# TOWN OF APPLE VALLEY

SAN BERNARDINO COUNTY, CALIFORNIA

# ENVIRONMENTAL IMPACT REPORT (SCH# 2008091077)

# APPLE VALLEY GENERAL PLAN AND ANNEXATIONS 2008-001 & 2008-002

Prepared For

Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, CA 92307

Prepared By

Terra Nova Planning & Research, Inc.®
400 South Farrell, Suite B-205
Palm Springs, CA 92262

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C. Cultural Resources Technical Report, Town of Apple Valley General Plan Update, prepared by CRM Tech, September 21, 2007. C-1

D. Seismic, Geologic and Flooding Sections of the Technical Background Report to the Safety Element of the General Plan, prepared by Earth Consultants International, September 18, 2008. D-1

E. Town of Apple Valley Noise Element Update Technical Report, prepared by Urban Crossroads, Inc., December 9, 2008. E-1

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G. Air Quality Demand & Emissions Tables for the Town of Apple Valley General Plan and Annexations 2008-001 & 2008-002 Environmental Impact Report, prepared by Terra Nova Planning & Research, Inc., January 2009. G-1

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J. Final EIR Response to Comments on Draft Environmental Impact Report for Town of Apple Valley General Plan Update and Annexations 2008-001 and 2008-002, prepared by Terra Nova Planning & Research, Inc., June 26, 2009. J-1

## ENVIRONMENTAL SUMMARY MATRIX

This Environmental Impact Report (EIR) has been prepared to assess the potential impacts to the environment that may result from the approval and implementation of the proposed Town of Apple Valley General Plan and Annexations 2008-001 and 2008-002. The EIR assesses the build out of 46,948.3± acres, or approximately 72± square miles, within the Town's corporate limits, as well as 3,579.7± acres (approximately 6± square miles) within the Town's Sphere of Influence that are proposed for annexation. Throughout this document, the collective total of lands analyzed is referred to as the planning area. The land use plan in the proposed General Plan includes a mix of residential densities ranging from very low-density acreage, at a density of one unit per 5 acres or more, to medium density residential lands with densities as high as 20 units per acre, and mixed use lands with densities as high as 30 units per acre. Commercial and industrial land use designations occur in primarily along the I-15, State Route 18 and Bear Valley Road corridors. Open space and recreation lands occur throughout the planning area.

The Town of Apple Valley is located in the southwestern portion of the County of San Bernardino (See Exhibit I-1, Regional Location Map). The proposed General Plan study area encompasses lands within the Town's corporate limits as well as the two annexation areas, herein described as Annexation 2008-001 and Annexation 2008-002, respectively. These areas are further described below.

Town Limits

The Town limits can generally be described as follows: bounded on the west by the Mojave River and U.S. Interstate 15, on the north by the northern section lines of Sections 3, 4 and 5, Township 6 North, Range 3 West, San Bernardino Base and Meridian, on the east by Central Avenue and Joshua Road, and on the south by Tussing Ranch Road and Ocotillo Way.

The Apple Valley corporate limits encompass 72± square miles, substantial portions of which are developed. Lands in the southern and central portion of the Town are most developed. Lands containing sparser development and lands remaining vacant are generally located in the northern one-third of the Town, northerly of Waalew Road. Lands in the northeast portion of Town have been the subject of recent planning efforts, resulting in approval of the North Apple Valley Industrial Specific Plan (NAVISP), which provides for the development of industrial and commercial uses in this area.

Annexation 2008-001 ("Golden Triangle")

Annexation 2008-001 is generally bounded on the west by U.S.-Interstate 15, on the north by Morro Road, on the east by Dale Evans Parkway, and on the south by Johnson Road. The "Golden Triangle" area encompasses 4.3± square miles, most of which is undeveloped.

The Golden Triangle consists of 4.3± square miles of mostly vacant lands, with scattered single family residential occurring throughout the area.

Annexation 2008-002 ("Northeast Industrial Area")

Annexation 2008-002 is generally bounded on the west by Central Avenue and the eastern boundary of the Town of Apple Valley, on the north by Quarry Road, on the east by the section line of Section 14, Township 6 North, Range 3 West, Section 14, and on the south by the half-section line of Section 23 Township 6 North, Range 3 West, San Bernardino Base and Meridian.

The Northeast Industrial Area is 1.3± square mile, and includes limited industrial (aggregate quarry) development. It is located east of and contiguous with the NAVISP, and would provide for additional lands for similar uses.

*Township, Section, Range Data*
The corporate limits of the Town of Apple Valley can be more specifically described as including: all of Sections 3, 4, 5, 6, 7, 8, 9, 10, 16, 17, and 19, and portions of Sections 15 and 18, Township 4 North, Range 3 West of the San Bernardino Base and Meridian; portions of Sections 1 and 12, Township 4 North, Range 4 West of the San Bernardino Base and Meridian; all of sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, and 35, Township 5 North, Range 3 West of the San Bernardino Base and Meridian; all of sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 23, 24 and 36, Township 5 North, Range 4 West of the San Bernardino Base and Meridian; all of Sections 3, 4, 9, 10, 15, 16, 19, 20, 21, 22, 27, 28, 29, 30, 31, 32, 33, 34, and 35, and a portion of Section 5, Township 6 North, Range 3 West of the San Bernardino Base and Meridian; and all of Sections 23, 25, and 36, and portions of Sections 24, 26, 34 and 35, Township 6 North, Range 4 West of the San Bernardino Base and Meridian.

Annexation 2008-001 can be described as including: a portion of Sections 5, 6, 7, and 18, and all of Sections 8 and 17, Township 6 North, Range 3 West; a portion of Section 13, Township 6 North, Range 4 West of the San Bernardino Base and Meridian.

Annexation 2008-002 lands include the following: all of Section 14 and a portion of Section 23, Township 6 North, Range 3 West of the San Bernardino Base and Meridian.

This EIR assesses the environmental impacts that may result as a consequence of approval and implementation of the proposed land use scenario and the Plan's goals, policies and programs, as well as buildout of the entire area. The following discussion briefly summarizes each category of analysis, including existing conditions, project impacts and applicable mitigation measures recommended to reduce impacts to acceptable or insignificant levels. Levels of impact include the following:

**Significant Impacts:** Those impacts that constitute a potentially significant adverse change in the environment.

**Insignificant Impacts:** Those impacts that, by virtue of the environmental conditions, predisposing existing development, or the implementation of mitigation measures, are reduced to acceptable or "insignificant" levels.

**Unavoidable Impacts:** Those impacts that occur as a result of project development whose adverse effects cannot be entirely eliminated or reduced to a level of insignificance.

| Existing Conditions | Project Impacts | Mitigation Measures |
|---|---|---|
| **AESTHETICS**<br>Natural visual resources that provide the planning area with special character include uninterrupted expanses of 'wide skies' and panoramic vistas of distant mountains. Characteristic views of the Mojave River floodplain bluffs and terraces, and areas of riparian forest flora also occur. The low-lying landscape surrounding the Town allows unobstructed, distant views in all directions and these create a prevailing sense of openness and spaciousness. Although the visual character of most parts of the planning area have been impacted to some extent by residential, commercial and industrial development, many acres of undeveloped desert lands remain.<br><br>The aesthetic quality of existing development in the Town and vicinity is inconsistent, with the built form being representative of several different periods of time and various standards of development. However, parts of an approximately seven-mile-long corridor along Highway 18, include some interesting residential and commercial buildings that date from the early years of the present-day community of Apple Valley, and these buildings make an important visual contribution to local character. | Implementation of the General Plan is expected to result in the continued development of a variety of residential, commercial and industrial structures, as well as additional recreational development. Development allowed by the General Plan is expected to continue to be limited in terms of coverage, height and density. Regardless of the type of development that occurs, new structures, signage, parking lots, utility infrastructure, lights and other elements of the built environment will result in additional visual impacts which could adversely affect surrounding viewsheds, either partially or wholly. The General Plan either directly regulates development, or mandates the maintenance of zoning and other regulatory codes that assure detailed assessment of building coverage, setbacks and building heights, as well as other design features.<br><br>**Annexation Areas 2008-001 and 2008-002**<br>The proposed land-use plans for the two annexation areas have been designed to integrate into those lands surrounding them which occur in the Town's urban environment. However, build out of the annexation areas is expected to have some impact on the visual and aesthetic resources, particularly since both areas are currently vacant desert lands. Existing viewsheds may be partially obstructed by buildings and other structures, and the present sense of open space will be diminished. The same policies, programs, and regulatory constraints applicable to all development in Town, however, will be applied to the annexation areas, thereby limiting building coverage and height to one and two story structures which will have limited impacts on viewsheds in either annexation area. | Mitigation measures require the implementation of design standards, the regulation of building mass and scale, and of signage and lighting. With the implementation of these measures, impacts associated with aesthetics will be reduced to less than significant levels.<br><br>**Alternatives:** The Less Intense Alternatives would result in less development within the planning area, and therefore would reduce potential aesthetic impacts to some degree. All alternatives, however, result in development of currently vacant lands, and will therefore have similar levels of impact on aesthetic resources. |

| Existing Conditions | Project Impacts | Mitigation Measures |
|---|---|---|
| **AGRICULTURAL RESOURCES**<br>The State has identified four areas in Apple Valley as Farmland of Statewide Importance. Two are located north of Yucca Loma Road, and west of Apple Valley Road. Two are located south of Yucca Loma Road; one immediately east of Apple Valley Road, and one south of Bear Valley Road, in the Deep Creek area. Altogether, these lands represent approximately 130 acres.<br><br>There is one Williamson Act contract in effect in Town, located on the south side of Chickasaw Lane, east of Chamber Lane, and consisting of 1.8 acres. The parcel is owned by the Apple Valley Ranchos Water Company (AVR).<br><br>Within the lands identified by the State, approved projects occur. Specifically, the Town has on record approved Tentative Tract Maps for 37.5 acres at the southeast corner of Camber Lane and Chickasaw Lane; 42.3 acres at the southwest corner of Choco Road and Yucca Loma Road, and 37 acres at the southeast corner of Wren Road and Mockingbird Road. These approvals affect almost all of the lands designated by the State as farmland, and occurred prior to the current General Plan update, on lands designated for residential land uses in the current General Plan. | As a result of implementation of the General Plan, it is likely that about 100 acres of land designated by the State as Farmland of Statewide Importance will be lost. None of the parcels represent viable long term agricultural production lands within Apple Valley, or for the region. The more likely agricultural, ranching and equestrian areas in Town occur surrounding the most southerly designated Farmland of Statewide Importance, in the Deep Creek area. These lands are designated to allow agricultural and ranching activities, and are able to support such activities through the policies of the General Plan.<br><br>**Annexations 2008-001 and 2008-002**<br>No designated agricultural lands occur in either annexation area. Therefore, there will be no impact to agricultural resources as a result of build out of the annexation areas. | Mitigation measures include the provision of buffers between the Town's lowest density residential designations and more intense land uses, and the continued coordination with the Department of Conservation. These mitigation measures will assure that impacts associated with agricultural resources are reduced to less than significant levels.<br><br>**Alternatives:** Build out of each of the alternatives would result in similar impacts on agricultural resources. |

| Existing Conditions | Project Impacts | Mitigation Measures |
|---|---|---|
| **AIR QUALITY**<br>The Mojave Desert Air Basin exceeds state and federal standards for fugitive dust ($PM_{10}$ and $PM_{2.5}$) and for ozone. State and federal standards for carbon monoxide, nitrogen oxides, sulfur dioxide, and lead are in attainment within the Town of Apple Valley and the Mojave Desert Air Basin.<br><br>The Mojave Desert Air Basin, which has a history of exceeding state and federal ozone standards, is currently designated as a "moderate" ozone non-attainment area under the federal Clean Air Act. The 2008 MDAQMD Ozone Attainment Plan is intended to assure that the Basin achieves attainment of the federal 8-hour NAAQS for ozone by 2021.<br><br>The region has a history of elevated $PM_{10}$ emissions, which are the result of both human activities, such as vehicle use and construction activity, and natural occurrences, such as windstorms. Particulate matter in the Town of Apple Valley is generated by vehicle emissions, construction, and fugitive dust. The Mojave Desert Air Basin and the Town of Apple Valley are classified as being in non-attainment for $PM_{2.5}$, based on the 2007 State Area Designations.<br><br>Some air polluting agents are also greenhouse gases (GHG), such as carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), and fluorinated gases (hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride). Carbon dioxide is the primary greenhouse gas that is stimulating concern. Currently, carbon dioxide concentrations in the atmosphere are 382 parts per million (ppm). ppm, | MDAQMD's Ozone attainment plan utilizes land use projections and associated growth rates from the previous General Plan land use plan (1998). The updated General Plan and associated land use designations result in increased residential densities, and greater commercial/retail and industrial development. Build out of the updated General Plan may interfere or delay implementation of the Ozone attainment plan, since it increases densities and is therefore non-conforming.<br><br>All criteria thresholds are projected to be exceeded without the application of mitigation measures. Although emissions can be mitigated to a certain degree, significant and unavoidable impacts to air quality, including greenhouse gas emissions, will occur as a result of development of the General Plan. Regardless of mitigation measures, development of the General Plan will contribute to cumulative air quality impacts locally and regionally.<br><br>**Annexation 2008-001**<br>Air quality emissions associated with stationary and moving source emitters will significantly exceed established thresholds for all criteria pollutants. Although mitigation measures will somewhat offset emissions, impacts associated with build out of the annexation area will result in significant and unavoidable air quality impacts.<br><br>**Annexation 2008-002**<br>Air quality emissions associated with stationary and moving source emitters will significantly exceed established thresholds for all criteria pollutants, except for particulates and ROG's. | A number of mitigation measures are offered to help to reduce emissions of all criteria pollutants. These include both broad based, community-wide mitigation, and project-specific measures. Mitigation measures are also included to reduce GHG emissions in the Town and region. However, even with the implementation of these mitigation measures, air quality impacts associated with all criteria pollutants and GHGs will remain significant and unavoidable.<br><br>**Alternatives:** Only the No Project Alternative would have no impact on the MDAQMD's Ozone attainment plan.<br><br>All project alternatives result in significant impacts associated with air quality. The No Project Alternative will have the least impact, while the More Intense Alternative represents the greatest impact. In all cases, impacts remain significant and unavoidable as they relate to air quality. |

| Existing Conditions | Project Impacts | Mitigation Measures |
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| **BIOLOGICAL RESOURCES**<br>There are several natural communities represented in the Apple Valley General Plan Study Area, supporting a wide variety of plant and animal species and various types of habitats. These include Saltbush Scrub, Mojave Riparian Forest, Wash Vegetation, Sandfield Plant Community, Joshua Tree Woodland, Creosote Bush Scrub, Mojave Mixed Woody Scrub, Montane Woodland and non-native plant communities. The more common species found in the Town of Apple Valley and vicinity tend to be associated with disturbed Creosote, Saltbush, and Mojave Mixed Woody Scrub plant communities. A variety of common native and non-native species are found in the planning area.<br><br>The Apple Valley General Plan area contains a wide range of significant biological resources, including special status species that are listed as threatened or endangered by federal and state governmental agencies.<br><br>A number of special survey areas in the planning area are identified in the General Plan. Species for which surveys are required as part of development applications include Desert Tortoise, Mojave Ground Squirrel, Burrowing Owls, Joshua Trees, and/or Migratory/Nesting/Other Protected Birds.<br><br>The Town of Apple Valley is in the process of preparing a comprehensive MSHCP that will address management for federally listed and other special status species occurring on private lands. | Disturbances from grading and development of lands within the General Plan area have the potential to result in direct adverse impacts to the soil column, which can eliminate soil nutrients and restrict plant growth. The Desert Cymopterus and the Southern Skullcap are two special status plant species thought to occur within Town limits and are considered to be rare and endangered throughout their range. Booth's Evening Primrose is thought to occur along the western edge of the Town. The Town of Apple Valley also protects and manages Joshua Trees.<br><br>Development of the General Plan will remove habitat and increase fragmentation, which will adversely impact special status species occurring within the Town.<br><br>**Annexation 2008-001 and 2008-002**<br><br>As with other undeveloped portions of the Town, build out of the annexation areas has the potential to impact biological resources, including common and possibly special status species, in the annexation areas through direct disturbance from development, habitat loss, and fragmentation.<br><br>Future development in the annexation areas may result in activities within and adjacent to ephemeral streams. Such activities may be subject to state and federal regulatory permitting requirements, to be determined at the time development proposals are reviewed by the Town. | The EIR includes requirements for site specific and species specific studies in areas of habitat for species of concern; the continued coordination with regional agencies on MSHCP issues; the adoption of the Town's MSHCP; and the preservation of open space areas. With implementation of these mitigation measures, impacts associated with biological resources will be reduced to less than significant levels.<br><br>**Alternatives:** All alternatives propose new development, each of which would be subject to the same standards imposed under the Preferred Alternative. Therefore, no alternative is considered superior in regard to impacts associated with biological resources, although the No Project and Less Intense alternatives could result in slightly more preservation of habitat. |

| Existing Conditions | Project Impacts | Mitigation Measures |
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| **CULTURAL RESOURCES**<br>Human occupation of the Victorville-Apple Valley region has continued for thousands of years, and although the Town of Apple Valley is a relatively 'new' community, there is evidence that both prehistoric and historic resources exist within the western, northern and southern portions of the Town. According to archaeological records, a total of 48 historical/archaeological sites have been identified within the planning area and recorded into the California Historical Resource Information System. These include 16 prehistoric (Native American) archaeological sites and 32 historic-period sites. Seven 'pending' sites, all prehistoric in nature, have also been reported. In addition, a total of 28 isolates (localities with fewer than three artifacts) have been discovered in the planning area.<br><br>Records on file indicate that approximately one-third of the total acreage within the Town has been systematically and intensively surveyed for cultural resources. Many prehistoric and historic sites that remain unsurveyed may therefore be at risk through being unidentified and unrecorded.<br><br>Research indicates that most of the surface deposits in the planning area have a low potential for containing significant fossil remains due to their young age. However, reports nearby have identified localities with fossil resources in similar age soil deposits as those that occur in the planning area. In summary, the likelihood of encountering paleontological resources during future development projects within the boundaries of the planning area ranges from low to high, depending on the location and sediments encountered. | The majority of the 48 cultural resource sites presently recorded within the Planning Area are from the historic period and are reflective of the Apple Valley area's past as a nexus of transportation arteries, its gradual transformation from a 'frontier' settlement to a rural retreat, and finally its development into a post-WWII boomtown.<br><br>It is likely that additional sites and structures may be discovered in areas of cultural resource sensitivity during future development of the General Plan and annexation areas. Future development projects could potentially result in direct and/or indirect disturbance or destruction of sensitive archaeological and historic resources. Impacts may include grading activities, site excavation, construction, and increased foot and vehicular traffic.<br><br>**Annexation 2008-001 and 2008-002**<br>Annexation 2008-001 and the bulk of Annexation 2008-002 are located in an area previously identified as highly sensitive for archaeological resources. Build out of these areas could result in the disturbance and/or destruction of archaeological resources. Development activities, including grading, excavation, paving and building construction, as well as increased foot and vehicular traffic could damage or destroy sensitive artifacts. | This EIR includes mitigation measures requiring site specific surveys for development proposed in areas of sensitivity for archaeological, historic and paleontologic resources. Mitigation measures also include protection and inventory of resources by the Town. These mitigation measures will reduce potential impacts to cultural resources to less than significant levels.<br><br>**Alternatives:** All the alternatives represent development scenarios which would likely impact cultural resources in a manner similar to the Preferred Alternative. The No Project and Less Intense alternatives, because of their reduced intensities, could have slightly lower impacts. The mitigation measures provided in this document will reduce impacts of all alternatives to less than significant levels. |

| Existing Conditions | Project Impacts | Mitigation Measures |
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| **GEOLOGY AND SOILS**<br>The Town of Apple Valley is generally bounded by the Turtle Mountains on the north, the Fairview Mountains and Granite Mountains on the east, and the Ord Mountains on the south. The Town of Apple Valley is situated on gently sloping alluvial fans that range in elevation from approximately 3,400 feet above sea level near the base of the Fairview Mountains in the northeast to nearly 2,700 feet above sea level along the Mojave River in the west. Within Town limits notable geologic formations include Bell Mountain (3,897 feet above sea level) and Catholic Hill (3,645 feet above sea level). Other major features of the planning area include the Mojave River, a wide floodplain that runs along and defines a portion of Apple Valley's western boundary.<br><br>The geological character of Apple Valley and the surrounding region has been formed by its proximity to large active fault systems, including the Helendale Fault, San Andreas Fault, and the North Frontal Fault.<br><br>There are six types of geologic deposits that underlie the Town of Apple Valley and vicinity. These consist of:<br><br>1. Artificial or man-made fill, typically associated with infrastructure (too small to identify on map);<br>2. Very young or recent alluvium deposits;<br>3. Young deposits;<br>4. Older alluvial fan deposits;<br>5. Sedimentary rocks; and<br>6. Crystalline Rocks. | The San Andreas Fault Zone and associated faults in the area have the potential to cause moderate to extreme ground shaking and significant ground acceleration in the Town. Seismic activity of this magnitude has the potential to result in direct damage to structures, property, and infrastructure, and/or generate indirect hazards such as slope instability, liquefaction, settlement, landslides, and flood inundation, and can cause a variety of localized, but no less destructive hazards such as urban fires, dam failures, and toxic chemical releases. Damage to infrastructure and utility systems could exacerbate post earthquake conditions. Seismic activity could also result in significant damage to smaller structures. Although the Town is predominantly situated on broad alluvial plains, scattered slopes, hillsides, and mountains surround the planning area and present potential geological hazards in the Town and region. Development at the base of slopes, hillsides, and mountains is susceptible to hazards associated with slope instability such as rock falls and landslides.<br><br>**Annexations 2008-001 and 2008-002**<br>Both annexation areas will be subject to the same seismic hazards as the rest of the Town. The soil underling Annexation 2008-001 is comprised of very old alluvial valley deposits (Qvoa) with moderately consolidated sand and gravel, which may be more compact, and therefore provide better structural support compared to younger sediment types. Annexation 2008-002 contains several sediment types, but is dominated by younger alluvial fan deposits which are unconsolidated to moderately consolidated and may be subject to wind erosion. | The General Plan includes a number of policies and programs to minimize potential impacts to soils and geology. This EIR also includes mitigation measures, ranging from grading specifications to the requirements for project-specific geotechnical studies and the proper construction of trenches and foundations. These mitigation measures will reduce the impacts associated with geology and soils to less than significant levels.<br><br>**Alternatives:** All alternatives represent the construction of new development that would be subject to the same standards imposed under the proposed General Plan. No alternative is considered preferable as regards impacts associated with geology and soils. |

| Existing Conditions | Project Impacts | Mitigation Measures |
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| **HAZARDS AND HAZARDOUS MATERIALS**<br>There are 15 properties within the planning area that are currently listed in environmental databases. Of those 15 properties, 11 are listed as a result of generating, using, and/or disposing relatively small quantities of potentially hazardous materials from their business location, with no material releases having been reported on these properties.<br><br>Currently, there are no large quantity generators of hazardous waste in the Town of Apple Valley. There is one transporter of hazardous waste listed by the EPA in the Town and its Sphere of Influence.<br><br>There are no Federal Superfund Sites (NPL), State Response Sites, Voluntary Cleanup Sites, School Cleanup Sites, Permitted Sites, or Corrective Action Sites in the planning area.<br><br>Other potential risks are those from leaks from underground storage tanks. A search for Leaking Underground Fuel Tank (LUFT) cleanup sites identified 15 spills within the Town of Apple Valley.<br><br>Approximately 560 acres within the NAVISP were previously used as a practice bombing range by the U.S. Army Air Force during World War II. Potential hazards exist due to the presence of known or suspected military munitions and explosives of concern. | Uses and activities may be proposed or undertaken that could result in the use of hazardous materials or create a hazardous condition within the Town or annexation areas. Hazardous materials transport, storage and handling are highly regulated at the federal, state, regional and local level. The long-term build out of the General Plan and annexation areas is expected to continue to be regulated by multiple agencies. Releases, leaks, or the disposals of chemical compounds, such as petroleum hydrocarbons, on or below the ground surface, can lead to the contamination of underlying soil and groundwater. An increase in the residential population will lead to an associated increase in the use of common household cleaners, batteries, fluorescent tubes, mercury-containing devices, and electronics.<br><br>**Annexation 2008-001**<br>Growth and development of this annexation area would result in an increase in the frequency of transport, use, and disposal of hazardous materials associated with residential, commercial, and industrial growth.<br><br>**Annexation 2008-002**<br>Annexation 2008-002 has the potential to result in 7,676,379 square feet of industrial space, which in turn could result in greater quantities of industrial hazardous waste being generated, stored, and transported. | Mitigation measures includes in this EIR require analysis of suspected and known hazardous materials releases; requiring the proper reporting, storing, transport and disposal of hazardous materials for all existing and proposed development within the Town; and continued coordination of all responsible agencies for both everyday occurrences, and emergency situations. These mitigation measures will reduce impacts associated with hazardous materials to less than signficiant levels.<br><br>**Alternatives:** All alternatives propose new development, which would be subject to the same mitigation measures as the proposed General Plan. The No Project and Less Intense alternatives, which propose development at lower intensities, would have a somewhat lower risk associated with the materials, due to the reductions in building intensities. |

| Existing Conditions | Project Impacts | Mitigation Measures |
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| **HYDRLOGY**<br>The Mojave River is a federally regulated waterway that flows along and generally defines of much of the western boundary of Apple Valley. In the planning area, the Mojave River is fed by several tributary dry washes, the largest of which, the Bell Mountain Wash, is a natural channel that collects runoff primarily from the north and west. The Desert Knolls Wash, which contains a partially lined concrete drainage basin, is a smaller wash that drains the area west of Catholic Hill. There are also several small, unnamed drainages that channel flows from the western part of the Ord Mountains towards the Mojave River. Other watercourses in the planning area flow into the Apple Valley Dry Lake.<br><br>The Town has historically been subject to flooding and associated hazards, such as mudflows, during severe summer storm events. The winter rainfall in February and March of 1938 stands as the benchmark for damaging storms in the Apple Valley area; during this event, peak stream flow for Deep Creek was estimated at more than 46,000 cubic feet per second, and flows in the Mojave River increased to more than 70,000 cubic feet per second. Other notable historic peak flows reached about 23,000 cubic feet per second in 1969 and 1978, and more than 37,000 cubic feet per second in 1910. | As the population in the planning area grows, development pressure will amplify and urbanization and associated impervious surfaces, such as roadways, sidewalks, and parking lots will also increase. If drainage channels that convey storm waters are not designed or improved to carry these increased flows, areas that have not flooded in the past may be subject to flooding in the future, especially in developments downstream from canyons that have the potential to convey mudflows, and within the vicinity of the Mojave River and the Apple Valley Dry Lake. Future development also has the potential to alter existing drainage patterns and, in some areas, to result in the accumulation of a significant amount of debris during large storms. The proposed General Plan includes goals, policies and programs designed to limit flood hazards and protect natural watersheds as well as lives and properties in areas subject to flooding. The Flooding and Hydrology Element will be implemented by the Apple Valley Master Plan of Drainage and the Apple Valley West/Desert Knolls Master Plan of Drainage. Both Master Plans of Drainage are currently being updated in consultation with the County of San Bernardino Flood Control District.<br><br>**Annexation 2008-001 and 2008-002**<br>As with the rest of the planning area, future development in the annexation areas will result in construction that includes impervious surfaces such as roads, sidewalks, driveways, and parking lots, which will result in a reduction of permeable soils. Future development also has the potential to alter or obstruct existing drainage patterns and may impact the ephemeral streams that traverse each of the annexation areas. | This EIR imposes mitigation measures associated with hydrology which would focus on the implementation of the Towns Master Plans of Drainage, and the control and management of runoff created by new development. These mitigation measures will assure that impacts associated with hydrology are reduced to less than significant levels.<br><br>**Alternatives:** The No Project Alternative would represent a reduction in impacts, due to a reduction in development densities. All alternatives would implement Master Plan and site-specific mitigation measures, and would therefore result in less than significant impacts. |

| Existing Conditions | Project Impacts | Mitigation Measures |
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| **WATER RESOURCES/QUALITY**<br>The Mojave River Groundwater Basin is comprised of several subsurface aquifers, or subareas. These include the Alto, the Baja, the Centro, the Este, and the Oeste subareas. The Town is located near the center of the Alto Subarea. The Basin is in overdraft, resulting in a net reduction in groundwater stored in the aquifer. Modeling data prepared by the U. S. Geological Survey (USGS) indicates that the overdraft condition began in the Centro and Baja subareas in the 1950s, and by 1960 was present in all subareas of the Basin. Water levels in the Alto subarea have declined by between 50 and 75 feet since the mid-1940s.<br><br>There are several domestic water purveyors in the Town. The Apple Valley Ranchos Water Company provides domestic water services to approximately 19,000 active service connections. Golden State Water Company has approximately 2,800 service connections. There are several other water purveyors, including: Apple Valley Foothill County Water District, Apple Valley Heights County Water District, Apple Valley View Mutual Water Company, County Service Area 64, Juniper Rivera County Water District, Mariana Ranchos County Water District, Rancheritos Mutual Water Company, Thunderbird County Water District. and Navajo Mutual Water Company. | Residential development associated with implementation of the proposed General Plan and the annexations is estimated to result in water demand of 45,396.2 acre-feet per year at build out. Commercial, industrial and other land uses are expected to result in water demand of 50,603.6 acre-feet per year at build out. All land uses within the Town limits and annexation areas are expected to result in total water demand of 95,999.8 acre-feet per year at build out.<br><br>The implementation of the proposed General Plan will facilitate urban development that will contribute to cumulative impacts on groundwater resources in the region; these impacts will include a reduction in the amount of potable groundwater in storage.<br><br>Build out of the General Plan and the annexation areas will facilitate development that may require the expansion of existing or construction of new domestic water facilities to ensure adequate fire flows and provision of domestic water.<br><br>**Annexations 2008-001 and 2008-002**<br>Water consumption at build out of future development in Annexation 2008-001 is estimated at 6,476.4 acre-feet per year, of which approximately 3,082.8 acre-feet would be from residential uses and approximately 3,393.6 acre-feet would be from commercial, industrial and other uses. For future industrial and other uses in Annexation 2008-002, build out water demand is estimated at 1,301.5 acre-feet per year. | Mitigation measures included in this document are designed to reduce the demand for water, and lower the amount of water removed from the aquifer. These mitigation measures include conservation, use of efficient appliances and landscaping techniques, and the careful review of site specific proposals to assure compliance with local and regional regulations. With implementation of these mitigation measures, the impacts of build out of the General Plan on water quality and water resources will be reduced to less than significant levels.<br><br>**Alternatives:** The No Project and Less Intense alternatives, which both propose lower intensity land uses, would reduced impacts on water quality and water resources. |

| Existing Conditions | Project Impacts | Mitigation Measures |
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| **LAND USE, POPULATION & HOUSING**<br>Apple Valley has developed most densely along major roadways in the Town, including State Highway 18 and Bear Valley Road. Highway 18, extends southeast to northwest through the Town, while Bear Valley Road is south of Highway 18, and runs east to west. Existing development becomes gradually less dense north of Highway 18 to Waalew Road, north of which existing development is scattered and relatively limited in most areas. The Apple Valley Airport is located between Waalew Road on the south and Johnson Road on the north, west of Central Road. Commercial centers in the Town include the Village commercial area,; retail and office uses between Rancherias Road and Dale Evans Parkway, north to Thunderbird Road; and further west along Highway 18, near its intersection with Corwin Road. The most recent commercial development has occurred on the west half of Bear Valley Road. Residential development is concentrated in the southern and central portions of the Tow. Residential densities range from very low to high densities (1 dwelling unit per 5 acres or more, to 20 dwelling units per acre). The majority of single-family development in the Town occurs on lots of between 0.5 and 2.5 acres.<br><br>The current General Plan resulted in a total potential 50,053 residential units, 28,608,875 square feet of commercial land uses, and 37,848,814 square feet of industrial land uses at build out. The current General Plan would result in a build out population of 152,813 within Town limits. | The proposed General Plan includes 34,576.6 acres of residentially designated lands within the existing Town limits, and 1,091.6 acres in the annexation areas. This represents a decrease of 4,213.6 acres in residential lands, or 10.6%. The proposed General Plan will result in 63,749 dwelling units, an increase of 21.4% over the current General Plan. These changes will also result in an increase in build out population from 160,517 to 194,931 at build out of both the General Plan and the two annexation areas. The total commercial acreage will be 4,484.2 acres, an increase of 2,186.2 acres (95%). In total, commercial square footage will increase by 81% over the existing General Plan designations. Industrial land use designations total 2,258.4 acres under the proposed General Plan and annexation areas, as compared to 418.7 under the current General Plan.<br><br>**Annexation 2008-001 and 2008-002**<br>Annexation Area 2008-001 will experience the greatest change in land use patterns. Approximately 722 acres will be designated for Estate Residential development, which is equivalent to the Rural Living land use designation currently in effect in the area. Annexation 2008-001 will also result in the addition of 773 acres of commercially designated lands, and 812.1 acres of industrial designated lands. These lands are currently designated Rural Living under the County General Plan. Changes in land use designations as proposed cannot be mitigated to less than significant levels.<br><br>Lands within Annexation 2008-002 are currently designated for a mix of Rural Living (399.5 acres) and industrial (323.7 acres) land uses. The proposed Annexation would result in industrial land uses (801.0 acres). | Mitigation measures included in this document and the policies of the General Plan assure the coordinated and sensitive development of land uses in the Town limits and the annexation areas. Land use patterns proposed in the Town limits and in Annexation 2008-002 are consistent with the land use patterns which have occurred, or were projected in the Town and County General Plans. Impacts in these areas will be less than significant. In Annexation 2008-001, the land uses proposed will differ significantly from those currently envisioned for the area, and will impact the character of the area. No mitigation measures are feasible to reduce these impacts, and they will remain significant and unavoidable.<br><br>**Alternatives:** The No Project alternative would have the least impacts on land use, population and housing, and would be the only alternative which would not significantly impact Annexation 2008-001. |

| Existing Conditions | Project Impacts | Mitigation Measures |
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| **MINERAL RESOURCES**<br>Mineral resources located within the Town and Sphere of Influence are found primarily along or near the Mojave River or in the surrounding mountains, and include sand, gravel and stone deposits that are suitable as sources of concrete aggregate. The Cemex Black Mountain Quarry mines limestone on the northwest edge of Town, adjacent to the newly approved North Pointe and Bridle Path Specific Plans. Cemex and TXI Riverside Cement operate quarries within the Sphere of Influence. The Cemex operations occur in part in Annexation 2008-002. | The General Plan proposes 452.5 acres as mineral resources land use. Of this, approximately 111.56 acres are developed for mining and processing of aggregate materials, and an additional 340.95 acres are designated for the use and production of mineral resources.<br><br>**Annexation 2008-001 and 2008-002**<br><br>Impacts from mineral resource operations will impact the two annexation areas to the same extent as they impact other northern parts of the planning area. Land use designations within the annexation areas have been determined as compatible with mineral resource operations and implementation of the Town's policies and standards concerning effective buffering, maintenance of air quality, and control of noise and light emissions will reduce potential impacts in these areas to less than significant levels. | The proposed General Plan policies and programs, and the mitigation measures included in this EIR require that mining activities be conducted in conformance with local, regional and state requirements, and that the restoration of mined lands be undertaken in accordance with these standards, to assure compatibility with surrounding land uses. These mitigation measures will assure that impacts associated with mineral resources are less than significant at build out of the General Plan and Annexation areas.<br><br>**Alternatives:** All alternatives include similar designations for mineral resource lands, and would encompass the same existing quarries in the area. Therefore, all alternatives will have similar, and less than significant, impacts. |

| Existing Conditions | Project Impacts | Mitigation Measures |
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| **NOISE**<br>The Town of Apple Valley generally enjoys a quiet noise environment. The community noise environment is dominated primarily by motor vehicle traffic on highways and major arterials, including U.S. Interstate 15, which forms a portion of the Town's northwest boundary, State Route 18 in the central portion of the planning area, and other roadways. Other noise generators in the local environmental include operations associated with general aviation aircraft at the Apple Valley Airport in the northeast portion of the planning area, and rail lines that serve local and regional mineral extraction operations and have a limited impact on the portions of the planning area to the north, south and west.<br><br>There are a variety of noise sensitive land uses throughout the planning area, including but not limited to schools, hospitals, rest homes, long-term care facilities, residential uses, places of worship, libraries, and passive recreation areas. Potential land use incompatibilities related to noise occur when residential areas or other sensitive receptors are located in proximity to industrial and commercial uses.<br><br>Hourly noise levels currently range between 49.1 dBA Leq to 66.7 dBA Leq; the weighted 24-hour noise levels ranged from 60.5 dBA CNEL to 65.7 dBA CNEL. Data indicate that traffic peak hours, at about 7:00 a.m. and 6:00 p.m., generally resulted in the highest noise levels. | Under existing conditions, approximately 13 of the General Planned roadway segments in the planning area generate noise levels between 65 and 70 dBA CNEL at 100 feet from the centerline. This will increase to 27 roadway segments at buildout of the proposed General Plan and annexations. Currently there are 11 roadway segments in the General Plan area that generate noise levels between 70 and 75 dBA CNEL at 100 feet, however, proposed General Plan noise contours will increase to 59 the number of roadway segments between 70 dBA and 75 dBA CNEL. There are currently no master planned roadways that currently generate greater than 75 dBA CNEL at 100 feet, however at buildout of the proposed General Plan and annexations, there will be 9 roadways that generate greater than 75 dBA CNEL at 100 feet from the centerline. Increases in noise levels are expected to be perceptible to land uses adjacent to 44 roadway segments in the planning area.<br><br>**Annexation 2008-001 and 2008-002**<br>At build out, Annexation No. 2008-001 will include up to 4,236 residential units, 7,135,369 square feet of commercial development and 7,782,275 square feet of industrial development. Build out of Annexation No. 2008-002 will result in up to 7,676,379 square feet of industrial land uses. Noise impacts are expected to be primarily associated with temporary construction noises and gradually increasing traffic volumes as these areas develop. | The General Plan includes policies and programs to assure that all future development meets the Town's noise standards. The mitigation measures in this EIR include on and off site measures, and the analysis of development proposals to assure compliance with acceptable noise levels. The implementation of these measures will assure that impacts associated with noise at build out will be less than significant.<br><br>**Alternatives:** The No Project and Less Intense alternatives would both result in lower noise levels as a result of reduced building intensities and traffic volumes. Mitigation measures would be applied to these alternatives as well, and would result in less than significant impacts. |

| Existing Conditions | Project Impacts | Mitigation Measures |
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| **PUBLIC SERVICES AND FACILITIES**<br>The General Plan area is located within the service boundaries of a wide range of public services and facilities providers, which are listed below.<br><br>• Public Schools: Apple Valley Unified School District<br>• Library Services: San Bernardino County Library System<br>• Law Enforcement: Apple Valley Police Department/San Bernardino County Sheriff's Department<br>• Fire Protection: Apple Valley Fire Protection District<br>• Health Services: St. Mary Medical Center<br>• Electricity: Southern California Edison<br>• Natural Gas: Southwest Gas Company<br>• Telephone Services, Internet and Cable Television: Verizon, Charter Communications<br>• Domestic Water: Apple Valley Ranchos Water Company, Golden State Water Company, various small water purveyors<br>• Wastewater Collection/Treatment: Town of Apple Valley Public Works Division, Victor Valley Wastewater Reclamation Authority<br>• Solid Waste Management: Burrtec Waste Industries | Build out of the General Plan has the potential to generate 29,899 students in the AVUSD school system, 1,598 of which would occur in Annexation 2008-001.<br><br>General Plan and annexations build out will require approximately 87,719 square foot library area to serve the build out population.<br><br>Maintenance of the target ratio of 1 police officer per 1,500 residents at General Plan build out will require a total of 130 deputies, which is an increase of 81 deputies as compared with current staffing levels.<br><br>Based on the AVFPD desired ratio of 1 full-time personnel per 1,500 population, at build out of the General Plan there would be 130 full-time fire personnel on staff.<br><br>Development facilitated by build out of the General Plan and annexation areas will result in wastewater generation in the General Plan and annexation areas of approximately 19,493,069 gallons per day.<br><br>Build out of the General Plan and annexation areas will result in the generation of 950,712 tons per year of solid waste. | The build out of the General Plan and annexation areas has the potential to significantly impact schools, police and fire services, wastewater treatment and solid waste facilities. The mitigation measures in this EIR, however, require the coordination of new development proposals with affected agencies, the payment of required fees designed to offset impacts, and the continued conservation and reduction of the use of resources. These mitigation measures will reduce impacts to public facilities and services to less than significant levels.<br><br>**Alternatives:** The No Project and Less Intense alternatives would result in lower intensities of development, and would therefore reduce impacts associated with public facilities and services. The same mitigation measures would be imposed on these alternatives, and impacts would be less than significant. |

| Existing Conditions | Project Impacts | Mitigation Measures |
|---|---|---|
| **RECREATIONAL RESOURCES**<br>Currently, the Town of Apple Valley has 346.87 acres of developed parkland that are open to the public, and provide a range of recreational amenities both locally, within neighborhoods and regionally, within the Parks and Recreation service boundary. There are seven Mini-Parks, two Neighborhood Parks, three Community Parks and two Special Use Parks in Town.<br><br>In addition, the Town has a further 65 acres of BLM and privately owned land for two parks that are approved within Specific Plans, but not yet developed: The Bridle Path Park and the North Pointe Park. The Town also owns a further 27 acres of land identified for park use, but not yet developed. Based on these holdings, the Town currently has 438.87 acres of developed or developable parklands. | Implementation of the General Plan and annexation areas will result in the construction of an additional 38,824 residential units. The total build out population will be approximately 194,931. The Town has adopted a Town wide standard of 5 acres of parkland per 1,000 persons. Therefore, build out of the General Plan will require a provision of approximately 975 acres of parkland.<br><br>**Annexations 2008-001 and 2008-002**<br><br>Build out of Annexation Area 2008-001 will result in 4,236 residential units. Annexation 2008-001 will have a build out population of 13,238. Build out of the area will require the provision of approximately 66 acres of parkland to meet the recreational needs of the residents of Annexation 2008-001.<br><br>Annexation 2008-002 will have 7,676,379 square feet of industrial land uses at build out, and will have no residential component. As a result, this annexation area will not require parkland to accommodate residents. | The General Plan includes standards and policies to assure that adequate parkland is provided to the community's residents. The mitigation measures in this EIR require that these standards be implemented, and that the Town pursue supplemental funding for park and recreation activities and facilities. These mitigating measures will assure that impacts at build out are less than significant.<br><br>**Alternatives:** The No Project and Less Intense alternatives would result in lower intensities of development, and would therefore reduce impacts associated with public facilities and services. The same mitigation measures would be imposed on these alternatives, and impacts would be less than significant. |

| Existing Conditions | Project Impacts | Mitigation Measures |
|---|---|---|
| **TRANSPORTATION AND TRAFFIC**<br>Existing 2008 peak hour traffic operations at intersections in the planning area have been assessed during morning and afternoon/evening (AM and PM) peak hours of traffic.<br><br>The Town of Apple Valley has previously established a minimum intersection Level of Service (LOS) "C". The following eight (8) intersections are currently operating at LOS D, E or F during AM and/or PM peak hours:<br><br>Apple Valley Road (NS) at:<br>• State Route 18 (EW) operates at LOS D in both the AM and PM peak hours<br>• Yucca Loma Road (EW) operates at LOS D in the PM peak hour<br>• Bear Valley Road (EW) operates at LOS D in the PM peak hour<br>• Sitting Bull Road (EW) operates at LOS D in both the AM and PM peak hours<br><br>Deep Creek Road (NS) at:<br>• Bear Valley Road (EW) operates at LOS F in both the AM and PM peak hours<br><br>State Route 18 (NS) at:<br>• Bear Valley Road (EW) operates at LOS D in the PM peak hour<br><br>Kiowa Road (NS) at:<br>• Sitting Bull Road (EW) operates at LOS E in the PM peak hour<br><br>Navajo Road (NS) at:<br>• Nisqually Road (EW) operates at LOS D in the AM peak hour | Projected ADT volumes on roadways in the planning area range from less than 7,000 vehicles per day (vpd) to more than 60,000 vpd. The following roadways are expected to carry more than 60,000 vpd at General Plan buildout:<br><br>• Quarry Road east of I-15;<br>• Choco/Alembic Street north of the High Desert Corridor;<br>• Dale Evans Parkway south of the High Desert Corridor;<br>• State Route 18 west of Apple Valley Road; and<br>• Bear Valley Road west of Apple Valley Road.<br><br>Daily V/C ratios range from "Acceptable" (79 segments) to "Approaching Capacity" (17 segments). Along this continuum are values in the "Potentially Exceeds Capacity" (8 segments) category. At build out of the General Plan and annexation areas, 19 intersections in the planning area are expected to operate below LOS C (D, E, or F) during AM and/or PM peak hours. With improvements to General Plan standards, only one intersection will operate below LOS D at build out (Dale Evans Parkway at Corwin Rd).<br><br>Build out of the General Plan will also implement a comprehensive system of bicycle and multi-purpose trails throughout the community, which will facilitate alternative transportation.<br><br>**Annexations 2008-001 and 2008-002**<br>All intersections within the annexation areas will operate at acceptable (LOS D) levels at build out of these areas. | The mitigation measures included in this EIR focus on the maintenance of acceptable levels of service through the adequate ultimate development of the Town's roadways, as designated in the General Plan. With the implementation of these measures, the impacts associated with all intersections except the intersection of Dale Evans Parkway and Corwin Road will be reduced to less than significant levels. At the subject intersection, however, LOS will occur during the morning peak hour, and this impact cannot be mitigated. At this intersection, therefore, the impact to transportation and traffic will remain significant and unavoidable.<br><br>**Alternatives:** The No Project alternative will represent the greatest reduction in trips, and the best levels of service on local roadways. Implementation of this alternative would reduce all impacts to less than significant levels. |

# TOWN OF APPLE VALLEY

## ENVIRONMENTAL IMPACT REPORT FOR THE COMPREHENSIVE GENERAL PLAN AND ANNEXATIONS NO. 2008-001 AND NO. 2008-002

## I. INTRODUCTION AND PROJECT DESCRIPTION

### A. Lead Agency

The Town of Apple Valley is the lead agency responsible for the preparation of this Program Environmental Impact Report (EIR). The contact person is Ms. Lori Lamson, Assistant Director of Community Development. The Town's mailing address is 14955 Dale Evans Parkway, Apple Valley, California, 92307.

### B. Introduction

This Environmental Impact Report (EIR) has been prepared in conjunction with the preparation of the Comprehensive General Plan for the Town of Apple Valley, and the planned annexations of two areas west and east of the Town (please see Project Description, below). Under the California Environmental Quality Act (CEQA), General Plans and their amendments are considered "projects", which require thorough assessment in an EIR. The EIR is therefore an essential part of the General Plan development process.

This EIR has been prepared to analyze the environmental constraints and opportunities associated with adoption of the Apple Valley Comprehensive General Plan and two planned annexations. It assesses impacts and establishes appropriate mitigation measures. Further, it is intended to be used as an information database to streamline and facilitate the tiering of the environmental review process for future projects proposed in the Town.

This EIR considers the Town and portions of its Sphere of Influence (SOI), specifically two proposed annexation areas, further described below. It also considers lands outside the Town limits and annexation areas that form the planning area context. Within this framework, the EIR incorporates technical data collected over a broad area and thereby considers impacts of the proposed General Plan not only on a localized level, but regionally. It summarizes the land use categories set forth in the General Plan, as well as the major General Plan goals and policies.

The EIR also assesses a broad range of environmental issues associated with implementation of the General Plan. Among these are land use compatibility, traffic and circulation, flooding and drainage, geotechnical and seismic safety, air quality, biological and archaeological resources, noise impacts and visual resources. It considers the availability and provision of public services and facilities, as well as the socio-economic impacts of implementation of the General Plan.

Section II of this EIR describes the Environmental Setting, wherein the current environmental context of the Town and the region are described. Section II also identifies environmental resources and constraints, and describes existing regional infrastructure, land use patterns and natural resources.

Section III sets forth a comprehensive consideration of issues specific to the General Plan and annexation areas' lands, and analyzes potential impacts to the environment from implementation of the proposed General Plan land use designations. Section III evaluates, among other issues, the impacts of population growth, development patterns, alterations to the physical environment, and the availability of public services and facilities. Mitigation measures are included as appropriate to reduce potential adverse environmental impacts to less than significant levels.

Alternatives to the implementation of the proposed General Plan are discussed in Section V. This section includes the required No Project alternative, as well as two other potential land use scenarios. The impacts of each of the alternatives is evaluated categorically, based on the same issue areas analyzed in Section III of the document. This section also includes the project objectives, and a determination of the environmentally superior alternative.

The EIR also considers the short-term use and long-term productivity of the affected environment as well as irreversible and irretrievable commitment of resources. The latter discusses water and energy resources, biological habitat, and air quality with regard to long-term planning. It assesses whether and to what extent the adoption of the proposed General Plan land uses have potential to result in growth inducing and cumulative impacts, and identifies feasible and appropriate alternative projects. Other mandated CEQA issues are also discussed. Section IX cites persons, organizations and documents consulted in the preparation of the EIR.

### C. CEQA and Other Requirements

This environmental Impact Report has been prepared in accordance with the California Environmental Quality Act (CEQA) Statutes (Public Resources Code Section 21000-21177), and CEQA Guidelines of 2007 (Administrative Code Section 15000, et. seq.) as amended. CEQA requires that the adoption of a general plan, element thereof, or amendment, requires that findings be made concerning the identified significant environmental effects (Title 14, California Code of Regulations Section 15088). These findings must be supported by substantial evidence and must provide explanation of how significant effects have been or should be mitigated. In compliance with Section 15080 of the CEQA Guidelines, 2007, an Initial Study (see Appendix A) has be prepared to determine the areas of concern which required further analysis in this document. CEQA requires the preparation of an EIR if the Initial Study identifies any potentially significant impacts that may result from the "project." As provided in Appendix A, the Initial

Study determined that there was a potential for significant impact in a number of issue areas, and that an EIR is required to further analyze these issues.

This EIR has been prepared as an informational and analytical document to provide an objective evaluation of the environmental impacts associated with the proposed General Plan to decision makers, the general public, and other responsible or interested agencies.

Mitigation measures are proposed herein that are designed to eliminate or reduce to an acceptable level the environmental impacts associated with the General Plan. Where impacts cannot be reduced to a less than significant level, a significant and unavoidable impact results.

The Final EIR and the mitigation measures set forth herein shall become part of the "project" approval, and an integral part of the General Plan. If, upon approval of the Final EIR, the Town Council chooses to approve the General Plan without applying any or some of the mitigation measures provided in the EIR, or should there be unavoidable significant impacts, the Town must prepare Findings and a "Statement of Overriding Considerations." Such a Statement must demonstrate that the benefits of the proposed project outweigh the unavoidable significant impacts that may result from implementation of the Plan.

A number of Town departments and divisions are responsible for review of the Plan. In addition, certain local, state, federal and regional agencies will review this EIR. These agencies include, but are not limited to, the California Office of Planning and Research, California Department of Fish and Game, U.S. Department of the Interior Bureau of Land Management, San Bernardino Association of Governments (SANBAG), San Bernardino Local Agency Formation Commission, Mojave Desert Air Quality Management District (MDAQMD), Mojave Water Agency (MWA), Apple Valley Ranchos Water Company (AVRWC), and other water and utility purveyors serving the General Plan area. A number of other public and quasi-public agencies, as well as private individuals and for-profit and non-profit organizations will also review this document.

This EIR is intended to serve at a Program level. Additional environmental documentation, including Initial Studies and EIRs, may be required for specific plans, subdivisions, land use plans and other development applications that may be processed by the Town after approval of the General Plan and annexation of Annexations 2008-001 and 2008-002.

## D. Project Location and Description

### 1. Project Location

The Town of Apple Valley is located in the southwestern portion of the County of San Bernardino (See Exhibit I-1, Regional Location Map). The proposed General Plan study area encompasses approximately 78 square miles. The General Plan study area is comprised of lands within the Town's corporate limits as well as the two annexation areas, herein described as Annexation 2008-001 and Annexation 2008-002, respectively. These areas are further described below.

Town Limits

The Town limits can generally be described as follows: bounded on the west by the Mojave River and U.S. Interstate 15, on the north by the northern section lines of Sections 3, 4 and 5, Township 6 North, Range 3 West, San Bernardino Base and Meridian, on the east by Central Avenue and Joshua Road, and on the south by Tussing Ranch Road and Ocotillo Way.

The Apple Valley corporate limits encompass 72± square miles, substantial portions of which are developed. Lands in the southern and central portion of the Town are most developed. Lands containing sparser development and lands remaining vacant are generally located in the northern one-third of the Town, northerly of Waalew Road. Lands in the northeast portion of Town have been the subject of recent planning efforts, resulting in approval of the North Apple Valley Industrial Specific Plan (NAVISP), which provides for the development of industrial and commercial uses in this area.

Annexation 2008-001 ("Golden Triangle")

Annexation 2008-001 is generally bounded on the west by U.S.-Interstate 15, on the north by Morro Road, on the east by Dale Evans Parkway, and on the south by Johnson Road. The "Golden Triangle" area encompasses 4.3± square miles, most of which is undeveloped.

The Golden Triangle consists of 4.3± square miles of mostly vacant lands, with scattered single family residential occurring throughout the area.

Annexation 2008-002 ("Northeast Industrial Area")

Annexation 2008-002 is generally bounded on the west by Central Avenue and the eastern boundary of the Town of Apple Valley, on the north by Quarry Road, on the east by the section line of Section 14, Township 6 North, Range 3 West, Section 14, and on the south by the half-section line of Section 23 Township 6 North, Range 3 West, San Bernardino Base and Meridian.

The Northeast Industrial Area is 1.3± square mile, and includes limited industrial (aggregate quarry) development. It is located east of and contiguous with the NAVISP, and would provide for additional lands for similar uses.

*Township, Section, Range Data*

The corporate limits of the Town of Apple Valley can be more specifically described as including: all of Sections 3, 4, 5, 6, 7, 8, 9, 10, 16, 17, and 19, and portions of Sections 15 and 18, Township 4 North, Range 3 West of the San Bernardino Base and Meridian; portions of Sections 1 and 12, Township 4 North, Range 4 West of the San Bernardino Base and Meridian; all of sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, and 35, Township 5 North, Range 3 West of the San Bernardino Base and Meridian; all of sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 23, 24 and 36, Township 5 North, Range 4 West of the San Bernardino Base and Meridian; all of Sections 3, 4, 9, 10, 15, 16, 19, 20, 21, 22, 27, 28, 29, 30, 31, 32, 33, 34, and 35, and a portion of Section 5, Township 6 North, Range 3 West of the San Bernardino Base and Meridian; and all of Sections 23, 25, and 36, and portions of Sections 24, 26, 34 and 35, Township 6 North, Range 4 West of the San Bernardino Base and Meridian.

Annexation 2008-001 can be described as including: a portion of Sections 5, 6, 7, and 18, and all of Sections 8 and 17, Township 6 North, Range 3 West; a portion of Section 13, Township 6 North, Range 4 West of the San Bernardino Base and Meridian.

Annexation 2008-002 lands include the following: all of Section 14 and a portion of Section 23, Township 6 North, Range 3 West of the San Bernardino Base and Meridian.

## 2. Project Description

This EIR has been prepared to analyze the environmental constraints and opportunities related to adoption and implementation of the proposed Town of Apple Valley Comprehensive General Plan and two proposed annexations. It summarizes the major goals, policies and programs and the land use designations that are set forth in the General Plan. It addresses a range of environmental issues related to the Town and portions of its Sphere of Influence, utilizing a variety of technical data as the basis for analysis of the potential environmental impacts of the proposed General Plan and subject annexations. The range of environmental issues addressed herein includes but is not limited to, land use compatibility, traffic and circulation, flooding and hydrology, geotechnical and seismic safety, biological and archaeological resources, and noise impacts. The EIR also considers the availability of public services and facilities and the socio-economic impacts associated with General Plan implementation.

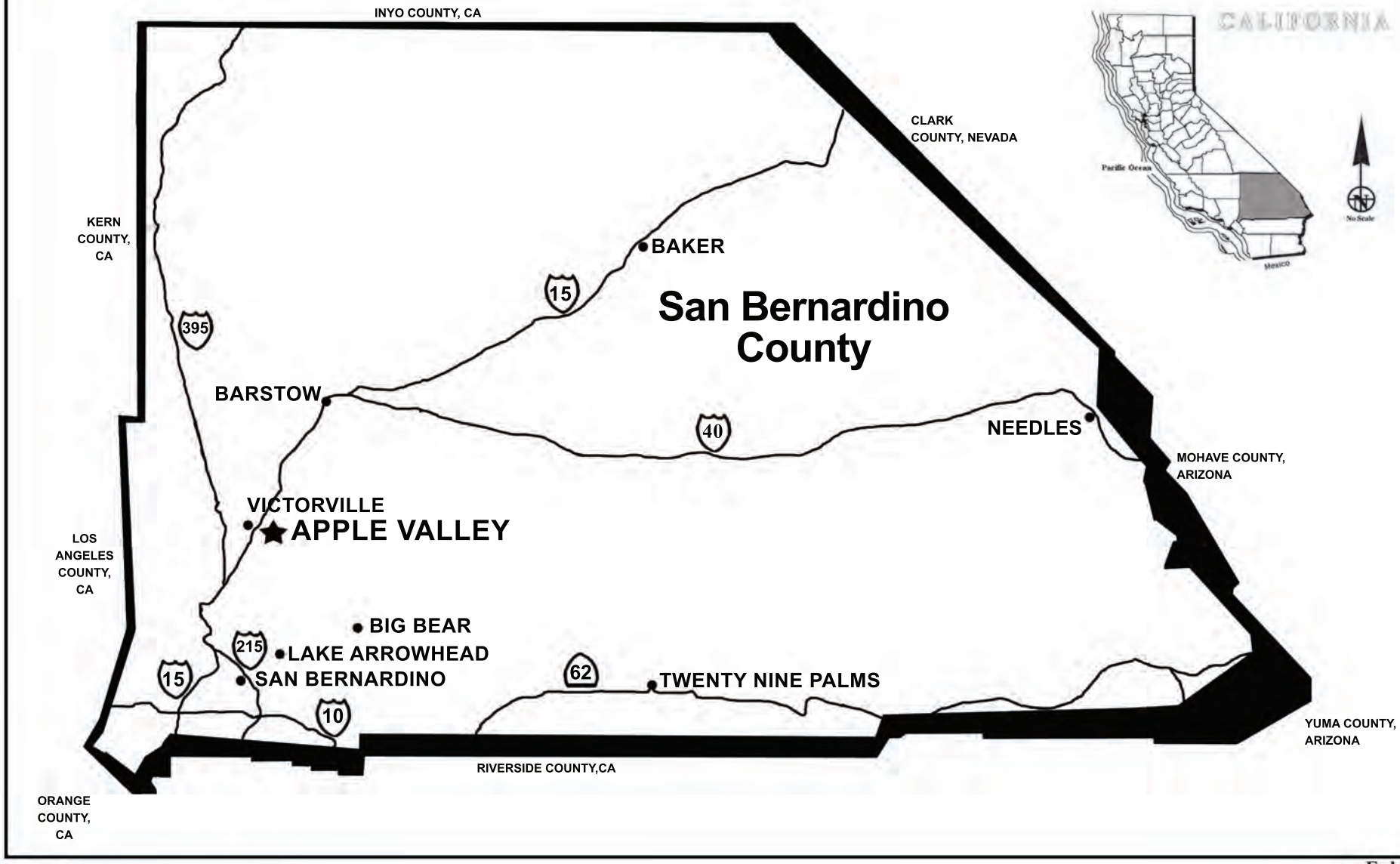
The EIR addresses these issues on 46,948.3± acres, or approximately 72± square miles, within the Town's corporate limits, as well as 3,579.7± acres (approximately 6± square miles) within the Town's Sphere of Influence that are proposed for annexation. The area addressed under the proposed project is also hereinafter referred to as the "General Plan area" or the "planning area".

The Town's Sphere of Influence is comprised of the area determined by the San Bernardino Local Agency Formation Commission (LAFCO) to be a logical extension of the Town in the long term. The entire Sphere of Influence encompasses lands to the east and south of Town boundaries, covering an area of approximately 192 square miles. The Sphere was assigned General Plan land use designations prior to the adoption of this General Plan, and these designations will remain in effect after the adoption of this General Plan. However, most of the Sphere lands will not be included in this General Plan until they are annexed to the Town, and therefore are not analyzed in this EIR except as they relate to the planning area context. At such time as they are annexed in to the Town, this General Plan will be amended to include annexed lands.

As noted above, there are two exceptions to the Sphere lands that were incorporated into the General Plan and analyzed as part of the preparation of this EIR. They are Annexation 2008-001, which includes approximately 2,774.6± acres, and Annexation 2008-002, which includes 805.1± acres; the locations of the annexation areas are described under Project Location, above.

As part of the General Plan update process, the Town prepared a Community Issues Report in 2007, which described current conditions in the Town related to a range of environmental and socio-economic issues. To identify key issues in the community, the Town held a series of

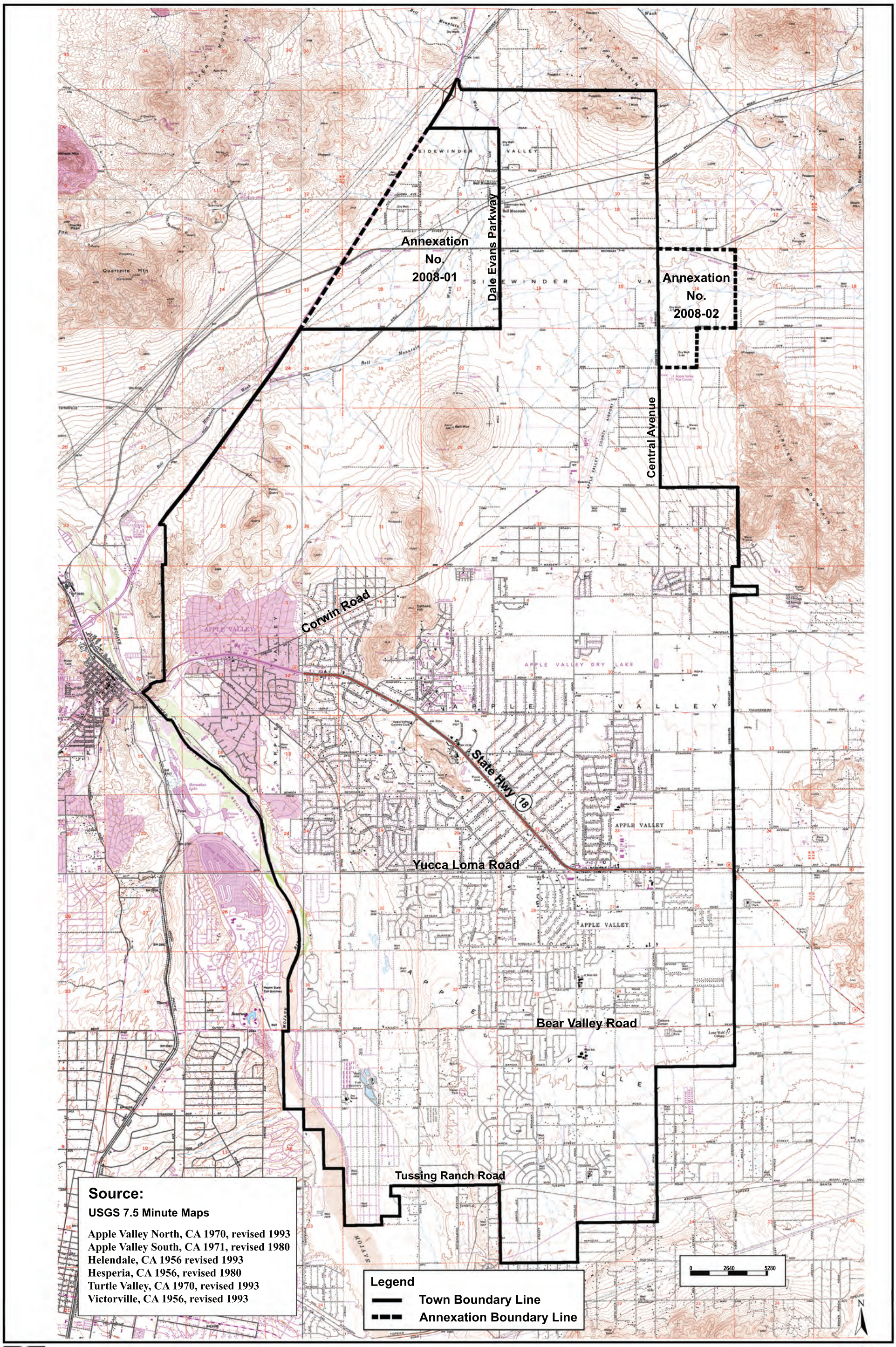
meetings to elicit input from representatives of local agencies, community groups, and private individuals; the information provided at these meetings was documented in the Community Issues Report. The Town Council also appointed a General Plan Advisory Council (GPAC), comprised of members from a broad cross section of the community, which held extensive public meetings to review and amend the Land Use Element and Land Use Map of the General Plan. The GPAC discussed wide-ranging and specific goals for the community, as well as policies and programs to be included in the General Plan, and participated in a detailed consideration of current land use designations in the planning area. As a result a new set of land use designations has been developed, which is set forth in the General Plan update and analyzed in this EIR. This process provided for refinement of the Preferred Land Use Alternative, which was finalized in July 2008.




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**Apple Valley General Plan Draft EIR**
**Regional Location Map**
**Apple Valley, California**

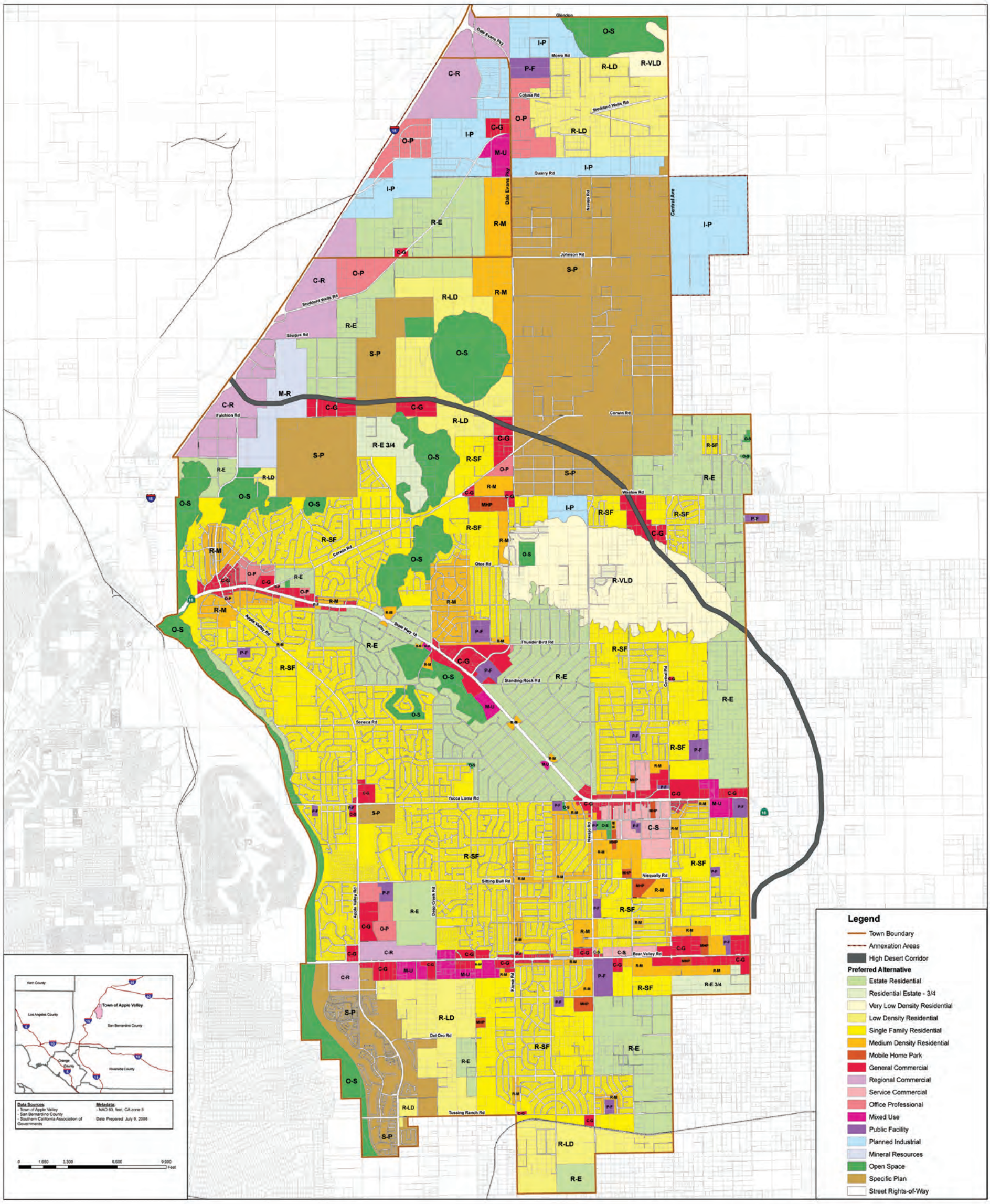
Exhibit
**I-1**




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**Apple Valley General Plan Draft EIR**
**Vicinity Map**
**Town of Apple Valley**

Exhibit
**I-2**




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**Apple Valley General Plan Draft EIR**
**General Plan Study Area Boundaries**
**Town of Apple Valley**

**Exhibit**

**I-3**

**Existing Land Use**

In general, Apple Valley has developed most densely along major roadways in the Town, including State Highway 18 and Bear Valley Road. Highway 18 (Happy Trails Highway), runs generally southeast to northwest through the Town, while Bear Valley Road is south of Highway 18, and runs east to west. Existing development becomes gradually less dense north of Highway 18 to Waalew Road, north of which existing development is scattered and relatively limited in most areas. The Apple Valley Airport is located between Waalew Road on the south and Johnson Road on the north, west of Central Road. Currently the area surrounding the airport is comprised of lands that have been developed to a limited extent for industrial uses. The airport is centrally located within the approved North Apple Valley Industrial Specific Plan (NAVISP) area that provides for the industrial and commercial development of these lands; this development is expected to begin occurring in the near term (within 5 years).

The Mojave River runs generally southeast to northwest along the Town's western boundary. It enters the Town near its southern boundary and crosses under Highway 18 where it exits the Town to the northwest. U.S. Interstate 15 crosses the River at the westernmost portion of the Town, and then turns northeast along a portion of the Town's western boundary.

Commercial centers in the Town include the Village commercial area, which is situated along State Highway 18 between two major north to south roads, Navajo Road and Central Road; retail and office uses between Rancherias Road and Dale Evans Parkway, north to Thunderbird Road along Highway 18, in the vicinity of Town Hall and other public facilities associated with the Civic Center complex; and further west along Highway 18, near its intersection with Corwin Road, St. Mary Medical Center and associated medical offices and other commercial uses. The most recent and substantial commercial development in Town has occurred on the west half of Town on Bear Valley Road, which experienced significant expansion of the Town's commercial base in the first seven years of this century.

Residential development in Apple Valley is concentrated in the southern and central portions of the Town, generally south of Waalew Road. Residential densities in these areas range from very low to high densities (1 dwelling unit per 5 acres or more, to 20 dwelling units per acre). The majority of single family development in the Town occurs on lots of between 0.5 and 2.5 acres. There are also residential developments within specific plan areas, such as Jess Ranch in the southwest portion of Town. The approved North Pointe and Bridle Path Specific Plan areas are located in the northwest portion of Town and will also include residential development. The Specific Plans were recently approved, but have not been developed.

The Town's developed areas integrate numerous public and private open space areas, including parks and recreational facilities, operated by the Town and parks associated with Apple Valley Unified School District (AVUSD) schools. Other recreational and open spaces include golf courses, and open space associated with the Mojave River, Apple Valley Dry Lake, Bell Mountain and other notable landforms in the Town. Institutional development and public facilities, such as schools, fire and police stations, are located amidst residential and other types of development. The Town's Civic Center complex is centrally located on Dale Evans Parkway near State Highway 18 and Thunderbird Road.

The land use patterns described above reflect existing General Plan designations. Residential land use designations are concentrated south of Waalew Road, while commercial designated lands are generally organized around major roadways such as Highway 18 and Bear Valley Road and north of Waalew Road near U.S. I-15. As noted above, the General Plan also designates Specific Plan areas, including Jess Ranch, Bridle Path, North Pointe and the NAVISP area. It allocates lands for Community Reserve, providing for a mix of low density residential and supporting commercial and industrial uses, west of the NAVISP site and north of Waalew Road. Lands along U.S. Interstate 15 in the northern portion of the Town are generally designated for regional commercial uses intended to serve highway travelers.[1]

Existing Land Uses in Annexation Areas

*Proposed Annexation 2008-001 (Golden Triangle)*
There are approximately 2,774±-acres within the proposed Annexation 2008-001 area. Of these, approximately 2,552.1 acres (92%) are vacant and undeveloped desert lands. The remaining approximately 8% are sparsely developed with single-family residences and paved and unpaved roadways. Lands in this annexation area are designated and zoned for Rural Living, Rural Living-5 (minimum 5-acre lots) and Neighborhood Commercial under the County General Plan and Zoning Code.[2]

*Proposed Annexation 2008-002 (Northeast Industrial Area)*
There are approximately 805 acres within this proposed annexation area, of which nearly all is vacant and undeveloped. Approximately 5.5 acres are developed for uses associated with the Black Mountain quarry operation. Lands within proposed Annexation 2008-002 are designated and zoned Regional Industrial, Community Industrial, Resource Conservation, and Rural Living in the County General Plan and Zoning Code.[3]

**Surrounding Land Uses**

The Town is located in the high desert region of southwest San Bernardino County. The mountains and foothills of the San Bernardino Mountains occur to the south, with the San Gabriel Mountains further southwest.

There are a number of jurisdictions surrounding the Town. Portions of lands to the northwest are within unincorporated San Bernardino County and comprise the proposed Annexation 2008-001, comprised of largely undeveloped desert lands. The City of Victorville is located west of Apple Valley, beyond the Mojave River and U.S. I-15. The City of Hesperia lies to the southwest and the unincorporated Lucerne Valley community to the southeast. While the region has an overall rural character, these established communities constitute largely urbanized areas that include a range of residential, commercial, industrial, public facilities and open space uses. To the north are sparsely populated desert lands and the small community of Bell Mountain.

1 "Town of Apple Valley General Plan Existing Alternative" map, prepared by Aerial Information Systems, December 27, 2007.
2 Ibid.
3 Ibid.

Lands to the east are within unincorporated San Bernardino County and include portions of the Town's Sphere of Influence as well as federal lands administered by the Bureau of Land Management. These lands are largely vacant, undeveloped and sparsely populated desert and mountainous areas, with some residential and industrial development, including the aforementioned Black Mountain Quarry operation that is located within the proposed Northeast Industrial annexation area, which lies east of the Town. County land use designations on lands to the east of the Town are predominantly Rural Living, but also include Regional and Community Industrial, Resource Conservation, and to a limited extent, Single Residential and General Commercial.

Lands to the south are also within unincorporated San Bernardino County and include portions of the Town's Sphere of Influence, rising into the foothills and mountain slopes of the San Bernardino Mountains. These lands are County designated Single Residential, Rural Living, with Resource Conservation further south within mountainous areas.

### E. Draft General Plan Goals and Policies

Designed to provide Town officials and the general public with information necessary to make informed decisions, the General Plan, along with the EIR, provide the bases for subsequent planning activities, such as the preparation of special environmental and planning studies. The basic parameters for the General Plan are set forth in the following goals and policies.

**GENERAL LAND USE GOALS, POLICIES AND PROGRAMS**

**GOAL 1**

The Town shall respect its desert environment.

**Policy 1.A**
The Town will require low water use through drought tolerant and native desert plants for landscaping.

**Program 1.A.1**
The Development Code shall maintain a plant palette of native plants and acceptable non-native drought tolerant plant materials, and minimize the use of natural turf except in public and private parks, and public facilities.
**Responsible Party:** Planning Division
**Schedule:** Ongoing

**Program 1.A.2**
Development proposals shall be subject to the requirements of the Town's Native Plant Protection Ordinance.
**Responsible Party:** Planning Division
**Schedule:** Ongoing

**Policy 1.B**
New development shall be designed to minimize grading, and avoid mass grading to the greatest extent possible.

**Program 1.B.1**
The Municipal Code shall maintain grading standards and requirements which clearly dictate the scope of grading allowed on any development project.
**Responsible Party:** Planning Division, Town Engineer
**Schedule:** Ongoing

**Policy 1.C**
Natural drainage channels shall be designed with soft bottoms whenever possible.

**Policy 1.E**
Areas of biological or aesthetic significance shall be protected from development.

**Program 1.E.1**
The knolls, rock outcroppings and the Mojave River shall be designated Open Space on the Land Use Map.
**Responsible Party:** Planning Commission, Town Council
**Schedule:** Ongoing

**GOAL 2**

A well planned, orderly development pattern which enhances community values, and assures development of adequate infrastructure.

**Policy 2.A**
The Town shall maintain a land use map which assures a balance of residential, commercial, industrial, open space and public lands.

**Program 2.A.1**
The Town shall maintain an inventory of remaining capacity of all General Plan land use categories and recommend to the Town Council, as needed, changes in land use designations to maintain a balance of available land uses within the planning area.
**Responsible Agency:** Planning Division, Planning Commission
**Schedule:** Ongoing

**Program 2.A.2**
The Zoning Map shall directly correspond to General Plan land use designations, and shall be kept consistent with the General Plan.
**Responsible Agency:** Planning Division, Planning Commission, Town Council
**Schedule:** Ongoing

**Policy 2.B**
All new development and redevelopment proposals shall be required to install all required infrastructure, including roadways and utilities, and shall have complied with requirements for public services prior to occupancy of the project.
**Responsible Party:** Planning Division, Town Engineer, Public Services Department, Water Purveyors, Fire District, utility providers
**Schedule:** Ongoing

**Policy 2.C**
The Town shall require quality design in all development and redevelopment proposals and shall encourage the enhancement of existing development.

**Program 2.C.1**
The Development Code shall include design standards and guidelines for all land use types which clearly enumerate the Town's minimum requirements.
**Responsible Party:** Planning Division
**Schedule:** Ongoing

**Program 2.C.2**
The Town shall provide incentives for rehabilitating and remodeling existing development.
**Responsible Party:** Planning Division, Economic Development Department
**Schedule:** Ongoing

**Policy 2.D**
The Town will support and pursue annexation which will mutually benefit the Town and the property annexed in the form of quality development and an improved economic base.

**Program 2.D.1**
Develop annexation policies which identify minimum standards for annexation and development in the Sphere of Influence.
**Responsible Party:** Planning Division, Town Council
**Schedule:** 2009-2010

**Program 2.D.2**
The Town will pursue annexation of the Golden Triangle and additions to the North Apple Valley Industrial Specific Plan as part of its overall economic development strategy.
**Responsible Party:** Planning Division, Town Council
**Schedule:** 2009-2010

**Policy 2.E**
The Town shall protect right of way for the High Desert Corridor as determined by CalTrans.

**Program 2.E.1**
New development and redevelopment projects located in the area of the High Desert Corridor shall be conditioned to reserve right of way for the future roadway.
**Responsible Party:** Planning Division, Town Council
**Schedule:** Ongoing

**Program 2.E.2**
The Town shall encourage CalTrans to notify affected property owners as early as feasible.
**Responsible Party:** Planning Division, Town Engineer
**Schedule:** Ongoing

**GOAL 3**

Minimal impact to existing neighborhoods.

**Policy 3.A**
The Town will support measures which buffer both new and established residences from commercial, industrial and agricultural uses.
**Program 3.A.1**
The Development Code shall include standards for increased setbacks, walls, berms, landscaping, incremental lot sizes, buffering guidelines and recommendations for projects adjoining different or less intense land use designations.
**Responsible Party:** Planning Division
**Schedule:** 2009-2010

**Program 3.A.2**
The Development Code will include incentives for creative design, including but not limited to varied setbacks, lot patterns, building massing and non-motorized transportation paths and trails.
**Responsible Party:** Planning Division
**Schedule:** 2009-2010

**Policy 3.B**
Specific Plans shall be required for development proposals which include one or more of the following:

a. A combination of residential, recreational, commercial and/or industrial land use designation (except in the Mixed Use land use designation); or
b. Variations from development standards in the applicable Zone.

## F. Statistical Summary: General Plan Land Use

The General Plan study area is comprised of approximately 50,528.0 acres, which are addressed in this environmental analysis. Of these lands, 46,948.3± acres are within the Town corporate limits, and 3,579.7± acres are within the proposed annexation areas. This document illustrates several development scenarios of varying land use types and intensities.

The recommended project alternative is represented by the Preferred Alternative land use scenario, which is addressed in the main body of the EIR. Table I-1 and I-2 provide statistical summaries for the Preferred Alternative. In Table I-3, the Preferred land use designations and appropriate development types per designation are defined. This land use plan is illustrated on Exhibit III-15 Preferred Alternative Land Use Map, in Section III-J, Land Use.

This EIR considers three other land use alternatives, which are analyzed in Section V. These alternatives include implementation of the current General Plan (No Project Alternative), a somewhat more intense land use plan and a somewhat less intense land use plan.

**Table I-1**
**Statistical Summary of Land Uses**
**General Plan Preferred Alternative**

| | Town of Apple Valley | | Annexation Areas | |
|---|---|---|---|---|
| **Land Use Designation** | **Acres** | **%** | **Acres** | **%** |
| **Residential Land Uses** | | | | |
| Very Low Density Residential (1 du/5 or more gross ac) | 1,961.5 | 4.2% | -- | -- |
| Low Density Residential (1 du/2.5 - 5 gross ac) | 3,503.5 | 7.5% | -- | -- |
| Estate Residential (1du/1 – 2.5 gross ac) | 6,666.9 | 14.2% | 778.0 | 21.7% |
| Estate Residential ¾ (1 du/0.75 – 1 ac) | 475.7 | 1.0% | -- | -- |
| Single-Family Residential (1 du/0.4-0.9 ac) | 12,527.9 | 26.7% | -- | -- |
| Medium Density Residential (4- 20 du/ac) | 1,925.9 | 4.1% | 218.7 | 6.1% |
| Mobile Home Park (5-15 du/ac) | 180.0 | 0.4% | -- | -- |
| Mixed Use | 288.3 | 0.6% | 94.9 | 2.7% |
| Specific Plan | 7,046.8 | 15.0% | -- | -- |
| **Total Residential Uses** | **34,576.6** | **73.6%** | **1,091.6** | **30.5%** |
| **Commercial Land Uses** | | | | |
| Mixed Use[1] | 288.3 | 0.6% | 94.9 | 2.7% |
| General Commercial | 1,550.8 | 3.3% | 52.6 | 1.5% |
| Regional Commercial | 1,303.0 | 2.8% | 442.5 | 12.4% |
| Service Commercial | 335.6 | 0.7% | -- | -- |
| Office Professional | 616.8 | 1.3% | 183.1 | 5.1% |
| Specific Plan/Commercial[1] | 7,046.8 | 15.0% | -- | -- |
| **Total Commercial Uses** | **3,806.1** | **8.1%** | **678.1** | **18.9%** |
| **Industrial Land Uses** | | | | |
| Planned Industrial | 645.3 | 1.4% | 1,613.1 | 45.1% |
| Specific Plan/Industrial[1] | 7,046.8 | 15.0% | -- | -- |
| **Total Industrial Uses** | **645.3** | **1.4%** | **1,613.1** | **45.1%** |
| **Other Land Uses** | | | | |
| Public Facility | 472.5 | 1.0% | -- | -- |
| Open Space | 3,053.9 | 6.5% | -- | -- |
| Mineral Resources | 452.5 | 1.0% | -- | -- |
| Street Rights-of-Way | 3,941.2 | 8.4% | 196.9 | 5.5% |
| **Total Other Land Uses** | **7,290.3** | **16.9%** | -- | -- |
| **Grand Total** | **46,948.3** | **100.0%** | **3,579.7** | **100.0%** |

[1]Specific Plan and Mixed Use acreage included under Residential, above.
Source: Aerial Information Systems, July 2008

**Table I-2**
**Preferred Alternative General Plan**
**Land Use Designation Build Out Summary: Town & Unincorporated Lands**

**RESIDENTIAL LAND USES**

| | Town Limits | | | | | | Annexation Areas | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Land Use Designation** | **AC Dev.** | **AC Vacant** | **AC Total** | **Exist. Units** | **Future Units** | **Total Units** | **AC Dev.** | **AC Vacant** | **AC Total** | **Exist. Units** | **Future Units** | **Total Units** |
| Very Low Density Residential (1 du/5 or more gross ac) | 174.1 | 1,787.4 | 1,961.5 | | 357 | 357 | -- | -- | -- | -- | -- | -- |
| Low Density Residential (1 du/2.5 - 5 gross ac) | 390.1 | 3,113.3 | 3,503.5 | | 1,245 | 1,245 | -- | -- | -- | -- | -- | -- |
| Estate Residential (1du/1 – 2.5 gross ac) | 3,177.8 | 3,489.1 | 6,666.9 | 20,107 | 3,489 | 23,596 | 55.7 | 722.3 | 778.0 | -- | 722 | 722 |
| Estate Residential ¾ (1 du/0.75 – 1 ac) | 20.8 | 454.9 | 475.7 | | 607 | 607 | -- | -- | -- | -- | -- | -- |
| Single-Family Residential (1 du/0.4-0.9 ac) | 8,424.0 | 4,103.9 | 12,527.9 | | 6,156 | 6,156 | -- | -- | -- | -- | -- | -- |
| Medium Density Residential (4- 20 du/ac) | 745.1 | 1,180.8 | 1,925.9 | 3,775 | 17,712 | 21,487 | 41.4 | 177.3 | 218.7 | -- | 2,659 | 2,659 |
| Mobile Home Park (5-15 du/ac) | 178.5 | 1.5 | 180.0 | 1,043 | 23 | 1,066 | -- | -- | -- | -- | -- | -- |
| Mixed Use | 51.6 | 236.7 | 288.3 | | 2,130 | 2,130 | 0.00 | 94.8 | 94.8 | -- | 854 | 854 |
| Specific Plan | 1,068.6 | 5,978.2 | 7,046.8 | | 2,869 | 2,869 | -- | -- | -- | -- | -- | -- |
| **Residential Total** | **14,230.7** | **20,345.9** | **34,576.6** | **24,925** | **34,588** | **59,513** | **97.2** | **994.4** | **1,091.6** | **--** | **4,236** | **4,236** |

**COMMERCIAL AND INDUSTRIAL LAND USES**

| | Town Limits | | | | Annexation Areas | | | |
|---|---|---|---|---|---|---|---|---|
| **Land Use Designation** | **Acres Dev.** | **Acres Vacant** | **Acres Total** | **Total Potential SF** | **Acres Dev.** | **Acres Vacant** | **Acres Total** | **Total Potential SF** |
| Mixed Use[1] | 51.6 | 236.7 | 288.3 | 1,587,686 | 0.0 | 94.9 | 94.9 | 636,612 |
| General Commercial | 385.5 | 1,165.3 | 1,550.8 | 14,861,742 | 11.7 | 40.8 | 52.6 | 503,617 |
| Regional Commercial | 31.7 | 1,271.3 | 1,303.0 | 12,486,488 | 7.2 | 435.3 | 442.5 | 4,240,502 |
| Service Commercial | 146.8 | 188.7 | 335.6 | 3,215,875 | -- | -- | -- | -- |
| Office Professional | 74.2 | 542.6 | 616.8 | 5,910,597 | -- | 183.1 | 183.1 | 1,754,639 |
| Specific Plan[1] | 1,068.6 | 5,978.2 | 7,046.8 | 6,663,010 | -- | -- | -- | -- |
| **Commercial Sub Total** | **638.2** | **3,167.9** | **3,806.1** | **44,725,397** | **19.0** | **659.2** | **678.1** | **7,135,369** |
| Planned Industrial | 21.4 | 623.9 | 645.3 | 6,183,941 | 55.3 | 1,557.8 | 1,613.1 | 14,929,042 |
| Specific Plan[1] | 1,068.6 | 5,978.2 | 7,046.8 | 36,938,445 | -- | -- | -- | -- |
| **Industrial Sub Total** | **21.4** | **623.9** | **645.3** | **43,122,386** | **55.3** | **1,557.8** | **1,613.1** | **14,929,042** |
| **Grand Total Commercial & Industrial** | **659.6** | **3,791.8** | **4,451.4** | **87,847,783** | **74.2** | **2,217.1.** | **2,291.2** | **22,594,023** |

[1] Mixed Use and Specific Plan acreage included under Residential, above.

**Table I-2 (continued)**
**Town of Apple Valley Preferred Alternative General Plan**
**Build Out Summary: Town & Unincorporated Lands**

**Other Land Use Designations**

| | Town Limits | | | Annexation Areas | | |
|---|---|---|---|---|---|---|
| **Land Use Designation** | **Acres Dev.** | **Acres Vacant** | **Acres Total** | **Acres Dev.** | **Acres Vacant** | **Acres Total** |
| Public Facility | 353.5 | 119.1 | 472.5 | -- | -- | -- |
| Open Space | 233.3 | 2,820.6 | 3,053.9 | -- | -- | -- |
| Mineral Resources | 111.6 | 340.9 | 452.5 | -- | -- | -- |
| Street Rights-of-Way | 2,563.5 | 1,377.8 | 3,941.2 | 43.1 | 153.8 | 196.9 |
| **Grand Total Other Uses** | **3,261.8** | **4,658.5** | **7,920.3** | **43.1** | **153.8** | **196.9** |

Source: Aerial Information Systems, July 2008

**Table I-3**
**Town of Apple Valley Comprehensive General Plan**
**Proposed Land Use Designations**

| **Land Use Designations (Density)** | **Purpose of Land Use** |
|---|---|
| **RESIDENTIAL LAND USES** | |
| **Very Low Density Residential, R-VLD** (1 dwelling unit per 5 or more gross acres) | This land use designation allows detached single family homes on lots of at least five gross acres. Multi-use trails should be integrated into all new projects in this designation, as appropriate. Also permitted are agricultural and ranching activities, animal keeping (both personal use and commercial) and home occupations. May be appropriate for bed and breakfast and similar uses, and animal-keeping or agricultural-related commercial enterprises, such as feed stores, commercial stables and similar uses with approval of a conditional use permit. |
| **Low Density Residential, R-LD** **(**1 dwelling unit per 2.5 to 5 gross acres) | This land use designation allows detached single family homes on lots of two and a half to five gross acres. This designation provides for the rural and suburban environment. Multi-use trails should be integrated into all new projects in this designation, as appropriate. Also permitted are agricultural and ranching activities, animal keeping (both personal use and commercial) and home occupations. May be appropriate for bed and breakfast and similar uses, with approval of a conditional use permit. |

| | |
|---|---|
| **Estate Residential, R-E**<br>(1 dwelling unit per 1 to 2.5 gross acres) | This land use designation allows detached single family homes on lots of one to two and a half gross acres. Access on local roads in new subdivisions within this designation should be paved. Multi-use trails should be integrated into all new projects in this designation, as appropriate. Animal keeping for personal use, ranching activities and home occupations are appropriate land uses in this designation. May be appropriate for bed and breakfast and similar uses, with approval of a conditional use permit. |
| **Estate Residential ¾, R-E**<br>(1 dwelling unit per 0.75 to 1.0 net acre) | This land use designation is specifically designed for animal keeping. Multi-use trails should be integrated into all new projects in this designation, as appropriate. Animal keeping for personal use, ranching activities and home occupations are appropriate land uses in this designation. Centralized stables, corrals, show rings and similar facilities, available to all residents of a development project are encouraged. May be appropriate for bed and breakfast and similar uses, with approval of a conditional use permit. |
| **Single Family Residential, R-SF**<br>(1 dwelling unit per 0.4 to 0.9 net acre) | Lots in this designation must be a minimum of 18,000 square feet net, and may range to 39,200 square feet. This designation is intended to be composed of planned subdivisions with all utilities and public services. Animal keeping is permitted on lots zoned Equestrian Residential in the Development Code. Multi-use trails should be integrated into all new projects in this designation, as appropriate. |

| | |
|---|---|
| **Medium Density Residential, R-M**<br>(4 to 20 dwelling units per net acre) | This designation is intended to promote a wide range of higher density residential units, including: single family attached; and multi-family units, including condominiums, townhomes and apartments. Projects restricted to senior citizens (age 55 and older) and providing various levels of care are also appropriate in this designation. Single family detached units are only permitted on lots of 18,000 square feet or greater in the Mountain Vista Estates area, as defined in Program 2.G.1. On all other lands designated Medium Density Residential within Town limits, single family detached units are prohibited. This land use designation should be a buffer between less intense residential designations and commercial or industrial designations, or major roadways. Future projects should be located in close proximity to commercial services, public transit and schools. |
| **Mobile Home Park, MHP**<br>(5-15 units per acre) | This designation is applied to mobile home parks which existed upon adoption of this General Plan. New mobile home parks would be required to file a General Plan Amendment and Change of Zone to assign this designation to the project. This designation applies to mobile home parks and mobile home subdivisions. Home occupations and recreational facilities and amenities associated with the mobile home use are also appropriate in this designation. |

## COMMERCIAL LAND USES

| | |
|---|---|
| **Mixed Use, M-U** | The land use designation has been created to allow for the development of projects which include residential and retail and office commercial development in an integrated, master planned project. Residential development should occur over commercial development, or within a commercial complex (i.e. residential building abutting a commercial building). Residential development must occur at a density of 4 to 30 units per acre. Mixed Use projects are encouraged in The Village, on major roadways, and in close proximity to employment centers, such as the North Apple Valley Industrial Specific Plan area. Projects which propose residential parcels adjacent to commercial parcels, and do not truly integrate the land uses, will not qualify for this designation. The minimum size for a Mixed Use project is 1 acre. |
| **Office Professional, O-P** | This designation allows professional offices, and is intended to act as a buffer between General Commercial and residential land uses. This designation encourages high quality professional services with only ancillary retail commercial components. There is no minimum size for project sites in this designation, but assemblage of smaller parcels is encouraged. |
| **General Commercial, C-G** | This designation allows a broad range of retail uses, as well as office and service land uses. Typical uses will serve the needs of the Town's residents and businesses, in a shopping center setting. General retail stores, including all types of consumer goods, furniture and appliance sales, auto repair and sales are permitted in this designation. Restaurants, both sit-down and fast food, gasoline service stations and general office (secondary to retail uses) are also permitted in this designation. There is no minimum size for project sites in this designation, but assemblage of smaller parcels is encouraged. |

**Service Commercial, C-S**

This designation is assigned to lands in The Village, and is intended as a transition designation allowing commercial and industrial land uses on a smaller scale. Its location in an established area of Town necessitates flexibility in development standards, due to existing development and infrastructure constraints. Land uses in this designation include vehicle sales and service; lumber, home repair and building supply, general retail, warehousing and manufacturing uses completely contained within an enclosed structure. There is no minimum size for project sites in this designation, but assemblage of smaller parcels is encouraged.

**Regional Commercial, C-R**

This land use category allows retail uses which serve not only the residents and businesses of Apple Valley, but also of the surrounding region. Permitted uses in this designation include auto malls, regional malls, business parks, factory stores and outlets, entertainment commercial, hotels and motels, restaurants, institutional and public uses. The minimum size for a Regional Commercial project site is 10 acres.

| | |
|---|---|
| **INDUSTRIAL LAND USES** | |
| **Planned Industrial, I-P** | This land use designation allows high quality, non-polluting industrial land uses, either as free-standing uses or as part of master planned industrial parks. Uses permitted include warehousing, light manufacturing, research and development and administrative facilities. The minimum size for a Planned Industrial project site is 5 acres. |
| **OTHER LAND USES** | |
| **Public Facility, PF** | This land use designation is assigned to public and quasi-public land uses, including Town Hall and other Town facilities, fire stations, schools, facilities of the County, State and federal government, water and sewer district, and utility substations and facilities. There is no minimum size in this land use designation. |
| **Open Space, OS** | This land use designation is applied to natural and active open space areas, including the knolls, Bell and Fairview mountains, the Mojave River, lands owned by Town, County, State and federal agencies for the purposes of recreation or conservation, and golf courses, parks or other recreational facilities. |
| **Mineral Resources, MR** | This land use designation is applied to lands in active mining operations. One such operation exists in Town at the present time, located near Interstate 15. This land use designation allows mining operations permitted by the State for lands with significant deposits of concrete aggregate (please see the Mineral Resources Element). |
| **Specific Plan** | This designation is applied to lands on which a specific plan has been approved by the Town Council. The Specific Plan must conform to State law, and include maps and text which establish the land use designations; standards and guidelines for development; infrastructure requirements; and phasing for the specific plan area. Specific Plans will be prepared for projects consistent with General Land Use Policy 3.B. |

The proposed General Plan includes three new land use designations: Estate Residential ¾, Mobile Home Park, both applied to residential uses, and Mixed Use, which provides for residential and commercial components within an integrated master-planned project.

**Residential Land Uses**

The Preferred Alternative provides for a total of 35,668.2± acres of residential land uses, or a decrease of about 4,213.7 acres, approximately10.6%, fewer than the current General Plan. There are currently approximately 23,882 dwelling units within the General Plan area, and approximately 25,327.5 acres of undeveloped residential lands.[4]

To estimate the number of future units at build out of the General Plan, it is assumed that lands designated for Very Low, Low, Estate Residential and Mobile Home Parks will build out at 100% of maximum densities, and that Estate Residential ¾, Single Family and Medium Density Residential will build out at 75% of maximum densities. Residential development is assumed to be a component that will occupy approximately 30% of future Mixed Use development. Residential densities proposed under the General Plan range from one single-family unit per five acres to 20 single-family attached and/or multi-family units per acre. The level of residential development within Specific Plans is based on densities set forth in the applicable Specific Plan as approved by the Town.

Based on these assumptions, build out of the General Plan area is expected to result in a total of approximately 63,749 dwelling units, including existing and potential units. This compares with approximately 52,519 dwelling units estimated under the current General Plan. Based on these estimates, therefore, the proposed General Plan will generate approximately 11,230 more units, or an increase of approximately 21.4% over that which would be constructed under the current General Plan. This is primarily due to changes in the residential designation on lower intensity lands within the Town, as well as the designation of residential lands in proposed Annexation 2008-001. The latter adds approximately 1,091.6 acres of residential lands to the Town and would result in approximately 4,236 total dwelling units.

It should be noted that lands designated as Mixed Use occur under two land use categories: Residential and Commercial, and that lands designated as Specific Plan also occur under multiple land use categories: Residential, Commercial and Industrial. As previously noted, the Mixed Use designation provides for the integration of residential and commercial components within a master-planned project. Mixed Use lands in the planning area account for approximately 383.2 acres. The Specific Plan designation, which accounts for approximately 7,046.8 acres in the planning area, may also provide for a variety of land uses within a master-planned project. The Specific Plan designation is only applied for approved Specific Plans.

In order to avoid double-counting Mixed Use and Specific Plan lands, the acreage associated with these designations is accounted for in the Residential totals cited herein, and is not included in those for the Commercial and/or Industrial categories.

[4] Apple Valley General Plan Existing General Plan (No Project) Land Use Alternative table, prepared by Aerial Information Systems, September 11, 2008.

**Commercial Land Uses**
The proposed General Plan assigns commercial designations and provides for permitted uses that are essentially the same as those provided for under the current General Plan, with two exceptions, further discussed below. The current General Plan designates 2,298.0± acres of lands to commercial uses, as compared with 4,484.2± acres under the proposed General Plan, an increase of 95.1%. The proposed General Plan provides for a range of retail, service and regional commercial uses, as well as office professional, any or all of which may also be included within Mixed Use projects or within Specific Plans that propose commercial development. It is assumed that commercial development in the General Plan area will build out at approximately 22% (land-to-building coverage). Based on this assumption, the proposed General Plan would result in 51,860,766± square feet of commercial development at build out. This figure accounts for commercial development in the annexation areas, as shown on Table I-2, above.

**Industrial Land Uses**
The current General Plan designates approximately 418.6 acres for industrial uses outside the NAVISP, including lands within proposed annexation areas under County designations, Community Industrial and Regional Industrial. The proposed General Plan assigns Industrial land use designations to 2,258.4± acres, which represents a nearly five-fold increase in industrial lands over the current General Plan. These lands occur primarily in Annexation 2008-002, and are in addition to the lands within the NAVISP, which also proposes primarily industrial land uses. The same assumption of approximately 22% of land-to-building coverage has been used for industrial development, and yields an estimated 58,581,040± square feet of industrial development at build out of the General Plan area, including the annexation areas.

**Other Land Uses**
Other land use designations include Public Facility, Open Space, Mineral Resources and Street Rights-of-Way.

*Public Facility*
Lands allocated for public facilities include public and quasi-public lands such as Town Hall, fire stations, and parks, and will increase by approximately 148 acres within the Town limits. The proposed General Plan allocates additional lands to allow for the expansion of these services to serve the community on lands owned by the Town.

*Street Rights-of-Way*
These lands are set aside to provide for build out of a circulation network adequate to serve future development. The amount of lands allocated towards Street Rights-of-Way under the current General Plan (4,138 acres) will not change under the proposed General Plan.

*Open Space*
Lands designated as open space are considered an important or valuable natural resource. In Apple Valley, these include natural and active open space areas, including the knolls, mountain lands, the Mojave River, and lands owned by local, state and federal agencies for conservation or recreation. Golf courses, parks and other recreational facilities are also designated Open Space.

Under the proposed General Plan, approximately 3,053.9 acres are designated for Open Space. This represents an increase of approximately 1.3% over the current General Plan.

*Mineral Resources*
Lands in the Town in active mining operations are assigned the Mineral Resources designation. Currently, there is one such operation in the Town, the Scheerer Quarry, located near U.S. I-15 in the northwest portion of Town. As discussed in the Mineral Resources Element of the General Plan, these lands contain significant deposits of concrete aggregate of which the State permits mining. Both the current and proposed General Plan designate 452.5± acres for Mineral Resources.

**Proposed Annexations**

The current General Plan identifies approximately 2,774.6 acres of developed and vacant lands in the proposed "Golden Triangle," Annexation 2008-001, and approximately 805.0 acres in the proposed Annexation 2008-002. Current and proposed designation and densities are discussed by annexation area, below.

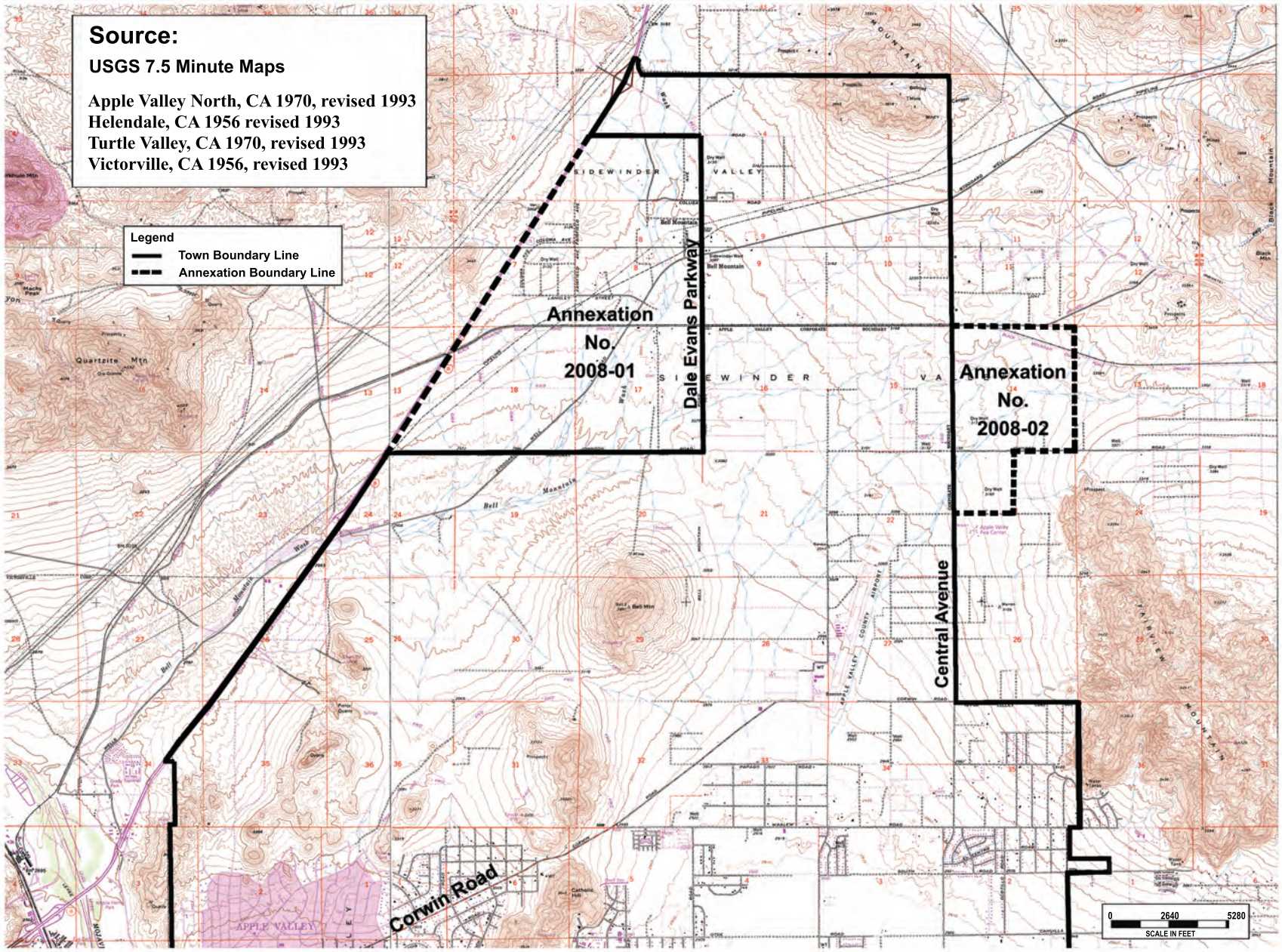
Annexation 2008-001
The current General Plan allocates approximately 2,573.7 acres towards residential land uses in this annexation area, which at build out would result in 2,067 dwelling units. The proposed General Plan designates 1,091.6 acres within this annexation area for residential units, and would result in 4,236 dwelling units. This represents a decrease in acreage of approximately 57.5% from the current General Plan, but an increase in dwelling units at build out of approximately 104.9% over the current General Plan. This increase is due to changes in assigned land use designations, from lower to higher intensities. These units are accounted for under Residential development discussed for the General Plan build out, above.

Similarly, the proposed General Plan would result in a substantial increase in commercial development in the annexation area over the current General Plan, providing for 678.1± acres for commercial uses, as compared with 7.9 acres under the current General Plan.

The current General Plan allocates no lands towards industrial development in this annexation area, whereas the proposed General Plan allocates 812.1± acres for these uses.

Annexation 2008-002
Under the current General Plan, 77.8± acres are designated for residential uses at very low densities. At build out, these lands would result in 398 dwelling units. The current General Plan provides for 323.6± acres of commercial development, and 4.1± acres of industrial uses.

By comparison, the proposed General Plan allocates nearly all of the developable lands in this annexation area, 801± acres, towards industrial development, which are envisioned to serve as an extension of the commercial and industrial uses planned within the NAVISP lands to the west. The remaining 4± acres of this area are allocated towards street rights-of-ways.




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**Apple Valley General Plan Draft EIR**
**Annexation Boundary Map**
**Apple Valley, California**

**Exhibit**
**I-4**

# TOWN OF APPLE VALLEY

## ENVIRONMENTAL IMPACT REPORT FOR THE COMPREHENSIVE GENERAL PLAN AND ANNEXATIONS NO. 2008-001 AND NO. 2008-002

## II. REGIONAL ENVIRONMENTAL SETTING

### Introduction

This section of the EIR describes the existing environmental setting of the high desert region in which the Town is located. In order to provide a broad perspective and comprehensive understanding of the issues associated with implementation of the proposed General Plan and annexations, this section is based on a regional perspective. A wide range of topics are discussed, including existing and surrounding land use patterns in the General Plan area and vicinity, regional climate and topography, soils and geology, biological resources, air quality issues, cultural resources, traffic and circulation, visual resources and public services and facilities. An overview of the socio-economic setting of the General Plan area is also provided.

In accordance with Section 15063, 15064, and 15065 of the California Environmental Quality Act (CEQA) Guidelines, the Town of Apple Valley conducted an Initial Study as part of the CEQA process for this project. The Initial Study is included in Appendix A of this document; it identified as potentially significant a range of environmental issues, which are analyzed in Section III of this EIR. The Notice of Preparation (NOP) of an EIR was transmitted on September 17, 2008. Appendix A also includes comments received during the public review period for the Notice of Preparation.

The General Plan area encompasses the 72± square miles within the Town of Apple Valley corporate limits, as well as 6± square miles within two areas proposed for annexation in the Town's Sphere of Influence.

### A. Existing Land Use

In general, Apple Valley has developed most densely along major roadways in the Town, including State Highway 18 and Bear Valley Road. Highway 18 (Happy Trails Highway), runs generally southeast to northwest through the Town, while Bear Valley Road is south of Highway 18, and runs east to west. Existing development becomes gradually less dense north of Highway

18 to Waalew Road, north of which existing development is scattered and relatively limited in most areas. The Apple Valley Airport is located between Waalew Road on the south and Johnson Road on the north, west of Central Road. Currently the area surrounding the airport is comprised of lands that have been developed to a limited extent for industrial uses. The airport is centrally located within the approved North Apple Valley Industrial Specific Plan (NAVISP) area that provides for the industrial and commercial development of these lands; this development is expected to begin occurring in the near term (within 5 years).

The Mojave River runs generally southeast to northwest along the Town's western boundary. It enters the Town near its southern boundary and crosses under Highway 18 where it exits the Town to the northwest. U.S. Interstate 15 crosses the River at the westernmost portion of the Town, and then turns northeast along a portion of the Town's western boundary.

Commercial centers in the Town include the Village commercial area, which is situated along State Highway 18 between two major north to south roads, Navajo Road and Central Road; retail and office uses between Rancherias Road and Dale Evans Parkway, north to Thunderbird Road along Highway 18, in the vicinity of Town Hall and other public facilities associated with the Civic Center complex; and further west along Highway 18, near its intersection with Corwin Road, St. Mary Medical Center and associated medical offices and other commercial uses. The most recent and substantial commercial development in Town has occurred on the west half of Bear Valley Road, which experienced significant expansion of the Town's commercial base in the first seven years of this century.

Residential development in Apple Valley is concentrated in the southern and central portions of the Town, generally south of Waalew Road. Residential densities in these areas range from very low to high densities (1 dwelling unit per 5 acres or more, to 20 dwelling units per acre). The majority of single-family development in the Town occurs on lots of between 0.5 and 2.5 acres. There are also residential developments within specific plan areas, such as Jess Ranch in the southwest portion of Town. The approved North Pointe and Bridle Path Specific Plan areas are located in the northwest portion of Town and will also include residential development. The Specific Plans were recently approved, but have not been developed.

The Town's developed areas integrate numerous public and private open space areas, including parks and recreational facilities, operated by the Town and parks associated with Apple Valley Unified School District (AVUSD) schools. Other recreational and open spaces include golf courses, and open space associated with the Mojave River, Apple Valley Dry Lake, Bell Mountain and other notable landforms in the Town. Institutional development and public facilities, such as schools, fire and police stations, are located amidst residential and other types of development. The Town's Civic Center complex is centrally located on Dale Evans Parkway near State Highway 18 and Thunderbird Road.

The land use patterns described above reflect existing General Plan designations. Residential land use designations are concentrated south of Waalew Road, while commercial designated lands are generally organized around major roadways such as Highway 18 and Bear Valley Road and north of Waalew Road near U.S. I-15. As noted above, the General Plan also designates Specific Plan areas, including Jess Ranch, Bridle Path, North Pointe and the NAVISP area. It

allocates lands for Community Reserve, providing for a mix of low density residential and supporting commercial and industrial uses, west of the NAVISP site and north of Waalew Road. Lands along U.S. Interstate 15 in the northern portion of the Town are generally designated for regional commercial uses intended to serve highway travelers.[1]

Existing Land Uses in Annexation Areas

*Proposed Annexation 2008-001 (Golden Triangle)*
There are approximately 2,774±-acres within the proposed Annexation 2008-001 area. Of these, approximately 2,552.1 acres (92%) are vacant and undeveloped desert lands. The remaining approximately 8% are sparsely developed with single-family residences and paved and unpaved roadways. Lands in this annexation area are designated and zoned for Rural Living, Rural Living-5 (minimum 5-acre lots) and Neighborhood Commercial under the County General Plan and Zoning Code.[2]

*Proposed Annexation 2008-002 (Northeast Industrial Area)*
There are approximately 805 acres within this proposed annexation area, of which nearly all is vacant and undeveloped. Approximately 5.5 acres are developed for uses associated with the Black Mountain quarry operation. Lands within proposed Annexation 2008-002 are designated and zoned Regional Industrial, Community Industrial, Resource Conservation, and Rural Living in the County General Plan and Zoning Code.[3]

## B. Surrounding Land Use

The Town is located in the high desert region of southwest San Bernardino County. The mountains and foothills of the San Bernardino Mountains occur to the south, with the San Gabriel Mountains further southwest.

There are a number of jurisdictions surrounding the Town. Portions of lands to the northwest are within unincorporated San Bernardino County and comprise the proposed Annexation 2008-001, comprised of largely undeveloped desert lands. The City of Victorville is located west of Apple Valley, beyond the Mojave River and U.S. I-15. The City of Hesperia lies to the southwest and the unincorporated Lucerne Valley community to the southeast. While the region has an overall rural character, these established communities constitute largely urbanized areas that include a range of residential, commercial, industrial, public facilities and open space uses. To the north are sparsely populated desert lands and the small community of Bell Mountain.

Lands to the east are within unincorporated San Bernardino County and include portions of the Town's Sphere of Influence as well as federal lands administered by the Bureau of Land Management. These lands are largely vacant, undeveloped and sparsely populated desert and mountainous areas, with some residential and industrial development, including the

1 "Town of Apple Valley General Plan Existing Alternative" map, prepared by Aerial Information Systems, December 27, 2007.
2 Ibid.
3 Ibid.

aforementioned Black Mountain Quarry operation that is located within the proposed Northeast Industrial annexation area, which lies east of the Town. County land use designations on lands to the east of the Town are predominantly Rural Living, but also include Regional and Community Industrial, Resource Conservation, and to a limited extent, Single Residential and General Commercial.

Lands to the south are also within unincorporated San Bernardino County and include portions of the Town's Sphere of Influence, rising into the foothills and mountain slopes of the San Bernardino Mountains. These lands are County designated Single Residential, Rural Living, with Resource Conservation further south within mountainous areas.

### C. Topography

The Town of Apple Valley is located in the western Mojave Desert region of Southern California, in the southwestern portion of San Bernardino County. Local topography is characterized by features that are typical of the desert environment, including mountains and foothills, dry lakes, alluvial fans with a coarse sandy floor, and rocky washes that drain the adjacent foothills.

The Town's topography is characterized by gradual slopes, primarily alluvial, that incline towards the San Bernardino Mountains to the south, as well as scattered knolls and low mountains to the north and east of the Town. At the northeast corner of Town, near the base of the Fairview Mountains, elevations range from approximately 2,700 feet above sea level in the southwest near the Mojave River to approximately 3,400 feet above sea level. Notable landforms at higher elevations in the Town include Bell Mountain and Catholic Hill, with elevations of approximately 3,897 feet above sea level, and 3,645 feet above sea level, respectively. The Mojave River floodplain is broad, with scattered bluffs and terraces.

The north face of the San Bernardino Mountains, south of Apple Valley, contains some of the higher elevations in the region. Terrain within the Sphere of Influence reaches elevations as high as 4,800 feet above sea level. The San Gabriel Mountains, approximately 10 miles to the south of Town, rise to a peak elevation of 10,064 feet above sea level. Approximately 75 miles northwest of the Town are the Tehachapi Mountains, with a peak elevation of 7,986 feet above sea level.

A variety of forces have contributed to the topography of the region. The geological character of Apple Valley and the surrounding region has been formed by its proximity to large active fault systems, which have historically resulted in ground rupture, major groundshaking, subsidence, uplift and mountain building, landform compression and extension. The region is also characterized by mountain drainages and ephemeral streams associated with the Mojave River. The Mojave River is fed by several associated, tributary dry washes, including the Bell Mountain/Knolls wash. Other watercourses in the planning area, most of which are considered to be ephemeral, flow into the Apple Valley Dry Lake.

## D. Climate

Climate in Apple Valley is influenced by topographic features and geographic location. As discussed under Topography, the planning area is located in the southern portion of the Mojave Desert, which is considered a high desert, with elevations ranging from 2,000 to 5,000 feet above sea level. Climate within the planning area, therefore, is representative of a high desert ecosystem, with extreme fluctuations of daily temperature, strong seasonal winds, and less than five inches of annual precipitation.

Regionally, the climate is typical of that found in the dry and hot Mojave Desert, and is characterized by large quantities of sunlight, high daytime temperatures and cool nights. It is also affected by moderating coastal influences, although it is far enough inland that temperatures can reach over 100°F during the summer and drop to 20°F during the winter. The surrounding mountain slopes are typically cooler and experience an approximately 5°F temperature decrease for every 1,000 foot increase in elevation.

Tropical rains typically occur in desert areas in the summer or early fall. These storms originate in the warm, Pacific waters of Baja California, and move northward into southern California. Winter storms, characteristically heavy and sometimes resulting in prolonged precipitation over a large area, usually occur between November and April and are responsible for most of the precipitation recorded in Apple Valley and southern California. Local thunderstorms can occur at any time, but usually impact relatively small areas. These storms, typically most prevalent in the higher mountains during the summer, are also common in the Mojave Desert region.

Precipitation in southern California is also extremely variable from year to year and ranges from a fraction of the average amount in one year to more than double the average amount in another. The Town of Apple Valley and surrounding areas are, like most of southern California, subject to unpredictable seasonal rainfall. Most years, the sparse winter rains are barely enough to turn the hills green for a few weeks, but every few years the region experiences periods of intense and sustained precipitation that results in flooding.

Wind patterns in the area are controlled by onshore westerly winds during the day and offshore easterly winds in the evenings and at night. Climatic conditions associated with high pressure and low humidity can drive winds from the north to a low-pressure system to the south and create a condition known as the Santa Ana winds, which can blow for multiple days during fall and winter months. These strong winds sweep up, suspend, and transport large quantities of sand and dust, reducing visibility, damaging property and constituting a potentially significant health threat.

## E. Soils and Geology

Soils

The Town of Apple Valley and the region are geologically diverse due to the uplift of the San Bernardino and San Gabriel Mountains to the south, which results from tectonic activities associated with the San Andreas Fault. These mountains, also called the Transverse Ranges, are comprised of Mesozoic and crystalline basement terrain and contribute, through deposition and

erosion, sediments ranging in age from early Pleistocene to Holocene (approximately one million year to less than 11,000 years old).

Alluvial fans extending downslope from the mountain canyons consist of coarser grained cobbles, gravels, sands, silts, and clays that decrease in size and abundance at lower elevations, near the valley floor. The more recent sedimentary deposits consist of alluvium outcroppings and tend to be associated with the Mojave River floodplain. Floodplain deposits from the Mojave River are made up predominantly of sand, sandy silt, and silt. Alluvial fans, terraces, and floodplain deposits are intermixed, forming a highly variable layering of different sizes of alluvial materials, and occur throughout the Town and surrounding areas. Some areas have well-developed surface exposures of meta-volcanic cobble, commonly known as "desert pavement", which is composed of gravel and small rocks overlain with a thin layer of clay.

Soils identified as occurring in the Town of Apple Valley include the following primary soil series: Bousic Clay, Bryman Loamy Fine Sands, Cajon Sand, Cajon Loamy Sand, Cajon-Arizo Complex, Cajon Wasco, Helendale Loamy Sand, Helendale-Bryman Loamy Sands, Kimberlina Loamy Fine Sands, Lavic Loamy Fine Sand, Lucerne Sandy Loam, Villa Loamy Sand, and Rock Outcrop-Lithic Torriorthents Complex. The most predominant series, Helendale-Bryman Loamy Sands, of the Aridosol Soil Order, occur on 0 to 2 percent slopes. Bryman soils, also a common soil type within the Town, are typically found on terraces and older alluvial fans, and are formed by the mixing of alluvium derived mainly from granitite sources in combination with erosion caused by wind and water.[4]

Soils in the planning area are generally coarse grained and non-expansive and tend to be well drained with slow runoff and moderately slow permeability. The filtering capacity of these soils is considered to be very limited.

These soil types and sediment deposits make the Town and the region susceptible to hazards, including compressible or collapsible soils, subsidence, expansion, and blow sand. The potential geological hazards and impacts associated with implementation of the General Plan and annexations are addressed in Section III-F.

Geology

The geological character of Apple Valley and the surrounding region has been formed by its proximity to the San Andreas Fault system. The San Andreas Fault Zone is the main plate boundary between the Pacific and North American tectonic plates. In southern California, the San Andreas Fault consists of three segments: the Mojave Desert segment, the San Bernardino Mountains segment, and the Coachella Valley segment.

The Mojave Desert segment of the San Andreas Fault occurs approximately 25 miles south-southwest of the Town. This fault extends from the Tejon Pass to the San Bernardino valley, where it becomes the San Bernardino strand. The 1857 Tejon Pass earthquake occurred along the Mojave Desert segment and had an estimated Richter magnitude of 7.9. According to the

[4] "Soil Survey of San Bernardino County, California, Mojave River Area," prepared by the US Natural Resource Conservation Service, 1994.

Southern California Earthquake Data Center, the average recurrence interval for this fault is estimated to be approximately 140 years, give or take 40 years.

The Helendale fault is located approximately 8 miles east-northeast of Apple Valley. This fault extends from Highway 58 just north of Edwards Air Force Base, southeast through Helendale, north of Apple Valley, and terminates at the North Frontal fault just south of Lucerne Valley. According to the California Integrated Seismic Network, the epicenter of the 2003 Big Bear earthquake was located approximately 6 miles south of where the Helendale fault intersects with the North Frontal fault, and had an estimated Richter magnitude of 5.2.

The proximity to these faults makes the Town of Apple Valley and the region susceptible to seismically induced hazards, including groundshaking and slope instability. The potential geological hazards and impacts associated with the General Plan are addressed in Section III-F.

### F. Hydrology

The region and the Town are impacted by winter storms, local thunderstorms, and summer tropical storms, all of which have the potential to produce substantial precipitation. Winter storms, which usually occur between November and April, are responsible for most of the precipitation recorded in Apple Valley and southern California. These storms may discharge heavy and sometimes prolonged precipitation over a large area. Local thunderstorms, which typically impact relatively small areas and can occur at any time, are generally most prevalent in the higher mountains during the summer, but are also common in the Mojave Desert region. Tropical storms typically occur in the summer or early fall, especially in the desert areas.

The Town has historically been subject to flooding and associated hazards, such as mudflows, during severe summer storm events. However, the winter rainfall in February and March of 1938 remains the benchmark for damaging storms in the Apple Valley area, during which the peak streamflow for Deep Creek was estimated at more than 46,000 cubic feet per second, and the Mojave River swelled to more than 70,000 cubic feet per second. Other notable historic peak flows reached about 23,000 cubic feet per second in 1969 and 1978, and more than 37,000 cubic feet per second in 1910 in the Mojave River.

Most of the drainages from the hills and mountains surrounding Apple Valley terminate in desert playas (dry lakes). The largest playa in the area is the Apple Valley Dry Lake, which collects runoff from most of Apple Valley. The Reeves Dry Lake is a smaller playa that occurs in the central part of Fairview Valley, easterly of the planning area, where it receives runoff from the adjacent mountains. Drainages from the Ord Mountains, including the Juniper Flats, Arrastre Canyon, and Lovelace Canyon watersheds, lead to Rabbit Dry Lake in Fifteen Mile Valley, which is located in the southeast corner of Apple Valley. Along the eastern edge of the Sphere of Influence, drainages from the Granite Mountains flow eastward to Lucerne Dry Lake in Lucerne Valley. Locally, drainage channels in Apple Valley become less defined on the valley floor, where sediment-laden water typically spreads out into braided ephemeral stream channels as sheet flow.

Along the western side of Apple Valley, drainages eventually discharge into the Mojave River. The Bell Mountain Wash is a natural channel that collects runoff primarily in the area north and west of Bell Mountain, and is the largest tributary to the Mojave River within Apple Valley. The smaller, partially modified Desert Knolls Wash draw off flows from the area west of Catholic Hill. There are also numerous small, unnamed drainages emanating from the western part of the Ord Mountains and flowing towards the Mojave River.

Portions of Apple Valley that are still vulnerable to inundation during the 100-year flood occur along the Mojave River and Desert Knolls Wash, and within the Apple Valley Dry Lake. Most of the flood-prone areas, as mapped by the Federal Emergency Management Agency (FEMA), are relatively undeveloped or minimally developed. This is further discussed in Section III-H.

The San Bernardino County Flood Control District (SBCFCD) has the primary responsibility for managing regional drainage in and around the community and sets forth methodology for analysis and design of flood control structures. SBCFCD is also responsible for regional flood control facilities.

The Town remains directly responsible for the management of local drainages, as well as for the operation of the local storm drain network. SBCFCD has prepared two master drainage plans for the General Plan area, the Apple Valley Master Plan of Drainage and the Apple Valley West/Desert Knolls Master Plan of Drainage. These are further discussed in Section III-H. Both the Town and SBCFCD are involved in the planning and approval of mitigation measures in order to assure compatibility between local and regional flood control management. The Town and County are also currently undertaking the revision of the Master Plan of Drainage. Its completion is expected in 2010.

### G. Water Quality and Resources

The Mojave River Groundwater Basin underlies the planning area, and is the primary source of domestic groundwater to the planning area. The Basin encompasses approximately 1,400 square miles along the Mojave River, which lies within the 4,900± square mile management area of the Mojave Water Agency (MWA). MWA has management responsibility for the long-term reliability of surface and groundwater within its service area.

Underlying the MWA service area are several subsurface aquifers, or subareas, including the Alto, the Baja, the Centro, the Este, and the Oeste Subareas. These are depicted on Exhibit III-?, Groundwater Basins Within the MWA Service Area. The Alto Subarea has the largest water supply in the Mojave Basin, and underlies the communities of Apple Valley, Victorville, Adelanto, Hesperia, Helendale, and Phelan.

The subbasin that comprises the Alto Subarea contains approximately 82,400 acre-feet of water with out-flows and losses calculated at 47,700 acre-feet. Based on this, the net volume of water in the Alto Subarea is estimated at 34,700 acre-feet of water. Additional water is imported and stored in the Subarea through State Water Project (SWP) allocations, further discussed below.

The Mojave River is the primary natural source of groundwater recharge to the Basin; it is fed by natural tributaries, most notably the Bell Mountain Wash to the east, as well as numerous small, unnamed channels. Most of the River's streambed is dry throughout much of the year, although it receives flows from spring runoff and intense rainstorms that occur at other times of the year. Other sources of groundwater recharge include imported SWP water, which the MWA acquires as a SWP contractor. MWA has an annual SWP allocation of 75,800 acre-feet.

The Mojave River Groundwater Basin, including the Alto Subarea, is in a state of overdraft, a condition under which the demand for groundwater exceeds the amount of recharge into the groundwater basin over a period of time. MWA is subject to the Mojave Basin Area Adjudication, which requires that additional surface water be imported to help balance the basin. The MWA is the court-appointed "Watermaster" for the Mojave Water Basin and as such is charged with avoiding overdraft. This is accomplished in part by the Court-established Free Production Allowance (FPA), which is subject to annual review and adjustment to ensure that water extractions do not exceed supply.

There are several water purveyors that contract with MWA for water for distribution to individual, commercial and other customers. Those in Apple Valley include Apple Valley Ranchos Water Company (AVRWC), which has the largest customer service area and number of connections in the Town, as well as Golden States Water Company. There are also several other purveyors that serve smaller customer service areas in the Town and its Sphere of Influence. These are further described in Section III-I.

Water Quality

The AVRWC-generated Consumer Confidence Report states that local water quality in the Town is very high. The Golden State Water Annual Water Quality Report, which lists testing results for approximately 80 types of constituents, indicates that in many instances, water quality in Golden State wells exceeds U.S. EPA and California Department of Health Services standards. The other water purveyors in the area, which all provide water from the same Subasin, are expected to have similar water quality. Potential sources of groundwater contamination are total dissolved solids (TDS) and nitrates.

AVRWC testing for wells within Apple Valley for 2006/2007 shows TDS concentrations averaging 248 mg/L, as compared with the State Maximum Contaminant Level (MCL) of 1,000 mg/L. AVR has identified run-off and leaching from natural deposits as possible TDS sources. Golden State well samples averaged between 310 mg/L and 435 mg/L TDS in 2005 (Apple Valley North system) and 2006 (Apple Valley South system).

Based on AVRWC data, average concentrations of nitrate as $NO_3$ for 2006/2007 were 6.4 parts per million (ppm), as compared with State MCL and Public Health Goal (PHG) or MCLG of 45 ppm. Testing from Golden State wells showed these concentrations averaging approximately 6.7 mg/L (equivalent to ppm). Unsewered development accounts for approximately 70% of development in Apple Valley. Much of this development utilizes on-lot septic systems, which have potential to result in long-term discharge and adverse impacts to groundwater quality.

Water resources and quality are further discussed in Section III-I of this document.

## H. Biological Resources

In general, Apple Valley contains vegetation described by the Bureau of Land Management (BLM) as Low Cover Woodlands. The most common vegetation types include Creosote Bush Scrub (mid elevations), Salt Bush Scrub (lower elevations), Mojave Mixed Woody Scrub (higher elevations), Joshua Tree Woodlands (higher elevations), and Montane Woodlands (extreme southern portion of the Sphere of Influence). Developed portions of the Town contain a considerable amount of non-native woody plantings.

The Creosote Bush Scrub communities represent the predominant vegetation type found within the Town and Sphere of Influence. This plant community appears to have been significantly disturbed by livestock grazing (domestic sheep), off-road vehicle use, illegal dumping, and development, resulting in minimal ground cover and a diminished sub-shrub[5] component in this vegetation type. The most common plant species identified in the Creosote Bush Scrub vegetation type include Creosote Bush, Burrobush, Golden Cholla, Pencil Cholla, Beavertail, Cheesebush, Cooper's Boxthorn, and Rabbitbush. Joshua Trees also appear as a minor component of this community.

The remaining vegetation types, Salt Bush Scrub, Mojave Mixed Woody Scrub, Joshua Tree Woodlands, and Montane Woodlands, occupy a much smaller geographic area within the Town and Sphere of Influence. Saltbush Scrub tends to contain stands of Allscale, Four-wing Saltbush, and Shadescale. Steeper slopes with overly drained and rocky soils that contain Goldenbush, California Buckwheat, Bladderpod, Clustered Barrel Cactus, and Hedgehog Cactus indicate Mojave Mixed Wood Scrub communities. Joshua Tree Woodlands tend to occupy sandy/loamy soils with gentle alluvial slopes and contain Green Ephedra, Paperbag Bush, Desert Needlegrass, and Mojave Yucca. The least common vegetation type in the area is Montane Woodlands. Indicator species for this vegetation type include California Juniper, Joshua Tree, Blackbush, Cliffrose, and Turpentine Broom.

Wildlife species identified throughout the area are typically associated with disturbed Creosote Scrub, Saltbush Scrub, and Mojave Mixed Wood Scrub habitats. In the Town of Apple Valley, species capable of tolerating ruderal assemblages or proximity to urban areas are common.

Invertebrate species commonly found in the area include California Harvester, Crater-nest, and Argentine Ants, Creosote Bush Grasshopper, Orb Weaver Spiders, Honey Bees, Bumblebees, Wasps, and Darkling and Broad-necked Beetles.

Amphibians species associated with the Mojave River corridor include the Western and Red-spotted Toads, Pacific Tree Frog, and Bullfrog.

Common reptiles including the Western Whiptail, Zebra-tailed, Western Fence, and Side-blotched Lizards, Desert Iguana, Western Patch-nosed, Spotted Leaf-nosed, Glossy, and Gopher Snakes, Coachwhip, Sidewinder, and Mojave Rattlesnakes are expected to occur in the area.

[5] Sub-shrub refers to vegetation that grows close to the ground at lower heights, typically woody perennial plants.

More than 300 bird species have been documented in the area, including the Common Raven, House Finch, House Sparrow, Western Meadowlark, Cactus Wren, Common Roadrunner, Loggerhead Shrike, and Northern Mockingbird, to name a few.

The Black-tailed Jack Rabbit, Desert Cottontail, Spotted and Striped Skunks, Ringtail Raccoon, White-tailed Antelope and California Ground Squirrels, Botta's Pocket Gopher, Kangaroo Rats, Pocket and Deer Mice, Coyote, and Kit Fox are all common mammal species expected to occur in the Town of Apple Valley and Sphere of Influence.

In addition to the common species identified above, there are several special status species that have potential to occur. Special status species are those identified by state, federal, or local governing authorities as threatened or endangered. Special status species thought to occur include plants and animals. Plant species include but are not limited to Booth's Evening Primrose, Desert Cymopterus, Southern Skullcap, and Joshua Tree.

Special status animal species with occurrence potential in the planning area include birds such as the Great Horned, Barn, and Burrowing Owls, Southwestern Willow, Brown-crested, and Vermillion Flycatchers, and Prairie Falcon; reptiles including the Coast Horned Lizard, Arroyo Toad, Western Pond Turtle, and Desert Tortoise; and mammals: such as the Hoary and Pale Big-eared Bats, Mojave Ground Squirrel, Mojave River Vole, and Pallid San Diego Pocket Mouse.

Section III-D of this EIR provides a complete lists of the special status species identified and likely to occur within the planning area, assesses potential impacts of the General Plan to biological resources, and sets forth mitigation measures to avoid or limit impacts.

## I. Cultural Resources

The General Plan area has been human-occupied for thousands of years, and prehistoric and historic cultural resources have been identified in various portions of the Town as well as within the Sphere of Influence. The region has historically served as a transportation link between Southern California and inland areas along what is now U.S. Interstate 15.

Pre-Historic Period

Apple Valley is located near what is estimated to have been the boundary between the traditional territories of the Vanyume and Serrano peoples. The Vanuyme people are thought to have been related to, but politically different from, their southern neighbors, the Serrano. The Vanuyme people as a group had nearly disappeared by the early 1900s and there remains little knowledge about them today. The Serrano, derived from the Spanish "mountaineer" or "highlander", were primarily a hunting/gathering group, which also subsisted through fishing and settled along areas where water flowed from mountains.

The planning area is situated in proximity to the Mojave River, which would have provided the Native peoples who inhabited the area with a dependable water source as well as other resources necessary for their subsistence. The river also served as a major inter-regional trade and exchange route. There are a significant number of ancient cultural resource sites along the river.

Many of the prehistoric sites in the General Plan area contain ancient habitation debris, rock shelters and rock art panels.

Contact between Native groups and Europeans is thought to have occurred in the early 1770s. The Spanish established a mission on the southern edge of Serrano territory in 1819, and over the next two decades relocated most of the Vanyume and Serrano peoples from their traditional settlements to various missions. Present day descendents of the Serrano people are found primarily on the San Manuel and Morongo Indian Reservations.

Historic Period

According to historical records, there were three phases to Apple Valley's settlement and development during the historic period: from the 1860s to the 1880s; from the 1890s to the mid 1940s; and from 1946 to the present day.

Around 1860 the earliest European-American settlements appeared, and by around 1870 there were several permanent settlements in or near Apple Valley. With the completion of the Santa Fe Railroad, settlement increased and a land boom took place in the 1880s.

The second development phase began with activities associated with the Appleton Land and Water Company in the 1890s. The Company established an irrigation system throughout the valley for use in its apple orchards. This period, which lasted into the 1940s, saw the gradual growth of a number of large cattle ranches, apple plantations, and later, guest ranches.

The town-building efforts of the Apple Valley Ranchos company marked the beginning of the third phase in 1946. The company, later named the Apple Valley Building and Development Company, was reportedly the first business establishment of the post-World War II era. Within 20 years the Company had transformed the sparsely settled desert lands in the area into a western-themed town of 11,000 residents.

Cultural and historical resources in the planning area, and potential impacts associated with implementation of the proposed General Plan and annexations, are further discussed in Section III-E.

Paleontological Resources

The potential for geological formations to produce fossils based on what fossil resources have been produced in the past at other nearby locations of similar geologic composition serves as a means to assess paleontological sensitivity. Surface or subsurface Pleistocene-age (1,808,000 to 11,550 years ago) soils in the planning area may have a high potential to contain significant paleontological resources; this is particularly true of the older sediments close to the Mojave River and within the area of the Apple Valley Dry Lake. Due to their relatively young age, most of the surface deposits in the Town are thought to have a low potential to contain paleontological resources. However, studies have identified nearby paleontological localities with fossil resources in similar age soil deposits as those that occur in the planning area. These issues are further discussed in Section III-E.

## J. Visual Resources

The Town of Apple Valley is located primarily on alluvial slopes of the Mojave River floodplain, at the southern edge of the Mojave Desert. The topography gradually inclines towards the San Bernardino Mountains to the south as well as to the scattered knolls and mountains to the north and east of the Town.

Viewsheds in the area are characterized by uninterrupted expanses of wide skies and panoramic vistas of distant mountains, as well as views associated with the Mojave River that include areas of riparian forest and the bluffs and terraces of the floodplain. The low-lying terrain surrounding the Town allows unobstructed views in all direction, creating a sense of openness and spaciousness that is enhanced by the muted colors of the desert landscape.

Existing development in the Town does not currently convey a consistent aesthetic quality. State Highway 18 is designated as an "Eligible State Scenic Highway." Some interesting residential and commercial buildings of local character that date from the early years of the present-day community of Apple Valley (1946-1960) are located along parts of Highway 18.

A detailed analysis of the visual resources of the Town is contained in Section III-A of this document.

## K. Air Quality

For any particular locale, air quality is based on the amount of pollutants emitted and dispersed, and the climatic conditions that may reduce or enhance the formation of primary and secondary pollutants. Apple Valley's air quality is generally considered good, especially as compared to other, more densely populated areas of Southern California. However, over the past few decades, deterioration of air quality has been noted. This decline is largely attributed to increased population growth, traffic, construction activities, and other site disturbances. While some air pollutants are generated from sources within Apple Valley, the most evident degradation of regional air quality, with the exception of fugitive dust, is due to sources outside the area, including the San Bernardino and Los Angeles County air basins.

The Town of Apple Valley is part of the Mojave Desert Air Basin (MDAB), which is regulated on a regional level by the Mojave Desert Air Quality Management District (MDAQMD). MDAQMD monitors the air quality in the region and reports compliance or exceedance of the established thresholds of six criteria pollutants that have been determined by the state and federal government to be indicators of air quality.

Criteria air pollutants consist of carbon monoxide (CO), ozone ($O_3$), nitrogen oxides ($NO_x$), sulfur dioxide ($SO_2$), lead (Pb), and particulate matter with a diameter less than 10 microns and 2.5 microns, respectively ($PM_{10}$ and $PM_{2.5}$). Regional air quality monitoring stations in the region are located in Victorville, Lucerne, and Hesperia, and routinely measure the concentration of these pollutants in the air.

The most common air pollutants in Apple Valley are ozone and particulate matter. Ozone is a pungent, colorless, toxic gas commonly referred to as smog. It forms when byproducts of combustion react in the presence of ultraviolet sunlight. Particulate matter and consists of fine, suspended particles, such as soot, dust, smoke, and aerosols, which are by-products of fuel combustion, tire wear, and natural wind erosion processes. MDAQMD has set thresholds for emissions of $PM_{10}$ and $PM_{2.5}$. Ozone and particulate matter can pose a significant public health threat and may result in diminished breathing capacity, increased sensitivity to lung infections, inflammation of the lung tissue, and other respiratory distress.

Climate change associated with the emission of greenhouse gases is also of concern. Unlike criteria pollutants, thresholds have not been established for greenhouse gases, which makes it difficult, to determine a project's impact on climate change. Pursuant to Senate Bill 97, the Governor's Office of Planning and Research (OPR) will publish a draft regulatory guidance document for the analysis and mitigation of greenhouse gases on or before July 1, 2009. In the interim. OPR has issued a Technical Advisory, which offers a CEQA-compliant approach in addressing greenhouse gas emissions. The recommended approach set forth in the aforementioned OPR document was used in this analysis and is described in more detail in Section III-C of this EIR.

Build out of the General Plan will include grading, development, and other improvements that will result in increased emissions from stationary sources (energy and natural gas) and moving sources (vehicles). In addition to these man-made impacts, natural conditions within the General Plan area also have the potential to contribute to the air quality. The General Plan area is primarily underlain by coarse sands, which have erosion and soil blowing hazard potential. Potential air quality impacts and mitigation measures are discussed in Section III-C of this EIR.

### L. Noise

Noise is among the most pervasive pollutants in today's environment. Over the past several decades, noise levels and their effect on the general population have increased substantially. Intrusive noise levels can result in physical and psychological distress or disease, including hearing loss, stress, high blood pressure, sleep loss, anxiety, distraction, and loss of productivity, as well as an overall quality-of-life reduction.

A range of between 40 to 100 decibels (dB) accounts for the most common sounds, such as human conversation at three feet (approximately 60 dBA). The noise of a jet engine equates to about 110 dBA and can create significant discomfort. The Community Noise Equivalent Level (CNEL) is generally used to assess community noise impacts, converting the effect of daily noise exposure into a single number and weighting it to account for increased noise sensitivity experienced during the more sensitive evening and nighttime hours.

The noise environment in much of the Town is generally relatively quiet, with higher noise levels associated with major roadways in the area. Noise levels ranging from 48.2 to 72.1 dBA

CNEL were measured during the course of short-term noise monitoring conducted for this EIR.[6] The primary noise source in the Town is from vehicular traffic. Although most roadways in the Town carry relatively low traffic volumes at moderate speeds, some roadways carry higher traffic volumes at higher speeds. Further, traffic in the planning area is comprised of higher than average percentages of truck traffic, which may increase noise levels. Major roadways in the planning area include U.S. Interstate-15, which runs southwest to northeast along a portion of the Town's western boundary. There are few sensitive noise receptors in the vicinity of U.S. I-15 in the planning area. Portions of State Highway 18, which runs generally southeast to northwest through the planning area, and Bear Valley Road, a major east-to-west roadway, are adjacent to existing residential development. This is further discussed in Section III-L.

There are two rail lines in the planning area. One is located in the northerly portion of Town and serves an existing quarry operation. Currently there are no sensitive receptors near this rail line. The second line is located south of Tussing Ranch Road, intersecting the Town limits between Central Road and Kiowa Road, and turning south east of Kiowa Road outside the planning area. Land uses within 300 feet of this line include residential development. Each of these rail lines operates fewer than five trips per week. Issues associated with these noise sources are further considered in Section III-L.

The Apple Valley Municipal Airport is a general aviation airport located on Corwin Road in the North Apple Valley Industrial Specific Plan (NAVISP) area, south of Johnson Road between Dale Evans Parkway and Central Road. The airport primarily serves private aircraft. The 60 dBA CNEL noise contours are contained within the airport property, and airport operations are considered "barely perceptible" in most of the planning area.[7] Existing single-family development is located south of Waalew Road and both west and east of Central Road. Existing and projected noise impacts associated with airport operations are considered in Section III-L.

Existing industrial and commercial uses in the Town are concentrated in the NAVISP area and along State Highway 18 and Bear Valley Road. Existing scattered, single-family residential development is located south of Waalew Road and east of Central Road near the NAVISP area, and more densely populated residential development is adjacent to portions of both Highway 18 and Bear Valley Road. Impacts to sensitive receptors associated with these potential noise sources are further discussed in Section III-L.

### M. Traffic and Circulation

As described under Noise, above, the General Plan area is located east of U.S. Interstate 15 (I-15), a north-south transcontinental interstate highway that runs generally southwest to northeast through the region. State Highway 18 (Happy Trails Highway) intersects the Town, running southeast to northwest. The Town's arterial roadway network is laid out in a one-mile grid pattern and provides connection between various locations in Town as well as access to I-15. Dale Evans Parkway is the largest road within the Town's major north-south arterial network;

6 "Town of Apple Valley Noise Element Update: Existing Noise Conditions Report, Town of Apple Valley, California," prepared by Urban Crossroads, Inc., July 2008.

7 Ibid.

other major north-south roadways in this network include Central Road and segments of Apple Valley Road and Kiowa Road. Major east-west arterial roadways in the Town, in addition to Highway 18, discussed above, include Bear Valley Road and Tussing Ranch Road. A system of major and secondary roadways interconnect the local circulation network.

Build out of the General Plan will result in increased traffic on the Town's roadway system and corresponding changes to the existing levels of service. The impacts of the increased levels of traffic on local and regional traffic and circulation are analyzed in Section III-O of this EIR.

## N. Public Services and Facilities

This section identifies the different providers of public services, facilities, and utilities and briefly describes the current levels of service and operation applicable to the planning area. Section III-M provides a more detailed discussion of these services and facilities, and the impacts to them from General Plan build out.

**Domestic Water**
As discussed under Water Quality and Resources, the Mojave Water Agency (MWA) is responsible for managing the long-term reliability of surface and groundwater within its service area. There are a number of local water purveyors which contract with MWA for water deliveries from SWP facilities.

The MWA service area is underlain by several subsurface aquifers, known as subareas, which include the Alto, the Baja, the Centro, the Este, and the Oeste Subareas. The Town of Apple Valley is located near the center of the Alto Subarea of the Mojave River Groundwater Basin. Water purveyors serving the GeneralPlan area include the Apple Valley Ranchos Water Company, the Golden State Water Company and several other smaller water purveyors.

Projected water consumption associated with implementation of the General Plan and annexations, as well as associated issues, are further evaluated in the Water Quality and Resources discussion in Section III-I.

**Wastewater Treatment**
The Town of Apple Valley owns, operates and maintains the local wastewater collection system, to which approximately 30% of local development is connected. This local collection system serves commercial facilities and portions of the residential areas along State Highway 18 and in the vicinity of Bear Valley and Apple Valley Roads, conveying wastewater to regional intercept lines operated by the Victor Valley Wastewater Reclamation Authority (VVWRA). Wastewater from Apple Valley is processed at the VVWRA plant in Victorville, which has a current capacity of 18 million gallons per day (MGD).

The Town of Apple Valley has a Sewer Master Plan that identifies the wastewater facilities that are needed to serve potential future development within the Town.

Development that is not connected to the sewer system is served by on-lot septic systems. The Town has adopted a Sewer Connection Policy that requires new development with less than one-

acre lots and within one-half mile of existing sewer facilities to connect to the Town's collection system. Development that does not meet these criteria is required to install dry sewers or interim holding tank systems subject to approval by the Regional Water Quality Control Board. Issues associated with provision of these services, as well as estimated wastewater generation at build out of the General Plan, are discussed in Section III-M.

**Electric Service**
Southern California Edison (SCE) provides electricity to the Town via distribution facilities connected to four 115kV regional electric transmission corridors. There are three SCE sub-stations in Apple Valley, with voltages ranging from 33kV to 115kV, which reduce power for distribution to residential, business and institutional clients. Projected demand for electrical power in Apple Valley and the annexation areas is analyzed in Section III-M of this document.

**Natural Gas**
Natural gas is delivered to the Town by Southwest Gas Corporation (SWG) facilities. Southwest Gas owns and maintains a high-pressure pipeline corridor system with 4-inch to 12-inch diameter pipelines, and a distribution system consisting of pipelines ranging from 2 to 4 inches in diameter, which typically run within developed public rights-of-ways. SWG offers services and programs responsive to residential and commercial requirements, and integrates energy conservation techniques. Section III-M of this report analyses natural gas consumption associated with implementation of the proposed General Plan and annexations.

**Solid Waste Management**
The Town of Apple Valley contracts for solid waste and recycling services through Burrtec Waste Industries of Fontana, California, which hauls non-hazardous solid waste from Apple Valley to the San Bernardino County Victorville landfill. The closing date for the Victorville landfill is estimated to be 2047, based on recent expansion. The landfill in Victorville is permitted to accept up to 3,000 tons of solid waste per day. It has historically averaged receipts of approximately 1,400 tons per day.

The Town operates a household hazardous waste collection center located at the Public Works Yard. Qualified small-quantity industrial hazardous waste generators are eligible for the County's "Conditionally Exempt Small Quantity Generators" (CESQG) program, which provides for disposal of such wastes through the County Fire Department. County-approved firms collect and dispose of hazardous waste from businesses that do not qualify for the small-quantity generator program.

Curbside recycling is available to residences and businesses in Apple Valley; recyclable materials are taken to a recovery facility in Victorville, which has a processing capacity of more than 800 tons per week. The facility is jointly owned by Apple Valley and the City of Victorville. The Town participates in the Zero Waste Communities of San Bernardino County (SWC), a collective of 16 communities.

The California Bio-Mass composting facility in Victorville accepts greenwaste generated in Apple Valley and other high desert communities. It uses greenwaste for composting, processing approximately 18,000 tons of greenwaste annually at the Victorville location.

**Telecommunications**
Telephone and telecommunications services, including high-speed Internet and cable television, are provided to the planning area by Verizon and Charter Communications. A wide variety of basic and state-of-the-art telephone and other services are available throughout the Town and in portions of the Sphere of Influence. The major service providers design their infrastructure to accommodate future growth demands. These issues are future discussed in Section III-M.

**Fire Protection**
The Apple Valley Fire Protection District (AVFPD) provides fire protection services to the planning area. The AVFPD is an independent district; its western boundary is the Mojave River, and it extends to the east as far as the dry lakes toward Lucerne Valley, over a total of 206± square miles. AVFPD serves the Town as well as unincorporated areas of San Bernardino County, with a paid professional and support staff that includes both full and part-time personnel.

There are currently seven fire stations in the District, with 54 full-time, 20-paid call, and 5 part-time staff. Of these, 50 are assigned to the seven stations in Apple Valley. The District's desired ratio for full-time fire personnel to population is approximately 1:1,500. The Fire Protection District maintains a mutual aid agreement with Victorville, San Bernardino County Fire Department, and the Bureau of Land Management.

The Apple Valley Fire Marshal provides project review services for all new development. The District offers a variety of fire safety and awareness programs for school children and others in the community.

**Police Protection**
Police services to the Town of Apple Valley are provided via contractual agreement with the San Bernardino County Sheriff's Department. There are currently 61 personnel assigned to the Town. The Department prefers a ratio of one police officer per 1,500 population. The average response time for highest priority emergency calls is five minutes. There is one staffed police station, located at 14931 Dale Evans Parkway. An unstaffed sub-station, used for report writing and other administrative tasks, is located at 21989 Outer State Highway 18.

**Educational Facilities and Services**
The Apple Valley Unified School District (AVUSD) provides kindergarten through 12$^{th}$ grade public education services and facilities to the Town of Apple Valley. AVUSD operates 9 elementary schools, 3 middle schools, and 3 high schools with a total enrollment of approximately 14,725 students. In addition, the District operates a magnet school and the Academy for Academic Excellence (AAE), an independent charter school focusing on science and technology. The District also offers alternative education, as well as adult-education GED studies.

There are several private schools serving K-12 students in Apple Valley. These schools vary in their enrollment and religious affiliations, and are discussed further in Section III-M.

Currently, the County of San Bernardino serves special needs students through private placement or by means of staffing provided at public (AVUSD) elementary schools. The County has planned for three facilities to consolidate special education services, which will serve students living in Apple Valley as well as within the region.

Higher educational facilities in the planning area and vicinity include four-year college course offerings through Redlands University at the AAE Campus on Mana Road. Victor Valley College is a 253-acre community college located in City of Victorville.

Section III-M addresses potential educational impacts associated with the build out of the Town of Apple Valley.

**Libraries**

The Newton T. Bass Apple Valley Library of the San Bernardino County Library system is located adjacent to the Apple Valley Town Hall. The 19,142 square foot library building houses over 20,000 hardcopy books, and provides access to an online database that contains electronic periodicals, magazines, and encyclopedias. Resources for illiterate and visually impaired residents include books on tape and CD, as well as some large print books. Patrons can access the Internet on any of the 23 computers in the library. The library also functions as a community facility through a diverse offering of events and programs.

**Medical Facilities**

St. Mary Medical Center is an acute, general medical-surgical and intensive care hospital on approximately 90-acres in the western portion of the Town along Highway 18. The hospital includes a 24-hour emergency room and offers a variety of other in-and-outpatient medical services. It is currently (2008) designated as a Level III trauma care center, which is the lowest level for this type of care. The hospital has near-term plans for construction of new facilities through which it hopes to attain Level I status, and has purchased lands in Hesperia on which it plans to construct additional facilities.

There are a number of small private clinics and local physician's offices within the Town of Apple Valley, including one urgent care center, as well as various private psychiatric clinics, some of which are within the Town and others in neighboring communities. The County of San Bernardino operates the High Desert Juvenile Detention and Assessment Center (HDJDAC) at 21101 Dale Evans Parkway. The Center is a short-term facility for offenders under the age of 18, pending hearing before a judge.

## O. Hazardous and Toxic Materials

Currently (2008), there are no large quantity generators of hazardous waste in the Town of Apple Valley. All businesses that use, generate, transport, or store hazardous waste are required to submit a hazardous waste management business plan to the County of San Bernardino.

There are a limited number of "small quantity generators," that use or produce hazardous materials in Apple Valley. The County requires any such businesses to certify on-site hazardous materials annually with the County's Hazardous Materials Division (HMD). These facilities

include waste-generating medical clinics, gasoline service stations, equipment and fuel storage yards, and waste haulers. These businesses are inspected and monitored to assure compliance with California Code of Regulation (Title 22).

Other potential risks are those from leaks from underground storage tanks, which are typically located at service stations, maintenance yards and airports. These constitute the most significant hazards from these "small quantity generators." The Apple Valley Airport has a moderate to high potential for hazardous material spills, associated with the aforementioned underground fuel storage tanks as well as sewage discharge. These issues are discussed further in Section III-G.

A search of the U.S. EPA Envirofacts Data Warehouse for the Town of Apple Valley identifies three State Superfund Sites, none of which has National Priorities List (NPL) status. These sites are further discussed in Section III-G. There are three School Investigation Sites, which have been cleared by the EPA (no further action required). No other EPA-listed sites have been identified in Apple Valley.

There are three hazardous materials transportation corridors located in the Town of Apple Valley. The Atchison Topeka & Santa Fe Railroad, U.S. Interstate 15, and Highway 18 have the potential to be used for the transport of hazardous wastes and materials.

Approximately 560 acres in the west-central portion of the Town of Apple Valley were formerly used as a practice bombing range by the U.S. Army Air Force during World War II. Potential hazards exist due to the presence of known or suspected military munitions and explosives of concern. These issues are discussed in further detail in Section III-G.

The Town's Multi Hazard Functional Planning Guidance Document (Multi Hazard Plan) establishes contingency plans when an incident involving hazardous materials occurs. The Hazardous Materials Team, a unit of the Apple Valley Fire Protection District and a member of the San Bernardino County Hazardous Materials Team, responds to all calls received related to hazardous materials in Apple Valley, including fuel spills and the illegal dumping of unknown products in the Town. The Team also provides assistance in other jurisdictions as requested. This is further discussed in Section III-G.

### P. Recreational Resources

There are a wide variety of natural and man-made recreational resources in the Town of Apple Valley and Sphere of Influence.

The Town of Apple Valley is responsible for the Apple Valley Park and Recreation District, and has 346.87 acres of developed public parkland, including seven mini-Parks, two Neighborhood Parks, three Community Parks and two Special Use Parks. In November 2008, the Town Council announced that subject to the successful resolution of water rights issues, the Town plans to purchase the Apple Valley Country Club and open its facilities to the public. The country club includes an 18-hole golf course, lighted tennis courts, a pool, pro shop, sports bar, lounges and locker rooms, meeting and dining rooms and a banquet facility. There are an additional 65 acres of BLM and privately owned lands allocated for two parks associated with the approved Bridle

Path and North Pointe Specific Plans, which have not yet been developed. Another 27 acres of land have been identified for park use, but not yet developed. As currently planned, at build out the Town will contain 438.87 acres of developed parklands.

The Town offers a program of year-round activities geared to meet the needs and interests of all segments of the community's residents. In 2007, an amphitheatre and community swimming pool opened on the grounds of the Civic Center. There is an integrated system of bicycle paths and equestrian trails throughout the Town and in portions of the Sphere of Influence.

In addition to the Town's parks, other recreational resources include designated open space areas such as the Mojave river-bottom and the Apple Valley Dry Lake, as well as various rock outcroppings, knolls and riverside bluffs in the planning area. Regional recreational resources include Mojave Narrows Regional Park, the Desert Conservation Area, the San Bernardino National Forest, Rodman Mountains and Grapevine Canyon Recreational Areas, Deep Creek Hot Springs and the Stoddard Valley Open Area.

A more detailed discussion of recreational resources in the planning area and region is included in Section III-N of this document.

### Q. Socio-Economic Resources

Based on U.S. Census data, the population in the Town of Apple Valley grew from 46,079 in 1990 to 54,239 by 2000, an increase of approximately 17.7%. The 2008 population is currently (2008) 70,092. In 1990, the median age in Apple Valley was 30.8 years, whereas in 2000 it had increased to 35.4 years. As of 2008 there were 24,925 housing units in the Town; this figure had increased from year 2000, when there were 20,161 housing units. There were an average of 2.903 persons per household in 2000; by 2008 this average had increased to 3.053.

The median household income in Apple Valley in 2000 was $40,421, and had risen by approximately 34.4% in 2008, to $54,323. The median home price for existing homes in Apple Valley was $338,000 in third quarter 2007, and had fallen to $220,000 by third quarter 2008. At current (2008) levels, home ownership is considered affordable to moderate income households in Apple Valley.

The median new home price in the Victor Valley region, in which the Town is located, also dropped over the past year. In second quarter 2007 the median new home price in the region was $415,000, and $377,000 in second quarter 2008. These prices still exceed those of the overall County of San Bernardino for the same period.

Socio-economic impacts associated with implementation of the proposed General Plan and EIR are further analyzed in Section III-J.

## R. Agricultural Resources

Although agricultural activities played a prominent role in the Town's formation, the difficulty of farming in the high desert environment has limited, and now mostly eliminated, farming activities within the Town limits.

The State Department of Conservation, Farmland Mapping and Monitoring Program identifies four small areas within the Town limits as Farmlands of Statewide Importance. These areas are all in the southern half of Town. The analysis of impacts associated with the development of these lands through the build out of the General Plan is included in Section III-B of this EIR.

## S. Mineral Resources

Mineral resources are an integral part of the local economy. In the planning area, these resources occur primarily along or near the Mojave River. The predominant mineral resources in the area are concrete aggregate materials such as sand, gravel and stone deposits. The State Department of Conservation, Division of Mines and Geology classifies these resources within Mineral Resource Zones (MRZs) based on the presence or absence of significant concrete-grade aggregate deposits. The location of MRZs in the planning area are shown in Section III-K.

Potentially important mineral resources in the planning area are aggregate and limestone for cement manufacture. There is one quarry on the northwest edge of Town, adjacent to the newly approved North Pointe and Bridle Path Specific Plans. Another quarry operation is located in proposed Annexation 2008-002. For the most part, current sources of these minerals are located outside the planning area in the Mojave River flood plain or mountain ranges of the region.

A detailed analysis of the mineral resources of the Town of Apple Valley and Sphere of Influence is contained in Section III-K of this report.

# TOWN OF APPLE VALLEY

## ENVIRONMENTAL IMPACT REPORT FOR THE COMPREHENSIVE GENERAL PLAN AND ANNEXATIONS NO. 2008-001 AND NO. 2008-002

## III. EXISTING ENVIRONMENTAL CONDITIONS, PROJECT IMPACTS AND MITIGATION MEASURES

### A. Aesthetics and Visual Impacts

**Introduction and Background**

This section describes the existing visual resources of the planning area, including the Town, Annexation 2008-001 and 2008-002, as well as those of the region. It analyzes the potential impacts of the General Plan on these resources and sets forth mitigation measures effective in reducing impacts. The California Environmental Quality Act is prescriptive in how the Town must address issues related to visual/scenic resources.

**Thresholds of Significance/Criteria for Determining Significance**

The following thresholds or criteria are not those strictly recommended in 15064 of CEQA. Rather, they are derived from Appendix G of CEQA, which is used to determine the level of potential effect. Build out of the General Plan for the Town of Apple Valley would have a significant effect on aesthetics if it is determined that the project will:

a. Has a substantial adverse effect on a scenic vista.

b. Substantially damages scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

c. Substantially degrades the existing visual character or quality of the site and its surroundings.

d. Creates a new source of substantial light or glare which would adversely affect day or night-time views in the area.

## 1. Existing Conditions

### Regional Setting

The Town and two annexation areas are located primarily on alluvial slopes of the Mojave River floodplain, at the southern edge of the Mojave Desert. Elevations in the Town range from approximately 2,800 feet above sea level near the Mojave River, to approximately 3,200 feet above sea level at the northeast corner of Town. The topography gradually inclines towards the Juniper Flats foothills of the San Bernardino Mountains to the south, as well as to the scattered knolls and mountains to the north and east of the Town. Turtle and Black Mountains are located to the north of the planning area, Fairview Mountain to the northeast and the Granite Mountains to the southeast. From these elevated topographical features, panoramic vistas exist across Apple Valley.

The Town is located in the high desert between the City of Victorville and the communities of Lucerne Valley on the southeast and Hesperia on the southwest. Federal lands managed by the U.S. Bureau of Land Management (BLM) form the largest land blocks within the adjacent Sphere of Influence. These Federal lands are natural areas managed as open space, which both benefit and characterize the overall setting of the Town. Although considerable rural and residential development exists in the region, a sense of spaciousness prevails and expansive vistas occur in many directions across the planning area.

### Planning Area Existing Conditions

Natural visual resources that provide the planning area with special character include uninterrupted expanses of 'wide skies' and panoramic vistas of distant mountains. Characteristic views of the Mojave River floodplain bluffs and terraces, and areas of riparian forest flora also occur. The low-lying landscape surrounding the Town allows unobstructed, distant views in all directions and these create a prevailing sense of openness and spaciousness. Although the visual character of most parts of the planning area have been impacted to some extent by residential, commercial and industrial development, many acres of undeveloped desert lands remain.

The aesthetic quality of existing development in the Town and vicinity is inconsistent, with the built form being representative of several different periods of time and various standards of development. However, parts of an approximately seven-mile-long corridor along Highway 18, include some interesting residential and commercial buildings that date from the early years of the present-day community of Apple Valley, and these buildings make an important visual contribution to local character.

## 2. Project Impacts

Implementation of the General Plan is expected to result in the continued development of a variety of residential, commercial and industrial structures, as well as additional recreational development. With the exception of certain specialty structures, development allowed by the

General Plan is expected to continue to be limited in terms of coverage, height and density. Some new low-density residential projects will be located within master planned communities and will benefit from consolidated open space, consistent architectural themes and limited building heights.

Regardless of the type of development that occurs, new structures, signage, parking lots, utility infrastructure, lights and other elements of the built environment will result in additional visual impacts which could adversely affect surrounding viewsheds, either partially or wholly. Continued urbanization in undeveloped areas will change the natural topography and appearance of the area to a man-made built environment.

Build out of the General Plan will generate increased light and glare resulting from residential, commercial and industrial activities, while increased traffic will result in additional headlights and increased levels of illumination on local roadways.

The General Plan addresses these potential impacts through a series of policies and programs that are directed at maintaining the Town's character and scenic views and vistas. The Plan either directly regulates development, or mandates the maintenance of zoning and other regulatory codes that assure detailed assessment of building coverage, setbacks and building heights, as well as other design features.

**Annexation Areas 2008-001 and 2008-002**

The proposed land-use plans for the two annexation areas have been designed to integrate into those lands surrounding them which occur in the Town's urban environment. However, build out of the annexation areas is nevertheless expected to have some impact on the visual and aesthetic resources, particularly since both areas are currently vacant desert lands. Although these potential impacts are not expected to affect the visual character of the annexation areas in the immediate future, they will gradually accumulate over time as new development takes place.

The conversion of rural land uses to industrial, commercial and residential uses will transform the open, semi-rural character of the area to that of a developed urban community. Existing viewsheds may be partially obstructed by buildings and other structures, and the present sense of open space will be diminished. Other elements of the built environment, including signage, utility infrastructure, and paved surfaces will also alter existing visual resources. The same policies, programs, and regulatory constraints applicable to all development in Town, however, will be applied to the annexation areas, thereby limiting building coverage and height to one and two story structures which will have limited impacts on viewsheds in either annexation area.

**Light and Glare**

The southwestern portions of the planning area are the most urbanized. These areas are presently impacted by light and glare emitted from vehicular headlights, street lights, accent lighting, building lights and external safety lighting for parking lots and other open spaces, as well as glare from reflective surfaces such as vehicles, building materials and windows. These areas will

continue to emit light, while build out of the General Plan will result in increased levels of illumination and glare impacting currently undeveloped portions of the planning area. Land that was previously undeveloped has been designated for residential, commercial and industrial uses. However, all future development proposals will be subject to review by Town staff to determine compliance with General Plan dark sky and lighting policies, as well as Development Code standards and requirements, designed to control light spillage and preserve night skies. The Town has also established development performance standards for exterior lighting in Chapter 9.70.020 of the Town's Municipal Code and these will be enforced to effectively reduce lighting and glare impacts to less than significant levels.

**Summary of Impacts**

Build out of the General Plan will result in some change to the existing visual character of much of the planning area. The conversion of vacant lands and rural land uses to industrial, commercial and more intense residential uses will change the open, semi-rural character that prevails in many parts of the area to that of a developed community. Existing viewsheds may be partially obstructed by buildings and other structures, and the present sense of open space will be diminished. Other elements of the built environment, including signage, utility infrastructure, and paved surfaces will also impact existing visual resources. However, implementation of the Town's General Plan policies and design performance standards, together with the mitigation measures set forth herein, are expected to reduce potentially detrimental impacts to visual resources to less than significant levels.

Build out of the General Plan will also result in increased levels of illumination and glare, as previously undeveloped land is developed for residential, commercial and industrial uses. The designation of new and more intensively developed industrial areas may also impact on sensitive neighboring residential developments. However, impacts resulting from light and glare are expected to be reduced to less than significant levels through implementation of the Town's General Plan policies and design performance standards.

### 3. Mitigation Measures

The General Plan enhances the Town's ability to regulate and prevent significant viewshed impacts from occurring as a result of future development, while also mandating continued protection of the Town's visual resources. In order to ensure that impacts to visual resources are reduced to less than significant levels, the following mitigation measures shall be implemented.

1. Signage shall be in compliance with the Town's sign ordinance and shall be limited to the minimum size, scale and number needed to provide functional information, thereby minimizing impacts on traffic safety, streetscape, scenic viewsheds and the aesthetic character of the area.

2. Compliance with the Town's performance and design standards for landscaping, building coverage and setbacks, building design and height, architectural finishes, walls, fences and utility structures will be required of all development and redevelopment projects.

3. The Town shall maintain and implement design standards which protect scenic viewsheds and enhance community cohesion. Development standards shall address signage, landscaping, setbacks, building facades, vehicular and pedestrian access and related issues.

4. The Town's performance and design standards for lighting shall be maintained and implemented.

5. In addition to being in compliance with the Town's lighting ordinance, supplementary lighting recommendations include:

   - External lighting shall be limited to the minimum height, fewest number and lowest intensity required to provide effective levels of illumination.
   - Every reasonable effort shall be made to reduce spillage, both to protect residential use areas from excessive levels of illumination and to preserve dark skies at nighttime.
   - Elevated lighting, including but not limited to parking lot lighting, shall be full-cutoff fixtures.
   - Lighting fixtures in the vicinity of the airport shall be compatible with airport operations.

6. Overhead utility lines shall be undergrounded to the greatest extent possible through the maintenance of an undergrounding program.

7. The Town shall coordinate with utility providers to assure that utility infrastructure, including water wells, substations and switching/control facilities, are effectively screened to preserve scenic viewsheds and limit visual clutter.

8. Planning and design of residential neighborhoods and street corridors shall provide distinctive and characteristic design elements, such as entry monuments and landscaping, which preserve and enhance viewsheds enjoyed from these areas

9. All development proposed within scenic viewsheds shall be regulated to minimize adverse impacts to views and vistas.

**Mitigation Monitoring/Reporting Program**

A. All development plans, including lighting, landscape and signage proposals, shall be reviewed by the Town to assure their substantial compliance with the Town's design and performance standards, the design parameters set forth in the above mitigation measures and the General Plan.
   **Responsible Party**: Planning Division, Planning Commission, Town Council

B. The Town shall maintain and implement a comprehensive Development Code and other regulatory documents which define the design perimeters to which public and private development projects must conform. Application packages shall be maintained to guide the

preparation of Specific Plans, Conditional Use and other permits, and to ensure a thorough review of all community design issues.
**Responsible Party**: Planning Division, Planning Commission, Town Council

C. The Development Code shall maintain neighborhood enhancing design standards for industrial, commercial and residential development areas that ensure a variety of complementary design, the provision of safe open spaces, adequate access and parking, appropriately designed and scaled walls/fences and comprehensive landscaping programs.
**Responsible Party**: Planning Division, Planning Commission, Town Council

## B. Agricultural Resources

### Introduction

This section of the EIR assesses the potential impacts to agricultural resources resulting from build out of the General Plan and annexations. As the Department of Conservation has identified Farmland of Statewide Importance within the Town boundaries, an assessment of the potential impacts associated with these lands is necessary. Appropriate mitigation is offered to reduce the potential impacts associated with implementation of the General Plan to less than significant levels. It is important to note that no State designated farmlands occur in either of the annexation areas.

### Thresholds of Significance/Criteria For Determining Significance

The following significant thresholds or criteria are derived from Appendix G of CEQA, which is used to determine if and to what extent a project may have a potentially significant impact on agricultural resources. Build out of the General Plan and annexations would have a significant effect on air quality if it is determined that the project will:

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

b. Conflict with existing zoning for agricultural use, or a Williamson Act contract.

c. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use.

### 1. Existing Conditions

Agricultural activities in Town historically ranged from ranching to crop farming. In the last 50 years, however, agricultural activities have diminished considerably, due in part to the limited supply of irrigation water, and the pressures of urbanization in the community. The California Department of Conservation, Farmland Mapping and Monitoring Program, monitors the supply of farmland in the State, including San Bernardino County. The Department classifies four types of farmland:

<u>Prime Farmland</u>
These lands have the best combination of physical and chemical features to maintain long term agricultural activities. The quality of the soils, the level of moisture, and the length of the growing season are all ideal for the production of consistently high yields.

<u>Farmland of Statewide Importance</u>
This type of farmland is similar to Prime Farmland, but has some restrictions, such as slope or less soil moisture. These lands are designated if they have been used for agriculture in the four years preceding the preparation of the map.

Unique Farmland
This classification of farmland has lower quality soils, and usually requires irrigation, although irrigated orchards and vineyards can be included in the classification.

Farmland of Local Importance
Locally important farmlands has the soils which meet the requirements of Prime, Statewide Importance or Unique farmlands, but are not irrigated.

The Department has identified four areas in Apple Valley which it has designated as Farmland of Statewide Importance. Two are located north of Yucca Loma Road, and west of Apple Valley Road. Two are located south of Yucca Loma Road; one immediately east of Apple Valley Road, and one south of Bear Valley Road, in the Deep Creek area. Altogether, these lands represent approximately 130 acres.

There is one Williamson Act contract in effect in Town, located on the south side of Chickasaw Lane, east of Chamber Lane, and consisting of 1.8 acres. The parcel is owned by the Apple Valley Ranchos Water Company (AVR).

Within the lands identified by the State, approved projects occur. Specifically, the Town has on record approved Tentative Tract Maps for 37.5 acres at the southeast corner of Camber Lane and Chickasaw Lane; 42.3 acres at the southwest corner of Choco Road and Yucca Loma Road, and 37 acres at the southeast corner of Wren Road and Mockingbird Road. These approvals affect almost all of the lands designated by the State as farmland, and occurred prior to the current General Plan update, on lands designated for residential land uses in the current General Plan.

### 2. Project Impacts

Implementation of the General Plan has the potential to convert the lands designated by the State as Farmland of Statewide Importance to residential development. As stated above, all but about 15 acres are committed to development under the existing General Plan, although development has not occurred. These lands are in relatively small parcels of 40 acres or less, and not conducive to the long term production of agriculture.

The Land Use Element of the General Plan allows ranching and agricultural activities in the Very Low Density Residential, Low Density Residential, Estate Residential and Estate Residential ¾ land use designations. The parcels identified by the State occur in the Single Family Residential, Specific Plan, Public Facilities and Low Density Residential designations. The majority of these lands are designated for suburban land uses, and have existing approved residential development proposals under the current General Plan. These lands are also not currently farmed, nor have they been in several years. The latter designation applies to those lands located south of Bear Valley Road. These lands, therefore, may be developed as agricultural or ranching facilities under the General Plan, representing about 30 acres. The balance of the land use designations, however, will result in the elimination of these lands from potential agricultural production.

Lands in the Deep Creek area are designated Low Density Residential and Estate Residential in order to preserve the rural and agricultural/ranching activities which have occurred there in the past. Although these lands are not designated by the State as Farmland of Statewide Importance, they are likely to develop to include equestrian, ranching or hobby farm facilities. This area of Apple Valley has been identified in the General Plan for long term preservation in a semi-agrarian character, including policies and programs which protect this character.

The Williamson Act contract which currently occurs in Town applies to land owned by the Town's largest water company. The parcel is not currently farmed. Should AVR wish to develop the land, the Williamson Act contract will need to be removed from the parcel. AVR will be required to notify responsible agencies, including the Town, of its intent of non-renewal, and the change will be recorded with the County. Given that the parcel is only 1.8 acres in size, it is not of long term agricultural value, and will not represent a significant loss of agricultural land in the area.

As a result of implementation of the General Plan, it is likely that about 100 acres of land designated by the State as Farmland of Statewide Importance will be lost. None of the parcels represent viable long term agricultural production lands within Apple Valley, or for the region. The more likely agricultural, ranching and equestrian areas in Town occur surrounding the most southerly designated Farmland of Statewide Importance, in the Deep Creek area. These lands are designated to allow agricultural and ranching activities, and are able to support such activities through the policies of the General Plan.

### 3. Mitigation Measures

In order to protect lands in agricultural and equestrian activities in Town, the following mitigation measures shall be implemented.

1. The Town's Development Code shall include buffers between Very Low Density, Low Density and Estate Residential land use designations and more intense lands, in order to provide for the preservation or creation of ranching or animal raising activities in the Deep Creek area.

2. The Town shall coordinate with the Department of Conservation, Farmland Mapping and Monitoring Program, to accurately reflect farmed and farmable lands within the Town limits.

**Mitigation Monitoring/Reporting Program**

A. The Development Code shall include buffer standards for Very Low, Low and Estate Residential land use designations abutting more intense land use designations.
**Responsible Party**: Planning Division, Planning Commission, Town Council

B. The Planning Division shall annually work with the Department of Conservation to accurately map agricultural lands within the Town.
**Responsible Party**: Planning Division, Department of Conservation

## C. Air Quality

### Introduction

This section of the EIR describes the existing air quality conditions in the Town of Apple Valley, the vicinity, and regionally, and analyzes the potential health risks and emissions as the General Plan builds out. An evaluation of the potential impacts of the proposed General Plan and annexations relative to air quality conditions is contained herein. Mitigation measures that may be effective in reducing impacts are also set forth. A wide range of data and information, including regional air quality monitoring stations, local and regional scale planning and environmental documents, and consultation with the Mojave Desert Air Quality Management District, have been used in researching and analyzing the build out of the General Plan and annexations, and their potential air quality impacts.

### Thresholds of Significance/Criteria For Determining Significance

The following significant thresholds or criteria are derived from Appendix G of CEQA, which is used to determine if and to what extent a project may have a potentially significant impact on air quality. Build out of the General Plan for the Town of Apple Valley would have a significant effect on air quality if it is determined that the project will:

a. Conflict with or obstruct implementation of the applicable air quality plan.

b. Violate any air quality standards or contribute substantially to an existing or projected air quality violation.

c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

d. Expose sensitive receptors to substantial pollutant concentrations.

e. Create objectionable odors affecting a substantial number of people.

Sensitive receptors are persons or land uses that may be subject to respiratory stress and/or significant adverse impact as a result of exposure to air contaminants. The Air Resources Board designates people with cardiovascular and chronic respiratory diseases, children under 14, seniors over 65, and athletes as sensitive receptors. Accordingly, hospitals, nursing and retirement homes, schools, daycares, playgrounds, parks, athletic facilities, and residential and hotel/motel facilities are all considered sensitive land uses.

MDAQMD Thresholds[1]

In accordance with Mojave Desert Air Quality Management District (MDAQMD), any project will have significant air quality impacts if it exceeds those thresholds set forth in Table III-1 below:

**Table III-1**
**Emissions Thresholds for MDAQMD**

| Criteria Pollutant | Annual Threshold (tons) | Daily Threshold (pounds) |
|---|---|---|
| Carbon Monoxide (CO) | 100 | 548 |
| Oxides of Nitrogen (NOx) | 25 | 137 |
| Volatile Organic Compounds (VOC) | 25 | 137 |
| Oxides of Sulfur (SOx) | 25 | 137 |
| Particulate Matter (PM10) | 15 | 82 |

In addition, a project may be found to have significant air quality impacts if it generates a violation of any ambient air quality standard when added to the local background; and/or, does not conform with the applicable attainment or maintenance plan(s); and/or, exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million; and/or a Hazard Index (HI) (non-cancerous) greater than or equal to one (1). It should be noted that the above mentioned significance thresholds are not applicable to all projects and the District individually determines whether a project should be evaluated under these thresholds.

It should be noted that the above Table is intended for specific projects and is not necessarily applicable to the General Plan level analysis presented in this programmatic EIR. Nonetheless, in order to make a significance determination, these thresholds are used.

Global Warming and Climate Change

Assembly Bill 32, signed in 2006, requires the Air Resources Board (ARB) to develop regulation on how the state will combat global warming. On December 6, 2007, ARB approved the statewide greenhouse gas limit for carbon dioxide equivalent in the amount of 427 million metric tons. Although this statewide standard has been established, criteria for determining project specific emission levels have not yet been defined. To date the ARB, Environmental Protection Agency (EPA), and other regulatory agencies have not adopted thresholds to analyze project level impacts on climate change. In the absence of published CEQA thresholds for emissions of greenhouse gases, impacts would be considered significant if it were determined that the project interferes with the goals of AB 32.

The Global Warming Solutions Act (AB 32) requires the state to cut GHG emission to 1990 levels by the year 2020. Therefore, for the purpose of the following analysis, impacts associated

[1] "California Environmental Quality Act (CEQA) and Federal Conformity Guidelines," prepared by MDAQMD in June 2007.

with GHG emissions would be significant if GHG levels emitted by the project interfere with the ability of AB 32 to achieve the intended reductions by 2020.

Conformity Impacts[2]

A project is non-conforming if it conflicts or delays implementation of any attainment or maintenance plan. A project is conforming if it complies with all applicable District rules and regulations, complies with all proposed control measures that are not yet adopted from the applicable plan(s), and is consistent with the growth forecasts in the applicable plan(s) (or is directly included in the applicable plan). Conformity with growth forecasts can be established by demonstrating that the project is consistent with the land use plan that was used to generate the growth forecast. An example of an inconsistent project would be one that increases the gross number of dwelling units, increases the number of trips, and/or increases the overall vehicle miles traveled in an affected area (relative to the applicable land use plan).

### 1. Existing Conditions

Air quality is one of the most important issues associated with public health and safety. In the Town of Apple Valley air quality has exceeded state and federal standards for some pollutants in the past. Continued implementation of air quality management programs and local commitment to reducing air pollutants will have long-term beneficial impacts on public health and safety.

Local development and population growth, traffic, construction activities, and various site disturbances in the Town contribute to the air quality. Although air pollution is emitted from various sources locally, some of the degradation of air quality can be attributed to sources outside of the Mojave Desert Air Basin (MDAB), in which Apple Valley is located, including air basins to the west in Los Angeles County, to the southwest in Riverside County and regionally in San Bernardino County.

**Climatic Conditions and Air Quality**

Within a particular locale, air quality is a function of the amount of pollutants emitted and dispersed as well as the climatic, meteorological, and geophysical conditions that reduce or enhance the formation of pollutants. Meteorological conditions in Apple Valley are largely attributed to its geographic setting. Surrounding mountains effectively isolate the Town from moderating coastal influences and create a hot and dry desert environment. Strong winds out of the west and southwest from 5 to 10 knots per hour are common and occur due to the buildup of a thermal low pressure area. Aeolian processes (erosion caused by wind) sweep up, suspend and transport large quantities of sand and dust, reducing visibility, damaging property and constituting a significant health threat.

Temperatures in the low lying areas of Apple Valley range from the lower teens during winter months to highs above 100ºF during summer months. In the Apple Valley area the average annual rainfall is approximately 7.5 inches, with higher mountain slopes receiving as much as 30

[2] "California Environmental Quality Act (CEQA) and Federal Conformity Guidelines," prepared by MDAQMD in June 2007.

inches of rainfall per year. Precipitation is often short and intense in the adjacent mountains; therefore, torrential run-off may occur, with considerable sediment deposition on the valley floor.

Natural vegetation in the Town and region is sparse and widely spaced, thereby exposing surface soils to wind. The area is frequently subjected to strong winds, causing sand and dust to become airborne. This condition, known as blowsand, poses an often destructive environmental hazard. In addition to health problems associated with the presence of dust particles in the air, dust storms reduce highway and air traffic visibility.

During the past few decades, the region has experienced a decline in air quality as a result of increasing development and population growth, traffic, construction activity and various site disturbances.

**Air Quality Management and Regulation**

Federal and state government air quality standards have been established to monitor and regulate a variety of air pollutants and to assure that people and the environment are not adversely impacted by poor air quality.

The federal Clean Air Act (CAA), initially passed by Congress in 1963 and subsequently amended, is a federal law intended to ensure that all Americans have the same basic health and environmental protections. The law establishes national ambient air quality standards (NAAQS) for six principal ("criteria") pollutants and requires that each state adopt a State Implementation Plan (SIP) that provides for the enforcement of ambient air quality standards within that state.

The California Clean Air Act (CCAA) was signed into law in 1988 and amended in 1992. It establishes ambient air quality standards and attainment dates that are more stringent than those established under the federal CAA. The California Air Resources Board (CARB) is the state agency responsible for implementing the CCAA. For areas in non-compliance with federal standards, a SIP may be prepared to help regional air quality management districts meet the federal and state ambient air quality standards by the deadlines specified in the CAA, and emission reduction targets of the CCAA. The severity of a region's air pollution determines required emission reductions and attainment deadlines.

The Air Resources Board (ARB) approved the State Area Designations for criteria pollutants and it became effective in July of 2007. ARB sets area designations for nine criteria pollutants: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter, sulfates, lead, hydrogen sulfide, and visibility reducing particles.

The Mojave Desert Air Quality Management District (MDAQMD**)** is responsible for regulating air quality within the Mojave Desert Air Basin (Basin), which includes the Town of Apple Valley, the Sphere of Influence, and neighboring communities within San Bernardino County and the northeastern portion of Riverside County. MDAQMD is responsible for leading the

regional effort to attain state and national air quality standards, and for the development and implementation of various attainment plans.

**Primary and Secondary Pollutants**

Air pollutants are generally classified into two categories: primary and secondary pollutants. Primary pollutants are a direct consequence of the combustion of petroleum and other fuels, and produce oxides of carbon, sulfur, nitrogen and a number of reactive hydrocarbons and suspended particulates. Primary pollutants typically affect only local areas, and do not undergo chemical modification or further dispersion. Pollutants that undergo chemical changes after emission are referred to as secondary pollutants. These pollutants disperse and undergo chemical changes under conditions of high ambient temperatures and high rates of solar insolation. Termed oxidants, principal secondary pollutants include ozone, peroxynitrates, nitrogen dioxide, and chemical aerosols.

**Criteria Pollutants**

Criteria pollutants are air contaminants for which air quality standards currently exist, including carbon monoxide, nitrogen dioxide, ozone, lead, particulate matter (PM10 and PM2.5), and sulfur dioxide. Following is a brief description of each pollutant and associated health impacts.

Carbon Monoxide (CO)
Carbon monoxide is a colorless, odorless, toxic gas and a byproduct from the partial combustion of fossil fuels, most notably from automobiles and other motor vehicles. Carbon monoxide passes through the lungs directly into the blood stream, reducing the amount of oxygen reaching the vital organs, such as the heart, brain and tissues. In high concentrations, carbon monoxide can contribute to the development of heart disease, anemia, and impaired psychological behavior.

Ozone ($O_3$)
Ozone is a pungent, colorless, toxic gas that is formed when byproducts of the internal combustion engine react in the presence of ultraviolet sunlight. Ozone is the main component of photochemical smog. Although some ozone is produced locally, most ozone pollutants and precursors enter the Basin via coastal winds from major metropolitan areas such as Los Angeles, and other areas within the South Coast Air Quality Management Basin (SCAQMB). Prolonged exposure to ozone can result in diminished breathing capacity, increased sensitivity to infections, and inflammation of lung tissue.

Nitrogen Dioxide ($NO_2$)
Nitric oxide (NO) and Nitrogen Dioxide ($NO_2$) are the primary oxides of nitrogen that are formed as a byproduct of combustion, thermal power stations, and pulp mills. These compounds act as the primary receptors of ultraviolet light initiating the photochemical reactions to produce smog. Nitric oxide combines with oxygen in the presence of reactive hydrocarbons and sunlight to form nitrogen dioxide and ozone. Oxides of nitrogen are contributors to other air pollution

problems including high levels of fine particulate matter, poor visibility, and acid deposition. Exposure to nitrogen dioxide can result in airway constriction and diminish lung capacity.

Lead (Pb)
Lead occurs in the atmosphere as particulate matter resulting from the manufacturing of batteries, paint, ink, and ammunition. In recent years, the elimination of leaded gasoline has reduced hazards associated with airborne lead. Exposure to lead can result in anemia, kidney disease, gastrointestinal dysfunction, and neuromuscular and neurological disorders.

Suspended Particulate Matter ($PM_{10}$ and $PM_{2.5}$)
Suspended particulate matter consists of fine, suspended particles of soil and mineral dust, soot and smoke, and aerosols, many of which are byproducts of fuel combustion, tire wear, and natural wind erosion. Particulate matter of ten microns or smaller in diameter are referred to as $PM_{10}$, whereas $PM_{2.5}$ consists of particles smaller than 2.5 microns.

$PM_{10}$ and $PM_{2.5}$ may be generated by direct particle erosion and fragmentation associated with the natural process of sand migration, as well as grading and other activities associated with construction. Eroded particles may be further pulverized by motor vehicles on roadways, where they are re-suspended in the air. Elevated PM levels are associated with an increase in respiratory infections and occurrences of asthma attacks. The elderly, children, and adults with respiratory or cardiovascular disease are most susceptible to the effects of suspended particulate matter.

Sulfur Dioxide ($SO_2$)
Sulfur dioxide results from the combustion of high-sulfur content fuels, such as coal and petroleum. Sources include motor vehicle fuel combustion, chemical manufacturing plants, and sulfur recovery plants. Sulfur dioxide is a colorless, pungent, extremely irritating gas that can result in airway constriction and severe breathing difficulties in asthmatics. High levels of exposure can cause fluid accumulation in the lungs and lung tissue damage.

**State and Federal Air Quality Standards**

The state and federal governments have each established ambient air quality standards for each of the above mentioned criteria pollutants. National standards established by the federal government include primary and secondary standards. Primary standards set limits to protect public health, including the health of sensitive populations, such as asthmatics, children, and the elderly. Secondary standards protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

The following Table describes state and federal (primary) air quality standards. State standards are generally more restrictive than federal standards.

**Table III-2**
**State and Federal Ambient Air Quality Standards**

| Pollutant | State Standards | | Federal Standards | |
|---|---|---|---|---|
| | Averaging Time | Concentration | Averaging Time | Concentration |
| Ozone | 1 hour | 0.09 ppm | 1 hour | 0.12 ppm |
| | 8 hour | 0.07 ppm | 8 hour | 0.08 ppm |
| Carbon Monoxide | 1 hour | 20.0 ppm | 1 hour | 35.0 ppm |
| | 8 hours | 9.0 ppm | 8 hours | 9.0 ppm |
| Nitrogen Dioxide | 1 hour | 0.18 ppm | AAM | 0.053 ppm |
| (NO2) | AAM | 0.030 ppm | | |
| Sulfur Dioxide | 1 hour | 0.25 ppm | AAM | 0.03 ppm |
| | 24 hours | 0.04 ppm | 24 hours | 0.14 ppm |
| Particulate Matter | 24 hours | 50 $\mu g/m^3$ | 24 hours | 150 $\mu g/m^3$ |
| (PM10) | AAM | 20 $\mu g/m^3$ | AAM | 50 $\mu g/m^3$ |
| Particulate Matter | AAM | 12 $\mu g/m^3$ | AAM | 15 $\mu g/m^3$ |
| (PM2.5) | | | 24 hours | 35 $\mu g/m^3$ |

Notes: ppm = parts per million ; µg/ m3 = micrograms per cubic meter of air;
AAM = Annual Arithmetic Mean;
Source: California Air Resources Board, March 2008

**Regional Pollutants of Concern**

The Mojave Desert Air Basin exceeds state and federal standards for fugitive dust ($PM_{10}$), is unclassified for $PM_{2.5,}$ and "Non-attainment; classified Severe17" for ozone. State and federal standards for carbon monoxide, nitrogen oxides, sulfur dioxide, and lead are in attainment within the Town of Apple Valley and the Mojave Desert Air Basin.

To determine whether existing ambient air quality complies with the standards shown above, MDAQMD operates and maintains regional air quality monitoring stations throughout its jurisdiction. The Victorville Monitoring Station is the closest air quality monitoring station in proximity to Apple Valley.

MDAQMD has general responsibility to control emissions of air contaminants and prevent endangerment to public health, in addition to meeting federal and state air quality standards for criteria air pollutants. Consequently, MDAQMD also regulates pollutants other than criteria pollutants including Toxic Air Contaminants (TACs), which are further discussed below.

Ozone
The Mojave Desert Air Basin, which has a history of exceeding state and federal ozone standards, is currently designated as a "Non-attainment; classified Severe17" ozone non-attainment area under the federal Clean Air Act. The 2008 MDAQMD Ozone Attainment Plan is intended to assure that the Basin achieves attainment of the federal 8-hour NAAQS for ozone by 2021.

Ozone in the MDAB is generated by a variety of local and regional sources. These include motor vehicles from regional and local roadways, as well as other local sources. In addition, the region is impacted by prevailing daytime breezes from coastal areas to the west that may transport ozone and its precursor emissions easterly from the nearby South Coast Air Basin into the Mojave Desert Air Basin.

According to the Victorville Monitoring Station, data from 2000 through 2008 indicate that ozone levels in the area were exceeded for the State 1-hour standard an average of 14 days a year. The Federal 1-hour ozone standard was exceeded on 8 days over the 9 year period from 2000 through 2007, and the Federal 8-hour standard was exceeded an average of 12 days per year.[3] See Table III-3 below.

**Table III-3**
**Victorville Air Quality Trends**
**Exceedance of Ozone Standards**

| Monitoring Station | Year | Max. Concentration in 1 Hour | No. Days Standard Exceeded | | |
|---|---|---|---|---|---|
| | | | Federal[1] 1hr/8hr | | State[2] |
| Victorville | 2000 | 0.114 ppm | 0 | 12 | 15 |
| | 2001 | 0.114 ppm | 0 | 12 | 15 |
| | 2002 | 0.127 ppm | 3 | 27 | 30 |
| | 2003 | 0.145 ppm | 2 | 19 | 22 |
| | 2004 | 0.111 ppm | 0 | 4 | 8 |
| | 2005 | 0.131 ppm | 2 | 12 | 16 |
| | 2006 | 0.136 ppm | 1 | 6 | 9 |
| | 2007 | 0.107 ppm | 0 | 6 | 7 |
| As of June | 2008* | 0.109 ppm | N/A | 10 | 6 |

[1] = > 0.12 parts per million in 1 hour; [2] = > 0.09 parts per million in 1 hour
* Less than 12 full months of data; may not be representative.
Source: Source: "Exceedances of Standards and Maximum Concentrations," prepared by Mojave Desert Air Quality Management District, 2008.

$PM_{10}$ Emissions

The region has a history of elevated $PM_{10}$ emissions, which are the result of both human activities, such as vehicle use and construction activity, and natural occurrences, such as windstorms. Particulate matter in the Town of Apple Valley is generated by vehicle emissions, construction, and fugitive dust. One of the state's largest contributors of particulate matter, Cemex, is located in the Sphere of Influence for Apple Valley.[4] Cemex operates the Black Mountain Quarry for the production of cement and aggregate. The facility is estimated to emit 277 tons per year of $PM_{10}$ and 183 tons per year of $PM_{2.5}$.

[3] "Air Quality Management District: Exceedances of Standards and Maximum Concentrations," Victorville Monitoring Station, MDAQMD, 2000-2008.

[4] "High Emitting Facilities for the Mojave Desert Air Basin Appendix A," prepared by the California Air Resources Board, 2007.

The Town relies on applicable state code and AQMD Rules, including Rule 403 (Fugitive Dust), for authority to enforce fugitive dust compliance as needed, since it does not have its own fugitive dust ordinance. The Town's Municipal Code does include provisions for Off-Road dust generation by prohibiting nuisance dust or dirt emissions (Chapter 11.30, Section 020).

As seen in Table III-4 below, for the period between 2000 and 2007, the 24-hour state standards for $PM_{10}$ levels were exceeded on an average of approximately 4 days per year. Although state standards are more stringent than federal standards, $PM_{10}$ levels also exceeded federal standards, but only on one (1) day during the 9-year period. The Basin is currently designated as a $PM_{10}$ non-attainment area for both state and federal standards.

**Table III-4**
**Victorville Air Quality Monitoring**
**Exceedance of $PM_{10}$ Standards**

| Monitoring Station | Year | Maximum Concentration ($\mu g/m^3$/24hours) | No. (%) Samples Exceeding 24-hr. Standards | | Annual Average ($\mu g/m^3$) | |
|---|---|---|---|---|---|---|
| | | | Federal[1] | State[2] | AAM[3] | AGM[4] |
| Victorville | 2000 | 82 | 0 | 6 | 33.7 | 30.7 |
| | 2001 | 53 | 0 | 1 | 29.1 | 26.7 |
| | 2002 | 98 | 0 | 9 | 34.5 | 31.3 |
| | 2003 | 181 | 1 | 5 | 32.5 | 27.9 |
| | 2004 | 56 | 0 | 1 | 28.5 | 25.3 |
| | 2005 | 61 | 0 | 1 | 28.9 | 24.6 |
| | 2006 | 63 | 0 | 7 | 33.8 | 30.9 |
| | 2007 | 359* | 0 | 5 | 39.0 | 30.7 |

Source: "Exceedances of Standards and Maximum Concentrations," prepared by Mojave Desert Air Quality Management District, 2008.
* 2007 includes one Federal exceptional event on April 12, 2007 for Victorville.

$PM_{2.5}$ Emissions

Federal and state standards have been developed to regulate fine particulate matter smaller than 2.5 microns in diameter. To achieve federal attainment, a jurisdiction must provide the Environmental Protection Agency (EPA) with air quality monitoring data that does not violate the fine particle standards over a three-year period. In March of 2007 the EPA issued the Clean Air Fine Particle Implementation Rule, which describes the framework and requirements that state and local governments must achieve in developing their $PM_{2.5}$ implementation plans. The Rule requires that states meet the $PM_{2.5}$ standards by 2010, but may grant attainment extensions of up to 5 years. Therefore, the 2007 Rule requires that all states meet federal standards for attainment no later than 2015.

The Mojave Desert Air Basin and the Town of Apple Valley are classified as being in non-attainment for $PM_{2.5}$, based on the 2007 State Area Designations. Although the region is classified as being in non-attainment for the state standard, the region is classified as being in attainment/unclassifiable for the national standard, based on 2006 national area designations,

despite the air quality monitoring data from the Victorville station that shows zero (0) exceedances for either the state or federal 24 hour standard from 2000 through 2007.

**Table III-5**
**Victorville Air Quality Monitoring**
**Exceedance of $PM_{2.5}$ Standards**

| Monitoring Station | Year | Maximum Concentration ($\mu g/m^3$/24hours) | No. (%) Samples Exceeding 24-hr. Standards | | Annual Average ($\mu g/m^3$) | |
|---|---|---|---|---|---|---|
| | | | Federal[1] | State[2] | AAM[3] | AGM[4] |
| Victorville | 2000 | 31 | 0 | 0 | 13.4 | 12.6 |
| | 2001 | 31 | 0 | 0 | 11.6 | 10.8 |
| | 2002 | 38 | 0 | 0 | 13.8 | 12.3 |
| | 2003 | 28 | 0 | 0 | 11.4 | 10.5 |
| | 2004 | 34 | 0 | 0 | 10.8 | 9.8 |
| | 2005 | 27 | 0 | 0 | 9.5 | 8.2 |
| | 2006 | 22 | 0 | 0 | 10.3 | 9.5 |
| | 2007 | 28 | 0 | 0 | 8.5 | 7.3 |

Source: "Exceedances of Standards and Maximum Concentrations," prepared by Mojave Desert Air Quality Management District, 2008.

Toxic Air Contaminants

Toxic Air Contaminants (TACs) generation and emissions are regulated in the MDAQMD through the Toxic Air Contamination Control Program. TACs include substances such as asbestos, benzene, beryllium, inorganic arsenic, mercury, vinyl chloride, and any other air contaminants not addressed by the national ambient air pollution program. They are generated by a variety of sources, such as electroplating and anodizing operations, gasoline distribution facilities, petroleum refineries, and others.

The primary health concern associated with TACs is their carcinogenic potential. Mobile source components comprise the dominant risk, with about 70 percent of the risk attributed to diesel particulate emissions, 10 percent attributed to 1,3-Butadiene,[5] and approximately 20 percent to other toxics associated with mobile sources.[6]

Certain areas of the Town are located in an area subject to substantial exposure to mobile source emissions, including diesel-fueled motor vehicles. Three roadway segments within Apple Valley are projected to carry more than 60,000 vehicle trips per day at build out. These include Dale Evans Parkway south of the proposed High Desert Corridor, Highway 18 west of Apple Valley Road, and Bear Valley Road west Apple Valley Road[7]. (Also see Section III-O, Traffic and Circulation).

5 An industrial chemical used as a binding agent in the production of synthetic rubber.

6 "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles," prepared by CARB, October 2000.

7 "Town of Apple Valley General Plan Circulation Element Traffic Study," prepared by Urban Crossroads, November 10, 2008.

## Climate Change and Global Warming

Air quality is a concern due to human health issues, and because air pollutants are thought to be contributing to global warming and climate change. Air pollution is defined as a chemical, physical or biological process that modifies the characteristics of the atmosphere. The primary contributor to air pollution is the burning of fossil fuels through the use of automobiles, power and heat generators, and industrial processes. The byproduct from the combustion of fossil fuels can contain a number of air polluting substances. These emissions are responsible for the poor air quality that is evident in industrial centers worldwide.

Some air polluting agents are also greenhouse gases (GHG), such as carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), and fluorinated gases (hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride), which are released into the atmosphere through natural processes and human activities. These gases are termed greenhouse gases due to their shared characteristic of trapping heat, and may be responsible for the global average increase in surface temperatures of 1.0-1.7°F that were observed during the 20th century[8]. The quantity of greenhouse gases in the atmosphere has increased drastically over a relatively short period. For example, by 2005 the concentration of $CO_2$ in the atmosphere had increased by 36%, methane by 148%, and nitrous oxide by 18% since pre-industrial times[9].

Carbon dioxide is the primary greenhouse gas that is stimulating concern, due to current and projected levels, and the highly correlated temperature regression curve; temperatures rise as carbon dioxide levels rise. Currently, carbon dioxide concentrations in the atmosphere are 382 parts per million (ppm). Comparatively, prior to the Industrial Revolution, about 250 years ago, $CO_2$ levels were 278 ppm; by comparison, over the past 650,000 years carbon dioxide levels have fluctuated between 180 and 300 ppm,[10] making present day $CO_2$ levels greater than at any point in the past 650,000 years.

There is much debate over what the effects of climate change will be, but there is a general consensus that the levels of emissions need to be reduced in order to minimize air pollution and limit the amount of carbon dioxide that is released. Carbon dioxide levels (382 ppm in 2006) are projected to increase to at least 540 ppm, and as much as 970 ppm, by the year 2100[11]. Currently, there are limited incentives for reducing emissions and few laws that require reductions. However, some regulations have been adopted.

California was the first state to establish regulations that require the reduction of emissions from motor vehicles. On September 24, 2004, the California Air Resources Board adopted a bill that requires all 2009 and later vehicles to reduce their greenhouse gas emissions by about 30% by

8 "Working Group III contribution to the Intergovernmental Panel on Climate Change Fourth Assessment Report,"; Climate Change 2007: Mitigation of Climate Change.

9 U.S. Environmental Protection Agency, Climate Change, Atmosphere Changes; http://www.epa.gov/climatechange/science/recentac.html

10 "Working Group III contribution to the Intergovernmental Panel on Climate Change Fourth Assessment Report,"; Climate Change 2007: Mitigation of Climate Change.

11 *Ibid*.

the year 2016[12]. In addition, the California Global Warming Solutions Act of 2006 has been passed in order to comprehensively limit GHG emissions at the state level by establishing an annual reporting program of GHG emissions for significant sources and sets emissions limits to cut the state's GHG emissions to 1990 levels by 2020. It is anticipated that additional regulations will be adopted in future years as the effects of global warming become more problematic. In the interim it is prudent to incorporate air pollution reduction techniques into project design and land use decisions.

The existing GHG emissions within the Town and Annexation areas are estimated in the Table below.

**Table III-6**
**Existing GHG Summary**

| Emission Source | CO2 Equivalent Metric Tons | CO2 Equivalent Million Metric Tons | Pounds Per Day |
|---|---|---|---|
| Electricity | 116,002.06 | 0.116 | 700,659.65 |
| Natural Gas | 127,447.76 | 0.127 | 769,792.39 |
| Moving Source | 357,771.29 | 0.358 | 2,160,960.72 |
| Water Transport | 48,408.88 | 0.048 | 292,392.64 |
| **Total** | **649,630.00** | **0.650** | **3,923,805.40** |

### 2. Impacts

The potential for air quality degradation in the Town of Apple Valley and region will increase with implementation of the proposed General Plan. Air pollutants will come from a variety of sources including mining operations, grading activities, off-road vehicle activity, construction, vehicle emissions and high winds. Pollutant emissions generated by vehicular traffic are expected to result in the most significant impacts. Operation of existing and new facilities, which require the utilization of natural gas and electricity, will also contribute to the degradation of air quality. Major sources of pollutants associated with build out of the General Plan are described below, and projected emissions are quantified where possible. Although the Town of Apple Valley is located within the Mojave Desert Air Basin, factors used to project air quality emissions are from the CEQA Air Quality Handbook, which was prepared by the South Cost Air Quality Management District. The MDAQMD accepts the use of emission factors as set forth and adopted by SCAQMD.

**Mining Operations**

Mineral extraction operations and associated processes generate fugitive dust and emit other criteria pollutants into the atmosphere, which adversely impact local and regional air quality. The Town of Apple Valley, Sphere of Influence, and the surrounding region have identified valuable mineral deposits, some of which are actively being mined. In order to minimize fugitive dust

[12] http://www.ucsusa.org/clean_vehicles/vehicles_health/californias-global-warming-vehicle-law.html

generation resulting from mineral extraction facilities operating within the Town's jurisdiction, a number of policies and programs have been developed to regulate extraction procedures and reduce impacts to air quality. Also see Section III-K, Mineral Resources.

**Compliance with MDAQMD Ozone Attainment Plan**

The Ozone attainment plan utilizes land use projections and associated growth rates from the previous General Plan land use plan (1998). The updated General Plan and associated land use designations result in increased residential densities, and greater commercial/retail and industrial development. It should be mentioned that the updated General Plan substantially increases the employment opportunities within Town limits, and the jobs to housing ratio (Please see Section III-P, Socio-Economic Resources). Nonetheless, build out of the updated General Plan may interfere or delay implementation of the Ozone attainment plan, since it increases densities and is therefore non-conforming. This represents a significant impact. There are no mitigation measures available to reduce this impact to less than significant levels. As a result, the build out of the General Plan, and of Annexations 2008-001 and 2008-002 will result in a significant and unavoidable impact to air quality management planning.

**Fugitive Dust**

Fugitive dust is generated and emitted into the atmosphere during grading and disturbance of undeveloped land and construction of new facilities. Factors that affect the amount of fugitive dust generated as a result of site disturbance include soil characteristics, the number of acres disturbed, duration of grading activities, and climatic conditions. Grading and construction equipment also generate fugitive dust. However, quantification of fugitive dust impacts from equipment will need to be analyzed on a per project basis.

A general estimate of future, long-term fugitive dust emission generated by grading activities on vacant, but developable, acres in the planning area is provided below. The calculation is based on a fugitive dust generation factor for grading activities of 26.4 pounds per day per acre, as provided by South Coast Air Quality Management District.

**Table III-7**
**Fugitive Dust Potential at General Plan Build Out**

| Total Acres Disturbed at General Plan Build Out | Fugitive Dust Generation Factor | Total Potential Dust Generation |
|---|---|---|
| 29,340.9 acres[1] | 26.4 lbs./day/acre | 774,599.76 lbs |

[1] Includes all vacant acres in General Plan Study Area (32,161.5 acres), except vacant Open Space acres (2,820.6 acres), which will remain undeveloped and will not be graded.
Source: Table A9-9, "CEQA Air Quality Handbook," South Coast Air Quality Management District, April 1993.

The figures shown in Table III-7, above, represent a conservative estimate that assumes all vacant, but potentially developable acres, will be graded at once. Actual fugitive dust emissions are expected to be much less, as properties develop individually over time. Although fugitive dust will be produced over the course of General Plan build out, emissions from site grading and

disturbance are temporary and will be limited to the construction period. Compliance with dust control measures listed in MDAQMD Rule 403.2 will reduce air quality impacts from fugitive dust to meet established $PM_{10}$ standards. Rule 403.2 requires several operating conditions to assure that fugitive dust emissions are minimized. A wide range of mitigation measures can be applied to reduce fugitive dust emissions, these are further discussed below, under Mitigation Measures.

**Construction-Related Emissions**

It is beyond the scope of this EIR analysis to project pollutant emissions generated by the construction of new buildings and improvements for project-specific activities. Such a calculation would require knowledge of development plans, building footprints, engineering strategies, phasing schedules, and other detailed criteria for each developable parcel. For most vacant parcels, such development plans have not yet been proposed, and the Town has no direct control over private sector development, local financing, or developer schedules. Air quality impacts resulting from construction activities could be significant and should be analyzed in detail, as each specific development is proposed and site-specific environmental documents are prepared. At that time, project-specific mitigation measures will be identified, as needed, to reduce potential impacts to acceptable levels.

**Power Plant Emissions**

Emissions from power plants consist primarily of combustion products, such as carbon monoxide, oxides of nitrogen, sulfur oxides, particulate matter and reactive organic gases (ROG). Electrical power plants that serve the Town of Apple Valley are located outside the Mojave Desert Air Basin (MDAB) and region. Therefore, most of the pollutants associated with energy production will be emitted outside the region.

An estimate of power plant emissions associated with annual electricity consumption for all residential dwelling units at General Plan build out is provided in Table III-8 below. On average, the amount of electrical energy necessary to power lights, appliances, and all other household equipment for a year is estimated at 5,626.5 kilowatt-hours, per the SCAQMD EIR Handbook.[13] The total annual electricity usage is then multiplied by the SCAQMD factor for each criteria pollutant to determine the projected annual and daily emissions.

It should be reiterated that emissions associated with the use of energy are produced outside of the MDAB. As quantification protocol become more standardized, accounting for these emissions locally may actually be double counting, since energy producers will have included energy demand generated by the Town as part of their overall energy production, which also recognizes the associated air quality emissions that will be produced. Nonetheless, the following Tables project the potential air quality emissions that may be generated as a result of energy production.

[13] Table A9-11-A, "CEQA Air Quality Handbook," prepared by the South Coast Air Quality Management District, April 1993.

**Table III-8**
**Power Plant Emission Projections**
**For Residential Development at General Plan Build Out**
**(lbs. per 1,000 kwh)**

| Annual Electric Usage Factor (kwh/unit/year) | Total No. Dwelling Units | Total Annual Electricity Usage (kwh) |
|---|---|---|
| 5,626.50 | 63,749 | 358,683,749 |

| | Carbon Monoxide | Nitrogen Oxides | Sulfur Oxides | Particulates | ROGs |
|---|---|---|---|---|---|
| **Factor** | 0.20 | 1.15 | 0.12 | 0.04 | 0.01 |
| **Lbs./Year** | 71,736.75 | 412,486.31 | 43,042.05 | 14,347.35 | 3,586.84 |
| **Lbs./Day** | 196.54 | 1,130.10 | 117.92 | 39.31 | 9.83 |

Based on per unit usage and emissions factors provided in Tables A9-11-A and A9-11-B, "CEQA Air Quality Handbook," prepared by the South Coast Air Quality Management District, April 1993. Assumes continued availability and use of natural gas in power plants and an average contribution from hydro-electric sources. Represents total pounds emitted per year by all residential development at buildout.

The following emissions tables for commercial and industrial electrical consumption are presented below. Electrical power usage factors are provided on a per square foot basis, depending upon land use type. For example, the "CEQA Air Quality Handbook" offers several electrical usage factors for commercial development; those used in this analysis include retail, restaurant, office, food store, and hotel/motel. It is assumed that retail uses will compose approximately 64%, offices 20%, food stores 8%, restaurants 4%, and hotels/motels 4% of all commercial development at General Plan build out.

**Table III-9**
**Power Plant Emission Projections**
**For Commercial Development at General Plan Build Out**
**(lbs. per 1,000 kwh)**

**Estimated Annual Electric Usage for Commercial (kwh): 924,262,572**

| | Carbon Monoxide | Nitrogen Oxides | Sulfur Oxides | Particulates | ROGs |
|---|---|---|---|---|---|
| **Factor** | 0.20 | 1.15 | 0.12 | 0.04 | 0.01 |
| **Lbs./Year** | 184,852.51 | 1,062,901.96 | 110,911.51 | 36,970.50 | 9,242.63 |
| **Lbs./Day** | 506.45 | 2,912.06 | 303.87 | 101.29 | 25.32 |

Source: Tables A9-11-A and A9-11-B, "CEQA Air Quality Handbook," prepared by the South Coast Air Quality Management District, April 1993. Assumes continued availability and use of natural gas in power plants and an average contribution from hydro-electric sources. Represents total pounds emitted per year by all commercial development at buildout including 33,190,890 s.f. of retail, 10,372,153 s.f. of office, 4,148,861 s.f. of food stores, and 2,074,431 s.f. each of restaurant and hotel/motel land uses.

Industrial electrical consumption at General Plan build out is estimated by applying the annual usage factors for "warehouse" and "miscellaneous" development. For the purposes of this analysis, it is assumed that warehouse development will account for approximately 25% of all industrial development in the Town, and the remaining 75% of industrial development will be

considered "miscellaneous." Projected emissions generated by electrical consumption for all industrial land use designations are described in the following table.

**Table III-10**
**Power Plant Emission Projections**
**For Industrial Development at General Plan Build Out**
**(lbs. per 1,000 kwh)**

| **Estimated Annual Electric Usage for Industrial (kwh):** | | | | **525,032,571** | |
|---|---|---|---|---|---|
| | **Carbon Monoxide** | **Nitrogen Oxides** | **Sulfur Oxides** | **Particulates** | **ROGs** |
| **Factor** | 0.20 | 1.15 | 0.12 | 0.04 | 0.01 |
| **Lbs./Year** | 105,006.51 | 603,787.46 | 63,003.91 | 21,001.30 | 5,250.33 |
| **Lbs./Day** | 287.69 | 1,654.21 | 172.61 | 57.54 | 14.38 |

Source: Tables A9-11-A and A9-11-B, "CEQA Air Quality Handbook," prepared by the South Coast Air Quality Management District, April 1993. Assumes continued availability and use of natural gas in power plants and an average contribution from hydro-electric sources. Represents total pounds emitted per year by all industrial development at buildout assuming 43,935,780 s.f of miscellaneous industrial land use and 14,645,260 s.f of warehouse land use.

**Natural Gas Emissions**

The following Tables, III-10 through III-12, show estimates of air pollutant emissions resulting from the consumption of natural gas at build out of the proposed General Plan. Natural gas emissions are calculated based on average monthly consumption factors defaults as set forth in the URBEMIS 2007 Version 9.2.4 model. The pollutant factors vary for residential and non-residential users. The following natural gas emission assume that all indoor heating uses100% natural gas. The use of wood stoves, hearths, fireplaces, or alternative heating options for indoor heating would generate different emissions.

**Table III-11**
**Natural Gas Emissions**
**for Residential Development at General Plan Build Out**
**(Lbs. per $10^6$ cubic feet)**

| Unit Type | Natural Gas Factor (cf/unit/mo) | Total Dwelling Units | Total Monthly Natural Gas Consumption (cf/mo) |
|---|---|---|---|
| Single-family | 6,665.00 | 36,619 | 244,065,635 |
| Multi-family | 4,011.50 | 27,130 | 108,831,995 |
| | **Total:** | **63,749** | **352,897,630** |

| Pollutants | CO | NOx | SOx | PM10 | PM2.5 | ROGs | CO2 |
|---|---|---|---|---|---|---|---|
| Factor | 40.0 | 94.0 | 0.001 | 0.2 | 0.2 | 7.3 | 120,000 |
| Lbs./Year | 169,391 | 398,069 | 4.23 | 762 | 762 | 30,744 | 508,172,587 |
| Lbs./Day | 464 | 1,091 | 0.01 | 2.09 | 2.09 | 84.2 | 1,392,254 |

Source: Emission Factors are from Urbemis 2007 Version 9.2.4 default settings. Represents total pounds emitted per year by all residential development at build out as a result of natural gas combustion. Multi-family assumes medium density and mixed use only, single-family includes all other residential land uses.

**Table III-12**
**Natural Gas Emissions**
**for Commercial Development at General Plan Build Out**
**(Lbs. per $10^6$ cubic feet)**

| Unit Type | Natural Gas Factor (cf/unit/month) | Total Dwelling Units | Total Natural Gas Consumption (cf/month) |
|---|---|---|---|
| Retail/Commercial | 2.90 | 39,414,182 | 114,301,128 |
| Office Professional | 2.00 | 10,372,153 | 20,744,306 |
| Hotel/Motel | 4.80 | 2,074,431 | 9,957,269 |
| | **Total:** | **63,749** | **352,897,630** |

| Pollutants | CO | NOx | SOx | $PM_{10}$ | $PM_{2.5}$ | ROGs | CO2 |
|---|---|---|---|---|---|---|---|
| Factor | 84.0 | 100 | 0.001 | 0.18 | 0.18 | 7.26 | 120,000 |
| Lbs./Year | 146,163 | 174,003 | 1.74 | 313 | 313 | 12,633 | 208,803,892 |
| Lbs./Day | 400 | 477 | 0.005 | 0.86 | 0.86 | 34.6 | 572,066 |

Source: Emission Factors are from Urbemis 2007 Version 9.2.4 default settings. Represents total pounds emitted per year by all commercial development at buildout as a result of natural gas combustion. Assumes that office space occupies 20% and hotel/motel occupies 4% of all commercial land use square footage. The remaining square footage (76% of all commercial land use) represents 33,190,890 s.f of retail, 4,148,861 s.f. of food stores, and 2,074,431 s.f. of restaurant land uses

**Table III-13**
**Natural Gas Emissions for**
**Industrial Development at General Plan Build Out**
**(Lbs. per $10^6$ cubic feet)**

| Unit Type | Natural Gas Factor (cf/unit/month) | Total Square Footage | Total Natural Gas Consumption (cf/month) |
|---|---|---|---|
| Industrial | 4.8 | 58,581,040 | **281,188,992** |

| Pollutants | CO | NOx | SOx | PM10 | PM2.5 | ROGs | CO2 |
|---|---|---|---|---|---|---|---|
| Factor | 84 | 100 | 0.001 | 0.18 | 0.18 | 7.26 | 120,000 |
| Lbs./Year | 283,439 | 337,427 | 3.37 | 607 | 607 | 24,497 | 404,912,148 |
| Lbs./Day | 777 | 924 | 0.01 | 1.7 | 1.7 | 67 | 1,109,348 |

Source: Emission Factors are from Urbemis 2007 Version 9.2.4 default settings. Represents total pounds emitted per year by all industrial development at buildout as a result of natural gas combustion. Assumes industrial use of natural gas is comparable to highest rate of retail use, at 4.8 cf per month.

**Consumer Products**

The use of consumer products such as air fresheners, automotive products, household cleaners, and personal care products generate ROG emissions from daily use. URBEMIS 2007 Version 9.2.4 sets forth a per person factor of 0.0171 pounds per day. Therefore, build out of the General Plan has the potential to result in a maximum of 3,333.32 pounds of ROG per day from the use of consumer products. The project-specific thresholds for ROG of 137 pounds per day would be exceeded. Thus build out of the General Plan would generate unavoidable significant impacts to air quality as a result of ROG emissions. See the summary discussion below, which addresses these unavoidable impacts.

**Traffic Exhaust Emissions**

Analysis of the potential traffic and circulation aspects associated with build out of the General Plan involved the preparation of a comprehensive traffic impact study prepared by Urban Crossroads (see Appendix F). The traffic study indicates that build out of the General Plan is expected to generate approximately 1,577,731 two-way vehicle trips per day.

Based on SCAQMD methodologies accepted by MDAQMD, emission factors were compiled by running the California Air Resource Board EMFAC 2007 (Version 2.3) Burden Model. Total vehicle emissions are calculated by first identifying the total vehicle miles traveled per day (number of trips times the trip length), and then multiplying this figure by the emission factors, which are given in pounds per mile. Emission factors account for emissions from start, running, and idling exhaust. In addition, the ROG emission factors include diurnal, hot soak, running and resting emissions, and the $PM_{10}$ and $PM_{2.5}$ emission factors accounts for tire and brake wear.

Projections of the vehicle emissions associated with the build out of the General Plan are based on emission factors for passenger vehicles and delivery trucks for the year 2025. Improvements to combustion technology are expected to reduce vehicle emissions, including actual per mile

emissions, in both the near future and over the long-term. The following table provides the estimated daily emissions for year 2025, as a result of 17,039,495 miles traveled.

**Table III-14**
**Moving Exhaust Emission for all Land Uses**
**at General Plan Build Out**
**(Lbs./day)**

| Trip Type | Total Vehicle Trips/Day | Average Trip Length (miles) | Total Miles/Day |
|---|---|---|---|
| Home-Work | 288,977 | 11.5 | 3,323,236 |
| Home-Other | 469,940 | 6.02 | 2,829,039 |
| Work-Other | 420,540 | 9.07 | 3,814,298 |
| Other-Other | 398,274 | 5.66 | 2,254,231 |
| **Total** | **1,577,731** | | **12,220,803** |

| | CO | NOx | SOx | PM10 | PM2.5 | ROGs | CO2 |
|---|---|---|---|---|---|---|---|
| **Passenger Vehicles** | 41,048 | 3,455 | 128 | 1,159 | 769 | 5,215 | 13,303,199 |
| **Delivery Trucks** | 1,455 | 1,505 | 7 | 69 | 51 | 225 | 704,269 |
| **Total** | **42,503** | **4,960** | **135** | **1,229** | **820** | **5,440** | **14,007,469** |

Based on California Air Resources Board Highest EMFAC 2007 (Version 2.3) Emissions Factors for On-Road Vehicles, scenario year 2025. All the emission factors account for the emissions from start, running and idling exhaust. In addition, the ROG emission factors take into account diurnal, hot soak, running and resting emissions, and PM10 emission factor accounts for tire and brake wear. Passenger vehicles <8,500 pounds; delivery trucks >8,500 pounds. Vehicle mix accounts for 98% passenger vehicles and 2% delivery trucks.
Note: Total miles traveled per day are based on the 2-way trip estimates as set forth in the "Town of Apple Valley General Plan Circulation Element Traffic Study," Table 2-6: Town of Apple Valley Trip Generation Future Growth, prepared by Urban Crossroads, November 10, 2008. Average Trip Length assumes URBEMIS2007 Version 9.2 default setting for Southern California.

**Greenhouse Gas Emissions**

Build out of the General Plan has the potential to incrementally contribute to global climate change, primarily through the combustion of fossil fuels from automobiles as well as indirectly through the generation of electricity at power plants. These activities contribute to climate change and global warming by releasing air pollutants known as greenhouse gases (GHG).

Although CEQA has yet to establish significance thresholds for greenhouse gases, for the purposes of this analysis it was assumed that development activities and operations that interfere with the objectives of AB 32 would be considered to have a significant impact. As previously mentioned, AB 32 requires a coordinated effort to curb greenhouse gas emissions within the state of California. Specifically, the Bill requires the state board to adopt a statewide greenhouse gas emissions limit, so that by the year 2020 GHG emissions are at or below 1990 emission levels.

At build out of the General Plan, the annual $CO_2$ equivalent emission for indirect electricity use is estimated to be 660,713 metric tons, or 3.99 million pounds per day. Natural gas use is expected to average approximately 511,839 metric tons per year, or 3.09 million pounds per day.

Greenhouse gas emissions from moving sources are estimated to be 2.05 million metric tons of carbon dioxide equivalent per year, or 12.4 million pounds per day. In summary, build out of the General Plan is estimated to generate 3.2227 million metric tons of carbon dioxide equivalent per year, or 19.49 million pounds per day, as shown in Table III-15.

**Table III-15**
**Annual GHG Summary**
**at Build Out of the General Plan**

| Emission Source | CO2 Equivalent Metric Tons | CO2 Equivalent Million Metric Tons | Million Pounds Per Day |
|---|---|---|---|
| Electricity | 660,712.98 | 0.661 | 3,990,747.31 |
| Natural Gas | 511,838.54 | 0.512 | 3,091,536.47 |
| Moving Source | 2,054,443.56 | 2.054 | 12,408,966.31 |
| **Total** | **3,226,995.08** | **3.227** | **19,491,250.10** |

Source: Emission factors for electricity usage and moving source emissions for CH4 and N2O are from "California Climate Action Registry General Reporting Protocol: Tables C5 and C6," version 3.0 prepared by California Climate Action Registry, April 2008. Natural gas emission factors for CO2 and Moving Source emissions CO2 are from "Calculations and References," of the Greenhouse Gas Equivalencies Calculator, prepared by EPA and last updated on August 4, 2008, and for CH4 and N2O emission factors are from "California Climate Action Registry General Reporting Protocol: Equations III.8d," version 3.0 prepared by California Climate Action Registry, April 2008.
Note that CO2 Equivalent figures are based on SAR (1996) global warming potential of 21 for CH4 and 310 for N2O.

In comparison, the total carbon dioxide equivalent emissions in California for the year 1990 was estimated to be 427 million metric tons. At build out the Town of Apple Valley will contribute approximately 0.756% of the total California emissions limit for 2020 as established by ARB.

In 2005 the total carbon dioxide equivalent emissions for the United States was estimated at 7,260.4 million metric tons. The General Plan represents 0.044% of the total emissions for the U.S. as estimated in year 2005. As state and federal requirements are established in coming years to reduce and limit greenhouse gas emissions, project developers, owners, tenants, and residents will be obligated to follow applicable greenhouse gas regulations and quantification protocols. However, using the currently available methods to quantify GHG emissions, the build out of the General Plan will increase emissions over 1990 levels, resulting in a significant impact. Mitigation measures are included below. However, the reductions which these mitigation measures offer cannot be effectively quantified. Impacts associated with GHG emissions will therefore be significant and unavoidable.

**Summary of Impacts**

The following table summarizes potential pollutant emissions generated at build out of the proposed General Plan, including emissions from the use of consumer products, electricity, and natural gas, and emissions from vehicle exhaust for residential, commercial, office, and industrial land use designations as set forth in the General Plan Land Use Table.

**Table III-16**
**Projected Daily Air Quality Emissions**
**At General Plan Build Out**
**(lbs./day)**

| | Stationary Source Emissions | | | Moving Source Emissions | Total Project Emissions | Threshold Criteria* |
|---|---|---|---|---|---|---|
| | Consumer Products | Power Plant | Natural Gas | All Vehicles | Lbs./Day | Lbs./Day |
| **CO** | - | 991 | 1,641 | 42,503 | **45,135** | **548** |
| **NOx** | - | 5,696 | 2,492 | 4,960 | **13,148** | **137** |
| **SOx** | - | 594 | 0.026 | 135 | **729** | **137** |
| **PM10** | - | 198 | 4.61 | 1,229 | **1,431** | **82** |
| **PM2.5** | - | - | 4.61 | 820 | **824** | **55** |
| **ROGs** | 3,333 | 50 | 186 | 5,440 | **5,676** | **137** |
| **CO2** | - | - | 3,073,667 | 14,007,469 | **17,081,136** | **N/A** |

*Threshold criteria offered by the Mojave Desert Air Quality Management District for determining the significance of air quality impacts. Source: "CEQA and Federal Conformity Guidelines," MDAQMD, June 2007 and URBEMIS 2007Version 9.2.4 default emissions.

Projected emissions for air quality criteria pollutants shown in the table above summarize the worst-case operational emissions associated with build out of the proposed General Plan. It should be reiterated that for purpose of this analysis, temporary air quality emissions from demolition, grading, and construction activities are not quantified. While it is impossible to predict whether, and to what extent, new development will actually occur in the General Plan area over the long-term, this analysis assumes that all vacant parcels, with the exception of Open Space lands, will be developed.

All criteria thresholds are projected to be exceeded without the application of mitigation measures. Although emissions can be mitigated to a certain degree, significant and unavoidable impacts to air quality, including greenhouse gas emissions, will occur as a result of development of the General Plan. Therefore, as required under CEQA, Findings and a Statement of Overriding Considerations for emission that can not be reduced to levels below the MDAQMD thresholds must be prepared. Regardless of mitigation measures, development of the General Plan will contribute to cumulative air quality impacts locally and regionally.

Note that requiring project-specific proposals to implement mitigation measures, including but not limited to those set forth below, can be effective in reducing air quality impacts to the entire General Plan area by providing alternative transportation options, increasing the use of green building design and technologies into planned future and remodeled facilities, and incorporating the use of alternative energy sources both locally and regionally through individual and region-wide solar roof installation projects and region-wide wind farm development, among other possible programs. These measures will not only reduce emissions of criteria pollutants, but will also reduce emissions associated with the formation of greenhouse gases.

**Annexation 2008-001**

Also known as the Golden Triangle, Annexation 2008-001 will generate significant air quality emission at build out, due to operational use of electricity and natural gas and moving source emissions. In addition to these ongoing emissions, build out of Annexation 2008-001 will also generate temporary air quality emissions from grading, construction, and equipment deliveries. Temporary impacts are not quantified, since they are dependant on project specific parameters, which are unknown at this time. However, as required, each project will prepare the appropriate CEQA compliant document, which will quantify all emissions associated with development, including temporary and ongoing air emissions.

As described in the General Plan Land Use Element, Annexation 2008-001 has the potential to result in as much as 7,135,369 square feet of commercial space, 7,782,275 square feet of industrial space, and a total of 4,236 residential units at build out. All of these land uses would generate air quality emissions from electricity and natural gas use, and from transportation.

Table III-17 quantifies the maximum daily air quality emissions for all criteria pollutants at build out of Annexation 2008-001. Using the factors set forth in the CEQA Handbook prepared by SCAQMD, the following demands were estimated: total annual electricity 220.7 million kilo-watt hours; total annual natural gas 914.5 million cubic feet. In addition, build out is projected to result in 1.46 million miles a day traveled assuming an average trip length of 8.06 miles. The population within Annexation 2008-001, 13,238 persons, has the potential to generate as much as 226.4 pounds per day of ROG emissions from the use of consumer products.

**Table III-17**
**Projected Daily Emissions within Annexation 2008-001**
**at General Plan Build Out**
**(Lbs./day)**

| | Stationary Source Emissions | | | Moving Source Emissions | Total Project Emissions | Threshold Criteria* |
|---|---|---|---|---|---|---|
| | Consumer Products | Power Plant | Natural Gas | All Vehicles | Lbs./Day | Lbs./Day |
| **CO** | - | 121 | 183 | 5,068 | **5,372** | **548** |
| **NOx** | - | 696 | 247 | 591 | **1,534** | **137** |
| **SOx** | - | 73 | 0.003 | 649 | **721** | **137** |
| **PM10** | - | 24 | 0.45 | 16 | **41** | **82** |
| **PM2.5** | - | - | 0.45 | 146 | **147** | **55** |
| **ROGs** | 226.4 | 6 | 18 | 98 | **348.4** | **137** |
| **CO2** | - | - | 300,664 | 1,670,120 | **1,670,120** | **N/A** |

*Threshold criteria offered by the Mojave Desert Air Quality Management District for determining the significance of air quality impacts. Source: "CEQA and Federal Conformity Guidelines," MDAQMD, June 2007 and Urbemis 2007Version 9.2.4 default emissions.

Air quality emissions associated with stationary and moving source emitters will significantly exceed established thresholds for all criteria pollutants, as shown in Table III-17 above. Although mitigation measures will somewhat offset emissions, impacts associated with build out

of the annexation area will result in significant and unavoidable air quality impacts. As a result, Findings and a Statement of Overriding Considerations will need to be prepared.

**Table III-18**
**Annual GHG Summary within Annexation 2008-001**
**at Build Out of the General Plan**

| Emission Source | CO2 Equivalent Metric Tons | CO2 Equivalent Million Metric Tons | Million Pounds Per Day |
|---|---|---|---|
| Electricity | 80,671.16 | 0.081 | 487,258.81 |
| Natural Gas | 50,067.67 | 0.050 | 302,411.83 |
| Moving Source | 244,952.74 | 0.245 | 1,479,529.74 |
| **Total** | **375,691.58** | **0.376** | **2,269,200.38** |

Source: Emission factors for electricity usage and moving source emissions for CH4 and N2O are from "California Climate Action Registry General Reporting Protocol: Tables C5 and C6," version 3.0 prepared by California Climate Action Registry, April 2008. Natural gas emission factors for CO2 and Moving Source emissions CO2 are from "Calculations and References," of the Greenhouse Gas Equivalencies Calculator, prepared by EPA and last updated on August 4, 2008, and for CH4 and N2O emission factors are from "California Climate Action Registry General Reporting Protocol: Equations III.8d," version 3.0 prepared by California Climate Action Registry, April 2008.
Note that CO2 Equivalent figures are based on SAR (1996) global warming potential of 21 for CH4 and 310 for N2O.

Table III-18 illustrates the GHG emissions anticipated to occur as a result of build out of Annexation 2008-001. In comparison, the total carbon dioxide equivalent emissions in California for the year 1990 was estimated to be 427 million metric tons. At build out the Annexation will contribute approximately 0.088% of the total California GHG emissions limits established by ARB for year 2020. In 2005 the total carbon dioxide equivalent emissions for the United States was estimated at 7,260.4 million metric tons. The Annexation represents 0.005% of the total emissions for the U. S. as estimated in year 2005.

**Annexation 2008-002**

Annexation 2008-002 will generate significant air quality emission at build out, due to operational use of electricity and natural gas and moving source emissions. In addition to these ongoing emissions, development of Annexation 2008-002 will also generate temporary air quality emissions from grading, construction, and equipment deliveries. Temporary impacts are not quantified since they are dependant on project specific parameter, which are unknown at this time. However, as required each project will prepare the appropriate CEQA compliant document, which will quantify all emissions associated with development including temporary and ongoing air quality emissions.

As described in the General Plan Land Use Element, Annexation 2008-002 has the potential to result in 7,676,379 square feet of industrial uses at build out, which will result in the generation of air quality emissions from electricity and natural gas use, and from transportation.

Table III-19 quantifies the maximum daily air quality emissions for all criteria pollutants at build out of Annexation 2008-002. Using the factors set forth in the CEQA Handbook prepared by SCAQMD, the following demands were estimated: total annual electricity 68.8 million kilo-watt hours; total annual natural gas 36.8 million cubic feet. In addition, build out is projected to result in 359,121 miles a day traveled assuming an average trip length of 8.06 miles.

**Table III-19**
**Projected Daily Emissions within Annexation Area 2008-002**
**at General Plan Build Out**
**(Lbs./day)**

| | Stationary Source Emissions | | Moving Source Emissions | Total Emissions | Threshold Criteria* |
|---|---|---|---|---|---|
| | Power Plant | Natural Gas | All Vehicles | Total Lbs./Day | Total Lbs./Day |
| **CO** | 38 | 102 | 1,249 | **1,388** | **548** |
| **NOx** | 217 | 121 | 146 | **484** | **137** |
| **SOx** | 23 | 0.001 | 160 | **182** | **137** |
| **PM10** | 8 | 0.2 | 4 | **12** | **82** |
| **PM2.5** | - | 0.2 | 36 | **36** | **55** |
| **ROGs** | 1.9 | 9 | 24 | **35** | **137** |
| **CO2** | - | 145,367 | 411,624 | **556,992** | **N/A** |

Source: Emission factors are from "CEQA Air Quality Handbook," South Coast Air Quality Management District, April 1993. *Threshold criteria as established by the Mojave Desert Air Quality Management District for determining the significance of air quality impacts.

Air quality emissions associated with stationary and moving source emitters will significantly exceed established thresholds for all criteria pollutants, except for particulates and ROG's, as shown in Table III-19 above. Although mitigation measures will somewhat offset emissions, impacts will be significant and unavoidable, and Findings and a Statement of Overriding Consideration will need to be prepared for CO, NOx, and SOx.

**Table III-20**
**Annual GHG Summary within Annexation Area 2008-002**
**at Build Out of the General Plan**

| Emission Source | CO2 Equivalent Metric Tons | CO2 Equivalent Million Metric Tons | Million Pounds Per Day |
|---|---|---|---|
| Electricity | 25,142.30 | 0.025 | 151,861.07 |
| Natural Gas | 24,207.13 | 0.024 | 146,212.59 |
| Moving Source | 60,372.03 | 0.060 | 364,650.78 |
| **Total** | **109,721.46** | **0.110** | **662,724.44** |

Source: Emission factors for electricity usage and moving source emissions for CH4 and N2O are from "California Climate Action Registry General Reporting Protocol: Tables C5 and C6," version 3.0 prepared by California Climate Action Registry, April 2008. Natural gas emission factors for CO2 and Moving Source emissions CO2 are from "Calculations and References," of the Greenhouse Gas Equivalencies Calculator, prepared by EPA and last updated on August 4, 2008, and for CH4 and N2O emission factors are from "California Climate Action Registry General Reporting Protocol: Equations III.8d," version 3.0 prepared by California Climate Action Registry, April 2008.
Note that CO2 Equivalent figures are based on SAR (1996) global warming potential of 21 for CH4 and 310 for N2O.

Table III-20 illustrates the GHG emissions anticipated to occur as a result of build out of Annexation 2008-002. For comparison, the total carbon dioxide equivalent emissions in California for the year 1990 was estimated to be 427 million metric tons. At build out Annexation 2008-002 will contribute approximately 0.026% of California's total GHG emission limits as established by ARB for year 2020. In 2005 the total carbon dioxide equivalent emissions for the United States was estimated at 7,260.4 million metric tons. The Annexation represents 0.002% of the total emissions for the US as estimated in year 2005.

### 3. Mitigation Measures

Federal, state and local agencies have developed a range of mitigation measures that, with implementation, will reduce pollutant emissions associated with General Plan build out. These include achieving or exceeding California Title 24 Building Code standards, which will reduce pollutant emissions generated by power plants and the consumption of natural gas. The use of alternative methods of electrical power generation can replace the need for additional fossil fuel-based generating capacity and substantially reduce air quality emissions by utilizing clean energy sources such as wind and solar. In addition, air quality emissions from moving sources can be reduced by promoting public transit and alternative transportation options, use of electric and natural gas vehicles, and other land use and planning designs that reduce overall vehicle trips.

A wide range of mitigation measures can be applied to new development and redevelopment projects to reduce project-related pollutant emissions at General Plan build out, including those described below.

**General Measures**

1. Grading and development permits shall be reviewed and conditioned to require the provision of all available methods and technologies to assure minimal air quality emissions from development. See Table III-21 below.

**Table III-21**
**Available Emission Reduction Technologies**

| | Daily Emission Reduction Factors | | | | |
|---|---|---|---|---|---|
| **Diesel Equipment** | CO | NOx | SOx | $PM_{10}$ | ROG |
| Aqueous Fuel | 0% | 14% | 0% | 63% | 0% |
| Diesel Particle Filter | 0% | 0% | 0% | 80% | 0% |
| Cooled Exhaust Gas Recirculation | 90% | 40% | 0% | 85% | 90% |
| Lean NOx Catalyst | 0% | 20% | 0% | 0% | 0% |
| Diesel Oxidation Catalyst | 0% | 20% | 0% | 0% | 0% |
| | | | | | |
| **Worker Trips** | CO | NOx | SOx | $PM_{10}$ | ROG |
| Use of Shuttle or Ride Sharing | 1.3% | 1.3% | 1.3% | 1.3% | 1% |

Source: Urban Emissions Model (URBEMIS2002) version 8.7.0 April 2005; developed by the California Air Resources Board (CARB) as a modeling tool to assist local public agencies with estimating air quality impacts from land use projects when preparing a CEQA environmental analysis.

*2.* As part of the grading permit process, developers shall concurrently submit a dust control plan as required by MDAQMD in compliance with Rule 403 (see Table III-22 below).

**Table III-22**
**Fugitive Dust Control Methods**

| **Daily $PM_{10}$ Reduction** | |
|---|---|
| Apply Soil Stabilizers to Inactive Areas | 30% |
| Replace Ground Cover in Disturbed Areas Quickly | 15% |
| Water Exposed Surfaces 2 Times Daily | 34% |
| Water Exposed Surfaces 3 Times Daily | 50% |

Source: Urban Emissions Model (URBEMIS2002) version 8.7.0, April 2005.

3. Prior to grading activities a wind erosion control plan that among other things addresses soil stabilization techniques shall be submitted to the Apple Valley Building Division to assure that dust control is realized for all projects.

4. The Town shall conduct an initial study for all projects that are expected to exceed any of the MDAQMD pollutant emission threshold criteria, and shall require detailed air quality analyses for all development applications that have the potential to adversely affect air quality including quantification of greenhouse gas emissions. Until new factors are developed the use of the CEQA Handbook prepared by SCAQMD or other appropriate modelling tools such as URBAMIS shall be utilized.

5. All construction activities within the Town of Apple Valley shall be subject to Rule 401 Visible Emissions, Rule 402 Nuisance, and Rule 403 Fugitive Dust in accordance with the Mojave Desert Planning Area PM10 Attainment Plan.[14]

6. Set backs and buffer zones shall be provided between sensitive receptors (residences, schools, daycare centers, playgrounds and medical facilities) and point source emitters, such as highways, hazardous materials sites, and industrial development. Projects proposed for sites located within the specified distance to an existing or planned (zoned) sensitive receptor land use shall be evaluated to determine impacts to sensitive receptors including a health risk assessment for the following projects:

   Any industrial project within 1000 feet;
   A distribution center (40 or more trucks per day) within 1000 feet;
   A transportation project with 50,000 or more vehicles per day within 1000 feet;
   A dry cleaner using perchloroethylene within 500 feet;
   A gasoline dispensing facility within 300 feet.

7. The General Plan Land Use Plan shall be routinely updated to assure that air pollution point sources, such as those described above, are located a sufficient distance residential areas and other sensitive receptors, to the greatest extent practical.

8. The Town shall encourage the phasing of development projects and the staging of construction equipment to assure the lowest construction-related pollutant emission levels practical.

9. The Town shall strive to maintain a balance between housing, commercial, and industrial development, and shall encourage mixed-use development to reduce the length of vehicle trips and associated moving vehicle emissions.

10. The Town shall promote the development of pedestrian-oriented retail centers, community-wide trails, and dedicated bike lanes to encourage alternatives to vehicle travel. These components shall be integrated and periodically updated in the General Plan Circulation Element.

11. The Town shall pursue programs that create a diversified transportation system that minimizes vehicle miles traveled and associated air quality emissions.

12. The Town shall encourage the incorporation of energy-efficient design measures in site plans, including appropriate site orientation to assure solar access, and the use of shade and windbreak trees to enhance the use of alternative energy systems and reduce the need for excessive heating and cooling.

[14] "Final Mojave Desert Planning Area Federal Particulate Matter (PM10) Attainment Plan," prepared by the Mojave Desert Air Quality Management District, July 31, 1995.

13. The Town shall encourage the use of clean burning energy sources for transportation, heating and cooling. Pilot studies and/or demonstration programs shall be initiated by the Town and/or local agencies to promote these uses. The following programs shall be pursued:

    - Replace Town and County vehicle fleet with alternative vehicles
    - Initiate ride sharing programs for employees and of telecommuter options
    - Utilize Town building rooftops for placement of Solar equipment

14. The Town shall continue to develop and coordinate mass transit services that link residential, commercial, shopping and industrial centers, and shall coordinate with regional transportation authorities to facilitate public transport outside Town limits.

15. As requested, the Town shall participate, through the San Bernardino Associated Governments and MDAQMD, in the routine monitoring of all pollutants of regional concern, and shall maintain records of regional air quality trends.

16. The Town shall create staff positions that emphasis the Town's commitment towards building a green and sustainable community including LEED certified personnel and interagency liaisons that work directly with the Town and utility providers to increase efficiency, initiate programs, and develop incentives for water and energy conservation and reducing air quality emissions.

17. The Town shall coordinate with MDAQMD and the nearby SCAQMD in providing air quality management training to staff and volunteers.

18. The Town shall review individual projects under CEQA using the control efficiencies provided on pages 11-13 through 11-32 of the 1993 SCAQMD "CEQA Air Quality Handbook" to determine the effectiveness of proposed air quality mitigation measures for specific projects.

19. A $PM_{10}$ Management Plan for construction operations shall be submitted with all development proposal applications. Plans shall include dust management controls, which can reduce PM emission as shown in the table below:

**Table III-23**
**Particulate Matter Emission Reduction Techniques**

| Mitigation Measure | Daily Reduction Factor for PM10 |
|---|---|
| Apply non-toxic soil stabilizers to graded construction areas that are inactive for 10 days or more | 30-65% |
| Replace ground cover immediately through seeding and watering | 15-49% |
| Enclose, cover, water twice daily or apply soil binders to exposed piles with more than 5% silt content | 30-74% |
| Water active site at least twice a day | 34-68% |
| Water active site at least three times daily | 45-85% |
| Cover soil haul trucks or maintain at least two feet of freeboard | 7-14% |
| Conduct street sweeps at the end of each day | 25-60% |
| Install wheel washers where vehicles enter and exist unpaved roads or wash off equipment leaving the site | 40-70% |
| Enforce maximum speeds of less than 15 mph on all unpaved roads | 40-70% |
| Pave construction roads that have more than 50 daily construction equipment trips or 150 total daily trips | 92.5% |
| Pave construction site access roads at least 100 feet on to the site from the main road | 92.5% |
| Pave construction roads that have less than 50 daily daily trips | 92.5% |
| Source: "CEQA Air Quality Handbook," prepared by SCAQMD, 1993. | |

20. To reduce construction-related traffic congestion, developers and contractors shall implement the following mitigation measures:

    - configure construction equipment parking to minimize traffic disturbance
    - minimize obstruction of through-traffic lanes
    - provide a flag person to ensure safety at construction sites, as necessary
    - schedule operations affecting roadways for off-peak traffic hours
    - provide rideshare incentives to construction personnel

21. To minimize construction equipment emissions, developers shall implement the following measures:

    - wash off trucks leaving the site
    - require trucks to maintain two feet of freeboard
    - properly tune and maintain construction equipment
    - use low sulfur fuel for construction equipment

22. To minimize indirect-source emissions, developers may:

    - implement energy conservation measures beyond state and local requirements
    - install low-polluting, high-efficiency appliances
    - install solar pool and water heaters, where feasible
    - landscape with appropriate drought-tolerant species to reduce water consumption and provide passive solar benefits
    - install energy-efficient street lighting

23. To minimize building energy consumption, developers shall be encouraged to implement the following:

    - improve the thermal integrity of buildings
    - utilize window glazing, wall insulation, and efficient ventilation methods
    - introduce efficient heating and appliances, such as water heaters, cooking equipment, refrigerators, furnaces, and boiler units
    - incorporate appropriate passive solar design and solar heaters
    - use devices that minimize the combustion of fossil fuels

**Climate Change and GHG Reduction Measures**

In addition to those mitigation measure listed above, the following measure will assure that specific action is taken to reduce emissions of greenhouse gases and combat the effects of global warming and climate change.

1. Design and implement land uses that encourage job/housing proximity or easy access to transit opportunities including high density development along transit corridors, compact mixed use projects, and urban villages that maximize affordable housing and encourage biking, walking, and the use of public transit. This can be accomplished through the implementation of the goals, policies and programs of the Medium Density Residential and Mixed Use land use designations and, as appropriate, implementation of specific plans in targeted areas where the opportunities for such development can be created through advance planning. Transit corridors to be focused on high density development are along Bear Valley Road, Highway 18, Dale Evans Parkway, Apple Vally Road, Navajo Road, Central Road, and Kiowa Road. Furthermore, high density development will be targeted for the future High Desert Corridor.

2. Encourage infill, redevelopment, mixed use, and higher density development in appropriate areas of the Town where existing development can serve as the foundation for the creation of new urban villages. . Such development would be focused around the southern portion of the Town near the major intersections of Bear Valley Road, such as its intersections with Apple Valley Road, Kiowa Road and Navajo Road. Other areas targeted for development include those along Highway 18 and Dale Evans Parkway.

3. In order to reduce vehicle miles traveled and greenhouse gas emissions, mixed use projects with a maximum density of 30 dwelling units per acre shall be developed in the core of Apple Valley on infill lots and/or adjacent to transportation corridors (such as Bear Valley Road, Highway 18, and Dale Evans Parkway) and existing and future job centers.

4. Incentive programs shall be offered for affordable Medium Density Residential infill projects (maximum 20 dwelling units per acre) within the core of Apple Valley and/or adjacent to transportation corridors and existing and proposed job centers. This will help to reduce the vehicle miles traveled and greenhouse gas emissions.

5. Infill in the Mountain Vista Neighborhood is encouraged and incentives shall be offered by the Town for projects greater than 20 units in size. Infill and higher densities in this existing neighborhood will reduce the amount of vehicle miles traveled.

6. Mobile Home Park development shall be encouraged through the creation of the Mobile Home Park Land Use Designation. This will encourage higher density residential development along transportation corridors and adjacent to existing and future job centers. As a result, this should help reduce vehicle miles traveled and greenhouse gas emissions.

7. The Town shall encourage and promote the development of the North Apple Valley Industrial Specific Plan to create a job center with productive industries, which will reduce the vehicle miles traveled of high desert residents that typically have to drive to employment centers in the San Bernardino Valley, as well as the Riverside City and County portions of the Inland Empire for work. The Town shall reduce the approval time for entitlements and permit process for industrial projects within this area. The industrial development also supports a broad-based economy and encourages a jobs housing balance.

8. The Town shall permit childcare facilities in single-family and multi-family residential zones, as well as, in the commercial and industrial areas where employment is concentrated. This will encourage the reduction of vehicle miles traveled.

9. New developments shall be encouraged to include housing, recreational, and retail amenities, so as to limit the number of vehicle miles traveled by providing accessible and desirable amenities onsite.

10. All new development shall be required to install infrastructure prior to occupancy, which will encourage a well planned, orderly development pattern.

11. Advanced technology systems and effective management strategies shall be employed in order to improve the operational efficiency of transportation systems and the movement of people, goods, and services including synchronization of traffic lights and signals. New development that requires roadway and/or intersection improvements will be required to install such improvements such that these advanced traffic management systems may be easily implemented by the Town.

12. New projects shall incorporate design parameters that allow for frequent, reliable, and convenient public transit.

13. The Town shall expand and develop an integrated and comprehensive bikeway, walking path and trail system. The expansion of a regional trail system shall be in consultation with neighboring communities to improve the overall Victor Valley system.

14. Street and travel corridors shall be monitored and maintained to assure that congested areas and intersections are rectified.

15. Idling time for commercial, delivery, and construction vehicles shall be regulated and limited.

16. Landscaping designs shall use trees and other vegetation to maximize the shading of buildings in order to reduce energy requirements for heating and cooling.

17. Planting and preserving existing trees shall be utilized as means of providing carbon storage. Preserving existing trees shall be encouraged during the development review of new projects. The Town shall formulate minimum tree planting standards to be applied during the development review of a project.

18. Tree planting in parks and open spaces will be encouraged. Tree planting programs shall be implemented by the Town. These programs shall include an educational component that emphasizes the importance of trees as means of providing carbon storage.

19. The Town shall promote the use of LEED (Leadership in Energy and Environmental Design) building practices for public and private development by considering the utilization of such building practices as a factor favoring project approval during the entitlement process. Sustainable or "green" building standards similar to LEED shall also be considered favorably. Alternative energy systems such as solar, thermal, photovoltaics and other clean energy systems shall be integrated in building design. Building design shall take advantage of shade, prevailing winds and sun screen to promote energy efficiency.

20. The Town shall encourage the use of energy saving measures beyond the requirements of Title 24 for residential and commercial projects. The incorporation of such measures shall be considered as a factor in favor of project approval during the entitlement process. An incentive program shall be developed for projects that exceed Title 24 requirements by 15% and/or achieve LEED certification or similar performance standards for building design. Incentives such as fee reductions or waivers of certain development standards shall be considered.

21. Promote the use of facilities for low/zero carbon fueled vehicles in new developments, such as the charging of electric vehicles from green electricity sources.

22. The Town will encourage and facilitate the exploitation of local renewable resources by supporting public and private initiatives to develop and operate alternative systems of electricity generation, using wind, solar and other renewable energies.

23. Promote educational programs directed at the public, schools, professional associations, businesses, and industries that offer strategies for reducing GHG emissions.

24. Initiate a program to replace existing traffic lights, street lights, and other electrical uses to energy efficient bulbs and appliances. Encourage new lighting to be energy efficient. The

Town shall require that lighting in all Town facilities be replaced with energy efficient fixtures as existing fixtures fail and require replacement.

25. Utilize Energy Star equipment and appliances for new development and encourage replacement appliances to be energy efficient. The voluntary commitment to such a requirement by project applicants shall be considered a factor in favor of project approval.

26. Promote the use of on-site renewable energy production including installation of photovoltaic cells or other solar options. The Town shall encourage the use of solar cells in private development and consider such project features favorably during project review. The Town shall investigate the cost effectiveness of installing such solar cells on Town buildings for the purposes of powering Town facilities and possibly selling excess "clean" energy back to the SCE power grid, pursuant to state law.

27. Consider an Energy Savings Performance Contract with a private entity to retrofit public buildings, which will allow the private entity to fund all energy improvements in exchange for a share of the energy savings over a period of time.

28. Utilize the Collaborative for High Performance Schools (CHPS) best practices for school design, building, and operation.

29. Replace or retrofit municipal water and wastewater systems with energy efficient motors, pumps, and other equipment, and recover wastewater treatment methane for energy production.

30. Capture and utilize landfill gas for use as an energy source including fuel for vehicles, operating equipment, and heating buildings.

31. Promote the use of vehicles and buses that use alternative fuels or technologies such as hybrids, biodiesel, and ethanol. The Town's vehicle fleet shall be transitioned to alternative fuels to the extent economically feasible.

32. The Town shall promote the use of mass transit services, coordinating with all agencies to link residential and commercial businesses and employment centers within the Town's residential neighborhoods and nearby communities. Mass transit services shall be expanded as needed within the context of economic feasibility.

33. Ride sharing, carpooling, flexible work scheduling, telecommuting and Park & Ride programs shall be encouraged for public and private employers.

34. The Town shall assess the local transportation system annually with a view to gaining greater efficiency in the movement of people and goods through the community. Opportunities to expand the public transit system, using buses equipped with bicycle racks and fueled by compressed natural gas or hydrogen will be maximized. Widespread use of pedestrian

pathways and alternative means of transportation, such as bicycles and electric hybrid vehicles will be facilitated and encouraged.

35. Offer incentives to private businesses for developing energy and water efficient features and building materials, such as expedited plan checks and reduced permit fees.

36. Offer rebates and low interest loans to residents that make energy saving improvements on their homes, including but not limited to the installation of solar cells and panels.

37. Incentives shall be provided for rehabilitation and remodeling of existing development. Assistance from the Town shall be provided through the Residential Rehabilitation Loan Program to improve energy efficiency of existing residences. Educational materials shall be provided to the public advising them of energy efficiency through available appliance programs and other energy conservation improvements that are eligible for the Residential Rehabilitation Loan Program.

38. The Town shall consider incentive programs, rebates and refunds for the use of energy efficient appliances, windows and building designs for new and remodeled structures. The incentive program could also include incentives for the use of recycled materials.

39. Encourage bicycle lanes and walking paths directed to the location of schools, parks, and other destination points. The provision of such facilities will be considered favorably during project review pursuant to the General Plan's Circulation Element.

40. The Town will implement a program to install photo voltaic systems on the buildings and carports located at the Public Works facility and Town Hall/Police Department, which will provide electricity for the Civic Center and the Public Works/Animal Control facilities. This will improve the energy efficiency of these facilities

41. Prior to July 15, 2010, the Town shall develop and adopt a Climate Action Plan ("CAP") that enhances the General Plan's goals, policies and programs relating to meeting the greenhouse gas emission targets established in the California Global Warming Solutions Act, including reducing emissions to 1990 levels by including an emissions inventory; emission targets that apply at reasonable intervals through the life of the plan; enforceable GHG control measures; monitoring and reporting; and mechanisms to allow for the revision of the plan, if necessary, to stay on target. The goal of the CAP shall be to reduce greenhouse gas emissions within the Town's control the achieve the emission reduction goals required by AB 32, as further developed and quantified by the California Air Resources Board. The CAP shall quantify the approximate greenhouse gas emissions reductions of each measure developed with the CAP, and shall consider the mechanisms, strategies and techniques included above.

**Mitigation Monitoring/Reporting Program**

A. The code enforcement division shall record and refer all complaints it receives regarding air quality degradation from vehicle emissions, industrial generators, and other sources to

MDAQMD. A report of air quality complaints and identified problems shall be provided in the annual review of the General Plan. Development may be temporarily halted until inadequate controls or unacceptable conditions are corrected to the satisfaction of the Town and/or MDAQMD.
**Responsible Parties:** Code Enforcement and MDAQMD

B. Continue to coordinate with MDAQMD regarding the implementation of local and regional air quality programs. Consider initiating a local air quality monitoring station.
**Responsible Parties:** Planning Division and MDAQMD

C. Grading and development permits, as well as required dust control plans, shall be reviewed and conditioned to require the provision of all appropriate methods and technologies to assure the minimal emissions of pollutants from the development, in accordance with existing standards established by the Town of Apple Valley.
**Responsible Parties**: Public Works, Engineering, Planning, and Building Divisions.

D. Building and landscape plans shall be reviewed for assurance of optimized energy efficiency and soil stabilization, respectively. California Code of Regulations Title 24 and other applicable energy efficiency codes and regulations shall be appropriately applied.
**Responsible Parties**: Public Works, Engineering, Planning, and Building Divisions.

E. The Town shall review grading plan applications to assure compliance with mitigation measures set forth in this EIR, as well as those otherwise conditioned by the Town.
**Responsible Parties**: Planning Division and MDAQMD.

## D. Biological Resources

### Introduction

This section of the EIR describes the existing biological resources in the Town of Apple Valley, the vicinity, and regionally, and analyzes the potential constraints, risks and opportunities associated with these existing conditions as the General Plan and annexations build out. It assesses the potential impacts of the proposed General Plan relative to biological issues and sets forth mitigation measures that may be effective in reducing impacts. A wide range of data and information, including regional biological field surveys, habitat conservation plans and related documents, as well as a biological resources study prepared for the General Plan, have been used to assess the potential effects on biological resources from implementation of the proposed General Plan and annexations.

### Thresholds of Significance/Criteria For Determining Significance

The following significant thresholds or criteria are derived from Appendix G of CEQA, which is used to determine if and to what extent a project may have a potentially significant impact on biological resources. Build out of the General Plan would have a significant effect on biological resources if it is determined that implementation of the General Plan will:

a. Have a substantial adverse effect, either directly or indirectly, or through habitat modifications, on any species identified as a candidate, sensitive, or special status species (including species listed as threatened or endangered) in local or regional plans, policies, or regulations, or by the CDFG or USFWS;

b. Have a substantial adverse effect on any wetlands, riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFG or the USFWS;

c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.);

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

f. Conflict with the provisions of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

This section also considers standards and criteria established by the California Department of Fish and Game (CDFG), California Native Plant Society (CNPS), and the United States Fish and Wildlife Service (USFW), further discussed below.

### 1. Existing Conditions

The biological resources within the Town of Apple Valley and Sphere of Influence were assessed in a comprehensive study prepared for the proposed General Plan,[15] which is included in Appendix B of this document. To prepare the biological resources study, the consultant conducted a literature review that included the California Natural Diversity Data Base (CNDDB), San Bernardino County Museum records, California Department of Fish and Game staff, various botanical and wildlife references for the Apple Valley area, and the California Environmental Information Catalogue. Other documents reviewed were biological surveys prepared for development projects in the General Plan area and vicinity, which included species accounts, life histories, and distribution and status of covered species. A field survey of the General Plan and annexation areas was also conducted as part of the biological resources assessment. In addition to the Biological Resources Report, the Draft West Mojave Habitat Conservation Plan & Conservation Banking Program[16] was also referenced in order to describe existing conditions.

**Regional Biological Setting**

The Town of Apple Valley and vicinity are located in the High Desert north of the San Bernardino Mountains and west of the Mojave River, between the City of Victorville and the communities of Lucerne Valley to the southeast and Hesperia to the southwest. This region is within the southwestern portion of the Mojave Desert and is characteristic of desert environments, with hot dry summers and cool winters, including extreme fluctuations of daily temperature, strong seasonal winds, and less than 5 inches of annual precipitation.

Elevations in the Town and vicinity range from approximately 2,550 feet above mean sea level (MSL) near the Mojave River up to approximately 4,800 feet above MSL within mountain ranges to the north, east and south of Town. Drainages and streams associated with the Mojave River have contributed to the topography of the region, and are considered to be ephemeral in that they rarely contain overland water flow and generally have poorly defined banks. Watercourses in the planning area flow into the Mojave River, Apple Valley Dry Lake, or inland depression areas. The Mojave River and associated drainages support riparian habitat and provide wildlife movement corridors.

[15] "Town of Apple Valley General Plan Update Biological Resources," prepared by AMEC Earth & Environmental, Inc., February 21, 2008.

[16] "Draft Documentation and Analysis West Mojave Habitat Conservation Plan & Conservation Banking Program (WEMO HCP/CBP)," prepared by Solution Strategies Inc., September 2008.

**Natural Communities**

There are several natural communities represented in the Apple Valley General Plan Study Area, supporting a wide variety of plant and animal species and various types of habitats. These natural communities are discussed categorically, below.

Saltbush Scrub
This type of vegetation is found within the eastern portion of the Town limits and the Sphere of Influence. It is generally comprised of Saltbush, Allscale, and Shadscale. Joshua Tree, Cheesebush, Anderson Boxthorn, and Cholla are also sometimes a component of this vegetation type.

Mojave Riparian Forest
This habitat consists of small areas of water-dependent plants, including Cattail, and is supported by the Mojave River that flows through the western portion of the planning area. Specifically, the Upper Narrows portion of the River contains an extensive Mojave Riparian Forest. This community is dominated by Cottonwood, Willow, Olive, Saltcedar, Quailbush, Rabbitbrush, and Saltgrass.

Wash Vegetation
There are a number of small washes within the planning area. These washes support specific species, including Rabbitbrush, Cheesebush, and Brickellbush. This community type may be associated with Mojave Riparian Forest species and usually contains some non-native grasses and flowering plants. Both Mojave Riparian and Wash habitat types, although limited in size in the planning area, are valuable for the diversity of wildlife, especially birds, that they support.

Sandfield Plant Community
This community assemblage is found within the upstream area of the Mojave River where water flow is primarily subsurface, except during times of heavy rainfall. Vegetation is generally limited to short-lived annual plants, although intermittently occurring perennial species may also be present. Representative species include Sand Verbena, Tiquilia, Sandpaper Plant, Saltbush, and Ricegrass.

Joshua Tree Woodlands
Found on alluvial slopes with sandy/loamy soils, this community type often contains California Buckwheat, Green Ephedra, Desert Needlegrass, Paperbag Bush, and may contain Mojave Yucca. Although scattered Joshua Trees occur within the planning area, the densest growth is observed south of the Town limits, within the Sphere of Influence.

Creosote Bush Scrub
This community type is the predominant vegetation type within the planning area, and is composed of Creosote Bush, Burrobush, Golden Cholla, Pencil Cholla, Beavertail, Cheesebush, Boxthorn, Rabbitbrush, and may contain a minor component of Joshua Trees. The sub-shrub component of this community type is largely diminished, due to past livestock grazing and frequent disturbance from off-road vehicles.

Mojave Mixed Woody Scrub
This community assemblage is limited to small patches within the Town limits, although larger swaths of land occur in the easterly Sphere of Influence. It is usually supported by steep and rocky soils that are shallow and overly drained. Buckwheat, Bladderpod, Beavertail, Goldenbush, Cheesebush, and some cactus species such as Clustered Barrel Cactus and Hedgehog Cactus are representative of this vegetation type.

Montane Woodlands
Located southwest of the Town limits is a small community of this vegetation type, which extends south in the vicinity of the Sphere of Influence. This open woodland vegetation type is dominated by California Juniper, Joshua Tree, and a number of shrubs including Blackbush, Cliffrose, Turpentine Broom, and may contain an understory that is typical of Mojave Mixed Woody Scrub species.

Non-native Communities
The Town and Sphere of Influence contain non-native species interspersed within natural assemblages. Within urbanized areas, non-native species tend to be associated with landscaping, slope stabilization, and abandoned or vacant lots. These occur adjacent to the Apple Valley Airport as well as in disturbed land within residential areas of the Town, predominated by ruderal, or weedy, flora. Within these non-native communities, a few components of former native plant communities are also occasionally represented. Although not native, this community type provides open space and habitat and foraging opportunities for a variety of common species.

**Common Species**

The more common species found in the Town of Apple Valley and vicinity tend to be associated with disturbed Creosote, Saltbush, and Mojave Mixed Woody Scrub plant communities. They may be readily adaptable to urbanization and able to survive ruderal habitats, such as those adjacent to roadways. A variety of common native and non-native species are found in the planning area.

Common invertebrates include Harvester Ants, Crater-nest Ants, Creosote Bush Grasshoppers, Paper Wasps, Honeybees, Daddy Longlegs as well as venomous insects such as the Black Widow Spider and Sand Scorpions. Common amphibian species include the Western Toad, Pacific Tree Frog, and the Bullfrog, a non-native species that has become naturalized to the region. A variety of common reptiles occur, including the Western Whiptail Lizard, Side-blotched Lizard, Desert Iguana, and other lizard species. Snake species include venomous and

non-venomous varieties, such as the Western Patch-nosed Snake, Coachwhip, Gopher Snake, Mojave Rattlensnake, Sidewinder, and Speckled Rattlesnake.

A range of common bird species inhabit and nest in the area, while certain species are migratory, present seasonally for foraging. Approximately 301 bird species have been documented in the region. The Song Sparrow, Rufous Towhee, and Blue-gray Gnatcatcher are among the many bird species that use Mojave River riparian habitat. Many bird species use landscaping features or even occasionally human-built structures for nesting, including House finch, House Sparrow, and some hummingbird species.

Common mammal species in the planning area include Black-tailed Jackrabbit, Desert Cottontail, Kit Fox, Coyote, Kangaroo Rats, and several mouse and squirrel species.

The General Plan Biological Resources Element further discusses common species, and a complete listing of common species thought to occur in the planning area and vicinity is included in the Biological Resources Report in Appendix B.

**Special Status Species**

The Apple Valley General Plan area contains a wide range of significant biological resources, including special status species that are listed as threatened or endangered by federal and state governmental agencies. The U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG) maintain lists of these sensitive species and provide information about species ranges and occurrence probabilities. The California Native Plant Society (CNPS), a non-profit conservation organization, maintains a listing of native flora and makes a determination of the status as rare, threatened, and/or endangered for each species listed.

These agencies determine the status of qualified species based on the following three definitions; (1) “Endangered” species are those with such limited numbers that they are considered to be in imminent danger of extinction; (2) “Threatened” species are those likely to become endangered within the foreseeable future, particularly on a local scale; and (3) “Sensitive” and “rare” species are those that are naturally rare or have been locally depleted or put at risk by human activities, and although perpetuation of these species does not appear to be significantly threatened, they are considered vulnerable and may be candidates for future listing.

The following tables identify the listed sensitive species that have the potential to occur within the General Plan area and vicinity. The appendices section of this document, wherein the Biological Report is included, also provides a comprehensive listing of sensitive species associated with the Town of Apple Valley, Sphere of Influence, and vicinity. Each species thought to occur is described below.

**Table III-24**
**Special Status Plant Species from the Vicinity of Apple Valley**

| Species Name | Habitat | Local or CDFG Status | Federal Status | Reported Within Planning Area (PA) |
|---|---|---|---|---|
| ***Camissonia boothii*** **ssp. *Boothii*** **Booth's Suncup** | Sandy habitats | CNPS List 2 | | Yes (West Edge PA) |
| ***Cymopterus Deserticola*** **Desert Cymopterus** | Sandy habitats | CNPS List 1B | | Yes (Central PA along Hwy 18) |
| ***Yucca Brevifolia*** **Joshua Tree** | Creosote Bush, Saltbush, Mojave Mixed Woody, Scrub | Apple Valley Ordinance | | Yes (PA) |
| ***Saltugilia Latimeri*** **Latimer's Woodland-gilia** | Creosote Bush Scrub | CNPS List 1B.2 | | No |
| ***Opuntia basilaris*** **var. *bracyclada*** **Short-jointed Beavertail** | Joshua Tree Woodland | CNPS List 1B.2 | | No |
| ***Scutellaria bolanderi ssp. austromontana*** **Southern Skullcap** | Meadows, riparian habitat | CNPS List 1B.2 | | Yes (Mojave River at Upper Narrows) |
| ***Symphyotrichum defoliatun*** **San Bernardino Aster** | Meadows, riparian habitat | CNPS List 1B.2 | | No |

**Table III-25**
**Special Status Invertebrate Species from the Vicinity of Apple Valley**

| Species Name | Habitat | Local or CDFG Status | Federal Status | Reported Within Planning Area (PA) |
|---|---|---|---|---|
| ***Plebulina Emigdionis*** **San Emigdio Blue [butterfly]** | Saltbush Scrub & riparian habitat | | | Yes (reported from west edge PA along Mojave River) |
| ***Helminthoglypta Mojaveana*** **Victorville Shoulderband** | Granite boulders base of Mojave River | | | Yes (reported from west edge PA along Mojave River at Upper Narrows) |

**Table III-26**
**Special Status Amphibian Species from the Vicinity of Apple Valley**

| Species Name | Habitat | Local or CDFG Status | Federal Status | Reported Within Planning Area (PA) |
|---|---|---|---|---|
| ***Rana aurora Draytonii*** **California Red-legged Frog** | Wetlands with deep water & adjacent Riparian habitat | Special Concern | Threatened | No (reported historically from Mojave River at Upper Narrows) |
| ***Bufo californicus*** **Arroyo Toad** | Streams with sandy banks | Special Concern | Endangered | No ( historically southwest of PA within Mojave River) |

## Table III-27
## Special Status Reptile Species from the Vicinity of Apple Valley

| Species Name | Habitat | Local or CDFG Status | Federal Status | Reported Within Planning Area (PA) |
|---|---|---|---|---|
| ***Phyrnosoma coronatum (blainvillei population)*** **Coast Horned Lizard** | Friable, rocky or shallow sandy habitats with ants | Special Concern | | No (reported southwest PA along dry portions of the Mojave River) |
| ***Sauromalus ater*** **Chuckwalla** | Rocky habitat, Creosote Bush Scrub | | | Yes (from Mojave River Narrows) |
| ***Gopherus Agassizii*** **Desert Tortoise** | Creosote Bush Scrub | Threatened | Threatened | Yes (from central west of Mojave River and north PA) |
| ***Actinemys marmorata pallida*** **Western Pond Turtle** | Wetlands & adjacent riparian areas | Special Concern | | Yes (reported from west edge PA at Upper Narrows) |

## Table III-28
## Special Status Mammal Species from the Vicinity of Apple Valley

| Species Name | Habitat | Local or CDFG Status | Federal Status | Reported Within Planning Area (PA) |
|---|---|---|---|---|
| ***Lasiurus cinereus*** **Hoary Bat** | Dense foliage of large trees next to open habitats | Special Concern | | Unknown ( from west edge PA, exact location unknown) |
| ***Spermophilus Mojavensis*** **Mojave Ground Squirrel** | Creosote Bush & Saltbush Scrub | Threatened | | No (1955 report just southeast of the PA) |
| ***Microtus Californicus Mojavensis*** **Mojave River Vole** | Wet herbaceous Habitat | Special Concern | | Yes (reported from west edge PA along Mojave River) |
| ***Corynorhinus Townsendii Pallescens*** **Pale Big-eared Bat** | Crevices, Mineshafts, Creosote Bush Scrub near water | Special Concern | | No (reported southeast of PA) |
| ***Chaetodipus fallax pallidus*** **Pallid San Diego Pocket Mouse** | Sandy habitats rocks/ coarse gravel, wash habitat, succulent scrub | Special Concern | | Possibly (reported from west edge PA & Granite Mountains) |

## Table III-29
## Special Status Bird Species from the Vicinity of Apple Valley

| Species Name | Habitat | Local or CDFG Status | Federal Status | Reported Within Planning Area (PA) |
|---|---|---|---|---|
| ***Toxostoma Bendirei*** **Bendire's Thrasher** | Joshua Tree Woodland, Mojave Mixed Woody Scrub | Special Concern | | Yes (reported from North PA) |
| ***Myiarchus tyrannulus*** **Brown-crested Flycatcher** | Riparian woodland | Special Concern | | Yes (reported from Mojave River) |
| ***Athene Cunicularia*** **Burrowing Owl** | Burrows/abandoned foundation structures, Creosote Bush & Ruderal Scrub | Special Concern | | Yes (reported throughout PA) |
| ***Accipiter cooperii*** **Cooper's Hawk** | Riparian habitat with large cottonwoods | Special Concern | | Yes (west edge PA; Mojave River at Upper Narrows) |
| ***Vireo vicinior*** **Gray Vireo** | Dry chaparral, Pinyon-juniper Woodland, Mojave Desert Mountains | Special Concern | | No (reported from north slope San Bernardino Mountains) |
| ***Vireo bellii pusillus*** **Least Bell's Vireo** | Riparian habitat, willow trees, seep-willow scrub | Endangered | Endangered | Yes (reported from west edge PA along Mojave River) |
| ***ToxostomaLecontei*** **Le Conte's Thrasher** | Shrubs, washes, Creosote Bush Scrub | Special Concern | | Yes (reported throughout PA) |
| ***Asio otus*** **Long-eared Owl** | Riparian habitat next to open fields | Special Concern | | No (reported south west of PA along Mojave River) |
| ***FalcoMexicanus*** **Prairie Falcon** | Cliff faces (nesting), Open habitats for Foraging | Special Concern | | Yes (from northeast PA in spring/summer; throughout PA during winter) |
| ***Empidonax traillii Extimus Southwestern*** **Willow Flycatcher** | Riparian habitat | Endangered | Endangered | Yes (reported from west edge PA along Mojave River) |
| ***Piranga rubra*** **Summer Tanager** | Riparian habitat | Special Concern | | Yes(reported from west edge PA along Mojave River) |
| ***Buteo swainsoni*** **Swainson's Hawk** | Riparian Habitat (Migration) | Threatened | | Yes (from Mojave River Corridor) |
| ***Pyrocephalus Rubinus*** **Vermillion Flycatcher** | Riparian habitat | Special Concern | | Yes (reported from west edge PA along Mojave River) |
| ***Coccyzus americanus occidentalis*** **Western Yellow-billed Cuckoo** | Riparian habitat with Large cottonwood and willow canopy | Threatened | Candidate for listing | Yes (reported from west edge PA along Mojave River) |
| ***Icteria virens*** **Yellow-breasted Chat** | Riparian habitat | Special Concern | | Yes (reported from west edge PA along Mojave River) |

**Table III-29**
**Special Status Bird Species from the Vicinity of Apple Valley**

| Species Name | Habitat | Local or CDFG Status | Federal Status | Reported Within Planning Area (PA) |
|---|---|---|---|---|
| ***Dendroica Petechia brewsteri*** **Yellow Warbler** | Riparian habitat | Special Concern | | Yes (reported from west edge PA along Mojave River) |

**Habitat:** terrestrial natural community descriptions per Holland (1986) as modified by general observations of the planning area in 2007.

**State of California and Local Status**: Endangered, Threatened, Protected, Special Concern status per the California Fish and Game Code of 2007, as well as all species protected by local Town of Apple Valley Ordinance.

California Native Plan Society (CNPS) listing rankings (CNPS 2001) are described as follows:

**List 1B**: Plants considered rare and endangered in California and throughout their range. All of the plants constituting List 1B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code and are eligible for state listing. It is mandatory that these plant species be fully considered during preparation of environmental documents pertaining to the California Environmental Quality Act.

**List 2:** Plants considered rare, threatened or endangered in California but which are more common elsewhere.

**Federal Status:** Endangered, Threatened and Candidate for listing status per the Endangered Species Act of 1973 (as amended). It is mandatory that federally listed plant species be fully considered during preparation of environmental documents pertaining to the California Environmental Quality Act, or National Environmental Policy Act, or any federal authorization.

**Reported within Planning Area**: Includes observations by AMEC personnel, reports by knowledgeable individuals, e California Natural Diversity Database (CDFG 2007) and San Bernardino Museum records.

## Sensitive Plant Species

Booth's Suncup

This annual herb species is a member of the Evening Primrose Family, and has a low potential of occurrence within the Town. Nonetheless, CNDD records identify the western portion of the Town just south of the Mojave Narrows Regional Park as potentially containing sandy loam habitats that may support this species. Booth's Suncup is generally detectable during surveys conducted in the spring season following a precipitation event.

Desert Cymopterus

This perennial herb species is a member of the Carrot Family, and has a low potential of occurrence within the Town. Records indicate the species has been observed in the northwest portion of the Town, immediately east of the Mojave Narrows Regional Park, and in the central portion of Town near State Route 18. The latter area has since developed extensively and populations of this plant have not been detected there in recent years. Desert Cymopterus is

generally detectable during surveys conducted in the spring season following a precipitation event.

Joshua Tree
This species is known to occur throughout the Mojave Desert on desert flats, slopes, washes, and riparian areas. Joshua Trees provide important shade, and foraging, breeding, and nesting habitat for a variety of species, particularly invertebrates and birds. Within Town limits Joshua Trees are protected by an ordinance that emphasizes the incorporation of these trees into landscaping, requires inspection of trees prior to site disturbance, and requires oversight of transplantation of candidate trees by an approved arborist or other native plant specialist. In Apple Valley, Joshua Tree occurrences are generally scattered and often comprise a sub-component of other plant communities. Denser stands occur southwest of the planning area near the foothills of the San Bernardino Mountains.

Southern Skullcap
Gravelly soils near streambanks and wetlands support habitat for this small herb. Flowers of this species bloom from June through August, but can be difficult to detect among dense meadow vegetation. Southern Skullcap has been known to occur in the western portion of the Town northwest of the Mojave Narrows Regional Park.

San Bernardino Aster
This sensitive plant species was not observed during site surveys but has been collected in the Mojave Narrows Regional Park. The flower of this perennial plant blooms from August to November and typically occurs in meadows and wet grasslands in proximity to the Mojave River. Wet ditches and drainages associated with the Mojave River may also support habitat for this species. Presence of this species can be more easily detected during late summer or fall surveys, when the San Bernardino Aster is in bloom.

**Sensitive Invertebrate Species**

San Emigdio Blue Butterfly
This species is found in association with Four-wing Saltbush and is known to occur in the western portion of the Town along the Mojave River.

Victorville Shoulderband
This species of snail is endemic to the Mojave River and can be found under rocks and at the base of rocky outcrops and cliffs. The Victorville Shoulderband has been identified within the Town's westernmost limits within the Mojave River at Upper Narrows.

**Sensitive Amphibian Species**

California Red-legged Frog
This species is primarily a pond frog found in streams and deep waters providing substantial riparian vegetation cover. Data indicates this species may migrate as much as two miles overland. It breeds in, and requires water for, larval development. Outside of breeding season it

may be found in upland habitats. It is a state species of concern and is federally listed as threatened. It was not observed during site surveys but has been observed in the planning area historically. It is considered to have a low probability of occurrence in the planning area.

**Sensitive Reptile Species**

Common Chuckwalla
This is the largest lizard species within the Mojave Desert and is most commonly found in Creosote Bush Scrub communities among rock outcrops, boulder piles, or scattered rocks. In the Town of Apple Valley the Common Chuckwalla has been reported adjacent to the Mojave River Narrows and downstream near Quartzite Mountain.

Desert Tortoise
This desert reptile species is found throughout the Mojave Desert region and has been reported from the northwestern edge of the Town to the northeastern portion of the Sphere of Influence. Habitat loss, degradation, fragmentation and disease have resulted in declines in Desert Tortoise populations. The Town of Apple Valley has been estimated to contain low densities of desert tortoise ranging from 0 to 20 individuals per square mile. In order to protect this state and federally listed threatened species, critical habitat has been designated north of the Town; a recovery plan was prepared in 1994 and is currently being revised. There are several measures that can be employed to protect this species, which are discussed in detail under Mitigation Measures below.

Western Pond Turtle
This turtle species is native to the Mojave River, with a small population in the western edge of the planning area at Upper Narrows. They forage for algae, plants, snails, insects, fish, and frogs. Recommended mitigation for this species includes protecting wetlands and adjacent riparian corridors up to 500 meters from the edge of pools inhabited by the Western Pond Turtle.

**Sensitive Bird Species**

Bendire's Thrasher
This migratory bird species breeds in the western Mojave Desert, is typically found in densely-vegetated areas in the northern portion of the planning area as well as the Sphere of Influence, and has been reported from Bell Mountain, Johnson Road, and Sidewinder Mountain. Bendire's Thrashers build open cup nests in cholla cactus, yucca, and various shrubs. Nest surveys conducted prior to site disturbance can identify the presence of this species.

Brown-Crested Flycatcher
This bird species is known to nest annually along the Mojave River between Victorville and Apple Valley from May through August. Riparian woodlands containing cottonwoods and willows may support the Brown-Crested Flycatcher. Preventing the decline of the water table, ensuring fire breaks along the Mojave River, and minimizing habitat destruction are expected to help protect this species.

Burrowing Owl
This diurnal owl is found throughout the Town and Sphere of Influence in open areas, such as grasslands, scrubs, and agricultural areas. Burrowing owls excavate nests in the ground, use small animal burrows, and man-made structures such as pipes, drains, culverts, asphalt, and cement, wood, and rubble piles. The species is vulnerable due to habitat loss, exposure to environmental toxins, and vehicles. Protection of this species includes presence-absence surveys and habitat replacement. Additional protection measures for Burrowing Owls are further discussed under Mitigation Measures below.

Cooper's Hawk
This migratory hawk species is found within the Mojave River at Upper Narrows and is dependent on open riparian vegetation and large trees. Cooper's hawks will forage throughout the planning area, including in residential yards. Conservation of the Mojave River Riparian Forest is critical in order to protect habitat for this species.

Least Bell's Vireo
This migratory songbird species is federally and state listed as endangered. It is dependent on dense riparian vegetation. It has been recorded along the Mojave River at the Lewis Center and at the Mojave Narrows Regional Park. Habitat loss, flood control activities, and parasites have caused a population decline. Habitat restoration and tapping of parasite-infected species are effective measures for protecting this species.

Le Conte's Thrasher
This endemic bird species is found throughout the southwestern United States, but is considered rare in desert scrub habitats. Le Conte's Thrashers have been observed throughout the Town of Apple Valley and in the southeast corner of the Sphere of Influence. Mitigation measures include protection of nests via pre-site disturbance surveys.

Prairie Falcon
This migratory raptor species is found year-round throughout the planning area and prefers open habitats for foraging. Prairie Falcons are threatened due to exposure to toxins and disturbance to nests. Mitigation measures include surveys prior to disturbance.

Southwestern Willow Flycatcher
This migratory bird species prefers dense riparian woodlands and has been observed within the Mojave Narrows Regional Park. The Southwestern Willow Flycatcher is typically present from May through September. Habitat loss, degradation, flood control activities, and livestock grazing has led to its listing as endangered by the federal and state governments. Protection of riparian habitat and the Mojave River Forest corridor is essential for preserving this species' presence within the Town and Sphere.

Summer Tanager
This songbird species prefers dense riparian habitat and has been reported at the Mojave Narrows Regional Park from April through September. Habitat loss, flood control, and invasive species have contributed to the listing of Summer Tanagers as Species of Special Concern. Protection of

the Mojave River corridor and minimizing cutting of large trees are important conservation measures for this species.

Swainson's Hawk
This hawk species nests almost exclusively in tress; often these trees are located on the edges of open space areas for foraging opportunities. In Apple Valley, Swainson's Hawks utilize Cottonwoods, Joshua Trees, and Creosote scrub habitat, and have been observed along the Mojave River. This species is state listed as threatened.

Vermillion Flycatcher
This bird species is found in scrub and riparian woodlands and is often associated with Cottonwood, Mesquite, or Sycamore trees. Vermillion Flycatchers prefer open habitats and avoid dense riparian growth. In the Town of Apple Valley this species is found along the Mojave River. It has been adversely impacted by habitat loss, degradation, and fragmentation of riparian habitats.

Western Yellow-billed Cuckoo
This migratory bird species frequents cottonwood-willow riparian habitat and is thought to breed within the Mojave River area at Upper Narrows. Western Yellow-billed Cuckoos prefer low woody vegetation, Willow trees, and high canopy closures. Habitat loss due to clearing for agricultural lands has been the primary reason for the state listing of this species as threatened. It is a federal candidate for listing. Pre-construction surveys can help to mitigate impacts to this species.

Yellow-breasted Chat
This migratory song bird nests along the Mojave River in the Town of Apple Valley and in the western portion of the Sphere of Influence. Yellow-breasted Chats prefer riparian habitats that contain shrubby Willow, Mulefat, Wild Grape, and Cottonwood species.

Yellow Warbler
This riparian-dependent bird species is found along the Mojave River within and adjacent to the western portion of the Town. These birds prefer dense thickets of riparian communities containing Wild Rose, shrubby Willow, and Mulefat. Parasitism and habitat loss have caused the population of Yellow Warblers to decline. Preserving riparian habitat will help to protect this species.

**Sensitive Mammal Species**

Mojave River Vole
This vole species is restricted to moist habitats occurring along the Mojave River and prefers meadows and marshes. The Mojave River Vole is a state species of special concern, due to habitat fragmentation, flood control, and urbanization. Protection of meadow and marsh communities within the Mojave River corridor will reduce impacts to this species.

Pallid San Diego Pocket Mouse

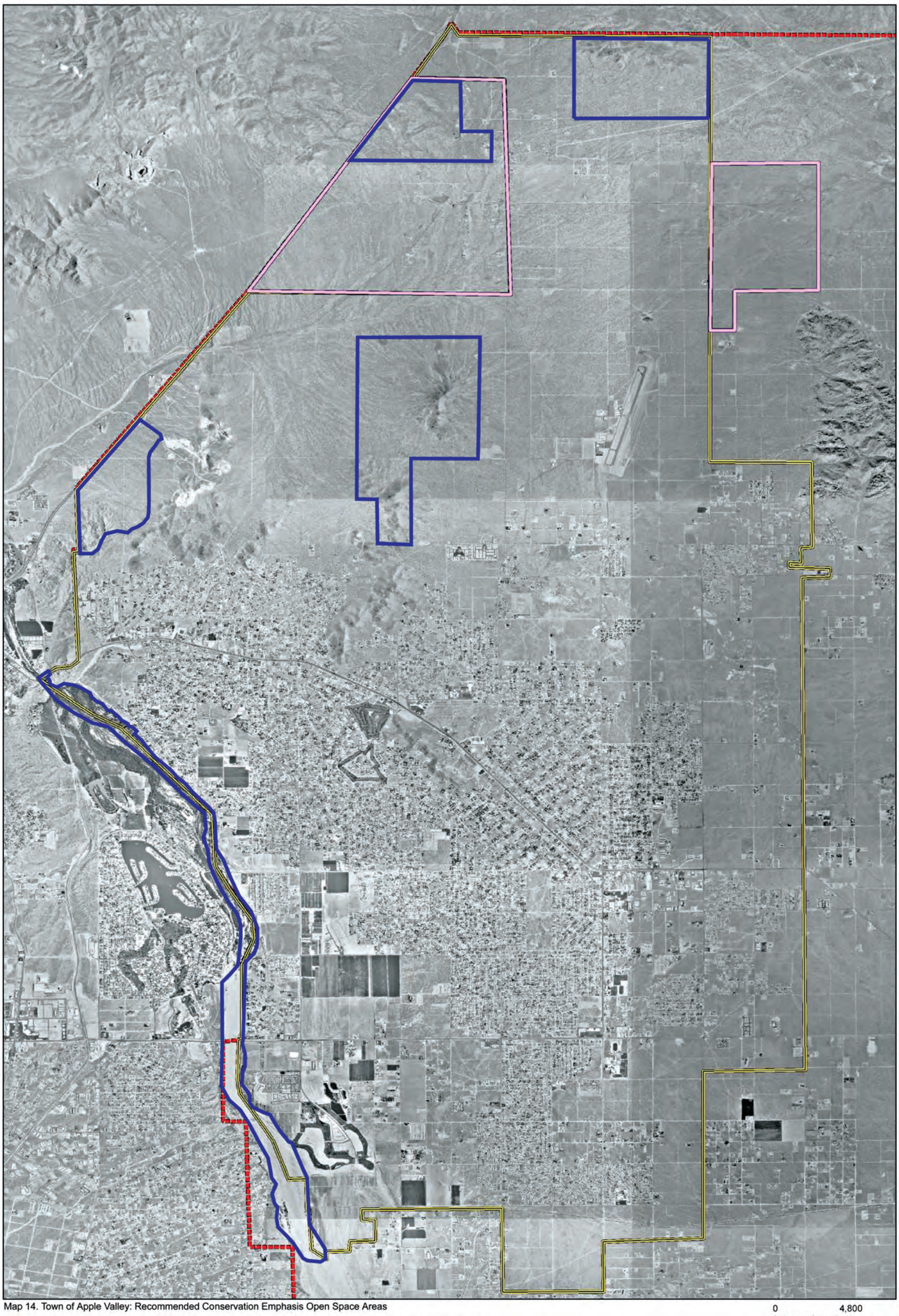
This pocket mouse prefers habitats such as Desert Scrub, mixed Mojave Scrub washes, and Pinyon-Juniper plant communities. Much of its preferred habitat within the Town has been eliminated by urbanization and cultivation, but there is small potential for this species to exist within the sandier portion of the Mojave River corridor.

Hoary Bat

The hoary bat, so called because of the frosted or "hoary" appearance of its fur, is generally solitary. It eats a variety of insects and is identifiable by its fast and direct flight. It roosts in trees. It has been historically reported in the western portion of the planning area at the Mojave Narrows Regional Park, but was not observed during site surveys. This species is jeopardized by loss of riparian habitat and pesticide use. Curtailing removal of riparian plant communities, limiting cutting of large trees, and controlling wildfires along the Mojave River in a timely manner are considered important to the conservation of this species.

Mojave Ground Squirrel

During rainy seasons, this species relies primarily on leaves and seeds of forbs and shrubs, on the fruit of Joshua Trees and sometimes eats insects. During dry seasons they eat mainly perennial stub leaves. This species is thought to forego breeding during dry years. This is a state listed threatened species, the historic range of which is thought to occur within the planning area. However, due to habitat fragmentation related to agriculture and urban development, this species appears to have been extirpated from the Victor Valley region.

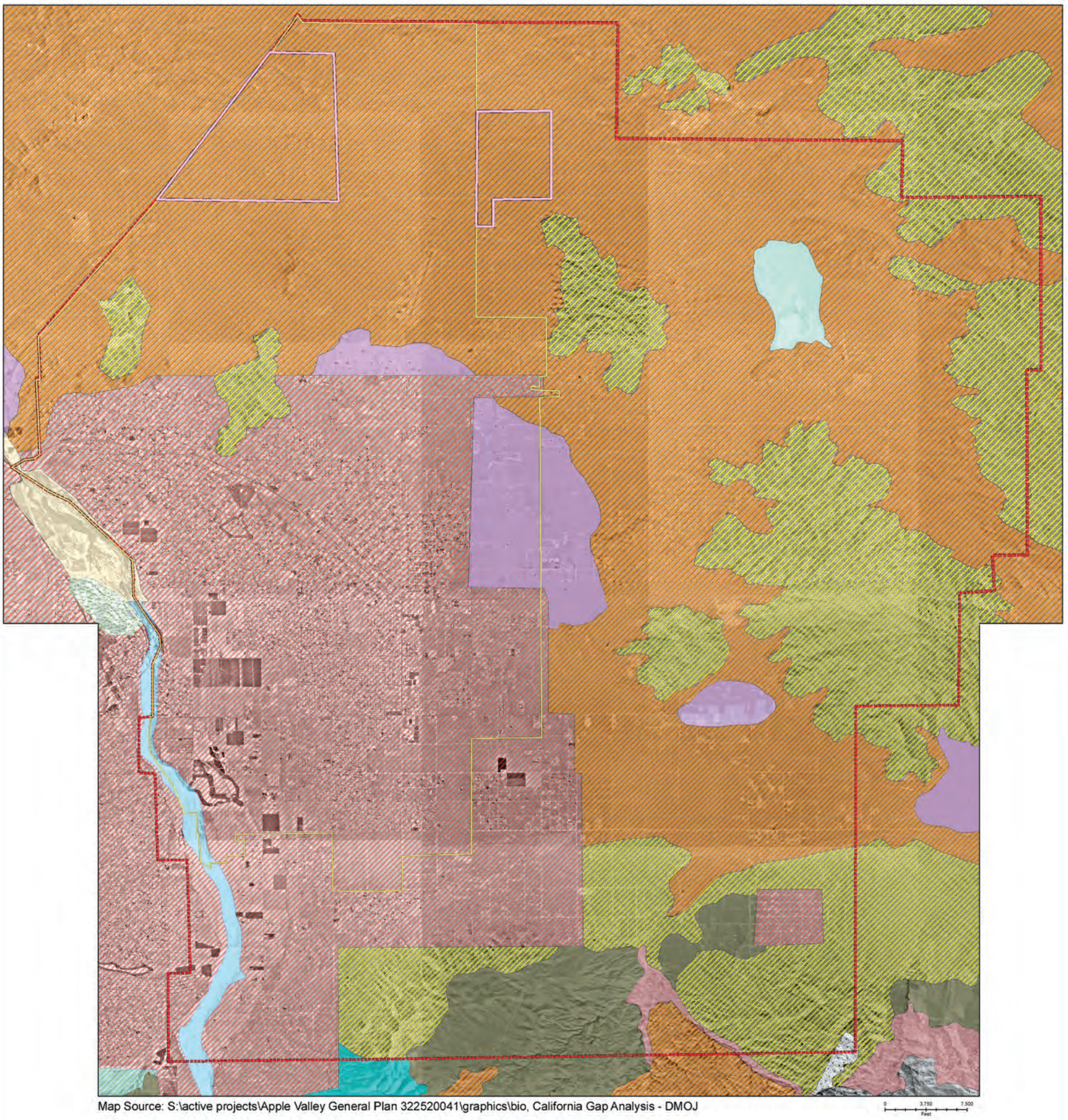



Source: AMEC 11.2007

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**Apple Valley General Plan Draft EIR**
**Habitat Areas Requiring Additional Biological Study**
**Apple Valley, California**

Exhibit
**III-1**




# Legend

Apple Valley Town Limits
Apple Valley SOI
Apple Valley Annexation Areas

**Regional VegetationType**

- Pinyon-Juniper & Desert Wash
- Pinyon-Juniper
- Juniper
- Montane Hardwood-Conifer
- Annual Grassland & Saltbush Scrub
- Mojave Riparian Forest
- Mojave Mixed Woody Scrub
- Urban/Rural
- Saltbush Scrub
- Creosote Bush Scrub
- Lacustrine
- Mojave River Sand Fields

N

Source: AMEC 11.2007

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**Apple Valley General Plan Draft EIR**
**Natural Communities by Vegetation Type**
**Apple Valley, California**

**Exhibit**
**III-2**

**Habitat Protection and Connectivity**

As previously discussed, the planning area and vicinity contain areas of valuable habitat that support special status species. These areas are illustrated in the Biological Resources Study in Appendix B. A number of plans have been or are being developed to address issues associated with impacts to these areas from development, including the West Mojave Habitat Conservation Plan (Bureau of Land Management) and the Apple Valley Multiple Species Habitat Conservation Plan (MSHCP) currently under development. These plans provide important guidelines and criteria for these habitats by establishing requirements for the preservation and maintenance of wildlife movement corridors within the Town and vicinity. Both plans are further discussed below.

Important linkage areas in the planning area and vicinity include the Mojave River corridor, which links a number of natural communities within the planning area, and other washes, which provide for movement between surrounding mountain ranges to the north/northeast and south/southeast. The General Plan includes policies and programs intended to ensure that habitat connectivity is preserved in the planning area. In addition, a number of special survey areas in the planning area are identified in the General Plan. Species for which surveys are required as part of development applications include Desert Tortoise, Mojave Ground Squirrel, Burrowing Owls, Joshua Trees, and/or Migratory/Nesting/Other Protected Birds.

West Mojave Habitat Conservation Plan

The West Mojave Habitat Conservation Plan, developed by the Bureau of Land Management (BLM) covers approximately 9.3 million acres of publicly owned land within San Bernardino, Kern, Los Angeles, and Inyo Counties. It is the largest habitat conservation plan to be developed in the United States. The Plan sets forth a comprehensive strategy for managing state and federally listed species, special status species, and their habitats on public lands. The plan mandates conservation of lands for specifically covered species, such as the Desert Tortoise, Mojave Ground Squirrel, Le Conte's Thrasher, Burrowing Owl, and others. Currently, the West Mojave Plan has achieved certification under the National Environmental Policy Act (NEPA) and therefore only applies to federally owned lands within its planning area.

Local, state, and federal entities are in the process of developing a private lands counterpart to the West Mojave Plan. Upon completion of the CEQA process for the plan by the County of San Bernardino, it is expected that future development on state, local government, and private lands will be covered and properly mitigated through the payment of a regional land development fee. At completion of the CEQA process it is likely that specific survey requirements and permitting parameters for public and private land actions will be required. An extension of the West Mojave Plan is the Draft West Mojave Habitat Conservation Plan and Conservation Banking Program, which identifies fourteen special status species.

Apple Valley Habitat Conservation Plan

As noted above, the Town of Apple Valley is in the process of preparing a comprehensive MSHCP that will address management for federally listed and other special status species occurring on private lands within the Town of Apple Valley. Currently individual development

projects with potential to impact a listed species must process separate state and/or federal permits to address compliance with the state and federal Endangered Species Acts.

The Town is preparing the Apple Valley MSHCP to address impacts to sensitive and listed species and ensure that the General Plan can be implemented. It will also enable the Town to streamline the development entitlement process and permitting while ensuring protection of sensitive environmental resources.

Native Plant Ordinance

The Town of Apple Valley has adopted an ordinance[17] aimed at protecting native plants, which makes special provision for Joshua Trees and other native species. The ordinance requires authorization from the Town prior to disturbing, removing or destroying Joshua Trees, and when removal is necessary, prescribes their relocation and transplant whenever feasible.

**Public Land Agencies and Ecosystem Management**

A number of public land agencies in the planning area and the region collaborate to manage open space lands. On a federal level, these include the National Park Service, the United States Forest Service, United States Fish and Wildlife Service, and the Bureau of Land Management. State agencies include the California Department of Fish and Game, State Water Quality Control Board, and the California Department of Parks and Recreation. Lands owned and managed by these agencies and organizations may, among other uses, provide for recreational uses, which has the potential to impact and disturb the land to varying degrees. The Bureau of Land Management manages open space areas within the area, located primarily in the northern portion of Apple Valley.

**Regulation of Streambeds and Watercourses**

Per California Fish and Game Code § 1600 et seq., the California Department of Fish and Game (CDFG) has authority regarding any proposed development activity that will divert, obstruct, or affect the natural flow, or change the bed, channel, or bank of any watercourse or body of water. On a federal level, Section 404 of the federal Clean Water Act grants the U.S. Army Corps of Engineers permitting authority for any project that will alter waters of the United States. The Town will continue to require that developers obtain the proper permits and authorizations from these and other appropriate agencies, including the California Regional Water Quality Control Board, as necessary. Exhibit III-3 shows the jurisdictional and non-jurisdictional waterways within the Town and Sphere of Influence.

**Annexation 2008-001**

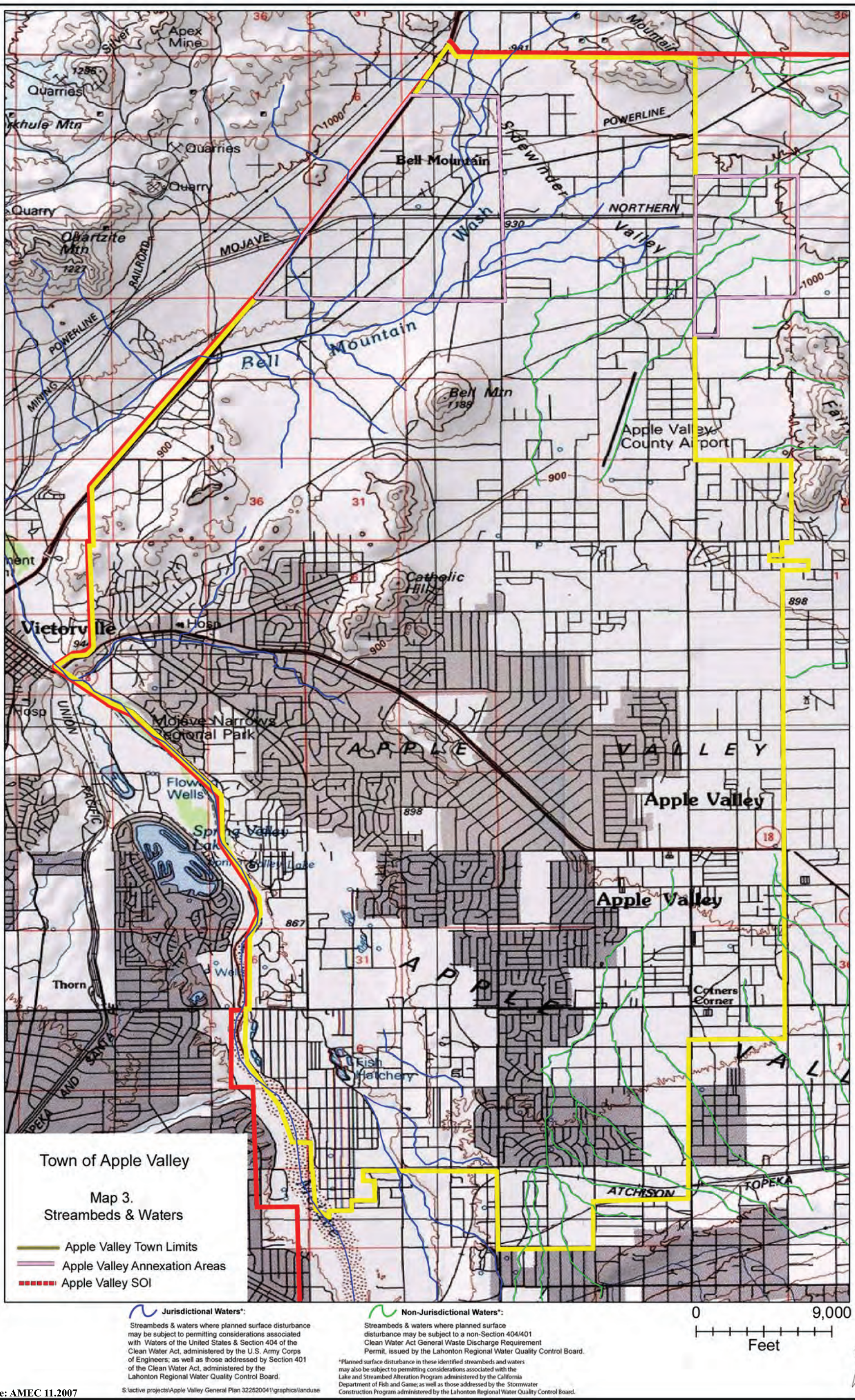
Currently this area is undeveloped and is occupied primarily by Creosote Bush Scrub habitat, which may support a number of common plant and animal species, as well as providing potential habitat for special status species. There are several ephemeral blue-line streams, which the

[17] Chapter 9.76.040, as amended., "Plant Protection and Management", Town of Apple Valley Development Code 2000.

biological resources study identified as jurisdictional, that intersect this annexation area in a north/south direction. These streams originate in the hills to the north and terminate at the Mojave River.

**Annexation 2008-002**

Currently Annexation 2008-002 is generally undeveloped, with the exception of a mining operation. The area contains creosote bush scrub habitat and is crossed by two ephemeral, non-jurisdictional waterways that trend in a northeast/southwest direction. These streams originate in the hills to the northeast and terminate at Reeves Dry Lake to the south.




Town of Apple Valley

Map 3.
Streambeds & Waters

- Apple Valley Town Limits
- Apple Valley Annexation Areas
- Apple Valley SOI

**Jurisdictional Waters*:**
Streambeds & waters where planned surface disturbance may be subject to permitting considerations associated with Waters of the United States & Section 404 of the Clean Water Act, administered by the U.S. Army Corps of Engineers; as well as those addressed by Section 401 of the Clean Water Act, administered by the Lahonton Regional Water Quality Control Board.

**Non-Jurisdictional Waters*:**
Streambeds & waters where planned surface disturbance may be subject to a non-Section 404/401 Clean Water Act General Waste Discharge Requirement Permit, issued by the Lahonton Regional Water Quality Control Board.

*Planned surface disturbance in these identified streambeds and waters may also be subject to permitting considerations associated with the Lake and Streambed Alteration Program administered by the California Department of Fish and Game; as well as those addressed by the Stormwater Construction Program administered by the Lahonton Regional Water Quality Control Board.

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Source: AMEC 11.2007

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Planning & Research, Inc.

**Apple Valley General Plan Draft EIR**
**Streams, Washes and Waterways**
**Apple Valley, California**

Exhibit
**III-3**

## 2. Impacts

This discussion focuses on biological resources that have the potential to be impacted by development of the General Plan. It is assumed that individual land development actions will require site-specific evaluations identifying potential impacts to biological resources.

There are a variety of land uses in the planning area, including highly developed urbanized areas within the Town, where habitat value has been significantly degraded. Within parts of the Town and the proposed annexation areas, there are areas of undeveloped lands with habitat supporting a range of common and special-status plant and animal species. In particular, development that occurs on vacant or undisturbed lands has the potential to result in direct and indirect impacts to biological resources that could be significant if not adequately mitigated. Implementation of mitigation measures set forth below will reduce impacts to biological resources to less than significant levels.

The most severe impacts to biological resources are those that result from habitat loss, fragmentation, and degradation. Impacts to wildlife species are particularly associated with loss of important breeding and/or foraging habitat, native plant communities, and riparian habitat as urban development encroaches into open space areas. The introduction of non-native species can disturb and overrun natural communities. As urban development grows it is often accompanied by increased use by off-highway vehicles and pedestrians, exposure of wildlife to domestic pets, and illegal trash dumping, which adversely affect biological resources. Fragmentation can contribute to instability of ecosystems and other adverse changes, such as an increase in predators, competitors and parasites. To minimize biodiversity losses associated with fragmentation, it is crucial that land use planning include provisions for an interconnected network with established wildlife corridors and linkages.

**Potential Impacts to Plant Communities**

Disturbances from grading and development of lands within the General Plan area have the potential to result in direct adverse impacts to the soil column, which can eliminate soil nutrients and restrict plant growth. Although temporary disturbances can result in regeneration and new growth, permanent disturbances can lead to the destruction of entire populations of common and sensitive plant species. The Desert Cymopterus and the Southern Skullcap are two special status plant species thought to occur within Town limits and are considered to be rare and endangered throughout their range (CNPS List 1B). Booth's Evening Primrose is thought to occur along the western edge of the Town and although it is considered to be rare, threatened or endangered in California, it is more common elsewhere (CNPS List 2). The Town of Apple Valley also protects and manages Joshua Trees, as set forth in the Town's Development Code.

Development of the General Plan also has the potential to indirectly impact plant species that occur within Town limits. Introduction of non-native plant species associated with landscaping could result in native plant species competing for water, nutrients and space. Habitat fragmentation from roads and fences can reduce the extent to which seeds disperse, thereby isolating plant communities.

Although build out of the General Plan has the potential to adversely impact special status plant species, implementation of mitigation measures set forth below, including but not limited to the requirement of site-specific surveys, species specific survey protocols, and land development fees, are expected to reduce impacts to biological resources to less than significant levels.

**Potential Impacts to Invertebrates, Reptiles and Amphibians**

Along the west edge of the Town, in association with the Mojave River and Upper Narrows, two special status invertebrates, one federally listed amphibian, and three special status reptiles are thought to occur or were historically recorded.

Special status and federal or state listed species that rely on the Mojave River habitat are protected in the General Plan, since the Mojave River corridor will be preserved as Open Space. Special status invertebrates thought to occur along the Mojave River include the San Emigdio Butterfly and the Victorville Shoulderband. Although not recently reported, one federally listed amphibian, the California Red-legged Frog, was historically reported along the Mojave River. There are two special status reptiles reported along the Mojave River, the Common Chuckwalla and the Western Pond Turtle. As shown in the land use plan, the Mojave River corridor will be preserved and maintained as open space, and will continue to provide valuable habitat for special status species and common species alike.

In addition to the important habitat associated with the Mojave River, the Town contains Creosote Bush Scrub habitat that may support the Desert Tortoise. This species has state and federal status as threatened, and therefore requires specific consideration. Although build out of the General Plan will impact any Desert Tortoises occurring within the planning area, implementation of mitigation measures including site-specific surveys and species relocation will reduce impacts to Desert Tortoises to less than significant levels.

Special status invertebrates, amphibians and reptiles are potentially affected by increased urbanization. Many of these species are most likely to occur in non-urbanized portions of the Town, including along the Mojave River, and within undisturbed Creosote Bush Scrub habitats. Urban development has the potential to destroy or fragment these habitats; impacts also include the depletion of surface water resources as urban water uses increase in the planning area. Individual species and entire populations will be impacted by permanent loss of this habitat. Off-highway vehicle traffic and grading and construction activities place reptiles and amphibians at particular risk. Adherence to mitigation measures will reduce impacts to these resources to less than significant levels.

**Potential Impacts to Birds**

Development in the Town of Apple Valley will result in habitat degradation and the direct loss of foraging and nesting sites for a variety of common and special-status bird species. Indirect impacts to special status bird species include increased exposure to and hunting by domestic pets, decreased availability of nesting sites, ingestion of pesticides, and the introduction of

parasites. It is thought that some bird species are disrupted by off-road vehicle activity, especially during the breeding season. Bird species that are capable of tolerating human disturbance will continue to inhabit developed areas.

As listed in Table III-29, there are several special status bird species that nest or forage within the Town, especially in association with the riparian habitat along the Mojave River. Preservation of the habitat along the Mojave River will protect those special status and listed species that rely on riparian habitat such as the Southwestern Willow and Vermillion Flycatchers, Western Yellow-billed Cuckoo, Swainson's Hawk, Long-eared Owl, and Least Bell's Vireo, as well as others.

The Prairie falcon is a species of special concern that is known to occur within town limits. This species tends to occupy cliffs and hilly or mountainous terrain, and may be particularly vulnerable to development that occurs within or adjacent to such terrain. The Town of Apple Valley has preserved steep slopes as open space, which should help to protect this species' nesting habitat.

Special status bird species that rely on creosote scrub habitat such as Le Conte's and Bendire's Thrashers and Burrowing Owls also have the potential to be adversely impacted by development of the General Plan and annexation areas. Undisturbed Creosote Bush Scrub habitat is largely located within the Sphere of Influence, outside of Town limits. Future development in the annexation areas will be required to specifically address special status bird species by conducting presence/absence surveys prior to development, in addition to other mitigation measures set forth below.

**Potential Impacts to Mammals**

The General Plan area is situated in the western portion of the Mojave Desert, north of the San Bernardino Mountains, providing a range of habitat types and supporting a variety of wildlife. Urbanization of the General Plan and annexations areas has the potential to adversely impact common and sensitive animal species. The Mojave River channel is thought to be one of the few possibilities for a connection between these mountain ranges to the south and the desert environment.

The Mojave River Vole is a species of special concern and has been reported along the Mojave River. As previously mentioned, the Mojave River corridor will be preserved as open space, thereby protecting this important habitat for the Mojave River Vole.

As listed by the State of California, the Mojave Ground Squirrel is a threatened species that prefers Creosote Bush and Saltbush Scrub habitat. Most of this habitat type within the Town has been highly disturbed and fragmented and is not thought to support this species presently.

The Hoary Bat and the Pale Big-eared Bat have been reported in the general vicinity of the planning area and have the potential to be impacted by development facilitated by the General Plan and annexation areas. In the Town of Apple Valley, bats may roost in abandoned buildings,

bridges over major drainages, and old mines in the northern portion of the planning area (See Exhibits III-16 and III-17, Mineral Resources/Mines and Prospects North and South), which should be surveyed prior to disturbance.

The Pallid San Diego Pocket Mouse has a low potential to occur within the Town since only a small area of its preferred habitat type, sandy washes, remains intact in association with the Mojave River corridor. More intact habitat that may support this species is found south of the planning area at the base of the San Bernardino Mountains.

Development of the General Plan will remove habitat and increase fragmentation, which will adversely impact mammal species occurring within the Town. However, the implementation of mitigation measures and adherence to the Habitat Conservation Plans currently being developed for the area will ensure that impacts to biological resources are limited to less than significant levels.

**Annexation 2008-001 and 2008-002**

As with other undeveloped portions of the Town, build out of the annexation areas has the potential to impact biological resources, including common and possibly special status species, in the annexation areas through direct disturbance from development, habitat loss, and fragmentation. In order to assure that impacts to special status species are mitigated, site specific evaluations of biological resources shall be required prior to site disturbance for any project occurring within the proposed annexation areas which has the potential to contain special status species.

Future development in the annexation areas may result in activities within and adjacent to ephemeral streams. Such activities may be subject to state and federal regulatory permitting requirements, to be determined at the time development proposals are reviewed by the Town.

### 3. Mitigation Measures

To ensure that impacts to biological resources are reduced to less than significant levels, the following mitigation measures shall be implemented.

1. (a) The Town shall aid the County of San Bernardino and other participating federal, state, and local agencies in the preparation of a private lands counterpart to the West Mojave Habitat Conservation Plan.
   (b) The Town shall participate in the provision of biological resources data and/or surveys relevant to open space areas within its jurisdiction and sphere of influence that may have biological resources value, and shall participate in the preparation of a Habitat Conservation Plan that addresses the needs of the Town with regard to regional biological resources.
   (c) If a Habitat Conservation Plan is formulated by the participating federal, state, and local agencies that allows for the conservation of biological resources, the Town shall implement it.

2. The Town shall complete the preparation of the Apple Valley MSHCP, in conjunction with the California Department of Fish & Game ("CDFG") and the U.S. Fish and Wildlife Service ("USFWS"). Upon the completion of the MSHCP to the satisfaction of all three parties, the Town shall proceed to implement it according to its terms and the authorization for take of special status species granted by CDFG and USFWS.

3. (a) The Town shall require that biological resources evaluations be performed prior to development actions, including site-specific surveys utilizing specified survey parameters as required for all special status species in identified habitat areas, and especially within or adjacent to linkage corridors or special survey areas and potential jurisdictional areas.
   (b) As required by CEQA, if biological resources are present that would be significantly impacted by a project, mitigation shall be imposed on the project to reduce the impact to a level of less than significant, to the extent feasible.
   (c) At the General Plan-level, it is not practical to formulate or list the entire range of specific mitigation measures that can be required for individual projects. Therefore, this identification can only be done at the project-level, based on the Town's judgment of the individual circumstances of the project before it as a lead agency under CEQA. However, it can be generally stated that the Town shall require mitigation pursuant to species- or resource-specific protocols established by CDFG, USFWS, and/or the U.S. Army Corps of Engineers. The Town can also require, as appropriate, transplantation or seed collection programs, trapping and removal of wildlife, preservation of offsite habitat, recreation of habitat, or participation in a mitigation bank.

4. The Town shall ensure that land actions require site-specific nest surveys for the presence of migratory birds in accordance with established protocols and requirements of the Migratory Bird Treaty Act, prior to site disturbance. If protected migratory birds and/or raptors are found to be nesting onsite, construction activities will not be allowed within a radius of the nest determined by a qualified biologist, until the young have fledged and left the nest.

5. Biological surveys for Burrowing Owls and Prairie Falcons shall be performed for any site proposed for development wherever sufficient open space and suitable habitat is present. Coordination with California Department of Fish and Game is required when survey results are positive.

6. Biological surveys for bats shall be performed prior to disturbance on projects involving reconstruction of bridges, demolition of abandoned buildings, and/or have the potential to contain old mines, in order to determine if significant roosts are present. If roosts are present, projects shall comply with applicable protocols of the Department of Fish and Game or US Wildlife Service, and the recommendations of qualified biologists.

7. The Town shall utilize land use designations that provide for Open Space in order to protect viable habitat within the Town. On lands not already designated as Open Space where viable habitat occurs, such lands shall be considered for an open space land use

designation as appropriate. Open Space lands shall be managed as warranted for the preservation and protection of their biological and natural resources.

8. The Town shall retain the Open Space designation along the Mojave River to ensure that important riparian habitat and linkages are conserved.

9. To conserve the natural state of existing hillsides and slopes, land greater than 15% slope shall not be built upon and shall be used as open space.

10. Open space land shall be protected in perpetuity.

11. Development proposals adjacent to open space lands shall provide buffers and linkages to maintain natural resource values.

12. Groundwater shall be conserved to reduce overdraft and retain or increase the depth of the water table along the Mojave River, which will help to preserve and restore plant communities within and adjacent to the waterway.

13. Development projects proposing to alter or impact major drainages (blueline streams) including ephemeral streams, shall consult with the appropriate state and/or federal regulatory agency. Such alteration may require permits from the U.S. Army Corps of Engineers, Lahonton Regional Water Quality Control Board, and/or the California Department of Fish and Game. Compliance with such permits will ensure that impacts to riparian habitat are mitigated by either restoration or replacement, and that impacts to water quality are avoided by compliance with Section 401 of the Clean Water Act requirements.

14. The Town shall promote the use of native vegetation for landscaping to enhance and create viable habitat for local species. The Town shall periodically update a comprehensive list of plant materials that are complementary with the local environment. This list shall include native and non-native, drought tolerant trees, shrubs and groundcover. The Town shall also maintain a list of prohibited plant materials. Both lists shall be made available to developers and residents. The use of native vegetation in project submissions shall be given preference over water-intensive landscaping during project design review.

15. The Town shall require developers to recover, preserve, or utilize native vegetation within their project or shall require that viable vegetation is transplanted to other appropriate sites in conformance with its Native Plant Ordinance. The Town shall make information on salvaging and transplanting native species available to developers.

16. The Town shall provide and maintain a comprehensive interconnected recreational trail system suitable for bicycles, equestrians and/or pedestrians. This will encourage the reduction of vehicle miles traveled and also provide corridors for animal migration between habitat areas. The Town shall encourage multiple use corridors through the

drainage channels and utility easements, thereby encouraging the connectivity of natural communities.

17. The Town shall continue to promote biodiversity by protecting natural communities with high habitat value, protecting habitat linkages to prevent further fragmentation, and encouraging an appreciation for the natural environment and bio resources.

**Mitigation Monitoring/Reporting Program**

A. Potential impacts to biological resources from development projects shall be evaluated and assessed on a project-by-project basis, through the Initial Study review process. Impacts shall be clearly documented and mitigation measures recommended as necessary.
**Responsible Parties**: Planning Division, Developer, Consulting Biologist.

B. Prior to the issuance of building permits, the Town shall assure that all required biological resource mitigation actions, including but not limited to pre-construction surveys, off-site mitigation and/or the payment of appropriate impact fees, have been satisfied.
**Responsible Parties**: Planning Division, Building Division, Developer, Consulting Biologist.

C. Town staff shall, on an annual basis, review biological resources reference materials and update records and inventories to ensure that resource databases are maintained on an ongoing basis.
**Responsible Parties**: Planning Division, Consulting Biologist.

D. Prior to issuance of grading permits, the Town shall assure that project developers have obtained all required state and federal regulatory permits related to biological resources, including impacts to stream beds and banks, have been obtained.
**Responsible Parties:** Planning Division, Developer, California Department of Fish and Game, U.S. Army Corps of Engineers.

E. he Town shall require that on-site inspections be conducted during development activities, including but not limited to grading and construction, in order to assure conformance with grading limits, and the preservation and integration of native and other appropriate landscape materials in accordance with approved landscape plans.
**Responsible Parties**: Planning Division, Developer, Consulting Biologist.

## E. Cultural Resources

### Introduction

Cultural resources are an integral part of a community and provide a meaningful sense of history and heritage. In the Town and Sphere of Influence, cultural resources include Native American sites and historical elements from the Town's early settlement and development.

A Cultural Resources Technical Report has been prepared in conjunction with the development of the General Plan and consideration of the two annexation areas[18]. The study included a records search, a historical background review of the planning area, and a reconnaissance-level field inspection. It is included in Appendix C of this document.

The Cultural Resources section of the EIR describes the existing condition of cultural resources within the planning area, analyzes the potential impacts of the General Plan on these resources and sets forth mitigation measures to reduce the impacts. Cultural resources include three types of resource: prehistoric or archaeological resources; historic resources; and paleontological resources.

### Thresholds of Significance/Criteria For Determining Significance

The California Environmental Quality Act (CEQA) is prescriptive in how the Town of Apple Valley must address issues relating to cultural resources. The CEQA guidelines state that the term 'historical resources' applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical Resources.

The following thresholds or criteria are derived from Appendix G of CEQA. The General Plan will have a significant effect on cultural resources if it:

a. Causes a substantial adverse change in the significance of a historical resource as defined in 15064.5

b. Causes a substantial adverse change in the significance of an archaeological resource pursuant to 15064.5

c. Directly or indirectly destroys a unique paleontological resource or site, or unique geologic feature.

d. Disturbs any human remains, including those interred outside of formal cemeteries.

The State of California's Public Resources Code (PRC) Section 5020.1 defines 'historical resources' as including but not limited to 'any object, building, structure, site, area, place record or manuscript' which is determined to be historically or archaeologically significant. Historical resources may also include those that are determined to be significant 'in the architectural,

[18] Cultural Resources Technical Report for the Town of Apple Valley General Plan Update, prepared by CRM Tech, September 21, 2007.

engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California'. Similarly, the CEQA Guidelines state that the term 'historical resources' applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical Resources. The relevant criteria for determining significance are briefly described below.

The California Environmental Quality Act (CEQA) Guidelines mandate that, in order for a resource to be considered historically significant, it must meet the criteria for listing on the California Register of Historical Resources (Title 14, California Code of Regulations (CCR) Section 15064.5(a)(1)-(3)[19]. Inclusion in the Register may occur if the resource meets any of the following criteria:

a. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

b. Is associated with the lives of persons important in our past.

c. Embodies the distinctive characteristics of a type, period, region, method of construction, or represents the work of an important creative individual, or possesses high aesthetic value.

d. Has yielded, or may be likely to yield, information important in pre-history or history.

Criteria for the consideration of cultural resources of potential significance, and their appropriate disposition, are established in Section 15126.4(b)(3) of the CEQA Guidelines.[20]

**Senate Bill 18 and Native American Consultation**

The purpose of SB18 is to protect traditional tribal cultural places and in accordance with the Bill, the Town of Apple Valley is required to offer consultation with Californian Native American Tribes regarding proposed land use planning decisions involving General Plan adoption or amendment.

Based on a listing of Native American Tribes provided by the Native American Heritage Commission (NAHC), the Town of Apple Valley offered consultation to regionally active Tribes. No responses were received. The 90-day consultation period has ended, and no consultation was requested.

19 Guidelines for Implementation of the California Environmental Quality Act, California Code of Regulations, Title 14, Division 6, Chapter 3. Section 15064.5(a)(1)-(3)

20 California Environmental Quality Act – Statutes and Guidelines, prepared by the Governor's Office of Planning and Research, State of California, 1998.

## 1. Existing Conditions

### Archaeological Resources in the Planning Area

Records on file show that most of the planning area has not been surveyed systematically for cultural resources. The older neighborhoods near the center of Town were developed long before federal and state regulations began to require such surveys as a part of the planning process. The natural landscape within Apple Valley has been displaced by these residential neighborhoods and commercial development, erasing surface evidence of prehistoric archaeological sites as well as early historic-period settlements at those localities. In comparison, the areas where new development occurred in recent decades have received much more survey coverage, especially along the Mojave River.

According to archaeological records, a total of 48 historical/archaeological sites have been identified within the planning area and recorded into the California Historical Resource Information System. These include 16 prehistoric (Native American) archaeological sites and 32 historic-period sites. Seven 'pending' sites, all prehistoric in nature, have also been reported. In addition, a total of 28 isolates (localities with fewer than three artifacts) have been discovered in the planning area.

At least six of the recorded prehistoric sites and five of the 'pending' prehistoric sites were identified as large Native American habitation areas/villages along or in close proximity to the banks of the Mojave River. Archaeological evidence for these sites included the presence of rock shelters, bedrock milling features, pictographs and/or petroglyphs on surfaces of boulders, human cremations and associated grave goods, aboriginal trails, and midden. Such clustering of large and extensive Native American living areas is indicative of a reliance on the Mojave River and its tributaries for the necessities of daily life.

Records on file indicate that approximately one-third of the total acreage within the Town and associated Sphere of Influence has been systematically and intensively surveyed for cultural resources. Many prehistoric and historic sites that remain unsurveyed may therefore be at risk through being unidentified and unrecorded.

During preparation of the Cultural Resources Technical Report for the Town of Apple Valley General Plan Update, the NAHC confirmed that according to a search of the Sacred Lands File, no sites are recorded within the Planning Area. However, the Commission suggested that local Native American organizations be contacted and CRM Tech initiated correspondence with nine representatives identified by the NAHC, as well as with two additional representatives of the Cahuilla. At the time of writing the Technical Report, only one response from the Morongo Band of Mission Indians had been received. The Cultural Resources Coordinator for the tribe advised that the tribe is aware of several cultural resource sites to the south and southeast of the planning area, and made recommendations regarding project review and protection of resources as development occurs.

Areas of sensitivity for archaeological resources are shown in Exhibit III-4.

**Historic Resources in the Planning Area**

Historic maps from the mid-1850s identified the only evidence of human activities in the vicinity of the Planning Area was the historic Mormon Trail, identified in the maps as "Road to Salt Lake City". At the nearest spot, the trail traversed in a north-south direction approximately 3.5 miles west of the north portion of the Planning Area. No man-made features of any kind were observed within or adjacent to the Town and Sphere of Influence at that time.

Based on the results of the historical background research, settlement and development of Apple Valley during the historic period occurred in three phases: the 1860s to the 1880s; the 1890s to the mid 1940s; and 1946 to present day.

Early Settlement in Apple Valley (1860s-1880s)
The first of these phases was the early settlement period, lasting from the 1860s to the 1880s. The best-known example of properties dating to this period was the Brown Ranch, later known as Rancho Verde, which once exceeded 3,000 acres and extended from present-day Apple Valley and Bear Valley Roads to the Upper Mojave Narrows.

The present-day Apple Valley area was first settled on a semi-permanent basis in 1860 by cattle herder Silas Cox, and the earliest permanent settlements to appear in and near Apple Valley were the Brown ranch, Atkinson's homestead, and McKenney and Taylor's supply station, all established around 1870. Other settlers undoubtedly also ventured into the area during the great southern California land boom of the 1880s. Unfortunately, due to later redevelopment, little physical remains of these early settlement activities can be found today.

Agrarian Development (1890s-1940s)
The second phase in the settlement and development of Apple Valley, set off by the Appleton Land and Water Company's activities in the 1890s, lasted into the 1940s. It was characterized by the gradually growing number of large ranches, including apple plantations, cattle ranches and, later, guest ranches. Among the ranches that predated the rise of the dude ranch industry were those owned and operated by Ursula Poates, who is credited with naming the town. None of these early ranches survived to the present time, but remains associated with their heyday may still be found in the less developed portions of the planning area.

Towards the end of this period, and partially due to the impacts of the Great Depression, a unique variation developed in the otherwise common agrarian theme in the area's growth, when many of the ranch owners began to take advantage of their isolated desert setting and marketed it to city-dwellers seeking health, relaxation, and recreation.

Birth and Growth of the Town (1940s-Present)
The third identifiable phase in the settlement and development of Apple Valley, starting in 1946, featured primarily the town-building efforts of Newton Bass, Bud Westlund, and the Apple Valley Building and Development Company. Several commercial and residential projects were overseen by Bass and Westlund, such as the construction of the Branding Iron, the Bank of Apple Valley, the Apple Valley Inn, and the Hilltop House, used for entertaining potential

buyers. Bass and Westlund stipulated that all development in the community should 'complement the natural beauty of the valley and of building of permanence'. Based on this idea, all new projects were reviewed by an Architectural Board as a means to prevent new construction from degrading or decreasing the value of older buildings. The majority of the buildings constructed during this period were typical for the early post-WWII era, featuring primarily the "rambling" California Ranch-style architecture.

A number of public facilities in the new community were built on land donated by Bass and Westlund, such as the James A. Woody Community Center, the Yucca Loma Elementary School, and St. Mary's Academy. Additional development during this time period included the El Pueblo Shopping Center, the Black Horse Motel, the Terri Lee Doll Company, and the Buffalo Trading Post. True to Bass and Westlund's original plan for Apple Valley Ranchos, the growth of the town has been largely driven by residential and commercial development. And finally, in 1988 the Town of Apple Valley was incorporated.

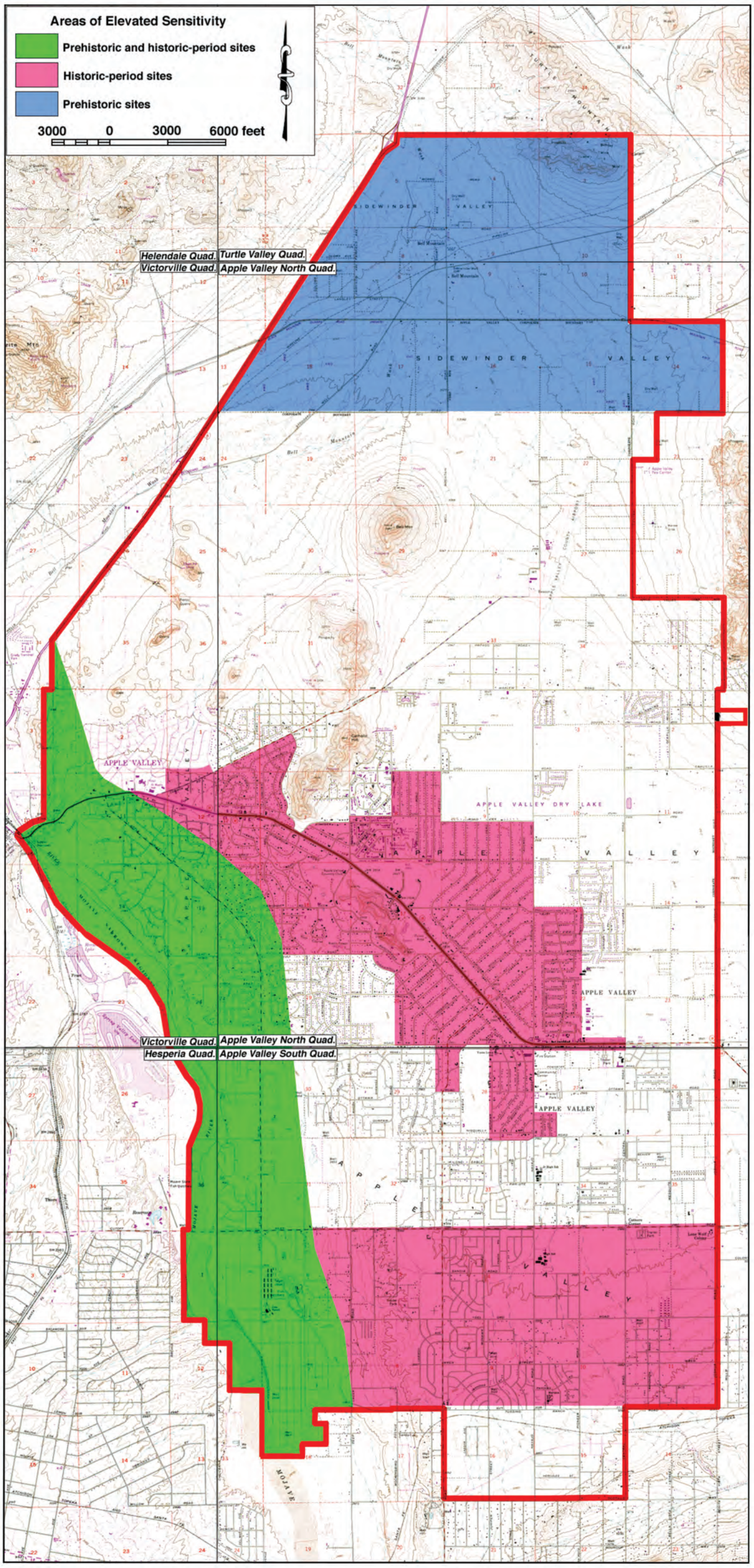
Areas of sensitivity for historic resources are shown in Exhibit III-4.

**Paleontological Resources in the Planning Area**

Paleontological sensitivity is based on the potential of geological formations to produce fossils based on what fossil resources have been produced in the past at other nearby locations of similar geologic composition. Any surface or subsurface Pleistocene-age (1,808,000 to 11,550 years ago) soils that are present in the planning area may have a high potential to contain significant nonrenewable paleontological resources (also see Geology and Soils, Section III-F). The older sediments along the Mojave River, and at unknown depth below the surface are given a higher priority. The more elevated portions of the Planning Area contain substantial exposure of Mesozoic-age (65,000,000 to 245,000,000 years ago) rocks that may be devoid of fossils. Similarly, grading of shallow excavations in the younger Quaternary alluvium exposed throughout most of the planning area is unlikely to uncover significant fossil remains.

Research indicates that most of the surface deposits in the planning area have a low potential for containing significant fossil remains due to their young age. Although these surface deposits can be just a veneer cover that in some areas rests directly on top of older sediments, based on local research, no reports of any fossil have been made in the planning area. However, reports nearby have identified localities with fossil resources in similar age soil deposits as those that occur in the planning area. In summary, the likelihood of encountering paleontological resources during future development projects within the boundaries of the planning area ranges from low to high, depending on the location and sediments encountered.

Areas of sensitivity for paleontological resources are shown in Exhibit III-5

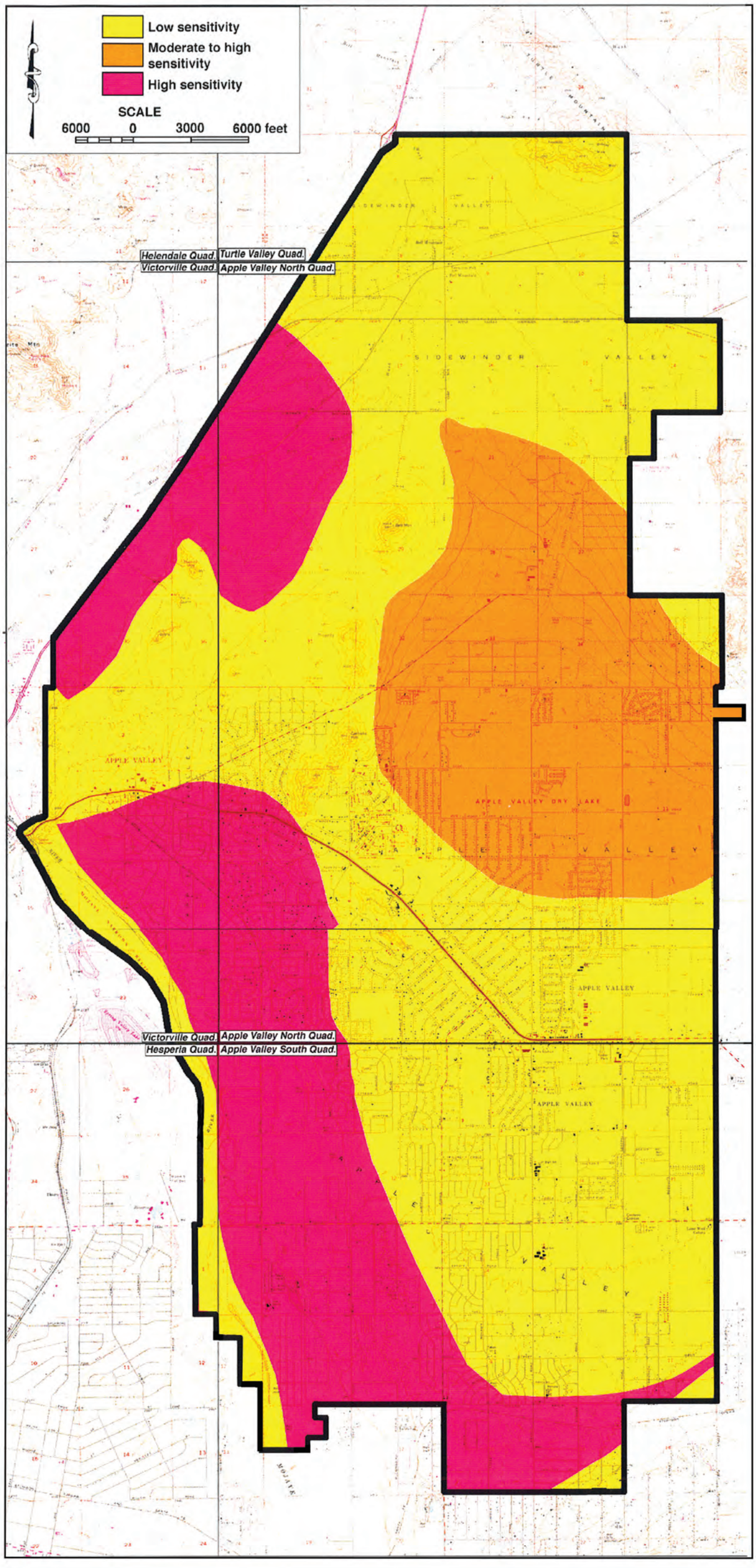



Source: CRM Tech 9/21/07

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**Apple Valley General Plan Draft EIR**
**Cultural Resources Sensitivity Map**
**Apple Valley, California**

Exhibit
**III-4**




Source: CRM Tech 9/21/07

TERRA NOVA®
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**Apple Valley General Plan Draft EIR**
**Areas of Sensitivity for Paleo Resources**
**Apple Valley, California**

Exhibit
**III-5**

## 2. Project Impacts

### Impacts on Cultural Resources

Based on the findings of the Cultural Resources Survey, the areas within one mile of the Mojave River appear to be highly sensitive for both prehistoric and historic-period cultural resources, including potential subsurface archaeological deposits. In addition, the northernmost portion of the Town and adjacent Sphere of Influence is also sensitive for prehistoric archaeological remains. Sensitive historic period sites exist across the southern parts of the planning area and are also concentrated within a corridor along Highway 18.

It is likely that additional sites and structures may be discovered in areas of cultural resource sensitivity during future development of the General Plan and annexation areas. Future development projects could potentially result in direct and/or indirect disturbance or destruction of sensitive archaeological and historic resources. Impacts may include grading activities, site excavation, construction, and increased foot and vehicular traffic. Site surveys should be conducted on all future developments on previously undeveloped land in areas identified as potentially sensitive for historic and prehistoric resources in Exhibit III-5, to determine the presence and significance of archaeological and historic resources, and to set forth appropriate mitigation measures to off-set potential negative impacts resulting from build out of the General Plan and annexation areas.

### Impacts on Paleontological Resources

Future development in the Planning area could also impact paleontological resources, should Pleistocene-age soils be disturbed by grading or excavation activities resulting from build out of the General Plan. Since the depth of Holocene-age soils in the planning area is not known, Pleistocene-age soils may be sufficiently close to the surface to be disturbed by grading activities. Monitoring of grading activities by a suitably qualified expert should occur in areas where there is potential for disturbance to Pleistocene-age soils, in areas identified as potentially sensitive for paleontologic resources in Exhibit III-5 to determine the presence and significance of such resources.

### Annexation 2008-001 and 2008-002

As described earlier in this section, human occupation of the Victorville-Apple Valley region has continued for thousands of years, and although the Town of Apple Valley is a relatively ‘new’ community, there is evidence that both prehistoric and historic resources exist within the western, northern and southern portions of the Town and Sphere of Influence. The majority of the 48 cultural resource sites presently recorded within the Planning Area are from the historic period and are reflective of the Apple Valley area’s past as a nexus of transportation arteries, its gradual transformation from a ‘frontier’ settlement to a rural retreat, and finally its development into a post-WWII boomtown.

The Annexation 2008-001 and the bulk of Annexation 2008-002 are located in an area previously identified as highly sensitive for archaeological resources. Build out of these areas could result in the disturbance and/or destruction of archaeological resources. Development activities, including grading, excavation, paving and building construction, as well as increased foot and vehicular traffic could damage or destroy sensitive artefacts.

Given that additional sites and resources may be discovered during future development, site surveys should be required as part of the initial project review process on all future development projects in sensitive areas. The mitigation measures described below are applicable to all lands within the planning area and both annexation areas.

### 3. Mitigation Measures

The following mitigation measures shall be implemented to reduce potential impacts to cultural and paleontological resources.

1. Cultural resource studies shall be required prior to development for all lands identified as having high potential for historic or archaeological resources, as identified in Exhibit III-4. The studies shall be reviewed and approved by the Town Planning Division prior to the issuance of any ground disturbing permit. The recommendations of the studies shall be made conditions of approval of the ground disturbing permits.

2. Paleontological resource studies shall be required prior to development for all lands identified as having high potential for paleontological resources, as identified in Exhibit III-5. The studies shall be reviewed and approved by the Town Planning Division prior to the issuance of any ground disturbing permit. The recommendations of the studies shall be made conditions of approval of the ground disturbing permits.

3. The Town shall establish and maintain a confidential inventory of archaeological and historical resources within the Planning area, including those identified in focused cultural resources studies.

4. The Town shall protect sensitive archaeological and historic resources from vandalism and illegal collection, to the greatest extent possible.

**Mitigation Monitoring/Reporting Program**

A. Site specific historic, pre-historic and paleontological surveys shall be prepared for new development projects in sensitive areas, and their results compiled in an inventory available only to qualified professionals.
**Responsible Party**: Planning Division; Developer; Consulting Archaeologist/Paleontologist.

## F. Geology and Soils

### Introduction

This section of the EIR describes the existing geological setting in the Town of Apple Valley, the vicinity and region, and analyzes the potential constraints, risks and opportunities associated with these existing conditions. It assesses the potential impacts of the proposed General Plan and annexations relative to geotechnical issues and sets forth mitigation measures to reduce impacts to acceptable levels. A wide range of data and information, including regional-scale soils and geological resource documents, have been used in researching and analyzing the General Plan and its potential effects. This section also utilizes information provided in the Technical Background Report to the Safety Element Update for the Town of Apple Valley[21], which was prepared for the General Plan. This report is included in its entirety in Appendix D of this EIR.

### Thresholds of Significance/Criteria For Determining Significance

Standards and criteria have been drawn from a variety of sources, including but not limited to resources developed by the California Division of Mines and Geology, and Appendix G: Environmental Checklist Form of the California Environmental Quality Act (CEQA) Guidelines. Build out of the General Plan and annexation areas would have a significant effect on soils and geology if it is determined that the project will:

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
   - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.
   - Strong seismic ground shaking.
   - Seismic-related ground failure, including liquefaction.
   - Landslides.

b. Result in substantial soil erosion or the loss of topsoil.

c. Locate the project on a geologic units or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

d. Locate structures or other improvements on expansive soil, as defined in Section 1802.3.2 of the 2007 California Building Code (CBC), creating substantial risks to life or property.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater.

[21] "Technical Background Report to the Safety Element of the Apple Valley General Plan," prepared by Earth Consultants International, October 2007.

f. Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater.

Seismic Hazard Mapping Act

The Seismic Hazards Mapping Act (SHMA) was enacted by the State of California in 1990 for the purpose of protecting the health and safety of the public from seismically induced ground failure, including groundshaking, liquefaction, and slope stability. The California Division of Mines and Geology is responsible for implementing the Act and providing local governments with maps that identify areas susceptible to such hazards.

Alquist-Priolo Earthquake Fault Zoning Act

This Act was passed in 1972 to mitigate the hazard of surface faulting by identifying zones where surface fractures have occurred. Alquist-Priolo Zones are established to identify those areas that are at risk of surface fractures and prevent construction or development on these zones. The State Geologist is responsible for establishing regulatory zones around the surface traces of active faults and issuing appropriate maps that identify Alquist-Priolo zones.

### 1. Existing Conditions

The physical characteristics of the Town of Apple Valley and the safety of the community are examined in the Geotechnical Element of the General Plan and are considered in the following discussion. The geologic hazards portion of the Technical Background Report prepared for the General Plan is also summarized.

**Geologic Setting**

California is divided into geomorphic provinces, which are regions characterized by unique physical characteristics formed by geologic, topographic, and climatic processes. The Town of Apple Valley and Sphere of Influence are located near the boundary of two geomorphic provinces, the Transverse Ranges and the Mojave Desert.

The Transverse Ranges geomorphic province contains the southernmost portion of the Sphere of Influence. The Transverse Ranges include the San Gabriel and San Bernardino Mountains to the south of the planning area.

Most of Apple Valley, including its northern Sphere of Influence, is contained within the Mojave Desert geomorphic province. The geological characteristics of the Town are primarily representative of the Mojave Desert geomorphic province, containing arid climatic conditions, alluvial fans, desert plains, dry lakebeds, and scattered mountain ranges.

The Town of Apple Valley is generally bounded by the Turtle Mountains on the north, the Fairview Mountains and Granite Mountains on the east, and the Ord Mountains on the south. The Town of Apple Valley is situated on gently sloping alluvial fans that range in elevation from approximately 3,400 feet above sea level near the base of the Fairview Mountains in the northeast to nearly 2,700 feet above sea level along the Mojave River in the west. Within Town

limits notable geologic formations include Bell Mountain (3,897 feet above sea level) and Catholic Hill (3,645 feet above sea level). Other major features of the planning area include the Mojave River, a wide floodplain that runs along and defines a portion of Apple Valley's western boundary.

The geological character of Apple Valley and the surrounding region has been formed by its proximity to large active fault systems, including the Helendale Fault, San Andreas Fault, and the North Frontal Fault. Fault activity in the region results in ground rupture, major groundshaking, subsidence, uplift and mountain building, landform compression, and extension. Alquist-Priolo Zones, further described below, identify those faults that have surface fractures, such as the Helendale Fault. Mountains are composed of rocks that have been sheared and intensely fractured under the strain of tectonic movement. Valleys are formed by multiple generations of overlapping alluvial fans from erosion of local mountains.

**Soils and Geologic Units**

The Town of Apple Valley has a diversity of soil types, some of which contain valuable mineral deposits. The California Department of Conservation, Division of Mines and Geology conducted several land surveys in the early 1990's to identify mineral deposits, aggregate resources, and mines and prospects. The Energy and Mineral Resources Section of this EIR provides details on those mineral resources that have been identified within the Town.

There are six types of geologic deposits (see Exhibits III-6 And III-7, Geologic Units in Apple Valley & Geologic Units Legend) that underlie the Town of Apple Valley and vicinity. These consist of:

1. Artificial or man-made fill, typically associated with infrastructure (too small to identify on map);
2. Very young or recent alluvium deposits;
3. Young deposits;
4. Older alluvial fan deposits;
5. Sedimentary rocks; and
6. Crystalline Rocks.

The following section describes the general physical and engineering characteristics, from youngest to oldest, of the six types of geologic deposits that underlie the Apple Valley planning area.

<u>Artificial Fill/Disturbed Ground</u>
These recent deposits are from man-made activities including roadways, bridges, railway embankments, levees, and graded developments. Although this type of deposit is typically associated with infrastructure, recent and active mining operations can also be identified under this category. These deposits vary widely in size, age, and composition, and although some may cover a significant portion of the planning area, most are too small to identify on Exhibit III-6.

Very Young or Recent Alluvium (Map Symbols Qw, Qf, Qc, Qe, and Qp)
Deposition of very young or recent alluvium tends to be associated with active processes of erosion caused by wind or water. Very young wash and alluvial deposits (Qw and Qf) are comprised of unconsolidated sediments that lack soil development on the surface, including sand and gravel in the Mojave River; mixed sand, gravel, and boulders in Arrastre Canyon, Desert Knolls Wash, Bell Mountain Wash; and silt, sand, and gravel in the many unnamed washes and gullies that cross the planning area's alluvial fans.

Modern colluvium (Qc) is associated with erosion and weathering processes from hillsides and steep slopes. Colluvial deposits are characteristically massive and unconsolidated; they may include organic material.

Wind deposited sediment of fine- to medium-grained sand and silt (Qe) are scattered through the Town and vicinity. These deposits are typically thin, undissected, and unconsolidated, and recent deposits tend accumulate around desert vegetation. There is a large deposit of modern colluvium located north of the Ord Mountains, as seen in Exhibit III-6.

There are two dry lakes in the planning area and vicinity. Apple Valley Dry Lake is located within the Town limits, and Reeves Dry Lake is located to the east, in Fairview Valley. Dry lake deposits or playa deposits (Qp) are comprised predominantly of very fine-grained sediments such as silt and clay, with some fine- to medium-grained sand.

Young Alluvial and Landslide Deposits (Map Symbols Qyf, Qyw, Qya and Qyls)
These deposits are young in geological terms, typically ranging in age from the Holocene (0 to 10,000 years ago) to the Pleistocene (11,000 to 1.8 million years ago) epoch. The eastern portion of the Town are predominantly comprised of Alluvial fan deposits (Qyf), generally consisting of unconsolidated to moderately consolidated silt and sand with scattered gravel over most of the valley areas. These deposits may contain cobbles and boulders, as well as more deeply incised drainage channels, within and near the surrounding mountains.

Young wash deposits (Qyw), located in the southwestern portion of the Town, include unconsolidated and slightly consolidated silt, sand, and gravel deposits, are typically of low density, have very little soil development, and form a slightly elevated terrace adjacent to the Mojave River. Along the northern portion of the Mojave River, where this geological unit represents an older river floodplain, considerable soil development has occurred. The lower elevations of this deposit type are somewhat protected by sand levees along the river, however localized areas could experience flooding in severe storm events, or as a result of catastrophic failure of one of the dams in the area.

Young alluvial valley deposits (Qya) form an elevated terrace above the Mojave River floodplain consisting of slightly to moderately consolidated silt, sand, and gravel. This geologic unit has been incised by shallow to moderately deep drainages, and forms the relatively steep bluffs north of Yucca Loma Road in the southwest portion of Town.

Southeast of Town, within the western slopes of the Granite Mountains, two landslide deposits (Qyls) have been mapped. These deposits generally consist of blocks of intact bedrock and/or rubble, with the upper part of the slide typically composed of a mix of soil and bedrock fragments.

Older Alluvial Fan and Valley Deposits (Map Symbols Qof, Qoa, Qvof and Qvoa)
Deposition of this sediment type generally occurred between 11,000 to 1 million years ago. Older alluvial deposits (Qof and Qoa) typically consist of weakly to moderately well-consolidated silt, sand, and gravel that were deposited in the late to middle Pleistocene epoch (about 11,000 to 500,000 years ago). In Apple Valley, these deposits occur as scattered remnants on the flanks of the Ord Mountains, in the Desert Knolls area, and as isolated patches in the Black Mountain area. Typically, this geologic unit exhibits moderate surface soil development, with weakly stratified sub-surface materials.

Very old alluvial deposits (Qvof and Qvoa) consist primarily of silt, gravel, and medium- to coarse-grained sand. These deposits are about 500,000 to 1 million years old (mid-to early-Pleistocene). The Qvoa geologic unit is found in the northeast portion of the Town, north of Bell Mountain Wash, and as isolated patches southwest of the Black Mountains and within the Ord Mountains. This sediment type is moderately to well consolidated. In general, older alluvium is more consolidated than young alluvium, and may provide better structural support, although clayey soils, which can be expansive qualities, may develop on the surface of the fan.

Sedimentary Rocks (Map Symbol: Tcr)
Within the Town of Apple Valley and the vicinity, sedimentary rock deposits are found in the southwestern quadrant, in a fairly contiguous north/south tending band, as seen in Exhibit III-6. Deposition of sedimentary rocks are typical of the Miocene age and are estimated to be 10 to 26 million years old. Sandstone, pebbly sandstone, and siltstone deposits are exposed in narrow bands along the base of the Ord Mountains, and along the eastern side of the Mojave River. This sediment is highly susceptible to erosion and failure of surface soils on natural slopes.

Crystalline Rocks (Map Symbols: Mzp, Mzv, Mzm, and Pzw)
Crystalline rocks are formed in the molten (igneous) state and under extreme pressure and temperature conditions deep below the earth's surface (metasedimentary). These rocks generally range from 65 to 225 million years old. Where not highly weathered, they are very hard, and tend to form steep, rugged slopes, and deep canyons. Having been subjected to millions of years of tectonic activity, they are typically quite fractured and may be sheared near fault zones, which serve as planes of weakness where slope instability can occur.

Plutonic (Mzp), volcanic (Mzv), and metasedimentary (Mzm) rocks occur in the northwest portion of the Town. Regionally, crystalline rocks are associated with the surrounding mountain ranges, as seen in Exhibit III-6. Plutonic rocks (Mzp), which solidified deep within the earth's crust, have fine to coarse grains, and tend to weather into rounded, boulder shaped outcrops. Volcanic rocks (Mzv) solidified extremely rapidly on the ground surface (for instance from a lava flow) and are very fined-grained. These rocks occur as small isolated patches on Bell Mountain and Catholic Hill, where they form blocky outcrops, and are present in the Sidewinder

and Black Mountains, northeast of the Helendale fault. Metasedimentary rocks (Mzm) are found in small patches north of the Desert Knolls area and south of Town in the western part of the Ord Mountains.

**Geologic Hazards in the Apple Valley Area**

Geologic hazards are processes that occur on or near the surface of the earth and have the potential to cause loss or harm to the community or the environment. Given the geophysical composition of the region, the Town of Apple Valley and the vicinity are susceptible to several geologic hazards, as described below.

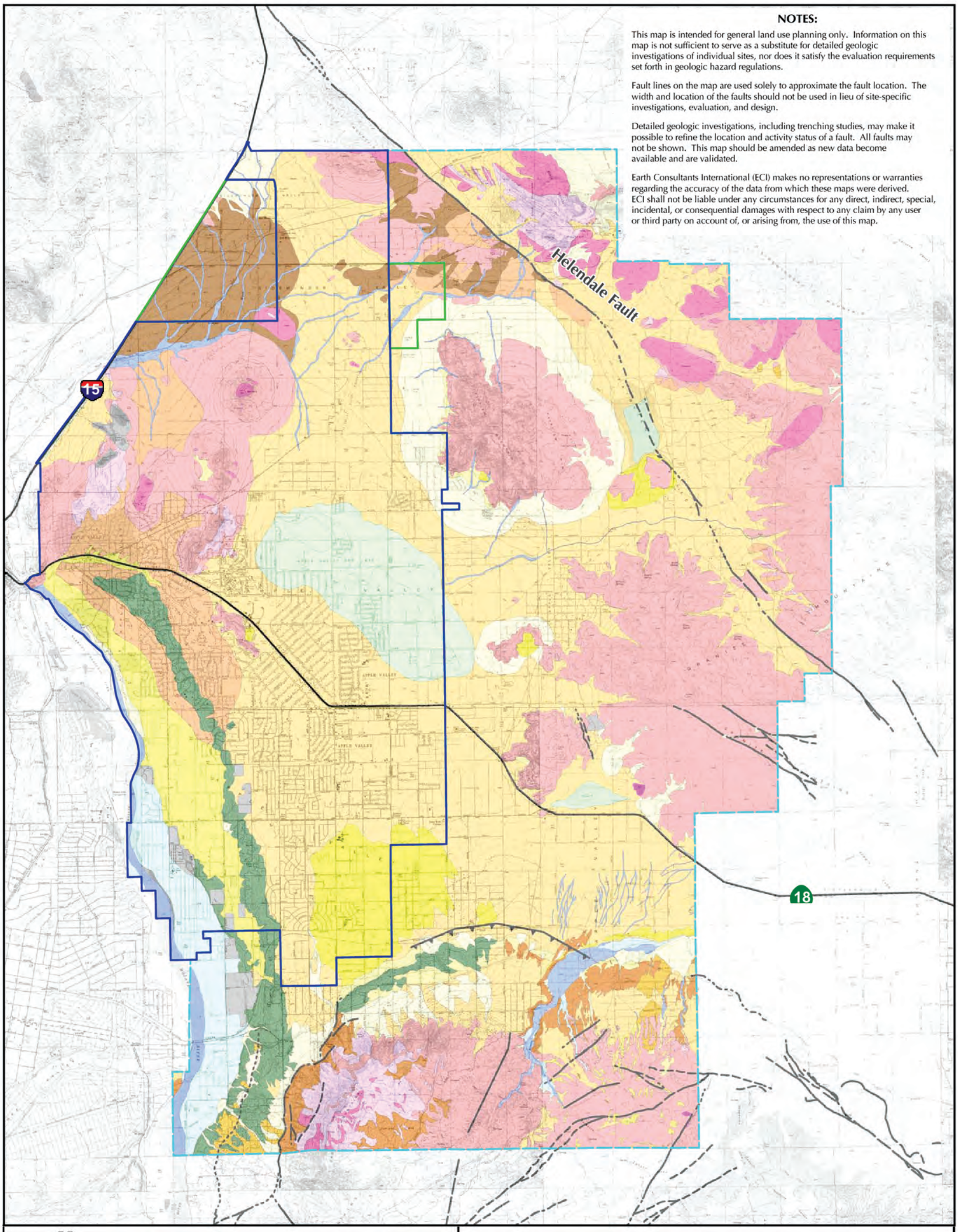
The predominant geological hazards in the area are directly or indirectly related to the San Andreas Fault Zone, which serves as the main boundary between the Pacific and North American tectonic plates, and has generated several other faults in the area.

Landslide and Slope Instability

In the Town of Apple Valley an estimated 1,792.4 acres consist of hillside terrain and mountains. Currently, the majority of hills and mountains are generally not developed, except for local mining operations. Development has occurred at the base of steep slopes, and scattered residential, commercial, and other land uses are at risk of slope failure, landslides, and rockfalls. Consequently, slope instability is a potential hazard in the Town and vicinity.

There are several factors that contribute to slope failure, including slope height and steepness, shear strength and orientation of weak layers in the geologic units underlying the slope and water pressure between soil particles. While slope failure can occur on natural slopes, man-made slopes can also fail due to poor engineering or poor construction.

The Town's natural hillsides are vulnerable to the types of slope instability mentioned above. Table III-30 is a summary of the geologic conditions in various parts of Town that are generally conducive to slope failures.




**NOTES:**

This map is intended for general land use planning only. Information on this map is not sufficient to serve as a substitute for detailed geologic investigations of individual sites, nor does it satisfy the evaluation requirements set forth in geologic hazard regulations.

Fault lines on the map are used solely to approximate the fault location. The width and location of the faults should not be used in lieu of site-specific investigations, evaluation, and design.

Detailed geologic investigations, including trenching studies, may make it possible to refine the location and activity status of a fault. All faults may not be shown. This map should be amended as new data become available and are validated.

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N
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9000 0 9000 18000
Feet

2000 0 2000 4000
Meters

**Scale: 1:108,000**

**For Geologic Unit Descriptions See Exhibit III-7**

Base Map: USGS Topographic Map from Sure!MAPS RASTER, 1997.
Sources: Morton and Miller, 2003; Dibblee, 1960; and CGS, 2007.

**Source: Earth Consultants International, December 2008**

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**Apple Valley General Plan Draft EIR**
**Geological Units in Apple Valley Area**
**Apple Valley, California**

**Exhibit**
**III-6**

## Symbols

Fault; solid where location known, dashed where approximate, dotted where concealed. (For more information on faults refer to Exhibit III-?)

Geologic Contact

Apple Valley City Boundary

Apple Valley Sphere of Influence

Apple Valley Annexed Areas

## Geologic Unit Descriptions

### Very Young Deposits

**Qaf** Artificial Fill/ Disturbed Ground- Mainly larger fills and graded areas or mining operations. Many smaller areas, inluding both engineered and non-engineered fills, are present, but not shown.

**Qw** Very Young Wash Deposits- Unconsolidated sand, gravel, cobbles, and boulders in the Mojave River and active washes. Late Holocene.

**Qf** Very Young Alluvial Fan Deposits- Unconsolidated silt, sand, and gravel on active and recently active fans. Late Holocene.

**Qc** Very Young Colluvium- Unconsolidated silt, sand, and gravel in drainage swales and along the toes of natural slopes. Late Holocene.

**Qe** Very Young to Young Eolian Deposits- Fine-grained sand and silt. Holocene to late Pleistocene.

**Qp** Very Young to Young Playa/ Dry Lake Deposits- Sand, silty to sandy clay, and clayey silt. Holocene to late Pleistocene.

### Young Deposits

**Qyw** Young Wash Deposits- Unconsolidated to slightly consolidated silt, sand, and gravel along the margins of the Mojave River and within Arrastre Canyon. Holocene to late Pleistocene.

**Qyf** Young Alluvial Fan Deposits- Unconsolidated to moderately consolidated silt and sand; locally with gravel. Holocene to late Pleistocene.

**Qya** Young Alluvial Valley Deposits- Slightly to moderately consolidated silt, sand, and gravel. Holocene to late Pleistocene.

**Qyls** Landslide Deposits- Young landslides consisting of displaced bedrock blocks and/ or rubble. Holocene and late Pleistocene.

### Older Deposits

**Qof** Old Alluvial Fan Deposits- Moderately well consolidated silt, sand, and gravel. May contain boulders near the base of the mountains. Late to middle Pleistocene.

**Qoa** Old Alluvial Valley Deposits- Weakly consolidated silt, sand, and gravel. Pleistocene.

**Qvof** Very Old Alluvial Fan Deposits- Moderately to well consolidated silt, sand, and gravel. Middle to early Pleistocene.

**Qvoa** Very Old Alluvial Valley Deposits- Moderately consolidated sand and gravel. Early Pleistocene to late Miocene (?).

### Sedimentary Rocks

**Tcr** Crowder Formation- Sandstone, pebbly sandstone, and siltstone. Pliocene to Miocene.

### Crystalline Rocks

**Mzp** Plutonic Rocks- Predominately monzonite, quartz monzonite, monzogranite, and syenogranite. Mesozoic.

**Mzv** Volcanic Rocks- Predominately rhyolite and dacite. Mesozoic.

**Mzm** Metasedimentary Rocks- Marble, schist, quartzite, and gneiss. Mesozoic.

**Pzw** Wood Canyon Formation- Highly deformed schist and quartzite. Paleozoic.

**Source: Earth Consultants International, December 2008**

**Table III-30**
**General Slope Instability Potential within Apple Valley**

| Location | Existing Geologic Conditions | Types of Potential Slope Instability |
|---|---|---|
| **Mountain Areas** | Moderate to very steep natural slopes, many in excess of 26 degrees. Fractured, sheared, faulted, and locally crushed bedrock; soils and loose debris at the toes of slopes and in drainage courses. Locally, small to large boulders perched on slopes. | ***Most Common:*** Rockfalls and rockslides, falling boulders, soil slips, slumping of oversteepened stream banks; small to large debris flows in canyons; sedimentation at the mouths of canyons.<br>***Less Common***: Large, deep-seated landslides. |
| **Mojave River Area** | Moderately steep bluffs underlain by geologically weak materials consisting of unconsolidated granular sediments, primarily sand and gravel; with undefined to crudely defined bedding; raveling slopes; erosion gullies in channel banks, loose soil and debris at the toes of slopes and in channels. Possible undercutting by flood waters at the base. | ***Most Common***: Surficial soil slips; erosion and slumping of oversteepened bluffs; small to moderate debris/mudflows; sedimentation at the base.<br>***Less Common:*** Large, deep-seated landslides; large debris flows. |

Source: Table 2-2, Technical Background Report to the Safety Element Update, Town of Apple Valley, California, prepared by Earth Consultants International, October 2007.

Although the bedrock underlying the mountains and hills of Apple Valley is generally not prone to landslides, areas of high topographic relief, such as steep canyon walls, have the potential to be impacted by rockfalls and rockslides, typically as a result of strong seismic shaking. In addition, seismic events can cause soil slips and mudflows during or after periods of intense rainfall. Exhibit III-8, Slope Distribution, illustrates the variable slope gradients within the Town of Apple Valley and Sphere of Influence.

Compressible Soils

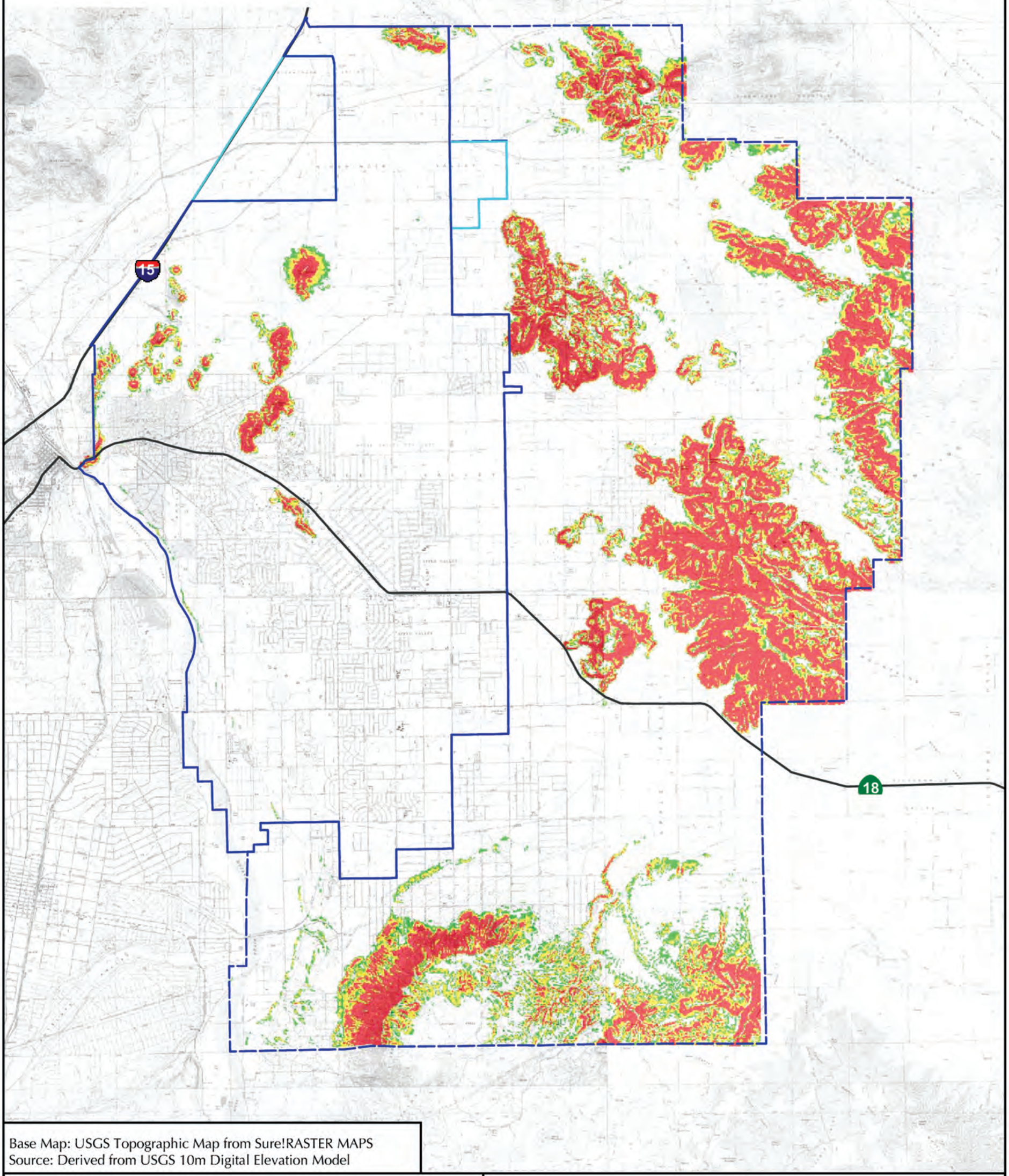
Geologic units that could compress under the weight of proposed fill embankments and structures are known as compressible soils. Although compressible soils usually involve geologically young (Holocene age) unconsolidated sediments with low density, weathered older alluvium, slope failure debris, and in some cases, very weathered bedrock can also be susceptible to compression or soil settlement. Soil texture, grain size, moisture, density, thickness, weight of the proposed load, the rate at which the load is applied, and drainage are among those characteristic that determine the settlement potential and the rate of settlement for each geologic unit.

In the Town of Apple Valley compressible soils are most likely to occur where Holocene-age deposits are present, as well as active and recently active stream channels. In addition, compressible soils are commonly found in canyon bottoms, swales, and at the base of natural slopes. Compression is also associated with landslide deposits particularly at the head and along the margins of the slide. Proper engineering and thorough geotechnical soils analyses can minimize potential hazards associated with compressible soils.

**NOTES:**

This map is intended for general land use planning only. Information on this map is not sufficient to serve as a substitute for detailed geologic investigations of individual sites, nor does it satisfy the evaluation requirements set forth in geologic hazard regulations.

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Base Map: USGS Topographic Map from Sure!RASTER MAPS
Source: Derived from USGS 10m Digital Elevation Model

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**Scale: 1:108,000**

9000 0 9000
Feet
2000 0 2000
Meters

**Explanation**

Slope (in % grade)

- 0-15%
- 20-30%
- 15-20%
- Greater than 30%

- Town of Apple Valley Boundary
- Apple Valley Annexed Area
- Apple Valley Sphere of Influence

**Source: Earth Consultants International, December 2008**

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**Apple Valley General Plan Draft EIR**
**Slope Distribution in Apple Valley Area**
**Apple Valley, California**

**Exhibit**
**III-8**

Collapsible Soils

Saturated soil results in changes to the soil structure such as loss of cohesion or cementation, which can result in settlement and compaction, or the collapse of the soil column. Soil collapse or hydroconsolidation can occur under relatively light loads and is generally associated with recently deposited Holocene-age soils that have accumulated in arid or semi-arid environments. Soils that are susceptible to collapse include wind-deposited sands and silts, and alluvial fan and debris flow sediments. In addition, irrigation, or a rise in the groundwater table could increase surface water infiltration, which when combined with the weight of a building or structure, has the potential to induce rapid settlement of the soil column. In Apple Valley young and very young alluvial sediments that are granular in nature may be susceptible to collapse.

Expansive Soils

Expansive soils are those that contain significant amounts of clay minerals resulting in the ability to give up water (shrink) or absorb water (swell), which allows these soils to expand (or shrink) as a result of changes in moisture content. The pressure differential induced by the shrinking or swelling of expansive soils can have significant harmful effects upon structures and other surface improvements.

In the Town of Apple Valley and the vicinity, expansive soils are primarily associated with areas underlain by older fan deposits containing argillic (clay-rich) soil profiles, which are in the moderately expansive range. In addition, the Apple Valley Dry Lake contains very fine-grained silts and clays that are potentially expansive. Alluvial fan sediments, composed primarily of granular soils, underlie the low-lying areas of the Town and the expansion potential ranges from very low to moderately low.

Ground Subsidence

The gradual settling or sinking of the ground surface with minimal horizontal movement is generally associated with oil, gas, or ground water extraction from below the ground surface and is commonly referred to as ground subsidence. Subsidence can result in earth fissures, sinkholes or depressions, and disrupt surface drainage patterns. In addition, ground subsidence has the potential to cause damage to canals, levees, underground pipelines, wells, buildings, roads, railroads, and other structures and improvements. Proper management of local water supplies, including the reduction in groundwater extraction from local wells, importing water, and the use of artificial recharge has mitigated subsidence in affected areas.

The Mojave River Groundwater Basin occupies approximately 1,400 square miles, has an estimated storage capacity of nearly five million acre-feet, and underlies the Town of Apple Valley and vicinity. Water extraction from the basin has historically occurred at rates that exceeded the natural replenishment, leading to an overdraft condition in the basin. Groundwater levels in the basin dropped more than 100 feet between the 1950s and 1990s, and approximately 30 feet in the last 20 years. Overdraft of the water basin can lead to ground subsidence.

Based on US Geological Survey and Mojave Water Agency studies of subsidence in the Mojave River Groundwater Basin, the closest subsidence area to the Town of Apple Valley is located approximately seven miles northwest. To date, subsidence has not been detected within Apple

Valley's town limits. The continued implementation of groundwater conservation and recharge activities in the Apple Valley area contributes to the management of ground subsidence. Preventive measures include monitoring groundwater and basin conditions and increasing the use of reclaimed water, storm water, or imported water.

Soil Erosion

Erosion is an ongoing natural process that is dictated by climate, topography, and geologic conditions including soil and rock types, vegetation cover, and slope aspect. The Town of Apple Valley and vicinity are subject to erosion, runoff, and sedimentation due to the extreme topographic relief between the valley and the surrounding hills and mountains. Human activities such as agricultural or land development accelerate natural erosion by disturbing the ground surface, which can expose sediment deposits to wind and water transport, alter natural drainage patterns, and increase the potential for erosion and sedimentation. Local modification to geological conditions, such as an increase in impermeable surfaces, can result in geological changes elsewhere, such as an increase in the potential for flooding and sedimentation downstream. It should be mentioned that natural events can also lead to accelerated rates of erosion. For example, wildfires that occur on hills and mountains can leave slopes vulnerable to aeolian (wind) and fluvial (water) erosion.

Wind erosion commonly occurs in flat, bare areas where dry, sandy soils are present, or anywhere the topsoil is loose, dry, and finely granulated. Wind erosion removes soil from one place and deposits it elsewhere resulting in deterioration of the soil structure, nutrient and productivity losses, and air pollution. Sediment transport and deposition induced by wind is known as wind-blown sand or blowsand events. Sand storms can affect air quality, reduce visibility, and can cause damage to buildings, vehicles, crops, and vegetation. The presence of air born sediment is also the source of several major health problems. Atmospheric dust causes respiratory discomfort, and may carry pathogens that cause eye infections and skin disorders.

Several physical factors determine the intensity and distribution of wind-blown sand in the Apple Valley area, including the alignment of the mountain passes, sand deposits from local flood events and natural erosion processes, lack of significant vegetation, and strong winds. The elevation difference between the Cajon Pass and the valley floor results in strong winds under certain climatic conditions. Strong winds combined with sandy surface soils commonly found in Apple Valley has the potential to result in wind erosion that poses an environmental hazard.

**Major Faults Affecting the Town of Apple Valley and Vicinity**

As previously mentioned, the Town of Apple Valley is located near the boundary of two tectonic plates: the North American and Pacific plates. It is the San Andreas fault that separates the two tectonic plates. While there are no faults zoned by the State of California within the corporate limits of the Town of Apple Valley, two faults are zoned within the Town's Sphere of Influence including an Alquist-Priolo Earthquake Fault Zone. The following discussion describes the faults in the region that are most likely to impact Apple Valley. Faults in proximity to the Town of Apple Valley are illustrated in Exhibit III-9.

North Frontal Fault

A rupture along the North Frontal fault has the potential to generate strong seismic shaking, due to the proximity of this fault to the Town. This fault is located along the eastern flank of the San Bernardino Mountains and consists of several fault splays that have a combined total length of approximately 40 miles. The west segment of the North Frontal Fault passes through the Town's Sphere of Influence and at its closest approach is less than 0.5 miles from the southeast corner of the Town limits. See Exhibit III-10.

Although the North Frontal Fault has not ruptured in recent years, it is thought to have moved in the past 10,000 years, making it an active fault. As seen in Exhibit III-10, Alquist-Priolo Zones, the western portion of the North Frontal Fault Zone, Apple Valley Highlands-Fault, is located within the Sphere of Influence and is designated as an Alquist-Priolo Earthquake Fault Zone. Similarly, the eastern portion of the North Frontal Fault Zone, White Mountains Fault and Sky High Ranch Fault, is also designated as an Alquist-Priolo zone. The North Frontal fault has an expected slip rate of about 0.5 millimeters per year, and is attributed to the 1 millimeter average annual uplift rate the San Bernardino Mountains. A rupture along the North Frontal Fault zone could generate a maximum magnitude earthquake ranging from 6.7 to 7.2 depending on where the rapture were to occur. Using the Modified Mercalli intensity index, shaking could range from very strong (0.14g to 0.26g) to extreme (0.4g to 1.1g).

Helendale Fault

The Helendale fault is the westernmost of several faults that combined are referred to as the Eastern California Shear Zone and are responsible for 9 and 23 percent of the total North American and Pacific plate boundary motions, respectively. The Helendale fault transect the Sphere of Influence immediately east of the Town's northeastern limits and is designated as an Alquist-Priolo Earthquake Fault Zone, which indicates the potential for surface rupture within the designated zone. Exhibit III-10, Alquist-Priolo Zones, shows that the Helendale Fault is designated as an Alquist-Priolo Earthquake Fault Zone that bisects the Sphere, immediately east of the Town.

As seen in Exhibit III-9, Faults in the Apple Valley Area, the Helendale fault is an extension of the South Lockhart fault. Without further studies of these two faults it is currently unclear how they would interact during a seismic event. In order to consider the greatest potential seismic event that could occur on the Helendale fault, it was assumed that both the Helendale and the South Lockhart faults would rupture simultaneously. In this event, a maximum magnitude earthquake of 7.3 could occur, which would result in horizontal peak ground acceleration of 0.3g to 0.75g, or violent to extreme shaking using the Modified Mercalli intensities.

San Andreas Fault

The San Andreas Fault zone is the longest fault in the state of California, extending approximately 750 miles from Cape Mendocino in northern California to the Salton Sea in southern California. Historically, movement along the San Andreas Fault zone has been the primary source of major earthquakes in southern California and continues to present serious seismic related risks and hazards. The San Bernardino Mountains segment and the Mojave segment of the San Andreas Fault zone pass within approximately 14 and 16 miles of the southern portion of Apple Valley, respectively.

Each segment is assumed to have a characteristic slip rate (rate of movement averaged over time), recurrence interval (time between moderate to large earthquakes), and displacement (amount of offset during an earthquake). The San Bernardino Mountains segment is estimated to have an annual slip rate of 24 ± 5 millimeters, a derived recurrence interval of 146 years, and displacement of 3.5 m ± 1.0 m, which could result in a maximum magnitude earthquake of 7.5, or peak ground acceleration of 0.17g to 0.36g. The Mojave segment is estimated to have an annual slip rate of 30±8 millimeters, a derived recurrence interval of 150 years, and displacement of 4.5 m ± 1.5 m, which could result in a maximum magnitude earthquake of 7.4, or peak ground acceleration of 0.15g to 0.3g.

The San Bernardino Mountains and the Mojave segments of the San Andreas Fault zone have a 28 percent and 26 percent probability of rupturing sometime between 1994 and 2024, respectively.

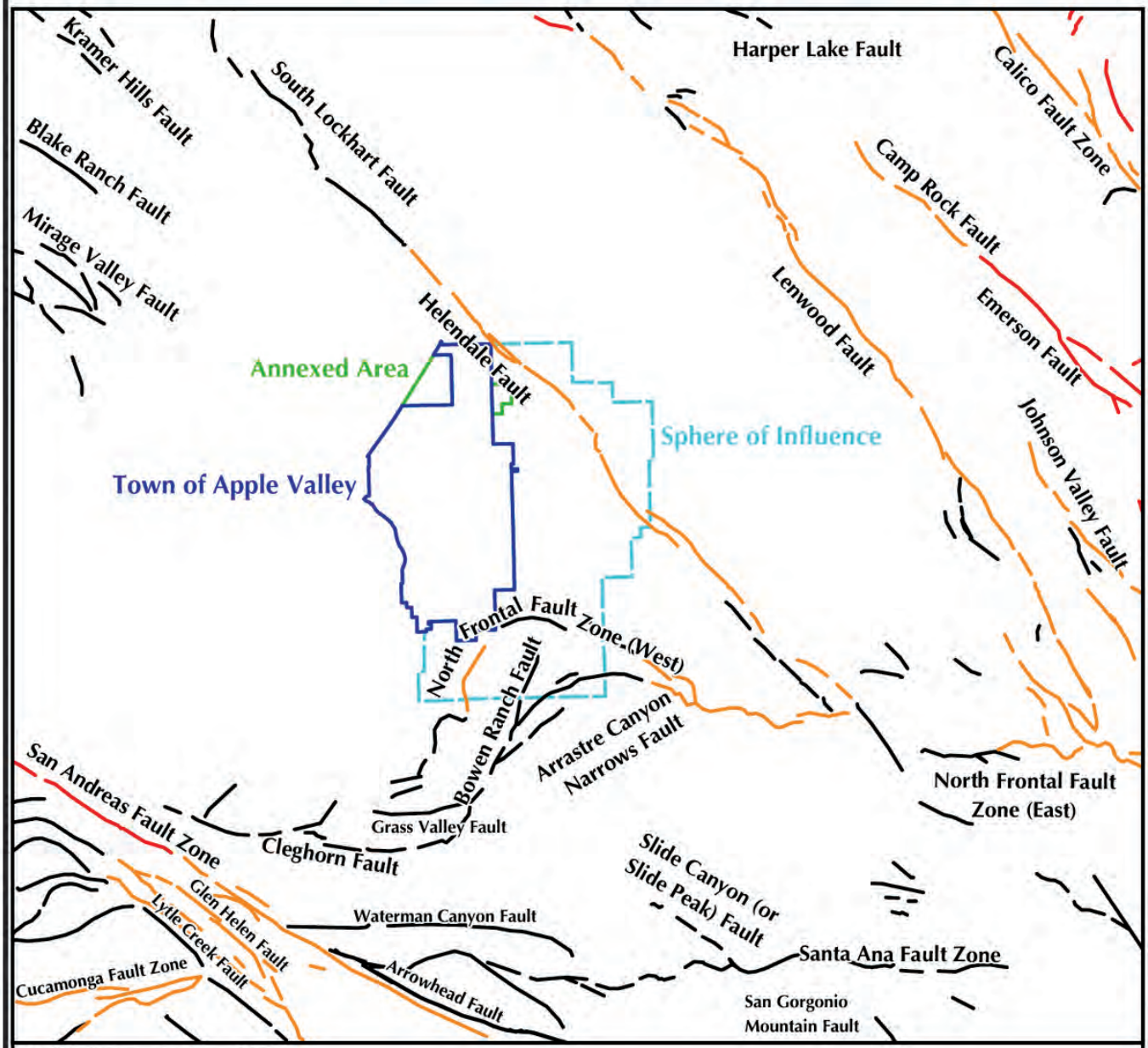
In addition to the San Bernardino and the Mojave segments of the San Andreas Fault zone, the Coachella Valley segment also has the potential to generate sizable ground motion in the Town and Sphere. This segment is located south of the Town of Apple Valley and extends from the San Gorgonio Pass south to the Salton Sea. The Coachella Valley segment is estimated to have an annual slip rate of 25 ± 5 millimeters, a derived recurrence interval of 220 ± 13 years, and a characteristic displacement of 4.0 m ± 1.0 m, which could result in a maximum magnitude earthquake of 7.7, or peak ground acceleration of 0.2g to 0.41g.

Lenwood – Lockhart – Old Woman Springs Faults

The Lenwood fault, like the Helendale fault is part of the Eastern California Shear Zone faults. There is evidence that this fault has ruptured three times within the last 8,300 years and has an estimated recurrence rate of 4,000 to 5,000 years. The slip rate for the Lenwood fault is about 0.8 millimeters annually.

The Old Woman Springs segment is the primary portion of a complex system of faulting at the junction between the Eastern segment of the North Frontal Fault Zone and the Lenwood fault. The fault is thought to have ruptured within the last 10,000 years and is therefore defined as active.

The Lockhart fault forms a contiguous, 90-mile long fault system with the Lenwood fault. The interval between major surface-rupturing earthquakes on the Lockhart fault is estimated at 3,000 and 5,000 years. In the event that these three faults were to rupture simultaneously a maximum magnitude earthquake of 7.5 could occur, which would generate peak ground accelerations in Apple Valley of about 0.19g to 0.42g. Using the Modified Mercalli intensities index, such an event would result in severe (VIII) to violent (IX) shaking.




Modified from: Jennings, 1994;
www.scecd.scec.org/faults/mojfault.html
Refer to text for descriptions of these faults.

## Explanation

Fault Showing Evidence of Historic Rupture (Active).

Fault Showing Evidence of Holocene Rupture (Active).

Fault Showing Evidence of Quaternary and Late Quaternary Rupture (Potentially Active).

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**Source: Earth Consultants International, December 2008**

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**Apple Valley General Plan Draft EIR**
**Faults in Apple Valley Area**
**Apple Valley, California**

**Exhibit**
**III-9**

**NOTES:**

This map is intended for general land use planning only. Information on this map is not sufficient to serve as a substitute for detailed geologic investigations of individual sites, nor does it satisfy the evaluation requirements set forth in geologic hazard regulations.

Fault lines on the map are used solely to approximate the fault location. The width and location of the faults should not be used in lieu of site-specific investigations, evaluation, and design.

Detailed geologic investigations, including trenching studies, may make it possible to refine the location and activity status of a fault. All faults may not be shown. This map should be amended as new data become available and are validated.

Earth Consultants International (ECI) makes no representations or warranties regarding the accuracy of the data from which these maps were derived. ECI shall not be liable under any circumstances for any direct, indirect, special, incidental, or consequential damages with respect to any claim by any user or third party on account of, or arising from, the use of this map.

Helendale Fault

unnamed faults

North Frontal Fault

North Frontal Fault Zone

Ocotillo Ridge "Fold"

Ord Mountain Fault

Apple Valley Highlands Fault

Deep Creek Lineament

Bowen Ranch Fault

Arrastre Canyon

Narrows Fault Zone

Lovelace Canyon Fault

White Mountain Fault

Sky High Ranch Fault

Power Tree Canyon Fault

Base Map: USGS Topographic Map from Sure!MAPS RASTER, 1997.

Sources: Morton and Miller (2003); Alquist-Priolo Earthquake Fault Zones [Reproduced with permission CGS CD-ROM 2001-05 (2002)]; and Jennings (1994) [reproduced with permission CDMG, CD-ROM 2000-06 (2000)].

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**Scale: 1:108,000**

9000 0 9000

Feet

2000 0 2000

Meters

## Explanation

Faults; solid where location is known, dashed where approximate, dotted where inferred.

- Fault. From Morton and Miller (2003).
- Alquist-Priolo Earthquake Fault. From CGS (2002).
- Alquist-Priolo Earthquake Fault Zone. From CGS (2002).
- Late Quaternary faults. From Jennings (1994).
- Pre-Quaternary faults. From Jennings (1994).
- Town of Apple Valley Boundary
- Apple Valley Annexed Area
- Apple Valley Sphere of Influence

**Source: Earth Consultants International, December 2008**

TERRA NOVA®
Planning & Research, Inc.

**Apple Valley General Plan Draft EIR**
**Alquist-Priolo Earthquake Fault Zones**
**Apple Valley, California**

**Exhibit**

**III-10**

Cleghorn Fault

The Cleghorn fault is located to the southwest of the Town, is approximately 19-miles long, and is potentially active. The fault extends across Silverwood Lake, and therefore is also referred to as the Silverwood Lake fault. The Cleghorn fault zone is estimated to have an annual slip rate of 2 to 4 millimeters, and the potential to generate a magnitude 6.5 earthquake, which could generate horizontal peak ground accelerations in the Apple Valley area of 0.11g and 0.33g. Using the Modified Mercalli intensities index, ground shaking could range from very strong (VII) to violent (IX).

Cucamonga Fault

The Cucamonga fault zone is located to the southwest of the Town and Sphere and is considered active. This fault has a slip rate of approximately 4.5 to 5.5 ± 2.0 millimeters per year, an estimated average recurrence interval of 625 years, and rupture could result in a maximum magnitude 6.9 earthquake. Such an event would generate peak horizontal ground acceleration in the Apple Valley area of about 0.15g and 0.28g, with Modified Mercalli intensities in the very strong (VIII) to violent (IX) range.

Landers (or Kickapoo) Fault

The Landers fault or the Kickapoo fault is part of the Eastern Mojave Shear Zone. In 1992 the Kickapoo fault moved laterally nearly 9.5 feet, but the annually slip rate is usually negligible in part because the interval between major ruptures is estimated to be thousands of years. Individually, the Eastern Mojave Shear Zone faults could rupture in smaller earthquakes, but their combined lengths allowed for the magnitude 7.3 earthquake that shook southern California on the morning of June 28, 1992. Ground shaking in the Apple Valley area due to a Landers-type earthquake on these faults would cause horizontal ground accelerations of between 0.14g and 0.27g, with Modified Mercalli intensities in the very strong (VIII) to violent (IX) range.

Sierra Madre Fault

The Sierra Madre fault zone extends along the base of the San Gabriel Mountains from the San Fernando Valley to San Antonio Canyon, where it continues southeastward as the Cucamonga fault. The Sierra Madre fault is estimated to have an annual slip rate of 0.6 millimeter, a recurrence interval of about 8,000 years, and could generate a maximum magnitude 7.2 earthquake, resulting in peak horizontal ground accelerations of 0.14g and 0.21g.

Gravel Hills – Harper Lake Fault

The Gravel Hills segment is thought to have last ruptured in the last 10,000 years, and the Harper Lake fault in the late Quaternary. Therefore the Gravel Hills fault is considered active, whereas the Harper Lake fault is considered inactive. Slip rate on the Gravel Hills fault zone is estimated at 0.9 millimeters annually, with a recurrence interval between earthquakes of about 3,500 years. The combined fault segments are estimated to be capable of generating a 7.2 magnitude earthquake, which would generate peak horizontal ground accelerations in the Apple Valley area of 0.11g and 0.20g. Using the Modified Mercalli intensities index ground shaking in area would range from very strong (VII) to sever (VIII).

Calico – Hidalgo Fault Zone

This fault zone is also part of the Eastern California Shear Zone. The Calico fault is estimated to have an annual slip rate between 1.0 and 2.6 millimeters, a recurrence interval of 1,500 years, and the ability to generate a maximum magnitude earthquake of 6.5 to 7.1. The Hidalgo fault is estimated to have an annual slip rate of 0.5 millimeters, its recurrence interval is unknown, and it is expected to generate a maximum magnitude 6.4 to 7.1 earthquake. However, in the event that both faults were to rupture simultaneously, a maximum magnitude 7.3 earthquake could occur, which would generate peak horizontal ground accelerations in the Apple Valley area of 0.11g and 0.18g or using the Modified Mercalli intensities groundshaking would be in the very strong (VII) to severe (VIII) range.

San Jacinto Fault Zone

The San Jacinto fault zone extends from its junction with the San Andreas fault in San Bernardino, southeasterly, where it continues south of the international border with Mexico as the Imperial fault. The San Jacinto fault zone is divided into seven segments, the nearest segments to the Town of Apple Valley are the San Bernardino and San Jacinto Valley segments.

A maximum magnitude earthquake of 6.7 is expected in the event of a rupture on the San Bernardino segment of the San Jacinto fault, which has the potential to result in peak horizontal ground accelerations of 0.09g and 0.17g in the Apple Valley area. Similarly, a 6.9 earthquake on the more distant San Jacinto Valley segment would generate peak horizontal ground accelerations in Apple Valley of 0.09g and 0.14g.

Johnson Valley Fault

The northern portion of this fault is located east of the Town of Apple Valley and Sphere of Influence. Although the southern portion of the fault ruptured during the 1992 Landers earthquake, the northern portion did not. Trenching studies show that the last rupture on the north portion of the fault occurred between 5,800 and 7,500 years ago. The estimated maximum magnitude earthquake for the Johnson Valley fault is 6.8, but could be 7.0 in the event that several faults rupture concurrently.

Puente Hills Thrust Fault

This fault extends from northern Orange County to the Los Angeles metropolitan area, and is a blind fault since it does not extend upward to the surface. However, the Puente Hills serve as a visible indicator of the faults presence. Studies indicate that the Puente Hills rise 1 to 2 meters when the fault ruptures with a maximum magnitude of 7.2 to 7.5. A magnitude 7.1 earthquake on the Puente Hills thrust fault is estimated to generate ground accelerations in the Apple Valley area between 0.10g and 0.14g, with Modified Mercalli intensities in the very strong (VII) to sever (VIII) range; stronger shaking could be experienced if the fault breaks in a larger magnitude earthquake.

Blackwater Fault

The Blackwater fault extends from Barstow on the south to the Garlock fault on the north. The annual slip rate is estimated to be 2 millimeters, the recurrence interval is known, and the maximum magnitude earthquake that could be generated by a fault break is between 6.5 and 7.1.

Such a rupture would result in peak ground accelerations in the Apple Valley area of 0.09g and 0.14g, or a Modified Mercalli intensities ranging from very strong (VII) to sever (VIII).

Pinto Mountain Fault

The Pinto Mountain fault is located approximately 31 miles southeast of the Town of Apple Valley, just north of the Little San Bernardino Mountains. The fault is active, has an estimated annual slip rate of 1.1 to 2.3 millimeters per year, and could generate a maximum magnitude earthquake of 7.2. A rupture of this magnitude would cause peak horizontal ground accelerations in the Apple Valley area of 0.09g and 0.14g, or a Modified Mercalli intensities ranging from very strong (VII) to sever (VIII).

Pisgah-Bullion Mountain-Mesquite Lake Fault Zone

In the event that this fault zone were to rupture simultaneously a magnitude 7.3 earthquake could be generated, which would result in peak horizontal ground accelerations in the Apple Valley area of 0.09g to 0.13g. An individual rupture along any one of these three faults would result in a less intense earthquake and reduced ground acceleration.

Emerson South- Copper Mountain Fault Zone

This fault zone is located east of the Town of Apple Valley and the Sphere of Influence. The Emerson fault is estimated to have an annual slip rate of 0.5 millimeters, an interval recurrence of 9,000 years, and could generate a maximum magnitude 6.5 earthquake. The Copper Mountain fault estimated to have an annual slip rate of 0.5 millimeters, an unknown interval recurrence rate, and could generate a maximum magnitude 7.0 earthquake. In the event that these two faults were to rupture together, the maximum magnitude earthquake would be 7.3.

**Seismically Induced Geotechnical Hazards**

Ground Shaking

As demonstrated by the above discussion, there are numerous faults in the region that have the potential to cause substantial ground shaking in Apple Valley and the Sphere of Influence, making seismically induced ground shaking the most significant geotechnical hazard facing the Apple Valley area. The effects of ground motion on structures are difficult to predict, and depend on a variety of factors including the intensity of the quake, the distance from the epicenter to the site, the composition of soils and bedrock, building design, and other physical criteria. Based on these factors, ground shaking can result in minimal to significant damage.

In general, peak ground accelerations and seismic intensity values decrease with increasing distance from the earthquake. Local conditions, such as soft soils, shallow ground water, and the presence of ridge tops, could amplify the effects of seismic waves and result in higher localized accelerations. The Uniform Building Code, California Building Code, and Unreinforced Masonry Law are the primary tools used by agencies to ensure seismic safety in structures (see mitigation measures below).

Liquefaction

During liquefaction, soils behave like a liquid or semi-viscous substance, which can cause structural distress or failure. For liquefaction to occur loose, granular sediment must be saturated and exposed to prolonged ground shaking greater than 0.2 g. The alluvium that underlies Apple Valley is coarsely granular and well drained. Although the water table is not within 50 feet of the ground surface throughout most of the area, water-saturated sediment within 50 feet of the surface occurs locally within the Mojave River floodplain. These geological conditions exist or have the potential to occur within the Apple Valley area, accordingly there is a potential for liquefaction to occur in the event of a fault rupture.

Seismically Induced Settlement

Strong ground shaking can cause soil compaction, resulting in local or regional settlement of the soil column. This type of ground failure occurs when loose granular soils become tightly packed due to the collapse of air and water pockets in the soil column. Recently deposited alluvial sediments and artificial fills that are not properly compacted are especially susceptible to this hazard. Impacts can include damage to structures, and water, sewer, and other subsurface pipelines.

Seismically Induced Rock falls and Landslides

Landslides, rock slides, and rock falls can be triggered by strong ground motions and can be exacerbated where saturated ground conditions exist. In Apple Valley steep slopes, deeply incised canyons, rocks with inherently weak components such as silt or clay layers, and highly fractured and folded rocks are particularly susceptible to seismic activity. In addition, slope orientation relative to the direction of the seismic wave also contributes to the occurrence of landslides and rock falls. Although most of the Town is characterized by relatively level to gently sloping terrain, there are several natural slopes in the Sphere of Influence area that could be vulnerable to seismically induced slope failure. See Exhibit III-8, Slope Distribution, for areas that may be particularly susceptible to landslides and rock falls.

Deformation of Sidehill Fills

Sidehill fills are artificial fill wedges constructed on natural slopes to create a level foundation for roadways or buildings. Sidehill fills can be compromised by strong seismic ground shaking, which could cause minor to severe property damage. Cracking at the wedge contact area, differential settlement in the fill wedge, and bulging on the slope face can develop from strong ground shaking, and is typically associated with relatively thin fills of 27 feet or less placed near the tops of narrow ridges. This hazard is generally not expected to occur in the Apple Valley area, except potentially along the approaches to the two bridges that extend across the Mojave River, where sidehill fills exist in the nearby mountains and hills, and on lots where grading required artificial fill for a level building pad.

Ridgetop Fissures and Shattering

Ridgetop fissuring and shattering is the result amplified seismic energy due to local topographic features and geological conditions. Linear fault-like fissures and shattering of surface soils on the crests of steep, narrow ridgelines is a common occurrence in association with major historical earthquakes in southern California. This hazard can result in severe structural damage,

particularly if it occurs on relatively high (greater than 100 feet), narrow (typically less than 300 feet wide) ridges flanked by slopes steeper than about 2.5:1 (horizontal: vertical). Ridgetop shattering may occur in the Town of Apple Valley and Sphere of Influence, particularly in the Granite Mountains, Fairview Mountains, and Ord Mountains.

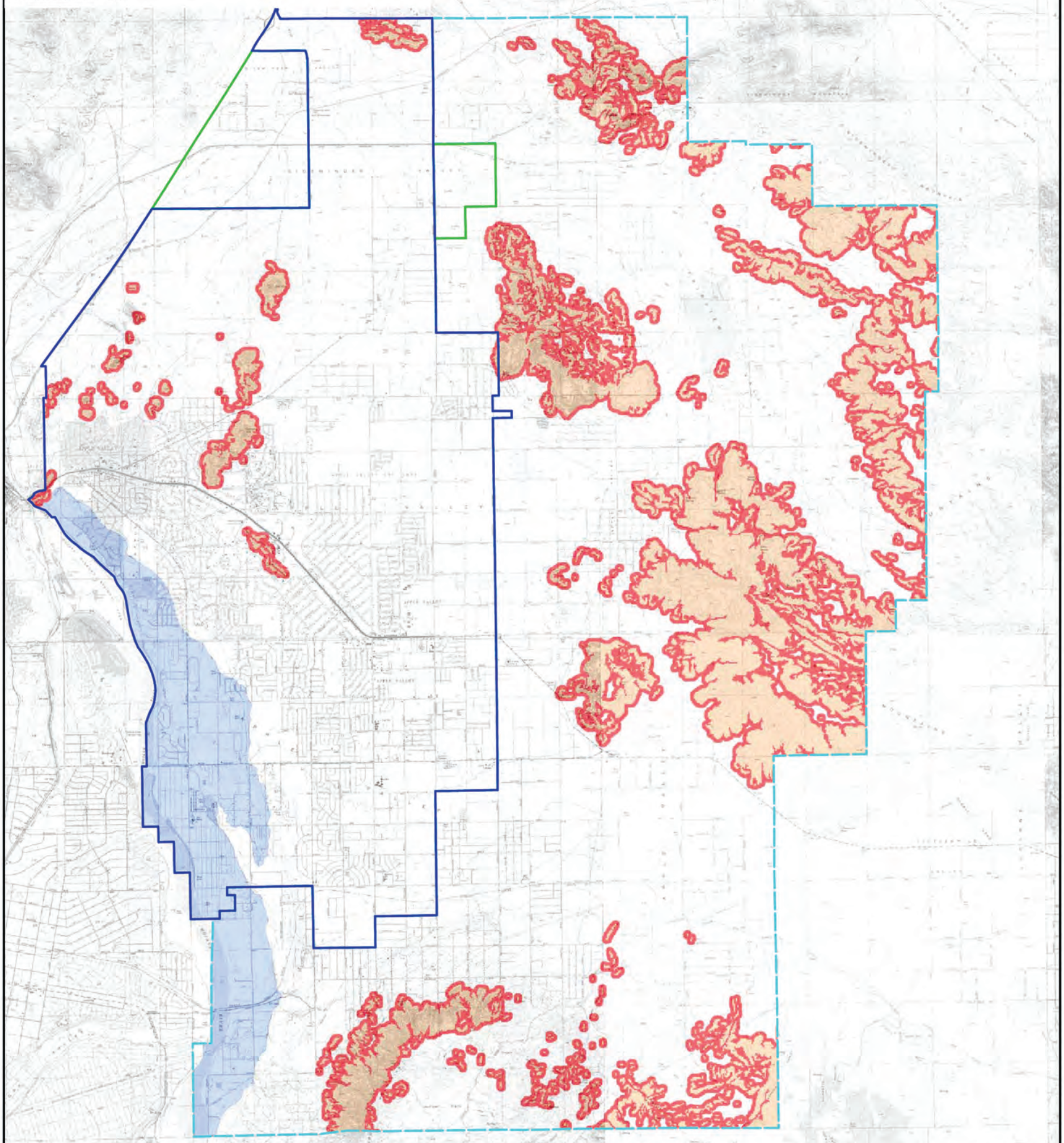
Seiches and Seismically Induced Inundation

Seiches are seismically-induced oscillation or sloshing of water contained in enclosed bodies of water such as lakes, ponds, reservoirs, and swimming pools. This hazard is dependent upon the frequency of seismic waves, distance and direction from the epicenter, and site-specific design criteria of the enclosed body of water. Ground shaking in the Town and Sphere could result in seismically induced seiches in Silverwood Lake, located to the southwest of Apple Valley, and in the shallow lakes present throughout the study area. In addition, water in swimming pools can slosh during earthquakes, but in most cases, the sloshing does not lead to significant damage.

## NOTES:

This map is intended for general land use planning only. Information on this map is not sufficient to serve as a substitute for detailed geologic investigations of individual sites, nor does it satisfy the evaluation requirements set forth in geologic hazard regulations.

Earth Consultants International (ECI) makes no representations or warranties regarding the accuracy of the data from which these maps were derived. ECI shall not be liable under any circumstances for any direct, indirect, special, incidental, or consequential damages with respect to any claim by any user or third party on account of, or arising from, the use of this map.



Base Map: USGS Topographic Map from Sure!MAPS RASTER, 1997.
Sources: Derivative map based on an analysis of geology as mapped by Morton and Miller (2003), and groundwater data from Sneed et al. (2003), and Schlumberger Water Services, 2004; slope analysis made from USGS 10m Digital Elevation Model.

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**Scale: 1:108,000**

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Feet

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Meters

## Explanation

- Areas where local geological and groundwater conditions suggest a potential for liquefaction.
- Hillside and mountainous areas where numerous rockfalls and landslides are expected to occur during an earthquake.
- Areas where local topographic and geological conditions suggest the potential for earthquake-induced landslides.
- Town of Apple Valley Boundary
- Apple Valley Sphere of Influence
- Apple Valley Annexed Areas

**Source: Earth Consultants International, December 2008**

TERRA NOVA®
Planning & Research, Inc.

**Apple Valley General Plan Draft EIR**
**Seismic Related Hazards**
**Apple Valley, California**

**Exhibit**
**III-11**

## 2. Project Impacts

Build out of the General Plan and annexation areas will increase the potential for a number of geologic and seismic hazards. Construction of structures and infrastructure could expose persons and property to geological hazards in the event of a seismic event. Potential geological impacts associated with build out of the General Plan and annexation areas are discussed below.

**Geological Conditions**

The San Andreas Fault Zone and associated faults in the area have the potential to cause moderate to extreme ground shaking and significant ground acceleration in the Town of Apple Valley and Sphere of Influence. Seismic activity of this magnitude has the potential to result in direct damage to structures, property, and infrastructure, and/or generate indirect hazards such as slope instability, liquefaction, settlement, landslides, and flood inundation, and can cause a variety of localized, but no less destructive hazards such as urban fires, dam failures, and toxic chemical releases.

Damage to infrastructure and utility systems could exacerbate post earthquake conditions. There are many roadways within the Town and surrounding area that could fail during an earthquake, which would impede traffic and restrict access to and from Apple Valley and the area by emergency response teams. In addition, disruption to utilities such as telephone, gas, energy, and water could substantially affect efforts to alleviate damage and provide support, including fire suppression, and access to heating and cooling, and potable water.

Seismic activity could also result in significant damage to smaller structures. The greatest hazard related to smaller structures is that of unreinforced masonry buildings, failure of which can cause foundations to shift and result in gas leeks, fires, and exposed power lines. The Town requires all new buildings to utilize reinforced masonry, as well as comply with the Uniform Building Code (UBC), which is expected to enable structures to resist major earthquakes without collapsing, although structural damage could occur. Unreinforced masonry buildings within the Town have been retrofitted in compliance with state law.

Another potential hazard associated with seismic activity is surface fractures. As shown in Exhibit III-10, although there are no Alquist-Priolo Earthquake Fault Zones located within the Town, two such zones are mapped within the Sphere and a third is located immediately southeast of the Sphere. In order to limit impacts associated with surface ruptures, the Town is mandated by law to require that geological investigations, including but not limited to fault trenching, be preformed if residential development is proposed in proximity to these zones.

**Soil Characteristics**

The Town of Apple Valley and the Sphere of Influence contain a variety of soil types, with a range of characteristics that influence geological hazards such as slope instability, collapsible, compressible, and expansive soils, ground subsidence, and erosion. In addition, the soil structure

influences drainage, percolation, and other hydrological processes, impacts of which are further discussed in Section III-H of this EIR.

Although the Town is predominantly situated on broad alluvial plains, scattered slopes, hillsides, and mountains surround the planning area and present potential geological hazards in the Town and region. Development at the base of slopes, hillsides, and mountains is susceptible to hazards associated with slope instability such as rock falls and landslides. As build out of the General Plan continues, development should be minimized or avoided in areas that have greater than 15% slopes to limit potential impacts associated with slope instability and failure. The Development Code includes specific requirements and prohibitions for the construction of structures on slopes. These areas can be maintained as open space for recreation or health and safety. Where development is proposed adjacent to slopes, hillsides, and mountains, site specific analyses that address the potential impacts of rock falls, landslides, and slope stability must be conducted to assess site specific impacts and provide appropriate mitigation measures.

Soil parameters dictate the potential for soil collapse, compression, and expansion. The Town is primarily underlain by young alluvium, see Exhibit III-7, Geological Units, composed of unconsolidated to moderately consolidated silt and sand, which makes this soil type (Qyf) potentially susceptible to collapse and compression. This potential is exacerbated when additional weight loads and/or pressure is applied.

Expansive soils also present hazards within the planning area, but are limited to finer-grained sediments that have a clay component. Collapsible, compressible, and expansive soils can have adverse impacts to structures and infrastructure if not properly managed. Site-specific studies must be conducted to evaluate soil parameters and determine the potential for soil collapse, compression, and expansion.

Ground subsidence in the planning area is closely associated with groundwater levels. Structures sensitive to slight changes in elevation, such as canals, sewers, and drainage improvements are particularly susceptible to the effects of subsidence and have the potential to be damaged if subsidence occurs. Proper management of groundwater supplies, creating water conservation programs, and promoting water efficient public education can help to ensure that groundwater levels are not significantly reduced. As discussed in Section III-I, Water Resources and Quality, the groundwater supply in Apple Valley is part of the regional groundwater aquifer and is managed accordingly. Therefore, a regional approach to groundwater conservation and recharge should be continued and encouraged in order to avoid the adverse impacts of subsidence.

In some areas of the Town and the Sphere of Influence, especially where dry and granular sediment are present, aeolian and fluvial erosion present potential hazards. Grading, site development, or other surface disturbances can result in loose sediment that can easily be picked up by wind or water. Strong winds can cause deposits to become airborne, which can result in adverse health conditions, degraded air quality, and can erode structures. The potentially adverse health impacts associated with suspended dust and blowsand are further discussed in Section III-C, Air Quality. Project-specific erosion control measures shall continue to be required and implemented to protect soils within the Town and Sphere.

**Annexation 2008-001**

Annexation 2008-001 will support a variety of land uses at build out, including residential, office, commercial, and industrial uses. Although build out will occur gradually over several years development of this annexation area has the potential to present geological hazards to people and structures. The soil underling Annexation 2008-001 is comprised of very old alluvial valley deposits (Qvoa) with moderately consolidated sand and gravel. This sediment type, due to its age, may be more compact, and therefore provide better structural support compared to younger sediment types. However, clayey soils may have accumulated on the surface, which could result in expansion when saturated.

This annexation area, like the rest of Apple Valley is situated in close proximity to several faults that have the potential to cause strong to sever ground shaking, which could result in damage to structures, infrastructure, and persons, or generate seismically induced hazards. Site specific analyses should be conducted prior to development that identify potential hazards, and set forth effective mitigation measures. Development standards that minimize impacts from structural failure and promote the health and safety of residents must also be maintained in the Development.

**Annexation 2008-002**

Annexation 2008-002 is located to the northeast of the Town, and is planned for industrial land use at build out. Like the rest of the Town and Sphere, this area has the potential to be subjected to geological hazards. The area contains several sediment types, but is dominated by younger alluvial fan deposits (Qyf and Qf). These soil types are unconsolidated to moderately consolidated and may be subject to wind erosion, creating blowsand conditions during high wind events.

Annexation 2008-002, like the rest of Apple Valley and the Sphere, is located in close proximity to several faults that have the potential to generate strong to sever shaking and ground acceleration. In addition, seismic induced hazards resulting from strong shaking could also impact the annexation area. Site-specific analyses should be conducted prior to development that identify potential hazards and set forth effective mitigation measures that minimize impacts to structures and assure that any potentially hazardous industrial materials are properly stored to avoid release during a seismic event.

### 3. Mitigation Measures

1. The Town shall establish and maintain an information database containing maps and other information that describes seismic and other geotechnical hazards occurring within the General Plan Area. Consult and coordinate with surrounding communities, the California Division of Mines and Geology, San Bernardino County, other applicable state and federal agencies, and professional engineering geologists to establish, improve, and routinely update the database.

2. Future development proposals shall require the preparation of a site-specific soils and/or geotechnical analysis that include an evaluation of seismic and soil conditions and provide recommendations that mitigate soils and geotechnical hazards or constraints.

3. Proper structural engineering, which takes into account the forces that will be applied to structures by anticipated ground motions, shall provide mitigation for ground shaking hazards. Seismic design shall be in accordance with the most recently adopted editions of the Uniform Building Code and the seismic design parameters of the Structural Engineers' Association of California.

4. Establish a cooperative agreement with the County Geologist, State Geologist, contract state-certified geologist, or contract geological engineer, to review and determine the adequacy of geotechnical and fault hazard studies prepared within the Town.

5. Design elements, such as baffles, shall be required to reduce the potential for seiches in tanks, open reservoirs, and ponds where overflow or structural failure may cause damage to nearby properties. Criteria for seismic design of water tanks shall be in accordance with the American Water Works Association (AWWA) Standards for Design of Steel Water Tanks.

6. New development shall not be placed within natural flow paths or result in substantial changes to drainage patterns offsite. (Also see Hydrology Section III-D)

7. Development on wind or stream-deposited sediment or young alluvium on the valley floor should include site-specific subsurface geotechnical investigations that address the potential for seismic settlement, collapsible and expansive soils, and liquefaction. These hazards can be mitigated by proper excavation, compaction, backfilling, and foundation design.

8. Site-specific geotechnical analyses shall be conducted where new development is proposed adjacent to or in close proximity to steep slopes. Analyses shall evaluate the potential for landslides, rock falls, and/or slope failure, and set forth mitigation measures to minimize these hazards such as the use of set backs, retaining walls, and vegetation buffers.

9. Retaining walls shall be constructed to adopted building code standards, include an adequate sub-drain system at the base to prevent excessive hydrostatic pressure, and be evaluated by the Building Inspector.

10. All existing vegetation and debris shall be removed from areas that are to receive compacted fill. Removal of trees shall include a minimum of 95% of the root systems. Excavation to depths ranging from 2 to 4 feet or more below the existing site grade may be required.

11. Encourage consultation and coordination between the Town of Apple Valley Public Works Division, Apple Valley Ranchos Water Company, Mojave Water Agency, U.S. Geological Survey, and other appropriate agencies in order to routinely monitor groundwater levels and surface elevations in the Town.

12. The Town shall actively support and participate in local and regional efforts to conserve water in an effort to mitigate potential ground subsidence resulting from over extraction of groundwater. Preventive measures include the use of water efficient appliances and faucets indoors, desert tolerant landscaping, and increased use of reclaimed water, storm water, or imported water. (Also see Water Resources in Section III-I)

13. Maintain working relationships and strategies between the Public Works Division, Apple Valley Fire Protection District, and other appropriate agencies to strengthen or relocate utility or service facilities including the expedient retrofitting of weak or damaged service structures, enforce fire and building codes, and take other appropriate measures to safeguard major utility distribution systems in preparation of a seismic event.

14. The Town shall coordinate and cooperate with public and quasi-public agencies to encourage education and earthquake preparedness so that residents can be self-sufficient after a seismic event.

15. All grading permit requests shall include a soil erosion prevention plan. Blowing dust and sand during grading operation shall be mitigated by maintaining moist surface soils, limiting the area of dry exposed soils, planting stabilizing vegetation, establishing windbreaks with non-invasive vegetation or perimeter block walls, applying chemical soil stabilizers, and adequately watering construction sites prior to and during grading and site disturbance. (Also see Air Quality in Section III-C)

16. Proposed development within a designated Alquist-Priolo Earthquake Fault Zone shall require site-specific geotechnical investigation including fault trenching and other Alquist-Priolo Fault Zoning Act guidelines.

17. The Town shall require that development applications include plans indicating the location of leach fields, seepage pits, drainage facilities, and water-dependent landscaping so that staff may evaluate the potential for ground saturation and assure that structural foundation are located an appropriate distance away to minimize the potential for localized soil collapse.

18. Imported and onsite fill soils for future development shall be approved by the project's soils engineer. Prior to placement as compaction fill the soils engineer shall assure that all fill materials are free of vegetation, organic material, cobbles and boulders greater than 6 inches in diameter, and other debris. Approved soil shall be placed in horizontal lifts or appropriate thickness as prescribed by the soils engineer and watered or aerated as necessary to obtain near-optimum moisture-content.

19. Fill materials shall be uniformly compacted to no less than 90% of the laboratory maximum density, by either over-filling and cutting back to expose a compacted core or by approved mechanical methods, as determined by American Society for Testing and Materials (ASTM) test method D-1557-78. The project soils engineer shall observe the placement of fill and take sufficient tests to verify the moisture content, uniformity, and degree of compaction obtained. In-place soil density measurements should be determined by the sand-cone method,

in accordance with ASTM Test Method D-1556-64 (74), or equivalent test method acceptable to the Town's Building and Safety Department.

20. In general, finish cut slopes shall not be inclined steeper than 2:1 (horizontal to vertical). Attempts to excavate near-vertical temporary cuts for retaining walls or utility installations in excess of 5 feet may result in failure of the slope, which has the potential to damage equipment and injure workers. All cut slopes must be inspected by the project engineer during grading to provide additional recommendations for safe construction.

21. Foundation systems that utilize continuous and spread footings are recommended for the support of one and two-story structures. Foundations for higher structures must be evaluated based on structure design and on-site soil conditions.

22. Positive site drainage shall be established during finish grading. Finish lot grading shall include a minimum positive gradient of 2% away from structures for a minimum distance of three (3) feet and a minimum gradient of 1% to the street or other approved drainage course.

23. Utility trench excavations in slope areas or within the zone of influence of structures should be properly backfilled in accordance with the following recommendations:

    (a) Pipes shall be bedded with a minimum of 6 inches of pea gravel or approved granular soil. Similar material shall be used to provide a cover of at least 1 foot over the pipe. This backfill shall then be uniformly compacted by mechanical means or jetted to a firm and unyielding condition.

    (b). Remaining backfill may be fine-grained soils. It shall be placed in lifts not exceeding 6 inches in thickness or as determined appropriate, watered or aerated to near optimum moisture content, and mechanically compacted to a minimum of 90% of the laboratory maximum density.

    (c) Pipes in trenches within 5 feet of the top of slopes or no the face of slopes shall be bedded and backfilled with pea gravel or approved granular soils as described above. The remainder of the trench backfill shall comprise typical on-site fill soil mechanically compacted as described in the previous paragraph.

**Mitigation Monitoring/Reporting Program**

A. During any project site preparation, the Town Engineer and/or Building and Safety Department staff shall visit the site to ensure compliance with applicable Town ordinances, conditions of approval, and erosion control plans.
   **Responsible Parties**: Town Engineer, Building Division, developer, and grading contractor.

B. Prior to grading and construction, but subsequent to preparation of final development plans and specifications, the Geotechnical Consultant and/or the Town Engineer shall review foundation plans to verify compatibility with site-specific geotechnical conditions and

conformance with the recommendations contained herein. The need for additional subsurface exploration shall be determined on a project-by-project basis.
**Responsible Parties**: Town Engineer, and Geotechnical Consultant.

C. As appropriate, rough grading shall be performed under geological and/or engineering observation by the Geotechnical Consultant and the Town Engineer, accordingly.
**Responsible Parties**: Town Engineer, and Geotechnical Consultant.

D. As determined appropriate, the Town Engineer and/or Geotechnical Consultant shall monitor the following onsite grading activities, and as necessary verify or modify conclusions and recommendations set forth in the project's geotechnical report:

1. Observation of all grading operations;
2. Geologic observation of all cut slopes;
3. Observation of all key cuts and fill benching;
4. Observation of all retaining wall back cuts, during and following completion or excavation;
5. Observation of all surface and subsurface drainage systems;
6. Observation of all backfill wedges and sub-drains for retaining walls;
7. Observation of pre-moistening of sub-grade soils and placement of sand cushion and vapor barrier beneath the slab;
8. Observation of all foundation excavations for the structure or retaining walls prior to placing forms and reinforcing steel; and
9. Observation of compaction of all utility trench backfill.

**Responsible Parties**: Town Engineer and/or Geotechnical Consultant.

## G. Hazards and Hazardous Materials

### Introduction

This section of the EIR describes the potential for hazardous and toxic materials and waste to occur within the planning area and the vicinity, analyzes the potential impacts associated with implementing the proposed project, and sets forth mitigation measures to minimize impacts. A wide range of data and information, ranging from research and analysis conducted for specific projects in the area, to regional-scale planning and environmental documents, have been used in researching and analyzing the project and its potential effects.

The California Health and Safety Code defines a Hazardous Material as "any material that because of its quantity, concentration, or physical or chemical characteristics poses a significant present or potential hazard to human health and safety or the environment if released into the work-place or environment." Hazardous and toxic “material” refers to substances that have a value or can be used, whereas hazardous “waste” is defined as a waste substance or byproduct of industrial, manufacturing, agricultural, and other sues, which can pose a substantial or potential hazard to human health or the environment when improperly managed.[22] Hazardous waste possesses at least one of these four characteristics: ignitability, corrosivity, reactivity, or toxicity; or appears on special U.S. EPA lists. This includes items such as used oil, mercury or products containing mercury, over the counter prescription drugs, and home medical waste. The most common type of hazardous waste is termed “universal waste,” and includes many common items, such as fluorescent lights, cathode ray tubes, instruments that contain mercury, batteries, and others.

Responsibility for the regulation of these hazardous materials is shared across several county, state, and federal agencies. The use, storage and disposal of hazardous materials and wastes are regulated by a variety of state, federal, and regional agencies, based on the type and volume of these materials generated and stored. When federal regulation is warranted, such as for “large-scale” generators of hazardous materials and wastes. Such uses are regulated by the U.S. Environmental Protection Agency (EPA).

### Thresholds of Significance/Criteria For Determining Significance

Standards and criteria have been drawn from a variety of sources, including Appendix G of the Environmental Checklist Form of the California Environmental Quality Act (CEQA) guidelines. Build out of the General Plan and annexation areas would have a significant effect from hazards or hazardous materials if it is determined that the project will:

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous material.

[22] U.S. Environmental Protection Agency, http://www.epa.gov/

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

d. Be located on a site, which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or environment.

e. Result in a safety hazard for people residing or working in the project area for a project located within an airport land use plan or, where such a plan has not yet been adopted, within two miles of a public airport or public use airport.

f. Result in a safety hazard for people residing or working in the project area for a project within the vicinity of a private airstrip.

g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

### 1. Existing Conditions

**Regulatory Environment**

Hazardous Materials Management

Hazardous materials are under the jurisdiction of various federal and state regulations and programs which regulate the use, storage, and transportation of hazardous materials. Regulations can be used to reduce or mitigate the danger that hazardous substances may pose to Apple Valley residents, businesses, and visitors, both in normal day-to-day conditions and as a result of a regional disaster, such as an earthquake or major flood. Several of the existing federal and state programs are summarized below.

The Resource Conservation and Recovery Act (RCRA) gives the EPA the authority to control hazardous waste from the "cradle-to-grave" and is the principal federal law which regulates generation, management, and transportation of waste materials. Hazardous waste management includes the treatment, storage, or disposal of hazardous waste. The 1986 amendments to RCRA enabled the EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. It should be noted that RCRA focuses only on active and future facilities and does not address abandoned or historic sites.

The federal Hazardous and Solid Waste Amendments (HSWA) are the 1984 amendments to RCRA that required the phasing out of land disposal of hazardous waste. Some of the other mandates of this law include increased enforcement authority for EPA, more stringent hazardous waste management standards, and a comprehensive underground storage tank program.

Other federal laws governing the production, use, storage, and disposal of hazardous waste include the Hazardous and Solid Waste Amendments Act (HSWA); the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the Superfund Amendments and Reauthorization Act (SARA); and Emergency Planning and Right-to-Know (SARA Title III).

At the state level, California has a number of agencies that oversee management of hazardous materials. In many cases California State law mirrors or is more restrictive than federal law, and enforcement of these laws has been delegated to the state or a local agency. Collectively these Certified Unified Program Agencies (CUPA) regulate and implement law pertaining to hazardous materials. The two primary oversight agencies are the Department of Toxic Substances Control (DTSC) and the Regional Water Quality Control Board (RWQCB). The Office of Emergency Services, California Department of Fish and Game, Air Resource Board, Caltrans, State Office of Environmental Health Hazard Assessment, and California Integrated Waste Management Board are also involved in state management of hazardous materials. For industrial users and producers of hazardous materials, the Cal-OSHA Division of the California Department of Industrial Relations is the regulatory agency. For state transport of hazardous materials, the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans) are the responsible agencies.

The California Regional Water Quality Control Board (CRWQCB), the Town of Apple Valley, Apple Valley Ranchos Water Company, and the Golden State Water Company maintain information concerning contaminated wells and groundwater. As mentioned above, the state and federal Environmental Protection Agencies (EPA) and the State Department of Health also supply information concerning specific hazardous waste sites and their locations.

The Department of Toxic Substances Control (DTSC) is a state department that provides assistance through an Emergency Response Program (ERP) for actual and potential releases of hazardous substances that pose a threat to public health or the environment.[23]

Commonly known as the Tanner Bill, AB 2948 (Chapter 1504, Statures of 1986) authorizes counties to prepare Hazardous Waste Management Plans (HWMP) in response to the need for safe management of hazardous materials and waste products. The County of San Bernardino prepared the Business Emergency/Contingency Plan (Business Plan) to meet the requirements of the aforementioned bill. The plan requires new and existing businesses that generate or use hazardous materials to obtain approval from the County or Town prior to onsite use of such materials. The Business Plan provides a management tool that requires each business to

[23] http://www.dtsc.ca.gov/SiteCleanup/ERP/index.cfm

individually address the disposal, handling, processing, storage and treatment of hazardous materials and waste products used.

Small-scale generators of industrial hazardous wastes qualify for the County's "Conditionally Exempt Small Quantity Generators" (CESQGs) program. The San Bernardino County Fire Department will collect hazardous waste, or businesses can deliver waste to the County's collection facility. Wastes are then transported to a state-permitted processing facility located in San Bernardino and further recycled or incinerated. Hazardous waste from businesses that generate more than the threshold amounts is collected by private contractors for disposal by County-approved hazardous waste disposal firms in accordance with state and federal regulations for such waste.

The Town of Apple Valley is a member of the Southern California Hazardous Waste Management Authority, a joint powers authority between Southern California Association of Governments (SCAG) member counties. The draft Regional Comprehensive Plan (RCP) addresses a number of areas of resource management. The RCP includes an overview of the current solid and hazardous waste management planning process in Southern California, and discusses potential strategies and actions for improving the SCAG region's solid and hazardous waste management system.

Standards established by the Town of Apple Valley's Development Code are intended to ensure that the use, handling, storage, and transportation of hazardous materials comply with all applicable requirements of the State Government Code Section 65850.2 and Health and Safety Code Section 25505, and Article 80 of the Uniform Fire Code.

The Town's Multi Hazard Functional Planning Guidance Document (Multi Hazard Plan) establishes contingency plans when an incident involving hazardous materials occurs. The Town works with the Hazardous Materials Division (HMD) of the San Bernardino County Fire Department, which has been designated by the State as the Certified Unified Program Agency for handling hazardous waste and materials in the High Desert. The Hazardous Materials Team, a unit of the Apple Valley Fire Department and a member of the San Bernardino County Hazardous Materials Team, responds to all calls received related to hazardous materials in Apple Valley, including fuel spills and the illegal dumping of unknown products in the Town and surrounding area, which are all part of the Fire District's service area. They also provide assistance in other jurisdictions as requested. Local businesses must certify any hazardous materials at their facilities with the County HMD on an annual basis. HMD performs compliance inspections of facilities that handle hazardous materials, which are defined by the California Code of Regulations (Title 22). The Apple Valley Fire District Duty Chief acts as the liaison with HMD in the event of a hazardous materials spill or leak.[24]

For the Town of Apple Valley, the Hazardous Material Division of the San Bernardino County Fire Department is the administering agency and the Certified Unified Program Agency (CUPA) responsible for the regulation of hazardous materials.

[24] "Apple Valley General Plan: Emergency Preparedness Element," prepared by Terra Nova Planning & Research, Inc., March 25, 2008.

In order to raise awareness and encourage emergency preparedness, Town and Fire District staff provide CERT (Community Emergency Response Teams) training throughout the community to help its citizens and visitors prepare for potential disasters. The CERT course is certified by FEMA and the State Office of Emergency Services (OES).

Hazardous Materials Transportation

There are three hazardous materials transportation corridors located in the Town of Apple Valley. The Atchison Topeka & Santa Fe Railroad, Interstate 15, and Highway 18 have the potential to be involved in the transport of hazardous wastes and materials. The California Highway Patrol (CHP) and the California Department of Transportation (Caltrans) are the two state agencies that have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies. CHP enforces hazardous material and hazardous waste labeling and packing regulations to prevent leakage and spills of material in transit, and to provide detailed information to cleanup crews in the event of an accident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are all part of the responsibility of the CHP, which conducts regular inspections of licensed transporters to assure regulatory compliance. Caltrans has emergency chemical spill identification teams at as many as 72 locations throughout the state that can respond quickly in the event of a spill.

The US Department of Transportation (DOT) regulates the transportation of hazardous materials between states and foreign countries. DOT regulations govern all means of transportation, except packages sent by mail, which are governed by U.S. Postal Service regulations. The State of California has adopted DOT regulations for the intra-state movement of hazardous materials. State regulations are contained in Title 26 of the California Code of Regulations.

Aboveground Storage Tanks

The Aboveground Petroleum Storage Act was enacted to protect the state's people and natural resources from aboveground petroleum storage tank spills. Facilities storing petroleum products (gasoline, diesel, lubricants, etc.) in aboveground tanks with a capacity greater than 1,320 gallons, or the total capacity for the facility greater than 1,320 gallons, are subject to the Act. Owners or operators of aboveground tanks are required to file a storage statement with the State Water Quality Control Board (SWQCB) and prepare and implement a Spill Prevention Control and Countermeasure Plan (SPCCP) in accordance with federal regulations.

Underground Storage Tanks

Federal laws and regulations relating to underground storage tanks used to store hazardous materials (including petroleum products) require that tank owners and operators register their tanks with the U.S. EPA or delegated agencies. Federal regulations require extensive remodeling and upgrading of underground storage tanks, including installation of leak detection systems. Tank removal and testing procedures are specified by the regulations.

State laws relating to underground storage tanks include permitting, monitoring, closure, and cleanup requirements. Regulations set forth construction and monitoring standards, release

reporting requirements, and closure requirements. Old tanks must eventually be replaced. All new tanks must be double-walled, with an interstitial monitoring device to detect leaks. All soil and groundwater contamination must be cleaned up. The regulations for this program are contained in Chapter 6.7, Division 20 of the Health and Safety Code and Subchapter 16 of Title 23 of the California Code of Regulations, California Underground Storage Tank Regulations, and are implemented by the Regional Water Quality Control Boards (RWQCB). Underground storage tank permitting is handled through local governmental agencies.

Polychlorinated Biphenyls (PCBs)

PCBs are organic oils that were formerly placed in many types of electrical equipment, including transformers and capacitors, primarily as electrical insulators. Years after their widespread and commonplace use, it was discovered that exposure to PCBs may cause various health effects, and that PCBs are highly persistent in the environment.

In 1979, U.S. EPA banned the use of PCBs in most new electrical equipment and began a program to phase out certain existing PCB-containing equipment. The use and management of PCBs in electrical equipment is regulated pursuant to the Toxic Substances Control Act (40 CFR). These regulations generally require labeling and periodic inspection of certain types of PCB equipment and set forth detailed safeguards to be followed in disposal of such items.

Pesticides

Pesticides contain chemicals formulated specifically to be toxic to certain living things. As the use of modern chemical-based pesticide products has grown, attention has been drawn to their potential adverse side effects. Legislative and regulatory efforts to regulate the use and application of pesticides have sought to retain the benefits while minimizing the potential harm to public health and the environment.

Pesticides are subject to federal and state legislation. The following major federal and state statutes and regulations control pesticides:

- Federal Insecticide, Fungicide, and Rodenticide Act;
- Pesticide Contamination Prevention Act; and
- Birth Defects Prevention Act.

Occupational Safety

Federal and state laws define occupational safety standards to minimize worker safety risks from both physical and chemical hazards in the workplace. The California Division of Occupational Safety and Health (Cal-OSHA) and the federal Occupational Safety and Health Administration (OSHA) are the agencies responsible for assuring worker safety in the workplace. OSHA regulations (29 CFR 1910 and 1926) contain requirements concerning the use of hazardous materials in the workplace and during construction that mandate employee safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, emergency action and fire prevention plan preparation, and a hazard communication program.

**Hazardous Sites**

In order to identify sources of hazardous materials, a database search of federal state, and local agency records must be conducted. There are a limited number of small quantity generators that use or produce hazardous materials in Apple Valley and surrounding areas. The County requires any such businesses to certify on-site hazardous materials annually with the County's Hazardous Materials Division (HMD). These facilities include waste-generating medical clinics, gasoline service stations, equipment and fuel storage yards, and waste haulers. These businesses are inspected and monitored to assure compliance with California Code of Regulation (Title 22).

According to the environmental records review prepared for the Town of Apple Valley[25], there are 15 properties within the planning area that are currently listed in environmental databases. Of those 15 properties, 11 are listed as a result of generating, using, and/or disposing relatively small quantities of potentially hazardous materials from their business location, with no material releases having been reported on these properties. Due to these findings, significant hazardous material releases into the underlying soil and groundwater are not suspected at these locations.

Currently, there are no large quantity generators of hazardous waste in the Town of Apple Valley. All businesses that use, generate, transport, or store hazardous waste are required to submit a hazardous waste management business plan to the County of San Bernardino. According to the search of available environmental records for the study area conducted by Environmental Data Resources, Inc. (EDR)[26], there is one transporter of hazardous waste listed by the EPA in the Town and its Sphere of Influence.

A search of the US EPA Envirofacts Data Warehouse for the Town of Apple Valley conducted on October 20, 2008 did not identify any Federal Superfund Sites (NPL), State Response Sites, Voluntary Cleanup Sites, School Cleanup Sites, Permitted Sites, or Corrective Action Sites. The search did identify 7 school investigation sites, all of which require no further action since no hazards were found.[27]

Other potential risks are those from leaks from underground storage tanks, which are typically located at service stations, maintenance yards, and at airports. These constitute the most significant hazards from these small quantity generators. A search for Leaking Underground Fuel Tank (LUFT) cleanup sites identified 15 spills within the Town of Apple Valley.

Approximately 560 acres within the NAVISP were previously used as a practice bombing range by the U.S. Army Air Force during World War II. This portion of the planning area, formerly referred to as Victorville Pre Bomb Range N-1, contained no building structures. The concentric rings and the transecting strips remain visible (in aerial photographs) south of the Wal-Mart Distribution Center. Potential hazards exist due to the presence of known or suspected military munitions and explosives of concern.

[25] "Apple Valley Study", prepared by Environmental Data Resources Inc., May 01, 2006
[26] Ibid.
[27] "http://www.epa.gov/enviro/html/toxic_releases.html" accessed October 20, 2008.

### Fire Hazards

Fire hazards are based on a combination of several factors, which include fuel loading, slope, weather, dwelling density, wildfire history, and whether or not there are local mitigation measures in place, such as an adequate network of fire hydrants, fire-rated construction, and fuel modification zones. The Apple Valley Fire Protection District constantly monitors the fire hazard in the Town, and has ongoing programs for investigation and alleviation of hazardous situations. Section III-M, Public Services discusses in further detail fire protection, project impacts, and mitigation measures.

### Medical Hazardous Waste

The Medical Waste Management Program (California Health and Safety Code, Section 117600) protects the public and the environment from potentially hazardous medical waste by regulating the generation, handling, storage, and disposal of medical hazardous waste through the implementation of the Medical Waste Management Act (MWMA). Under the MWMA the County of San Bernardino is the local enforcement agency for Apple Valley's medical hazardous waste generators. All medical hazardous waste generators within the Town and Sphere of Influence are required to abide by the MWMA, Title 22 and Title 8 of the California Code of Regulations, and any other pertinent laws that regulate medical hazardous waste.

### Household Hazardous Waste

Household hazardous waste includes a number of common household products such as fluorescent lamps, batteries, pesticides and herbicides, paint, motor oil, mercury containing devices, medications, and electronic equipment. All household hazardous waste must be disposed of at specified disposal facilities. The County Fire Department coordinates and facilitates household hazardous waste disposal. Under the authority of the County Fire Department's Household Hazardous Waste program, the Town operates a collection center located at the Town's Public Works Yard at 22411 South Outer Highway 18. Materials accepted for disposal at this location include pesticides, wood preservatives and solvents, automobile batteries, and small electronic items such as television sets and computer monitors, as well as other materials. Approved County contractors categorize, sort, pack and haul wastes to approved facilities.

### Airport Safety

The Apple Valley Airport, located at 21284 Corwin Road, has a moderate to high potential for hazardous material spills. The airport is permitted to discharge less than 1,000 gallons per day of treated sewage, which is considered a minor threat to groundwater. In addition, the site contains four underground fuel storage tanks, none of which have any reported spills or leaks.

**Emergency Response**

EPCRA requires detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of to prevent or minimize adverse effects to human health or the environment in the event such materials are accidentally released. California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local governments and private agencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services, which coordinates the responses of other agencies, including Cal EPA, CHP, Department of Fish and Game, Los Angeles RWQCB, Apple Valley Fire Protection District and San Bernardino County Environmental Health Services.

The California Emergencies Services Act requires each city to prepare and maintain an Emergency Plan for natural, manmade, or war-caused emergencies that result in conditions of disaster or in extreme peril to life. The County is currently developing mass evacuation plans within each region. The high desert region plan has not yet bee completed. The Town shall continue to coordinate with Caltrans, the Federal Highway Administration, adjoining cities and communities and San Bernardino County to provide the highest functional reliability of major roadways and the public transportation system serving the Town and the region.

## 2. Project Impacts

As a result of policies of the General Plan update, uses and activities may be proposed or undertaken within the Town of Apple Valley that could result in the use of hazardous materials or create a hazardous condition within the Town or annexation areas. Hazardous materials transport, storage and handling, as described above, are highly regulated at the federal, state, regional and local level. The long-term build out of the General Plan and annexation areas is expected to continue to be regulated by multiple agencies.

Releases, leaks, or the disposals of chemical compounds, such as petroleum hydrocarbons, on or below the ground surface, can lead to the contamination of underlying soil and groundwater. Disturbance of previously contaminated areas could, through grading or excavation operations, expose the public to health hazards from physical contact with contaminated materials including potential airborne hazards. Although various local state, and federal regulations govern the proper storage, handing, and transport of hazardous materials, the improper handling or storage of contaminated soil and groundwater can further expose the public to these hazards, or potentially spread contamination through surface water runoff or airborne dust. Contaminated groundwater can also spread down gradient, potentially contaminating subsurface areas of surrounding properties.

Demolition of older buildings for redevelopment can expose people and the environment to hazardous materials such as asbestos and lead-based paint. During demolition and construction operations, hazardous materials associated with the on-site uses could also be present. Demolition debris generated may include asphalt paving, dirt, concrete, asphalt, and other building materials. The General Plan includes policies and programs to assure that activities

which require the handling of hazardous building materials are properly undertaken, with the appropriate agencies' oversight.

The Atchison Topeka & Santa Fe Railroad, Interstate 15, and Highway 18 may be used in the transfer of hazardous wastes and materials within the Apple Valley planning area. Therefore, potential exists for spills and leaks from moving sources along these corridors, including within the Town and its Sphere of Influence. As previously noted, the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans) are the two state agencies designated with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies. The CHP is responsible for cleaning up hazardous waste spills that occur in or along freeways, and coordinate with Caltrans and the local sheriff and fire departments for additional enforcement and routing assistance. These two agencies' regulations will continue to govern the transport of hazardous materials through Town and the region.

Although no "large scale" hazardous waste producing industries are planned for the planning area, there are a number of businesses that have the potential to use hazardous materials and produce hazardous wastes. Commercial and industrial service providers such as dry cleaners, film processors, mechanics, and others have the potential to use and produce hazardous materials and wastes. As noted above, these hazardous material users and hazardous waste generators are regulated by county, state, and federal law, and are required to comply with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, chapter 6.5) and the California Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Division 4.5). These regulations help ensure a level of safety, in which no persons are exposed to hazardous materials or waste.

An increase in the residential population will lead to an associated increase in the use of common household cleaners, batteries, fluorescent tubes, mercury-containing devices, and electronics. All of these products, termed universal wastes, are considered hazardous materials since they could harm people or the environment if they are not disposed of properly. In order to safely dispose of these wastes, the San Bernardino County Fire Department maintains a collection facility, located at 22411 Highway 18, that accepts a wide variety of household wastes. This facility, or similar facilities, are expected to continue to operate through the build out of the General Plan and annexation areas.

As previously noted, approximately 560 acres in the west-central portion of the study area was formerly used as a practice bombing range by the U.S. Army Air Force during World War II. Based on the Environmental Records Review of the Phase I Environmental Assessment prepared for the Town of Apple Valley[28], a formerly used defense site (FUDS) summary reports that this property contains a high risk due to unexploded ordnances. The report therefore strongly recommends further background study for the former bombing range prior to development. Such investigation, and associated disposal of any identified ordinance, will reduce the potential impacts at this location to less than significant levels.

[28] "Environmental Records Review", prepared by Black Rock Geosciences, of the Phase I Environmental Assessment conducted for the Town of Apple Valley by Environmental Data Resources, Inc., May 01, 2006.

The San Bernardino County Department of Airports provides for the management, maintenance, and operation of the Apple Valley Airport[29]. Two primary hazards derived from aviation activities include noise and aviation safety. Noise issues relating to airports are addressed in the Noise Element Update Technical Study, which can be found in its entirety in Technical Appendix L. Particularly hazardous land uses should be prohibited in all designated airport overlay zones, including those which would cause smoke, water vapor, or light interference impeding the pilot's ability to see the airfield. Uses which cause electrical interference with aircraft navigational and communications equipment also should be prohibited in the airport vicinity. Other inappropriate uses include those attracting large numbers of birds, including landfills and some types of food processing plants involving outdoor storage of grant and other raw materials or food by-products.[30]

**Annexation 2008-001**

Annexation 2008-001, also known as the Golden Triangle, has the potential to result in as much as 7,135,369 square feet of commercial space, 7,782,275 square feet of industrial space, and a total of 4,236 residential units at build out. Growth and development of this annexation area would result in an increase in the frequency of transport, use, and disposal of hazardous materials associated with residential, commercial, and industrial growth. In that the area is undeveloped, it is unlikely that contaminated or potentially contaminated sites occur within this annexation area currently; however, site-specific analyses should be conducted to determine potential areas of known and/or potential soil and/or groundwater contamination.

While businesses are required by federal, state, and local regulations to properly transport, use, and dispose of hazardous materials in the Town and its Sphere of Influence, it is possible that upset or accidental conditions may arise which result in the release of hazardous materials into the environment. However, compliance with the Town's Multi Hazard Plan and the implementation of the uniform regulations to manage the risk associated with transportation of hazardous materials will function to minimize the hazard risks that may occur.

**Annexation 2008-002**

As described in the General Plan Land Use Element, Annexation 2008-002 has the potential to result in 7,676,379 square feet of industrial space at build out, which in turn could result in greater quantities of industrial hazardous waste being generated, stored, and transported. As with Annexation 2008-001, although Annexation 2008-002 is currently undeveloped land, site-specific studies will be required to determine areas of soil or groundwater contamination. Project proponents for future development within Annexation 2008-002 will, as is the case with the entire planning area, be required to comply with applicable federal state, and local requirements concerning hazardous materials.

[29] County of San Bernardino General Plan, Safety Element, adopted April 12, 2007.

[30] "Town of Apple Valley Development Code, Chapter 9.65 Airport Overlay Districts", adopted October 2000.

While businesses are required by federal, state, and local regulations to properly transport, use, and dispose of hazardous materials in the Town and its Sphere of Influence, it is possible that upset or accidental conditions may arise which result in the release of hazardous materials into the environment. However, compliance with the Town's Multi Hazard Plan and the implementation of the uniform regulations to manage the risk associated with transportation of hazardous materials will function to minimize the hazard risks that may occur.

### 3. Mitigation Measures

The following mitigation measures will reduce the number and severity of hazardous materials incidents within the Town of Apple Valley and its Sphere of Influence, and help to ensure the protection of future residents, visitors and lands from exposure to such materials. Impacts will be less than significant.

1. The Town will cooperate with regulators and encourage the enforcement of laws that require all users, producers, and transporters of hazardous materials and wastes to clearly identify such materials, and notify the appropriate county, state and/or federal agencies as required by law.

2. The Town shall maintain appropriately managed access routes to facilitate the transport of hazardous and toxic materials.

3. The Town will work with the County Sheriff's Department, Caltrans, and CHP, to regulate the transport of hazardous materials along local roadways, state highways and routes, and interstates in the Town or the vicinity.

4. The Town will coordinate with the Apple Valley Fire Protection District and the San Bernardino County Environmental Health Department to assure improved response to, and capability for, handling hazardous materials incidents.

5. Future development within the General Plan area shall be required to comply with all applicable federal, state, and regional permitting requirements for hazardous and toxic materials generation and handling, including but not limited to the following:

    a. If it is determined that hazardous wastes are, or will be, generated by any proposed operations, the wastes must be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Division 4.5). If so, the proposed facility shall obtain a United States Environmental Protection Agency Identification Number by contacting (800) 618-6942.

    b. If hazardous wastes are (a) stored in tanks or containers for more than ninety days, (b) treated onsite, or (c) disposed of onsite, then a permit from the Department of Toxic Substances Control (DTSC) may be required. If so, the proposed facility shall contact DTSC at (818) 551-2171 to initiate pre-application discussions and determine the permitting process applicable to the facility.

6. Developers shall submit for approval a detailed description of any hazardous materials use, as well as detailed plans for location of any hazardous materials storage and management facilities to the Apple Valley Fire Protection District.

7. The Town shall thoroughly evaluate development proposals for lands directly adjacent to sites known to be contaminated with hazardous or toxic materials or sites that use or contain potentially hazardous or toxic materials.

8. During project construction and implementation, the handling, storage, transport, and disposal of all chemicals, including herbicides and pesticides, runoff, hazardous materials and waste used on, or at, the project site, shall be in accordance with a project's BMP/Integrated Pest Management Plan, other relevant regulatory plans, and applicable County, state, and federal regulations.

9. The Town shall require all business that use, store, or produce hazardous material to comply with the County's Business Plan in addition to all Town regulations.

10. The Town shall annually update the SEMS Multihazard Functional Plan to ensure that emergency shelters and emergency evacuation routes are responsive to changing community needs.

11. The Town shall maintain documentation of known hazards to public health and safety and shall make this information available to government officials and organizations, emergency response personnel, and the general public.

**Mitigation Monitoring and Reporting**

A. Development plans and permits for uses, which may include or involve the production, storage, dispensing, or disposal of hazardous or toxic materials shall be concurrently submitted, reviewed, and properly conditioned or regulated.
**Responsible Parties:** Apple Valley Fire Protection District, Planning Division, Environmental Health, California Regional Water Quality Control Board, Caltrans.

## H. Hydrology

### Introduction and Background

This section of the EIR describes the existing hydrological setting in the planning area, the vicinity and region, and analyzes the potential constraints, risks and opportunities associated with these existing conditions. It assesses the potential for hydrological risks associated with implementation of the proposed General Plan and annexation areas, including the generation of storm runoff and associated infrastructure needs, and sets forth mitigation measures that will be effective in reducing impacts to levels that are less than significant. A wide range of data and information have been used in researching and analyzing the build out of the planning area, and its potential effects and impacts. In addition to regional-scale hydrological resource documents and the two Town Master Drainage Plans, a hydrology analysis was prepared for the proposed General Plan.[31] It is presented in its entirety in Appendix D of this EIR.

### Thresholds of Significance/Criteria For Determining Significance

Standards and criteria have been drawn from Appendix G: Environmental Checklist Form of the California Environmental Quality Act (CEQA). The following factors should be considered to assure that potential flooding and hydrology impacts that may arise from build out of the proposed Apple Valley General Plan and annexations are adequately addressed. Potential project impacts to water resources and water quality are also addressed in Section III-I of this EIR:

a. Violate any water quality standards or wastewater discharge requirements;

b. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in flooding on- or off-site;

c. Substantially alter the existing drainage pattern of the state or area, including through the alteration of the course of a stream or river, or substantially increase the rate of surface runoff in a manner, which would result in flooding on- or off-site;

d. Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

e. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazards Boundary or Flood Insurance Road Map or other flood hazard delineation map;

f. Place within a 100-year flood hazard area structures, which would impede or redirect flood flow;

g. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of a levee or dam;

h. Inundation by seiche, tsunami, or mudflow.

[31] "Seismic, Geologic and Flooding Sections of the Technical Background Report to the Safety Element of the General Plan," prepared by Earth Consultants International, 2007.

## 1. Existing Conditions

Hydrology refers to the distribution and circulation of water in a given area, and in the context of this EIR, it is associated with the management of floodwaters and surface runoff. Hydrology is significantly influenced by geography and climate of a particular locale. Because the local microclimate affects the amount and intensity of precipitation, it also plays an important role in local hydrology.

The planning area is located in the southern portion of the Mojave Desert. The planning area climate is characteristic of a high desert ecosystem, which experiences extreme fluctuations of daily temperature, strong seasonal winds, and receives less than 5 inches of annual precipitation.

Elevations within the Town of Apple Valley and its vicinity range from 2,550 to 4,800 feet above MSL. In general, terrain within the boundary of Apple Valley ranges from 2,550 to 3,186 feet above MSL. Higher elevations occur on isolated hills such as Bell Mountain, which peaks at 3,645± feet above MSL and Catholic Hill, at approximately 3,897 feet above MSL. The lowest elevation within the planning area is associated with the Mojave River, located on the west side of Town.

The Town's Sphere of Influence contains elevated terrain as high as 4,800 feet. Mountain ranges to the north and northeast of the planning area include the Sidewinder, Black, and Turtle Mountains. The Fairview and Granite Mountains occur to the east. The Ord Mountains and the San Bernardino Mountains are located to the south. The north face of the San Bernardino Mountains constitute some of the highest elevations in the region, and have a strong influence on the local climate and potential for flooding hazard in the planning area.

The region and the Town are impacted by winter storms, local thunderstorms, and summer tropical storms, all of which have the potential to produce substantial precipitation. Winter storms, which usually occur between November and April, are responsible for most of the precipitation recorded in Apple Valley and southern California. These storms may discharge heavy and sometimes prolonged precipitation over a large area. Local thunderstorms, which usually impact relatively small areas and can occur at any time, are usually most prevalent in the higher mountains during the summer, but also common in the Mojave Desert region. Tropical rains originate in the warm, southern waters off Baja California in the Pacific Ocean, and move northward into southern California. Tropical storms typically occur in the summer or early fall, especially in the desert areas.

The mountain drainages and ephemeral streams associated with the Mojave River have contributed to the topography of the region. The Mojave River is a federally regulated waterway that flows along and generally defines of much of the western boundary of Apple Valley. The headwaters of the River are formed by streams on the north flank of the San Bernardino Mountain, which occur south of Apple Valley. There are two flood control structures along the west fork of the River; these are the Cedar Springs Dam, and the Mojave Forks Dam, a major flood control structure. The Mojave River leaves the mountains flowing northward along the

western edge of Apple Valley, from whence it trends eastward towards Barstow and ends at Soda Lake in Kern County. While most of the River's flow is underground, surface water may occur along the entire length of the river during large storms. It has been one of the most significant sources of destructive flooding in the high desert region.

In the planning area, the Mojave River is fed by several tributary dry washes, the largest of which, the Bell Mountain Wash, is a natural channel that collects runoff primarily from the north and west. The Desert Knolls Wash, which contains a partially lined concrete drainage basin, is a smaller wash that drains the area west of Catholic Hill. There are also several small, unnamed drainages that channel flows from the western part of the Ord Mountains towards the Mojave River. Other watercourses in the planning area flow into the Apple Valley Dry Lake. Most of these watercourses are considered to be ephemeral, in that they rarely contain surface water flow and generally have poorly defined banks.

The Town has historically been subject to flooding and associated hazards, such as mudflows, during severe summer storm events. The winter rainfall in February and March of 1938 stands as the benchmark for damaging storms in the Apple Valley area; during this event, peak stream flow for Deep Creek was estimated at more than 46,000 cubic feet per second, and flows in the Mojave River increased to more than 70,000 cubic feet per second. Other notable historic peak flows reached about 23,000 cubic feet per second in 1969 and 1978, and more than 37,000 cubic feet per second in 1910.

The planning area is primarily a high desert area, and as such is typified by rugged mountain ranges and dry lakes, or desert playas, where most of the drainages from the surrounding hills and mountains in area terminate. The aforementioned Apple Valley Dry Lake is the largest playa in the area, collecting runoff from most of Apple Valley. The Reeves Dry Lake, a smaller playa to the east of the planning area in the central part of Fairview Valley, collects runoff from the adjacent mountains. Drainages emanating from the Ord Mountains include the Juniper Flats, Arrastre Canyon, and Lovelace Canyon watersheds; these drain into the Rabbit Dry Lake in Fifteen Mile Valley, located to the southeast of Apple Valley. Drainages from the Granite Mountains, located to the east of the planning area, flow eastward to Lucerne Dry Lake in Lucerne Valley. Locally, drainage channels in Apple Valley become less defined on the valley floor, as water-borne sediment typically occurs as sheet flow, spreading out into braided ephemeral stream channels.

The Town includes older as well as some newer construction that incorporates little alteration to natural terrain, with some structures built along and within natural drainage channels. Some streets are constructed without culverts or bridges. Flows along natural drainage courses can therefore impact such development.

Floods on alluvial fans are typically shallow in depth but can occur with little warning, at high speeds and can carry large sediment loads. As defined by the Federal Emergency Management Agency (FEMA), flood hazards associated with alluvial fans fall into two categories: active and inactive. Active alluvial fans have unpredictable flow paths, result in sudden and unexpected deposition and erosion and can pose an extreme hazard due to the combination of slope,

topography and sediment availability. It is difficult to realistically assess flood risk and develop appropriate mitigation under these conditions. Inactive alluvial fans have relatively stable flow paths and low levels of deposition and erosion that do not de-stabilize flow paths. Both processes may be present in a particular alluvial fan, especially where man-made structures have modified terrain. In Apple Valley, most alluvial fans exhibit active and inactive characteristics.

**Regional Stormwater Management**

Regional drainage facilities in the planning area and vicinity include rivers, major streams and their tributaries, as well as areas of significant sheet flows. As the agency responsible for management of these facilities, the San Bernardino Flood Control District ("Flood Control District") implements broad management functions, including flood control planning, construction of drainage improvements for regional flood control facilities, and watershed and watercourse protection related to those facilities. To carry out its mandated responsibilities, the Flood Control District also has power of taxation, bonded indebtedness, land and water rights acquisition, and cooperative partnerships with local, state, and federal agencies. The San Bernardino County Board of Supervisors is the official decision-making body for the Flood Control District.

**Local Drainage Management**

Although the County Flood Control District holds the primary responsibility for managing regional drainage in the planning area, the Town retains direct responsibility for local drainage management. Areas rich in vegetation and cover or constrained by topography, such as alluvial plains and drainage channels, provide a valuable means of reducing runoff, preserving the capacity of downstream facilities, as well as managing local drainage and open space. The integration of planned on-site stormwater detention facilities significantly reduces the needed size of downstream facilities, creates opportunities for groundwater recharge, and provides for enhanced open space and/or recreation areas.

**Major Local Flood Control Facilities**

The drainage within the Town of Apple Valley is defined by the Apple Valley Master Plan of Drainage and the Apple Valley West/Desert Knolls Master Plan of Drainage.

Apple Valley Master Plan of Drainage[32]
The Apple Valley Master Plan of Drainage divides the Town of Apple into subareas based on localized hydrologic features, including topography, soils, and drainage facilities. These subareas include the North Community, the South Community, and the East Community, as discussed below.

[32] "Apple Valley Master Plan of Drainage," prepared by San Bernardino County Flood Control District, 1991.

*The North Community Master Drainage Plan* identifies numerous drainage courses and regional drainage facilities in the northern part of Town, north of the Apple Valley Dry Lake. Existing and proposed flood control facilities in this area include:

- Facility N-01: an unimproved, open channel that collects runoff from a 3.3 square mile area that encompasses Fairview Mountain and is diffused on the valley floor. This channel intercepts runoff and provides flood protection for buildings east of Central Road.

- Facility N-02: a shallow earthen channel adjacent to the Apple Valley Airport. This channel runs through from Central Road north of Johnson Road, to Waalew Road west of Navajo Road. It transports runoff that originates on the south side of Black Mountain and the northeast side of Fairview Mountain, an approximately 8.7 square mile area.

- Facility N-03: a riprap-lined channel that transports runoff from an industrial area east of the airport, and merges with facility N-02 south of Papago Road.

- Facility N-04: a fully leveed channel that conveys runoff southward from Black Mountain, north of the Mojave Northern Railroad, draining an area of 7.6± square miles. A debris basin is recommended adjacent to the railroad, since there are numerous drainage paths through the Black Mountain area upstream of the railroad line.

- Facility N-05: an earthen channel with a partial riprap lining. Facility N-05 transports runoff generated entirely from the industrial area north of the airport, merging with channel N-04 just south of Gustine Street, where an earthen levee collects flows.

- Facility N-06: carries runoff generated by Bell Mountain, Little Bell Mountain, and Catholic Hill, west of Dale Evans Parkway between Quarry Road and Corwin Road. Draining approximately 1.6 square miles, N-06 is a natural earthen channel in some areas, has riprap in other sections, and is fully leveed in its southernmost sections. On the east side of the upper portions of the channel, containment levees are needed, and debris basins may be required, since the natural channels that drain Bell Mountain are intercepted.

- Facility N-07: a riprap-lined channel that carries runoff from Little Bell Mountain and Catholic Hill, running parallel with Corwin Road and merging with channel N-06 at the intersection of Corwin Road and Papago Road. Facility N-07 requires a containment levee along Corwin Road to channelize flows, and a debris basin where the natural channels that drain Catholic Hill are intercepted.

*The South Community Master Drainage Plan* proposes drainage courses and regional drainage facilities in the northern part of Town, north of the Apple Valley Dry Lake. The existing and proposed flood control facilities in this area include:

- Facility S-01 (Mariana Wash) and its tributaries: these facilities convey most of the initial runoff from the Ord Mountains within the watershed, out-letting at the Dry Lake, with 100-year peak flows of approximately 9,900 cubic feet per second and a tributary area of about 29

miles. The Drainage Plan indicates that it may be beneficial to elevate the lower reaches of this facility as a rectangular concrete channel to reduce impact on existing development.

- Facility S-02: conveys runoff from the residential area south of the railroad and north of Ocotillo Way along an alignment that closely follows that of the existing wash. This facility outlets to S-01, just south of Ramona Avenue with a 100-year peak flow rate of approximately 5,200 cubic feet per second. This drainage has a tributary area of about 9 square miles.

- Facility S-03: conveys runoff from the Ord Mountains east of the portion that is directly tributary to Facility S-01. At the confluence point with S-01, this facility has a peak 100-year flow rate of approximately 3,800 cubic feet per second, and a 5.5 square mile tributary area.

- Facility S-04: conveys runoff originating in the Ord Mountains west of the portion contributing directly to Facility S-01. Where these facilities meet, S-04 has a peak 100-year flow rate of approximately 2,100 cubic feet per second, and a 2.1 square mile tributary area.

- Facility S-05 (proposed): this facility will be constructed to convey runoff from the single-family residential development south of the railroad. It will have a base 15 feet wide and be riprap lined along its entire 200-foot length. The 100-year peak flow for this facility is estimated to be approximately 780 cubic feet per second.

- Facility S-06 (proposed): will follow the existing alignment of Colony wash, and convey runoff from Deadman Hills and the low-density residential area in the southeast portion of the Town. Where it meets Facility S-02, this facility would have a peak 100-year flow of approximately 3,100 cubic feet per second, and a 4.4 square mile tributary area.

- Facility S-07 (proposed): the alignment of this facility is proposed to closely follow the existing Del Oro Wash for its entire length, and will convey runoff from local residential areas encompassing 2.4 square miles. At its outlet to S-03 it will have a peak 100-year flow rate of 1,600 cubic feet per second.

- Facility S-08: conveys runoff from a southwest portion of Town to the Apple Valley Dry Lake. It is a long, narrow watershed that includes dense single-family residential development. It outlets to the Dry Lake, where the 100-year peak flow rate is approximately 2,800 cubic feet per second, with a 7.4-mile tributary area.

- Facility S-09: conveys runoff from the southwest portion of Town and outlets to S-08, just north of Standing Rock Avenue and east of Navajo Road. It has a 2.8-mile square mile tributary area; the 100-year peak flow rate is approximately 1,100 cubic feet per second.

- Facility S-10: conveys runoff from the area immediately west of the Apple Valley Dry Lake. Where it outlets to the Dry Lake, the channel has a 100-year peak flow rate of about 1,100 cubic feet per second. The tributary area is approximately 1.2 square mile.

Drainage courses and regional drainage facilities in the eastern part of Apple Valley are proposed in the *East Community Master Drainage Plan*. Currently there are no significant man-made flood control facilities in the East Community; the natural drainage system consists of one major watercourse, the Fairview Wash. The existing and proposed flood control facilities in this area include:

- Facility E-01: also known as the Fairview Wash, which receives runoff from the Granite Mountains in the east and south, and from the Fairview Mountains to the north. The tributary area is approximately 20 square miles. Runoff is contained within a broad flood plain with side slopes with a ratio of approximately 60 to 1. Facility E-01 outlets to the Apple Valley Dry Lake, with 100-year peak flows of 8,500 cubic feet per second.

- Facility E-02 (proposed): is planned to meet with E-01 at the outlet to the Dry Lake, and will receive runoff generated from Fairview Mountain north of Waalew Road. Runoff will be collected into a concrete channel by means of an earthen levee along the north side of Waalew Road, east of Tokata Road, as well as a short section of levee running north on the west side of the natural watercourse. The 100-year peak flow is expected to be about 1,400 cubic feet per second, with a 1.5-mile tributary area.

- Facility E-03: drains the southern portion of Fairview Mountain. The channel is partially riprap-lined and has a base of 15 feet. It meets Facility E-01 approximately 1,200 feet east of Japatul Road. Peak 100-year flow rates are approximately 840 cubic feet per second.

- Facility E-04: conveys runoff from the western portion of the Granite Mountains and the Deadman Hills. Channelization occurs just north of Esaws Avenue, approximately 1,600 feet east of Japatul Road. In order to ensure channelization of runoff, a levee is proposed to run southeast from the channel inlet, and another along the east side of Redwing Road. At its outlet into the Dry Lake, this facility has a 100-year peak flow of 5,700 cubic feet per second, from a 10.4 square mile tributary area.

- Facility E-05: conveys runoff from the Granite Mountains between Thunderbird Road and Standing Rock Avenue, meeting E-04 at Candlewood Road. The 100-year peak flow rate for this facility is 3,800 cubic feet per second, from a tributary area of 4 square miles.

- Facility E-06: conveys runoff from the Deadman Hills. Its confluence with E-04 occurs approximately 750 feet north of Esaws Avenue and 500 feet west of Shirwaun Road. The 100-year peak flow for this facility is approximately 1,600 cubic feet per second.

- Facility E-07: conveys runoff from the Granite Mountains and Japatul Hills south of Standing Rock Avenue, joining with E-05 at Shirwaun Road. E-07 has a 100-year peak flow of 1,200 cubic feet per second, and is riprap lined with a base of 15 feet.

- Facility E-08: conveys runoff from the Granite Mountains between Thunderbird Road and Standing Rock Avenue. It is a riprap-lined channel with a 100-year peak flow rate of

approximately 750 cubic feet per second. E-08 joins E-05 at Via Vista Road just east of Lillian Way.

Apple Valley West/Desert Knolls Master Plan of Drainage[33]

The Apple Valley West/Desert Knolls watershed is generally defined by Catholic Hill and Piercy Quarry to the north, the base of the Ord Mountains to the south, Kiowa Road to the east, and the Mojave River to the west. A long and narrow watershed, the northern portion is moderately sloping to the southwest. The southern portion gently slopes down to the northwest to the Mojave River. Existing and proposed flood control facilities in this area include:

- Line A-01: also known as the "Desert Knolls Wash," A-01 is an existing natural earthen channel that enters the Mojave River just upstream of the Upper Narrows. Along the River in this area, approximately 500 feet of containment levees will be required, ranging from zero to six feet in height. The 100-year flow depth of this facility and that of the River are the same at their confluence point.

- Line B-01: the proposed outlet of this line will cross Riverside Drive and continue directly into the River. In future, this facility will require containment levees along the River ranging from zero to six feet in height ,upstream to Talcony Road, which is approximately 1,200 feet upstream of Riverside Drive. The 100-year flow depth in this facility is approximately 3 feet higher than the River where they meet.

- Line C-01: flows across Havasu Road, emptying into an earthen swale that flows to the northwest and into the River. Containment levees at the River along this line will need to range from zero to six feet in height, upstream to Havasu Road. This facility and the River have the same 100-year flow at their confluence.

- Line E-01 (proposed): will utilize existing pits between the existing rail line and Rock Springs Road. The pits will need to be filled to approximately 10 feet and the River levee will have to be lowered to allow flows to reach the River, with railroad and road embankments acting as levees for this facility. These improvements will place the 100-year flow depth of this facility at approximately 4 feet higher than the River where the facility and the River join.

**National Flood Insurance Program**

The Federal Emergency Management Agency (FEMA) is responsible for the analysis and mapping of areas prone to flooding in the United States, as mandated by the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. In order to promote appropriate land use planning within floodplain, FEMA produces Flood Insurance Rate Maps (FIRMs) to regional and local agencies to identify flood hazard zones. They assist agencies in decision-making based on the varying degrees of potential flood hazards, and in determining the

[33] "Apple Valley Master Plan of Drainage," prepared by San Bernardino County Flood Control District, 1991.

need for federal flood insurance. A particular site's potential frequency of flooding, or "base flood," may also be referred to as the 100-year flood, which has a one percent probability of occurring in a given year. FIRM maps designate lands located within the 100-year and 500-year floodplains.

The National Flood Insurance Program (NFIP) uses the base flood as a regulatory standard to determine insurance requirements throughout the United States. This standard is also used by federal, state, and county agencies in the administration of floodplain management programs, which are intended to reduce flood-related losses and protecting the natural resources and functions of the floodplain. Property owners in local jurisdictions where floodplain management ordinances have been adopted and are enforced, and that meet minimum FEMA criteria, are eligible for federally subsidized flood insurance, as mandated by the NFIP. In addition, the NFIP offers State and community grants for flood mitigation projects, and, through the Community Rating System (CRS), recognizes communities that implement measures to protect their floodplains from flooding and erosion hazards.

The Town has participated in the NFIP since 1995, and therefore, flood insurance is available to any property owner in Town.

**Flood Hazard Zones in the Planning Area**

The FIRM inundation limits for the 100-year and 500-year flood for the General Plan area are shown in Exhibit III-12, Apple Valley Flood Hazard Map. Each of the applicable flood zones is briefly described below. It should be noted that the flood zones are incomplete since the entire planning area has not been studied.

Zone A: Areas of 100-year flood for which no base flood elevations have been determined.

Zone AE: Areas of 100-year flood for which base flood elevations have been determined.

Zone D: Areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted. Flood insurance rates are commensurate with the uncertainty of the flood risk; mandatory flood insurance purchase requirements do not apply, but coverage is available.

Zone X: Areas that have been determined to be outside the 500-year floodplains.

The FIRM maps are amended periodically to reflect changes in flood control facilities and/or topography (usually as a result of development). Modifications to the FIRM maps typically accompany updated Flood Insurance Studies or Letters of Map Change that FEMA issues in response to an agency supplying new hydraulic data showing that the flooding hazard in a specific area has changed or been abated. Current FIRM maps in the Town include six community panels from 1996, and one community panel from 1997. Since their original publication, some of the maps have been amended by Letters of Map Change (LOMC).

Portions of Apple Valley are still vulnerable to inundation during the 100-year flood. Although the Mojave Riverbed is dry most of the year, areas along the Mojave River have been identified by FEMA as subject to inundation by the 100-year flood. While in some areas along the River development is located primarily atop bluffs, these natural barriers do not exist along the central and southern areas of the River, which are still subject to flood hazards. Low-lying areas near the River are especially at risk during periods of intense precipitation in the San Bernardino Mountains, which receive substantially more precipitation than the adjacent desert.

Other flood-prone areas include Desert Knolls Wash and lands within the Apple Valley Dry Lake. Most of the areas identified by FEMA as subject to flooding are relatively undeveloped, or minimally developed, as in Apple Valley Dry Lake. The Desert Knolls Wash area, however, is generally developed. Roadways potentially susceptible to flooding include Rock Springs Road, a major roadway that would be flooded and impassable in the event of a 100-year storm, and many secondary roads in the planning area, primarily in the vicinity of Apple Valley Dry Lake.

Town of Apple Valley Flood Hazard Overlay Ordinance[34]

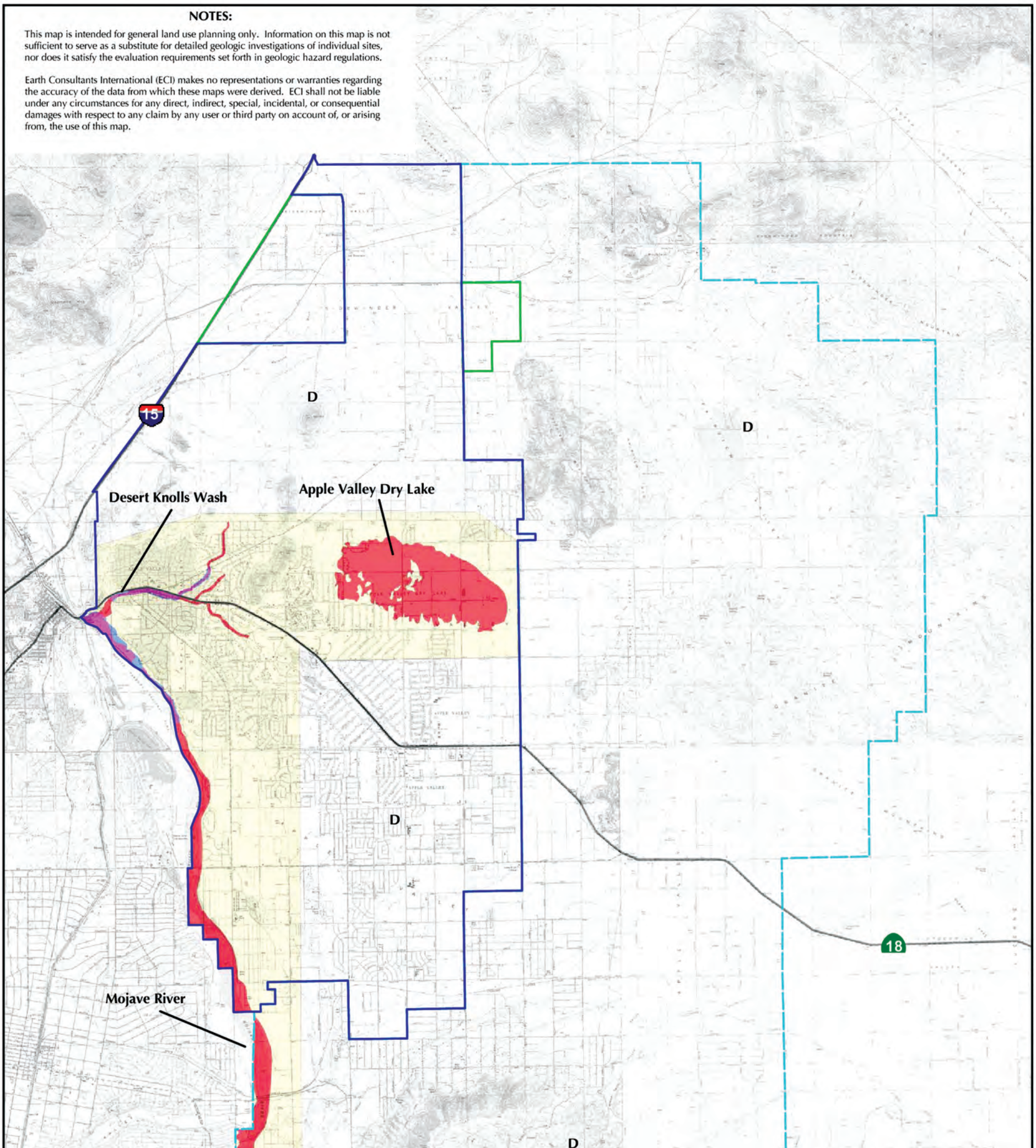
As part of its participation in the NFIP program and to ensure safe development within flood zones, the Town's development code establishes development standards within areas identified as FIRM-mapped flood hazard zones. The Flood Hazard Overlay Ordinance (Chapter 9.62 of Apple Valley Development Code) is intended to protect the community's residents from risk to health and safety and to minimize economic impacts associated with flooding. It restricts or prohibits uses that are unsafe or otherwise inappropriate for development in flood zones, and sets forth construction and other standards for permitted development in these areas.

[34] "Flood Hazard Overlay District Ordinance, Chapter 9.62, as amended, Town of Apple Valley Development Code 2000.

**NOTES:**

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Base Map: USGS Topographic Map from Sure!MAPS RASTER, 1997.
Sources: Federal Emergency Management Agency, 1997; 1996, 1997 (Flood Insurance Rate Maps
Panel Numbers: 06071C6485F, 06071C5845F, 06071C5840F, 06071C5820F, 06071C6505F, and 06071C6515G).

N
W E
S

**Scale: 1:108,000**

9000 0 9000
Feet

2000 0 2000
Meters

## Explanation

- A — Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
- AE — Areas of 100-year flood; base flood elevations and flood hazard factors determined.
- X — Areas of 500-year flood; areas of 100-year flood with average depths of less than one foot or with drainage areas less than one square mile and areas protected by levees from 100-year flood.
- X — Areas determined to be outside the 500-year floodplain.
- D — Areas in which flood hazards are undetermined.
- Town of Apple Valley Boundary
- Apple Valley Sphere of Influence
- Apple Valley Annexed Area

**Source: Earth Consultants International, December 2008**

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**Apple Valley General Plan Draft EIR**
**Flood Zones in the Study Area**
**Apple Valley, California**

**Exhibit**
**III-12**

### All-Weather Crossings

As described above, the planning area includes numerous channels and drainage facilities. Bridges and underpasses are critical roadway components for delivery of food, water and medical supplies and personnel, as well as for the evacuation of the injured. U.S. Interstate-15 and State Route 18 are major regional access routes serving the Town. Freeway underpasses and railroad crossings are generally protected from flooding by existing flood control structures. In the event of a major flood or other disaster, critical roadways and components could be damaged or blocked.

Access to the U.S. Interstate-15 freeway, which links Apple Valley with other cities and communities in the region, may become flooded or damaged in the event of major flood events. Several roadways, including U.S. I-15, cross the Mojave River west of the Town. State Route 18, Bear Valley Road and Rock Springs Road cross the River at the Town limits. State Route 18 and Bear Valley Road are all-weather crossings. Rock Springs Road is an at-grade roadway that is frequently impassible during major storms. All bridges on U.S. Interstate-15 in the planning area are designed to withstand the 100-year flood and to have 2 feet of freeboard for the 50-year flood.[35]

An additional crossing, the Yucca Loma Bridge at Yucca Loma Road, is under design by the Town, and construction is anticipated to begin in 2010 and be completed in the later part of 2011. At completion this bridge will be four lanes wide (two lanes in each direction).

### Bridge Scour

Bridge scour is the erosion and transport of stream materials from bridge foundations, and is caused by the rapid flow of flood or other surface waters beneath a bridge or railroad crossing. This process can result in the subsequent loss of support of bridge foundations, and could result in damage or the ultimate collapse of the bridge. Scour can occur within the main channel, on the floodplain, or both. Scouring of roadway and railroad bridges in the planning area could result from local or regional flooding.

There have been several catastrophic collapses of highway and railroad bridges nationwide that have occurred as a result of scouring and the subsequent loss of foundation support. A nationwide inventory and evaluation of bridges, administered by the U.S. Department of Transportation/Federal Highway Administration (FHWA), has been developed in response to these disasters. The State of California participates in this National Bridge Inventory program. Potential for bridge scour occurs within the planning are at the river crossings of State Route 18 and Bear Valley Road, as well as the railroad bridge at Rock Springs Road, and a concrete bridge where Interstate 15 crosses Bell Mountain Wash. Scouring may occur sporadically since streams in the planning area flow only occasionally, often during high-intensity storms. To ensure that any scouring is detected, bridges should be inspected during and after a flood event to ascertain scour damage that could impact their foundations. Repairs should take place as quickly as

[35] Personal communication, Darin Cooke, Caltrans District 8, August 11, 2008.

possible and prior to the next storm event or storm season, whichever is applicable. Mitigation measures are set forth below.

The San Bernardino County Flood Control District and the Town require that development approvals for all projects proposed in FEMA Zone A where sheet flooding may occur are conditioned to protect improvements from flood damage. As discussed under Project Impacts, below, future development in these areas should be carefully regulated until such time as flood improvements are completed and severe flooding threats are alleviated in these areas.

In summary, the Town has developed in a pattern that is characteristic of a rural to semi-rural development area, and in many areas there have been only minor alterations to natural terrain. Private developers have constructed most of the improvements to Apple Valley's drainage infrastructure as development has occurred, generally in a piecemeal fashion. Most site-specific systems include on-site collection and percolation. The western portion of the planning area is well-developed and generally incorporates more drainage improvements. Most of these flow to the Mojave River. In the overall, the Town currently lacks a comprehensive, interconnected storm drain system.

There are numerous natural drainages throughout the planning area, which, in the past, have been the primary cause of localized flooding. Many streets cross natural drainage channels that are not equipped with bridges or culverts. Unpaved roadways are subject to erosion, and paved and unpaved roadways in many areas lack curbs or channels to direct flows. Other facilities such as underground pipelines are not common. In the absence of these facilities, strong storms frequently result in localized flooding, road closures, erosion damage, and sedimentation. Drainages have been blocked or altered by debris or structures, such as elevated rail lines. The nature of these natural drainages, supplemented by a few man-made improvements, is the primary cause of localized flooding experienced in the recent past. Maintenance also becomes a challenge, as many of the naturally occurring drainage features meander through private properties. These issues are further addressed under Project Impacts and Mitigation Measures, below.

**Seismically Induced Inundation**

Dam Inundation

Inundation associated with seismic events can occur if dams and other water retention structures fail due to strong groundshaking, settlement and other risks associated with earthquakes. There are three major water retention structures upstream from Apple Valley: Mojave Forks Dam (Mojave Reservoir), Cedar Springs Dam (Silverwood Lake), and Lake Arrowhead Dam. The planning area and vicinity are subject to risk of flooding in the event these facilities fail. The California Division of Dam Safety monitors each of these dams for structural safety. Although the potential for a catastrophic dam breach is remote, the potential impacts of such an event could be devastating. Therefore, dams are required to develop inundation maps that show the potential flood limits to help with contingency planning. Dam owners are also required to submit emergency response plans to the State Office of Emergency Services, which serves as the lead

State agency for the State dam inundation-mapping program. The dam inundation pathways for the planning area are shown in Exhibit III-13, Dam Inundation Pathways.

*Mojave Forks Dam*
As previously noted, Mojave Forks Dam is located at the base of the San Bernardino Mountains at the confluence of Deep Creek and the West Fork of the Mojave River. Constructed in 1971 to control flooding in desert communities, with a drainage basin area of 215 square miles, the dam is designed to retain water temporarily during storm events. Single-outflow releases are then allowed at rates designed to remain within the downstream channel. design flood peak outflow is 23,500 cubic feet per second (cfs). The maximum release from the dam to date is 16,600 cfs, when waters reached a height of 73 feet below the spillway crest.

*Cedar Springs Dam*
Upstream from the Mojave Forks Dam, in the Summit Valley area of Hesperia, is the Cedar Creek Dam. This dam, which is constructed across the West Fork of the Mojave River, impounds the Silverwood Lake water supply reservoir and recreation area. Cedar Creek Dam is also used to generate hydroelectric power. It has a 34-square-mile drainage area and receives additional water from the California Aqueduct. A dam failure at this facility would inundate a substantial portion of eastern Summit Valley between Silverwood Lake and Mojave Forks Dam in less than 30 minutes.

*Lake Arrowhead Dam*
Lake Arrowhead is a man-made reservoir located in the San Bernardino Mountains, 15± miles south of Apple Valley, at an elevation of approximately 5,000 feet. Construction of the dam, which was originally intended to serve as a water supply source to the City of San Bernardino, began in 1893. Due to legal difficulties and ownership changes, the dam was not completed until 1922.

Projected Dam Failure Scenarios
The technical report prepared for the General Plan projected several dam failure scenarios. In the event that the Mojave Forks Dam were to fail at near-capacity conditions, the path of the water's inundation is projected to remain within the existing Mojave River bed and the mouth of several small tributary channels. Should Lake Arrowhead Dam fail, water flowing down the Deep Creek drainage would eventually reach the Mojave Forks Dam. Floodwaters from Silverwood Lake or Lake Arrowhead would remain within the Mojave Forks Reservoir area, assuming that facility was not at or near capacity. If it were, flood flows would spill over into the River[36]. As these scenarios indicate, therefore, the probability of extreme flood hazard from dam inundation is unlikely. This is due to the distance from the planning area, as well as precautions built into the holding basins below Lake Silverwood and in the Deep Creek area just ahead of where water enters into the Mojave River.

[36] "Technical Background Report to the Safety Element, Flooding Hazards, Town of Apple Valley", prepared by Earth Consultants International, October 2007.

**NOTES:**

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Distance from Dam..... 14.2 Miles
Arrival Time..... 2.25 Hours
Peak Elevation..... 2,752 NGVD
Time of Peak Elevation..... 4.0 Hours
Average Overbank Depth.. 32 Feet

32

Distance from Dam..... 10.2 Miles
Arrival Time..... 2.25 Hours
Peak Elevation..... 2,816 NGVD
Time of Peak Elevation..... 3.25 Hours
Average Overbank Depth.. 15 Feet

15

Distance from Dam..... 6.5 Miles
Arrival Time..... 1.5 Hours
Peak Elevation..... 2,885 NGVD
Time of Peak Elevation..... 2.5 Hours
Average Overbank Depth.. 14 Feet

14

Distance from Dam..... 3.2 Miles
Arrival Time..... 0.75 Hour
Peak Elevation..... 2,939 NGVD
Time of Peak Elevation..... 1.75 Hours
Average Overbank Depth.. 18 Feet

18

Distance from Dam..... 0.3 Mile
Arrival Time..... 0.25 Hour
Peak Elevation..... 2,993 NGVD
Time of Peak Elevation..... 1.25 Hours
Average Overbank Depth.. 32 Feet

Base Map: USGS Topographic Map from Sure!MAPS RASTER, 1997.
Sources: California Department of Water Resources, 1986;
US Army Corps of Engineers, 1975; US Army Corps of Engineers, 1986.
NGVD= National Geodetic Vertical Datum; the national standard reference datum used to establish elevations, in feet.

N
W E
S

10000 0 10000 Feet

2400 0 2400 Meters

Scale: 1:120,000

## Explanation

- Mojave River Forks Dam Failure Inundation Pathway
- Cedar Springs Dam Failure Inundation Pathway
- Lake Arrowhead Dam Failure Inundation Pathway
- Town of Apple Valley Boundary
- Apple Valley Sphere of Influence
- Apple Valley Annexed Area
- 5 Cross-section, with average overbank depth in feet at cross-section.

Source: Earth Consultants International, December 2008

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Planning & Research, Inc.

**Apple Valley General Plan EIR**
**Dam Inundation Pathways**
**Town of Apple Valley**

Exhibit
III-13

Inundation from Above-Ground Storage Tanks

Aboveground water tanks may be damaged by strong ground shaking and rupture. Seismically induced inundation can occur if a tank is not adequately braced and baffled, which allows water to slosh within the tank, potentially lifting it off of its foundation and splitting the shell. Pipes leading to and from the tank may also be severed or damaged, thereby releasing water. Although the Town of Apple Valley does not store or distribute water or own water storage tanks, there are several water purveyors serving Town, each of which maintains aboveground water storage reservoirs located throughout the planning area. Water tanks constructed in recent years are expected to meet current earthquake design standards, however this is not necessarily true of older tanks, which may lack seismic upgrades, such as flexible joints, that are designed to limit potential for tank failure and resulting flooding and damage to downstream areas. These issues are further discussed under Project Impacts and Mitigation Measures, below.

**Annexations 2008-001 and 2008-002**

Currently, both proposed annexation areas are largely undeveloped. Several shallow, dry washes (ephemeral streams) of relatively small width flow southeasterly throughout both annexation areas. Portions of Bell Mountain Wash, previously described, occur in Annexation 2008-001. As illustrated in Exhibit III-12 both annexation areas are designated by FEMA as Zone D, which is within the floodplain but not within the Special Flood Hazard Area (SFHA).

**Federal and State Regulatory Requirements**

National Pollutant Discharge Elimination System (NPDES)

Stormwater runoff from the built environment, such as rooftops, streets, parking lots, fertilized recreational facilities such as golf course, and other landscaped and hardscaped surfaces, could potentially contaminate or pollute surface and ground waters. The Town participates in the National Pollutant Discharge Elimination System (NPDES), which implements the federal Clean Water Act of 1990. NPDES regulates polluted runoff by requiring the implementation of stormwater management plans and programs that reduce the discharge of pollutants from stormwater systems into waters of the United States. Any development generating discharges that flow directly to surface water must obtain the NPDES permit.

Federal Clean Water Act

Drainages that flow into the Mojave River may be considered, for purposes of complying with Section 404 of the Clean Water Act (CWA), waters of the U.S., which fall under the jurisdiction of the U.S. Army Corps of Engineers (ACOE). Based on the Biological Resources Study prepared for the General Plan, surface disturbance involving dredge and/or fill activities affecting the streambanks or bed of Bell Mountain Wash and its connected tributaries may therefore require compliance with Section 404 of the federal CWA, which is administered by the ACOE.[37] Development within these channels may also be subject to compliance with Section

[37] "Town of Apple Valley General Plan Update - Biological Resources", prepared by AMEC Earth & Environmental, Inc., February 2008.

401 of the Clean Water Act through the Lahonton Regional Water Quality Control Board (LRWQCB). These issues are further discussed in Section III-F, Biological Resources.

California Fish and Game Code
Surface disturbance and/or land development that alters the bed and banks of streambed areas within the planning area may also require site-specific Streambed Alteration Agreement (SAA) permitting under Section 1602 of the California Fish and Game code. This is also further discussed in Section III-D.

### 2. Project Impacts

As the population in the planning area grows, development pressure will amplify and urbanization and associated impervious surfaces, such as roadways, sidewalks, and parking lots will also increase. Water that would at one time have been absorbed into the ground will dispersed as runoff to downstream areas. If drainage channels that convey storm waters are not designed or improved to carry these increased flows, areas that have not flooded in the past may be subject to flooding in the future, especially in developments downstream from canyons that have the potential to convey mudflows, and within the vicinity of the Mojave River and the Apple Valley Dry Lake. Future development also has the potential to alter existing drainage patterns and, in some areas, to result in the accumulation of a significant amount of debris during large storms. Golf courses, greenbelts or other open space areas in large-scale developments may be utilized as part of a network of channels that collect and convey on-site runoff.

Flood hazard areas in the planning area are at risk of periodic inundation. Such events create health and safety hazards that can result in the loss of life and property. Commerce and governmental services may be disrupted, requiring expensive outlays of public funds for flood protection and relief, and the tax base undermined. These would constitute adverse impacts on public health, safety and general welfare.

Such flood losses are the result of development that is inadequately elevated, flood-proofed, or protected from flood damage. Further, placing structures or other potential obstructions in areas of special flood hazards may result in cumulative effects such as increased flood heights and velocities; when such obstructions are inadequately secured, damage may also occur in other areas.

The gently sloping alluvial fans that spread out from the base of the surrounding hills and mountains in the planning area have provided the setting for most development in Apple Valley. Given the unpredictability of alluvial fan flooding, flash floods remain a substantial risk in the planning area. A large portion of Apple Valley has not yet been studied by FEMA, and storms even smaller than the 100-year event have potential to cause localized damage.

One of the most effective methods of managing flood control damage, safeguarding lives and property and reducing losses to the community is through land use planning that restricts the type and location of structures permitted near major drainages. Although improvements to the local stormwater management system are needed to assure its adequacy to serve build out of the

General Plan area, an approach that integrates the rural character of the planning area and utilizes natural internal drainage to the dry lakes may prove more efficient and practicable than an area-wide man-made drainage network. The Town's Flood Hazard Overlay Ordinance restricts and provides standards for development within floodplains.

The Town should continue to require that future planning for new developments consider the impact on flooding potential, as well as the impact of flood control structures on the local and regional environment. Land development projects can design floodway management to retain natural stream courses, or develop them as parks, golf courses or other open space amenities. Where flood control structures are necessary, design features may be incorporated to blend with the surrounding environment, and must be designed so as to avoid adverse environmental impacts. Certain natural processes may benefit from periodic flooding, which may affect off-site, even far distant areas. (e.g., soft-bottomed vs. concrete-lined channels to facilitate groundwater recharge). The advantages to natural flood control include lower cost, preservation of wildlife habitats, and improved recreational potential.

The proposed General Plan includes goals, policies and programs designed to limit flood hazards and protect natural watersheds as well as lives and properties in areas subject to flooding. In addition to land use strategies set forth in the General Plan Land Use Element, the Flooding and Hydrology Element establishes policies and programs intended to address potential flooding hazards and hydrology issues in the planning area as a whole, and establishes measures directed at minimizing the impacts of increased development of stormwater control facilities. Primarily, the Flooding and Hydrology Element will be implemented by the Apple Valley Master Plan of Drainage and the Apple Valley West/Desert Knolls Master Plan of Drainage. Both Master Plans of Drainage are currently being updated in consultation with the County of San Bernardino Flood Control District. The Town has indicated that it expects the updates to be completed by 2011 if not sooner.[38]

General provisions for flood hazard reduction are also provided in the Apple Valley Development Code, Grading Ordinance, and Subdivision Ordinance and apply to all lands in Areas of Special Flood Hazard. While the Town's Flood Hazard Overlay District and Flood Hazard Lake Overlay District are based on the FEMA maps, which show minimal at-risk areas, it should be noted that these provisions may also be applied to other portions of the planning area.

Hydrologic studies should be conducted as new developments are considered within the Town to measure the impact that increased development may have on existing development slope, and should assess the effects of increased runoff and alterations to natural stream courses. In keeping with CEQA guidelines, the project proponent of each development must demonstrate that any potential design deficiencies identified in the project-specific hydrologic study can be rectified, and significant impacts mitigated to acceptable levels prior to project construction. Mitigation measures may include the provision of flood control devices such as catch basins, storm drain

[38] Personal communication, Richard Pedersen, Town of Apple Valley, October 16, 2008.

pipelines, culverts, detention basins, desilting basins, velocity reducers, as well as debris basins for protection from mud and debris flows.

The San Bernardino County Flood Control District (SBFCD) sets forth methodology for analysis and design of flood control structures. The SBFCD and the Town must coordinate closely and both must review future development plans and ensure the compatibility and adequacy of mitigation measures. The effectiveness with which the drainage issues are managed within Apple Valley will have a direct impact on the scale, complexity and cost of future flood control facilities. Prevention and on-site management are effective cost-reduction methods and should be actively integrated into community land use planning and regulation, recognizing significant physical and financial constraints in many areas of Apple Valley.

Finally, inundation associated with water tank failure as a result of seismic activity poses a hazard in the planning area, as many aboveground storage tanks were constructed prior to current design criteria. As discussed under Mitigation Measures, below, all existing water tanks in the planning area should be evaluated and retrofitted as necessary to ensure compliance with the most current water tank design criteria and containment of potential floodwaters within a reservoir site.

**Flood Protection Measures for Property Owners**

Property owners may incorporate a variety of measures to reduce potential impacts of flooding on their homes and property. As identified by FEMA, these measures may include: adding waterproof veneers on building exterior walls; adding seals to all openings, including doors, to prevent the entry of water; elevating electrical components above the anticipated water level; and installing backflow valves to prevent sewage back-up through drainpipes in the house. These measures vary in complexity and cost, and not all are appropriate for a specific property. Such improvements may be subject to permitting by the Town or County, and property owners should confer with the appropriate agency..

In compliance with its Flood Hazard Overlay Ordinance, the Town should continue to require future development to ensure that improvements within flood zones subject to sheet flooding are protected from flood damage. Conditions of approval may include raising the finished floor levels of buildings above the flood depth projected for the surrounding area, and providing protection to drainages against scouring.

**Annexation 2008-001 and 2008-002**

As with the rest of the planning area, future development in the annexation areas will result in construction that includes impervious surfaces such as roads, sidewalks, driveways, and parking lots, which, in addition to the conversion of undeveloped land to more urban uses, will result in a reduction of permeable soils. Future development also has the potential to alter or obstruct existing drainage patterns and may impact the ephemeral streams that traverse each of the annexation areas.

Larger developments that incorporate features such as golf courses, open spaces, and common areas can utilize these spaces to convey runoff, while smaller-scale developments may require the installation of retention/detention basins and other on-site flood control facilities. Site-specific analyses should be conducted prior to development that identify potential hazards, and set forth effective mitigation measures and development standards that minimize impacts from structural failure and promote the health and safety of residents.

Future development within the planning area, including the subject annexation areas, will require that developers obtain any applicable state and federal regulatory permitting for activities that involve disturbance to stream banks or beds. Such permitting typically requires site-specific development consultation to determine the applicability and extent of permitting requirements and to determine resource mitigation where required. These requirements are further discussed in Section III-F, Biological Resources, and mitigation measures are set forth therein to ensure compliance with state and federal regulations regarding impacts to jurisdictional waters.

### 3. Mitigation Measures

The Town will continue to review and assess hydrology analyses on a project-by-project basis. The findings of these studies will be integrated into the project master drainage plans appropriately, and the Town will have the opportunity to require additional on-site flood control facilities as necessary. The proposed General Plan establishes goals, policies and programs to ensure that lives and property are protected, and that a comprehensive system of flood control facilities are implemented throughout the planning area.

1. The Town shall monitor its Master Plans of Drainage every five years to ensure that it reflects changes to local and regional drainage and flood conditions.

2. The Town shall upgrade its local and regional drainage system through proactive planning and coordination with other responsible agencies to ensure the provision of a comprehensive system of flood control facilities throughout the Town.

3. The Town shall continue to implement flood-warning systems, and shall maintain its public outreach and information programs to educate and inform the public of potential flood hazards and provide potential solutions made available to them.

4. The Town shall develop evacuation plans in the 100-year and 500-year flood zones where critical facilities, including but not limited to schools, hospitals and nursing homes are located.

5. To ensure that water storage tanks retain their structural integrity during an earthquake, and so that water demands after the earthquake can be met, the Town shall coordinate with all water purveyors in the planning area to evaluate and retrofit all above-ground water tanks in the Town as necessary, based on their vulnerability to seismic hazards, to ensure compliance with the most current water tank design criteria.

6. Major drainage facilities, including debris basins and flood control channels, shall be designed to maximize their use as multi-purpose recreational or open space sites, consistent with the functional requirements of these facilities.

7. The Town shall assure that adequate, safe all-weather crossings over drainage facilities and flood control channels are provided where necessary, and are maintained for passage during major storm events.

8. The Town shall continue to restrict development in those areas that are FEMA-mapped as being subject to flooding, and shall require site-specific hydrologic studies for future development to determine flooding potential for other areas.

9. Future development proposals shall be required to submit a hydrology study and mitigation plan which conforms to the Apple Valley Master Plan of Drainage or the Apple Valley West/Desert Knolls Master Plan of Drainage and other regional and local requirements, policies, and programs.

10. All new development shall be required to incorporate, at the developer's expense, adequate flood control mitigation, such as grading that prevents adverse drainage impacts to adjacent properties, on-site retention of runoff, and the adequate siting of structures located within flood plains and to, as part of project development.

11. Future flood control plans required of developers shall include specific recommendations and/or designs regarding pollution control techniques to be applied to keep pollutants, including herbicides, pesticides, and other hydrocarbons out of surface and groundwaters. Mitigation measures may include specifically designed open space areas such as artificial wetlands where nuisance and otherwise contaminated on-site runoff shall be retained separate from channels conveying off-site flows.

12. Bridging of General Plan roadways within new development projects shall be the responsibility of the developer on whose project the bridge occurs, and shall be included as a condition of approval.

13. Stormwater retention shall be enforced through the development review process and routine site inspection.

14. The Town shall pursue all credible sources of funding and continue to explore County funding, Cobey-Alquist Flood Plain Management Act, other State programs, and Federal funding options for local and regional drainage improvements needed for adequate flood control protection.

15. Capital Improvement Plans for drainage management and control shall be developed, updated and maintained and shall be based upon the Apple Valley Master Plan of Drainage and the Apple Valley West/Desert Knolls Master Plan of Drainage.

16. The Town shall consider the establishment of Fair Share Cost Allocations or Assessment Districts for purposes of funding necessary drainage improvements in particular geographic areas throughout Apple Valley.

17. In conjunction with SBFCD the Town shall coordinate and cooperate in the filing of appropriate FEMA application materials to incrementally secure amendments to the Flood Insurance Rate Maps of the Town, consistent with existing and proposed improvements.

**Mitigation Monitoring/Reporting Program**

A. The Town shall, at least once annually, report to the Town Council on progress made in updating the local drainage plans and implementing drainage control projects. Such reports shall also include information regarding the status of regional drainage plans and facilities affecting flood control in the Town.
**Responsible Parties:** Town Engineer, Town Council, San Bernardino County Flood Control District

B. The Town shall review and approve project-specific hydrology studies and mitigation plans for development proposals, and assure their adequacy with regard to stormwater management and on-site retention, and pollution control.
**Responsible Parties:** Town Engineer, Project Developer

# I. Water Resources/Quality

## Introduction

This section discusses the existing water supply and water quality conditions for the General Plan and annexation areas. It assesses potential impacts on water suppliers and water quality that are expected from the implementation of the proposed General Plan update and annexations. Existing and future water demand is described, and current and projected availability and reliability of water supplies, as well as State Water Project water supplies.

The role of the Mojave Water Agency (MWA), which is responsible in managing water resources in the General Plan area, is also discussed. There are several water suppliers responsible for distribution of water resources in the General Plan area. Their service areas are described and illustrated. Apple Valley Ranchos Water Company (AWRWC) serves the majority of connections in the General Plan area; therefore, its ability to provide water supplies over the course of General Plan build out is also discussed.

A variety of information sources have been consulted, including the MWA Urban Water Management Plan (MWA UWMP), the AVRWC UWMP, and materials from the California Department of Water Resources and other entities.

## Thresholds of Significance/Criteria for Determining Significance[39]

The following standards and criteria have been drawn from Appendix G: Environmental Checklist Form of the California Environmental Quality Act (CEQA) Guidelines. The following factors have been considered to ensure that the General Plan EIR adequately addresses potential impacts to water resources that may result from the adoption and implementation development of the Apple Valley General Plan and annexation areas.

a. Violate any water quality standards or waste discharge requirements.

b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site.

[39] "California Environmental Quality Act Statutes and Guidelines," prepared by the Association of Environmental Professionals, January 2007. Additional thresholds related to hydrology are in the Section III-D, Hydrology, of this EIR.

d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site.

e. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

f. Otherwise substantially degrade water quality.

### 1. Existing Conditions

The topography of the Town of Apple Valley and the planning area are the result of a variety of natural forces. As discussed in Section III-F, the planning area is located within a seismically active region and in proximity to several large, active fault zones. The region has and continues to be subject to ground rupture, major groundshaking, subsidence, uplift and mountain building, landform compression and extension.

The Mojave River streambed trends south to north along the western edge of the Town's boundary. Flows in the streamed are generally limited to those occurring as a result of spring runoff or intense seasonal rainstorms. The topographic relief along the Mojave River constitutes a divide in local drainage patterns. Drainage from the hills and mountains in Apple Valley to the east flow towards the Apple Valley Dry Lake, while channels along the western side of the Town ultimately discharge into the River. The Bell Mountain Wash is a natural channel that collects runoff primarily in the area north and west of Bell Mountain and flows into the River. A number of small, unnamed drainages flow towards the River from the western part of the Ord Mountains, which occur to the southeast. Bell Mountain, at 3,897 feet above sea level, is the highest point in the Town, while the lowest point, approximately 2,700 feet above sea level, occurs along the Mojave River.

Climatalogically, the region is subject to temperature extremes, ranging from the 20°F in the winter months to more than 100°F in the summer, with variations based on elevation. The average annual rainfall is approximately 5 inches.[40] The region is subject to intense seasonal storms, and the rainfall in a given year may vary.

**Mojave River Groundwater Basin**

As previously noted, the Mojave Water Agency (MWA) is responsible for managing long-term reliability of surface and groundwater within a management area covering approximately 4,900 square miles and including 22 groundwater basins. [41] The Mojave River Groundwater Basin (the Basin), which falls within the MWA management area, underlies the Town and the planning

[40] "Apple Valley Ranchos Water Company 2005 Urban Water Management Plan," prepared by Apple Valley Ranchos Water Company, November 2005.

[41] "Mojave Water Agency 2004 Regional Water Management Plan, Supplement A: 2005 Urban water Management Plan Update," December 8, 2005.

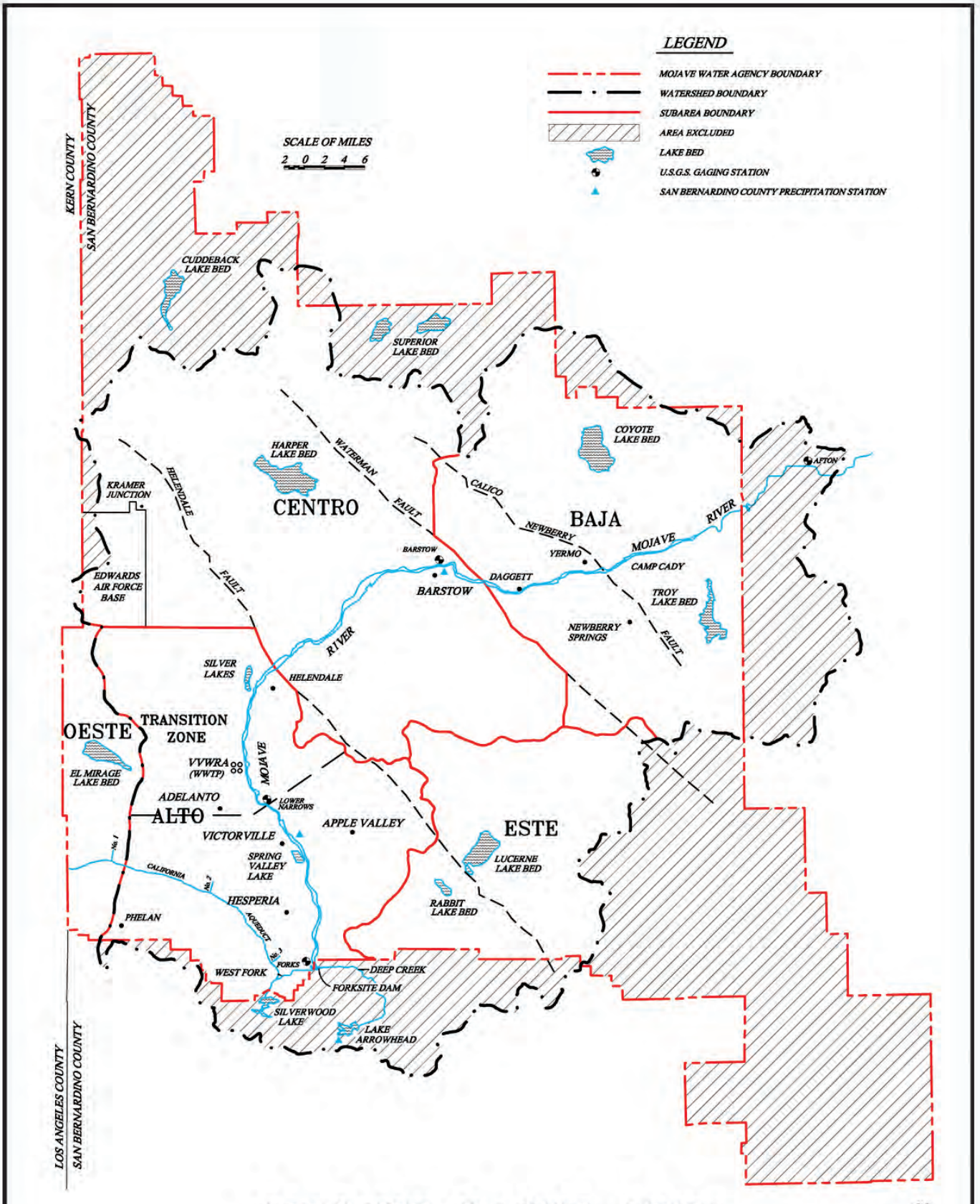
area. The Basin comprises an approximately 1,400 square mile area along the Mojave River and has an estimated groundwater storage capacity of 5 million acre-feet.[42]

The Mojave River Groundwater Basin is comprised of several subsurface aquifers, or subareas, that underlie the MWA management area. These subareas are defined by faults and other topographic features that restrict groundwater flow and surface water drainage, and include the Alto, the Baja, the Centro, the Este, and the Oeste subareas (please see Exhibit III-14. Groundwater Basins within the MWA Service Area). The Town is located near the center of the Alto Subarea, which is further described below. The Basin is in a condition known as overdraft, wherein groundwater discharge exceeds recharge, resulting in a net reduction in groundwater stored in the aquifer. Modeling data prepared by the U. S. Geological Survey (USGS) indicates that the overdraft condition began in the Centro and Baja subareas in the 1950s, and by 1960 was present in all subareas of the Basin.

Water levels in the Alto subarea have declined by between 50 and 75 feet since the mid-1940s.[43] Overdraft conditions are currently present in almost all of the subareas in the Mojave River Basin.

[42] Op. Cit.

[43] "Water Supply in the Mojave River Ground-Water Basin, 1931-99, and the Benefits of Artificial Recharge," prepared by the U.S. Geological Survey, November 2001.




# MOJAVE BASIN AREA

Source: Fourteenth Annual Report of the Mojave Basin Area Watermaster for Water Year 2006-2007 Mojave Water Agency, April 1, 2008

TERRA NOVA®
Planning & Research, Inc.

**Apple Valley General Plan Draft EIR**
**Groundwater Basins**
**in the Mojave Water Agency Service Area**
**Apple Valley, California**

**Exhibit**
**III-14**

**Mojave Basin Area Adjudication**

The MWA is subject to the Mojave Basin Area and the Warren Valley Adjudications ("the Adjudication," January 1996). The Adjudication is a court-approved mechanism for MWA to finance and obtain supplemental water to recharge these Basins and augment water supplies for parties to the Adjudication. The Alto Subarea as well as the other sub-areas shown on Exhibit III-14, above, are within the Mojave Basin Adjudication.

The Mojave Basin Adjudication limits the amount of groundwater that may be produced in each subarea before requiring that additional groundwater be imported.[44] and assigns a Free Production Allowance (FPA) within each of the adjudicated subareas. The FPA is intended to avoid overdraft conditions and maintain a safe water balance between the Alto and other subareas. The court reviews and adjusts the FPA annually, and has appointed MWA as the "Watermaster" for the Mojave Water Basin. In this role, MWA is charged with ensuring that extractions do not exceed supply, using, in part, the assigned FPA. The FPA is currently 65.79% of Base Annual Production (BAP), which is defined as a water producer's highest annual use verified for the five-year period from 1986 through 1990.

Should groundwater extractions exceed the FPA, domestic water producers are required to replace the overage, either by means of a replenishment fee to acquire additional water, or through transfer of unused water rights within the Alto Subarea from another party to the Adjudication. For 2007-2008, the replenishment fee was set at $277 per acre-foot.

The Watermaster accounts for average and minimum annual flows to ensure these are maintained between the Mojave Basin subareas. The Adjudication assumes that sufficient water supplies will be available to MWA in future to meet the needs of the Basin, and that such supplies are a combination of natural recharge, imported water from SWP and other sources, water conservation, water reuse, and FPA transfers among producers.

All water supplies generated in the MWA, or imported from outside, are recharged into the groundwater basins for future use. The 2005 Urban Water Management Plan prepared by MWA (see below) demonstrates that increased water demands over the next 20 years will require the development and implementation of additional projects and water management actions to ensure sufficient groundwater recharge to maintain groundwater levels and to protect groundwater quality. The Presiding Judge for the Mojave Basin Area Adjudication may require mandatory production cutbacks in the event such projects are not implemented and overdraft persists or intensifies.

**Alto Subarea**

The Alto Subarea generally encompasses the communities of Apple Valley, Victorville, Adelanto, Hesperia, Helendale, and Phelan. The subarea is comprised of an approximately 35-mile long water-bearing strata underlying the Mojave River, and is recharged by snowmelt from

[44] "2004 Regional Water Management Plan, Supplement A: 2005 Urban Water Management Plan Update," prepared by Mojave Water Agency, December 8, 2005.

the San Bernardino Mountains to the south of Apple Valley. The Alto Subarea has the largest water supply in the Mojave Basin, due to its proximity to the Mojave River.

The Alto Subarea merges with the Este Subarea to the east, with the Oeste Subarea to the West, and with the Centro Subarea to the North, down-gradient. To the south are the headwaters of the Mojave River, which occur where the West Fork and Deep Creek streams converge. The general boundaries of the Alto Subara are the non-water bearing rocks of the San Bernardino Mountains to the south, the non-water bearing rocks of the San Gabriel Mountains to the west, and Helendale Fault to the northeast.

The Alto Subarea contains approximately 82,400 acre-feet of water; outflows and losses are estimated at 47,700 acre-feet, yielding an estimated net volume of water of 34,700 acre-feet. An additional 75,800 acre-feet of State Water Project (SWP) entitlements are available to MWA. SWP allocations are further discussed below. The following table shows historical verified annual production in the Alto Subarea from 1994 to 2007.

**Table III-31**
**Alto Subarea Verified Annual Production**
**1994 – 2007**

| Year | Acre-Feet | Million Gallons |
|---|---|---|
| 1994 | 81,100 | 26,427 |
| 1995 | 75,100 | 24,471 |
| 1996 | 87,500 | 28,512 |
| 1997 | 88,500 | 28,838 |
| 1998 | 75,900 | 24,732 |
| 1999 | 83,300 | 27,143 |
| 2000 | 88,300 | 28,773 |
| 2001 | 82,800 | 26,980 |
| 2002 | 87,100 | 28,382 |
| 2003 | 86,700 | 28,251 |
| 2004 | 92,700 | 30,206 |
| 2005 | 88,900 | 28,968 |
| 2006 | 95,900 | 31,247 |
| 2007 | 99,900 | 32,561 |

Source: Mojave Basin Area Watermaster Annual Water Reports, 1994 - 2008.

**Distribution Facilities**

There are several domestic water purveyors with distribution facilities in the Town as well as its Sphere of Influence. The Apple Valley Ranchos Water Company (AVRWC) provides domestic water services to most of the Town of Apple Valley, with approximately 19,000 active service connections in its service area. Golden State Water Company (Golden State) has approximately 2,800 service connections in its service area. There are several other water purveyors, some of

which have very small customer service areas. The following additional purveyors serve 100 or ore service connections: Apple Valley Foothill County Water District, Apple Valley Heights County Water District, Apple Valley View Mutual Water Company, County Service Area 64, Juniper Rivera County Water District, Mariana Ranchos County Water District, Rancheritos Mutual Water Company and Thunderbird County Water District. One other small water purveyor, Navajo Mutual Water Company, serves approximately 80 service connections within Apple Valley.

Apple Valley Ranchos Water Company

AVRWC, an investor-owned water utility, is regulated by the California Public Utilities Commission (CPUC). As noted above, AVRWVC provides water service to the majority of the Town of Apple Valley and the planning area. AVRWC draws groundwater solely from its 23 AVRWC wells, which are located along the Mojave River. Many of the wells are equipped with stationary emergency generators or quick connections for mobile generator hook-ups. Groundwater is pumped from the wells into the AVRWC distribution system, which has 11 million gallons (MG) of elevated storage capacity. The water distribution system is comprised of more than 400 miles of pipelines; these lines generally range in size from 4 inches to 20 inches in diameter. There are currently 15 pressure zones to accommodate the Town's topography and elevation changes, with booster pump or pressure reducing stations at the juncture of interconnecting pressure zones. These facilities may require expansion to accommodate future development and ensure adequate fire flows.[45] This is further discussed under Project Impacts, below.

Under the Mojave Basin Adjudication, AVRWC was assigned a free production allowance (FPA) of 11,250 acre-feet for year 2007-08. This includes carry-over from the 2006-07 FPA.[46]

Golden State Water Company

Golden State Water Company, a subsidiary of American States Water, is a public utility company that serves the northeastern and southern portions of the Town, including a small portion within the southern Sphere-of-Influence. Within the planning area, Golden State has a service area of approximately 4± square miles. Currently, the Golden State system provides water to approximately 2,847 active service connections within its services areas. [47] Historical water demand production for the years 1996 to 2005 averaged 0.64 acre-feet per year per connection in Golden State's Apple Valley North and South service areas.[48], [49]

45 "Apple Valley Ranchos Water Company Pressure Zone Discussion," prepared by Apple Valley Ranchos Water Company, 2008.

46 "Permanent Transfers of Base Annual Production Right (BAP) and 2007-08 Free Production Allowance (FPA) Reconciled for Transfers Accepted by Watermaster as of the Date of this Report, 2007-08 Water Year," Mojave Basin Area Watermaster, July 23, 2008.

47 Personal communication, Perry Dahlstrom, Golden State Water Company, August 21, 2008.

48 "Existing and Future Water Demands—Apple Valley North Water System," prepared by CH2MHill, April 6, 2007.

49 ibid.

Small Water Purveyors and Private Companies

A number of other, smaller water purveyors serve portions of the Town of Apple Valley and/or its Sphere of Influence. Several of these are San Bernardino County Service Areas (CSAs) that were established to provide domestic water services and facilities to specific development. Other purveyors are private water companies.

*Apple Valley Foothill County Water District* encompasses an approximately 2 square mile service area located at the southeastern edge of the Town's corporate limits near Central Road and Del Oro Road. It serves 180 service connections, and has 2 wells and 2 elevated storage units, with approximately 150,000 gallons of capacity.

*Apple Valley Heights County Water District* covers a service area of approximately 2 square miles, and is located south of the Town corporate limits and its Sphere of Influence. The district has approximately 290 service connections, with two wells and has 260,000 gallons of elevated storage.

*Apple Valley View Mutual Water Company* has a service area of approximately 1 square mile. It currently has 100 service connections, of which 81 are active. There are 3 wells, one storage tank with a capacity of 20,000 gallons, and one 5,000-gallon pressure tank. It is estimated that the service area has potential to build out with up to 301 connections, which would require a facilities upgrade. The company has purchased lands to upgrade through construction of a larger capacity storage tank.

*County Service Area (CSA) 64* covers an approximately 4 square mile service area, which is bisected east to west by the Mojave River. The eastern portion is within Apple Valley and the largest portion is to the west in the City of Victorville. CSA 64 serves approximately 3,801 active service connection, of which approximately 20% are within the Town of Apple Valley. Its facilities include five wells, three elevated storage tanks, and approximately 2.65 million gallons of storage capacity.

*Juniper Rivera County Water District's* service area encompasses approximately 2 square miles and serves 168 connections. There are two wells and two storage tanks with approximately 150,000 gallons of capacity.

*Mariana Ranchos County Water District* encompasses approximately 7 square miles, most of which is located south of the Town's corporate limits but within its Sphere of Influence. It serves 650 service connections with 2 wells and three elevated storage tanks with approximately 900,000 gallons of storage capacity.

*Rancheritos Mutual Water Company* has a service area of approximately 1.25 miles in the southern portion of Apple Valley and within its Sphere of Influence. It serves 269 service connections with three wells. Rancheritos has no elevated storage; wells are equipped with small reserve storage tanks and pressure is maintained hydro-pneumatically. Water is distributed via small distribution tanks directly to service connections. Rancheritos may erect additional,

possibly elevated storage on two sites in the future, however plans are not complete and site selection has not been finalized.

*Thunderbird County Water District* serves approximately 325 service connections within its approximately 2 square mile service area. It is located east of the Town limits and includes service area within the Town's Sphere of Influence. Thunderbird has three wells and three storage reservoirs with a capacity of approximately 410,000 gallons.

**Annexation. 2008-001 and 2008-002**

Currently neither annexation area is serviced by any of the water purveyors listed above. Water for existing development, which is limited to scattered single-family residential development in Annexation 2008-001, and an aggregate quarry operation in Annexation 2008-002, is provided by private wells or water delivered by private haulers for storage in privately owned underground storage tanks.[50]

**Regional Water Supply And Demand**

Regional Water Supply

Currently, the Town relies on precipitation and runoff from adjacent mountains for groundwater recharge, as well as from imported water. MWA has established a groundwater replenishment program for the Mojave Water Basin, including the Alto Subarea. The purpose of this program is to reduce annual and cumulative groundwater overdraft through artificial recharge to the groundwater basin.

Current Consumption

Water production data (water withdrawals) from AVRWC indicates that the water table in the Alto Subarea has steadily declined over the past two decades. This data is shown on Table III-32, below.

[50] Personal communication, Jerry Bender, Apple Valley Ranchos Water Company, November 25, 2008.

**Table III-32**
**Apple Valley Ranchos Annual Water Production**
**1999 - 2007**

| Year | Acre-Feet | Million Gallons |
|---|---|---|
| 1999 | 14,916 | 4,860 |
| 2000 | 16,002 | 5,214 |
| 2001 | 14,741 | 4,803 |
| 2002 | 15,853 | 5,166 |
| 2003 | 15,536 | 5,062 |
| 2004 | 16,100 | 5,246 |
| 2005 | 16,189 | 5,275 |
| 2006* | 15,123 | 4,928 |
| 2007* | 16,527 | 5,385 |

Source: "Urban Water Management Plan," Table 6, prepared by Apple Valley Ranchos Water Company, 2005.
*Mojave Basin Area Water Master, Annual Reports 2007 and 2008.

The following shows annual water production data for Golden State wells for the period from 1996 to 2005. As shown here, water production has fluctuated during this period but has generally increased over time. Future water demand in the Golden State service area in the Town is expected to increase in future.

**Table III-33**
**Golden State Annual Water Production**
**1996 - 2005[1]**

| Year | Acre-Feet | Million Gallons |
|---|---|---|
| 1996 | 1,052 | 3,251 |
| 1997 | 929 | 2,871 |
| 1998 | 893 | 2,759 |
| 1999 | 997 | 3,081 |
| 2000 | 1,038 | 3,207 |
| 2001 | 1,013 | 3,130 |
| 2002 | 1,136 | 3,510 |
| 2003 | 1,116 | 3,448 |
| 2004 | 1,206 | 3,727 |
| 2005 | 1,205 | 3,723 |

[1]Portions of the North and South systems are outside Town corporate limits but within its Sphere of Influence. Source: Combined totals: "Existing and Future Water Demands: Apple Valley North System," and "Existing and Future Water Demands: Apple Valley South System," prepared by CH2M Hill. 2007.

Imported Water

The Mojave River is predominantly a dry wash that flows intermittently after intense storms or during spring runoff; therefore, natural recharge from precipitation runoff to the upper reaches of washes and the River is limited. To ensure adequate recharge and to achieve the Court-mandated balance in the Basin, MWA relies on imported water from two primary sources. These include California State Water Project water, and "banked" or conjunctive use water from the Metropolitan Water District (MWD).

As a State Water Project contractor, MWA imports SWP water for groundwater recharge. MWA has an annual allocation of 75,800 acre-feet, which includes 25,000 acre-feet that MWA purchased from Berrenda-Mesa Water District in 1998. MWA uses factors of 69% under 2005 demands to 77% under 2025 conditions to estimate the reliability of SWP deliveries. Based on these factors, MWA can expect to receive between 53,800 to 58,400 acre-feet annually, should it request its full entitlement.[51] The average dry year supply is estimated at 43,200 acre-feet/year, and 22,900 acre-feet/year over multiple dry years.[52] Between 1972 and 2001, MWA received approximately 150,000 acre-feet of water from the SWP.[53]

It should be noted that current deliveries of SWP water allocations to SWP contractors, including MWA, have been affected by recent events involving water deliveries and impacts to endangered species in the San Joaquin River basin. It is possible that future deliveries may be reduced, although the extent of such potential reductions is unclear. This issue is further discussed under Project Impacts, below.

MWA also has an agreement with the MWD that allows MWD to store up to 75,000 acre-feet of water in the Mojave basin. This is referred to as "conjunctive use" or "water banking", in exchange for which MWD is entitled to an equal amount of water in the event of a significant drought in the future.

Based on year 2010 estimates, MWA estimates that approximately 119,300 acre-feet/year is available through natural supplies and SWP allocations annually (2010 projection).[54] AVRWC estimates that water supply sources in 2005 were 17,818 acre feet, which included its FPA allotment, additional groundwater replacement water purchased from MWA, and purchased water rights. It estimates increased supplies of 29,067 acre-feet per year in 2010, of which 69% would be purchased as replacement groundwater from MWA.[55] Current and planned water supplies through year 2025 are discussed under Project Impacts, below.

**Additional Water Sources**

Reclaimed Water

Wastewater treatment is provided to the Town by the Victor Valley Wastewater Reclamation Authority (VVWRA) facilities in Victorville. VVWRA processes approximately 10,000 acre-feet of reclaimed water per year, which is used internally at the VVWRA plant and for golf course irrigation in Victorville. There are currently no facilities to provide reclaimed water to Apple Valley. VVWRA has indicated that it plans to construct intercept and sub-regional

51 "Mojave Water Agency 2004 Regional Water Management Plan, Groundwater Management Plan, Urban Water Management Plan," prepared by Mojave Water Agency, adopted February 24, 2005.

52 "2004 Regional Water Management Plan, Supplement A: 2005 Urban Water Management Plan Update," prepared by Mojave Water Agency, December 8, 2005.

53 Op. Cit.

54 "2004 Regional Water Management Plan, Supplement A: 2005 Urban Water Management Plan Update," prepared by Mojave Water Agency, December 8, 2005.

55 "Apple Valley Ranchos Water Company 2005 Urban Water Management Plan," prepared by Apple Valley Ranchos Water Company, November 2005.

treatment facilities in Apple Valley to produce reclaimed water from wastewater generated in Apple Valley. Such facilities would provide AVRWC with a source of reclaimed water for use in Apple Valley, thereby reducing the consumption of potable groundwater. Timeline for completion of this project is based on VVWRA Board approval of the Capital Improvement Project, and has not yet been determined.[56]

Water Conservation

The California Public Utilities Commission adopted a Water Action Plan in 2005 with the primary objective to strengthen water conservation programs of regulated water utilities. This plan also contains a number of specific actions designed to increase water conservation programs.

The County and the Town work closely with AVRWC and Golden State to encourage water conservation. The County General Plan includes several policies and programs that both require and encourage water conversation. The County requires the use of drip irrigation systems or systems of equivalent efficiency for all landscaping at commercial facilities and all common areas of residential developments.

The Alliance for Water Awareness and Conservation (AWAC) was established in August 2003 and includes a regional consortium of 24 entities, including local stakeholders in and around the Apple Valley planning area. The purpose of the AWAC is to "provide a vehicle to attract support for a regional water conservation program and coordinate implementation of activities by forming partnerships to obtain common measurable goals."[57] Goals of the AWAC include the reduction of regional water use by 10% gross per capita by 2010 and 15% gross per capita by 2015.

The Town of Apple Valley has adopted a Water Conservation Plan Ordinance (Development Code Chapter 9.75) regulating water use and prohibiting wasteful water use practices, such as excessive runoff of landscape irrigation water and washing driveways and walkways with water The Ordinance establishes penalties for violation of these regulations. In addition, MWA has established a goal of 10% municipal conservation by 2020. In an effort to meet this goal, development within the Town is to be consistent with the recently adopted MWA 2005 Urban Water Management Plan.[58]

Adequate water supplies for local purveyors to meet the demand associated with build out of the General Plan depend on MWA's ability to manage the basin and to implement any necessary additional infrastructure projects and water management actions to continue to recharge the groundwater basin, maintain groundwater levels, secure additional sources of supply and protect groundwater quality. Based on Supplement A to the MWA 2005 Urban Water Management Plan Update, adequate supplies will be available through 2025, however this availability is based on a combination of measures to manage demand, as well as increased reliance on stored

56 Personal communication, Sandra Perea and Gilbert Perez, VVWRA, October 14, 2008.

57 "Mojave Water Agency 2004 Regional Water Management Plan, Groundwater Management Plan, Urban Water Management Plan," prepared by Mojave Water Agency, adopted February 24, 2005.

58 Ibid.

groundwater, and management mechanisms implemented through the Mojave Basin Judgment, Warren Basin Judgment, and the MWA Regional Water Management Plan.

**Urban Water Management Plans**

The state of California requires that all urban water suppliers serving more than 3,000 customers or supplying more than 3,000 acre-feet of water prepare an Urban Water Management Plan (UWMP) at least once every five years. (Division 6 Part 2.6, California Water Code). Although MWA does not directly supply water, as an SWP contractor it imports water to replenish groundwater basins within its service area and to meet the conditions of the Adjudication.

MWA and AVWRC each adopted UMWPs in 2005.[59],[60] The UMWPs demonstrate historic water usage in the water supplier's service area, estimate potential demand through 2020, and make findings as to the availability of water to its service area for those periods. MWA published a supplemental update to its 2005 UWMP providing availability projections through year 2030.[61] Both UMWPs set forth projects and Demand Management Measures (DMMs), including but not limited to, water conservation and reclamation, to ensure the continued availability of water. Further, MWA has established a goal of 10% municipal conservation by 2020. The discussions herein reference various data from these UMWPs.

**Regional Water Quality**

There are a number of factors that impact groundwater quality, including the water source, type of water-bearing materials in which groundwater water occurs or is stored, depth to the water table, proximity to faults, presence of surface or subsurface contaminants, and quality of well maintenance. AVRWC publishes a Consumer Confidence Report that states that water quality within the Town is considered to be very high, based on data from hundreds of monthly water samples collected by AVRWC. Samples are analyzed to ensure that AVR complies with all federal and state drinking water standards.

Testing results reported in the Golden State Water Annual Water Quality Report for approximately 80 types of constituents show that in many instances, water quality in Golden State wells exceeds U.S. EPA and California Department of Health Services standards.

The following discusses testing data for Total Dissolved Solids (TDS) and nitrates.

Total Dissolved Solids

Based on data provided in the AVR 2006/2007 Annual Water Quality Report, AVR water wells within the Town of Apple Valley contain total dissolved solids (TDS) concentrations ranging from 120 to 960 milligrams per liter (mg/L), with an average of 248 mg/L. The State Maximum

[59] "2004 Regional Water Management Plan: Integrated Regional Water Management Plan, Groundwater Management Plan, Urban Water Management Plan," Mojave Water Agency, adopted February 24, 2005.

[60] "Urban Water Management Plan," Apple Valley Ranchos Water Company, November 2005.

[61] "2004 Regional Water Management Plan, Supplement A: 2005 Urban Water Management Plan Update," prepared by Mojave Water Agency, December 8, 2005.

Contaminant Level (MCL) is 1,000 mg/L. AVR indicates that potential sources of TDS are run-off and leaching from natural deposits.[62]

Data from the 2007 Golden State Water Company Water Quality Report shows TDS concentrations in its wells ranged from 400 to 470 mg/L (average 435 mg/L)[63] based on year 2005 sampling data for the Apple Valley North system. In the Apple Valley South system, year 2006 sampling data show these concentrations within a range of 120 to 680 mg/L, averaging 310 mg/L.[64]

Nitrates

Groundwater quality may be adversely impacted by long-term discharge from on-lot septic systems. These impacts to groundwater quality are expected to be greatest where septic systems serve large populations in high densities. Well-maintained community sewer systems provide excellent protection of groundwater resources through the prompt removal of sewage materials and levels of treatment at the plant and in the soil column to assure safe recharge into the subsurface groundwater basin.

Based on water quality data for 2006-2007, AVR wells average concentrations range between 2.5 and 17 parts per million (ppm) of nitrates as $NO_3$, with an average of 6.4 ppm.[65] The State MCL and Public Health Goal (PHG) or Maximum Contaminant Level Goal (MCLG) is 45 ppm.

Golden State water quality data for nitrates shows concentrations at a range of between 5.7 to 7.7 mg/L (ppm), averaging 6.7 mg/L (ppm) in the Apple Valley North system.[66] For Apple Valley South, the range of nitrate concentrations ranged from "not detectable" to 5.0 mg/L, with an average of 2.8 mg/L.[67] Sampling data was from year 2006 for both systems.

Approximately 30 percent of the Town of Apple Valley is connected to the existing sewer system.[68] The balance of existing development utilizes on-site septic systems. Many of these systems will be abandoned over time, as future development occurs and infrastructure is expanded, thereby allowing projects on their own collection and treatment systems to connect to the larger community system. Given the costs to convey wastewater from many areas of the Town that are outside the existing wastewater treatment system to the VVWRA, the Town has

62 "Apple Valley Ranchos Water Co. – 2006/2007 Annual Water Quality Report, Water Quality Parameters Detected in Apple Valley Ranchos Company Wells," prepared by Apple Valley Ranchos Water Company.

63 "Apple Valley North System-Source Water Quality," year 2005 data, presented in Golden State Water Quality Report, May 2007.

64 "Apple Valley South System-Source Water Quality" year 2006 data, presented in Golden State Water Quality Report, May 2007.

65 "Apple Valley Ranchos Water Co. – 2006/2007 Annual Water Quality Report, Water Quality Parameters Detected in Apple Valley Ranchos Company Wells," prepared by Apple Valley Ranchos Water Company.

66 "Apple Valley North System-Source Water Quality," year 2005 data, presented in Golden State Water Quality Report, May 2007.

67 "Apple Valley South System-Source Water Quality" year 2006 data, presented in Golden State Water Quality Report, May 2007.

68 Personal Communication, Rodger Lopez, Town of Apple Valley Public Works Division, April 21, 2008.

identified areas where sub-regional wastewater treatment plants might be located to serve existing and future development.

The Town's Sewer Connection Policy was adopted in January 2006 to ensure that new single-family subdivisions with lots less than one acre and within one-half mile of existing sewer infrastructure connect to the Town sewer system. Developers of subdivisions located further than one-half mile from existing sewer lines are required to install a dry sewer system on-site. The policy provides for options to the dry sewer requirement, which are subject to Town and/or California Regional Water Quality Control Board (CRWQCB) approval. These include an interim holding tank system or a community septic system, both of which are designed as sewage collection and treatment systems located within the developments they serve.

**Water Quality Regulation**

Water quality control efforts are legislated through a variety of federal and state laws and regulations that are intended to ensure that water quality control efforts are adequately planned, implemented and enforced. Federal regulations include the Clean Water Act and the National Environmental Policy Act (NEPA). The State of California has enacted water quality statutes and administrative laws that include the California Water Code, California Environmental Quality Act (CEQA) and California Code of Regulations. Other applicable state codes include the Health and Safety Code, Fish and Game Code and Public Resources Code.

Under California Water Code (Section 13260), "any person discharging waste or proposing to discharge waste that may affect waters of the State, except to a community sewer system" is required "to file a report of waste discharge with the regional board of that region" where densities exceed two (2) dwelling units/acre. These requirements also apply to commercial and industrial wastewater generators where discharge volumes exceed certain thresholds.

Federal and state laws and regulations pertaining to water quality are implemented by the California Regional Water Quality Control Board (CRWQCB), Lahontan Region. A Memorandum of Understanding (MOU) between the Town and the CRWQC provides for the Town to issue building permits for development projects that use individual septic systems without obtaining RWQCB approval, based on certain conditions. The MOU directs the Town to consider on-site conditions such as soil characteristics, proposed densities based on EDU wastewater flows, lot sizes, and other parameters. It excludes commercial and industrial projects that will generate more than 500 gallons/acre/day, residential projects that exceed the EDU/acre density threshold, and others as set forth in the MOU.[69]

In addition to addressing issues regarding septic and sewer systems, the CRWQCB oversees concerns about the Mojave River and other sources of surface water. CRWQCB monitors illegal discharges of human or animal waste, leaking fuel storage tanks, and unauthorized hazardous and toxic materials dumping sites.

[69] "Memorandum of Understanding Between the California Water Quality Control Board, Lahontan Region and the Town of Apple Valley," California Regional Water Quality Control Board, Lahontan Region, February 6, 1990.

**National Pollutant Discharge Elimination System**

The National Pollutant Discharge Elimination System (NPDES), adopted in 1990, implements the federal Clean Water Act. Under NPDES, municipalities are required to develop, adopt and implement storm water management plans and programs. The NPDES is intended to ensure that local jurisdictions "effectively prohibit non-storm water discharge into the storm drain and require controls to reduce the discharge of pollutants from storm water systems to waters of the United States to the maximum extent possible." No CEQA analysis is required for pollutant control measures. The NPDES program for the Town of Apple Valley is managed by the Town Engineering Division.

### 2. Project Impacts

Build out of the proposed General Plan will result in an additional 64,749 dwelling units. This represents an increase of approximately 13,696 units, or 27.4% over the previous General Plan, which planned for 50,053 units.[70] Residential development in the General Plan area is expected to generate a population of approximately 194,931. The proposed Plan will also result in a proportional increase in commercial, industrial, public and other types of development. Therefore, implementation of the proposed General Plan update is expected to result in an increase in water consumption and other impacts to water resources, as compared with the previous General Plan.

**Annexations 2008-001 and 2008-002**

Adoption and implementation of the proposed Annexations 2008-001 and 2008-002 would facilitate the development of approximately 4,236 dwelling units, and a population of approximately 13,238, along with commercial and industrial development. These lands are currently largely undeveloped, with the only development consisting of an aggregate processing operation and scattered single-family homes. Implementation of the annexations is therefore expected to result in an increase in water consumption and other impacts to water resources as compared with existing conditions. Water lines will need to be extended and other infrastructure constructed so that water purveyors in the Town can serve future development in the annexation areas.

**Future Consumptive Demand**

There are several published consumption rates to estimate future water demand associated with build out of the proposed General Plan and the annexations. Such rates are generalized and are offered as a guide. Each specific project in the planning area should be evaluated individually.

AVRWC has developed an average water demand factor for residential land uses of 208 gallons per capita per day (gpcpd). This factor is based on historical use, as cited in the AVRWC 2004

[70] "Town of Apple Valley Housing Element, Table 31" prepared by the Town of Apple Valley, 2000.

Urban Water Management Plan. No AVRWC consumption factors were available for commercial, industrial and other uses are base. Therefore, consumption factors developed for desert climates have been used.[71]

Estimated water demands for proposed General Plan build out land uses are shown in Table III-34, below.

**Table III-34**
**Estimated Future Water Service Demands at General Plan Build Out**

| | Units | Demand Factor [1, 2, 3, 4] | Demand |
|---|---|---|---|
| **Land Use** | **No. of Persons** | **Gallons Per Capita Per Day (GPCPD)** | **Ac-ft/Yr** |
| Residential | 194,931 | 208.00 | 45,396.2 |
| | **AC** | **Ac-Ft/Ac/Year** | **Ac-ft/Yr** |
| Commercial | 11,914 | 1.98 | 25,590.3 |
| Industrial | 2,258 | 1.61 | 3,636.0 |
| Other Uses | 8,117 | 2.88 | 23,377.3 |
| | | **Non-Residential Subtotal** | **50,603.6** |
| | | **TOTAL GP BUILDOUT** | **95,999.8** |

[1]Residential factor from AVRWC based on historical consumption for residential uses.
[2]Commercial factors based on CVWD (2004) factor for Retail Shopping Areas, assuming 35% return flow. Commercial acreage includes Mixed Use and SP/Commercial.
[3]Industrial factor based on CVWD (2004) factor for Commercial and Industrial parks, based on 35% return flow. Industrial acreage does not include SP/Industrial since that is counted under SP/Commercial, above.
[4]Other uses factor based on CVWD (2004) average of factors for Golf course developments, public schools, self-storage facilities assuming 5% return flow.
Source: Terra Nova staff estimates based on historical consumption factors for residential uses from AVRWC UWMP 2005; industrial, commercial and other uses factors from Water System Backup Facilities Charge Study, prepared by Engineering Dept, Coachella Valley Water District, Sept 2004.

The estimates for future water service demand shown in Table III-34 account for build out of the entire General Plan area, including the proposed annexation lands. Residential development associated with implementation of the proposed General Plan and the annexations is estimated to result in water demand of 45,396.2 acre-feet per year at build out. Commercial, industrial and other land uses are expected to result in water demand of 50,603.6 acre-feet per year at build out. All land uses within the Town limits and annexation areas are expected to result in total water demand of 95,999.8 acre-feet per year at build out.

[71] "Water System Backup Facilities Charge Study," prepared by Engineering Department, Coachella Valley Water District, September 2004. See Table 11 - Annual Consumption Factors by Development Type Factors.

**Annexations 2008-001 and 2008-002**

Implementation and build out of proposed Annexation 2008-001 could result in development of approximately 4,236 dwelling units. No residential land uses are proposed for Annexation 2008-002. Currently, unincorporated San Bernardino County, in which the proposed annexation lands are located, has an average household size of approximately 5.13 persons per household. This yields an estimate of approximately 13,238 additional residents in Annexation 2008-001.

The consumption factors cited above for build out of the General Plan within the Town have been utilized for residential, commercial, industrial and other uses for the annexation areas. Table III-35, below, shows estimated water demand within the annexation areas.

**Table III-35**
**Estimated Water Demand at Build Out of Proposed Annexation Areas**

**Annexation 2008-001**

| | Units | Demand Factor[1, 2, 3, 4] | Demand |
|---|---|---|---|
| **Land Use** | **No. of Persons** | **Gallons Per Capita Per Day (GPCPD)** | **Ac-ft/Yr** |
| Residential | 13,238 | 208.00 | 3,082.8 |
| | **AC** | **Ac-Ft/Ac/Year** | **Ac-ft/Yr** |
| Commercial | 773 | 1.98 | 1,530.6 |
| Industrial | 812 | 1.61 | 1,307.4 |
| Other Uses | 193 | 2.88 | 555.6 |
| | | **Subtotal Non-Residential** | **3,393.6** |
| | | **TOTAL ANNEXATION 2008-001** | **6,476.4** |

**Annexation 2008-002**

| | Units | Demand Factor[1, 2, 3, 4] | Demand |
|---|---|---|---|
| **Land Use** | **No. of Persons** | **Gallons Per Capita Per Day (GPCPD)** | **Ac-ft/Yr** |
| Residential | 0 | 208.0 | 0 |
| | **AC** | **Ac-Ft/Ac/Year** | **Ac-ft/Yr** |
| Commercial | 0 | 1.98 | 0 |
| Industrial | 801 | 1.61 | 1,289.7 |
| Other Uses | 4 | 2.88 | 11.8 |
| | | **Subtotal Non-Residential** | **1,301.5** |
| | | **TOTAL ANNEXATION 2008 -002** | **1,301.5** |
| | | **TOTAL ANNEXATION AREAS -001 & -002** | **7,777.9** |

[1]Residential factor from AVRWC based on historical consumption for residential uses.

[2]Commercial factors based on CVWD (2004) factor for Retail Shopping Areas, assuming 35% return flow. Commercial acreage includes Mixed Use and SP/Commercial.

[3]Industrial factor based on CVWD (2004) factor for Commercial and Industrial parks, based on 35% return flow. Industrial acreage does not include SP/Industrial since that is counted under SP/Commercial, above.

[4]Other uses factor based on CVWD (2004) average of factors for Golf course developments, public schools, self-storage facilities assuming 5% return flow.

Source: Terra Nova staff estimates based on historical consumption factors for residential uses from AVRWC UWMP 2005; industrial, commercial and other uses factors from Water System Backup Facilities Charge Study, prepared by Engineering Dept, Coachella Valley Water District, Sept 2004.

Water consumption at build out of future development in Annexation 2008-001 is estimated at 6,476.4 acre-feet per year, of which approximately 3,082.8 acre-feet would be from residential uses and approximately 3,393.6 acre-feet would be from commercial, industrial and other uses. For future industrial and other uses in Annexation 2008-002, build out water demand is estimated at 1,301.5 acre-feet per year.

Estimated increases in water consumption will occur gradually as these lands develop. Further, no development projects are expected to occur in the annexation areas immediately, and impacts to domestic water resources are not anticipated in the immediate future. Nonetheless, build out of the proposed annexation lands will contribute to cumulative increases in the demand for

domestic water resources. Build out of the General Plan area, including the proposed Annexation No. 2008-001 and No. 2008-002, will result in significant impacts to water resources without mitigation.

**Summary**

To summarize, based on the level of development proposed, impacts to water resources associated with adoption and implementation of the General Plan are expected to be about 17.5% more than those associated with the existing General Plan. As the proposed General Plan builds out, potential for groundwater contamination will increase. The proposed Plan includes goals, policies and programs to reduce impacts to water resources to less than significant levels, as well as to ensure that federal, state, local and all other applicable pollution control standards continue to be implemented.

AVRWC distributes domestic water to approximately 80% of the connections in the Town of Apple Valley. The 2005 AVRWC UWMP demonstrates that AVRWC has sufficient water supplies for its service area through year 2025 under normal and drought conditions.[72] Based on sufficiency of water supplies through AVWRC to the majority of the Town, it seems safe to assume that sufficient water will be available to serve the entire planning area through year 2025. In its UWMP, AVWRC acknowledges the need to identify additional water sources to growing demand and also sets forth Best Management Practices (BMPs) to increase water efficiency. These include water conservation measures and incentives, water audits, plumbing retrofits and public education. It is expected that new development will utilize efficient appliances and irrigation systems, and these and other water-saving technologies and conservation efforts will serve to decrease water demand by development in the planning area.

The implementation of the proposed General Plan will facilitate urban development that will contribute to cumulative impacts on groundwater resources in the region; these impacts will include a reduction in the amount of potable groundwater in storage. It should be noted that the subject increased water consumption will occur over time, at a gradual rate as development occurs. The Town shall require that prior to approval of any future development in the planning area has an adopted Water Supply Assessment in compliance with SB 610 and 221.

The MWA and AVRWC UWMPs include mitigation measures and conservation methods that are intended to reduce total water consumption in the Mojave Water Basin, including the General Plan area. The AVRWC UWMP includes a water shortage contingency plan, and a series of water demand measures to implement water conservation and recycling programs. The goal of these measures is to increase the overall efficiency of the existing water system and reduce general consumption.

[72] Urban Water Management Plan," Apple Valley Ranchos Water Company, November 2005.

### Other Impacts

Build out of the General Plan and the annexation areas will facilitate development that may require the expansion of existing or construction of new domestic water facilities to ensure adequate fire flows and provision of domestic water. Expansion may include "looping" of existing water systems into new storage and/or distribution facilities, construction of booster pumping or pressure reduction stations, and construction of transmission mains and pipelines.[73] Future development plans will be subject to review by the Town, AVFPD and the applicable water provider. Such review will consider fire flow requirements and will include a determination of the appropriate funding mechanisms for construction of these improvements. A Water Supply Assessment will be conducted for projects subject to the requirements of AB 220 and AB610.

## 3. Mitigation Measures

### Water Conservation

Water conservation is an essential short and long-term resource management strategy, given increasing demands on water supplies in the General Plan area, including the proposed annexation lands. Efforts to reduce per capita consumption are a priority. The implementation of water-efficient landscaping design and management is among the best conservation opportunities. The Town's Water Conservation Plan ordinance includes water regulations that prohibit wasteful water practices, including washing driveways and walkways with water and excessive runoff of landscape irrigation water and washing driveways , and establishes penalties for violation of these regulations. MWA has established a goal of 10% municipal conservation by 2020. The proposed General Plan recommends that the Town follow the recently adopted MWA UWMP.

The Town will continue its involvement in the Alliance for Water Awareness and Conservation (AWAC). As noted previously, the AWAC has set goals to reduce regional water use by 10% gross per capita by 2010 and by 15% gross per capita by 2015.

### General Mitigation Measures

Groundwater depletion and contamination are regional and local issues that affect groundwater subareas, which are not defined by jurisdictional boundaries. As discussed above, conservation and efficient use of water will continue to be foundational to community planning and development in Southern California. Further, to help assure and optimize long-term natural recharge of the Mojave River Basin and the respective subareas, the region's major mountain watersheds must be protected. Effective stormwater management can also preserve and protect groundwater quality. The Town has an integral role in the protection and management of this finite, essential resource.

[73] "Apple Valley Ranchos Water Company Pressure Zone Discussion," prepared by Apple Valley Ranchos Water Company, 2008.

The proposed Apple Valley General Plan update includes a variety of goals, policies, and programs that are intended to provide and maintain a dependable supply of safe, high-quality domestic water to meet the needs of all segments of the community. To reduce potential impacts to water resources associated with implementation of the proposed General Plan and subject annexations to less than significant levels, the following mitigation measures shall be implemented:

1. The Town shall coordinate and cooperate with the Mojave Water District, the Apple Valley Ranchos Water Company, Golden State Water Company and other water purveyors within the Town to strengthen and expand educational and public relations programs that convey the importance of water conservation and water-efficient landscaping.

2. The Town shall promote, encourage and participate in the development of water management and conservation strategies through the Alliance for Water Awareness and Conservation, the San Bernardino Association of Governments (SANBAG) and its member jurisdictions, as well as the Mojave Water Agency, Apple Valley Ranchos Water Company, Golden State Water Company, and other water purveyors in the Town, on water supply and conservation programs.

3. The Town shall continue to implement its Water Conservation Plan ordinance and comply with State Assembly Bill 325 (AB 325) by limiting turfed areas in new projects, and requiring the use of native and other drought-tolerant planting materials, installing efficient irrigation systems and monitoring existing systems to ensure maximum efficiency and conservation.

4. The Town shall require that all new developments use water conserving appliances and fixtures, including low-flush toilets and low-flow showerheads and faucets. The Town shall require the application of water-conserving technologies in conformance with Section 17921.3 of the Health and Safety Code, Title 20, California Administrative Code Section 1601(b), and applicable sections of Title 24 of the State Code.

5. The Town shall encourage the use of faucets, showerheads and appliances in new development that exceed Title 20 and Title 24 water efficiency requirements.

6. The Town shall require that future development in the General Plan area has an adopted Water Supply Assessment in compliance with AB 610 and 221 prior to approval of development plans.

7. The Town shall actively support and encourage the continuation and expansion of groundwater recharge efforts, and shall confer and coordinate with MWA and AVRWC regarding the possible future use of tertiary treated wastewater as a means of reducing demand for groundwater resources. To the greatest extent practicable, the Town shall direct new development to provide irrigation systems that are able to utilize reclaimed water, when available, for use in common area and streetscape landscaping.

8. The Town shall consider approaches and mechanisms that facilitate financing and construction of expanded wastewater collection facilities.

9. To the greatest extent practicable, the Town shall continue to require new development to connect to the community sewer system. Where sewer service is not available and lots are created of less than one (1) acre in size, the Town shall require the installation of "dry sewers" and the payment of connection fees for future sewer main extensions.

10. Consistent with community design standards and local and regional drainage plans, the Town shall provide development standards and guidelines for the construction of on-site storm water retention facilities.

11. The Town shall require that the development and maintenance of project-specific on-site stormwater retention/detention basins that implement the NPDES program, enhance groundwater recharge, complement regional flood control facilities, and address applicable community design policies subject to all applicable regulations, standards and guidelines.

12. The Town shall evaluate the potential of all proposed land use and development plans to create groundwater contamination hazards from point and non-point sources. The Town shall confer and coordinate as necessary with appropriate water agencies and water purveyors to ensure adequate review.

13. The Town shall coordinate with Apple Valley Ranchos Water Company, Golden State Water Company, and other water purveyors that serve the Town and its Sphere of Influence to establish/continue incentive programs to encourage that existing development be retrofitted to utilize water conserving fixtures, and landscaping and irrigation materials and controllers.

14. The Town shall restrict the amount of turf planted on all new commercial, industrial, public facilities, multi-family and front yards of single-family residential projects to reduce the amount of water used for irrigation.

15. Irrigation design that reduces overspray and uses conservation techniques shall be required for all new commercial, industrial, public facilities and multi-family projects which will reduce the amount of water used and wasted on irrigation.

16. The Town shall confer and coordinate with the Victor Valley Wastewater Reclamation Authority to explore the possible future provision of recycled/reclaimed wastewater that can serve new and existing development.

17. The Town shall consider incentive programs for the removal of existing turf and replacing the turf with drought tolerant desert landscaping that requires less water.

18. The Town shall proceed with the agreement entered into with the City of Hesperia to design two (2) wastewater reclamation plants that will enable reclaimed water to be used to irrigate Town parks and the Apple Valley Country Club Golf Course.

**Mitigation Monitoring/Reporting Program**

A. The Planning Division and the Town Engineer shall review all development proposals to assess potential adverse impacts on water quality and quantity, and shall require all development to mitigate any significant adverse impacts.
**Responsible Parties:** Planning Division, Town Engineer, Mojave Water Agency, Apple Valley Ranchos Water Company, Golden State Water Company, other local water purveyors, project developer

B. The Town shall coordinate and cooperate with the Mojave Water Agency, Apple Valley Ranchos Water Company, Golden States Water Company and other local water purveyors to ensure that groundwater aquifer is protected from excessive extraction**.**
**Responsible Parties:** Planning Division, Town Engineer, Mojave Water Agency, Apple Valley Ranchos Water Company, Golden State Water Company, other local water purveyors.

## J. Land Use, Population and Housing

### Introduction and Background

This section of the EIR addresses potential impacts associated with land use, population and housing. It analyzes the potential impacts of the General Plan and the annexations on these resources. The existing conditions in the Town and annexation areas are described, and the impacts of changes, particularly changes in the land use allocation from the previously approved General Plan, are assessed.

### Thresholds of Significance/Criteria for Determining Significance

The following thresholds or criteria are not those strictly recommended in 15064 of CEQA. Rather, they are derived from Appendix G of CEQA, which is used to determine the level of potential effect. Build out of the General Plan for the Town of Apple Valley would have a significant effect on land use, population or housing if it is determined that the project will:

Land Use and Planning

a. Physically divide an established community.

b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

c. Conflict with any applicable habitat conservation plan or natural community conservation plan.

Population and Housing

a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

### 1. Existing Conditions

Apple Valley has developed most densely along major roadways in the Town, including State Highway 18 and Bear Valley Road. Highway 18, extends southeast to northwest through the Town, while Bear Valley Road is south of Highway 18, and runs east to west. Existing development becomes gradually less dense north of Highway 18 to Waalew Road, north of

which existing development is scattered and relatively limited in most areas. The Apple Valley Airport is located between Waalew Road on the south and Johnson Road on the north, west of Central Road. Currently the area surrounding the airport is comprised of lands that have been developed to a limited extent for industrial uses. The airport is centrally located within the approved North Apple Valley Industrial Specific Plan (NAVISP) area that provides for the industrial and commercial development of these lands.

The Mojave River runs generally southeast to northwest along the Town's western boundary. It enters the Town near its southern boundary and crosses under Highway 18 where it exits the Town to the northwest. U.S. Interstate 15 crosses the River at the westernmost portion of the Town, and then turns northeast along a portion of the Town's western boundary.

Commercial centers in the Town include the Village commercial area, which is situated along State Highway 18 between Navajo Road and Central Road; retail and office uses between Rancherias Road and Dale Evans Parkway, north to Thunderbird Road along Highway 18, in the vicinity of Town Hall and other public facilities associated with the Civic Center complex; and further west along Highway 18, near its intersection with Corwin Road, St. Mary Medical Center and associated medical offices and other commercial uses. The most recent and substantial commercial development in Town has occurred on the west half of Bear Valley Road, which experienced significant expansion of the Town's commercial base in the first seven years of this century.

Residential development in Apple Valley is concentrated in the southern and central portions of the Town, generally south of Waalew Road. Residential densities in these areas range from very low to high densities (1 dwelling unit per 5 acres or more, to 20 dwelling units per acre). The majority of single-family development in the Town occurs on lots of between 0.5 and 2.5 acres. There are also residential developments within Specific Plan areas, such as Jess Ranch in the southwest portion of Town. The approved North Pointe and Bridle Path Specific Plan areas are located in the northwest portion of Town. The Specific Plans were recently approved, but have not been developed.

The Town's developed areas integrate numerous public and private open space areas, including parks and recreational facilities, operated by the Town and parks associated with Apple Valley Unified School District (AVUSD) schools. Other recreational and open spaces include golf courses, and open space associated with the Mojave River, Apple Valley Dry Lake, Bell Mountain and other notable landforms in the Town. Institutional development and public facilities, such as schools, fire and police stations, are located amidst residential and other types of development. The Town's Civic Center complex is centrally located on Dale Evans Parkway near State Highway 18 and Thunderbird Road.

The land use patterns described above reflect existing General Plan designations. Residential land use designations are concentrated south of Waalew Road, while commercial designated lands are generally organized around major roadways such as Highway 18 and Bear Valley Road and north of Waalew Road near U.S. I-15. As noted above, the General Plan also designates Specific Plan areas, including Jess Ranch, Bridle Path, North Pointe and the NAVISP area. It

allocates lands for Community Reserve, providing for a mix of low density residential and supporting commercial and industrial uses, west of the NAVISP site and north of Waalew Road. Lands along U.S. Interstate 15 in the northern portion of the Town are generally designated for regional commercial uses intended to serve highway travelers.[74]

Existing Land Uses in Annexation Areas

*Proposed Annexation 2008-001*
There are approximately 2,774±-acres within the proposed Annexation 2008-001 area. Of these, approximately 2,552.1 acres (92%) are vacant and undeveloped desert lands. The remaining approximately 8% are sparsely developed with single-family residences and paved and unpaved roadways. Lands in this annexation area are designated and zoned for Rural Living, Rural Living-5 (minimum 5-acre lots) and Neighborhood Commercial under the County General Plan and Zoning Code.[75]

*Proposed Annexation 2008-002*
There are approximately 805 acres within this proposed annexation area, of which nearly all is vacant and undeveloped. Approximately 5.5 acres are developed for uses associated with the Black Mountain quarry operation. Lands within proposed Annexation No 2008-002 are designated and zoned Regional Industrial, Community Industrial, Resource Conservation, and Rural Living in the County General Plan and Zoning Code.[76]

Surrounding Land Use
The Town is located in the high desert region of southwest San Bernardino County. The mountains and foothills of the San Bernardino Mountains occur to the south, with the San Gabriel Mountains further south.

There are a number of jurisdictions surrounding the Town. Portions of lands to the northwest are within unincorporated San Bernardino County and comprise the proposed Annexation area No. 2008-001, comprised of largely undeveloped desert lands. The City of Victorville is located west of Apple Valley, beyond the Mojave River and U.S. I-15. The City of Hesperia lies to the southwest and the unincorporated Lucerne Valley community to the southeast. While the region has an overall rural character, these established communities constitute largely urbanized areas that include a range of residential, commercial, industrial, public facilities and open space uses. To the north are sparsely populated desert lands and the small community of Bell Mountain.

Lands to the east are within unincorporated San Bernardino County and include portions of the Town's Sphere of Influence as well as federal lands administered by the Bureau of Land Management. These lands are largely vacant, undeveloped and sparsely populated desert and mountainous areas, with some residential and industrial development, including the aforementioned Black Mountain Quarry operation that is located within the proposed

[74] "Town of Apple Valley General Plan Existing Alternative" map, prepared by Aerial Information Systems, December 27, 2007.
[75] Ibid.
[76] Ibid.

Annexation 2008-002 annexation area, which lies east of the Town. County land use designations on lands to the east of the Town are predominantly Rural Living, but also include Regional and Community Industrial, Resource Conservation, and to a limited extent, Single Residential and General Commercial.

Lands to the south are also within unincorporated San Bernardino County and include portions of the Town's Sphere of Influence, rising into the foothills and mountain slopes of the San Bernardino Mountains. These lands are County designated Single Residential, Rural Living, with Resource Conservation further south within mountainous areas.

Demographic Information

Based on U.S. Census data, the population in the Town of Apple Valley grew from 46,079 in 1990 to 54,239 by 2000, an increase of approximately 17.7%. The 2008 population is currently 70,092.

In 1990, the median age in Apple Valley was 30.8 years, whereas in 2000 it had increased to 35.4 years. As of 2008 there were 24,925 housing units in the Town; this figure had increased from year 2000, when there were 20,161 housing units. There were an average of 2.903 persons per household in 2000; by 2008 this average had increased to 3.053.

The median household income in Apple Valley in 2000 was $40,421, and had risen by approximately 34.4% in 2008, to $54,323.

The median home price for existing homes in Apple Valley was $338,000 in third quarter 2007, and had fallen to $220,000 by third quarter 2008. At current levels, home ownership is considered affordable to moderate income households in Apple Valley. The median new home price in the Victor Valley region, in which the Town is located, also dropped over the past year. In second quarter 2007 the median new home price in the region was $415,000, and $377,000 in second quarter 2008. These prices still exceed those of the overall County of San Bernardino for the same period.

**Build Out of the Town and Annexation Areas under the Current General Plans**

The current General Plan for the Town of Apple Valley allocated land uses for all incorporated areas, resulting in a total potential 50,053 residential units 28,608,875 square feet of commercial land uses, and 37,848,814 square feet of industrial land uses at build out. The current General Plan would result in a build out population of 152,813 within Town limits, based on a 2008 Department of Finance household size of 3.053 persons per household. Table III-36 illustrates the development potential of the current Town of Apple Valley General Plan.

**Table III-36**
**Statistical Summary of Land Uses**
**Current General Plan – Town of Apple Valley**

| **Land Use Designation** | **Developed** | **Vacant** | **Total** | | | |
|---|---|---|---|---|---|---|
| **Residential Designations** | | | | **Existing Units** | **Potential Units** | **Total Units** |
| Very Low Density Residential | 174.46 | 1,828.18 | 2,002.64 | | 366 | 366 |
| Low Density Residential | 503.64 | 3,403.59 | 3,907.23 | | 1,361 | 1,361 |
| Estate Residential | 3,128.95 | 2,836.06 | 5,965.02 | 20,107 | 2,836 | 22,943 |
| Single Family Residential | 8,625.30 | 4,690.55 | 13,315.86 | | 7,036 | 7,036 |
| Medium Density Residential | 852.07 | 564.16 | 1,416.22 | 3,775 | 8,462 | 12,237 |
| Community Reserve | 30.07 | 3,241.00 | 3,271.07 | | 3,241 | 3,241 |
| Specific Plan/Residential Units | 1,068.45 | 5,884.28 | 6,952.73 | | 2,869 | 2,869 |
| | | | **Total** | **23,882** | **26,171** | **50,053** |
| | | | | | | |
| **Commercial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| General Commercial | 368.44 | 523.83 | 892.27 | 3,530,803 | 5,019,991 | 8,550,794 |
| Regional Commercial | 19.40 | 844.56 | 863.96 | 185,937 | 8,093,581 | 8,279,518 |
| Service Commercial | 147.66 | 150.77 | 298.42 | 1,415,034 | 1,444,831 | 2,859,865 |
| Office Professional | 49.34 | 186.04 | 235.38 | 472,851 | 1,782,838 | 2,255,689 |
| Specific Plan/Commercial | 1,068.45 | 5,884.28 | 6,952.73 | 1,740,086 | 4,922,924 | 6,663,010 |
| | | | **Total** | **7,344,710** | **21,264,165** | **28,608,875** |
| **Industrial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Planned Industrial | 3.50 | 91.49 | 95.00 | 33,560 | 876,810 | 910,369 |
| Specific Plan/Industrial | 1,068.45 | 5,884.28 | 6,952.73 | 3,053,208 | 33,885,237 | 36,938,445 |
| | | | **Total** | **3,086,768** | **34,762,047** | **37,848,814** |
| **Other Designations** | | | | | | |
| Public Facility | 263.78 | 60.92 | 324.70 | | | |
| Open Space | 241.94 | 2,771.70 | 3,013.64 | | | 0 |
| Mineral Resources | 111.6 | 340.9 | 452.5 | | | 0 |
| Street Rights-of-Way | 2,563.53 | 1,378.11 | 3,941.64 | | | |
| | | | | | | |
| **Grand Total** | **18,152.1** | **28,796.2** | **46,948.3** | | | |

In Annexation 2008-001, the County of San Bernardino has assigned primarily residential land use designations, with the exception of one 8 acre site for neighborhood commercial development. If Annexation 2008-001 were to build out under the current land use designations, a total of 2,067 residential units and 53,192 square feet of commercial space would be expected to occur. The current County General Plan land use pattern would result in a build out population of 6,459 persons, based on a 2008 Department of Finance household size of 3.125 persons per household in unincorporated San Bernardino County. Table III-37 illustrates the build out potential of Annexation 2008-001.

**Table III-37**
**Statistical Summary of Land Uses**
**Current General Plan (County) – Annexation 2008-001**

| Land Use Designation | Developed | Vacant | Total | Existing Units | Potential Units | Total Units |
|---|---|---|---|---|---|---|
| **Residential Designations** | | | | | | |
| Rural Living | 151.6 | 1,982.4 | 2,134.0 | | 1,982 | 1,982 |
| Rural Living, 5 AC. | 14.2 | 425.5 | 439.7 | | 85 | 85 |
| | | | **Total** | - | **2,067** | **2,067** |
| **Commercial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Neighborhood Commercial | | 7.9 | 7.9 | - | **53,192** | **53,192** |
| | | | | | | |
| **Other Designations** | | | | | | |
| Street Rights-of-Way | 42.8 | 150.1 | 192.9 | | | |
| | | | | | | |
| **Grand Total** | **208.7** | **2,565.9** | **2,774.6** | | | |

In Annexation 2008-002, the County of San Bernardino General Plan identifies about 400 acres of residentially designated lands, 78 acres of Resource Conservation land, and 324 acres of industrially designated land. If Annexation 2008-002 were to build out under the current County land use designations, a total of 398 residential units and 3,101,376 square feet of industrial space would be expected to occur. The current County General Plan land use pattern would result in a build out population of 1,245 persons, based on a 2008 Department of Finance household size of 3.125 persons per household in unincorporated San Bernardino County. Table III-38 illustrates the build out potential of Annexation 2008-002.

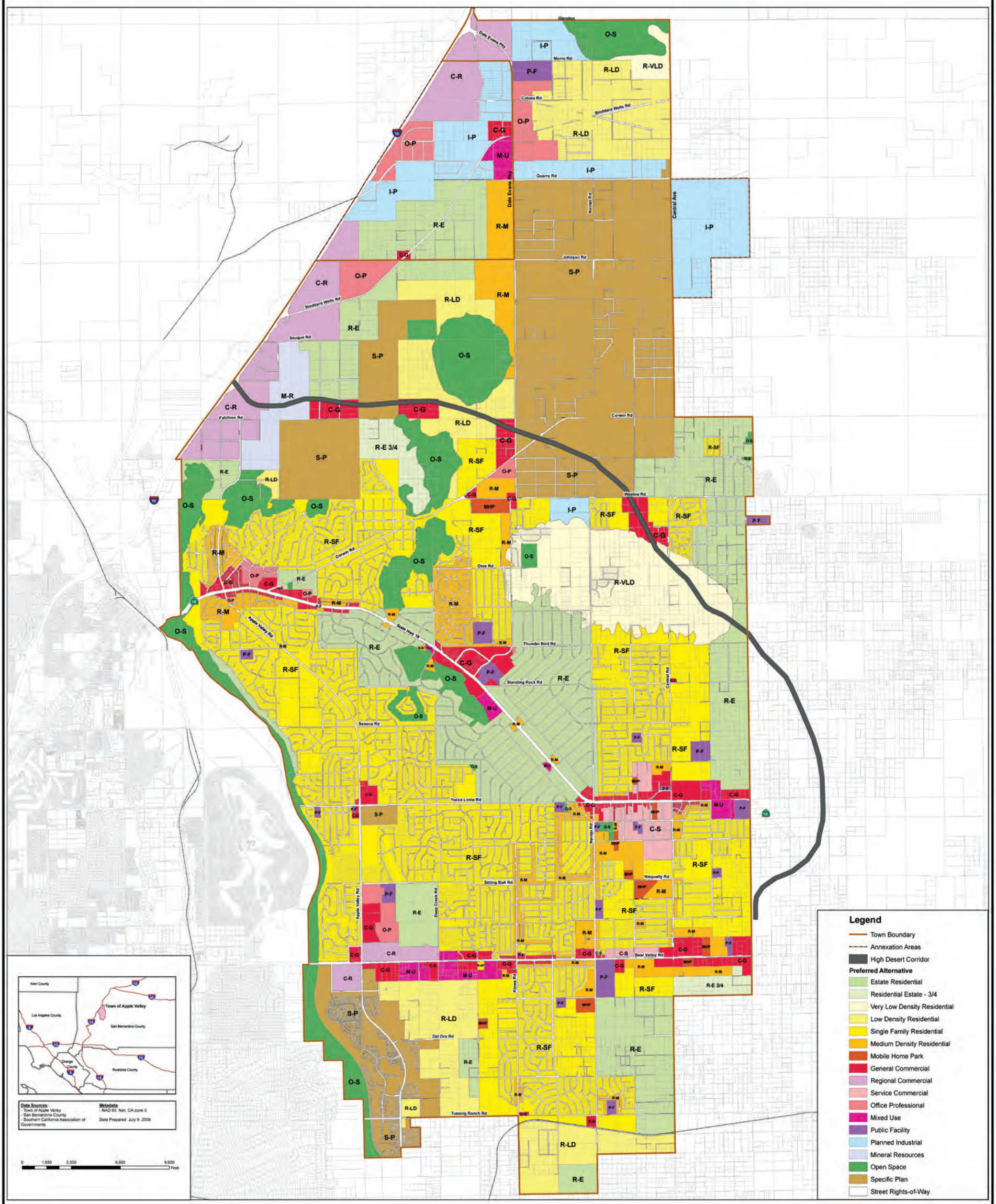
**Table III-38**
**Statistical Summary of Land Uses**
**Current General Plan (County) – Annexation 2008-002**

| Land Use Designation | Developed | Vacant | Total | Existing Units | Potential Units | Total Units |
|---|---|---|---|---|---|---|
| **Residential Designations** | | | | | | |
| Rural Living | 5.4 | 394.1 | 399.5 | | 394 | 394 |
| Resource Conservation | 0.1 | 77.7 | 77.8 | | 4 | 4 |
| | | | | | | |
| | | | **Total** | - | **398** | **398** |
| **Industrial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Community Industrial | | 50.5 | 50.5 | - | 483,608 | 483,608 |
| Regional Industrial | | 273.2 | 273.2 | - | 2,617,768 | 2,617,768 |
| | | | **Total** | - | **3,101,376** | **3,101,376** |
| | | | | | | |
| **Other Designations** | | | | | | |
| Street Rights-of-Way | 0.2 | 3.9 | 4.1 | | | |
| | | | | | | |
| **Grand Total** | **5.7** | **799.3** | **805.0** | | | |

When considering the area within the Town limits and both Annexation Areas, the existing General Plan designations assigned to these lands have the potential to generate a total of 52,519 residential units, 28,662,067 square feet of commercial space, and 40,950,190 square feet of industrial space. In total, the current General Plan designations would generate a build out population of 160,517 persons. Table III-39 illustrates the build out potential of the existing General Plans for the Town and annexation areas.

**Table III-39**
**Statistical Summary – Build Out of the Current General Plan and Annexation Areas**

| **Land Use Designation** | **Developed** | **Vacant** | **Total** | | | |
|---|---|---|---|---|---|---|
| **Residential Designations** | | | | **Existing Units** | **Potential Units** | **Total Units** |
| Rural Living (County) | 157.0 | 2,376.5 | 2,533.5 | | 2,377 | 2,377 |
| Rural Living, 5 AC. (County) | 14.2 | 425.5 | 439.7 | | 85 | 85 |
| Resource Conservation (County) | 0.1 | 77.7 | 77.8 | | 4 | 4 |
| Very Low Density Residential | 174.46 | 1,828.18 | 2,002.64 | | 366 | 366 |
| Low Density Residential | 503.64 | 3,403.59 | 3,907.23 | | 1,361 | 1,361 |
| Estate Residential | 3,128.95 | 2,836.06 | 5,965.02 | 20,107 | 2,836 | 22,943 |
| Single Family Residential | 8,625.30 | 4,690.55 | 13,315.86 | | 7,036 | 7,036 |
| Medium Density Residential | 852.07 | 564.16 | 1,416.22 | 3,775 | 8,462 | 12,237 |
| Community Reserve | 30.07 | 3,241.00 | 3,271.07 | | 3,241 | 3,241 |
| Specific Plan/Residential Units | 1,068.45 | 5,884.28 | 6,952.73 | | 2,869 | 2,869 |
| | | | **Total** | **23,882** | **28,637** | **52,519** |
| **Commercial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Neighborhood Commercial (County) | | 7.9 | 7.9 | - | **53,192** | **53,192** |
| General Commercial | 368.44 | 523.83 | 892.27 | 3,530,803 | 5,019,991 | 8,550,794 |
| Regional Commercial | 19.40 | 844.56 | 863.96 | 185,937 | 8,093,581 | 8,279,518 |
| Service Commercial | 147.66 | 150.77 | 298.42 | 1,415,034 | 1,444,831 | 2,859,865 |
| Office Professional | 49.34 | 186.04 | 235.38 | 472,851 | 1,782,838 | 2,255,689 |
| Specific Plan/Commercial | 1,068.45 | 5,884.28 | 6,952.73 | 1,740,086 | 4,922,924 | 6,663,010 |
| | | | **Total** | **7,344,710** | **21,317,35** | **28,662,067** |
| **Industrial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Community Industrial (County) | | 50.5 | 50.5 | - | 483,608 | 483,608 |
| Regional Industrial (County) | | 273.2 | 273.2 | - | 2,617,768 | 2,617,768 |
| Planned Industrial | 3.50 | 91.49 | 95.00 | 33,560 | 876,810 | 910,369 |
| Specific Plan/Industrial | 1,068.45 | 5,884.28 | 6,952.73 | 3,053,208 | 33,885,237 | 36,938,445 |
| | | | **Total** | **3,086,768** | **37,863,422** | **40,950,190** |
| **Other Designations** | | | | | | |
| Public Facility | 263.78 | 60.92 | 324.70 | | | |
| Open Space | 241.94 | 2,771.70 | 3,013.64 | | | |
| Mineral Resources | 111.6 | 340.9 | 452.5 | | | |
| Street Rights-of-Way | 2,606.53 | 1,532.11 | 4,138.64 | | | |
| **Grand Total** | **18,366.4** | **32,161.4** | **50,527.9** | | | |




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**Apple Valley General Plan Draft EIR**
**Preferred General Plan Land Use Map**
**Apple Valley, California**

**Exhibit**
**III-15**

## 2. Project Impacts

The proposed General Plan does not significantly change development patterns or land use designations within Town limits. Land use designations have generally been maintained consistent with those in the current General Plan. Three new land use designations are proposed, the Mixed Use, Estate Residential ¾, and the Mobile Home Park designations.

The Mixed Use designation, which has generally been assigned to lands on major roadways such as Bear Valley Road and Highway 18, as well as lands in proximity to the future Highway 220 (also known as the High Desert Corridor), requires the development of both commercial and high density residential development within each project. This designation has been applied to lands previously designated Medium Density Residential, various Commercial designations, and some Residential designations, particularly north of Highway 18. The Mixed Use designation has been assigned to a total of 383.2 acres, 288.3 acres within Town limits and 94.9 acres in the annexation areas. This designation has the potential to generate 2,984 dwelling units, and 2,224.298 square feet of commercial space.

The Estate Residential ¾ designation has been assigned primarily in the southern and eastern areas of Town, on lands previously designated Estate Residential or Very Low or Low Density Residential. This designation is proposed specifically to allow the keeping of animals, and the expansion of the equestrian lifestyle in the Town. The Residential Estate ¾ designation has been assigned to a total of 475.7 acres, and has the potential to generate 607 dwelling units.

The Mobile Home Park designation has been assigned to existing mobile home parks in Town, which under the current General Plan were assigned a range of residential densities, but generally occurred in the Single Family Residential and Medium Density Residential land use designation. This designation, as it applies to only existing mobile home parks, will have no impact on the ultimate build out densities or intensities beyond those of the current General Plan.

**Table III-40**
**Statistical Summary of Land Uses**
**General Plan Preferred Alternative**

| | Town of Apple Valley | | Annexation Areas | |
|---|---|---|---|---|
| **Land Use Designation** | **Acres** | **%** | **Acres** | **%** |
| **Residential Land Uses** | | | | |
| Very Low Density Residential (1 du/5 or more gross ac) | 1,961.5 | 4.2% | -- | -- |
| Low Density Residential (1 du/2.5 - 5 gross ac) | 3,503.5 | 7.5% | -- | -- |
| Estate Residential (1du/1 – 2.5 gross ac) | 6,666.9 | 14.2% | 778.0 | 21.7% |
| Estate Residential ¾ (1 du/0.75 – 1 ac) | 475.7 | 1.0% | -- | -- |
| Single-Family Residential (1 du/0.4-0.9 ac) | 12,527.9 | 26.7% | -- | -- |
| Medium Density Residential (4- 20 du/ac) | 1,925.9 | 4.1% | 218.7 | 6.1% |
| Mobile Home Park (5-15 du/ac) | 180.0 | 0.4% | -- | -- |
| Mixed Use | 288.3 | 0.6% | 94.9 | 2.7% |
| Specific Plan | 7,046.8 | 15.0% | -- | -- |
| **Total Residential Uses** | **34,576.6** | **73.6%** | **1,091.6** | **30.5%** |
| **Commercial Land Uses** | | | | |
| Mixed Use[1] | 288.3 | 0.6% | 94.9 | 2.7% |
| General Commercial | 1,550.8 | 3.3% | 52.6 | 1.5% |
| Regional Commercial | 1,303.0 | 2.8% | 442.5 | 12.4% |
| Service Commercial | 335.6 | 0.7% | -- | -- |
| Office Professional | 616.8 | 1.3% | 183.1 | 5.1% |
| Specific Plan/Commercial[1] | 7,046.8 | 15.0% | -- | -- |
| **Total Commercial Uses** | **3,806.1** | **8.1%** | **678.1** | **18.9%** |
| **Industrial Land Uses** | | | | |
| Planned Industrial | 645.3 | 1.4% | 1,613.1 | 45.1% |
| Specific Plan/Industrial[1] | 7,046.8 | 15.0% | -- | -- |
| **Total Industrial Uses** | **645.3** | **1.4%** | **1,613.1** | **45.1%** |
| **Other Land Uses** | | | | |
| Public Facility | 472.5 | 1.0% | -- | -- |
| Open Space | 3,053.9 | 6.5% | -- | -- |
| Mineral Resources | 452.5 | 1.0% | -- | -- |
| Street Rights-of-Way | 3,941.2 | 8.4% | 196.9 | 5.5% |
| **Total Other Land Uses** | **7,290.3** | **16.9%** | -- | -- |
| **Grand Total** | **46,948.3** | **100.0%** | **3,579.7** | **100.0%** |

[1]Specific Plan and Mixed Use acreage included under Residential, above.
Source: Aerial Information Systems, July 2008

The proposed General Plan includes 34,576.6 acres of residentially designated lands within the existing Town limits, and 1,091.6 acres in the annexation areas, for a total of 35,668.2 acres of residentially designated lands within the planning area. This represents a decrease of 4,213.6 acres in residential lands, or 10.6%. The proposed General Plan will also result in a total of 63,749 dwelling units, 59,513 of which will occur within the Town, and 4,236 in Annexation 2008-001. This represents an increase of 11,230 residential units, or an increase of 21.4% over the current General Plan residential units. These changes will also result in an increase in build out population from 160,517 to 194,931 residents at build out of both the General Plan and the

two annexation areas. The increase in units, when compared to the decrease in acreage, is attributable to the increase in Medium Density Residential lands (an additional 728.4 acres), and the addition of the Mixed Use designation, which in and of itself has the potential to generate 2,984 residential units.

Commercial acreage is increased under the proposed General Plan and annexations. The total commercial acreage will be 4,484.2 acres, an increase of 2,186.2 acres (95%), 678.1 acres occurring within the annexation areas. The proposed General Plan also results in an increase in commercial space, primarily associated with Annexation 2008-001. The proposed General Plan will result in a total of 51,860,766 square feet of commercial space, or 23,198,699 square feet more than under the current General Plan designations. 7,135,369 square feet of this increase will occur in Annexation 2008-001. In total, commercial square footage will increase by 81% over the existing General Plan designations.

Industrial land use designations total 2,258.4 acres under the proposed General Plan and annexation areas, as compared to 418.7 under the current General Plan designations. The vast majority of these lands occur in the annexation areas, where 1,613.1 acres of industrial lands are proposed. The proposed General Plan and annexations will also result in a total of 58,051,428 square feet of industrial space, an increase of 17,101,238 square feet over the current General Plan potential. Almost all of this increased industrial space will occur in the annexation areas (14,929,042 square feet).

Finally, the proposed General Plan and annexations result in an increase from 324.7 to 472.5 acres in Public Facility land uses, primarily associated with the addition of schools and other previously undesignated public lands in the current General Plan; and an increase from 3,013.6 to 3,053.9 acres in Open Space lands.

**Table III-41**
**Preferred Alternative General Plan**
**Land Use Designation Build Out Summary: Town & Unincorporated Lands**

**RESIDENTIAL LAND USES**

| | Town Limits | | | | | | Annexation Areas | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Land Use Designation** | **AC Dev.** | **AC Vacant** | **AC Total** | **Exist. Units** | **Future Units** | **Total Units** | **AC Dev.** | **AC Vacant** | **AC Total** | **Exist. Units** | **Future Units** | **Total Units** |
| Very Low Density Residential (1 du/5 or more gross ac) | 174.1 | 1,787.4 | 1,961.5 | | 357 | 357 | -- | -- | -- | -- | -- | -- |
| Low Density Residential (1 du/2.5 - 5 gross ac) | 390.1 | 3,113.3 | 3,503.5 | | 1,245 | 1,245 | -- | -- | -- | -- | -- | -- |
| Estate Residential (1du/1 – 2.5 gross ac) | 3,177.8 | 3,489.1 | 6,666.9 | 20,107 | 3,489 | 23,596 | 55.7 | 722.3 | 778.0 | -- | 722 | 722 |
| Estate Residential ¾ (1 du/0.75 – 1 ac) | 20.8 | 454.9 | 475.7 | | 607 | 607 | -- | -- | -- | -- | -- | -- |
| Single-Family Residential (1 du/0.4-0.9 ac) | 8,424.0 | 4,103.9 | 12,527.9 | | 6,156 | 6,156 | -- | -- | -- | -- | -- | -- |
| Medium Density Residential (4- 20 du/ac) | 745.1 | 1,180.8 | 1,925.9 | 3,775 | 17,712 | 21,487 | 41.4 | 177.3 | 218.7 | -- | 2,659 | 2,659 |
| Mobile Home Park (5-15 du/ac) | 178.5 | 1.5 | 180.0 | 1,043 | 23 | 1,066 | -- | -- | -- | -- | -- | -- |
| Mixed Use | 51.6 | 236.7 | 288.3 | | 2,130 | 2,130 | 0.00 | 94.8 | 94.8 | -- | 854 | 854 |
| Specific Plan | 1,068.6 | 5,978.2 | 7,046.8 | | 2,869 | 2,869 | -- | -- | -- | -- | -- | -- |
| **Residential Total** | **14,230.7** | **20,345.9** | **34,576.6** | **24,925** | **34,588** | **59,513** | **97.2** | **994.4** | **1,091.6** | **--** | **4,236** | **4,236** |

**COMMERCIAL AND INDUSTRIAL LAND USES**

| | Town Limits | | | | Annexation Areas | | | |
|---|---|---|---|---|---|---|---|---|
| **Land Use Designation** | **Acres Dev.** | **Acres Vacant** | **Acres Total** | **Total Potential SF** | **Acres Dev.** | **Acres Vacant** | **Acres Total** | **Total Potential SF** |
| Mixed Use[1] | 51.6 | 236.7 | 288.3 | 1,587,686 | 0.0 | 94.9 | 94.9 | 636,612 |
| General Commercial | 385.5 | 1,165.3 | 1,550.8 | 14,861,742 | 11.7 | 40.8 | 52.6 | 503,617 |
| Regional Commercial | 31.7 | 1,271.3 | 1,303.0 | 12,486,488 | 7.2 | 435.3 | 442.5 | 4,240,502 |
| Service Commercial | 146.8 | 188.7 | 335.6 | 3,215,875 | -- | -- | -- | -- |
| Office Professional | 74.2 | 542.6 | 616.8 | 5,910,597 | -- | 183.1 | 183.1 | 1,754,639 |
| Specific Plan[1] | 1,068.6 | 5,978.2 | 7,046.8 | 6,663,010 | -- | -- | -- | -- |
| **Commercial Sub Total** | **638.2** | **3,167.9** | **3,806.1** | **44,725,397** | **19.0** | **659.2** | **678.1** | **7,135,369** |
| Planned Industrial | 21.4 | 623.9 | 645.3 | 6,183,941 | 55.3 | 1,557.8 | 1,613.1 | 14,929,042 |
| Specific Plan[1] | 1,068.6 | 5,978.2 | 7,046.8 | 36,938,445 | -- | -- | -- | -- |
| **Industrial Sub Total** | **21.4** | **623.9** | **645.3** | **43,122,386** | **55.3** | **1,557.8** | **1,613.1** | **14,929,042** |
| **Grand Total Commercial & Industrial** | **659.6** | **3,791.8** | **4,451.4** | **87,847,783** | **74.2** | **2,217.1.** | **2,291.2** | **22,594,023** |

[1] Mixed Use and Specific Plan acreage included under Residential, above.

**Table III-41 (continued)**
**Preferred Alternative General Plan**
**Land Use Designation Build Out Summary: Town & Unincorporated Lands**

**Other Land Use Designations**

| | Town Limits | | | Annexation Areas | | |
|---|---|---|---|---|---|---|
| **Land Use Designation** | **Acres Dev.** | **Acres Vacant** | **Acres Total** | **Acres Dev.** | **Acres Vacant** | **Acres Total** |
| Public Facility | 353.5 | 119.1 | 472.5 | -- | -- | -- |
| Open Space | 233.3 | 2,820.6 | 3,053.9 | -- | -- | -- |
| Mineral Resources | 111.6 | 340.9 | 452.5 | -- | -- | -- |
| Street Rights-of-Way | 2,563.5 | 1,377.8 | 3,941.2 | 43.1 | 153.8 | 196.9 |
| **Grand Total Other Uses** | **3,261.8** | **4,658.5** | **7,920.3** | **43.1** | **153.8** | **196.9** |

Source: Aerial Information Systems, July 2008

**Table III-42**
**Build Out Summary – Annexation 2008-001**

| **Land Use Designation** | **Developed** | **Vacant** | **Total** | **Existing Units** | **Potential Units** | **Total Units** |
|---|---|---|---|---|---|---|
| **Residential Designations** | | | | | | |
| Estate Residential | 55.7 | 722.3 | 778.0 | | 722 | 722 |
| Medium Density Residential | 41.4 | 177.3 | 218.7 | | 2,659 | 2,659 |
| Mixed Use | 0.0 | 94.8 | 94.9 | | 854 | 854 |
| | | | **1,091.6** | **-** | **4,236** | **4,236** |
| **Commercial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Mixed Use | 0.0 | 94.9 | 94.9 | - | 636,612 | 636,612 |
| General Commercial | 11.7 | 40.8 | 52.6 | 112,202 | 391,415 | 503,617 |
| Regional Commercial | 7.2 | 435.3 | 442.5 | 69,069 | 4,171,433 | 4,240,502 |
| Office Professional | 0.0 | 183.1 | 183.1 | - | 1,754,639 | 1,754,639 |
| | | | **773.0** | **181,271** | **6,954,099** | **7,135,369** |
| **Industrial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Planned Industrial | 49.72 | 762.4 | 812.1 | **476,523** | **7,305,753** | **7,782,275** |
| | | | | | | |
| **Other Designations** | | | | | | |
| Street Rights-of-Way | 42.8 | 150.1 | 192.9 | | | |
| | | | | | | |
| **Grand Total** | **208.7** | **2,565.9** | **2,774.6** | | | |

**Table III-43**
**Build Out Summary – Annexation 2008-002**

| Land Use Designation | Developed | Vacant | Total | Existing SF | Potential SF | Total SF |
|---|---|---|---|---|---|---|
| **Industrial Designations** | | | | | | |
| Planned Industrial | 5.54 | 795.5 | 801.0 | **53,089** | **7,623,290** | **7,676,379** |
| | | | | | | |
| **Other Designations** | | | | | | |
| Street Rights-of-Way | 0.2 | 3.9 | 4.1 | | | |
| | | | | | | |
| **Grand Total** | **5.7** | **799.4** | **805.1** | | | |

**Table III-44**
**Build Out Summary – Annexations 2008-001 & 2008-002 Totals**

| Land Use Designation | Developed | Vacant | Total | Existing Units | Potential Units | Total Units |
|---|---|---|---|---|---|---|
| **Residential Designations** | | | | | | |
| Estate Residential | 55.7 | 722.3 | 778.0 | | 722 | 722 |
| Medium Density Residential | 41.4 | 177.3 | 218.7 | | 2,659 | 2,659 |
| Mixed Use | 0.0 | 94.8 | 94.9 | | 854 | 854 |
| | | | **1,091.6** | **-** | **4,236** | **4,236** |
| **Commercial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Mixed Use | 0.0 | 94.9 | 94.9 | - | 636,612 | 636,612 |
| General Commercial | 11.7 | 40.8 | 52.6 | 112,202 | 391,415 | 503,617 |
| Regional Commercial | 7.2 | 435.3 | 442.5 | 69,069 | 4,171,433 | 4,240,502 |
| Office Professional | | 183.1 | 183.1 | - | 1,754,639 | 1,754,639 |
| | | | **773.0** | **181,271** | **6,954,099** | **7,135,369** |
| **Industrial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Planned Industrial | 55.26 | 1,557.8 | 1,613.1 | **529,612** | **14,929,042** | **15,458,654** |
| | | | | | | |
| **Other Designations** | | | | | | |
| Street Rights-of-Way | 43.1 | 153.8 | 196.9 | | | |
| | | | | | | |
| **Grand Total** | **214.5** | **3,365.3** | **3,579.7** | | | |

## Summary of Impacts

The proposed General Plan and annexations will result in an increase in residential units, commercial and industrial square footage. Within the existing Town limits, this increase will be associated with changes in the distribution of land uses, including an increase in Medium Density residential units. The changes in the land use pattern within the Town, however, will not be significant, and will not significantly affect the pattern of development which has already occurred. Lower intensity residential land uses are still proposed in the southern and northwestern areas of Town. The character of these areas will not significantly change. Along the

High Desert Corridor, land use intensities will increase somewhat, as the land use map has been modified to reduce the exposure of sensitive receptors, particularly single family homes, to the potential impacts of a high-volume roadway. The changes proposed in the land use plan will not represent a significant impact to land use within the Town limits.

Annexation 2008-001

Annexation Area 2008-001 will experience the greatest change in land use patterns. This area is currently primarily designated for low density residential development of 1 unit per acre, with an 8 acre neighborhood commercial land use designation occurring along Dale Evans Parkway. The proposed land use plan for Annexation 2008-001 will result in increased residential densities, including Medium Density and Mixed Use residential development. Approximately 722 acres will be designated for Estate Residential development, which is equivalent to the Rural Living land use designation currently in effect in the area.

Annexation 2008-001 will also result in the addition of 773 acres of commercially designated lands, and 812.1 acres of industrial designated lands. These lands are currently designated Rural Living under the County General Plan.

Annexation 2008-001 is located immediately west of lands within the Town currently designated for industrial development, on the east side of Dale Evans Parkway. North of the annexation area, at the I-15/Dale Evans parkway interchange, lands within the Town are designated for commercial development, and will be in the proposed General Plan. The annexation area is also bordered on its west boundary by I-15. These currently occurring conditions are not conducive to the long term preservation of rural land uses in the area.

As development occurs in Town over the next several years, an intensification of land use would be expected in Annexation 2008-001, regardless of the current land use patterns in the area. However, the character of the existing scattered residential development, and of potentially constructed 1 acre residential lots in the future, will be changed significantly by the proposed land use designations in this annexation area. The General Plan includes policies and programs designed to provide buffers between residential and commercial or industrial land uses. The Town's Development Code also includes such standards, and would require any development to appropriately protect surrounding residential development. Further, only about 208.7 acres, or 7.5% of the 2,774.6 acres within the annexation area are currently developed. Impacts of development to existing residents will therefore be limited, and the development of the area will not displace a substantial number of homes or residents.

It is not expected that development in this area will occur in the short term. Infrastructure is not currently available, and economic conditions will not allow its extension at this time. However, in the mid- to long-term, development will occur in this area, according to the land use designations assigned under this project.

Changes in land use designations as proposed in this General Plan and Annexation effort cannot be mitigated to less than significant levels. As a result, the anticipated changes in land use

designations within Annexation 2008-001 will be significant and unavoidable, as they relate to land use.

Annexation 2008-002

Lands within Annexation 2008-002 are currently designated for a mix of Rural Living (399.5 acres) and industrial (323.7 acres) land uses. The proposed Annexation would result in all lands within the annexation area to be developed in industrial land uses (801.0 acres). The annexation area is currently vacant, and does not include any residential development. The area is bordered on the west by lands designated for industrial development, and includes a portion of an existing mining operation. The land use designations proposed under Annexation 2008-002 will therefore have no impact on the character of the area. Development of industrial uses on these lands will not displace any housing or people. The impacts associated with land use in Annexation 2008-002 are expected to be insignificant.

### 3. Mitigation Measures

The General Plan includes policies and programs to address and mitigate land use incompatibilities. Even with these policies and programs, however, the impacts associated with land use in Annexation 2008-001 will remain significant and unavoidable. The following mitigation measures are offered to help reduce impacts to the extent possible.

1. Individual project proposals, especially those involving a mix of residential and other uses, as well as those located near sensitive lands or uses, shall be fully evaluated during the project review process to assure that all land use compatibility issues are addressed and mitigated.

2. Development in currently undeveloped areas shall be controlled to assure that adequate infrastructure, including roadways, water and wastewater systems.

**Mitigation Monitoring/Reporting Program**

A. All development proposals shall be reviewed by the Planning Division to assess the potential for land use incompatibilities between residential and more urban land uses and to assure that appropriate mitigation measures are identified and implemented.
**Responsible Parties:** Planning Division, Developers, and affected land owners.

## K. Mineral Resources

### Introduction

Important mineral resources that occur in the Apple Valley area are aggregate and limestone, both of which are used in the manufacturing of cement. The availability of these resources has the potential to be significantly impacted and restricted by urbanization or development of nearby properties. This section of the EIR addresses the development of the General Plan and annexations as they relate to mineral resources, particularly those resources which have previously been identified, and are or have been mined.

California Government Code Section 65560(b) directs cities and counties to provide for the preservation of mineral resource areas, as well as other resources. The Section is one among many state and federal regulations that apply to mineral resource issues, with the various requirements having direct application to the Town of Apple Valley and its Sphere of Influence, where important mineral resources have already been identified and developed. The regulation of mineral resources is also addressed at length in Sections 2762, 2763 and 2764 of the Public Resources Code.

### Thresholds of Significance/Criteria for Determining Significance

The following thresholds or criteria are derived from Appendix G of CEQA. The proposed General Plan will have a significant effect on mineral resources if it:

a. Results in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

b. Results in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

### 1. Existing Conditions

Utilization of mineral resources frequently conflicts with urban or suburban land uses. Careful consideration of rare or valuable mineral deposits is required prior to their exclusion by urban development. Mineral deposits are nonrenewable resources, and careful and efficient utilization is essential to avoid waste or over-exploitation.

Mineral resources located within the Town and Sphere of Influence are found primarily along or near the Mojave River or in the surrounding mountains, and include sand, gravel and stone deposits that are suitable as sources of concrete aggregate. The Cemex Black Mountain Quarry mines limestone on the northwest edge of Town, adjacent to the newly approved North Pointe and Bridle Path Specific Plans. Cemex and TXI Riverside Cement operate quarries within the Sphere of Influence. The Cemex operations occur in part in Annexation 2008-002.

**State Mineral Resource Designations**

California's Department of Mines and geology has established definitions for mineral resource zones, to identify the potential for their occurrence in any area. These definitions are:

**MRZ-1:** Areas where available geologic information indicates that little likelihood exists for the presence of significant mineral resources.

**MRZ-2a:** Areas underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present. MRZ-2 is divided on the basis of both degree of knowledge and economic factors. Areas classified MRZ-2a contain discovered mineral deposits that are either measured or indicated reserves as determined by such evidence as drilling records, sample analysis, surface exposure, and mine information. Land included in the MRZ-2a category is of prime importance because it contains known economic mineral deposits.

**MRZ-2b:** Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present. For this report, areas classified MRZ-2b contain discovered mineral deposits that are significant inferred resources as determined by their lateral extension from proven deposits or their similarity to proven deposits. Further exploration work could result in upgrading areas classified MRZ-2b to MRZ-2a.

**MRZ-3a:** Areas containing known mineral occurrences of undetermined mineral resource significance. Further exploration work within these areas could result in the reclassification of specific localities into MRZ-2a or MRZ-2b categories. MRZ-3 is divided on the basis of knowledge of economic characteristics of the resources.

**MRZ-3b:** Areas containing inferred mineral occurrences of undetermined mineral resource significance. Land classified MRZ-3b represents areas in geologic settings that appear to be favorable environments for the occurrence of specific mineral deposits. Further exploration work could result in the reclassification of all or part of these areas into the MRZ-2a or MRZ-2b categories.

**MRZ-4:** Areas of no known mineral occurrences where geologic information does not rule out either the presence or absence of significant mineral resources.

**Aggregate Resource Areas (ARA) in Apple Valley**

As described in the Department of Conservation's 2006 Geological Survey, "Aggregate Availability in California," the Barstow Victorville P-C Region contained 133 million tons of permitted aggregate resources as of January, 2006. The following State-designated areas include highly significant deposits of aggregate resources, and have been identified in and near Apple Valley:

ARA-8: That part of the Mojave River MRZ-2b area between the Rock Springs Road crossing and the Bear Valley Road bridge. The size of this ARA is 2,758 acres. The aggregate resources in this area are about 71 feet thick, based on well logs in the area. ARA-8 is rated as Highly Significant and the highest probable use of material from this deposit is concrete aggregate.

ARA-9: That part of the Mojave River MRZ-2b area between the Bear Valley Road bridge and the Upper Narrows. The size of this ARA is 691 acres. The aggregate resources in this area are at least 100 feet thick, based on well logs in the area. ARA-9 is rated as Highly Significant and the highest probable use of material from this deposit is concrete aggregate.

Exhibits III-16 and III-17 delineate mineral resource zones within the planning area.

Evidence of mining, particularly surface mining in desert areas, can remain for hundreds of years, if not properly reclaimed through redistribution of unmarketable (waste) materials, recontouring, fine grading and revegetation. Nevertheless, excavation of mineral resources can have significant environmental impacts that may not be entirely mitigated by surface mining reclamation plans. The Surface Mining and Reclamation Act (SMARA) was developed to assure the sustainable utilization of mineral resources while concurrently addressing the need for protecting the environment. The Town does not currently exercise jurisdiction over local quarry reclamation plans, and instead relies on the expertise of San Bernardino County and state staff, to the extent they are empowered under SMARA. The General Plan includes policy which requires the Town to establish formal relationships with these agencies to assure the long term protection of quarries, and their proper reclamation.

# Legend

| Map No. | Name | Commodity | Mineral Resource Zone |
|---|---|---|---|
| 267 | Scheerer Quarry | Limestone | MRZ 2a |
| 268 | Unknown | Limestone | MRZ 4 |
| 269 | Unknown | Limestone | MRZ 4 |
| 270 | Piercy | Limestone | MRZ 2a |
| 271 | Unknown | Limestone | MRZ 3a |
| 272 | Unknown | Gold | MRZ 3a |
| 273 | Unknown | Gold | MRZ 3a |
| 279 | Unknown | Gold | MRZ 4 |
| 280 | Unknown | Gold | MRZ 4 |
| 300 | Unknown | Unknown | MRZ 4 |
| 301 | Unknown | Unknown | MRZ 4 |

**MRZ-1:** Areas where available geologic information indicates that little likelihood exists for the presence of significant mineral resources.

**MRZ-2a:** Areas underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present. MRZ-2 is divided on the basis of both degree of knowledge and economic factors. Areas classified MRZ-2a contain discovered mineral deposits that are either measured or indicated reserves as determined by such evidence as drilling records, sample analysis, surface exposure, and mine information. Land included in the MRZ-2a category is of prime importance because it contains known economic mineral deposits.

**MRZ-2b:** Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present. For this report, areas classified MRZ-2b contain discovered mineral deposits that are significant inferred resources as determined by their lateral extension from proven deposits or their similarity to proven deposits. Further exploration work could result in upgrading areas classified MRZ-2b to MRZ-2a.

**MRZ-3a:** Areas containing known mineral deposits of undetermined significance. Further exploration work within these areas could result in the reclassification of specific localities into MRZ-2a or MRZ-2b categories. MRZ-3 is divided on the basis of knowledge of economic characteristics of the resources.

**ARA-10:** That part of the Mojave River MRZ-2b between the Upper Narrows and Highway 15 bridge. The size of this ARA is 119 acres. The aggregate resources in this area are about 40 feet thick, based on well logs in the area. ARA-10 is rated as Significant. The highest probable use of material from this deposit is concrete aggregate.

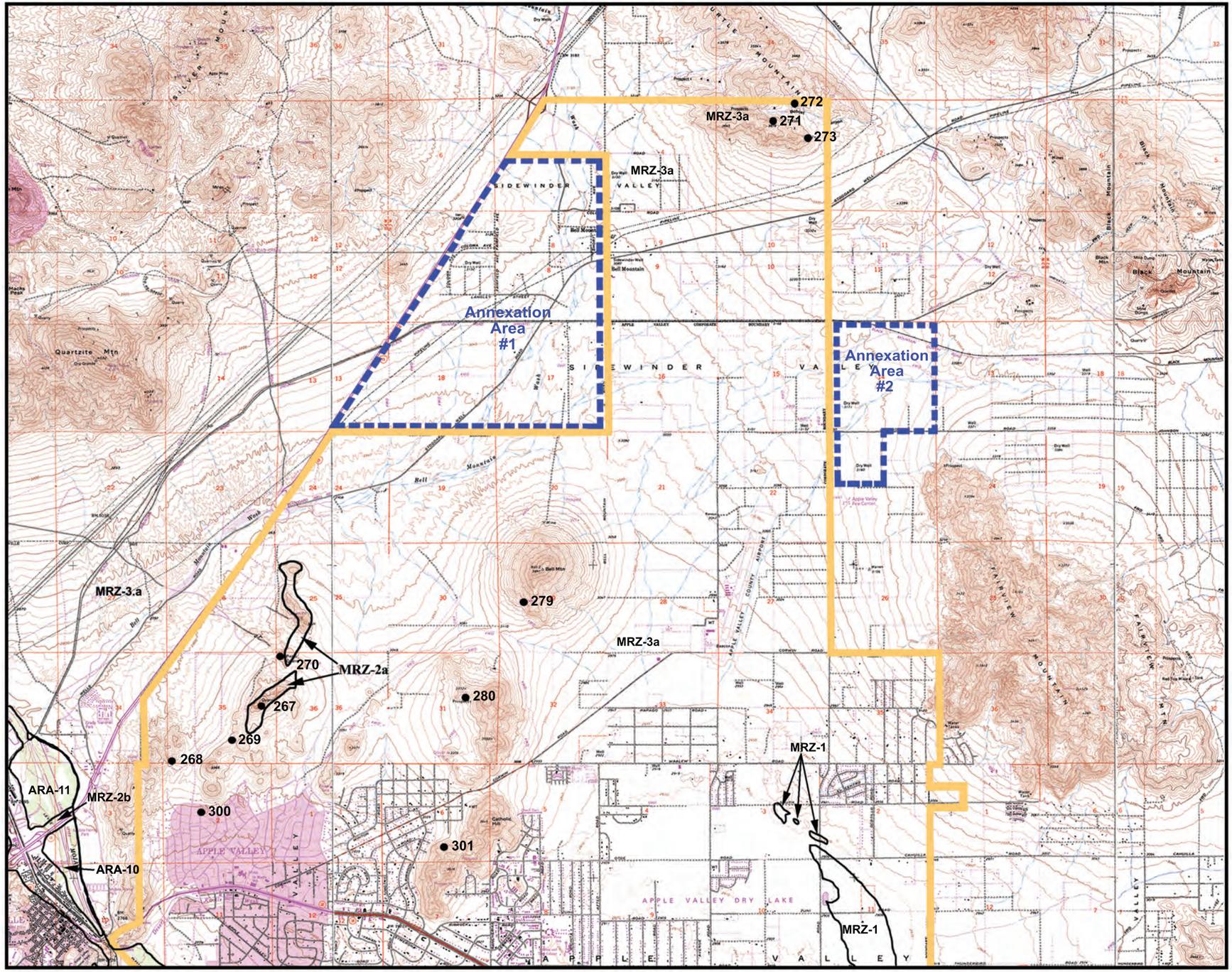
**ARA-11:** That part of the Mojave River MRZ-2b between the Highway 15 bridge and a pipeline crossing near the Lowers Narrows. The size of this ARA is 290 acres. The aggregate resources in this area are about 42 feet thick, based on well logs in the area. ARA-10 is rated as Highly Significant. The highest probable use of material from this deposit is concrete aggregate.

**Source: USGS 7.45 Minute Maps;**

Apple Valley North, CA 1970, revised 1993
Fairview Valley, CA 1993
Helendale, CA 1956 revised 1993
Turtle Valley, CA 1970, revised 1993
Victorville, CA 1956, revised 1993

0 2640 5280
SCALE IN FEET

N



# Legend

**MRZ-1:** Areas where available geologic information indicates that little likelihood exists for the presence of significant mineral resources.

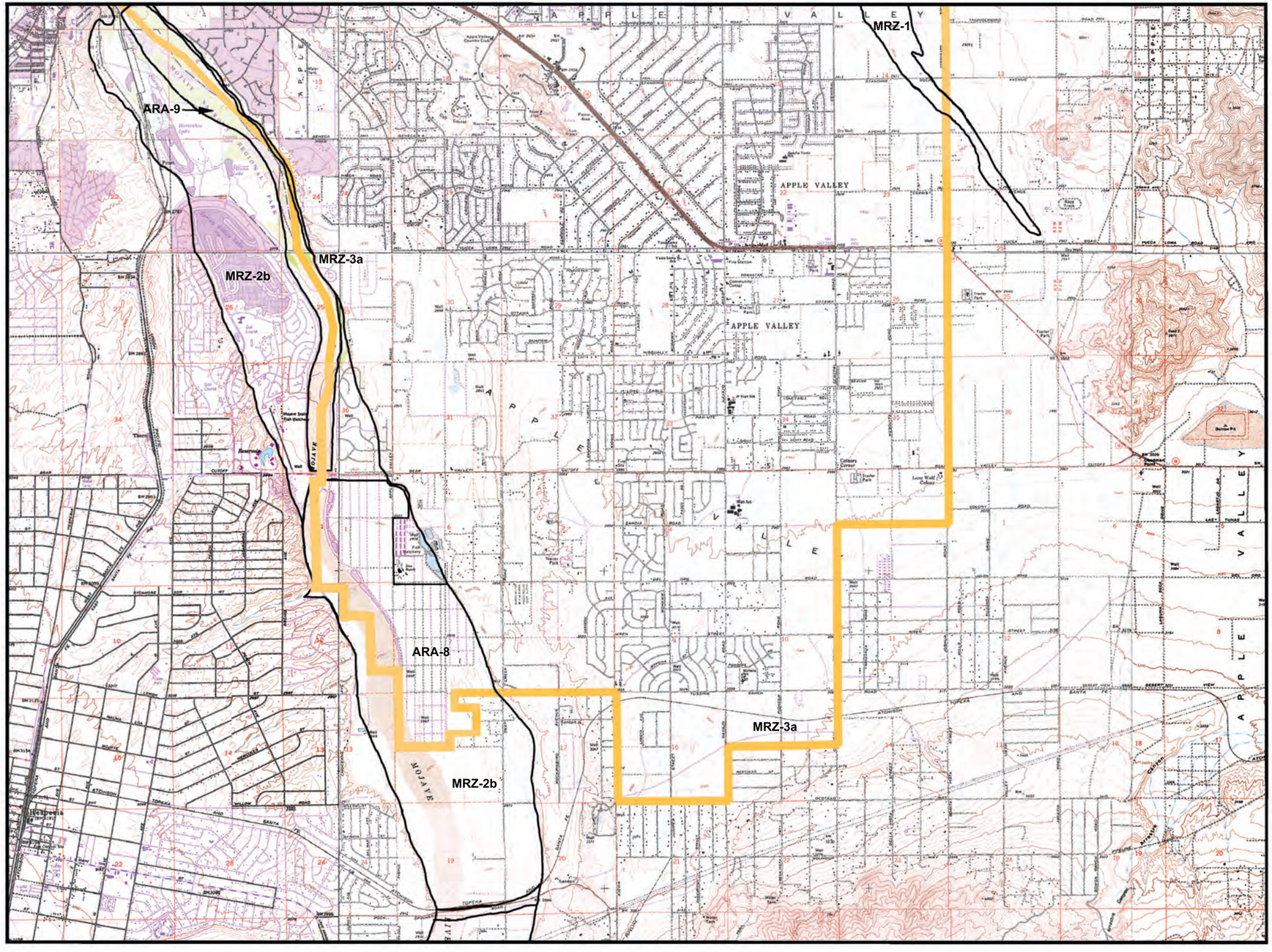
**MRZ-2a:** Areas underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present. MRZ-2 is divided on the basis of both degree of knowledge and economic factors. Areas classified MRZ-2a contain discovered mineral deposits that are either measured or indicated reserves as determined by such evidence as drilling records, sample analysis, surface exposure, and mine information. Land included in the MRZ-2a category is of prime importance because it contains known economic mineral deposits.

**MRZ-2b:** Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present. For this report, areas classified MRZ-2b contain discovered mineral deposits that are significant inferred resources as determined by their lateral extension from proven deposits or their similarity to proven deposits. Further exploration work could result in upgrading areas classified MRZ-2b to MRZ-2a.

**MRZ-3a:** Areas containing known mineral deposits of undetermined significance. Further exploration work within these areas could result in the reclassification of specific localities into MRZ-2a or MRZ-2b categories. MRZ-3 is divided on the basis of knowledge of economic characteristics of the resources.

**ARA-8:** That part of the Mojave River MRZ-2b area between the Rock Springs Road crossing and the Bear Valley Road bridge. The aggregate resources in this area occupy 2,758 acres, and are about 71 feet thick, based on well logs in the area. ARA-8 is rated as Highly Significant and the highest probable use of material from this deposit is concrete aggregate.

**ARA-9:** That part of the Mojave River MRZ-2b area between the Bear Valley Road bridge and the Upper Narrows. The size of this ARA is 691 acres. The aggregate resources in this area are at least 100 feet thick, based on well logs in the area. ARA-9 is rated as Highly Significant and the highest probable use of material from this deposit is concrete aggregate.




**Source: USGS 7.45 Minute Maps;**

**Apple Valley North, CA 1970, revised 1993**
**Apple Valley South, CA 1971, revised 1980**
**Fairview Valley, CA 1993**
**Fifteenmile Valley, CA 1971**
**Hesperia, CA 1956, revised 1980**
**Victorville, CA 1956, revised 1993**

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**Apple Valley General Plan Draft EIR**
**Mineral Resource Zones South / Mines and Prospects**
**Apple Valley, California**

### 2. Project Impacts

The Town of Apple Valley has designated 452.5 acres as mineral resources land use. Of this, approximately 111.56 acres are developed for mining and processing of aggregate materials, and an additional 340.95 acres are designated for the use and production of mineral resources. Mining activities may be incompatible with surrounding land uses, as for example, dust, noise, and heavy truck traffic may create conflicts with residential and commercial uses. The designation of mineral resources land use therefore has some impact on the potential uses of adjacent lands and development proposals could be submitted to the Town that may generate land use conflicts with aggregate and limestone quarries. However, thoughtful application of the Town's land use policies will reduce potential impacts from adjacent conflicting land uses to less than significant levels.

CEMEX Incorporated owns a mineral extraction operation in the planning area and was granted a permit in December 2005 to build a 4.5 million metric ton per year aggregate processing plant. Several quarries within the Black and White Mountains, and the Alvic, and Piercy quarries are also mined for limestone.

According to the California Air Resources Board 2007 Almanac (Appendix A), the Cemex Black Mountain Quarry emits 4,754 tons of Oxides of Nitrogen (NOx), 277 tons of Particulate Matter PM10, and 183 tons of Particulate matter PM2.5 per year. In addition to generating noise and light impacts, mineral resource operations in or near the planning area may therefore impact the air quality of the Town and the two annexation areas. Application of the Town's Development Standards for lighting and noise will limit other impacts to less than significant levels.

**Annexation 2008-001 and 2008-002**

Impacts from mineral resource operations will impact the two annexation areas to the same extent as they impact other northern parts of the planning area. Land use designations within the annexation areas have been determined as compatible with mineral resource operations and implementation of the Town's policies and standards concerning effective buffering, maintenance of air quality, and control of noise and light emissions will reduce potential impacts in these areas to less than significant levels.

### 3. Mitigation Measures

The following mitigation measures shall be implemented to reduce the impacts resulting from mineral resource extraction to acceptable levels:

1. The Town will allow aggregate, limestone and other mineral resource extractions only in cases where all residual hazards to public health and safety are effectively mitigated.

2. Development proposals adjacent to lands designated for Mineral Resources shall be reviewed to assure the inclusion of adequate buffering.

3. The Town shall cooperate with the Mojave Desert Air Quality Management District to ensure mineral extraction operations' compliance with air quality standards.

4. The Town shall coordinate closely with San Bernardino County and the State Department of Mines and Geology to assure that reclamation plans are current and adequately implemented at existing mining operations.

**Mitigation Monitoring/Reporting Program**

A. Town staff shall review development proposals for the inclusion of buffering when adjacent to quarries.
**Responsible Party**: Planning Division

B. Town staff will establish contractual arrangements with San Bernardino County, the Mojave Desert Air Quality Management District and the California Department of Mines and Geology to assure compliance with all local, regional and state requirements.
**Responsible Party**: Town Engineer, County Geologist, Mojave Desert Air Quality Management District, Department of Mines and Geology.

## L. Noise

### Introduction and Background

This section describes existing conditions in the planning area noise environment and analyses the potential impacts of the various potential sources of noise associated with build out of the proposed General Plan and annexations. An acoustical analysis has been prepared in conjunction with the General Plan, and the results have been used to prepare the analysis of noise impacts presented in this section of the EIR[77]. The study is included in its entirety in Appendix E of this EIR. This section also sets forth noise-related mitigation measures that will effectively reduce construction, operational and traffic noise impacts to acceptable levels.

### Thresholds of Significance/Criteria For Determining Significance

The following thresholds or criteria are derived from Appendix G of the CEQA Guidelines, which are used to determine the level of potential effect. Build out of the proposed General Plan and annexations will have a significant effect on noise levels if it:

a. Generates or exposes persons to noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

b. Generates or exposes persons to excessive ground-borne vibration or ground-borne noise levels;

c. Causes a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

d. Causes a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;

e. If located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, a project would expose people residing or working in the project area to excessive noise levels;

f. If located within the vicinity of a private airstrip, a project would expose people residing or working in the project area to excessive noise levels.

[77] "Town of Apple Valley Noise Element Update, Technical Study Report", prepared by Urban Crossroads, Inc., December 9, 2008.

## 1. Existing Conditions

Although noise has been accepted as a necessary by-product of urban development, it has in recent years begun to receive attention as a potential environmental hazard. Excessive noise or prolonged exposure to noise can contribute to physical impairments, both temporary and permanent, which may include hearing loss, fatigue, stress, anxiety and annoyance. A variety of components of the urban environment generate noise; these include construction equipment and activities, motor vehicles, rail and air traffic, mechanical equipment, household appliances, and other sources.

The Town of Apple Valley generally enjoys a quiet noise environment. The community noise environment is dominated primarily by motor vehicle traffic on highways and major arterials, including U.S. Interstate 15, which forms a portion of the Town's northwest boundary, State Route 18 in the central portion of the planning area, and other roadways. Other noise generators in the local environmental include operations associated with general aviation aircraft at the Apple Valley Airport in the northeast portion of the planning area, and rail lines that serve local and regional mineral extraction operations and have a limited impact on the portions of the planning area to the north, south and west.

There are a variety of noise sensitive land uses throughout the planning area, including but not limited to schools, hospitals, rest homes, long-term care facilities, residential uses, places of worship, libraries, and passive recreation areas. Potential land use incompatibilities related to noise occur when residential areas or other sensitive receptors are located in proximity to industrial and commercial uses.

### Noise Rating Terminology

The A-weighted decibel (dBA) scale is the most common unit for measuring noise levels. It reflects the human ear's response by de-emphasizing the very low and high frequency components of sound. The decibel scale threshold of hearing ranges from 0 dBA to140 dBA, with the higher end of this continuum representing a threshold that is considered painful to the human ear. Most common sounds range between 40 dBA (very quiet) and 100 dBA (very loud). For example, a rural night-time environment typically measures about 25 dBA, while a jet flying overhead generates 105 dBA. The logarithmic nature of the decibel means that a doubling of sound energy of a noise source results in an increase in the decibel rating of only 3 dBA. In order for a human ear to perceive a sound as being twice as loud, the sound must increase by nearly 10 dBA.

The average intensity of a sound over a 24-hour period is known as the Community Noise Equivalent Level (CNEL). To account for the decrease in background noise levels that occur during evening and nighttime hours, as well as people's increased sensitivity to and decreased tolerance for noise during these times, weighting penalty factors are added for sounds that occur in evening and nighttime hours. For sounds that occur during evening hours (from 7 p.m. to 10 p.m.), 5 decibels are added, and for sounds that occur during nighttime hours (between 10 p.m. and 7 a.m.), 10 decibels are added.

Noise sources can be classified as either “line sources” (such as a busy street) or “point sources” (for example, a commercial air compressor). There are a number of factors that affect noise transmission, such as temperature, wind speed and direction, as well as the type of ground surface, whether hard or soft, and intervening vegetation and walls. Sound transmission is diminished at a rate of approximately 4.5 dBA per doubling of distance under “soft site” conditions, such as that which occurs over natural surfaces, such as earth and vegetation. Under “hard site” conditions, such as hard ground surfaces including asphalt, concrete, and stone, a doubling of distance typically results in a noise reduction of 3 dBA.

A noise compatibility matrix has been developed by the State of California to evaluate the noise compatibility of various land uses. A range of allowable exterior noise levels of different land uses is shown Table III-45, based on 1998 State of California General Plan Guidelines. This table illustrates the standards used for maximum outdoor noise levels. Where sensitive land uses will be exposed to noise levels of 60 dBA CNEL or higher, an acoustical study may be required. In residential areas in California, the standard is a CNEL of 65 dBA. Mitigation measures are required where land uses will be exposed to noise levels exceeding 65 dBA CNEL. As discussed below, the Town of Apple Valley has consistently implemented the noise levels shown in Table III-45 for several years.

## Table III-45
## Land Use Compatibility for Community Noise Environments

| Land Uses | CNEL (dBA) | | | | | | |
|---|---|---|---|---|---|---|---|
| | 50 | 55 | 60 | 65 | 70 | 75 | 80 |
| Residential - Single Family Dwellings, Duplex, Mobile Homes | A | B | B | B | C | D | D |
| Residential – Multiple Family | A | A | B | B | C | D | D |
| Transient Lodging: Hotels and Motels | A | A | B | B | C | C | D |
| School Classrooms, Libraries, Churches, Hospitals, Nursing Homes and Convalescent Hospitals | A | A | A | B | C | C | D |
| Auditoriums, Concert Halls, Amphitheaters | B | B | B | C | C | C | C |
| Sports Arenas, Outdoor Spectator Sports | B | B | B | B | B | C | C |
| Playgrounds, Neighborhood Parks | A | A | A | A | C | D | D |
| Golf Courses, Riding Stables, Water Recreation, Cemeteries | A | A | A | A | C | C | D |
| Office Buildings, Business, Commercial and Professional | A | A | A | B | B | D | D |
| Industrial, Manufacturing, Utilities, Agriculture | A | A | A | A | B | D | D |

Source: *California Department of Health Services, "Guidelines for the Preparation and Content of the Noise Element of the General Plan," 1990*

A **Normally Acceptable:** With no special noise reduction requirements assuming standard construction.

B **Conditionally Acceptable:** New construction or development should be undertaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation features included in the design.

C **Normally Unacceptable:** New construction is discouraged. If new construction does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

D **Clearly Unacceptable:** New construction or development should generally not be undertaken.

## Town of Apple Valley Noise Standards

Town of Apple Valley Noise Ordinance

The Town of Apple Valley Development Code, Section 9.73, sets forth community-wide noise standards and establishes regulations for noise measurement and monitoring. Intended to regulate excessive noise from existing uses and their activities while underscoring the value of an acceptable noise environment, the Ordinance cites special provisions, and exemptions to the ordinance. It defines violations as a nuisance, and provides procedures, remedies and penalties to which violators are subject. Table III-46, below, shows the exterior noise limits established by the Town of Apple Valley in its Noise Ordinance.

**Table III-46**
**Exterior Noise Limits[1]**

| Receiving Land Use Category | Time Period | Noise Level (dBA) |
|---|---|---|
| Single Family Residential | 10 p.m. - 7 a.m. | 40 |
| | 7 a.m. - 10 p.m. | 50 |
| Multiple Dwelling Residential, Public Space | 10 p.m. - 7 a.m. | 45 |
| | 7 a.m. - 10 p.m. | 50 |
| Limited Commercial & Office | 10 p.m. - 7 a.m. | 55 |
| | 7 a.m. - 10 p.m. | 60 |
| General Commercial | 10 p.m. - 7 a.m. | 60 |
| | 7 a.m. - 10 p.m. | 65 |
| Light Industrial | Any Time | 70 |
| Heavy Industrial | Any Time | 75 |

[1]Levels not to be exceeded more than 30 minutes in any hour.
Source: Town of Apple Valley Development Code, Section 9.73.050.

Section 9.73 also establishes standards for construction activities, which represent a temporary, but often disruptive, noise source. From 7 a.m. to 7 p.m. weekday and on Saturdays, the maximum noise levels allowed for mobile and stationary equipment near single-family residential development are 75 dBA Leq and 60 dBA Leq, respectively. These levels are reduced to 60 dBA Leq for mobile equipment, and 50 dBA Leq for stationary equipment during weekday nighttime hours between 7 p.m. to 7 a.m. and all day Sundays and holidays. These levels are increased by about 5 dBA Leq, across the board, for multi-family residential development, and by another 5 dBA Leq for areas characterized as “semi-residential/commercial.”

Other Noise Standards and Regulations

A variety of other noise standards and regulations were considered in the preparation of the acoustical analysis for the General Plan. The following describes these standards.

Based on the Federal Highway Program Manual Vol. 7, Ch. 7, Section 3, 1982 use compatibility chart for community noise, “normally acceptable” noise limits are 50 to 60 db for residential land uses (single and multi family dwellings, group quarters, and mobile homes), and 50 to 65 db for commercial land uses. For residential, transient lodging, schools, libraries and commercial uses noise levels Noise levels of up to 70 db are considered “conditionally acceptable.” For

recreational uses, however, noise exposure up to only 65 db is considered "conditionally acceptable."

An additional source for establishing guidelines for compatible land uses and limiting human exposure to noise comes from the California Department of Health Services.[78] Based on these guidelines, an exterior noise limit of 60 db is considered "normally acceptable" for residential land uses (including single-family dwellings, duplexes, and mobile homes); for multifamily residential dwellings and transient lodging, the standard is 65 db. Noise levels up to 70 db are "normally acceptable" for commercial land uses, while noise levels of up to 70 db are considered "conditionally acceptable" for residential, lodging, schools, libraries, churches and hospitals.

The California Administrative Code requires acoustical analysis to demonstrate that residential units are designed to limit interior noise levels, with doors and windows closed, to 45 CNEL in any habitable room. The Code further implements noise insulation standards for new multifamily structures within the 60 CNEL contour adjacent to roads, railroads, airports, industrial areas, and rapid transit lines.

**Existing Noise Level Measurements in the General Plan Area**

Two types of noise monitoring were conducted to establish a baseline for the Town's noise environment, and both have been used in the noise analysis conducted for the General Plan. First, four sites were monitored for a 24-hour period. A summary of the data collected at these sites is shown in Table III-47, below. Hourly noise levels at these locations ranged between 49.1 dBA Leq to 66.7 dBA Leq; the weighted 24-hour noise levels ranged from 60.5 dBA CNEL to 65.7 dBA CNEL. Data indicate that traffic peak hours, at about 7:00 a.m. and 6:00 p.m., generally resulted in the highest noise levels.

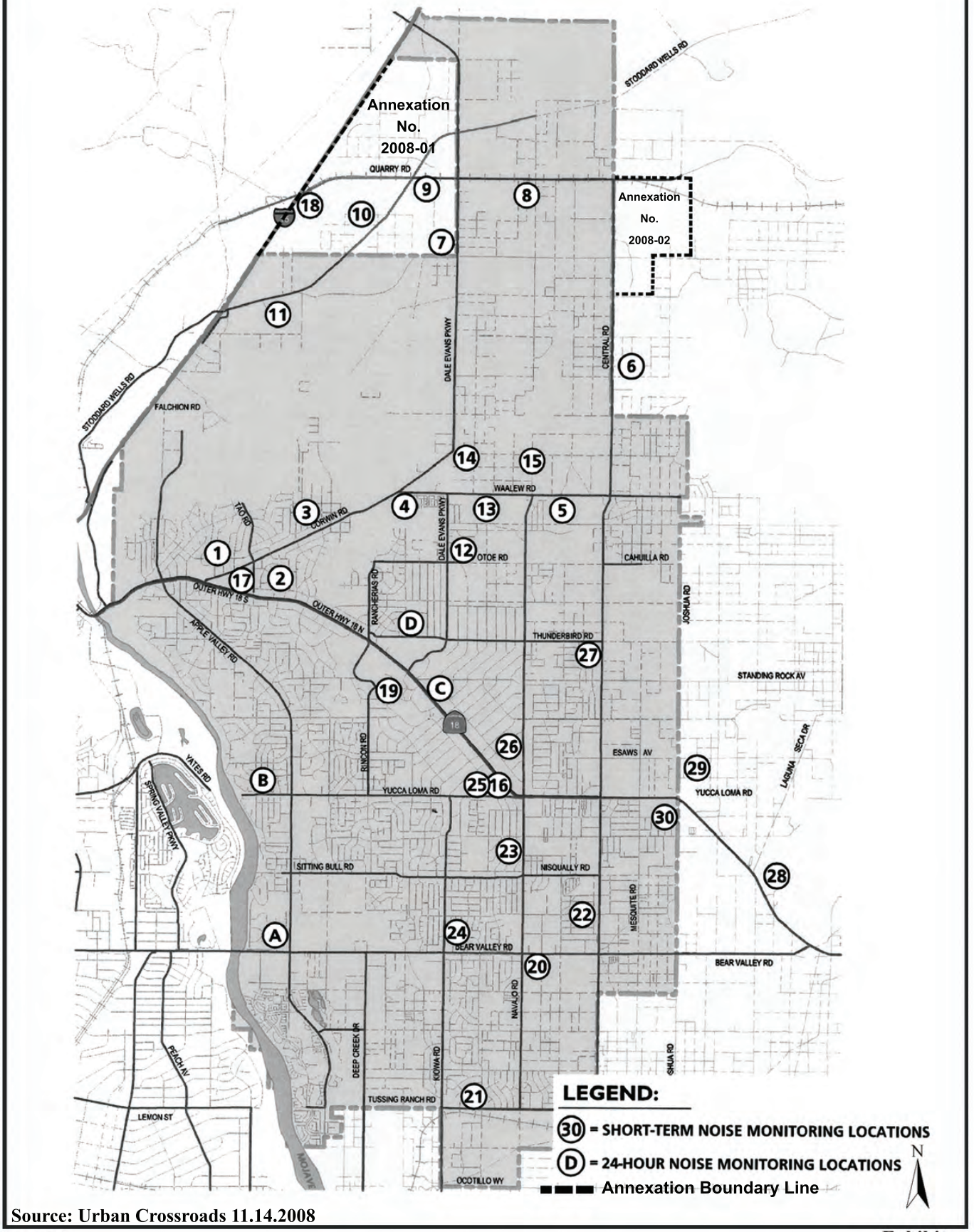
In addition, short term monitoring was performed at 30 sites, as shown on Exhibit III-18; the results of the short-term monitoring are shown in Table III-48. Data shown in this table demonstrate that existing residential neighborhoods adjacent to Highway 18, Bear Valley Road, Central Road, Waalew Road and Corwin Road currently experience exterior noise levels approaching 65 dBA CNEL.

[78] California Department of Health Services, "Guidelines for the Preparation and Content of the Noise Element in the General Plan," 1990.

**Table III-47**
**Existing (Ambient) 24-hour Noise Level Measurements[1]**

| Observer Location[2] | Description | Hourly Noise Levels (1h-Leq) Minimum | Hourly Noise Levels (1h-Leq) Maximum | 24-Hour Noise Levels (CNEL) |
|---|---|---|---|---|
| A | Located in a residential area behind a 5-foot high sound wall. | 49.1 | 57.8 | 60.5 |
| B | Located in a residential area near the intersection of Apple Valley Rd. and Yucca Loma Rd. | 58.1 | 66.6 | 69.7 |
| C | Located in a residential area approximately 200 feet north of the 18 Highway. | 48.0 | 66.7 | 65.1 |
| D | Located at the Vista Campana Middle School approximately 200 feet from Thunderbird Rd. | 52.2 | 66.5 | 65.7 |

[1] Noise measurements taken by Urban Crossroads, Inc. on June 18 and 19, 2008.
[2] See Exhibit III-18 for the location of the monitoring sites, and Appendix C of the Noise Impact Study for Study Area Photos.
[3] Taken with a Quest DL Type 2 noise dosimeter.




Source: Urban Crossroads 11.14.2008

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**Apple Valley General Plan Draft EIR**
**Noise Monitoring Locations in the Study Area**
**Apple Valley, California**

Exhibit
**III-18**

## Table III-48
## Existing (Ambient) Noise Level Measurements[1]

| Observer Location[2] | Description | Time Of Measurement | Primary Noise Source | Measured Noise Levels (Leq Dba) | Calculated Noise Levels (Leq CNEL) |
|---|---|---|---|---|---|
| 1 | Located 50 feet from the road centerline by the Valley Crest Residential Care. | 8:30 a.m. | traffic noise from Corwin Road | 65.2 | 65.8 |
| 2 | Located approximately 150 feet from the road centerline by the Corwin Park. | 8:50 a.m. | traffic noise from Corwin Road | 56.5 | 57.1 |
| 3 | Located 50 feet from the road centerline in a residential area along Corwin Road south of Choco Road. | 9:10 a.m. | traffic noise from Corwin Road | 66.8 | 67.4 |
| 4 | Located 50 feet from the road centerline in front of the Rancho Del Lago residential community near a 7-foot high masonry wall. | 9:30 a.m. | traffic noise from Corwin Road | 62.1 | 62.7 |
| 5 | Located 50 feet from Waalew Road centerline in a single family front yard across the Specific Plan area. | 9:50 a.m. | traffic noise from Waalew Road. | 63.2 | 63.8 |
| 6 | Located 50 feet from Central Road near residential developments. | 10:20 a.m. | traffic noise from Central Road. | 62.5 | 63.1 |
| 7 | Located approximately 100 feet from Dale Evans Parkway south of Johnson. | 10:40 a.m. | traffic noise from Dale Evans Pkwy. | 59.4 | 60.0 |
| 8 | Located 50 feet from Quarry Road centerline east of Dale Evans Pkwy. | 11:10 a.m. | traffic noise from Quarry Rd. | 62.1 | 62.6 |
| 9 | Located 30 feet from the centerline of Quarry Road in front of a house. | 11:30 a.m. | traffic noise from Quarry Rd. | 62.5 | 63.0 |
| 10 | Located 50 feet from the centerline of Stoddard Wells Road by a single family home. | 11:50 a.m. | traffic noise from Stoddard Wells Rd. | 57.5 | 58.0 |
| 11 | Located 50 feet form Stoddard Wells Road west of Johnson Road. | 8:50 a.m. | traffic noise from Stoddard Wells Rd. | 61.5 | 62.1 |

## Table III-48
## Existing (Ambient) Noise Level Measurements[1]

| Observer Location[2] | Description | Time Of Measurement | Primary Noise Source | Measured Noise Levels (Leq Dba) | Calculated Noise Levels (Leq CNEL) |
|---|---|---|---|---|---|
| 12 | Located 50 feet from Dale Evans Parkway south of Waalew Rd. near single family homes. | 9:20 a.m. | traffic noise from Dale Evans Pkwy. | 58.4 | 59.0 |
| 13 | Located 100 feet from Waalew Rd. near a gas station east of Dale Evans Pkwy. south. | 9:40 a.m. | traffic noise from Waalew Rd. | 61.1 | 61.7 |
| 14 | Located 50 feet from the centerline of Stoddard Wells Road by a single family home. | 11:50 a.m. | traffic noise from Stoddard Wells Rd. | 57.5 | 58.0 |
| 15 | Located 50 feet form Stoddard Wells Road west of Johnson Road. | 8:50 a.m. | traffic noise from Stoddard Wells Rd. | 61.5 | 62.1 |
| 16 | Located 50 feet from Dale Evans Parkway south of Waalew Rd. near single-family homes. | 9:20 a.m. | traffic noise from Dale Evans Pkwy. | 58.4 | 59.0 |
| 17 | Located 100 feet from Waalew Rd. near a gas station east of Dale Evans Pkwy. south. | 9:40 a.m. | traffic noise from Waalew Rd. | 61.1 | 61.7 |
| 18 | Located 100 feet from Dale Evans Pkwy. approximately 500 feet from Waalew Rd. | 10:00 a.m. | traffic noise from Dale Evans Pkwy. | 53.9 | 54.5 |
| 19 | Located 400 feet from Waalew Rd. near a single family home east of Dale Evans Pkwy. | 10:20 a.m. | traffic noise from Waalew Rd. | 47.6 | 48.2 |
| 20 | Located at the Apple Valley High School approximately 100 feet from Bear Valley Rd. | 2:00 p.m. | Traffic noise from Bear Valley Rd. | 64.1 | 69.2 |
| 21 | Located in a residential area approximately 100 feet north of Tussing Ranch Rd. | 2:20 p.m. | Traffic noise from Tussing Ranch Rd. | 57.1 | 62.2 |
| 22 | Located in a residential area approximately 100 feet west of Central Rd. | 2:50 p.m. | Traffic noise from Central Rd. | 57.0 | 61.3 |
| 23 | Located at the Apple Valley Middle School approximately 100 feet east of Navajo Rd. | 3:00 p.m. | Traffic noise from Navajo Rd. | 62.2 | 66.5 |

## Table III-48
## Existing (Ambient) Noise Level Measurements[1]

| Observer Location[2] | Description | Time Of Measurement | Primary Noise Source | Measured Noise Levels (Leq Dba) | Calculated Noise Levels (Leq CNEL) |
|---|---|---|---|---|---|
| 24 | Located in a residential area approximately 100 feet west of Kiowa Rd. | 3:20 p.m. | Traffic noise from Kiowa Rd. | 59.9 | 64.2 |
| 25 | Located in a residential area approximately 40 feet from Yucca Loma Rd. | 1:40 p.m. | Traffic noise from Yucca Loma Rd. | 59.8 | 64.1 |
| 26 | Located in a residential area approximately 100 feet from Highway 18. | 1:20 p.m. | Traffic noise from Highway 18 | 53.4 | 58.3 |
| 27 | Located in a residential area approximately 150 feet from Central Rd. | 11:50 p.m. | Traffic noise from Central Rd. | 67.1 | 71.4 |
| 28 | Located at the Horseman's Center Park. | 12:10 p.m. | Traffic noise from Highway 18. | 53.4 | 57.7 |
| 29 | Located at a park by the swimming pool approximately 150 feet from Dale Evans Pkwy. | 11:10 a.m. | Traffic noise from Dale Evans Pkwy. | 59.6 | 65.0 |
| 30 | Located in a residential area approximately 100 feet west of Joshua Rd. | 3:00 p.m. | Traffic noise from Joshua Rd. | 54.5 | 58.8 |

[1] All measurements were taken with a Larson Davis 824 Series Type 1 noise meter.

[2] See Noise Technical Study Exhibit III-18 for the location of the monitoring sites, and Noise Technical Study Appendix C for Study Area Photos.

[3] Noise measurements 1 to 10 taken by Urban Crossroads, Inc. on March 24, 2006.

[4] Noise measurements 11 to 16 taken by Urban Crossroads, Inc. on January 26, 2007.

[5] Noise measurements 16, 17 and from 25 to 30 taken by Urban Crossroads, Inc. on May 20, 2008.

[6] Noise measurements 18 to 24 taken by Urban Crossroads, Inc. on June 9, 2008.

**Primary Noise Sources**

As previously noted, the primary noise source in Apple Valley is motor vehicle traffic. Other noise sources include: air and rail traffic, which generally have the greatest impact only on certain portions of the planning area; noise from industrial and commercial operations, including truck loading and back-up beepers; noise from operation of mechanical equipment such as HVAC systems associated with residential and commercial development; and construction noise, which impacts development in proximity to the construction activities and equipment. Each of these noise sources is discussed categorically, below.

Motor Vehicle Noise

A variety of factors contribute to noise generated by motor vehicles, which is the major noise source in the General Plan area. Noise levels are affected by engine vibration, tire and roadway interaction, the operation of exhaust systems, as well as traffic volumes, and the types and speed of vehicles traveling on roadways. U.S. I-15 runs along the northwestern Town limits; currently there are no noise sensitive uses near U.S. I-15. The primary thoroughfare through Town, State Route 18, is adjacent or in proximity to residential uses that are impacted by traffic noise. Schools and the St. Mary Medical Center are also located on major roadways.

Existing noise levels along major roadways in the study area are shown on Table III-49. These levels were determined based on modeling using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model FHWA-RD-77-108. This model is currently in use nationwide and has undergone extensive field measurement verification. Using various data inputs, it calculates equivalent noise levels during typical daytime, evening and nighttime hours. These inputs include factors such as traffic volume, vehicle mix and speed, roadway geometry, site conditions and the percentage of total average daily traffic (ADT) that moves through on an hourly basis over a 24-hour period. Results are weighted for a 24-hour period and then expressed as CNEL.

Noise contours were calculated using “soft-site” conditions in order to account for the effective noise attenuation over natural surfaces such as normal earth and ground vegetation. Noise drops off at a rate 4.5 dBA per doubling of distance over soft ground, as compared to 3.0 dBA per doubling of distance over hard ground, such as concrete, stone, or hard-packed earth. The acoustical analysis compared modeled results for existing conditions with the noise level measurements; based on this comparison, soft-site conditions are consistent with and appropriate for the development of noise contours boundaries in the planning area.

As shown on Table III-49, along major roadways such as State Route 18, Bear Valley Road, Central Road, Waalew Road and Corwin Road, noise levels at existing residential development approach the 65 dBA CNEL noise level limits at the road right of way. These are unmitigated, exterior noise levels.

**Truck and Bus Routes**

Truck Routes

The percentage of trucks along a roadway generally increases noise impacts. Currently, key truck routes in the planning area include State Route 18, Bear Valley Road, Corwin Road, Navajo Road, Yucca Loma Road, Central Road, and Apple Valley Road (also please see Exhibit III-31 in Traffic/Circulation, Existing Truck Routes). As shown in Table III-49, below, noise levels along truck routes in the City are currently high (for example, 71.1 dBA CNEL at 100 feet from the roadway centerline along Apple Valley Road between Sitting Bull Road and Bear Valley Road).

Bus Routes

Currently, there are three dedicated bus routes in the Town, operated by the Victor Valley Transit Authority (VVTA). These routes are illustrated in the Traffic and Circulation discussion (please see Exhibit III-30, Existing and Proposed Public Transportation Routes). The VVTA is a regional transit system designed to link the high desert cities along a network of interconnected routes. It is operated through a joint powers agreement between the communities of Adelanto, Apple Valley, Hesperia, and Victorville as well as the County of San Bernardino.

In terms of noise generation, buses are generally equivalent to heavy trucks, with noise impacts generated by bus brakes, shifting gears and engine noise during acceleration from bus stops. The ambient noise level at a particular location affects whether conditions or changes in bus service have an adverse impact on the noise environment, in that bus stops located near noise sensitive uses create greater noise impacts when they occur on local streets. Most of the existing bus routes in Apple Valley are located along major roadways.

## Table III-49
## Existing Noise Exposure Adjacent to General Plan Study Area Roadways

| | | | Distance to Contour (Feet) | | | |
|---|---|---|---|---|---|---|
| **Roadway** | **Segment** | **CNEL at 100 feet (dBA)** | **70 dBA CNEL** | **65 dBA CNEL** | **60 dBA CNEL** | **55 dBA CNEL** |
| **Alembic Street** | between Norco Street & Saugus Road | - | - | - | - | - |
| | between Saugus Road & Stoddard Wells Road | - | - | - | - | - |
| | n/o High Desert Corridor | - | - | - | - | - |
| | s/o High Desert Corridor | - | - | - | - | - |
| **Apple Valley Road** | between Bear Valley Road & Tussing Ranch Road | 64.3 | RW | 90 | 193 | 417 |
| | between Sitting Bull Road & Bear Valley Road | 71.1 | 118 | 255 | 550 | 1,184 |
| | between SR-18 & Yucca Loma Road | 69.5 | 92 | 198 | 427 | 920 |
| | between Yucca Loma Road & Sitting Bull Road | 70.5 | 109 | 234 | 504 | 1,086 |
| | n/o SR-18 | 63.3 | RW | 77 | 166 | 357 |
| **Bear Valley Road** | between Apple Valley Road & Deep Creek Road | 72.5 | 146 | 315 | 678 | 1,461 |
| | between Central Road & SR-18 | 66.3 | RW | 123 | 265 | 571 |
| | between Deep Creek Road & Kiowa Road | 72.6 | 148 | 319 | 687 | 1,480 |
| | between Kiowa Road & Navajo Road | 71.2 | 120 | 258 | 555 | 1,196 |
| | between Navajo Road & Central Road | 68.7 | 82 | 176 | 380 | 819 |
| | w/o Apple Valley Road | 73.5 | 170 | 366 | 789 | 1,700 |
| **Central Road** | between Bear Valley Road & Tussing Ranch Road | 62.0 | RW | RW | 135 | 291 |
| | between Nisqually Road & Bear Valley Road | 66.0 | RW | 116 | 250 | 539 |
| | between SR-18 & Nisqually Road | 64.8 | RW | 96 | 208 | 447 |
| **Central Road (cont)** | between Thunderbird Road & SR-18 | 64.5 | RW | 93 | 201 | 432 |
| | between Waalew Road & Thunderbird Road | 63.8 | RW | 83 | 178 | 384 |
| | n/o Waalew Road | 56.6 | RW | RW | RW | 128 |
| | n/o Lafayette Street | 56.6 | RW | RW | RW | 128 |
| **Choco Road** | between Norco Street & Saugus Road | - | - | - | - | - |
| **Corwin Road** | between SR-18 & Tao Road | 63.8 | RW | 83 | 180 | 387 |
| | between Tao Road & Waalew Road | 63.4 | RW | 78 | 168 | 361 |
| | between Waalew Road & Dale Evans Parkway | 54.5 | RW | RW | RW | 93 |
| | between Dale Evans Parkway & Dakota Road | - | - | - | - | - |
| **Dachshund Avenue** | n/o Fresno Road | - | - | - | - | - |
| **Dakota Road** | s/o Fresno Road | - | - | - | - | - |

## Table III-49
## Existing Noise Exposure Adjacent to General Plan Study Area Roadways

| | | | Distance to Contour (Feet) | | | |
|---|---|---|---|---|---|---|
| **Roadway** | **Segment** | **CNEL at 100 feet (dBA)** | **70 dBA CNEL** | **65 dBA CNEL** | **60 dBA CNEL** | **55 dBA CNEL** |
| **Dale Evans Parkway** | between Corwin Road & Waalew Road | 60.4 | RW | RW | 107 | 231 |
| | between Thunderbird Road & SR-18 | 62.2 | RW | 65 | 140 | 301 |
| | between Waalew Road & Thunderbird Road | 62.5 | RW | RW | 146 | 314 |
| | n/o Fresno Road | 62.1 | RW | RW | 137 | 296 |
| | s/o I-15 Freeway | 62.3 | RW | RW | 143 | 308 |
| | between High Desert Corridor & Corwin Road | 62.1 | RW | 64 | 138 | 298 |
| | between High Desert Corridor & Norco Street | 60.5 | RW | RW | 108 | 232 |
| | s/o Quarry Road | 62.1 | RW | RW | 137 | 296 |
| **Deep Creek Road** | between Bear Valley Road & Tussing Ranch Road | 61.9 | RW | 62 | 135 | 290 |
| | s/o of Rock Springs Road | 57.4 | RW | RW | 67 | 144 |
| **Falchion Road** | between Apple Valley Road & Pauma Street | - | - | - | - | - |
| | between Pauma Street & Alembic Street | - | - | - | - | - |
| | w/o Apple Valley Road | - | - | - | - | - |
| | e/o Alembic Street | - | - | - | - | - |
| **Fresno Road** | between Dale Evans Parkway & Navajo Road | - | - | - | - | - |
| **High Desert Corridor** | between Alembic Street & I-15 freeway | - | - | - | - | - |
| | between Central Road & Waalew Road | - | - | - | - | - |
| | between Dale Evans Parkway & Alembic Street | - | - | - | - | - |
| | between Standing Rock Avenue & Central Road | - | - | - | - | - |
| | between Waalew Road & Dale Evans Parkway | - | - | - | - | - |
| **Kiowa Road** | between Bear Valley Road & Tussing Ranch Road | 65.8 | 52 | 113 | 242 | 522 |
| | between Sitting Bull Road & Bear Valley Road | 66.8 | 61 | 131 | 283 | 610 |
| | between SR-18 & Yucca Loma Road | 64.3 | 42 | 90 | 194 | 418 |
| | between Yucca Loma Road & Sitting Bull Road | 65.6 | RW | 110 | 236 | 509 |
| **Lafayette Street** | w/o Dale Evans Parkway | - | - | - | - | - |
| **Navajo Road** | between Bear Valley Road & Tussing Ranch Road | 61.0 | RW | 54 | 117 | 253 |
| | between Nisqually Road & Bear Valley Road | 67.8 | 71 | 154 | 332 | 715 |
| | between SR-18 & Nisqually Road | 68.5 | 80 | 172 | 370 | 798 |
| | between Thunderbird Road & SR-18 | 62.9 | RW | 72 | 155 | 335 |
| | s/o Lafayette Street | - | - | - | - | - |

## Table III-49
## Existing Noise Exposure Adjacent to General Plan Study Area Roadways

| | | | Distance to Contour (Feet) | | | |
|---|---|---|---|---|---|---|
| **Roadway** | **Segment** | **CNEL at 100 feet (dBA)** | **70 dBA CNEL** | **65 dBA CNEL** | **60 dBA CNEL** | **55 dBA CNEL** |
| **Norco Street** | w/o Alembic Street | - | - | - | - | - |
| **Outer Highway I-15 S** | between Quarry Road & Dale Evans Parkway | - | - | - | - | - |
| | between Stoddard Wells Road & Quarry Road | - | - | - | - | - |
| **Pauma Street** | n/o Falchion Road | - | - | - | - | - |
| | s/o Saugus Road | - | - | - | - | - |
| **Quarry Road** | between Dale Evans Parkway & Navajo Road | - | - | - | - | - |
| | between I-15 Frontage Road & Stoddard Wells Road | - | - | - | - | - |
| | e/o I-15 freeway | - | - | - | - | - |
| | e/o Navajo Road | - | - | - | - | - |
| | w/o Dale Evans Parkway | - | - | - | - | - |
| **Rincon Road** | between SR-18 & Yucca Loma Road | 62.8 | 33 | 72 | 154 | 333 |
| **Saugus Road** | w/o Pauma Street | - | - | - | - | - |
| **Sitting Bull Road** | between Apple Valley Road & Kiowa Road | 64.7 | 45 | 96 | 207 | 446 |
| **SR-18** | between Apple Valley Road & Corwin Road | 72.0 | 136 | 294 | 633 | 1,364 |
| | between Central Road & Joshua Road | 65.7 | RW | 111 | 239 | 516 |
| | between Corwin Road & Tao Road | 71.2 | 120 | 258 | 555 | 1,196 |
| | between Dale Evans Parkway & Kiowa Road | 71.4 | 125 | 268 | 578 | 1,245 |
| | between Kiowa Road & Navajo Road | 69.8 | 97 | 209 | 451 | 972 |
| | between Navajo Road & Central Road | 67.7 | 71 | 152 | 328 | 706 |
| | between Rancherias Road & Dale Evans Parkway | 71.8 | 132 | 284 | 611 | 1,317 |
| | between Tao Road & Rancherias Road | 71.6 | 128 | 276 | 595 | 1,282 |
| | w/o Apple Valley Road | 73.8 | 180 | 388 | 837 | 1,802 |
| **Stoddard Wells Road** | e/o I-15 Freeway | 60.5 | RW | RW | 108 | 232 |
| | between Quarry Road & Dale Evans Parkway | 60.2 | RW | RW | 103 | 221 |
| | e/o Alembic Street | 60.5 | RW | RW | 108 | 232 |
| | n/o Johnson Road | 60.2 | RW | RW | 103 | 221 |
| | w/o Navajo Road | 60.2 | RW | RW | 103 | 221 |
| **Thunderbird Road** | between Dale Evans Parkway & Navajo Road | 63.8 | RW | 83 | 180 | 387 |
| | between Navajo Road & Central Road | 61.2 | RW | 56 | 120 | 259 |
| | between Rancherias Road & Dale Evans Parkway | 64.1 | RW | 87 | 187 | 402 |

## Table III-49
## Existing Noise Exposure Adjacent to General Plan Study Area Roadways

| | | | Distance to Contour (Feet) | | | |
|---|---|---|---|---|---|---|
| **Roadway** | **Segment** | **CNEL at 100 feet (dBA)** | **70 dBA CNEL** | **65 dBA CNEL** | **60 dBA CNEL** | **55 dBA CNEL** |
| **Tussing Ranch Road** | between Apple Valley Road & Kiowa Road | - | - | - | - | - |
| | between Kiowa Road & Navajo Road | - | - | - | - | - |
| | between Navajo Road & Central Road | - | - | - | - | - |
| | w/o Apple Valley Road | - | - | - | - | - |
| **Waalew Road** | between Corwin Road & Dale Evans Parkway | 62.8 | RW | 71 | 153 | 329 |
| **Waalew Road (cont)** | e/o Dale Evans Parkway | 63.6 | RW | 80 | 173 | 372 |
| | w/o Central Road | 63.6 | RW | 80 | 173 | 372 |
| **Yucca Loma Road** | between Apple Valley Road & Rincon Road | 66.0 | 54 | 116 | 251 | 540 |
| | between Kiowa Road & SR-18 | 62.2 | RW | 65 | 140 | 301 |
| | between Rincon Road & Kiowa Road | 64.7 | RW | 95 | 205 | 441 |
| | w/o Apple Valley Road | 62.6 | RW | 69 | 149 | 322 |

[1] RW: Noise contour located within the road right of way.

Rail Noise

Train pass-bys, although intermittent, generate high noise levels for short periods of time, generally ranging from one to five minutes. There are two rail lines in the planning area.

A single-track rail line is located within the northern portion of the Town along Quarry Road. It is privately owned, and is used exclusively by the Mojave Northern Mining Quarry, which is located easterly of the Town limits. There are generally 2 to 4 trains per day along this line, with up to 20 freight cars per train. Noise impacts were modeled using the Federal Transit Administration general assessment model. At a distance of 100 feet from the railroad line, train activity generates noise levels of 49 dBA CNEL. Based on a dispersal rate for train noise of approximately 3 dBA rate per doubling of distance, impacts at 200 feet are estimated to be 46 dBA CNEL. At 400 feet these impacts are reduced to 43 dBA CNEL.

A second single-track rail line is located within and adjacent to a portion of the southern Town limits. This rail line is used by quarry operations in San Bernardino County located east of the planning area. It generally runs along Tussing Ranch Road, following Kiowa Road south and Rock Springs Road west. There is an estimated one train per day along this line in the planning area, at speeds of up to 20 miles per hour. Lands adjacent to the line are mostly vacant, although single-family homes are located as close as 300 feet to the north. Noise from train operations along this rail line are modeled at approximately 44 dBA CNEL at 100 feet from the line, decreasing to 41 dBA CNEL at 200 feet, and to 38 dBA CNEL at 400 feet.

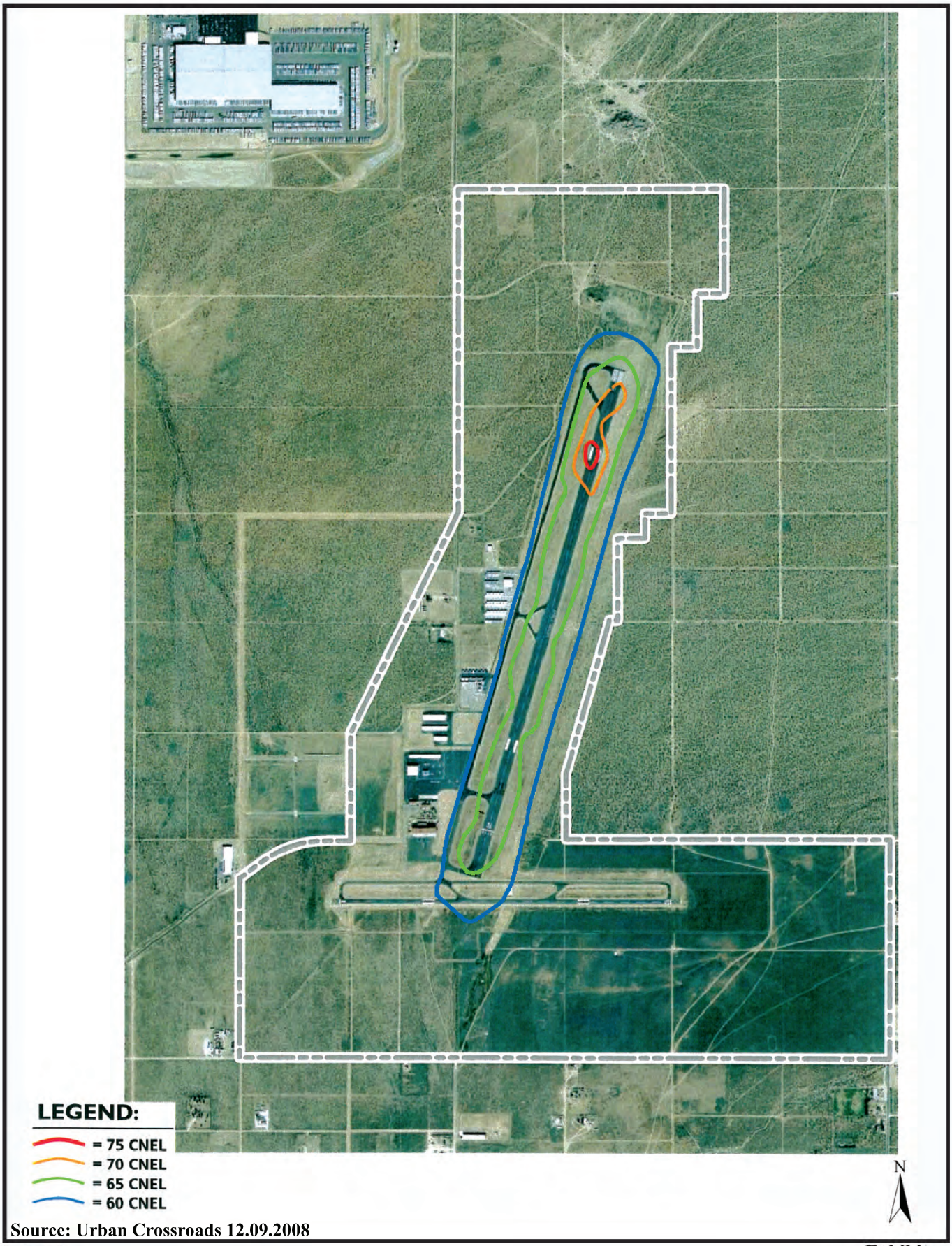
Noise impacts to residential uses are those primarily associated with train horns along at-grade crossings. The crossings closest to single-family homes are located at Navajo Road, approximately 900 feet from residences, and Kiowa Road, approximately 1,200 feet.

Each train pass-by event generates noise from the locomotive, horn, and cars. Noise level measurements have been collected for other spur lines with similar train compositions and speeds. Based on these measurements, it is expected that noise levels may approach 90 dBA Lmax at 100 feet, 87 dBA Lmax at 200 feet, and 84 dBA Lmax at 400 feet from the locomotive. These are readily perceptible noise levels, however they are of relatively short duration and occur only once daily based on current traffic levels along this rail line.

Aircraft Noise

Operation of the Apple Valley Airport is currently limited to general aviation aircraft, with noise impacts perceived as “barely perceptible” throughout most of the planning area. The airport houses approximately 119 aircraft, mostly single-engine airplanes. There are currently an average of 103 operations (takeoffs/landings) a day, or 38,000 annually. Of these operations, approximately 67% are associated with local general aviation.

Lands adjacent to the airport are generally vacant and are zoned for airport, industrial and commercial uses. Although overflights may occasionally be audible within the Town, these impacts are not considered significant. As shown on Exhibit III-19, Existing Airport Noise Contours, the noise contours of 65 dBA or greater are contained within the airport’s boundaries.




Source: Urban Crossroads 12.09.2008

TERRA NOVA®
Planning & Research, Inc.

**Apple Valley General Plan Draft EIR**
**Existing Airport Noise Contours**
**Apple Valley, California**

Exhibit
**III-19**

Industrial and Commercial Noise

Industrial and commercial uses can have a varying degree of impact on adjacent land uses. Noises from industrial and commercial uses are typically associated with mechanical equipment, generators, truck deliveries, loading/unloading docks, speakerphones, trash compactors and air conditioning units. Land use compatibility issues may arise when residential development is located adjacent to commercial/industrial areas and the resultant exposure of noise sensitive uses to noise from air conditioning units, truck deliveries, speakerphones associated with drive-through services such as those associated with fast food restaurants, and the use of mechanical equipment. All land uses are required to comply with exterior noise levels set forth in the Town's development code, as discussed above. These issues are further discussed below under Impacts.

Construction Noise

Construction noise is generated by construction equipment (including trucks, graders, bulldozers, concrete mixers and portable generators). As discussed previously, increases to the ambient noise environment from construction activities are short-term but can reach high levels, especially from grading activities. Noise levels from heavy equipment can range between approximately 68 dBA to 100 dBA at a distance of 50 feet; these noise levels diminish rapidly with a doubling of distance from the noise source.

Construction noise can be most effectively controlled through compliance with locally established construction hours. As discussed above, the Town of Apple Valley has established day and time restrictions on construction noise levels; these are set forth in the Town development code.

Sensitive Receptors

Sensitive receptors are those land uses that are particularly sensitive to noise intrusion, including residences, schools, libraries, churches, hospitals, nursing homes, and other health care facilities. Day care centers, parks, and other outdoor recreation areas may also be considered sensitive receptors. Moderately sensitive land uses include cemeteries, golf courses, hotels and motels, and dormitories.

**Annexation 2008-001 and 2008-002**

The existing noise environment in the proposed annexation areas is characteristic of a semi-rural region and is therefore relatively quiet. Motor vehicle traffic, occasional small aircraft overflights from the Apple Valley airport, and mechanical noise associated with household and agricultural equipment comprise the primary noise sources in these areas. The aforementioned rail line adjacent to Quarry Road serves existing quarry operations in the Northeast Industrial Area (Annexation No. 2008-002), however, as discussed there are currently few if any sensitive receptors in this area and train operations are generally limited to between 2 and 4 daily trips.

Potential noise impacts associated with buildout of the annexation areas is further discussed under Project Impacts, below.

## 2. Project Impacts

### Traffic Noise Impacts at General Plan Build Out

Future noise contours along roadways in the General Plan area have been modeled to ascertain the extent of future noise impacts associated with General Plan build out. The Preferred Alternative build out traffic volumes, planned lane geometrics and posted speed limits were used as the basis for modeling these noise contours. The FHWA model that was used to model existing noise contours was applied to Average Daily Traffic (ADT) volumes obtained from the Town of Apple Valley General Plan Circulation Element Traffic Study prepared by Urban Crossroads, Inc.[79] This study is further discussed in section III-B, Traffic/Circulation, and is presented in the appendices of this EIR.

To determine vehicle mix inputs to the model, axle counts were collected at a location along Dale Evans Parkway in December 2008. Based on these counts, medium and heavy trucks account for a larger percentage of hourly traffic flow during daytime hours, however it is estimated that over a 24-hour period, automobiles account for approximately 90.8% of the vehicle mix. As truck traffic on a given roadway increases and constitutes a larger percentage of the vehicle mix, adjacent noise levels also increase. This can result in a significant effect on community noise levels.

Given the logarithmic nature of traffic noise levels, assuming no change in speed and truck mix, a doubling of the traffic volume would result in an increase in noise levels of 3 dBA. This increase is considered "barely perceptible" based on FHWA community noise assessment criteria. Based on these criteria, therefore, increases to noise levels of less than or equal to 3 dBA are considered less than significant.

### Traffic Noise Contours

Noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway. Table III-50 presents the noise contours projected to result from build out of the proposed General Plan. It presents the CNEL noise contour boundaries for the 55, 60, 65 and 70 dBA noise levels, as well as a summary of the predicted noise contours and the estimated CNEL exterior noise level at a distance of 100 feet throughout the Town of Apple Valley. As shown on the table, the 65 dBA CNEL noise contours for the proposed High Desert Corridor will extend to up to 972 feet from the road centerline.

The values shown in Table III-50 are based upon soft site conditions, not accounting for the effects of any noise barriers, topography, or final roadway grades that may affect ambient noise levels. These assumptions are appropriate for this level of noise analysis, however, final noise studies prepared as future noise-sensitive development occurs should consider the effect of noise barriers and actual topography.

[79] "Town of Apple Valley General Plan Circulation Element Traffic Study," prepared by Urban Crossroads, Inc., November 24, 2008.

## Table III-50
## Anticipated Exterior Noise Exposures Adjacent to Major Roadways

| Roadway | Segment | dBA CNEL at 100 ft. | Distance to Contour (Feet) | | | |
|---|---|---|---|---|---|---|
| | | | 70 dBA CNEL | 65 dBA CNEL | 60 dBA CNEL | 55 dBA CNEL |
| **Alembic Street** | between Norco Street & Saugus Rd | 72.6 | 149 | 321 | 692 | 1,492 |
| | between Saugus Road & Stoddard Wells Road | 73.1 | 161 | 348 | 749 | 1,613 |
| | n/o High Desert Corridor | 75.3 | 227 | 488 | 1,051 | 2,265 |
| | s/o High Desert Corridor | 73.2 | 163 | 352 | 758 | 1,632 |
| **Apple Valley Road** | between Bear Valley Road & Tussing Ranch Road | 71.8 | 131 | 282 | 607 | 1,308 |
| | between Sitting Bull Road & Bear Valley Road | 73.9 | 181 | 391 | 842 | 1,815 |
| | between SR-18 & Yucca Loma Rd | 71.3 | 122 | 263 | 567 | 1,221 |
| | between Yucca Loma Road & Sitting Bull Road | 73.5 | 171 | 369 | 795 | 1,713 |
| | n/o SR-18 | 69.4 | 91 | 196 | 422 | 910 |
| **Bear Valley Road** | between Apple Valley Road & Deep Creek Road | 74.3 | 193 | 416 | 896 | 1,931 |
| | between Central Road & SR-18 | 69.7 | 95 | 205 | 442 | 952 |
| | between Deep Creek Road & Kiowa Road | 74.1 | 188 | 405 | 872 | 1,880 |
| | between Kiowa Road & Navajo Rd | 72.8 | 153 | 330 | 711 | 1,533 |
| | between Navajo Road & Central Rd | 71.6 | 128 | 275 | 593 | 1,279 |
| | w/o Apple Valley Road | 75.2 | 222 | 478 | 1,030 | 2,220 |
| **Central Road** | between Bear Valley Road & Tussing Ranch Road | 68.9 | 85 | 183 | 394 | 848 |
| | between Nisqually Road & Bear Valley Road | 71.4 | 125 | 268 | 578 | 1,245 |
| | between SR-18 & Nisqually Road | 71.8 | 131 | 283 | 610 | 1,314 |
| | between Thunderbird Rd & SR-18 | 72.3 | 143 | 308 | 664 | 1,430 |
| | between Waalew Road & Thunderbird Road | 73.8 | 180 | 387 | 834 | 1,797 |
| | n/o Waalew Road | 72.9 | 155 | 334 | 720 | 1,552 |
| | n/o Lafayette Street | 70.8 | 112 | 242 | 522 | 1,124 |
| **Choco Road** | between Norco Street & Saugus Rd | 69.7 | 96 | 207 | 446 | 960 |
| **Corwin Road** | between SR-18 & Tao Road | 71.4 | 124 | 267 | 575 | 1,238 |
| | between Tao Road & Waalew Road | 70.5 | 108 | 233 | 502 | 1,081 |
| | between Waalew Road & Dale Evans Parkway | 70.2 | 103 | 222 | 477 | 1,029 |
| | between Dale Evans Parkway & Dakota Road | 72.1 | 138 | 297 | 640 | 1,379 |
| **Dachshund Avenue** | n/o Fresno Road | 67.7 | 70 | 151 | 326 | 702 |
| **Dakota Road** | s/o Fresno Road | 71.1 | 118 | 255 | 550 | 1,184 |
| **Dale Evans Parkway** | between Corwin Road & Waalew Road | 73.6 | 174 | 374 | 806 | 1,736 |
| | between Thunderbird Rd & SR-18 | 70.4 | 106 | 228 | 492 | 1,059 |
| | between Waalew Road & Thunderbird Road | 72.1 | 139 | 299 | 645 | 1,389 |

## Table III-50
## Anticipated Exterior Noise Exposures Adjacent to Major Roadways

| Roadway | Segment | dBA CNEL at 100 ft. | Distance to Contour (Feet) | | | |
|---|---|---|---|---|---|---|
| | | | 70 dBA CNEL | 65 dBA CNEL | 60 dBA CNEL | 55 dBA CNEL |
| **Dale Evans Parkway cont'd** | n/o Fresno Road | 74.2 | 191 | 411 | 885 | 1,907 |
| | s/o I-15 Freeway | 74.2 | 191 | 412 | 889 | 1,914 |
| | between High Desert Corridor & Corwin Road | 75.1 | 219 | 472 | 1,017 | 2,190 |
| | between High Desert Corridor & Norco Street | 74.8 | 210 | 452 | 974 | 2,098 |
| | s/o Quarry Road | 74.1 | 187 | 402 | 866 | 1,866 |
| **Deep Creek Road** | between Bear Valley Road & Tussing Ranch Road | 63.9 | RW | 85 | 183 | 394 |
| | s/o of Rock Springs Road | 59.0 | RW | RW | 86 | 186 |
| **Falchion Road** | between Apple Valley Road & Pauma Street | 71.1 | 119 | 257 | 554 | 1,193 |
| | between Pauma Street & Alembic Street | 71.3 | 123 | 265 | 571 | 1,230 |
| | w/o Apple Valley Road | 68.2 | 76 | 163 | 352 | 759 |
| | e/o Alembic Street | 70.3 | 104 | 224 | 483 | 1,041 |
| **Fresno Road** | between Dale Evans Parkway & Navajo Road | 69.6 | 95 | 204 | 440 | 948 |
| **High Desert Corridor** | between Alembic Street & I-15 freeway | 79.8 | 451 | 972 | 2,094 | 4,510 |
| | between Central Road & Waalew Road | 76.4 | 268 | 577 | 1,243 | 2,677 |
| | between Dale Evans Parkway & Alembic Street | 79.1 | 405 | 872 | 1,878 | 4,046 |
| | between Standing Rock Avenue & Central Road | 73.6 | 174 | 374 | 806 | 1,736 |
| | between Waalew Road & Dale Evans Parkway | 78.0 | 341 | 735 | 1,583 | 3,411 |
| **Kiowa Road** | between Bear Valley Road & Tussing Ranch Road | 71.3 | 123 | 265 | 571 | 1,230 |
| | between Sitting Bull Road & Bear Valley Road | 71.2 | 121 | 261 | 562 | 1,210 |
| | between SR-18 & Yucca Loma Rd | 68.2 | 76 | 163 | 351 | 756 |
| | between Yucca Loma Road & Sitting Bull Road | 71.2 | 121 | 260 | 560 | 1,207 |
| **Lafayette Street** | w/o Dale Evans Parkway | 69.0 | 86 | 186 | 401 | 864 |
| **Navajo Road** | between Bear Valley Road & Tussing Ranch Road | 64.2 | RW | 89 | 192 | 413 |
| **Navajo Road (cont)** | between Nisqually Road & Bear Valley Road | 71.3 | 122 | 264 | 568 | 1,224 |
| | between SR-18 & Nisqually Road | 71.9 | 134 | 289 | 622 | 1,341 |
| | between Thunderbird Rd & SR-18 | 69.6 | 94 | 202 | 436 | 940 |
| | s/o Lafayette Street | 67.3 | 66 | 142 | 305 | 658 |
| **Norco Street** | w/o Alembic Street | 70.6 | 110 | 237 | 510 | 1,099 |
| **Outer Highway I-15 S** | between Quarry Road & Dale Evans Parkway | 68.5 | 80 | 172 | 371 | 800 |

## Table III-50
## Anticipated Exterior Noise Exposures Adjacent to Major Roadways

| Roadway | Segment | dBA CNEL at 100 ft. | Distance to Contour (Feet) | | | |
|---|---|---|---|---|---|---|
| | | | 70 dBA CNEL | 65 dBA CNEL | 60 dBA CNEL | 55 dBA CNEL |
| **Outer Highway I-15 S cont'd** | between Stoddard Wells Road & Quarry Road | 69.9 | 98 | 212 | 456 | 982 |
| **Pauma Street** | n/o Falchion Road | 69.7 | 95 | 205 | 441 | 950 |
| | s/o Saugus Road | 70.3 | 104 | 224 | 483 | 1,040 |
| **Quarry Road** | between Dale Evans Parkway & Navajo Road | 69.9 | 99 | 214 | 460 | 992 |
| | between I-15 Frontage Road & Stoddard Wells Road | 73.6 | 175 | 377 | 812 | 1,749 |
| | e/o I-15 freeway | 75.1 | 219 | 472 | 1,018 | 2,193 |
| | e/o Navajo Road | 68.7 | 82 | 176 | 380 | 819 |
| | w/o Dale Evans Parkway | 72.2 | 140 | 301 | 649 | 1,397 |
| **Rincon Road** | between SR-18 & Yucca Loma Rd | 67.1 | 64 | 137 | 295 | 637 |
| **Saugus Road** | w/o Pauma Street | 69.1 | 88 | 189 | 407 | 877 |
| **Sitting Bull Road** | between Apple Valley Road & Kiowa Road | 66.3 | 57 | 122 | 262 | 565 |
| **SR-18** | between Apple Valley Road & Corwin Road | 74.0 | 184 | 397 | 856 | 1,845 |
| | between Central Road & Joshua Road | 67.7 | 71 | 152 | 328 | 706 |
| | between Corwin Road & Tao Road | 71.3 | 123 | 264 | 570 | 1,227 |
| | between Dale Evans Parkway & Kiowa Road | 72.8 | 153 | 330 | 711 | 1,533 |
| | between Kiowa Road & Navajo Rd | 70.8 | 114 | 245 | 528 | 1,137 |
| | between Navajo Road & Central Rd | 71.8 | 133 | 286 | 615 | 1,326 |
| | between Rancherias Road & Dale Evans Parkway | 72.1 | 139 | 299 | 644 | 1,387 |
| | between Tao Road & Rancherias Road | 72.8 | 154 | 333 | 716 | 1,543 |
| | w/o Apple Valley Road | 75.5 | 234 | 504 | 1,085 | 2,339 |
| **Stoddard Wells Road** | e/o I-15 Freeway | 74.6 | 202 | 436 | 939 | 2,022 |
| | between Quarry Road & Dale Evans Parkway | 71.2 | 120 | 258 | 556 | 1,199 |
| | e/o Alembic Street | 74.4 | 196 | 423 | 912 | 1,965 |
| **Stoddard Wells Road (cont)** | n/o Johnson Road | 71.2 | 120 | 259 | 558 | 1,201 |
| | w/o Navajo Road | 67.5 | 68 | 146 | 314 | 677 |
| **Thunderbird Road** | between Dale Evans Parkway & Navajo Road | 66.8 | 61 | 131 | 283 | 610 |
| | between Navajo Road & Central Rd | 68.8 | 83 | 178 | 383 | 826 |
| | between Rancherias Road & Dale Evans Parkway | 64.7 | RW | 96 | 207 | 446 |
| **Tussing Ranch Road** | between Apple Valley Road & Kiowa Road | 70.8 | 113 | 244 | 526 | 1,134 |
| | between Kiowa Road & Navajo Road | 70.2 | 103 | 223 | 480 | 1,033 |
| | between Navajo Road & Central Road | 69.7 | 95 | 205 | 442 | 952 |
| | w/o Apple Valley Road | 72.1 | 139 | 299 | 644 | 1,387 |

**Table III-50**
**Anticipated Exterior Noise Exposures Adjacent to Major Roadways**

| Roadway | Segment | dBA CNEL at 100 ft. | Distance to Contour (Feet) | | | |
|---|---|---|---|---|---|---|
| | | | 70 dBA CNEL | 65 dBA CNEL | 60 dBA CNEL | 55 dBA CNEL |
| **Waalew Road** | between Corwin Road & Dale Evans Parkway | 67.3 | 66 | 143 | 307 | 662 |
| | e/o Dale Evans Parkway | 67.6 | 69 | 148 | 320 | 688 |
| | w/o Central Road | 68.0 | 73 | 158 | 340 | 733 |
| **Yucca Loma Road** | between Apple Valley Road & Rincon Road | 72.5 | 148 | 319 | 686 | 1,479 |
| | between Kiowa Road & SR-18 | 71.8 | 133 | 286 | 616 | 1,327 |
| | between Rincon Road & Kiowa Rd | 71.1 | 118 | 253 | 546 | 1,175 |
| | w/o Apple Valley Road | 73.3 | 166 | 357 | 769 | 1,656 |

[1] RW: Noise contour located within the road right of way.

## Noise Level Increases Over Existing Conditions

Table III-51, below, shows the expected noise level contours for the proposed General Plan build out as compared to existing conditions. The proposed General Plan is expected to result in increases to noise levels of up to 16.3 dBA CNEL over existing conditions. Increases in noise levels are expected to be perceptible to land uses adjacent to 44 roadway segments in the planning area.

## Table III-51
## Noise Increases Over Existing Conditions

| Roadway | Segment | CNEL AT 100 FEET (dBA) | | | Potentially Significant Impact?[1] |
|---|---|---|---|---|---|
| | | Existing | Preferred Alternative | Increase | |
| **Alembic Street** | between Norco Street & Saugus Road | - | 72.6 | - | - |
| | between Saugus Road & Stoddard Wells Road | - | 73.1 | - | - |
| | n/o High Desert Corridor | - | 75.3 | - | - |
| | s/o High Desert Corridor | - | 73.2 | - | - |
| **Apple Valley Road** | between Bear Valley Rd & Tussing Ranch Road | 64.3 | 71.8 | 7.5 | YES |
| | between Sitting Bull Road & Bear Valley Road | 71.1 | 73.9 | 2.8 | NO |
| | between SR-18 & Yucca Loma Road | 69.5 | 71.3 | 1.8 | NO |
| | between Yucca Loma Road & Sitting Bull Road | 70.5 | 73.5 | 3.0 | NO |
| | n/o SR-18 | 63.3 | 69.4 | 6.1 | YES |
| **Bear Valley Road** | between Apple Valley Rd & Deep Creek Road | 72.5 | 74.3 | 1.8 | NO |
| | between Central Road & SR-18 | 66.3 | 69.7 | 3.3 | YES |
| | between Deep Creek Road & Kiowa Road | 72.6 | 74.1 | 1.6 | NO |
| | between Kiowa Road & Navajo Road | 71.2 | 72.8 | 1.6 | NO |
| | between Navajo Road & Central Road | 68.7 | 71.6 | 2.9 | NO |
| | w/o Apple Valley Road | 73.5 | 75.2 | 1.7 | NO |
| **Central Road** | between Bear Valley Rd & Tussing Ranch Road | 62.0 | 68.9 | 7.0 | YES |
| | between Nisqually Road & Bear Valley Road | 66.0 | 71.4 | 5.5 | YES |
| | between SR-18 & Nisqually Road | 64.8 | 71.8 | 7.0 | YES |
| | between Thunderbird Road & SR-18 | 64.5 | 72.3 | 7.8 | YES |
| | between Waalew Road & Thunderbird Road | 63.8 | 73.8 | 10.0 | YES |
| | n/o Waalew Road | 56.6 | 72.9 | 16.3 | YES |
| | n/o Lafayette Street | 56.6 | 70.8 | 14.2 | YES |
| **Choco Road** | between Norco Street & Saugus Road | - | 69.7 | - | - |
| **Corwin Road** | between SR-18 & Tao Road | 63.8 | 71.4 | 7.6 | YES |
| | between Tao Road & Waalew Road | 63.4 | 70.5 | 7.1 | YES |

## Table III-51
## Noise Increases Over Existing Conditions

| Roadway | Segment | CNEL AT 100 FEET (dBA) | | | Potentially Significant Impact?[1] |
|---|---|---|---|---|---|
| | | Existing | Preferred Alternative | Increase | |
| **Corwin Road cont** | between Waalew Road & Dale Evans Parkway | 54.5 | 70.2 | 15.7 | YES |
| | between Dale Evans Parkway & Dakota Road | - | 72.1 | - | - |
| **Dachshund Avenue** | n/o Fresno Road | - | 67.7 | - | - |
| **Dakota Road** | s/o Fresno Road | - | 71.1 | - | - |
| **Dale Evans Parkway** | between Corwin Road & Waalew Road | 60.4 | 73.6 | 13.1 | YES |
| | between Thunderbird Road & SR-18 | 62.2 | 70.4 | 8.2 | YES |
| | between Waalew Road & Thunderbird Road | 62.5 | 72.1 | 9.7 | YES |
| | n/o Fresno Road | 62.1 | 74.2 | 12.1 | YES |
| | s/o I-15 Freeway | 62.3 | 74.2 | 11.9 | YES |
| | between High Desert Corridor & Corwin Road | 62.1 | 75.1 | 13.0 | YES |
| | between High Desert Corridor & Norco Street | 60.5 | 74.8 | 14.4 | YES |
| | s/o Quarry Road | 62.1 | 74.1 | 12.0 | YES |
| **Deep Creek Road** | between Bear Valley Rd & Tussing Ranch Road | 61.9 | 63.9 | 2.0 | NO |
| | s/o of Rock Springs Road | 57.4 | 59.0 | 1.7 | NO |
| **Falchion Road** | between Apple Valley Road & Pauma Street | - | 71.1 | - | - |
| | between Pauma Street & Alembic Street | - | 71.3 | - | - |
| | w/o Apple Valley Road | - | 68.2 | - | - |
| | e/o Alembic Street | - | 70.3 | - | - |
| **Fresno Road** | between Dale Evans Parkway & Navajo Road | - | 69.6 | - | - |
| **High Desert Corridor** | between Alembic Street & I-15 freeway | - | 79.8 | - | - |
| | between Central Road & Waalew Road | - | 76.4 | - | - |
| | between Dale Evans Parkway & Alembic St | - | 79.1 | - | - |
| | between Standing Rock Avenue & Central Road | - | 73.6 | - | - |
| | between Waalew Road & Dale Evans Parkway | - | 78.0 | - | - |
| **Kiowa Road** | between Bear Valley Rd & Tussing Ranch Road | 65.8 | 71.3 | 5.6 | YES |
| | between Sitting Bull Road & Bear Valley Road | 66.8 | 71.2 | 4.5 | YES |

## Table III-51
## Noise Increases Over Existing Conditions

| Roadway | Segment | CNEL AT 100 FEET (dBA) | | | Potentially Significant Impact?[1] |
|---|---|---|---|---|---|
| | | Existing | Preferred Alternative | Increase | |
| **Kiowa Road (cont)** | between SR-18 & Yucca Loma Road | 64.3 | 68.2 | 3.9 | YES |
| | between Yucca Loma Road & Sitting Bull Road | 65.6 | 71.2 | 5.6 | YES |
| **Lafayette Street** | w/o Dale Evans Parkway | - | 69.0 | - | - |
| **Navajo Road** | between Bear Valley Rd & Tussing Ranch Road | 61.0 | 64.2 | 3.2 | YES |
| | between Nisqually Road & Bear Valley Road | 67.8 | 71.3 | 3.5 | YES |
| | between SR-18 & Nisqually Road | 68.5 | 71.9 | 3.4 | YES |
| | between Thunderbird Road & SR-18 | 62.9 | 69.6 | 6.7 | YES |
| | s/o Lafayette Street | - | 67.3 | - | - |
| **Norco Street** | w/o Alembic Street | - | 70.6 | - | - |
| **Outer Highway I-15 S** | between Quarry Road & Dale Evans Parkway | - | 68.5 | - | - |
| | between Stoddard Wells Road & Quarry Road | - | 69.9 | - | - |
| **Pauma Street** | n/o Falchion Road | - | 69.7 | - | - |
| | s/o Saugus Road | - | 70.3 | - | - |
| **Quarry Road** | between Dale Evans Parkway & Navajo Road | - | 69.9 | - | - |
| | between I-15 Frontage Rd & Stoddard Wells Road | - | 73.6 | - | - |
| | e/o I-15 freeway | - | 75.1 | - | - |
| | e/o Navajo Road | - | 68.7 | - | - |
| | w/o Dale Evans Parkway | - | 72.2 | - | - |
| **Rincon Road** | between SR-18 & Yucca Loma Road | 62.8 | 67.1 | 4.2 | YES |
| **Saugus Road** | w/o Pauma Street | - | 69.1 | - | - |
| **Sitting Bull Road** | between Apple Valley Road & Kiowa Road | 64.7 | 66.3 | 1.5 | NO |
| **SR-18** | between Apple Valley Road & Corwin Road | 72.0 | 74.0 | 2.0 | NO |
| | between Central Road & Joshua Road | 65.7 | 67.7 | 2.0 | NO |
| | between Corwin Road & Tao Road | 71.2 | 71.3 | 0.2 | NO |
| | between Dale Evans Parkway & Kiowa Road | 71.4 | 72.8 | 1.4 | NO |

## Table III-51
## Noise Increases Over Existing Conditions

| Roadway | Segment | CNEL AT 100 FEET (dBA) | | | Potentially Significant Impact?[1] |
|---|---|---|---|---|---|
| | | Existing | Preferred Alternative | Increase | |
| **SR 18 (cont)** | between Kiowa Road & Navajo Road | 69.8 | 70.8 | 1.0 | NO |
| | between Navajo Road & Central Road | 67.7 | 71.8 | 4.1 | YES |
| | between Rancherias Rd & Dale Evans Parkway | 71.8 | 72.1 | 0.3 | NO |
| | between Tao Road & Rancherias Road | 71.6 | 72.8 | 1.2 | NO |
| | w/o Apple Valley Road | 73.8 | 75.5 | 1.7 | NO |
| **Stoddard Wells Road** | e/o I-15 Freeway | 60.5 | 74.6 | 14.1 | YES |
| | between Quarry Road & Dale Evans Parkway | 60.2 | 71.2 | 11.0 | YES |
| | e/o Alembic Street | 60.5 | 74.4 | 13.9 | YES |
| | n/o Johnson Road | 60.2 | 71.2 | 11.0 | YES |
| | w/o Navajo Road | 60.2 | 67.5 | 7.3 | YES |
| **Thunderbird Road** | between Dale Evans Parkway & Navajo Road | 63.8 | 66.8 | 3.0 | NO |
| | between Navajo Road & Central Road | 61.2 | 68.8 | 7.5 | YES |
| | between Rancherias Rd & Dale Evans Parkway | 64.1 | 64.7 | 0.7 | NO |
| **Tussing Ranch Road** | between Apple Valley Road & Kiowa Road | - | 70.8 | - | - |
| | between Kiowa Road & Navajo Road | - | 70.2 | - | - |
| | between Navajo Road & Central Road | - | 69.7 | - | - |
| | w/o Apple Valley Road | - | 72.1 | - | - |
| **Waalew Road** | between Corwin Road & Dale Evans Parkway | 62.8 | 67.3 | 4.5 | YES |
| | e/o Dale Evans Parkway | 63.6 | 67.6 | 4.0 | YES |
| | w/o Central Road | 63.6 | 68.0 | 4.4 | YES |
| **Yucca Loma Road** | between Apple Valley Road & Rincon Road | 66.0 | 72.5 | 6.6 | YES |
| | between Kiowa Road & SR-18 | 62.2 | 71.8 | 9.7 | YES |
| | between Rincon Road & Kiowa Road | 64.7 | 71.1 | 6.4 | YES |
| | w/o Apple Valley Road | 62.6 | 73.3 | 10.7 | YES |

[1] A potential significant impact occurs when the resulting level is greater than 65 dBA and the increase is greater than 3 dBA.

## Impacts from Proposed Truck and Bus Routes

Proposed Truck Routes

As shown on Exhibit III-31 (please see Section III-O, Traffic/Circulation), the majority of proposed new truck routes will be located in the North Apple Valley Industrial Specific Plan area, north of Waalew Road. In general residential areas will be impacted to a limited extent, if at all, by traffic along proposed truck routes in the NAVISP area, where routes will generally pass through vacant, industrial, and commercial areas.

No new truck routes are proposed in the most developed areas of Town, which generally occur south of State Route 18 and Waalew Road. Primary through truck routes will continue to be located along major roads including the Outer Highway 15, Bear Valley Road, State Route 18, Central Road, Deep Creek Road south of Bear Valley Road, and will be established along the future High Desert Corridor. Additional truck traffic along these roadways is expected to increase noise impacts to adjacent development, which along some roadway segments include sensitive receptors such as residential development, schools, the hospital, and others. Mitigation measures are set forth below to address noise impacts along truck routes.

Proposed Bus Routes

Future bus routes are expected to provide for new and expanded service along major roadways such as Central Road, Bear Valley Road, Kiowa Road and others in the intermediate term, and along Apple Valley Road, Corwin Road, and other roadways in the central and northern portions of the planning area over the long term. While additional bus service has potential to result n noise impacts to residential development and other sensitive receptors, these impacts are also expected to be at least partially off-set by reductions in other vehicular traffic associated with increased use of public transportation. The Town will need to continue to monitor noise impacts associated with expanded and additional bus routes and bus stops where these are planned near sensitive receptors. Mitigation measures are set forth, below, to address these issues.

## Impacts from Railroad Noise

The proposed General Plan and annexations will not result in changes to operations along existing freight rail lines in the planning area. While the Town is not aware of plans for increased operations, these lines are owned by third parties over which the Town has no control. For purposes of this analysis, it was assumed that freight train traffic would double over existing conditions. As discussed under Existing Conditions, the rail line adjacent to Quarry Road carries from 2 to 4 trains daily. Noise levels were modeled at approximately 49 dBA CNEL at 100 feet from the rail line, decreasing by 3 dBA per distance doubling, to 46 dBA CNEL at 200 feet, and to 43 dBA CNEL at 400 feet. Based on a doubling of rail traffic, these impacts would occur approximately 4 to 8 times daily, as compared with existing conditions.

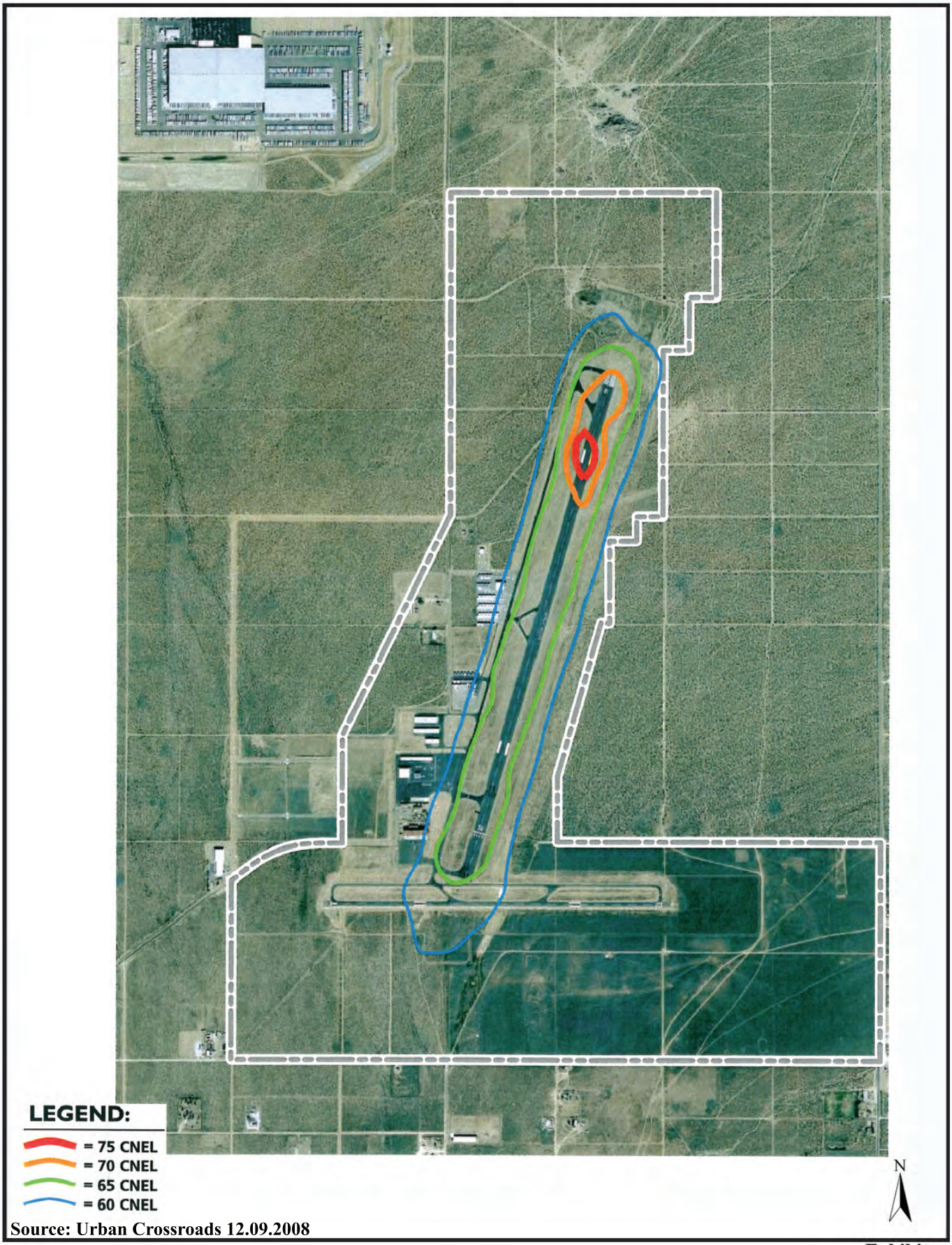
Based on modeling for existing conditions for the rail line that runs southerly of Tussing Ranch Road, at a distance of 100 feet from the railroad line, train activities produce noise levels of 44 dBA CNEL, at 200 feet 41 dBA CNEL, and at 400 feet 38 dBA CNEL. Doubling of train traffic

that currently occurs along this line would generate approximately 2 trips daily at these noise levels.

As previously discussed, noise levels from train pass-by events may generate noise levels may near 90 dBA Lmax at 100 feet, 87 dBA at 200 feet, and 84 dBA at 400 feet from the locomotive.

**Impacts from Airport Operations**

The County of San Bernardino County has plans to expand the Apple Valley Airport into a hub to better serve industrial and commercial development in and adjacent to the North Apple Valley Industrial Specific Plan area in which the airport is located. The County Board of Supervisors recently approved the construction of airport upgrades, including 18 new hangars at the Airport, and improvements to the terminal and taxiways to accommodate larger corporate aircraft. Surrounding lands are planned primarily for development of airport industrial and general commercial land uses. Adjacent land uses are largely compatible with existing and future aircraft operations at the Apple Valley Airport, and as shown on Exhibit III-I-3, future noise contour boundaries are generally contained within the boundaries of the airport. No significant impacts are anticipated to residential development or other land uses in the vicinity.




Source: Urban Crossroads 12.09.2008

TERRA NOVA®
Planning & Research, Inc.

**Apple Valley General Plan Draft EIR**
**Future Airport Noise Contours**
**Apple Valley, California**

Exhibit
**III-20**

**Construction Noise**

As discussed under Existing Conditions, above, heavy construction equipment can generate noise levels that are beyond the level of comfort of the human ear. Certain equipment can result in noise levels of up to 100 dBA at a distance of 50 feet. It should be noted, however, that these noise levels diminish at a rate of approximately 6 dBA as distance from the noise source is doubled. Construction noise is generally short term and may be mitigated to acceptable levels by a variety of measures, including equipping construction equipment with mufflers, locating stationary equipment away from noise sensitive receptors and placing equipment staging areas as far from sensitive receptors, such as residential development, as is practicable. Mitigation measures for construction noise impacts are set forth below.

**Annexation 2008-001 and 2008-002**

At build out, Annexation No. 2008-001 will include up to 4,236 residential units, 7,135,369 square feet of commercial development and 7,782,275 square feet of industrial development. Build out of Annexation No. 2008-002 will result in up to 7,676,379 square feet of industrial land uses. These represent substantial increases over existing development and have potential to result in adverse impacts to the existing noise environment. Noise impacts are expected to be primarily associated with temporary construction noises and gradually increasing traffic volumes as these areas develop. Site-specific design features that mitigate noise impacts may need to be implemented to limit noise impacts to acceptable levels. All noise associated with new development in the annexation areas will be subject to the Town's noise ordinance and other mitigation measures described below. Without mitigation, build out of the General Plan could result in significant impacts associated with noise in the two annexation areas.

**Summary of Impacts**

Under existing conditions, approximately 13 of the General Planned roadway segments in the planning area generate noise levels between 65 and 70 dBA CNEL at 100 feet from the centerline. This will increase to 27 roadway segments at buildout of the proposed General Plan and annexations. Currently there are 11 roadway segments in the General Plan area that generate noise levels between 70 and 75 dBA CNEL at 100 feet, however, proposed General Plan noise contours will increase to 59 the number of roadway segments between 70 dBA and 75 dBA CNEL. There are currently no master planned roadways that currently generate greater than 75 dBA CNEL at 100 feet, however at buildout of the proposed General Plan and annexations, there will be 9 roadways that generate greater than 75 dBA CNEL at 100 feet from the centerline. Increases in noise levels are expected to be perceptible to land uses adjacent to 44 roadway segments in the planning area.

Build out of the proposed General Plan and annexations will result in overall increases to community noise levels from increased urbanization and associated activities including short-term construction noise, increases in motor vehicle traffic and other modes of transportation. These impacts may be significant if not mitigated. The General Plan is a program-level document and site-specific development is not within the scope of this EIR, but will be analysed

and impacts mitigated on a project-by-project basis at the time such development is proposed. Measures set forth below, however, provide broad-based mitigation and are intended to ensure the reduction of potential noise impacts to acceptable levels. Additional noise reduction measures are included in the Town of Apple Valley Noise Element Technical Report (Appendix E of this EIR) for implementation on a project-specific basis.

### 3. Mitigation Measures

Noise impacts may be mitigated using a variety of design features. These include shielding those exposed to the noise source, or dampening the source itself. Motor vehicle can be reduced in a range of ways, such as enforcing truck route use, reducing vehicle speeds, regulating traffic flow using synchronized intersection signals, modifying parkway widths, using roadside acoustical barriers, and depressing roadways such that they are below the level of adjacent terrain. Local land use controls and enforcement of building construction/insulation codes is the best means to mitigate railroad noise. Commercial and industrial noise may be managed by means of strategic site layout that includes careful design of traffic access points, parking lots and loading areas, and solid waste collection areas.

The Town has adopted exterior noise standards in Section 9.73.050 of its Development Code (Noise Ordinance) and has therein also provided regulations for noise measurement/monitoring, as well as establishing penalties for violation of the Noise Ordinance. The Town's exterior noise standards for various land uses are consistent with those set forth by the State of California in its "Land Use Compatibility for Community Environments" matrix.

Mitigation measures that follow shall be implemented within the General Plan area to ensure the reduction of potential noise impacts to less than significant levels. Additional site-specific noise mitigation measures may also be required as appropriate for future development.

General Mitigation Measures

1. The Town shall continue to maintain and enforce its noise ordinance to ensure that noise impacts throughout the General Plan area are maintained at acceptable levels.

2. The Town shall continue to require that all project designs comply with Title 25 (California Noise Insulation Standards) by ensuring that interior noise levels for residential development do not exceed 45 dBA.

3. Final site plans for all proposed development projects in the General Plan area shall consider potential noise impacts, including residential site-orientation to shield outdoor living areas, incorporating additional setbacks from roadways, and constructing additional noise barriers where necessary.

4. All development shall be designed to include and comply with requirements of State Code for lateral and vertical unit-to-unit airborne sound isolation. For multi-family residential and hotel development, design shall include vertical impact sound isolation.

5. Project-specific development shall prepare construction drawings to determine exact specifications for window glass in buildings with unshielded first and second story windows.

6. The Town shall require an acoustical analysis for all commercial and industrial projects that are proposed adjacent to residential land uses or land use designations. The acoustical analysis shall evaluate potential noise impacts of the project and provide mitigation measures that are adequate to meet Town noise standards for residential land uses.

7. Sensitive receptors, which include schools, libraries and hospitals, shall, to the greatest extent feasible, be located always from major noise generators.

Off-Site Traffic Noise

8. The Town shall encourage a planning area-wide circulation pattern that loads primary traffic onto major arterials in order to limit local roadway traffic to the greatest extent feasible and thereby preserve local neighborhood noise environments.

9. The Town shall evaluate and monitor noise impacts associated with the addition of bus routes and bus stops near noise sensitive uses, in particular stops to be located along collector and local roads.

Construction Noise

10. All construction equipment operating in the General Plan area shall be equipped with properly operating and well-maintained mufflers to limit noise emissions.

11. To the greatest extent feasible, earth moving and hauling routes, and stockpiling and vehicle staging areas shall be situated away from existing residences.

12. Construction activities shall be conducted in compliance with the Town's Noise Ordinance to ensure that acceptable noise levels are achieved during sensitive time periods.

On-Site Stationary Noise Sources

13. Mechanical equipment for various buildings within the General Plan area shall be designed, selected and placed in consideration of the potential noise impacts on nearby residences within any development and in the surrounding community.

14. Appropriate sound barriers shall surround all public facilities generating disturbing levels of noise, such as water pumping stations.

15. Outdoor equipment such as cooling towers, air cooled condensers and refrigeration compressors and/or condenser units, as well as at air intake and discharge openings for

building ventilation systems, shall be provided with silencers and/or barriers at or surrounding them, where necessary.

**Mitigation Monitoring/Reporting Program**

A. The Town shall periodically review land-use patterns and the community noise environment, and amend the Land Use map as appropriate to ensure reasonable land use/noise compatibility.
**Responsible Parties:** Planning Division

B. The Town shall establish and review on a periodic basis and inventory of existing significant noise sources and areas where incompatibilities occur, and shall develop procedures to reduce noise effects on these areas as much as feasible economically and aesthetically.
**Responsible Parties:** Planning Division

C. The Town shall require that new development located in areas subject to potentially significant noise impacts monitor and document compliance with all applicable noise level limits.
**Responsible Party:** Planning Division

Pre-Construction

D. During project and site-specific building design, the Town shall ensure that acoustical analysis for all buildings considers the following for all buildings and/or outdoor living spaces, as applicable:

- Selection, placement and shielding of mechanical equipment;
- Strategic location of attached residences to provided shielded outdoor living areas;
- Acoustical specifications for window glass in buildings with unshielded first and second floor windows;
- Theme walls constructed to noise barrier specifications;
- Shielding and buffering of truck loading/unloading areas;
- Verification that project designs and plans comply with State code requirements for unit-to-unit airborne sound isolation.

**Responsible Parties:** Project Proponent, Project Acoustical Engineer, Planning Division, Building and Safety Division

E. Designate acceptable truck/construction equipment route(s), as appropriate.
**Responsible Parties:** Project Proponent, Planning Division, Public Works Division

During Construction

F. Ensure functional mufflers are installed on all construction equipment.
**Responsible Parties:** Project Proponent, General Contractor, Building and Safety Division

G. Ensure designated truck routes are being utilized.
**Responsible Parties:** General Contractor, Building and Safety Division

H. Ensure construction equipment operates only during those hours designated by the Town Noise Ordinance, except in emergencies.
**Responsible Parties:** Project Proponent, General Contractor, Building and Safety Division

## M. Public Services and Facilities

### Introduction

This section describes the current public services, utilities and service systems in the General Plan area and the vicinity, and assesses the potential constraints, risks and opportunities associated with these existing conditions. It analyzes the potential impacts associated with implementation of the proposed General Plan and annexations in relation to these public services, and establishes mitigation measures to reduce impacts. A variety of resources have been consulted to research and analyze these impacts, including personal communication with service providers and other sources. These resources are further described under Existing Conditions, below.

### Thresholds of Significance/Criteria for Determining Significance

Standards and criteria have been drawn from Appendix G Environmental Checklist Form of the California Environmental Quality Act (CEQA) Guidelines. To ensure that the General Plan EIR adequately addresses potential impacts to public services and facilities that may result from the adoption and implementation development of the Apple Valley General Plan, the project would have a significant impact if it would:

a. Conflict with or obstruct construction of new public utilities or facilities, including above-ground and subsurface energy, fuel or telecommunication transmission facilities.

b. Conflict with or obstruct the operation and maintenance of existing public utilities or facilities, including aboveground and subsurface energy, fuel or telecommunication transmission facilities.

c. Result in substantial adverse physical impacts associated with or create substantial impediments to the provision of new or physically altered government facilities.

d. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

e. Require or result in the construction of new or wastewater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

f. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

g. Not have sufficient water supplies available to serve the project from existing entitlements and resources, or new expanded entitlements are needed.

h. Have inadequate landfill capacity to accommodate the project's solid waste disposal needs.

i. Fail to meet the water supply assessment requirements of Water Code Section 10910, et seq. (SB 610), and the requirements of Government Code Section 664737 (SB 221).

j. Fail to result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

k. Not be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.

l. Fail to comply with federal, state, and local statues and regulations related to solid waste.

m. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or create a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time or other performance objectives for fire protection, police protection, schools, parks, and other public facilities.

**Service Providers**

The General Plan area is located within the service boundaries of a wide range of public services and facilities providers, which are listed below.

- Public Schools: Apple Valley Unified School District
- Library Services: San Bernardino County Library System
- Law Enforcement: Apple Valley Police Department/San Bernardino County Sheriff's Department
- Fire Protection: Apple Valley Fire Protection District
- Health Services: St. Mary Medical Center
- Electricity: Southern California Edison
- Natural Gas: Southwest Gas Company
- Telephone Services, Internet and Cable Television: Verizon, Charter Communications
- Domestic Water: Apple Valley Ranchos Water Company, Golden State Water Company, various small water purveyors
- Wastewater Collection/Treatment: Town of Apple Valley Public Works Division, Victor Valley Wastewater Reclamation Authority
- Solid Waste Management: Burrtec Waste Industries

**Schools**

**1. Existing Conditions**

**Public Schools**

The Apple Valley Unified School District (AVUSD) is the public school District in the Town of Apple Valley and portions of its Sphere of Influence, including the proposed annexation areas.

AVUSD currently operates 18 schools within its District, including 9 elementary, 3 middle and 2 high schools, as well as one continuation school. In addition, AVUSD operates an alternative education center offering adult education, a magnet school and a charter school. [80] [81] The following table lists AVUSD schools, locations, grades served, 2007-08 school enrollment, and total capacity.

**Table III-52**
**Apple Valley Unified School District Schools**

| School | Location | Grades Served | Enrollment (2007-08) | Capacity |
|---|---|---|---|---|
| **Elementary** | | | | |
| Desert Knolls | 18213 Symeron Drive | K-5 | 529 | 795 |
| Mariana | 10601 Manhasset Rd. | K-5 | 609 | 702 |
| Mojave Mesa | 15552 Wichita Rd. | K-5 | 607 | 655 |
| Rancho Verde | 14334 Pioneer Road | K-5 | 716 | 725 |
| Rio Vista | 13590 Havasu Road | K-5 | 693 | 795 |
| Sandia | 21331 Sandia Rd. | K-5 | 757 | 795 |
| Sitting Bull | 19355 Sitting Bull Rd. | K-5 | 569 | 761 |
| Sycamore Rocks | 23450 South Road | K-5, Visual/Perf. Arts | 557 | 725 |
| Yucca Loma | 21351 Yucca Loma Road | K-5 | 669 | 865 |
| **Middle** | | | | |
| Apple Valley | 12555 Navajo Road | 6-8 | 921 | 1,664 |
| Sitting Bull | 19445 Sitting Bull Road | 6-8, Technology | 1,267 | 1,231 |
| Vista Campana | 20700 Thunderbird Road | 6-8 | 876 | 1,408 |
| **High Schools** | | | | |
| Apple Valley | 11837 Navajo Road | 9-12 | 1,978 | 2,813 |
| Granite Hills | 22900 Esaws Road | 9-12 | 2,140 | 2,494 |
| Willow Park | 21950 Nisqually Road | 9-12 | 147 | 406 |
| **Other** | | | | |
| Alternative Education Center | 13063 Pawnee Road | K-12 | 498 | N/A[1] |
| Academy for Academic Excellence (Lewis Center; Charter) | 20702 Thunderbird Road | K-2 | 120 | 120 |
| Academy for Academic Excellence (Lewis Center; Charter) | 17500 Mana Road | 3-12 | 855 | 880 |
| Vanguard Preparatory (Magnet) | 12951 Mesquite Road | K-8 | 1,192 | 1,086 |
| **Adult Education** | | | 39 | N/A[3] |

Sources: AVUSD, February 12, 2008; Teresa Dowd, Academy for Academic Excellence, April 10, 2008.
[1]Independent Study.
[2]Independent Charter.
[3]At Alternative Education Center

[80] Personal communication, Lynette Kachelmeyer, AVUSD Facilities Planning, February 2008.
[81] Personal communication, Teresa Dowd, Academy for Academic Excellence, February 2008.

The District also offers programs for gifted and talented students through the GATE program, after-school programs for elementary level students, peer tutoring, and other special programs.

Enrollment at AVUSD schools has generally increased by about 1.5% to 5% annually; however, enrollment declined by approximately 2% in 2007, consistent with a downturn in the local housing market. Currently, many District schools have excess capacity, as shown in Table III-52, above.

The District completed an update to its Master Plan in 2007, which plans for facilities over a six-year period, through 2012. The District generally purchases property and plans for new facilities in proximity to areas where the Town has approved Tract maps.[82]

Assembly Bill 2926, passed by the California State Legislature in 1986, allows school districts to assess development fees for construction and reconstruction of public schools. Currently the AVUSD development fees are:[83]

- Residential (new construction): $3.60 per square foot[84]
- Commercial (all): $0.47/sf

Other Public School Facilities

In addition to AVUSD schools, San Bernardino County serves special needs students in the region through staffing provided at AVUSD elementary schools or through private placement. The County intends to consolidate these services at three planned new facilities in Apple Valley, which are expected to be completed in 2009 and 2010. These facilities will include an early education center and State-mandated medical-therapy services adjacent to the AVUSD Sandia Elementary School. A second early education center near St. Mary Medical Center will include, among other facilities, four classrooms dedicated to serve autistic students and will serve regional needs as well as students within AVUSD boundaries. A junior/senior high school for special needs students in the western portion of the Town will serve approximately 156 students.[85]

Private Schools and Higher Education Institutions

There are several private schools in the Town, including Apple Valley Child Care Center, Apple Valley Christian School, Valley Christian Schools, Apple Valley Private School Learning Center, Apple Valley Village School, High Desert Haven, St. Timothy's Episcopal School, St. Mary's Regional Catholic School, and Mojave Christian.

Higher education institutions serving residents of the Town and the region include Victor Valley College in the City of Victorville, and Redlands University. In addition to its primary campus in

82 Op. Cit.

83 AVUSD Residential Development School Fee Justification Study, March 4, 2008.

84 Residential fees for additions are $2.97 per square foot. Commercial fees are the same for new construction and additions.

85 Personal Communication, David Reck, County of San Bernardino Facilities Planning, February 2008.

Redlands, the University offers evening courses at the AVUSD Academy for Academic Excellence (AAE) school site on Mana Road in Apple Valley.

Other Educational Initiatives

The AAE and Redlands are exploring the potential for future development of a four-year college or university at the campus. The college is currently envisioned as a partnership between several colleges and universities in the region and would focus on providing teacher education and credentialing. This initiative is still in the exploratory stage.

The Town is also considering the possibility of offering a branch of the San Bernardino County Museum within Apple Valley. The Museum is located in Redlands and is a regional cultural and natural history museum with branches at historic sites in Yucaipa, Colton, Chino, Rancho Cucamonga and Daggett. Housing collections focusing on anthropology, biological and geological science, and history, the Museum offers special programs and events for families, school children, and scout troops.

### 2. Impacts

At build out, the proposed General Plan and annexation areas is expected to result in the construction of approximately 63,749 dwelling units of which it is assumed that 36,619 will be single-family units and 27,130 will be multi-family units. Based on AVUSD student generation factors by grade level and type of residential development, the following table provides an estimate of total student enrollment at build out of the General Plan area.

**Table III-53**
**Potential School Enrollment at General Plan and Annexation Build Out**

| Grade Level | Potential Build Out Units | Student Generation Rate | Build Out Enrollment |
|---|---|---|---|
| **K-5** | | | |
| Single-Family | 36,619 | 0.2401 | 8,792 |
| Multi-Family | 27,130 | 0.1826 | 4,954 |
| **6-8** | | | |
| Single-Family | 36,619 | 0.1418 | 5,193 |
| Multi-Family | 27,130 | 0.0743 | 2,016 |
| **9-12** | | | |
| Single-Family | 36,619 | 0.1838 | 6,731 |
| Multi-Family | 27,130 | 0.0816 | 2,214 |
| | | **TOTAL** | **29,899** |

Based on Student Generation Rates, Apple Valley Unified School District Residential Development School Fee Justification Study, March 4, 2008.

Table III-53 provides a benchmark for estimating future student enrollment using both existing and potential new dwelling units to calculate build out enrollment. It assumes a moderate rate of development. Actual student enrollment figures will be based on actual development that occurs

in the future, as regulated by the General Plan. However, as the table demonstrates, implementation of the General Plan has the potential to generate a substantial increase in student enrollment in public schools and thereby have a significant impact on AVUSD schools in the area. The State-mandated funding mechanism that AVUSD uses provides for the District to receive developer fees for school construction.

**Annexation 2008-001 and 2008-002**

The AVUSD District boundaries include the two proposed annexation areas, and AVUSD will provide public education services and facilities to those areas. Build out of the proposed annexation areas is expected to result in development of 4,236 dwelling units, of which 722 will be single-family and 3,513 will be multi-family. It should be noted that all of these units will be developed in Annexation Area 2008-001, since based on land use designations in Annexation Area 2008-002, build out of that area will be for Planned Industrial uses only.

The following table provides an estimate of future school enrollment at build out of the proposed annexation areas.

**Table III-54**
**Potential School Enrollment at Build Out of Annexation No. 2008-001 and 2008-002**

| Grade Level | Potential Build Out Units | Student Generation Rate | Build Out Enrollment |
|---|---|---|---|
| **K-5** | | | |
| Single-Family | 722 | 0.2401 | 173 |
| Multi-Family | 3,513 | 0.1826 | 642 |
| **6 - 8** | | | |
| Single-Family | 722 | 0.1418 | 102 |
| Multi-Family | 3,513 | 0.0743 | 261 |
| **High School** | | | |
| Single-Family | 722 | 0.1838 | 133 |
| Multi-Family | 3,513 | 0.0816 | 287 |
| | | **TOTAL** | **1,598** |

Based on Student Generation Rates, Apple Valley Unified School District Residential Development School Fee Justification Study, March 4, 2008

The estimated student enrollment figure shown on Table III-54 includes students in existing and future dwelling units. Further, this estimate is included in the total shown on Table III-53, which estimates build out population of the General Plan area and the annexations. Since new development will occur over time, student populations are also expected to increase gradually, and are therefore not expected to significantly impact AVUSD schools. AVUSD facilities planning provides for new school sites as population within the District increases, based on tract map approvals within the Town. Further, AVUSD will continue to receive developer's impacts

fees for residential, commercial and industrial development. While these measures are expected to minimize impacts to AVUSD schools, mitigation measures are set forth below to ensure that any potential adverse effects to public schools are reduced to less than significant levels.

Calculation of potential developer impact fees would require site-specific development data that is not available at this level of analysis, particularly as the fees are periodically adjusted. However, fees are expected to be substantial and will assist AVUSD in off-setting impacts of new development on District schools.

### 3. Mitigation

The following mitigation measures shall be implemented to ensure that impacts to schools in the Apple Valley Unified School District are reduced to less than significant levels.

1. Statutory school mitigation fees for residential and commercial development shall continue to be assessed to developers.

2. Should developers in the General Plan study area use Mello-Roos or other types of public facilities financing districts, AVUSD shall be included in discussions to determine how the developer may cooperate with the District in its funding mechanism. The following alternatives are available to AVUSD to mitigate significant impacts to District schools:

    - Leroy F. Green State School Building Lease-Purchase Law: Under an agreement between the school district and the State of California, this Act provides for construction, reconstruction or replacement of school facilities by the State Allocation Board. Districts with 1) substantial enrollment in year-round schools, 2) the ability to raise a percentage of project costs, and 3) opening a new facility as a year-round school receive first priority for future State funding.

    - Lease-Purchase Arrangements: Lease-purchase agreements may be made between school districts and private builders of portable classrooms, as authorized under Sections 39240 and 39290 of the State Education Code. Under this method, school districts can also finance capital outlay. Lease-purchase agreements also provide the benefit of offering long-term financing without the need for voter approval of special taxes or benefit assessments.

    - Developer Fees: Assembly Bill 2926 (Chapter 887) was approved by the State Legislature in 1986, authorizing school districts to assess development fees to fund school construction or reconstruction. Currently these fees are $3.60 per square foot of residential construction and $0.47 per square foot of commercial construction. Under Government Code Section 53080, proof of compliance with the school district's resolution may be required prior to issuance of building permits.

    - Mello-Roos Community Facilities Act: Government Code Section 55311, et. seq., establishes provisions for this funding option. In order to benefit from this Act, a

school district is responsible to initiate proceedings to declare itself a "Community Facilities District" (CFD), which is defined as a government entity created to perform specific activities within set boundaries. It provides for the CFD to purchase, construct or rehabilitate real or tangible property with an estimated useful life of five years or longer.

**Mitigation Monitoring/Reporting Program**

A. The Town of Apple Valley shall continue to confer and consult with the Apple Valley Unified School District to monitor public schools in the General Plan area to ascertain whether and to what extent the following occur: overcrowding, security issues, low performance on standardized tests, and other adverse impacts on District schools.
**Responsible Parties**: Planning Division, Town Council, Apple Valley Unified School District

B. The Town shall continue to cooperate with Apple Valley Unified School District to ensure the collection of statutory developer impact fees.
**Responsible Party**: Planning Division

**Libraries**

**1. Existing Conditions**

The Newton T. Bass Apple Valley Library, part of the San Bernardino County Library System, is a 19,142 square foot facility located adjacent to Town Hall off of Dale Evans Parkway. The library provides Apple Valley residents access to over 20,000 hardcopy books as well as to an online database containing electronic periodicals, magazines and encyclopedias. The library offers a number of programs and community events including resources for illiterate and visually impaired residents, the LITE program for younger children, the Kids and Crafts program for children ages 5 to 12, and programs geared towards teens. Adult programs include the free literacy program, book and poetry clubs, and volunteer opportunities. [86]

The County Master Library Facility Plan (2001)[87] indicates that the desirable size of a public library in the County system within communities with populations of between 35,000 and 100,000 persons is 0.5 to 0.6 square feet per capita. For libraries across the United States, it estimates the average at 0.46 square feet per capita. Based on the Town's current estimated population of 70,092, the public library in Apple Valley provides approximately 0.27 square feet of library space per capita. The County Plan further indicates that additional library funding would be needed to meet a standard of 0.5 to 0.6 square feet per capita, and addresses expansion of the library in Apple Valley to provide facilities consistent with the national average, approximately 0.45 square feet per capita.

86 Personal Communication, Cheri Cervantes, Apple Valley Library References, February 12, 2008.

87 "San Bernardino County Library Master Facility Master Plan," prepared by PROVIDENCE Associates, December 2001.

Library facilities may require expansion to meet future demand as the Town's population increases. The Town and the County of San Bernardino monitor library circulation data and plan for expansion of services and facilities as needed. Currently there is no indication that the library in Apple Valley is over-utilized or unable to meet the demand generated by residents.

### 2. Impacts

Based on provision of library facilities at a standard of 0.45 square feet per capita, as planned for in the County Library Master Facilities Plan, and a General Plan and annexations build out population of 194,931, an approximately 87,719 square foot facility will be needed to serve the build out population.

**Annexations 2008-001 and 2008-002**

At build out the proposed annexation areas are expected to have a population of 4,236, all of which will occur within Annexation 2008-001. Based on the standard of 0.45 that is indicated in the County's Master Plan, the build out population of the annexation areas would be adequately served by approximately 1,906 square feet of library facilities. It should be noted that this population is included in the total General Plan build out population and therefore provision of library services is also accounted for therein.

Development facilitated by the General Plan and the proposed annexations is expected to occur gradually and will therefore not result in immediate impacts to County library services. The Town and the County will need to continue to monitor growth in this area to ensure that adequate library services are available to serve the build out population within the annexation area.

Without mitigation, impacts associated with build out of the proposed General Plan and annexations are expected to be significant.

### 3. Mitigation

The following mitigation measures will ensure that impacts to libraries are reduced to less than significant levels.

1. The Town and the County of San Bernardino shall, by continuing to monitor and evaluate library usage rates and the level of service provided at County libraries in the General Plan area, determine the need for additional services and facilities.

2. In order to determine appropriate mitigation fees necessary to provide adequate library services, the Town shall continue to consult and coordinate with San Bernardino County, and consider the addition of library facilities to Developer Impact Fees in the future.

**Mitigation Monitoring/Reporting Program**

A. The Town and County shall regularly monitor utilization of the County library facilities in Apple Valley to determine needs and ensure provision of essential adequate library services to local residents.
**Responsible Parties**: Town Manager, County Librarian

**Law Enforcement**

**1. Existing Conditions**[88]

The Town of Apple Valley contracts with the San Bernardino County Sheriff's Department for law enforcement services within the Town limits. The Sheriff also currently patrols both annexation areas.

The Apple Valley Police Department is located in the Apple Valley Civic Center at 14931 Dale Evans Parkway in Apple Valley. There is also an un-staffed substation used for report writing and other administrative tasks located at 21989 Outer State Highway 18.

Staffing at the Apple Valley Police Department currently consists of 49 sworn personnel and 14 civilian/general employees, six of whom are qualified to perform non-suspect-involved crimes or calls for service. The Department has set a target ratio of 1 deputy per 1,500 residents.

**2. Impacts**

Implementation of the proposed General Plan and annexations are expected to result in a total build out population of approximately 194,931 residents. To maintain the target ratio of 1 deputy per 1,500 residents at General Plan build out will require a total of 130 deputies, which is an increase of 81 deputies as compared with current staffing levels. This will require a significant increase in the number of deputies and level of police protection afforded to the residents of the Town. An increase in the number of deputies, associated staff, equipment, and patrol vehicles could result in substantial costs to the Town. However, the demand for additional police protection services will increase gradually, and an increase in Town revenue is also expected with General Plan build out. Actual demand for police protection will be dependent upon future levels of development.

**3. Mitigation Measures**

1. New development projects shall be reviewed by the Sheriff's Department to ensure the Department's ability to provide adequate police protection. New developments shall comply with established Sheriff's Department standards.

[88] Personal communication, Trish Hill, Apple Valley Police Department, November 24, 2008.

2. The Town shall continue to monitor Town population and Sheriff's Department staffing levels to insure that sufficient levels of police protection are afforded.

**Mitigation Monitoring/Reporting Program**

A. The Sheriff's Department shall monitor calls in the planning area. The Town shall annually review response times and police activity to ensure adequate protection.
**Responsible Parties**: Sheriff's Department, Town Manager.

**Fire Protection**

**1. Existing Conditions**[89], [90]

The Town of Apple Valley receives fire protection services from the Apple Valley Fire Protection District (AVFPD). AVFPD is an independent District that serves the Town and unincorporated areas of San Bernardino County. The District's approximately 206 square mile service area extends easterly from the Mojave River as far as the dry lakes toward Lucerne Valley.

District Staffing
The District currently has 20 paid-call, 5 part-time, and 54 career (paid, full-time) staff. Of these staff, 50 are currently assigned to the seven stations within the District:

- Station No. 331 at 22400 Headquarters Drive has 12 staff, and is equipped with a Type-1 engine, a Type-2 water tender, and a medium-level rescue vehicle.
- Station No. 332 at 18857 Highway 18 has 9 staff. Equipment includes a Type-1 engine and a Type-3 engine.
- Station No. 333 at 20604 Highway 18 is staffed with private ambulance company personnel.
- Station 334 at 12143 Kiowa Road has 9 staff, a Type-1 engine, and a Type-3 engine.
- Station No. 335 at 21860 Tussing Ranch Road is staffed by paid-call staff only. This means that staff members are alerted via pager to calls within the response area. The station is equipped with a Type-1 engine and a Type-3 water tender.
- Station No. 336 at 19235 Yucca Loma Road has 6 career and 10 paid-call staff, and is equipped with a rescue squad vehicle, a Type-1 engine, a Type-4 engine, an Incident Command bus, an Incident Support unit and a Type-2 truck.
- Station No. 337 at 19305 Jess Ranch Parkway was added in October 2007. Staffing has been expanded, as of April 2008, from 2 to 4 staff members. The station is equipped with a Type-4 Medic Patrol, a Hazmat Trailer, and a Reserve Squad.

AVFPD and the Town are considering construction of an eighth fire station on approximately 12 acres at the northwest corner of Johnson Road and Navajo Road in north Apple Valley. AVFPD

[89] Personal communication, Cindy Serrano, Apple Valley Emergency Services, January – May 2008.
[90] Personal communication, Luann Hopkins, Apple Valley Fire Protection District, February – July 2008.

has indicated that it expects to relocate fire training classes from Victor Valley College to the new station, if developed.

The AVFPD maintains a mutual aid agreement with other agencies in the region, including the City of Victorville, San Bernardino County, and the Bureau of Land Management. A joint dispatch center is located in Victorville and serves the mutual aid agencies.

Standards and Response Times

The AVFPD has established a desired staffing ratio of approximately 1 full-time fire personnel per 1,500 persons. With a current population of 70,092 in the Town, the current staffing level meets and slightly exceeds the desired staffing ratio.

The District's desired response time is 6 minutes. Currently, the District averages a response time within the Town limits of 6 minutes 25 seconds.

District Rating

The Insurance Service Office (ISO), which provides rating and statistical information for the insurance industry in the United States, has developed a rating scale to assess community's fire protection services. The ratings are based on a community's fire suppression delivery system, dispatch, fire department equipment, staff and distribution, and water supply. This scale is used to determine insurance rates, and ranges from Class 1 (best) to Class 10 (worst). The AVFPD is currently rated "Class 4."

### 2. Impacts

Build out of the proposed General Plan and annexation areas is estimated to result in a population of approximately 194,931 residents. This increased population would increase demand for fire protection services including personnel, equipment, and facilities. In outlying or previously undeveloped areas, new fire hydrants and the extension of water mains may also be required. Costs associated with the provision of new fire facilities and equipment, as well as the infrastructure to deliver adequate fire flows, can be significant and the need for these facilities should be thoroughly assessed as build out occurs.

Based on the AVFPD desired ratio of 1 full-time personnel per 1,500 population, at buildout of the General Plan there would be 130 full-time fire personnel on staff. This represents an increase over current staffing that is commensurate with projected population growth in the planning area.

**Annexations 2008-001 and 2008-002**

At build out the two annexation areas will be developed with additional residential, commercial and industrial uses that will result in increased demand for fire protection services. Based on the desired ratio cited above, at build out these areas will require 9 full-time fire personnel. This is included in the General Plan build out staffing figure cited above.

Without mitigation, build out of the General Plan will result in significant impacts associated with the provision of fire protection services. Mitigation is set forth below to reduce these impacts to less than significant levels.

### 3. Mitigation

The following mitigation measures will reduce impacts associated with provision of fire protection services to less than significant levels.

1. The Town shall continue to coordinate closely with the Apple Valley Fire Protection District to assure the timely expansion of facilities and services.

2. The Town and Apple Valley Fire Protection District shall continue to enforce fire codes and other applicable standards and regulations as part of building plan review and conducting building inspections.

3. Industrial facilities that involve the storage of hazardous, flammable or explosive materials shall be sited so as to ensure the highest level of safety in strict conformance with Uniform Fire Code and other applicable codes and regulations.

4. The Apple Valley Fire Protection District shall continue to review new development proposals and evaluate project plans to assure that it can provide adequate fire protection.

5. The Town and Apple Valley Fire Protection District shall coordinate with the Apple Valley Ranchos Water Company, Golden States Water Company, and all other water purveyors serving the General Plan and annexation areas, to ensure adequate water supplies and pressure for existing and proposed development.

**Mitigation Monitoring/Reporting Program**

A. Apple Valley Fire Protection District shall review all development plans prior to issuance of building permits to ensure that development complies with Town and District standards.
**Responsible Parties:** Planning Division, Apple Valley Fire Protection District

**Health Care Services**

### 1. Existing Conditions

The St. Mary Medical Center is a 186-bed hospital, and the largest health care facility in the Town. It is located at 18300 Highway 18 in Apple Valley. The approximately 90-acre campus provides acute, general, medical-surgical, and intensive care, and includes a 24-hour emergency room and a variety of other in- and out-patient medical services. The current facilities, encompass approximately 215,000 square feet, including offices. The hospital is currently designated as a Level III trauma care center, which is the lowest level of trauma care. Near-term

(5-year) plans include construction of new acute care facilities with the intention of attaining Level I trauma care status.

The hospital has also purchased lands in Victorville and plans to break ground for facilities there within approximately three years. Located within the Apple Valley Regional Commercial Corridor, this planned 733,500 square-foot facility will include a 120-bed, 100,000 square-foot general acute-care hospital, a convalescent care facility, medical office buildings, and office/professional buildings. A 99-bed sub-acute facility is proposed to be developed adjacent to the hospital. [91] The hospital maintains backup facilities such as diesel-powered generators and food and water stockpiles, as well as a decontamination tent. Its role as a critical facility in the event of an emergency is further discussed in the Emergency Preparedness Element of the General Plan.

Other Medical Facilities in Apple Valley

There are a number of private practice physician's offices and clinics in the Town, including Choice Medical Group, Formula Medical Group and All Points Medical Group. There is one urgent care center in Apple Valley. Dr. Mike's Walk-In Clinic at 12413 Navajo Road is affiliated with the Choice Medical Group.

There are also psychiatric and rehabilitation facilities available to high desert residents, although many located in other high desert communities in the region. Within Apple Valley, Desert Behavioral Health is a private family counseling/behavioral health services practice located at 16195 Siskiyou Road. Desert Behavioral Health provides therapeutic groups and classes to individuals, families, children and couples.

The County of San Bernardino High Desert Juvenile Detention and Assessment Center (HDJDAC) is located at 21101 Dale Evans Parkway. Opened in 2004, the 200-bed facility is a short-term residential facility wherein short-term juvenile offenders can receive special programs and public schooling while awaiting hearing before a judge.[92]

Several residential senior care facilities are located in Apple Valley and provide services ranging from independent to assisted living facilities and skilled nursing care. Some facilities also offer specialized care for persons with Alzheimer's or other forms of dementia.

Other Medical Facilities in the Region

There are two other hospitals in the vicinity of the General Plan area, the Victor Valley Community Hospital, located approximately 5 miles west of Apple Valley, and the Desert Valley Hospital, located approximately 10 miles to the southwest. Victor Valley Community Hospital, licensed for 115 beds, includes 24-hour/7-day a week emergency services and an on-site heliport. Desert Valley is licensed for 83 beds. Both centers include acute care hospitals.

91 Town of Apple Valley, http://www.applevalley.org/pgs/market_profile.asp, accessed November 24, 2008.

92 Personal Communication, Robert Suchomel, St. Mary Medical Center, January 18, 2008.

Currently, injured persons requiring Level I care are transported to the Loma Linda Medical Center, approximately 51 miles from Apple Valley. Loma Linda has 900 beds and is currently the only Level I trauma center for Inyo, Mono, San Bernardino, and Riverside counties.

### 2. Impacts

All health care facilities inside and outside the planning area may be impacted by build out of the General Plan and annexations, and should continue to plan for regional growth. The planned St. Mary Medical Center facility in Victorville is expected to substantially contribute to the provision of acute-care and other general medical-surgical services to residents and visitors to the General Plan area and the region. Further, other health care providers such as Victor Valley Community Hospital and DVMC are also expected to continue to expand to maintain adequate service as needs are identified.

### 3. Mitigation

Local and regional medical care facilities are privately operated and will continue to plan for growth. Therefore, no mitigation measures are necessary.

## Electricity

### 1. Existing Conditions

Southern California Edison (SCE) provides electrical service to the General Plan area. SCE has four major electric transmission corridors in the region, each with 115kV lines. Power from these lines is provided to businesses, industrial plants, institutions and residences in the planning area via distribution facilities and circuits ranging from 33kV to 6.9kV. There are three SCE substations in Apple Valley, with voltages of 33kV to 115kV.[93] All new electric lines of 34.5kV or less in Apple Valley are undergrounded, in compliance with Town Ordinance 14.28.020. SCE is conferring with the Town to determine a location for a new planned 115/12kV substation to serve newly developing areas by year 2013.[94]

SCE plans for new infrastructure to serve existing and new development. Based on its current 10-year load forecasts, SCE expects to be able to provide electrical service to future development in the Town and Sphere of Influence, including the proposed annexation areas. Additional lines may be required to serve future growth.

As discussed in Section III-C, Air Quality, the South Coast Air Quality Management District (SCAQMD) estimates that residential customers use an average of 5,626 kilowatt ours per year. Estimated electricity usage rates by land use type are shown in Table III-56.

[93] Letter of correspondence, Nancy Jackson, Southern California Edison, July 25, 2008.

[94] E-mail correspondence, Nancy Jackson, Southern California Edison, November 10, 2008.

**Table III-56**
**Estimated Electricity Usage Rates**

| Land Use | Annual Usage Rate |
|---|---|
| Residential | 5,626 Kilowatt-hour/unit/year |
| Retail Commercial | 13.55 Kilowatt-hour/square feet/year |
| Restaurant | 47.45 Kilowatt-hour/square feet/year |
| Hotel/Motel | 9.95 Kilowatt-hour/square feet/year |
| Office | 12.95 Kilowatt-hour/square feet/year |
| Food Store | 53.30 Kilowatt-hour/square feet/year |

Source: SCAQMD Air Quality Handbook, Appendix to Chapter 9, April 1993.

### 2. Impacts

Based on annual usage rates shown above, build out of the proposed General Plan and annexation areas is estimated to result in electrical consumption of 1,807,978,891 kilowatt-hours per year (kwh/year). Of this amount, 353,683,749 kwh/year would for residential uses, 924,262,572 kwh/year would be for commercial uses, and 525,032,571 kwh/year would be used by industrial establishments.[95]

**Annexations 2008-001 and 2008-002**

At build out, Annexation 2008-001 is estimated to result in electrical consumption of 220,749,040 kwh/year, which includes existing and future residential, commercial and industrial development. Build out of Annexation No. 2008-002 is expected to consume approximately 68,799,547 kwh/year. These consumption estimates are included in the estimated consumption figure for the General Plan build out area cited above. As previously discussed, Annexation 2008-002 is designated for Planned Industrial uses only.

No development projects are immediately planned for construction in either annexation area, and therefore adoption of the implementation of the proposed annexations is not expected to result in an immediate increase in demand for electricity. The gradual expansion of SCE infrastructure will be required at build out of these areas, which will contribute to the regional demand for electricity.

Southern California Edison is a publicly traded company whose rate structure includes the expansion of facilities to accommodate growth. As development and build out of the General Plan and annexation areas is expected to occur over time, SCE's expansion plans will be adjusted to accommodate it. Impacts are therefore expected to be less than significant.

[95] Based on CEQA Air Quality Handbook, Appendix to Chapter, prepared by South Coast Air Quality Management District, April 1993. Please see Section III-H of this document for calculations.

### 3. Mitigation

As expansion of electrical service is expected to occur over time, and SCE's rate structure includes expansion of facilities, no significant impact is expected, and no mitigation measures are required.

## Natural Gas

### 1. Existing Conditions

Southwest Gas Company provides natural gas service to the Town and its planning area through a series of pipelines of differing sizes and pressure capabilities. Transmission, supply, and distribution lines provide service to most portions of the Town and its Sphere of Influence.

Natural gas is delivered to the area through high-pressure facility corridors located at Central Road-Quarry Road to Ottawa Road; Thunderbird Road-Central Road to Highway 18 and Quantico Road; Ottawa Road-Central Road to Kiowa Road; Del Oro Road-Kiowa Road to Tussing Ranch Road; Del Oro Road-Kiowa Road to Joshua Road; Bear Valley Road-Kiowa Road to the Mojave River; and Apple Valley Road-Bear Valley Road to Yucca Loma Road. This high-pressure system consists of a combination of 4-inch, 6-inch, 8-inch, and 12-inch high-pressure lines that operate at 240 psig. They use 36-inch lines with pressure levels ranging from 400 to 700 pounds per square inch (psi). The pressure is reduced at different limiting stations, which then direct the gas to distribution lines. Distribution lines are 2 to 8 inches in diameter, with pressure levels ranging from 175 to 400 psi, and are located within most public right-of-ways. The pressure is reduced again at regulator stations, which transfer natural gas to distribution lines for transportation to homes and businesses. Distribution lines are 2 to 4-inch diameter steel or plastic pipes that operate at 45 to 55 psi.[96]

Natural gas is not currently provided in some areas within the service area; these include those without existing facility extensions, undeveloped areas, or extreme rural areas. Southwest Gas Company has indicated that it will accommodate new development in the planning area by working closely with developers to build extensions for build out areas. Where natural gas services and facilities are not available, propane is utilized as an alternative source of fuel.

The average household in Southwest Gas Company's service area for Apple Valley is expected to consume approximately 6,665 cubic feet of natural gas per month, as shown in the following table.

[96] Personal communication, Kevin Lang, Southwest Gas, April 2008.

**Table III-57**
**Natural Gas Consumption Factors**

| Land Use | Monthly Use Rate |
|---|---|
| Single Family Residential | 6,665.0 cf/unit/month |
| Multiple Family Residential | 4,011.5 cf/unit/month |
| Retail/Shopping Center | 2.9 cf/sq.ft./month |
| Office | 2.0 cf/sq.ft./month |
| Hotel/Motel | 4.8 cf/sq.ft./month |
| Industrial | 4.8 cf/sq.ft./month |

Note: Industrial usage factor used is equivalent to the highest commercial usage factor provided by SCAQMD.
Source: South Coast Air Quality Management District Air Quality Handbook, Appendix to Chapter 9, April 1993.

### 2. Impacts

At General Plan build out, the planning area is expected to contain approximately 36,619 single-family dwelling units, 27,130 multi-family dwelling units, 51,860,766 square feet of commercial space, and 281,188,992 square feet of industrial space.

Using the factors described in Table III-57, above, single-family units will use approximately 244,065,635 cubic feet per month (cf/month), and multi-family units will use approximately 108,831,995 cf/month.

Commercial use will consume approximately 145,002,703 cf/month, while industrial use will consume about 281,188,992 cf/month. Total development at General Plan build out is projected to consume about 779,089,325 cubic feet per month. This figure represents both existing and future development in the General Plan and annexation areas. Future levels of development, individual project designs, and the effectiveness of energy-conserving measures will be the determining factors in actual consumption of natural gas.

**Annexation 2008-001 and 2008-002**

The implementation of Annexation 2008-001 will facilitate residential, commercial and industrial development that will result in increased natural gas consumption. Based on the factors for these uses cited above, it is estimated that all development in the annexation area will consume approximately 76,209,944 cubic feet per month. Future industrial development in Annexation 2008-002 is expected to result in consumption of approximately 36,846,619 cubic feet per month of natural gas.

Consumption estimates for the annexation areas are accounted for under the General Plan build out figures cited about. New facilities, including natural gas distribution lines, will need to be constructed to serve new development in the annexation areas. This development is expected to build out gradually over time. Further, Southwest Gas coordinates closely with the Town to ensure the adequate provision of natural gas facilities and services to new development within

the SWG service area. Nonetheless, the Town and SWG will need to monitor growth in these areas to ensure that these services can be extended in a timely manner to serve new development.

SWG's rate structure includes the expansion of facilities to accommodate growth. As development and build out of the General Plan and annexation areas is expected to occur over time, SWG's expansion plans will be adjusted to accommodate it. Impacts are therefore expected to be less than significant.

### 3. Mitigation

As expansion of natural gas service is expected to occur over time, and SWG's rate structure includes expansion of facilities, no significant impact is expected, and no mitigation measures are required.

## Telephone, Internet and Television Service

### 1. Existing Conditions

Telephone and high-speed internet services are provided in the area by Verizon. Verizon facilities in the planning area include a standard telephone network comprised of copper lines. Verizon's fiber optic network (FiOS) is available within the Town's limits and transmits high-speed Internet service and high-definition television. Verizon serves business clients in Apple Valley with point-to-point data transmission services via data service transmission lines (DS3) or T1 high-speed data transmission lines.[97]

In most areas of Apple Valley, Charter Communications also provides telephone service, high-speed Internet and cable television. Charter facilities in the planning area include approximately 446 miles of coaxial cable, of which about 65% is aerial and approximately 35% is underground. Bandwidth speeds range from 550 megahertz (MHz) to up to 820 MHZ in some parts of Charter's service area. Charter also has approximately 380 miles of fiber optic network within several high desert communities, including Apple Valley.[98]

### 2. Impacts

Build out of the General Plan will result in increased demand for telephone, Internet and television services and thereby to facilities and equipment owned and maintained by Verizon and Charter Communications. Future development is expected to require expansion of services to areas not currently serviced. It is expected that impacts to the ability of Verizon and Charter Communications to provide service to the planning will not be significant.

97 Personal Communication, Paul Elsebusch, Verizon, April 9, 2008.

98 Personal Communication, Sandra Magana, Charter Communications, May 29, 2008.

**Annexations 2008-001 and 2008-002**

Development facilitated by these annexations is expected to result in construction of additional residences, as well as additional commercial and industrial development. This development is expected to occur gradually; nonetheless, it will increase the demand for additional telephone, Internet and television services. Both Verizon and Charter Communications plan for extension of infrastructure throughout the region, based on future development. Implementation of the proposed annexations is not expected to result in significant impacts to their facilities or equipment, nonetheless, these service providers will need to monitor growth trends in their service areas to ensure the orderly and efficient of services and facilities.

Both Verizon and Charter incorporate expansion into their rate structure to accommodate growth. As development and build out of the General Plan and annexation areas is expected to occur over time, their expansion plans will be adjusted to accommodate it. Impacts are therefore expected to be less than significant.

### 3. Mitigation

As expansion of telephone service is expected to occur over time, and Verizon's and Charter's rate structure includes expansion of facilities, no significant impact is expected, and no mitigation measures are required.

**Domestic Water Services**

### 1. Existing Conditions

There are several water purveyors responsible for providing domestic water to the Town of Apple Valley and areas within its Sphere-of-Influence. The Apple Valley Ranchos Water Company serves approximately 19,000 customer connections, or approximately 80% of residential, commercial, industrial and institutional development in the Town. Golden States Water Company provides service to approximately 2,500 active connections in the Town and its Sphere-of-Influence. Several other smaller water purveyors also provide water to within the General Plan area.

Apple Valley Ranchos Water Company (AVWRC)[99]
AVWRC provides domestic water to its customer base in the Town from 23 wells. AVRWC has a total groundwater production capacity of approximately 37.79 million gallons per day (MGD). The AVRWC water system includes approximately 400 miles of water lines ranging from 4 inches to 20 inches in diameter, and approximately 11 MG of elevated storage capacity distributed over 15 pressure zones.[100]

[99] Apple Valley Ranchos Water Company Pressure Zone Discussion, prepared for Terra Nova Planning and Research for the Apple Valley General Plan Update by Apple Valley Ranchos Water Company, April 2008.

[100] "Apple Valley Ranchos Water Company Pressure Zone Discussion," prepared by Apple Valley Ranchos Water Company, 2008.

Golden State Water Company

As noted above, Golden State Water Company serves approximately 2,500 active service connections within an approximately 4 square mile area in the General Plan area, which includes areas within the Town's corporate limits and in the Sphere-of-Influence. [101]

Neither of the two annexation areas is currently located within a service area served by a local water purveyor. Water users in both annexation areas utilize domestic water from private wells or from storage tanks filled with water deliveries from private haulers. This is further addressed under Impacts and Mitigation, below.[102]

### 2. Impacts

As discussed in Section III-I, Water Resources/Quality, build out of the proposed General Plan and annexations will result in water demand associated with increased residential, commercial, industrial and other types of development, such as open space amenities, street rights-of-way, etc. This increased demand has been estimated based on water consumption factors from a variety of sources. These include, but are not limited to, historical water use for residential development in AVWRC's service area. Based on these factors, General Plan build out is estimated to generate water demand of 95,999 acre-feet per year for all types of development.

Development facilitated by General Plan build out will increase the cumulative impact of urban development to groundwater supplies in the region, and will reduce the amount of potable groundwater in storage. These increases will occur gradually as development takes place in the region. Section III-I provides a more thorough discussion of impacts to water resources and quality.

**Annexations 2008-001 and 2008-002**

The same factors used to estimate water consumption associated with General Plan build out have been used to calculate water consumption in each of the annexation areas. As shown in Section III-I, at build out it is estimated that residential, commercial, industrial and other development in Annexation 2008-001 will result in water demand of 6,476 acre-feet per year. Industrial development in Annexation 2008-002 is estimated to result in demand of 1,290 acre-feet per year.

Since these areas are not currently served by local water purveyors, implementation of the annexations will require the extension of infrastructure to provide domestic water service to future development. This is expected to occur over time as development takes place. The Town and applicable water purveyors will need to monitor growth in these areas and plan for extension of future infrastructure. Appropriate mitigation is set forth below.

[101] E-mail Correspondence, Perry Dahlstrom, Golden State Water Company, August 21, 2008.

[102] Personal Communication, Jerry Bender, Apple Valley Ranchos Water Company, November 25, 2008.

Build out of the proposed General Plan and annexations will result in significant impacts to domestic water resources without mitigation (please also see Section III-I).

### 3. Mitigation

The following mitigation measures shall be implemented to reduce potential impacts associated with domestic water to less than significant levels.

1. All future development projects shall be subject to review by the Town and the applicable water purveyor to assess their potential impact on local groundwater supplies.

2. The Town and applicable water purveyor shall coordinate for the extension of infrastructure to serve future development in Annexations 2008-001 and 2008-002.

3. The use of drought tolerant landscaping shall be encouraged in public and private development.

4. Future development shall required to conform to standards set forth in Section 17921.3 of the Health and Safety Code, Title 20, California Administrative Code Section 1601(b), and applicable sections of Title 24 of the State Code. These measures include the installation of low-flush toilets, low-flow showerheads and faucets in all new construction.

**Mitigation Monitoring/Reporting Programs**

A. The Planning Division and Town Engineer shall review all development proposals for their potential to adversely affect water quality and quantity, and shall require that any potential significant impacts be mitigated prior to project approval.
**Responsible Parties**: Planning Division, Town Engineer, Apple Valley Ranchos Water Company, Golden State Water Company, other water purveyors.

**Wastewater Collection and Treatment**

### 1. Existing Conditions

Apple Valley owns, operates and maintains the local wastewater collection system. Wastewater facilities needed to serve the Town are identified in the Town's Sewer Master Plan (1993). This document is slated for an update within the next few years to ensure the system's adequacy to meet future needs of the Town's build out.

Currently the Town has force main lines and gravity sewer lines of from 6 inches to 24 inches in diameter that connect to regional intercept lines that convey wastewater to a wastewater treatment plant operated by the Victor Valley Wastewater Treatment Authority (VVWRA) in Victorville. Regional intercept lines, which are owned and maintained by VVWRA, are located along Dale Evans parkway, trending southeasterly along Stoddard Wells road to Victorville, as

well as from Nanticoke Road along Standing Rock Avenue and then along Highway 18 to the Town's western boundary.[103]

The VVWRA wastewater treatment plan is located at 20111 Shay Road in Victorville. It has a design and current treatment capacity of 18 MGD; on a daily basis, the plant averages treatment of 13 million gallons.[104]

Approximately 30% of development in the Town is currently connected to sewer facilities.[105] Costs associated with transport of wastewater from many areas of the Town to the VVWRA have been cost-prohibitive. The Town and VVWRA have identified the need for sub-regional wastewater treatment plants to serve existing and future development but there is no specified schedule for their construction.

The Town adopted a Sewer Connection Policy in January 2006 that requires new single-family subdivisions with lots of less than one acre, and within one-half mile of existing sewer infrastructure, to connect to the Town sewer system; or where development occurs more than one-half mile from existing sewer lines, to install a dry sewer system on-site. Subject to Town and/or California Regional Water Quality Control Board (CRWQCB) approval, compliance with the Town's Sewer Connection Policy may also be obtained through construction of an interim holding tank system or a community septic system, both of which are designed as sewage collection and treatment systems located within the developments they serve. New users connecting to sewer facilities are subject to a sewer connection fee collected by the Town and remitted to VVWRA.

Tertiary Treated Water

Currently there is no tertiary treated water available for irrigation within the Town. The Town and VVWRA have discussed improvement plans to provide reclaimed water for use within the Town, and such facilities are expected to be constructed pending funding approval by VVWRA[106].

### 2. Impacts

Development facilitated by build out of the General Plan and annexation areas will increase demand on existing wastewater collection and treatment facilities. It is estimated that domestic wastewater flows average approximately 100 gallons per capita per day. Applying this factor to the estimated build out population of 194,931, wastewater generation in the General Plan and annexation areas would be approximately 19,493,069 gallons per day.

This increase in wastewater generation and demand for collection and treatment facilities is significant when compared with the current level of service, in that it will exceed current

[103] Town of Apple Valley Sewer System Map, prepared by So and Associates Engineers, Inc., October 29, 2007.
[104] Personal communication, Sandra Perea and Gilbert Perez, VVWRA, October 14, 2008.
[105] Personal Communication, Rodger Lopez, Town of Apple Valley Public Works Division, April 21, 2008.
[106] Personal communication, Sandra Perea and Gilbert Perez, VVWRA, October 14, 2008.

treatment capacity at the VVWRA treatment plant in Victorville. This estimate assumes that all new residential construction in the Town will be connected to sewer facilities.

Development in the General Plan and annexation areas will occur gradually over time, giving the Town and VVWRA the opportunity to plan for increased development and bring additional treatment capacity on-line. Nonetheless, they will need to continue to monitor growth trends in the planning area to ensure the adequate provision of wastewater treatment facilities and to secure funding for their construction. Future development connecting to sewer facilities will continue to be subject to connection fees.

**Annexation 2008-001 and 2008-002**
Build out of the proposed annexation areas will result in additional demand for wastewater collection and treatment facilities. Based on the factor used above, Annexation No. 2008-001 is expected to result in generation of 1,323,750 gallons of wastewater per day. This figure is accounted for under the estimated wastewater generation figure cited for General Plan build out, above.

New development is not expected to occur immediately in the annexation areas, and the Town and VVWRA will monitor growth to ensure adequate wastewater treatment capacity to serve development that is connected to sewer collection facilities in these areas as well as throughout the General Plan area.

### 3. Mitigation

1. To the greatest extent feasible, all new development shall connect to the existing wastewater treatment collection system, or otherwise comply with the Town's Sewer Connection Policy.

2. The Town shall cooperate and coordinate with VVWRA to ensure that there are adequate wastewater collection and treatment facilities to serve development in the General Plan study area.

3. The Town shall continue to confer and coordinate with VVRWA to secure funding for sub-regional wastewater treatment facilities to serve development in the Town.

4. The Town shall continue to confer and coordinate with VVWRA to secure funding for tertiary treated water facilities to serve development in the Town.

**Mitigation Monitoring/Reporting Program**

A. The Town Planning and Public Works Divisions shall confer and consult with Victor Valley Waste Reclamation Authority to implement Town-wide wastewater collection and treatment facilities and service.
**Responsible Parties**: Planning Division, Public Works Division, Victor Valley Waste Reclamation Authority

## Solid Waste Management

### 1. Existing Conditions

The Town of Apple Valley contracts with Burrtec Waste Industries of Fontana, California for the collection and disposal of solid waste. Burrtec provides weekly curbside pick-up of recyclable materials for residential, commercial and industrial development. Solid waste collected in the planning area by Burrtec is hauled to the Victorville landfill, approximately 12 miles to the northwest and is a part of the San Bernardino County landfill system.

The operating permit for the Victorville landfill allows for a maximum of 3,000 tons a day. Currently, it receives an average of 900 tons per day. Receipts in first quarter 2007 reflected higher averages of approximately 1,401 tons per day, which decreased in first quarter 2008 to 1,293 tons per day. This decrease over the past year is likely due to slow downs in the housing and construction markets.

In 2006, commercial sources generated approximately 43,382 tons of solid waste at the Victorville landfill annually, while residential sources generated about 25,479 tons. Based on estimates prepared in June 2008, the remaining capacity of the site is estimated at 82 million cubic yards. The County has acquired additional acreage at the landfill to expand capacity. Based on this expansion, the Victorville landfill is estimated to have a closing date of 2047.[107]

The Victorville landfill accepts non-hazardous industrial wastes. Hazardous industrial waste is collected by private contractors and disposed of elsewhere by County-approved hazardous waste disposal firms. Disposal of hazardous waste is coordinated through the County Fire Department. Disposal of such wastes has commonly taken place at Cattleman's Hill in central California. Hazardous waste and hazardous waste disposal is discussed in further detail in Section III-G, Hazards and Hazardous Materials.

Source Reduction and Recycling

In 1989, the Integrated Waste Management Act (AB 939) was passed by the State of California. The objective of the bill was to reduce the amount of solid waste being generated throughout the state. The legislation required that each city and county enforce programs that would reduce, recycle, and compost 50 percent of its solid waste by the year 2000. According to the California Integrated Waste Management Board, recycling efforts resulting from the enactment of this legislation save enough energy annually to power 1.4 million California homes, reduce water pollution by 27,047 tons, save 14 million trees, reduce air pollution by 165,142 tons, and reduce greenhouse gas emissions by an amount equal to taking 3.8 million passenger cars off the highway.[108]

AVCO, a hauling division of Burrtec Waste Industries, Inc., provides weekly curbside pick-up of recyclable materials for residential, commercial and industrial development. It transports and

[107] Personal Communication, Diana Torres, San Bernardino County Solid Waste Management, December 3, 2008.

[108] National Recycling Coalition's Environmental Benefits Calculator using California data from 2001studies by UC Berkeley and the National Recycling Coalition.

recycles materials at its materials recovery facility located in Victorville, discussed below. Burrtec has significantly reduced the amount of solid waste disposed of within the planning area through the operation of a curbside recycling program. The program allows for a weekly collection of recyclable materials including glass, aluminum, and newspaper. Based on Department of Public Works records, in 2006, Burrtec collected approximately 68,861 tons of recyclable materials from sources in the Town, 43,382 tons of which came from commercial sources, and 25,479 tons from residential sources.[109]

The Town is part of the Zero Waste Communities of San Bernardino County (ZWC), a collective effort by 16 townships and cities in the County to educate residents on ways to reduce, reuse and recycle to extend the lives of the County's landfills. Recycling services also address issues of sustainability and global warming by resulting in energy and resources conservation.

Greenwaste generated in the Town of Apple Valley is accepted at the California Bio-Mass composting facility on Shay Road in Victorville. The facility uses greenwaste for composting. The Victorville facility processes approximately 18,000 tons of greenwaste annually. Of this amount, approximately 1,771 tons were generated from sources in Apple Valley in 2006, and 925 tons in 2007. California Bio-Mass in Victorville has a daily processing capacity of 200 tons, and has a permitted expansion area for an additional 500 tons per day.[110]

Mojave Desert & Mountain Recycling Joint Powers Authority

The Town of Apple Valley is a member of the Mojave Desert and Mountain Recycling Joint Powers Authority, (JPA), a joint powers authority that oversees the solid waste contracts and facilities for its member cities and some unincorporated areas of San Bernardino County. Other jurisdictions that comprise the JPA include Adelanto, Barstow, Big Bear Lake, Needles, San Bernardino County, Twentynine Palms, Victorville and Yucca Valley. Formed in 1991 in response to the above-mentioned California's Integrated Waste Management Act of 1989, the JPA began coordinated efforts to divert waste from landfilling through recycling, composting, and waste reduction, and improve public awareness of environmental issues.

Materials Recovery Facility (MRF)

Offered as an alternative to landfill usage, the Victor Valley Materials Recovery Facility (MRF), co-owned by the Town of Apple Valley and the City of Victorville, receives all the commercial and residential recycling loads picked up in both jurisdictions. The facility was built in 1994 and underwent an extensive upgrade and modernization in 2006. Improvements included state-of-the-art optical sorting equipment, computerized controls, and several new conveyor systems, increasing the facility's processing capability to approximately 20 tons per hour. Materials received at the MRF are sorted, baled for shipment, and sold to various markets. Monies received from the sale of materials are applied to operational costs of the MRF. The facility processes over 710 tons of solid waste per week.[111] The MRF also includes a buy-back center for the

[109] E-mail Correspondence, Diana McKeen, Town of Apple Valley Municipal Services Division, March 24, 2008.
[110] E-mail Correspondence, Michael Hardy, California Biomass, May 29, 2008.
[111] Ibid.

public's recyclables, further encouraging efforts to decrease reliance on landfill disposal and provide alternative solid waste management practices.

**Hazardous Waste**

Hazardous wastes are generated by industrial, commercial, and household operations. Gas stations, dry cleaners, pest control companies, and other commercial operations produce small amount of hazardous waste. Limited quantities are also generated by the use of pesticides and fertilizers on agricultural lands and golf courses.

The County Fire Department coordinates and facilitates household hazardous waste disposal. Under the authority of the County Fire Department's Household Hazardous Waste program, the Town operates a collection center located at the Town's Public Works Yard at 22411 South Outer Highway 18. Materials accepted for disposal at this location include pesticides, wood preservatives and solvents, automobile batteries, and small electronic items such as television sets and computer monitors, as well as other materials. The center is open the first and third Saturdays of each month from 10:00 a.m. to 2:00 p.m. Approved County contractors categorize, sort, pack and haul wastes to approved facilities. Wastes are processed and packaged for off-site recycling or incineration, as applicable. Oil filters, oil, latex pain, antifreeze and batteries are among those items that are further recycled.

Small-scale generators of industrial hazardous wastes qualify for the County's "Conditionally Exempt Small Quantity Generators" (CESQGs) program. To qualify for the program, a business must generate less than 27 gallons or 220 pounds of hazardous waste, or 2.2 pounds of extremely hazardous waste, on a monthly basis. The San Bernardino County Fire Department will collect hazardous waste, or businesses can deliver waste to the County's collection facility, if such delivery can be accomplished safely and in compliance with all regulatory requirements. Wastes are then transported to a state-permitted processing facility located in San Bernardino and further recycled or incinerated.[112]

Hazardous waste from businesses that generate more than the threshold amounts is collected by private contractors collect for disposal by County-approved hazardous waste disposal firms in accordance with state and federal regulations for such waste. Disposal efforts for the generation of hazardous wastes are discussed in further detail in Section III-L, Hazards and Hazardous Materials.

### 2. Impacts

Implementation and build out of the proposed General Plan and annexations will increase the generation of solid waste and the need additional disposal sites. Burrtec Waste Industries plans on providing service to accommodate future development. Continued and increased recycling within the planning area will help lessen the impacts to regional landfills and assist with the

[112] Personal Communication, John Schwab, San Bernardino County Environmental Health Department, April 2008.

Town's compliance with AB 939. As shown in the following table, solid waste generation factors provided by the California Integrated Waste Management Board have been used in conjunction with the Apple Valley General Plan Land Use Plan calculations to project future solid waste generation at build out.

**Table III-58**
**Estimated Solid Waste Generation for Apple Valley**
**General Plan Build Out**

| Land Use Type | Generation Rate[9] | Unit Type | Units (DU/Sq. Ft.) | Annual Tons of Solid Waste |
|---|---|---|---|---|
| Single Family[1] | 2.0400 | tons/unit/year | 36,619 | 74,702.76 |
| Multi Family[2] | 1.1700 | tons/unit/year | 27,130 | 31,742.10 |
| Office/Professional | 0.0108 | tons/sf/year | 10,372,153 | 112,019.25 |
| Hotel/Motel | 0.0024 | tons/sf/year | 2,074,431 | 4,978.63 |
| Retail/Commercial[3] | 0.0024 | tons/sf/year | 39,414,182 | 94,594.04 |
| Industrial | 0.0108 | tons/sf/year | 58,581,040 | 632,675.23 |
| **Total** | | | | **950,712.02** |

Source: California Integrated Waste Management Board compilation of waste generation rates. Rates used are from Ventura County Solid Waste Management Department, "Guidelines for Preparation of Environmental Assessments of Solid Waste Impacts", September 1992, and "DEIR for North Hills Development in Santa Clarita", December 1991.

Build out of the General Plan and annexation areas is expected to result in approximately 63,749 dwelling units, which includes both existing and potential residences. Of these, approximately 36,619 will be single-family units, and about 27,130 multi-family units. Build out could also result in up to 51,860,766 square feet of commercial development and 58,581,040 square feet of industrial development. This level of development could generate a total of approximately 950,712 tons of solid waste per year, or 2,603 tons per day (including both existing and future development). This estimate assumes moderate densities at build out, and actual waste generation may vary, depending on future levels of development.

None of the land uses proposed within the planning area are expected to create high quantities of solid waste or severe hazardous waste conditions. Nonetheless, the project will increase the volume of solid waste generated, and waste management will need to carefully monitor these levels to assure safe and cost-effective disposal of the Town's solid waste.

**Annexation 2008-001 and 2008-002**

Future development facilitated by Annexation 2008-001 will include residential, commercial and industrial development. Based on the solid waste generation factors shown in Table III-58, this development has potential to generate approximately 118,744 tons of solid waste at build out.

Industrial development in Annexation Area 2008-002 is estimated to generate approximately 82,905 tons of solid waste at build out.

Estimates of solid waste generation for the two proposed annexation areas are included in those for build out of the General Plan area described above. These impacts will occur over time as development occurs. Further, actual solid waste generation will depend on actual development.

### 3. Mitigation

Source reduction of solid waste is the most effective way of lessening the impacts to landfills. The following measures will aid in reducing the amount of waste generated, thereby mitigating the impacts to landfills and promoting the Town's compliance with AB 939.

1. The Town and its solid waste disposal service provider shall continue to consult and coordinate to maintain and surpass, where possible, the provisions of AB 939 by means of expanded recycling programs to divert resources from the waste stream that can be returned to productive use.

2. To the greatest extent feasible, the Town shall encourage commercial and industrial establishments to minimize the amount of packaging and potential waste associated with product manufacturing and sales.

3. Recycling provisions for single-family and multi-family residential dwelling units shall continue to be included in the Town's solid waste disposal contracts.

4. Recycling provisions for commercial and business establishments should include separate recycling bins. Items to be recycled at commercial establishments may include white paper, computer legal paper, cardboard, glass, and aluminum cans.

5. As landscaping debris comprises a significant percentage of residential solid waste, developers shall contract for professional landscaping services from companies which compost green waste. Several landscaping companies in the Apple Valley/Victorville area are currently composting for waste disposal. On-site composting and grass recycling (whereby grass clippings are left on the ground) is also encouraged wherever possible.

**Mitigation Monitoring/Reporting Program**

A. The Town Planning Division and Building and Safety Division shall review project development plans and confer and coordinate with project developers to assure the provision and maintenance of recycling containers that correspond with current Town programs and those planned in the future.
**Responsible Parties**: Planning Division, Building and Safety Division, Burrtec Waste Industries, Inc.

## N. Recreational Resources

### Introduction

This section describes the existing condition of recreational resources within the planning area and vicinity. It analyzes the potential impacts of the General Plan and annexations on these resources. The Town of Apple Valley General Plan and the Apple Valley Parks and Recreation Services Master Plan have been used in researching and analyzing the project and its potential effects.

### Thresholds of Significance/Criteria For Determining Significance

The following thresholds or criteria are derived from Appendix G of CEQA. The proposed General Plan will have a significant effect on recreational resources if it will:

a. Increases the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

b. Includes recreational facilities, or requires the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment.

### 1. Existing conditions

### Local Recreational Resources

There are a wide variety of natural and man-made recreational resources in the Town of Apple Valley and vicinity.

Currently, the Town of Apple Valley has 346.87 acres of developed parkland that are open to the public, and provide a range of recreational amenities both locally, within neighborhoods and regionally, within the Parks and Recreation service boundary. There are seven Mini-Parks, two Neighborhood Parks, three Community Parks and two Special Use Parks in Town.

In November 2008, the Town Council announced that subject to the successful resolution of water rights issues, the Town will purchase the Apple Valley Country Club and open its facilities to the public. The country club includes an 18-hole golf course, lighted tennis courts, a pool, pro shop, sports bar, lounges and locker rooms, meeting and dining rooms and a banquet facility.

In addition, the Town has a further 65 acres of BLM and privately owned land for two parks that are approved within Specific Plans, but not yet developed: The Bridle Path Park and the North Pointe Park. The Town also owns a further 27 acres of land identified for park use, but not yet developed. Based on these holdings, the Town currently has 438.87 acres of developed or developable parklands.

A comprehensive, year round recreational program is offered by the Town, providing leisure time activities to all segments of the Apple Valley population. In 2007, the Town opened an amphitheatre and community swimming pool on the grounds of the Civic Center. The Town of Apple Valley and Sphere of Influence also have an integrated system of bicycle paths and equestrian trails.

In addition to the Town's parks, other recreational resources include the Mojave river-bottom and the Apple Valley Dry Lake designated open space areas. Various rock outcrops, knolls and riverside bluffs in the planning area are also designated open spaces that provide further recreational opportunity to the Town's residents and visitors.

**Regional Parks**

Regionally available recreational resources include Mojave Narrows Regional Park, the Desert Conservation Area, the San Bernardino National Forest, Rodman Mountains and Grapevine Canyon Recreational Areas, Deep Creek Hot Springs and the Stoddard Valley Open Area.

**Quimby Act**

The Quimby Act of 1975 authorizes a City or Town to adopt a local ordinance that can require dedications of land or in-lieu fees for development of new, or rehabilitation of existing, park facilities. The fees and land shall be given to the local public agency that provides park and recreation services. As set forth in the Town of Apple Valley Development Code Section 9.71.055(C), the Town has adopted a park standard of five acres of parkland per 1,000 persons.

### 2. Project Impacts

**Local Recreational Impacts**

Implementation of the General Plan and annexation areas will result in the construction of an additional 38,824 residential units. At build out, the total number of dwelling units in the planning area is expected to be 63,749. The total build out population will be approximately 194,931. The Town has adopted a Town wide standard of 5 acres of parkland per 1,000 persons. Therefore, build out of the General Plan will require a provision of approximately 975 acres of parkland. The Town currently owns 438.87 acres of parklands. Therefore, in order to provide parks and recreational opportunities at the desired level of service, the Town will need to provide an additional 536.13 acres within the planning area prior to build out of the General Plan and annexation areas.

Build out of the General Plan could impact the Town’s recreational resources as it will introduce approximately 38,824 dwelling units and 194,931 new residents who will have a need for recreational opportunity. However, the impact on local recreational resources is expected to be reduced to less than significant levels by the development of additional parkland that will be required through implementation of the Quimby Act, which will require:

- In lieu fees for projects under 1 acre.
- Staff discretion of in lieu fees or dedications for projects of 1 to 2.5 acres.
- Dedication of park land for projects of 2.5 acres or more.

The fees and dedication of land are designed to mitigate the potential impacts to recreational resources generated by new development. To facilitate the acquisition of further areas of parkland the Town may, in addition to the Quimby Act, implement Development Agreements and/or Developer Impact Fees, as well as a range of other funding mechanisms, as described in detail in the Parks and Recreation Element of the General Plan.

**Annexations 2008-001 and 2008-002**

Build out of Annexation Area 2008-001 will result in 4,236 residential units. Based on an average household size of 3.125[113] persons, Annexation 2008-001 will have a build out population of 13,238. Build out of the area will require the provision of approximately 66 acres of Parkland to meet the recreational needs of the residents of Annexation 2008-001.

Annexation 2008-002 will have 7,676,379 square feet of industrial land uses at build out, and will have no residential component. As a result, this annexation area will not require parkland to accommodate residents.

### 3. Mitigation Measures

1. The Town will require developers to participate in the Town's parkland fee programs/Quimby requirements.

2. The Town will actively pursue a range of supplementary funding sources to acquire additional parklands.

**Mitigation Monitoring/Reporting Program**

A. The Town's approval process shall assure that Quimby fee requirements are met.
**Responsible Party**: Planning Division; Parks and Recreation Services

[113] Source: Terra Nova staff estimates based on land use tables provided by AIS and California Dept of Finance Average HH Size for San Bernardino County.

## O. Transportation and Traffic

### Introduction

This section describes existing transportation and traffic conditions within the planning area and the region, and analyzes the potential impacts of buildout of the proposed General Plan and annexations. It also presents the results of a traffic impact study prepared by Urban Crossroads, Inc.[114] for the General Plan, and sets forth transportation-related mitigation measures to effectively reduce traffic and circulation impacts to acceptable levels. The traffic impact study is included in Appendix F.

### Thresholds of Significance/Criteria For Determining Significance

The following thresholds or criteria are derived from Appendix G of the CEQA Guidelines, which are used to determine the level of potential effect. Based on these thresholds, buildout of the proposed General Plan and annexations will have a significant effect on transportation and traffic if it:

a. Causes an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);

b. Exceeds, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways;

c. Results in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;

d. Substantially increases hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

e. Results in inadequate emergency access;

f. Results in inadequate parking capacity;

g. Conflicts with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

[114] Town of Apple Valley General Plan Circulation Element Traffic Study, prepared by Urban Crossroads, November 2008.

## 1. Existing Conditions

Factors that impact traffic conditions include not only the land use designations set forth in the proposed General Plan, which directly impact traffic conditions in the planning area, but also background traffic that results from land uses in other communities in the region. Therefore, the adequacy of the local transportation network is affected by decisions made by the Town of Apple Valley as well as by those of surrounding jurisdictions. A variety of other regional planning efforts may impact the circulation system in Apple Valley. These are further discussed below, along with current roadway projects that the Town is constructing or has recently completed.

### Regional and Local Roadways

The circulation network in the Town currently is comprised of 500 miles of paved roadways on a one-mile grid framework. Approximately 80% of the roads in Apple Valley are local streets that serve existing residential neighborhoods. Other local roadways provide connection between areas of Town to larger roadways in the planning area.

The following describes major regional and local roadways in the planning area traffic circulation system.

Major Regional Roadways

The high desert region and the planning area are intersected by U.S. Interstate 15, a major trans-continental interstate highway that extends from southern California to the U.S.-Canadian border in Montana. I-15 runs southwest to northeast in the region and abuts a portion of the Town's northwestern boundary. The region and the planning area are also served by State Route 18 (Happy Trails Highway), which runs generally southeast to northwest through the Town, crossing the Mojave River as it exits the Town on the west.

I-15 and State Route 18 are identified as the only two regionally significant roadways in the Town by the San Bernardino Congestion Management Plan.[115]

U.S. Interstate 15

U.S. Interstate 15 constitutes a major transportation corridor and provides the high desert region and Apple Valley with inter-regional and inter-state access. It connects the high desert with Las Vegas, Salt Lake City and markets to the north. In the planning area, I-15 includes 3-lanes in each direction. There are two freeway interchanges in the planning area; these occur at Dale Evans Parkway and at Stoddard Wells Road.

State Route 18

As noted above, State Route 18 runs generally southeast-to-northwest in the planning area. In Apple Valley it is a 4-lane divided highway along which are situated substantial portions of the Town's existing commercial development, and pockets of residential development. It is designated a Divided Major Arterial Roadway in the Town's adopted General Plan.

[115] Ibid.

Major Local Roadways

The planning area is linked by a network of local roadways. Roadway functions, mobility and access are defined within a system of classifications, further discussed below.

Major roadways in Town include the following:

*Dale Evans Parkway* is a north-south roadway that is designated a Major Divided Parkway with a minimum 142-foot right-of-way from I-15 south to Thunderbird Road. It is the only road so classified in the General Plan area. South of Thunderbird Road is it is classified as a Major Road (minimum 104-foot of right-of-way). Currently it is a 2-lane undivided road from I-15 south to Otoe Road, and a 4-lane divided roadway between Otoe Road and State Route 18.

*State Route 18* enters the Town at its eastern boundary and runs east-west to Navajo Road. From there it turns northwest and continues as "Outer State Route 18" in a generally southeast-northwest direction to the western limits of the Town. It is a 2-lane undivided roadway between Joshua Road and Central Road, and a 4-lane divided roadway through the remainder of Town. State Route 18 is signalized at its intersections with Central Road, Navajo Road, Dale Evans Parkway, Rancherias Road, Toa Road, Corwin Road, and Apple Valley Road, and left-turn channelization occurs at most of these intersections. It is classified a Major Divided Arterial roadway throughout the Town.

*Bear Valley Road* is an east-west roadway classified as a Major Divided Arterial. It intersects with State Route 18 easterly of the Town limits and spans the Town from east to west. Between the eastern boundary of Apple Valley and Central Road it is a 2-lane undivided highway, expanding to 4-lanes divided to Apple Valley Road. From there it becomes 6 lanes divided and crosses the Mojave River as it exits the Town at an all-weather crossing. Bear Valley is signalized with left-turn channelization at Central Road, Navajo Road, Kiowa Road, and Apple Valley Road. At Apple Valley there is also a designated right-turn-only lane. At Deep Creek Road there is left-turn channelization but no traffic signal.

*Tussing Ranch Road* is an east-west roadway that forms a portion of the Town's southern boundary. It is designated a Major Divided Arterial within the Town, and a major road easterly of the Town limits. It is a 2-lane undivided road in the Town. There is a stop sign controlling westbound traffic at the intersection of Tussing Ranch Road and Central Road.

*Central Road* is a north-south road that forms a portion of the Town's eastern boundary. It is designated a Major Divided Arterial south of Johnson Road. It is 2-lanes undivided throughout the Town, with the exception for one roadway segment just north of Cahuilla Road where it is a 3-lane undivided roadway. Central Road crosses the Mojave Northern Mining Railroad line at Quarry Road. There is an all-way stop at the intersection of Central Road and Waalew Road, and a traffic signal at the Central Road intersections with Yucca Loma Road and with Bear Valley Road.

*Kiowa Road* is a north-south street from Yucca Loma Road to the Town's southern boundary, and runs southwest to northeast from Yucca Loma, crossing State Route 18 and terminating at Navajo Road. Kiowa Road is classified as a Major Road between Bear Valley Road and Yucca Loma Road, and as a Major Divided Arterial south of Bear Valley Road. It is a 2-lane undivided road with a traffic signal and left-turn channelization at Bear Valley Road. A 4-way stop sign is located at the intersection of Kiowa Road and Nisqually Road.

*Apple Valley Road* runs north-south from its initiation point at Falchion Road south to State Route 18. It trends southwest to its intersection with Seneca Road, and thence north-south to the Town's southern boundary. Throughout most of the planning area Apple Valley Road is classified a Major Divided Arterial roadway. The Town recently completed widening of Apple Valley Road to its ultimate cross section of 2-lanes in each direction between State Route 18 and Yucca Loma Road. Currently Apple Valley Road is a 4-lane divided highway north of State Route 18, becoming 2-lane divided south of Seneca Road, and 2-lane undivided further south to and beyond its intersection with Yucca Loma Road, south to Sitting Bull Road. South of Sitting Bull Road it remains 2-lane undivided, then becomes 4-lane divided, and expands to 6-lanes divided at Bear Valley Road. South of Bear Valley Road it returns to a 4-lane divided roadway. Apple Valley road is signalized and left-turn channelization occurs at the following intersections: State Route 18, Yucca Loma Road, Sitting Bull Road, and Bear Valley Road.

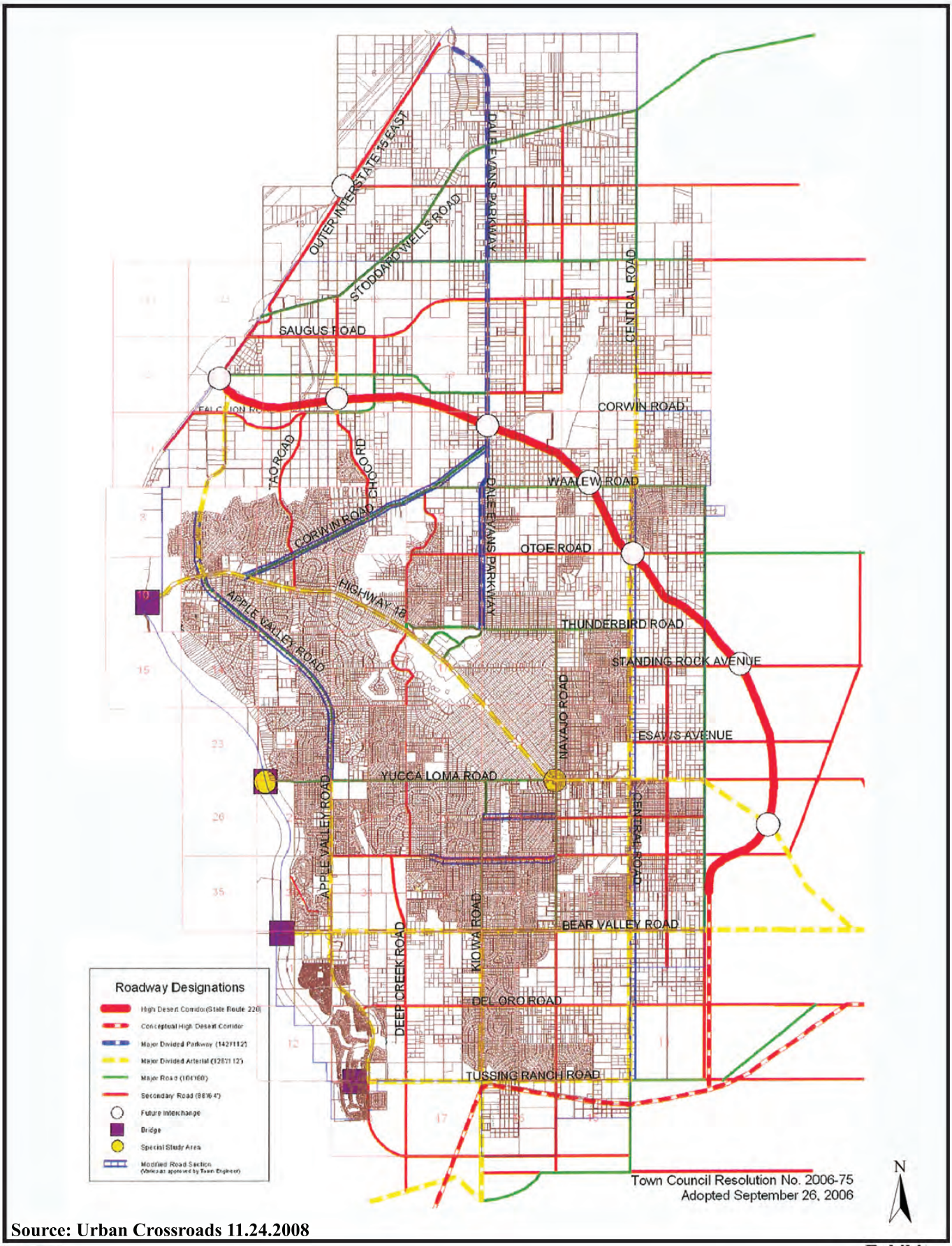
As described above, portions of Kiowa Road and Apple Valley Road are classified as Major Divided Arterial roadways in the planning area. Certain segments of these roadways are also classified as Major Roads (minimum 104 foot right-of-way). The following are also classified as Major Roads in the local circulation network: [116]

- Navajo Road (N-S)
- Joshua Road (N-S)
- Stoddard Wells Road (E-W)
- Johnson Road (E-W)
- Waalew Road (E-W)
- Thunderbird Road (E-W)
- Yucca Loma Road (E-W)

A number of secondary roads (minimum 88-foot right-of-way) in the Town connect major roads and serve to carry local traffic to larger streets.

Existing roadway through lanes and intersection controls are shown in the Traffic Impact Study in Appendix F of this EIR. Exhibit III-21 shows the currently adopted General Plan circulation plan in Apple Valley.

[116] N-S = North – South; E-W = East - West




**Source: Urban Crossroads 11.24.2008**

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**Apple Valley General Plan Draft EIR**
**Adopted General Plan Circulation Plan**
**Apple Valley, California**

**Exhibit**
**III-21**

Truck Routes

Based on the San Bernardino County Congestion Management Plan, there are two types of truck routes within the planning area: the National Network and the Terminal Access. I-15 is considered part of the National Network, which provides facilities for vehicles meeting specifications of the Surface Transportation Assistance Act (STAA)[117], including longer and wider vehicles such as semi trailers. The CMP identifies State Route 18 as a Terminal Access route, also providing access for STAA vehicles between designated National Network routes or to truck operating or freight origination, destination or handling facilities. In addition to those regional truck routes identified by the County of San Bernardino, key truck routes identified by the Town include Corwin Road, Navajo Road, Bear Valley Road, Yucca Loma Road, Central Road, Dale Evans Parkway, Waalew Road, Stoddard Wells Road and Apple Valley Road. Currently adopted truck routes in Apple Valley are shown on Exhibit III-22

**Transportation Programs and Plans**

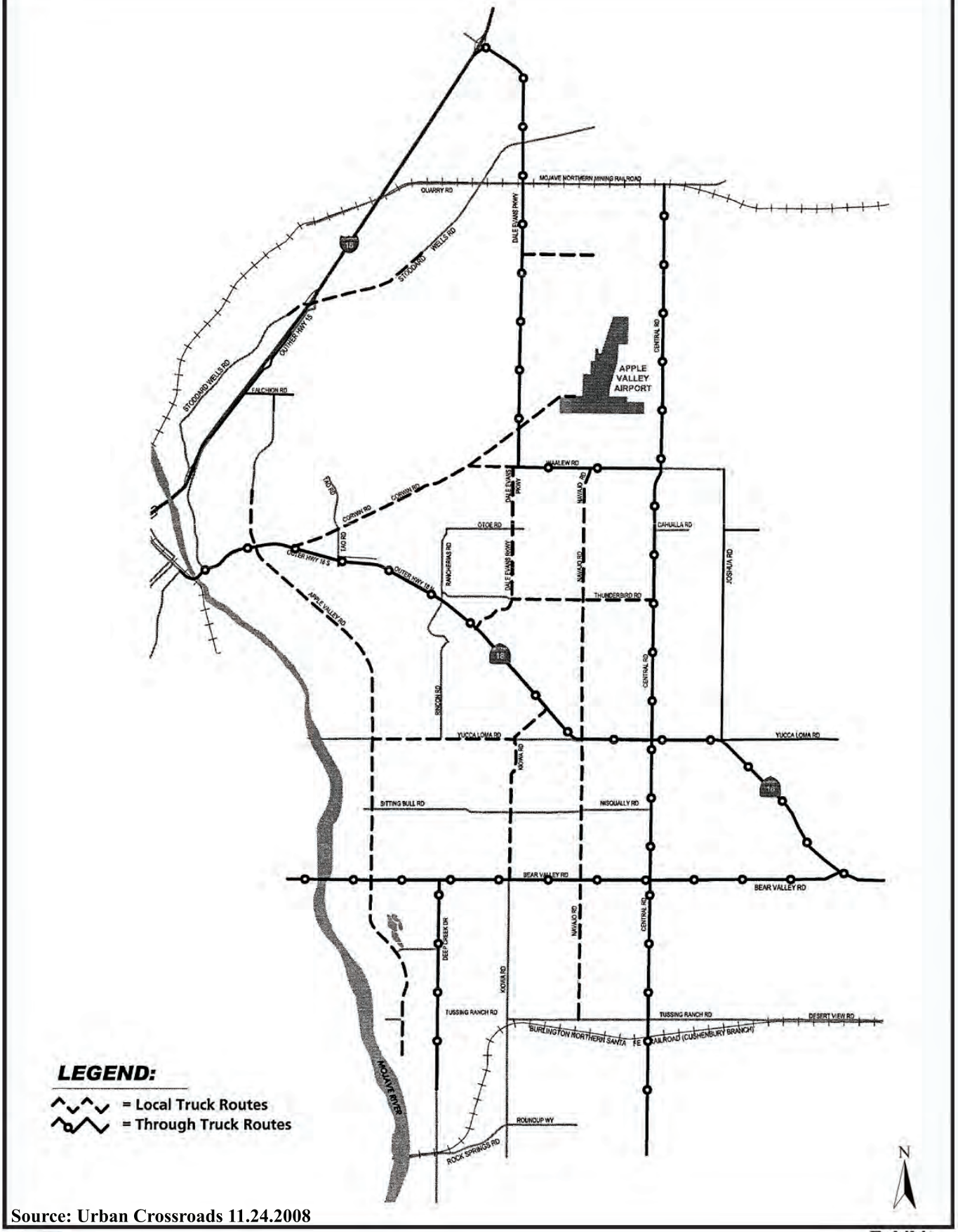
As previously noted, traffic conditions in the Town are affected not only by local policies but also by those of other jurisdictions and regional planning agencies. The following describes traffic programs and policies that may affect circulation in the General Plan area:

- The County of San Bernardino Congestion Management Plan (CMP): a State mandated program that is designed to promote effective growth management, and link transportation planning to land use and air quality issues.
- The County of San Bernardino General Plan Network: provides the policy framework for lands under the County's jurisdiction; it establishes roadway standards throughout unincorporated areas of the County.
- The Regional Transportation Plan (RTP): prepared by the Southern California Association of Governments (SCAG) to address transportation planning throughout its region, including San Bernardino County.
- The Victor Valley Area Transportation Study (VVATS): this study is currently being prepared to identify long-term regional roadway system needs in the Victor Valley.
- The High Desert Corridor (SR-220): this project is planned by California Department of Transportation (CalTrans); it will bisect Apple Valley, and ultimately provide access between the Victor Valley and Antelope Valley to the west. This is further discussed under Project Impacts, below.
- The Interstate 15/Nisqually Road Interchange: this project is proposed by CalTrans as a new east-west connection to the Interstate 15 freeway.
- Measure I: this measure was adopted by voter initiative; throughout San Bernardino County it is being implemented as a ½ cent sales tax, allocated specifically towards regional roadway improvement projects. In Apple Valley, 65% of the sales tax generated by Measure I is applied to regional roadways, 30% to local roadways, and 5% to transit projects.

[117] Section 405 of the Surface Transportation Assistance Act of 1982 (STAA), 49 U.S.C. 31105, as amended by section 1536 of the Implementing Recommendations of the 9/11 Commission Act of 2007, Pub. L. No. 110-53.

- SB 375 Sustainable Communities Strategies,: these strategies were adopted in 2008, and require that regional transportation agencies reduce vehicle miles traveled on RTP roadways through land use planning strategies that incorporate sustainable growth and reduce air emissions.

Locally, the Town is currently constructing two local roadway projects, and has recently completed a third. Those under construction include: 1) widening State Route 18 from the Narrows to Tao Road to improve the intersection of Apple Valley and State Route 18; and 2) construction of the Yucca Loma Bridge to four lanes, providing an additional Mojave River crossing into Victorville. A project that resulted in widening Apple Valley Road to its ultimate cross section has recently been completed.




Source: Urban Crossroads 11.24.2008

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**Apple Valley General Plan Draft EIR**
**Existing Truck Routes**
**Apple Valley, California**

**Exhibit**
**III-22**

## Current Traffic Conditions

In order to document existing traffic conditions, and to evaluate future impacts to circulation in the planning area, a wide range of traffic data were collected and analyzed. As previously discussed, a technical analysis was conducted by Urban Crossroads, Inc. (please see Appendix F). The traffic study utilized data regarding traffic volumes and conditions in the planning area, including mid-block roadway segment counts and intersection turning movements.

Several methods are used to assess the effective operation of the circulation system. These include Levels of Service within intersections and at mid-block, as well as average daily traffic during peak morning and evening hours. These are further discussed below.

Levels of Service

Roadway capacity refers to the number of vehicles that pass through a roadway segment or intersection in a particular time period under prevailing conditions. It is determined by factors such as roadway surface conditions, lane widths, alignment, grade and intersection design. This capacity is characterized as "Level of Service" (LOS), which provides a qualitative means to measure the efficiency of traffic flow (mid-block travel), and/or quantitatively by the number of seconds of delay for a vehicle passing through an intersection. To describe roadway-operating conditions, LOS values are indicated over a range of alphabetical designations from "A" through "F." LOS A represents the best, free flow conditions, and LOS F indicates the worst conditions and system failure. Table III-59 describes the Level of Service designations.

Levels of Service are also sometimes represented as volume-to-capacity ratios, or vehicle demand divided by roadway capacity. Ratios closer to 0.00 indicate higher efficiency and better flow, and as the ratio approaches 1.00, roadway operations are defined LOS F, characterized by extreme traffic congestion.

Mid-block LOS is qualitative as opposed to quantitative, therefore the usefulness of LOS assignment for mid-block is limited to characterizing capacity, rather than determining actual volumes that a roadway segment can carry.

**Table III-59**
**Roadway Level of Service Description**

| Level of Service | Quality of Traffic Flow |
|---|---|
| A | Free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. |
| B | Stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver. |
| C | Stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. |
| D | High-density but stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience. |
| E | Operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Small increases sin flow will cause breakdowns in traffic movement. |
| F | System failure; forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount that can traverse the point. Queues form behind locations. |

Source: 2000 Highway Capacity Manual (HCM) (Transportation Research Board Special Report 209).

Intersection Capacity Analysis

Intersection capacities can be evaluated to gain a realistic picture of the maximum volume of traffic that can be accommodated on urban roadways. The Level of Service at an intersection is characterized by the quality of traffic flow and the length of delays. Intersections are generally the most constrained portion of the roadway network, and LOS is measured qualitatively by the average time of delay per vehicle at a signalized and unsignalized intersections. The following table defines intersection LOS.

**Table III-60**
**Level of Service at Signalized and Unsignalized Intersections**

| | Average Total Delay Per Vehicle (Seconds) | |
|---|---|---|
| **Level of Service** | **Signalized** | **Unsignalized** |
| A | 0 to 10.00 | 0 to 10.00 |
| B | 10.01 to 20.00 | 10.01 to 15.00 |
| C | 20.01 to 35.00 | 15.01 to 25.00 |
| D | 35.01 to 55.00 | 25.01 to 35.00 |
| E | 55.01 to 80.00 | 35.01 to 50.00 |
| F | 80.01 and up | 50.01 and up |

**Existing Intersection Conditions**

Service levels at intersections are of the highest concern. In coordination with the Town, 46 key intersections were identified and analyzed. These are illustrated on Exhibit III-23.

Existing 2008 peak hour traffic operations at intersections in the planning area have been assessed during morning and afternoon/evening (AM and PM) peak hours of traffic. This analysis yields intersection LOS data, as calculated using methodologies set forth in the San Bernardino County Congestion Management Program analysis. The analysis is also based on existing intersection geometrics and traffic control devices at the respective analysis locations.

The Town of Apple Valley has previously established a minimum intersection Level of Service (LOS) "C". However, as shown on Table III-61, below, the following eight (8) intersections are currently operating at LOS D, E or F during AM and/or PM peak hours:

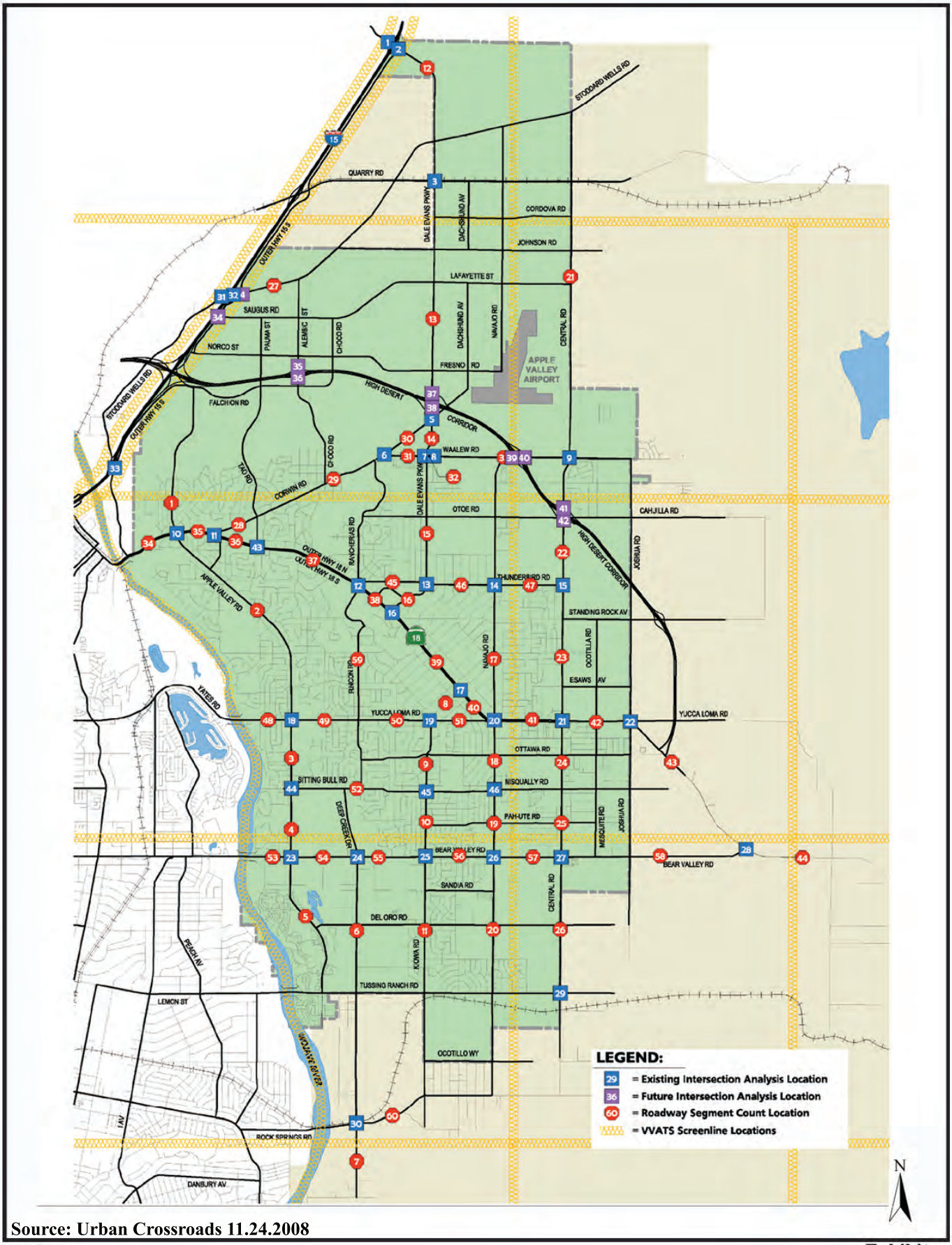
Apple Valley Road (NS) at:
- State Route 18 (EW) operates at LOS D in both the AM and PM peak hours
- Yucca Loma Road (EW) operates at LOS D in the PM peak hour
- Bear Valley Road (EW) operates at LOS D in the PM peak hour
- Sitting Bull Road (EW) operates at LOS D in both the AM and PM peak hours

Deep Creek Road (NS) at:
- Bear Valley Road (EW) operates at LOS F in both the AM and PM peak hours

State Route 18 (NS) at:
- Bear Valley Road (EW) operates at LOS D in the PM peak hour

Kiowa Road (NS) at:
- Sitting Bull Road (EW) operates at LOS E in the PM peak hour

Navajo Road (NS) at:
- Nisqually Road (EW) operates at LOS D in the AM peak hour




Source: Urban Crossroads 11.24.2008

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**Apple Valley General Plan Draft EIR**
**Traffic Analysis Locations**
**Apple Valley, California**

**Exhibit**
**III-23**

## Table III-61
## Existing 2008 Conditions
## Intersection Operations Analysis Summary

| Intersection | | Traffic Control[3] | Intersection Approach Lanes[1] | | | | | | | | | | | | Delay[2] (sec.) | | Level of Service | | LOS Criteria |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Northbound | | | Southbound | | | Eastbound | | | Westbound | | | | | | | |
| No. | Name | | L | T | R | L | T | R | L | T | R | L | T | R | AM | PM | AM | PM | |
| 1 | I-15 SB Ramps (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Dale Evans Pkwy. (EW) | CSS | 0 | 0 | 0 | 0.5 | 0 | 0.5 | 0 | 1 | 0 | 0 | 1 | 0 | 9.2 | 9.9 | A | A | |
| 2 | I-15 NB Ramps (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Dale Evans Pkwy. (EW) | CSS | 0.5 | 0 | 0.5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 9.1 | 9.5 | A | A | |
| 3 | Dale Evans Pkwy. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Quarry Rd. (EW) | CSS | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 10.3 | 10.2 | B | B | |
| 5 | Dale Evans Pkwy. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Corwin Rd. (EW) | CSS | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 10.1 | 11.1 | B | B | |
| 6 | Corwin Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Waalew Rd. (EW) | CSS | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 10.5 | 10.0 | B | B | |
| 7 | Dale Evans Pkwy. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Waalew Rd. West (EW) | CSS | 0.5 | 0 | 0.5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 10.4 | 13.0 | B | B | |
| 8 | Dale Evans Pkwy. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Waalew Rd. East (EW) | CSS | 0 | 0 | 0 | 0.5 | 0 | 0.5 | 0 | 1 | 0 | 0 | 1 | 0 | 11.2 | 12.3 | B | B | |
| 9 | Central Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Waalew Rd. (EW) | AWS | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 8.1 | 8.5 | A | A | |
| 10 | Apple Valley Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • State Route 18 (EW) | TS | 1.5 | 0.5 | 1 | 1 | 1 | 1 | 2 | 2 | 1>> | 1 | 2 | 1 | 37.3 | 40.8 | D | D | |

## Table III-61
## Existing 2008 Conditions
## Intersection Operations Analysis Summary

| Intersection | | Traffic Control[3] | Intersection Approach Lanes[1] | | | | | | | | | | | | Delay[2] (sec.) | | Level of Service | | LOS Criteria |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Northbound | | | Southbound | | | Eastbound | | | Westbound | | | | | | | |
| No. | Name | | L | T | R | L | T | R | L | T | R | L | T | R | AM | PM | AM | PM | |
| 11 | Corwin Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • State Route 18 (EW) | TS | 0 | 0 | 0 | 1 | 0 | 2> | 1 | 2 | 0 | 0 | 2 | 1 | 11.9 | 8.1 | B | A | |
| 12 | Rancherias Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • State Route 18 (EW) | TS | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 34.9 | 25.8 | C | C | |
| 13 | Dale Evans Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Thunderbird Rd. (EW) | AWS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12.3 | 11.4 | B | B | |
| 14 | Navajo Rd. at: | | | | | | | | | | | | | | | | | | C |
| | • Thunderbird Rd. (EW) | AWS | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 9.4 | 10.3 | A | B | |
| 15 | Central Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Thunderbird Rd. (EW) | CSS | 0 | 1 | 0 | 0 | 1 | 0 | 0.5 | 0 | 0.5 | 0 | 0 | 0 | 13.2 | 11.7 | B | B | |
| 16 | Dale Evans Pkwy. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • State Route 18 (EW) | TS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 20.0 | 23.0 | B | C | |
| 17 | Kiowa Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • State Route 18 (EW) | TS | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 | 20.2 | 18.2 | C | B | |
| 18 | Apple Valley Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Yucca Loma Rd. (EW) | TS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 34.8 | 36.2 | C | D | |
| 19 | Kiowa Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Yucca Loma Rd. (EW) | AWS | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 9.5 | 12.8 | A | B | |
| 20 | Navajo Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • State Route 18 (EW) | TS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 19.8 | 20.9 | B | C | |

## Table III-61
## Existing 2008 Conditions
## Intersection Operations Analysis Summary

| Intersection | | Traffic Control[3] | Intersection Approach Lanes[1] | | | | | | | | | | | | Delay[2] (sec.) | | Level of Service | | LOS Criteria |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Northbound | | | Southbound | | | Eastbound | | | Westbound | | | | | | | |
| No. | Name | | L | T | R | L | T | R | L | T | R | L | T | R | AM | PM | AM | PM | |
| 21 | Central Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • State Route 18 (EW) | TS | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 15.9 | 16.2 | B | B | |
| 22 | Joshua Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • State Route 18 (EW) | CSS | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 13.8 | 22.5 | B | C | |
| 23 | Apple Valley Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Bear Valley Rd. (EW) | TS | 2 | 2 | 1 | 2 | 1 | 2> | 2 | 2 | 1 | 1 | 2 | 1> | 33.0 | 35.5 | C | D | |
| 24 | Deep Creek Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Bear Valley Rd. (EW) | CSS | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 2 | 0 | 80.0 | -- | F | F | |
| 25 | Kiowa Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Bear Valley Rd. (EW) | TS | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 36.8 | 38.8 | D | D | |
| 26 | Navajo Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Bear Valley Rd. (EW) | TS | 1 | 2 | 0 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 22.9 | 26.7 | C | C | |
| 27 | Central Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Bear Valley Rd. (EW) | TS | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 25.7 | 24.9 | C | C | |
| 28 | State Route 18 (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Bear Valley Rd. (EW) | CSS | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1>> | 0 | 0 | 0 | 8.3 | 28.9 | A | D | |
| 29 | Central Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Tussing Ranch Rd. (EW) | CSS | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 10.0 | 9.8 | B | A | |
| 30 | Deep Creek Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Rock Springs Rd. (EW) | TS | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 15.4 | 15.8 | B | B | |

## Table III-61
## Existing 2008 Conditions
## Intersection Operations Analysis Summary

| Intersection | | Traffic Control[3] | Intersection Approach Lanes[1] | | | | | | | | | | | | Delay[2] (sec.) | | Level of Service | | LOS Criteria |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Northbound | | | Southbound | | | Eastbound | | | Westbound | | | | | | | |
| No. | Name | | L | T | R | L | T | R | L | T | R | L | T | R | AM | PM | AM | PM | |
| 31 | I-15 SB Ramps (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Stoddard Wells Rd. (EW) | CSS | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 8.7 | 9.2 | A | A | |
| 32 | I-15 NB Ramps (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Stoddard Wells Rd. (EW) | CSS | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 9.4 | 11.3 | A | B | |
| 33 | Outer Highway 15 (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Stodddard Wells Rd. (EW) | CSS | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 10.3 | 24.4 | B | C | |
| 43 | Tao Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • State Route 18 (EW) | TS | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 19.2 | 20.2 | B | C | |
| 44 | Apple Valley Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Sitting Bull Rd. (EW) | TS | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 0 | 1.5 | 0.5 | 1 | 36.4 | 38.9 | D | D | |
| 45 | Kiowa Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Sitting Bull Rd. (EW) | AWS | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 12.8 | 37.1 | B | E | |
| 46 | Navajo Rd. (NS) at: | | | | | | | | | | | | | | | | | | C |
| | • Nisqually Rd. (EW) | TS | 1 | 2 | 1 | 1 | 2 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 38.8 | 33.5 | D | C | |

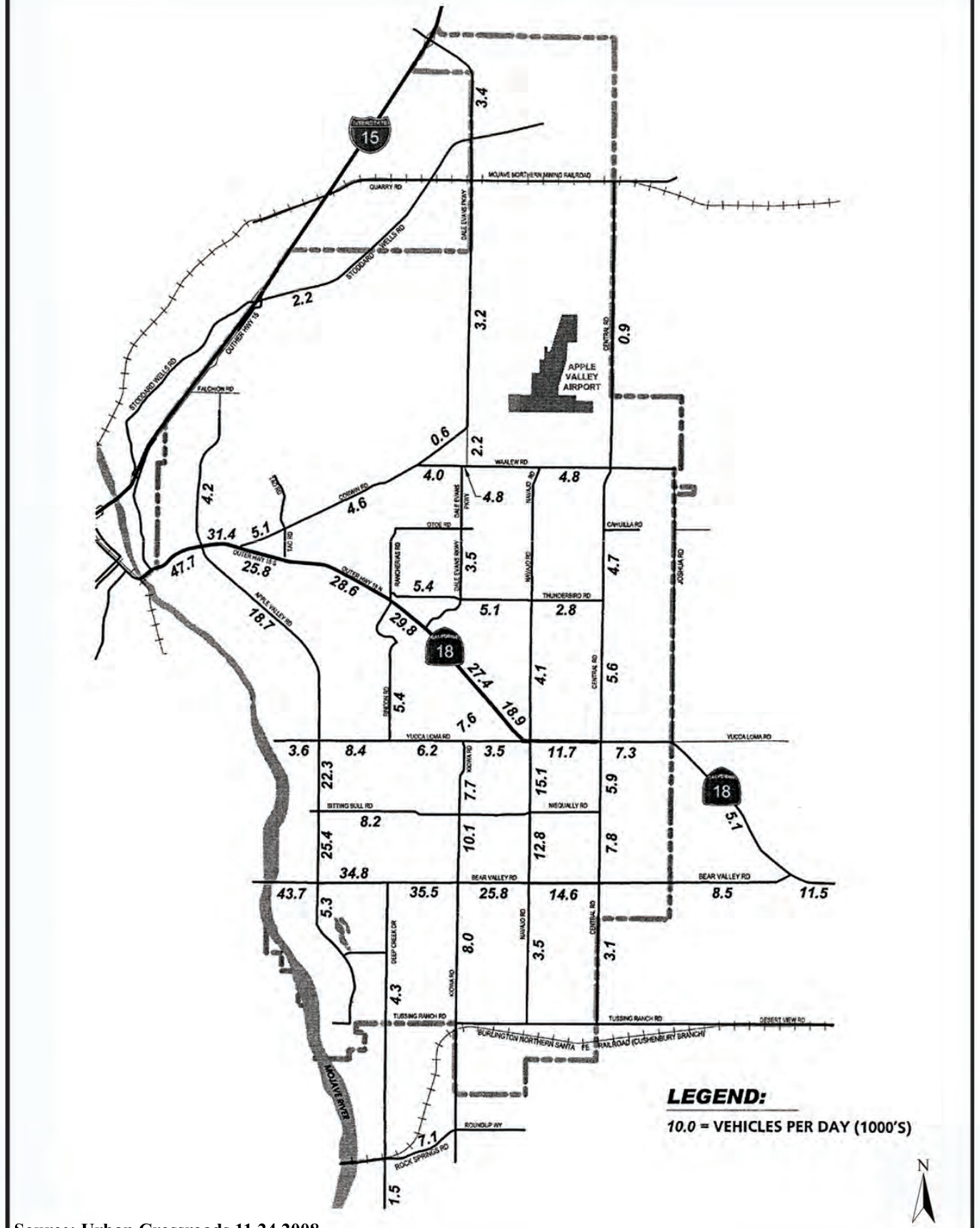
[1]When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; >> = Free Right Turn Lane
[2]Delay and level of service calculated using the following analysis software: Traffix, Version 7.9 R3 (2008). Per the 2000
Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.
CSS = Cross Street Stop; AWS = All Way Stop; TS = Traffic Signal

Average Daily Traffic

Existing 2008 ADT volumes in the planning area have been derived based on most current traffic data collected in 2008, or estimated based on 2007 counts. Where 2007 counts are used, they have been adjusted with an ambient growth rate for the study area. The ambient growth rate is estimated based on available historic traffic data for a selected roadway segment that is considered representative of typical traffic growth trends in the planning area. This analysis uses the roadway segment along State Route 18, east of Yucca Loma Road/Navajo Road. Traffic data was collected along this segment and used as a basis to estimate the rate of growth in traffic in the planning area between 2000 and 2006:

- 2000 Daily Traffic Volumes: 10,500 vehicles per day
- 2006 Daily Traffic Volumes: 13,000 vehicles per day
- Annual Growth between 2000 and 2006 = 2.97% (rounded to 3%)

Exhibit III-24 shows the existing 2008 average daily traffic (ADT) volumes in the study area.




Source: Urban Crossroads 11.24.2008

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Planning & Research, Inc.

**Apple Valley General Plan Draft EIR**
**Existing 2008 Average Daily Traffic**
**Apple Valley, California**

Exhibit
**III-24**

**Existing Roadway Classifications and Improvements**

The following describes the adopted Town of Apple Valley General Plan roadway classifications, as illustrated on the currently adopted circulation plan in Apple Valley (please see Exhibit III-21).

The *Major Divided Parkway* has a minimum 142-foot right-of-way with as 20-foot median and 15 foot parkway on each side of the roadway. As previously noted, there is one roadway segment in Apple Valley with this classification: Dale Evans Parkway from I-15 south to Thunderbird Road.

*Divided Major Arterials* provide for travel from freeways to major and secondary arterials. They have a minimum of six lanes and a 128-foot right-of-way comprised of two ten-foot parking lanes and a twelve-foot wide continuous left turn lane or median strip. Major intersections are often signalized and parking is generally restricted at intersections. Divided major arterials must have curbs, gutters, and sidewalks. As noted above, there are a number of Divided Major Arterials roadway segments in Apple Valley. Examples include segments of Apple Valley Road (NS), State Route 18 (EW), and Bear Valley Road (EW).

*Major Roads* are used to transport traffic from freeways and Divided Major Arterials to Secondary Roads. Major Roads have a minimum 104-foot right-of-way and are comprised of at least four traffic lanes, two shoulders which may be used as parking or bicycle lanes, and a twelve-foot wide median strip or two-way left turn lane. Primary intersections are generally parking restricted and include traffic lights, and sidewalks are generally required. The following roadway segments are examples of Major Roads in Apple Valley: Kiowa Road (NS), Navajo Road (NS), and Stoddard Wells Road (EW).

*Secondary Roads* allow for connections between Major Roads, and provide local traffic with routes to larger streets. Secondary Roads have a minimum right-of-way of 88 feet. While they are required to include curbs and gutters in industrial areas in Apple Valley, these requirements may be waived in low-density residential areas. This is a common roadway classification in Apple Valley. As an example, the following are Secondary Roads in Apple Valley: Tao Road (NS), Mesquite Road (NS), Laguna Seca Drive (NS), and Nisqually Road (EW).

*Local Industrial/Commercial Streets* provide routes for increased trip generation associated with industrial areas, and larger turning radii for delivery trucks. These roadways have 66-foot rights-of-way.

*Local Streets* comprise the majority of roadways within residential neighborhoods in Apple Valley. They generally have a 60-foot right-of-way. Local streets provide direct entry to adjacent properties and are used to transport local traffic from these properties to roadways used for higher volumes and faster speeds. Local streets do not carry through traffic.

The currently adopted and proposed roadway classification cross sections are shown under Project Impacts on Exhibit III-26.

Roadways in Annexation Areas[118], [119]
Currently there is a small network of paved and unpaved roadways within the annexation areas. No major roadways occur in the annexation areas, although the are bordered by major roadways, including Dale Evans Parkway on the east side of Annexation 2008-001; and Central Road on the west side of Annexation 2008-002. These areas are currently within unincorporated San Bernardino County but are planned for under the Apple Valley General Plan. The following describes existing General Plan roadways that occur within the annexation areas.

Johnson Road is an east-west road that enters the planning area on the eastern boundary of Annexation Area 2008-002, extends across the northern portion of the Town, continues through Annexation Area No. 2008-001, terminating at Stoddard Wells Road. It is designated a Secondary Road.

Quarry Road is an east-west road that runs parallel to and north of Johnson Road. It originates easterly of the Town limits within Annexation Area 2008-002 adjacent to the Mojave Northern Railroad Line, continuing westerly through Annexation Area 2008-001. It crosses I-15 and continues west. It is designated a Secondary Road. It is a 2-lane undivided roadway.

Stoddard Wells Road runs through the northern portion of the planning area from the southwest to the northeast, entering the Town at an interchange with I-15. It intersects the southeastern quadrant of Annexation Area 2008-001 as a 2-lane undivided roadway and is designated as a Major Road in the adopted General Plan.

**All Weather Crossings**

In the event of an emergency, it is critical that access into and out of the area be available. Portions of the planning area and several local and regional roadway are located within the Mojave River floodplain, including portions of State Route 18, Rock Springs Road and Bear Valley Road. Rock Springs is an at-grade crossing and is frequently impassable during major storms. Both State Route 18 and Bear Valley Road at the Mojave River are all-weather crossings. As previously discussed, the Town is currently constructing an all-weather crossing at Yucca Loma Road. All bridges on Interstate-15 in the planning area are designed to withstand the 100-year flood and to have 2 feet of freeboard for the 50-year flood.[120]

[118] Exhibit 2, Planning Area Circulation, Apple Valley Community Issues Report, prepared by Terra Nova Planning and Research, Inc., October 2007.

[119] Exhibit 3-B, Existing Number of Through Lanes and Traffic Controls (North Study Area), Town of Apple Valley General Plan Circulation Element Traffic Study, prepared by Urban Crossroads, November 2008.

[120] Personal communication, Darin Cooke, Caltrans District 8, August 11, 2008.

**Public Transportation Services**

There are 16 regional bus routes operated by the Victor Valley Transit Authority (VVTA), of which three operate regularly in the planning area. The three dedicated routes in the planning area are:

- Route 40 (Apple Valley North);
- Route 41 (Apple Valley/Victorville);
- Route 43 (Apple Valley/Victor Valley College).

Existing and proposed bus routes in Apple Valley are shown on Exhibit III-30, below. The potential for the fixed route system to be augmented through route or point deviation with a specified distance of existing bus stops is further discussed under Project Impacts, below.

**Apple Valley Airport**

The Apple Valley Airport is a general aviation airport located in the northern portion of the planning area. It serves fixed wing aircraft and helicopters. Currently airport operations are generally limited to small, private aircraft and flight schools, although California Highway Patrol and the San Bernardino County Sheriff's Department share a hangar.[121] The airport operates approximately 103 flights daily, or 38,000 operations annually.

Facilities at the airport include two box hangars, two rectangular for multiple aircraft, seven sets of T-hangars, and 60 pilot-owned "portaport" hangars, which are now stationary. There are 50 tie downs. There are two runways: runway 18/36 is approximately 6,500 feet long by 150 feet wide, and runway 8/26 is approximately 4,100 feet long by 60 feet wide.

**Rail Service**

There are two rail lines in the planning area. The Mojave Northern Mining Railroad intersects the northern portion of the planning area and runs south of Quarry Road; it serves the existing Mojave Northern Mining Quarry that operates through both annexation areas, as well as within the Town. Approximately 2 to 4 train trips occur along this line daily.

A second rail line intersects a small portion of the Town limits, south of Tussing Ranch Road between Central Road and Kiowa Road. It serves mining operations to the east in San Bernardino County. Approximately one trip runs along this rail line per day.

**Non-Motorized Transportation: Pedestrian, Equestrian and Bicycle Circulation**

Planning for non-motorized access to schools, commercial services, workplaces and recreational facilities is supported by the General Plan. Therefore, it is important that the master planning of sidewalks, bicycle lanes, and off-street trails along major roadways in the community be

[121] Personal communication, Terry Stover, Apple Valley Airport, January 17, 2008.

considered in circulation analysis. Such dedicated facilities ensure safety and reduce or avoid potential conflicts between motorized and non-motorized users. Residential design should emphasize connectivity and ease of access within and between neighborhoods and services used by residents daily, such as schools, commercial establishments and other uses to maximize access by pedestrians, bikers and equestrian users, as well as to decrease vehicle trip length and volume.

Bike Paths

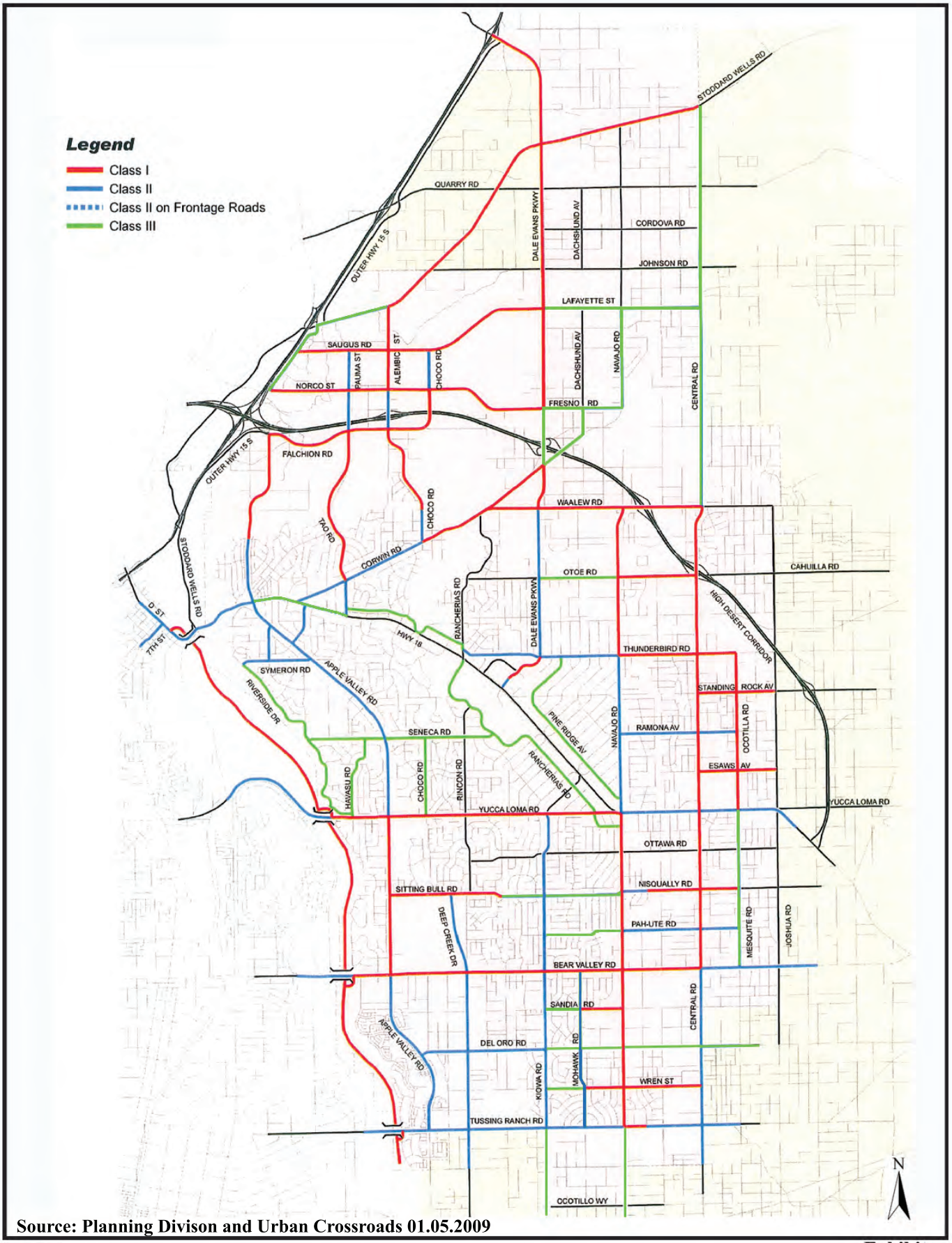
California has established three types of bicycle lanes:

- **Class I Bikeway** –provide a separate, paved right-of-way for bicycle travel, outside the roadbed, but within the right of way.
- **Class II Bikeway** – provide a striped and stenciled lane for one-way travel on a street or highway.
- **Class III Bikeway** –are unmarked routes identified only by signage, which allow shared travel with pedestrians and motor vehicles.

Currently all three bikeways are part of the Apple Valley circulation system. The currently adopted bike path system is shown on Exhibit III-25. Further, bicycle travel is allowed on all public roadways, except freeways and freeway ramps. The proposed General Plan Circulation Plan revises bikeway designations on some roadways, providing for several new Class II bike lanes. Proposed changes to the bikeway system are described and illustrated under Project Impacts, below.

Pedestrian Crossings

According to California Vehicle Code, a pedestrian crosswalk implicitly exists on every leg at every intersection. As a practical matter, visibility and safety are primary factors in determining where people will attempt to cross a street. Recommended guidelines for signalized and unsignalized pedestrian crosswalks include: a minimum width of 6 feet, or 10 feet in commercial districts, with wider crosswalks recommended in areas where pedestrian volumes are high. High visibility crosswalks, such as “zebra” style, are recommended along busy streets, in school zones, on pedestrian-oriented streets. Adequate lighting, unimpeded sight distance and freedom from obstructions such as landscaping and poles, are especially important at unsignalized crosswalks.




Source: Planning Divison and Urban Crossroads 01.05.2009

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**Apple Valley General Plan Draft EIR**
**Currently Adopted Plan of Bike Paths**
**Apple Valley, California**

**Exhibit**
**III-25**

## 2. Project Impacts

### Traffic Counts and Growth Rate Assumptions

The traffic study prepared for the General Plan utilizes the Apple Valley Traffic Model (AVTM), which was developed to support the preparation of General Plan Circulation Element and the analysis of impacts associated with implementation of the proposed General Plan and annexations. The AVTM provides long-range future traffic volume forecasts to analyze the circulation system in the planning area. It integrates data from the entire Southern California region (Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties), with the General Plan area as the primary analytical focus. The AVTM is based on and consistent with a sub-regional model, the Victor Valley Area Transportation Study (VVATS). The AVTM model bases forecasts on the following procedures: trip generation, trip distribution, time of day factoring, and traffic assignment.

The model considers the characteristics of land uses as traffic producers (for example, residential land uses) or as traffic attractors (for example, commercial land uses) to determine a means by which modeled traffic can be distributed on the circulation system. The traffic model divides the planning area into Traffic Analysis Zones (TAZs), and the amount of traffic, or number of trips that the respective land uses within a TAZ would generate is calculated. Trip generation calculations are based on factors for each land use determined using regional modeling data as well as planning area-specific data, including the proposed land use plan and associated socio-economic data. Trip generation rates for General Plan buildout are based on data collected by the Institute of Transportation Engineers (ITE).[122]

Once trip generation has been estimated, the directional orientation of traffic along the roadway network, or trip distribution, can then be determined. Trip distribution is influenced by a number of factors, such as the circulation network itself, the relationship between various types of land uses, and traffic patterns and volumes. For purposes of this analysis, these factors, along with extensive consultations with Town staff, have been considered in order to determine trip distribution for the proposed General Plan and annexations.

The traffic study has assumed the use of individual vehicles at buildout of the proposed General Plan and annexations. Although reductions in traffic associated with use of public transportation may be substantial, they are not accounted for in this analysis.

In the traffic study prepared for the General Plan, the traffic modeling considered both intersection impacts and street segment impacts. Impacts at intersections were analyzed for morning and evening peak hours (the hour in the morning or evening when the highest concentration of trips occurs, primarily controlled by commuter trips), while street segments were analyzed for average daily trips (ADT). A total of 46 intersections were analyzed for both existing and future conditions, and the locations shown on Exhibit III-23. The resultant data

[122] Institute of Transportation Engineers (ITE), "Trip Generation Manual," 7th Edition, 2003.

indicated what size of street would be required to allow smooth flow of traffic, and further identified where the existing street system would not function effectively.

**Proposed Roadway Classifications and Circulation System**

Proposed Roadway Classifications
The following describes the proposed General Plan roadway classifications. These are illustrated in Exhibit III-26. General Plan Roadway Cross Sections. The proposed Circulation Plan adds one roadway classification, Collector roadway.

Major Divided Parkway: 142 feet of right-of-way, with a 112 foot street section from curb to curb; six travel lanes with parking lanes on each side, a center median, and 15 feet of parkway with sidewalk on each side.

Major Divided Arterial: 128 feet of right-of-way, with a 104 foot street section from curb to curb. This represents six travel lanes with parking lanes on each side, a center median, and 12 feet of parkway with sidewalk on each side.

Major Road: 104 feet of right-of-way, with an 80 foot street section from curb to curb. This represents four travel lanes with parking lanes on each side, a center median, a 6 foot sidewalk and a 6 foot landscaped parkway on each side.

Secondary Road: 88 feet of right-of-way, with a 64 foot street section from curb to curb. This represents four travel lanes with a parking lane, a 6 foot sidewalk and a 6 foot landscaped parkway on each side.

Collector: 60 - 66 feet of right-of-way, with a 40 to 44 foot street section from curb to curb. This represents two travel lanes and a center median, with a 10 to 11 foot parkway on each side.

Industrial and Commercial Local Street: 66 feet of right-of-way, with a 44 foot street section from curb to curb. This represents four travel lanes and an 11 foot parkway on each side.

Local Street: 60 feet of right-of-way, with a 36 foot street section from curb to curb. This represents two travel lanes with a center median and a 12 foot parkway with sidewalk on each side.

Rural Street (Less than 1,000 ADT): 50' right-of-way with a 36 foot street section from curb to curb. This represents two travel lanes, with a center median and a 7 foot parkway on each side.

Cul-De-Sac: 50 foot right-of-way with a 36-foot street section from curb to curb. This represents two travel lanes, with a center median and a 7-foot parkway on each side.

**Proposed Circulation System**

The proposed Circulation Plan for Apple Valley is illustrated in Exhibit III-27, and shows proposed roadway classifications. All public roadways within the planning area will be constructed to meet General Plan standards. As noted above, the proposed circulation system

modifies the existing system by adding a "Collector roadway" classification to enhance network connectivity. Further, some roadways in the northerly part of the Town have been reclassified as Major and Secondary to provide needed parallel capacity to key north-south routes. The following describes how the proposed Circulation Plan differs from the currently adopted Circulation Plan:

Pauma Street
- between Saugus Road and Norco Street – new Secondary Road
- between Norco Street and Falchion Road – new Secondary Road

Alembic Street
- between Stoddard Wells Road and Saugus Road – upgrade from Secondary Road to Major Road
- between Saugus Road and Norco Street – upgrade from Secondary Road to Major Road

Rincon Road
- between Seneca Road and Yucca Loma Road – upgrade to Collector

Kiowa Road
- between SR-18 and Yucca Loma Road – upgrade to Collector
- between Bear Valley Road and Sandia Road – change from Major Divided Arterial to Major Road
- between Sandia Road and Del Oro Road - change from Major Divided Arterial to Major Road
- between Del Oro Road and Tussing Ranch Road - change from Major Divided Arterial to Major Road
- between Tussing Ranch Road and Ocotillo Way - change from Major Divided Arterial to Major Road

Dakota Road
- between Fresno Road and Corwin Road – upgrade to Collector

Navajo Road
- between Waalew Road and Otoe Road – upgrade to Collector
- between Otoe Road and Thunderbird Road – upgrade to Collector

Stoddard Wells Road
- between I-15 Freeway and Alembic Street – upgrade from Major Road to Major Divided Arterial
- between Alembic Street and Johnson Street - upgrade from Major Road to Major Divided Arterial

Quarry Road
- between I-15 Freeway and Stoddard Wells Road – upgrade from Secondary Road to Major Divided Arterial
- between Stoddard Wells Road and Dale Evans Road - upgrade from Secondary Road to Major Divided Arterial

Johnson Road
- east of Central Road – change from Major Road to Secondary Road

Falchion Road
- between Apple Valley Road and Tao Road – upgrade from Secondary Road to Major Road

Corwin Road
- between Dakota Road and Dale Evans Parkway – new Major Road

Yucca Loma Road
- west of Apple Valley Road – upgrade from Major Road to Major Divided Arterial

Ottawa Road
- between Rincon Road and Kiowa Road – upgrade to Collector

Pah-Ute Road
- between Kiowa Road and Navajo Road – upgrade to Collector
- between Navajo Road and Central Road - upgrade to Collector
- between Central Road and Mesquite Road – upgrade to Collector

Sandia Road
- between Kiowa Road and Navajo Road - upgrade to Collector

Rancherias Road
- between Hwy 18 and Thunderbird Road – upgrade from a Secondary to a Major Road.

Thunderbird Road
- between Navajo and Central Roads – upgrade to a Major Road.

As compared with the currently adopted Circulation Plan, the proposed changes are intended to provide for additional connectivity, particularly across the High Desert Corridor. The new Collector roadway classification and re-classifying roadways to Major and Secondary in the northerly portion of the planning area provide additional parallel capacity to north-south routes. Changes have also been recommended based on sustainability objectives, further discussed below.

Proposed Roadway Classifications in Annexations 2008-001 and 2008-002

Several of the proposed roadway classification changes are expected to be relevant to future development in the proposed Annexation 2008-002. Specifically, they include changes to

roadway classifications to segments of Stoddard Wells Road and Quarry Road, as described above.

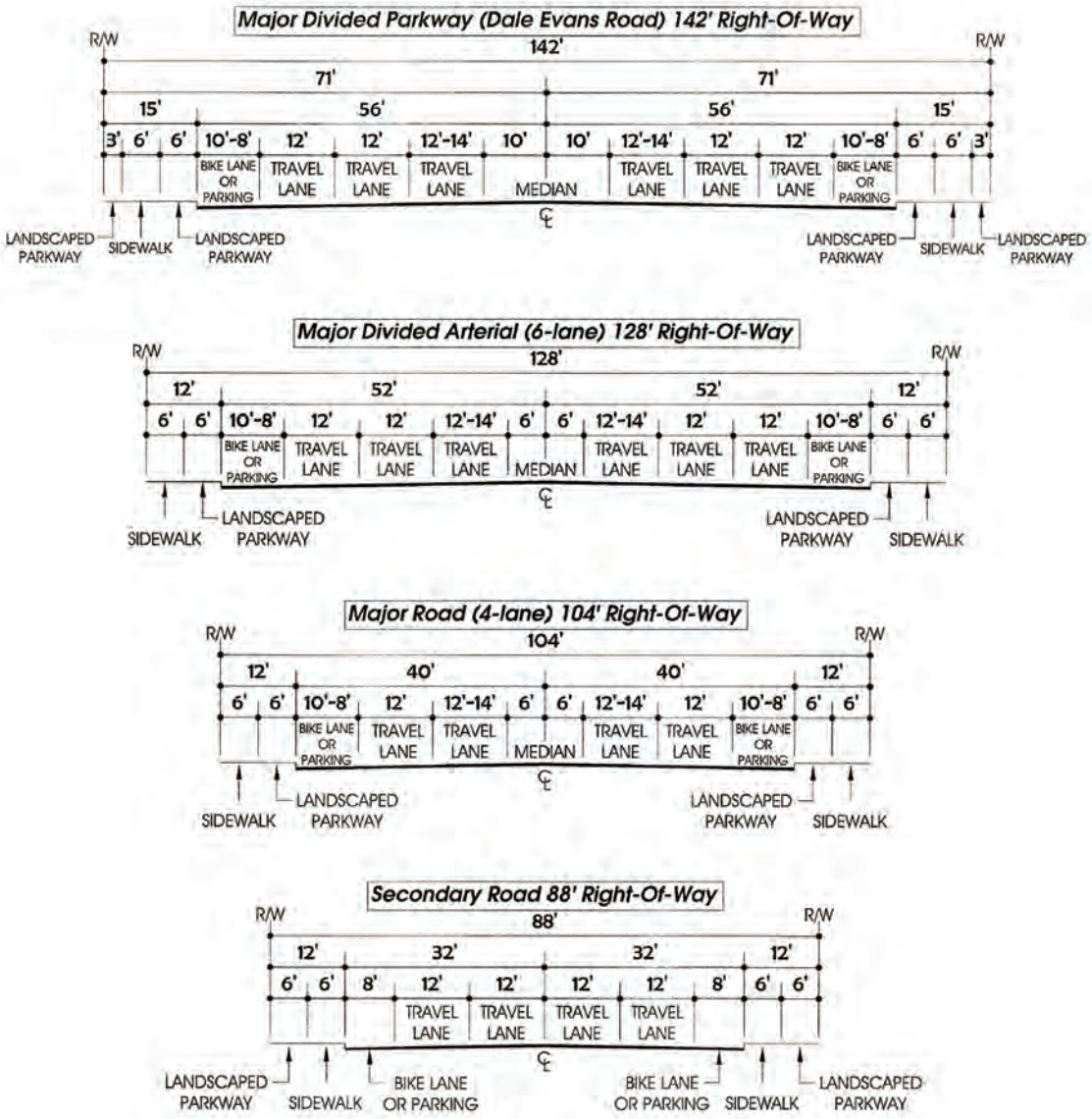
Sustainability Principles

The following objectives have been considered in the design of the proposed Circulation system to improve and further develop its ability to be sustainable:

- *Network Connectivity*: where possible, more than one route between land uses is provided;
- *Operational Balance:* flexibility so as to realize community objectives and allow the Town to further its goals towards place making while preserving safety and mobility;
- *Emissions Reduction/Energy Efficiency*: gives priority to design that provides for minimizing idling times and reducing vehicle miles traveled, contributes towards resource conservation and minimizes waste;
- *Pedestrian Accommodations:* fully integrates pedestrian walkways and bike paths;
- *Transit Readiness:* provides access to transit stops and promotes effective inter-modal connections;
- *Quality Public Space*: spatial definition of roadways using structures and landscaping.

**High Desert Corridor (SR-220)**

As previously discussed, the High Desert Corridor proposed by CalTrans will bisect the northern portion of the planning area. The Preferred Alternative Alignment is from southeast to northwest, providing a freeway connection between the southeastern portion of the Town with I-15. It will also connect the Victor Valley and the Antelope Valley to the west, as well as providing additional regional access to Los Angeles, the Inland Empire and Barstow, the Central Valley, and Nevada to the north. The Proposed Circulation Plan for the Apple Valley General Plan, Exhibit III-27 shows the preferred alignment for the Corridor as set forth by Caltrans. Plans include entrance and exit ramps at Choco/Alembic Street, Dale Evans Parkway and Waalew Road.

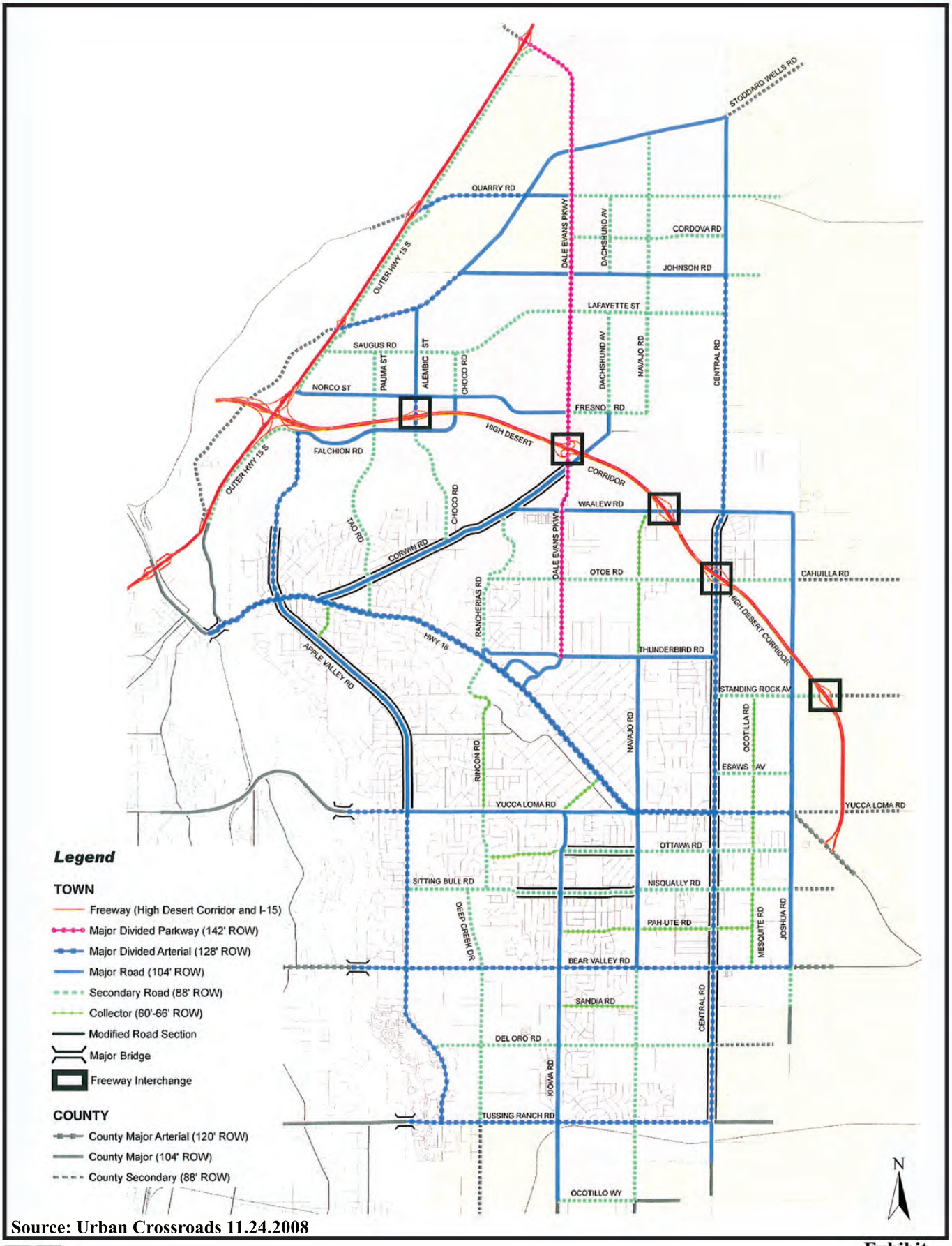



**Source: Urban Crossroads 11.24.2008**

TERRA NOVA®
Planning & Research, Inc.

**Apple Valley General Plan Draft EIR**
**General Plan Roadway Cross Sections**
**Apple Valley, California**

**Exhibit**
**III-26**




Source: Urban Crossroads 11.24.2008

TERRA NOVA®
Planning & Research, Inc.

**Apple Valley General Plan Draft EIR**
**Proposed General Plan Circulation Plan**
**Apple Valley, California**

**Exhibit**
**III-27**

## Traffic Impact Analysis

In order to quantify potential traffic impacts associated with buildout of the proposed General Plan and annexations, the traffic study determined the number of trips potentially generated by, or attracted to, the various land uses. Buildout of the proposed Apple Valley General Plan and the annexations will result in the construction of up to 63,749 dwelling units, approximately 51,860,766 square feet of commercial land uses and approximately 58,581,040 square feet of industrial land uses.

Buildout Daily Traffic Evaluation

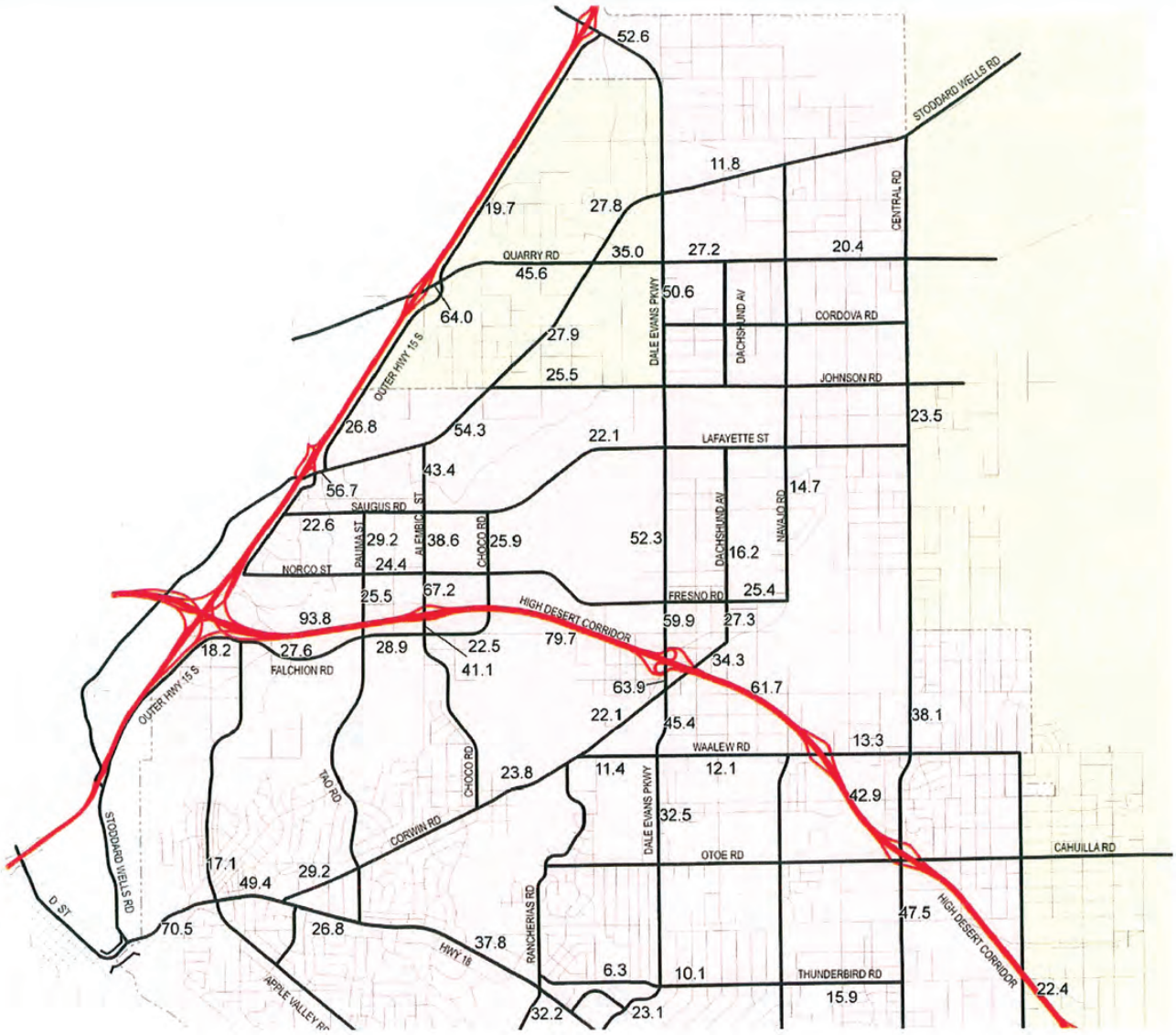
The analysis of average daily traffic (ADT) at buildout of the proposed General Plan is based on projected future daily traffic volumes at the key traffic analysis locations, previously shown in Exhibit III-23. Exhibits III-28 and III-29 show average daily traffic volumes on each of the modeled roadway segments at General Plan build out for the northerly and southerly planning areas, respectively.

As shown on these exhibits, projected ADT volumes on roadways in the planning area range from less than 7,000 vehicles per day (vpd) to more than 60,000 vpd. The following roadways are expected to carry more than 60,000 vpd at General Plan buildout:

- Quarry Road east of I-15;
- Choco/Alembic Street north of the High Desert Corridor;
- Dale Evans Parkway south of the High Desert Corridor;
- State Route 18 west of Apple Valley Road; and
- Bear Valley Road west of Apple Valley Road.

Based on these volumes, the analysis further estimates daily volume-to-capacity (V/C) ratios. V/C ratios are modeled using segment through-travel lanes based on the classifications in the proposed General Plan circulation plan. Daily V/C ratios are shown on Table III-62, which indicates the range of "Acceptable" (79 segments) to "Approaching Capacity" (17 segments). Along this continuum are values in the "Potentially Exceeds Capacity" (8 segments) category. Peak hour operations have been estimated at key intersections as determined in consultation with Town staff. Based on these estimates, the potential for lane modifications to accommodate traffic at General Plan build out has been considered and is discussed further, below.

The General Plan includes goals, policies and programs to ensure continued monitoring of roadway segments that have potential to exceed daily V/C capacity at build out. This is also further addressed in Mitigation Measures, below.




**LEGEND:**

30.0 = VEHICLES PER DAY (1000'S)

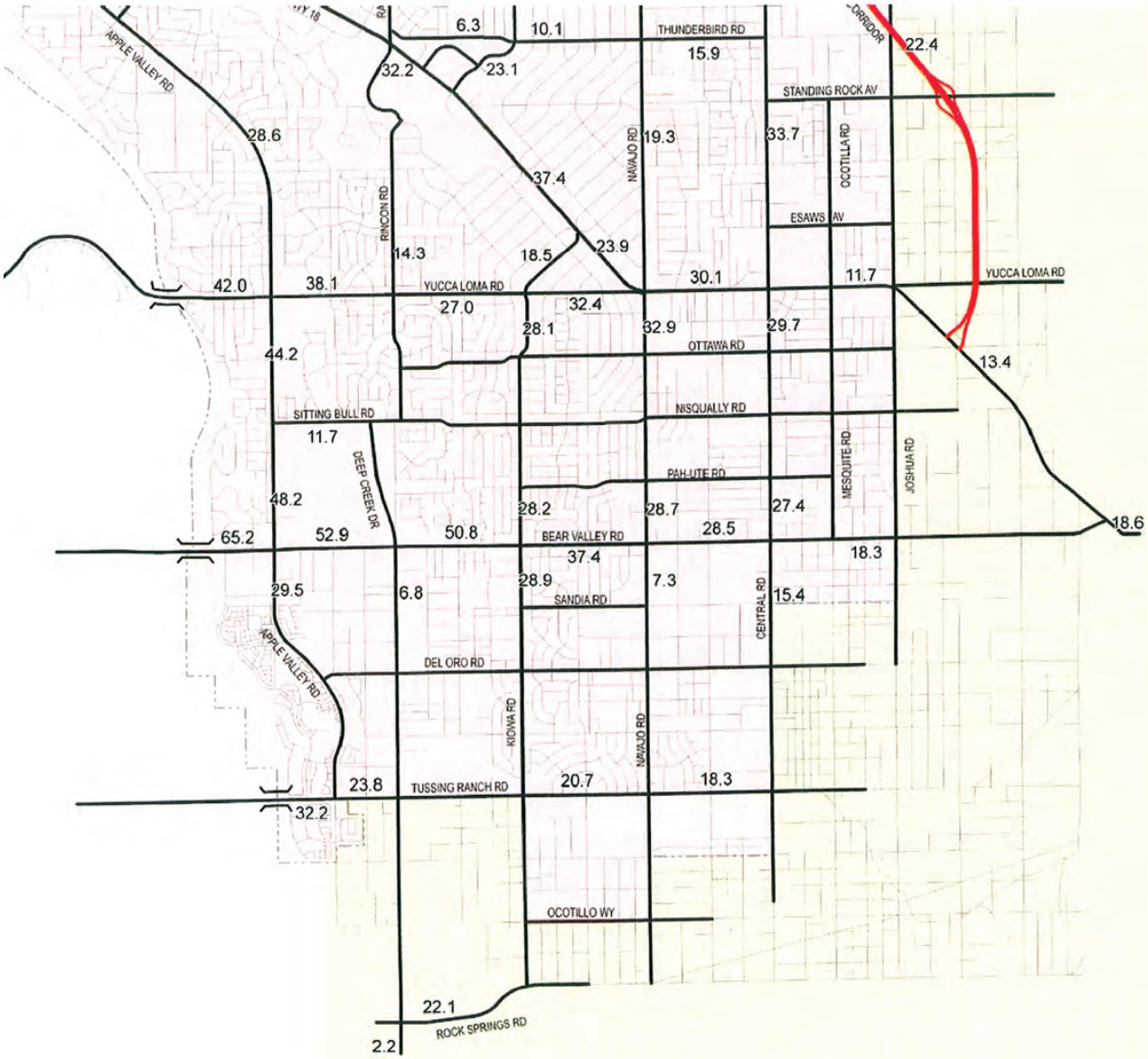
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Source: Urban Crossroads 11.24.2008

TERRA NOVA®
Planning & Research, Inc.

**Apple Valley General Plan Draft EIR**
**ADT at General Plan Buildout (North)**
**Apple Valley, California**

**Exhibit**
**III-28**




**LEGEND:**

30.0 = VEHICLES PER DAY (1000'S)

N

Source: Urban Crossroads 11.24.2008

TERRA NOVA®
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**Apple Valley General Plan Draft EIR**
**ADT at General Plan Buildout (South)**
**Apple Valley, California**

**Exhibit**
**III-29**

## Table III-62
## Roadway Segment Capacity Evaluation

| No. | Roadway Segment | Roadway Capacity | Future Forecast | Volume/ Capacity Ratio | Threshold |
|---|---|---|---|---|---|
| 1 | Apple Valley Road n/o SR-18 | 69,300 | 17,100 | 0.25 | Acceptable |
| 2 | Apple Valley Road between SR-18 & Yucca Loma Road | 40,500 | 28,600 | 0.71 | Acceptable |
| 3 | Apple Valley Rd between Yucca Loma Road & Sitting Bull Rd | 69,300 | 44,200 | 0.64 | Acceptable |
| 4 | Apple Valley Rd between Sitting Bull Road & Bear Valley Road | 69,300 | 48,200 | 0.70 | Acceptable |
| 5 | Apple Valley Rd between Bear Valley Rd & Tussing Ranch Rd | 69,300 | 29,500 | 0.43 | Acceptable |
| 6 | Deep Creek Road between Bear Valley Rd & Tussing Ranch Rd | 25,500 | 6,800 | 0.27 | Acceptable |
| 7 | Deep Creek Road s/o of Rock Springs Road | 12,700 | 2,200 | 0.17 | Acceptable |
| 8 | Kiowa Road between SR-18 & Yucca Loma Road | 17,300 | 18,500 | 1.07 | Potentially Exceeds Capacity |
| 9 | Kiowa Road between Yucca Loma Road & Sitting Bull Road | 40,500 | 28,100 | 0.69 | Acceptable |
| 10 | Kiowa Road between Sitting Bull Road & Bear Valley Road | 40,500 | 28,200 | 0.70 | Acceptable |
| 11 | Kiowa Road between Bear Valley Road & Tussing Ranch Road | 40,500 | 28,900 | 0.71 | Acceptable |
| 12 | Dale Evans Parkway s/o I-15 Freeway | 69,300 | 52,600 | 0.76 | Acceptable |
| 13 | Dale Evans Parkway n/o Fresno Road | 69,300 | 52,300 | 0.75 | Acceptable |
| 14 | Dale Evans Parkway between Corwin Road & Waalew Road | 69,300 | 45,400 | 0.66 | Acceptable |
| 15 | Dale Evans Parkway between Waalew Rd & Thunderbird Road | 69,300 | 32,500 | 0.47 | Acceptable |
| 16 | Dale Evans Parkway between Thunderbird Road & SR-18 | 40,500 | 23,100 | 0.57 | Acceptable |
| 17 | Navajo Road between Thunderbird Road & SR-18 | 40,500 | 19,300 | 0.48 | Acceptable |
| 18 | Navajo Road between SR-18 & Nisqually Road | 40,500 | 32,900 | 0.81 | Approaching Capacity |
| 19 | Navajo Road between Nisqually Road & Bear Valley Road | 40,500 | 28,700 | 0.71 | Acceptable |
| 20 | Navajo Road between Bear Valley Rd & Tussing Ranch Road | 25,500 | 7,300 | 0.29 | Acceptable |
| 21 | Central Road n/o Waalew Road | 69,300 | 38,100 | 0.55 | Acceptable |
| 22 | Central Road between Waalew Road & Thunderbird Road | 69,300 | 47,500 | 0.69 | Acceptable |
| 23 | Central Road between Thunderbird Road & SR-18 | 69,300 | 33,700 | 0.49 | Acceptable |
| 24 | Central Road between SR-18 & Nisqually Road | 69,300 | 29,700 | 0.43 | Acceptable |
| 25 | Central Road between Nisqually Road & Bear Valley Road | 69,300 | 27,400 | 0.40 | Acceptable |

## Table III-62
## Roadway Segment Capacity Evaluation

| No. | Roadway Segment | Roadway Capacity | Future Forecast | Volume/ Capacity Ratio | Threshold |
|---|---|---|---|---|---|
| 26 | Central Road between Bear Valley Rd & Tussing Ranch Road | 69,300 | 15,400 | 0.22 | Acceptable |
| 27 | Stoddard Wells Road e/o I-15 Freeway | 69,300 | 56,700 | 0.82 | Approaching Capacity |
| 28 | Corwin Road between SR-18 & Tao Road | 40,500 | 29,200 | 0.72 | Acceptable |
| 29 | Corwin Road between Tao Road & Waalew Road | 40,500 | 23,800 | 0.59 | Acceptable |
| 30 | Corwin Road between Waalew Road & Dale Evans Parkway | 40,500 | 22,100 | 0.55 | Acceptable |
| 31 | Waalew Road Between Corwin Road & Dale Evans Parkway | 40,500 | 11,400 | 0.28 | Acceptable |
| 32 | Waalew Road e/o Dale Evans Parkway | 40,500 | 12,100 | 0.30 | Acceptable |
| 33 | Waalew Road w/o Central Road | 40,500 | 13,300 | 0.33 | Acceptable |
| 34 | SR-18 w/o Apple Valley Road | 69,300 | 70,500 | 1.02 | Potentially Exceeds Capacity |
| 35 | SR-18 between Apple Valley Road & Corwin Road | 69,300 | 49,400 | 0.71 | Acceptable |
| 36 | SR-18 between Corwin Road & Tao Road | 69,300 | 26,800 | 0.39 | Acceptable |
| 37 | SR-18 between Tao Road & Rancherias Road | 69,300 | 37,800 | 0.55 | Acceptable |
| 38 | SR-18 between Rancherias Road & Dale Evans Parkway | 69,300 | 32,200 | 0.46 | Acceptable |
| 39 | SR-18 between Dale Evans Parkway & Kiowa Road | 69,300 | 37,400 | 0.54 | Acceptable |
| 40 | SR-18 between Kiowa Road & Navajo Road | 69,300 | 23,900 | 0.34 | Acceptable |
| 41 | SR-18 between Navajo Road & Central Road | 69,300 | 30,100 | 0.43 | Acceptable |
| 42 | SR-18 between Central Road & Joshua Road | 69,300 | 11,700 | 0.17 | Acceptable |
| 43 | SR-18 between Joshua Road & Bear Valley Road | 25,500 | 13,400 | 0.53 | Acceptable |
| 44 | SR-18 e/o Bear Valley Road | 25,500 | 18,600 | 0.73 | Acceptable |
| 45 | Thunderbird Rd between Rancherias Rd & Dale Evans Pkwy | 40,500 | 6,300 | 0.16 | Acceptable |
| 46 | Thunderbird Rd between Dale Evans Parkway & Navajo Road | 40,500 | 10,100 | 0.25 | Acceptable |
| 47 | Thunderbird Road between Navajo Road & Central Road | 40,500 | 15,900 | 0.39 | Acceptable |
| 48 | Yucca Loma Road w/o Apple Valley Road | 69,300 | 42,000 | 0.61 | Acceptable |
| 49 | Yucca Loma Road between Apple Valley Road & Rincon Road | 40,500 | 38,100 | 0.94 | Approaching Capacity |
| 50 | Yucca Loma Road between Rincon Road & Kiowa Road | 40,500 | 27,000 | 0.67 | Acceptable |
| 51 | Yucca Loma Road between Kiowa Road & SR-18 | 40,500 | 32,400 | 0.80 | Acceptable |
| 52 | Sitting Bull Road between Apple Valley Road & Kiowa Road | 25,500 | 11,700 | 0.46 | Acceptable |

## Table III-62
## Roadway Segment Capacity Evaluation

| No. | Roadway Segment | Roadway Capacity | Future Forecast | Volume/ Capacity Ratio | Threshold |
|---|---|---|---|---|---|
| 53 | Bear Valley Road w/o Apple Valley Road | 69,300 | 65,200 | 0.94 | Approaching Capacity |
| 54 | Bear Valley Rd between Apple Valley Rd & Deep Creek Road | 69,300 | 52,900 | 0.76 | Acceptable |
| 55 | Bear Valley Road between Deep Creek Road & Kiowa Road | 69,300 | 50,800 | 0.73 | Acceptable |
| 56 | Bear Valley Road between Kiowa Road & Navajo Road | 69,300 | 37,400 | 0.54 | Acceptable |
| 57 | Bear Valley Road between Navajo Road & Central Road | 69,300 | 28,500 | 0.41 | Acceptable |
| 58 | Bear Valley Road between Central Road & SR-18 | 69,300 | 18,300 | 0.26 | Acceptable |
| 59 | Rincon Road between SR-18 & Yucca Loma Road | 12,700 | 14,300 | 1.13 | Potentially Exceeds Capacity |
| 60 | Rock Springs Road between Deep Creek Road & Kiowa Road | 25,500 | 22,100 | 0.87 | Approaching Capacity |
| 61 | High Desert Corridor between Standing Rock Ave & Central Rd | 107,300 | 22,400 | 0.21 | Acceptable |
| 62 | High Desert Corridor between Central Road & Waalew Road | 107,300 | 42,900 | 0.40 | Acceptable |
| 63 | High Desert Corridor between Waalew Rd & Dale Evans Pkwy | 107,300 | 61,700 | 0.58 | Acceptable |
| 64 | High Desert Corridor between Dale Evans Pkwy & Alembic St | 107,300 | 79,700 | 0.74 | Acceptable |
| 65 | High Desert Corridor between Alembic Street & I-15 freeway | 107,300 | 93,800 | 0.87 | Approaching Capacity |
| 66 | Tussing Ranch Road w/o Apple Valley Road | 69,300 | 32,200 | 0.46 | Acceptable |
| 67 | Tussing Ranch Road between Apple Valley Rd & Kiowa Road | 69,300 | 23,800 | 0.34 | Acceptable |
| 68 | Tussing Ranch Road between Kiowa Road & Navajo Road | 69,300 | 20,700 | 0.30 | Acceptable |
| 69 | Tussing Ranch Road between Navajo Road & Central Road | 69,300 | 18,300 | 0.26 | Acceptable |
| 70 | Falchion Road w/o Apple Valley Road | 25,500 | 18,200 | 0.71 | Acceptable |
| 71 | Falchion Road between Apple Valley Road & Pauma Street | 40,500 | 27,600 | 0.68 | Acceptable |
| 72 | Falchion Road between Pauma Street & Alembic Street | 40,500 | 28,900 | 0.71 | Acceptable |
| 73 | Falchion Road e/o Alembic Street | 40,500 | 22,500 | 0.56 | Acceptable |
| 74 | Pauma Street n/o Falchion Road | 25,500 | 25,500 | 1.00 | Approaching Capacity |
| 75 | Pauma Street s/o Saugus Road | 25,500 | 29,200 | 1.15 | Potentially Exceeds Capacity |
| 76 | Choco/Alembic Street s/o High Desert Corridor | 69,300 | 41,100 | 0.59 | Acceptable |

## Table III-62
## Roadway Segment Capacity Evaluation

| No. | Roadway Segment | Roadway Capacity | Future Forecast | Volume/ Capacity Ratio | Threshold |
|---|---|---|---|---|---|
| 77 | Choco/Alembic Street n/o High Desert Corridor | 69,300 | 67,200 | 0.97 | Approaching Capacity |
| 78 | Choco/Alembic Street between Norco Street & Saugus Road | 40,500 | 38,600 | 0.95 | Approaching Capacity |
| 79 | Choco/Alembic Street between Saugus Road & Stoddard Wells Road | 40,500 | 43,400 | 1.07 | Potentially Exceeds Capacity |
| 80 | Choco Road between Norco Street & Saugus Road | 25,500 | 25,900 | 1.02 | Potentially Exceeds Capacity |
| 81 | Dale Evans Pkwy between High Desert Corridor & Corwin Rd | 69,300 | 63,900 | 0.92 | Approaching Capacity |
| 82 | Dale Evans Pkwy between High Desert Corridor & Norco Street | 69,300 | 59,900 | 0.86 | Approaching Capacity |
| 83 | Corwin Road between Dale Evans Parkway & Dakota Road | 40,500 | 34,300 | 0.85 | Approaching Capacity |
| 84 | Dakota Road s/o Fresno Road | 40,500 | 27,300 | 0.67 | Acceptable |
| 85 | Dachshund Avenue n/o Fresno Road | 25,500 | 16,200 | 0.64 | Acceptable |
| 86 | Fresno Road between Dale Evans Parkway & Navajo Road | 25,500 | 25,400 | 1.00 | Approaching Capacity |
| 87 | Norco Street w/o Alembic Street | 40,500 | 24,400 | 0.60 | Acceptable |
| 88 | Saugus Road w/o Pauma Street | 25,500 | 22,600 | 0.89 | Approaching Capacity |
| 89 | Lafayette Street w/o Dale Evans Parkway | 25,500 | 22,100 | 0.87 | Approaching Capacity |
| 90 | Johnson Road e/o Stoddard Wells Road | 40,500 | 25,500 | 0.63 | Acceptable |
| 91 | Stoddard Wells Road e/o Alembic Street | 69,300 | 54,300 | 0.78 | Acceptable |
| 92 | Stoddard Wells Road n/o Johnson Road | 40,500 | 27,900 | 0.69 | Acceptable |
| 93 | Stoddard Wells Rd between Quarry Rd & Dale Evans Parkway | 40,500 | 27,800 | 0.69 | Acceptable |
| 94 | Stoddard Wells Road w/o Navajo Road | 40,500 | 11,800 | 0.29 | Acceptable |
| 95 | Dale Evans Parkway s/o Quarry Road | 69,300 | 50,600 | 0.73 | Acceptable |
| 96 | Navajo Road s/o Lafayette Street | 25,500 | 14,700 | 0.58 | Acceptable |
| 97 | Central Road n/o Lafayette Street | 69,300 | 23,500 | 0.34 | Acceptable |
| 98 | Quarry Road e/o I-15 freeway | 69,300 | 64,000 | 0.92 | Approaching Capacity |
| 99 | Quarry Road between I-15 Frontage Rd & Stoddard Wells Rd | 69,300 | 45,600 | 0.66 | Acceptable |
| 100 | Quarry Road w/o Dale Evans Parkway | 40,500 | 35,000 | 0.86 | Approaching Capacity |
| 101 | Quarry Road between Dale Evans Parkway & Navajo Road | 25,500 | 27,200 | 1.07 | Potentially Exceeds Capacity |

**Table III-62**
**Roadway Segment Capacity Evaluation**

| No. | Roadway Segment | Roadway Capacity | Future Forecast | Volume/ Capacity Ratio | Threshold |
|---|---|---|---|---|---|
| 102 | Quarry Road e/o Navajo Road | 25,500 | 20,400 | 0.80 | Acceptable |
| 103 | Outer Highway I-15 South between Quarry Road & Dale Evans Parkway | 25,500 | 19,700 | 0.77 | Acceptable |
| 104 | Outer Highway I-15 South between Stoddard Wells Road & Quarry Road | 25,500 | 26,800 | 1.05 | Potentially Exceeds Capacity |

Peak Hour Traffic Operations Analysis

The traffic analysis evaluates peak hour traffic operations based on turning movement estimates shown in the AVTM, and recommends intersection lane configurations based on proposed General Plan roadway cross-sections and projected future travel patterns in the planning area. The Town's standard for acceptable LOS has in the past been LOS C. As shown in Table III-63, below, approximately 19 intersections in the planning area are expected to operate below this standard (D, E, or F) at General Plan buildout during AM and/or PM peak hours.

## Table III-63
## Intersection Operations Analysis Summary

| Intersection | | Traffic Control [1] | Northbound | | | Southbound | | | Eastbound | | | Westbound | | | Delay[2] (sec.) | | Level of Service | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Name | | L | T | R | L | T | R | L | T | R | L | T | R | AM | PM | AM | PM |
| 1 | I-15 SB Ramps (NS) at: | | | | | | | | | | | | | | | | | |
| | • Dale Evans Pkwy. (EW) | **TS** | 0 | 0 | 0 | **2** | 0 | **1** | 0 | **3** | **1** | **3** | **3** | 0 | 16.8 | 20.0 | B | B |
| 2 | I-15 NB Ramps (NS) at: | | | | | | | | | | | | | | | | | |
| | • Dale Evans Pkwy. (EW) | **TS** | **1** | 0 | **1>>** | 0 | 0 | 0 | **1** | **3** | 0 | 0 | **3** | **1** | 10.7 | 14.4 | B | B |
| 3 | Dale Evans Pkwy. (NS) at: | | | | | | | | | | | | | | | | | |
| | • Quarry Rd. (EW) | **TS** | **2** | **4** | **1** | **2** | **4** | **1** | **2** | **2** | **1** | **2** | **2** | **1>** | 51.6 | 49.5 | D | D |
| 4 | Outer Hwy. 15 (NS) at: | | | | | | | | | | | | | | | | | |
| | • Stoddard Wells Rd. (EW) | **TS** | 0 | 0 | 0 | **2** | 0 | **1>>** | **2** | **3** | 0 | 0 | **3** | **1** | 24.7 | 26.0 | C | C |
| 5 | Dale Evans Pkwy. (NS) at: | | | | | | | | | | | | | | | | | |
| | • Corwin Rd. (EW) | **TS** | **2** | **3** | **1** | **2** | **3** | **1** | **2** | **1.5** | **0.5** | **2** | **2** | **1>** | 68.6 | 52.8 | E | D |
| 6 | Corwin Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • Waalew Rd. (EW) | **TS** | 0 | **2** | **1** | **1** | **2** | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 24.3 | 30.1 | C | C |
| 8 | Dale Evans Pkwy. (NS) at: | | | | | | | | | | | | | | | | | |
| | • Waalew Rd. (EW) | **TS** | **1** | **2.5** | **0.5** | **1** | **3** | **1** | **1** | **2.5** | **0.5** | **1** | **2.5** | **0.5** | 47.5 | 32.7 | D | C |
| 9 | Central Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • Waalew Rd. (EW) | **TS** | **1** | **2.5** | **0.5** | **1** | **3** | **1>** | **2.5** | 1 | **0.5** | **1** | **2** | **1** | 53.2 | 39.5 | D | D |
| 10 | Apple Valley Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • State Route 18 (EW) | TS | **2** | **1.5** | **0.5** | 1 | **2** | 1 | 2 | **3** | 1>> | **2** | **3** | 1 | 54.5 | 48.0 | D | D |
| 11 | Corwin Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • State Route 18 (EW) | TS | 0 | 0 | 0 | **2** | 0 | **1>>** | **2** | **3** | 0 | 0 | **3** | **1>** | 43.6 | 34.3 | D | C |
| 12 | Rancherias Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • State Route 18 (EW) | TS | 1 | **1.5** | **0.5** | 1 | **1.5** | **0.5** | **2** | **2.5** | **0.5** | 1 | **3** | 1 | 43.4 | 45.1 | D | D |
| 13 | Dale Evans Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • Thunderbird Rd. (EW) | **TS** | 1 | **1.5** | **0.5** | **2** | **2.5** | **0.5** | 1 | **1.5** | **0.5** | 1 | **1.5** | **0.5** | 42.2 | 31.7 | D | C |

## Table III-63
## Intersection Operations Analysis Summary

| Intersection | | Traffic Control [1] | Northbound | | | Southbound | | | Eastbound | | | Westbound | | | Delay[2] (sec.) | | Level of Service | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Name | | L | T | R | L | T | R | L | T | R | L | T | R | AM | PM | AM | PM |
| 14 | Navajo Rd. at: | | | | | | | | | | | | | | | | | |
| | • Thunderbird Rd. (EW) | **TS** | **1** | **1.5** | **0.5** | **1** | **0.5** | **0.5** | **1** | **2** | **2** | **2** | **1.5** | **0.5** | 29.0 | 33.8 | C | C |
| 15 | Central Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • Thunderbird Rd. (EW) | **TS** | **1** | **4** | **1** | **1** | **3** | **2** | **3** | **0.5** | 0.5 | **1** | **0.5** | **0.5** | 52.5 | 44.5 | D | C |
| 16 | Dale Evans Pkwy. (NS) at: | | | | | | | | | | | | | | | | | |
| | • State Route 18 (EW) | TS | **1** | **0.5** | **0.5** | **2** | **1.5** | **0.5** | 1 | **3** | 1 | 1 | **3** | **1>** | 43.1 | 54.4 | D | D |
| 17 | Kiowa Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • State Route 18 (EW) | TS | **2** | **0.5** | **0.5** | 1 | **0.5** | **0.5** | 1 | **3** | **1>** | 1 | **2.5** | **0.5** | 29.5 | 26.6 | C | C |
| 18 | Apple Valley Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • Yucca Loma Rd. (EW) | TS | **2** | **2.5** | **0.5** | **2** | **2** | 1 | 1 | **3** | **1>** | **2** | **2** | 1 | 43.9 | 54.9 | D | D |
| 19 | Kiowa Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • Yucca Loma Rd. (EW) | **TS** | **1** | **1.5** | **0.5** | **1** | **0.5** | **0.5** | 1 | **2** | **1** | **2** | **1.5** | **0.5** | 39.4 | 50.6 | D | D |
| 20 | Navajo Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • State Route 18 (EW) | TS | **2** | **2** | **2>** | 1 | **2** | 1 | 1 | **3** | 1 | **2** | **3** | 1 | 52.9 | 54.7 | D | D |
| 21 | Central Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • State Route 18 (EW) | TS | **2** | **2.5** | **0.5** | **1** | **2.5** | **0.5** | **2** | **3** | **1>** | 1 | **2.5** | **0.5** | 51.8 | 39.6 | D | D |
| 22 | Joshua Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • State Route 18 (EW) | **TS** | **1** | **1.5** | **0.5** | **1** | **1.5** | **0.5** | 1 | **2.5** | **0.5** | 1 | **2.5** | **0.5** | 12.9 | 13.0 | B | B |
| 23 | Apple Valley Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • Bear Valley Rd. (EW) | TS | 2 | **3** | **1>** | 2 | **3** | 2> | 2 | **3** | 1 | **2** | **3** | **1** | 49.1 | 53.3 | D | D |
| 24 | Deep Creek Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • Bear Valley Rd. (EW) | **TS** | **1** | **1.5** | **0.5** | **1** | **1.5** | **0.5** | **1** | **2.5** | **0.5** | 1 | **2.5** | **0.5** | 27.9 | 34.3 | C | C |
| 25 | Kiowa Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • Bear Valley Rd. (EW) | TS | **2** | **1.5** | **0.5** | 1 | 2 | 1 | **2** | **3** | **1>** | 1 | **3** | 1 | 43.2 | 41.9 | D | D |

## Table III-63
## Intersection Operations Analysis Summary

| Intersection | | Traffic Control [1] | Northbound | | | Southbound | | | Eastbound | | | Westbound | | | Delay[2] (sec.) | | Level of Service | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Name | | L | T | R | L | T | R | L | T | R | L | T | R | AM | PM | AM | PM |
| 26 | Navajo Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • Bear Valley Rd. (EW) | TS | 1 | **1.5** | **0.5** | **2** | 2 | 1 | **2** | **2.5** | **0.5** | 1 | **2.5** | **0.5** | 42.4 | 54.6 | D | D |
| 27 | Central Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • Bear Valley Rd. (EW) | TS | 1 | **2.5** | **0.5** | 1 | **3** | **1>** | **2** | **2.5** | **0.5** | 1 | **2.5** | **0.5** | 43.6 | 44.0 | D | D |
| 28 | State Route 18 (NS) at: | | | | | | | | | | | | | | | | | |
| | • Bear Valley Rd. (EW) | **TS** | **2** | **3** | 0 | 0 | **2.5** | **0.5** | 1 | 0 | **1** | 0 | 0 | 0 | 17.7 | 24.8 | B | C |
| 29 | Central Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • Tussing Ranch Rd. (EW) | **TS** | **1** | **1.5** | **0.5** | **1** | **3** | **1>** | **2** | **2.5** | **0.5** | **1** | **1.5** | **0.5** | 27.2 | 23.8 | C | C |
| 30 | Deep Creek Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • Rock Springs Rd. (EW) | TS | **1** | **0.5** | **0.5** | **1** | **0.5** | **0.5** | 1 | **1.5** | **0.5** | 1 | **1.5** | **0.5** | 25.9 | 24.3 | C | C |
| 31 | I-15 SB Ramps (NS) at: | | | | | | | | | | | | | | | | | |
| | • Stoddard Wells Rd. (EW) | TS | **1** | **1** | **2>** | **2** | **0.5** | **0.5** | **1** | **2** | **1** | **3** | **2** | **2** | 37.7 | 48.8 | D | D |
| 32 | I-15 NB Ramps (NS) at: | | | | | | | | | | | | | | | | | |
| | • Stoddard Wells Rd. (EW) | TS | **2** | 1 | **1>>** | **3** | **2** | **2** | **2** | **3** | **1>** | **2** | **4** | **1** | 51.6 | 48.8 | D | D |
| 33 | Outer Highway 15 (NS) at: | | | | | | | | | | | | | | | | | |
| | • Stodddard Wells Rd. (EW) | TS | **2** | **2** | 0 | 0 | **2** | **1>>** | **2** | **0** | **1>>** | 0 | **0** | 0 | 52.3 | 29.5 | D | C |
| 34 | Outer Highway 15 (NS) at: | | | | | | | | | | | | | | | | | |
| | • Saugus Rd. (EW) | TS | 0 | **1.5** | **0.5** | **2** | **2** | 0 | 0 | 0 | 0 | **1** | 0 | **1>>** | 21.1 | 30.5 | C | C |
| 35 | Choco Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • H. D. C. WB Ramps (EW) | TS | **2** | **3** | 0 | 0 | **3** | **1>>** | 0 | 0 | 0 | **2** | 0 | **1** | 16.4 | 14.4 | B | B |
| 36 | Choco Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • H. D. C. EB Ramps (EW) | TS | 0 | **3** | **1** | **2** | **3** | 0 | **2** | 0 | **2** | 0 | 0 | 0 | 51.2 | 28.3 | D | C |
| 37 | Dale Evans Pkwy. (NS) at: | | | | | | | | | | | | | | | | | |
| | • H. D. C. WB Ramps (EW) | TS | 0 | **3** | **1>>** | 0 | **3** | **1>>** | 0 | 0 | 0 | **1** | 0 | **2>** | 22.3 | 8.8 | C | A |

## Table III-63
## Intersection Operations Analysis Summary

| Intersection | | Traffic Control [1] | Northbound | | | Southbound | | | Eastbound | | | Westbound | | | Delay[2] (sec.) | | Level of Service | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Name | | L | T | R | L | T | R | L | T | R | L | T | R | AM | PM | AM | PM |
| 38 | Dale Evans Pkwy. (NS) at: | | | | | | | | | | | | | | | | | |
| | • H. D. C. EB Ramps (EW) | TS | 0 | **3** | **2** | 0 | **3** | **1>>** | **2** | 0 | **1** | 0 | 0 | 0 | 14.4 | 8.1 | B | A |
| 39 | H.D.C. EB Ramps (NS) at: | | | | | | | | | | | | | | | | | |
| | • Waalew Rd. (EW) | TS | 0 | 0 | 0 | **2** | 0 | **2** | 0 | **1.5** | **0.5** | **1** | **2** | 0 | 20.5 | 15.5 | C | B |
| 40 | H.D.C. WB Ramps (NS) at: | | | | | | | | | | | | | | | | | |
| | • Waalew Rd. (EW) | TS | **1** | 0 | **1** | 0 | 0 | 0 | **1** | **2** | 0 | 0 | **2** | **2** | 12.7 | 12.6 | B | B |
| 41 | Central Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • H.D.C. WB Ramps (EW) | TS | **2** | **3** | 0 | 0 | **2.5** | **0.5** | 0 | 0 | 0 | **1** | 0 | **1** | 12.8 | 22.1 | B | C |
| 42 | Central Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • H.D.C. EB Ramps (EW) | TS | 0 | **2.5** | **0.5** | **1** | **3** | 0 | **2** | 0 | **2** | 0 | 0 | 0 | 21.1 | 24.2 | C | C |
| 43 | Tao Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • State Route 18 (EW) | TS | 1 | **0.5** | **0.5** | 1 | **1.5** | **0.5** | 1 | **2.5** | **0.5** | 1 | **2.5** | **0.5** | 21.0 | 33.3 | C | C |
| 44 | Apple Valley Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • Sitting Bull Rd. (EW) | TS | 1 | **2.5** | **0.5** | 1 | **2.5** | **0.5** | 1 | **0.5** | **0.5** | **1** | 0.5 | **0.5** | 30.1 | 29.2 | C | C |
| 45 | Kiowa Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • Sitting Bull Rd. (EW) | **TS** | 1 | **1.5** | **0.5** | 1 | **1.5** | **0.5** | 1 | **1.5** | **0.5** | 1 | **1.5** | **0.5** | 22.5 | 23.2 | C | C |
| 46 | Navajo Rd. (NS) at: | | | | | | | | | | | | | | | | | |
| | • Nisqually Rd. (EW) | TS | 1 | **1.5** | **0.5** | 1 | **1.5** | **0.5** | **1** | **1.5** | **0.5** | **1** | **1.5** | **0.5** | 24.4 | 38.6 | C | D |

[1]When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; > = Right-turn Overlap Phasing; >> = Free Right Turn Lane; **1** = Improvement

[2]Delay and level of service calculated using the following analysis software: Traffix, Version 7.9 R3 (2008). Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic, traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

[3]TS = Traffic Signal

Projected Trip Generation in Annexations 2008-001 and 2008-002

As the annexation areas develop, traffic generated by new development will need to be integrated into the area-wide circulation network. Table III-64 sets forth projected trip generation in the annexation area, based on the proposed General Plan land use patterns. These trips have been accounted for within estimates for the planning area as a whole, as set forth above.

**Table III-64**
**Projected Trip Generation in Annexation Areas**

| | Proposed General Plan | | | |
|---|---|---|---|---|
| | **Productions** | **Attractions** | **Total** | **% of Planning Area** |
| No. 2008-001 | 77,607 | 103,174 | 180,781 | 11% |
| No. 2008-002 | 16,193 | 28,363 | 44,556 | 3% |
| **Annexation Areas Total** | **93,800** | **131,537** | **225,337** | 14% |

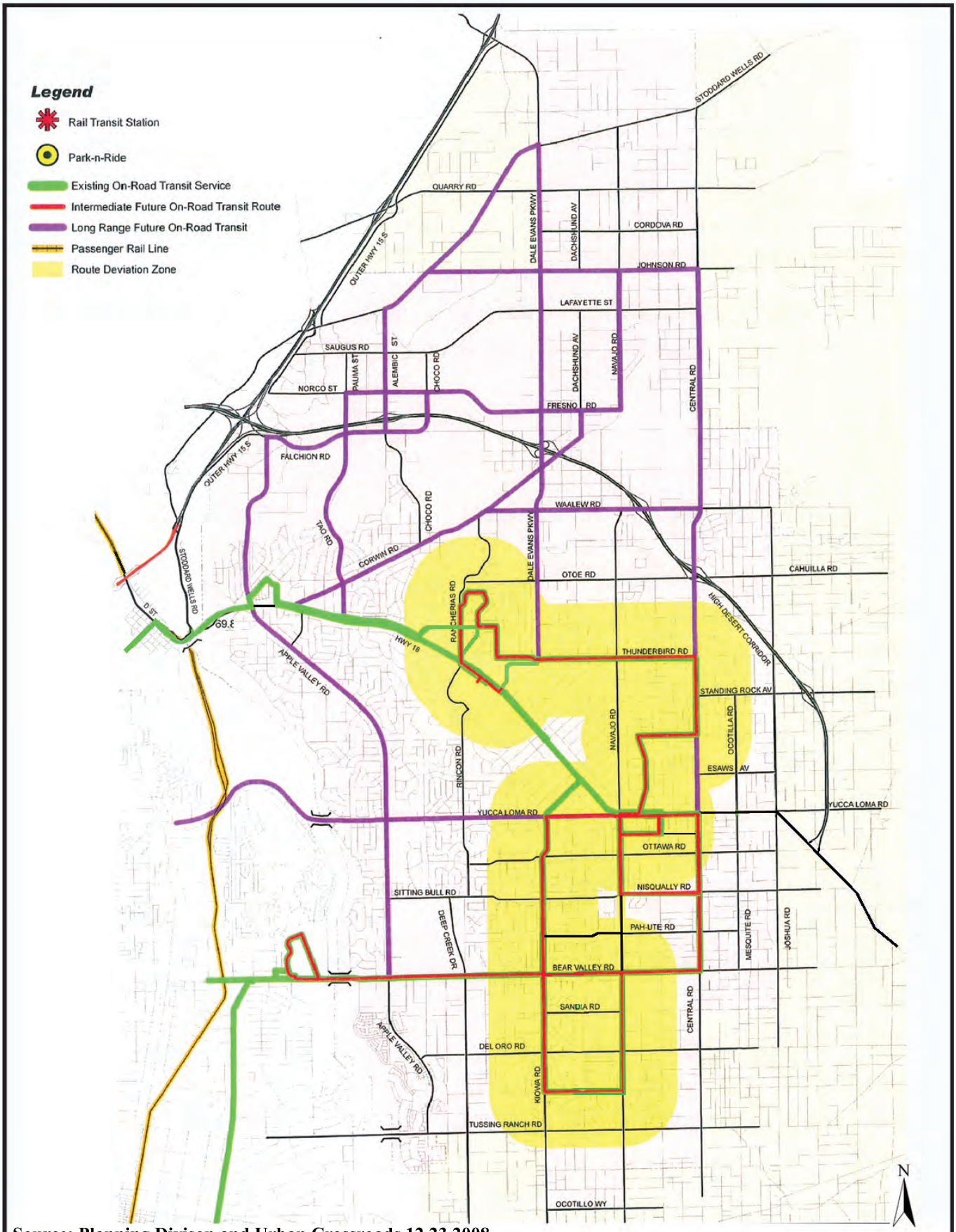
**Emergency Access**

Emergency access to development throughout the planning area has been designed in a manner consistent with the requirements of emergency service providers and the Apple Valley Municipal Code. Future site-specific development will be subject to design review by the Apple Valley Fire Protection District and Police Department. Buildout of the Proposed General Plan is not expected to result in any adverse impacts.

**Public Transportation**

Proposed public transportation features in Apple Valley are shown on Exhibit III-30. Future on-road transit routes are anticipated to provide additional connectivity throughout the northern parts of the Town, in particular. Transit routes are shown for each crossing of the High Desert Corridor, along with providing additional north/south access along Apple Valley road and east/west access on Yucca Loma Road. Potential transit corridors are identified which could be used to extend existing fixed route service, possibly using a route deviation or point deviation system that allows for pick up or drop off transit riders within ¾ miles of a fixed bus route. Such a system has the potential to be especially effective in less densely developed areas where service needs may be limited or warrant the expansion of an existing route.

The Town of Apple Valley relies on regional public transit providers to operate transit services. Because of this dependence on outside agencies, regional cooperation is crucial to ensure that the transit network operates effectively.




Source: Planning Divison and Urban Crossroads 12.23.2008

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**Apple Valley General Plan Draft EIR**
**Existing and Proposed Public Transportation Routes**
**Apple Valley, California**

**Exhibit**
**III-30**

**Truck Routes**

Major through truck routes will be located along major roads including the Outer Highway 15, Bear Valley Road, State Route 18, Central Road, Deep Creek Road south of Bear Valley Road, and the future High Desert Corridor, with several new truck routes serving the Apple Valley North Specific Plan area. Exhibit III-31 shows designated truck routes through the planning area. Changes from previously designated truck routes are as follows:

Apple Valley Road
- between Ohna Road and Outer Highway I-18 – Local Truck Route removed
- south of Tussing Ranch Road – Local Truck Route removed

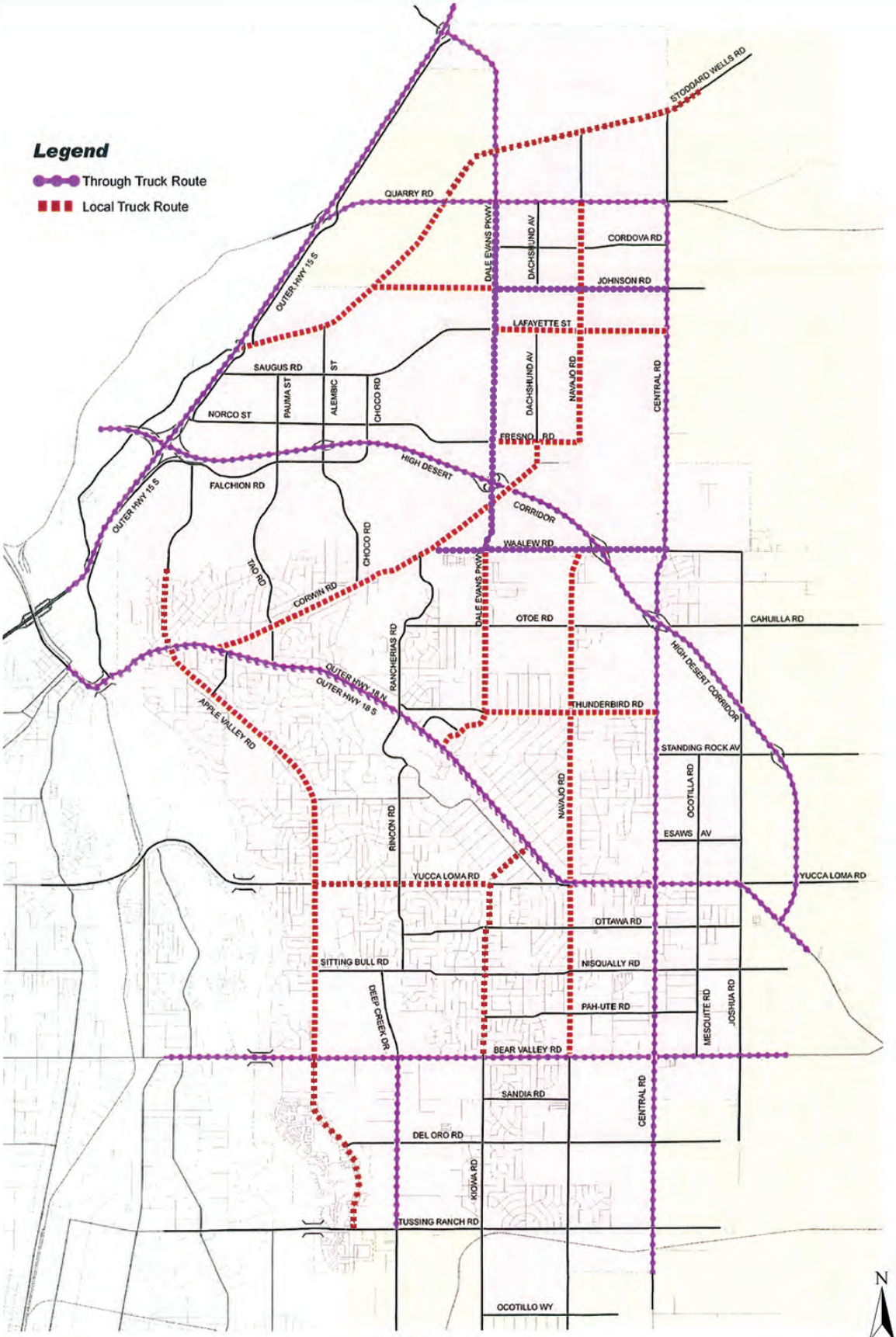
Kiowa Road
- between SR-18 and Yucca Loma Road – Local Truck Route removed
- between Yucca Loma Road and Ottawa Road – Local Truck Route removed
- between Ottawa Road and Nisqually Road – Local Truck Route removed
- between Nisqually Road and Pah-Ute Road – Local Truck Route removed
- between Pah-Ute Road and Bear Valley Road – Local Truck Route removed

Navajo Road
- between Quarry Road and Cordova Road – new Local Truck Route
- between Cordova Road and Johnson Road – new Local Truck Route
- between Johnson Road and LaFayette Street – new Local Truck Route
- between LaFayette Street and Fresno Road – new Local Truck Route
- between Bear Valley Road and Sandia Road – Local Truck Route removed
- between Sandia Road and Del Oro Road – Local Truck Route removed
- between Del Oro Road and Tussing Ranch Road – Local Truck Route removed

Stoddard Wells Road
- west of I-15 Freeway – Local Truck Route removed
- between Johnson Road and Quarry Road – new Local Truck Route

Quarry Road
- between I-15 Freeway and Stoddard Wells Road – new Through Truck Route
- between Stoddard Wells Road and Dale Evans Road – new Through Truck Route
- between Dale Evans Road and Dachshund Avenue – new Through Truck Route
- between Dachshund Avenue and Navajo Road – new Through Truck Route
- between Navajo Road and Central Road – new Through Truck Route

Johnson Road
- between Stoddard Wells Road and Dale Evans Parkway – new Local Truck Route
- between Navajo Road and Central Road – new Through Truck Route




Source: Planning Divison and Urban Crossroads 01.05.2009

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**Apple Valley General Plan Draft EIR**
**Proposed Truck Routes**
**Apple Valley, California**

**Exhibit**
**III-31**

**Proposed Multi-Use Trails**

Bike Paths

The Town of Apple Valley proposes expanded and updated bike facilities as shown on Exhibit III-32. The proposed bikeway system includes more connectivity, allowing bicycle users better access throughout the Town and planning area.

Apple Valley's bicycle network is part of a larger regional bikeway system that provides bicycle corridors and transit connections to regional facilities. Cooperation with neighboring cities and the County ensures that the bicycle network is an effective tool in providing greater access to the region's transit network, as well as providing a backbone of commuter bikeways to facilitate greater commuter bicycle travel.

The following describes proposed changes to the Town's bikeway system:

Outer Highway I-15 S

- between Stoddard Wells Road and Saugus Road -- new Class II bike lanes
- between Saugus Road and Norco Street -- new Class II bike lanes

Apple Valley Road

- between State Route 18 and Yucca Loma Road -- new Class II bike lanes
- between Bear Valley Road and Del Oro Road -- new Class II bike lanes
- between Del Oro Road and Tussing Ranch Road -- new Class II bike lanes

Pauma Street

- between Saugus Road and Norco Street -- new Class II bike lanes
- between Norco Street and Falchion Road -- new Class II bike lanes

Tao Road

- between Corwin Road and Outer Highway I-18 -- new Class II bike lanes

Alembic Street

- between Norco Street and High Desert Corridor – change from Class I to Class II bike lanes
- between High Desert Corridor and Falchion Road – change from Class I to Class II bike lanes

Choco Road (North)

- between Waalew Road and Corwin Road – new Class II bike lanes

Deep Creek Road

- between Sitting Bull Road and Bear Valley Road – new Class II bike lanes
- between Bear Valley Road and Del Oro Road– new Class II bike lanes
- between Del Oro Road and Tussing Ranch Road– new Class II bike lanes

Choco Road

- between Saugus Road and Norco Street– new Class II bike lanes

Dale Evans Parkway

- between Fresno Road and High Desert Corridor – change from Class I to Class II bike lanes
- between High Desert Corridor and Corwin Road – change from Class I to Class II bike lanes
- between Waalew Road and Otoe Road – new Class II bike lanes
- between Otoe Road and Thunderbird Road – change from Class III to Class II bike lanes
- between Wakita Boulevard and State Route 18 – change from Class I to Class II bike lanes

Kiowa Road

- between Yucca Loma Road and Ottawa Road – new Class II bike lanes
- between Ottawa Road and Nisqually Road – new Class II bike lanes
- between Nisqually Road and Pah-Ute Road – new Class II bike lanes
- between Pah-Ute Road and Bear Valley Road – new Class II bike lanes
- between Bear Valley Road and Sandia Road – change from Class III to Class II bike lanes
- between Sandia Road and Del Oro Road – change from Class III to Class II bike lanes
- between Del Oro Road and Tussing Ranch Road – change from Class III to Class II bike lanes
- between Tussing Ranch Road and Ocotillo Way - new Class II bike lanes

Dakota Road

- between Fresno Road and Corwin Road – new Class I bike path

Navajo Road

- between LaFayette Street and Fresno Road – new Class II bike lanes
- between Thunderbird Road and Yucca Loma Road – change from Class I to Class II bike lanes
- between Tussing Ranch Road and Ocotillo Way – new Class II bike lanes

Central Road

- between Stoddard Wells Road and Quarry Road– new Class II bike lanes
- between Quarry Road and Cordova Road– new Class II bike lanes
- between Cordova Road and Johnson Road– new Class II bike lanes
- between Johnson Road and LaFayette Street– new Class II bike lanes
- between LaFayette Street and Waalew Road– new Class II bike lanes
- between Bear Valley Road and Del Oro Road– new Class II bike lanes
- between Del Oro Road and Tussing Ranch Road– new Class II bike lanes
- between Tussing Ranch Road and Mojave Street– new Class II bike lanes

Mesquite Road
- between Yucca Loma Rd and Ottawa Rd – change from Class III to Class II bike lanes
- between Ottawa Road and Nisqually Road– change from Class III to Class II bike lanes
- between Nisqually Road and Pah-Ute Road– change from Class III to Class II bike lanes
- between Pah-Ute Road and Bear Valley Road – new Class II bike lanes

Stoddard Wells Road
- between I-15 Freeway and Alembic Street – new Class II bike lanes

LaFayette Street
- between Dale Evans Parkway and Dachshund Avenue – new Class II bike lanes
- between Dachshund Avenue and Navajo Road – new Class II bike lanes
- between Navajo Road and Central Road -- new Class II bike lanes

Fresno Road
- between Dale Evans Parkway and Dachshund Avenue – new Class I bike path
- between Dachshund Avenue and Navajo Road – new Class II bike lanes

Falchion Road / Choco Road (North)
- between Choco Road and Norco Street – new Class I bike path

Corwin Road
- between Dakota Road and Dale Evans Parkway – new Class I bike path
- between Outer Highway I-18 and Tao Road – change from Class I to Class II bike lanes
- between Tao Road and Choco Road– change from Class I to Class II bike lanes

Otoe Road
- between Dale Evans Parkway and Navajo Road – new Class III bike lanes

Thunderbird Road
- between Rancherias Road and Dale Evans Parkway – change from Class III to Class II bike lanes
- between Dale Evans Parkway and Navajo Road – change from Class I to Class II bike lanes

Yucca Loma Road
- between Kiowa Road and Navajo Road – new Class I bike path
- between Navajo Road and Central Road – new Class II bike lanes
- between Central Road and Mesquite Road – new Class II bike lanes
- between Mesquite Road and Joshua Road – new Class II bike lanes
- east of Joshua Road – new Class II bike lanes

Sitting Bull Road
- between Skyline Ranch Drive and Kiowa Road – change from Class III to Class II bike lanes
- between Kiowa Road and Navajo Road – change from Class III to Class II bike lanes

Nisqually Road
- between Navajo Road and Maumee Road– change from Class III to Class II bike lanes

Pah-Ute Road
- between Kiowa Road and Navajo Road – new Class II bike lanes
- between Central Road and Mesquite Road – new Class II bike lanes

Bear Valley Road
- between Central Road and Mesquite Road -- new Class II bike lanes
- between Mesquite Road and Joshua Road -- new Class II bike lanes
- east of Joshua Road -- new Class II bike lanes

Sandia Road
- between Kiowa Road and Mohawk Road – change from Class I to Class II bike lanes

Del Oro Road
- between Apple Valley Road and Deep Creek Road – new Class II bike lanes
- between Deep Creek Road and Kiowa Road – new Class II bike lanes
- between Kiowa Road and Navajo Road – new Class II bike lanes
- between Navajo Road and Central Road – new Class II bike lanes
- between Central Road and Denison Road – new Class II bike lanes

Wren Street
- between Kiowa Road and Mohawk Road – new Class III bike route
- between Mohawk Road and Central Road – new Class I bike path

Tussing Ranch Road
- west of Apple Valley Road – new Class II bike lanes
- between Apple Valley Road and Deep Creek Road – new Class II bike lanes
- between Deep Creek Road and Kiowa Road – new Class II bike lanes
- between Kiowa Road and Navajo Road – new Class II bike lanes
- between Navajo Road and Cochita Road – new Class I bike path
- between Cochita Road and Central Road – new Class II bike lanes
- east of Cochita Road – new Class II bike lanes

Frontage Road South

- between Stoddard Wells Road and Saugus Road – new Class II bike lanes
- between Saugus Road and Norco Street – new Class II bike lanes

D Street

- west of 7th Street – new Class II bike lanes
- between 7th Street to Stoddard Wells Road – new Class II bike lanes
- between Stoddard Wells Road to Apple Valley Road – new Class II bike lanes

Outer State Route 18 North Frontage Road

- between Apple Valley Road and Tao Road – change from Class III to Class II bike lanes

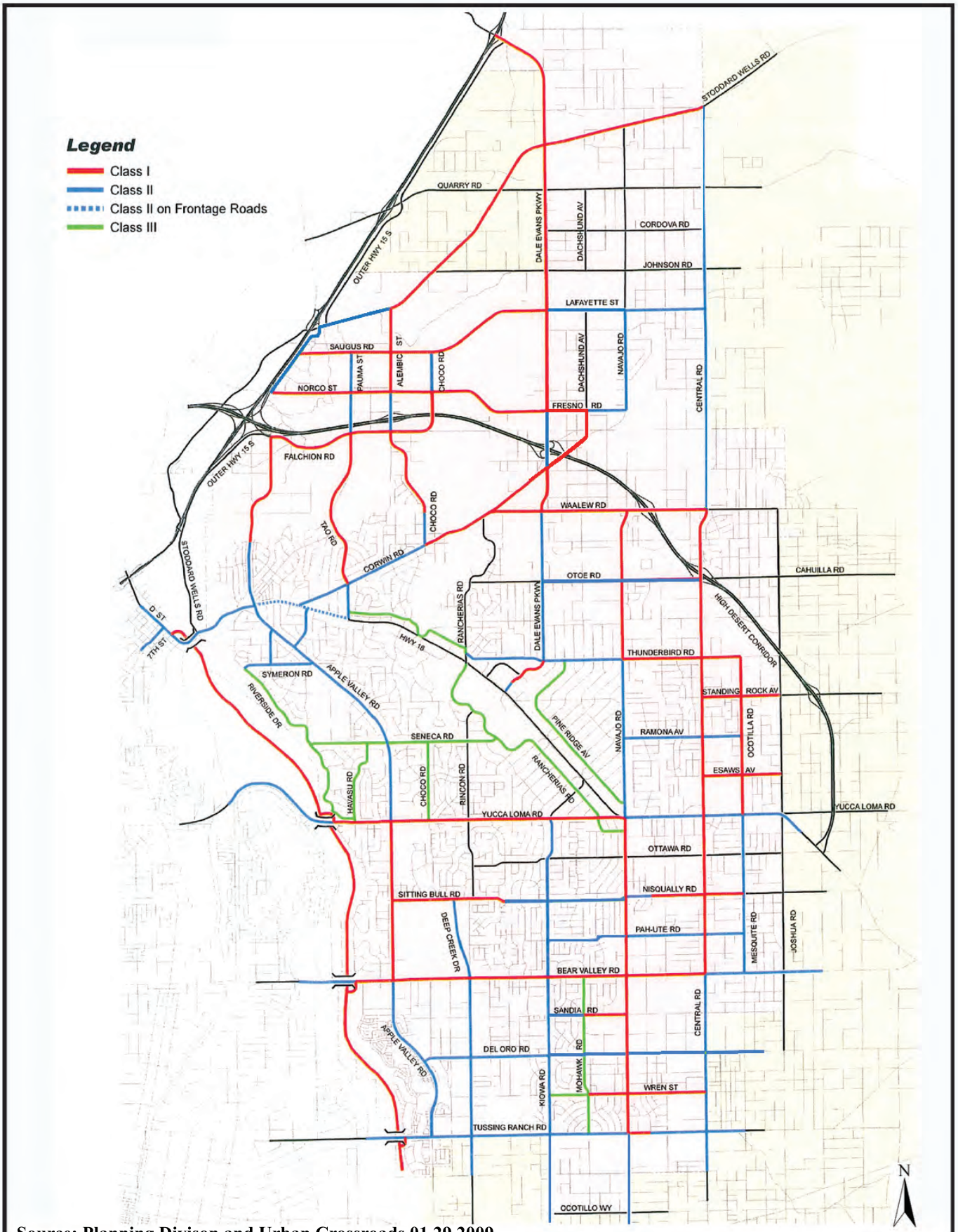
Modamon Road

- between State Route 18 and Apple Valley Road – new Class II bike lanes

As described above, some bicycle routes have been changed from Class I to Class II in this Circulation Element. The change generally applies to roadways with high volumes, near freeway access points, in order to limit the potential for conflicts at freeway on and off ramps.

Multi-Use Trails

The proposed Recreation Trails Plan for Apple Valley addresses the demands for recreation, protects and enhances the existing rural environment, and provides a framework for future planning and development of trails throughout the Apple Valley Planning Area. The Trails Plan, as shown in Exhibit III-33, defines and illustrates a proposed system of recreation trails, including bridle trails and multi-use trails. The Exhibit incorporates changes to the trails which are currently being undertaken by the Town through an amendment to the current Trails Map. The amendment will be completed prior to the adoption of the General Plan, and has therefore been incorporated into the proposed system. The proposed Recreational Trails Plan includes Lifeline Trails for equestrian use and multi-use as well as Recorded Bridle Trails. Multi-use trails are used for walking, bicycle riding, or horseback riding. Except for authorized maintenance, utility, law enforcement and emergency vehicles, motorized vehicles are prohibited.

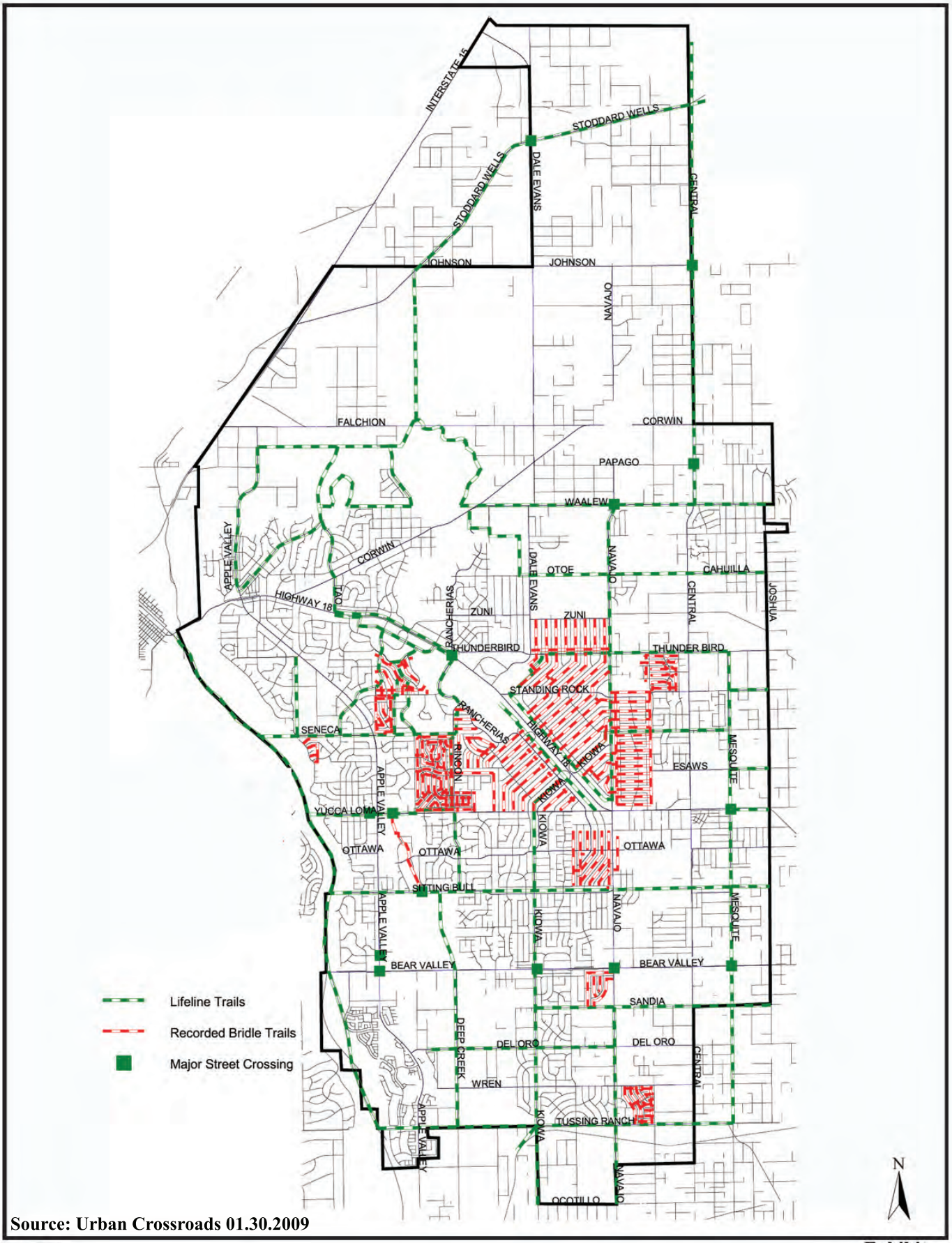



Source: Planning Divison and Urban Crossroads 01.29.2009

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**Apple Valley General Plan Draft EIR**
**Proposed Bicycle Pathways**
**Apple Valley, California**

**Exhibit**
**III-32**




Source: Urban Crossroads 01.30.2009

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**Apple Valley General Plan Draft EIR**
**Proposed Recreation Trail System**
**Apple Valley, California**

**Exhibit**
**III-33**

### 3. Mitigation Measures

The Town Engineer has reviewed the Town of Apple Valley Traffic Study prepared for the General Plan, and has determined that it has been prepared in accordance with Town standards. With the incorporation of mitigation measures listed below, the overall traffic and circulation impacts resulting from buildout of the Proposed General Plan and annexations will be reduced to less than significant levels and the required levels of service will be maintained at all intersections except Dale Evans Parkway and Corwin Road, which will operate at LOS E. This intersection's impacts cannot be mitigated to less than significant levels, and impacts will remain significant and unavoidable.

1. The Town shall establish and maintain a master plan of roadways that sets forth detailed improvement plans and priority schedules for implementation. The plan shall ensure that roadway segments and intersections generally operate at level of Service C or better, wherever feasible, and that all intersections maintain a Level of Service D or better during both morning and evening peak hours.

2. Street rights-of-way shall be provided as follows:
   - 142 feet for a Major Divided Parkway
   - 128 feet for Major Divided Arterials
   - 104 feet for Major Roadways
   - 88 feet for Secondary Roadways
   - 60 to 66 feet for Collector Streets
   - 66 feet for Industrial and Commercial Local Streets
   - 60 feet for Local Streets
   - 50 feet for Rural Streets and Cul-de-Sacs

3. All Town streets shall be designed to have a minimum lane width of 12 feet.

4. To minimize the number and length of vehicle trips travelled within the planning area, the General Plan Land Use Plan shall provide for a balance and mix of employment and housing opportunities.

5. The Town shall encourage the use of mass/public transit, and collaborate with the Victor Valley Transit Authority (VVTA) to ensure the ongoing operation and expansion of fixed route bus and demand responsive systems.

6. The Town shall require that new development projects on arterial roadways incorporate bus pullouts, to allow buses to leave the flow of traffic and reduce congestion.

7. The Town shall encourage the use of multi-occupant modes of transportation, and shall encourage employers to utilize telecommuting opportunities, home-based employment, and part-time or non-peak hour work schedules.

8. The Town shall develop a program to retrofit bus pullouts on built-out streets, wherever possible, and shall implement them through the Capital Improvement Program.

9. The Town shall enhance and expand its comprehensive Master Plan of continuous, convenient multi-use trails and bicycle routes that connect residential, commercial, schools, parks and other community activity centres.

10. The Town shall consult and coordinate with the County of San Bernardino and the California Department of Transportation to ensure the provision of adequate all-weather crossings along critical roadways.

11. The Town shall ensure that sidewalks are provided on all roadways that are 88 feet wide or wider. In Rural Residential land use areas, the Town shall ensure that designated pathways are provided

12. The Town shall confer and coordinate with the Apple Valley Unified School District to develop and implement safe routes to school.

13. The Town shall proactively consult and coordinate with the County of San Bernardino to ensure that the local airport continues to meet the Town's existing and future transportation, commercial and emergency response needs.

14. The Town shall require, as necessary, project-specific and/or phase-specific traffic impact analyses for subdivision and other project approvals. Such analyses may be required to identify build out and opening year traffic impacts and service levels, and may need to exact mitigation measures required on a cumulative and individual project or phase basis.

15. Concurrent with construction, all new development proposals located adjacent to public roadways shall be required to install all improvements to their ultimate General Plan half-width.

16. The Town shall continue to monitor roadway segments where the daily Volume to Capacity ratio analysis indicates that build out traffic volume will "potentially exceed capacity."

17. The Town shall review traffic volumes resulting from General Plan build out to coordinate, program and if necessary, revise road improvements. This review shall take place every five years.

18. All new development shall be required to pay a "fair share" of improvements to surrounding roadways, bridges and signals that are impacted by and are located within and surrounding the development project.

19. The Town shall ensure that pedestrian access is preserved and enhanced by means of the following: improved sidewalks, pedestrian walkways, lighting and landscaping designs and connections to existing sidewalks and trails.

20. New development proposals shall be required to construct bicycle lanes in conjunction with off-site improvements.

21. New development proposals shall be required to construct recreational trails in conjunction with off-site improvements.

**Mitigation Monitoring/Reporting Program**

A. The Town shall review and update the master roadway plans to identify facilities where capacity is at or near full utilization. The schedule for securing right-of-way and constructing improvements shall be consistent with projected needs and standards as established in the Circulation Element and this EIR. Necessary improvements will be incorporated into the Town's Capital Improvement Plan.
**Responsible Parties:** Public Works Division, Town Engineer

B. The Town shall periodically confer and coordinate with the County of San Bernardino, California Department of Transportation, SCAG, SANBAG and adjoining jurisdictions regarding transportation planning activities, to assure the coordination of planning and construction efforts of major roadway improvements along identified critical roadways, and that Town programs, policies and strategies are provided full consideration in resolving regional transportation issues affect the community.
**Responsible Parties:** Public Works Division, Planning Division, Town Engineer, County of San Bernardino, California Department of Transportation, SCAG, SANBAG

C. Project proponents shall submit detailed development and preliminary roadway improvement plans to the Town prior to the approval of subdivision maps or other Town development permits. Town staff shall review plans to assure compliance with circulation improvement plans and originally approved development plans.
**Responsible Parties:** Planning Division, Town Engineer

D. The Town shall monitor the planning and development of all-weather crossings as part of the implementation of the Community’s Master Drainage Plans.
**Responsible Parties:** Planning Division, Public Works Division, Town Engineer.

E. The Town shall continue to monitor the effectiveness of its multi-use trails and bikeways, and shall continue to secure bicycle storage facilities and other support facilities that increase non-motorized transportation.
**Responsible Parties:** Public Services Department.

F. The Town shall continue to promote and encourage expanded public transportation by means of on-going consultation and coordination with the Victor Valley Transit Authority.
**Responsible Parties:** Economic and Community Development Department, Town Engineer, Victor Valley Transit Authority

G. Prior to project approval, the Town shall verify that the developer has consulted with Victor Valley Transit Authority and that public transit has been incorporated into project design to the greatest extent feasible.
**Responsible Parties:** Planning Division, Town Engineer, Victor Valley Transit Authority, Project Proponent

# TOWN OF APPLE VALLEY

## DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE COMPREHENSIVE GENERAL PLAN AND ANNEXATION NO. 2008-001 AND NO. 2008-002

## IV. UNAVOIDABLE SIGNIFICANT IMPACTS

Section III of this EIR assessed the level of impact associated with all the environmental issues which could be affected by the build out of the General Plan and Annexations 2008-001 and 2008-002. This analysis led to a determination of the levels of impact, and the imposition of mitigation measures to lessen the level of impact when it was determined that significant impacts could occur.

This section of the EIR summarizes those impacts which, even with the imposition of mitigation measures, could not be reduced to less than significant levels. Under the following issue areas, the impacts, even after all possible mitigation measures are implemented, will remain significant, and are unavoidable.

**Air Quality**

The implementation of the General Plan and Annexations 2008-001 and 2008-002 will result in significant air quality impacts in several areas. Each area is described below.

Air Quality Management Planning

The Mojave Desert Air Quality Management District (MDAQMD) has adopted an Ozone attainment plan, which utilizes land use projections and associated growth rates from the previous General Plan land use plan (1998), and the County of San Bernardino land use designations in the annexation areas. The proposed General Plan land use designations result in increased residential densities, and greater commercial/retail and industrial development. Build out of the updated General Plan may interfere or delay implementation of the Ozone attainment plan, since it increases densities and is therefore non-conforming. This represents a significant impact. There are no mitigation measures available to reduce this impact to less than significant levels. As a result, the build out of the General Plan, and of Annexations 2008-001 and 2008-002 will result in a significant and unavoidable impact to air quality management planning.

Consumer Products

The use of consumer products such as air fresheners, automotive products, household cleaners, and personal care products generate ROG emissions from daily use. URBEMIS 2007 Version 9.2.4 sets forth a per person factor of 0.0171 pounds per day. Therefore, build out of the General Plan has the potential to result in a maximum of 3,333.32 pounds of ROG per day from the use of consumer products. The project-specific thresholds for ROG of 137 pounds per day would be exceeded. Thus build out of the General Plan and annexations would generate unavoidable significant impacts to air quality as a result of ROG emissions in the long term. There are no mitigation measures available to reduce these potential impacts, and they will remain significant.

Stationary Source Emissions

At build out of the General Plan and the annexation areas, operational emissions for nitrogen oxides will be exceeded at both power plants and natural gas generation facilities. Although these emissions will not occur in Apple Valley, as no such generating facilities exist in the planning area, the threshold criteria established by MDAQMD will be exceeded. This will result in significant impacts which cannot be mitigated, and impacts will be unavoidable.

Moving Source Emissions

At build out of the General Plan and annexation areas, operational emissions from vehicles will exceed MDAQMD thresholds for all criteria pollutants, with or without the application of mitigation measures. Regardless of mitigation measures, development of the General Plan will contribute to cumulative air quality impacts locally and regionally. Although emissions can be mitigated to a certain degree, significant and unavoidable impacts to air quality, including greenhouse gas emissions, will occur as a result of development of the General Plan.

Requiring project-specific proposals to implement mitigation measures can be effective in reducing air quality impacts to the entire General Plan area. Mitigation measures and design features such as providing alternative transportation options, increasing the use of green building design and technologies into planned future and remodeled facilities, and incorporating the use of alternative energy sources both locally and regionally through individual and region-wide solar roof installation projects and region-wide wind farm development, will reduce the emissions associated with build out of the area. These measures will not only reduce emissions of criteria pollutants, but will also reduce emissions associated with the formation of greenhouse gases.

**Land Use**

As described in Section III of this EIR, Annexation Area 2008-001 is currently primarily designated for low-density residential development of 1 unit per acre. The proposed land use plan for Annexation 2008-001 will result in increased residential densities, in the addition of 773 acres of commercially designated lands, and 812.1 acres of industrial designated lands. These lands are currently designated Rural Living under the County General Plan.

As development occurs in Town over the next several years, an intensification of land use would be expected in Annexation 2008-001, regardless of the current land use patterns in the area. However, the character of the existing scattered residential development, and of potentially constructed 1 acre residential lots in the future, will be changed significantly by the proposed

land use designations in this annexation area. Only about 208.7 acres, or 7.5% of the 2,774.6 acres within the annexation area are currently developed. Impacts of development to existing residents will therefore be limited, and the development of the area will not displace a substantial number of homes or residents.

Changes in land use designations as proposed for Annexation 2008-001 cannot be mitigated to less than significant levels. As a result, the anticipated changes in land use designations within Annexation 2008-001 will be significant and unavoidable, as they relate to land use.

**Traffic and Circulation**

The traffic analysis evaluates peak hour traffic operations based on turning movement estimates shown in the Apple Valley Traffic Model, and recommends intersection lane configurations based on proposed General Plan roadway cross-sections and projected future travel patterns in the planning area. The Town's standard for acceptable LOS is established at LOS D in the General Plan. As analyzed and described in Section III, all intersections except one will operate at this level of service at General Plan build out during AM and/or PM peak hours. At the intersection of Dale Evans Parkway and Corwin Road, the LOS during the morning peak hour will be LOS E. This intersection will therefore not operate at an acceptable level of service. No feasible mitigation measures exist to improve the LOS at this intersection, and impacts will remain significant.

All traffic impacts associated with both annexation areas will be mitigated to less than significant levels.

# TOWN OF APPLE VALLEY

## DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE COMPREHENSIVE GENERAL PLAN AND ANNEXATIONS NO. 2008-001 AND NO. 2008-002

## V. PROJECT ALTERNATIVES

### A. Introduction

Impacts associated with build out of the various alternatives to the proposed General Plan and annexation areas are considered in this section of the EIR. The potential impacts associated with the "Preferred Alternative" are analyzed in detail in Section III. A wide range of potential impacts, such as land use, traffic and circulation, soils and geology, air and water quality, hydrological issues, biological and cultural resources, and population and housing, are considered in Section III.

The potential impacts associated with the same range of issues that are evaluated in Section III are discussed in this section for three additional General Plan scenarios, as follows: "No Project" Alternative (existing General Plan); Alternative I: "More Intense" General Plan Scenario; and Alternative II: "Less Intense" General Plan scenario.

Table V-1 illustrates the land use build out summary for the Preferred Alternative. The build out summaries for each of the alternatives are illustrated below.

**Table V-1**
**Preferred Alternative General Plan**
**Land Use Designation Build Out Summary: Town & Unincorporated Lands**

## RESIDENTIAL LAND USES

| | Town Limits | | | | | | Annexation Areas | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Land Use Designation** | **AC Dev.** | **AC Vacant** | **AC Total** | **Exist. Units** | **Future Units** | **Total Units** | **AC Dev.** | **AC Vacant** | **AC Total** | **Exist. Units** | **Future Units** | **Total Units** |
| Very Low Density Residential (1 du/5 or more gross ac) | 174.1 | 1,787.4 | 1,961.5 | | 357 | 357 | -- | -- | -- | -- | -- | -- |
| Low Density Residential (1 du/2.5 - 5 gross ac) | 390.1 | 3,113.3 | 3,503.5 | | 1,245 | 1,245 | -- | -- | -- | -- | -- | -- |
| Estate Residential (1du/1 – 2.5 gross ac) | 3,177.8 | 3,489.1 | 6,666.9 | 20,107 | 3,489 | 23,596 | 55.7 | 722.3 | 778.0 | -- | 722 | 722 |
| Estate Residential ¾ (1 du/0.75 – 1 ac) | 20.8 | 454.9 | 475.7 | | 607 | 607 | -- | -- | -- | -- | -- | -- |
| Single-Family Residential (1 du/0.4-0.9 ac) | 8,424.0 | 4,103.9 | 12,527.9 | | 6,156 | 6,156 | -- | -- | -- | -- | -- | -- |
| Medium Density Residential (4-20 du/ac) | 745.1 | 1,180.8 | 1,925.9 | 3,775 | 17,712 | 21,487 | 41.4 | 177.3 | 218.7 | -- | 2,659 | 2,659 |
| Mobile Home Park (5-15 du/ac) | 178.5 | 1.5 | 180.0 | 1,043 | 23 | 1,066 | -- | -- | -- | -- | -- | -- |
| Mixed Use | 51.6 | 236.7 | 288.3 | | 2,130 | 2,130 | 0.00 | 94.8 | 94.8 | -- | 854 | 854 |
| Specific Plan | 1,068.6 | 5,978.2 | 7,046.8 | | 2,869 | 2,869 | -- | -- | -- | -- | -- | -- |
| **Residential Total** | **14,230.7** | **20,345.9** | **34,576.6** | **24,925** | **34,588** | **59,513** | **97.2** | **994.4** | **1,091.6** | **--** | **4,236** | **4,236** |

## COMMERCIAL AND INDUSTRIAL LAND USES

| | Town Limits | | | | Annexation Areas | | | |
|---|---|---|---|---|---|---|---|---|
| **Land Use Designation** | **Acres Dev.** | **Acres Vacant** | **Acres Total** | **Total Potential SF** | **Acres Dev.** | **Acres Vacant** | **Acres Total** | **Total Potential SF** |
| Mixed Use[1] | 51.6 | 236.7 | 288.3 | 1,587,686 | 0.0 | 94.9 | 94.9 | 636,612 |
| General Commercial | 385.5 | 1,165.3 | 1,550.8 | 14,861,742 | 11.7 | 40.8 | 52.6 | 503,617 |
| Regional Commercial | 31.7 | 1,271.3 | 1,303.0 | 12,486,488 | 7.2 | 435.3 | 442.5 | 4,240,502 |
| Service Commercial | 146.8 | 188.7 | 335.6 | 3,215,875 | -- | -- | -- | -- |
| Office Professional | 74.2 | 542.6 | 616.8 | 5,910,597 | -- | 183.1 | 183.1 | 1,754,639 |
| Specific Plan[1] | 1,068.6 | 5,978.2 | 7,046.8 | 6,663,010 | -- | -- | -- | -- |
| **Commercial Sub Total** | **638.2** | **3,167.9** | **3,806.1** | **44,725,397** | **19.0** | **659.2** | **678.1** | **7,135,369** |
| Planned Industrial | 21.4 | 623.9 | 645.3 | 6,183,941 | 55.3 | 1,557.8 | 1,613.1 | 14,929,042 |
| Specific Plan[1] | 1,068.6 | 5,978.2 | 7,046.8 | 36,938,445 | -- | -- | -- | -- |
| **Industrial Sub Total** | **21.4** | **623.9** | **645.3** | **43,122,386** | **55.3** | **1,557.8** | **1,613.1** | **14,929,042** |
| **Grand Total** | **659.6** | **3,791.8** | **4,451.4** | **87,847,783** | **74.2** | **2,217.1.** | **2,291.2** | **22,594,023** |

**Table V-1**
**Preferred Alternative General Plan**
**Land Use Designation Build Out Summary: Town & Unincorporated Lands**

| | | | | | | |
|---|---|---|---|---|---|---|
| **Commercial & Industrial** | | | | | | |
| Public Facility | 353.5 | 119.1 | 472.5 | -- | -- | -- |
| Open Space | 233.3 | 2,820.6 | 3,053.9 | -- | -- | -- |
| Mineral Resources | 111.6 | 340.9 | 452.5 | -- | -- | -- |
| Street Rights-of-Way | 2,563.5 | 1,377.8 | 3,941.2 | 43.1 | 153.8 | 196.9 |
| **Grand Total Other Uses** | **3,261.8** | **4,658.5** | **7,920.3** | **43.1** | **153.8** | **196.9** |

[1] Mixed-Use and Specific Plan acreage included under Residential, above.

## B. Statement of Project Objectives

The General Plan is, in and of itself, a "Statement of Project Objectives." The General Plan represents the long-term vision of the Town, and its goals for a successful community. The objectives of the Town are summarized in the Vision Statement prepared during the General Plan update process. This Vision Statement can also be characterized as the Project Objectives in many respects.

***Draft Vision Statement for the Apple Valley General Plan***

*The residents, property owners and business people of Apple Valley have hopes and dreams for the Town as it continues to grow. For the future….*

> *We see a community which preserves its residential character by continuing to develop single family homes on lots of at least one half acre.*
>
> *We see our existing neighborhoods being preserved, so that the character of those areas do not change as the rest of Town expands.*
>
> *We see a community which provides for housing for all its residents, and encourages housing development of all types throughout Town, convenient to services, public transit and schools.*
>
> *We see parks and recreation in all our neighborhoods, with facilities and programs for not only our children, but for all residents, no matter what their age.*
>
> *We see a community which works hard toward preserving its environment, including our open spaces, our water quality and the quality of the air we breathe, while conserving our resources.*
>
> *We see a roadway system which is free of congestion.*

*We see a system of trails which allows us to stay out of our cars, and either walk, pedal or ride through Town safely.*

*We see a strong economy, with healthy and broad-based commercial development.*

*We see a healthy, well developed industrial base which provides quality jobs for our residents.*

*We see an economic base which allows us and our children to work in the community in which we live.*

For purposes of this EIR, the Project Objectives have been determined to be:

1. The preservation of the residential character of the community, with a particular focus on the preservation and enhancement of existing neighborhoods.

2. A balance of housing types to accommodate the needs of all current and future residents.

3. Adequate park and recreation facilities distributed throughout the community.

4. The preservation of open space, water quality and air quality to the greatest extent possible.

5. The preservation of adequate Levels of Service on Town roadways.

6. The development of comprehensive alternative transportation routes for pedestrian, equestrian and bicycle use.

7. A land use pattern which improves the jobs/housing balance and reduces commuter trips.

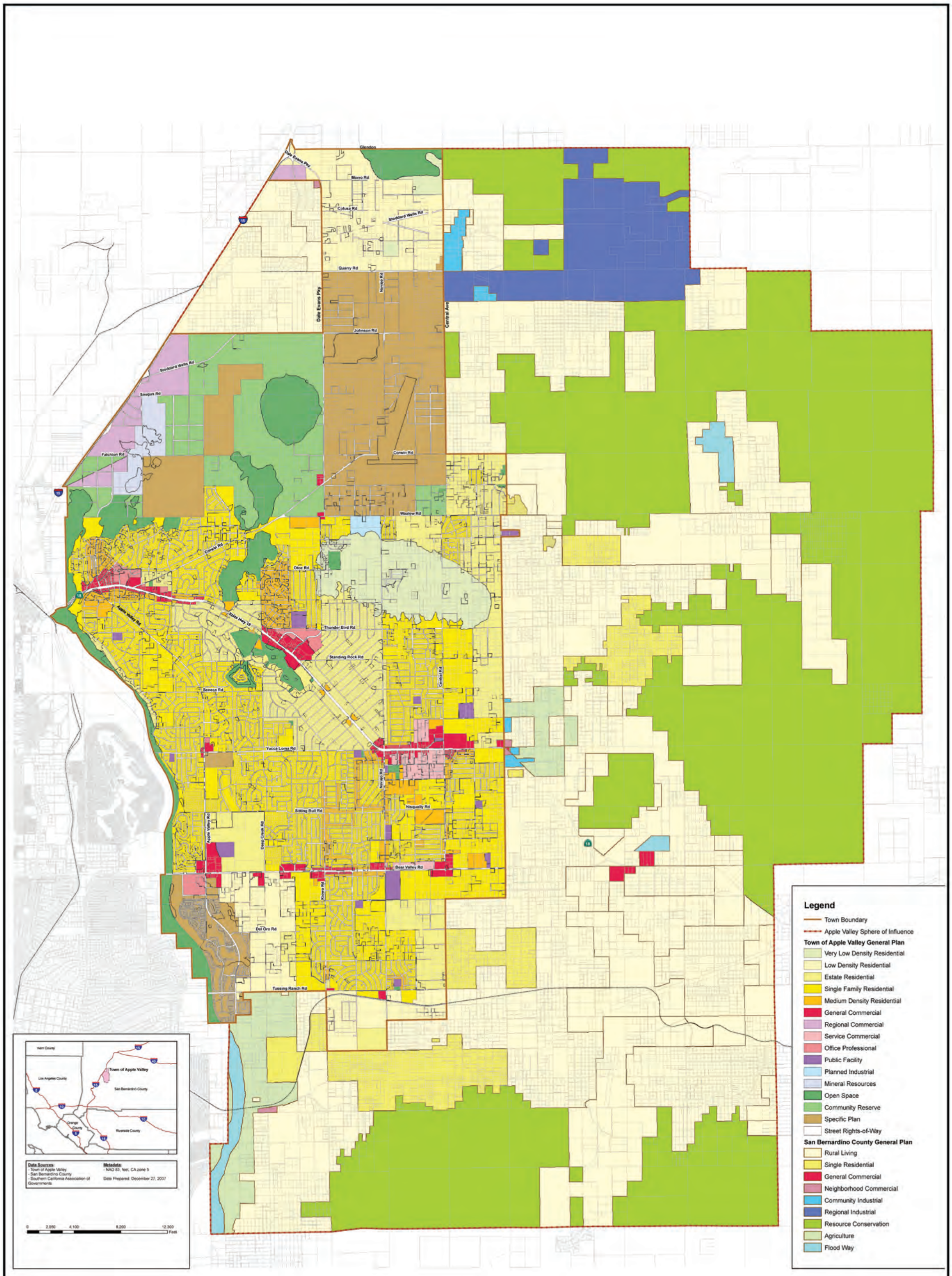
8. The build out of a wide-ranging economic base which provides a broad range of job opportunities.

## C. Alternative Projects Selected for Detailed Analysis

### 1. No Project Alternative: Existing Apple Valley General Plan

Under the No Project Alternative, the existing General Plan would be implemented, which includes existing Apple Valley land use designations within Town limits, and existing San Bernardino County designations within the proposed annexation areas.

Exhibit V-1 illustrates the Existing General Plan, which includes lower development intensities within the Town limits; primarily low-density residential development in Annexation 2008-001; and industrial land uses in Annexation 2008-002. Table V-2 shows the land uses associated with residential development at build out of the existing General Plan, which would facilitate development of approximately 52,519 dwelling units, including existing and future units, and a total population of 160,517 persons. This alternative also generates up to 28,662,067 square feet of commercial space, ranging from offices to large-scale retail complexes; and 40,950,190 square feet of industrial space, primarily in the North Apple Valley Industrial Specific Plan area, and in Annexation 2008-002.




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Planning & Research, Inc.

**Apple Valley General Plan Draft EIR**
**Existing General Plan Land Use Map**
**Apple Valley, California**

**Exhibit**
**V-1**

**Table V-2**
**No Project/Existing General Plan Land Use Alternative**
**Build Out Land Use Summary**

| Town Limits Only | | | | | | |
|---|---|---|---|---|---|---|
| **Land Use Designation** | **Developed Acres** | **Vacant Acres** | **Total Acres** | **Existing Units** | **Potential Units** | **Total Units** |
| **Residential Designations** | | | | | | |
| Very Low Density Residential | 174.46 | 1,828.18 | 2,002.64 | | 366 | 366 |
| Low Density Residential | 503.64 | 3,403.59 | 3,907.23 | | 1,361 | 1,361 |
| Estate Residential | 3,128.95 | 2,836.06 | 5,965.02 | 20,107 | 2,836 | 22,943 |
| Single Family Residential | 8,625.30 | 4,690.55 | 13,315.86 | | 7,036 | 7,036 |
| Medium Density Residential | 852.07 | 564.16 | 1,416.22 | 3,775 | 8,462 | 12,237 |
| Community Reserve | 30.07 | 3,241.00 | 3,271.07 | | 3,241 | 3,241 |
| Specific Plan/Residential Units | 1,068.45 | 5,884.28 | 6,952.73 | | 2,869 | 2,869 |
| | | | **Total** | **23,882** | **26,171** | **50,053** |
| | | | | | | |
| **Commercial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| General Commercial | 368.44 | 523.83 | 892.27 | 3,530,803 | 5,019,991 | 8,550,794 |
| Regional Commercial | 19.40 | 844.56 | 863.96 | 185,937 | 8,093,581 | 8,279,518 |
| Service Commercial | 147.66 | 150.77 | 298.42 | 1,415,034 | 1,444,831 | 2,859,865 |
| Office Professional | 49.34 | 186.04 | 235.38 | 472,851 | 1,782,838 | 2,255,689 |
| Specific Plan/Commercial | 1,068.45 | 5,884.28 | 6,952.73 | 1,740,086 | 4,922,924 | 6,663,010 |
| | | | **Total** | **7,344,710** | **21,264,165** | **28,608,875** |
| | | | | | | |
| **Industrial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Planned Industrial | 3.50 | 91.49 | 95.00 | 33,560 | 876,810 | 910,369 |
| Specific Plan/Industrial | 1,068.45 | 5,884.28 | 6,952.73 | 3,053,208 | 33,885,237 | 36,938,445 |
| | | | **Total** | **3,086,768** | **34,762,047** | **37,848,814** |
| | | | | | | |
| **Other Designations** | | | | | | |
| Public Facility | 263.78 | 60.92 | 324.70 | | | |
| Open Space | 241.94 | 2,771.70 | 3,013.64 | | | 0 |
| Mineral Resources | 111.6 | 340.9 | 452.5 | | | 0 |
| Street Rights-of-Way | 2,563.53 | 1,378.11 | 3,941.64 | | | |
| | | | | | | |
| **Grand Total** | **18,152.1** | **28,796.2** | **46,948.3** | | | |

**Table V-2**
**No Project/Existing General Plan Land Use Alternative**
**Build Out Land Use Summary**

| **Annexation Areas Only** | | | | | | |
|---|---|---|---|---|---|---|
| **Land Use Designation** | **Developed Acres** | **Vacant Acres** | **Total Acres** | **Existing Units** | **Potential Units** | **Total Units** |
| **Residential Designation** | | | | | | |
| Rural Living | 157.0 | 2,376.5 | 2,533.5 | | 2,377 | 2,377 |
| Rural Living, 5 AC. | 14.2 | 425.5 | 439.7 | | 85 | 85 |
| Resource Conservation | 0.1 | 77.7 | 77.8 | | 4 | 4 |
| | | | **Total** | **-** | **2,465** | **2,465** |
| | | | | | | |
| **Commercial Designations** | | | | | | |
| Neighborhood Commercial | | 7.9 | 7.9 | - | **53,192** | **53,192** |
| | | | | | | |
| **Industrial Designations** | | | | | | |
| Community Industrial | | 50.5 | 50.5 | - | 483,608 | 483,608 |
| Regional Industrial | | 273.2 | 273.2 | - | 2,617,768 | 2,617,768 |
| | | | **Total** | **-** | **3,101,376** | **3,101,376** |
| | | | | | | |
| **Other Designations** | | | | | | |
| Street Rights-of-Way | 43.0 | 154.0 | 197.0 | | | |
| **Grand Total** | **214.3** | **3,365.2** | **3,579.6** | | | |
| | | | | | | |
| **Planning Area Total** | | | | | | |
| **Land Use Designation** | **Developed Acres** | **Vacant Acres** | **Total Acres** | **Existing Units** | **Potential Units** | **Total Units** |
| **Residential Designations** | | | | | | |
| Rural Living (County) | 157.0 | 2,376.5 | 2,533.5 | | 2,377 | 2,377 |
| Rural Living, 5 AC. (County) | 14.2 | 425.5 | 439.7 | | 85 | 85 |
| Resource Conservation (County) | 0.1 | 77.7 | 77.8 | | 4 | 4 |
| Very Low Density Residential | 174.46 | 1,828.18 | 2,002.64 | | 366 | 366 |
| Low Density Residential | 503.64 | 3,403.59 | 3,907.23 | | 1,361 | 1,361 |
| Estate Residential | 3,128.95 | 2,836.06 | 5,965.02 | 20,107 | 2,836 | 22,943 |
| Single Family Residential | 8,625.30 | 4,690.55 | 13,315.86 | | 7,036 | 7,036 |
| Medium Density Residential | 852.07 | 564.16 | 1,416.22 | 3,775 | 8,462 | 12,237 |
| Community Reserve | 30.07 | 3,241.00 | 3,271.07 | | 3,241 | 3,241 |
| Specific Plan/Residential Units | 1,068.45 | 5,884.28 | 6,952.73 | | 2,869 | 2,869 |
| | | | **Total** | **23,882** | **28,637** | **52,519** |

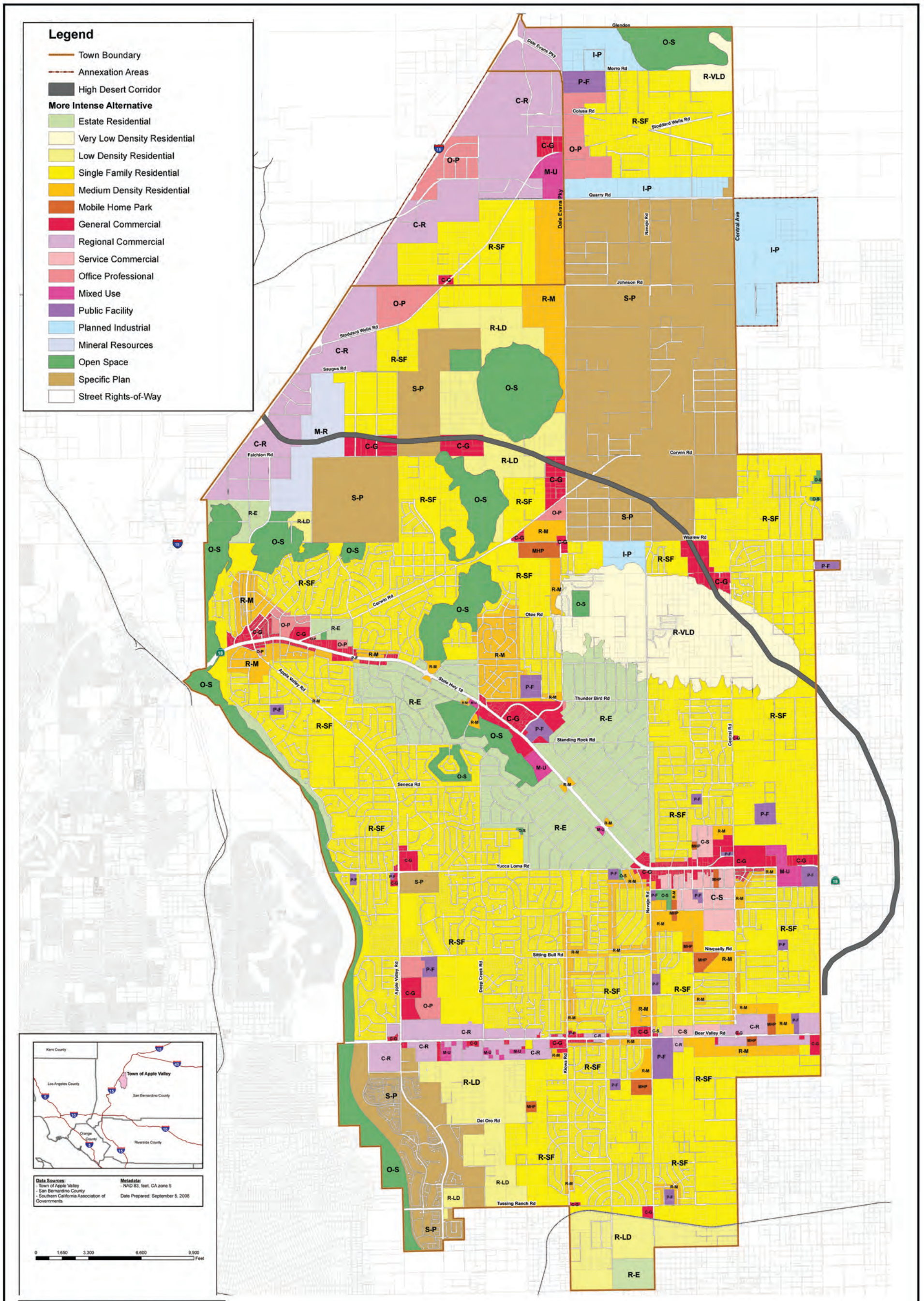
**Table V-2**
**No Project/Existing General Plan Land Use Alternative**
**Build Out Land Use Summary**

| **Commercial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
|---|---|---|---|---|---|---|
| Neighborhood Commercial (County) | | 7.9 | 7.9 | - | **53,192** | **53,192** |
| General Commercial | 368.44 | 523.83 | 892.27 | 3,530,803 | 5,019,991 | 8,550,794 |
| Regional Commercial | 19.40 | 844.56 | 863.96 | 185,937 | 8,093,581 | 8,279,518 |
| Service Commercial | 147.66 | 150.77 | 298.42 | 1,415,034 | 1,444,831 | 2,859,865 |
| Office Professional | 49.34 | 186.04 | 235.38 | 472,851 | 1,782,838 | 2,255,689 |
| Specific Plan/Commercial | 1,068.45 | 5,884.28 | 6,952.73 | 1,740,086 | 4,922,924 | 6,663,010 |
| | | | **Total** | **7,344,710** | **21,317,357** | **28,662,067** |
| | | | | | | |
| **Industrial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Community Industrial (County) | | 50.5 | 50.5 | - | 483,608 | 483,608 |
| Regional Industrial (County) | | 273.2 | 273.2 | - | 2,617,768 | 2,617,768 |
| Planned Industrial | 3.50 | 91.49 | 95.00 | 33,560 | 876,810 | 910,369 |
| Specific Plan/Industrial | 1,068.45 | 5,884.28 | 6,952.73 | 3,053,208 | 33,885,237 | 36,938,445 |
| | | | **Total** | **3,086,768** | **37,863,422** | **40,950,190** |
| **Other Designations** | | | | | | |
| Public Facility | 263.78 | 60.92 | 324.70 | | | |
| Open Space | 241.94 | 2,771.70 | 3,013.64 | | | |
| Mineral Resources | 111.6 | 340.9 | 452.5 | | | |
| Street Rights-of-Way | 2,563.74 | 1,382.01 | 3,945.75 | | | |
| **Grand Total** | **18,323.6** | **32,011.3** | **50,335.0** | | | |

## 2. Alternative I: More Intense Development Scenario

Under Alternative I, the More Intense Development alternative, commercial and industrial land use are intensified over the Preferred Alternative within Town limits, as well as within Annexation 2008-001.

Exhibit V-2 illustrates the Alternative I, More Intense Alternative. Table V-3 shows the land uses associated with build out of the alternative. Under Alternative I, development of approximately 66,119 dwelling units would occur, including existing and future units, with a total population of 202,217 persons. This alternative also generates up to 60,037,857 square feet of commercial space, ranging from offices to large-scale retail complexes; and 50,804,521 square feet of industrial space, in the North Apple Valley Industrial Specific Plan area, and in both Annexation 2008-001 and Annexation 2008-002.




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**Apple Valley General Plan Draft EIR**
**More Intense General Plan Alternative Land Use Map**
**Apple Valley, California**

Exhibit
**V-2**

**Table V-3**
**More Intense Land Use Alternative**
**Build Out Land Use Summary**

**Town Limits Only**

| **Land Use Designation** | **Developed Acres** | **Vacant Acres** | **Total Acres** | | | |
|---|---|---|---|---|---|---|
| **Residential Designations** | | | | **Existing Units** | **Potential Units** | **Total Units** |
| Very Low Density Residential | 174.1 | 1,787.4 | 1,961.5 | | 357 | 357 |
| Low Density Residential | 343.6 | 1,995.6 | 2,339.3 | | 798 | 798 |
| Estate Residential | 2,525.2 | 492.3 | 3,017.5 | 20,107 | 492 | 20,599 |
| Estate Residential 3/4 | 0.0 | 0.0 | 0.0 | | - | 0 |
| Single Family Residential | 9,143.9 | 8,673.4 | 17,817.3 | | 13,010 | 13,010 |
| Medium Density Residential | 745.1 | 1,180.8 | 1,925.9 | 3,775 | 17,712 | 21,487 |
| Mobile Home Park | 178.5 | 1.5 | 180.0 | 1,043 | 23 | 1,066 |
| Mixed Use | 50.3 | 108.2 | 158.5 | | 974 | 974 |
| Specific Plan/Residential Units | 1,068.6 | 5,978.2 | 7,046.8 | | 2,869 | 2,869 |
| | | | **Total** | **24,925** | **36,236** | **61,161** |
| | | | | | | |
| **Commercial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Mixed Use | 50.3 | 108.2 | 158.5 | - | 726,083 | 726,083 |
| General Commercial | 375.6 | 858.5 | 1,234.1 | 3,599,179 | 8,227,477 | 11,826,656 |
| Regional Commercial | 43.0 | 1,706.5 | 1,749.5 | 412,043 | 16,353,357 | 16,765,400 |
| Service Commercial | 146.8 | 188.7 | 335.6 | 1,407,196 | 1,808,678 | 3,215,875 |
| Office Professional | 74.2 | 542.6 | 616.8 | 711,062 | 5,199,535 | 5,910,597 |
| Specific Plan/Commercial | 1,068.6 | 5,978.2 | 7,046.8 | 1,740,086 | 4,922,924 | 6,663,010 |
| | | | **Total** | **7,869,566** | **37,238,054** | **45,107,620** |
| | | | | | | |
| **Industrial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Planned Industrial | 21.4 | 623.9 | 645.3 | 204,689 | 5,979,252 | 6,183,941 |
| Specific Plan/Industrial | 1,068.6 | 5,978.2 | 7,046.8 | 3,053,208 | 33,885,237 | 36,938,445 |
| | | | **Total** | **3,257,897** | **39,864,489** | **43,122,386** |
| | | | | | | |
| **Other Designations** | | | | | | |
| Public Facility | 353.5 | 119.1 | 472.5 | | | 0 |
| Open Space | 233.3 | 2,820.6 | 3,053.9 | | | 0 |
| Mineral Resources | 111.6 | 340.9 | 452.5 | | | 0 |
| Street Rights-of-Way | 2,563.5 | 1,377.8 | 3,941.2 | | | |
| **Grand Total** | **18,152.1** | **28,796.2** | **46,948.2** | | | |

**Table V-3**
**More Intense Land Use Alternative**
**Build Out Land Use Summary**

**Annexation Areas Only**

| Land Use Designation | Developed Acres | Vacant Acres | Total Acres | Existing Units | Potential Units | Total Units |
|---|---|---|---|---|---|---|
| **Residential Designations** | | | | | | |
| Single Family Residential | 55.7 | 722.3 | 778.0 | | 1,445 | 1,445 |
| Medium Density Residential | 41.4 | 177.3 | 218.7 | | 2,659 | 2,659 |
| Mixed Use | 0.0 | 94.8 | 94.9 | | 854 | 854 |
| | | | **Total** | **-** | **4,958** | **4,958** |
| **Commercial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Mixed Use | 0.0 | 94.9 | 94.9 | - | 636,612 | 636,612 |
| General Commercial | 11.7 | 40.8 | 52.6 | 112,202 | 391,415 | 503,617 |
| Regional Commercial | 56.9 | 1,199.0 | 1,255.9 | 545,583 | 11,489,787 | 12,035,370 |
| Office Professional | | 183.1 | 183.1 | - | 1,754,639 | 1,754,639 |
| | | | **Total** | **657,785** | **14,272,452** | **14,930,237** |
| **Industrial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Planned Industrial | 5.8 | 795.9 | 801.6 | **55,143** | **7,626,992** | **7,682,135** |
| | | | | | | |
| **Other Designations** | | | | | | |
| Street Rights-of-Way | 42.8 | 152.1 | 194.9 | | | |
| | | | | | | |
| **Grand Total** | **214.5** | **3,365.3** | **3,579.7** | | | |

**Planning Area Total**

| Land Use Designation | Developed Acres | Vacant Acres | Total Acres | Existing Units | Potential Units | Total Units |
|---|---|---|---|---|---|---|
| **Residential Designations** | | | | | | |
| Very Low Density Residential | 174.1 | 1,787.4 | 1,961.5 | | 357 | 357 |
| Low Density Residential | 343.6 | 1,995.6 | 2,339.3 | | 798 | 798 |
| Estate Residential | 2,580.9 | 1,214.6 | 3,795.5 | 20,107 | 1,937 | 22,044 |
| Estate Residential 3/4 | 0.0 | 0.0 | 0.0 | | - | 0 |
| Single Family Residential | 9,143.9 | 8,673.4 | 17,817.3 | | 13,010 | 13010 |
| Medium Density Residential | 786.5 | 1,358.1 | 2,144.6 | 3,775 | 20,371 | 24146 |
| Mobile Home Park | 178.5 | 1.5 | 180.0 | 1,043 | 23 | 1,066 |
| Mixed Use | 50.3 | 203.1 | 253.4 | - | 1,828 | 1,828 |
| Specific Plan/Residential Units | 1,068.6 | 5,978.2 | 7,046.8 | - | 2,869 | 2,869 |
| | | | **Total** | **24,925** | **38,325** | **63,250** |

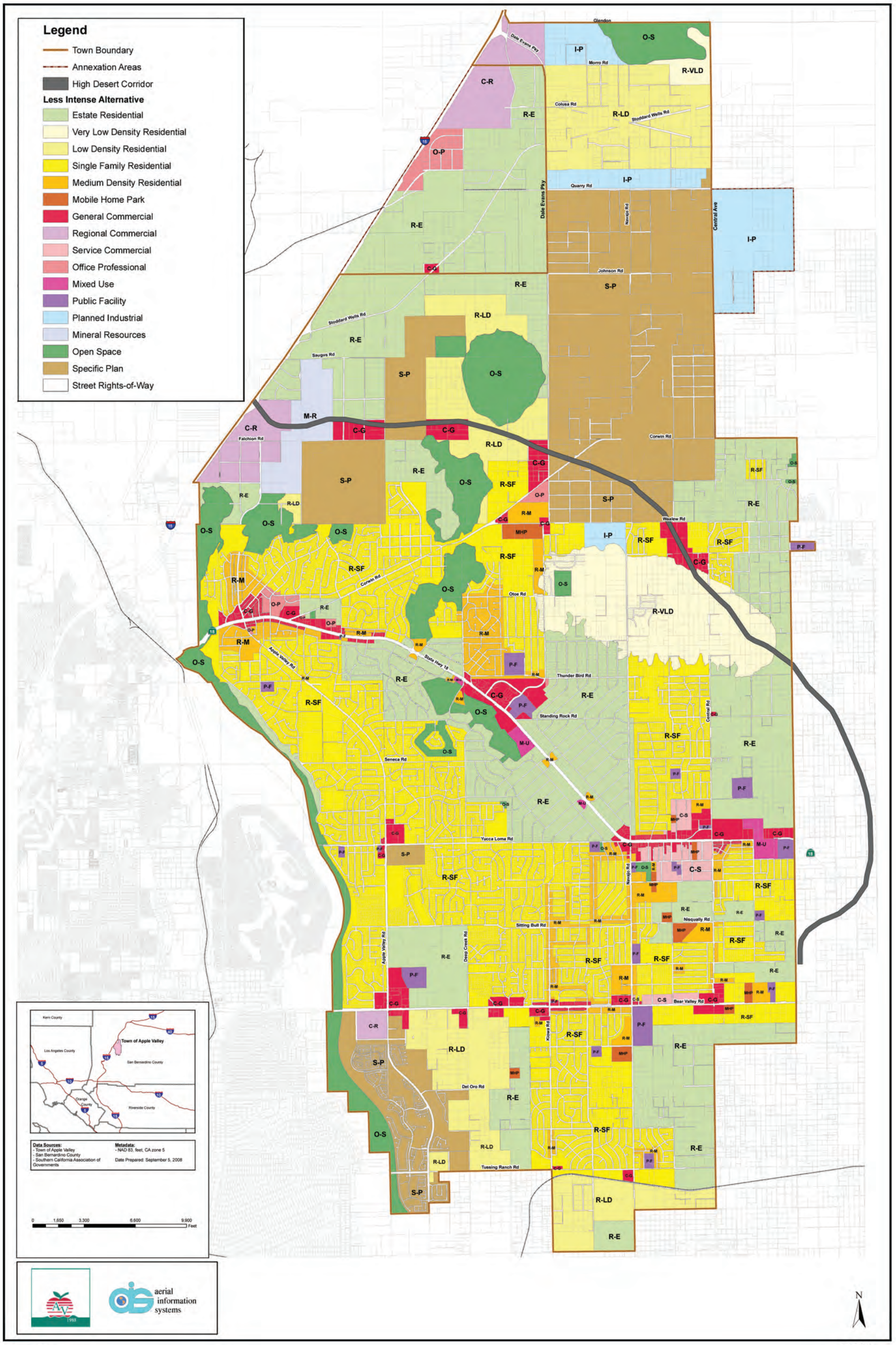
**Table V-3**
**More Intense Land Use Alternative**
**Build Out Land Use Summary**

| **Commercial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
|---|---|---|---|---|---|---|
| Mixed Use | 51.7 | 331.5 | 383.2 | - | 1,362,695 | 1,362,695 |
| General Commercial | 387.3 | 899.4 | 1,286.7 | 3,711,381 | 8,618,892 | 12,330,273 |
| Regional Commercial | 99.9 | 2,905.4 | 3,005.3 | 957,626 | 27,843,143 | 28,800,769 |
| Service Commercial | 146.8 | 188.7 | 335.6 | 1,407,196 | 1,808,678 | 3,215,875 |
| Office Professional | 74.2 | 725.7 | 799.9 | 711,062 | 6,954,173 | 7,665,235 |
| Specific Plan/Commercial | 1,068.6 | 5,978.2 | 7,046.8 | 1,740,086 | 4,922,924 | 6,663,010 |
| | | | **Total** | **8,527,351** | **51,510,506** | **60,037,857** |
| | | | | | | |
| **Industrial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Planned Industrial | 27.1 | 1,419.8 | 1,446.9 | 259,832 | 13,606,244 | 13,866,076 |
| Specific Plan/Industrial | 1,068.6 | 5,978.2 | 7,046.8 | 3,053,208 | 33,885,237 | 36,938,445 |
| | | | **Total** | **3,313,040** | **47,491,481** | **50,804,521** |
| | | | | | | |
| **Other Designations** | | | | | | |
| Public Facility | 353.5 | 119.1 | 472.5 | | | |
| Open Space | 233.3 | 2,820.6 | 3,053.9 | | | |
| Mineral Resources | 111.6 | 340.9 | 452.5 | | | |
| Street Rights-of-Way | 2,606.3 | 1,529.9 | 4,136.2 | | | |
| **Grand Total** | **18,366.5** | **32,161.4** | **50,528.0** | | | |

### 3. Alternative II: Less Intense Development Scenario

Under Alternative II, the Less Intense Development alternative, residential densities are reduced, as are commercial land uses, when compared to the Preferred Alternative. Land use intensities for industrial development are similar to those of the Preferred Alternative.

Exhibit V-3 illustrates the Alternative I, Less Intense Alternative. Table V-4 shows the land uses associated with residential development at build out of the existing General Plan, which would facilitate development of approximately 54,678 dwelling units, including existing and future units, and a total population of 167,068 persons. This alternative also generates up to 35,730,826 square feet of commercial space, ranging from offices to large scale retail complexes; and 50,805,237 square feet of industrial space, in the North Apple Valley Industrial Specific Plan area, and in Annexation 2008-002. Annexation 2008-001 remains primarily residential under this alternative, with some commercial development proposed adjacent to I-15.




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**Apple Valley General Plan Draft EIR**
**Less Intense General Plan Alternative Land Use Map**
**Apple Valley, California**

**Exhibit**
**V-3**

**Table V-4**
**Less Intense Land Use Alternative**
**Build Out Land Use Summary**

| Town Limits Only | | | | | | |
|---|---|---|---|---|---|---|
| **Land Use Designation** | **Developed Acres** | **Vacant Acres** | **Total Acres** | **Existing Units** | **Potential Units** | **Total Units** |
| **Residential Designations** | | | | | | |
| Very Low Density Residential | 174.1 | 1,787.4 | 1,961.5 | | 357 | 357 |
| Low Density Residential | 483.3 | 3,481.7 | 3,964.9 | | 1,393 | 1,393 |
| Estate Residential | 3,395.7 | 6,266.2 | 9,661.9 | 20,107 | 6,266 | 26,373 |
| Estate Residential 3/4 | 0.0 | 0.0 | 0.0 | | - | 0 |
| Single Family Residential | 8,317.2 | 3,286.3 | 11,603.5 | | 4,929 | 4,929 |
| Medium Density Residential | 735.8 | 736.3 | 1,472.1 | 3,775 | 11,044 | 14,819 |
| Mobile Home Park | 178.5 | 1.5 | 180.0 | 1,043 | 23 | 1,066 |
| Mixed Use | 14.3 | 107.9 | 122.2 | | 971 | 971 |
| Specific Plan/Residential Units | 1,068.6 | 5,978.2 | 7,046.8 | | 2,869 | 2,869 |
| | | | **Total** | **24,925** | **27,853** | **52,778** |
| | | | | | | |
| **Commercial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Mixed Use | 14.3 | 107.9 | 122.2 | - | 723,993 | 723,993 |
| General Commercial | 354.4 | 1,006.1 | 1,360.5 | 3,396,689 | 9,641,191 | 13,037,880 |
| Regional Commercial | 31.7 | 661.3 | 693.0 | 303,358 | 6,337,478 | 6,640,836 |
| Service Commercial | 132.9 | 143.0 | 275.9 | 1,273,259 | 1,370,368 | 2,643,627 |
| Office Professional | 31.6 | 72.0 | 103.6 | 303,019 | 689,867 | 992,886 |
| Specific Plan/Commercial | 1,068.6 | 5,978.2 | 7,046.8 | 1,740,086 | 4,922,924 | 6,663,010 |
| | | | **Total** | **7,016,412** | **23,685,820** | **30,702,232** |
| | | | | | | |
| **Industrial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Planned Industrial | 21.4 | 623.9 | 645.3 | 204,689 | 5,979,252 | 6,183,941 |
| Specific Plan/Industrial | 1,068.6 | 5,978.2 | 7,046.8 | 3,053,208 | 33,885,237 | 36,938,445 |
| | | | **Total** | **3,257,897** | **39,864,489** | **43,122,386** |
| **Other Designations** | | | | | | |
| Public Facility | 304.3 | 105.1 | 409.4 | | | 0 |
| Open Space | 233.3 | 2,820.6 | 3,053.9 | | | 0 |
| Mineral Resources | 111.6 | 340.9 | 452.5 | | | 0 |
| Street Rights-of-Way | 2,563.5 | 1,377.8 | 3,941.2 | | | |
| **Grand Total** | **18,152.1** | **28,796.2** | **46,948.3** | | | |

**Table V-4**
**Less Intense Land Use Alternative**
**Build Out Land Use Summary**

| **Annexation Areas Only** | | | | | | |
|---|---|---|---|---|---|---|
| **Land Use Designation** | **Developed Acres** | **Vacant Acres** | **Total Acres** | **Existing Units** | **Potential Units** | **Total Units** |
| **Residential Designations** | | | | | | |
| Estate Residential | 158.6 | 1,899.8 | 2,058.4 | | 1,900 | 1,900 |
| Medium Density Residential | 0.0 | 0.0 | 0.0 | | - | - |
| Mixed Use | 0.0 | 0.0 | 0.0 | | - | - |
| | | | **Total** | **-** | **1,900** | **1,900** |
| | | | | | | |
| **Commercial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Mixed Use | 0.0 | 0.0 | 0.0 | - | - | 0 |
| General Commercial | | 11.1 | 11.1 | - | 106,132 | 106,132 |
| Regional Commercial | 7.2 | 323.4 | 330.6 | 69,067 | 3,098,742 | 3,167,809 |
| Office Professional | | 183.1 | 183.1 | - | 1,754,654 | 1,754,654 |
| | | | **Total** | **69,067** | **4,959,527** | **5,028,595** |
| | | | | | | |
| **Industrial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Planned Industrial | 5.8 | 795.9 | 801.3 | **55,583** | **7,627,269** | **7,682,851** |
| | | | | | | |
| **Other Designations** | | | | | | |
| Street Rights-of-Way | 42.8 | 152.1 | 194.9 | | | |
| **Grand Total** | **214.5** | **3,365.3** | **3,579.8** | | | |
| | | | | | | |
| **Planning Area Total** | | | | | | |
| **Land Use Designation** | **Developed Acres** | **Vacant Acres** | **Total Acres** | **Existing Units** | **Potential Units** | **Total Units** |
| **Residential Designations** | | | | | | |
| Very Low Density Residential | 174.1 | 1,787.4 | 1,961.5 | | 357 | 357 |
| Low Density Residential | 483.3 | 3,481.7 | 3,964.9 | | 1,393 | 1393 |
| Estate Residential | 3,554.3 | 8,166.0 | 11,720.3 | 20,107 | 8,166 | 28,273 |
| Estate Residential 3/4 | 0.0 | 0.0 | 0.0 | | - | - |
| Single Family Residential | 8,317.2 | 3,286.3 | 11,603.5 | | 4,929 | 4929 |
| Medium Density Residential | 735.8 | 736.3 | 1,472.1 | 3,775 | 11,044 | 14819 |
| Mobile Home Park | 178.5 | 1.5 | 180.0 | 1,043 | 23 | 1,066 |
| Mixed Use | 14.3 | 107.9 | 122.2 | - | 971 | 971 |
| Specific Plan/Residential Units | 1,068.6 | 5,978.2 | 7,046.8 | - | 2,869 | 2,869 |
| | | | **Total** | **24,925** | **29,753** | **54,678** |

**Table V-4**
**Less Intense Land Use Alternative**
**Build Out Land Use Summary**

| **Commercial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
|---|---|---|---|---|---|---|
| Mixed Use | 51.7 | 331.5 | 383.2 | - | 723,993 | 723,993 |
| General Commercial | 354.4 | 1,017.1 | 1,371.6 | 3,396,689 | 9,747,323 | 13,144,012 |
| Regional Commercial | 38.9 | 984.7 | 1,023.5 | 372,425 | 9,436,220 | 9,808,645 |
| Service Commercial | 132.9 | 143.0 | 275.9 | 1,273,259 | 1,370,368 | 2,643,627 |
| Office Professional | 31.6 | 255.1 | 286.7 | 303,019 | 2,444,520 | 2,747,539 |
| Specific Plan/Commercial | 1,068.6 | 5,978.2 | 7,046.8 | 1,740,086 | 4,922,924 | 6,663,010 |
| | | | **Total** | **7,085,479** | **28,645,347** | **35,730,826** |
| | | | | | | |
| **Industrial Designations** | | | | **Existing SF** | **Potential SF** | **Total SF** |
| Planned Industrial | 27.2 | 1,419.8 | 1,446.6 | 260,271 | 13,606,521 | 13,866,792 |
| Specific Plan/Industrial | 1,068.6 | 5,978.2 | 7,046.8 | 3,053,208 | 33,885,237 | 36,938,445 |
| | | | **Total** | **3,313,479** | **47,491,758** | **50,805,237** |
| | | | | | | |
| **Other Designations** | | | | | | |
| Public Facility | 304.3 | 105.1 | 409.4 | | | |
| Open Space | 233.3 | 2,820.6 | 3,053.9 | | | |
| Mineral Resources | 111.6 | 340.9 | 452.5 | | | |
| Street Rights-of-Way | 2,606.3 | 1,529.9 | 4,136.2 | | | |
| **Grand Total** | **18,366.5** | **32,161.5** | **50,528.1** | | | |

## D. Land Use, Environmental and Service Impacts

### Aesthetics and Visual Resources

Visual impacts associated with each of the project alternatives are expected to be comparable for most of the planning area, in that the land use patterns for all alternatives are similar. While all alternatives will result in changes to local visual resources, they are planned to preserve the Town's rural aesthetic and the vistas that characterize the planning area to the greatest extent feasible. More significant differences are expected to be apparent in the two annexation areas, which are currently only sparsely developed.

No Project Alternative

In general, the land use development patterns of the No Project Alternative are similar to those of other alternatives, including the Preferred Alternative, placing commercial designations primarily along major roadways and focusing industrial development in the northern portion of the planning area. Under the No Project Alternative, there would be approximately 18% fewer residences than under the Preferred Alternative. Scenic areas, such as along the Mojave River, are retained as Open Space or utilized for other compatible uses, including low density residential uses.

The No Project Alternative differs from other alternatives in that Annexation No. 2008-001 is primarily designated for Low Density Residential uses, whereas the other alternatives propose a variety of residential, commercial and industrial uses along the U.S. Interstate-15 corridor in this area. Nonetheless the No Project Alternative would result in the urbanization of areas that are currently largely undeveloped. In the overall, while the No Project Alternative will generally result in impacts to aesthetic and visual resources that are less than those associated with the Preferred Alternative, including those from increased sources of light and glare, as with all of the development scenarios, it will result in some alteration of the visual character of previously undeveloped lands.

Alternative I: More Intense Alternative

The More Intense Alternative will result in an increase in structures, including homes, commercial and industrial buildings, and infrastructure such as roadways and utilities, to serve future development. Development facilitated by this alternative represents an increase of between 4% (residential) and 14% (commercial) as compared with that proposed under the Preferred Alternative. Therefore, these uses may be expected to result in a greater impact to aesthetics from light and glare and impacts to visual resources such as viewsheds and scenic vistas. This alternative proposes a lower level of industrial development, approximately 13% less than the Preferred Alternative.

Overall impacts to visual resources in Annexation 2008-001 are expected to be greater under this alternative, as the level of commercial development along the I-15 corridor is increased, and the impacts associated with building mass and light and glare will be greater as a result. Land use in Annexation 2008-002 under this Alternative would remain industrial, and aesthetic impacts would be expected to be equivalent to those of the Preferred Alternative.

Less Intense Alternative

The Less Intense alternative represents a reduction in development of approximately 14% for residential development, approximately 30% for commercial development, and approximately 13% for industrial development as compared with the Preferred Alternative. Within Annexation 2008-001, development under this alternative will be less intense than that of the Preferred Alternative, and is therefore expected to have less of an impact on the visual resources of the annexation area, as the intensity of commercial development is significantly reduced, and the amount of residential land increased over that proposed under the Preferred Alternative. This level of development would also be expected to result in correspondingly lower levels of light and glare impacts.

Goals, policies and programs forth in the General Plan, as well as building heights and setbacks, outdoor lighting restrictions, landscape design and other standards established by the Town Development Code, are intended to ensure the preservation of the planning area's visual resources to the greatest extent feasible. Adherence to these policies and standards, as well as implementation of the mitigation measures set forth in Section III-A are expected to reduce impacts to visual resources to less than significant levels for all alternatives.

**Agricultural Resources**

Agricultural resources within the planning area are identified primarily in the southwestern portion of the planning area. The Preferred Alternative, and all the proposed alternatives, represent development scenarios which would lead to urbanization of the planning area.

There are no identified agricultural resources in either of the Annexation areas. Therefore, there will be no impact to agricultural resources under any alternative, including the Preferred Alternative, in either Annexation area.

No Project Alternative
Under the No Project Alternative, development patterns in areas identified as having the potential for agricultural resources will be similar to the Preferred Alternative, consisting of residentially designated lands. Consistent with the Preferred Alternative, the area south of Bear Valley Road, both east and west of Deep Creek Road, will develop in very low intensity land uses, and although most of these lands are not designated as agriculturally significant, they have an equal potential for developing in agricultural or ranching uses as under the Preferred Alternative. Impacts under this Alternative would be equivalent to those of the Preferred Alternative.

More Intense Alternative
Under the More Intense Alternative, the residential development intensity would be increased throughout the Town, including that area south of Bear Valley Road at Deep Creek Road, where lot sizes as small as one-half acre could occur. Agricultural and ranching activities on smaller lots would be unlikely, and the potential for such activities would be reduced. This alternative would have a greater potential of eliminating agricultural activities within Town limits than the Preferred Alternative, or any of the other alternatives.

Less Intense Alternative
The Less Intense Alternative would result in more land in the Low Density Residential land use designation in the Deep Creek area, which would limit residential development, and increase the potential for larger lots (lots of 2 acres or more). Larger lots are more conducive to ranching and agricultural activities, so this alternative would be expected to have fewer impacts on the establishment and long term continuation of agricultural and ranching activities than any of the other alternatives, including the Preferred Alternative.

**Air Quality**

No Project Alternative
Development of the No Project Alternative will not interfere with the objectives of the Draft Ozone Attainment Plan, prepared by MDAQMD in 2008, since the land use plan for this Alternative was utilized in preparing ozone concentration projections.

The No Project Alternative will generate emissions for all criteria pollutants in concentrations that exceed the daily thresholds due to energy and natural gas usage and emissions from the operation of vehicles as seen in Table V-5 below. In addition, the use of consumer products such

as air fresheners, automotive products, household cleaners, and personal care products generate ROG emissions from daily use; therefore, these are also quantified in the Table below. Temporary air quality impacts from site preparation, grading, and construction are not quantified, these activities will also contribute substantial emissions.

**Table V-5**
**Projected Daily Air Quality Emissions**
**at General Plan Build Out of the No Project Alternative**
**(lbs./day)**

| | Stationary Source Emissions | | | Moving Source Emissions | Total Project Emissions | Threshold Criteria* |
|---|---|---|---|---|---|---|
| | Consumer Products | Power Plant | Natural Gas | All Vehicles | Lbs./Day | Lbs./Day |
| **CO** | - | 643 | 1,182 | 27,189 | **29,014** | **548** |
| **NOx** | - | 3,697 | 1,891 | 3,173 | **8,761** | **137** |
| **SOx** | - | 386 | 0.020 | 86 | **472** | **137** |
| **PM10** | - | 129 | 3.52 | 786 | **918** | **82** |
| **PM2.5** | - | - | 3.52 | 524 | **790528** | **55** |
| **ROGs** | 2,745 | 32 | 142 | 3,480 | **3,654** | **137** |
| **CO2** | - | - | 2,344,511 | 8,960,675 | **11,305,186** | **N/A** |

*Threshold criteria offered by the Mojave Desert Air Quality Management District for determining the significance of air quality impacts. Source: "CEQA and Federal Conformity Guidelines," MDAQMD, June 2007 and Urbemis 2007 Version 9.2.4 default emissions.

At build out of the No Project Alternative all criteria thresholds for air quality emissions will be substantially exceeded. Compared to the Preferred Alternative, total emissions for the No Project Alternative are reduced by 35.7% for CO, 33.4% for NOx, 35.9% for SOx, 35.5% for PM10, 35.9% for PM2.5, 21.5% for ROGs, and 33.8% for CO2.

Certain air quality emissions also function as greenhouse gases (GHG) that contribute to global warming and climate change. GHG emissions for the No Project Alternative are projected in Table V-6 below. At build out of the No Project Alternative, the planning area will contribute approximately 0.500% of the total California carbon dioxide equivalent emissions limits, or 427 million metric tons (mmt) as estimated in 1990. The No Project Alternative represents 0.029% of the total emissions for the United States (7,260.4 mmt) as estimated in year 2005. Using the currently available methods to quantify GHG emissions, the build out of the No Project Alternative will increase emissions over 1990 levels, resulting in a significant impact. Mitigation measures are included in Section III of this document. However, the reductions which these mitigation measures offer cannot be effectively quantified. Impacts associated with GHG emissions will therefore be significant and unavoidable.

**Table V-6**
**Annual GHG Summary at**
**Build Out of the No Project Alternative**

| Emission Source | CO2 Equivalent Metric Tons | CO2 Equivalent Million Metric Tons | Pounds Per Day |
|---|---|---|---|
| Electricity | 428,784.92 | 0.429 | 2,589,887.49 |
| Natural Gas | 390,416.62 | 0.390 | 2,358,140.57 |
| Moving Source | 1,314,241.89 | 1.314 | 7,938,102.39 |
| **Total** | **2,133,443.43** | **2.133** | **12,886,130.44** |

Although emissions can be mitigated to a certain degree, significant and unavoidable impacts to air quality, including greenhouse gas emissions, will occur as a result of development of the No Project Alternative. Therefore, like the Preferred Alternative, a Findings and a Statement of Overriding Considerations for emissions that cannot be reduced to levels below the MDAQMD thresholds would be required for this alternative.

Annexation No. 2008-001

Table V-7 below shows the projected emissions that will occur due to operation of all land uses within Annexation No. 2008-001 at build out of the No Project Alternative. These emissions are accounted for in the preceding tables and are broken out by annexation area, below. With the implementation of mitigation measures set forth in Section III-C, all criteria pollutants except for CO and NOx can be reduced to levels that are less than significant. Findings and a Statement of Overriding Considerations for CO and NOx emissions would be required under this alternative for Annexation 2008-001.

**Table V-7**
**Projected Daily Air Quality Emissions within Annexation No. 2008-001**
**at General Plan Build Out of the No Project Alternative**
**(lbs./day)**

| | Stationary Source Emissions | | | Moving Source Emissions | Total Project Emissions | Threshold Criteria* |
|---|---|---|---|---|---|---|
| | Consumer Products | Power Plant | Natural Gas | All Vehicles | Lbs./Day | Lbs./Day |
| **CO** | - | 6.9 | 18.5 | 744 | **770** | **548** |
| **NOx** | - | 39.6 | 43.1 | 87 | **170** | **137** |
| **SOx** | - | 4.1 | 0.0005 | 95 | **99** | **137** |
| **PM10** | - | 1.4 | 0.08 | 2.4 | **4** | **82** |
| **PM2.5** | - | - | 0.08 | 22 | **22** | **55** |
| **ROGs** | 35.35 | 0.34 | 3.3 | 14 | **53.35** | **137** |
| **CO2** | - | - | 54,938 | 245,306 | **300,244** | **N/A** |

*Threshold criteria offered by the Mojave Desert Air Quality Management District for determining the significance of air quality impacts. Source: "CEQA and Federal Conformity Guidelines," MDAQMD, June 2007 and Urbemis 2007 Version 9.2.4 default emissions.

GHG emissions within Annexation No. 2008-001 for the No Project Alternative are projected in Table V-8 below. At build out of the No Project Alternative, the annexation area will contribute

approximately 0.012% of California's total carbon dioxide equivalent emissions limit for 2020 (427 mmt) as estimated by the ARB. The No Project Alternative represents 0.001% of the total emissions for the United States (7,260.4 mmt) as estimated in year 2005.

**Table V-8**
**Annual GHG Summary within Annexation No. 2008-001**
**at Build Out of the No Project Alternative**

| Emission Source | CO2 Equivalent Metric Tons | CO2 Equivalent Million Metric Tons | Pounds Per Day |
|---|---|---|---|
| Electricity | 4,596.53 | 0.005 | 27,763.31 |
| Natural Gas | 9,148.50 | 0.009 | 55,257.48 |
| Moving Source | 35,978.51 | 0.036 | 217,312.42 |
| **Total** | **49,723.53** | **0.050** | **300,333.21** |

Although emissions can be mitigated to a certain degree, significant and unavoidable impacts associated with CO and NOx emissions, including greenhouse gas emissions, will occur as a result of development within Annexation No. 2008-001, under the No Project Alternative. Therefore, Findings and a Statement of Overriding Considerations would be required.

Annexation No. 2008-002

Table V-9, below, shows the projected emissions that will occur due to operation of all land uses within Annexation 2008-002 at build out of the No Project Alternative. With the implementation of mitigation measures described in Section III-C, CO and NOx emissions would not be reduced to levels that are less than significant. Findings and a Statement of Overriding Considerations would be required under this alternative.

**Table V-9**
**Projected Daily Air Quality Emissions within Annexation No. 2008-002**
**at General Plan Build Out of the No Project Alternative**
**(lbs./day)**

| | Stationary Source Emissions | | | Moving Source Emissions | Total Project Emissions | Threshold Criteria* |
|---|---|---|---|---|---|---|
| | Consumer Products | Power Plant | Natural Gas | All Vehicles | Lbs./Day | Lbs./Day |
| **CO** | - | 16 | 45 | 606 | **667** | **548** |
| **NOx** | - | 95 | 57 | 71 | **223** | **137** |
| **SOx** | - | 9.9 | 0.001 | 78 | **87** | **137** |
| **PM10** | - | 3.3 | 0.1 | 1.9 | **5** | **82** |
| **PM2.5** | - | - | 0.1 | 18 | **18** | **55** |
| **ROGs** | 6.81 | 0.8 | 4.2 | 12 | **23.81** | **137** |
| **CO2** | - | - | 69,196 | 199,761 | **268,957** | **N/A** |

*Threshold criteria offered by the Mojave Desert Air Quality Management District for determining the significance of air quality impacts. Source: "CEQA and Federal Conformity Guidelines," MDAQMD, June 2007 and Urbemis 2007 Version 9.2.4 default emissions.

GHG emissions within Annexation No. 2008-002 for the No Project Alternative are projected in Table V-10 below. At build out of the No Project Alternative, the annexation area will contribute approximately 0.012% of California's total carbon dioxide equivalent emissions (427 million metric tons) as estimated in 1990. The No Project Alternative represents 0.001% of the total emissions for the United States (7,260.4 mmt) as estimated in year 2005.

**Table V-10**
**Annual GHG Summary within Annexation No. 2008-002**
**at Build Out of the No Project Alternative**

| Emission Source | CO2 Equivalent Metric Tons | CO2 Equivalent Million Metric Tons | Pounds Per Day |
|---|---|---|---|
| Electricity | 10,976.23 | 0.011 | 66,297.13 |
| Natural Gas | 11,522.78 | 0.012 | 69,598.32 |
| Moving Source | 29,298.51 | 0.029 | 176,964.81 |
| **Total** | **51,797.52** | **0.052** | **312,860.25** |

It is expected that with the implementation of mitigation measures, air quality emissions generated within Annexation No. 2008-002 would exceed CO and NOx thresholds, including greenhouse gas emissions. Therefore, Annexation No. 2008-002 for the No Project Alternative will result in significant air quality impacts.

Less Intense Alternative

The potential for air quality degradation in the Town of Apple Valley and region will decrease with implementation of the Less Intense Project Alternative as compared to the Preferred Alternative. However, development of the Less Intense Project Alternative will result in an approximately 4% increase in the population size, 20% increase in commercial/retail square footage, and a 19% increase in industrial square footage as compared to the land use plan (No Project or Existing General Plan) that was utilized to prepared the Draft Ozone Attainment Plan. Therefore, without mitigation, it is expected that, like the Preferred Alternative, the Less Intense Alternative has the potential to interfere with the objectives of the Ozone Attainment Plan.

The Less Intense Project Alternative will generate emissions for all criteria pollutants in concentrations that exceed the daily thresholds due to energy and natural gas usage and emissions from the operation of vehicles, as seen in Table V-11 below. As with all other development scenarios, ROG emissions from daily use of household products is included in the projections shown in the table. Grading and construction activities will contribute to substantial air quality emissions but are not quantifiable at this level of analysis.

**Table V-11**
**Projected Daily Air Quality Emissions**
**At General Plan Build Out of the Less Intense Project Alternative**
**(lbs./day)**

| | Stationary Source Emissions | | | Moving Source Emissions | Total Project Emissions | Threshold Criteria* |
|---|---|---|---|---|---|---|
| | Consumer Products | Power Plant | Natural Gas | All Vehicles | Lbs./Day | Lbs./Day |
| **CO** | - | 767 | 1,374 | 34,325 | **36,466** | **548** |
| **NOx** | - | 4,410 | 2,127 | 4,006 | **10,543** | **137** |
| **SOx** | - | 460 | 0.022 | 109 | **569** | **137** |
| **PM10** | - | 153 | 3.94 | 992 | **1,150** | **82** |
| **PM2.5** | - | - | 3.94 | 662 | **666** | **55** |
| **ROGs** | 2,857 | 38 | 159 | 4,394 | **4,591** | **137** |
| **CO2** | - | - | 2,628,685 | 11,312,512 | **13,941,197** | **N/A** |

*Threshold criteria offered by the Mojave Desert Air Quality Management District for determining the significance of air quality impacts. Source: "CEQA and Federal Conformity Guidelines," MDAQMD, June 2007 and Urbemis 2007 Version 9.2.4 default emissions.

At build out of the Less Intense Project Alternative all criteria thresholds for air quality emissions will be substantially exceeded. Compared to the Preferred Alternative, total emissions for the Less Intense Project Alternative are reduced by 19.2% for CO, 19.8% for NOx, 19.6% for SOx, 21.3% for PM10, 19.2% for PM2.5, 15.3% for ROGs, and 18.4% for CO2.

GHG emissions for the Less Intense Project Alternative are projected in Table V-12 below. At build out of this Alternative, the planning area will contribute approximately 0.668% of California's total carbon dioxide equivalent emissions limit for 2020 (427 million metric tons) as established by ARB, and represents 0.039% of the total emissions for the US (7,260.4 mmt) as estimated in year 2005. Using the currently available methods to quantify GHG emissions, the build out of the Less Intense Alternative will increase emissions over 1990 levels, resulting in a significant impact. Mitigation measures are included in Section III of this document. However, the reductions which these mitigation measures offer cannot be effectively quantified. Impacts associated with GHG emissions will therefore be significant and unavoidable.

**Table V-12**
**Annual GHG Summary**
**at Build Out of the Less Intense Project Alternative**

| Emission Source | CO2 Equivalent Metric Tons | CO2 Equivalent Million Metric Tons | Pounds Per Day |
|---|---|---|---|
| Electricity | 511,540.52 | 0.512 | 3,089,736.40 |
| Natural Gas | 437,738.41 | 0.438 | 2,643,967.08 |
| Moving Source | 1,901,750.44 | 1.902 | 11,486,690.39 |
| **Total** | **2,851,029.36** | **2.851** | **17,220,393.86** |

Although emissions can be mitigated to a certain degree, significant and unavoidable impacts to air quality, including greenhouse gas emissions, will occur as a result of development of the Less

Intense Project Alternative. Therefore, like the Preferred Alternative, Findings and a Statement of Overriding Considerations for emissions that cannot be reduced to levels below the MDAQMD thresholds would be required.

Annexation No. 2008-001

Table V-13 below, shows the projected emissions that will occur due to operation of all land uses within Annexation No. 2008-001 at build out of the Less Intense Project Alternative. With the implementation of mitigation measures, emissions of all criteria pollutants except for CO, NOx, and SOx can be reduced to levels that are less than significant. Findings and a Statement of Overriding Considerations for CO, NOx, and SOx emissions would be required.

**Table V-13**
**Projected Daily Air Quality Emissions within Annexation No. 2008-001**
**at General Plan Build Out of the Less Intense Project Alternative**
**(lbs./day)**

| | Stationary Source Emissions | | | Moving Source Emissions | Total Project Emissions | Threshold Criteria* |
|---|---|---|---|---|---|---|
| | Consumer Products | Power Plant | Natural Gas | All Vehicles | Lbs./Day | Lbs./Day |
| **CO** | - | 55 | 59 | 2,311 | **2,425** | **548** |
| **NOx** | - | 316 | 89 | 270 | **675** | **137** |
| **SOx** | - | 33 | 0.001 | 296 | **329** | **137** |
| **PM10** | - | 11 | 0.17 | 7 | **18** | **82** |
| **PM2.5** | - | - | 0.17 | 67 | **67** | **55** |
| **ROGs** | 32.49 | 2.7 | 6.7 | 45 | **86.49** | **137** |
| **CO2** | - | - | 110,350 | 761,564 | **761,564** | **N/A** |

*Threshold criteria offered by the Mojave Desert Air Quality Management District for determining the significance of air quality impacts. Source: "CEQA and Federal Conformity Guidelines," MDAQMD, June 2007 and Urbemis 2007 Version 9.2.4 default emissions.

GHG emissions within Annexation No. 2008-001, for the Less Intense Project Alternative are projected in Table V-14, below. At build out of the Less Intense Project Alternative, the annexation area will contribute approximately 0.039% of California's total carbon dioxide equivalent emissions limit as established by the ARB. The Less Intense Project Alternative represents 0.002% of the total emissions for the United States as estimated in year 2005.

**Table V-14**
**Annual GHG Summary within Annexation No. 2008-001**
**at Build Out of the Less Intense Project Alternative**

| Emission Source | CO2 Equivalent Metric Tons | CO2 Equivalent Million Metric Tons | Pounds Per Day |
|---|---|---|---|
| Electricity | 36,657.56 | 0.037 | 221,413.95 |
| Natural Gas | 18,375.90 | 0.018 | 110,991.55 |
| Moving Source | 111,696.91 | 0.112 | 674,656.25 |
| **Total** | **166,730.37** | **0.167** | **1,007,061.75** |

Significant and unavoidable impacts to CO, NOx, and SOx emissions, including greenhouse gas emissions, will occur as a result of development within Annexation No. 2008-001 of the Less Intense Project Alternative. Therefore, Findings and a Statement of Overriding Considerations for CO, NOx, and SOx emissions would be required.

Annexation No. 2008-002

Table V-15 below shows the projected emissions that will occur due to operation of all land uses within Annexation No. 2008-002 at build out of the Less Intense Project Alternative. Impacts to CO, NOx and SOx would exceed MDAQMD thresholds. Findings and a Statement of Overriding Considerations for emissions that cannot be reduced to levels below the MDAQMD thresholds would be required.

**Table V-15**
**Projected Daily Air Quality Emissions within Annexation No. 2008-002**
**at General Plan Build Out of the Less Intense Project Alternative**
**(lbs./day)**

| | Stationary Source Emissions | | | Moving Source Emissions | Total Project Emissions | Threshold Criteria* |
|---|---|---|---|---|---|---|
| | Consumer Products | Power Plant | Natural Gas | All Vehicles | Lbs./Day | Lbs./Day |
| **CO** | - | 38 | 102 | 1,250 | **1,390** | **548** |
| **NOx** | - | 217 | 121 | 146 | **484** | **137** |
| **SOx** | - | 23 | 0.001 | 160 | **183** | **137** |
| **PM10** | - | 7.5 | 0.2 | 4.0 | **12** | **82** |
| **PM2.5** | - | - | 0.2 | 36 | **36** | **55** |
| **ROGs** | - | 1.9 | 8.8 | 24 | **35** | **137** |
| **CO2** | - | - | 145,490 | 411,939 | **557,429** | **N/A** |

*Threshold criteria offered by the Mojave Desert Air Quality Management District for determining the significance of air quality impacts. Source: "CEQA and Federal Conformity Guidelines," MDAQMD, June 2007 and Urbemis 2007 Version 9.2.4 default emissions.

GHG emissions within Annexation No. 2008-002, for the Less Intense Project Alternative are projected in Table V-16 below. At build out of the Less Intense Project Alternative, the annexation area will contribute approximately 0.026% of California's total carbon dioxide equivalent emissions limit (427 mmt) as established by the ARB. The Less Intense Project Alternative represents 0.002% of the total emissions for the US (7,260.4 mmt) as estimated in year 2005.

**Table V-16**
**Annual GHG Summary within Annexation No. 2008-002**
**at Build Out of the Less Intense Project Alternative**

| Emission Source | CO2 Equivalent Metric Tons | CO2 Equivalent Million Metric Tons | Pounds Per Day |
|---|---|---|---|
| Electricity | 25,163.50 | 0.025 | 151,989.10 |
| Natural Gas | 24,227.54 | 0.024 | 146,335.86 |
| Moving Source | 60,418.09 | 0.060 | 364,929.00 |
| **Total** | **109,809.13** | **0.110** | **663,253.96** |

It is expected that regardless of mitigation measures, air quality emissions generated within Annexation 2008-002 will be significant for CO, NOx and SOx. Therefore, Findings and a Statement of Overriding Consideration for CO, NOx, SOx and associated GHGs would be required for Annexation No. 2008-002 under the Less Intense Project Alternative.

More Intense Alternative

The potential for air quality degradation in the Town of Apple Valley and region will increase with implementation of the More Intense Project Alternative. Similar to the Preferred Alternative, development of the More Intense Project Alternative is expected to interfere with the objectives of the Draft Ozone Attainment Plan, prepared by MDAQMD in 2008. This is because the land use plan for this Alternative increases residential densities, and commercial and industrial square footage compared to the land use plan that was utilized in preparing ozone concentration projections.

The More Intense Project Alternative will generate emissions for all criteria pollutants in concentrations that exceed the daily thresholds due to energy and natural gas usage and emissions from the operation of vehicles as seen in Table V-17 below.

**Table V-17**
**Projected Daily Air Quality Emissions**
**At General Plan Build Out of the More Intense Project Alternative**
**(lbs./day)**

| | Stationary Source Emissions | | | Moving Source Emissions | Total Project Emissions | Threshold Criteria* |
|---|---|---|---|---|---|---|
| | Consumer Products | Power Plant | Natural Gas | All Vehicles | Lbs./Day | Lbs./Day |
| **CO** | - | 1,040 | 1,626 | 45,714 | **48,379** | **548** |
| **NOx** | - | 5,978 | 2,503 | 5,335 | **13,815** | **137** |
| **SOx** | - | 624 | 0.026 | 145 | **769** | **137** |
| **PM10** | - | 208 | 4.64 | 1,321 | **1,534** | **82** |
| **PM2.5** | - | - | 4.64 | 882 | **886** | **55** |
| **ROGs** | 3,458 | 52 | 187 | 5,851 | **6,090** | **137** |
| **CO2** | - | - | 3,091,024 | 15,065,671 | **18,156,694** | **N/A** |

*Threshold criteria offered by the Mojave Desert Air Quality Management District for determining the significance of air quality impacts. Source: "CEQA and Federal Conformity Guidelines," MDAQMD, June 2007 and Urbemis 2007 Version 9.2.4 default emissions.

At build out of the More Intense Project Alternative all criteria thresholds for air quality emissions will be substantially exceeded. Compared to the Preferred Alternative total emissions for the More Intense Project Alternative are increased by 6.7% for CO, 4.8% for NOx, 6.8% for SOx, 5.6% for PM10, 7.0% for PM2.5, 4.2 % for ROGs, and 5.9% for CO2.

Certain air quality emissions also function as greenhouse gases (GHG) that contribute to global warming and climate change. GHG emissions for the More Intense Project Alternative are projected in Table V-18, below. At build out of the More Intense Project Alternative, the planning area will contribute approximately 0.800% of the total California carbon dioxide equivalent emissions limit for 2020 as established by the ARB. The No Project Alternative represents 0.047% of the total emissions for the United States as estimated in year 2005. Using the currently available methods to quantify GHG emissions, the build out of the More Intense Alternative will increase emissions over 1990 levels, resulting in a significant impact. Mitigation measures are included in Section III of this document. However, the reductions which these mitigation measures offer cannot be effectively quantified. Impacts associated with GHG emissions will therefore be significant and unavoidable.

**Table V-18**
**Annual GHG Summary**
**at Build Out of the More Intense Project Alternative**

| Emission Source | CO2 Equivalent Metric Tons | CO2 Equivalent Million Metric Tons | Pounds Per Day |
|---|---|---|---|
| Electricity | 693,372.56 | 0.693 | 4,188,013.20 |
| Natural Gas | 514,729.16 | 0.515 | 3,108,995.99 |
| Moving Source | 2,209,647.58 | 2.210 | 13,346,408.21 |
| **Total** | **3,417,749.30** | **3.418** | **20,643,417.41** |

Although emissions can be mitigated to a certain degree, significant and unavoidable impacts to air quality, including greenhouse gas emissions, will occur as a result of development of the More Intense Project Alternative. Therefore, like the Preferred Alternative, Findings and a Statement of Overriding Considerations for emission that cannot be reduced to levels below the MDAQMD thresholds would be required.

Annexation No. 2008-001

Table V-19 below, shows the projected emissions that will occur due to operation of all land uses within Annexation No. 2008-001 at build out of the More Intense Project Alternative. Even with the implementation of mitigation measures, all criteria pollutants except for PM10 will exceed threshold levels and result in significant impacts to air quality. Therefore, Findings and a Statement of Overriding Considerations for CO, NOx, SOx, PM10, and ROG emissions would be required.

**Table V-19**
**Projected Daily Air Quality Emissions within Annexation No. 2008-001**
**at General Plan Build Out of the More Intense Project Alternative**
**(lbs./day)**

| | Stationary Source Emissions | | | Moving Source Emissions | Total Project Emissions | Threshold Criteria* |
|---|---|---|---|---|---|---|
| | Consumer Products | Power Plant | Natural Gas | All Vehicles | Lbs./Day | Lbs./Day |
| **CO** | - | 161 | 78 | 6,513 | **6,752** | **548** |
| **NOx** | - | 926 | 129 | 760 | **1,815** | **137** |
| **SOx** | - | 97 | 0.001 | 834 | **930** | **137** |
| **PM10** | - | 32 | 0.24 | 21 | **53** | **82** |
| **PM2.5** | - | - | 0.24 | 188 | **189** | **55** |
| **ROGs** | 264.9 | 8.1 | 10 | 126 | **407.9** | **137** |
| **CO2** | - | - | 159,877 | 2,146,543 | **2,146,543** | **N/A** |

*Threshold criteria offered by the Mojave Desert Air Quality Management District for determining the significance of air quality impacts. Source: "CEQA and Federal Conformity Guidelines," MDAQMD, June 2007 and Urbemis 2007 Version 9.2.4 default emissions.

GHG emissions within Annexation No. 2008-001 for the More Intense Project Alternative are projected in Table V-20, below. At build out of the More Intense Project Alternative, the annexation area will contribute approximately 0.105% of California's carbon dioxide equivalent emissions limit for 2020 as established by ARB. The More Intense Alternative represents 0.006% of the total emissions for the United States as estimated in year 2005.

**Table V-20**
**Annual GHG Summary within Annexation No. 2008-001**
**at Build Out of the More Intense Project Alternative**

| Emission Source | CO2 Equivalent Metric Tons | CO2 Equivalent Million Metric Tons | Pounds Per Day |
|---|---|---|---|
| Electricity | 107,433.94 | 0.107 | 648,907.66 |
| Natural Gas | 26,623.23 | 0.027 | 160,805.96 |
| Moving Source | 314,828.52 | 0.315 | 1,901,583.76 |
| **Total** | **448,885.69** | **0.449** | **2,711,297.37** |

Although emissions can be mitigated to a certain degree, significant and unavoidable impacts to all criteria pollutants except for PM10, but including greenhouse gas emissions, will occur as a result of development within Annexation No. 2008-001, under the More Intense Project Alternative. Therefore, Findings and a Statement of Overriding Considerations for these emissions would be required.

Annexation No. 2008-002

Table V-21, below, shows the projected emissions that will occur due to operation of all land uses within Annexation No. 2008-002 at build out of the More Intense Project Alternative. Even with the implementation of mitigation measures it is likely that CO, NOx and Sox emission

levels will exceed established thresholds. Therefore, Findings and a Statement of Overriding Considerations for CO, NOx and SOx emissions would be required.

**Table V-21**
**Projected Daily Air Quality Emissions within Annexation No. 2008-002**
**at General Plan Build Out of the More Intense Project Alternative**

| | Stationary Source Emissions | | | Moving Source Emissions | Total Project Emissions | Threshold Criteria* |
|---|---|---|---|---|---|---|
| | Consumer Products | Power Plant | Natural Gas | All Vehicles | Lbs./Day | Lbs./Day |
| **CO** | - | 38 | 102 | 1,250 | **1,390** | **548** |
| **NOx** | - | 217 | 121 | 146 | **484** | **137** |
| **SOx** | - | 23 | 0.001 | 160 | **183** | **137** |
| **PM10** | - | 7.5 | 0.2 | 4.0 | **12** | **82** |
| **PM2.5** | - | - | 0.2 | 36 | **36** | **55** |
| **ROGs** | - | 1.9 | 8.8 | 24 | **35** | **137** |
| **CO2** | - | - | 145,490 | 411,939 | **557,429** | **N/A** |

*Threshold criteria offered by the Mojave Desert Air Quality Management District for determining the significance of air quality impacts. Source: "CEQA and Federal Conformity Guidelines," MDAQMD, June 2007 and Urbemis 2007 Version 9.2.4 default emissions.

GHG emissions within Annexation No. 2008-002 for the More Intense Project Alternative are projected in Table V-22, below. At build out of the More Intense Project Alternative, the annexation area will contribute approximately 0.026% of California's total carbon dioxide equivalent emissions limit for 2020, and approximately 0.002% of the total emissions for the United States as estimated in year 2005.

**Table V-22**
**Annual GHG Summary within Annexation No. 2008-002**
**At Build Out of the More Intense Project Alternative**

| Emission Source | CO2 Equivalent Metric Tons | CO2 Equivalent Million Metric Tons | Pounds Per Day |
|---|---|---|---|
| Electricity | 25,163.50 | 0.025 | 151,989.10 |
| Natural Gas | 24,227.54 | 0.024 | 146,335.86 |
| Moving Source | 60,418.09 | 0.060 | 364,929.00 |
| **Total** | **109,809.13** | **0.110** | **663,253.96** |

Although emissions can be mitigated to a certain degree, significant and unavoidable impacts to CO, NOx and SOx, including greenhouse gas emissions, will occur as a result of development within Annexation No. 2008-002, under the More Intense Project Alternative. Therefore, Findings and a Statement of Overriding Considerations for these emissions would be required.

**Summary**

The land use plan for the No Project Alternative was utilized in preparing ozone concentration projections for the Draft Ozone Attainment Plan, prepared by MDAQMD in 2008. The No Project Alternative is therefore not expected to interfere with objectives of the Draft Attainment

Plan, while the other alternatives will impact its implementation, as they are based on land use densities and intensities that exceed those used for the Draft Attainment Plan.

All of the alternatives, including the No Project Alternative, are expected to exceed daily thresholds established by the MDAQMD for all criteria pollutants for project operations at build out. Within the annexation areas, exceedances of some criteria pollutant emissions are anticipated at build out. In general these exceedances are highest for the Most Intense Alternative and lowest for the No Project Alternative. All of the alternatives will contribute to an increase in greenhouse gas emissions (GHG) that contribute to global warming and climate change.

The Town is participating in air quality and GHG-reduction efforts by adhering to or exceeding Title 24 building regulations that address energy efficiency, using active and passive solar design, including the use of LEED-certified building practices, and promoting the use of solar for water and space heating, and is taking a proactive role in enhancing commuter services, ride share programs, and encouraging the use of hybrid, electric, or alternative fuel vehicles.

Air quality impacts will be reduced to the greatest extent feasible for any of the alternatives by means of mitigation measures set forth in Section III-C. Where air quality impacts cannot be reduced to levels below the MDAQMD thresholds with mitigation, Findings and a Statement of Overriding Considerations will have to be prepared under all alternatives.

**Biological Resources**

No Project Alternative
Impacts to Biological Resources as a result of development of the No Project Alternative are comparable to those impacts described in Section III-D of this EIR. Development of the No Project Alternative would result in removal of habitat, increase habitat fragmentation, and introduce domestic pets, which are predators of birds, lizards, and rodents. The No Project Alternative would result in nearly 14% fewer dwelling units and residents than the Preferred Alternative, which could reduce impacts from domestic animals and use of open space areas compared to the Preferred Alternative. The No Project Alternative and the Preferred Alternative are comparable with regard to allocation of Open Space lands.

More Intense Alternative
Development of the More Intense Alternative is projected to result in a level of impacts to biological resources that is comparable to those anticipated under the Preferred Alternative. At project build out, construction activities, development, and operation would result in fragmentation, impacts to open space areas, removal of habitat, and an increase in human population and associated domestic pets, which prey on birds, lizards, and rodents. The number of acres designated for Open Space is the same as for the Preferred Alternative.

Less Intense Alternative
Impacts to Biological Resources as a result of development of the Less Intense Alternative are projected to be comparable to those expected for the Preferred Alternative. Development of the Less Intense Alternative would result in removal of habitat, habitat fragmentation, impacts to open space areas, and would introduce domestic pets, which are predators of birds, lizards, and

rodents. The Less Intense Alternative would result in nearly 14% less dwelling units and residents, which could reduce impacts from domestic animals and use of open space areas compared to the Preferred Alternative. The same number of acres are designated for Open Space uses under both alternatives.

In the overall, increased development and associated human and domestic pet populations will occur under all alternatives, although to a slightly lesser extent under the No Project and Less Intense Alternatives. Nonetheless, impacts to Biological Resources under any alternative are expected to be reduced to less than significant levels with the implementation of mitigation measures set forth in Section III-D.

**Cultural Resources**

As described in the Section III-E, Cultural Resources, although the Town of Apple Valley is a relatively "new" community, there is evidence that both prehistoric and historic cultural resources exist within the western, northern and southern portions of the planning area, as well as within a centrally located corridor.

Impacts to cultural resources within the planning area are expected to be comparable under the Preferred Alternative, the No Project Alternative, the Less Intense Alternative and the More Intense Alternative. While the intensity of development varies with each alternative, the patterns of urban development and the lands to be impacted are similar.

Annexation No. 2008-001 and much of Annexation No. 2008-002 are located within areas identified as highly sensitive for archaeological resources. Therefore, build out of these areas under each of the project alternatives has potential to result in disturbance to such resources. The potential exists for additional sites and resources to be discovered during future development of previously undeveloped and unsurveyed lands throughout the planning area, and this is true for any of the development scenarios.

State and federal regulations regarding the identification and protection of cultural resources will remain the same, as well as Mitigation Measures set forth in Section III-E, which will be applicable regardless of which land use scenario is implemented. With the implementation of these measures, impacts to cultural resources are expected to be reduced to less than significant levels.

**Geology and Soils**

<u>No Project Alternative</u>
Build out of the No Project Alternative would result in fewer people, structures, and facilities that would be susceptible to potential hazards associated with a seismic event. Compared to the Preferred Alternative, the No Project Alternative would result in nearly 18% fewer residences and people that would have the potential to be exposed to seismic events. Similarly, the extent of commercial development in square feet, and the associated risk of exposure to seismic events for the No Project Alternative are reduced by approximately 45% as compared to the Preferred Alternative. Development of industrial land uses at build out of the No Project Alternative would

be approximately 30% less as compared to the Preferred Alternative, thereby exposing fewer industrial operations to a potential seismic event and associated hazards.

Land disturbances and impacts to soils under the No Project Alternative are comparable to the Preferred Alternative since the overall acreage impacted at build out are equivalent. Therefore, projected impacts to soils under the No Project Alternative are comparable to the Preferred Alternative.

More Intense Alternative

The More Intense Alternative would result in similar impacts to geology and soils as the Preferred Alternative. As compared to the Preferred Alternative, the More Intense Alternative would result in slightly more residences (an increase of about 4%), which would proportionally increase the population that would have the potential to be exposed to hazards associated with seismic events. Similarly, the extent of commercial development in square feet are approximately 14% more than that proposed under the Preferred Alternative, and exposure of structures and workers to risk of seismic hazards is expected to be increase proportionally. Approximately 13% less industrial development would occur under the More Intense Alternative than under the Preferred Alternative, thereby reducing the potential risk to industrial operations from seismic events and associated hazards.

The level of land use development and resulting exposure of persons and structures to seismic hazards is comparable for the More Intense Alternative and the Preferred Alternative. The most notable differences between these two alternatives are for commercial development, which is higher and therefore results in more exposure to risk under the More Intense Alternative, and industrial development, which is lower under the More Intense Alternative.

Residential, commercial, and industrial development under the More Intense Alternative would result in comparable land disturbance and impacts to soils as with the Preferred Alternative. Overall, the No Project Alternative results in the lowest level of exposure of persons and structures to hazards associated with seismic hazards, followed by the Less Intense Alternative. Mitigation measures set forth in Section III-F would apply to any development scenario, and are expected to reduce potential impacts to less than significant levels in any case.

Less Intense Alternative

Under this alternative approximately 10% fewer residential units would be developed as compared to the Preferred Alternative, and therefore this alternative would result in a proportional decrease in the potential impacts to structures and residents were a seismic event to occur. Commercial development will be reduced by approximately 30% from the Preferred Alternative, and industrial uses will occupy 13% less square footage, thereby reducing the total number of commercial and industrial structures and workers that could be impacted as result of a seismic event.

The total acreage of land that will be disturbed including impacts to surface soils as a result of development of the Less Intense Alternative is comparable to the Preferred Alternative in that overall the same acreage of land will be disturbed and developed at build out.

**Hazardous and Toxic Materials**

No Project Alternative

Under the No Project Alternative, build out of the planning area will result in fewer residents, structures, and commercial and industrial establishments than under the Preferred Alternative. The No Project alternative will result in approximately 18% fewer residences in comparison to the Preferred Alternative, while commercial development will be reduced by 45% and industrial land uses will be approximately 30% less than the Preferred Alternative. The No Project Alternative will therefore generate a lower volume of universal and industrial hazardous wastes, and expose fewer people to hazards associated with the potential transport of hazardous and toxic substances along U.S. Interstate-15 and the rail lines within the planning area than would the Preferred Alternative.

Under the No Project Alternative Annexation No. 2008-001 will result in the development of residential and commercial development but no industrial development. In Annexation No. 2008-002, in addition to a limited amount of residential development, the No Project Alternative proposes industrial uses equating to approximately 40% of that proposed under the Preferred Alternative, and these uses have the potential to generate, use, store and dispose of hazardous and toxic materials. Due to the presence of a residential population in this annexation area in this alternative, there will be increased risk of exposure to hazardous waste and materials.

More Intense Alternative

This alternative is expected to result in the generation of a comparable, albeit slightly larger, volume of household and other universal hazardous wastes than under the Preferred Alternative. Commercial development under the More Intense Alternative will be about 14% greater than that proposed under the Preferred Alternative, increasing the potential for risks associated with hazardous and toxic materials. Development of industrial land uses at build out would be approximately 13% less than that of the Preferred Alternative, and is expected to result in a corresponding decrease in the amount of hazardous substances in storage and exposure of fewer people to worker safety risks from both physical and chemical hazards.

Implementation of the More Intense Alternative in Annexation No. 2008-001 will result in about 15% more residents than the Preferred Alternative, which would expose slightly more people to risk from potential hazardous/toxic materials releases along I-15 and within the planning area itself. As in the rest of the planning area, the More Intense Alternative in Annexation No. 2008-001 would also result in a greater amount of hazardous substances in storage and would generate slightly elevated levels of hazardous materials compared to the Preferred Alternative.

Annexation No. 2008-002 will facilitate the development of the same level of industrial land uses as would the Preferred Alternative, and no residential or commercial development. Therefore, the level of hazardous waste generation and storage will be virtually the same as that under the Preferred Alternative.

Less Intense Alternative

Under the Less Intense Alternative, impacts from the generation and storage of hazardous materials and waste are expected to be somewhat less than the Preferred Alternative since the

Less Intense Alternative will facilitate development of 10% fewer residential units, approximately 30% less commercial development, and approximately 13% less industrial development as under the Preferred Alternative.

In Annexation No. 2008-001 the Less Intense Alternative would result in approximately 55% fewer dwelling units and approximately 30% less commercial development than under the Preferred Alternative. Therefore, associated impacts from the generation and storage of hazardous materials and waste in the Less Intense Alternative in are expected to be correspondingly reduced.

Industrial development under the Less Intense Alternative for Annexation No. 2008-002 will be the same as that of the Preferred Alternative, and no residential or commercial development is planned.

As discussed in Section III-G, the use, storage, and transportation of hazardous materials is regulated by various County, federal and state regulations and programs. Under all development scenarios, potential impacts from the risk of exposure to hazardous materials are expected to be less than significant with the implementation of mitigation measures set forth in Section III-G.

**Hydrology**

The Town of Apple Valley is located within a low desert basin and experiences very low mean annual rainfall, due to extreme aridity and remoteness from maritime influences. However, the region is subject to sporadic and often severe thunderstorms that can rapidly saturate sandy surfaces, resulting in reduced infiltration and increased rapid runoffs.

The Town has historically been subject to flooding and associated hazards during severe year-round storm events. Although a large portion of Apple Valley has not yet been studied by FEMA, there are areas of Apple Valley and its Sphere of Influence which lie within the 100-year and 500-year floodplains, as indicated on the Flood Rate Insurance Maps published by FEMA. These areas occur along the Mojave River, the Desert Knolls Wash, and within the Apple Valley Dry Lake. Much of the planning area is underlain by alluvial fans and is traversed by a number of natural drainages on which structures have been constructed. Although outside FEMA-mapped flood plains, these areas may also be subject to flooding during storm events. Neither of the annexation areas occur within 100- or 500-year floodplains, but as discussed in Section III-H, both are crossed by natural drainages.

Development associated with each land use alternative will result in an increase in impervious surfaces and associated runoff, and each will therefore have the potential to alter or obstruct existing drainage patterns. The More Intense Alternative would generate the greatest amount of runoff, flooding potential, and sedimentation, a result of this alternative's more intense land use patterns and an increase in impervious surfaces. Development under the More Intense Alternative for Annexation No. 2008-01 and Annexation No. 2008-02 will be similar to the same as that of the Preferred Alternative.

The proposed General Plan utilizes land-planning strategies to limit flood hazards. Updates to

both the Apple Valley Master Plan of Drainage and the West/Desert Knolls Master Plan of Drainage are currently being drafted, and are anticipated to be completed by the year 2011. In addition to existing drainage facilities, the construction of additional flood control structures and systems are expected to manage runoff. With the implementation of mitigation measures as set forth in Section III-H, implementation of any of the four alternatives is expected to have no substantial impact on flooding and hydrology.

**Water Quality and Resources**

The Town of Apple Valley and the proposed annexation areas are underlain by the Mojave River Groundwater Basin. The Mojave Water Agency (MWA) is responsible for managing domestic water supplies that are extracted from subareas within the Basin. The planning area is located within the boundaries of the Alto Subarea, which serves as the primary source of domestic water in the planning area. MWA supplies water for distribution throughout the planning area to several water purveyors, which are listed in Section III-I of this EIR. Of the water purveyors serving the General Plan area, Apple Valley Ranchos Water Company (AVRWC) supplies domestic water to approximately 80% of the planning area.

As discussed in Section III-I, the Basin, including the Alto Subarea, is in a state of overdraft. MWA is subject to a court-approved mechanism, the Mojave Basin Adjudication ("Adjudication") to ensure availability of water supplies in the Basin. The Adjudication provides for MWA to obtain supplemental water to recharge the Basin. As part of its management of water supplies in the Basin, MWA imports State Water Project (SWP) water and also participates in conjunctive water use, or banking, with the Metropolitan Water District (MWD) of Southern California. Water conservation and water-efficient technologies are important aspects of MWA's water management plans.

A variety of factors are discussed in Section III-I and used to calculate future water demand for development in the planning area under the Preferred Alternative. Based on these factors, at General Plan build out the Preferred Alternative is expected to consume approximately 95,999.8 acre-feet per year, of which approximately 7,777.9 acre-feet would be used within the proposed annexation areas.

The factors utilized to calculate future water demand for the Preferred Alternative have been used here to calculate future water demand for each of the project alternatives. For each alternative, estimated water demand is shown first for the entire planning area, and then break-out tables showing the annexation areas are presented.

No Project Alternative

**Table V-23**
**Estimated Future Water Service Demands at General Plan Build Out**
**No Project Alternative**

| | Units | Demand Factor [1, 2, 3, 4] | Demand |
|---|---|---|---|
| **Land Use** | **No. of Persons** | **Gallons Per Capita Per Day (GPCPD)** | **Ac-ft/Yr** |
| Residential | 160,517 | 208.8 | 37,381.8 |
| | **AC** | **Ac-Ft/Ac/Year** | **Ac-ft/Yr** |
| Commercial | 9,251 | 1.98 | 18,316.4 |
| Industrial | 419 | 1.61 | 674.0 |
| Other Uses | 7,929 | 2.88 | 22,836.9 |
| | | **Non-Residential Subtotal** | **41,827.3** |
| | | **TOTAL GP BUILD OUT** | **79,209.1** |

[1]Residential factor from AVRWC based on historical consumption for residential uses.

[2]Commercial factors based on CVWD (2004) factor for Retail Shopping Areas, assuming 35% return flow. Commercial acreage includes Mixed Use and SP/Commercial.

[3]Industrial factor based on CVWD (2004) factor for Commercial and Industrial parks, based on 35% return flow. Industrial acreage does not include SP/Industrial since that is counted under SP/Commercial, above.

[4]Other uses factor based on CVWD (2004) average of factors for Golf course developments, public schools, self-storage facilities assuming 5% return flow.

Source: Terra Nova staff estimates based on historical consumption factors for residential uses from AVRWC UWMP 2005; industrial, commercial and other uses factors from Water System Backup Facilities Charge Study, prepared by Engineering Dept, Coachella Valley Water District, Sept 2004.

## Table V-24
## Estimated Water Demand at Build Out of Proposed Annexation Areas
## No Project Alternative

**Annexation Area 2008-001**

| | Units | Demand Factor[1, 2, 3, 4] | Demand |
|---|---|---|---|
| **Land Use** | **No. of Persons** | **Gallons Per Capita Per Day (GPCPD)** | **Ac-ft/Yr** |
| Residential | 6,461 | 208.00 | 1,504.6 |
| | **AC** | **Ac-Ft/Ac/Year** | **Ac-ft/Yr** |
| Commercial | 8 | 1.98 | 15.7 |
| Industrial | 0 | 1.61 | 0 |
| Other Uses | 193 | 2.88 | 555.7 |
| | | **Subtotal Non-Residential** | **571.4** |
| | | **TOTAL ANNEXATION AREA 2008-001** | **2,076.0** |

**Annexation Area 2008-002**

| | Units | Demand Factor[1, 2, 3, 4] | Demand |
|---|---|---|---|
| **Land Use** | **No. of Persons** | **Gallons Per Capita Per Day (GPCPD)** | **Ac-ft/Yr** |
| Residential | 1,244 | 208.0 | 289.6 |
| | **AC** | **Ac-Ft/Ac/Year** | **Ac-ft/Yr** |
| Commercial | 0 | 1.98 | 0 |
| Industrial | 324 | 1.61 | 521.0 |
| Other Uses | 4 | 2.88 | 11.9 |
| | | **Subtotal Non-Residential** | **532.9** |
| | | **TOTAL ANNEXATION AREA 2008-002** | **822.5** |
| | | **TOTAL ANNEXATION AREAS 2008-001 & 2008-002** | **2,898.5** |

[1]Residential factor from AVRWC based on historical consumption for residential uses.

[2]Commercial factors based on CVWD (2004) factor for Retail Shopping Areas, assuming 35% return flow. Commercial acreage includes Mixed Use and SP/Commercial.

[3]Industrial factor based on CVWD (2004) factor for Commercial and Industrial parks, based on 35% return flow. Industrial acreage does not include SP/Industrial since that is counted under SP/Commercial, above.

[4]Other uses factor based on CVWD (2004) average of factors for Golf course developments, public schools, self-storage facilities assuming 5% return flow.

Source: Terra Nova staff estimates based on historical consumption factors for residential uses from AVRWC UWMP 2005; industrial, commercial and other uses factors from Water System Backup Facilities Charge Study, prepared by Engineering Dept, Coachella Valley Water District, Sept 2004.

More Intense Development Scenario

**Table V-25**
**Estimated Future Water Service Demands at General Plan Build Out**
**Alternative I: More Intense Alternative**

| | Units | Demand Factor [1, 2, 3, 4] | Demand |
|---|---|---|---|
| **Land Use** | **No. of Persons** | **Gallons Per Capita Per Day (GPCPD)** | **Ac-ft/Yr** |
| Residential | 202,217 | 208.00 | 47,093.0 |
| | **AC** | **Ac-Ft/Ac/Year** | **Ac-ft/Yr** |
| Commercial | 12,857 | 1.98 | 25,457.8 |
| Industrial | 1,447 | 1.61 | 2,329.5 |
| Other Uses | 8,115 | 2.88 | 23,371.8 |
| | | **Non-Residential Subtotal** | **51,159.1** |
| | | **TOTAL GP BUILD OUT** | **98,252.1** |

[1]Residential factor from AVRWC based on historical consumption for residential uses.

[2]Commercial factors based on CVWD (2004) factor for Retail Shopping Areas, assuming 35% return flow. Commercial acreage includes Mixed Use and SP/Commercial.

[3]Industrial factor based on CVWD (2004) factor for Commercial and Industrial parks, based on 35% return flow. Industrial acreage does not include SP/Industrial since that is counted under SP/Commercial, above.

[4]Other uses factor based on CVWD (2004) average of factors for Golf course developments, public schools, self-storage facilities assuming 5% return flow.

Source: Terra Nova staff estimates based on historical consumption factors for residential uses from AVRWC UWMP 2005; industrial, commercial and other uses factors from Water System Backup Facilities Charge Study, prepared by Engineering Dept, Coachella Valley Water District, Sept 2004.

## Table V-26
## Estimated Water Demand at Build Out of Proposed Annexation Areas
## Alternative I: More Intense Alternative

**Annexation Area 2008-001**

| | Units | Demand Factor[1, 2, 3, 4] | Demand |
|---|---|---|---|
| **Land Use** | **No. of Persons** | **Gallons Per Capita Per Day (GPCPD)** | **Ac-ft/Yr** |
| Residential | 15,493 | 208.00 | 3,608.1 |
| | **AC** | **Ac-Ft/Ac/Year** | **Ac-ft/Yr** |
| Commercial | 1,586 | 1.98 | 3,141.1 |
| Industrial | 0 | 1.61 | 0 |
| Other Uses | 195 | 2.88 | 561.4 |
| | | **Subtotal Non-Residential** | **3,702.5** |
| | | **TOTAL ANNEXATION AREA 2008-001** | **7,310.7** |

**Annexation Area 2008-002**

| | Units | Demand Factor[1, 2, 3, 4] | Demand |
|---|---|---|---|
| **Land Use** | **No. of Persons** | **Gallons Per Capita Per Day (GPCPD)** | **Ac-ft/Yr** |
| Residential | 0 | 208.0 | 0 |
| | **AC** | **Ac-Ft/Ac/Year** | **Ac-ft/Yr** |
| Commercial | 0 | 1.98 | 0 |
| Industrial | 802 | 1.61 | 1,290.7 |
| Other Uses | 4 | 2.88 | 11.8 |
| | | **Subtotal Non-Residential** | **1302.6** |
| | | **TOTAL ANNEXATION AREA 2008-002** | **1,302.6** |
| | | **TOTAL ANNEXATION AREAS 2008-001 & 2008-002** | **8,613.2** |

[1]Residential factor from AVRWC based on historical consumption for residential uses.

[2]Commercial factors based on CVWD (2004) factor for Retail Shopping Areas, assuming 35% return flow. Commercial acreage includes Mixed Use and SP/Commercial.

[3]Industrial factor based on CVWD (2004) factor for Commercial and Industrial parks, based on 35% return flow. Industrial acreage does not include SP/Industrial since that is counted under SP/Commercial, above.

[4]Other uses factor based on CVWD (2004) average of factors for Golf course developments, public schools, self-storage facilities assuming 5% return flow.

Source: Terra Nova staff estimates based on historical consumption factors for residential uses from AVRWC UWMP 2005; industrial, commercial and other uses factors from Water System Backup Facilities Charge Study, prepared by Engineering Dept, Coachella Valley Water District, Sept 2004.

Less Intense Alternative

**Table V-27**
**Estimated Future Water Service Demands at General Plan Build Out**
**Alternative II: Less Intense**

| | Units | Demand Factor [1, 2, 3, 4] | Demand |
|---|---|---|---|
| **Land Use** | **No. of Persons** | **Gallons Per Capita Per Day (GPCPD)** | **Ac-ft/Yr** |
| Residential | 167,068 | 208.00 | 38,907.4 |
| | **AC** | **Ac-Ft/Ac/Year** | **Ac-ft/Yr** |
| Commercial | 10,388 | 1.98 | 20,567.5 |
| Industrial | 1,447 | 1.61 | 2,329.5 |
| Other Uses | 8,052 | 2.88 | 23,189.9 |
| | | **Non-Residential Subtotal** | **46,087.0** |
| | | **TOTAL GP BUILD OUT** | **84,994.4** |

[1]Residential factor from AVRWC based on historical consumption for residential uses.

[2]Commercial factors based on CVWD (2004) factor for Retail Shopping Areas, assuming 35% return flow. Commercial acreage includes Mixed Use and SP/Commercial.

[3]Industrial factor based on CVWD (2004) factor for Commercial and Industrial parks, based on 35% return flow. Industrial acreage does not include SP/Industrial since that is counted under SP/Commercial, above.

[4]Other uses factor based on CVWD (2004) average of factors for Golf course developments, public schools, self-storage facilities assuming 5% return flow.

Source: Terra Nova staff estimates based on historical consumption factors for residential uses from AVRWC UWMP 2005; industrial, commercial and other uses factors from Water System Backup Facilities Charge Study, prepared by Engineering Dept, Coachella Valley Water District, Sept 2004.

## Table V-28
## Estimated Water Demand at Build Out of Proposed Annexation Areas
## Alternative II: Less Intense

**Annexation Area 2008-001**

| | Units | Demand Factor[1, 2, 3, 4] | Demand |
|---|---|---|---|
| **Land Use** | **No. of Persons** | **Gallons Per Capita Per Day (GPCPD)** | **Ac-ft/Yr** |
| Residential | 5,937 | 208.00 | 1,382.6 |
| | **AC** | **Ac-Ft/Ac/Year** | **Ac-ft/Yr** |
| Commercial | 525 | 1.98 | 1,038.9 |
| Industrial | 0 | 1.61 | 0 |
| Other Uses | 195 | 2.88 | 561.43 |
| | | **Subtotal Non-Residential** | **1,600.4** |
| | | **TOTAL ANNEXATION AREA 2008-001** | **2,982.9** |

**Annexation Area 2008-002**

| | Units | Demand Factor[1, 2, 3, 4] | Demand |
|---|---|---|---|
| **Land Use** | **No. of Persons** | **Gallons Per Capita Per Day (GPCPD)** | **Ac-ft/Yr** |
| Residential | 0 | 208.0 | 0 |
| | **AC** | **Ac-Ft/Ac/Year** | **Ac-ft/Yr** |
| Commercial | 0 | 1.98 | 0 |
| Industrial | 802 | 1.61 | 1,290.7 |
| Other Uses | 4 | 2.88 | 11.8 |
| | | **Subtotal Non-Residential** | **1,302.5** |
| | | **TOTAL ANNEXATION AREA 2008-002** | **1,302.5** |
| | | **TOTAL ANNEXATION AREAS 2008-001 & 2008-002** | **4,285.5** |

[1]Residential factor from AVRWC based on historical consumption for residential uses.

[2]Commercial factors based on CVWD (2004) factor for Retail Shopping Areas, assuming 35% return flow. Commercial acreage includes Mixed Use and SP/Commercial.

[3]Industrial factor based on CVWD (2004) factor for Commercial and Industrial parks, based on 35% return flow. Industrial acreage does not include SP/Industrial since that is counted under SP/Commercial, above.

[4]Other uses factor based on CVWD (2004) average of factors for Golf course developments, public schools, self-storage facilities assuming 5% return flow.

Source: Terra Nova staff estimates based on historical consumption factors for residential uses from AVRWC UWMP 2005; industrial, commercial and other uses factors from Water System Backup Facilities Charge Study, prepared by Engineering Dept, Coachella Valley Water District, Sept 2004.

**Summary**
Based on the tables above, the No Project Alternative is expected to result in the lowest water demand, approximately 18% less than the Preferred Alternative. The More Intense Alternative will result in the greatest water demand, approximately 2% more than the Preferred Alternative, while the Less Intense Alternative will result in approximately 12% less demand than the Preferred Alternative. The No Project is therefore the least impacting on water resources. The Preferred and More Intense Alternatives are generally similar based on a comparison of water demand for these two scenarios.

The mitigation measures set forth in Section III-I will be applicable to any of the development scenarios, and are expected to reduce potential impacts to water resources to less than significant levels. As discussed in Section III, AVRWC, which supplies water to approximately 80% of the planning area, has indicated it has sufficient water supplies through year 2025.

Regardless of which scenario is implemented, development within the planning area will be subject to water conservation measures set forth by the Town, and MWA. AVWRC and all water purveyors serving the planning area will continue to encourage water conservation. In future, VVWRA has plans to construct facilities to deliver reclaimed water for irrigation within the Town, thus reducing the use of potable water for this use. Efficient irrigation systems and drought-tolerant landscaping, use of water-conserving appliances in new development and where feasible, retrofitting existing development, are expected to continue to reduce the direct demand for groundwater.

Water Quality
Implementation of any of the project alternatives has potential to result in adverse impacts to water quality. The generation of water pollutants that will degrade water quality in the General Plan and annexation areas is closely associated with development type and intensities such as those proposed under the alternatives. Each project alternative will facilitate development of paved surfaces such as roadways, sidewalks and parking lots. Such development collects and transports runoff that may carry water pollutants and result in contamination of groundwater as pollutants enter natural underground aquifers. The Town will continue to review proposed projects in terms of their potential to degrade water quality, and to meet the requirements of the National Pollutant Discharge Elimination System (NPDES), regardless of which alternative is implemented. New development shall be required to comply with the Town's Sewer Connection Policy, which requires connection to existing sewer facilities where feasible and based on certain development parameters.

Mitigation measures to reduce potential adverse impacts to water quality and resources as set forth in Section III-I will be required of any of the development scenarios.

## Land Use, Population and Housing

No Project Alternative

The No Project Alternative would result in no changes in development patterns, as the existing General Plan would continue to be implemented. Under this alternative, the Town and annexation areas would have a build out population of 160,517, which represents a reduction of 18% from the Preferred Alternative. This alternative would also result in 11,231 fewer residential units, a 45% reduction in commercial space, and a 30% reduction in industrial space throughout the planning area. The land use pattern under the No Project Alternative is not significantly different from that proposed under the Preferred Alternative, insofar as commercial land uses are located on major roadways, residential land uses are distributed primarily south of Highway 18, and industrial land uses are located north of Waalew Road.

The most substantial difference in land use patterns under the No Project Alternative would occur in Annexation 2008-001. Under this alternative, the annexation area would develop in the Rural Living land use designation, and would result in single family homes on lots ranging from 1 to 5 acres, with the exception of a neighborhood shopping center located on Dale Evans Parkway. The current character of the area would change, insofar as development is currently extremely sparse, and build out would result in about 2,400 homes, but this change would not be significant, especially when compared to the Preferred Alternative. Under this alternative, impacts associated with land use would be reduced to less than significant levels, whereas under the Preferred Alternative, impacts were found to be significant and unavoidable in Annexation 2008-001.

In Annexation 2008-002, impacts associated with land use, population and housing would be about the same under the No Project Alternative, as the land uses in this area would be primarily industrial under either alternative. Under the No Project Alternative, a small area of residential development would occur in the southern portion of the annexation area, but the development pattern would be consistent with the Preferred Alternative.

More Intense Alternative

Under the More Intense Alternative, the planning area as a whole would have 2,588 more residences; 6,753,146 square feet more commercial space; and 7,246907 square feet less industrial space. This alternative would somewhat intensify residential and commercial land uses, and reduce industrial land uses, particularly in Annexation 2008-001, where industrially designated lands would instead be developed in commercial land uses. Within the Town limits, the land use pattern would be expected to be similar to the Preferred Alternative, and the increase in residential units and commercial space, and decrease in industrial space, would not significantly affect population and housing. The land use pattern in this alternative would improve the jobs/housing balance in a manner similar to that of the Preferred Alternative, insofar as it would provide a greater variety of employment opportunities for the Town's residents, and would likely reduce the need to commute to work.

As with the Preferred Alternative, the More Intense Alternative will significantly impact Annexation 2008-001 in terms of land use, population and housing. The intensity of development under this alternative is similar to that proposed under the Preferred Alternative, and would represent a change in character which could not be mitigated. Under this alternative, impacts associated with land use, population and housing would remain significant and unavoidable.

The More Intense Alternative will have similar land use impacts as the Preferred Alternative in Annexation 2008-002, since the land use pattern under both alternatives would be similar, and would result in industrial development. Impacts under the More Intense Alternative in this area would be equivalent to the Preferred Alternative, and would be less than significant.

Less Intense Alternative

The Less Intense Alternative will have land use, population and housing impacts similar to those described under the No Project Alternative. The intensity of development would be somewhat reduced from the Preferred Alternative, but the development patters within the Town and Annexation 2008-002 would be similar to both the No Project and Preferred alternatives. This alternative would result in a total of 54,678 residential units, and a build out population of 167,068. There would be 16,129,940 fewer square feet of commercial space under this alternative, and 7,246,191 fewer square feet of industrial space. The primary reductions would occur in the Annexation 2008-001 area.

In Annexation 2008-001, the majority of the land would remain in residential land uses, of a density consistent with the existing County densities. Lands in the northwestern portion of the annexation area would be developed in commercial and office commercial land uses, in the area closest to the I-15 interchange at Dale Evans Parkway. This alternative would reduce the land use, population and housing impacts in Annexation 2008-001 to less than significant levels, insofar as the development pattern would be substantially similar to that currently envisioned by the County.

The land use designation in Annexation 2008-002 would be the same as under the Preferred Alternative, and would result in industrial development in either scenario. Therefore, impacts to this annexation area under the Less Intense Alternative would be equivalent to the Preferred Alternative.

**Mineral Resources**

As described in the Mineral Resources Element of Section III-M, significant deposits of aggregate resources are located within the planning area. The resources include sand, gravel and stone deposits that are suitable as sources of concrete aggregate.

Under the Preferred Alternative, compatible land uses have been designated for areas adjacent to mineral resource extraction activities. Mitigation measures are set forth in Section III-M, including monitoring of these operations, to ensure that their continued use will not adversely affect other land uses in the planning area.

While the intensity of development varies with the No Project Alternative, the More Intense Alternative and the Less Intense Alternative, the patterns of urban development and the lands to be impacted by mineral resources operations are essentially the same under each development scenario, and are generally consistent with those proposed under the Preferred Alternative. Therefore, impacts associated with implementation of any of the four alternatives are expected to be similar with regard to the availability and use of mineral resources.

Federal and state regulations, as well as policies set forth in the General Plan and mitigation measures included in Section III-M of this EIR are intended to offset any potentially adverse impacts resulting from mineral resource extraction operations. These will apply regardless of which land use scenario is implemented. Therefore, the potential impacts on mineral resource operations associated with each of the four alternatives are expected to be comparable to one another.

## Noise

As discussed in Section III-L, a comprehensive noise impact study was prepared to analyze potential noise impacts associated with build out of the Preferred Alternative, and to assess the relative noise impacts of each of the other development scenarios. The entire report is included in Appendix E of this EIR. The following table summarizes the results. The study analyzed roadway links in the planning area, and projected CNEL noise levels at 100 feet from the roadway centerline for each project alternative.

**Table V-29**
**Projected General Plan Build Out Noise Levels**
**Generated by Each Project Alternative**

| | | CNEL AT 100 FEET (dBA)[2, 3] | | | |
|---|---|---|---|---|---|
| **Roadway** | **Segment[1]** | **Preferred** | **No Project** | **More Intense** | **Less Intense** |
| **Alembic Street** | between Norco Street & Saugus Road | 72.6 | 71.6 | 72.9 | 69.9 |
| | between Saugus Road & Stoddard Wells Road | 73.1 | 68.1 | 73.6 | 70.2 |
| | n/o High Desert Corridor | 75.3 | 73.7 | 75.5 | 73.5 |
| | s/o High Desert Corridor | 73.2 | 69.7 | 73.3 | 72.3 |
| **Apple Valley Road** | between Bear Valley Road & Tussing Ranch Road | 71.8 | 71.1 | 71.8 | 71.3 |
| | between Sitting Bull Road & Bear Valley Road | 73.9 | 72.7 | 73.9 | 72.8 |
| | between SR-18 & Yucca Loma Road | 71.3 | 70.4 | 71.3 | 70.5 |
| | between Yucca Loma Road & Sitting Bull Road | 73.5 | 72.5 | 73.4 | 72.7 |
| | n/o SR-18 | 69.4 | 69.2 | 69.4 | 70.0 |
| **Bear Valley Road** | between Apple Valley Road & Deep Creek Road | 74.3 | 73.2 | 74.0 | 73.0 |
| | between Central Road & SR-18 | 69.7 | 67.6 | 69.3 | 67.3 |
| | between Deep Creek Road & Kiowa Road | 74.1 | 73.2 | 73.8 | 73.1 |
| | between Kiowa Road & Navajo Road | 72.8 | 72.0 | 72.7 | 71.9 |
| | between Navajo Road & Central Road | 71.6 | 69.7 | 71.3 | 69.7 |

**Table V-29**
**Projected General Plan Build Out Noise Levels**
**Generated by Each Project Alternative**

| | | CNEL AT 100 FEET (dBA)[2, 3] | | | |
|---|---|---|---|---|---|
| **Roadway** | **Segment[1]** | **Preferred** | **No Project** | **More Intense** | **Less Intense** |
| **Bear Valley Road (cont)** | w/o Apple Valley Road | 75.2 | 75.0 | 75.1 | 74.8 |
| **Central Road** | between Bear Valley Road & Tussing Ranch Road | 68.9 | 67.8 | 68.9 | 68.4 |
| | between Nisqually Road & Bear Valley Road | 71.4 | 69.4 | 71.3 | 70.1 |
| | between SR-18 & Nisqually Road | 71.8 | 70.4 | 71.8 | 70.8 |
| | between Thunderbird Road & SR-18 | 72.3 | 71.1 | 72.5 | 71.6 |
| | between Waalew Road & Thunderbird Road | 73.8 | 72.5 | 74.0 | 73.3 |
| | n/o Waalew Road | 72.9 | 72.5 | 73.0 | 72.8 |
| | n/o Lafayette Street | 70.8 | 67.7 | 71.0 | 70.7 |
| **Choco Road** | between Norco Street & Saugus Road | 69.7 | 65.1 | 70.0 | 66.9 |
| **Corwin Road** | between SR-18 & Tao Road | 71.4 | 70.3 | 71.4 | 71.3 |
| | between Tao Road & Waalew Road | 70.5 | 69.3 | 70.4 | 70.7 |
| | between Waalew Road & Dale Evans Parkway | 70.2 | 68.1 | 70.3 | 70.0 |
| | between Dale Evans Parkway & Dakota Road | 72.1 | - | 72.1 | 66.7 |
| **Dachshund Avenue** | n/o Fresno Road | 67.7 | 66.9 | 67.7 | 67.4 |
| **Dakota Road** | s/o Fresno Road | 71.1 | - | 71.2 | 66.7 |
| **Dale Evans Parkway** | between Corwin Road & Waalew Road | 73.6 | 71.1 | 73.8 | 73.2 |
| | between Thunderbird Road & SR-18 | 70.4 | 68.8 | 70.5 | 69.9 |
| | between Waalew Road & Thunderbird Road | 72.1 | 70.2 | 72.2 | 71.4 |
| | n/o Fresno Road | 74.2 | 67.6 | 74.5 | 72.8 |
| | s/o I-15 Freeway | 74.2 | 70.7 | 74.5 | 73.4 |
| | between High Desert Corridor & Corwin Road | 75.1 | 75.0 | 75.2 | 74.2 |
| | between High Desert Corridor & Norco Street | 74.8 | 73.9 | 75.1 | 73.8 |
| | s/o Quarry Road | 74.1 | 67.8 | 74.8 | 71.4 |
| **Deep Creek Road** | between Bear Valley Road & Tussing Ranch Road | 63.9 | 62.0 | 63.4 | 62.0 |
| | s/o of Rock Springs Road | 59.0 | 59.2 | 59.2 | 59.2 |
| **Falchion Road** | between Apple Valley Road & Pauma Street | 71.1 | 68.2 | 71.2 | 70.1 |
| | between Pauma Street & Alembic Street | 71.3 | 67.2 | 71.5 | 70.5 |
| | w/o Apple Valley Road | 68.2 | 65.6 | 68.2 | 65.6 |
| | e/o Alembic Street | 70.3 | 62.2 | 70.0 | 69.6 |
| **Fresno Road** | between Dale Evans Parkway & Navajo Road | 69.6 | 69.5 | 69.7 | 69.9 |
| **High Desert Corridor** | between Alembic Street & I-15 freeway | 79.8 | 78.7 | 79.8 | 79.6 |
| | between Central Road & Waalew Road | 76.4 | 75.3 | 76.7 | 76.0 |

**Table V-29**
**Projected General Plan Build Out Noise Levels**
**Generated by Each Project Alternative**

| | | CNEL AT 100 FEET (dBA)[2, 3] | | | |
|---|---|---|---|---|---|
| **Roadway** | **Segment[1]** | **Preferred** | **No Project** | **More Intense** | **Less Intense** |
| **High Desert Corridor (cont)** | between Dale Evans Parkway & Alembic Street | 79.1 | 78.2 | 79.1 | 78.6 |
| | between Standing Rock Avenue & Central Road | 73.6 | 72.2 | 73.7 | 73.1 |
| | between Waalew Road & Dale Evans Parkway | 78.0 | 77.0 | 78.2 | 77.2 |
| **Kiowa Road** | between Bear Valley Road & Tussing Ranch Road | 71.3 | 70.5 | 71.4 | 70.9 |
| | between Sitting Bull Road & Bear Valley Road | 71.2 | 70.5 | 71.1 | 70.7 |
| | between SR-18 & Yucca Loma Road | 68.2 | 67.5 | 68.1 | 68.0 |
| | between Yucca Loma Road & Sitting Bull Road | 71.2 | 70.2 | 71.2 | 70.7 |
| **Lafayette Street** | w/o Dale Evans Parkway | 69.0 | 65.2 | 69.3 | 66.5 |
| **Navajo Road** | between Bear Valley Road & Tussing Ranch Road | 64.2 | 63.2 | 64.3 | 64.2 |
| | between Nisqually Road & Bear Valley Road | 71.3 | 70.6 | 71.4 | 70.8 |
| | between SR-18 & Nisqually Road | 71.9 | 71.0 | 72.0 | 71.4 |
| | between Thunderbird Road & SR-18 | 69.6 | 68.4 | 69.6 | 69.2 |
| | s/o Lafayette Street | 67.3 | 66.2 | 67.5 | 66.9 |
| **Norco Street** | w/o Alembic Street | 70.6 | 68.5 | 70.5 | 69.0 |
| **Outer Highway I-15 S** | between Quarry Road & Dale Evans Parkway | 68.5 | 59.6 | 68.7 | 65.6 |
| | between Stoddard Wells Road & Quarry Road | 69.9 | 60.8 | 70.3 | 65.6 |
| **Pauma Street** | n/o Falchion Road | 69.7 | - | 69.8 | 65.6 |
| | s/o Saugus Road | 70.3 | - | 70.3 | 65.6 |
| **Quarry Road** | between Dale Evans Parkway & Navajo Road | 69.9 | 68.4 | 70.0 | 70.1 |
| | between I-15 Frontage Road & Stoddard Wells Road | 73.6 | 69.9 | 74.2 | 67.0 |
| | e/o I-15 freeway | 75.1 | 70.6 | 75.4 | 74.3 |
| | e/o Navajo Road | 68.7 | 67.0 | 68.9 | 68.4 |
| | w/o Dale Evans Parkway | 72.2 | 68.3 | 72.8 | 70.9 |
| **Rincon Road** | between SR-18 & Yucca Loma Road | 67.1 | 65.3 | 67.0 | 66.4 |
| **Saugus Road** | w/o Pauma Street | 69.1 | 65.8 | 69.2 | 68.5 |
| **Sitting Bull Road** | between Apple Valley Road & Kiowa Road | 66.3 | 64.8 | 66.2 | 64.8 |
| **SR-18** | between Apple Valley Road & Corwin Road | 74.0 | 73.9 | 74.0 | 74.1 |
| | between Central Road & Joshua Road | 67.7 | 65.7 | 67.8 | 67.9 |
| | between Corwin Road & Tao Road | 71.3 | 71.6 | 71.3 | 71.4 |
| | between Dale Evans Parkway & Kiowa Road | 72.8 | 71.9 | 72.9 | 72.4 |
| | between Kiowa Road & Navajo Road | 70.8 | 70.0 | 70.9 | 70.6 |
| | between Navajo Road & Central Road | 71.8 | 71.4 | 71.8 | 71.8 |

**Table V-29**
**Projected General Plan Build Out Noise Levels**
**Generated by Each Project Alternative**

| | | CNEL AT 100 FEET (dBA)[2, 3] | | | |
|---|---|---|---|---|---|
| **Roadway** | **Segment[1]** | **Preferred** | **No Project** | **More Intense** | **Less Intense** |
| | between Rancherias Road & Dale Evans | | | | |
| **SR-18 (cont)** | Parkway | 72.1 | 71.9 | 72.2 | 72.1 |
| | between Tao Road & Rancherias Road | 72.8 | 72.6 | 72.9 | 72.7 |
| | w/o Apple Valley Road | 75.5 | 75.6 | 75.5 | 75.5 |
| **Stoddard Wells** | | | | | |
| **Road** | e/o I-15 Freeway | 74.6 | 72.1 | 74.9 | 71.3 |
| | between Quarry Road & Dale Evans | | | | |
| | Parkway | 71.2 | 64.7 | 72.3 | 67.8 |
| | e/o Alembic Street | 74.4 | 71.0 | 75.1 | 72.5 |
| | n/o Johnson Road | 71.2 | 65.1 | 72.4 | 67.7 |
| | w/o Navajo Road | 67.5 | 63.5 | 69.0 | 67.9 |
| **Thunderbird** | between Dale Evans Parkway & Navajo | | | | |
| **Road** | Road | 66.8 | 65.4 | 66.8 | 66.1 |
| | between Navajo Road & Central Road | 68.8 | 67.7 | 68.8 | 68.5 |
| | between Rancherias Road & Dale Evans | | | | |
| | Parkway | 64.7 | 64.6 | 64.9 | 64.7 |
| **Tussing Ranch** | between Apple Valley Road & Kiowa | | | | |
| **Road** | Road | 70.8 | 70.8 | 70.8 | 70.7 |
| | between Kiowa Road & Navajo Road | 70.2 | 70.1 | 70.1 | 70.2 |
| | between Navajo Road & Central Road | 69.7 | 69.5 | 69.6 | 69.6 |
| | w/o Apple Valley Road | 72.1 | 72.1 | 72.1 | 72.0 |
| | between Corwin Road & Dale Evans | | | | |
| **Waalew Road** | Parkway | 67.3 | 67.0 | 67.6 | 67.6 |
| | e/o Dale Evans Parkway | 67.6 | 67.0 | 67.6 | 67.3 |
| | w/o Central Road | 68.0 | 68.9 | 68.3 | 69.1 |
| **Yucca Loma** | between Apple Valley Road & Rincon | | | | |
| **Road** | Road | 72.5 | 72.4 | 72.5 | 72.5 |
| | between Kiowa Road & SR-18 | 71.8 | 71.2 | 71.8 | 71.4 |
| | between Rincon Road & Kiowa Road | 71.1 | 70.9 | 71.0 | 70.9 |
| | w/o Apple Valley Road | 73.3 | 73.1 | 73.3 | 73.1 |

[1] n/o= North of; s/o=South of; e/o=East of; w/o=West of.
[2] CNEL values are given at 100 feet from all roadway centerlines.
[3] All distances are measured from the centerline. RW means noise contour within roadway right-of-way.

The Preferred Alternative is projected to result in an increase in noise levels of up to 9.1 dBA CNEL over the No Project Alternative (currently adopted General Plan). As discussed in Section III-L, the Preferred alternative is expected to result in increases in noise levels over existing conditions that are perceptible (equal to or greater than 3 dBA) along 44 roadway segments in the planning area.

No Project Alternative

As shown in the table, above, under the No Project Alternative, noise levels along approximately 85 roadway segments in the planning area are projected to exceed the 65 dBA CNEL at 100 feet from the roadway centerline at build out of the existing General Plan. Noise levels along 4 roadway segments are expected to be greater than the Preferred Alternative, however, these differences are less than 1 dBA and are therefore considered imperceptible. Along four of roadway segments evaluated, noise levels at build out of the No Project Alternative are expected to be the same as those projected for the Preferred Alternative. Along 34 roadway segments noise levels are expected to be less than the Preferred Alternative by less than 1 dBA, a difference that would be imperceptible. Noise levels are expected to be greater to 1 dBA but less than 3 dbA less than the Preferred Alternative along 40 roadway segments. These differences are considered potentially audible. Noise levels along 24 roadway segments are expected to result in noise levels that are perceptibly lower (greater than or equal to 3.0 dBA) than the Preferred Alternative.

More Intense Alternative

The More Intense Alternative will result in an increase of approximately 9.5 dBA CNEL over the No Project Alternative, and is expected to result in an increase in noise levels along 44 roadway segments that will be perceptible to adjacent land uses.

The More Intense Alternative is expected to result in noise impacts that are the same as those of the Preferred Alternative along 34 of roadway segments evaluated. Along 57 segments, noise levels are projected to be within 1 dBA of the Preferred Alternative. Noise increases equal to or greater than 3 dBA more than the Preferred Alternative are not projected to occur along any of the evaluated roadway segments, however potentially audible increases (greater than 1 dBA and less than 3 dBA) will occur along 6 of the roadway segments. Noise levels that are less than those expected to be generated by the Preferred Alternative are projected along 21 roadway segments, however, the differences are expected to be imperceptible.

Less Intense Alternative

The Less Intense Alternative is expected to increase noise levels by approximately 7.4 dBA CNEL over the No Project Alternative. Along 41 roadway segments, increased noise levels are expected to be perceptible to land uses over the No Project Alternative.

As compared with the Preferred Alternative, the Less Intense Alternative will result in noise levels that are the same along 2 of the evaluated roadway segments. Along 8 roadway segments, the Less Intense Alternative will result in noise levels that are perceptibly less than those projected for the Preferred Alternative. Along 22 roadway segments noise levels are projected to decrease at levels that have potential to be audible, while along 42 roadway segments, these decreases are expected to be imperceptible.

The Less Intense Alternative is expected to result in increased noise levels along 8 roadway segments as compared with the Preferred Alternative. Of these, increases along one of the roadway segments would be considered potentially audible.

Overall, noise impacts will be less, when compared to the Preferred Alternative, under the No Project and Less Intense Alternatives, although the difference is not expected to be significant. Under the More Intense Alternative, noise levels will be only marginally higher. For all the alternatives, the mitigation measures included in Section III-L would be required, and impacts would be reduced to less than significant levels at build out.

## Public Services and Facilities

### 1. Schools

The following tables show estimated student enrollment at build out of each project alternative.

**Table V-30**
**Potential School Enrollment at General Plan Build Out**
**No Project Alternative**

| Grade Level | Potential Build Out Units | Student Generation Rate | Build Out Enrollment |
|---|---|---|---|
| **K-5** | | | |
| Single-Family | 40,282 | 0.2401 | 9,672 |
| Multi-Family | 12,237 | 0.1826 | 2,234 |
| **6 - 8** | | | |
| Single-Family | 40,282 | 0.1418 | 5,712 |
| Multi-Family | 12,237 | 0.0743 | 909 |
| **High School** | | | |
| Single-Family | 40,282 | 0.1838 | 7,404 |
| Multi-Family | 12,237 | 0.0816 | 999 |
| Total | | | **26,930**[1] |

[1]Includes 1,169 students from build out of Annexation area No. 2008-001 and 225 students from build out of Annexation area No. 2008-002.
Based on Student Generation Rates, Apple Valley Unified School District Residential Development School Fee Justification Study, March 4, 2008

**Table V-31**
**Potential School Enrollment at General Plan Build Out**
**More Intense Alternative**

| Grade Level | Potential Build Out Units | Student Generation Rate | Build Out Enrollment |
|---|---|---|---|
| **K-5** | | | |
| Single-Family | 40,145 | 0.2401 | 9,639 |
| Multi-Family | 25,974 | 0.1826 | 4,743 |
| **6 - 8** | | | |
| Single-Family | 40,145 | 0.1418 | 5,693 |
| Multi-Family | 25,974 | 0.0743 | 1,930 |
| **High School** | | | |
| Single-Family | 40,145 | 0.1838 | 7,379 |
| Multi-Family | 25,974 | 0.0816 | 2,119 |
| **Total** | | | **31,502**[1] |

[1]Includes 2,006 students from Annexation Area No. 2008-001. The More Intense Alternative does not designate lands for residential in Annexation Area No. 2008-002, therefore no student generation is expected.
Based on Student Generation Rates, Apple Valley Unified School District Residential Development School Fee Justification Study, March 4, 2008

**Table V-32**
**Potential School Enrollment at General Plan Build Out**
**Less Intense Alternative**

| Grade Level | Potential Build Out Units | Student Generation Rate | Build Out Enrollment |
|---|---|---|---|
| **K-5** | | | |
| Single-Family | 38,888 | 0.2401 | 9,337 |
| Multi-Family | 15,790 | 0.1826 | 2,883 |
| **6 - 8** | | | |
| Single-Family | 38,888 | 0.1418 | 5,514 |
| Multi-Family | 15,790 | 0.0743 | 1,173 |
| **High School** | | | |
| Single-Family | 38,888 | 0.1838 | 7,148 |
| Multi-Family | 15,790 | 0.0816 | 1,288 |
| Total | | | **27,344**[1] |

[1]Includes 1,075 students from Annexation Area No. 2008-001. The Less Intense Alternative does not designate lands for residential in Annexation Area No. 2008-002, therefore no student generation is expected.
Based on Student Generation Rates, Apple Valley Unified School District Residential Development School Fee Justification Study, March 4, 2008

As discussed in Section III-M, at build out the Preferred Alternative is expected to result in a student population of 29,899. Build out of the No Project Alternative is expected to generate 26,930 students, or 9.9% fewer students than the Preferred Alternative. The More Intense Alternative would generate 31,502 students, approximately 5.4% more students than the Preferred Alternative, while the Less Intense Alternative would generate 27,344 students, or

approximately 8.5% less than the Preferred Alternative. Each of these estimates includes the projected student population within the annexation areas, which is expected to represent between approximately 3.5 and 6.3% of the total student population for the respective alternatives.

The More Intense Alternative would generate the greatest number of students, and is therefore expected to have the most substantial impact on public schools in the planning area, followed by the Preferred Alternative. The No Project and Less Intense Alternative appear to place the least impact on school enrollment.

The estimates shown above include projected student enrollments within the proposed annexation areas. Except for the No Project Alternative, all annexation-related student enrollment would be generated from residential development within Annexation 2008-001. Under the No Project Alternative, there is proposed residential development in Annexation 2008-002 which has potential to generate an increased student population.

New development facilitated by implementation of the proposed General Plan and annexations will build out gradually over time, and student enrollment will also increase gradually. Student enrollment will depend on actual development. Further, as discussed in Section III-M, future development will be subject to payment of statutory developer fees to off-set potential impacts. These fees are expected to reduce potential impacts to schools to less than significant levels, and will be required of any of the development scenarios.

### 2. Libraries

No Project Alternative

Build out the No Project Alternative is expected to result in a population of approximately 160,517 persons. Based on the desired goal of 0.45 square feet of library space per capita, as cited in Section III-M, approximately 72,233 square feet of library space is desirable to serve this build out population. Of this amount, approximately 2,907 square feet represents estimated demand generated by Annexation 2008-001, and approximately 560 square feet in Annexation 2008-002.

More Intense Alternative

The build out population of the More Intense Alternative is estimated at 202,217 persons, which would be best served by approximately 90,998 square feet of library space. Of this approximately 6,972 square feet represents estimated demand generated by Annexation 2008-001. No residential development would occur in Annexation 2008-002, and it would therefore generate no demand for library services.

Less Intense Alternative

It is estimated that the build out population of 167,068 persons under the Less Intense Alternative would be best served by a library space of approximately 75,181 square feet, of which 2,672± square feet would be indicated by the estimated build out population within Annexation 2008-001. No residential development would occur in Annexation 2008-002, and it would therefore generate no demand for library services.

As discussed above, the projected populations and estimated optimum library facility space for each alternative include those associated with the proposed annexation areas. Based on these estimates, the No Project Alternative and the Less Intense Alternative are the most similar and would pose the least demand for library services, requiring approximately 17.7% and 14.3% less space, respectively, than the Preferred Alternative. The More Intense Alternative would require approximately 3.7% more library space than the Preferred Alternative.

As discussed in Section III-M, the existing library facilities in Apple Valley equate to approximately 0.27 square feet of library space per capita, and do not appear to be over-utilized at that level of service. However, as growth occurs the demand on library services and facilities will also increase, albeit gradually, and the Town and San Bernardino County will need to continue to monitor library use to ensure the adequate provision of services and facilities to meet the needs of the community. The mitigation measures set forth in Section III-M will ensure that potential impacts are reduced to less than significant levels, and are applicable to any of the development scenarios.

### 3. Law Enforcement

No Project Alternative

Total population for the planning area under the No Project Alternative will be approximately 160,517. Applying the Town's standard of 1 deputy per 1,500 residents, 107 deputies will be required to serve the build out population. This is 23 fewer deputies than required under the Preferred Alternative, or a decrease of approximately 17.7%. As with each of the alternatives, the construction of additional residential, commercial and industrial development will result in additional costs for provision of these services.

Approximately 4 deputies will be required to serve the projected build out population in Annexation 2008-001, and approximately one (1) deputy will be required to serve the build out population estimated for Annexation 2008-002. It should be noted that the No Project Alternative is the only alternative expected to result in residential land uses within the Annexation 2008-002. The increased police demand within the two annexation areas is accounted for in the total described above for the planning area.

More Intense Alternative

Based on an estimated build out population of 202,217 in the planning area, the number of deputies required under this alternative would be 130, or 5 more than the Preferred Alternative. This constitutes a 3.7% increase over the Preferred Alternative. Of the total number of deputies required for the More Intense alternative, approximately 10 are indicated by the build out population within Annexation 2008-001.

Less Intense Alternative

Based on the estimated build out population of 167,068 for the Less Intense Alternative, a minimum of 111 officers will be needed. This is approximately 14.3% less than the Preferred Alternative. Of these, approximately 4 would be required based on the estimated build out population within Annexation 2008-001.

The No Project and Less Intense alternatives will place the least additional demand on police services, while the More Intense and Preferred, respectively, will place the most demand on these services of the project alternatives. It should be noted that since the method for calculating increased police protection is based on residential population, these calculations have not been applied to Annexation 2008-002 for most of the alternatives. However, the increase in industrial development associated with Annexation 2008-002 for the Preferred, More Intense and Less Intense alternatives will generate increased demand for police services. This demand is accounted for in the police-to-population ratio, which considers the various types of development within the planning area in its per capita factor. Population increases will occur gradually, and therefore the associated need for additional deputies will also occur gradually. Mitigation measures set forth in Section III-M will reduce potential impacts to less than significant levels for all alternatives.

### 4. Fire Protection

The following provides comparative estimates of fire personnel to serve the build out population of each alternative. As discussed in Section III-M, the AVFPD has set a desired population-to-staff ratio of 1 full-time fire staff per 1,500 persons in the planning area. Based on this ratio, the Preferred Alternative will generate a demand for 121 fire personnel. This includes the proposed annexation areas, where approximately 9 fire staff would be needed.

In the discussions that follow, the 1:1,500 standard has been applied to build out population for each alternative, and this population estimate necessarily relies on residential development. As previously noted, with the exception of the No Project alternative, no residential development is proposed in Annexation 2008-002, and therefore, the method of calculating fire demand based on population is not applied to that annexation area for the Preferred, More Intense and Less Intense alternatives.

It should be noted, however, that all of the project alternatives propose some type of development within Annexation 2008-002, which will generate increased demand for fire protection services. The methodology used here is assumed to account for this increased demand. In addition, mitigation measures are set forth in Section III-M that will reduce potential impacts associated with commercial and industrial development to less than significant levels, including the use of alarms and sprinkler systems. These measures will apply to all of the alternatives.

<u>No Project Alternative</u>
Based on the standard of 1 full-time fire protection staff per 1,500 persons, the estimated build out population under the current No Project Alternative would require 107 full-time fire personnel. This is approximately 15.9% fewer fire personnel than would be required under the Preferred Alternative. Of the total fire protection staff required in the planning area, this estimate accounts for approximately 4 fire staff in Annexation Area 2008-001 and one (1) in Annexation 2008-002.

<u>More Intense Alternative</u>
Based on the standard cited above, the build out population under the More Intense Alternative would generate demand for 135 full-time fire staff in the planning area, or approximately 2.8%

more than the Preferred Alternative. This figure includes approximately 10 fire staff to serve Annexation 2008-001.

Less Intense Alternative
Under the Less Intense Alternative, 111 full-time fire staff would be required to meet the AVFPD staffing standard. This is approximately 11.3% fewer staff than the Preferred Alternative. It includes approximately 4 fire staff to serve Annexation 2008-001.

The More Intense and Preferred Alternatives are generally similar in terms of demand for fire protection services, and would generate the most increased demand. The No Project and Less Intense would each generate increased need for these services, although at lower levels than the other two scenarios. Nonetheless, all of the development scenarios will require additional fire services and facilities, including fire stations, staffing, and equipment. As discussed above, mitigation measures are set forth in Section III-M to reduce potential impacts to fire protection services to less than significant levels for any of the development scenarios.

### 5. Medical Facilities

The planning area is served a variety of regional and local medical facilities, including the. St. Mary Medical Center, a 186-bed hospital, as well as physicians' offices, urgent care facilities, private psychiatric clinics, and assisted living facilities. There are also two other hospitals in the high desert region, both in Victorville.

As compared to the other alternatives, the No Project Alternative will result in the fewest number of residents in the planning area, therefore having the least impact on the demand for medical facilities, followed by the Less Intense Alternative. As discussed in Section III-M, these medical facilities are privately-operated facilities that will continue to plan to serve the growing regional and local community.

### 6. Electricity

Estimated electric consumption has been calculated for each of the project alternatives based on electricity usage factors established by the South Coast Air Quality Management District (SCAQMD). Factors are applied to residential, commercial, and industrial development in the planning area. Following are electric consumption estimates for each project alternative.

No Project Alternative
- Planning Area: 1,173,329,589 kilowatt hour/year
- Annexation 2008-001: 12,577,963 kilowatt hour/year
- Annexation 2008-002: 30,035,429 kilowatt hour/year

More Intense Alternative
- Planning Area: 1,897,348,760 kilowatt hour/year
- Annexation 2008-001: 293,982,871 kilowatt hour/year
- Annexation 2008-002: 68,857,552 kilowatt hour/year

Less Intense Alternative

- Planning Area: 1,399,776,067 kilowatt hour/year
- Annexation 2008-001: 100,309,970 kilowatt hour/year
- Annexation 2008-002: 68,857,552 kilowatt hour/year

At build out, the Preferred Alternative is expected to generate demand for 1,807,978,891 kilowatt-hours per year. This accounts for existing and future residential, commercial and industrial development in the planning area, including the proposed annexation areas. As noted above, the No Project Alternative is expected to generate approximately 35.1% less demand for electricity than the Preferred Alternative, while the Less Intense Alternative will generate approximately 22.6% less demand. The More Intense Alternative is expected to generate approximately 4.9% greater demand than the Preferred Alternative. As indicated above, these figures account for usage within the proposed annexation areas.

From the standpoint of electricity consumption, the No Project is the environmentally superior alternative, although all of the development scenarios will use and further deplete this non-renewable resource. Impacts related to implementation of the proposed General Plan and annexations, regardless of the development scenario that is implemented, will be less than significant.

### 7. Natural Gas

As discussed in Section III-M, the Preferred Alternative is expected to consume approximately 779,089,325 cubic feet/month of natural gas at build out. The following shows the estimated natural gas consumption among the project alternatives.

No Project Alternative

- Planning Area: 594,268,308 cubic feet/month
- Annexation 2008-001: 13,925,281 cubic feet/month
- Annexation 2008-002: 17,539,275 cubic feet/month

More Intense Alternative

- Planning Area: 783,488,673 cubic feet/month
- Annexation No. 2008-001: 40,524,252 cubic feet/month
- Annexation No. 2008-002: 36,877,684 cubic feet/month

Less Intense Alternative

- Planning Area: 666,295,196 cubic feet/month
- Annexation No. 2008-001: 27,970,666 cubic feet/month
- Annexation No. 2008-002: 36,877,684 cubic feet/month

The More Intense Alternative is expected to consume the largest amount of natural gas at project build out, approximately 0.56% more than the Preferred Alternative. The Less Intense is expected to consume approximately 14.5% less than the Preferred Alternative, and the No Project approximately 23.7% less. These figures account for usage within the proposed annexation areas.

The No Project will have the lowest impacts in terms of natural gas consumption. Build out of the planning area will occur gradually over time as development occurs. Any of the development scenarios will be subject to mitigation measures set forth in Section III-M, which will reduce impacts to less than significant levels.

### 8. Telephone, Internet and Television Service

All of the project alternatives will necessitate the extension of telephone lines, cable and other telecommunications infrastructure to serve new development, including that within the proposed annexation areas, which are currently largely undeveloped. New development will be required to pay for costs associated with this expansion of these facilities and services, regardless of the development scenario that is implemented.

### 9. Domestic Water Services

Each of the project alternatives will result in increased demand on water resources, and will require the construction and expansion of facilities and infrastructure to serve new development, including that within the proposed annexation areas. Section III-M provides a detailed discussion regarding the existing conditions associated with water resources and water quality, and potential impacts associated with the Preferred Alternative. Please see Section V, Water Quality/Resources, for estimated water consumption for each alternative.

### 10. Wastewater Collection and Treatment

Section III-M estimates potential wastewater generation in the planning area, including the subject annexation areas, based on a per capita generation rate of 100 gallons per day. This factor has been applied to the estimated build out population of each alternative to provide a basis for comparison between the four project alternatives. Based on these assumptions, the Preferred Alternative is expected to generate approximately 19,493,069 gallons per day. The estimated wastewater generation for each of the other alternatives is shown below.

<u>No Project Alternative</u>

- Planning Area: 16,051,734 gallons per day
- Annexation 2008-001: 645,938 gallons per day
- Annexation 2008-002: 124,375 gallons per day

<u>More Intense Alternative</u>

- Planning Area: 20,221,701 gallons per day
- Annexation 2008-001: 1,549,331
- Annexation 2008-002: N/A

<u>Less Intense Alternative</u>

- Planning Area: 16,706,771 gallons per day
- Annexation 2008-001: 593,683 gallons per day
- Annexation 2008-002: N/A

The More Intense Alternative is expected to result in the highest volume of wastewater generation, and approximately 3.7% more than the Preferred Alternative. The No Project Alternative is expected to generate the least wastewater, approximately 17.7% less than the Preferred Alternative, while the Less Intense Alternative is expected to generate approximately 14.3% less wastewater than the Preferred Alternative.

All of these estimates account for existing and future development in the General Plan area, which includes the annexation areas. The More Intense Alternative will place the greatest demand on wastewater collection and treatment facilities, and the Preferred Alternative is expected to result in a similar level of impact. The No Project and Less Intense are the least wastewater-generating alternatives. Future development at whatever level it occurs will place additional demands on these facilities, and the Town will need to continue to work with VVWRA to monitor growth and plan for new facilities. Mitigation measures set forth in Section III-M will reduce potential impacts to less than significant levels and will apply to any of the development scenarios.

### 11. Solid Waste Management

Estimates of solid waste generation for the Preferred Alternative are discussed in Section III-M. At build out, the Preferred Alternative is estimated to generate approximately 950,712.02 tons annually. This figure includes solid waste estimates for the proposed annexation areas.

The following tables show estimated solid waste for each of the project alternatives at General Plan build out.

**Table V-33**
**Projected Solid Waste Generation for the Town of Apple Valley**
**No Project Alternative**

| Projected Level Development at Build Out | Annual Waste Generation Factor | Projected Annual Waste Generation at Build Out (tons) |
|---|---|---|
| 40,282 single-family dwelling units | 2.04 tons/unit | 82,175.28 |
| 12,237 multi-family dwelling units | 1.17 tons/unit | 14,317.29 |
| 5,732,413 sq. ft. professional space | 0.0108 tons/ sq. ft | 61,910.06 |
| 1,146,483 sq. ft hotel/motel space | 0.0024 tons/ sq. ft | 2,751.56 |
| 21,783,171 sq. ft. /commercial space | 0.0024 tons/ sq. ft. | 52,279.61 |
| 40,950,190 sq. ft. industrial space | 0.0108 tons/ sq. ft. | 442,262.05 |
| | **TOTAL** | **655,695.85 tons** |

Assessments for Solid Waste Impacts," September 1992, and "DEIR for North Hills Development in Santa Clarita," December 1991.

This estimate includes approximately 4,433.7 tons that are expected to be generated by Annexation 2008-001 annually at build out, and approximately 83,786.7 tons from Annexation 2008-002.

**Table V-34**
**Projected Solid Waste Generation for the Town of Apple Valley**
**More Intense Alternative**

| Projected Level Development at Build Out | Annual Waste Generation Factor | Projected Annual Waste Generation at Build Out (tons) |
|---|---|---|
| 40,145 single-family dwelling units | 2.04 tons/unit | 81,895.80 |
| 25,974 multi-family dwelling units | 1.17 tons/unit | 30,389.58 |
| 12,007,571 sq. ft. professional space | 0.0108 tons/ sq. ft | 120,681.77 |
| 2,401,514 sq. ft hotel/motel space | 0.0024 tons/ sq. ft | 5,763.63 |
| 45,628,772 sq. ft./commercial space | 0.0024 tons/ sq. ft. | 109,509,05 |
| 50,804,521 sq. ft. industrial space | 0.0108 tons/ sq. ft. | 548,688.83 |
| | **TOTAL** | **950,712.02 tons** |

Assessments for Solid Waste Impacts," September 1992, and "DEIR for North Hills Development in Santa Clarita," December 1991.

For the More Intense Alternative, Annexation 2008-001 is expected to generate approximately 47,332.2 tons of solid waste annually at build out, and Annexation 2008-002 is expected to generate approximately 82,974.8 tons. These estimates are included in that shown in Table V-34, above.

**Table V-35**
**Projected Solid Waste Generation for the Town of Apple Valley**
**Less Intense Alternative**

| Projected Level Development at Build Out | Annual Waste Generation Factor | Projected Annual Waste Generation at Build Out (tons) |
|---|---|---|
| 38,888 single-family dwelling units | 2.04 tons/unit | 79,331.52 |
| 15,790 multi-family dwelling units | 1.17 tons/unit | 18,474.30 |
| 7,146,165 sq. ft. professional space | 0.0108 tons/ sq. ft | 77,178.58 |
| 1,429,233 sq. ft hotel/motel space | 0.0024 tons/ sq. ft | 3,430.16 |
| 27,155,428 sq. ft./commercial space | 0.0024 tons/ sq. ft. | 52,279.61 |
| 40,950,190 sq. ft. industrial space | 0.0108 tons/ sq. ft. | 65,173.03 |
| | **TOTAL** | **792,276.42 tons** |

Assessments for Solid Waste Impacts," September 1992, and "DEIR for North Hills Development in Santa Clarita," December 1991.

Under the Less Intense Alternative, Annexation 2008-001 is expected to generate approximately 29,145.5 tons of solid waste annually at build out, and Annexation 2008-002 is expected to generate approximately 82,974.8 tons annually. As with the other alternatives, the estimated solid waste generation for the annexation areas is included under that for General Plan build out for this alternative.

The estimates shown above account for existing and future development over the entire General Plan area. As shown on these tables, the No Project alternative is expected to generate the least amount of solid waste, approximately 31.0% less than the Preferred Alternative. The Less Intense will generate approximately 16.6% less than the Preferred, while the More Intense will generate approximately 4.71% less than the Preferred Alternative.

While all of the alternatives will contribute to the waste stream, mitigation measures set forth in Section III-M will be applied to any development scenario and are expected to reduce potential impacts to less than significant levels.

### 12. Recreational Resources

The Town of Apple Valley has an adopted standard of 5 acres of parklands per 1,000 persons. As discussed in Section III-N, at build out of the proposed General Plan the Town will require the provision of approximately 975 acres of parklands.

No Project Alternative

At build out of the No Project alternative, the total number of dwelling units in the planning area is expected to be 52,519 and will result in a total population of approximately 160,517. Based on this standard, at build out of the No Project Alternative the Town will require approximately 803 acres of parklands, or approximately 18% less than the Preferred Alternative. Of these, approximately 38.5 acres would be required to serve the build out populations in the proposed annexation areas.

As compared to the Preferred Alternative, the No Project Alternative proposes fewer new dwelling units and thus introduces fewer new residents to the planning area. Therefore, the impact on local recreational resources is expected to be somewhat less, both in terms of use of existing recreational resources and the need for provision of new resources.

More Intense Alternative

Implementation of this alternative will result in the construction of 66,110 dwelling units at build out, and a total population of approximately 202,217. Therefore, 1,011 acres of parklands will be required to serve this population, of which approximately 77 acres will be required to serve the build out population in Annexation 2008-001. The total parklands requirements under the More Intense Alternative are approximately 4% greater than those of the Preferred Alternative. In the overall impacts to parklands and recreational facilities associated with this alternative are expected to exceed, albeit slightly, those associated with the Preferred Alternative.

Less Intense Alternative

At build out of the Less Intense alternative, the total number of dwelling units in the planning area is expected to be 54,678. With a build out population of approximately 167,068, build out of the Less Intense Alternative will require provision of approximately 835 acres of Parklands, or approximately 14% less than the Preferred Alternative. Of this, approximately 30 acres would be required to serve the build out population in Annexation 2008-001. Impacts to recreational resources are expected to be less under the Less Intense Alternative than under the Preferred Alternative.

Impacts on recreational resources resulting from the implementation of any of the project alternatives will be reduced to less than significant levels by the implementation of mitigation measures set forth in Section III-N, including application of the Town's Quimby Act requirements, developer agreements and impact fees, and a range of other funding mechanisms that are described in the Parks and Recreation Element of the General Plan.

**Traffic and Circulation**

The Traffic Study prepared for the General Plan and Annexation Areas included analysis of the alternatives. Table V-36 illustrates the forecast ADT for each alternative, including the Preferred Alternative.

## Table V-36
## Daily Traffic Volume Forecasts

| | | Forecast ADT[2] | | | |
|---|---|---|---|---|---|
| | Roadway Segment[1] | Preferred | No Project | More Intense | Less Intense |
| **Apple Valley Road** | n/o SR-18 | 17,100 | 16,400 | 17,200 | 19,600 |
| | between SR-18 & Yucca Loma Road | 28,600 | 23,300 | 28,300 | 24,000 |
| | between Yucca Loma Road & Sitting Bull Road | 44,200 | 35,200 | 43,400 | 37,000 |
| | between Sitting Bull Road & Bear Valley Road | 48,200 | 36,900 | 48,100 | 37,500 |
| | between Bear Valley Road & Tussing Ranch Road | 29,500 | 25,600 | 29,900 | 26,800 |
| **Deep Creek Road** | between Bear Valley Road & Tussing Ranch Road | 6,800 | 4,400 | 6,000 | 4,400 |
| | s/o of Rock Springs Road | 2,200 | 2,300 | 2,300 | 2,300 |
| **Kiowa Road** | between SR-18 & Yucca Loma Road | 18,500 | 16,000 | 18,300 | 17,600 |
| | between Yucca Loma Road & Sitting Bull Road | 28,100 | 22,400 | 27,800 | 24,700 |
| **Kiowa Road (cont)** | between Sitting Bull Road & Bear Valley Road | 28,200 | 23,500 | 27,400 | 24,800 |
| | between Bear Valley Road & Tussing Ranch Road | 28,900 | 24,000 | 29,000 | 26,100 |
| **Dale Evans Parkway** | s/o I-15 Freeway | 52,600 | 23,300 | 56,300 | 43,300 |
| | n/o Fresno Road | 52,300 | 11,300 | 56,300 | 37,900 |
| | between Corwin Road & Waalew Road | 45,400 | 25,300 | 47,700 | 41,600 |
| | between Waalew Road & Thunderbird Road | 32,500 | 20,700 | 33,100 | 27,500 |
| | between Thunderbird Road & SR-18 | 23,100 | 16,100 | 23,500 | 20,800 |
| **Navajo Road** | between Thunderbird Road & SR-18 | 19,300 | 14,600 | 19,300 | 17,600 |
| | between SR-18 & Nisqually Road | 32,900 | 26,700 | 33,300 | 29,100 |
| | between Nisqually Road & Bear Valley Road | 28,700 | 24,300 | 29,200 | 25,200 |
| | between Bear Valley Road & Tussing Ranch Road | 7,300 | 5,700 | 7,400 | 7,200 |
| **Central Road** | n/o Waalew Road | 38,100 | 35,200 | 39,100 | 37,900 |
| | between Waalew Road & Thunderbird Road | 47,500 | 35,300 | 49,000 | 41,800 |
| | between Thunderbird Road & SR-18 | 33,700 | 25,600 | 34,900 | 28,800 |
| | between SR-18 & Nisqually Road | 29,700 | 21,600 | 30,100 | 23,900 |
| | between Nisqually Road & Bear Valley Road | 27,400 | 17,200 | 26,800 | 20,000 |

## Table V-36
## Daily Traffic Volume Forecasts

| | | Forecast ADT[2] | | | |
|---|---|---|---|---|---|
| | **Roadway Segment[1]** | **Preferred** | **No Project** | **More Intense** | **Less Intense** |
| **Central Road (cont)** | between Bear Valley Road & Tussing Ranch Road | 15,400 | 11,900 | 15,300 | 13,500 |
| **Stoddard Wells Road** | e/o I-15 Freeway | 56,700 | 32,200 | 60,300 | 26,700 |
| **Corwin Road** | between SR-18 & Tao Road | 29,200 | 22,700 | 29,400 | 28,800 |
| | between Tao Road & Waalew Road | 23,800 | 18,100 | 23,400 | 24,700 |
| | between Waalew Road & Dale Evans Parkway | 22,100 | 13,600 | 22,600 | 21,300 |
| **Waalew Road** | Between Corwin Road & Dale Evans Parkway | 11,400 | 10,500 | 12,100 | 12,300 |
| | e/o Dale Evans Parkway | 12,100 | 10,700 | 12,100 | 11,300 |
| | w/o Central Road | 13,300 | 16,400 | 14,200 | 17,200 |
| **SR-18** | w/o Apple Valley Road | 70,500 | 71,400 | 69,800 | 69,900 |
| | between Apple Valley Road & Corwin Road | 49,400 | 48,300 | 49,500 | 50,100 |
| **SR 18 (cont)** | between Corwin Road & Tao Road | 26,800 | 28,600 | 26,900 | 27,400 |
| | between Tao Road & Rancherias Road | 37,800 | 36,000 | 38,100 | 36,800 |
| | between Rancherias Road & Dale Evans Parkway | 32,200 | 30,400 | 32,500 | 31,900 |
| | between Dale Evans Parkway & Kiowa Road | 37,400 | 30,500 | 38,000 | 34,500 |
| | between Kiowa Road & Navajo Road | 23,900 | 19,600 | 24,500 | 22,600 |
| | between Navajo Road & Central Road | 30,100 | 27,500 | 29,800 | 30,100 |
| | between Central Road & Joshua Road | 11,700 | 7,400 | 11,800 | 12,100 |
| | between Joshua Road & Bear Valley Road | 13,400 | 13,100 | 14,100 | 13,300 |
| | e/o Bear Valley Road | 18,600 | 18,700 | 19,000 | 18,200 |
| **Thunderbird Road** | between Rancherias Road & Dale Evans Parkway | 6,300 | 6,100 | 6,500 | 6,300 |
| | between Dale Evans Parkway & Navajo Road | 10,100 | 7,400 | 10,200 | 8,700 |
| | between Navajo Road & Central Road | 15,900 | 12,600 | 15,900 | 15,100 |
| **Yucca Loma Road** | w/o Apple Valley Road | 42,000 | 39,900 | 41,700 | 40,000 |
| | between Apple Valley Road & Rincon Road | 38,100 | 36,400 | 38,100 | 37,800 |
| | between Rincon Road & Kiowa Road | 27,000 | 25,900 | 26,500 | 26,000 |
| | between Kiowa Road & SR-18 | 32,400 | 27,900 | 32,000 | 29,200 |

## Table V-36
## Daily Traffic Volume Forecasts

| | | Forecast ADT[2] | | | |
|---|---|---|---|---|---|
| | **Roadway Segment[1]** | **Preferred** | **No Project** | **More Intense** | **Less Intense** |
| **Sitting Bull Road** | between Apple Valley Road & Kiowa Road | 11,700 | 8,400 | 11,400 | 8,400 |
| **Bear Valley Road** | w/o Apple Valley Road | 65,200 | 62,500 | 63,700 | 58,900 |
| | between Apple Valley Road & Deep Creek Road | 52,900 | 41,100 | 49,900 | 39,500 |
| | between Deep Creek Road & Kiowa Road | 50,800 | 41,100 | 47,700 | 40,100 |
| | between Kiowa Road & Navajo Road | 37,400 | 31,300 | 36,800 | 30,400 |
| | between Navajo Road & Central Road | 28,500 | 18,400 | 26,400 | 18,500 |
| | between Central Road & SR-18 | 18,300 | 11,400 | 16,900 | 10,600 |
| **Rincon Road** | between SR-18 & Yucca Loma Road | 14,300 | 9,500 | 14,000 | 12,200 |
| **Rock Springs Road** | between Deep Creek Road & Kiowa Road | 22,100 | 19,300 | 21,600 | 20,700 |
| **High Desert Corridor** | between Standing Rock Avenue & Central Road | 22,400 | 16,100 | 23,200 | 19,800 |
| | between Central Road & Waalew Road | 42,900 | 33,200 | 45,300 | 38,600 |
| | between Waalew Road & Dale Evans Parkway | 61,700 | 49,600 | 64,500 | 51,700 |
| | between Dale Evans Parkway & Alembic Street | 79,700 | 64,800 | 79,800 | 71,500 |
| | between Alembic Street & I-15 freeway | 93,800 | 73,300 | 94,000 | 89,800 |
| **Tussing Ranch Road** | w/o Apple Valley Road | 32,200 | 31,800 | 32,300 | 31,100 |
| | between Apple Valley Road & Kiowa Road | 23,800 | 23,900 | 23,700 | 23,400 |
| | between Kiowa Road & Navajo Road | 20,700 | 20,200 | 20,100 | 20,600 |
| | between Navajo Road & Central Road | 18,300 | 17,400 | 17,900 | 18,100 |
| **Falchion Road** | w/o Apple Valley Road | 18,200 | 5,600 | 13,200 | 9,900 |
| | between Apple Valley Road & Pauma Street | 27,600 | 14,000 | 28,200 | 21,900 |
| | between Pauma Street & Alembic Street | 28,900 | 11,200 | 30,000 | 23,900 |
| | e/o Alembic Street | 22,500 | 3,500 | 21,300 | 19,300 |
| **Pauma Street** | n/o Falchion Road | 25,500 | 5,600 | 13,200 | 9,900 |
| | s/o Saugus Road | 29,200 | 5,600 | 13,200 | 9,900 |
| **Alembic Street** | s/o High Desert Corridor | 41,100 | 18,500 | 42,600 | 33,800 |
| | n/o High Desert Corridor | 67,200 | 46,700 | 70,600 | 43,800 |

## Table V-36
## Daily Traffic Volume Forecasts

| | | Forecast ADT[2] | | | |
|---|---|---|---|---|---|
| | **Roadway Segment[1]** | **Preferred** | **No Project** | **More Intense** | **Less Intense** |
| **Alembic Street (cont)** | between Norco Street & Saugus Road | 38,600 | 30,900 | 41,300 | 20,700 |
| | between Saugus Road & Stoddard Wells Road | 43,400 | 13,800 | 48,100 | 22,200 |
| **Choco Road** | between Norco Street & Saugus Road | 25,900 | 8,900 | 27,800 | 13,500 |
| **Dale Evans Parkway** | between High Desert Corridor & Corwin Road | 63,900 | 62,300 | 64,600 | 52,200 |
| | between High Desert Corridor & Norco Street | 59,900 | 48,200 | 63,200 | 47,700 |
| **Corwin Road** | between Dale Evans Parkway & Dakota Road | 34,300 | 5,600 | 13,200 | 9,900 |
| **Dakota Road** | s/o Fresno Road | 27,300 | 5,600 | 13,200 | 9,900 |
| **Dachshund** | Avenue n/o Fresno Road | 16,200 | 13,400 | 16,300 | 15,100 |
| **Fresno Road** | between Dale Evans Parkway & Navajo Road | 25,400 | 24,700 | 25,600 | 26,700 |
| **Norco Street** | w/o Alembic Street | 24,400 | 14,900 | 23,700 | 17,000 |
| **Saugus Road** | w/o Pauma Street | 22,600 | 10,400 | 23,100 | 19,500 |
| **Lafayette Street** | w/o Dale Evans Parkway | 22,100 | 9,100 | 23,700 | 12,400 |
| **Johnson Road** | e/o Stoddard Wells Road | 25,500 | 16,300 | 28,400 | 20,900 |
| **Stoddard Wells Road** | e/o Alembic Street | 54,300 | 24,800 | 64,000 | 34,900 |
| | n/o Johnson Road | 27,900 | 6,800 | 37,200 | 12,600 |
| | between Quarry Road & Dale Evans Parkway | 27,800 | 6,300 | 35,600 | 12,900 |
| | w/o Navajo Road | 11,800 | 4,700 | 16,700 | 13,000 |
| **Dale Evans Parkway** | s/o Quarry Road | 50,600 | 12,100 | 59,300 | 27,700 |
| **Navajo Road** | s/o Lafayette Street | 14,700 | 11,500 | 15,400 | 13,600 |
| **Central Road** | n/o Lafayette Street | 23,500 | 11,700 | 24,900 | 23,100 |
| **Quarry Road** | e/o I-15 freeway | 64,000 | 22,700 | 68,600 | 53,100 |
| | between I-15 Frontage Road & Stoddard Wells Road | 45,600 | 5,600 | 13,200 | 9,900 |
| | w/o Dale Evans Parkway | 35,000 | 14,400 | 40,100 | 26,000 |
| **Quarry Road (cont)** | between Dale Evans Parkway & Navajo Road | 27,200 | 19,100 | 27,700 | 27,900 |
| | e/o Navajo Road | 20,400 | 13,800 | 21,400 | 19,200 |
| **Outer Highway I-15 South** | between Quarry Road & Dale Evans Parkway | 19,700 | 5,600 | 13,200 | 9,900 |
| | between Stoddard Wells Road & Quarry Road | 26,800 | 5,600 | 13,200 | 9,900 |

[1] n/o= North of; s/o=South of; e/o=East of; w/o=West of.
[2] ADT means current average daily two-way traffic volumes.

No Project Alternative

At build out of the No Project Alternative, it is estimated that approximately 969,942 average daily two-way trips will be generated. This is an approximately 63% decrease from the Preferred Alternative. Based on analysis Volume/Capacity (VC) ratios for modeled roadway segments in the planning area, 95 roadway segments are expected to operate at acceptable levels (V/C ratio of 0 to 0.80); 6 segments are expected to approach capacity (V/C ratios between 0.81 and 1.00) and 3 segments show values that would potentially exceed capacity (V/C ratio of greater than 1.01).

**Table V-37**
**Roadway Segment Capacity Evaluation**
**No Project Alternative**

| Roadway Segment | Roadway Capacity | Future Forecast | Volume/ Capacity Ratio | Threshold |
|---|---|---|---|---|
| Apple Valley Road n/o SR-18 | 69,300 | 16,400 | 0.24 | Acceptable |
| Apple Valley Road between SR-18 & Yucca Loma Road | 40,500 | 23,300 | 0.58 | Acceptable |
| Apple Valley Road between Yucca Loma Road & Sitting Bull Road | 69,300 | 35,200 | 0.51 | Acceptable |
| Apple Valley Road between Sitting Bull Road & Bear Valley Road | 69,300 | 36,900 | 0.53 | Acceptable |
| Apple Valley Road between Bear Valley Road & Tussing Ranch Road | 69,300 | 25,600 | 0.37 | Acceptable |
| Deep Creek Road between Bear Valley Road & Tussing Ranch Road | 25,500 | 4,400 | 0.17 | Acceptable |
| Deep Creek Road s/o of Rock Springs Road | 12,700 | 2,300 | 0.18 | Acceptable |
| Kiowa Road between SR-18 & Yucca Loma Road | 12,700 | 16,000 | 1.26 | Potentially Exceeds Capacity |
| Kiowa Road between Yucca Loma Road & Sitting Bull Road | 40,500 | 22,400 | 0.55 | Acceptable |
| Kiowa Road between Sitting Bull Road & Bear Valley Road | 40,500 | 23,500 | 0.58 | Acceptable |
| Kiowa Road between Bear Valley Road & Tussing Ranch Road | 69,300 | 24,000 | 0.35 | Acceptable |
| Dale Evans Parkway s/o I-15 Freeway | 69,300 | 23,300 | 0.34 | Acceptable |
| Dale Evans Parkway n/o Fresno Road | 69,300 | 11,300 | 0.16 | Acceptable |
| Dale Evans Parkway between Corwin Road & Waalew Road | 69,300 | 25,300 | 0.37 | Acceptable |
| Dale Evans Parkway between Waalew Road & Thunderbird Road | 69,300 | 20,700 | 0.30 | Acceptable |
| Dale Evans Parkway between Thunderbird Road & SR-18 | 40,500 | 16,100 | 0.40 | Acceptable |
| Navajo Road between Thunderbird Road & SR-18 | 40,500 | 14,600 | 0.36 | Acceptable |
| Navajo Road between SR-18 & Nisqually Road | 40,500 | 26,700 | 0.66 | Acceptable |
| Navajo Road between Nisqually Road & Bear Valley Road | 40,500 | 24,300 | 0.60 | Acceptable |
| Navajo Road between Bear Valley Road & Tussing Ranch Road | 25,500 | 5,700 | 0.22 | Acceptable |
| Central Road n/o Waalew Road | 69,300 | 35,200 | 0.51 | Acceptable |
| Central Road between Waalew Road & Thunderbird Road | 69,300 | 35,300 | 0.51 | Acceptable |
| Central Road between Thunderbird Road & SR-18 | 69,300 | 25,600 | 0.37 | Acceptable |
| Central Road between SR-18 & Nisqually Road | 69,300 | 21,600 | 0.31 | Acceptable |

## Table V-37
## Roadway Segment Capacity Evaluation
## No Project Alternative

| Roadway Segment | Roadway Capacity | Future Forecast | Volume/ Capacity Ratio | Threshold |
|---|---|---|---|---|
| Central Road between Nisqually Road & Bear Valley Road | 69,300 | 17,200 | 0.25 | Acceptable |
| Central Road between Bear Valley Road & Tussing Ranch Road | 69,300 | 11,900 | 0.17 | Acceptable |
| Stoddard Wells Road e/o I-15 Freeway | 40,500 | 32,200 | 0.80 | Acceptable |
| Corwin Road between SR-18 & Tao Road | 40,500 | 22,700 | 0.56 | Acceptable |
| Corwin Road between Tao Road & Waalew Road | 40,500 | 18,100 | 0.45 | Acceptable |
| Corwin Road between Waalew Road & Dale Evans Parkway | 40,500 | 13,600 | 0.34 | Acceptable |
| Waalew Road Between Corwin Road & Dale Evans Parkway | 40,500 | 10,500 | 0.26 | Acceptable |
| Waalew Road e/o Dale Evans Parkway | 40,500 | 10,700 | 0.26 | Acceptable |
| Waalew Road w/o Central Road | 40,500 | 16,400 | 0.40 | Acceptable |
| SR-18 w/o Apple Valley Road | 69,300 | 71,400 | 1.03 | Potentially Exceeds Capacity |
| SR-18 between Apple Valley Road & Corwin Road | 69,300 | 48,300 | 0.70 | Acceptable |
| SR-18 between Corwin Road & Tao Road | 69,300 | 28,600 | 0.41 | Acceptable |
| SR-18 between Tao Road & Rancherias Road | 69,300 | 36,000 | 0.52 | Acceptable |
| SR-18 between Rancherias Road & Dale Evans Parkway | 69,300 | 30,400 | 0.44 | Acceptable |
| SR-18 between Dale Evans Parkway & Kiowa Road | 69,300 | 30,500 | 0.44 | Acceptable |
| SR-18 between Kiowa Road & Navajo Road | 69,300 | 19,600 | 0.28 | Acceptable |
| SR-18 between Navajo Road & Central Road | 69,300 | 27,500 | 0.40 | Acceptable |
| SR-18 between Central Road & Joshua Road | 69,300 | 7,400 | 0.11 | Acceptable |
| SR-18 between Joshua Road & Bear Valley Road | 25,500 | 13,100 | 0.51 | Acceptable |
| SR-18 e/o Bear Valley Road | 25,500 | 18,700 | 0.73 | Acceptable |
| Thunderbird Road between Rancherias Road & Dale Evans Parkway | 40,500 | 6,100 | 0.15 | Acceptable |
| Thunderbird Road between Dale Evans Parkway & Navajo Road | 40,500 | 7,400 | 0.18 | Acceptable |
| Thunderbird Road between Navajo Road & Central Road | 40,500 | 12,600 | 0.31 | Acceptable |
| Yucca Loma Road w/o Apple Valley Road | 40,500 | 39,900 | 0.99 | Approaching Capacity |
| Yucca Loma Road between Apple Valley Road & Rincon Road | 40,500 | 36,400 | 0.90 | Approaching Capacity |
| Yucca Loma Road between Rincon Road & Kiowa Road | 40,500 | 25,900 | 0.64 | Acceptable |
| Yucca Loma Road between Kiowa Road & SR-18 | 40,500 | 27,900 | 0.69 | Acceptable |
| Sitting Bull Road between Apple Valley Road & Kiowa Road | 25,500 | 8,400 | 0.33 | Acceptable |
| Bear Valley Road w/o Apple Valley Road | 69,300 | 62,500 | 0.90 | Approaching Capacity |
| Bear Valley Road between Apple Valley Road & Deep Creek Road | 69,300 | 41,100 | 0.59 | Acceptable |
| Bear Valley Road between Deep Creek Road & Kiowa Road | 69,300 | 41,100 | 0.59 | Acceptable |

## Table V-37
## Roadway Segment Capacity Evaluation
## No Project Alternative

| Roadway Segment | Roadway Capacity | Future Forecast | Volume/ Capacity Ratio | Threshold |
|---|---|---|---|---|
| Bear Valley Road between Kiowa Road & Navajo Road | 69,300 | 31,300 | 0.45 | Acceptable |
| Bear Valley Road between Navajo Road & Central Road | 69,300 | 18,400 | 0.27 | Acceptable |
| Bear Valley Road between Central Road & SR-18 | 69,300 | 11,400 | 0.16 | Acceptable |
| Rincon Road between SR-18 & Yucca Loma Road | 12,700 | 9,500 | 0.75 | Acceptable |
| Rock Springs Road between Deep Creek Road & Kiowa Road | 25,500 | 19,300 | 0.76 | Acceptable |
| High Desert Corridor between Standing Rock Avenue & Central Road | 107,300 | 16,100 | 0.15 | Acceptable |
| High Desert Corridor between Central Road & Waalew Road | 107,300 | 33,200 | 0.31 | Acceptable |
| High Desert Corridor between Waalew Road & Dale Evans Parkway | 107,300 | 49,600 | 0.46 | Acceptable |
| High Desert Corridor between Dale Evans Parkway & Alembic Street | 107,300 | 64,800 | 0.60 | Acceptable |
| High Desert Corridor between Alembic Street & I-15 freeway | 107,300 | 73,300 | 0.68 | Acceptable |
| Tussing Ranch Road w/o Apple Valley Road | 69,300 | 31,800 | 0.46 | Acceptable |
| Tussing Ranch Road between Apple Valley Road & Kiowa Road | 69,300 | 23,900 | 0.34 | Acceptable |
| Tussing Ranch Road between Kiowa Road & Navajo Road | 69,300 | 20,200 | 0.29 | Acceptable |
| Tussing Ranch Road between Navajo Road & Central Road | 69,300 | 17,400 | 0.25 | Acceptable |
| Falchion Road w/o Apple Valley Road | 25,500 | 5,600 | 0.22 | Acceptable |
| Falchion Road between Apple Valley Road & Pauma Street | 40,500 | 14,000 | 0.35 | Acceptable |
| Falchion Road between Pauma Street & Alembic Street | 25,500 | 11,200 | 0.44 | Acceptable |
| Falchion Road e/o Alembic Street | 40,500 | 3,500 | 0.09 | Acceptable |
| Pauma Street n/o Falchion Road | 25,500 | 5,600 | 0.22 | Acceptable |
| Pauma Street s/o Saugus Road | 25,500 | 5,600 | 0.22 | Acceptable |
| Alembic Street s/o High Desert Corridor | 69,300 | 18,500 | 0.27 | Acceptable |
| Alembic Street n/o High Desert Corridor | 69,300 | 46,700 | 0.67 | Acceptable |
| Alembic Street between Norco Street & Saugus Road | 25,500 | 30,900 | 1.21 | Potentially Exceeds Capacity |
| Alembic Street between Saugus Road & Stoddard Wells Road | 25,500 | 13,800 | 0.54 | Acceptable |
| Choco Road between Norco Street & Saugus Road | 25,500 | 8,900 | 0.35 | Acceptable |
| Dale Evans Parkway between High Desert Corridor & Corwin Road | 69,300 | 62,300 | 0.90 | Approaching Capacity |
| Dale Evans Parkway between High Desert Corridor & Norco Street | 69,300 | 48,200 | 0.70 | Acceptable |
| Corwin Road between Dale Evans Parkway & Dakota Road | 40,500 | 5,600 | 0.14 | Acceptable |
| Dakota Road s/o Fresno Road | 12,700 | 5,600 | 0.44 | Acceptable |
| Dachshund Avenue n/o Fresno Road | 25,500 | 13,400 | 0.53 | Acceptable |

**Table V-37**
**Roadway Segment Capacity Evaluation**
**No Project Alternative**

| Roadway Segment | Roadway Capacity | Future Forecast | Volume/ Capacity Ratio | Threshold |
|---|---|---|---|---|
| Fresno Road between Dale Evans Parkway & Navajo Road | 25,500 | 24,700 | 0.97 | Approaching Capacity |
| Norco Street w/o Alembic Street | 40,500 | 14,900 | 0.37 | Acceptable |
| Saugus Road w/o Pauma Street | 25,500 | 10,400 | 0.41 | Acceptable |
| Lafayette Street w/o Dale Evans Parkway | 25,500 | 9,100 | 0.36 | Acceptable |
| Johnson Road e/o Stoddard Wells Road | 40,500 | 16,300 | 0.40 | Acceptable |
| Stoddard Wells Road e/o Alembic Street | 40,500 | 24,800 | 0.61 | Acceptable |
| Stoddard Wells Road n/o Johnson Road | 40,500 | 6,800 | 0.17 | Acceptable |
| Stoddard Wells Road between Quarry Road & Dale Evans Parkway | 40,500 | 6,300 | 0.16 | Acceptable |
| Stoddard Wells Road w/o Navajo Road | 40,500 | 4,700 | 0.12 | Acceptable |
| Dale Evans Parkway s/o Quarry Road | 69,300 | 12,100 | 0.17 | Acceptable |
| Navajo Road s/o Lafayette Street | 12,700 | 11,500 | 0.91 | Approaching Capacity |
| Central Road n/o Lafayette Street | 69,300 | 11,700 | 0.17 | Acceptable |
| Quarry Road e/o I-15 freeway | 69,300 | 22,700 | 0.33 | Acceptable |
| Quarry Road between I-15 Frontage Road & Stoddard Wells Road | 25,500 | 5,600 | 0.22 | Acceptable |
| Quarry Road w/o Dale Evans Parkway | 25,500 | 14,400 | 0.56 | Acceptable |
| Quarry Road between Dale Evans Parkway & Navajo Road | 25,500 | 19,100 | 0.75 | Acceptable |
| Quarry Road e/o Navajo Road | 25,500 | 13,800 | 0.54 | Acceptable |
| Outer Highway I-15 South between Quarry Road & Dale Evans Parkway | 25,500 | 5,600 | 0.22 | Acceptable |
| Outer Highway I-15 South between Stoddard Wells Road & Quarry Road | 25,500 | 5,600 | 0.22 | Acceptable |

More Intense Alternative

The More Intense Alternative is projected to generate 1,630,773 daily two-way trips at build out. This represents approximately 3% more daily trips than the Preferred Alternative. V/C ratio analysis for this alternative shows that 76 segments would operate at acceptable levels, 20 segments would approach capacity, and 8 roadway segments would potentially exceed capacity at build out.

## Table V-38
## Roadway Segment Capacity Evaluation
## More Intense Alternative

| Roadway Segment | Roadway Capacity | Future Forecast | Volume/ Capacity Ratio | Threshold |
|---|---|---|---|---|
| Apple Valley Road n/o SR-18 | 69,300 | 17,200 | 0.25 | Acceptable |
| Apple Valley Road between SR-18 & Yucca Loma Road | 40,500 | 28,300 | 0.70 | Acceptable |
| Apple Valley Road between Yucca Loma Road & Sitting Bull Road | 69,300 | 43,400 | 0.63 | Acceptable |
| Apple Valley Road between Sitting Bull Road & Bear Valley Road | 69,300 | 48,100 | 0.69 | Acceptable |
| Apple Valley Road between Bear Valley Road & Tussing Ranch Road | 69,300 | 29,900 | 0.43 | Acceptable |
| Deep Creek Road between Bear Valley Road & Tussing Ranch Road | 25,500 | 6,000 | 0.24 | Acceptable |
| Deep Creek Road s/o of Rock Springs Road | 12,700 | 2,300 | 0.18 | Acceptable |
| Kiowa Road between SR-18 & Yucca Loma Road | 17,300 | 18,300 | 1.06 | Potentially Exceeds Capacity |
| Kiowa Road between Yucca Loma Road & Sitting Bull Road | 40,500 | 27,800 | 0.69 | Acceptable |
| Kiowa Road between Sitting Bull Road & Bear Valley Road | 40,500 | 27,400 | 0.68 | Acceptable |
| Kiowa Road between Bear Valley Road & Tussing Ranch Road | 40,500 | 29,000 | 0.72 | Acceptable |
| Dale Evans Parkway s/o I-15 Freeway | 69,300 | 56,300 | 0.81 | Approaching Capacity |
| Dale Evans Parkway n/o Fresno Road | 69,300 | 56,300 | 0.81 | Approaching Capacity |
| Dale Evans Parkway between Corwin Road & Waalew Road | 69,300 | 47,700 | 0.69 | Acceptable |
| Dale Evans Parkway between Waalew Road & Thunderbird Road | 69,300 | 33,100 | 0.48 | Acceptable |
| Dale Evans Parkway between Thunderbird Road & SR-18 | 40,500 | 23,500 | 0.58 | Acceptable |
| Navajo Road between Thunderbird Road & SR-18 | 40,500 | 19,300 | 0.48 | Acceptable |
| Navajo Road between SR-18 & Nisqually Road | 40,500 | 33,300 | 0.82 | Approaching Capacity |
| Navajo Road between Nisqually Road & Bear Valley Road | 40,500 | 29,200 | 0.72 | Acceptable |
| Navajo Road between Bear Valley Road & Tussing Ranch Road | 25,500 | 7,400 | 0.29 | Acceptable |
| Central Road n/o Waalew Road | 69,300 | 39,100 | 0.56 | Acceptable |
| Central Road between Waalew Road & Thunderbird Road | 69,300 | 49,000 | 0.71 | Acceptable |
| Central Road between Thunderbird Road & SR-18 | 69,300 | 34,900 | 0.50 | Acceptable |
| Central Road between SR-18 & Nisqually Road | 69,300 | 30,100 | 0.43 | Acceptable |
| Central Road between Nisqually Road & Bear Valley Road | 69,300 | 26,800 | 0.39 | Acceptable |
| Central Road between Bear Valley Road & Tussing Ranch Road | 69,300 | 15,300 | 0.22 | Acceptable |
| Stoddard Wells Road e/o I-15 Freeway | 69,300 | 60,300 | 0.87 | Approaching Capacity |

## Table V-38
## Roadway Segment Capacity Evaluation
## More Intense Alternative

| Roadway Segment | Roadway Capacity | Future Forecast | Volume/ Capacity Ratio | Threshold |
|---|---|---|---|---|
| Corwin Road between SR-18 & Tao Road | 40,500 | 29,400 | 0.73 | Acceptable |
| Corwin Road between Tao Road & Waalew Road | 40,500 | 23,400 | 0.58 | Acceptable |
| Corwin Road between Waalew Road & Dale Evans Parkway | 40,500 | 22,600 | 0.56 | Acceptable |
| Waalew Road Between Corwin Road & Dale Evans Parkway | 40,500 | 12,100 | 0.30 | Acceptable |
| Waalew Road e/o Dale Evans Parkway | 40,500 | 12,100 | 0.30 | Acceptable |
| Waalew Road w/o Central Road | 40,500 | 14,200 | 0.35 | Acceptable |
| SR-18 w/o Apple Valley Road | 69,300 | 69,800 | 1.01 | Potentially Exceeds Capacity |
| SR-18 between Apple Valley Road & Corwin Road | 69,300 | 49,500 | 0.71 | Acceptable |
| SR-18 between Corwin Road & Tao Road | 69,300 | 26,900 | 0.39 | Acceptable |
| SR-18 between Tao Road & Rancherias Road | 69,300 | 38,100 | 0.55 | Acceptable |
| SR-18 between Rancherias Road & Dale Evans Parkway | 69,300 | 32,500 | 0.47 | Acceptable |
| SR-18 between Dale Evans Parkway & Kiowa Road | 69,300 | 38,000 | 0.55 | Acceptable |
| SR-18 between Kiowa Road & Navajo Road | 69,300 | 24,500 | 0.35 | Acceptable |
| SR-18 between Navajo Road & Central Road | 69,300 | 29,800 | 0.43 | Acceptable |
| SR-18 between Central Road & Joshua Road | 69,300 | 11,800 | 0.17 | Acceptable |
| SR-18 between Joshua Road & Bear Valley Road | 25,500 | 14,100 | 0.55 | Acceptable |
| SR-18 e/o Bear Valley Road | 25,500 | 19,000 | 0.75 | Acceptable |
| Thunderbird Road between Rancherias Road & Dale Evans Parkway | 40,500 | 6,500 | 0.16 | Acceptable |
| Thunderbird Road between Dale Evans Parkway & Navajo Road | 40,500 | 10,200 | 0.25 | Acceptable |
| Thunderbird Road between Navajo Road & Central Road | 40,500 | 15,900 | 0.39 | Acceptable |
| Yucca Loma Road w/o Apple Valley Road | 69,300 | 41,700 | 0.60 | Acceptable |
| Yucca Loma Road between Apple Valley Road & Rincon Road | 40,500 | 38,100 | 0.94 | Approaching Capacity |
| Yucca Loma Road between Rincon Road & Kiowa Road | 40,500 | 26,500 | 0.65 | Acceptable |
| Yucca Loma Road between Kiowa Road & SR-18 | 40,500 | 32,000 | 0.79 | Acceptable |
| Sitting Bull Road between Apple Valley Road & Kiowa Road | 25,500 | 11,400 | 0.45 | Acceptable |
| Bear Valley Road w/o Apple Valley Road | 69,300 | 63,700 | 0.92 | Approaching Capacity |
| Bear Valley Road between Apple Valley Road & Deep Creek Road | 69,300 | 49,900 | 0.72 | Acceptable |
| Bear Valley Road between Deep Creek Road & Kiowa Road | 69,300 | 47,700 | 0.69 | Acceptable |
| Bear Valley Road between Kiowa Road & Navajo Road | 69,300 | 36,800 | 0.53 | Acceptable |
| Bear Valley Road between Navajo Road & Central Road | 69,300 | 26,400 | 0.38 | Acceptable |
| Bear Valley Road between Central Road & SR-18 | 69,300 | 16,900 | 0.24 | Acceptable |
| Rincon Road between SR-18 & Yucca Loma Road | 12,700 | 14,000 | 1.10 | Potentially Exceeds Capacity |

## Table V-38
## Roadway Segment Capacity Evaluation
## More Intense Alternative

| Roadway Segment | Roadway Capacity | Future Forecast | Volume/ Capacity Ratio | Threshold |
|---|---|---|---|---|
| Rock Springs Road between Deep Creek Road & Kiowa Road | 25,500 | 21,600 | 0.85 | Approaching Capacity |
| High Desert Corridor between Standing Rock Avenue & Central Road | 107,300 | 23,200 | 0.22 | Acceptable |
| High Desert Corridor between Central Road & Waalew Road | 107,300 | 45,300 | 0.42 | Acceptable |
| High Desert Corridor between Waalew Road & Dale Evans Parkway | 107,300 | 64,500 | 0.60 | Acceptable |
| High Desert Corridor between Dale Evans Parkway & Alembic Street | 107,300 | 79,800 | 0.74 | Acceptable |
| High Desert Corridor between Alembic Street & I-15 freeway | 107,300 | 94,000 | 0.88 | Approaching Capacity |
| Tussing Ranch Road w/o Apple Valley Road | 69,300 | 32,300 | 0.47 | Acceptable |
| Tussing Ranch Road between Apple Valley Road & Kiowa Road | 69,300 | 23,700 | 0.34 | Acceptable |
| Tussing Ranch Road between Kiowa Road & Navajo Road | 69,300 | 20,100 | 0.29 | Acceptable |
| Tussing Ranch Road between Navajo Road & Central Road | 69,300 | 17,900 | 0.26 | Acceptable |
| Falchion Road w/o Apple Valley Road | 25,500 | 13,200 | 0.52 | Acceptable |
| Falchion Road between Apple Valley Road & Pauma Street | 40,500 | 28,200 | 0.70 | Acceptable |
| Falchion Road between Pauma Street & Alembic Street | 40,500 | 30,000 | 0.74 | Acceptable |
| Falchion Road e/o Alembic Street | 40,500 | 21,300 | 0.53 | Acceptable |
| Pauma Street n/o Falchion Road | 25,500 | 13,200 | 0.52 | Acceptable |
| Pauma Street s/o Saugus Road | 25,500 | 13,200 | 0.52 | Acceptable |
| Alembic Street s/o High Desert Corridor | 69,300 | 42,600 | 0.61 | Acceptable |
| Alembic Street n/o High Desert Corridor | 69,300 | 70,600 | 1.02 | Potentially Exceeds Capacity |
| Alembic Street between Norco Street & Saugus Road | 40,500 | 41,300 | 1.02 | Potentially Exceeds Capacity |
| Alembic Street between Saugus Road & Stoddard Wells Road | 40,500 | 48,100 | 1.19 | Potentially Exceeds Capacity |
| Choco Road between Norco Street & Saugus Road | 25,500 | 27,800 | 1.09 | Potentially Exceeds Capacity |
| Dale Evans Parkway between High Desert Corridor & Corwin Road | 69,300 | 64,600 | 0.93 | Approaching Capacity |
| Dale Evans Parkway between High Desert Corridor & Norco Street | 69,300 | 63,200 | 0.91 | Approaching Capacity |
| Corwin Road between Dale Evans Parkway & Dakota Road | 40,500 | 13,200 | 0.33 | Acceptable |
| Dakota Road s/o Fresno Road | 40,500 | 13,200 | 0.33 | Acceptable |
| Dachshund Avenue n/o Fresno Road | 25,500 | 16,300 | 0.64 | Acceptable |

**Table V-38**
**Roadway Segment Capacity Evaluation**
**More Intense Alternative**

| Roadway Segment | Roadway Capacity | Future Forecast | Volume/ Capacity Ratio | Threshold |
|---|---|---|---|---|
| Fresno Road between Dale Evans Parkway & Navajo Road | 25,500 | 25,600 | 1.00 | Approaching Capacity |
| Norco Street w/o Alembic Street | 40,500 | 23,700 | 0.59 | Acceptable |
| Saugus Road w/o Pauma Street | 25,500 | 23,100 | 0.91 | Approaching Capacity |
| Lafayette Street w/o Dale Evans Parkway | 25,500 | 23,700 | 0.93 | Approaching Capacity |
| Johnson Road e/o Stoddard Wells Road | 40,500 | 28,400 | 0.70 | Acceptable |
| Stoddard Wells Road e/o Alembic Street | 69,300 | 64,000 | 0.92 | Approaching Capacity |
| Stoddard Wells Road n/o Johnson Road | 40,500 | 37,200 | 0.92 | Approaching Capacity |
| Stoddard Wells Road between Quarry Road & Dale Evans Parkway | 40,500 | 35,600 | 0.88 | Approaching Capacity |
| Stoddard Wells Road w/o Navajo Road | 40,500 | 16,700 | 0.41 | Acceptable |
| Dale Evans Parkway s/o Quarry Road | 69,300 | 59,300 | 0.86 | Approaching Capacity |
| Navajo Road s/o Lafayette Street | 25,500 | 15,400 | 0.60 | Acceptable |
| Central Road n/o Lafayette Street | 69,300 | 24,900 | 0.36 | Acceptable |
| Quarry Road e/o I-15 freeway | 69,300 | 68,600 | 0.99 | Approaching Capacity |
| Quarry Road between I-15 Frontage Road & Stoddard Wells Road | 69,300 | 13,200 | 0.19 | Acceptable |
| Quarry Road w/o Dale Evans Parkway | 40,500 | 40,100 | 0.99 | Approaching Capacity |
| Quarry Road between Dale Evans Parkway & Navajo Road | 25,500 | 27,700 | 1.09 | Potentially Exceeds Capacity |
| Quarry Road e/o Navajo Road | 25,500 | 21,400 | 0.84 | Approaching Capacity |
| Outer Highway I-15 South between Quarry Road & Dale Evans Parkway | 25,500 | 13,200 | 0.52 | Acceptable |
| Outer Highway I-15 South between Stoddard Wells Road & Quarry Road | 25,500 | 13,200 | 0.52 | Acceptable |

Less Intense Alternative

The Less Intense Alternative is projected to generate 1,224,515 daily two-way trips at build out, or approximately 22% less than daily trip projections for the Preferred Alternative. Level of service along modeled roadway segments in the planning area are expected to be "acceptable" for 95 roadway segments, and 5 segments are projected to approach capacity at build out. There are 4 roadway segments where the LOS potentially exceeds capacity.

## Table V-39
## Roadway Segment Capacity Evaluation
## Less Intense Alternative

| Roadway Segment | Roadway Capacity | Future Forecast | Volume/ Capacity Ratio | Threshold[1] |
|---|---|---|---|---|
| Apple Valley Road n/o SR-18 | 69,300 | 19,600 | 0.28 | Acceptable |
| Apple Valley Road between SR-18 & Yucca Loma Road | 40,500 | 24,000 | 0.59 | Acceptable |
| Apple Valley Road between Yucca Loma Road & Sitting Bull Road | 69,300 | 37,000 | 0.53 | Acceptable |
| Apple Valley Road between Sitting Bull Road & Bear Valley Road | 69,300 | 37,500 | 0.54 | Acceptable |
| Apple Valley Road between Bear Valley Road & Tussing Ranch Road | 69,300 | 26,800 | 0.39 | Acceptable |
| Deep Creek Road between Bear Valley Road & Tussing Ranch Road | 25,500 | 4,400 | 0.17 | Acceptable |
| Deep Creek Road s/o of Rock Springs Road | 12,700 | 2,300 | 0.18 | Acceptable |
| Kiowa Road between SR-18 & Yucca Loma Road | 17,300 | 17,600 | 1.02 | Potentially Exceeds Capacity |
| Kiowa Road between Yucca Loma Road & Sitting Bull Road | 40,500 | 24,700 | 0.61 | Acceptable |
| Kiowa Road between Sitting Bull Road & Bear Valley Road | 40,500 | 24,800 | 0.61 | Acceptable |
| Kiowa Road between Bear Valley Road & Tussing Ranch Road | 40,500 | 26,100 | 0.64 | Acceptable |
| Dale Evans Parkway s/o I-15 Freeway | 69,300 | 43,300 | 0.62 | Acceptable |
| Dale Evans Parkway n/o Fresno Road | 69,300 | 37,900 | 0.55 | Acceptable |
| Dale Evans Parkway between Corwin Road & Waalew Road | 69,300 | 41,600 | 0.60 | Acceptable |
| Dale Evans Parkway between Waalew Road & Thunderbird Road | 69,300 | 27,500 | 0.40 | Acceptable |
| Dale Evans Parkway between Thunderbird Road & SR-18 | 40,500 | 20,800 | 0.51 | Acceptable |
| Navajo Road between Thunderbird Road & SR-18 | 40,500 | 17,600 | 0.43 | Acceptable |
| Navajo Road between SR-18 & Nisqually Road | 40,500 | 29,100 | 0.72 | Acceptable |
| Navajo Road between Nisqually Road & Bear Valley Road | 40,500 | 25,200 | 0.62 | Acceptable |
| Navajo Road between Bear Valley Road & Tussing Ranch Road | 25,500 | 7,200 | 0.28 | Acceptable |
| Central Road n/o Waalew Road | 69,300 | 37,900 | 0.55 | Acceptable |
| Central Road between Waalew Road & Thunderbird Road | 69,300 | 41,800 | 0.60 | Acceptable |
| Central Road between Thunderbird Road & SR-18 | 69,300 | 28,800 | 0.42 | Acceptable |
| Central Road between SR-18 & Nisqually Road | 69,300 | 23,900 | 0.34 | Acceptable |
| Central Road between Nisqually Road & Bear Valley Road | 69,300 | 20,000 | 0.29 | Acceptable |
| Central Road between Bear Valley Road & Tussing Ranch Road | 69,300 | 13,500 | 0.19 | Acceptable |
| Stoddard Wells Road e/o I-15 Freeway | 69,300 | 26,700 | 0.39 | Acceptable |
| Corwin Road between SR-18 & Tao Road | 40,500 | 28,800 | 0.71 | Acceptable |
| Corwin Road between Tao Road & Waalew Road | 40,500 | 24,700 | 0.61 | Acceptable |

## Table V-39
## Roadway Segment Capacity Evaluation
## Less Intense Alternative

| Roadway Segment | Roadway Capacity | Future Forecast | Volume/ Capacity Ratio | Threshold[1] |
|---|---|---|---|---|
| Corwin Road between Waalew Road & Dale Evans Parkway | 40,500 | 21,300 | 0.53 | Acceptable |
| Waalew Road Between Corwin Road & Dale Evans Parkway | 40,500 | 12,300 | 0.30 | Acceptable |
| Waalew Road e/o Dale Evans Parkway | 40,500 | 11,300 | 0.28 | Acceptable |
| Waalew Road w/o Central Road | 40,500 | 17,200 | 0.42 | Acceptable |
| SR-18 w/o Apple Valley Road | 69,300 | 69,900 | 1.01 | Potentially Exceeds Capacity |
| SR-18 between Apple Valley Road & Corwin Road | 69,300 | 50,100 | 0.72 | Acceptable |
| SR-18 between Corwin Road & Tao Road | 69,300 | 27,400 | 0.40 | Acceptable |
| SR-18 between Tao Road & Rancherias Road | 69,300 | 36,800 | 0.53 | Acceptable |
| SR-18 between Rancherias Road & Dale Evans Parkway | 69,300 | 31,900 | 0.46 | Acceptable |
| SR-18 between Dale Evans Parkway & Kiowa Road | 69,300 | 34,500 | 0.50 | Acceptable |
| SR-18 between Kiowa Road & Navajo Road | 69,300 | 22,600 | 0.33 | Acceptable |
| SR-18 between Navajo Road & Central Road | 69,300 | 30,100 | 0.43 | Acceptable |
| SR-18 between Central Road & Joshua Road | 69,300 | 12,100 | 0.17 | Acceptable |
| SR-18 between Joshua Road & Bear Valley Road | 25,500 | 13,300 | 0.52 | Acceptable |
| SR-18 e/o Bear Valley Road | 25,500 | 18,200 | 0.71 | Acceptable |
| Thunderbird Road between Rancherias Road & Dale Evans Parkway | 40,500 | 6,300 | 0.16 | Acceptable |
| Thunderbird Road between Dale Evans Parkway & Navajo Road | 40,500 | 8,700 | 0.21 | Acceptable |
| Thunderbird Road between Navajo Road & Central Road | 40,500 | 15,100 | 0.37 | Acceptable |
| Yucca Loma Road w/o Apple Valley Road | 69,300 | 40,000 | 0.58 | Acceptable |
| Yucca Loma Road between Apple Valley Road & Rincon Road | 40,500 | 37,800 | 0.93 | Approaching Capacity |
| Yucca Loma Road between Rincon Road & Kiowa Road | 40,500 | 26,000 | 0.64 | Acceptable |
| Yucca Loma Road between Kiowa Road & SR-18 | 40,500 | 29,200 | 0.72 | Acceptable |
| Sitting Bull Road between Apple Valley Road & Kiowa Road | 25,500 | 8,400 | 0.33 | Acceptable |
| Bear Valley Road w/o Apple Valley Road | 69,300 | 58,900 | 0.85 | Approaching Capacity |
| Bear Valley Road between Apple Valley Road & Deep Creek Road | 69,300 | 39,500 | 0.57 | Acceptable |
| Bear Valley Road between Deep Creek Road & Kiowa Road | 69,300 | 40,100 | 0.58 | Acceptable |
| Bear Valley Road between Kiowa Road & Navajo Road | 69,300 | 30,400 | 0.44 | Acceptable |
| Bear Valley Road between Navajo Road & Central Road | 69,300 | 18,500 | 0.27 | Acceptable |
| Bear Valley Road between Central Road & SR-18 | 69,300 | 10,600 | 0.15 | Acceptable |
| Rincon Road between SR-18 & Yucca Loma Road | 12,700 | 12,200 | 0.96 | Approaching Capacity |
| Rock Springs Road between Deep Creek Road & Kiowa Road | 25,500 | 20,700 | 0.81 | Approaching Capacity |

## Table V-39
## Roadway Segment Capacity Evaluation
## Less Intense Alternative

| Roadway Segment | Roadway Capacity | Future Forecast | Volume/ Capacity Ratio | Threshold[1] |
|---|---|---|---|---|
| High Desert Corridor between Standing Rock Avenue & Central Road | 107,300 | 19,800 | 0.18 | Acceptable |
| High Desert Corridor between Central Road & Waalew Road | 107,300 | 38,600 | 0.36 | Acceptable |
| High Desert Corridor between Waalew Road & Dale Evans Parkway | 107,300 | 51,700 | 0.48 | Acceptable |
| High Desert Corridor between Dale Evans Parkway & Alembic Street | 107,300 | 71,500 | 0.67 | Acceptable |
| High Desert Corridor between Alembic Street & I-15 freeway | 107,300 | 89,800 | 0.84 | Approaching Capacity |
| Tussing Ranch Road w/o Apple Valley Road | 69,300 | 31,100 | 0.45 | Acceptable |
| Tussing Ranch Road between Apple Valley Road & Kiowa Road | 69,300 | 23,400 | 0.34 | Acceptable |
| Tussing Ranch Road between Kiowa Road & Navajo Road | 69,300 | 20,600 | 0.30 | Acceptable |
| Tussing Ranch Road between Navajo Road & Central Road | 69,300 | 18,100 | 0.26 | Acceptable |
| Falchion Road w/o Apple Valley Road | 25,500 | 9,900 | 0.39 | Acceptable |
| Falchion Road between Apple Valley Road & Pauma Street | 40,500 | 21,900 | 0.54 | Acceptable |
| Falchion Road between Pauma Street & Alembic Street | 40,500 | 23,900 | 0.59 | Acceptable |
| Falchion Road e/o Alembic Street | 40,500 | 19,300 | 0.48 | Acceptable |
| Pauma Street n/o Falchion Road | 25,500 | 9,900 | 0.39 | Acceptable |
| Pauma Street s/o Saugus Road | 25,500 | 9,900 | 0.39 | Acceptable |
| Alembic Street s/o High Desert Corridor | 69,300 | 33,800 | 0.49 | Acceptable |
| Alembic Street n/o High Desert Corridor | 69,300 | 43,800 | 0.63 | Acceptable |
| Alembic Street between Norco Street & Saugus Road | 40,500 | 20,700 | 0.51 | Acceptable |
| Alembic Street between Saugus Road & Stoddard Wells Road | 40,500 | 22,200 | 0.55 | Acceptable |
| Choco Road between Norco Street & Saugus Road | 25,500 | 13,500 | 0.53 | Acceptable |
| Dale Evans Parkway between High Desert Corridor & Corwin Road | 69,300 | 52,200 | 0.75 | Acceptable |
| Dale Evans Parkway between High Desert Corridor & Norco Street | 69,300 | 47,700 | 0.69 | Acceptable |
| Corwin Road between Dale Evans Parkway & Dakota Road | 40,500 | 9,900 | 0.24 | Acceptable |
| Dakota Road s/o Fresno Road | 40,500 | 9,900 | 0.24 | Acceptable |
| Dachshund Avenue n/o Fresno Road | 25,500 | 15,100 | 0.59 | Acceptable |
| Fresno Road between Dale Evans Parkway & Navajo Road | 25,500 | 26,700 | 1.05 | Potentially Exceeds Capacity |
| Norco Street w/o Alembic Street | 40,500 | 17,000 | 0.42 | Acceptable |
| Saugus Road w/o Pauma Street | 25,500 | 19,500 | 0.76 | Acceptable |
| Lafayette Street w/o Dale Evans Parkway | 25,500 | 12,400 | 0.49 | Acceptable |
| Johnson Road e/o Stoddard Wells Road | 40,500 | 20,900 | 0.52 | Acceptable |

**Table V-39**
**Roadway Segment Capacity Evaluation**
**Less Intense Alternative**

| Roadway Segment | Roadway Capacity | Future Forecast | Volume/ Capacity Ratio | Threshold[1] |
|---|---|---|---|---|
| Stoddard Wells Road e/o Alembic Street | 69,300 | 34,900 | 0.50 | Acceptable |
| Stoddard Wells Road n/o Johnson Road | 40,500 | 12,600 | 0.31 | Acceptable |
| Stoddard Wells Road between Quarry Road & Dale Evans Parkway | 40,500 | 12,900 | 0.32 | Acceptable |
| Stoddard Wells Road w/o Navajo Road | 40,500 | 13,000 | 0.32 | Acceptable |
| Dale Evans Parkway s/o Quarry Road | 69,300 | 27,700 | 0.40 | Acceptable |
| Navajo Road s/o Lafayette Street | 25,500 | 13,600 | 0.53 | Acceptable |
| Central Road n/o Lafayette Street | 69,300 | 23,100 | 0.33 | Acceptable |
| Quarry Road e/o I-15 freeway | 69,300 | 53,100 | 0.77 | Acceptable |
| Quarry Road between I-15 Frontage Road & Stoddard Wells Road | 69,300 | 9,900 | 0.14 | Acceptable |
| Quarry Road w/o Dale Evans Parkway | 40,500 | 26,000 | 0.64 | Acceptable |
| Quarry Road between Dale Evans Parkway & Navajo Road | 25,500 | 27,900 | 1.09 | Potentially Exceeds Capacity |
| Quarry Road e/o Navajo Road | 25,500 | 19,200 | 0.75 | Acceptable |
| Outer Highway I-15 South between Quarry Road & Dale Evans Parkway | 25,500 | 9,900 | 0.39 | Acceptable |
| Outer Highway I-15 South between Stoddard Wells Road & Quarry Road | 25,500 | 9,900 | 0.39 | Acceptable |

Annexation 2008-001 and 2008-002

The following table shows trip generation within the annexation areas for each of the project alternatives. These trips are included in the overall planning area trip generation figures cited above. The percentage of trips for the entire planning area represented by the annexation area is shown below.

**Table V-40**
**Annexation Areas Trip Generation at Build Out**

| | Average Daily Trips | % of Planning Area |
|---|---|---|
| **Annexation Area 2008-001** | | |
| Preferred Alternative | 180,781 | 11% |
| No Project | 26,553 | 3% |
| Alternative I: More Intense | 232,351 | 14% |
| Alternative II: Less Intense | 82,435 | 7% |
| **Annexation Area 2008-002** | | |
| Preferred Alternative | 44,556 | 3% |
| No Project | 21,623 | 2% |
| Alternative I: More Intense | 44,590 | 3% |
| Alternative II: Less Intense | 44,590 | 4% |

**Summary**
In summary, at build out the No Project Alternative will generate approximately 600,000 fewer average daily trips, or a decrease of approximately 63% from the Preferred Alternative. The More Intense Alternative is projected to generate approximately 50,000 more daily trips (3%) than the Preferred Alternative, while the Less Intense Alternative is expected to generate approximately 353,216 fewer daily trips, a decrease of approximately 22%.

Levels of service analysis based on volume/capacity ratios along modeled roadway segments shows that the No Project Alternative and Less Intense Alternative will result in the most roadway segments operating within the acceptable range. The More Intense Alternative exceeds other alternative with regard to segments that are either approaching capacity or potentially exceeding capacity.

All of the alternatives will generate increased vehicular traffic along local and regional roadways. These impacts are expected to be substantial, and will require the construction of roadway improvements to accommodate traffic volumes at build out. Levels of capacity will be exceeded along some roadway segments, regardless of the alternative that is developed. The General Plan Circulation Element provides for build out of roadways in the planning area. Mitigation measures set forth in Section III-O will reduce traffic impacts to the greatest extent feasible for any of the alternatives.

## E. Environmentally Superior Alternative

CEQA requires that the analysis of alternatives include a conclusion as to which alternative is environmentally superior. Based on the analysis in this Section of the EIR, and when compared to that provided in Section III, all the alternatives will have similar impacts on agricultural resources, biological resources, cultural resources, geology and soils, and hydrology. Impacts associated with issue areas directly tied to development, including air quality, noise, public facilities and traffic, will be lower under the No Project and Less Intense alternatives, and equal or marginally higher under the More Intense Alternative.

For air quality impacts, where the impacts have been determined to remain significant and unavoidable under the Preferred Alternative, even after the implementation of all feasible mitigation measures, none of the alternatives would reduce all these impacts to less than significant levels. The No Project (existing General Plan) alternative, would have the least significant amount of emissions, but would still have significant impacts to air quality.

For land use impacts, which remain significant and unavoidable for Annexation 2008-001 under the Preferred Alternative as they relate to the change in land use character, the No Project Alternative would be environmentally superior and would eliminate the significant and unavoidable impacts, and reduce them to less than significant levels.

Traffic impacts associated with remain significant and unavoidable under the Preferred Alternative for the intersection of Dale Evans Parkway and Corwin Road. Traffic impacts associated with all the alternatives except the More Intense Alternative can be mitigated to less

than significant levels with the improvements described in the Traffic Study, and the mitigation measures detailed in Section III of this document. Therefore, the No Project Alternative would have the least traffic impacts, and would be the superior alternative as it relates to traffic and circulation.

In the overall, the No Project Alternative would have the least impacts on the environment, and would represent the environmentally superior alternative. The No Project Alternative can be considered in this case, because it would result in development under the existing General Plans of the Town and the County, and is not a No Project/No Development alternative. However, the General Plan Update was undertaken because the existing General Plan no longer meets the community's needs and goals. Therefore, the No Project Alternative would no meet the Project Objectives established in this Section. The Less Intense Alternative would be the next most superior alternative, and would meet more of the Project Objectives, but would not meet the objectives relating the jobs/housing balance and economic base, because the land use designations would not support sufficient commercial and industrial space to diversify the economy and provide the widest range of jobs.

# TOWN OF APPLE VALLEY

## DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE COMPREHENSIVE GENERAL PLAN AND ANNEXATION NO. 2008-001 AND NO. 2008-002

## VI. SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

This section of the EIR considers the long-term effects of the proposed General Plan and annexations. It assesses the relationship between the local short-term uses of the environment and the maintenance and enhancement of long-term productivity. It focuses on areas of impact that limit the range of beneficial uses of the environment or pose long-term health and safety risks. Areas of concern include biological resources, visual resources, air and water resources, and geophysical conditions. This section also discusses why the proposed General Plan and annexations are considered justified for adoption and implementation at this time.

**Biological Resources**

As the General Plan area continues to develop, disturbance and conversion of natural lands will occur. The loss of natural plant communities and wildlife will result from the construction of improvements, and development activities such as grading and clearing will have direct consequences such as habitat loss, fragmentation and degradation. The proposed General Plan includes goals, policies and programs to assure compliance with the Western Mojave Habitat Conservation Plan, which has been adopted for federal lands in the planning area and provides for conservation of lands for specifically covered species, such as the Desert Tortoise, Mojave Ground Squirrel, Le Conte's Thrasher, and Burrowing Owl. The Town is developing the Apple Valley Multiple Species Conservation Plan (Apple Valley MSHCP) for non-federal lands in the planning area. Upon its adoption, the Apple Valley MSHCP will provide a means by which the Town can ensure protection of sensitive environmental resources. Pending adoption of the Apple Valley MSHCP, appropriate incidental take permits and associated mitigation measures are required prior to development on private lands where state and/or federal listed species are identified.

In general, on-going impacts of human activities to biological resources and the loss and degradation of habitat will contribute to the long-term reduction of animal and plant species, habitat and biological diversity.

**Water Resources**

As discussed in Section II and III of this EIR, portions of the Mojave River Groundwater Basin, including the Alto sub-basin, which underlies the planning area, are in a state of overdraft. The sub-basin is included under the Mojave Basin Area Adjudication, which requires that the Mojave Water Agency (MWA) import additional surface water to help balance the Basin. MWA is a State Water Project (SWP) contractor and receives imported SWP water annually for distribution by approved water contractors that serve Apple Valley, including Apple Valley Ranchos Water Company (AVRWC) and others. MWA also participates in conjunctive water use, or "water banking" with Metropolitan Water District. MWA and AVRWC have prepared Urban Water Management Plans (UWMPs) to address water management issues in the Basin. AVRWC serves approximately 80% of water users in the Town of Apple Valley and has indicated that it has adequate water for its service area through year 2025. MWA and AVRWC have implemented water conservation techniques and measures to reduce overdraft. The Town and the Victor Valley Wastewater Treatment Authority (VVWRA), which processes reclaimed water at its Victorville plant, have developed plans for delivery of reclaimed water to the Town in the future.

Continued growth and development in the region and the planning area have resulted in increased demand on groundwater production. Implementation of water conservation methods and future delivery of reclaimed water are expected to ease overdraft conditions in the Basin and Alto sub-area. The proposed General Plan includes policies and programs intended to promote and support the conservative use of water resources for domestic and landscaping uses, and to encourage the use of drought tolerant planting materials. Nonetheless, factors such as periodic drought conditions in California, the potential for reductions in available Colorado River water and new sources of recharge water all affect the availability of domestic water resources for future development. The proposed General Plan and annexations will contribute to a cumulative reduction in groundwater in the Basin.

**Air Resources**

Air quality is a non-localized issue that is influenced not only by the local generation of pollutants but also sources outside the high desert region. The Town is located within the Mojave Desert Air Basin (MDAB), which includes air basins to the west and southwest. As the Town continues to grow, and development in the region occurs, pollutants emitted into the air basin are expected to increase as a result of additional traffic, urban development, and power and natural gas consumption that will further degrade air quality. As a result of increased local emissions, higher concentrations of reactive organic gases and particulates are expected, while the amount of locally produced ozone is also likely to increase.

Burning natural gas, and the continued use of gasoline and diesel fuels in vehicles, produces oxides of nitrogen and reactive hydrocarbons. Depending on the rate of dispersion, these pollutants degrade local air quality to a greater or lesser extent. Continued urban development will also temporarily increase fugitive dust emissions, which will largely subside as site disturbance results in development and permanent stabilizers such as landscaping, structures and pavement, are put in place. The General Plan includes goals, policies and programs that are intended to regulate emissions; nonetheless, future development will result in air quality impacts. Emissions are not expected to substantially decrease in the near-term without the extreme modification of transportation methods and combustion technology.

**Visual Resources**

The region and planning area's scenic and visual resources are highly valued, characterized by gently sloping terrain with mountain vistas and expansive views of desert lands and open spaces along the Mojave River. The General Plan area's visual resources will be impacted by continued development in the area, especially within the previously less developed northern portion of the planning area. Viewsheds along I-15 in the northwestern portion of the planning area are also expected to be impacted by development that will be facilitated by the proposed Annexation No. 2008-001.

Policies and programs included in the proposed General Plan provide for appropriate development criteria and ensure that development proposals will be reviewed for their potential to adversely affect scenic resources. The General Plan also provides for the use of native vegetation and the preservation and integration of desert landscape elements into urban design. Nonetheless, long-term impacts to visual resources will occur as a result of grading, clearing and other site disturbances, along with the construction of roads and structures.

**Geophysical Resources**

Section III of this EIR discusses the geotechnical forces that affect the General Plan area. The region is seismically active and is considered subject to potentially strong ground shaking associated with earthquakes along any of the large fault zones in the region. Continued development and increased urbanization in the planning area, even at relatively low densities and intensities, is expected to expose greater numbers of residents, workers, and visitors to potentially substantial geotechnical hazards. The Town enforces the provisions and requirements of several relevant regulatory mechanisms, in order to ensure the continued safety of the community's residents and visitors. The Alquist-Priolo Earthquake Fault Zoning Act, Title 24 of the California Administrative Code, the Uniform Building Code and the International Building Code are all intended to help reduce geological hazards. Nonetheless, major seismic events can result in impacts that are generally severe, and for which it is not possible to completely plan or mitigate. These hazards are considered long-term impacts that will continue to pose a risk to people and property in the planning area.

# TOWN OF APPLE VALLEY

## DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE COMPREHENSIVE GENERAL PLAN AND ANNEXATION NO. 2008-001 AND NO. 2008-002

## VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF ENVIRONMENTAL RESOURCES

As mandated by CEQA, the EIR addresses the use of non-renewable resources as development proceeds; it further evaluates the continued use of these resources upon the completion of that development. Non-renewable resources generally imply energy resources, but may also pertain to the permanent loss of visual resources, as well as biological, mineral and other resources.

The future development of the planning area as proposed under the General Plan and annexations will result in the irretrievable and irreversible commitment of the following renewable and non-renewable natural resources: open land; energy resources, including natural gas, oil and other fossil fuels; water; construction materials such as lumber, gravel, sand, asphalt, and metals; minerals; biological resources; and visual resources.

This EIR sets forth mitigation measures, the implementation of which will reduce potential impacts associated with the proposed General Plan to less than significant levels for sensitive and/or non-renewable environmental resources.

The on-going depletion of fossil fuel resources will continue to occur as a result of the continued consumption of electrical energy and natural gas. The incremental use of fossil fuels will factor into the ultimate loss of an important source of chemical and material feed stocks, and these stocks will be irretrievable once consumed.

As the General Plan builds out, habitat and other biological resources will be irretrievably lost. Viewsheds within the planning area will be irreversibly altered as future development occurs, potentially degrading the quality of the open space environment as urbanization continues.

The General Plan establishes a regulatory framework and land use patterns and intensities that are intended to conserve and protect valuable resources and substantially reduce long-term impacts.

Urban development is, over time, expected to have lesser impacts on finite resources than it does at present, as future and enhanced technology are anticipated to reduce impacts on fossil fuel resources and other finite mineral resources. Development standards and restrictions, as well as land use designations established in the proposed General Plan and annexation areas, are also expected to limit development impacts on natural resources, including open space lands and biological resources.

# TOWN OF APPLE VALLEY

## DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE COMPREHENSIVE GENERAL PLAN AND ANNEXATIONS NO. 2008-001 AND NO. 2008-002

## IX. ORGANIZATIONS, PERSONS AND DOCUMENTS CONSULTED

### A. Project Proponent

Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, CA 92307

### B. Planning/Environmental Consultant

Terra Nova Planning & Research, Inc.
400 South Farrell, Suite B-205
Palm Springs, CA 92262

### C. Transportation Consultants

Urban Crossroads, Inc.
41 Corporate Park, Suite 300
Irvine, CA 92606

### D. Biological Consultant

AMEC Earth and Environmental, Inc.
3120 Chicago Avenue, Suite 110
Riverside, CA 92507-3431

### E. Cultural and Paleontological Consultant

CRM Tech, Inc.
4472 Orange Street
Riverside, CA 92501

## F. Water Purveyors

Apple Valley Ranchos Water Company
Golden State Water Company
Metropolitan Water District of Southern California
Mojave Water Agency

## G. Utilities

Burrtec
Charter Communications
Southern California Edison
Southwest Gas
TimeWarner
Verizon
Victor Valley Wastewater Reclamation Authority

## H. Public Agencies

Academy for Academic Excellence
Apple Valley Airport
Apple Valley Chamber of Commerce
Apple Valley Emergency Services
Apple Valley Fire Protection District
Apple Valley Police Department
Apple Valley Public Library
Apple Valley Unified School District
California Department of Finance
California Department of Fish and Game
California Office of Emergency Services
Caltrans
Mojave Desert Air Quality Management District
San Bernardino County Environmental Health Department
San Bernardino County Facilities Planning
San Bernardino County Public Works Department, Flood Control
San Bernardino County Sheriff's Department
San Bernardino County Waste Management Department
San Bernardino Department of Airports
St. Mary Medical Center
South Coast Air Quality Management District
Town of Apple Valley Economic Development Department
Town of Apple Valley Planning Department
U.S. Bureau of Land Management
U.S. Fish and Wildlife Service
Victorville Landfill

## I. Documents


- "Apple Valley Community Issues Report," prepared by Terra Nova Planning and Research, Inc., October 2007.
- Apple Valley General Plan Existing General Plan, (No Project) Land Use Alternative table, prepared by Aerial Information Systems, September 11, 2008.
- "Apple Valley Master Plan of Drainage," prepared by San Bernardino County Flood Control District, 1991.
- "Apple Valley North System-Source Water Quality," year 2005 data, presented in Golden State Water Quality Report, May 2007.
- "Apple Valley Ranchos Water Company 2005 Urban Water Management Plan," prepared by Apple Valley Ranchos Water Company, November 2005.
- "Apple Valley Ranchos Water Company – 2006/2007 Annual Water Quality Report, Water Quality Parameters Detected in Apple Valley Ranchos Company Wells," prepared by Apple Valley Ranchos Water Company.
- "Apple Valley Ranchos Water Company Pressure Zone Discussion," prepared by Apple Valley Ranchos Water Company, 2008.
- "Apple Valley South System-Source Water Quality," year 2006 data, presented in Golden State Water Quality Report, May 2007.
- "Apple Valley Study", prepared by Environmental Data Resources Inc., May 01, 2006.
- "AVUSD Residential Development School Fee Justification Study", March 4, 2008.
- "CEQA Air Quality Handbook", prepared by South Coast Air Quality Management District, April 1993.
- "Cultural Resources Technical Report for the Town of Apple Valley General Plan Update", prepared by CRM Tech, September 21, 2007.
- "California Environmental Quality Act – Statutes and Guidelines", prepared by the Governor's Office of Planning and Research, State of California, 1998.
- County of San Bernardino General Plan, Safety Element, adopted April 12, 2007.
- "California Environmental Quality Act Statutes and Guidelines," prepared by the Association of Environmental Professionals, January 2007.
- "Environmental Records Review of the Phase I Environmental Assessment conducted for the Town of Apple Valley, by Environmental Data Resources, Inc.," prepared by Black Rock Geosciences, May 01, 2006.
- "Existing and Future Water Demands—Apple Valley North Water System," prepared by CH2MHill, April 6, 2007.
- "Flood Hazard Overlay District Ordinance, Chapter 9.62, Amended, Town of Apple Valley Development Code 2000".
- Guidelines for Implementation of the California Environmental Quality Act, California Code of Regulations, Title 14, Division 6, Chapter 3. Section 15064.5(a)(1)-(3).
- "Guidelines for the Preparation and Content of the Noise Element in the General Plan," California Department of Health Services, 1990.
- Memorandum of Understanding Between the California Water Quality Control Board, Lahontan Region and the Town of Apple Valley, California Regional Water Quality Control Board, Lahontan Region, February 6, 1990.

- "Mojave Water Agency 2004 Regional Water Management Plan, Groundwater Management Plan, Urban Water Management Plan," prepared by Mojave Water Agency, adopted February 24, 2005.
- "Mojave Water Agency 2004 Regional Water Management Plan, Supplement A: 2005 Urban water Management Plan Update," December 8, 2005.
- "Permanent Transfers of Base Annual Production Right (BAP) and 2007-08 Free Production Allowance (FPA) Reconciled for Transfers Accepted by Watermaster as of the Date of this Report, 2007-08 Water Year," Mojave Basin Area Watermaster, July 23, 2008.
- "Plant Protection and Management", Town of Apple Valley Development Code 2000.
- "San Bernardino County Library Master Facility Master Plan," prepared by PROVIDENCE Associates, December 2001.
- "Seismic, Geologic and Flooding Sections of the Technical Background Report to the Safety Element of the General Plan," prepared by Earth Consultants International, 2007.
- "Soil Survey of San Bernardino County, California, Mojave River Area," prepared by the US Natural Resource Conservation Service, 1994.
- Surface Transportation Assistance Act of 1982 (STAA), 49 U.S.C. 31105, as amended by section 1536 of the Implementing Recommendations of the 9/11 Commission Act of 2007, Pub. L. No. 110-53.
- "Technical Background Report to the Safety Element of the Apple Valley General Plan," prepared by Earth Consultants International, October 2007.
- "Town of Apple Valley Development Code, Chapter 9.65 Airport Overlay Districts", adopted October 2000.
- "Town of Apple Valley General Plan Circulation Element Traffic Study," prepared by Urban Crossroads, Inc., November 24, 2008.
- Town of Apple Valley General Plan Existing Alternative map, prepared by Aerial Information Systems, December 27, 2007.
- "Town of Apple Valley General Plan Update - Biological Resources", prepared by AMEC Earth & Environmental, Inc., February 2008.
- "Town of Apple Valley Housing Element," prepared by the Town of Apple Valley, 2000.
- "Town of Apple Valley Noise Element Update: Existing Noise Conditions Report," Town of Apple Valley, California," prepared by Urban Crossroads, Inc., July 2008.
- "Town of Apple Valley Noise Element Update, Technical Study Report," prepared by Urban Crossroads, Inc., December 9, 2008.
- "Trip Generation Manual," Institute of Transportation Engineers (ITE), 7th Edition, 2003.
- "2004 Regional Water Management Plan: Integrated Regional Water Management Plan, Groundwater Management Plan, Urban Water Management Plan," Mojave Water Agency, adopted February 24, 2005.
- "2004 Regional Water Management Plan, Supplement A: 2005 Urban Water Management Plan Update," prepared by Mojave Water Agency, December 8, 2005.
- "Urban Water Management Plan," Apple Valley Ranchos Water Company, November 2005.
- "Water Supply in the Mojave River Ground-Water Basin, 1931-99, and the Benefits of Artificial Recharge," prepared by the U.S. Geological Survey, November 2001.
- "Water System Backup Facilities Charge Study," prepared by Engineering Department, Coachella Valley Water District, September 2004.

Web Sites


- http://www.epa.gov/enviro/html/toxic_releases.html, accessed October 20, 2008.
- http://www.dtsc.ca.gov/SiteCleanup/ERP/index.cfm
- Town of Apple Valley, http://www.applevalley.org/pgs/market_profile.asp, accessed November 24, 2008.
- U.S. Environmental Protection Agency, http://www.epa.gov/

# APPENDIX A

Initial Study, Notice of Preparation (NOP) and Responses to NOP

Prepared by

Terra Nova Planning and Research, Inc.
400 S. Farrell Dr., Suite B-205
Palm Springs, CA 92262

September 17, 2008

# Notice of Completion & Environmental Document Transmittal

CLERK OF THE BOARD

*Mail to:* State Clearinghouse, P. O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
*For Hand Delivery/Street Address:* 1400 Tenth Street, Sacramento, CA 95814

SCH # SEP 17 2008

COUNTY OF SAN BERNARDINO

**Project Title:** Town of Apple Valley General Plan Update and Annexations 2008-01 and 2008-02

Lead Agency: Town of Apple Valley | Contact Person: Lori Lamson, Asst. Dir. Com Dev
Mailing Address: 14955 Dale Evans Parkway | Phone: (760) 240-7000, ext. 7204
City: Apple Valley, CA | Zip: 92307 | County: San Bernardino

**Project Location:** County: San Bernardino | City/Nearest Community: Town of Apple Valley
Cross Streets: N/A | Zip Code: 92307
Lat. / Long.: 34 ° 31 ' 54 " N/ 117 ° 12 ' 39 " W | Total Acres: 50,528±
Assessor's Parcel No.: N/A | Section: Att A | Twp.: Att A | Range: Att A | Base: SBB&M
Within 2 Miles: State Hwy #: 18, I-15 | Waterways: Mojave River
Airports: Apple Valley, Osborne Airstri | Railways: | Schools: AVUSD (all)

**Document Type:**

CEQA: ☑ NOP ☐ Early Cons ☐ Neg Dec ☐ Mit Neg Dec ☐ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) ☐ Other
NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI
Other: ☐ Joint Document ☐ Final Document ☐ Other

**Local Action Type:**

☑ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan
☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☐ Site Plan
☑ Rezone ☐ Prezone ☐ Use Permit ☐ Land Division (Subdivision, etc.)
☑ Annexation ☐ Redevelopment ☐ Coastal Permit ☐ Other

**Development Type:**

☑ Residential: Units 62,513 Acres 34,577
☑ Office: Sq.ft. 5.9M Acres 617 Employees N/A
☑ Commercial: Sq.ft. 32.1M Acres 3,478 Employees N/A
☑ Industrial: Sq.ft. 6.1M Acres 645 Employees N/A
☑ Educational addresses student generation at buildout
☑ Recreational addresses parkland requirements at buildout
☐ Water Facilities: Type MGD
☑ Transportation: Type Addresses circulation
☐ Mining: Mineral
☐ Power: Type MW
☐ Waste Treatment: Type MGD
☐ Hazardous Waste: Type
☐ Other:

**Project Issues Discussed in Document:**

☑ Aesthetic/Visual ☑ Agricultural Land ☑ Air Quality ☑ Archeological/Historical ☑ Biological Resources ☐ Coastal Zone ☑ Drainage/Absorption ☑ Economic/Jobs
☐ Fiscal ☑ Flood Plain/Flooding ☑ Forest Land/Fire Hazard ☑ Geologic/Seismic ☑ Minerals ☑ Noise ☑ Population/Housing Balance ☑ Public Services/Facilities
☑ Recreation/Parks ☑ Schools/Universities ☑ Septic Systems ☑ Sewer Capacity ☑ Soil Erosion/Compaction/Grading ☑ Solid Waste ☑ Toxic/Hazardous ☑ Traffic/Circulation
☑ Vegetation ☑ Water Quality ☑ Water Supply/Groundwater ☑ Wetland/Riparian ☑ Wildlife ☑ Growth Inducing ☑ Land Use ☑ Cumulative Effects
☐ Other

**Present Land Use/Zoning/General Plan Designation:**

All

**Project Description:** *(please use a separate page if necessary)*

The proposed project is a comprehensive General Plan update that addresses 46,948.3±-acres in the Town's corporate limits, and 3,579.7±-acres in unincorporated San Bernardino County within the Town's Sphere-of-Influence that are proposed for annexation into Apple Valley. The project includes changes to land use and zoning designations, circulation system, and new goals, policies, and programs for all General Plan elements.

Note: The state Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

CLERK OF THE BOARD

OCT 17 2008

COUNTY OF SAN BERNARDINO

January 2008

DATE FILED & POSTED

## Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".
If you have already sent your document to the agency please denote that with an "S".

| | |
|---|---|
| ___ Air Resources Board | X Office of Historic Preservation |
| ___ Boating & Waterways, Department of | ___ Office of Public School Construction |
| X California Highway Patrol | ___ Parks & Recreation |
| X Caltrans District # ___ | ___ Pesticide Regulation, Department of |
| ___ Caltrans Division of Aeronautics | ___ Public Utilities Commission |
| ___ Caltrans Planning (Headquarters) | ___ Reclamation Board |
| ___ Coachella Valley Mountains Conservancy | X Regional WQCB # ___ |
| ___ Coastal Commission | ___ Resources Agency |
| ___ Colorado River Board | ___ S.F. Bay Conservation & Development Commission |
| ___ Conservation, Department of | ___ San Gabriel & Lower L.A. Rivers and Mtns Conservancy |
| ___ Corrections, Department of | ___ San Joaquin River Conservancy |
| ___ Delta Protection Commission | ___ Santa Monica Mountains Conservancy |
| ___ Education, Department of | ___ State Lands Commission |
| ___ Energy Commission | ___ SWRCB: Clean Water Grants |
| S Fish & Game Region # ___ | ___ SWRCB: Water Quality |
| ___ Food & Agriculture, Department of | ___ SWRCB: Water Rights |
| ___ Forestry & Fire Protection | ___ Tahoe Regional Planning Agency |
| ___ General Services, Department of | ___ Toxic Substances Control, Department of |
| ___ Health Services, Department of | X Water Resources, Department of |
| ___ Housing & Community Development | |
| ___ Integrated Waste Management Board | ___ Other ___ |
| ___ Native American Heritage Commission | ___ Other ___ |
| ___ Office of Emergency Services | |

**Local Public Review Period (to be filled in by lead agency)**

Starting Date 9/17/08 Ending Date 10/17/08

**Lead Agency (Complete if applicable):**

Consulting Firm: Terra Nova Planning & Research, Inc.
Address: 400 S. Farrell, Suite B-205
City/State/Zip: Palm Springs, CA 92262
Contact: Nicole Sauviat Criste
Phone: 760-320-9040

Applicant: Town of Apple Valley
Address: 14955 Dale Evans Parkway
City/State/Zip: Apple Valley, CA 92307
Phone: 760-240-7000

**Signature of Lead Agency Representative:** Nicole Sauviat Criste **Date:** 9/15/08

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

TERRA NOVA PLANNING & RESEARCH INC.®

# TRANSMITTAL MEMORANDUM
# NOTICE OF PREPARATION

Date: September 15, 2008

To; Responsible Agencies and Interested Parties

From: Nicole Sauviat Criste, Planning Consultant, Town of Apple Valley

Subject: Transmittal of Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for Town of Apple Valley General Plan Update and Annexations 2008-001 and 2008-002, San Bernardino County, California

Enclosed please find the above referenced NOP to prepare a Draft EIR for the Town of Apple Valley General Plan Update and Annexations 2008-001 and 2008-002.

The project involves the assignment of land use designations on incorporated Town lands, and two areas outside Town limits, one on the northwest corner, and one on the northeast corner, which would be annexed to the Town following the adoption of the General Plan. The Notice of Preparation is your opportunity to provide comments and suggestions for issues that should be addressed in the Draft EIR. The enclosed material includes regional and vicinity maps, and the draft Land Use Designations and allocation tables.

The NOP comment period runs from September 17 to October 17, 2008. If you have comments, please submit them prior to October 17, 2008. You may FAX comments to the attention of Nicole Sauviat Criste, Town Planning Consultant, at FAX No. (760) 322-2760 within this time frame. Please also send hard copies to the Town, attention Lori Lamson, via mail to the address below to assure legible and reproducible originals.

Ms. Lori Lamson
Assistant Director of Community Development
Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, CA 92307

If you have any questions regarding the enclosed or require additional information, please do not hesitate to contact me at (760) 320-9040 or Ms. Lamson at the Town of Apple Valley at (760) 240-7000.

Town of Apple Valley

# ENVIRONMENTAL CHECKLIST FORM
# (INITIAL STUDY)

# FOR

# PROPOSED APPLE VALLEY COMPREHENSIVE GENERAL PLAN UPDATE AND ENVIRONMENTAL IMPACT REPORT

## *GPA 2008-001 and Annexation Nos. 2008-001 and 2008-002*


Prepared by :

Terra Nova Planning & Research, Inc.
400 South Farrell, Suite B-205
Palm Springs, CA 92262


For

Town of Apple Valley
Planning Division
September, 2008

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**TOWN OF APPLE VALLEY**
**INITIAL STUDY ENVIRONMENTAL CHECKLIST FORM**

This form and the descriptive information in the application package constitute the contents of Initial Study pursuant to Town of Apple Valley Development Code and Section 15063 of the State CEQA Guidelines.

***PROJECT INFORMATION***

1. Project title:

Apple Valley General Plan Update and Annexations 2008-01 and 2008-02

USGS Quad: Apple Valley North, Apple Valley South, Fairview Valley, Fifteenmile Valley, Helendale, Hesperia, Turtle Valley, Victorville, California.

Township, Range, Section:

Incorporated limits of the Town of Apple Valley:

- All of Sections 3, 4, 5, 6, 7, 8, 9, 10, 16, 17, and 19, and portions of Sections 15 and 18, Township 4 North, Range 3 West of the San Bernardino Base and Meridian;
- Portions of Sections 1 and 12, Township 4 North, Range 4 West of the San Bernardino Base and Meridian;
- Sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, and 35, Township 5 North, Range 3 West of the San Bernardino Base and Meridian;
- Sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 23, 24 and 36, Township 5 North, Range 4 West of the San Bernardino Base and Meridian;
- All of Sections 3, 4, 9, 10, 15, 16, 19, 20, 21, 22, 27, 28, 29, 30, 31, 32, 33, 34, and 35, and a portion of Section 5, Township 6 North, Range 3 West of the San Bernardino Base and Meridian;
- All of Sections 23, 25, and 36, and portions of Sections 24, 26, 34 and 35, Township 6 North, Range 4 West of the San Bernardino Base and Meridian.

Annexation No. 2008-001:

- A portion of Sections 5, 6, 7, and 18, and allof Sections 8 and 17, Township 6 North, Range 3 West
- A portion of Section 13, Township 6 North, Range 4 West of the San Bernardino Base and Meridian.

Annexation No. 2008-002:

- All of Section 14 and a portion of Section 23, Township 6 North, Range 3 West of the San Bernardino Base and Meridian.

Thomas Bros: N/A

2. Lead agency name and address:

   Town of Apple Valley
   Planning Division
   14955 Dale Evans Parkway
   Apple Valley, CA 92307

   Location: Town of Apple Valley and portions of its Sphere-of-Influence, San Bernardino County, California

   Town Zoning: Varies/All

   APNs: All

3. Contact person and phone number:
   Lori Lamson, Assistant Director of Community Development
   (760) 240-7000 ext. 7204

4. Project location: Town of Apple Valley, and two proposed annexation areas that occur in the Town's Sphere-of-Influence within unincorporated San Bernardino County (please see Project Description, below).

5. Description of project:

   The proposed project is a Comprehensive General Plan update that addresses 46,948.3± acres within the Town's corporate limits, as well as 3,5797.7± acres within the Town's Sphere-of-Influence that are proposed for annexation. The area addressed under the proposed project is also hereinafter referred to as the "planning area". The project includes changes to land use and zoning designations, the circulation system, and new goals, policies and programs for all General Plan elements.

   The Town Planning Commission and Town Council, along with Town staff and representatives from public and quasi-public agencies, as well as members of the community, have held numerous meetings to discuss overall and specific goals for the community over the last year. These discussions have included consideration of signficant community issues and discussion of speciifc policies for inclusion in the General Plan document.

   A detailed assessment of existing land use designations has been conducted, and changes to land use designations has been considered for various areas within the Town, including the proposed annexation areas. The proposed land use designations are shown in Table 2. In addition, the circulation system has been considered and modifications are suggested in the General Plan; these are intended to address current and project traffic volumes on major roadways.

   California Government Code Section 65302 requires that a General Plan include these seven elements: Land Use, Circulation, Housing, Conservation, Open Space, Noise and Safety. These statutory elements will be addressed in the Draft Apple Valley General Plan; interrelated elements may be consolidated. The General Plan will include additional elements, such as Archeological /Historic Resources, Biological Resources, Energy/Mineral Resources, Water Resources, Water, Sewer and Utilities, Parks and Recreation, and Public Buildings and Facilities.

Proposed Annexation Actions

As noted above, the General Plan area includes two portions of the Town's Sphere-of-Influence that have been the subject of research and analysis regarding the possibility of annexation. These are herein referred to as Annexation No. 2008-001, or the "Golden Triangle", which is located to the west of the Town limits, and Annexation No. 2008-02, or the "Northeast Industrial Area", which is located to the east of the Town limits. The proposed annexation areas have been included in the environmental analysis for the General Plan, so that, should the annexations proceed, the EIR will serve as the environmental compliance for the annexation actions. The annexation areas total 3,579.7± acres, as shown on Table 7. They are graphically illustrated on Exhibit I-3, Land Use Map, Preferred Alternative.

*Annexation No. 2008-001 (Golden Triangle)*

The area proposed for Annexation No. 2008-01 occupies approximately 2,774.6 acres; it is bounded on the west by U.S. Interstate-15, on the north by Morro Road; on the east by the western boundary of the Town of Apple Valley and Dale Evans Parkway, and on the south by Johnson Road. Lands within the annexation area are largely vacant, with scattered single-famiy residences. The area is crossed by a network of local roadways, including Stoddard Wells Road which bisects the annexation area in a generally northeast to southwest direction. U.S. Interstate-15 runs southwest to northeast along the annexation area's western boundary.

The Town has previously assigned General Plan and Zoning designations for these lands, which are shown on Exhibit C. The proposed designations for Annexation No. 2008-001 are Estate Residential, Medium Density Residential, Mixed Use, General Commercial, Regional Commercial, Office Professional, and Planned Industrial. Proposed land uses are discussed under Preferred Alternative Land Use Plan, below.

*Annexation No. 2008-002 (Northeast Industrial Area)*

The area proposed for Annexation No. 2008-02 occupies approximately 805.1 acres. It is bounded on the west by Central Avenue and the eastern boundary of the Town of Apple Valley, on the north by Quarry Road, on the east by the section line of Section 14, Township 6 North, Range 3 West, and on the south by the half-section line of Section 23 Township 6 North, Range 3 West, San Bernardino Base and Meridian. With the exception of a network of paved and unpaved roadways, the proposed annexation area is largely vacant and undeveloped. The proposed designation for Annexation No. 2008-002 area is Planned Industrial, also further discussed below.

## ***ENVIRONMENTAL/EXISTING SITE CONDITIONS***

The Town of Apple Valley and the annexation areas are situated in the western Mojave Desert, which is located in the southwestern portion of San Bernardino County, in Southern California. The planning area is comprised of low mountains and foothills, dry lakes and alluvial fans with a coarse sandy floor, which are characteristic of the desert environment. Topographically, the area slopes gently from northeast to southwest towards the Mojave River. This typically dry river winds through the region from the San Bernardino Mountains to the south toward the north-northeast and forms a portion of the Town's southwestern and western boundary. The region's urban development has occurred primarily along the River and other major thoroughfares, including U.S. Interstate 15 (I-15, Mojave Freeway), historic Route 66 and State Highways 18 and 247.

The planning area includes a wide-ranging variety of land uses, including residential, commercial, industrial, agricultural, institutional, public facilities, and open space. These are further discussed below.

### Current Land Uses and Designations

Town of Apple Valley

Development within the Town is most densely concentrated to the south of Highway 18, (Happy Trails Highway), which runs generally southeast to northwest through the Town. Development becomes decreasingly dense northerly of Highway 18 north to Waalew Road. North of Waalew Road, development is scattered and relatively sparse in most areas. The Apple Valley Airport is located between Waalew Road on the south and Johnson Road on the north, west of Central Road. The Mojave River runs generally southeast to northwest along the Town's western boundary, entering the Town near its southern boundary and exiting where it crosses under Highway 18. U.S. Interstate 15 crosses the River at the westernmost portion of the Town, and then turns northeast along a portion of the Town's western boundary.

The southern and central portions of the Town, generally south of Waalew Road, are predominated by residential development ranging from very low to medium densities (1 dwelling unit per gross acre to 2 to 20 dwelling units per acre). Residential development also occurs within specific plans, such as Jess Ranch in the southwest portion of Town.

Concentrated commercial development occurs along major roadways, including State Highway 18 and Bear Valley Road. The Village commercial area is situated along State Highway 18 between Navajo Road and Central Road. Other commercial centers along Highway 18 include retail and office uses between Rancherias Road and Dale Evans Parkway, north to Thunderbird Road, in the vicinity of Town Hall and other public facilities associated with the Civic Center complex. The St. Mary's Medical Center and associated medical offices and other commercial uses occur further west along Highway 18 near its intersection with Corwin Road.

Numerous public and private open space areas occur throughout developed areas, including Town parks, open spaces associated with Apple Valley Unified School District schools, golf facilities, and open space along the Mojave River, Apple Valley Dry Lake, Bell Mountain and other notable landforms in the Town. Public facilities, including AVUSD schools, fire and police stations are located amidst residential and other types of develpment. As previously mentioned, the Town's Civic Center complex is centrally located on Dale Evans Parkway near State Highway 18 and Thunderbird Road.

As previously noted, the northern portion of the Town is currently less densely developed than the south and central portions, being largely comprised of vacant desert land with scattered single family residences and a limited amount of industrial development. The most notable development in this area is the Apple Valley Airport, located north of Corwin Road betwen Dale Evans Parkway and Central Road. Other existing development north of Waalew Road includes the Walmart Distribution Center. Both the airport and the distribution center are within the approved 5,100±-acre North Apple Valley Industrial Specific Plan (NAVISP) site, which provides for development of a variety of commercial and industrial uses.

Existing General Plan designations reflect the land use patterns described above, with residential land use designations concentrated, although not limited to, areas south of Waalew Road, and commercial uses centered around major roadways such as Highway 18 and Bear Valley Road. The current General Plan also designates Specific Plan areas, including Jess Ranch and the NAVISP area. It designates Community Reserve north of Waalew and west of the NAVISP site. Community Reserve provides for a mix of low density residential and supporting commercial and industrial uses. The Plan allocates lands along U.S. Interstate 15 in the northern portion of the Town for regional commercial uses intended to serve highway travelers. Current General Plan land use designations are shown on Table 1, below.

Proposed Annexation No. 2008-001 (Golden Triangle)

Lands within proposed Annexation No. 2008-001 occupy 2,774±-acres, of which approximately 92% are vacant and undeveloped desert lands. The remaining approximately 8% is sparsely developed with single family residences andpaved and unpaved roadways. These lands are County General Planned and Zoned for Rural Living and Rural Living-5 (minimum 5-acre lots).

Proposed Annexation No. 2008-002 (Northeast Industrial Area)

Lands within proposed Annexation No 2008-002 are designated Community Industrial (IC) in the County General Plan. Of the approximately 805 acres within the proposed annexation area, 5.5± acres are

developed for uses associated with the Black Mountain quarry operation. The rest is undeveloped and vacant. These lands are County General Planned and Zoned for Resource Conservation, Rural Living and Community Industrial.

**Surrounding Land Uses**

There are a number of jurisdictions surrounding the Town. These include the City of Victorville, which lies to the west, and the City of Hesperia to the southwest. Both are urbanized areas that include a range of residential, commercial, industrial, public faciities and open space uses.

Lands to the east are unincorporated San Bernardino County, including the Town's Sphere-of-Influence and the subject Annexation No. 2008-002 site, as well as federal lands adminstered by the Bureau of Land Management. Lands to the east are largely vacant, undeveloped and sparsely populated, with some residential and industrial development.

**Project Location**

The planning area boundaries may be generally described as follows:

Town of Apple Valley
The Town of Apple Valley is generally bounded on the west by the Mojave River and U.S. Interstate 15, on the north by the northern section lines of Sections 3, 4 and 5, Township 6 North, Range 3 West, San Bernardino Base and Meridian, on the east by Central Road and Joshua Road, and on the south by Tussing Ranch Road and Ocotillo Way.

Annexation No. 2008-001
Annexation No. 2008-001 is generally bounded on the west by U.S.-Interstate 15, on the north by Morro Road, on the west by Dale Evans Parkway, and on the south by Johnson Road.

Annexation No. 2008-002
Annexation No. 2008-002 is generally bounded on the west by Central Road and the eastern boundary of the Town of Apple Valley, on the north by Quarry Road, on the east by the section line of Section 14, Township 6 North, Range 3 West, and on the south by the half-section line of Section 23 Township 6 North, Range 3 West, San Bernardino Base and Meridian.

Also please see Township, Section, Range information in Item No. 1, above.

| Table 1<br>Statistical Summary of Land Uses<br>Current Comprehensive General Plans (Town Limits) | | | |
|---|---|---|---|
| Town of Apple Valley | | | |
| **Land Use Designation** | **Developed Acres** | **Vacant Acres** | **Total Acres** |
| Residential Land Uses | | | |
| Very Low Density Residential (1 du/5 or more gross ac) | 174.46 | 1,828.18 | 2,002.64 |
| Low Density Residential (1 du/2.5 to 5 gross ac) | 503.64 | 3,403.59 | 3,907.23 |
| Estate Residential (1 du/1.0 to 2.5 gross ac) | 3,128.95 | 2,836.06 | 5,965.02 |
| Single-Family Residential (1 du/0.4 to 0.9 net ac) | 8,625.30 | 4,690.55 | 13,315.86 |
| Medium Density Residential (2 to 10 du net ac) | 852.07 | 564.16 | 1,416.22 |
| **Subtotal** | **13,284.42** | **13,322.54** | **26,606.97** |
| **Commercial Land Uses** | | | |
| General Commercial | 368.44 | 523.83 | 892.27 |
| Regional Commercial | 19.40 | 844.56 | 863.96 |
| Service Commercial | 147.66 | 150.77 | 298.42 |
| Office Professional | 49.34 | 186.04 | 235.38 |
| **Subtotal** | **584.84** | **1,705.20** | **2,290.03** |
| **Industrial Land Uses** | | | |
| Planned Industrial | 3.50 | 91.49 | 95.00 |
| **Subtotal** | **3.50** | **91.49** | **95.00** |
| **Other Land Uses** | | | |
| Specific Plan | 1,068.45 | 5,884.28 | 6,952.73 |
| Public Faclitiy | 263.78 | 60.92 | 324.70 |
| Mineral Resources | 111.56 | 340.95 | 452.51 |
| Open Space | 241.94 | 2,771.70 | 3,013.64 |
| Community Reserve | 30.07 | 3,241.00 | 3,271.07 |
| Sreet Rights-of-Way | 2,563.53 | 1,378.11 | 3,941.64 |
| **Subtotal** | **13,872.76** | **13,676.96** | **11,003.56** |
| **Grand Total** | **18,152.10** | **28,796.20** | **46,948.30** |
| Source: Aerial Information Systems, 2007. | | | |

**Preferred Alternative Land Use Plan**

The Preferred Alternative land use plan would amend the existing General Plan land use map based on the land use designations described in Table 2, Proposed Land Use Designations, shown below. The Preferred Alternative includes the aforementioned annexation areas and assigns land use designations to these lands.

The Preferred Alternative addresses future development over the entire planning area, however revisions to the land use designations occur primarily in the northern portion of the Town, which still has large areas of undeveloped lands. As noted previously, the Preferred Alternative also assigns land use designations for the two proposed annexation areas.

The area north of Quarry Road between Dale Evans Parkway and Central Avenue would continue to be predominantly Low Density Residential. Very Low Density lands would be retained in the northeast, as would Open Space-designated lands at the Town's northern boundary. However, lands immediately north of Quarry Road would be re-designated Planned Industrial, consistent with the land use designations provided for in the NAVISP, which occurs south of Quarry Road. Lands along the eastern side of Dale Evans Parkway north of Quarry Road would be re-designated from residential uses to Office Professional and Public Facilities.

The Preferred Alternative would retire the Community Reserve designation. Therefore, lands to the west of the NAVISP and north of Waalew Road, large areas of which are currently designated as Community Reserve, would be re-designated as a variety of residential uses, including Estate and Estate 3/4, Low, Very Low, Single Family, and Medium Density Residential and Mobile Home Park as well as commercial uses including General Commercial and Office Professional. Other lands in this area, including those currently

designated for Open Space, Specific Plan, Mineral Resources and Regional Commercial, would retain their current designations.

The Preferred Alternative provides for three new land use designations:

The Estate Residential ¾ designation, a derivative of the current General Plan Estate Residential designation, is specifically designed for animal keeping for personal use, ranching activities, and home occupations. It is further described in Table 2, below. The Preferred Alternative proposes this designation in two general areas: north of Waalew, west of the NAVISP and east of the Bridle Path and North Pointe Specific Plans, and in the southeastern most portion of the Town.

The Mobile Home Park residential designation applies to mobile home parks that exist upon the adoption of the subject General Plan update. Table 2, below, provides a more detailed description of this designation.

Mixed Use provides for developments that include residential and commercial uses in a master planned project. This designation is primarily proposed adjacent to or within existing commercial centers in the Town.

The Preferred Alternative will continue to provide for a full range of public facilities and infrastructure, including street rights-of-way, to support residential, commercial, industrial, institutional and other land uses.

Annexation No. 2008-001
Proposed land use designations within this area provide for Estate Residential and Medium Density Residential in the southern portion of the annexation area, along the north side of Johnson Road, with supporting General Commercial along a portion of Johnson Road. Regional Commercial, Office Professional and Planned Industrial designations are proposed along U.S. Interstate-15 from Johnson Road to the northern boundary of the annexation area. These uses extend easterly into the annexation area to provide land use synergies with lands proposed for General Commercial and Mixed Use in the east-central portion, west of Dale Evans Parkway. Lands are also identified for street rights-of-way to ensure adequate and efficient circulation and local and regional access.

Annexation No. 2008-002
The proposed land use designation for this annexation area is Planned Industrial, which provides for high quality, non-polluting industrial land uses such as warehousing, light manufacuring, research and development, and administrative facilities. These uses are consistent with those approved under the NAVISP, located just to the west within the Apple Valley corporate limits. Planned Industrial designations are proposed over 801.0± acres. Approximately 4.1 acres are in street rights-of-way.

The following table describes the land use designations proposed under the General Plan update.

**Table 2**
**Town of Apple Valley General Plan**
**Proposed Land Use Designations**

| Land Use Designation (Density) | Purpose of Land Use |
|---|---|
| | **Residential Land Uses** |
| **Very Low Density Residential, R-VLD** (1 dwelling unit per 5 or more gross acres) | This land use designation allows detached single family homes on lots of at least five gross acres. Multi-use trails should be integrated into all new projects in this designation, as appropriate. Also permitted are agricultural and ranching activities, animal keeping (both personal use and commercial) and home occupations. May be appropriate for bed & breakfast and similar uses, and animal-keeping or agricultural related commercial enterprises, such as feed stores, commercial stables and similar uses with approval of a conditional use permit. |
| **Low Density Residential, R-LD** | This land use designation allows detached single family homes on lots of two and a half to five gross acres. This designation provides for the rural and |

**Table 2**
**Town of Apple Valley General Plan**
**Proposed Land Use Designations**

| Land Use Designation (Density) | Purpose of Land Use |
|---|---|
| (1 dwelling unit per 2.5 to 5 gross acres) | suburban environment. Multi-use trails should be integrated into all new projects in this designation, as appropriate. Also permitted are agricultural and ranching activities, animal keeping (both personal use and commercial) and home occupations. May be appropriate for bed & breakfast and similar uses, with approval of a conditional use permit. |
| **Estate Residential, R-E**<br>(1 dwelling unit per 1 to 2.5 gross acres) | This land use designation allows detached single family homes on lots of two and a half to five gross acres. This designation provides for the rural and suburban environment. Multi-use trails should be integrated into all new projects in this designation, as appropriate. Also permitted are agricultural and ranching activities, animal keeping (both personal use and commercial) and home occupations. May be appropriate for bed & breakfast and similar uses, with approval of a conditional use permit. |
| **Estate Residential ¾, R-E**<br>(1 dwelling unit per 0.75 to 1.0 net acre) | This land use designation is specifically designed for animal keeping. Multi-use trails should be integrated into all new projects in this designation, as appropriate. Animal keeping for personal use, ranching activities and home occupations are appropriate land uses in this designation. Centralized stables, corrals, show rings and similar facilities, available to all residents of a development project are encouraged. May be appropriate for bed & breakfast and similar uses, with approval of a conditional use permit. |
| **Single Family Residential, R-SF**<br>(1 dwelling unit per 0.4 to 0.9 net acre) | Lots in this designation must be a minimum of 18,000 square feet net, and may range to 39,200 square feet. This designation is intended to be composed of planned subdivisions with all utilities and public services. Animal keeping is permitted on lots zoned Equestrian Residential in the Development Code. Multi-use trails should be integrated into all new projects in this designation, as appropriate. |
| **Medium Density Residential R-M**<br>(4 to 20 dwelling units per net acre) | This designation is intended to promote a wide range of higher density residential units, including: single family attached; and multi-family units, including condominiums, townhomes and apartments. Projects restricted to senior citizens (age 55 and older) and providing various levels of care are also appropriate in this designation. Single family detached units are only permitted on lots of 18,000 square feet or greater in the Mountain Vista Estates area, as defined in Program 2.G.1. On all other lands designated Medium Density Residential within Town limits, single family detached units are prohibited. This land use designation should be a buffer between less intense residential designations and commercial or industrial designations, or major roadways. Future projects should be located in close proximity to commercial services, public transit and schools. |
| **Mobile Home Park, MHP**<br>(5-15 units per acre) | This designation is applied to mobile home parks which existed upon adoption of this General Plan. New mobile home parks would be required to file a General Plan Amendment and Change of Zone to assign this designation to the project. This designation applies to mobile home parks and mobile home subdivisions. Home occupations and recreational facilities and amenities associated with the mobile home use are also appropriate in this designation. |
| **Commercial Land Uses** | |
| **Mixed Use (M-U)** | The land use designation has been created to allow for the development of projects which include residential and retail and office commercial development in an integrated, master planned project. Residential development should occur over commercial development, or within a commercial complex (i.e. residential building abutting a commercial building). Residential development must occur at a density of 4 to 30 units per acre. Mixed Use projects are encouraged in The Village, on major roadways, and in |

**Table 2**
**Town of Apple Valley General Plan**
**Proposed Land Use Designations**

| Land Use Designation (Density) | Purpose of Land Use |
|---|---|
| | close proximity to employment centers, such as the North Apple Valley Industrial Specific Plan area. Projects which propose residential parcels adjacent to commercial parcels, and do not truly integrate the land uses, will not qualify for this designation. The minimum size for a Mixed Use project is 1 acre. |
| **Office Professional (O-P)** | This designation allows professional offices, and is intended to act as a buffer between General Commercial and residential land uses. This designation encourages high quality professional services with only ancillary retail commercial components. There is no minimum size for project sites in this designation, but assemblage of smaller parcels is encouraged. |
| **General Commercial (C-G)** | This designation allows a broad range of retail uses, as well as office and service land uses. Typical uses will serve the needs of the Town's residents and businesses, in a shopping center setting. General retail stores, including all types of consumer goods, furniture and appliance sales, auto repair and sales are permitted in this designation. Restaurants, both sit-down and fast food, gasoline service stations and general office (secondary to retail uses) are also permitted in this designation. There is no minimum size for project sites in this designation, but assemblage of smaller parcels is encouraged. |
| **Service Commercial (C-S)** | This designation is assigned to lands in The Village, and is intended as a transition designation allowing commercial and industrial land uses on a smaller scale. Its location in an established area of Town necessitates flexibility in development standards, due to existing development and infrastructure constraints. Land uses in this designation include vehicle sales and service; lumber, home repair and building supply, general retail, warehousing and manufacturing uses completely contained within an enclosed structure. There is no minimum size for project sites in this designation, but assemblage of smaller parcels is encouraged. |
| **Regional Commercial (C-R)** | This land use category allows retail uses which serve not only the residents and businesses of Apple Valley, but also of the surrounding region. Permitted uses in this designation include auto malls, regional malls, business parks, factory stores and outlets, entertainment commercial, hotels and motels, restaurants, institutional and public uses. The minimum size for a Regional Commercial project site is 10 acres. |
| | **Other Land Uses** |
| **Planned Industrial (I-P)** | This land use designation allows high quality, non-polluting industrial land uses, either as free-standing uses or as part of master planned industrial parks. Uses permitted include warehousing, light manufacturing, research and development and administrative facilities. The minimum size for a Planned Industrial project site is 5 acres. |
| **Public Facility (PF)** | This land use designation is assigned to public and quasi-public land uses, including Town Hall and other Town facilities, fire stations, schools, facilities of the County, State and federal government, water and sewer district, and utility substations and facilities. There is no minimum size in this land use designation. |
| **Open Space (OS)** | This land use designation is applied to natural and active open space areas, including the knolls, Bell and Fairview mountains, the Mojave River, lands owned by Town, County, State and federal agencies for the purposes of recreation or conservation, and golf courses, parks or other recreational facilities. |
| **Mineral Resources (MR)** | This land use designation is applied to lands in active mining operations. One such operation exists in Town at the present time, located near Interstate 15. This land use designation allows mining operations permitted by the State for lands with significant |

**Table 2**
**Town of Apple Valley General Plan**
**Proposed Land Use Designations**

| Land Use Designation (Density) | Purpose of Land Use |
|---|---|
| | deposits of concrete aggregate (please see the Mineral Resources Element). |
| **Specific Plan (SP)** | This designation is applied to lands on which a Specific Plan has been approved by the Town Council. The Specific Plan must conform to State law, and include maps and text which establish the land use designations; standards and guidelines for development; infrastructure requirements; and phasing for the Specific Plan area. Specific Plans will be prepared for projects consistent with General Land Use Policy 3.B. |

The following tables (Tables 3 through 5) show proposed land uses under the Preferred Alternative for the Town and Annexation areas for each land use cateogry.

**Table 3**
**Preferred Alternative General Plan (Town Limits and Annexation Areas)**
**Statistical Summary of Land Uses – Residential**

| | City Limits | | | | | | Annexation Areas | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Designation** | **AC Dev.** | **AC Vacant** | **AC Total** | **Exist. Units** | **Future Units** | **Total Units** | **AC Dev.** | **AC Vacant** | **AC Total** | **Exist. Units** | **Future Units** | **Total Units** |
| Very Low Density Residential (1 du/5 or more gross ac) | 174.1 | 1,787.4 | 1,961.5 | | 357 | 357 | -- | -- | -- | -- | -- | -- |
| Low Density Residential (1 du/2.5 - 5 gross ac) | 390.1 | 3,113.3 | 3,503.5 | | 1,245 | 1,245 | -- | -- | -- | -- | -- | -- |
| Estate Residential (1du/1 – 2.5 gross ac) | 3,177.8 | 3,489.1 | 6,666.9 | 20,107 | 3,489 | 33,596 | 55.7 | 722.3 | 778.0 | -- | 722 | 722 |
| Estate Residential ¾ (1 du/0.75 – 1 ac) | 20.8 | 454.9 | 475.7 | | 607 | 607 | -- | -- | -- | -- | -- | -- |
| Single-Family Residential (1 du/0.4-0.9 ac) | 8,424.0 | 4,103.9 | 12,527.9 | | 6,156 | 6,156 | -- | -- | -- | -- | -- | -- |
| Medium Density Residential (4- 20 du/ac) | 745.1 | 1,180.8 | 1,925.9 | 3,775 | 17,712 | 21,487 | 41.4 | 177.3 | 218.7 | -- | 2,659 | 2,659 |
| Mobile Home Park (5-15 du/ac) | 178.5 | 1.5 | 180.0 | 1,047 | 23 | 1,066 | -- | -- | -- | -- | -- | -- |
| Mixed Use | 51.6 | 236.7 | 288.3 | | 2,130 | 2,130 | 0.00 | 94.8 | 94.9 | -- | 854 | -- |
| Specific Plan | 1,068.6 | 5,978.2 | 7,046.8 | | 2,869 | 5,869 | -- | -- | -- | -- | -- | -- |
| **Residential Total** | **14,230.7** | **20,345.9** | **34,576.6** | **24,925** | **34,588** | **59,513** | **97.2** | **994.4** | **1,091.6** | **--** | **4,236** | **4,236** |

**Table 4**
**Preferred Alternative General Plan (Town Limits and Annexation Areas)**
**Statistical Summary of Land Uses – Commercial and Industrial**

| | City Limits | | | | Annexation Areas | | | |
|---|---|---|---|---|---|---|---|---|
| **Designation** | **Acres Dev.** | **Acres Vacant** | **Acres Total** | **Total Potential SF** | **Acres Dev.** | **Acres Vacant** | **Acres Total** | **Total Potential SF** |
| Mixed Use[1] | 51.6 | 236.7 | 288.3 | 1,587,686 | 0.0 | 94.8 | 94.9 | 636,256 |
| General Commercial | 385.5 | 1,165.3 | 1,550.8 | 14,861,742 | 11.7 | 40.8 | 52.6 | 503,617 |
| Regional Commercial | 31.7 | 1,271.3 | 1,303.0 | 12,486,488 | 7.2 | 485.3 | 442.5 | 4,240,502 |
| Service Commercial | 146.8 | 195.1 | 342.4 | 3,215,875 | -- | -- | -- | -- |
| Office Professional | 74.2 | 542.6 | 616.8 | 5,910,597 | -- | -- | -- | -- |
| Specific Plan[1] | 1,068.6 | 5,978.2 | 7,046.8 | 6,663,010 | -- | -- | -- | -- |
| **Commercial Sub Total** | **638.2** | **3,167.9** | **3,806** | **44,725,397** | **18.9** | **476.1** | **495.0** | **7,135,369** |
| Planned Industrial | 21.4 | 623.9 | 645.3 | 6,183,941 | 55.3 | 1,557.8 | 16.13.1 | 15,458,654 |
| Specific Plan[1] | 1,068.6 | 5,978.2 | 7,046.8 | 36,938,445 | -- | -- | -- | -- |
| **Industrial Sub Total** | **21.4** | **623.9** | **645.3** | **43,122,386** | **55.3** | **1,557.8** | **16.13.1** | **15,458,654** |
| **Grand Total Commercial & Industrial** | **659.6** | **3,791.8** | **4,451.4** | **87,847,783** | **74.2** | **2,034.0** | **2,108.1** | **22,594,023** |

[1] Mixed Use and Specific Plan acreage included under Residential in Table 3.

**Table 5**
**Preferred Alternative General Plan (Town Limits and Annexation Areas)**
**Statistical Summary of Land Uses – Other Uses**

| | City Limits | | | Annexation Areas | | |
|---|---|---|---|---|---|---|
| **Designation** | **Acres Dev.** | **Acres Vacant** | **Acres Total** | **Acres Dev.** | **Acres Vacant** | **Acres Total** |
| Public Facility | 353.5 | 119.1 | 472.5 | -- | -- | -- |
| Open Space | 233.3 | 2,820.6 | 3,053.9 | -- | -- | -- |
| Mineral Resources | 111.6 | 340.9 | 452.5 | -- | -- | -- |
| Street Rights-of-Way | 2,563.5 | 1,377.8 | 3,941.2 | 43.1 | 153.8 | 196.9 |
| **Grand Total Other Uses** | **3,261.8** | **4,658.5** | **7,920.3** | 43.1 | 153.8 | 196.9 |

The following two tables summarize the Preferred Alternative land uses, for the Town limits and the Annexation areeas, respectively.

**Table 6**
**Statistical Summary of Land Uses**
**Preferred Alternative (Town Limits)**

| | Town of Apple Valley | | |
|---|---|---|---|
| **Land Use Designation** | **Developed Acres** | **Vacant Acres** | **Total Acres** |
| **Residential Land Uses** | | | |
| Very Low Density Residential (1 du/5 or more gross ac) | 174.1 | 1,787.4 | 1,961.5 |
| Low Density Residential (1 du/2.5 - 5 gross ac) | 390.1 | 3,113.3 | 3,503.5 |
| Estate Residential (1du/1 – 2.5 gross ac) | 3,177.8 | 3,489.1 | 6,666.9 |
| Estate Residential ¾ (1 du/0.75 – 1 ac) | 20.8 | 454.9 | 475.7 |
| Single-Family Residential (1 du/0.4-0.9 ac) | 8,424.0 | 4,103.9 | 12,527.9 |
| Medium Density Residential (4- 20 du/ac) | 745.1 | 1,180.8 | 1,925.9 |
| Mobile Home Park (5-15 du/ac) | 178.5 | 1.5 | 180.0 |
| Mixed Use | 51.6 | 236.7 | 288.3 |
| Specific Plan | 1,068.6 | 5,978.2 | 7,046.8 |
| **Total Residential Uses** | **14,230.7** | **20,345.9** | **34,576.6** |
| **Commercial Land Uses** | | | |
| Mixed Use[1] | 51.6 | 236.7 | 288.3 |
| General Commercial | 385.5 | 1,165.3 | 1,550.8 |
| Regional Commercial | 31.7 | 1,271.3 | 1,303.0 |
| Service Commercial | 146.8 | 188.7 | 335.6 |
| Office Professional | 74.2 | 542.6 | 616.8 |
| Specific Plan[1] | 1,068.6 | 5,978.2 | 7,046.8 |
| **Total Commercial Uses** | **639.2** | **3,167.9** | **3,806.1** |
| **Industrial Land Uses** | | | |
| Planned Industrial | 21.4 | 623.9 | 645.3 |
| Specific Plan[1] | 1,068.6 | 5,978.2 | 7,046.8 |
| **Total Industrial Uses** | **21.4** | **623.9** | **645.3** |
| **Other Land Uses** | | | |
| Public Facility | 353.5 | 119.1 | 472.5 |
| Open Space | 233.3 | 2,820.6 | 3,053.9 |
| Mineral Resources | 111.6 | 340.9 | 452.5 |
| Street Rights-of-Way | 2,563.5 | 1,377.8 | 3,941.2 |
| **Total Other Land Uses** | **3,261.3** | **4,658.5** | **7,290.3** |
| **Grand Total** | **18,152.1** | **28,796.2** | **46.948.3** |

[1] Mixed Use and Specific Plan acreage included under Residential
Source: Aerial Information Systems, July 2008

| Table 7<br>Statistical Summary of Land Uses<br>Preferred Alternative Proposed Annexation Areas<br>Annexation No. 2008-001 and No. 2008-002 | | | |
|---|---|---|---|
| | ANNEXATION NO. 2008-001 and 2008-002 | | |
| **General Plan Land Use Designation** | **Developed Acres** | **Vacant Acres** | **Total Acres** |
| **Residential Land Uses** | | | |
| Estate Residential (1du/1 – 2.5 gross ac) | 55.7 | 722.3 | 778.0 |
| Medium Density Residential (4- 20 du/ac) | 41.4 | 177.3 | 218.7 |
| Mixed Use (4-30 du/ac) | 0.0 | 94.8 | 94.9 |
| **Total Residential Uses** | **97.2** | **994.4** | **1,091.6** |
| **Commercial Land Uses** | | | |
| Mixed Use | 0.0 | 94.8 | 94.9 |
| General Commercial | 11.7 | 40.8 | 52.6 |
| Regional Commercial | 7.2 | 435.3 | 442.5 |
| Office Professional | 0.0 | 183.1 | 183.1 |
| **Total Commercial Uses** | **18.9** | **659.2** | **678.1** |
| **Industrial Land Uses** | | | |
| Planned Industrial | 55.2 | 1,557.8 | 1.613.1 |
| **Other Land Uses** | | | |
| Street Rights-of-Way | 43.0 | 153.8 | 196.9 |
| **Grand Total Land Uses** | **214.4** | **3,365.3** | **3,579.7** |
| | | | |
| Source: Aerial Information Systems, July 24, 2008. | | | |

## *I. AESTHETICS*

| | Potentially Significant Impact | Less than Significant with Mitigation Incorp. | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a) Have a substantial adverse effect on a scenic vista? | ☒ | ☐ | ☐ | ☐ |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | ☒ | ☐ | ☐ | ☐ |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings? | ☐ | ☒ | ☐ | ☐ |
| d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | ☒ | ☐ | ☐ | ☐ |

SUBSTANTIATION: General Plan Land Use: Preferred Alternative Map, California Department of Transportation Scenic Highway Mapping System

a. Future development associated with the propopsed General Plan and in Annexation Nos. 2008-001 and 2008-002 has the potential to adversely affect scenic vistas of local and surrounding mountains as viewed from public and private lands and/or rights-of-way. The proposed General Plan includes policies and programs that are expected to limit these impacts. Such policies and programs include but are not limited to comprehensive landscape programs, and requirements for site-sensitive planning, review of development plans, and implementation of the Town Zoning Ordinance. A more thorough review shall be conducted and discussed in the EIR.

b. Implementation of the proposed General Plan will result in grading and construction activities that have potential to damage scenic resources, including vegetation and rock outcroppings. Portions of the planning area are adjacent to or visible from State Highway 18, which is designated as an "Eligible State Scenic Highway." Some buildings dating from the mid-1940's to 1960 and the early years of present-day Apple Valley are located along Highway 18 within the Town. Potential impacts to these structures from implementation of the General Plan, and mitigation to reduce any such impacts to less than significant levels, will be discussed in the EIR.

c. Implementation of the General Plan update and Annexation Nos. 2008-001 and 2008-002 will provide for continued urbanization that has the potential to degrade the existing visual character of the Town and its surroundings. Land clearing, grading and construction activity have the potential to impact existing scenic resources. Adherence to the Town's Zoning Ordinance and other policies and programs set forth in the General Plan are expected to minimize these impacts, and future development is expected to be compatible with existing land uses. Nonetheless, these issues should be further addressed in the EIR.

d. The Vistor Valley and the Town of Apple Valley enjoy good visibility of dark night skies, which are considered a valued scenic resource. The General Plan update and the annexations will facilitate development that has the potential to create substantial light and glare from sources such as parking lot and security lighting. The EIR will include further analysis and mitigation measures.

## *II. AGRICULTURE RESOURCES*

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

| | Potentially Significant Impact | Less than Significant with Mitigation Incorp. | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | ☐ | ☐ | ☒ | ☐ |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | ☐ | ☐ | ☒ | ☐ |
| c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use? | ☐ | ☐ | ☒ | ☐ |

SUBSTANTIATION (check _ if project is located in the Important Farmlands Overlay):
General Plan Land Use: Preferred Alternative Map, Personal Communication, Chrissie Barialla County of San Bernardino Land Use Services Department, July 2008.

a. There are no agricultural lands within the Town's corporate limits. East of the Town limits and within the Sphere-of-Influence, there are approximately 1,992 acreas designated for agricultural uses, of which approximatelly 404 acres are currently in agricultural production. Neither implementation of the proposed General Plan, nor the subject annexations, would convert agricultural lands with these designations to non-agricultural uses.

b. Based on information provided by San Bernardino County, there is currently one Williamson Act contract in effect over approximately 2 acres in Apple Valley. The potential impacts of future development associated with implementation of the proposed General Plan and the subject annexations will be ientified and evaluated in the EIR.

c. The proposed General Plan update and subject annexations will facilitate future development that may result in the conversion of limited amounts of farmland to non-agricultural uses. This potential should be further assessed in the EIR.

## *III. AIR QUALITY*

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

| | Potentially Significant Impact | Less than Significant with Mitigation Incorp. | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a) Conflict with or obstruct implementation of the applicable air quality plan? | ☐ | ☒ | ☐ | ☐ |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | ☒ | ☐ | ☐ | ☐ |
| c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | ☒ | ☐ | ☐ | ☐ |
| d) Expose sensitive receptors to substantial pollutant concentrations? | ☐ | ☒ | ☐ | ☐ |
| e) Create objectionable odors affecting a substantial number of people? | ☐ | ☒ | ☐ | ☐ |

SUBSTANTIATION: General Plan Land Use Map: Preferred Alternative, Mojave Desert Air Quality Management District Rule Book, Mojave Desert Air Quality Management District CEQA and Federal Conformity Guidelines

a: The Town and annexation areas are located within the Mojave Desert Air Quality Management District (MDAQMD) which lies in the San Bernardino County portion of the Mojave Desert Air Basin (MDAB). Air quality in Apple Valley has deteriorated over the past few decades, primarily as a result of increased construction and development, population growth, and traffic. Air quality within the MDAB has been impacted not only by local sources but also by sources in neighboring air basins, including those to the west and southwest.

Future development associated with implementation of the proposed General Plan, as well as that facilitated by the subject proposed annexations, will generate particulate matter ($PM_{2.5}$ and $PM_{10}$) pollutant emissions that are subject to local and regional air quality plans. The EIR should further evaluate these issues.

b. Buildout of the proposed General Plan has the potential to result in exceedances of established MDAQMD air quality thresholds. A variety of measures, such as the use of energy-efficient applicances, reduction of fugitive dust emissions through site watering and other measures, and site-specific air quality analysis for future development projects, are expected to mitigate these impacts. Future development within the annexation areas is expected to result in similar types of impacts on a reduced scale. The EIR should further evaluate these issues.

c. The Mojave Desert Air Basin exceeds state and federal standards for fugitive dust ($PM_{10}$) and for ozone. Grading and construction of future development facilitiated by the proposed General Plan update, as well as to a lesser extent the annexations, are expected to result in a cumulative net increase in these

pollutants. Increases in mobile sources, such as automobiles and other vehiclular traffic, and stationary sources such as HVAC systems, also have potential to generate pollutants over the buildout of the General Plan and annexation areas. The level of impacts should be analyzed and appropriate mitigation measures set forth in the EIR.

d. The proposed General Plan and annexations would facilitate development that has potential to expose sensitive receptors, such as schools and residences, to pollutant concentrations. The General Plan provides policies and programs aimed at reducing these potential impacts to less than significant levels. These include thoughtful land use planning and zoning, phasing development projects, and implementing measures to reduce and suppress fugitive dust. These issues should be further considered in the EIR.

e. Industrial and heavy commercial land uses are considered most likely to create objectionable odors. Implementation of the proposed General Plan and the annexations has potential to create objectional odors that would affect a substantial number of people. Potential impacts should be further evaluated in the EIR.

## *IV. BIOLOGICAL RESOURCES*

Would the project:

| | Potentially Significant Impact | Less than Significant with Mitigation Incorp. | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | ☒ | ☐ | ☐ | ☐ |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service? | ☐ | ☒ | ☐ | ☐ |
| c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | ☐ | ☒ | ☐ | ☐ |
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | ☐ | ☒ | ☐ | ☒ |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | ☐ | ☒ | ☐ | ☐ |
| f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? | ☐ | ☐ | ☐ | ☒ |

SUBSTANTIATION (check if project is located in the Biological Resources Overlay ___or contains habitat for any species listed in the California Natural Diversity Database X ): Town of Apple Valley General Plan Update Biological Resources," prepared by AMEC Earth & Environmental, Inc., February 2008; San Bernardino County 2007 General Plan Land Use Maps, Apple Valley.

a. The planning area includes a variety of special status species, including some which have been listed as threatened or endangered by federal and state governments. The General Plan sets forth policies and programs intended to protect these species, including protection of sensitive habitats and participation in local and regional conservation plans. A biological resources study has been prepared for the General Plan; it discusses the occurrence probability of such species in the planning area and recommends measures to ensure their protection. The EIR should further evaluate potential impacts to sensitive species.

b. The Town of Apple Valley and the Sphere-of-Influence contain areas of valuable habitat that support special status species. The western portion of Apple Valley, in conjunction with the Mojave River, harbors wetland-dependent species and associated riparian habitat. These resources are protected by applicable state and federal regulations, and the Town General Plan sets forth policies and programs to protect these sensitive resources. The potential for future development associated with the General Plan and annexations to impact these resources should be further assessed in the EIR.

c. The western portion of Apple Valley, in conjunction with the Mojave River, harbors wetland-dependent species and associated riparian habitat. These resources are protected by applicable state and federal regulations, and the Town General Plan sets forth policies and programs to protect these sensitive resources. The potential for future development associated with the General Plan and annexations to impact these resources should be further assessed in the EIR.

d. The Mojave River is a significant north/south corridor that links a number of natural communities within the planning area. Similarly, hills, ridges and associated washes serve as important corridors for movement between mountains that occur in the northern, northeastern, southern and southeastern portions of the General Plan area. The Town is processing a multiple species habitat conservation plan (MSHCP) that will establish guidelines for the preservation and maintenance of wildlife movement corridors within the Town and vicinity. Prior to adoption of the MSHCP, the Town intends to apply standards set forth in the CEQA Guidelines for projects within or adjacent to Special Linkage areas. Nonetheless, potential impacts to these areas should be further assessed in the EIR.

e. The General Plan area contains Joshua Tree Woodland, of which Joshua Trees represent a minor component. The densest Joshua Tree stands occur in the southwestern portion of Apple Valley. Joshua Trees are protected by Town ordinance, which requires special permitting for their removal. Future development associated with the General Plan and annexations is expected to comply with all local policies and ordinances protecting biological resources. Nonetheless, these issues should be further addressed in the EIR.

f. Non-federal lands within the Town are not currently subject to any adopted habitat conservation plans. The Town and annexation areas are within the planning area of the approved West Mojave Habitat Conservation Plan (West Mojave Plan), prepared by the Bureau of Land Management (BLM). The West Mojave Plan is currently only applicable to federal lands, having only completed NEPA certification. Mountain areas within the Town are managed by the U.S. Bureau of Land Management and are subject to the West Mojave Plan. Local, state, and federal entities are in the process of developing a private lands counterpart to the West Mojave Plan; among these are the Draft Apple Valley MSHCP. The MSHCP is expected to address impacts to sensitive and listed species in order to ensure that the updated General Plan can be implemented, and to streamline the Town's development entitlement process while ensuring protection of sensitive environmental resources. The General Plan contains policies and programs which are intended to ensure consistency with the MSHCP, once adopted. These issues should be further evaluated in the EIR.

## *V. CULTURAL RESOURCES*

Would the project:

| | Potentially Significant Impact | Less than Significant with Mitigation Incorp. | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? | ☐ | ☒ | ☐ | ☐ |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? | ☐ | ☐ | ☐ | ☒ |
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | ☐ | ☒ | ☐ | ☐ |
| d) Disturb any human remains, including those interred outside of formal cemeteries? | ☐ | ☒ | ☐ | ☐ |

SUBSTANTIATION (check if the project is located in the Cultural __ or Paleontologic ___ Resources overlays or cite results of cultural resource review): Cultural Resources Technical Report, Town of Apple Valley General Plan Update, prepared by CRM Tech, September 2007.

a-b. Based on previous cultural resources surveys, the planning area is known to contain a number of historical and archaelolical sites. Certain areas within the Town, such as along the Mojave River, areas within the northern and southern portions of the Town, and along areas of Highway 18, have been identified as being highly sensitive for both prehistoric and historic-period cultural resources. Large portions of the planning area have not been intensively surveyed for these resources. Therefore, future development facilitated by implementation of the General Plan and annexations has potential to result in alteration or destruction of historical or archaeological resources, particularly in areas that have not been surveyed. The General Plan includes policies and programs, including review of development plans to assess potential impacts to cultural resources and continued preservation efforts, which are expected to reduce potential impacts to less than significant levels. These issues should, nonetheless, be addressed in the EIR.

c. Based on the young age of geologic formations in most of the General Plan area, there is low potential for surface deposits in the Town and adjacent lands to contain significant fossil remains. Where older subsurface soils occur, there exists high potential for significant nonrenewable paleontological resources. Such older sediments have most potential to occur along the Mojave River and at unknown depth below the surface. While no reports of fossils have been made in the Town, nonetheless, the EIR should evaluate the potential for impacts to such resources, and provide appropriate mitigation.

d. Apple Valley is situated near the estimated boundary between the traditional territories of the Vanyume and Serrano peoples. Given the occurrence of cultural resources sites within the planning area, development associated with implementation of the proposed General Plan has the potential to disturb human remains, including those interred outside of formal cemeteries. The proposed General Plan includes programs intended to reduce potential impacts to cultural resources through a pro-active approach to their preservation. These issues should be further addressed in the EIR.

## *VI. GEOLOGY AND SOILS*

Would the project:

| | Potentially Significant Impact | Less than Significant with Mitigation Incorp. | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | | |
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | ☒ | ☐ | ☐ | ☐ |
| ii) Strong seismic ground shaking? | ☐ | ☒ | ☐ | ☐ |
| iii) Seismic-related ground failure, including liquefaction? | ☐ | ☒ | ☐ | ☐ |
| iv) Landslides? | ☐ | ☒ | ☐ | ☐ |
| b) Result in substantial soil erosion or the loss of topsoil? | ☐ | ☒ | ☐ | ☐ |
| c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | ☐ | ☒ | ☐ | ☐ |
| d) Be located on expansive soil, as defined in Table 18 1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | ☐ | ☐ | ☒ | ☐ |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? | ☐ | ☐ | ☒ | ☐ |

SUBSTANTIATION (check __ if project is located in the Geologic Hazards Overlay District):
"Technical Background Report to the Safety Element of the General Plan for the Town of Apple Valley," Earth Consultants International, October 2007.

a.(i). There are two fault zones which are within the Alquist-Priolo Fault Hazard Zone as delineated by the State Geologist within the Town's Sphere-of-Influence. These are the North Frontal Fault Zone, and the Helendale Fault. No faults zoned by the State of California are mapped within the corporate limits of the Town of Apple Valley or within either of the annexation areas. Therefore, implementation of the proposed General Plan would not be expected to expose people and structures to adverse impacts associated with surface rupture. Impacts associated with geological concerns will be further evaluated in the EIR.

a.(ii). The Town and the annexation areas are located in proximity to several active fault zones. These include the aforementinoned North Frontal Fault Zone and Helendale Fault Zone. The San Andreas Fault Zone,

one of the most active faults in Southern California, is located approximately 23 miles from the planning area. Therefore, future development within the proposed General Plan area, including the annexation lands, has potential to expose people and structures to hazards associated with strong seismic groundshaking. These issues should be further assessed in the EIR.

a.(iii). Portions of the Town and its Sphere-of-Influence are considered to be subject to risk of seismically-induced ground failure, which include liquefaction and settlement. This is due to the number of active faults in the region that could potentially generate earthquakes characterized by strong ground shaking of long durations, and the presence in portions of the area of young, unconsolidated alluvial soils. Risk of liquefaction is primarily localized within the Mojave River floodplain. The proposed General Plan and annexations would facilitate development that could expose people and structures to these hazards. The EIR should further evaluate these issues.

a.(iv). Portions of the planning area that are situated along natural slopes and in the San Bernardino Mountains in and to the south of Apple Valley have potential to be vulnerable to seismically-induced landslides and slope instability. Other risks that may occur locally are those from ridgetop fissuring and shattering, which occurs as a result of intense amplification or focusing of seismic energy due to local topographic features. The greatest potential for ridgetop fissuring and shattering occur outside the Town or annexation areas, in the Granite Mountains, Fairview Mountains, and Ord Mountains, and just outside the Town's Sphere-of-Influence, at the top of the Black Mountains, Sidewinder Mountains and Turtle Mountains. The potential for these hazards to adversely affect people and structures associated with development facilitated by the General Plan and annexations is reduced given the location of these landforms in relationship to the planning area, however, these risks should be further assessed in the EIR.

b. The planning area is located in a region where the extreme topographic relief between the valley and the surrounding mountains, along with the soil and rock types and vegetation contribute to conditions favorable to erosion, runoff, and sedimentation processes. Natural erosion is exacerbated by human activities such as agriculture and land development, including grading, alteration of natural drainage patterns, soil compaction, cut and fill slopes, and decrease in impermeable surfaces. The planning area is also susceptible to strong winds associated with the Cajon Pass which, when combined with the sandy surface soils characteristic of Apple Valley, can result in substantial wind erosion, and occasional dust storms. Potential impacts associated with these risks should be further evaluated in the EIR.

c. As previously noted, portions of the planning area are subject to potential risks associated with landslide, liquefaction, or differential settlement. Soil collapse, or hydro-consolidation can result in substantial and rapid settlement under relatively light loads, and may be caused by irrigation, or a rise in the groundwater table which could increase surface water infiltration. The young and very young alluvial sediments in the Apple Valley area may be locally susceptible to this hazard due to the granular nature of the soils, rapid deposition in the alluvial fan environment, and the generally dry condition of the upper soils. Based on subsidence studies in the Mojave River Groundwater Basin, which underlies the planning area, the closest subsidence area to Apple Valley is located approximately seven miles northwest. To date, subsidence has not been detected within Apple Valley and therefore risk of adverse effects from this hazard is considered to be less than significant. Nonetheless, the potential for these hazards to impact development facilitated by the implementation of the General Plan and annexations should be further assessed in the EIR.

d. The planning area is primarily underlain by alluvial sediments that are composed predominantly of silty sand and sand, which typically have a low expansion potential. Expansive or potentially expansive soils are found within Apple Valley Dry Lake and may also occur within subsurface accumulation of clay deposits that have developed on older fan deposits. In general, risk to life and property associated with development facilitated by the General Plan is considered less than significant. Nonetheless, these risks should be further evaluated in the EIR.

e. Currently approximately 70% of development within the Town of Apple Valley is unsewered, and is served by private septic or dry sewer systems. The annexation areas are largely undeveloped and are at some distance from municipal sewer systems. The Town currently requires connection to sewer systems for developments located within one-half mile of existing sewer facilities. Development plans are subject to review and on-site soils testing where applicable to determine the suitability of soils for septic systems. As has been discussed, soils within the planning area are comprised primarily of young and very young alluvium, which is generally not expansive, but has potential to be subject to collapse from hydroconsolidation, liquefaction, or differential settlement. The suitability of soils in the Town and the annexation areas to support septic systems or alternative wastewater treatment systems should be further evaluated in the EIR.

## *VII. HAZARDS AND HAZARDOUS MATERIALS*

Would the project:

| | Potentially Significant Impact | Less than Significant with Mitigation Incorp. | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | ☐ | ☒ | ☐ | ☐ |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | ☒ | ☐ | ☐ | ☐ |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | ☐ | ☒ | ☐ | ☐ |
| d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | ☐ | ☒ | ☐ | ☐ |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? | ☐ | ☒ | ☐ | ☐ |
| f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? | ☐ | ☐ | ☒ | ☐ |
| g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | ☐ | ☐ | ☒ | ☐ |
| h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? | ☐ | ☐ | ☒ | ☐ |

SUBSTANTIATION: U.S. EPA Envirofacts Data Warehouse for the Town of Apple Valley, EDR Data Map Area Study, Apple Valley 2006; San Bernardino County 2007 General Plan Hazard Mapping, Apple Valley.

a. The Town and Sphere-of-Influence are located along three hazardous materials transportation corridors. The Atchison Topeka & Santa Fe Railroad, U.S.-Interstate 15, and State Highway 18 have the potential to be involved in the transport of hazardous wastes and materials. The proposed General Plan update and annexations will facilitate continued urbanization that may result in development that

involves the production, storage, use or transport of hazardous or toxic materials. Potential hazards to existing and future development should be further assessed in the EIR.

b. There are no large-scale industrial or commercial users of hazardous materials in the Town of Apple Valley. There are several small-quantity hazardous/toxic materials generators, such as those associated with commercial, industrial and quasi-industrial and medical operations, including St. Mary's Medical Center. As a result, the potential exists for accidental spills, air emssions, illegal dumping, and other uncontrolled discharges into the environment. Leakage hazards are associated with underground storage tanks such as are typical of service stations and which are located at the Town's Corporate Yard. High-pressure natural gas transmission and distribution lines traverse the Town and Sphere-of-Influence, and have the potential to result in accidental leaks or spillage.

The policies and programs established in the General Plan are aimed at reducing the risk of hazardous materials releases through the review of development proposals for hazardous materials sites, land use planning to ensure compatibility between hazardous material operations and surrounding land uses, strict adherence to the Uniform Fire Code, and compliance with other applicable hazardous materials regulations. These issues should be further addressed in the EIR.

c. Future development facilitated by the proposed General Plan update and annexations has potential, albeit limited, to result in hazardous emissions or to handle hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. However, the General Plan provides for review of development applications and thoughtful land use planning which are expected to minimize these potential impacts by limiting the development of hazardous materials operations to areas where such operations are compatible with surrounding land uses. Nonetheless, these issues should be further evaluated in the EIR.

d: The General Plan update and annexations are not "sites" as defined in this threshold. However, the implementation of the General Plan and annexations could affect sites which are listed in state and federal databases. The General Plan includes policies and programs for the handling of hazardous materials, and coordination with responsible agencies regarding existing and potential future sites. The EIR will further assess the potential hazards.

e. The Apple Valley Airport is located in the northern portion of the planning area within the approved North Apple Valley Industrial Specific Plan site. Existing and approved development on the Specific Plan site is predominantly industrial. The proposed General Plan update would facilitate primarily industrial and commercial development in proximity to the airport. The airport is located within one mile of the Annexation 2008-002 site, on which are proposed industrial uses. Potential adverse impacts to future development in proximity to the airport should be further assessed in the EIR.

f. The Osborne Airstrip is a private airstrip located outside the Town in the eastern portion of the City of Victorville. It is within two miles of portions of the existing western boundary of the Town and approximately the same distance from Annexation 2008-001. It is a private airstrip for use by the owner and invited guests, and therefore generates a limited volume of flights. While future development facilitated by the General Plan update may result in exposure of additional people to airstrip activities, these risks are expected to be limited given the volume of air traffic supported by the airstrip. Nonetheless, these issues should be further addressed in the EIR.

g: Development faciltated by the proposed General Plan update and the annexations is not expected to impair or interfere with the Town's adopted emergency services plan. The General Plan requires the continued maintenance and update of the Town's Multi-Hazard Functional Planning Guidance document, and sets forth a policy and program to ensure the development of a mass evacuation plan in conjunction with surrounding jurisdictions. No significant adverse impacts are expected, however, the EIR should address these issues.

h: The Town of Apple Vallely is situated in a region subject to wildland fires due to topgraphic relief, and areas containing grass and brush-covered hillsides. The region is also subject to strong winds and extreme summer daytime temperatures. The planning area is outside Fire Safety Zones established by San Bernardino County. The General Plan provides policies and programs to ensure adequate provision of fire protection services and emergency services accessibility to development. The Apple Valley Fire Protection District reviews development projects to ensure applicable development requirements are met. The EIR should thoroughly assess potential adverse impacts to future development.

## ***VIII. HYDROLOGY AND WATER QUALITY***

Would the project:

| | Potentially Significant Impact | Less than Significant with Mitigation Incorp. | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a) Violate any water quality standards or waste discharge requirements? | ☐ | ☒ | ☐ | ☐ |
| b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | ☒ | ☐ | ☐ | ☐ |
| c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? | ☐ | ☒ | ☐ | ☐ |
| d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? | ☐ | ☒ | ☐ | ☐ |
| e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? | ☐ | ☒ | ☐ | ☐ |
| f) Otherwise substantially degrade water quality? | ☐ | ☒ | ☐ | ☐ |
| g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? | ☐ | ☒ | ☐ | ☐ |
| h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows? | ☐ | ☒ | ☐ | ☐ |
| i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? | ☐ | ☒ | ☐ | ☐ |
| j) Inundation by seiche, tsunami, or mudflow? | ☒ | ☐ | ☐ | ☒ |

SUBSTANTIATION: Town of Apple Valley Master Plan of Drainage, SO & Associates, 1993; Technical Background Study to the Safety Element of the Apple Valley General Plan, Earth Consultants International, 2007.

a. The proposed General Plan and the subject annexations will facilitate continued urbanization. However, such development is not expected to substantially contribute to violations of water quality standards or waste discharge requirements. As required in the General Plan, all development plans will be subject to review to determine their potential to create surface and groundwater contamination hazards. Nevertheless, the EIR should further analyze these potential impacts.

b. The proposed General Plan update will facilitate development of substantial additional residential, commercial, industrial and public facilities development. The proposed annexations will also facilitate new development, although at a smaller scale than the General Plan, including residential, commercial and industrial uses. This development may result in a reduction in groundwater available for use. The expansion of development in the Town has resulted in a depletion of groundwater in storage. The Mojave Water Agency imports water from the California State Water Project (SWP) to recharge groundwater in the Mojave River Basin. The SWP also allows the MWA to purchase and/or facilitate delivery of additional water from sources other than the SWP. The Mojave Water Agency is subject to the Mojave Basin Area Adjudication, which requires that additional surface water be imported to help balance the Basin. The EIR should assess potential water consumption and other potential impacts to groundwater resources.

c, d. Development facilitated by the proposed General Plan update and annexations has the potential to alter existing drainage patterns, increase the rate of erosion and/or siltation in portions of the Town and its Sphere-of-Influence, and increase the amount of runoff. In order to limit these impacts, the General Plan includes policies and programs that include the construction of on-site stormwater management improvements, as well as on-going maintenance and periodic updates to the Town's Multi-Hazard Functional Planning Guidance document as it pertains to flooding and hydrology issues. The EIR should further address these issues.

e. Adoption and implementation of the General Plan update and the subject annexations will facilitate development that will generate increased runoff. Policies and programs in the General Plan require that new development retain project-generated runoff on-site, and plans for improvements to the Town stormwater management system to accommodate future developmen that the Plan will facilitate. While runoff is not expected to exceed the capacity of existing or planned stormwater drainage systems, these potential impacts should be further evaluated and discussed in the EIR.

f. The proposed General Plan and annexations will facilitate continued urbanization that has the potential to contribute to further degradation of surface and/or groundwater as a result of increased runoff and other possible contaminants. Potential impacts are expected to be mitigated by the inclusion of on-site drainage improvements that implement the National Pollution Elimination System (NPDES). Connection of new and existing development to the Town's sewage treatment system, and expansion of the existing sewage treatment system, are expected to reduce potential impacts to less than significant levels. These impacts should be further evaluated in the EIR.

g, h. Portions of the Town Apple Valley, including areas along the Mojave River and Desert Knolls Wash, and within the Apple Valley Dry Lake, are vulnerable to inundation during the 100-year flood. Some roadways in the Town would be flooded and impassable as a result of the 100-year storm. The General Plan includes policies and programs intended to avoid and reduce flood-related hazards. The Plan also establishes policies and programs that are aimed at limiting development of structures within the 100-year flood hazards areas that have potential to redirect and/or impede flows. However, the EIR should further address these issues.

i. There are three dams in the area that could potentially impact Apple Valley and the surrounding communities: the Mojave Forks Dam (Mojave Reservoir), the Cedar Springs Dam (Silverwood Lake), and the Lake Arrowhead Dam. Development facilitated by the proposed General Plan update and the annexations has potential to expose additional people or structures to increased risk should these facilities fail. The General Plan provides policies and programs intended to limit or mitigate these risks, including review of future development plans to restrict the type and location of structures in the vicinity of major drainages, planning for improvements to local stormwater management facilities, as well as

updating the Multi-Hazard Functional Planning Guidance document and establishing a mass evacuation plan in the event of a major flood. The EIR should further evaluate potential impacts.

j. The Town and its Sphere-of-Influence are located far inland and are not subject to risk of inundation by tsunami; risk of mudflow is likewise less than signfigant given the regional and local soil characteristics. Potential impacts associated with risks from seiche are limited to those associated with aboveground water tanks, which may be damaged by strong ground shaking and rupture from earthquakes. Seismically induced inundation can occur if a tank is not adequately braced and baffled, allowing water to slosh within the tank potentially lifting it off of its foundation and splitting the shell. The Town of Apple Valley does not provide water to its residents, nor does it own any water reservoirs, however, there are numerous private water companies that provide the area with water and maintain aboveground water reservoirs within the Town. Nonetheless, these issues should be further addressed in the EIR.

## *IX. LAND USE AND PLANNING*

Would the project:

| | Potentially Significant Impact | Less than Significant with Mitigation Incorp. | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a) Physically divide an established community? | ☐ | ☐ | ☐ | ☒ |
| b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | ☐ | ☐ | ☒ | ☐ |
| c) Conflict with any applicable habitat conservation plan or natural community conservation plan? | ☐ | ☒ | ☐ | ☐ |

SUBSTANTIATION: Town of Apple Valley General Plan, 1991; County of San Bernardino 2007 General Plan.

a. The proposed General Plan update and annexations address future development within the Town and portions of its Sphere-of-Influence. Future development facilitiated by their adoption and implementation is not expected to physically divide an existing community.

b. The adoption and implementation of the proposed General Plan update and annexations will update the Town's Comprehensive General Plan. It will address future development in areas currently governed by the County of San Bernardino within the Town's Sphere-of-Influence, and would annex portions of those lands into the Town's corporate limits. There is no apparent conflict between the goals, policies and programs established by the proposed General Plan update and other applicable land use plans or regulations, including the current Town General Plan or the San Bernardino County General Plan.

c. There are currently no habitat conservation plans or natural community conservation plans applicable to non-federal lands within Apple Valley. The Town is within the planning area of the Western Mojave HCP, prepared by BLM, which currently is applicable only to federal lands. Local, state, and federal entities are in the process of developing a private lands counterpart to the West Mojave Plan. On a parallel track with the General Plan Update, the Town is preparing Multiple Species Habitat Conservation Plan (MSHCP). The MSHCP will provide a means to address impacts to sensitive and listed species in order to ensure that the updated General Plan can be implemented, which will enable the Town to streamline the development entitlement process while ensuring protection of sensitive environmental resources. Development facilitated by the proposed General Plan update and subject annexations has potential to result in impacts to species covered by these plans. The EIR should further discuss these issues to ensure that these impacts are reduced to less than signficant levels and ensure compliance with applicable plans.

## X. MINERAL RESOURCES

Would the project:

| | Potentially Significant Impact | Less than Significant with Mitigation Incorp. | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | ☐ | ☐ | ☒ | ☐ |
| b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | ☐ | ☐ | ☒ | ☐ |

SUBSTANTIATION: Town of Apple Valley General Plan, 1991

a-b. The Town and Sphere-of-Influence lands contain mineral resources including sand, gravel and stone deposits that are suitable as sources of concrete aggregate. Aggregate and limestone for cement manufacture are potentially important mineral resources, although utilization of these resources will significantly impact and be impacted by urbanization and development of nearby properties. Areas with current land uses that may be compatible with resource exploitation are identified as Aggregate Resource Areas (ARA). These lands are located primarily near the Mojave River. The General Plan includes policies and programs intended to ensure the continued long-term availability of lands containing known mineral resources. These issues should be further discussed in the EIR.

## ***XI. NOISE***

Would the project result in:

| | Potentially Significant Impact | Less than Significant with Mitigation Incorp. | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | ☒ | ☐ | ☐ | ☐ |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | ☐ | ☒ | ☐ | ☐ |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | ☒ | ☐ | ☐ | ☐ |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | ☒ | ☐ | ☐ | ☐ |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | ☐ | ☒ | ☐ | ☐ |
| f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | ☐ | ☐ | ☒ | ☐ |

SUBSTANTIATION: "Town of Apple Valley Noise Element Update: Existing Conditions Report, Urban Crossroads, July 2008.

a. The Town's Development Code establishes permissible interior and exterior sound levels by land use category, and also sets maximum noise levels for stationary and mobile construction equipment. Over a maximum 30 minute period, the maximum exterior noise level for residential development from stationary noise sources is 50 dBA during daytime hours, and from 40 to 45 dBA during nighttime hours. These limits are higher for commercial and industrial uses. For construction-related noise, maximum noise levels set for intermittent, short-term operation are between 75 and 80 dBA during daytime hours, and up to 85 dBA for semi-residential/commercial areas. The proposed General Plan update and annexations will facilitate development that will result in increases in construction noise and traffic volumes that may exceed applicable noise standards temporarily or on a short-term basis. A Noise Study is being prepared which will further evaluate potential impacts. The EIR should provide a thorough analysis of the Noise Study findings and potential impacts.

b. Development facilitated by implementation of the General Plan and annexations will require grading and construction that may result in termporary groundborne vibrations or an increase in groundborne noise levels. These impacts are not expected to be excessive, but should nonetheless be assessed in the EIR.

c-d. Noise sources in Apple Valley include mobile sources, such as roadways, including U.S. Interstate-15 and Highway 18, noise associated with the Apple Valley Airport, and to a limited extent, rail traffic in the extreme

northern and southern portions of Town. Stationary souces include HVAC units and other equipment. Future development facilitated by the proposed General Plan update and annexations will result in changes to the ambient noise level. These include temporary incrses generated by construction activity and associated traffic. Other changes are permanent increases in noise levels as a result of higher traffic volumes generated by future development, as well as stationary source operation including HVAC equipment. The General Plan establishes policies and programs that appear to adequately mitigate these impacts, such as thoughtful and sensitive land use planning to ensure compatibility, and the installation of earthen berms, sound walls and other noise attenuation mechanisms. Nonetheless, the EIR should further consider these issues and provide additional mitigation where appropriate and as needed to ensure impacts are reduced to less than significant levels.

e. The Apple Valley Airport currently generates noise levels of approximately 60 to 75 dBA CNEL, all of which remain within airport property. These impacts are barely perceptible in most of the planning area. Future development facilitated by the proposed General Plan update and annexations is not expected to result in substantial changes in aircraft volume, and potential noise impacts from the airport are not expected to be significant. Lands adjacent to and in the vicinity of the airport, which includes lands proposed for Annexation No. 2008-002, are designated primarily for industrial and commercial uses in the proposed General Plan update. The use of building setbacks, adherence to State Code requirements for airborne sound isolation of residences, and preparation of on-site noise studies, where necesssary, are expected to adquately mitigate potential impacts. Nonetheless, the EIR should address these issues in detail based on findings in the General Plan Noise Study.

f. The Osborne Airstrip is located in Victorville, within approximately one mile of the Town's western boundary and the western boundary of the proposed Annexation 2008-001 site. The airstrip generates a limited volume of landings and take-offs, and is not expected to generate excessive noise levels.

## ***XII. POPULATION AND HOUSING***

Would the project:

| | Potentially Significant Impact | Less than Significant with Mitigation Incorp. | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | ☒ | ☐ | ☐ | ☐ |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☒ |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☒ |

SUBSTANTIATION: General Plan Land Use Map: Preferred Alternative, Draft General Plan Land Use Element

a. Adoption and implementation of the proposed General Plan update and the annexations will facilitate substantial new residential, commercial, and industrial development and the extension of roads and other infrastructure. The EIR should further evaluate the potential for population growth and other related issues.

b-c. Implementation of the proposed General Plan update and annexations will facilitate development on lands that are primarily vacant, and therefore is not expected to displace substantail numbers of people or housing.

## ***XIII. PUBLIC SERVICES***

Would the project:

| | Potentially Significant Impact | Less than Significant with Mitigation Incorp. | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: | | | | |
| Fire protection? | ☒ | ☐ | ☐ | ☐ |
| Police protection? | ☒ | ☐ | ☐ | ☐ |
| Schools? | ☒ | ☐ | ☐ | ☐ |
| Parks? | ☐ | ☒ | ☐ | ☐ |
| Other public facilities? | ☐ | ☒ | ☐ | ☐ |

SUBSTANTIATION: General Plan Land Use Map: Preferred Alternative, Draft General Plan: Land Use Element; Police and Fire Element; Schools and Libraries Element; Water, Wastewater and Utilities Element

a. The Apple Valley Fire Protection District provides fire protection for the planning area. Currently there are eight fire stations within the Town and its Sphere-of-Influence. The Town participates in a joint response and aid agreement with fire departments in neighboring cities and communities. Future development will result in a need for increased staffing and equipment, and individual projects will be subject to Fire Marshal review and conditions of approval, as well as payment of applicable fire impact fees. The EIR should evaluate potential impacts on demand for fire protection services and provide appropriate mitigation.

The Town of Apple Valley contracts with the San Bernardino County Sheriff's Department which assigns staff to the Apple Valley Police Department for police protection services within the Town's corporate limits. The County Sheriff's Department serves unincorporated areas in the vicinity of Apple Valley, including the Town's Sphere-of-Influence. Future development will result in increased demand for police services. The EIR should assess potential impacts on demand for police services and provide appropriate mitigation.

The Apple Valley Unified School District provides public education to grades kindergarten through 12th grade in the Town. In 2007/2008, there were an average of 14,725 students enrolled in a total of 18 AVUSD schools including 9 elementary schools, 3 middle schools, 2 high schools, and one continuation school. The District also provides alternative and adult education. California Government Code allows school districts to charge development fees to help finance local school services. Future development facilitated by the proposed General Plan update and the annexations will result in residential development with potential to generate a substantial number of new students. New development would be required to pay appropriate school fees to off-set mpacts to schools. The EIR should evaluate the potential for student generation and off-setting school fees associated with future development.

The Town of Apple Valley is responsible for the parks within the Apple Valley Park and Recreation District. Within the Town of Apple Valley and Sphere-of-Influence there are currently sixteen parks, ranging in size and use from mini-parks, to neighborhood, community, special use and school parks. The Town has also planned for development of two additional parks.The Town's recreational facilities include an aquatic center, a community center, and an equestrian park, and the Town is interspersed by a system of

bikeways, paths and trails. Future development facilitated by the proposed General Plan update and annexations will result in additional population that is expected to utilize existing parks. The Town has adopted standards requiring the provision of 5 acres of parkland per 1,000 population; therefore, future development will also necessitate the allocation and development of additonal parklands. The General Plan includes policies and programs intended to ensure the adequate allocation and funding of sufficient parklands. The EIR should further evaluate these issues.

Continued urbanization of hte Town and Sphere-of-Influence will result in additional impacts to public roads and other public facilities and serivces, such as libraries, medical care, and utilities. The EIR should evaluate these potential impacts.

## *XIV. RECREATION*

| | Potentially Significant Impact | Less than Significant with Mitigation Incorp. | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | ☐ | ☒ | ☐ | ☐ |
| b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | ☐ | ☒ | ☐ | ☐ |

SUBSTANTIATION: Draft General Plan Parks and Recreation Element

a-b. Future development facilitiated by the proposed General Plan update and annexations will result in population growth and has potential to increase the use of exisiting parks and recreational facilities, and the physical deterioration of those facilities. Increased population will also require allocation and development of additonal parklands, which are provided for in the proposed General Plan update. The provision of such facilities could be expected to slow or reduce deterioration of existing facilities, however, their construction has potential to result in adverse environmental impacts without mitigation. Policies and programs in the General Plan are intended to minimize such impacts by requiring installation of native, drought-tolerant landscaping, and preservation of active and passive open space and recreation areas. These issues should be further discussed in the EIR.

## ***XV. TRANSPORTATION/TRAFFIC***

Would the project:

| | Potentially Significant Impact | Less than Significant with Mitigation Incorp. | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)? | ☒ | ☐ | ☐ | ☐ |
| b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways? | ☐ | ☒ | ☐ | ☐ |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? | ☐ | ☐ | ☐ | ☒ |
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | ☐ | ☐ | ☐ | ☒ |
| e) Result in inadequate emergency access? | ☐ | ☐ | ☒ | ☐ |
| f) Result in inadequate parking capacity? | ☐ | ☒ | ☐ | ☐ |
| g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)? | ☐ | ☐ | ☒ | ☐ |

SUBSTANTIATION: General Plan Land Use Plan

a. Development facilitiated by the proposed General Plan update and annexations has potential to result in a substantial increase in vehicular trips and traffic generated in the Town and Sphere-of-Influence. A Traffic Study is being prepared for the General Plan and EIR and the results should be further assessed in the EIR.

b. The proposed General Plan update, as well as the annexations, will facilitate development that is expected to result in alterations to existing traffic loads and circulation systems. The Town has established an acceptable minimum Level of Service (LOS) based on volume/capacity ratios for intersections in the community. The Town's standard is "C", or a V/C ratio of 0.61 ~ 0.75. Based on a study of existing traffic conditions, which studied 60 intersections in the planning area, 9 intersections are currently operating below LOS C. Whether or to what extent future development has the potential to result in additional exceedence of established LOS standards for designated roads is unclear and will be assessed in the EIR. Policies and programs set forth in the General Plan support alternative transportation modes, and include on-going consultation and coordination with Caltrans as well as review of development plans and project-specific traffic impacts. The EIR should further assess and where possible, quantify, potential impacts.

c: Future development facilitated by the proposed General Plan update may result in increased air traffic at the Apple Valley Airport, and to a more limited extent, at the Osborne Airstrip. However, any increases in

air traffic volumes associated with General Plan development or the annexations are not expected to be substantial. Neither is such development expected to result in a change in air traffic patterns.

d. The Town and annexation areas do not contain roadways sharp curves or dangerous intersections, nor are any proposed in the General Plan update. Some roads in the General Plan area may carry farm equipment to a limited extent. However, development facilitated by the proposed General Plan update and subject annexations this is not expected to significantly increase the volume of farm equipment occurrences or result in traffic hazards.

e. Future development facilitated by the General Plan update and annexations will result in increased demand for emergency services. However, the General Plan sets forth policies and programs intended to ensure that services can be provided in a safe and effective manner with established response times, and that sufficient emergency access is adequate to all development in the Town and Sphere-of-Influence areas. Nonetheless, the EIR should further consider these issues and provide additional mitigation as appropriate.

f. The proposed General Plan update and annexations will facilitate development that will result in increased parking demand. Policies and programs in the General Plan provide mititation measures to mitigate potential impacts, such as development plan review, and promoting public transportion, bicycle use, and development of non-motorized trails. The EIR should further consider potential impacts and set forth any additional mitigation needed to ensure they are reduced to less than significant levels.

g. The General Plan includes policies and programs promoting pedestrian access. Development of individual projects would be required to include elements designed to encourage and support alternative transportation (e.g. sidewalks, equestrian and bicycle trails, pedestrian crossings), and would not interfere with any existing or proposed bus stops.

## ***XVI. UTILITIES AND SERVICE SYSTEMS***

Would the project:

| | Potentially Significant Impact | Less than Significant with Mitigation Incorp. | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | ☐ | ☐ | ☒ | ☐ |
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | ☒ | ☐ | ☐ | ☐ |
| c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | ☐ | ☒ | ☐ | ☐ |
| d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? | ☒ | ☐ | ☐ | ☐ |
| e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | ☐ | ☒ | ☐ | ☐ |
| f) Be served by a landfill(s) with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | ☐ | ☐ | ☒ | ☐ |
| g) Comply with federal, state, and local statutes and regulations related to solid waste? | ☐ | ☐ | ☒ | ☐ |

SUBSTANTIATION: Mojave Water Agency 2005 Urban Water Management Plan Update; Memorandum of Understanding Between the California Regional Water Quality Control Board-Lahontan Region and the Town of Apple Valley, 1991, as amended; Town of Apple Valley Sewer Connection Policy, 2006; Draft General Plan Water, Wastewater and Utilities Elemen.t

a. The California Regional Water Quality Control Board (CRWQCB), Lahontan Region, implements federal and state laws and regulations pertaining to water quality. Development facilitated by the proposed General Plan update and annexations will generate increased wastewater and require that existing capacities of wastewater collection and treatment facilities expand. The General Plan includes goals, policies and programs intended to guide the timely and effective expansion of these services and facilities and ensure that they meet requirements set forth by the CRWQCB and other applicable regulatory agencies. The EIR should further address these issues.

b: There are major water and wastewater facilities already in place in the Town; some facilities also exist in the annexation areas, although to a more limited extent than within the Town. However, new or altered systems will be required to serve future development associated with the General Plan update and

annexations. The General Plan establishes goals, policies and programs intended to ensure the timely extension of these facilities to portions of the planning area where they do not currently exist. The EIR should analyze potential impacts associated with construction of new facilities or expansion of existing facilities.

c. New stormwater drainage facilities, or alterations to existing facilities, will be necessitated by continued urbanization associated with the proposed General Plan update. The Town's Master Plan of Drainage identifies existing and planned facilities. Currently there are very few existing stormwater improvements within the proposed annexation areas. The General Plan includes policies and programs to ensure the effective and timely expansion of these facilities to serve future development, including updating its Master Plan of Drainage and review of specific development plans to ensure retention of project-related stormwater on-site. The EIR should further address these issues.

d. The Town and annexation areas are served by a number of water service providers. The proposed General Plan update and annexations will facilitiate continued urbanization that will result in increased demand for domestic water and contribute to a cumulative reduction in groundwater. Additional projects and water management actions will be needed to continue to recharge the groundwater basins to maintain groundwater levels for land uses in the General Plan and annexation areas. The General Plan includes policies and programs intended to minimize potential impacts to the water supply, including the installation of low-flush toilest and low-flow shower heads and the use of drought-tolerant landscaping materials. The EIR should evaluate and quantify, where possible, potential impacts.

e. Wastewater treatment is provided by the Victor Valley Wastewater Treatment Authority (VVWRA). VVWRA is continually expanding the ccapacity of its wastewater treatment facilities, however, the proposed General Plan and annexations will facilitate development that may require further expansion. The EIR should further assess these potential impacts.

f-g. Future solid waste generated by the proposed General Plan update and annexations would be transported to the Victorville Regional Sanitary Landfill, which has a projected closure date of 2047. Development facilitated by the proposed General Plan update and annexations will generate additional solid waste from residential, commercial, industrial and institutional sources. The General Plan's policies and programs intended to minimize potential impacts to regional landfills include continuing to meet or exceed requirements of the California Integrated Waste Management Act, which requires all cities and counties within the state to have diverted 50 % of their wastes from landfills by the year 2000. Potential impacts should be further assessed and quantified, where possible, in the EIR.

## ***XVII. MANDATORY FINDINGS OF SIGNIFICANCE***

| | Potentially Significant Impact | Less than Significant with Mitigation Incorp. | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | ☒ | ☐ | ☐ | ☐ |
| b) The project has the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals. | ☐ | ☒ | ☐ | ☐ |
| c) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | ☒ | ☐ | ☐ | ☐ |
| d) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | ☐ | ☒ | ☐ | ☐ |

SUBSTANTIATION:

a. The approval and implementation of the proposed General Plan update has potential to substantially degrade the quality of fish and wildlife resources, and may have other potentially adverse effects on sensitive, threatened or endangered species or their habitats. These actions may also have a potentially adverse impact on historic and/or pre-historic resources. Such impacts may also result from development facilitated by the annexations, although on a smaller scale. The EIR should fully assess this potential and provide appropriate mitigation.

b. Adoption and implementation of the proposed General Plan update and annexations has potential to result in short-term benefits to the disadvantage of long-term environmental goals. The General Plan sets forth goals, policies and programs intended to ensure that services and faclities are sustainable, and to protect environmental resources and processes in the long-term. The EIR shall further assess the balance of short-term versus long-term goals.

c. Implementation of the General Plan update may result in impacts that are individually limited, but are cumulatively considerable to various environmental rsources. The extent to which this may occur is unclear, and should be more fully assessed in the EIR.

d. Future build-out of the General Plan and annexation areas may result in direct and indirect adverse impacts to human beings, such as exposure to hazards associated with strong seismic ground-shaking, increased traffic, threats to limited water sources, and impacts to air quality. However, the extent of this potential for the General Plan update these impacts is unclear and should be fully evaluated in the EIR.

STATE OF CALIFORNIA

# GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

RECEIVED

SEP 25 2008

Community Development

**Notice of Preparation**

September 18, 2008

To: Reviewing Agencies

Re: Town of Apple Valley General Plan Update and Annexations 2008-01 and 2008-02
SCH# 2008091077

Attached for your review and comment is the Notice of Preparation (NOP) for the draft Town of Apple Valley General Plan Update and Annexations 2008-01 and 2008-02 Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

**Lori Lamson**
**Town of Apple Valley**
**14955 Dale Evans Parkway**
**Apple Valley, CA 92307**

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Assistant Deputy Director & Senior Planner, State Clearinghouse

Attachments
cc: Lead Agency

# Document Details Report
## State Clearinghouse Data Base

**SCH#** 2008091077
**Project Title** Town of Apple Valley General Plan Update and Annexations 2008-01 and 2008-02
**Lead Agency** Apple Valley, City of

**Type** NOP Notice of Preparation

**Description** The proposed project is a comprehensive General Plan update that addresses 46,948.3+\- acres in the Town's corporate limits, and 3,579.7+\- acres in unincorporated San Bernardino County within the Town's Sphere-of-Influence that are proposed for annexation into Apple Valley. The project includes changes to land use and zoning designations, circulation system, and new goals, policies, and programs for all General Plan elements.

## Lead Agency Contact

**Name** Lori Lamson
**Agency** City of Apple Valley
**Phone** (760) 240-7000 x7204 **Fax**
**email**
**Address** 14955 Dale Evans Parkway
**City** Apple Valley **State** CA **Zip** 92307

## Project Location

**County** San Bernardino
**City** Apple Valley
**Region**
**Cross Streets**
**Lat / Long** 34° 31' 54" N / 117° 12' 39" W
**Parcel No.**
**Township** **Range** **Section** **Base** SBB&M

## Proximity to:

**Highways** 18, I-15
**Airports** Apple Valley, Osborne Airstrip
**Railways**
**Waterways** Mojave River
**Schools** AVUSD (all)
**Land Use** All

**Project Issues** Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Economics/Jobs; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Septic System; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Growth Inducing; Landuse; Cumulative Effects

**Reviewing Agencies** Resources Agency; Department of Conservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Game, Region 6; Public Utilities Commission; Native American Heritage Commission; Caltrans, Division of Aeronautics; California Highway Patrol; Department of Housing and Community Development; Caltrans, District 8; Department of Toxic Substances Control; Regional Water Quality Control Bd., Region 6 (Victorville)

**Date Received** 09/17/2008 **Start of Review** 09/17/2008 **End of Review** 10/16/2008

Note: Blanks in data fields result from insufficient information provided by lead agency.

## NOP Distribution List

County: Contra Costa SCH# 2008091077

### Resources Agency

- [■] **Resources Agency** Nadell Gayou
- [ ] **Dept. of Boating & Waterways** David Johnson
- [ ] **California Coastal Commission** Elizabeth A. Fuchs
- [ ] **Colorado River Board** Gerald R. Zimmerman
- [■] **Dept. of Conservation** Sharon Howell
- [ ] **California Energy Commission** Dale Edwards
- [ ] **Cal Fire** Allen Robertson
- [ ] **Office of Historic Preservation** Wayne Donaldson
- [■] **Dept of Parks & Recreation** Environmental Stewardship Section
- [ ] **Central Valley Flood Protection Board** Mark Herald
- [ ] **S.F. Bay Conservation & Dev't. Comm.** Steve McAdam
- [■] **Dept. of Water Resources** Resources Agency Nadell Gayou
- [ ] _____ Conservancy

### Fish and Game

- [ ] **Depart. of Fish & Game** Scott Flint Environmental Services Division
- [ ] **Fish & Game Region 1** Donald Koch
- [ ] **Fish & Game Region 1E** Laurie Harnsberger
- [ ] **Fish & Game Region 2** Jeff Drongesen
- [ ] **Fish & Game Region 3** Robert Floerke
- [ ] **Fish & Game Region 4** Julie Vance
- [ ] **Fish & Game Region 5** Don Chadwick Habitat Conservation Program
- [■] **Fish & Game Region 6** Gabrina Gatchel Habitat Conservation Program
- [ ] **Fish & Game Region 6 I/M** Gabrina Getchel Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Game M** George Isaac Marine Region

### Other Departments

- [ ] **Food & Agriculture** Steve Shaffer Dept. of Food and Agriculture
- [ ] **Depart. of General Services** Public School Construction
- [ ] **Dept. of General Services** Anna Garbeff Environmental Services Section
- [■] **Dept. of Public Health** Veronica Malloy Dept. of Health/Drinking Water

### Independent Commissions,Boards

- [ ] **Delta Protection Commission** Debby Eddy
- [ ] **Office of Emergency Services** Dennis Castrillo
- [ ] **Governor's Office of Planning & Research** State Clearinghouse
- [■] **Native American Heritage Comm.** Debbie Treadway
- [ ] **Public Utilities Commission** Ken Lewis
- [ ] **Santa Monica Bay Restoration** Guangyu Wang
- [ ] **State Lands Commission** Marina Brand
- [ ] **Tahoe Regional Planning Agency (TRPA)** Cherry Jacques

### Business, Trans & Housing

- [■] **Caltrans - Division of Aeronautics** Sandy Hesnard
- [ ] **Caltrans - Planning** Terri Pencovic
- [■] **California Highway Patrol** Shirley Kelly Office of Special Projects
- [■] **Housing & Community Development** CEQA Coordinator Housing Policy Division

### Dept. of Transportation

- [ ] **Caltrans, District 1** Rex Jackman
- [ ] **Caltrans, District 2** Marcelino Gonzalez
- [ ] **Caltrans, District 3** Bruce de Terra
- [ ] **Caltrans, District 4** Lisa Carboni
- [ ] **Caltrans, District 5** David Murray
- [ ] **Caltrans, District 6** Michael Navarro
- [ ] **Caltrans, District 7** Elmer Alvarez
- [■] **Caltrans, District 8** Dan Kopulsky
- [ ] **Caltrans, District 9** Gayle Rosander
- [ ] **Caltrans, District 10** Tom Dumas
- [ ] **Caltrans, District 11** Jacob Armstrong
- [ ] **Caltrans, District 12** Ryan P. Chamberlain

### Cal EPA

**Air Resources Board**

- [ ] Airport Projects Jim Lerner
- [ ] Transportation Projects Ravi Ramalingam
- [ ] Industrial Projects Mike Tollstrup
- [ ] **California Integrated Waste Management Board** Sue O'Leary
- [ ] **State Water Resources Control Board** Regional Programs Unit Division of Financial Assistance
- [ ] **State Water Resources Control Board** Student Intern, 401 Water Quality Certification Unit Division of Water Quality
- [ ] **State Water Resouces Control Board** Steven Herrera Division of Water Rights
- [■] **Dept. of Toxic Substances Control** CEQA Tracking Center
- [ ] **Department of Pesticide Regulation** CEQA Coordinator

### Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1** Cathleen Hudson North Coast Region (1)
- [ ] **RWQCB 2** Environmental Document Coordinator San Francisco Bay Region (2)
- [ ] **RWQCB 3** Central Coast Region (3)
- [ ] **RWQCB 4** Teresa Rodgers Los Angeles Region (4)
- [ ] **RWQCB 5S** Central Valley Region (5)
  - [ ] **RWQCB 5F** Central Valley Region (5) Fresno Branch Office
  - [ ] **RWQCB 5R** Central Valley Region (5) Redding Branch Office
- [ ] **RWQCB 6** Lahontan Region (6)
  - [■] **RWQCB 6V** Lahontan Region (6) Victorville Branch Office
- [ ] **RWQCB 7** Colorado River Basin Region (7)
- [ ] **RWQCB 8** Santa Ana Region (8)
- [ ] **RWQCB 9** San Diego Region (9)

- [ ] **Other** _____

Last Updated on 08/13/2008

MOJAVE
air quality management district
DESERT

**Mojave Desert Air Quality Management District**
14306 Park Avenue, Victorville, CA 92392-2310
760.245.1661 • fax 760.245.2699
*Visit our web site: http://www.mdaqmd.ca.gov*
Eldon Heaston, Executive Director

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SEP 24 2008
Community Development

September 22, 2008

Ms. Lori Lamson, Assistant Director of Community Development
Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, CA 92307

**Project: Notice of Preparation (NOP) to Prepare a Draft Environmental Impact Report (DEIR) for Town of Apple Valley General Plan Update and Annexations 2008-001 and 2008-002**

Dear Ms. Lamson:

The Mojave Desert Air Quality Management District (District) has received the NOP of a DEIR for Town of Apple Valley General Plan Update and Annexations 2008-001 (Golden Triangle) and 2008-002 (Northeast Industrial Area). This project involves the assignment of land use designations on incorporated Town lands, and two areas outside Town limits, one on the northwest corner, and one on the northeast corner, which would be annexed to the Town following the adoption of the General Plan.

The District has reviewed the Initial study and concurs with the proposed analysis of potential impacts in the Air Quality section. The MDAQMD recommends the Town of Apple Valley use URBEMIS as the appropriate computer model to be used to estimate emissions associated with land development projects in the District.

Thank you for the opportunity to review this planning document. If you have any questions regarding this letter, please contact me at (760) 245-1661, extension 6726, or Tracy Walters at extension 6122.

Sincerely,

**Alan J. De Salvio**
Supervising Air Quality Engineer

TW/AJD

AV GPA 2008-001, Annex 2008-001, 2008- 002

Chemehuevi Indian Tribe

P. O. Box 1976 • Havasu Lake, CA 92363 • (760) 858-4219 • Fax: (760) 858-5400

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SEP 25 2008

Community Development

September 22, 2008

Nicole Sauviat Criste
Consulting Planner
Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, CA 92307

RE: Apple Valley General Plan Update

Dear Ms. Criste,

The Chemehuevi have a long and well documented history in the desert areas of southern California, southern Nevada, and northern and western Arizona. In fact, we would have originally considered all of San Bernardino County and parts of Riverside, Kern and Inyo Counties as our ancestral, historical homeland. We also considered parts of southern Nevada and western Arizona as within our homeland territories. In the late 1800's the vast majority of this area was declared public domain by the US Federal Government and the various Tribes that had traditionally used this land on an intimate, daily basis lost the ability to freely use it as their ancestors once had. The Chemehuevi were just one of several nations of people whose ancestors freely used the area in question.

At one time we would have called the area between the Tehachapi Mountains to the Colorado River and from Death Valley to nearly Yuma, AZ as our ancestral territory. In addition, we would claim from Ash Meadows and the Pahrump area through Las Vegas and into the Muddy and Virgin Rivers area and on into the Valley of Fire.

The particular area that you speak of is of the utmost importance to the Chemehuevi. I only bring the following facts to your attention to show the obvious ancestral, historical presence of the Chemehuevi Indians in the greater area between Hesperia/Victorville and Barstow.

All along the length of the Mojave River are found areas of cultural resources; there may be burial sites, camp sites, 'sleeping circles' and village sites. This was a major residential and trade route in ancient times of my people between the coast and the Colorado River areas.

There are petroglyphs scattered across a wide swath of the Mohave and Colorado Deserts. In a publication titled, "Native American Rock Art at Ft. Irwin" distributed in both the Ft. Irwin Archaeology Center and the Mojave River Valley Museum in Barstow, the author states, "*Most likely, the Chemehuevi or Kawaiisu lived at Ft. Irwin*".

Also in, "Native American Rock Art at Ft. Irwin" the author states, "*The Fort Irwin petroglyphs dated by archaeologists so – far, however, are not the oldest examples of rock art in the Mojave Desert. Petroglyphs have been found in the Barstow area that are 12,000 years old, while examples at China Lake date to 19,000 years ago*".

In a census conducted in the late 1800's of the Victor area (later to become Victorville) there were found 44 Indians. Of that group, 37 were Chemehuevi and 7 were Desert Kawaiisu. In fact, we have a picture taken of two Chemehuevi women and a child in their campground living near Victor in 1898. One of the women has been identified as Maria Chapula, a renowned Chemehuevi basket maker, who was born in Victor in 1856 and who lived there until her death in 1960 at the age of 104 years. This was most likely the ancient village site of Atongiabit.

In the mid 1800's three cowboys were killed by Chemehuevis on what is today 'The Las Flores Ranch' in Hesperia. This was the ancient village site of Guapiabit. This incident later led to the 'Chimney Rock Massacre' in the Lucerne Valley involving up to 200 Chemehuevi.

Several burials were un-earthed at the old 'Lane's Crossing' near what is today Oro Grande. I believe this was the ancient village site of Topiabit.

I believe there were approximately nine (9) large permanent village sites along the Mojave River between the Narrows and the city of Barstow. Some of their names are as follows: Muscumbiabit, Guapiabit, Atongiabit, Najayabit, Guapian, Apiambit, Apiagma, Topiabit and Guaspect.

The question is not if there are artifacts or human remains, but where and when will they be found. I respectfully request notification if artifacts or human remains are found so we might consider repatriation.

While we no longer have intimate daily contact with the specific area in question we do have grave concerns, but we would not oppose the project as presented.

Thank you,

Charles F. Wood, Chairman
Chemehuevi Indian Tribe

Cc: Lori Lamson

Chemehuevi Indian Tribe

P. O. Box 1976 · Havasu Lake, CA 92363 · (760) 858-4219 · Fax: (760) 858-5400

RECEIVED

SEP 26 2008

Community Development

September 22, 2008

Nicole Sauviat Criste
Consulting Planner
Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, CA 92307

RE: Apple Valley General Plan Update

Dear Ms. Criste,

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There are petroglyphs scattered across a wide swath of the Mohave and Colorado Deserts. In a publication titled, "Native American Rock Art at Ft. Irwin" distributed in both the Ft. Irwin Archaeology Center and the Mojave River Valley Museum in Barstow, the author states, "*Most likely, the Chemehuevi or Kawaiisu lived at Ft. Irwin*".

Also in, "Native American Rock Art at Ft. Irwin" the author states, "*The Fort Irwin petroglyphs dated by archaeologists so – far, however, are not the oldest examples of rock art in the Mojave Desert. Petroglyphs have been found in the Barstow area that are 12,000 years old, while examples at China Lake date to 19,000 years ago*".

In a census conducted in the late 1800's of the Victor area (later to become Victorville) there were found 44 Indians. Of that group, 37 were Chemehuevi and 7 were Desert Kawaiisu. In fact, we have a picture taken of two Chemehuevi women and a child in their campground living near Victor in 1898. One of the women has been identified as Maria Chapula, a renowned Chemehuevi basket maker, who was born in Victor in 1856 and who lived there until her death in 1960 at the age of 104 years. This was most likely the ancient village site of Atongiabit.

In the mid 1800's three cowboys were killed by Chemehuevis on what is today 'The Las Flores Ranch' in Hesperia. This was the ancient village site of Guapiabit. This incident later led to the 'Chimney Rock Massacre' in the Lucerne Valley involving up to 200 Chemehuevi.

Several burials were un-earthed at the old 'Lane's Crossing' near what is today Oro Grande. I believe this was the ancient village site of Topiabit.

I believe there were approximately nine (9) large permanent village sites along the Mojave River between the Narrows and the city of Barstow. Some of their names are as follows: Muscumbiabit, Guapiabit, Atongiabit, Najayabit, Guapian, Apiambit, Apiagma, Topiabit and Guaspect.

The question is not if there are artifacts or human remains, but where and when will they be found. I respectfully request notification if artifacts or human remains are found so we might consider repatriation.

While we no longer have intimate daily contact with the specific area in question we do have grave concerns, but we would not oppose the project as presented.

Thank you,

Charles F. Wood, Chairman
Chemehuevi Indian Tribe

Cc: Lori Lamson

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SEP 2 6 2008

Community Development

MORONGO BAND OF MISSION INDIANS

A SOVEREIGN NATION

September 23, 2008

Lori Lamson
Assistant Director of Community Development
Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley CA 92307

**SUBJECT: Notice of Preparation of a Draft Environmental Impact Report (DEIR) for Town of Apple Valley General Plan Update and Annexations 2008-001 and 2008-002, San Bernardino County, California**

Dear Ms. Lamson:

Thank you for contacting the Morongo Band of Mission Indians regarding the above referenced project(s). The Tribe greatly appreciates the opportunity to review the project and, respectfully, offer the following comment(s):

- If human remains are encountered during grading and other construction excavation, work in the immediate vicinity shall cease and the County Coroner shall be contacted pursuant to State Health and Safety Code §7050.5.

- In the event that Native American cultural resources are discovered during project development/construction, all work in the immediate vicinity of the find shall cease and a qualified archaeologist meeting Secretary of Interior standards shall be hired to assess the find. Work on the overall project may continue during this assessment period.

- If significant Native American cultural resources are discovered, for which a Treatment Plan must be prepared, the developer or his archaeologist shall contact the Morongo Band of Mission Indians ("Tribe")[1]. If requested by the Tribe, the developer or the project archaeologist shall, in good faith, consult on the discovery and its disposition (e.g. avoidance, preservation, return of artifacts to tribe, etc.).

[1] The Morongo Band of Mission Indians realizes that there may be additional tribes claiming cultural affiliation to the area; however, Morongo can only speak for itself. The Tribe has no objection if the archaeologist wishes to consult with other tribes and if the city wishes to revise the condition to recognize other tribes.

If I may be of further assistance with regard to this matter, please do not hesitate to contact me at 951-755-5212 or FRANKLIN_DANCY@MORONGO.ORG.

Very truly yours,
MORONGO BAND OF MISSION INDIANS

Franklin A. Dancy
Project Manager

GOVERNOR'S OFFICE OF EMERGENCY SERVICES
DISASTER ASSISTANCE PROGRAMS BRANCH
3650 SCHRIEVER AVENUE
MATHER, CALIFORNIA 95655
PHONE: (916) 845-8101 FAX: (916) 845-8381

OES CALIFORNIA
Governor's Office of Emergency Services

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OCT - 6 2008

Community Development

October 2, 2008

Lori Lamson
Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, CA 92307

RE: Notice of Preparation for a Draft Environmental Impact Report for the Town of Apple Valley General Plan Update, SCH# 2008091077

Dear Ms. Lamson:

Thank you for the opportunity to comment on your Notice of Preparation for a Draft Environmental Impact Report (DEIR) for the town's general plan update. In preparing the general plan and accompanying DEIR, the town should examine the sections of state planning law that involve potential hazards the city may face. For your information, I have underlined specific sections of state planning law where identification and analysis of hazards are discussed (see Attachment A).

Prior to the release of the draft general plan or within the DEIR, town staff or your consultants should examine each of the requirements in state planning law and determine if there are hazard issues within the community which the general plan should address. A table in the DEIR (or general plan) which identifies these specific issues and where they are addressed in the general plan would be helpful in demonstrating the city has complied with these requirements. If the DEIR determines that state planning law requirements have not been met, it should recommend that these issues be addressed in the general plan as a mitigation measure.

We note that state planning law includes a requirement for consultations with state agencies in regard to information related to hazards. OES would be happy to share all available information at our disposal to facilitate the town's ability to comply with state planning and environmental laws.

If you have any questions about these comments, please contact Andrew Rush at (916) 845-8269 or andrew.rush@OES.ca.gov.

Sincerely,

Dennis Castrillo

Dennis Castrillo
Environmental Officer

cc: State Clearinghouse

**Attachment A**
**Hazards and State Planning Law Requirements**

## General Plan Consistency

65300.5. In construing the provisions of this article, the Legislature intends that the general plan and elements and parts thereof comprise an integrated, internally consistent and compatible statement of policies for the adopting agency.

## Seven Mandated Elements

65302. The general plan shall consist of a statement of development policies and shall include a diagram or diagrams and text setting forth objectives, principles, standards, and plan proposals. The plan shall include the following elements:

(a) A land use element that designates the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, open space, including agriculture, natural resources, recreation, and enjoyment of scenic beauty, education, public buildings and grounds, solid and liquid waste disposal facilities, and other categories of public and private uses of land. The location and designation of the extent of the uses of the land for public and private uses shall consider the identification of land and natural resources pursuant to paragraph (3) of subdivision (d). The land use element shall include a statement of the standards of population density and building intensity recommended for the various districts and other territory covered by the plan. The land use element shall identify and annually review those areas covered by the plan that are subject to flooding identified by flood plain mapping prepared by the Federal Emergency Management Agency (FEMA) or the Department of Water Resources. The land use element shall also do both of the following:

(1) Designate in a land use category that provides for timber production those parcels of real property zoned for timberland production pursuant to the California Timberland Productivity Act of 1982, Chapter 6.7 (commencing with Section 51100) of Part 1 of Division 1 of Title 5.

(2) Consider the impact of new growth on military readiness activities carried out on military bases, installations, and operating and training areas, when proposing zoning ordinances or designating land uses covered by the general plan for land, or other territory adjacent to military facilities, or underlying designated military aviation routes and airspace.

(A) In determining the impact of new growth on military readiness activities, information provided by military facilities shall be considered. Cities and counties shall address military impacts based on information from the military and other sources.

(B) The following definitions govern this paragraph:

(i) "Military readiness activities" mean all of the following:

(I) Training, support, and operations that prepare the men and women of the military for combat.

(II) Operation, maintenance, and security of any military installation.

(III) Testing of military equipment, vehicles, weapons, and sensors for proper operation or suitability for combat use.

(ii) "Military installation" means a base, camp, post, station, yard, center, homeport facility for any ship, or other activity under the jurisdiction of the United States Department of Defense as defined in paragraph (1) of subsection (e) of Section 2687 of Title 10 of the United States Code.

(b) A circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities, all correlated with the land use element of the plan.

(c) A housing element as provided in Article 10.6 (commencing with Section 65580).

(d) (1) A conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. The conservation element shall consider the effect of development within the jurisdiction, as described in the land use element, on natural resources located on public lands, including military installations. That portion of the conservation element including waters shall be developed in coordination with any countywide water agency and with all district and city agencies, including flood management, water conservation, or groundwater agencies that have developed, served, controlled, managed, or conserved water of any type for any purpose in the county or city for which the plan is prepared. Coordination shall include the discussion and evaluation of any water supply and demand information described in Section 65352.5, if that information has been submitted by the water agency to the city or county.

(2) The conservation element may also cover all of the following:

(A) The reclamation of land and waters.

(B) Prevention and control of the pollution of streams and other waters.

(C) Regulation of the use of land in stream channels and other areas required for the accomplishment of the conservation plan.

(D) Prevention, control, and correction of the erosion of soils, beaches, and shores.

(E) Protection of watersheds.

(F) The location, quantity and quality of the rock, sand and gravel resources.

(3) Upon the next revision of the housing element on or after January 1, 2009, the conservation element shall identify rivers, creeks, streams, flood corridors, riparian habitats, and land that may accommodate floodwater for purposes of groundwater recharge and stormwater management.

(e) An open-space element as provided in Article 10.5 (commencing with Section 65560).

(f) (1) A noise element which shall identify and appraise noise problems in the community. The noise element shall recognize the guidelines established by the Office of Noise Control in the State Department of Health Care Services and shall analyze and quantify, to the extent practicable, as determined by the legislative body, current and projected noise levels for all of the following sources:

(A) Highways and freeways.

(B) Primary arterials and major local streets.

(C) Passenger and freight on-line railroad operations and ground rapid transit systems.

(D) Commercial, general aviation, heliport, helistop, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation.

(E) Local industrial plants, including, but not limited to, railroad classification yards.

(F) Other ground stationary noise sources, including, but not limited to, military installations, identified by local agencies as contributing to the community noise environment.

(2) Noise contours shall be shown for all of these sources and stated in terms of community noise equivalent level (CNEL) or day-night average level (Ldn). The noise contours shall be prepared on the basis of noise monitoring or following generally accepted noise modeling techniques for the various sources identified in paragraphs (1) to (6), inclusive.

(3) The noise contours shall be used as a guide for establishing a pattern of land uses in the land use element that minimizes the exposure of community residents to excessive noise.

(4) The noise element shall include implementation measures and possible solutions that address existing and foreseeable noise problems, if any. The adopted noise element shall serve as a guideline for compliance with the state's noise insulation standards.

(g) (1) A safety element for the protection of the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence, liquefaction, and other seismic hazards identified pursuant to Chapter 7.8 (commencing with Section 2690) of Division 2 of the Public Resources Code, and other geologic hazards known to the legislative body; flooding; and wild land and urban fires. The safety element shall include mapping of known seismic and other geologic hazards. It shall also address evacuation routes, military installations, peakload water supply requirements, and minimum road widths and clearances around structures, as those items relate to identified fire and geologic hazards.

(2) The safety element, upon the next revision of the housing element on or after January 1, 2009, shall also do the following:

(A) Identify information regarding flood hazards, including, but not limited to, the following:

(i) Flood hazard zones. As used in this subdivision, "flood hazard zone" means an area subject to flooding that is delineated as either a special hazard area or an area of moderate or minimal hazard on an official flood insurance rate map issued by the Federal Emergency Management Agency. The identification of a flood hazard zone does not imply that areas outside the flood hazard zones or uses permitted within flood hazard zones will be free from flooding or flood damage.

(ii) National Flood Insurance Program maps published by FEMA.

(iii) Information about flood hazards that is available from the United States Army Corps of Engineers.

(iv) Designated floodway maps that are available from the Central Valley Flood Protection Board.

(v) Dam failure inundation maps prepared pursuant to Section 8589.5 that are available from the Office of Emergency Services.

(vi) Awareness Floodplain Mapping Program maps and 200-year flood plain maps that are or may be available from, or accepted by, the Department of Water Resources.

(vii) Maps of levee protection zones.

(viii) Areas subject to inundation in the event of the failure of project or nonproject levees or floodwalls.

(ix) Historical data on flooding, including locally prepared maps of areas that are subject to flooding, areas that are vulnerable to flooding after wildfires, and sites that have been repeatedly damaged by flooding.

(x) Existing and planned development in flood hazard zones, including structures, roads, utilities, and essential public facilities.

(xi) Local, state, and federal agencies with responsibility for flood protection, including special districts and local offices of emergency services.

(B) Establish a set of comprehensive goals, policies, and objectives based on the information identified pursuant to subparagraph (A), for the protection of the community from the unreasonable risks of flooding, including, but not limited to:

(i) Avoiding or minimizing the risks of flooding to new development.

(ii) Evaluating whether new development should be located in flood hazard zones, and identifying construction methods or other methods to minimize damage if new development is located in flood hazard zones.

(iii) Maintaining the structural and operational integrity of essential public facilities during flooding.

(iv) Locating, when feasible, new essential public facilities outside of flood hazard zones, including hospitals and health care facilities, emergency shelters, fire stations, emergency command centers, and emergency communications facilities or identifying construction methods or other methods to minimize damage if these facilities are located in flood hazard zones.

(v) Establishing cooperative working relationships among public agencies with responsibility for flood protection.

(C) Establish a set of feasible implementation measures designed to carry out the goals, policies, and objectives established pursuant to subparagraph (B).

(3) After the initial revision of the safety element pursuant to paragraph (2), upon each revision of the housing element, the planning agency shall review and, if necessary, revise the safety element to identify new information that was not available during the previous revision of the safety element.

(4) Cities and counties that have flood plain management ordinances that have been approved by FEMA that substantially comply with this section, or have substantially equivalent provisions to this subdivision in their general plans, may use that information in the safety element to comply with this subdivision, and shall summarize and incorporate by reference into the safety element the other general plan provisions or the flood plain ordinance, specifically showing how each requirement of this subdivision has been met.

(5) Prior to the periodic review of its general plan and prior to preparing or revising its safety element, each city and county shall consult the California Geological Survey of the Department of Conservation, the Central Valley Flood Protection Board, if the city or county is located within the boundaries of the Sacramento and San Joaquin Drainage District, as set forth in Section 8501 of the Water Code, and the Office of Emergency Services for the purpose of including information known by and available to the department, the office, and the board required by this subdivision.

(6) To the extent that a county's safety element is sufficiently detailed and contains appropriate policies and programs for adoption by a city, a city may adopt that portion of the county's safety element that pertains to the city's planning area in satisfaction of the requirement imposed by this subdivision.

**Consistency with Airport Land Use Plans**

**65302.3.** (a) The general plan, and any applicable specific plan prepared pursuant to Article 8 (commencing with Section 65450), shall be consistent with the plan adopted or amended pursuant to Section 21675 of the Public Utilities Code.

**Review of Safety Element**

**65302.5.** (a) At least 45 days prior to adoption or amendment of the safety element, each county and city shall submit to the Division of Mines and Geology of the Department of Conservation one copy of a draft of the safety element or amendment and any technical studies used for

developing the safety element. The division may review drafts submitted to it to determine whether they incorporate known seismic and other geologic hazard information, and report its findings to the planning agency within 30 days of receipt of the draft of the safety element or amendment pursuant to this subdivision. The legislative body shall consider the division's findings prior to final adoption of the safety element or amendment unless the division's findings are not available within the above prescribed time limits or unless the division has indicated to the city or county that the division will not review the safety element. If the division's findings are not available within those prescribed time limits, the legislative body may take the division's findings into consideration at the time it considers future amendments to the safety element. Each county and city shall provide the division with a copy of its adopted safety element or amendments. The division may review adopted safety elements or amendments and report its findings. All findings made by the division shall be advisory to the planning agency and legislative body.

(1) The draft element of or draft amendment to the safety element of a county or a city's general plan shall be submitted to the State Board of Forestry and Fire Protection and to every local agency that provides fire protection to territory in the city or county at least 90 days prior to either of the following:

(A) The adoption or amendment to the safety element of its general plan for each county that contains state responsibility areas.

(B) The adoption or amendment to the safety element of its general plan for each city or county that contains a very high fire hazard severity zone as defined pursuant to subdivision (b) of Section 51177.

(2) A county that contains state responsibility areas and a city or county that contains a very high fire hazard severity zone as defined pursuant to subdivision (b) of Section 51177, shall submit for review the safety element of its general plan to the State Board of Forestry and Fire Protection and to every local agency that provides fire protection to territory in the city or county in accordance with the following dates as specified, unless the local government submitted the element within five years prior to that date:

(A) Local governments within the regional jurisdiction of the San Diego Association of Governments: December 31, 2010.

(B) Local governments within the regional jurisdiction of the Southern California Association of Governments: December 31, 2011.

(C) Local governments within the regional jurisdiction of the Association of Bay Area Governments: December 31, 2012.

(D) Local governments within the regional jurisdiction of the Council of Fresno County Governments, the Kern County Council of Governments, and the Sacramento Area Council of Governments: June 30, 2013.

(E) Local governments within the regional jurisdiction of the Association of Monterey Bay Area Governments: December 31, 2014.

(F) All other local governments: December 31, 2015.

(3) The State Board of Forestry and Fire Protection shall, and a local agency may, review the draft or an existing safety element and report its written recommendations to the planning agency within 60 days of its receipt of the draft or existing safety element. The State Board of Forestry and Fire Protection and local agency shall review the draft or existing safety element and may offer written recommendations for changes to the draft or existing safety element regarding both of the following:

(A) Uses of land and policies in state responsibility areas and very high fire hazard severity zones that will protect life, property, and natural resources from unreasonable risks associated with wildland fires.
(B) Methods and strategies for wildland fire risk reduction and prevention within state responsibility areas and very high hazard severity zones.
(b) Prior to the adoption of its draft element or draft amendment, the board of supervisors of the county or the city council of a city shall consider the recommendations made by the State Board of Forestry and Fire Protection and any local agency that provides fire protection to territory in the city or county. If the board of supervisors or city council determines not to accept all or some of the recommendations, if any, made by the State Board of Forestry and Fire Protection or local agency, the board of supervisors or city council shall communicate in writing to the State Board of Forestry and Fire Protection or to the local agency, its reasons for not accepting the recommendations.

**Open Space Plans**

**65560.** (a) "Local open-space plan" is the open-space element of a county or city general plan adopted by the board or council, either as the local open-space plan or as the interim local open-space plan adopted pursuant to Section 65563.
(b) "Open-space land" is any parcel or area of land or water that is essentially unimproved and devoted to an open-space use as defined in this section, and that is designated on a local, regional or state open-space plan as any of the following:
(1) Open space for the preservation of natural resources including, but not limited to, areas required for the preservation of plant and animal life, including habitat for fish and wildlife species; areas required for ecologic and other scientific study purposes; rivers, streams, bays and estuaries; and coastal beaches, lakeshores, banks of rivers and streams, and watershed lands.
(2) Open space used for the managed production of resources, including but not limited to, forest lands, rangeland, agricultural lands and areas of economic importance for the production of food or fiber; areas required for recharge of groundwater basins; bays, estuaries, marshes, rivers and streams which are important for the management of commercial fisheries; and areas containing major mineral deposits, including those in short supply.
(3) Open space for outdoor recreation, including but not limited to, areas of outstanding scenic, historic and cultural value; areas particularly suited for park and recreation purposes, including access to lakeshores, beaches, and rivers and streams; and areas which serve as links between major recreation and open-space reservations, including utility easements, banks of rivers and streams, trails, and scenic highway corridors.
(4) Open space for public health and safety, including, but not limited to, areas which require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, flood plains, watersheds, areas presenting high fire risks, areas required for the protection of water quality and water reservoirs and areas required for the protection and enhancement of air quality.

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OCT 10 2008

Community Development

MORONGO BAND OF MISSION INDIANS

A SOVEREIGN NATION

October 7, 2008

Lori Lamson
Assistant Director of Community Development
Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, CA 92307

**SUBJECT: Transmittal of Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for Town of Apple Valley General Plan Update and Annexations 2008-001 and 2008-002 San Bernardino County, California**

Dear Ms. Lamson:

Thank you for contacting the Morongo Band of Mission Indians regarding the above referenced project(s). The Tribe greatly appreciates the opportunity to review the project and, respectfully, offer the following comment(s):

- If human remains are encountered during grading and other construction excavation, work in the immediate vicinity shall cease and the County Coroner shall be contacted pursuant to State Health and Safety Code §7050.5.

- In the event that Native American cultural resources are discovered during project development/construction, all work in the immediate vicinity of the find shall cease and a qualified archaeologist meeting Secretary of Interior standards shall be hired to assess the find. Work on the overall project may continue during this assessment period.

- If significant Native American cultural resources are discovered, for which a Treatment Plan must be prepared, the developer or his archaeologist shall contact the Morongo Band of Mission Indians ("Tribe")[1]. If requested by the Tribe, the developer or the project archaeologist shall, in good faith, consult on the discovery and its disposition (e.g. avoidance, preservation, return of artifacts to tribe, etc.).

[1] The Morongo Band of Mission Indians realizes that there may be additional tribes claiming cultural affiliation to the area; however, Morongo can only speak for itself. The Tribe has no objection if the archaeologist wishes to consult with other tribes and if the city wishes to revise the condition to recognize other tribes.

If I may be of further assistance with regard to this matter, please do not hesitate to contact me at 951-755-5212 or FRANKLIN_DANCY@MORONGO.ORG.

Very truly yours,
MORONGO BAND OF MISSION INDIANS

Franklin A. Dancy
Project Manager

# DEPARTMENT OF CONSERVATION

**DIVISION OF LAND RESOURCE PROTECTION**

801 K STREET • MS 18-01 • SACRAMENTO, CALIFORNIA 95814

PHONE 916 / 324-0850 • FAX 916 / 327-3430 • TDD 916 / 324-2555 • WEBSITE conservation.ca.gov


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OCT 15 2008

Community Development

October 7, 2008

Ms. Lori Lamson
Assistant Director of Community Development
Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, CA 92307

Dear Ms. Lamson:

Subject: Notice of Preparation for a Draft Environmental Impact Report (DEIR), Town of Apple Valley General Plan Update and Annexations 2008-01 and 2008-02 – SCH2008091077

The Department of Conservation's (Department) Division of Land Resource Protection (Division) has reviewed the Notice for the referenced project. The Division monitors farmland conversion on a statewide basis and administers the California Land Conservation (Williamson) Act and other agricultural land conservation programs. We offer the following comments and recommendations with respect to the project's impacts on agricultural land and resources.

Project Description

The project is a comprehensive update of the Town of Apple Valley's (Town) General Plan encompassing 46,948 acres within the Town's limits and proposed annexation of 3,598 acres within the Town's Sphere of Influence. The proposed annexation areas include: 1) 2008-001, Golden Triangle approximately 2,775 acres lying west of the Town limits with proposed designations of Estate and Medium Density Residential, Mixed Use, General and Regional Commercial, Office Professional and Planned Industrial; and, 2) 2008-002, Northeast Industrial Area approximately 805 acres, located east of the Town with a proposed designation of Planned Industrial.

Agricultural Setting of the Project

The Notice of Preparation (NOP) indicates that agricultural lands in the southern portion of the Town limits and east of the Town and within the Sphere of Influence have been identified and will be further assessed in the DEIR. The DEIR should describe the project setting in terms of the actual and potential agricultural productivity of the land. The Division's Important Farmland Map for the County should be utilized to identify land within the project site and surrounding land that may be impacted. Acreages for each land use designation should be identified.

Williamson Act Lands

The NOP indicates there is a two acre Williamson Act contracted parcel within the Town's limits. The presumptive minimum parcel size requirements for lands subject to contract are ten acres for prime lands and 40 acres for nonprime lands. This parcel is below the presumptive minimum parcel size requirements; therefore the Town should consider initiating nonrenewal of the contract.

The Department recommends that the following information be included in the DEIR regarding Williamson Act land impacted by the project.

- If cancellation is proposed, notification must be submitted to the Department when the County or City accepts the application as complete (Government Code §51284.1). The board or council must consider the Department's comments prior to approving a tentative cancellation. Required findings must be made by the council in order to approve tentative cancellation. We recommend that the environmental document include discussion of how cancellations involved in this project would meet required findings. However, notification must be submitted separately from the CEQA process and CEQA documentation. (The notice should be mailed to Bridget Luther, Director, Department of Conservation, c/o Division of Land Resource Protection, 801 K Street MS 18-01, Sacramento, CA 95814-3528.)

- Pursuant to Government Code §51243, if a city annexes land under Williamson Act contract, the city must succeed to all rights, duties and powers of the county under the contract unless conditions in §51243.5 apply to give the city the option to not succeed to the contract. A Local Agency Formation Commission (LAFCO) must notify the Department within ten days of a city's proposal to annex land under contract (Government Code §56753.5). A LAFCO must not approve annexation of contracted land to a city unless specified conditions apply (Government Code §§51296.3, 56749 and 56856.5).

- Termination of a Williamson Act contract by acquisition can only be accomplished by a public agency, having the power of eminent domain, for a public improvement. The Department must be notified in advance of any proposed public acquisition (Government Code §51290 - 51292), and specific findings must be made. The property must be acquired in accordance with eminent domain law by eminent domain or in lieu of eminent domain in order to void the contract (Government Code §51295). The public agency must consider the Department's comments prior to taking action on the acquisition. School districts are precluded from acquiring land under Farmland Security Zone contract. We recommend discussion in the environmental document of whether such action is envisioned by this project and how the acquisition will meet the required findings. However, notification must be submitted separately from the CEQA process and CEQA documentation to the address noted above.

STATE OF CALIFORNIA ARNOLD SCHWARZENEGGER, *Governor*

PUBLIC UTILITIES COMMISSION
320 WEST 4TH STREET, SUITE 500
LOS ANGELES, CA 90013

October 8, 2008

Lori Lampson
City of Apple Valley
14955 Dale Evans Parkway
Apple Valley, CA 92307

Dear Ms. Lampson:

Re: SCH# 2008091077; Town of Apple Valley General Plan Update and Annexations 2008-01 and 2008-02

The California Public Utilities Commission (Commission) has jurisdiction over the safety of highway-rail crossings (crossings) in California. The California Public Utilities Code requires Commission approval for the construction or alteration of crossings and grants the Commission exclusive power on the design, alteration, and closure of crossings.

The Commission's Rail Crossings Engineering Section (RCES) is in receipt of the *Notice of Completion & Environmental Document Transmittal-NOP* from the State Clearinghouse. RCES recommends that the City add language to the General Plan so that any future development planned adjacent to or near the BNSF Railway Company right-of-way be planned with the safety of the rail corridor in mind. New developments may increase traffic volumes not only on streets and at intersections, but also at at-grade highway-rail crossings. This includes considering pedestrian circulation patterns/destinations with respect to railroad right-of-way.

Mitigation measures to consider include, but are not limited to, the planning for grade separations for major thoroughfares, improvements to existing at-grade highway-rail crossings due to increase in traffic volumes and continuous vandal resistant fencing or other appropriate barriers to limit the access of trespassers onto the railroad right-of-way.

If you have any questions, please contact Varouj Jinbachian, Senior Utilities Engineer at 213-576-7081, vsj@cpuc.ca.gov, or me at rxm@cpuc.ca.gov, 213-576-7078.

Sincerely,

Rosa Muñoz, PE
Utilities Engineer
Rail Crossings Engineering Section
Consumer Protection & Safety Division

C: John Shurson, BNSF

**DEPARTMENT OF TRANSPORTATION**
DIVISION OF AERONAUTICS – M.S.#40
1120 N STREET
P. O. BOX 942873
SACRAMENTO, CA 94273-0001
PHONE (916) 654-4959
FAX (916) 653-9531
TTY 711

*Flex your power!*
*Be energy efficient!*

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ACCT CODE _____
BY _____

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OCT 16 2008
Community Development

October 8, 2008

Ms. Lori Lamson
Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, CA 92307

Dear Ms. Lamson:

Apple Valley's Notice of Preparation of a Draft Environmental Impact Report for the Town of Apple Valley General Plan Update and Annexations 2008-001 and 2008-002; SCH# 2008091077

The California Department of Transportation (Caltrans), Division of Aeronautics (Division), reviewed the above-referenced document with respect to airport-related noise and safety impacts and regional aviation land use planning issues pursuant to the California Environmental Quality Act (CEQA). The Division has technical expertise in the areas of airport operations safety and airport land use compatibility. We are a funding agency for airport projects and we have permit authority for public-use and special-use airports and heliports.

The proposal is for an update to the Town of Apple Valley General Plan and proposed annexation. Apple Valley Airport is located within the Town boundaries. Apply Valley Airport is an economic asset that should be protected through effective airport land use compatibility planning and awareness. Our records indicate that Apple Valley Airport has approximately 117 based aircraft and over 37,000 annual operations. The proposal should be coordinated with Apple Valley Airport staff to ensure its compatibility with future as well as existing airport operations.

In accordance with California Public Utilities Code (PUC) Section 21676 *et seq.*, general plans and elements must clearly demonstrate intent to adhere to airport land use commission (ALUC) policies to ensure compliance with compatibility criteria. Direct conflicts between mapped land use designations in a general plan and the ALUC criteria must be eliminated. A general plan must include (at the very least) policies committing the county to adopt compatibility criteria essential to ensuring that such conflicts will be avoided. The criteria do not necessarily need to be spelled out in the general plan. There are a number of ways for a city or county to address airport land use compatibility, including:

- Incorporating airport compatibility policies into the update.
- Adopting an airport-combining zoning ordinance.
- Adopting an "Airport Element" into the general plan.
- Adopting the airport land use compatibility plan as a "stand alone" document or as a specific plan.

The general plan must acknowledge that until ALUC compatibility criteria are incorporated into the general plan, proposals within the airport influence area must be submitted to the ALUC for review. These provisions must be included in the general plan at a minimum for it to be considered consistent with the airport land use compatibility plan.

CEQA, Public Resources Code 21096, requires the California Airport Land Use Planning Handbook (Handbook) be utilized as a resource in the preparation of environmental documents for projects within airport land use compatibility plan boundaries or if such a plan has not been adopted, within two nautical miles of an airport. The Handbook provides a "General Plan Consistency Checklist" in Table 5A and a "Possible Airport Combining Zone Components" in Table 5B. The Handbook is available on-line at http://www.dot.ca.gov/hq/planning/aeronaut/documents/ALUPHComplete-7-02rev.pdf.

Federal and State regulations regarding aircraft noise do not establish mandatory criteria for evaluating the compatibility of proposed land use development around airports (with the exception of the 65 dB CNEL "worst case" threshold established in the State Noise Standards for the designated "noise problem" airports). For most airports in California, 65 dB CNEL is considered too high a noise level to be appropriate as a standard for land use compatibility planning. This is particularly the case for evaluating new development in the vicinity of the airport. The 60 dB CNEL, or even 55 dB CNEL, may be more suitable for new development around most airports. Consideration should also be given to cumulative noise impacts associated with roadways and railway lines and also the "single-event" impacts associated with individual aircraft overflights. Sound insulation, buyer notification and avigation easements are typical noise mitigation measures. These measures, however, do not change exterior aircraft noise levels. It is likely that some future homeowners and tenants will be annoyed by aircraft noise in this area. Noise mitigation measures are not a substitute for good land use compatibility planning for new development.

PUC Section 21659 prohibits structural hazards near airports. The planned height of buildings, antennas, and other objects should be checked with respect to Federal Aviation Regulation (FAR) Part 77 criteria if development is close to the airport, particularly if situated within the runway approach corridors. General plans must include policies restricting the heights of structures to protect airport airspace. To ensure compliance with FAR Part 77 "Objects Affecting Navigable Airspace" submission of a Notice of Proposed Construction or Alteration (Form 7460-1) to the Federal Aviation Administration (FAA) may be required. Form 7460-1 is available on-line at https://oeaaa.faa.gov/oeaaa/external/portal.jsp and should be submitted electronically.

Land use practices that attract or sustain hazardous wildlife populations on or near airports can significantly increase the potential for wildlife-aircraft collisions. The FAA recommends that landfills, wastewater treatment facilities, surface mining, wetlands and other uses that have the potential to attract wildlife, be restricted in the vicinity of an airport. FAA Advisory Circular (AC) 150/5200-33B entitled "Hazardous Wildlife Attractants on or Near Airports" and AC 150/5200-34 entitled "Construction or Establishment of Landfills Near Public Airports" address these issues. For further information, please refer to the FAA website http://wildlife-mitigation.tc.faa.gov/public_html/index.html.

Additional hazards to flight include visual hazards associated with distracting lights, glare, and sources of smoke and; electronic hazards that may interfere with aircraft instruments or radio communication.

Education Code Section 17215 requires a school site investigation by the Division prior to acquisition of land for a proposed school site located within two miles of an airport runway. Our recommendations are submitted to the State Department of Education for use in determining acceptability of the site. This

should be a consideration prior to designating residential uses in the vicinity of an airport. Our school site evaluation criteria is available on-line at http://www.dot.ca.gov/hq/planning/aeronaut/regulations.html.

Business and Professions Code Section 11010 and Civil Code Sections 1102.6, 1103.4, and 1353 address buyer notification requirements for lands around airports and are available on-line at http://www.leginfo.ca.gov/calaw.html. Any person who intends to offer subdivided lands, common interest developments and residential properties for sale or lease within an airport influence area is required to disclose that fact to the person buying the property.

Aviation plays a significant role in California's transportation system. This role includes the movement of people and goods within and beyond our state's network of over 250 airports. Aviation contributes nearly 9 percent of both total state employment (1.7 million jobs) and total state output ($110.7 billion) annually. These benefits are discussed in the study "Aviation in California: Benefits to Our Economy and Way of Life" available on-line at http://www.dot.ca.gov/hq/planning/aeronaut/econstudy2003.html. Aviation improves mobility, generates tax revenue, saves lives through emergency response, medical and fire fighting services, annually transports air cargo valued at over $170 billion and generates over $14 billion in tourist dollars, which in turn improves our economy and quality of life.

The protection of airports from incompatible land use encroachment is vital to California's economic future. Although the need for compatible and safe land uses near airports in California is both a local and a state issue, airport land use commissions and airport land use compatibility plans are key to protecting an airport and the people residing and working in the vicinity of an airport. Consideration given to the issue of compatible land uses in the vicinity of an airport should help to relieve future conflicts between airports and their neighbors.

These comments reflect the areas of concern to the Division with respect to airport-related noise and safety impacts and regional airport land use planning issues. We advise you to contact our Caltrans District 8 office concerning surface transportation issues.

Thank you for the opportunity to review and comment on this proposal. If you have any questions, please call me at (916) 654-5314.

Sincerely,

Sandy Hesnard

SANDY HESNARD
Aviation Environmental Specialist

c: State Clearinghouse, Apple Valley Airport

DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
Inland Deserts Region (IDR)
407 West Line Street
Bishop, CA 93514
(760) 872-1171

October 14, 2008

Ms. Lori Lamson
Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, CA 92307

Subject: Notice of Preparation (NOP) for Town of Apple Valley General Plan Update and Annexations 2008-01 and 2008-02 Notice of Preparation (NOP) (SCH# 2008091077).

Dear Ms. Lamson:

The Department of Fish and Game (Department) has reviewed the Notice of Preparation (NOP) for the Draft Environmental Impact Report (DEIR) for the Town of Apple Valley (Town) General Plan Update and Annexations 2008-01 and 2008-02. The project includes the annexation of those properties (roughly 3,579.7) under the Town's sphere of influence (Annexation numbers 2008-01 and 2008-02). Annexation 2008-01 would envelop approximately 2,774 acres and is generally bounded on the west by Interstate 15, to the north by Morro Road, on the west by Dale Evans Parkway and on the south by Johnson Road. Annexation 2008-02 would include approximately 805 acres bounded to the west by Central Road, on the north by Quarry Road, on the east by the section line of Section 14, Township 6 North, Range 3 West, and on the south by the half-section line of Section 23, Township 6 North, Range 3 West, San Bernardino Base and Meridian.

The Department is providing comments on this NOP as the State agency which has statutory and common law responsibilities with regard to fish and wildlife resources and habitats. California's fish and wildlife resources, including their habitats, are held in trust for the people of the State by the Department (Fish and Game Code §711.7). The Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitats necessary for biologically sustainable populations of those species (Fish and Game Code §1802). The Department's Fish and wildlife management functions are implemented through its administration and enforcement of Fish and Game Code (Fish and Game Code §702). The Department is a trustee agency for fish and wildlife under the California Environmental Quality Act (see CEQA Guidelines, 14 Cal. Code Regs. §15386(a)). The Department is providing these comments in furtherance of these statutory responsibilities, as well as its common law role as trustee for the public's fish and wildlife.

In order for Department staff to adequately review and comment on the proposed project the following information should be included in the DEIR:

1. A complete assessment of the flora and fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened and sensitive species and sensitive habitats.

    a. If appropriate habitat for any listed species occurs on the site, including surface waters potentially containing any fish species, have qualified biologist conduct focused surveys according USFWS and /or Department protocols (guidelines).
    b. Have a qualified botanist conduct a focused rare plant survey during the appropriate time of year following USFWS and/or Department protocols.
    c. Have a qualified biologist conduct focused surveys for burrowing owl following the 1993 Burrowing Owl Consortium protocol guidelines. Survey guidelines can be obtained for the Department. The mitigation measures presented in the guidelines should be included in the DEIR and/or DEIS.
    d. If any listed species will potentially be impacted by the proposed project, consultation with the Department and the USFWS will be required to establish appropriate avoidance, minimization and mitigation measures. An Incidental Take Permit may be required by the Department pursuant to Fish and Game Code Section 2080 *et. seq.*
    e. The Department requests that impacts to State and Federally-listed species and potential avoidance, alternative and mitigation measures be addressed in the CEQA document and not solely in subsequent negotiations between the applicant and the agencies.

2. A thorough discussion of direct, indirect and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts.

    a. CEQA Guidelines, 15125(a), state that knowledge of the regional setting is critical to an assessment of environmental impacts and that special emphasis should be placed on resources that are rare or unique to the region.
    b. Project impacts should be analyzed relative to their effects on off-site habitats. Specifically, this should include nearby public lands, open space, adjacent natural habitats and riparian ecosystems. Impacts to and maintenance of wildlife corridor/movement areas, including access to undisturbed habitat in adjacent areas, should be fully evaluated and provided. This includes impacts to wildlife from increased raven populations.

        1) The zoning of areas for development projects or other uses that are nearby or adjacent to natural areas may inadvertently contribute to wildlife-human interactions. A discussion of possible

conflicts and mitigation measures to reduce these conflicts should be included in the environmental document.

2) A cumulative effects analysis should be developed as described under CEQA Guidelines, 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

3. A range of alternatives should be analyzed to ensure that alternatives to the proposed project are fully considered and evaluated. A range of alternatives, which avoid or otherwise minimize impacts to sensitive biological resources should be included. Specific alternative locations should also be evaluated in areas with lower resource sensitivity, where appropriate.

   a. Mitigation measures for project impacts to sensitive plants, animals and habitats should emphasize evaluation and selection of alternatives which avoid or otherwise minimize project impacts. Off-site compensation for unavoidable impacts through acquisition and protection of high-quality habitat elsewhere should be addressed.
   b. The Department considers Rare Natural Communities as threatened habitats having regional and local significance. Thus, these communities should be fully avoided and otherwise protected from project-related impacts.
   c. A California Endangered Species Act (CESA) Permit must be obtained, if the project has the potential to result in "take" of species of plants or animals listed under CESA, either during construction or over the life of the project. CESA Permits are issued to conserve, protect, enhance and restore State-listed threatened or endangered species and their habitats. Early consultation is encouraged, as substantial modification to the proposed project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, requires that the Department issue a separate CEQA document for the issuance of a CESA permit unless the project CEQA document addresses all project impacts to listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of a CESA permit. For these reasons, the following information is requested:

      1) Biological mitigation monitoring and reporting proposals and a raven control plan should be of sufficient detail and resolution to satisfy the requirements of a CESA Permit. The Department recommends early consultation with the Department to discuss appropriate measures to avoid, minimize, and/or compensate for impacts.

2) A Department-approved Mitigation Agreement and Mitigation Plan are required for plants listed as rare under the Native Plant Protection Act.

4. Under Section 1600 *et. seq* of the Fish and Game Code, the Department requires the project applicant to notify the Department of any activity that will divert, obstruct or change the natural flow of the bed, channel or bank (which includes associated riparian habitat) or a river, stream or lake, or use material from a streambed prior to the applicant's commencement of the activity. Streams include, but are not limited to, intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams and watercourses with subsurface flow. The Department, as a responsible agency under CEQA, may consider the local jurisdiction's (Lead Agency) Negative Declaration of EIR for the project. However, if the EIR does not fully identify potential impacts to lakes, streams and associated resources (including, but not limited to, riparian and alluvial fan sage scrub habitat) and provide adequate avoidance, mitigation, monitoring and reporting commitments, additional CEQA documentation will be required prior to execution (signing) of the Streambed Alteration Agreement. In order to avoid delays or repetition of the CEQA process, potential impacts to a lake or stream, as well as avoidance and mitigation measures need to be discussed within this CEQA document. The Department recommends the following measures to avoid subsequent CEQA documentation and project delays:

   a. Incorporate all information regarding impacts to lakes, streams and associated habitat within the DEIR. Information that needs to be included within the document includes: (a) a delineation of lakes, streams and associated habitat that will be directly or indirectly impacted by the proposed project; (b) details on the biological resources (flora and fauna) associated with the lakes and/or streams; (c) identification of the presence or absence of sensitive plants, animals or natural communities; (d) a discussion of environmental alternatives; (e) a discussion of avoidance measures to reduce project impacts; and (f) a discussion of potential mitigation measures required to reduce the project impacts to a level of insignificance. The applicant and lead agency should keep in mind that the State also has a policy of no net loss of wetlands.

5. The Department recommends that the project applicant and/or lead agency consult with the Department to discuss potential project impacts, avoidance and mitigation measures. Early consultation with the Department is recommended, since modification of the proposed project may be required to avoid or reduce impacts to fish and wildlife resources.

In conclusion, the requested biological survey information should be submitted to Mr. Eric Weiss, 12550 Jacaranda Avenue, Victorville, CA 92395, for review in order to adequately determine the potential impacts of the project. Questions regarding this letter and further coordination on these issues should be directed to me at (760) 246-8828.

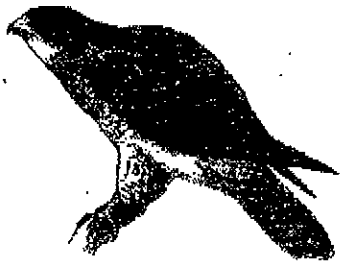
Sincerely,

Tonya Moore

Tonya Moore
Senior Environmental Scientist

cc: Mr. Eric Weiss, DFG
State Clearinghouse

**DEPARTMENT OF FISH AND GAME**
Inland Deserts Region
Mojave River Hatchery
12550 Jacaranda Ave
Victorville, CA 92395
(Mailing address only: Not a Public Office)
(760) 955-8139 phone
(760) 245-9142 fax



## FACSIMILE TRANSMITTAL SHEET

| | |
|---|---|
| TO: Lori Lamson | FROM: Tonya Moore |
| COMPANY: Town of Apple Valley | DATE: OCTOBER 16, 2008 |
| FAX NUMBER: (760) 240-7399 | TOTAL NO. OF PAGES INCLUDING COVER: 6 |
| PHONE NUMBER: (760) 240-7000 x7200 | SENDER'S REFERENCE NUMBER: |
| RE: Comments on NOP | YOUR REFERENCE NUMBER: General Plan Updates 2008-01 and 2008-02 |

☐ URGENT ☐ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS:

# LOCAL AGENCY FORMATION COMMISSION

*215 North "D" Street, Suite 204 • San Bernardino, CA 92415-0490*
*(909) 383-9900 • Fax (909) 383-9901*
*E-mail: lafco@lafco.sbcounty.gov • www.sbclafco.org*

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DIANE WILLIAMS
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STAFF

KATHLEEN ROLLINGS-McDONALD
Executive Officer

SAMUEL MARTINEZ
Senior LAFCO Analyst

MICHAEL TUERPE
LAFCO Analyst

ANNA M. RAEF
Clerk to the Commission

ANGELA M. SCHELL
Deputy Clerk to the Commission

REBECCA LOWERY
Deputy Clerk to the Commission

LEGAL COUNSEL

CLARK H. ALSOP


Sent Via email and Fax (760) 961-6242

RECEIVED
OCT 20 2008
Community Development

October 17, 2008

Ms. Lori Lamson
Assistant Director of Community Development
Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, CA 92307

Dear Ms. Lamson:

RE: Notice of Preparation of a Draft Environmental Impact Report for the Town of Apple Valley General Plan Update and Annexations 2008-001 and 2008-002

The Local Agency Formation Commission (LAFCO) is in receipt of the Notice of Preparation (NOP) for the abovementioned proposal. We understand that the comment period for the NOP ends today, October 17, 2008. However, LAFCO staff is unable to provide its comments by the said deadline.

Therefore, on behalf of LAFCO and its Environmental Consultant, Tom Dodson and Associates, I would like to formally request that an extension be granted to provide comments by 5:00 p.m., Wednesday, October 22, 2008.

Thank you for your consideration.

Sincerely,

SAMUEL MARTINEZ
Senior LAFCO Analyst

cc: Frank Robinson, Town Manager
Kenneth J. Henderson, Director of Economic & Community Development

# LOCAL AGENCY FORMATION COMMISSION

COUNTY OF SAN BERNARDINO

215 North "D" Street, Suite 204, San Bernardino, CA 92415-0490

Email: lafco@lafco.sbcounty.gov

Website: www.sbclafco.org

**Telephone (909) 383-9900 • Fax (909) 383-9901**


# TRANSMITTAL COVER SHEET

DATE: **October 17, 2008** TIME: **12:24 PM**

**TO: Nicole Sauviat Criste, Planning Consultant, Town of Apple Valley**

OFFICE: **Terra Nova Planning & Research Inc.**

FAX NUMBER: **(760) 322-2760**

**FROM: Sam Martinez**

PHONE NUMBER:

SENT BY:

**SUBJECT: Letter Requesting Extension to Provide Comments on NOP for the DEIR for the Town's General Plan Update and Annexations (2008-01 & 02)**

NUMBER OF PAGES (including this cover sheet): 2

SPECIAL INSTRUCTIONS:

☒ URGENT ☐ ACTION REQUIRED ☐ RETURN REPLY REQUESTED ☐ FYI
☐ REVIEW & COMMENT ☐ CALL UPON RECEIPT ☐ PER YOUR REQUEST

SHOULD YOU HAVE ANY DIFFICULTY RECEIVING THIS FAX, QUESTIONS CONCERNING THIS TRANSMITTAL, OR NEED ADDITIONAL INFORMATION, PLEASE CONTACT OUR OFFICE AT THE NUMBER LISTED ABOVE. THANK YOU.

**COMMENTS:**

Please find attached a letter from LAFCO to the Town regarding LAFCO's request for extension to provide comments on the NOP.

For your information.




# LOCAL AGENCY FORMATION COMMISSION

*215 North "D" Street, Suite 204 • San Bernardino, CA 92415-0490*
*(909) 383-9900 • Fax (909) 383-9901*
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Deputy Clerk to the Commission

REBECCA LOWERY
Deputy Clerk to the Commission

**LEGAL COUNSEL**

CLARK H. ALSOP

Sent Via email and Fax (760) 961-6242

October 17, 2008

Ms. Lori Lamson
Assistant Director of Community Development
Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, CA 92307

Dear Ms. Lamson:

RE: Notice of Preparation of a Draft Environmental Impact Report for the Town of Apple Valley General Plan Update and Annexations 2008-001 and 2008-002

The Local Agency Formation Commission (LAFCO) is in receipt of the Notice of Preparation (NOP) for the abovementioned proposal. We understand that the comment period for the NOP ends today, October 17, 2008. However, LAFCO staff is unable to provide its comments by the said deadline.

Therefore, on behalf of LAFCO and its Environmental Consultant, Tom Dodson and Associates, I would like to formally request that an extension be granted to provide comments by 5:00 p.m., Wednesday, October 22, 2008.

Thank you for your consideration.

Sincerely,

SAMUEL MARTINEZ
Senior LAFCO Analyst

cc: Frank Robinson, Town Manager
Kenneth J. Henderson, Director of Economic & Community Development

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

October 17, 2008

Ms. Lori Lamson
Assistant Director of Community Development
Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, CA 92307

Re: Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the Town of Apple Valley General Plan Update and Annexations 2008-001 and 2008-002

Dear Ms. Lamson:

Southern California Edison (SCE) appreciates the opportunity to review and provide comment on the NOP of the DEIR for the Town of Apple Valley General Plan Update (GPU). The Notice of Preparation describes the proposed project as a Comprehensive General Plan update addressing 46,948.3 ± acres within the Town's corporate limits as well as 3,5797.7 ± acres within the Town's Sphere-of-Influence proposed for annexation. The project includes changes to land use and zoning designations, the circulation system, and new goals, policies and programs for all General Plan elements.

SCE's comments on the NOP addresses the following areas of concern:

1. Providing electricity service to the GPU planning area
2. Potential program/project impacts to existing SCE facilities
3. Proposed GPU policies addressing energy conservation and renewable energy

Electric Service Provision

SCE has adequate generation capacity to support current and future developments proposed in the GPU and the region. In addition, over the next 10 years, SCE plans to invest over $15.3 billion on new transmission and distribution facilities to ensure the reliability of the electrical grid serving its 50,000 square-mile service territory.

SCE is a regulated electrical utility and, as such, maintains electrical transmission and distribution facilities, and supporting appurtenances in the Town of Apple Valley to provide electricity service to the community under the applicable rules and tariffs approved by the California Public Utilities Commission (CPUC).

The projected electrical demand for the GPU has been determined to be within the parameters of the projected load growth which SCE is planning to meet in this area, and, excluding any unforeseen problems, SCE's plans for new distribution resources indicate that our ability to serve all existing and projected GPU customers' loads within this area are in accordance with SCE's Design Standards, rules and tariffs, and will be adequate for the next ten years. SCE completes all work in accordance with the rules and tariffs as authorized by the CPUC and other governing entities. Any cumulative impacts related to electric service are addressed through this process.

Impacts to Existing SCE Facilities

SCE has three major transmission line corridors within the City limits (115kV, 220kV and 500kV). We request the DEIR discuss whether implementation of the proposed GPU will have the potential to impact existing SCE facilities. In addition, if any land use changes are proposed affecting SCE facilities or its land related rights, a discussion of potential impacts associated with the proposed land use changes.

We also request the DEIR discuss any proposed general plan policies potentially impacting existing electric utility infrastructure, for example, any policies potentially allowing and/or encouraging secondary land uses within SCE easements and corridors, which may impact SCE's capacity to operate and maintain its facilities.

Energy Conservation and Renewable Energy

Please discuss any energy conservation measures proposed by the GPU or policies addressing Renewable Energy.

Once again, we thank you for the opportunity to review and provide comment on the NOP of a DEIR for the Town of Apple Valley Comprehensive General Plan update. If you have any questions regarding this letter, do not hesitate to contact me at (760) 951-3237.

Sincerely,

Nancy Jackson

Nancy Jackson
Region Manager
Southern California Edison Company

Department of Toxic Substances Control

Linda S. Adams
Secretary for
Environmental Protection

Maureen F. Gorsen, Director
5796 Corporate Avenue
Cypress, California 90630

Arnold Schwarzenegger
Governor

RECEIVED
OCT 27 2008
Community Development

October 21, 2008

Ms. Lori Lamson
Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, California 92307

NOTICE OF PREPARATION (NOP) OF A DRAFT ENVIRONMENTAL IMPACT REPORT (EIR) FOR TOWN OF APPLE VALLEY GENERAL PLAN UPDATE PROJECT, APPLE VALLEY, CALIFORNIA (SCH# 2008091077)

Dear Ms. Lamson:

The Department of Toxic Substances Control (DTSC) has received your submitted Notice of Preparation of the Environmental Impact Report for the above-mentioned project. The following project description is stated in your document: "The proposed project is a Comprehensive General Plan update that addresses 46,948.3+/- acres within the Town's corporate limits, as well as 3,579.7+/- acres within the Town's Sphere-of-Influence that are proposed for annexation. The area addressed under the proposed project is also hereinafter referred to as the "planning area". The project includes changes to land use and zoning designations, the circulation system, and new goals, policies and programs for all General Plan elements." DTSC has the following comments.

1) The EIR should evaluate whether conditions within the project area may pose a threat to human health or the environment. Following are the databases of some of the regulatory agencies:

   - National Priorities List (NPL): A list maintained by the United States Environmental Protection Agency (U.S.EPA).
   - Envirostor (formerly CalSites): A Database primarily used by the California Department of Toxic Substances Control, accessible through DTSC's website (see below).
   - Resource Conservation and Recovery Information System (RCRIS): A database of RCRA facilities that is maintained by U.S. EPA.

- Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS): A database of CERCLA sites that is maintained by U.S.EPA.

- Solid Waste Information System (SWIS): A database provided by the California Integrated Waste Management Board which consists of both open as well as closed and inactive solid waste disposal facilities and transfer stations.

- Leaking Underground Storage Tanks (LUST) / Spills, Leaks, Investigations and Cleanups (SLIC): A list that is maintained by Regional Water Quality Control Boards.

- Local Counties and Cities maintain lists for hazardous substances cleanup sites and leaking underground storage tanks.

- The United States Army Corps of Engineers, 911 Wilshire Boulevard, Los Angeles, California, 90017, (213) 452-3908, maintains a list of Formerly Used Defense Sites (FUDS).

2) The EIR should identify the mechanism to initiate any required investigation and/or remediation for any site that may be contaminated, and the government agency to provide appropriate regulatory oversight. If necessary, DTSC would require an oversight agreement in order to review such documents.

3) Any environmental investigations, sampling and/or remediation for a site should be conducted under a Workplan approved and overseen by a regulatory agency that has jurisdiction to oversee hazardous substance cleanup. The findings of any investigations, including any Phase I or II Environmental Site Assessment Investigations should be summarized in the document. All sampling results in which hazardous substances were found above regulatory standards should be clearly summarized in a table. All closure, certification or remediation approval reports by regulatory agencies should be included in the EIR.

5) If buildings, other structures, asphalt or concrete-paved surface areas are being planned to be demolished, an investigation should also be conducted for the presence of other hazardous chemicals, mercury, and asbestos containing materials (ACMs). If other hazardous chemicals, lead-based paints (LPB) or products, mercury or ACMs are identified, proper precautions should be taken during demolition activities. Additionally, the contaminants should be remediated in compliance with California environmental regulations and policies.

6) Future project construction may require soil excavation or filling in certain areas. Sampling may be required. If soil is contaminated, it must be properly disposed and not simply placed in another location onsite. Land Disposal Restrictions (LDRs) may be applicable to such soils. Also, if the project proposes to import soil to backfill the areas excavated, sampling should be conducted to ensure that the imported soil is free of contamination.

7) Human health and the environment of sensitive receptors should be protected during any construction or demolition activities. If necessary, a health risk assessment overseen and approved by the appropriate government agency should be conducted by a qualified health risk assessor to determine if there are, have been, or will be, any releases of hazardous materials that may pose a risk to human health or the environment.

8) If it is determined that hazardous wastes are, or will be, generated by the proposed operations, the wastes must be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Division 4.5). If it is determined that hazardous wastes will be generated, the facility should also obtain a United States Environmental Protection Agency Identification Number by contacting (800) 618-6942. Certain hazardous waste treatment processes or hazardous materials, handling, storage or uses may require authorization from the local Certified Unified Program Agency (CUPA). Information about the requirement for authorization can be obtained by contacting your local CUPA.

9) If the project area was used for agricultural, livestock or related activities, onsite soils and groundwater might contain pesticides, agricultural chemical, organic waste or other related residue. Proper investigation, and remedial actions, if necessary, should be conducted under the oversight of and approved by a government agency in the project area prior to construction of the project.

10) In future CEQA documents please provide the contact person's title and e-mail address.

If you have any questions regarding this letter, please contact me at ashami@dtsc.ca.gov or by phone at (714) 484-5472.

Sincerely,

Al Shami
Project Manager
Brownfields and Environmental Restoration Program - Cypress Office

cc: Governor's Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, California 95812-3044
state.clearinghouse@opr.ca.gov.

CEQA Tracking Center
Department of Toxic Substances Control
Office of Environmental Planning and Analysis
1001 I Street, 22nd Floor, M.S. 22-2
Sacramento, California 95814
gmoskat@dtsc.ca.gov

CEQA#2310

**TOM DODSON & ASSOCIATES**
2150 N. ARROWHEAD AVENUE
SAN BERNARDINO, CA 92405
TEL (909) 882-3612 • FAX (909) 882-7015
E-MAIL tda@tdaenv.com



October 21, 2008

Ms. Lori Lamson, Asst. Director of Community Development
Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, CA 92307

Dear Ms. Lamson:

Tom Dodson & Associates (TDA) serves as the environmental consultant for the San Bernardino County Local Agency Formation Commission (LAFCO or Commission) which will serve as a Responsible Agency for future annexations within the Town of Apple Valley as described in the Notice of Preparation (NOP) to prepare an Environmental Impact Report (EIR) for a General Plan Update and Annexation (2008-001 and 2008-002). On behalf of the Commission I have compiled comments on the NOP based on review by the Commission staff and me. We have developed the following specific comments on the content of this NOP with the goal of enhancing the environmental document so it can by used by LAFCO for future responsible agency actions under the California Environmental Quality Act (CEQA). Overall, the City has compiled a comprehensive baseline from which it can forecast potential significant adverse impacts of future development in compliance with the updated General Plan and proposed annexations. However, there are a number of issues for which we have developed questions and some suggestions for improving the scope of the draft EIR. Limited editorial comments are also provided along with the substantive comments for the City's consideration.

Comments on the specific text of the document are discussed in the order that they occur in the City's NOP.

Page 1, Notice of Completion: LAFCO suggests that the "Prezone" box be checked as the primary action under the City's jurisdiction is the Prezone, not the annexation, which is under the jurisdiction of the Commission.

Page 2, Initial Study (IS), Project location: Suggest revising "Town of Apple Valley" to "Town of Apple Valley corporate limits".

Page 2, IS, project description, paragraph 1: Please correct the acreage value for the annexation areas to 3,579.7±. In the third sentence suggest including the Prezone actions by the City within the annexation areas and the processing of annexations by LAFCO. Throughout this document there are references to the Town, Annexation area and Sphere of Influence. Unlike most jurisdictions, the Town has chosen not to re-evaluate its prior General Plan land use and zoning designation assignments within its Sphere. In addition, at certain points in the document the text refers to Sphere of Influence when it appears to actually be referencing the "planning area." Suggest that in the EIR the text refer to just the planning area, and minimize references to the Sphere, except where the reference is specific to the actual Sphere.

Page 3, IS, first paragraph: Suggest restructuring this discussion to indicate that the Town needs to complete Prezoning of the proposed annexation area. It is suggested that this characterization be carried out through the whole IS.

Third paragraph: What is Exhibit C and where is it? Suggest providing references to documents and a discussion of the relationship between the old General Plan and EIR, recent GP designations and zoning, and the proposed designations.

Page 4, IS: Again, suggest identifying the proposed action as a Prezone and Proposed Annexation for the two parcels at the bottom of the page.

Page 7, IS: Suggest making the same change as identified for page 4, Prezone and Proposed Annexation.

Page 10, IS: Define AC as "Acres", either on the Table or as a note.

Page 13, IS: As a general note, the alternatives analysis requirement requires a "no project" analysis that addresses a comparison of future development based on both the existing physical environmental in the Prezone/Annexation areas and an analysis of the Town's proposed land use designations, fully developed, compared to the future development under the County's land use designations.

Page 18: LAFCO supports the inclusion of Aesthetic evaluation in the proposed EIR.

Page 19: The discussion in the Agriculture Resources section is confusing. There are no identified Potentially Significant Impacts and no suggested mitigation measures. However, the issue is carried forward into the EIR. Since conversion of prime agricultural land is an important consideration for LAFCO, carrying this issue forward is ok, but it is not clear what the specific issue is. Please make sure to clarify in the draft EIR.

Page 21: LAFCO supports the inclusion of Air Quality evaluation in the proposed EIR.

Page 22: LAFCO supports the inclusion of Biological Resources evaluation in the proposed EIR. Also, at the bottom of the page the reference to Sphere-of-Influence should be changed to the "planning area," unless it is the intent of the Town to address the biological resources of the whole Sphere in the proposed EIR.

Page 23: LAFCO supports the inclusion of Cultural Resources evaluation in the proposed EIR.

Page 25: LAFCO supports the inclusion of Geology and Soils evaluation in the proposed EIR. In the discussion under a.(i) it is not clear whether the reference to Fault Hazard Zones is to the annexation areas or a specific reference to the Sphere of Influence. Please clarify in the proposed EIR.

Page 28: LAFCO supports the inclusion of Hazards and Hazardous Materials evaluation in the proposed EIR.

Page 31: LAFCO supports the inclusion of Hydrology and Water Quality evaluation in the proposed EIR. Probably more than any other issues, the cumulative impact evaluation for water

supply, water quality, and groundwater must examine the water supply on a Basin-wide and Sub-Basin-wide basis. Circumstances have changed substantially since the completion of the most recent Mojave Water Agency's Regional Water Management Plan and these changes in circumstances need to be incorporated into the proposed EIR analysis. Also, note that CSA 64 also provides domestic water supply within its territory in the southwestern portion of the Town. It is important to LAFCO that all water purveyors within the Town be address and their water supply capabilities be examined. Also, note that at this time neither proposed prezone and annexation area is in a water providing agency's boundary. Which water supply entity will provide water to these areas and their ability to provide a sufficient supply should be examined.

Page 34: LAFCO supports the inclusion of Land Use and Planning evaluation in the proposed EIR. As previously noted, in addition to examining effects of the proposed land use designation in the prezone and annexation areas relative to the existing environmental setting, it is important to also evaluate the effects relative to the County's existing land use designations.

Page 35: LAFCO supports the inclusion of Mineral Resources evaluation in the proposed EIR. Is the text reference to "Sphere-of-Influence" or to the "planning area?" Please clarify in the proposed EIR.

Page 36: LAFCO supports the inclusion of Noise evaluation in the proposed EIR.

Page 38: LAFCO supports the inclusion of Population and Housing evaluation in the proposed EIR. Please include an evaluation of the annexation areas in the context of regional planning documents, including the Regional Comprehensive Plan and Guide.

Page 39: LAFCO supports the inclusion of Public Services evaluation in the proposed EIR. Regarding fire protection, LAFCO believes that the Apple Valley Fire Protection District, not the Town, participates in joint responses and mutual aid.

Note that the California Highway Patrol provides traffic enforcement on State Highways and unincorporated areas.

In addition to the Apple Valley Unified School District, a small area of the Town and proposed annexation area may be served by Oro Grande Elementary and Victor Valley Union. Please include evaluations of these districts in the proposed EIR.

Regarding recreation, suggest indicating that the Town's responsibility is for parks "within the boundaries of the former Apple Valley....." as this District no longer exists.

Page 40, bottom paragraph: change "hte" to "the," and is the reference to Sphere-of-Influence specific to it or to the "planning area."

Page 41: LAFCO supports the inclusion of Recreation evaluation in the proposed EIR.

Page 42: LAFCO supports the inclusion of Transportation/Traffic evaluation in the proposed EIR. Is the reference to Sphere-of-Influence specific to it or to the "planning area."

Page 43, top of page: It is not clear what the term "roadways sharp curves or dangerous intersections" means. Please clarify in the proposed EIR.

Page 44: LAFCO supports the inclusion of Utilities and Service Systems evaluation in the proposed EIR. Please refer to the comments under Hydrology and Water Quality regarding the focus on "ability to serve issues" of concern to LAFCO.

Page 46: The toughest issues of significance from LAFCO's perspective are clearly those related to cumulative effects from the proposed General Plan, prezone and annexation area impacts. It is essential that the appropriate cumulative impact context be established for each issue. For example, water supply, water availability, and groundwater resources need to be examined cumulatively for both the whole Alto Sub-basin and the Mojave River Basin. On the other hand, the cumulative context for fire protection is appropriately limited to the service area of the fire protection agency, the Apple Valley Fire Protection District. Please select the appropriate cumulative context and clearly define it in the proposed EIR.

As noted at the beginning of these comments, most of them are editorial in nature. For the most part the NOP defines the basic environmental issues that need to be addressed as part of the proposed EIR. A few substantive issues were identified that require clarification or additional information in order to provide fully substantiated impact analysis and conclusions. LAFCO staff and I are available to respond to any questions that you may have and to provide further suggestions as the EIR analysis proceeds. Do not hesitate to contact me if I can provide assistance.

Sincerely,

Tom Dodson

cc: Kathleen Rollings-McDonald, LAFCO

# APPENDIX B

Town of Apple Valley
General Plan Update
Biological Resources Report

Prepared by

AMEC Earth & Environment, Inc.
3120 Chicago Avenue, Suite 110
Riverside, CA 92507

February 21, 2008 (revised)
November 19, 2007









# TOWN OF APPLE VALLEY GENERAL PLAN UPDATE

## Biological Resources









# TOWN OF APPLE VALLEY
# GENERAL PLAN UPDATE
## BIOLOGICAL RESOURCES

**Prepared for:**

**Terra Nova Planning & Research, Inc.**
**400 S. Farrell Drive, Suite B-205**
**Palm Springs, CA 92262**
**(760) 320-9040**

**Prepared by:**

**AMEC Earth & Environmental, Inc.**
**3120 Chicago Avenue, Suite 110**
**Riverside, CA 92507**
**(951) 369-8060**
**www.amec.com**

**19 November 2007**

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# Appendices

***Appendix 1. California Natural Diversity Database RAREFIND Program Report for the Apple Valley North, Apple Valley South, Fairview Valley, Fifteenmile Valley, Hesperia, Turtle Valley and Victorville Quadrangles***

## 1.0 INTRODUCTION

The Town of Apple Valley, California is preparing a general planning update for lands within its corporate boundary, referred to as the Apple Valley General Plan. All relevant information on the natural and built environment is considered in this planning document, including biological resources within and surrounding the Town, which contribute substantially to the quality of life found in this locality in the Mojave Desert.

Apple Valley lies in the High Desert between the City of Victorville and the community of Lucerne Valley on the southeast and the City of Hesperia on the southwest (Figure 1). The study area for this General Plan biological report includes portions of five townships located within the town's corporate boundary and a surrounding sphere of influence encompassing portions of an additional five townships (Figures 2 and 3). Private lands predominate within the town of Apple Valley, with Federal lands managed by the U.S. Bureau of Land Management (BLM) forming the largest land blocks within the surrounding sphere of influence. These Federal lands are natural areas managed as open space, which both benefit and characterize the overall setting of the town.

Locally, rapid urbanization in the region has led to the listing of some plant and animal species as threatened or endangered by State and/or Federal governments. Future development in Apple Valley must comply with laws and regulations affording protection to these species. Identified land with potential habitats for these species is to be evaluated prior to surface disturbance and final use allocation permitting per established criteria and site-specific surveys. Non-listed sensitive biological features, such as state streambeds/federal waters, Joshua Trees (*Yucca brevifolia*) and rare plants/animals, are also evaluated in site-specific environmental reviews which identify all final necessary mitigation and permitting requirements.

This report describes the General Plan area's biological features in a programmatic fashion, in order to guide subsequent site-specific evaluation of biological values present in areas identified for development. A primary focus is the identification of potential special status biological resource occurrence areas within the area's fairly uniform alluvial plain topography that will require additional survey work and permitting.

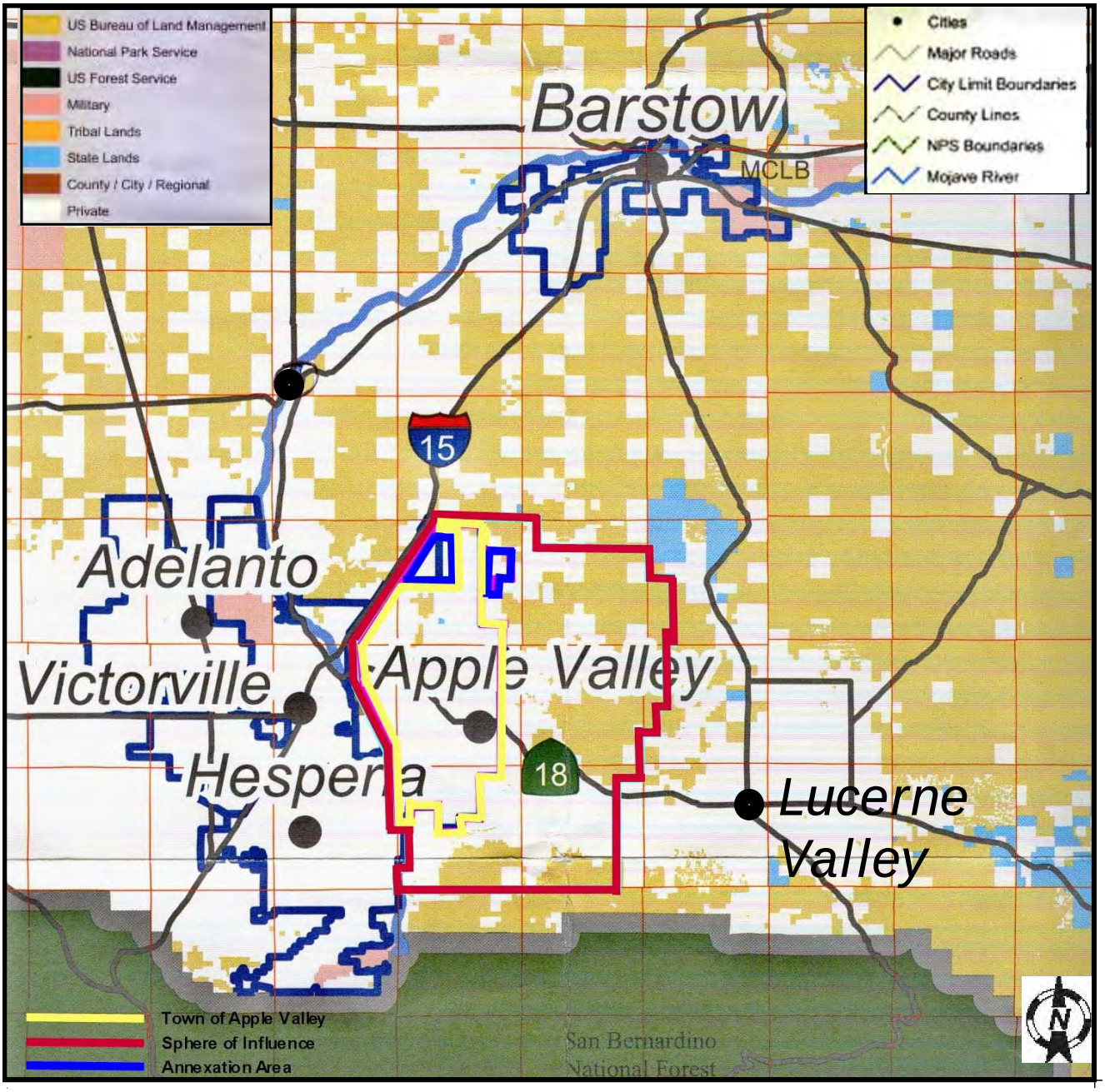



**Figure 1. Regional map of the Town of Apple Valley, California and the town's associated sphere of influence, with land ownership depicted. Map modified from BLM (2005a).**

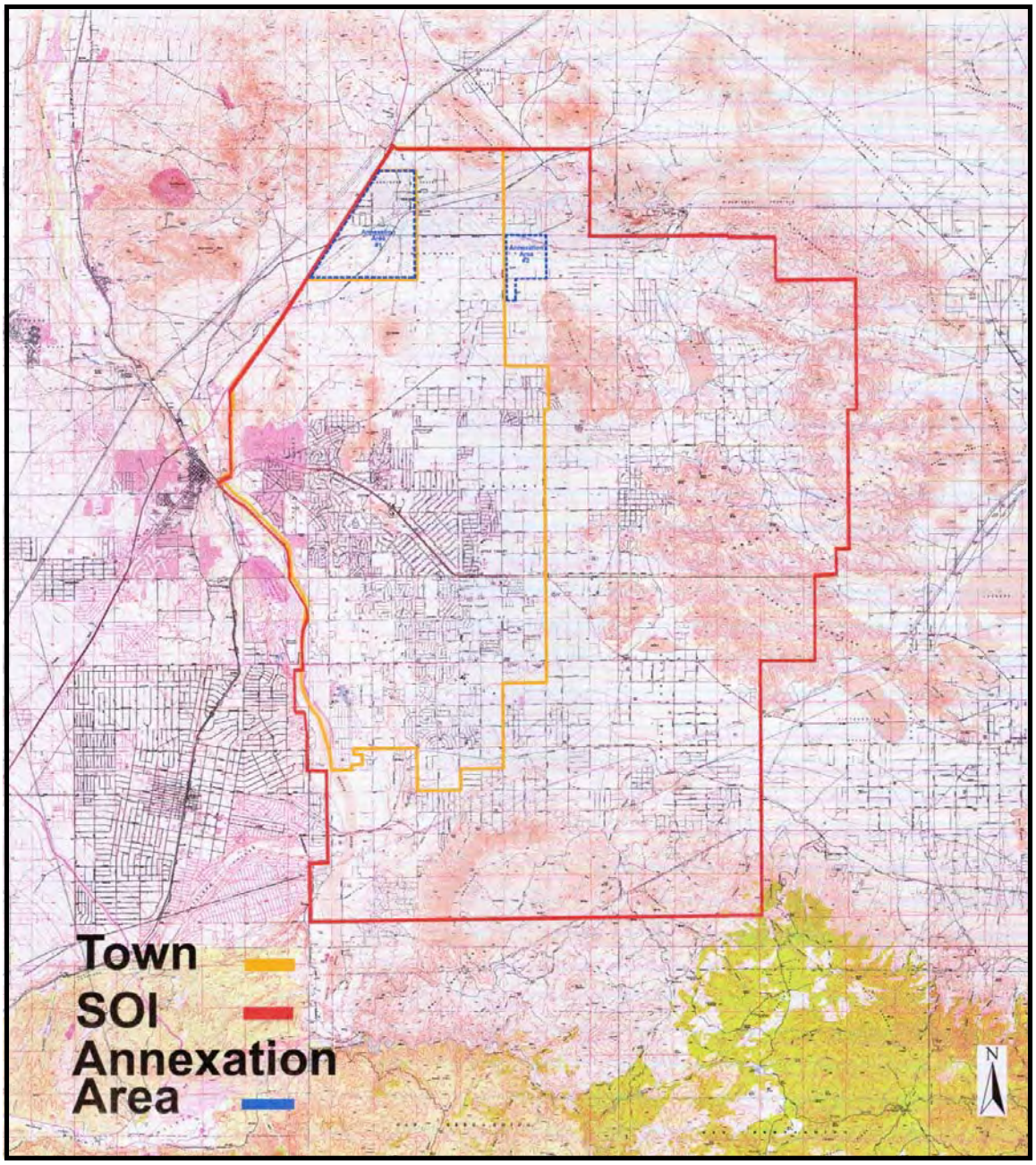



**Figure 2. Topography of the Town of Apple Valley, California and recent annexation areas, as well as the town's associated sphere of influence (SOI).**

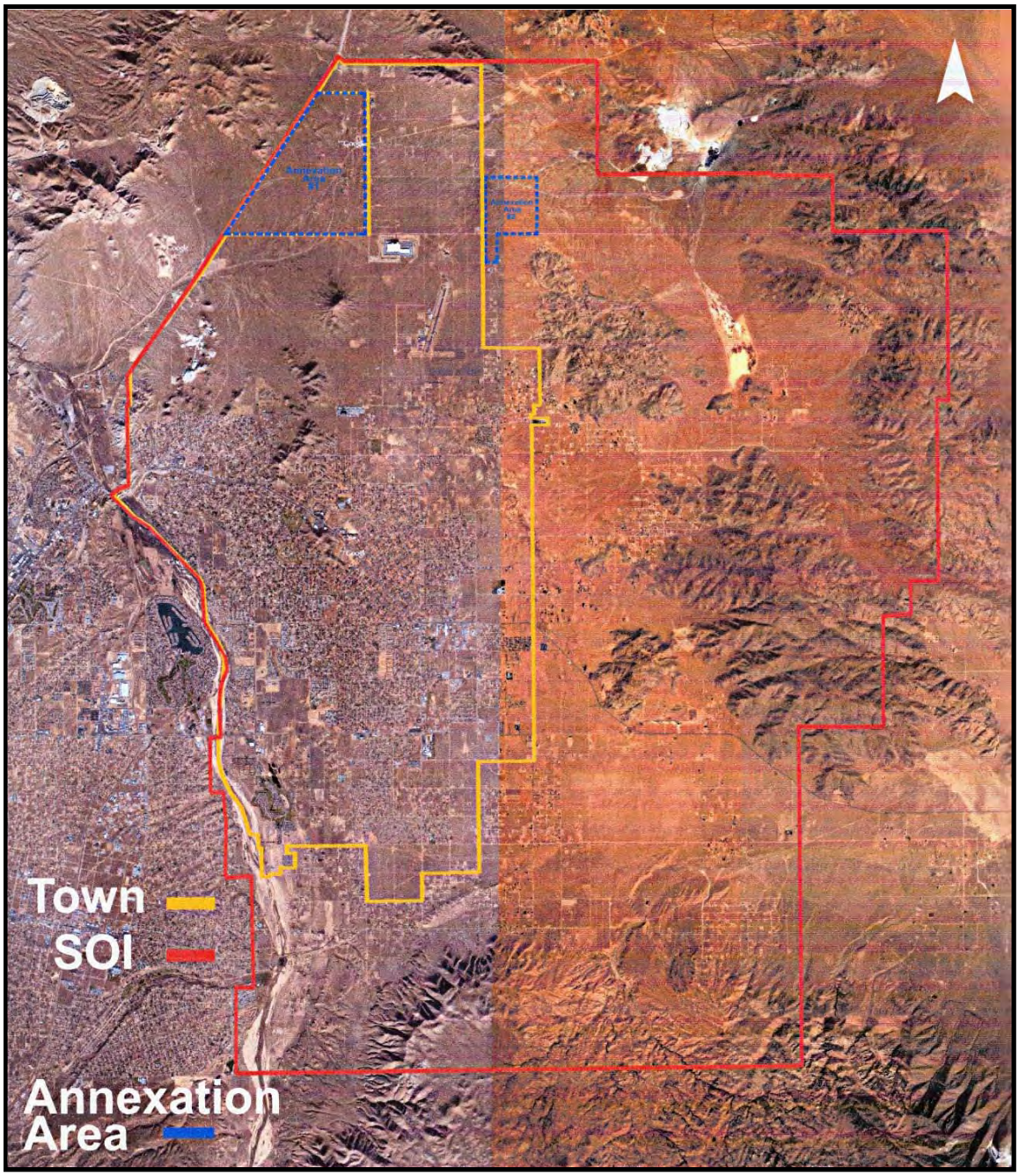



**Figure 3. Aerial photography of the Town of Apple Valley, California and recent annexation areas, as well as the town's associated sphere of influence (SOI).**

## 2.0 METHODS

### 2.1 Literature Review

Existing biological information for the Planning Area was reviewed and summarized to provide a brief, but characteristic description of Apple Valley. Sources consulted included the California Natural Diversity Data Base (CNDDB 2007), personnel of the California Department of Fish and Game (CDFG); various botanical and wildlife references pertaining to the North Apple Valley area; the California Environmental Information Catalogue (NRCS 1986); and biological surveys prepared by AMEC for projects in proximity to the planning area, including the North Apple Valley Specific Plan Biological Report (AMEC 2006).

Soils of the study area were characterized according to information generated through the Natural Resources Conservation Service's National Cooperative Soil Survey available for the Mojave River vicinity (NRCS 1994). Such information was reviewed to characterize the resource base and determine if unusual soil types might occur which could support rare plant species known from the region.

The BLM-prepared, "*California Desert Conservation Area Plan*" (BLM 1980) and "*Final Environmental Impact Report and Statement for the West Mojave Plan, A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment* (BLM 2005a) were reviewed in preparing this report. The supporting document, "*West Mojave Plan Species Accounts*" (BLM 2005b), which involves detailed plant/animal life histories for special status species occurring in the region, was also reviewed. This document includes discussion of special status plant and animal distributions, and was compiled for use in the tiered West Mojave Habitat Conservation Plan (HCP), with the expressed purpose of facilitating private land development permitting.

While public lands and associated National Environmental Policy Act (NEPA) documentation for this HCP have been addressed, California Environmental Act (CEQA) documentation has yet to be completed. San Bernardino County planning personnel intend to complete the CEQA portion of this HCP at some point in the future (personal communication R. Scott, San Bernardino County Planning Department, 2005).

Botanical nomenclature follows The Jepson Desert Manual (Baldwin et al. 2002), utilizing locality information from Abrams (1960). Plant community descriptions are based on Holland (1986). Insect information is based on (Milne and Milne 1992). Herpetological nomenclature follows Stebbins (2003). Avian taxonomy and nomenclature follows the American Ornithologists' Union (1998). Mammalian data is based on Ingles (1965) descriptive data, with nomenclature following Whitaker (1980). Wildlife habitat nomenclature follows Meyer and Laudenslayer (1988).

### 2.2 Field Visits

AMEC Senior Ecologist Thomas Egan conducted overview biological surveys of the plan area on September 12, 13 and 20, 2007. These surveys consisted of pedestrian surveys and habitat inspections by vehicle on established roadways to assess the occurrence potential of special status species.

Previously mapped streambed information was evaluated in a regional context to ascertain probable permitting requirements in subsequent site-specific analysis actions undertaken within the planning area. Streambeds and/or washes likely to require state and/or federal permitting were briefly analyzed in the field to assess natural integrity and natural biological community types.

## 3.0 RESULTS

The following information characterizes the Planning Area in general terms and serves as a baseline for subsequent site-specific analysis of affected lands. Elevations range from 2550-3186 feet above sea level for the Town of Apple Valley; and from 2550-4800 feet above sea level for the associated sphere of influence. The higher terrain within this surrounding sphere of influence includes the north face of the San Bernardino Mountains (Grapevine Peak, Juniper Flats) to the south, as well as Fairview Mountain to the east, and the Granite Mountains to the southeast. The lowest elevation terrain is associated with Apple Valley itself and the Mojave River, located just west of the town.

The climate is arid with hot, dry summers and cool winters. Mean annual precipitation is four to six inches occurring as rain in late autumn/winter and occasionally as winter snowfall. Average January temperature is 44 degrees Fahrenheit and average July temperature is 83 degrees Fahrenheit; with summer high temperatures of over 100 degrees Fahrenheit not uncommon.

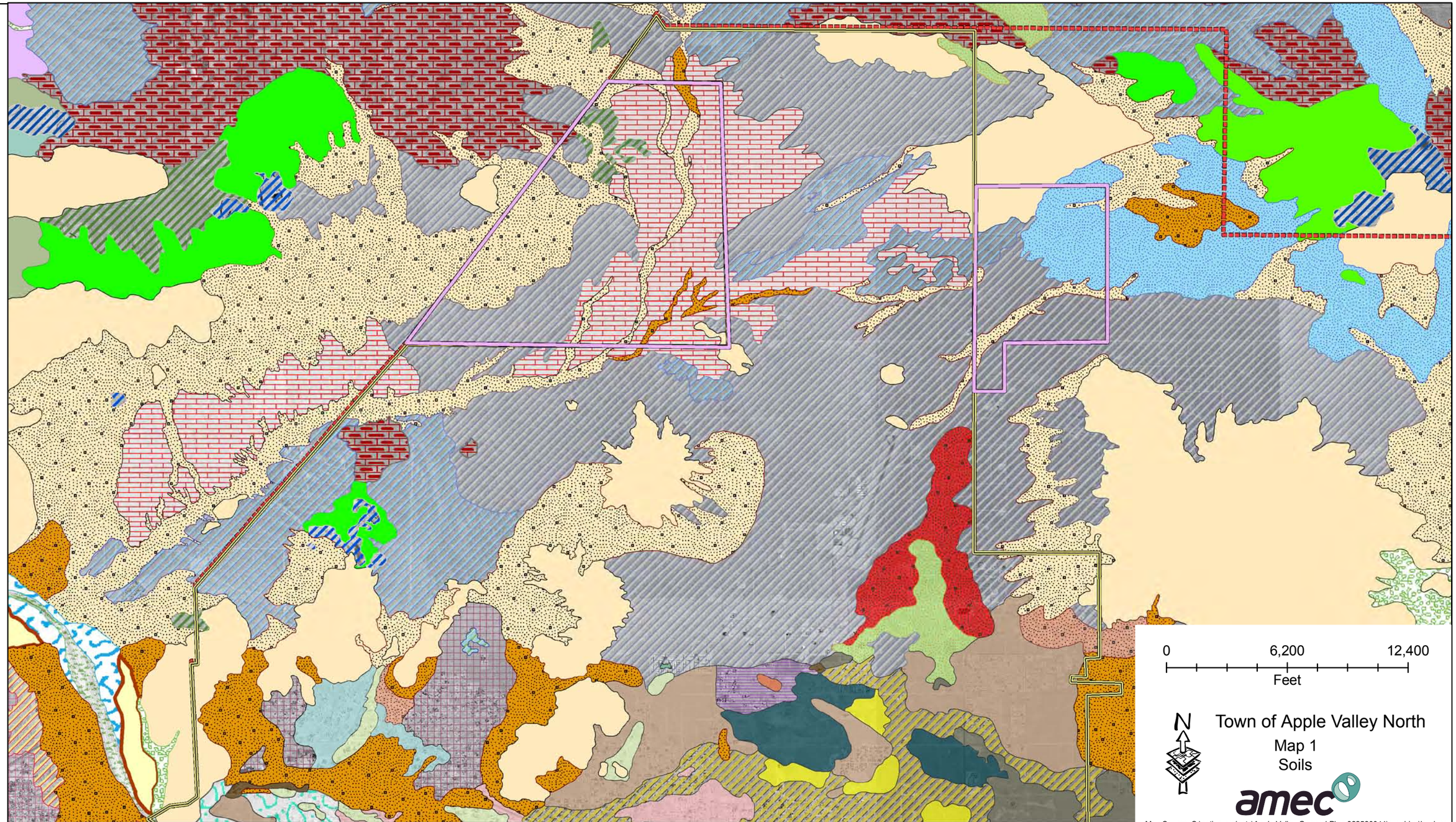
## 3.1 Soils

Thirteen primary soil series have been identified as occurring in Apple Valley, including Bousic Clay, Bryman Loamy Fine Sand, Cajon Sand, Cajon Loamy Sand, Cajon-Arizo Complex, Cajon Wasco, Cave Loam, Helendale Loamy Sand, Helendale-Bryman Loamy Sands, Kimberlina Loamy Fine Sand, Lavic Loamy Fine Sand, Lucerne Sandy Loam, Villa Loamy Sand and Rock Outcrop-Lithic Torriorthents Complex (Maps 1 and 2). Helendale-Bryman Loamy Sands, which are a series of the Aridosol soil order occurring on 0 to 2 percent slopes, are predominant.

These soils are largely well-drained, but contribute occasionally to slow runoff due to moderately slow permeability. Portions of the planning area are subject to flooding from December to early February. The filtering capacity of such soils is very limited.

Bryman soils are moderately extensive and are located on terraces and older alluvial fans. The latter soils formed in mixed alluvium derived mainly from granitic sources (Bryman Official Series Description, NRCS 1978). The Helendale and Cajon soils are considered geographically associated soils, with the former soil having a coarse, loamy particle size and the latter soil series lacking an argillic horizon.

The Bryman Loamy Fine, Kimberlina Fine and Villa Loamy Sands found in the west-central portion of the Planning Area are soils of note, which may support habitat for two fine sand-loving special status plants found in the vicinity. Rock outcrop localities (Lithic Torriorthents Complex), which provide important wildlife habitat, are also notably located in west-central portions of Apple Valley. Portions of the Upper Mojave River Narrows, Apple Valley Knolls, and the North Apple Valley Road-Falchion Boulderlands, as well as Bell Mountain, Catholic, and Bass Hills support outcrop soils.




**Soil Types-North**
Ca671

- 113: CAJON SAND, 2-9% SLOPES
- 114: CAJON SAND, 9-15% SLOPES
- 105: BRYMAN LOAMY FINE SAND, 0-2% SLOPES
- 106: BRYMAN LOAMY FINE SAND, 2-5% SLOPES
- 107: BRYMAN LOAMY FINE SAND, 5-9% SLOPES
- 132: HELENDALE LOAMY SAND, 2-5% SLOPES
- 148: MIRAGE SANDY LOAM, 2-5% SLOPES
- 157: RIVERWASH
- 171: VILLA LOAMY SAND
- 151: NEBONA-CUDDEBACK COMPLEX, 2-9% SLOPES
- 118: CAJON-ARIZO COMPLEX, 2-15% SLOPES
- 119: CAJON-WASCO, COOL COMPLEX, 2-9% SLOPES
- 117: CAJON LOAMY SAND, LOAMY SUBSTRATUM, 0-2& SLOPES
- 138: KIMBERLINA LOAMY FINE SAND, COOL, 2-5% SLOPES
- 143: LUCERNE SANDY LOAM, 2-5% SLOPES
- 159: ROSAMOND LOAM, SALINE-ALKAL
- 173: WASCO SANDY LOAM, COOL, 0-2% SLOPES
- 174: WASCO SANDY LOAM, COOL, 2-5% SLOPES
- 140: LAVIC LOAMY FINE SAND
- 149: MIRAGE-JOSHUA COMPLEX, 2-5% SLOPES
- 158: ROCK OUTCROP-LITHIC TORRIORTHENTS COMPLEX, 15-50% SLOPES
- 109: BRYMAN SANDY CLAY LOAM, 0-2% SLOPES
- 164: TRIGGER GRAVELLY LOAM, 5-15% SLOPES
- 165: TRIGGER-SPARKHULE-ROCK OUTCROP ASSOCIATION, STEEP
- 133: HELENDALE-BRYMAN LOAMY SANDS, 2-5% SLOPES
- 162: SPARKHULE-ROCK OUTCROP COMPLEX, 15-50% SLOPES
- 177: YERMO-KIMBERLINA, COOL, ASSOCIATION, SLOPING
- 120: CAVE LOAM, DRY, 0-2% SLOPES
- 178: WATER
- 155: PITS

Map 2. Town of Apple Valley South: Soils

**Soil Types-South**
Ca671

- 104: BOUSIC CLAY
- 105: BRYMAN LOAMY FINE SAND, 0-2% SLOPES
- 106: BRYMAN LOAMY FINE SAND, 2-5% SLOPES
- 107: BRYMAN LOAMY FINE SAND, 5-9% SLOPES
- 108: BRYMAN LOAMY FINE SAND, 9-15% SLOPES
- 109: BRYMAN SANDY CLAY LOAM, 0-2% SLOPES
- 112: CAJON SAND, 0-2% SLOPES
- 113: CAJON SAND, 2-9% SLOPES
- 114: CAJON SAND, 9-15% SLOPES
- 120: CAVE LOAM, DRY, 0-2% SLOPES
- 130: HAPLARGIDS-CALCIORTHIDS COMPLEX, 15-50% SLOPES
- 131: HELENDALE LOAMY SAND, 0-2% SLOPES
- 132: HELENDALE LOAMY SAND, 2-5% SLOPES
- 138: KIMBERLINA LOAMY FINE SAND, COOL, 2-5% SLOPES
- 140: LAVIC LOAMY FINE SAND
- 142: LUCERNE SANDY LOAM, 0-2% SLOPES
- 157: RIVERWASH
- 158: ROCK OUTCROP-LITHIC TORRIORTHENTS COMPLEX, 15-50% SLOPES
- 159: ROSAMOND LOAM, SALINE-ALKAL
- 169: VICTORVILLE SANDY LOAM
- 171: VILLA LOAMY SAND
- 173: WASCO SANDY LOAM, COOL, 0-2% SLOPES
- 174: WASCO SANDY LOAM, COOL, 2-5% SLOPES
- 178: WATER
- 137: KIMBERLINA LOAMY FINE SAND, COOL, 0-2% SLOPES

0 6,000 12,000
Feet

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amec

Map Source: S:\active projects\Apple Valley General Plan 322520041\graphics\landuse

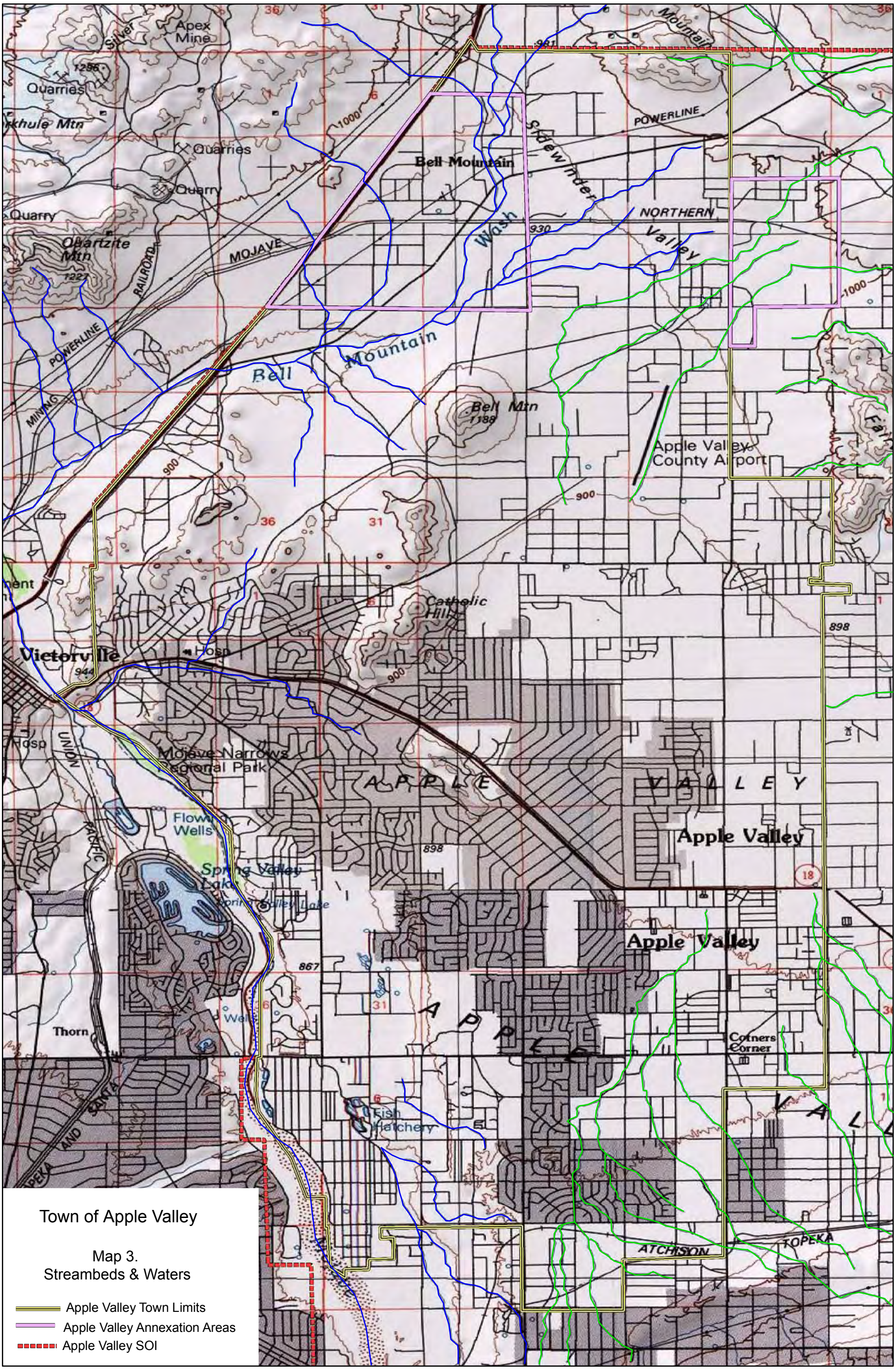
## 3.2 Streambeds and Waters

In addition to the Mojave River, which forms the western edge of Apple Valley and is considered a “Water of the United States”, several shallow, dry washes of relatively small width occur throughout the Planning Area (Map 3).

The largest of these is the southeastern-flowing Bell Mountain Wash, which occurs in the northwestern portion of Apple Valley and which is considered a dry wash tributary of the Mojave River. The northernmost assemblage of washes/streambeds found in the Planning Area flow into this wash. A partially concrete-lined drainage basin (Knolls Wash) situated immediately south of Highway 18 in western Apple Valley also flows into the Mojave River. These drainages which flow into the Mojave River are considered federal waters for purposes of complying with the Clean Water Act (CWA) and are also classified as state streambeds according to current California Fish and Game Code definition.

The majority of other washes occurring within the Planning Area flow into Apple Valley Dry Lake, proximal to the Apple Valley Airport or into inland depression areas, rather than into the Mojave River. Most of these latter washes are of considerably smaller width than Bell Mountain/ Knolls washes, and most exhibit poorly defined streambanks (Figure 4). Little overland water flow would be expected in most of these highly porous-soil washes, even during the infrequent high precipitation events that occur in the region. Associated bank height generally does not exceed 6 inches and has been lessened in some areas by vehicle travel within and across these washes. While no riparian vegetation or surface water occurs in these relatively small-width, shallow washes, these drainages are also considered to represent state streambeds.

Surface disturbance and/or land development altering the bed and banks of any potential wash/streambed area requires site-specific California Streambed Alteration Agreement permitting with the CDFG (under Section 1600 of the California Fish and Game Code) and consultation with the Lahonton Regional Water Quality Control Board (LRWQCB). In a like manner, surface disturbance involving dredge and/or fill activities affecting the streambanks or bed of Bell Mountain Wash and its connected tributaries, as well as those affecting the Knolls Wash, requires compliance with the federal CWA.




Town of Apple Valley

Map 3.
Streambeds & Waters

- Apple Valley Town Limits
- Apple Valley Annexation Areas
- Apple Valley SOI

**Jurisdictional Waters***:

Streambeds & waters where planned surface disturbance may be subject to permitting considerations associated with Waters of the United States & Section 404 of the Clean Water Act, administered by the U.S. Army Corps of Engineers; as well as those addressed by Section 401 of the Clean Water Act, administered by the Lahonton Regional Water Quality Control Board.

**Non-Jurisdictional Waters*:**

Streambeds & waters where planned surface disturbance may be subject to a non-Section 404/401 Clean Water Act General Waste Discharge Requirement Permit, issued by the Lahonton Regional Water Quality Control Board.

*Planned surface disturbance in these identified streambeds and waters may also be subject to permitting considerations associated with the Lake and Streambed Alteration Program administered by the California Department of Fish and Game; as well as those addressed by the Stormwater Construction Program administered by the Lahonton Regional Water Quality Control Board.

0 9,000
Feet

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amec

S:\active projects\Apple Valley General Plan 322520041\graphics\landuse



**Figure 4. Photographs depicting representative small-width, shallow washes found in portions of Apple Valley.**

The latter compliance work generally involves site-specific development consultation and on occasion, CWA Section 404/401 permitting with the U.S. Army Corps of Engineers and the LRWQCB. Mitigation specific to the development and anticipated resource impact is required in instances where state streambeds and/or federal waters would be adversely impacted. Such mitigation usually involves avoidance of impacts where feasible, affected streambed habitat compensation where impacts are unavoidable and implementation of best management practices to reduce impacts to biological resources.

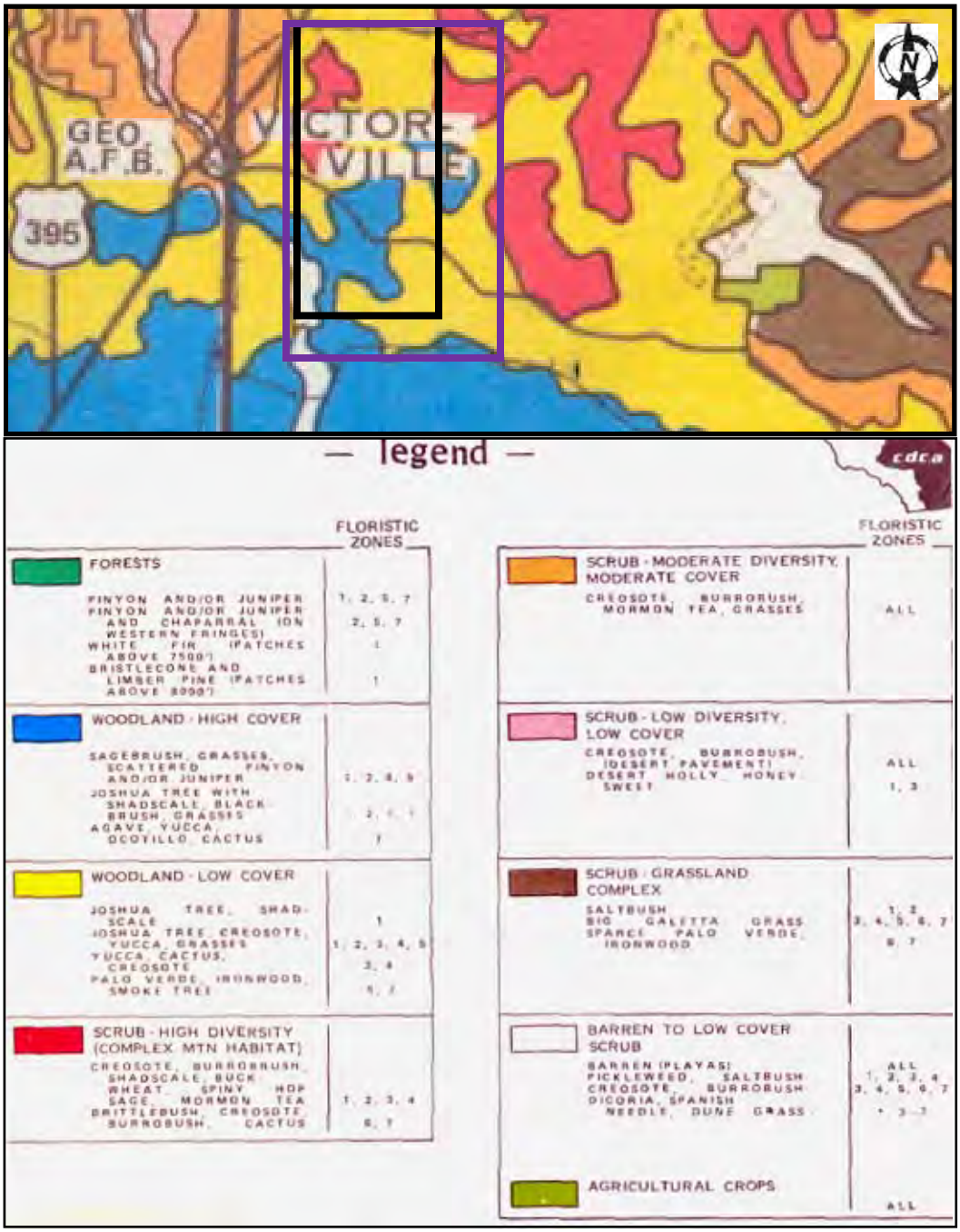
Potential impacts to streambeds and waters and associated California Environmental Quality Act (CEQA) analysis, are also discussed in Section 5 of this report.

### 3.3 Vegetation and Flora

General vegetation of Apple Valley has been classified as largely Low Cover Woodland (Map 4) by the BLM (1980). A considerable amount of vegetation within developed portions of Apple Valley consists of non-native mixed woody plantings (Maps 5 and 6). Immediately adjacent to the Apple Valley Airport and in repeatedly disturbed land within residential areas of the town, short-statured ruderal, or weedy, flora predominate (Figure 5), with a few components of former native plant communities occasionally present.

This short-statured ruderal flora is largely comprised of non-native grasses and forbs (*Bromus* spp., *Schismus arabicus*, *Erodium cicutarium*) occurring as a uniform ground cover or in the understory and inter-shrub spaces of remaining, widely-spaced Creosote Bushes (*Larrea tridentata*) or Joshua Trees (*Yucca brevifolia*). Other areas of ruderal flora contain similarly situated, tall-statured mustards, (*Brassica* spp., *Sisymbrium* spp.), Tumbleweeds (*Salsola tragus*), or near riparian areas, Fivehorn Smotherweed (*Kochia scoparia*) and Summer Cypress (*Bassia hyssopifolia*), as also depicted in Figure 5.

Minimally-disturbed surface areas in Apple Valley support a Saltbush Scrub plant community (Figure 6) in lower elevation areas, Creosote Scrub (Figure 7) in mid elevation areas, and a low-diversity Mojave Mixed Woody Scrub or Joshua Tree Woodland plant community (Figure 8) in the highest elevations (Holland 1986). Joshua Trees occur as a minor component in these plant communities, with the densest Joshua Tree stands occurring in the southwestern portion of Apple Valley (Figure 9).




**Map 4. General vegetation occurring in the Town of Apple Valley (approx.) and the town's surrounding sphere of influence, as described in the California Desert Conservation Area Plan (BLM 1980).**

Map 5. Town of Apple Valley North: Vegetation Types

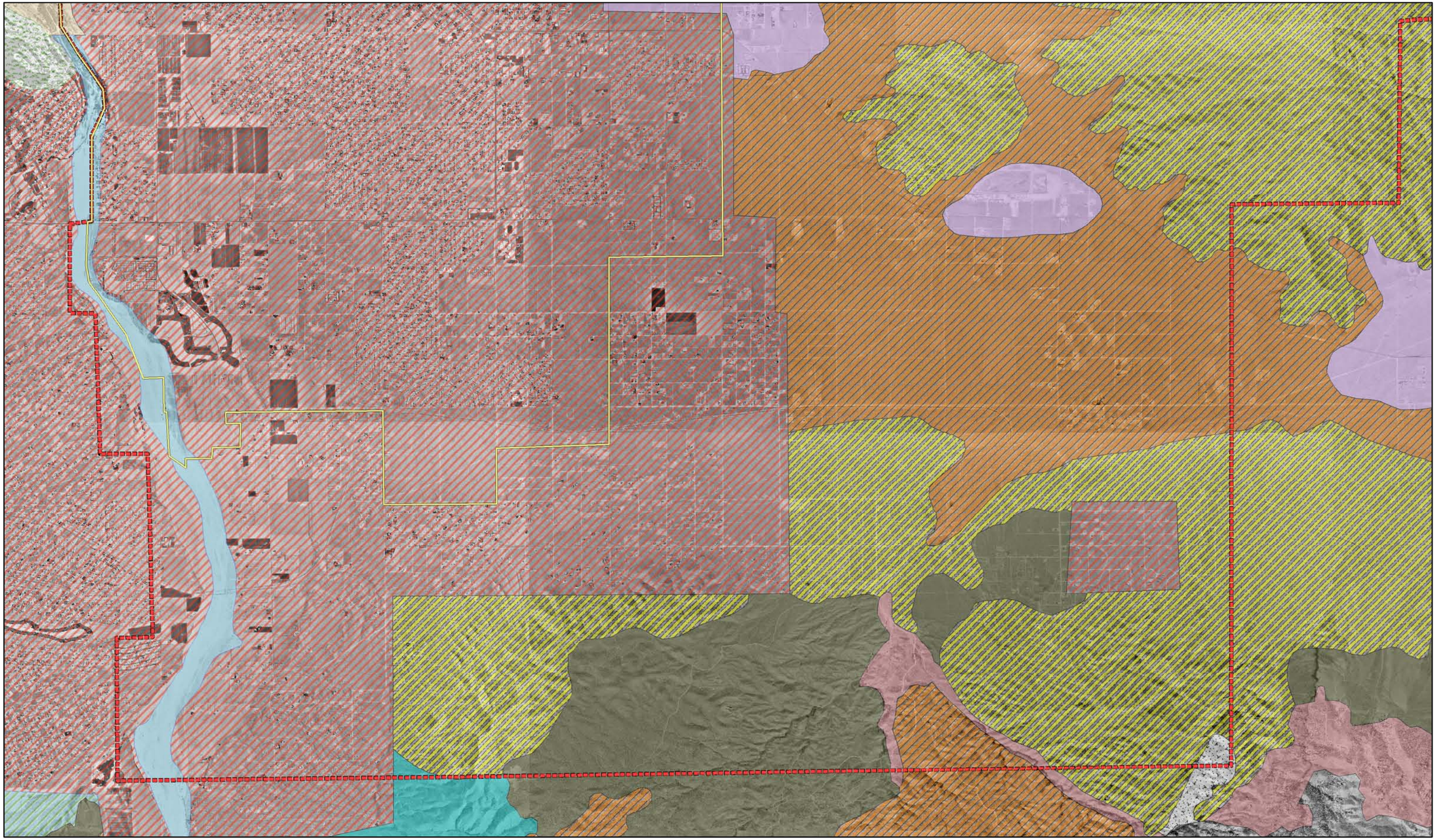
Apple Valley Town Limits
Apple Valley SOI
Apple Valley Annexation Areas

**Regional Vegetation Type**

Annual Grassland & Saltbush Scrub
Saltbush Scrub
Mojave Riparian Forest
Creosote Bush Scrub
Mojave Mixed Woody Scrub
Lacustrine
Urban/Rural
Mojave River Sand Fields

0 4,500 9,000
Feet

Map Source: S:\active projects\Apple Valley General Plan 322520041\graphics\bio, California Gap Analysis - DMOJ



Map 6. Town of Apple Valley South: Vegetation Types

Apple Valley Town Limits
Apple Valley SOI

**Regional VegetationType**

- Pinyon-Juniper & Desert Wash
- Saltbush Scrub
- Pinyon-Juniper
- Mojave Riparian Forest
- Creosote Bush Scrub
- Juniper
- Mojave Mixed Woody Scrub
- Lacustrine
- Montane Hardwood-Conifer
- Urban/Rural
- Mojave River Sand Fields

0 3,750 7,500
Feet

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Map Source: S:\active projects\Apple Valley General Plan 322520041\graphics\bio, California Gap Analysis - DMOJ



**Figure 5. Representative short-statured Ruderal (weedy)Scrub plant community (Holland 1986) found proximal to the Apple Valley Airport in northern Apple Valley, California is depicted in the top photograph. Representative tall-statured ruderal flora found adjacent to the Mojave River, along the western boundary of Apple Valley, California is depicted in the bottom photograph.**





**Figure 6. Photographs depicting representative Saltbush Scrub plant communities (Holland 1986) found in portions of Apple Valley, California.**

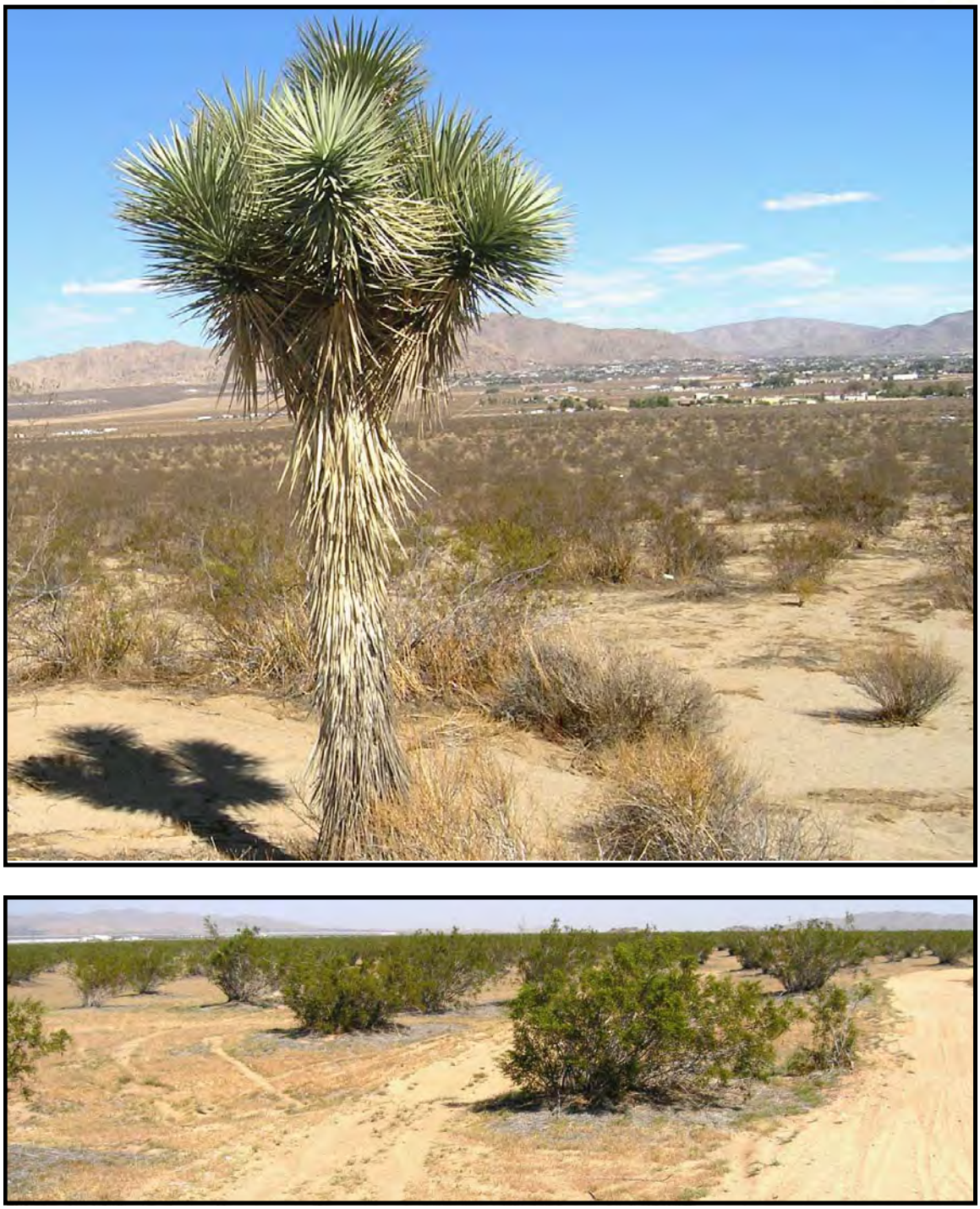


**Figure 7. Photographs depicting representative Creosote Bush Scrub plant communities (Holland 1986) found in portions of Apple Valley, California.**

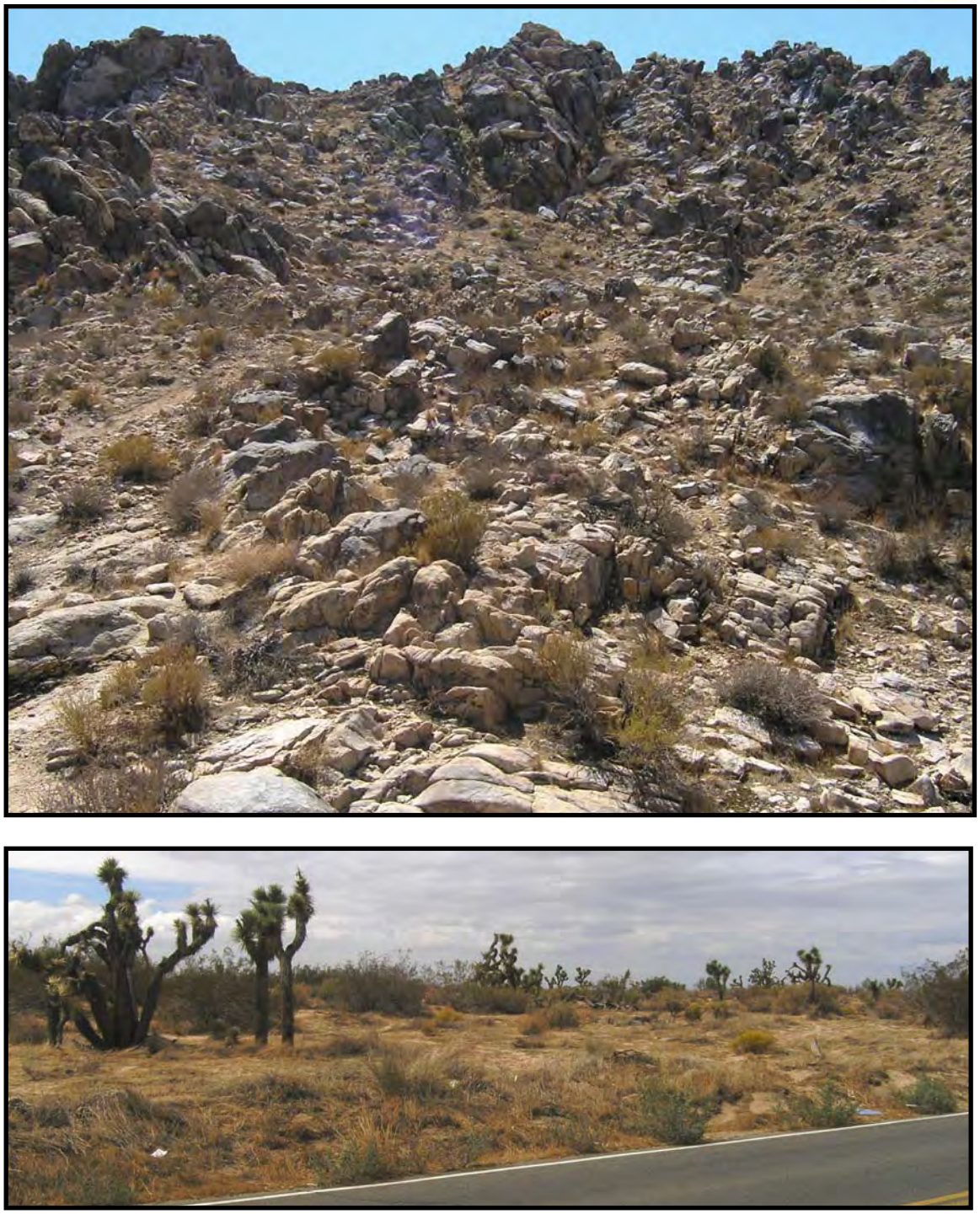


**Figure 8. Photographs of depicting representative Mojave Mixed Woody Scrub (top) and Joshua Tree Woodland (bottom) plant communities (Holland 1986) found in some higher elevation portions of Apple Valley, California.**

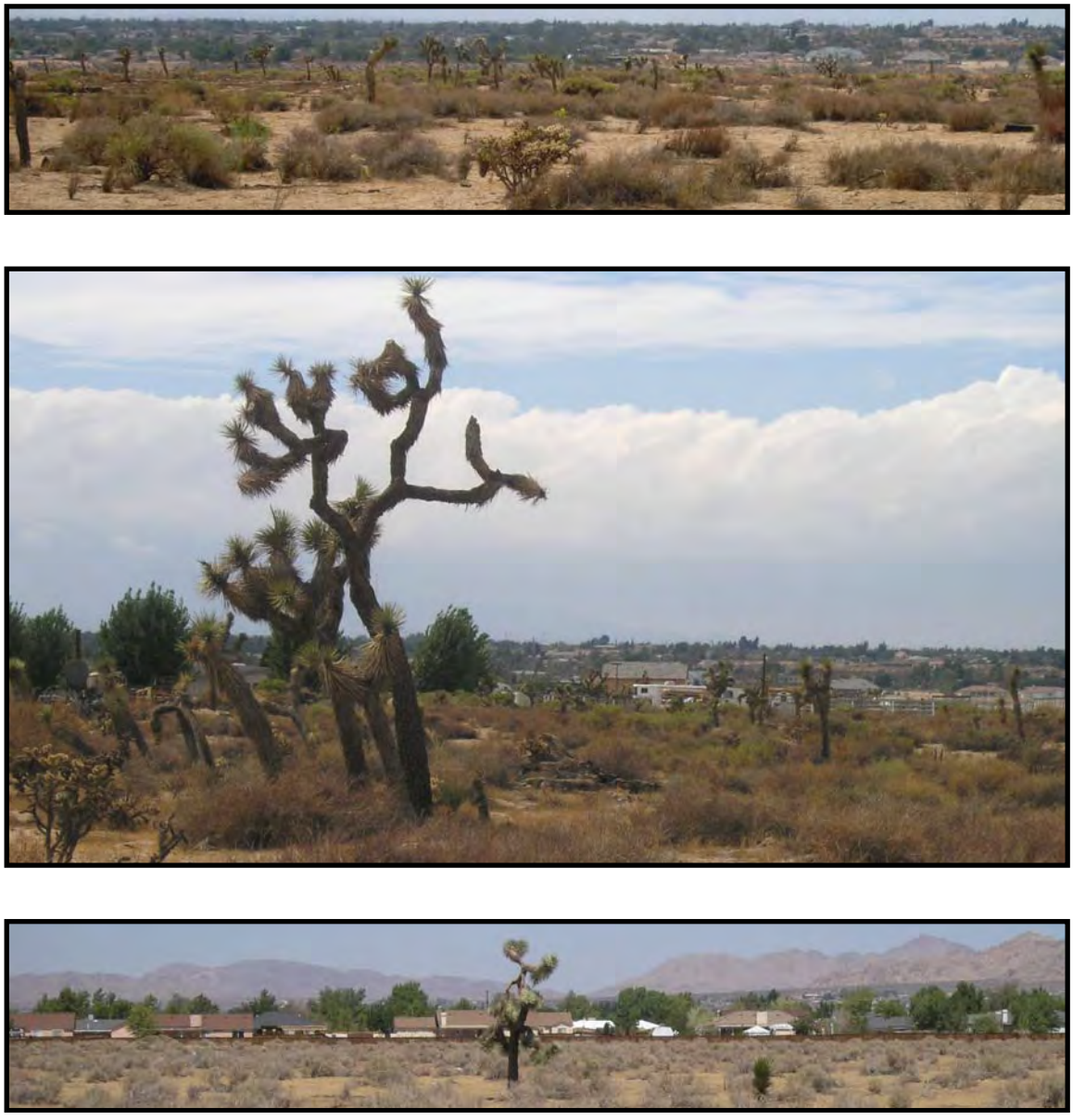


**Figure 9. Photographs depicting representative Joshua Tree (*Yucca brevifolia*) densities found in southwestern (top and center) and southeastern (bottom) Apple Valley, California.**

The most striking plant community encountered in Apple Valley is the Mojave Riparian Forest, which forms the western boundary of the Planning Area. The Upper Narrows portion of the river at the Highway 18 entrance to Apple Valley supports a perennial stream reach and extensive Mojave Riparian Forest. The upstream portion of the river in the southwestern corner of the Planning Area supports only subsurface water flow except during heavy precipitation events. Here, a wide Sandfield plant community, lacking perennial vegetation, occurs in the river's interior. Mojave Riparian Forest and Southern Willow Scrub are also present along a narrow streambank zone (Figure 10).

Predominant flora in the Mojave Riparian Forest plant community includes Fremont Cottonwood (*Populus fremontii*), Black Willow (*Salix gooddingii*), Red Willow (*Salix laevigata*), Narrow-leaved Willow (*Salix exigua*), Russian Olive (*Elaeagnus angustifolius*), Saltcedar (*Tamarix ramossisima*), Quailbush (*Atriplex lentiformis* ssp. *torreyi*), Rubber Rabbitbrush (*Chrysothamnus nauseosus*) and Saltgrass (*Distichlis spicata*).

Wash vegetation in Apple Valley often contains Rabbitbrush (*Chrysothamnus* spp.), Cheesebush (*Hymenoclea salsola*), and Brickellbush (*Brickellia* spp.). Occasionally, some of the floral components described above for the Mojave Riparian Forest are also occur sporadically in these washes, along with a variety of non-native grasses and forbs.

Predominant plant species observed in Creosote Bush Scrub plant communities in Apple Valley include Creosote Bush (*Larrea tridentata*), Burrobush (*Ambrosia dumosa*), Golden Cholla (*Opuntia echinocarpa*), Pencil Cholla (*Opuntia ramosissima*), Beavertail (*Opuntia basilaris*), Cheesebush, Cooper's Boxthorn (*Lycium cooperi*) and Rubber Rabbitbrush; the latter three species are found primarily along roads and wash edges. Joshua Tree is sometimes a minor component of this flora.

The sub-shrub component of Creosote Bush Scrub Plant communities found in Apple Valley appears highly diminished, likely due to past livestock (domestic sheep) grazing and frequent off-road vehicle use, with few smaller sub-shrubs occurring in the widely-spaced interspaces between Creosote Bushes.



**Figure 10. Photographs depicting the Mojave Riparian Forest plant community found along the Mojave River at the Upper Narrows (top) and along portions of Apple Valley's western boundary (center and bottom). The center photograph also depicts a Sandfield plant community largely lacking perennial vegetation, which occurs along the Planning Area's southwestern edge.**

Predominant plant species observed in Apple Valley's representative Saltbush Scrub often includes uniform stands of Allscale (*Atriplex polycarpa*); with sporadic Four-wing Saltbush and Shadscale (*Atriplex confertifolia*) sometimes present. A few scattered Cheesebush and Anderson Boxthorn (*Lycium andersonii*) also occur in higher soil moisture areas of this plant community; as do limited Pencil and Golden Cholla in well-drained areas. Joshua Tree sometimes occurs a very minor component of this plant community.

Mojave Mixed Woody Scrub tends to occur in very shallow, overly drained, steep and often rocky soils. Goldenbush (*Ericameria linearifolia*), California Buckwheat (*Eriogonum fasciculatum*), Bladderpod (*Isomeris arborea*), Cheesebush, Beavertail, Cottontop Cactus (*Echinocactus polycephalus*) and Hedgehog Cactus (*Echinocereus engelmannii*) are commonly found in Mojave Mixed Woody Scrub.

Joshua Tree Woodlands tend to be supported by sandy/loamy, gentle alluvial slopes. These woody plant communities generally support California Buckwheat, Mountain Joint Fir (*Ephedra viridis*), Paperbag Bush (*Salazaria mexicana*), as well as Desert Needlegrass (*Achnatherum speciosum*), and occasionally Mojave Yucca (*Yucca schidigera*).

### 3.4 Wildlife Habitat and Common Fauna

Wildlife common to Apple Valley are primarily associated with highly disturbed and fragmented Creosote, Saltbush and Mojave Mixed Woody Scrub Plant Communities (Holland 1986) and the associated habitat this flora provides. Species capable of surviving in Ruderal (weedy) plant communities or in proximity to residential, industrial and airport developments (Meyer and Laudenslayer 1988) are also common within the Planning Area.

Riparian habitat and wetland-dependent species are also known from the western edge of Apple Valley, in the immediate vicinity of the Mojave River. The river itself forms a significant wildlife travel corridor that links a variety of plant communities and habitats in the Planning Area to habitats located upstream and downstream from Apple Valley.

Although considerable rural and residential development, as well as fencing and roads, have severely fragmented and degraded native habitats in the region, a web of washes and remaining undisturbed plant communities, as well as and rocky hills and ridges (i.e., The Knolls, Falchion Boulderlands, Bell Mountain, Catholic Hill, Bass Hill) provide travel corridors and linkages for a variety of wildlife residing in remaining habitat patches within Apple Valley. In addition to connections with the Mojave River, these wildlife travel corridors and habitat patches are used by a variety of animal species which travel between the Turtle and Black Mountains located to the north of the Planning Area; Fairview Mountain to the northeast; the Granite Mountains to the southeast; and the Juniper Flats foothills of the San Bernardino Mountains located to the south.

### 3.4.1 Invertebrates

Many non-special status insect species are known from Apple Valley. California Harvester Ant (*Pogonomyrmex rugosus*) and Crater-nest Ant (*Conomyrma* spp.) mounds evidence the considerable ant occurrence within Creosote and Ruderal Scrub habitats. Non-native Argentine Ants (*Iridomyrmex humilis*) are suspected to occur as well. The Creosote Bush Grasshoppper (*Bootettix argentatis*) and Broad-necked Darkling Beetle (*Coelocnemis californicus*) are also characteristic native insects.

Daddy Longlegs (harvestmen) (Order Opiliones) are very common in Apple Valley, as are several orb weaver spider species (Family Araneidae). Honey Bees (*Apis mellifera*), Golden Northern Bumblebee (*Bombus fervidus*), Paper Wasps (*Polistes* spp.) and Tarantula Hawks (*Pepsis* spp.) are also known from residential areas and the Mojave River corridor. The Africanized Honey Bee is also known to occur.

The venomous Black Widow Spider (*Latrodectus mactans*) and Desert Loxosceles (*Loxosceles deserta*) are known to use structures which provide shade, as well as from woodpiles. Sand scorpions (*Paruroctonus* spp.) occur in sandy locales. The slightly venomous Desert Tarantula (*Aphonopelma chalcodes*) and Desert Hairy Scorpion (*Hadrurus arizonensis*) are also observed on occasion in Creosote Bush Scrub and Mixed Mojave Woody Scrub habitats.

### 3.4.2 Amphibians

Several non-special status amphibian species are known from the Mojave River corridor which forms Apple Valley's western edge; in select wash areas; in irrigation drains of alfalfa/crop fields; and in various periodically wet habitats within the Planning Area.

Common amphibians encountered in suitably wet habitats include the Western Toad (*Bufo boreas*), Pacific Tree Frog (*Pseudacris regilla*) and the non-native, but naturalized Bullfrog (*Rana catesbeiana*). Red-spotted Toads (*Bufo punctatus*), though uncommon, would also be expected to occur in suitably wet habitats within the Planning Area.

### 3.4.3 Reptiles

Apple Valley has a rich herpetofauna. Non-special status lizards common to the Planning Area include the Western Whiptail (*Aspidoscelis tigris*), Zebra-tailed Lizard (*Callisaurus draconoides*), Side-blotched Lizard (*Uta stansburiana*), Desert Iguana (*Dipsosaurus dorsalis*) and Western Fence Lizard (*Sceloporous occidentalis*).

The infrequently encountered, non-special status Desert Night Lizard (*Xantusia vigilis*) is also known from Joshua Tree habitats in the Planning Area. The Southern Alligator Lizard (*Elgaria multicarinata*) is sometimes found in old woodpiles within residential areas and in the shaded Mojave Riparian Forest along the Mojave River.

Apple Valley is also within the transitional range between the common Desert Horned Lizard (*Phrynosoma platyrhinos*) and the relatively rare Coast Horned Lizard (*Phynosoma coronatum*); a special concern species discussed further below.

Representative non-special status snakes known from the Planning area include Western Patch-nosed Snake (*Salvadora hexalepis*), Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*), Coachwhip (*Masticophis flagellum*), Glossy Snake (*Arizona elegans*) and Gopher Snake (*Pituophis catenifer*). The venomous Sidewinder (*Crotalus cerastes*), Mojave Rattlesnake (*Crotalus scutulatus*) and Speckled Rattlesnake (*Crotalus mitchellii*) are also known from sand, Creosote Scrub, and boulder habitats, respectively.

### 3.4.4 Birds

Avian species known from the Planning Area can be categorized as neotropical migrants that only travel through Apple Valley in spring and/or fall months; those migratory species which nest in Apple Valley, but overwinter elsewhere; species which nest at more northerly latitudes and winter in Apple Valley, and those bird species which are permanent residents of Apple Valley. Three hundred one (301) bird species have been documented in the Victor Valley (Myers 2007).

Primary nesting habitats within the Planning Area include riparian forest components associated with the Mojave River and wash habitats containing a somewhat less-dense mixed shrub habitat; shrubs, ground surfaces and animal burrows within Creosote Bush, Saltbush and Ruderal Scrub communities; Joshua Trees; residential area landscaping; and human structures. Cliff faces and abandoned mines located in mountain areas within Apple Valley's sphere of influence also provide nesting habitat for some birds.

Among the very large suite of birds which utilize Mojave River riparian habitats, Song Sparrow (*Melospiza melodia*), Spotted Towhee (*Pipilo maculatus*), Blue-gray Gnatcatcher (*Polioptila caerulea*), Western Bluebird (*Sialia mexicana*), California Quail (*Callipepla californica*), Mourning Dove (*Zenaida macroura*), Phainopepla (*Phainopepla nitens*), and Nuttall's Woodpecker (*Picoides nuttalii*) can be considered characteristic species. Red-tailed Hawk (*Buteo jamaicensis*), Red-shouldered Hawk (*Buteo lineatus*), Great Horned Owl (*Bubo virginianus*), and American Kestrel (*Falco sparverius*) utilize open habitats situated adjacent to the Mojave River. Several warbler and flycatcher species, Swainson's Hawks (*Buteo swainsoni*), and Turkey Vultures (*Cathartes aura*) also use the Mojave River in their migratory flights.

House Finch (*Carpodacus mexicanus*), House Sparrow (*Passer domesticus*), Bewick's Wren, Northern Mockingbird (*Mimus polyglottos*), and three hummingbird species are known to nest in landscaping features within Apple Valley's residential areas, and on occasion, human structures. A few other bird species known to nest in such structures include Black Phoebe (*Sayornis nigricans*), Cliff Swallow (*Petrochelidon pyrrhonota*), Rock Pigeon (*Columba livia*), Barn Owl (*Tyto alba*) and Common Raven (*Corvus corax*).

The Black-throated Sparrow (*Amphispiza bilineata*), Horned Lark (*Eremophila alpestris*), Cactus Wren (*Campylorhynchus brunneicapillus*), Common Roadrunner (*Geococcyx californianus*), Lesser Nighthawk (*Chordeiles acutipennis*), Loggerhead Shrike (*Lanius ludovicianus*) and Western Meadowlark (*Sturnella neglecta*) are representative non special-status birds common to Creosote Bush, Saltbush, and Ruderal Scrub communities of the Planning Area. Ladder-backed Woodpeckers (*Picoides scalaris*) and Scott's Oriole (*Icterus parisorum*) are known to utilize Joshua Tree habitats.

Several additional songbird species use both riparian and scrub habitats in the winter months only, including the Yellow-rumped Warbler (*Dendroica coronata*), White-crowned Sparrow (*Zonotrichia leucophrys*), Lincoln's Sparrow (*Melospiza lincolnii*), and Ruby-crowned Kinglet *(Regulus calendula*).

While the above bird species are common to the region and have not been designated species of concern, nearly all of them are afforded protection under the Migratory Bird Treaty Act. Nests, eggs, and incubating birds, as well as hatchling and fledgling birds, cannot be disturbed while birds are using active nests.

### 3.4.5 Mammals

Larger non-special status mammals known from Apple Valley include Black-tailed Jackrabbit (*Lepus californicus*), Desert Cottontail (*Sylvilagus audubonii*), Spotted Skunk (*Spirogale gracilis*), Striped Skunk (*Mephitis mephitis*), Ringtail (*Bassariscus astutus*), Raccoon (*Procyon lotor*), Kit Fox (*Vulpes macrotis*), and Coyote (*Canis latrans*). Small mammals common to the Planning Area include Pocket Mice (*Perognathus* spp.), Southern Grasshopper Mouse (*Onychomys torridus*), Deer Mouse (*Peromyscus maniculatus*), Kangaroo Rats (*Dipodomys* spp.), Botta's Pocket Gopher (*Thomomys bottae*), Desert Woodrat (*Neotoma lepida*), White-tailed Antelope Squirrel (*Ammospermophilus leucurus*) and California Ground Squirrel (*Spermophilus beecheyi*).

These mammals have not been designated species of concern and most opportunistically use a variety of habitat types present within the Planning Area.

## 3.5 Special Status Species

A number of plant and animal species occurring within the Planning Area have been termed Special Status Species due to a variety of designations issued by federal, state and/or local governing authorities. Other species occurring in this region are considered to have special status in this document due to local endemism or unique habitat use.

The U.S. Fish and Wildlife Service (FWS) and California Department of Fish and Game (CDFG) maintain lists of species designated as officially threatened or endangered according to federal and state Endangered Species Acts respectively, which are subsets of the special status species discussed in this narrative. These agencies also maintain lists of species under consideration for such listing or that are protected under other statutes.

The California Native Plant Society (CNPS), a non-profit conservation organization, also maintains a listing of flora believed to be rare and/or endangered. CNPS List 1B plants are considered rare and endangered in California and throughout their range. CNPS List 2 plants are considered rare, threatened or endangered in California but are more common elsewhere. More information is needed for CNPS List 3 plants. CNPS List 4 plants are those of limited distribution.

These special status designations have been issued for planning and development permitting pursuits by the aforementioned authorities to increase consideration of species whose remaining population numbers and/or habitat conditions are declining. Site-specific biological surveys and assessments required for surface disturbance permitting generally focus on the potential presence and/or suitable habitat for special status species identified as occurring in an area, such as those highlighted in this report.

Where the potential for impacts to state and/or federally-listed species is determined likely through site-specific evaluations, formal incidental take permitting per the California Endangered Species Act (CESA) and/or federal Endangered Species Act (ESA) is required. Similar consultation and specific impact minimization measures are also required when impacts to state-protected species are considered a likely impact of a proposed development action.

Mitigation appropriate to the site-specific circumstance is then required prior to any surface disturbance taking place. Such measures with regard to listed/protected wildlife commonly include adherence to a set of best management practices, construction monitoring and project reporting, avoidance of impacts where possible, compensation for loss of habitat, and relocation or exclusion of affected animals per established criteria.

With regard to special status plants, the CDFG has adopted the CNPS-tabulated list of rare plants as a set of plant species that should be addressed during the California Environmental Quality Act (CEQA) analysis of projects considered for permit authorization in the state. Mitigation relative to these plant species generally entails avoidance of habitat impacts, compensation for loss of habitat, and project reporting.

Tables 1 and 2 depict the Special Status Plant and Animal Species reported from the general Apple Valley vicinity per museum records and the California Natural Diversity Database. Narratives describing those plants and animals reported from the immediate Planning Area vicinity (Maps 7-10), their associated habitats, and common impact mitigation measures follow in Sections 3.5.1 - 3.5.32. Potential impacts to species requiring agency consultation and/or CEQA analysis are discussed in Sections 4 and 5.

**Table 1. Special Status Plant Species Reported from Apple Valley, California region.**

| Common Name | Scientific Name | Habitat | Local or State Status | Federal Status | Reported Within Immediate Planning Area (PA) |
|---|---|---|---|---|---|
| Booth's Evening Primrose | *Camissonia boothii* ssp. *Boothii* | Sandy habitats | CNPS List 2 (refer to text) | | Yes (West Edge PA) |
| Desert Cymopterus | *Cymopterus Deserticola* | Sandy habitats | CNPS List 1B (refer to text) | | Yes (Central PA along Hwy 18) |
| Joshua Tree | *Yucca Brevifolia* | Creosote Bush, Saltbush, Mojave Woody, Scrub | Apple Valley Ordinance | | Yes (PA) |
| Latimer's Woodland-gilia | *Saltugilia Latimeri* | Creosote Bush Scrub | CNPS List 1B.2 (refer to text) | | No |
| Short-jointed Beavertail | *Opuntia basilaris* var. *bracyclada* | Joshua Tree Woodland | CNPS List 1B.2 (refer to text) | | No |
| Southern Skullcap | *Scutellaria bolanderi ssp. austromontana* | Meadows, riparian habitat | CNPS List 1B.2 (refer to text) | | Yes (Mojave River at Upper Narrows) |
| San Bernardino Aster | *Symphyotrichum defoliatum* | Meadows, riparian habitat | CNPS List 1B.2 (refer to text) | | No |

**Table 2. Special Status Animal Species Reported from Apple Valley, California region.**

| Common Name | Scientific Name | Habitat (General Habitats Occurring In Planning Area) | State and/or California Department of Fish & Game Status | Federal Status | Reported Within Immediate Planning Area (PA) |
|---|---|---|---|---|---|
| **INVERTEBRATES** | | | | | |
| San Emigdio Blue [butterfly] | *Plebulina Emigdionis* | *Atriplex canescens*, Saltbush Scrub & riparian habitat | | | Yes (reported from west edge PA along Mojave River) |
| Victorville Shoulderband | *Helminthoglypta Mohaveana* | Granite boulders base of Mojave River | | | Yes (reported from west edge PA along Mojave River at Upper Narrows) |
| **AMPHIBIANS** | | | | | |
| California Red-legged Frog | *Rana aurora Draytonii* | Wetlands with deep water & adjacent Riparian habitat | Special Concern | Threatened | No (reported historically from Mojave River at Upper Narrows) |
| Arroyo Toad | *Bufo californicus* | Streams with sandy banks | Special Concern | Endangered | No (reported historically southwest of PA within Mojave River) |
| **REPTILES** | | | | | |
| Coast Horned Lizard | *Phyrnosoma coronatum (blainvillei population)* | Friable, rocky or shallow sandy habitats with ants | Special Concern | | No (reported southwest of PA along dry portions of Mojave River) |
| Chuckwalla | *Sauromalus ater* | Rocky habitat, Creosote Bush Scrub | | | Yes (reported from Mojave River Narrows) |
| Desert Tortoise | *Gopherus Agassizii* | Creosote Bush Scrub | Threatened | Threatened | Yes (reported from central west PA north of Mojave River and north PA) |
| Western Pond Turtle | *Actinemys marmorata pallida* | Wetlands & adjacent riparian areas | Special Concern | | Yes (reported from west edge PA at Upper Narrows) |
| **BIRDS** | | | | | |
| Bendire's Thrasher | *Toxostoma Bendirei* | Joshua Tree Woodland, Mojave Mixed Woody Scrub | Special Concern | | Yes (reported from north PA) |
| Brown-crested Flycatcher | *Myiarchus tyrannulus* | Riparian woodland | Special Concern | | Yes (reported from Mojave River) |

**Table 2 Continued. Special Status Animal Species Reported from Apple Valley, California region.**

| Common Name | Scientific Name | Habitat (General Habitats Occurring In Planning Area) | State and/or California Department of Fish & Game Status | Federal Status | Reported Within Immediate Planning Area (PA) |
|---|---|---|---|---|---|
| **BIRDS CONTINUED** | | | | | |
| Burrowing Owl | *Athene Cunicularia* | Burrows/abandoned foundation structures, Creosote Bush & Ruderal Scrub | Special Concern | | Yes (reported throughout PA) |
| Cooper's Hawk | *Accipiter cooperii* | Riparian habitat with large cottonwoods | Special Concern | | Yes (west edge PA; Mojave River at Upper Narrows) |
| Gray Vireo | *Vireo vicinior* | Dry chaparral, Pinyon-juniper Woodland, Mojave Desert Mountains | Special Concern | | No (reported from north slope San Bernardino Mountains) |
| Least Bell's Vireo | *Vireo bellii pusillus* | Riparian habitat, willow trees, seep-willow scrub | Endangered | Endangered | Yes (reported from west edge PA along Mojave River) |
| Le Conte's Thrasher | *Toxostoma Lecontei* | Shrubs, washes, Creosote Bush Scrub | Special Concern | | Yes (reported throughout PA) |
| Long-eared Owl | *Asio otus* | Riparian habitat next to open fields | Special Concern | | No (reported south west of PA along Mojave River) |
| Prairie Falcon | *Falco Mexicanus* | Cliff faces (nesting), Open habitats for Foraging | Special Concern | | Yes (reported from northeast PA in spring/summer; throughout PA during winter) |
| Southwestern Willow Flycatcher | *Empidonax traillii Extimus* | Riparian habitat | Endangered | Endangered | Yes (reported from west edge PA along Mojave River) |
| Summer Tanager | *Piranga rubra* | Riparian habitat | Special Concern | | Yes (reported from west edge PA along Mojave River) |
| Swainson's Hawk | *Buteo swainsoni* | Riparian Habitat (Migration) | Threatened | | Yes (reported from Mojave River Corridor) |
| Vermillion Flycatcher | *Pyrocephalus Rubinus* | Riparian habitat | Special Concern | | Yes (reported from west edge PA along Mojave River) |

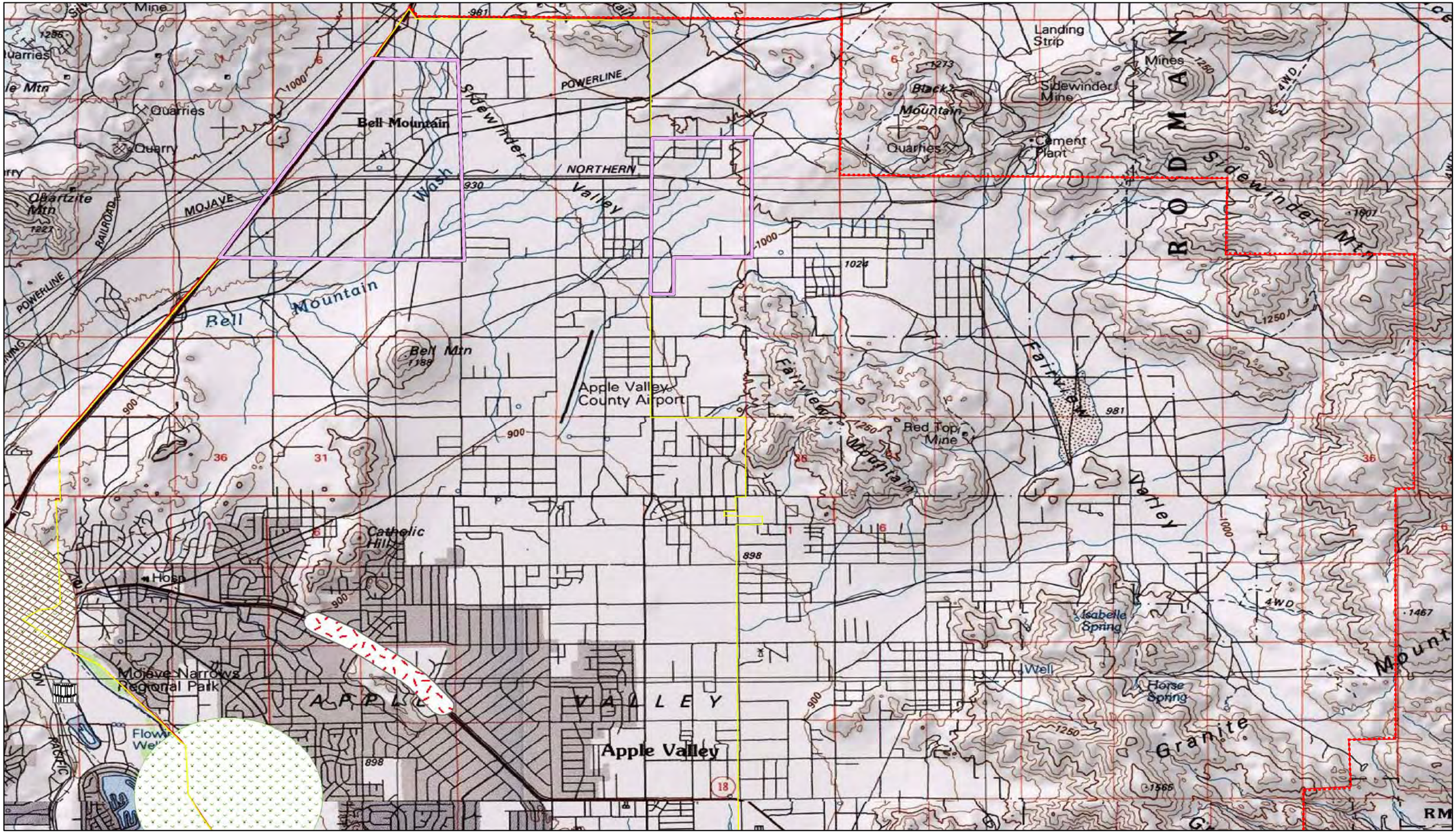
**Table 2 Continued. Special Status Animal Species Reported from Apple Valley, California region.**

| Common Name | Scientific Name | Habitat (General Habitats Occurring In Planning Area) | State and/or California Department of Fish & Game Status | Federal Status | Reported Within Immediate Planning Area (PA) |
|---|---|---|---|---|---|
| Western Yellow-billed Cuckoo | *Coccyzus americanus occidentalis* | Riparian habitat with Large cottonwood and willow canopy | Threatened | Candidate for listing | Yes (reported from west edge PA along Mojave River) |
| Yellow-breasted Chat | *Icteria virens* | Riparian habitat | Special Concern | | Yes (reported from west edge PA along Mojave River) |
| Yellow Warbler | *Dendroica petechia brewsteri* | Riparian habitat | Special Concern | | Yes (reported from west edge PA along Mojave River) |
| MAMMALS | | | | | |
| Hoary Bat | *Lasiurus cinereus* | Dense foliage of large trees next to open habitats | Special Concern | | Unknown (reported from west edge PA, exact location unknown) |
| Mohave Ground Squirrel | *Spermophilus Mohavensis* | Creosote Bush & Saltbush Scrub | Threatened | | No (1955 report just southeast of the PA) |
| Mohave River Vole | *Microtus Californicus Mohavensis* | Wet herbaceous Habitat | Special Concern | | Yes (reported from west edge PA along Mojave River) |
| Pale Big-eared Bat | *Corynorhinus townsendii pallescens* | Crevices, Mineshafts, Creosote Bush Scrub near water | Special Concern | | No (reported southeast of southeast PA) |
| Pallid San Diego Pocket Mouse | *Chaetodipus fallax pallidus* | Sandy habitats with rocks/coarse gravel, wash habitat, succulent scrub | Special Concern | | Possibly (reported from west edge PA & the Granite Mountains) |

## Plants

### 3.5.1 Booth's Suncup (*Camissonia boothii* ssp. *boothii*)

This small annual herb (Figure 11) of the Evening Primrose Family has been recorded from sandy flats within Joshua Tree Woodland and Pinyon-Juniper plant communities occurring at the base of the San Bernardino Mountains. One record is known from the Hesperia and Yucca Loma Road vicinity of southern Apple Valley (Appendix 1).




Map 7. Town of Apple Valley North: California Natural Diversity Database Plant Records

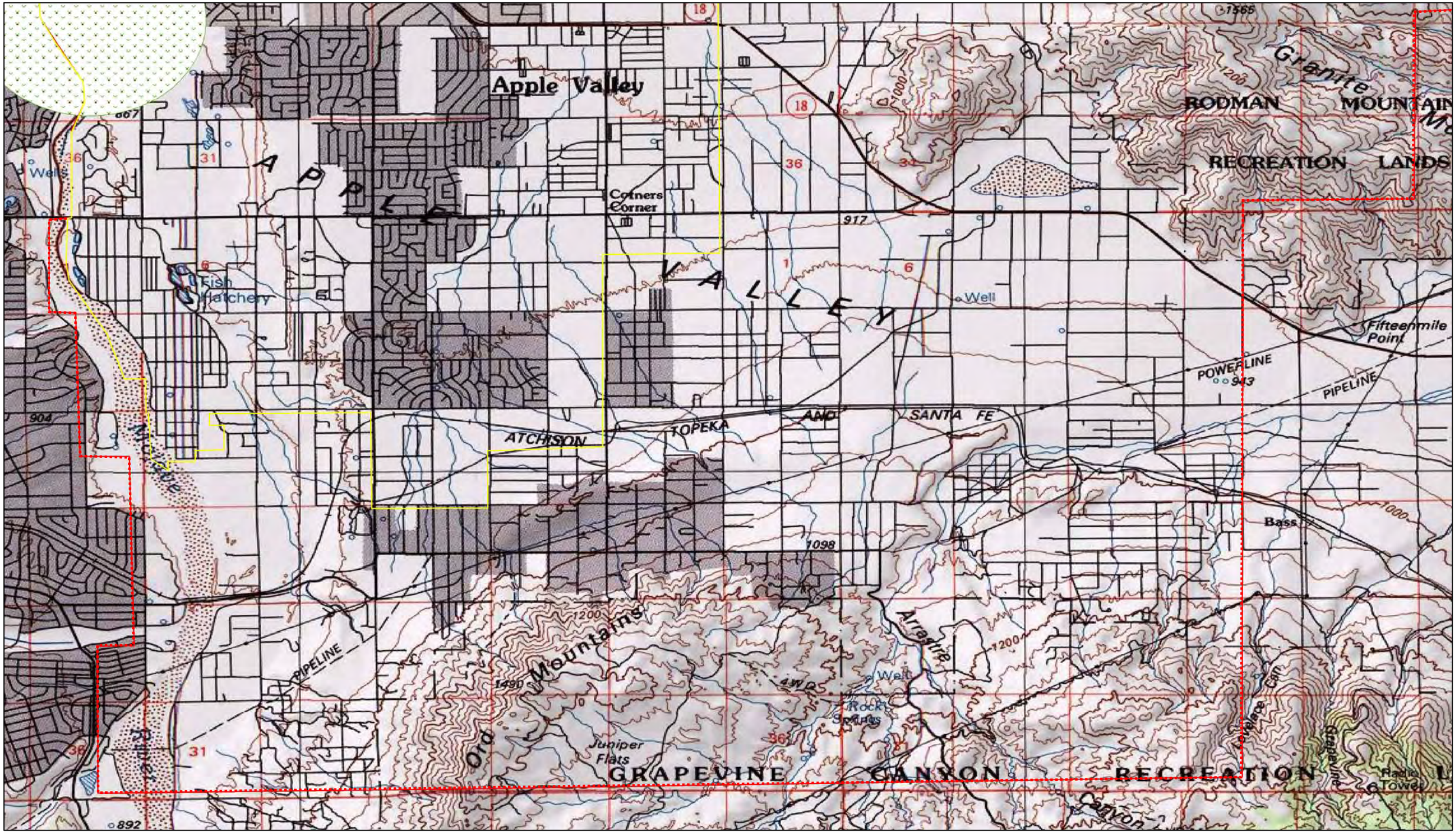
- Apple Valley Town Limits
- Apple Valley SOI
- Apple Valley Annexation Areas
- Booth's evening-primrose
- San Bernardino aster
- desert cymopterus
- southern skullcap

0 7,800 Feet

N

amec

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Map 8. Town of Apple Valley South: California Natural Diversity Database Plant Records

Apple Valley Town Limits
Apple Valley SOI

Booth's evening-primrose

N

0 6,400
Feet

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Map 9. Town of Apple Valley North: California Natural Diversity Database Animal Records

- Bendire's thrasher
- California red-legged frog
- Cooper's hawk
- Le Conte's thrasher
- Mohave river vole
- San Emigdio blue butterfly
- burrowing owl
- desert tortoise
- hoary bat
- least Bell's vireo
- pallid San Diego pocket mouse
- southwestern willow flycatcher
- western yellow-billed cuckoo
- yellow-breasted chat
- summer tanager

0 10,500 Feet

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**Map 10. Town of Apple Valley South: California Natural Diversity Database Animal Records**

- Coast (San Diego) horned lizard
- Le Conte's thrasher
- Mohave ground squirrel
- Mohave river vole
- San Emigdio blue butterfly
- Townsend's big-eared bat
- burrowing owl
- summer tanager
- least Bell's vireo
- pallid San Diego pocket mouse
- California red-legged frog
- western yellow-billed cuckoo

0 10,400 Feet

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The reddish leaves of this uncommon plant are lance-like to narrowly ovate and its nodding white flowers open at dusk. There is a low potential to encounter this species within the western portion of the Planning Area, as sandy loam habitats and Joshua Tree Woodlands usually associated with the species occur sporadically here. The population along Yucca Loma Road may now be extirpated, as the area now contains residential development and Rio Vista School.

Avoidance of identified populations, generally detected with a spring season survey following sufficient rainfall, is the primary means of mitigating impacts to this species.

### 3.5.2 Desert Cymopterus (*Cymopterus deserticola*)

This small perennial herb (Figure 11) of the carrot family has been recorded from sandy flats and slopes of the West Mojave Desert, generally in the vicinity of Edwards Air Force Base. Their 1-3 inch length leaves are carrot leaf-like and its flowers are purplish. It commonly occurs in loamy sands supporting a Creosote Bush Scrub plant community.

The species was collected from northwest Apple Valley (Township 5 North, Range 3 West, Section 17), in loose sandy soil at 2,930 feet above-sea-level elevation in 1915, 1920 and 1941 (Appendix 1). Past occurrences of the species adjacent to Highway 18, prior to extensive road development adjacent to the Planning Area's primary transportation artery, are also recorded in various herbarium collections.

Heavy urbanization, off-road vehicles, and livestock trampling have been recorded as threatening the existence of the species in the Planning Area. Heavy Black-tailed Jackrabbit browsing impacts were noted in extant populations occurring in 1941. Searches for the species in 1986 and 1988 failed to locate this plant. There remains a low potential to encounter this species within the northwestern portion of Apple Valley.

Avoidance of populations, generally detected with a spring season survey following sufficient rainfall, is the primary means of mitigating impacts to this species.

### 3.5.3 Joshua Tree (*Yucca brevifolia*)

This large perennial plant (Figure 11) of the lily family is considered the primary desert tree of the High Desert and is emblematic of the Mojave Desert. The species is known to occur on desert flats and slopes, as well as in washes and riparian areas within Creosote Bush Scrub, Saltbush Scrub and Pinyon-Juniper plant communities.

Several animal species, particularly invertebrates and the highly specialized Desert Night Lizard, are dependent upon Joshua Trees for shade, foraging, breeding and nesting purposes. Heights of this openly branched desert tree can reach 45 feet or more, though many only reach heights of ten feet or less.

Joshua Trees sometimes form dense woodlands, but individual trees can also occur very sparingly within other plant communities. It is very a long-lived, slowly-growing tree.

Sharp, dark green leaf blades with an expanded base characterize the foliage, with peduncled, bell-shaped, and creamy-colored flowers emerging in large clusters following years of sufficient rainfall. These flowers become seed-bearing fruit in the form of hard-skinned pods, which burst open after drying. Many small mammal species collect and cache this seed for subsequent feeding purposes. The tree's protective foliage provides both nesting and migratory travel habitat for several bird species, including Scott's Orioles, Cactus Wrens, and House Finches.

The highest regional Joshua Tree Woodland densities are known from the foothills of the San Bernardino Mountains and the westernmost portion of the Mojave Desert near Palmdale and Lancaster, California. In Apple Valley, Joshua Trees occur in scattered low densities and generally are characterized as a subcomponent of other plant communities, rather than as Joshua Tree Woodland. Small woodland stands of the species are, however, known from the southwest corner of the Planning Area.

Joshua Trees are protected by a specific Town of Apple Valley Ordinance which emphasizes incorporation of Joshua Trees within the planned landscaping features of surface disturbance actions.

Transplantation is required to be overseen by a San Bernardino County-certified arborist or similar approved native plant transplantation and landscaping specialist knowledgeable about Joshua Tree transplant survival specifics. A neighborhood adoption program is also an option for Joshua Trees that may be impacted by surface disturbance activities, though few have been adopted and moved out of approved surface disturbance areas in this fashion to date.

The Town of Apple Valley generally requires an approved specialist to inspect trees to be impacted prior to disturbance, determine healthy transplant candidates, and record evaluation results per directions outlined on a specific assessment form.

### 3.5.4 San Bernardino Aster (*Symphyotrichum defoliatum*)

This rhizomatous, perennial plant (Figure 11) is known from small populations in meadows and wet grasslands in the San Bernardino and San Gabriel Mountains, as well as from the Peninsular Range. It has also been reported from disturbed soil areas on the edges of wet ditches.

The pale violet flowers of this plant bloom from August to November. The species has been collected from the Mojave Narrows Regional Park, just north of Horseshoe Lake, in 1924, 1928 and 1991 (Appendix 1). Meadows and wet grasslands occurring in proximity to the Mojave River, on the west edge of the Planning Area, have a potential to support this rare plant. Similarly, wet ditches and flood control channels with a degree of connectivity to the Mojave River may support limited habitat for this species.

Avoidance of populations, generally detected with a late summer or fall season survey, is the primary means of mitigating impacts to this species.

### 3.5.5 Southern Skullcap (*Scuttelaria bolanderi* ssp. *austromontana*)

A small rhizamatous herb known from gravelly soils bordering streambanks and wetland sites, Southern Skullcap (Figure 11) is known from chaparral, cismontane woodlands and lower montane forests. This species was collected in 1886 from the banks of the Mojave River (Appendix 1).



**Booth's Suncup**
**[Photo: Jim Andre]**



**Desert Cymopterus**
**[Photo: Desert Tortoise Preserve Committee]**



**Joshua Tree**
**[Photo: Tom Egan,©2007]**



**San Bernardino Aster**
**[Photo: Kenneth L. Bowles]**



**Southern Skullcap**
**[Photo: Michael Charters]**

**Figure 11. Special status plant species known from the Apple Valley Planning Area.**

This herb supports cauline green leaves and a stout central stalk. Plants can sometimes be difficult to detect among dense meadow vegetation. The pale lavender flowers of this perennial plant bloom from June through August.

Avoidance of populations, generally detected with a summer season survey, is the primary means of mitigating impacts to this species.

**Invertebrates**

### 3.5.6 San Emigdio Blue Butterfly (*San emigdionis*)

A butterfly of central-southern California where it is considered rare to locally common in desert areas supporting Four-wing Saltbush,, its larval host-plant. Adults are known to nectar on Wild Heliotrope (*Heliotropium curassavicum*), and other herbaceous plants. The species (Figure 12) has been collected on the western edge of the Planning Area (Appendix 1), north and south of Highway 18 along the Mojave River (1950, 1982 and 1987).



**Figure 12. San Emigdio Blue Butterfly, mating pair in 2006 near Upper Narrows. [Photo: Stephen J. Myers, AMEC Earth and Environmental, ©2006.]**

### 3.5.7 Victorville Shoulderband (*Helminthoglypta mohaveana*)

This invertebrate is a gastropod (snail) endemic to the Mojave River. Microhabitat includes the underside of rocks found at the base of rocky (generally granite) outcrops and cliffs. The species (Figure 13) has been collected from the Mojave River at the Upper Narrows (Appendix 1), on the western edge of the Planning Area (1939, 2005).



**Figure 13. Victorville Shoulderband Snail.**
**[Photo: Lewis Center for Academic Excellence]**

## Amphibians

### 3.5.8 California Red-legged Frog (*Rana aurora draytonii*)

Chiefly a pond frog of streams and various deep waters where emergent plants provide dense riparian vegetative cover, this species (Figure 14) sometimes disperses to damp areas after rain. There are many historical records from the Mojave River, but it has not been observed in this waterway since the late 1960s. There is a very low probability that this species persists at the western edge of the Planning Area (Appendix 1).

Overland movements by the species of over two miles have been reported. The breeding period for this frog is very short; lasting only one to two weeks between November and April, depending on locality. When not breeding, the species can be found on a variety of upland habitats. Eleven to twenty weeks of permanent water is required for larval development and adults need access to aestivation habitat.

A frog heavily marketed as a source of frog legs in the 1800's, this threatened species is estimated to have disappeared from 75 percent of its former range.

The introduction of bullfrogs and non-native fishes, pesticides and other pollutants, as well as loss of habitat, all appear to have impacted the species. Where incidental take of Red-legged Frogs is found likely and/or occupied habitat loss would occur, permitting per the federal Endangered Species Act is required. Several measures are used to mitigate impacts to the species, including habitat compensation and animal relocation.



**Figure 14. California Red-legged Frog.**
**[Photo: Dr. Mark Jennings]**

### 3.5.9 Arroyo Toad (*Bufo californicus*)

This small greenish-gray or tan toad (Figure 15) historically occurred in many drainages in southern California from San Luis Obispo County to San Diego County, but now survives primarily in a few headwaters as small, isolated populations (USFWS 1994).

Although Arroyo Toad Critical Habitat was recently proposed for a portion of the Upper Mojave River, the final ruling on critical habitat was modified to exclude the Mojave River, based on economic reasons (USFWS 2005). The species has not been reported from the immediate Apple Valley vicinity.

Known for its high trill courtship vocalization, this endangered toad is restricted to rivers that have shallow, gravelly pools adjacent to sandy terraces.

Insects are the primary food, which are fed upon along sandy stream terraces that have nearly complete closure of cottonwood trees and almost no grass or herbaceous cover at ground level. Breeding occurs on large streams with persistent water flow from March until mid-June.

Toad eggs are deposited and larvae develop in shallow pools containing sand or gravel substrate, minimal current and little or no emergent vegetation. After metamorphosis in June or July, juvenile toads remain on bordering gravel bars until pool water no longer exists. Adult toads excavate shallow burrows where they shelter during the day. These burrows are sometimes also used for longer intervals during the dry season (USFWS 1994).

This species has been extirpated from approximately 75% of its range. Threats to the survival of the Arroyo Toad include habitat degradation, predation and small population sizes (USFWS 1994, 2005). Where incidental take of Red-legged Frogs is found likely and/or occupied habitat loss would occur, permitting per the federal Endangered Species Act is required. Several measures are used to mitigate impacts to the species, including habitat compensation and animal relocation.



**Figure 15. Arroyo Toad.**
**[Photo: Mimi Velten, AMEC Earth and Environmental, ©2007.]**

## Reptiles

### 3.5.10 Chuckwalla (*Sauromalus ater*)

The largest lizard of the Mojave Desert, the Chuckwalla (Figure 16) is known from a variety of desert woodland and scrub habitats, but is most commonly found in Creosote Bush Scrub. The species requires large rock outcrops, boulder piles or scattered large rocks among well-drained sandy soils. An herbivore, Chuckwallas regularly forage for a variety of annual plants on rocky slopes and in washes located adjacent to rocky slopes.

The species has been reported from rocky, boulder slopes adjacent the Mojave River Narrows on the western edge of the Planning Area (T. Hainley, Lewis Center for Academic Excellence, pers. comm.), as well as downstream at nearby Quartzite Mountain (Appendix 1). The Chuckwalla is also suspected to occur in other rocky locales in Apple Valley.



**Figure 16. Chuckwalla.**
**[Photo: Bureau of Land Management]**

### 3.5.11 Coast Horned Lizard (*Phrynosoma coronatum*)

This species (Figure 17) is known primarily from coastal sage scrub, chaparral, and woodlands in arid and semi-arid climate conditions. It prefers friable, shallow sandy soils with scattered shrubs. Coast Horned Lizards have a blunter snout than the more common Desert Horned Lizard (*Phrynosoma platyrhinos*) and two rows of fringe scales on each side of its body. This species eats harvester ants and other native insect prey.

Lowland populations of the species are greatly reduced due to urbanization and agricultural use. Disc-plowing is considered especially damaging to habitat. An adult male of the species was observed in 1978 in a sandy floodplain with *Chrysothamnus* and *Ceanothus* bush vegetation along Deep Creek Road, 3.5 miles southeast of Hesperia, California (Appendix 1). They are also regularly observed in California Juniper Woodland in Hesperia, and in shrub and woodland habitats in the Juniper Flats area. Portions of the Planning Area are marginally suitable habitat for the species, particularly in the vicinity of the Mojave River and at the southern end of the SOI.



**Figure 17. Coast Horned Lizard.**
**[Photo: Stephen J. Myers, AMEC Earth and Environmental, ©1998.]**

### 3.5.12 Desert Tortoise (*Gopherus agassizii*)

This charismatic species of the Mojave Desert (Figure 18), designated the official California Reptile, was state and federally listed as threatened in 1990. Critical habitat has been designated several miles to the north of the Planning Area (Ord-Rodman Desert Wildlife Management Area). Factors responsible for the listing include habitat loss and degradation, vehicle impacts, an upper respiratory disease, Common Raven (*Corvus corax*) predation of young tortoises and animal collection/vandalism.

Desert Tortoises are long-lived (60 plus years), hibernate, and utilize a variety of desert habitats (Appendix 1) that provide access to friable soil for burrowing or caliche stream-banks for cover sites, as well as forbs, wildflowers, and cactus food sources (BLM 2005b). Creosote Bush Scrub and Mojave Desert Wash appear to be preferred habitats, although Saltbush and Mixed Mojave Scrub (Holland 1986) are used as well. Dry lakes, housing communities, fencing and high-travel highways like State Route 18 generally act as barriers to the species' movement.

The species is territorial but the ranges of several animals usually overlap one another. High activity seasons include spring and fall months. Shrubs provide necessary shade and frequently support annual plant forage beneath their canopies. Several burrows are often used by a Tortoise, with some burrows extending underground for up to six feet.

Breeding generally occurs in April-June, but a secondary breeding period sometimes occurs during August. Eggs are usually laid during late spring and early summer months, often on burrow aprons or within the entrances to burrows. No parental care is provided to hatchlings, which frequently utilize other animal burrows and dense vegetation as cover sites. The species begins hibernation in late October to November and emerges again in mid to late March.

Tortoises have been reported from the western edge of the Planning Area within the Mojave river corridor (M. Huffine, pers. comm. 2007), as well as from the boulder-lands of north-central Apple Valley (S. Lockhart, pers. comm. 2007) and northeastern corner of the Planning Area (T. Hainley, pers. comm. 2007).



**Figure 18. Desert Tortoise hatchling (top) and adult (bottom). [Photos: Tom Egan, © 2001]**

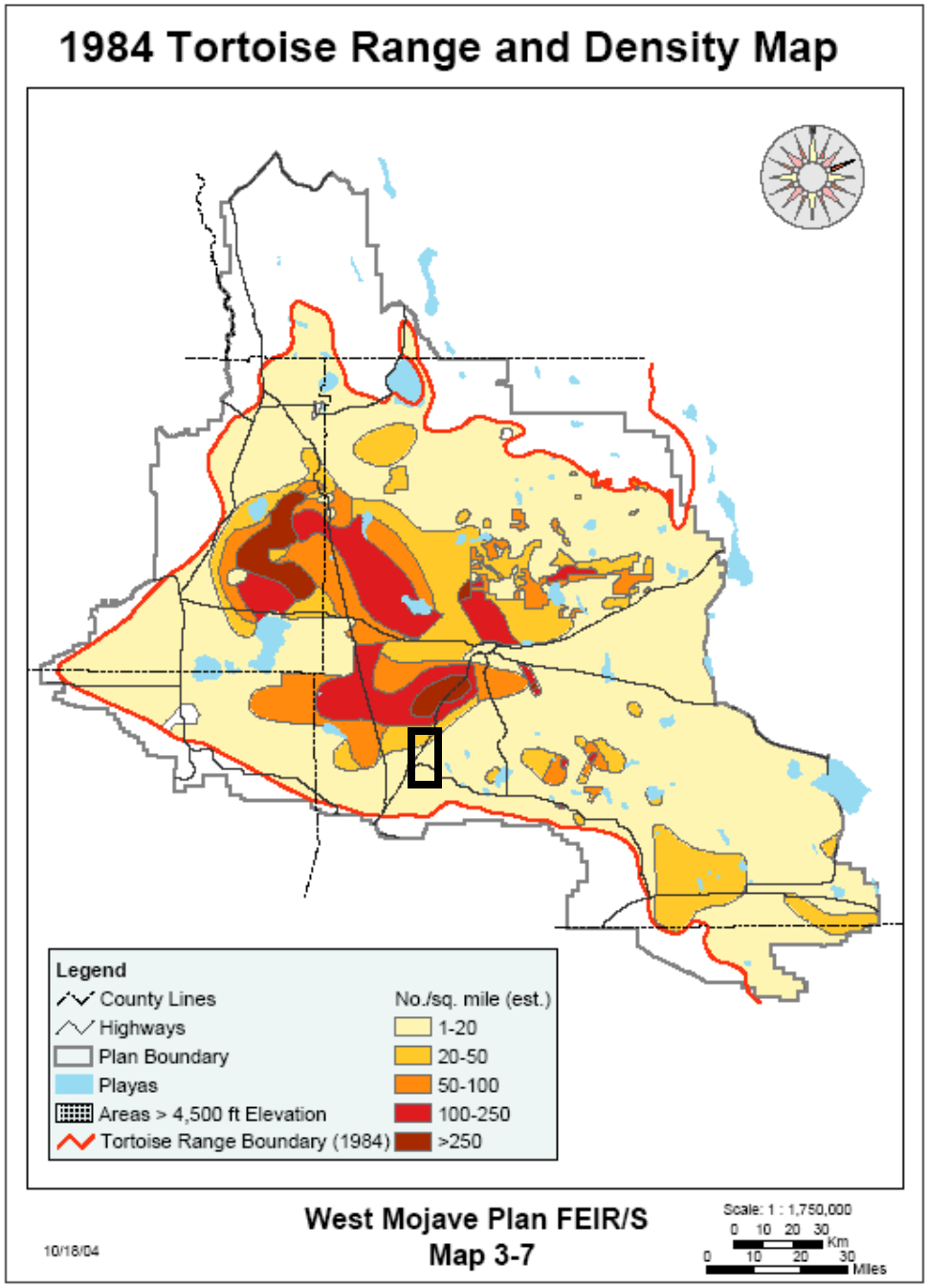
A number of roads and housing developments fragment habitat for the species in much of the Planning Area. The highest potential to encounter the species in Apple Valley are lands located in the northeast corner of the Planning Area, where public lands have been classified as a BLM Category III Desert Tortoise Habitat area. Apple Valley has previously been estimated as a low density (0-20 Desert Tortoises per square mile) region within the West Mojave Desert (Map11).

A recovery plan for the species has been prepared (1994) and is currently being revised. Pre-construction surveys according to agency-approved survey protocol are required for actions potentially impacting the species or its occupied habitat on private lands. Where incidental take of individual Desert Tortoises is found likely and/or occupied habitat loss would occur, permitting per the state and federal Endangered Species Acts is required.

Common mitigation measures implemented for the protection of desert tortoises include environmental awareness training, desert tortoise exclusion fence installation, property clearance surveys, translocation to approved offsite locations, restriction of equipment staging and/or vehicle parking to cleared and fenced areas, mandatory trash removal during construction and provision of offsite habitat compensation acreage.

Compensation ratios for affected private land habitat are generally evaluated by the CDFG on a case by case basis, ranging from 1:1 to 5.5:1 for each acre of habitat impacted. For public land actions where suitable Desert Tortoise habitat would be impacted, compensation ratios are calculated by the BLM per a formula outlined and approved by the West Mojave Plan (BLM 2005a).

Where handling is necessary, specific protocol are called for to avoid disease transmission to unaffected Desert Tortoises. It is illegal per state and federal law to capture wild Desert Tortoises or to release captive animals into the wild. Several local veterinarians in the Apple Valley region have extensive experience in caring for injured Desert Tortoises.




**Map 11. Town of Apple Valley (approx.) ▯ and estimated 1984 density of Desert Tortoise (*Gopherus agassizii*) in the West Mojave Desert (BLM 2005).**

### 3.5.13 Western Pond Turtle (*Actinemys marmorata pallida*)

The only native turtle of the Mojave River, this shy reptile (Figure 19) is known from a very small population at the Upper Narrows on the western edge of the Planning Area Appendix 1). It is active primarily from February to November, often congregating in deeper pools of inhabited streams. The species is capable of both aestivation in hot summer months and hibernation in winter months, as well as extensive overland travel between wetlands.

Western Pond Turtles forage for algae, various plants, snails, insects, and even vertebrates such as fish and frogs. The species requires basking sites such as exposed logs, rocks, emergent vegetation, and/or grassy streambanks. Adult males have the largest home range size, averaging over 2 acres. During summer months, individual turtles often move from pool to pool in a given stream segment. Individual turtle overland movements of up to three miles have been reported.

Nesting begins in late April and extends through August, with females occasionally travelling along a waterway for over a mile to access suitable nesting habitat. Nests are usually located along stream or pond margins, but can be located several hundred feet away from water on adjacent grassy hillsides with a southern exposure.

Protection of inhabited wetlands and adjacent riparian corridors up to 500 meters from the wetland edge has been recommended for conservation of the species.



**Figure 19. Western Pond Turtle.**
**[Photo: Chris Brown, U.S. Geological Survey]**

**Birds**

### 3.5.14 Bendire's Thrasher (*Toxostoma bendirei*)

This moderate-sized bird (Figure 20) winters in northwestern portions of Mexico and breeds throughout the southwestern United States, with its westernmost breeding range extending to the West Mojave Desert. It appears to prefer brushy desert habitat, where it builds open cup nests in cholla cactus, yucca, and various spinescent shrubs (BLM 2005b). Known for gleaning food from foliage and cocking their tail while running; caterpillars, beetles and fruit form a major part of their diet.

Reported from Bell Mountain, Johnson Road and Sidewinder Mountain (Appendix 1), Bendire's Thrashers are most likely to be encountered in densely-vegetated areas in the northern portion of the Planning Area. Pre-construction nest surveys and/or nest season surface disturbance avoidance measures are frequently used to avoid impacts to this migratory bird, which is protected under the auspices of the Migratory Bird Treaty Act.



**Figure 20. Bendire's Thrasher**
**[Photo:.Stephen Dowlan, Oregon Birds]**

### 3.5.15 Brown-crested Flycatcher (*Myiarchus tyrannulus*)

This brownish-olive, fairly large flycatcher is known to breed at a few scattered locations in the Mojave Desert. One to three pairs are known to nest annually along the Mojave River between Victorville and Apple Valley (BLM 2005b).

The species is dependent upon riparian woodland or forest dominated by cottonwoods and willows, usually in climax stage. The presence of woodpeckers or other cavity excavating birds is important. This flycatcher, like others, primarily eats insects which it captures by "hawking" or gleaning (BLM 2005b). Brown-crested Flycatchers usually arrive on their nesting grounds during May and depart by mid-August. These secondary cavity-nesters choose nesting sites at 10-30 feet above the ground surface.

Habitat destruction is the primary threat facing the species. The most catastrophic losses result from large-tract land clearing, flood control activities and fire. Locally, the lowering of ground water has likely reduced nesting habitat for this flycatcher. Ensuring adequate fire breaks exist to minimize wildfire spread on the Mojave River may benefit the species.



**Figure 21. Brown-crested Flycatcher**
**[Photo: Stephen J. Myers, AMEC Earth and Environmental, ©2007]**

### 3.5.16 Burrowing Owl (*Athene cunicularia*)

Burrowing Owls winter and nest throughout the Planning Area (Appendix 1), using burrows constructed by other animals such as the Desert Tortoise, Kit Fox, and Coyote, as well as those constructed by ground squirrels (BLM 2005b). This small raptor (Figure 20) will also utilize man-made habitats, including concrete rubble piles, pipes, and structures.



**Figure 22. Burrowing Owl, Apple Valley.**
**[Photo: Stephen J. Myers, AMEC Earth and Environmental, ©2005.]**

Male owls are slightly larger than females. The species is considered monogamous during the breeding season, which begins in March. Active during both the day and at night, the species frequently uses crepuscular time periods for hunting.

Arthropods often comprise the majority of prey items, though the species is a dietary generalist. Active burrows often exhibit sign of "whitewash," along with feathers and regurgitated pellets of undigestable portions of prey. Several burrows are commonly used by an owl pair, but numerous owls can occupy a very small area containing abundant burrows.

Open, dry, and level desert floor habitat is preferred by the species. Egg incubation generally lasts 28 days, with the female remaining in the burrow for most of that time, fed by the male. Young birds begin feeding themselves when they are roughly a month old. A new burrow is commonly selected at this time and the owl family relocates as a group, with young remaining near parents into September (Ehrlich et al. 1988).

Threats to Burrowing Owls include habitat loss, poisoning, and vehicle collisions. As a protected raptor and species of special concern, the CDFG must be notified and specific mitigation implemented when a proposed action might impact the species.

Commonly applied mitigation includes avoidance of actively-used burrows during the nesting season, passive relocation of owls (Trulio 1995) that could be affected by soil disturbance activities, and habitat-loss compensation. The habitat compensation formula applied by the CDFG, subject to periodic change, requires 6.5 acres of occupied replacement habitat for the loss of habitat occupied by each owl. Mitigation banking services are available which can fulfill compensation requirements. Passive relocation, when approved by the CDFG, involves collapsing suitable owl-use burrows when all owls are verified to be above-ground and away from potential harm.

### 3.5.17 Cooper's Hawk (*Accipiter cooperii*)

This middle-sized migratory hawk (Figure 23) is known to nest within the Mojave River Riparian Forest (Appendix 1). The species also migrates in substantial numbers through Apple Valley. The Mojave Desert Raptor Watch (McDermott 1995) regularly tallies them during their migration through the Planning Area. An average of eight overwintering Cooper's Hawk's per year have been observed during the past 12 years of the Mojave River Valley Christmas Bird Count.



**Figure 23. Coopers Hawk (immature).**
**[Photo: Stephen J. Myers, AMEC Earth and Environmental, ©2006.]**

Feeding primarily on small to medium-sized birds, this raptor is also known to prey on squirrels, rabbits, and rats. While it is a species dependent upon somewhat open riparian vegetation and large trees, this raptor occasionally forages in residential backyards, especially at bird feeders during winter. Pairs generally return to the same territory annually, often building a new nest in the vicinity of an old one. Eggs are laid in April to May, with incubation ranging up to 36 days. Fledging occurs at 31-34 days (BLM 2005).

As a protected raptor and species of special concern, the CDFG must be notified and specific mitigation implemented when a proposed action might impact the species. Protection of active nests and migratory/nesting habitat provided by the Mojave River Riparian Forest is considered to be of critical importance (BLM 2005).

### 3.5.18 Least Bell's Vireo (*Vireo bellii pusillus*)

A migratory species dependent upon dense riparian vegetation, this endangered songbird's nests (Figure 24) have been recorded from the Mojave River at the Lewis Center and Mojave Narrows Regional Park (Appendix 1). Nests have also been recorded downsteam from the Planning Area, in dense willow (*Salix* spp.) habitat occurring along the Mojave River.

Arriving in its breeding habitat in late March or early April, this species displays a high degree of nest site fidelity. Nesting takes place between April and July. Nests are usually suspended from forks of dense bushes or small trees, commonly willow (*Salix* spp.) and Mulefat (*Baccharis* spp.), usually within 1.5 meters of the ground.

The species feeds almost exclusively on arthropods, with insects and spiders comprising a bulk of their diet. Most individual birds depart for their wintering habitat in Baja California by late November (BLM 2005).

Habitat loss and degradation, sometimes associated with flood control activities, and Brown-headed Cowbird (*Molothrus ater*) brood parasitism, has greatly impacted this species in the past. Recent southern California population increases have been noted in conjunction with Brown-headed Cowbird trapping and non-native plant removal and riparian habitat restoration.

Where incidental take of individual birds is likely and/or occupied habitat loss would occur, permitting per the state and federal Endangered Species Acts is required. Several measures are commonly employed to mitigate adverse impacts to the species, including habitat compensation and seasonal impact avoidance.



**Figure 24. (Top) Singing Least Bell's Vireo, and (bottom) LBV nestlings within nest at the Lewis Center in Apple Valley.**
**[Photos: Stephen J. Myers, AMEC Earth and Environmental, ©2007 (top photo) & ©2002 (bottom photo).]**

Protecting suitable riparian habitat within the Mojave River Riparian Forest corridor is considered critical. Limiting off road vehicle and hiking trail access to prime nesting areas and non-native plant control has also been recommended (BLM 2005b).

### 3.5.19 Le Conte's Thrasher (*Toxostoma lecontei*)

The pale gray-brown Le Conte's Thrasher (Figure 23) is a non-migratory resident bird endemic to the Southwestern U.S. and northwestern Mexico. Although this terrestrial bird is widespread, the species is considered a rare resident in desert scrub habitats. It is a CDFG Species of Special Concern. It has been reported throughout Apple Valley, particularly in the Planning Area's southeast corner (Appendix 1).

These secretive birds forage for much of their food by digging and probing in the soil. Their diet consists of seeds, arthropods, small snakes and lizards, occasionally gleaned from vegetation or pursued on the ground (BLM 2005).



**Figure 25. Le Conte's Thrasher**
**[Photo: Chet McGaugh, AMEC Earth and Environmental, ©2004.]**

This species prefers open desert habitats with scattered shrubs and sandy or alkaline soil, and frequently takes cover in the denser shrub habitats found along washes when disturbed. The species generally avoids areas of monotypic Creosote Bush Scrub.

The species is monogamous and both sexes share nest-building tasks. Nests consisting of twigs are frequently constructed in a two to four foot tall cactus, thorny shrub, or small tree; nest substrates are chosen to provide protection from both predators and the sun. A pair usually nests in the same area annually for a period of years. Egg-laying dates span from January to June. Double-clutching is suspected to be common in the Mojave Desert. Incubation time is about fifteen days and the young fledge roughly fifteen days later.

Mitigation commonly applied to projects which might disturb nesting Le Conte's Thrasher includes conducting appropriate pre-construction surveys to identify potential nests and to avoid direct impacts to nesting birds.

### 3.5.20 Prairie Falcon (*Falco mexicanus*)

The tawny-colored Prairie Falcon (Figure 26) is a medium-large raptor of dry, open habitats that preys chiefly on birds, small mammals, and reptiles. This migratory species winters in southern California, Baja California and northern Mexico. Cliffs and/or steep rock ledges, largely absent from the immediate Planning Area, are required for nesting.

However, nests have been recorded from the nearby Fairview Mountains, located to the northeast of Apple Valley (Appendix 1). The species has been reported to have low nest site tenacity (Ehrlich et al. 1988) and parental care of young continues after fledging.

This top of the food chain raptor is also known to use boulders and rock outcrops for perching and feeding, when these features occur in proximity to open habitats. Prairie Falcons have been observed foraging at the Apple Valley Airport (T. Egan pers. obs. 2006), and are fairly common during winter near agricultural fields.



**Figure 26. Prairie Falcon**
**[Photo: Chet McGaugh, AMEC Earth and Environmental, ©2006.]**

Susceptible to metallic poisoning, some eggshell thinning and mercury poisoning of the species have been recorded. This raptor is also easily disturbed during nesting, with prolonged adult absence from the nest often caused by disturbance detrimental to nesting success.

As a protected raptor and species of special concern, the CDFG must be notified and specific mitigation implemented when a proposed action might impact the species. Mitigation commonly applied to projects which might affect the species includes conducting appropriate pre-construction surveys to identify potential nest disturbance impacts, particularly in proximity to the Fairview Mountains.

### 3.5.21 Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

This endangered migratory species (Figure 27) of dense riparian woodlands, known to nest along the Kern, Santa Clara, Santa Ana, Santa Margarita, Colorado, and other southern California rivers, has been reported from the Mojave Narrows Regional Park (Appendix 1) on the western edge of the Planning Area. It has also been reported from the Mojave River a short distance downstream from Apple Valley in Victorville, as well as historically along the river at Oro Grande.



**Figure 27. Willow Flycatcher (subspecies unknown).**
**[Photo: Stephen J. Myers, AMEC Earth and Environmental, ©2007.]**

A diurnal insectivore that catches its prey primarily in the middle story of their habitat, this flycatcher usually arrives in its breeding ground in early May and begins nesting in June. In historic egg collections of the species, nesting substrate is predominantly willow (Salix spp.), where open cup nests on average are situated 7.5 feet above the ground and next to water (BLM 2005).

The species maintains a degree of nest site fidelity, but shift sites within inhabited woodlands from year to year. Incubation is 12-13 days from the laying of the last egg, with young birds fledging at 12-15 days.

Adult birds depart for their wintering grounds in August, followed in September by juvenile birds.

Habitat loss and degradation, sometimes associated with flood control, invasive plants and/or livestock grazing activities, as well as Brown-headed Cowbird brood parasitism, has greatly impacted this species. While the Mojave River has never been reported as an important breeding region for the species (only a few territorial birds have been found since its listing), critical habitat has been designated along the Mojave River downstream from the Planning Area in Victorville. The species winters in southern Mexico south to western Venezuela.

Where incidental take of individual birds is likely and/or occupied habitat loss would occur, permitting per the state and federal Endangered Species Acts is required. Several measures are commonly employed to mitigate adverse impacts to the species, including habitat compensation and seasonal impact avoidance.

Protecting riparian habitat within the Mojave River Riparian Forest corridor is critical for species' recovery. Limiting vehicle and hiking trail access to prime Southwestern Willow Flycatcher nesting areas, as well as non-native plant removal and Brown-headed Cowbird control (i.e., regular trapping), may also benefit the species.

### 3.5.22 Summer Tanager (*Piranga rubra*)

This colorful songbird (Figure 28) has been reported from dense riparian habitat at the Mojave Narrows Regional Park (Appendix 1) on the western edge of the Planning Area. Ten to fifteen pairs are known to nest on the Mojave River annually (S. Myers, unpubl. data).

Females and juveniles of the species have yellow under-parts and brown to olive upper-parts, as opposed to the bright, all-red plumage of the males. The species generally nests fairly high in tree canopies along the Colorado River and at sporadic locales in the Mojave, Colorado, and Sonoran Deserts (BLM 2005).



**Figure 28. Summer Tanager**
**[Photo: Stephen J. Myers, AMEC Earth and Environmental, ©2007.]**

The species winters in southern Baja California south to Michoacan, Mexico. Summer Tanagers arrive in the California deserts in late April and generally depart by late September. Insectivorous during the breeding season, these songbirds specialize on "hawking" bees and wasps from a tree perch. The species also gleans other insects from foliage and regularly feeds on fruit during migration and while wintering.

Habitat loss, primarily associated with land clearing, flood control, and woodcutting has been cited as the primary threat to the species in California. Invasive plants also degrade suitable habitat for the species. Limiting riparian plant community clearing activities, minimizing large tree woodcutting, and non-native plant control within the Mojave River corridor are considered an important species' conservation prescriptions.

### 3.5.23 Swainson's Hawk (*Buteo swainsoni*)

The western limit of this threatened species' nesting distribution currently extends from eastern Washington/Oregon and northeastern California through Nevada to Arizona. Historically this hawk (Figure 29) nested in scattered Mojave Desert sites, including Apple Valley. Most Swainson's Hawks winter in South America, primarily in Argentina.



**Figure 29. Swainson's Hawk**
**[Photo: Chet McGaugh, AMEC Earth and Environmental, ©2005.]**

Swainson's Hawk nests almost exclusively in trees. Commonly these nest trees are located on woodland edges or in isolated clumps of trees within relatively open habitats.

In the Mojave Desert portion of the species historic range, nesting reportedly occurred in desert scrub habitats with a Joshua Tree over story, as well as in Fremont Cottonwood trees along stream courses and in windbreaks (BLM 2005b). Since 1979, a few nesting attempts have been recorded in Mojave Desert locales supporting Joshua Trees and Creosote Scrub habitat (Lancaster, Palmdale, and Fremont Valley). The only currently known nesting site in the Mojave Desert is near Lancaster, at a ranch yard with large trees (S. Myers, pers. comm.).

The species' diet in northeastern California is dominated by voles (*Micotus* spp.) and California Ground Squirrels, but also includes numerous grasshoppers. In other locations, their diet has been documented to include Botta's Pocket Gophers, Mourning Doves and Black-tailed Jackrabbits. Outside of the breeding season, their diet is primarily insectivorous, including grasshoppers and crickets (BLM 2005b).

Flocks of migrating Swainson's Hawks are commonly seen along the Mojave River on the western edge of the Planning Area. Individuals of the species are regularly observed flying with Turkey Vultures during their migration along this river (T. Egan pers. obs. 2006; S. Myers, pers. comm.).

Where incidental take of individual birds is likely and/or occupied habitat loss would occur, permitting per the state Endangered Species Act is required. Mitigation commonly applied to projects which might affect the species includes conducting appropriate pre-construction surveys to identify potential nest disturbance impacts and habitat compensation where occupied habitat loss would occur. Protecting suitable perching areas in the Mojave River Riparian Forest corridor could benefit the species during its migratory flights through the Planning Area.

### 3.5.24 Vermillion Flycatcher (*Pyrocephalus rubinus*)

This brightly colored flycatcher has been recorded both nesting and wintering in Apple Valley. This particular subspecies (i.e., *P.r. flammeus*) ranges from the southwestern United States south to Argentina and Uruguay (S. Myers in litt.).



**Figure 30. Vermilion Flycatcher, Mojave Narrows Regional Park, 2004 [Photo: Stephen J. Myers, AMEC Earth and Environmental, ©2004]**

In the breeding season, these insectivores occupy arid scrub as well as riparian woodlands. On occasion, farmlands and agricultural areas are also used. The species is commonly associated with surface water and relatively open stands of cottonwood, mesquite or sycamore trees (S. Myers in litt.). The species appears to avoid dense riparian growth; frequently being observed in more open riparian located habitats adjacent to pastures, golf courses and parks.

Nests are placed in horizontal, forked branches of trees at heights ranging from 1-18 feet above the ground. Migrating birds arrive at breeding habitats in mid-March and the species departs by late August.

Undoubtedly the most serious threat to the species in the Planning Area has been the loss, degradation and fragmentation of riparian habitats. Flood control activities, the lowering of groundwater by water pumping, and wildfire are previous impacts known to have affected Vermillion Flycatcher habitat in the Planning Area. Invasive plants also degrade suitable habitat for the species.

Limiting riparian plant community clearing activities, minimizing large tree woodcutting, aggressive wildfire suppression and non-native plant control within the Mojave River corridor are considered important species' conservation prescriptions.

### 3.5.25 Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)

A migratory inhabitant of cottonwood-willow riparian habitat, this threatened bird species (Figure 31) is suspected to breed in the Upper Narrows reach of the Mojave River (Appendix 1). Nests and/or fledged young have not been located to date, but unmated male birds have been observed on the Mojave River between Victorville and Barstow (BLM 2005b), and males giving territorial calls were heard regularly during the late 1990s and early 2000s (S. Myers, pers. comm.). The species overwinters in South America primarily east of the Andes Mountains.

Nesting begins shortly after they arrive in California, usually in June. During the breeding season the species is restricted to cottonwood-willow riparian habitat, with the size and configuration of woodland characteristics considered important. A large home range is required, often exceeding 50 acres. The presence of low woody vegetation, at least one willow tree and high tree canopy closure are likely critical nesting habitat constraints (BLM 2005b).

This foliage-gleaning insectivore feeds on caterpillars, katydids and grasshoppers, but also eats frogs, lizards, bird eggs, berries, and fruit. Fall migration begins in early August and extends into mid-September.



**Figure 31. Western Yellow-billed Cuckoo**
**[Photo: Stephen J. Myers, AMEC Earth and Environmental, ©2007.]**

Breeding habitat loss is a significant threat to the species, with past clearing for agricultural purposes probably the greatest historic impact. Loss of suitable habitat to wildfire and invasive plants is considerable.

Where incidental take of individual birds is likely and/or occupied habitat loss would occur, permitting per the state Endangered Species Act is required. Mitigation commonly applied to projects which might affect the species includes conducting appropriate pre-construction surveys to identify potential nest disturbance impacts. Limiting riparian plant community clearing activities and protecting potential nesting habitat in the Mojave River Riparian Forest corridor, as well as the establishment of fire breaks around this habitat, could benefit the Western Yellow-billed Cuckoo.

### 3.5.26 Yellow-breasted Chat (*Icteria virens*)

This migratory songbird (Figure 32) nests in riparian habitat throughout California, including along the Mojave River along the western edge of the Planning Area (Appendix 1). Approximately 12 to 15 pairs are estimated to nest in this river reach annually (S. Myers, pers. comm., 2007). The species winters in southern Baja California south to Panama (BLM 2005b).

An insectivore, this wood warbler forages by gleaning insects from foliage and tree branches, but also eats fruit on occasion. Coarse, bulky cup nests are commonly constructed three to six feet above the ground in dense riparian thickets containing shrubby willow (*Salix* spp.), Wild Grape (*Vitis* spp.) and Mulefat (*Baccaharis salicifolia*). Fremont Cottonwood and large willows typically form the over-story canopy at selected nest sites.

The species arrives at suitable nesting habitat in mid-April and is suspected to depart for its wintering ground in August to September.



**Figure 32. Yellow-breasted Chat**
**[Photo: Stephen J. Myers, AMEC Earth and Environmental, ©2007.]**

Western populations are generally stable, or even increasing, but local declines have occurred in some areas as a result of urbanization, flood control activities, livestock grazing, wildfire and perhaps Brown-headed Cowbird nest parasitism. Non-native invasive plants such as Saltcedar (*Tamarix ramosissima*) are known to degrade the species' habitat quality.

Limiting riparian plant community clearing activities, minimizing large tree woodcutting, non-native invasive plant removal, and timely wildfire control within the Mojave River corridor are considered important conservation prescriptions for the species.

### 3.5.27 Yellow Warbler (*Dendroica petechia brewsteri*)

Another riparian habitat-dependent songbird known from the Mojave River on the western edge of the Planning Area is the Yellow Warbler (Figure 33). Approximately 15 to 20 pairs are estimated to nest in this river reach annually (S. Myers, unpubl, data). The species winters in Veracruz, Sinaloa and Yucatan south to northern Brazil (BLM 2005b).



**Figure 33. Yellow Warbler**
**[Photo: Chet McGaugh, AMEC Earth and Environmental, ©2007.]**

An insectivore, this wood warbler forages by gleaning insects from foliage. Deep cup nests are commonly constructed in an upright branch fork in shrubs and small trees, three to eight feet above the ground, commonly in dense riparian thickets containing California Wild Rose (*Rosa californica*), shrubby willows, and Mulefat. The species arrives at suitable nesting habitat in early April, and depart in September.

Habitat loss and nest parasitism are considered the greatest threats to the species in the western Mojave Desert. Limiting riparian plant community clearing activities, minimizing large tree woodcutting, conducting non-native invasive plant removal and ensuring timely wildfire control within the Mojave River corridor are important conservation prescriptions for the species.

As Yellow Warblers are one of the more frequent hosts for parasitism by the Brown-headed Cowbird, regular Brown-headed Cowbird control (i.e., trapping), would likely benefit the species.

## Mammals

### 3.5.28 Hoary Bat (*Lasiurus cinereus*)

The frosted or hoary look of this largely solitary bat (Figure 34) comes from a white tinge of their grayish-brown fur. Preying upon moths, beetles, wasps and dragonflies, their distinctively fast and direct flight is an identifying trait.

Roosting in trees, this wide-spread species can be found from northern Canada to South America and Hawaii. A female of the species has been reported (1984) from Mojave River riparian habitat at the Mojave Narrows Regional Park (Appendix 1), on the western edge of the Planning Area.



**Figure 34. Hoary Bat**
**[Photo: Roger W. Barbour]**

This seldom-seen bat emerges late in the evening and prefers open or mosaic habitats for foraging. It requires water and roosts in the dense foliage of medium to large trees. Commonly, Hoary Bats give birth to twins in the late spring or early summer.

Habitat loss and indiscriminant use of pesticides are considered the greatest threats to Hoary Bats in the western Mojave Desert. Limiting riparian plant community clearing activities, minimizing large tree woodcutting, and ensuring timely wildfire control within the Mojave River corridor are important conservation prescriptions for the species.

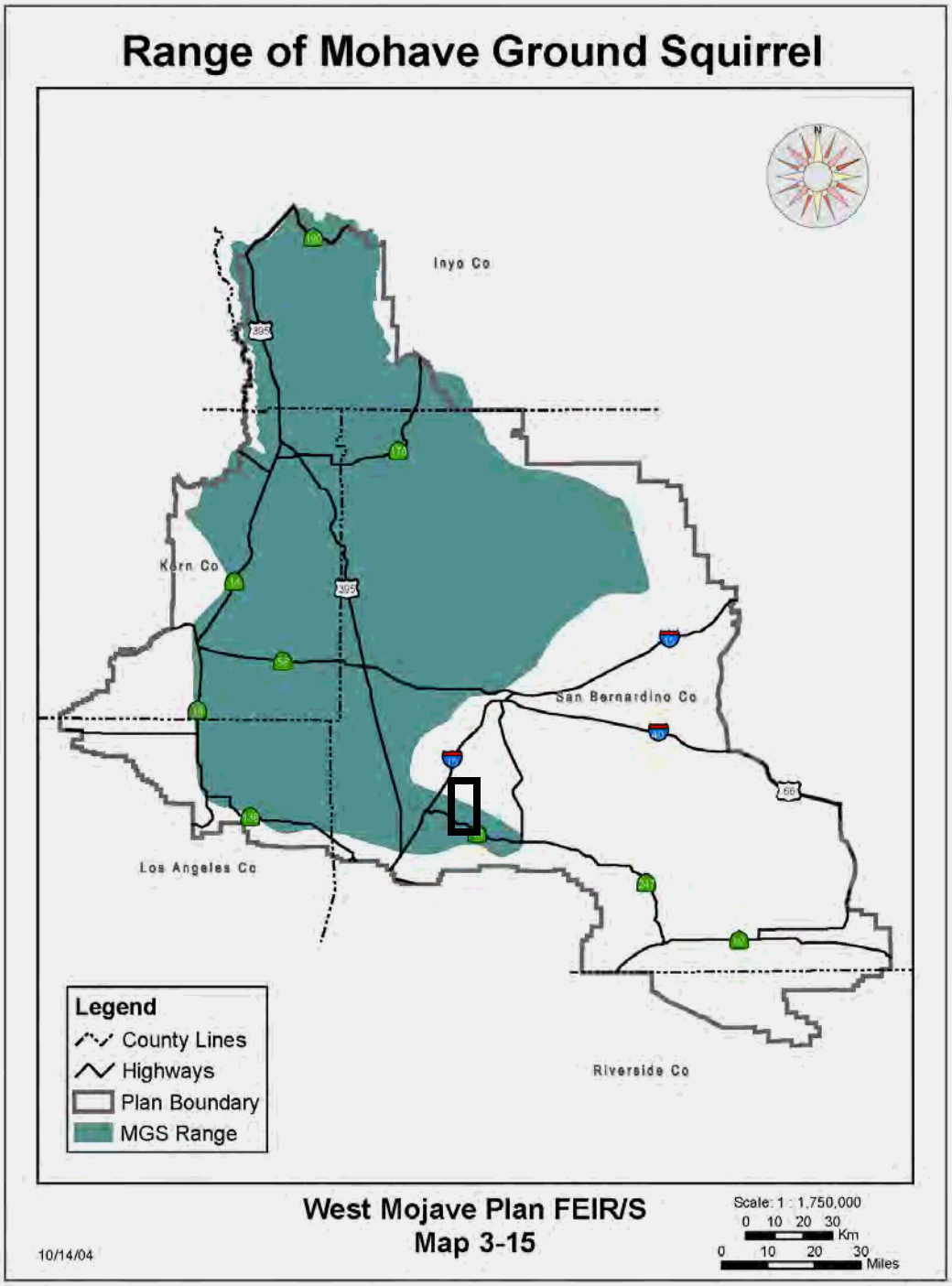
### 3.5.29 Mohave Ground Squirrel (*Spermophilus mohavensis*)

This threatened mammal (Figure 35) historically ranged from the San Gabriel and San Bernardino Mountains north to the Avawatz and Coso Mountain Ranges, east to Lucerne Valley and west to Palmdale-Lancaster (Map 13). Its type locality is Rabbit Springs, between Apple and Lucerne Valleys, where it was first collected in 1886. A female of the species was also collected in 1955 (Appendix 1) from Deadman's Point (Specimen #1265, University of California, Long Beach), just southeast of Apple Valley.



**Figure 35. Mohave Ground Squirrel (with transmitter collar)**
**[Photo: Desert Tortoise Preserve Committee]**

The medium-sized, cinnamon-colored Mohave Ground Squirrel lacks the white banner stripe on its tail and body, as exhibited by the much smaller White-tailed Antelope Squirrel. Both species occur in Creosote Bush, Saltbush, and Mojave Mixed Woody Scrub. However, the Mojave Ground Squirrel is not frequently found in rocky localities and the White-tailed Antelope Squirrel is sometimes found in such areas.




**Map 12. The Town of Apple Valley (approx.) ☐ and the historic range (BLM 2005) of the Mohave Ground Squirrel (*Spermophilus mohavensis*).**

Mohave Ground Squirrels in the northern portion of their range emerge from hibernation in early to mid March, with animals in the southern part of the range perhaps emerging as early as January. Once a sufficient amount of fat has been accumulated, individuals enter a period of aestivation and hibernation. The latter begins July or September, but during drought conditions can occur as early as April or May.

The reproductive success of the species is dependent upon the amount of fall and winter rains. In years of low or no rainfall, the species may forgo breeding entirely (BLM 2005). The species feed on a variety of foods, but rely on the leaves and seeds of select forbs and shrubs, as well as the fruit of Joshua Trees, and occasionally invertebrates.

In dry years, perennial shrub leaves make up a large part of the species' diet. Shrub species suspected as critical to long-term population persistence include Spiny Hopsage (*Grayia spinosa*), Winterfat (*Krascheninnikovia lanata*) and a variety of saltbushes (*Atriplex* spp.).

The Mohave Ground Squirrel is believed extirpated from the Apple/Victor Valleys, due to habitat fragmentation associated with agricultural and urban development (BLM 2005). However, the Planning Area is considered to be within the species' historic range.

Small mammal trapping surveys to ascertain species presence or absence are required for surface disturbance actions that might impact the species (T. Moore, CDFG, pers. comm., 2006). Such trapping must be conducted according to specific protocol, by permitted biologists, and within a fairly limited seasonal window. Alternatively, species presence can be assumed, in which case incidental take permitting per the state Endangered Species Act is required.

Mitigation commonly applied in projects which might affect the species includes providing compensatory lands for impacted habitat at a ratio of 1-3:1 acre (subject to change by CDFG), along with the implementation of several impact minimization measures, monitoring and project reporting.

### 3.5.30 Mohave River Vole (*Microtus californicus mohavensis*)

This “meadow mouse” is one of 17 named subspecies of the California Vole (*Microtus californicus*) as depicted in Figure 36. The Mohave River Vole is restricted to moist habitats, including wet meadows and marsh, occurring along the Mojave River between Hesperia and Helendale, California. It has been reported from the Mojave Narrows region on the western edge of the Planning Area and downstream to Helendale (Appendix 1).



**Figure 36. California Vole**
**[Photo: B. Moose Peterson]**

This vole constructs runways in grassy habitat which lead to shallow burrows. The species is active diurnally and nocturnally year-round. They forage primarily on the stems/leaves of grasses and forbs, but will eat grass seed in drier months. Roots and underground plant parts are commonly eaten in winter (BLM 2005b).

Threats to the species’ include habitat loss and fragmentation resulting from agriculture, flood control and urbanization. Non-native invasive plants are also known to degrade the meadow habitat the species is dependent on.

Protecting extant meadow and marsh plant communities within the Mojave River corridor is an important conservation prescription for the species (BLM 2005b).

### 3.5.31 Pale Big-eared Bat (*Corynorhinus townsendii*)

This medium-sized, big-eared bat (Figure 37) was collected (Specimen #1190 at California State University, San Bernardino) at Dead Man's Point located southeast of the Planning Area, in 1980 (Appendix 1). Surface water was known to be present at a local tourist attraction in proximity, which has since been eliminated. The species is also known from the Ord Mountains, located to the northeast of the Planning Area, and possibly in the Turtle Mountains, located on the northern edge of the Planning Area.



**Figure 37. Pale Big-eared Bat**
**[Photo: Drew Stokes, U.S. Geological Survey]**

Summer roosts and hibernacula located in close proximity to water, are required by the species. Suitable roost sites are commonly located in abandoned mineshafts near springs and surface water sources. This bat forages for insects in a variety of habitats, including Creosote Bush Scrub.

The species mates in a hibernaculum between October and February, giving birth to a single pup between May and July. These pups are raised in a maternity colony initially formed by the females of the species in mid March. Single males commonly use

separate bachelor roosts. Nurseries disperse by August, following weaning (BLM 2005b).

Threats to the species' include habitat loss (abandoned mine closure), the indiscriminate use of pesticides, as well as human disturbance of roosts and vandalism. Protection of inhabited roosts with bat-friendly gate installation, along with minimizing surface disturbance to adjacent foraging habitat, benefits long-term species conservation.

### 3.5.32 Pallid San Diego Pocket Mouse (*Chaetodipus fallax*)

Known primarily from desert areas in Eastern San Diego County, California, this Pocket Mouse (Figure 38) has been collected from Arrastre Canyon, located about ten miles southeast of Hesperia (Appendix 1), and from Oro Grande. Preferred habitats for this species include desert scrub, washes, mixed Mojave scrub, and pinyon-juniper plant communities. Little undisturbed acreage of this type exists in the southern portion of the Planning Area.



**Figure 38. Pallid San Diego Pocket Mouse**
**[Photo: J. Harris, Mammal Image Library]**

A small potential for species' use of the sandier portion of the immediate Mojave River corridor exists, but threats to this habitat have not been identified. In addition, public lands in the San Bernardino foothill vicinity south of the Planning Area provide habitat suitable for long-term conservation of the species.

### 3.6 Relationship to the West Mojave Public Land Use Plan

The West Mojave Plan ("WEMO," BLM 2005a), the largest habitat conservation plan (HCP) ever developed in the United States, encompasses 9.3 million acres in San Bernardino, Kern, Los Angeles, and Inyo Counties. A formal Record of Decision on the Final Environmental Impact Statement (EIS) portion of this plan was published by the U.S. Bureau of Land Management (BLM) in 2006. This plan provides a comprehensive strategy to conserve and protect state/federally listed species, as well as other special status species and their habitats, identified in Section 3.5 above.

A framework is identified in the WEMO Plan for a streamlined public agency and private party program for compliance with the State and Federal Endangered Species Acts. A regional private land development fee is to be required as a primary mandate of this Plan; along with BLM implementing focused public land conservation and listed species recovery programs for specifically-covered species.

Future State and local government actions are intended to be covered by the WEMO Plan's conservation framework designed for public lands, once the regulatory processes associated with the California Environmental Quality Act (CEQA) are completed by the County of San Bernardino. When this CEQA process is complete, the West Mojave HCP is likely to specify survey requirements and permitting parameters for land development and local government permitting occurring within the Planning Area.

## 4.0 POTENTIAL PLANNING AREA DEVELOPMENT IMPACTS

Individual land development actions considered for authorization within the Apple Valley Planning Area are anticipated to be addressed through a standard CEQA environmental review process. To assist in these future environmental analyses, impacts to the natural resources detailed in this document are described in a general fashion below.

In most development actions, soils in surface disturbance areas are likely to be leveled and graded. Over time, native vegetation is likely to be removed and/or highly fragmented throughout a considerable portion of the Planning Area. Additional roads, houses, commercial buildings, and/or fences are likely to be constructed.

Such surface disturbance and infrastructure development is likely to further fragment remaining open spaces already highly affected by past development activity. Increasing Common Raven density/nesting trends are anticipated to continue.

Much of the permeable surface area has the potential to be influenced by the installation of non-permeable surfaces, possibly affecting soil saturation and drainage patterns. An increased need for flood control work throughout the Planning Area may also be precipitated by future development activities. Increased vehicle use in the area and construction activities could also degrade area washes and streambank structure/function.

Increased recreational visitation to open space lands and remaining undisturbed plant communities are anticipated with future area growth. Associated increases in human uses/vehicle travel through undisturbed plant communities are likely to pose a distinct potential for further garbage dumping, Joshua Tree loss, and possibly more frequent wildfires.

The establishment and spread of certain non-native plants would also be expected over time. In turn, these biological impacts would be expected to adversely affect native species and/or supporting habitats in a variety of ways.

Wildlife species are likely to be displaced, injured, or killed as a result of property development, vehicle travel, soil alteration, removal of vegetation, and/or degradation of habitats in certain portions of the Planning Area. Courtship behaviors and breeding by some native wildlife are likely to be disrupted during the course of individual development actions.

There is a distinct potential for adverse impacts where listed animals occur as residents or seasonal migrants, resulting in incidental take of these species. Should impacts to special status species occur, they would add to the cumulative impacts each species already faces in the rapidly growing West Mojave Desert.

## 5.0 RECOMMENDATIONS

As future development in the Planning Area could generate significant direct, indirect, and cumulative impacts to the resources identified in this document, several recommendations are offered relative to affected special status species and protection of representative biodiversity (Figure 39) in the Apple Valley Planning Area.

According to CEQA §15370 analysis guidance, major impacts should be mitigated to a less than significant level. CEQA defines mitigation as measures that (a) avoid the impact; (b) minimize the magnitude of the action; (c) rectify the impact by repairing environmental impacts; (d) reduce or eliminate the impact over time by preservation actions; and/or (e) compensating for the impact over time by replacing or providing substitute environments.

In order to identify and characterize impacts to natural resources, development actions subject to Town of Apple Valley authorization should be carefully analyzed with the benefit of this document's background information and site-specific biological survey data. Basic survey parameters for key special status species and other significant natural resources, as well as associated permitting requirements, are outlined in Section 5.1 below. With the benefit of site-specific survey data, a suite of measures can often be applied to mitigate anticipated resource impacts of individual development actions to a less than significant level.

In addition to requiring biological survey information and compliance with all natural resource impact permitting authorities, it is recommended that the Town of Apple Valley consider formal recognition of several conservation-emphasis open space areas.

Formally recognized open space areas should consist of large, undisturbed native plant community properties containing special status species' habitat and representative Apple Valley biodiversity. Where feasible, identified open space areas should also be selected based on dynamic ecosystem functions, animal travel corridor utility and habitat linkage capability.



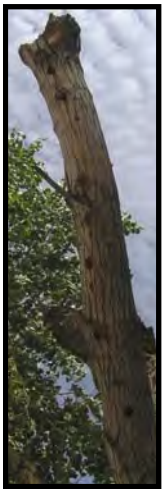
Yucca clonal rings known from north Apple Valley
[Photo: Tom Egan, ©2007]



Bird Nest in Joshua Tree
[Photo: Tom Egan ©2007]



Bobcat on boulders in north-central Apple Valley
[Photo: Tom Egan, ©2007]



Woodpecker snag tree on Mojave River
[Photo: Tom Egan ©2007]



Hammond's Flycatcher during fall migration
[Photo: Stephen J. Myers, ©2007]



Cactus Wren
[Photo: Stephen J. Myers, ©2006]

**Figure 39. Photographs depicting representative biodiversity in Apple Valley.**

The Mojave River corridor is a foremost candidate for conservation-emphasis open space protection, due simply to the dynamic nature of this key terrain feature. Extensive impact permitting prerequisites also lend to its consideration as formally recognized open space, as do its linear linkage characteristics and the many special status species river habitats support.

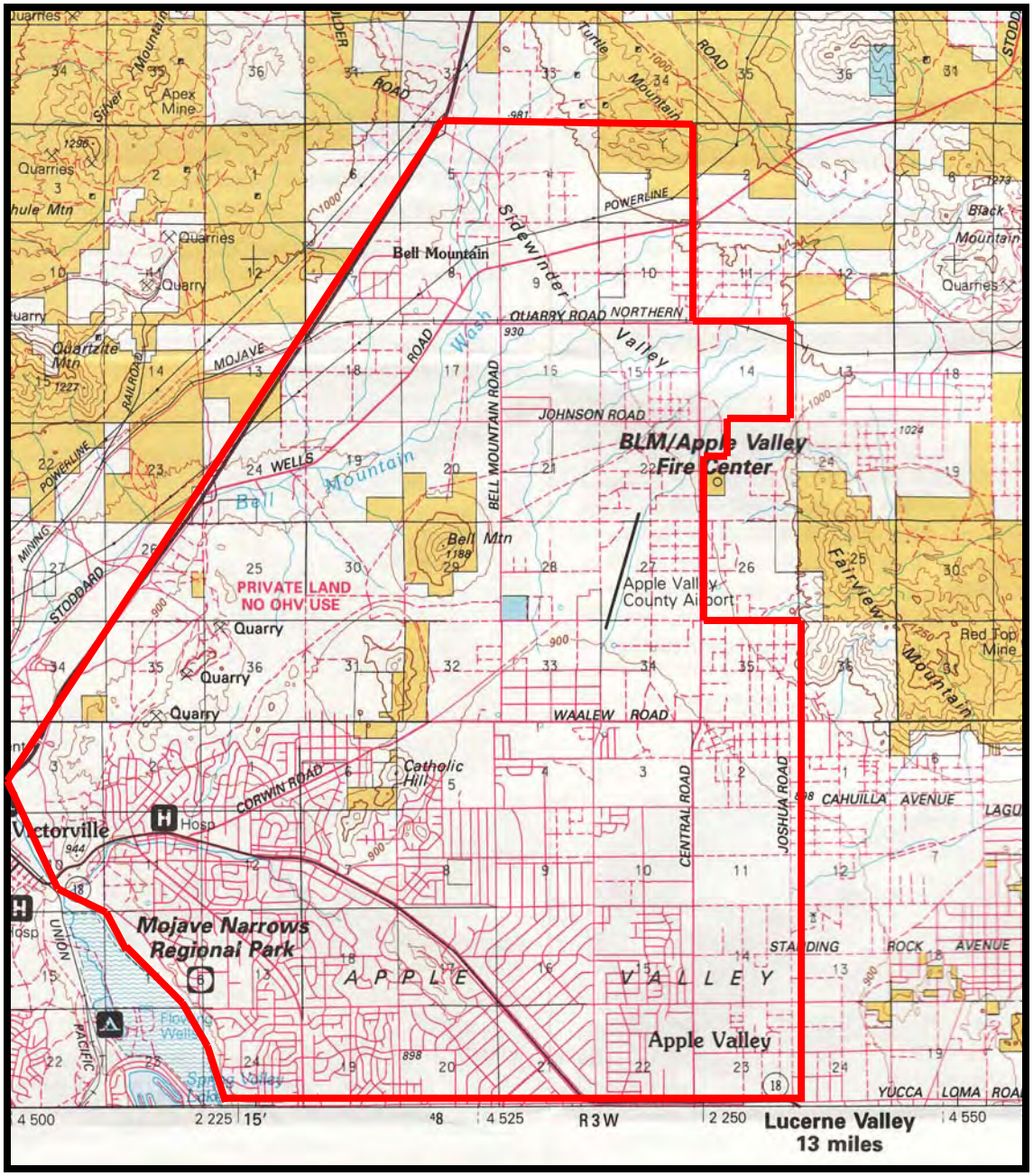
The Falchion Boulderlands locality located slightly northeast of the Mojave River Narrows also provides extensive habitat for a variety of wildlife and acts as a "stepping-stone" linkage habitat to northern Apple Valley wildlife habitats. Public lands in the immediate Bell Mountain vicinity, as well as on the north slope of the Turtle Mountains (Map 13), similarly act as a linkage habitat for many wildlife species travelling through the Planning Area. Both areas provide diverse habitats, in addition to a habitat linkage, and consequently are also likely candidate localities for conservation-emphasis open space protection (Map 14).

## 5.1 Biological Survey Requirements and Land Use Permitting

**Desert Tortoise**

Lands identified in the Planning Area with Desert Tortoise presence potential should be surveyed according to established protocol (USFWS 1992) for this species prior to any authorized surface disturbance. Should Desert Tortoise sign be encountered, a complete site clearance survey should be undertaken to ensure the species is not subject to potential harm that could occur as the result of lawful, permitted surface disturbance.

If Desert Tortoises would be affected on a private property by a development action, acquisition of a Section 10 Incidental Take Permit (USFWS 1992), per the federal Endangered Species Act (ESA) is required. If such a development action is determined to have a federal nexus, incidental take is addressed through ESA Section 7 consultation (USFWS 1992). A Section 2081 Incidental Take Permit, per the California Endangered Species Act (CESA), is also required when incidental take would occur. Permitting must be completed prior to any surface disturbance or Desert Tortoise handling taking place.




**Map 13. Town of Apple Valley North: Public Land Open Space Areas.** The northern portion of Apple Valley (approximate) is outlined in red, with private lands depicted in white and public lands in yellow. Map modified from California Desert District Victorville Desert Access Guide (BLM 1998).

Map 14. Town of Apple Valley: Recommended Conservation Emphasis Open Space Areas

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Feet

Apple Valley Town Limits
Apple Valley SOI
Apple Valley Annexation Areas
Open Space Areas

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Habitat compensation is generally required in actions where occupied Desert Tortoise habitat loss would occur. This requirement is addressed on a case by case basis but often involves replacing habitat anticipated to be lost at a ratio of 1:1, i.e., one acre of replacement habitat is required for every acre of planned habitat loss. Appropriate lands for affected animal relocation and other impact minimization mitigation tailored to the site-specific action is identified during the course of incidental take permitting.

A few third-party conservation entities provide mitigation bank transaction services in fulfillment of required Desert Tortoise habitat compensation needs. This process utilizes a binding Implementation Agreement between the requesting entity and the third-party conservation entity to acquire and manage mitigation habitat lands in perpetuity according to guidelines approved by the CDFG. A long-term management endowment fee is also separately required by the CDFG when this mitigation banking option is used.

Conservation easement acreage can similarly be deeded to the State of California for the conservation of Desert Tortoises. A variety of management fees, surveys, and other prerequisite tasks are required by the CDFG to utilize this mitigation banking option.

**Mohave Ground Squirrel**

As most of the Planning Area is within six miles of the historic range of the Mohave Ground Squirrel, small mammal trapping is required where surface disturbance actions could result in incidental take of this state-listed species (Tonya Moore, CDFG, personal communication, 2006). Only specifically-permitted biologists are considered qualified to conduct such trapping; wherein specific survey grid result criteria is used to confirm species presence or absence prior to surface disturbing activities. Survey study results are considered by CDFG to be valid for one year. Alternatively, Mohave Ground Squirrel presence can be assumed.

If Mohave Ground Squirrel presence is confirmed, or assumed to expedite project permitting, CESA Section 2081 incidental take permitting is required. A suite of impact minimization and mitigation measures are then incorporated into the incidental take permit issued by CDFG, tailored to specific site parameters.

Occupied habitat compensation requirements for this species are determined by CDFG on a case by case basis. This mitigation generally entails replacing affected habitat at a ratio of 1:1 to 3:1; i.e., one to three acres of replacement habitat is required for every one acre of habitat disturbance or loss. Other habitat impact minimization measures tailored to the site-specific action are identified during the course of incidental take permitting.

A few third-party conservation entities provide mitigation bank transaction services in fulfillment of required Mohave Ground Squirrel habitat compensation needs. This process utilizes a binding Implementation Agreement between the requesting entity and the third-party conservation entity to acquire and manage mitigation habitat lands in perpetuity according to guidelines approved by the CDFG. A long-term management endowment fee is also separately required by the CDFG when this mitigation banking option is used.

Conservation easement acreage can similarly be deeded to the State of California for the conservation of Mohave Ground Squirrels. A variety of management fees, surveys, and other prerequisites are required by the CDFG to utilize this mitigation banking option.

**Migratory/Nesting/Protected Birds**

Lands which may be impacted by development activities should be surveyed for the presence of migratory and residential birds prior to surface disturbance taking place. Bird nests, when occupied, are protected under the auspices of the Migratory Bird Treaty Act and cannot be harmed or removed until nesting has been completed. Nesting residential birds are also generally protected under the California Fish and Game Code.

Where non-protected and/or non-listed bird species are not involved, nesting season avoidance is generally sufficient to mitigate/avoid any anticipated avian impacts. Only knowledgeable personnel should conduct requisite avian surveys and survey results should be fully documented.

Where state-listed bird species (i.e., Swainson's Hawk, Western Yellow-billed Cuckoo) may be affected by a property development or surface disturbance action, a CESA conference must be initiated. The need to acquire a CESA Section 2081 Incidental Take Permit may be identified in such a conference. Where federally-listed bird species (i.e., Least Bell's Vireo, Southwestern Willow Flycatcher) may be affected by a property development or surface disturbance action, an ESA consultation must be initiated. The need to acquire an ESA Section 10 or Section 7 Incidental Take Permit may be identified during this consultation. Such conference/consultation is required prior to any property development or surface disturbance taking place.

Where a state-protected bird species (i.e., Burrowing Owl, Prairie Falcon) may be affected by a property development or surface disturbance action, the CDFG must be contacted to determine an appropriate course of action. Complete surveys for the Burrowing Owl by qualified personnel are commonly recommended for scheduled surface disturbance activities in the Planning Area, due to a high incidence of the species' occurrence. These surveys should be conducted within 30-45 days of planned surface disturbance, as both migratory and resident birds can move into suitable habitat at various times of the year. A specific Burrowing Owl survey protocol has been established by CDFG and the Burrowing Owl Consortium (1997) to guide such survey efforts.

Habitat compensation for actions affecting Burrowing Owls entails onsite protection of 6.5 acres of habitat per each owl or owl pair impacted. Alternatively, 13 acres of unoccupied, adjacent habitat; or 19.5 acres of unoccupied, non-adjacent habitat for each affected owl or owl pair is required. Other habitat impact minimization measures tailored to the site-specific action are generally identified during a course of consultation with the CDFG.

A few third-party conservation entities provide mitigation bank transaction services in fulfillment of required Burrowing Owl habitat compensation needs. This process utilizes a binding Implementation Agreement between the requesting entity and the third-party conservation entity to acquire and manage mitigation habitat lands in perpetuity according to guidelines approved by the CDFG.

Conservation easement acreage can similarly be deeded to the State of California for the conservation of Mohave Ground Squirrels. A variety of management fees, surveys and other prerequisite tasks are required by the CDFG to utilize this mitigation banking option.

Burrowing Owl relocation is desirable when nesting habitat is immediately threatened by development (The California Burrowing Owl Consortium 1997, TNC 1999, Trulio 1995). Harris and Feeney (1990) provide information on the successful relocation from a construction site to an enhanced site on an unused portion of a municipal golf course in central California (TNC 1999). Relocation has also been partially successful where Burrowing Owls have been moved a long distance at the beginning of the breeding season (Delevoryas 1997).

Passive relocation of occupied Burrowing Owl habitats by qualified personnel prior to site disturbance is generally required for occupied habitats in the Planning Area. This technique involves the closure of burrows when owls are known to be absent from them. A complete list of mitigation that may be required if Burrowing Owls are located on property proposed for surface disturbance (CDFG representative Tonya Moore personal communication, 2006), is outlined below.

Burrowing Owl Mitigation

- Occupied burrows shall not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by the California Department of Fish and Game verifies through non-invasive methods that either:

  (1) the birds have not begun egg-laying and incubation; or

  (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. A buffer zone of 75 meters around an active nest shall be established and monitored by a qualified biologist.

- To offset the loss of foraging and burrowing habitat on the project site, a minimum of 6.5 acres of occupied habitat per pair or unpaired resident bird should be permanently protected. The protected land must be adjacent to occupied burrowing owl habitat and at a location acceptable to the Department.

- When destruction of occupied burrows is unavoidable, existing unsuitable burrows shall be enhanced or new burrows created (by installing artificial burrows) at a ratio of 2:1 on the protected lands site.

- If owls must be moved away from the disturbance area, passive relocation techniques shall be used rather than trapping. At least one week will be necessary to allow the owls to acclimate to alternate burrows.

- The project proponent shall provide funding for long-term management of the protected lands. A monitoring plan must be developed and shall include success criteria, remedial measures, and an annual report to the Department.

- Preconstruction surveys of suitable habitat at the project site and buffer zone shall be conducted within the 30 days prior to construction.

- If ground disturbing activities are delayed or suspended for more than 30 days after the preconstruction survey, the site will be resurveyed.

**Common Raven**

While the Common Raven is classified as a migratory bird, this human-subsidized scavenging species has become largely resident in the Planning Area. During the nesting season, some Common Ravens are known to prey on hatchling/juvenile Desert Tortoises, as well as the young of other special status wildlife.

Common Ravens are known to favor upright structures of varying heights for nesting and roosting, particularly artificial structures such as transmission line poles and water tanks. Nest-site tenacity is fairly strong for the species in the Mojave Desert, a condition which compels individual birds to return annually in February or March to intact nests.

Instances where these nests have repeatedly been removed in whole from a specific site during the nonnesting season sometimes results in the area be avoided by Common Ravens in their returning nest pursuits.

Direct control and/or active nest removal of this designated migratory bird requires a specific depredation permit from the U.S. Fish and Wildlife Service. Appropriate, agency-approved treatment of any affected Common Raven eggs, fledgling and adults is required in applying an authorized depredation permit. Removal of unoccupied Common Raven nests in the inactive nesting season, however, does not require a specific depredation permit. Therefore, biological surveys of proposed development actions should document the presence of active and/or inactive Common Raven nests.

Instances of Common Raven predation upon Desert Tortoises should also be reported to the U.S. Fish and Wildlife Service. Further, where a transmission line or water tank location is being proposed for a land development, associated environmental analyses should consider the possibility that these structures could accommodate Common Ravens. Where feasible, such structures should be located away from protected open space areas.

**Washes and Streambeds**

Land development actions potentially impacting the Mojave River and/or other streambeds within the Planning Area can sometimes necessitate extensive survey work. Projects resulting in "cut and/or fill" impacts to the Mojave River, a jurisdictional "water of the United States," are usually required to complete a formal delineation of the affected stream reach(es).

Authorized surface disturbance in the Mojave River and certain streambeds (Map 3) may also require compliance with Sections 401 (Water Quality Certification) and 404 (Federal Waters) of the Clean Water Act (CWA). Such permitting shall require consultation with the Lahonton Regional Water Quality Control Board (LRWQCB) and U.S. Army Corps of Engineers (USACE).

Where CWA permitting with USACE is required, individual and nationwide programmatic permit application venues exist which are guided by project size and other parameters.

CDFG notification by a prospective development proponent, sometimes involving the subsequent preparation of a Streambed Alteration Agreement, is also required in any instance where the Mojave River or other streambed/wash might be affected by surface disturbing activities.

Where Mojave River and/or streambed habitat is to be impacted by a proposed surface disturbing action, affected land compensation may be required. Such compensation requirements commonly applied in the past have involved a 3:1 ratio, i.e., three acres of replacement lands are required for every acre of streambed affected by surface disturbance.

A suite of agency-approved best management practices are also commonly required during any such permitted surface disturbance work.

**Joshua Trees (*Yucca brevifolia*)**

This native tree species, protected under Town of Apple Valley Development Code 2000 (Chapter 9.76.040), should be identified, mapped, and assessed as to health condition during biological surveys of an affected land development action. The Town Manager is responsible for review and approval of any request to disturb, move, or destroy any Joshua Tree. Review application forms are available from the Town of Apple Valley Planning Division.

If Joshua Trees would be affected by a proposed surface disturbance, procedures outlined by the Town of Apple Valley in the above development code should be followed. Retention of trees in place is recommended, but tree transplantation by an approved "Desert Native Plant Expert" can be approved.

## 6.0 REFERENCES


Abrams, L. and R.S. Ferris. 1960. Illustrated flora of the Pacific States, vol. IV. Stanford Univ. Press, Stanford, Calif.

American Ornithologists' Union. 1998. Check-list of North American Birds, 7th ed. Am. Ornithol. Union, Washington, D.C. [also supplements published in *The Auk*.]

Baldwin, B.G, S. Boyd, B.J. Ertter, R.W. Patterson, T.J. Rosatti and D.H. Wilken (editors). 2002. The Jepson desert manual. Vascular plants of Southeastern California. University of California Press, Berkeley and Los Angeles, California.

Boarman, W.I. 2003. Desert tortoise species account. *In* Final Environmental Impact Report and Statement for the West Mojave Plan (BLM 2005). California Desert Conservation Area District Office, Riverside, California.

Boarman, W.I. and W.B. Kristan. 2006. Evaluation of evidence supporting the effectiveness of desert tortoise recovery actions. U.S. Geological Survey Scientific Investigations Report 2006-5143. U.S. Geological Survey. Information Services. Denver, Colorado.

Bond, M. 2003. Principles of wildlife corridor design. Center for Biological Diversity. Tucson, Arizona.

Bureau of Land Management (BLM). 1980. California Desert Conservation Area plan. U.S. Department of the Interior, Bureau of Land Management, California Desert District. Riverside, California.

Bureau of Land Management (BLM). 1998. California Desert District Victorville. BLM Special Edition Surface Management Status Desert Access Guide. U.S. Department of the Interior, Bureau of Land Management, California State Office, Sacramento, California; and U.S. Geological Survey, Denver, Colorado.

Bureau of Land Management (BLM). 2005a. Final environmental impact report and statement for the West Mojave plan: a habitat conservation plan and California Desert Conservation Area plan amendment. U.S. Department of the Interior, Bureau of Land Management, California Desert District. Riverside, California.

Bureau of Land Management (BLM). 2005b. Species accounts prepared in support of the West Mojave plan: a habitat conservation plan and California Desert Conservation Area plan amendment. U.S. Department of the Interior, Bureau of Land Management, California Desert District. Riverside, California.

Bureau of Land Management (BLM). 2006. Record of decision for the final environmental impact report and statement for the West Mojave plan: a habitat conservation plan and California Desert Conservation Area plan amendment. U.S. Department of the Interior, Bureau of Land Management, California Desert District. Riverside, California.

Bureau of Land Management (BLM) and California Department of Fish and Game (CDFG). 1992. California statewide desert tortoise management policy. Unpublished report prepared by the California Desert District. U.S. Department of the Interior, Bureau of Land Management, California Desert District. Riverside, California.

Burrowing Owl Consortium. 1997. Burrowing owl survey protocol and mitigation guidelines. J. Raptor Res. Report 9: 171-177.

California Department of Fish and Game (CDFG). 1994. A field guide to lake and streambed alteration agreement. Sacramento, California.

California Department of Fish and Game (CDFG). 1995. Staff report on burrowing owl mitigation. Sacramento, CA.

California Department of Fish and Game (CDFG). 2003. Mohave ground squirrel survey guidelines. Unpublished document distributed to biologists authorized for trapping surveys under a Memorandum of Understanding with CDFG.

California Department of Fish and Game (CDFG). 2005. California wildlife habitat relationship system. Website: http://www.dfg.ca.gov/whdab/html/cawildlife.html

California Department of Fish and Game (CDFG). 2006. California natural diversity database RAREFIND program version 3.0.5 application for the Apple Valley North, Apple Valley South, Fairview Valley, Fifteenmile Valley 7.5 minute quadrangles. Sacramento, California.

California Department of Fish and Game, California Natural Diversity Data Base. 2007. Special Animals List. October. Sacramento, CA.

California Native Plant Society. 2001. Inventory of rare and endangered plants of California, Special Publication #1, Sixth Edition.

Delevoryas, P. 1997. Relocation of burrowing owls during the courtship period. Pages 132-137 in J.L. Lincer and K. Steenhof, editors, "*The Burrowing Owl: its Biology and Management"*. Raptor Research Report No. 9. Raptor Research Foundation.

Desert Tortoise Council. 1994 (revised 1999). Guidelines for handling desert tortoises during construction projects. Edward L. LaRue (editor). Desert Tortoise Council. Beaumont, California.

Egan, T. 1996 (revised by R. Parker, 2004). Desert tortoises and the Bureau of Land Management a biological consultant's guide-endangered species act compliance, biological survey protocol & biological assessment format. In Proceedings of the Desert Tortoise Council 15th Annual Surveying, Monitoring and Handling Techniques Workshop. November 4-5, 2006; Ridgecrest, California.

Ehrlich, P.R., D.S. Dobkin and D. Wheye. 1988. The birders handbook. A field guide to the natural history of North American birds. Simon and Schuster, Inc., New York, New York.

Garrett, K. and J. Dunn. 1981. Birds of southern California: status and distribution. Los Angeles Audubon Society, Los Angeles, California.

Gustafson, J.R. 1993. A status review of the Mohave ground squirrel (*Spermophilus mohavensis*). California Department of Fish and Game. Nongame Bird and Mammals Report 93-9.

Hagar, S. B. 1992. Surface activity, movement, and home range of the San Diego horned lizard, *Phrynosoma coronatum blainvillei*. Master's Thesis, California State University, Fullerton.

Harris, R.D. and L. Feeney. 1990. *Restoration of habitats for burrowing owls* (*ATHENE CUNICULARIA*). Proc. Ann. Meet. Soc. Ecol. Restor. 1:251-259.

Holland, R.F. 1986. Preliminary descriptions of the terrestrial natural communities of California. California Department of Fish and Game, Nongame-Heritage Program, Sacramento, California.

Ingles, L.G. 1965. Mammals of the Pacific states. Stanford University Press. Stanford, California.

Lovich, J.E. and D. Bainbridge. 1999. Anthropogenic degradation of the southern California desert ecosystem and prospects for natural recovery and restoration. Environmental Management. Volume 24, No. 3, pp. 309-326.

McDermott, F. 1995. Continental summaries: California region. Journal of the Hawk Migration Association of North America 21(1):53-56.

Meyer, K.E. and W.F. Laudenslayer Jr. (Editors). 1988. A guide to wildlife habitats of California. California Department of Forestry and Fire Protection, Sacramento, California.

Milne, L. and M. Milne. 1992. The Audubon Society field guide to North American insects and spiders (11th printing). Published by Alfred A. Knopf, Inc. and copyrighted by Chanticleer Press, Inc. New York, New York.

Myers, S.J. 2007. Checklist of the birds of Mojave Narrows Regional Park and the surrounding Victor Valley. Mojave Desert Bird Club, Victorville, CA

National Geographic Society. 1991. Field guide to the birds of North America, second edition (fourth printing). The National Geographic Society, Washington D.C.

Natural Resources Conservation Service (NRCS). 1994. Soil Survey of San Bernardino County, California, Mojave River Area. Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov.

Natural Resources Conservation Service (NRCS). 1986. The California environmental information catalog, NRCS soils section metadata catalog. Catalog URL: http://gis.ca.gov/catalog.

San Bernardino County Department of Agriculture. 1988. Joshua tree transplanting. Recommended procedures issued by the County Agricultural Commissioner.

Sherbrooke, W.C. 1981. Horned lizards: unique reptiles of western North America. Southwest Parks and Monuments Assoc. Globe, Arizona. Stebbins, R.C. 1951. Amphibians and Reptiles of Western North America. McGraw-Hill, New York.

Stebbins, R.C. 2003. Western reptiles and amphibians, third edition. Peterson Field Guide Series, Houghton Mifflin Company, New York, New York.

The Nature Conservancy (TNC). 1999. Western burrowing owl *(Athene cunicularia hypugaea)*. On file, TNC, Arlington, Virginia.

Tierra Madre Consultants. 1992. Natural resources inventory of the Mojave River corridor. Unpub. report prepared for the Mojave River Corridor Task Force c/o the City of Victorville Parks and Recreation Department.

Trulio, L.A. 1995. Passive relocation: a method to preserve burrowing owls on disturbed sites. J. Field Ornithol. 66(1):99-106.

U.S. Fish and Wildlife Service (USFWS). 1992. Field survey protocol for any federal action (or non-federal action) that may occur within the range of the desert tortoise. Regions, 1, 2, and 6 of the Fish and Wildlife Service. U.S. Department of the Interior, U.S. Fish and Wildlife Service, Ventura Field Office, October 1992. 18 pp. plus appendices.

U.S. Fish and Wildlife Service (USFWS). 1992. Procedures for endangered species act compliance for the Mojave desert tortoise. In Proceedings of the Desert Tortoise Council 15th Annual Surveying, Monitoring and Handling Techniques Workshop. November 4-5, 2006; Ridgecrest, California.

U.S. Fish and Wildlife Service (USFWS). 1994. Desert tortoise (Mojave population) recovery plan. U.S. Department of the Interior, U.S. Fish and Wildlife Service, Portland, Oregon. 73pp. + appendices.

U.S. Fish and Wildlife Service (USFWS). 1994. Endangered and threatened wildlife and plants; determination of endangered status for the arroyo southwestern toad; final rule. U.S. Department of the Interior, U.S. Fish and Wildlife Service, *Federal Register,* Vol. 59, No. 241: 64589-64866.

U.S. Fish and Wildlife Service (USFWS). 1994. Endangered and threatened wildlife and plants; designation of critical habitat for the Mojave population of the desert tortoise; final rule. U.S. Department of the Interior, U.S. Fish and Wildlife Service, *Federal Register,* Vol. 59, No. 26: 5820-5866.

U.S. Fish and Wildlife Service (USFWS). 2005. Endangered and threatened wildlife and plants; designation of critical habitat for the Arroto Toad (*Bufo californicus*); final rule. U.S. Department of the Interior, U.S. Fish and Wildlife Service, *Federal Register,* Vol. 70, No. 70: 19562-19633.

Whitaker, J.O. 1980. The Audubon Society field guide to North American mammals (second printing). Published by Alfred A. Knopf, Inc. and copyrighted by Chanticleer Press, Inc. New York, New York.

Whitson, T.D. (ed.) et al. 1996. Weeds of the West, 5th edition. Western Society of Weed Science, Newark, CA.

**APPLE VALLEY GENERAL PLAN UPDATE**

**APPENDIX 1.**

**California Natural Diversity Database Report**

**RAREFIND 2007 Program,**

**California Department of Fish and Game**

**APPLE VALLEY GENERAL PLAN UPDATE**

**APPENDIX 1.**

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**Apple Valley General Plan**

**California Natural Diversity Database Report**

**RAREFIND 2007 Program,**

**California Department of Fish and Game**

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**A Full Condensed Report for Selected Biological Resource Elements on the Apple Valley North, Apple Valley South, Fairview Mountain, Fifteenmile Valley, Hesperia, Turtle Valley and Victorville Quadrangles is described below.**

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**Summary:**

***Apple Valley North Quadrangle (5 special status species):***

**Plants (2)**

**Booth's Evening-Primrose (*Camissonia boothii* ssp. *boothii*) - California Native Plant Society List 2.3.**

**Desert Cympoterus *(Cymopterus deserticola)* - California Native Plant Society List 1B.2.**

**Birds (3)**

**Burrowing Owl (*Athene cunicularia*) - California Species of Special Concern.**

**Le Conte's Thrasher (*Toxostoma lecontei*) - California Species of Special Concern.**

**Prairie Falcon (*Falco mexicanus*) - California Species of Special Concern.**

***Apple Valley South Quadrangle (7 special status species):***

**Plants (1)**

**Booth's Evening-Primrose (*Camissonia boothii* ssp. *boothii*) - California Native Plant Society List 2.3.**

**Birds (2)**

**Burrowing Owl (*Athene cunicularia*) - California Species of Special Concern.**

**Le Conte's Thrasher (*Toxostoma lecontei*) - California Species of Special Concern.**

**<u>Mammals</u> (3)**

**Mohave Ground Squirrel (Spermophilus mohavensis) - California listed Threatened.**

**Pallid San Diego Pocket Mouse (*Chaetodipus fallax pallidus*) - California Species of Special Concern.**

**Townsend's Big-eared Bat (*Corynorhinus townsendii*) - California Species of Special Concern.**

**<u>Reptiles</u> (1)**

**Coast (San Diego) Horned Lizard (*Phrynosoma coronatum* [*blainvillii* population]) - California Species of Special Concern.**

***Fairview Valley Quadrangle (5 special status species):***

**<u>Birds</u> (3)**

**Bendire's Thrasher (*Toxostoma bendirei*) - California Species of Special Concern.**

**Le Conte's Thrasher (*Toxostoma lecontei*) - California Species of Special Concern.**

**Prairie Falcon (*Falco mexicanus*) - California Species of Special Concern.**

**<u>Mammals</u> (1)**

**Pallid San Diego Pocket Mouse (*Chaetodipus fallax pallidus*) - California Species of Special Concern.**

**<u>Reptiles</u> (1)**

**Desert Tortoise (*Gopherus agassizii*) – California and Federally Listed Threatened.)**

***Fifteenmile Valley Quadrangle (7 special status species):***

**<u>Plants</u> (1)**

**Latimer's Woodland-gilia (*Saltugilia latimeri*) - California Native Plant Society List 1B.2.**

**<u>Birds</u> (2)**

**Le Conte's Thrasher (*Toxostoma lecontei*) - California Species of Special Concern.**

**Prairie Falcon (*Falco mexicanus*) - California Species of Special Concern.**

**<u>Mammals</u> (3)**

**Mohave Ground Squirrel (Spermophilus mohavensis) - California listed Threatened.**

**Pallid San Diego Pocket Mouse (*Chaetodipus fallax pallidus*) - California Species of Special Concern.**

**Townsend's Big-eared Bat (*Corynorhinus townsendii*) - California Species of Special Concern.**

**<u>Reptiles</u> (1)**

**Desert Tortoise (*Gopherus agassizii*) – California and Federally Listed Threatened.)**

***Hesperia Quadrangle (10 special status species):***

**<u>Plants</u> (2)**

**Booth's Evening-Primrose (*Camissonia boothii* ssp. *boothii*) - California Native Plant Society List 2.3.**

**Short-joint Beavertail (*Opuntia basilaris* var. *brachyclada*) - California Native Plant Society List 1B.2.**

**<u>Birds</u> (6)**

**Burrowing Owl (*Athene cunicularia*) - California Species of Special Concern.**

**Cooper's Hawk (*Accipiter cooperii*) - California Species of Special Concern.**

**Gray Vireo (*Vireo vicinior*) - California Species of Special Concern.**

**Le Conte's Thrasher (*Toxostoma lecontei*) - California Species of Special Concern.**

**Long-eared Owl (*Asio otus*) - Prairie Falcon (*Falco mexicanus*) - California Species of Special Concern.**

**Yellow Warbler (*Dendroica petechia brewsteri*) - California Species of Special Concern.**

**Mammals (1)**

**Mohave Ground Squirrel (Spermophilus mohavensis) - California listed Threatened.**

**Reptiles (1)**

**Coast (San Diego) Horned Lizard (*Phrynosoma coronatum* [*blainvillii* population]) - California Species of Special Concern.**

***Turtle Valley Quadrangle(1 special status species):***

**Reptiles (1)**

**Desert Tortoise (*Gopherus agassizii*) - California and Federally Listed Threatened.**

***Victorville Quadrangle (21 special status species):***

**Plants (3)**

**Booth's Evening-Primrose (*Camissonia boothii* ssp. *boothii*) - California Native Plant Society List 2.3.**

**San Bernardino Aster (*Symphyotrichum defoliatum*) - California Native Plant Society List 1B.2.**

**Southern Skullcap (*Scutellaria bolanderi* ssp. *austromontana*) - California Native Plant Society List 1B.2.**

**Amphibians (1)**

**California Red-legged Frog (*Rana aurora draytonii*) - federally listed as threatened.**

**Birds (8)**

**Burrowing Owl (*Athene cunicularia*) - California Species of Special Concern.**

**Cooper's Hawk (*Accipiter cooperii*) - California Species of Special Concern.**

**Least Bell's Vireo (*Vireo bellii pusillus*) - California and Federally Listed Endangered.**

**Le Conte's Thrasher (*Toxostoma lecontei*) - California Species of Special Concern.**

**Southwestern Willow Flycatcher (*Empidonax traillii extimus*) - California and Federally Listed Endangered.**

**Summer Tanager (*Piranga rubra*) - California Species of Special Concern.**

**Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*) - California listed Threatened and federal listing candidate.**

**Yellow-breasted Chat (*Icteria virens*) - California Species of Special Concern.**

**<u>Invertebrates</u> (2)**

**San Emigdio Blue Butterfly (*Plebulina emigdionis*) – limited distribution butterfly species.**

**Victorville Shoulderband (*Helminthoglypta mohaveana*) - Local endemic riverine snail species.**

**<u>Mammals</u> (4)**

**Hoary Bat (*Lasiurus cinereus*) - California Species of Special Concern.**

**Mohave Ground Squirrel (Spermophilus mohavensis) - California listed Threatened.**

**Mohave River Vole (*Microtus californicus mohavensis*) - California Species of Special Concern.**

**Pallid San Diego Pocket Mouse (*Chaetodipus fallax pallidus*) - California Species of Special Concern.**

**<u>Reptiles</u> (3)**

**Chuckwalla (*Sauromalus ater*) – limited distribution lizard species.**

**Coast (San Diego) Horned Lizard (*Phrynosoma coronatum* [*blainvillii* population]) - California Species of Special Concern.**

**Southwestern Pond Turtle (*Actinemys marmorata pallida*) - California Species of Special Concern.**

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## *Accipiter cooperii*

Cooper's hawk

**Element Code:** ABNKC12040

**Status**
**Federal:** None
**State:** None

**NDDB Element Ranks**
**Global:** G5
**State:** S3

**Other Lists**
**CDFG Status:** SC

**Habitat Associations**
**General:** WOODLAND, CHIEFLY OF OPEN, INTERRUPTED OR MARGINAL TYPE.
**Micro:** NEST SITES MAINLY IN RIPARIAN GROWTHS OF DECIDUOUS TREES, AS IN CANYON BOTTOMS ON RIVER FLOOD-PLAINS; ALSO, LIVE OAKS.

**Occurrence No.** 4 **Map Index:** 03390 **EO Index:** 27356

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1952-05-03
**Site:** 1952-05-03
**Record Last Updated:** 1989-08-10

**Quad Summary:** Hesperia (3411743/133A)
**County Summary:** San Bernardino

**Lat/Long:** 34.40819° / -117.32707°
**UTM:** Zone-11 N3807465 E469940
**Radius:** 1/5 mile
**Elevation:** 3,361 ft

**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT

**Township:** 04N
**Range:** 04W
**Section:** 29 **Qtr:** NW
**Meridian:** S

**Location:** 5 MI SW OF HESPERIA.
**General:** SBCM #E1528.
**Owner/Manager:** UNKNOWN

**Occurrence No.** 5 **Map Index:** 03434 **EO Index:** 28959

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1921-09-24
**Site:** 1921-09-24
**Record Last Updated:** 1994-02-17

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.53609° / -117.29532°
**UTM:** Zone-11 N3821638 E472900
**Radius:** 1 mile
**Elevation:** 2,860 ft

**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT

**Township:** 05N
**Range:** 04W
**Section:** 10 **Qtr:** E
**Meridian:** S

**Location:** VICTORVILLE.
**Location Detail:** SECTIONS 9 AND 10.
**General:** UCLA #J1321.
**Owner/Manager:** UNKNOWN

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## *Actinemys marmorata pallida*

southwestern pond turtle — **Element Code:** ARAAD02032

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G3G4T2T3Q | **CDFG Status:** SC |
| **State:** None | **State:** S2 | |

**Habitat Associations**

**General:** INHABITS PERMANENT OR NEARLY PERMANENT BODIES OF WATER IN MANY HABITAT TYPES; BELOW 6000 FT ELEV.

**Micro:** REQUIRE BASKING SITES SUCH AS PARTIALLY SUBMERGED LOGS, VEGETATION MATS, OR OPEN MUD BANKS. NEED SUITABLE NESTING SITES.

**Occurrence No.** 168 **Map Index:** 20260 **EO Index:** 9488

**Dates Last Seen**

* SENSITIVE *

**Occ Rank:** Good — **Element:** 1989-09-09
**Origin:** Natural/Native occurrence — **Site:** 1989-09-09
**Presence:** Presumed Extant
**Trend:** Unknown — **Record Last Updated:** 1992-02-19

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

* SENSITIVE *

**Lat/Long:** — **Township:**
**UTM:** — **Range:**
**Radius:** — **Mapping Precision:** — **Section:** — **Qtr:**
**Elevation:** — **Symbol Type:** — **Meridian:**

**Location:** *SENSITIVE* Location information suppressed.

**Location Detail:** Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information (916) 324-3812.

**Ecological:** FRESHWATER MARSH. DOMINANTS: TYPHA SP., SCIRPUS SP., DISTICHILIS SPICATA.

**Threat:** HORSE GRAZING, BULLFROGS ARE COMMON IN MARSH.

**Owner/Manager:**

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**Occurrence No.** 344 **Map Index:** 59543 **EO Index:** 59579

**Dates Last Seen**

* SENSITIVE *

**Occ Rank:** Good — **Element:** 2004-07-15
**Origin:** Natural/Native occurrence — **Site:** 2004-07-15
**Presence:** Presumed Extant
**Trend:** Unknown — **Record Last Updated:** 2005-01-24

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

* SENSITIVE *

**Lat/Long:** — **Township:**
**UTM:** — **Range:**
**Radius:** — **Mapping Precision:** — **Section:** — **Qtr:**
**Elevation:** — **Symbol Type:** — **Meridian:**

**Location:** *SENSITIVE* Location information suppressed.

**Location Detail:** Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information (916) 324-3812.

**Ecological:** HABITAT CONSISTS OF A WASTE WATER TREATMENT PLANT, VEGETATED BY COTTONWOOD, NARROW-LEAF WILLOWS, BLACK WILLOWS, AND FRESHWATER REEDS. DOMINANT EXOTICS INCLUDE CATTAILS AND ARUNDO.

**Threat:** THREATENED BY SPREAD OF EXOTIC PLANT SPECIES.

**Owner/Manager:**

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## *Asio otus*

long-eared owl

**Element Code:** ABNSB13010

| Status | | NDDB Element Ranks | | Other Lists | |
|---|---|---|---|---|---|
| **Federal:** | None | **Global:** | G5 | **CDFG Status:** | SC |
| **State:** | None | **State:** | S3 | | |

**Habitat Associations**

**General:** RIPARIAN BOTTOMLANDS GROWN TO TALL WILLOWS & COTTONWOODS; ALSO, BELTS OF LIVE OAK PARALLELING STREAM COURSES.

**Micro:** REQUIRE ADJACENT OPEN LAND PRODUCTIVE OF MICE AND THE PRESENCE OF OLD NESTS OF CROWS, HAWKS, OR MAGPIES FOR BREEDING.

**Occurrence No.** 17 **Map Index:** 03424 **EO Index:** 25558

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1948-04-04
**Site:** 1948-04-04
**Record Last Updated:** 1989-08-10

**Quad Summary:** Hesperia (3411743/133A)
**County Summary:** San Bernardino

**Lat/Long:** 34.38276° / -117.30171°
**UTM:** Zone-11 N3804638 E472263
**Radius:** 1/5 mile
**Elevation:** 3,260 ft

**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT

**Township:** 03N
**Range:** 04W
**Section:** 04 **Qtr:** NE
**Meridian:** S

**Location:** 3 MI S OF HESPERIA

**General:** SBCM EGG SET #8831.

**Owner/Manager:** UNKNOWN

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## *Athene cunicularia*

burrowing owl

**Element Code:** ABNSB10010

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G4 | **CDFG Status:** SC |
| **State:** None | **State:** S2 | |

**Habitat Associations**

**General:** OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION

**Micro:** SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL

**Occurrence No.** 252 **Map Index:** 36920 **EO Index:** 31917

**Dates Last Seen**
**Element:** 1997-04-03
**Site:** 1997-04-03
**Record Last Updated:** 1997-09-29

**Occ Rank:** Good
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.55583° / -117.35486°
**UTM:** Zone-11 N3823845 E467462
**Radius:** 1/10 mile
**Elevation:** 2,900 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 05W
**Section:** 01 **Qtr:** NE
**Meridian:** S

**Location:** 1 MILE SOUTH OF (FORMER) GEORGE AIR FORCE BASE AND 2 MILES NW OF VICTORVILLE.

**Location Detail:** SITE IS ADJACENT TO A FEDERAL PRISON COMPLEX.

**Ecological:** HABITAT CONSISTS OF CREOSOTE BUSH SCRUB, WITH A FEW SCATTERED JOSHUA TREES AND RABBITBRUSH.

**Threat:** POSSIBLE THREATS INCLUDE ORV 'S, CONSTRUCTION OF FEDERAL PRISON NEARBY, AND UTILITY LINE CONSTRUCTION.

**General:** 1 ADULT OBSERVED OCCUPYING A POTENTIAL DESERT TORTOISE BURROW.

**Owner/Manager:** UNKNOWN

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**Occurrence No.** 253 **Map Index:** 36926 **EO Index:** 31923

**Dates Last Seen**
**Element:** 199X-XX-XX
**Site:** 1990-02-16
**Record Last Updated:** 1997-09-29

**Occ Rank:** Fair
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.53580° / -117.36882°
**UTM:** Zone-11 N3821629 E466155
**Area:**
**Elevation:** 2,950 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POLYGON
**Township:** 05N
**Range:** 05W
**Section:** 11 **Qtr:** E
**Meridian:** S

**Location:** 3 MILES WEST OF VICTORVILLE.

**Location Detail:** SITE IS BORDERED ON THE NORTH BY HOPLAND AVENUE AND ON THE SOUTH BY MOJAVE DRIVE.

**Ecological:** HABITAT CONSISTS OF CREOSOTE BUSH SCRUB, WITH OCCASIONAL JOSHUA TREES.

**Threat:** THREATENED BY ORV ACTIVITY AND POSSIBLE DEVELOPMENT.

**General:** BURROW FOUND CONTAINING AN OLD NEST (POSSIBLY FROM THE PREVIOUS YEAR).

**Owner/Manager:** UNKNOWN

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**Occurrence No.** 449 **Map Index:** 47833 **EO Index:** 47833

**Dates Last Seen**
**Element:** 2002-03-26
**Site:** 2002-03-26
**Record Last Updated:** 2002-05-01

**Occ Rank:** Fair
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.60567° / -117.37312°
**UTM:** Zone-11 N3829378 E465789
**Radius:** 80 meters
**Elevation:** 2,820 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 06N
**Range:** 05W
**Section:** 14 **Qtr:** SE
**Meridian:** S

**Location:** NE EDGE OF THE RUNWAYS ON GEORGE AFB, 1.25 MILES WEST OF THE MOJAVE RIVER

**Ecological:** HABITAT CONSISTS OF CREOSOTE BUSH SCRUB.

**General:** FEMALE BURROWING OWL RELOCATED TO AN ARTIFICIAL BURROW 180 METERS EAST.

**Owner/Manager:** SOUTHERN CAL LOGISTICS AIRPORT

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## *Athene cunicularia*

burrowing owl

**Element Code:** ABNSB10010

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G4 | **CDFG Status:** SC |
| **State:** None | **State:** S2 | |

**Habitat Associations**

**General:** OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

**Micro:** SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

**Occurrence No.** 450 **Map Index:** 47834 **EO Index:** 47834

**Occ Rank:** Fair
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 2002-05-21
**Site:** 2002-05-21
**Record Last Updated:** 2002-07-10

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.61318° / -117.37207°
**UTM:** Zone-11 N3830210 E465888
**Radius:** 80 meters
**Elevation:** 2,620 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 06N
**Range:** 05W
**Section:** 14 **Qtr:** NE
**Meridian:** S

**Location:** NORTH OF THE RUNWAYS ON GEORGE AFB, 1 MILE WEST OF THE MOJAVE RIVER

**Location Detail:** BURROW IS LOCATED AT THE BOTTOM OF AN 8X8X4' MINING TEST PIT; EAST ASPECT.

**Ecological:** HABITAT CONSISTS OF CREOSOTE BUSH SCRUB, DOMINATED BY WHITE BUR SAGE AND JOSHUA TREES, WITH SANDY LOAM SOIL.

**General:** 1 ADULT OBSERVED AT THE BURROW ON 26 MAR 2002. 1 ADULT OBSERVED AT BURROW WITH 2 LIVE JUVENILES. 1 DEAD JUVENILE FOUND AT MOUTH OF BURROW.

**Owner/Manager:** UNKNOWN

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**Occurrence No.** 572 **Map Index:** 51259 **EO Index:** 51259

**Occ Rank:** Fair
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 2005-06-30
**Site:** 2005-06-30
**Record Last Updated:** 2005-07-19

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.53357° / -117.36366°
**UTM:** Zone-11 N3821379 E466627
**Radius:** 80 meters
**Elevation:** 2,939 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 05W
**Section:** 12 **Qtr:** NW
**Meridian:** S

**Location:** EAST SIDE OF AMETHYST ROAD, BETWEEN TAWNEY RIDGE AND MOJAVE ROAD, VICTORVILLE

**Location Detail:** AREA UNDISTURBED, EXCEPT FOR PAVED AMETHYST ROAD, WHICH LIES 147 FEET TO THE EAST. BURROW SITE IS LOCATED ON THE OUTSKIRTS OF DEVELOPED AREAS WITH A HIGH LEVEL OF HUMAN IMPACTS IN THE VICINITY.

**Ecological:** BURROW APPEARS TO BE AN OLD CANID BURROW; HABITAT CONSISTS OF RELATIVELY UNDISTURBED CREOSOTE BUSH SCRUB, DOMINATED BY LARREA TRIDENTATA ASSOCIATED WITH AMBROSIA DUMOSA. LANDMASS SLOPES TO THE NW, TOWARDS THE MOJAVE RIVER (~3 MILES AWAY).

**Threat:** THREATENED BY FUTURE DEVELOPMENT.

**General:** 1 ADULT OBSERVED WINTERING AT THE BURROW ON 4 NOV 2002. 2 ADULTS AND 7 JUVENILES OBSERVED ON 30 JUN 2005; A SECOND LIVE OWL AND A DEAD JUVENILE WERE ALSO OBSERVED IN THE VICINITY.

**Owner/Manager:** UNKNOWN

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**Occurrence No.** 663 **Map Index:** 54076 **EO Index:** 54076

**Occ Rank:** Fair
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 2002-07-XX
**Site:** 2002-07-XX
**Record Last Updated:** 2004-01-26

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.55746° / -117.34790°
**UTM:** Zone-11 N3824024 E468082
**Radius:** 80 meters
**Elevation:** 2,870 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 06N
**Range:** 05W
**Section:** 36 **Qtr:** SE
**Meridian:** S

**Location:** 0.75 MILE SOUTH OF AIR BASE ROAD, SE OF (FORMER) GEORGE AIR FORCE BASE

**Location Detail:** BURROWS ARE LOCATED IN THE FACE OF A SANDSTONE OUTCROP.

**Ecological:** HABITAT SURROUNDING BURROWS CONSISTS OF CREOSOTE BUSH SCRUB. GROUND SQUIRRELS ALSO FOUND AT THIS SITE. SITE IS SURROUNDED BY RESIDENTIAL AND HIGH-VOLTAGE TRANSMISSION LINES.

**General:** 2 ADULTS AND 2 JUVENILES OBSERVED, FEB-JUL 2002.

**Owner/Manager:** PVT

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## *Athene cunicularia*

burrowing owl

**Element Code:** ABNSB10010

**Status**
**Federal:** None
**State:** None

**NDDB Element Ranks**
**Global:** G4
**State:** S2

**Other Lists**
**CDFG Status:** SC

**Habitat Associations**
**General:** OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.
**Micro:** SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

**Occurrence No.** 755 **Map Index:** 62815 **EO Index:** 62869
**Occ Rank:** Fair
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 2005-09-19
**Site:** 2005-09-19
**Record Last Updated:** 2005-10-17

**Quad Summary:** Apple Valley South (3411742/132B)
**County Summary:** San Bernardino

**Lat/Long:** 34.46259° / -117.21140°
**UTM:** Zone-11 N3813469 E480583
**Radius:** 80 meters
**Elevation:** 3,000 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 04N
**Range:** 03W
**Section:** 05 **Qtr:** SE
**Meridian:** S

**Location:** 0.2 WEST OF KIOWA ROAD AND 0.6 MILE SOUTH OF BEAR VALLEY (CUTOFF) ROAD, APPLE VALLEY
**Ecological:** HABITAT CONSISTS OF MOJAVE CREOSOTE BUSH SCRUB, DOMINATED BY CHRYSOTHAMNUS PANICULATUS, LYCIUM COOPERI, TETRADYMIA STENOLEPIS, AND AMBROSIA ACANTHICARPA. SITE IS SURROUNDED BY MOSTLY RESIDENTIAL HOUSING AND SOME OPEN DESERT TO THE SOUTH.
**Threat:** THREATENED BY POTENTIAL DEVELOPMENT.
**General:** 2 ADULTS AND 6 BURROWS OBSERVED WITHIN A 50-YARD RADIUS ON 19 SEP 2005.
**Owner/Manager:** PVT

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**Occurrence No.** 772 **Map Index:** 64163 **EO Index:** 64258
**Occ Rank:** Fair
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 2006-04-26
**Site:** 2006-04-26
**Record Last Updated:** 2006-05-01

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.51361° / -117.32472°
**UTM:** Zone-11 N3819154 E470193
**Radius:** 80 meters
**Elevation:** 100 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 04W
**Section:** 20 **Qtr:** NW
**Meridian:** S

**Location:** EAST SIDE OF RAMONA AVENUE, 0.05 MILE SOUTH OF SENECA AVENUE, VICTORVILLE
**Location Detail:** BURROW IS LOCATED AT THE BASE OF A UTILITY BOX IN A PARKING LOT NEAR VACANT LOTS AND OFFICE BUILDINGS.
**Ecological:** HABITAT ACROSS THE STREET FROM THE BURROW SITE CONSISTS OF CREOSOTE BUSH SCRUB.
**Threat:** THREATENED BY CONSTRUCTION ACTIVITY NEARBY, AND THIS SITE WILL PROBABLY BE DEVELOPED WITHIN ONE YEAR.
**General:** 1 ADULT OBSERVED OCCUPYING THE BURROW ON 1 MAR 2006. 2 ADULTS OBSERVED AT A BURROW ON 26 APR 2006.
**Owner/Manager:** UNKNOWN

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**Occurrence No.** 787 **Map Index:** 64576 **EO Index:** 64655
**Occ Rank:** Good
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 2006-03-30
**Site:** 2006-03-30
**Record Last Updated:** 2006-04-28

**Quad Summary:** Apple Valley North (3411752/157C)
**County Summary:** San Bernardino

**Lat/Long:** 34.50947° / -117.17060°
**UTM:** Zone-11 N3818661 E484339
**Area:**
**Elevation:** 2,930 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POLYGON
**Township:** 05N
**Range:** 03W
**Section:** 23 **Qtr:** NW
**Meridian:** S

**Location:** NE OF THE CORNER OF CENTRAL ROAD AND ESAWS AVENUE, APPLE VALLEY.
**Location Detail:** MAPPED ACCORDING TO LOCATION SHOWN ON MAP PROVIDED.
**Ecological:** SALTBUSH SCRUB AND ALKALINE FLATS. VEGETATION CONSISTS OF ATRIPLEX CONFERTIFOLIA, EPHEDRA NEVADENSIS, KRASHINNIKOVIA LANATA, ERODIUM CICUTARIUM, ERIASTRUM SP., SCHISMUS SP., BROMUS SP. DISTURBANCE: NON-NATIVE INVASIVES, OHV, TRAILS.
**Threat:** THREATENED BY URBAN ENCROACHMENT. ARE WILL PROBABLY BE DEVELOPED WITHIN ONE YEAR.
**General:** ONE OWL DETECTED ON 30 MAR 2006 DURING MOHAVE GROUND SQUIRREL TRAPPING SURVEY. OWL FLUSHED/VOCALIZED FROM CANID BURROW WITH COPIOUS AMOUNTS OF WHITEWASH. AT LEAST 2-3 YRS WORTH OF SIGN PRESENT. PAIR IS SUSPECTED BUT NOT CONFIRMED.
**Owner/Manager:** PVT

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## *Athene cunicularia*

burrowing owl

**Element Code:** ABNSB10010

**Status**
**Federal:** None
**State:** None

**NDDB Element Ranks**
**Global:** G4
**State:** S2

**Other Lists**
**CDFG Status:** SC

**Habitat Associations**
**General:** OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.
**Micro:** SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

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**Occurrence No.** 795 **Map Index:** 64645 **EO Index:** 64724

**Dates Last Seen**
**Element:** 2006-05-04
**Site:** 2006-05-04

**Occ Rank:** Fair
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Record Last Updated:** 2006-05-08

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.51163° / -117.33607°
**UTM:** Zone-11 N3818938 E469151
**Radius:** 80 meters
**Elevation:** 3,650 ft

**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT

**Township:** 05N
**Range:** 04W
**Section:** 19 **Qtr:** NE
**Meridian:** S

**Location:** 0.6 MILE WNW OF THE INTERSECTION OF I-15 AND PEARBLOSSOM HIGHWAY, VICTORVILLE.
**Location Detail:** BURROW SITE IS LOCATED NEAR A HOUSING COMPLEX AND RECEIVES CONSTANT DISTURBANCE FROM PEOPLE AND VEHICLES, AND HAS COLLECTED TRASH.
**Ecological:** HABITAT SURROUNDING BURROW CONSISTS OF CREOSOTE BUSH SCRUB WITH AN UNDERSTORY OF WHITE BURSAGE.
**Threat:** THREATENED BY DEVELOPMENT OF ADJACENT PARCELS.
**General:** 1 ADULT OBSERVED AT A BURROW SITE ON 4 MAY 2006.
**Owner/Manager:** PVT

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**Occurrence No.** 803 **Map Index:** 64764 **EO Index:** 64843

**Dates Last Seen**
**Element:** 2006-05-23
**Site:** 2006-05-23

**Occ Rank:** Good
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Record Last Updated:** 2006-05-31

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.51066° / -117.34633°
**UTM:** Zone-11 N3818834 E468209
**Radius:** 80 meters
**Elevation:** 3,011 ft

**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT

**Township:** 05N
**Range:** 04W
**Section:** 19 **Qtr:** NW
**Meridian:** S

**Location:** EAST SIDE OF EL EVADO ROAD, 0.25 MILE NORTH OF THE PALMDALE ROAD/EL EVADO ROAD INTERSECTION, VICTORVILLE.
**Location Detail:** BURROW SITE IS LOCATED IN A VACANT LOT LOCATED BEHIND A RALPH'S SHOPPING CENTER.
**Ecological:** HABITAT SURROUNDING BURROW SITE CONSISTS OF CREOSOTE BUSH/WHITE BURSAGE SCRUB, WITH PAPERBAG BUSH, CHEESEBUSH, AND JOSHUA TREE ALSO PRESENT.
**Threat:** THREATENED BY RAPID DEVELOPMENT IN SURROUNDING LOTS.
**General:** 2 ADULTS OBSERVED ON 22 MAY 2006; 2 ADULTS AND 9 OF UNKNOWN AGE OBSERVED ON 23 MAY 2006.
**Owner/Manager:** UNKNOWN

---

**Occurrence No.** 872 **Map Index:** 66876 **EO Index:** 67033

**Dates Last Seen**
**Element:** 2006-06-24
**Site:** 2006-06-24

**Occ Rank:** Good
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Record Last Updated:** 2006-11-01

**Quad Summary:** Apple Valley South (3411742/132B)
**County Summary:** San Bernardino

**Lat/Long:** 34.46974° / -117.21378°
**UTM:** Zone-11 N3814263 E480366
**Radius:** 80 meters
**Elevation:** 3,011 ft

**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT

**Township:** 04N
**Range:** 03W
**Section:** 05 **Qtr:** NE
**Meridian:** S

**Location:** 0.1 MILE SOUTH OF BEAR VALLEY CUTOFF AND 0.35 MILE WEST OF KIOWA ROAD, APPLE VALLEY.
**Location Detail:** BURROW IS SURROUNDED BY OPEN DESERT, AND A TRANSMISSION LINE CORRIDOR; COMMERCIAL AND RESIDENTIAL PROPERTIES NEARBY.
**Ecological:** HABITAT CONSISTS OF MOJAVE CREOSOTE BUSH SCRUB, DOMINATED BY LARREA TRIDENTATA; ASSOCIATES: EPHEDRA NEVADENSIS, ACAMPTOPAPPUS SPHAEROCEPHALUS, AMBROSIA DUMOSA, ERICAMERIA COOPERI, AND OTHERS. SOILS: LOAMY SAND. ASPECT: WEST. SLOPE: 0-2%.
**Threat:** THREATENED BY ORV'S, DOGS, AND PROPOSED DEVELOPMENT OF THIS SITE.
**General:** 3 OWLS OBSERVED AT THE BURROW ON 24 JUN 2006.
**Owner/Manager:** PVT

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## *Athene cunicularia*

burrowing owl

**Element Code:** ABNSB10010

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G4 | **CDFG Status:** SC |
| **State:** None | **State:** S2 | |

**Habitat Associations**

**General:** OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

**Micro:** SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

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**Occurrence No.** 915 **Map Index:** 69190 **EO Index:** 69969

**Occ Rank:** Fair
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 2007-05-03
**Site:** 2007-05-03
**Record Last Updated:** 2007-05-08

**Quad Summary:** Apple Valley North (3411752/157C)
**County Summary:** San Bernardino

**Lat/Long:** 34.50504° / -117.17454°
**UTM:** Zone-11 N3818170 E483977
**Radius:** 80 meters
**Elevation:** 2,933 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 03W
**Section:** 22 **Qtr:** SE
**Meridian:** S

**Location:** 0.1 MILE WEST OF CENTRAL ROAD AND 0.2 MILE SOUTH OF ESAWS AVENUE, APPLE VALLEY.

**Ecological:** HABITAT SURROUNDING BURROW SITE CONSISTS OF SALTBUSH SCRUB DOMINATED BY ATRIPLEX CANESCENS, EPHEDRA NEVADENSIS, AND CHRYSOTHAMNUS NAUSEOSUS. SOILS: LOAMY. SLOPE: 0.

**Threat:** THREATENED BY URBAN ENCROACHMENT.

**General:** DURING A MOHAVE GROUND SQUIRREL HABITAT ASSESSMENT ON AN ADJACENT PARCEL, 1 MALE BUOW WAS OBSERVED AT THE BURROW ENTRANCE ON 3 MAY 2007; NESTING PRESUMED.

**Owner/Manager:** PVT

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**Occurrence No.** 916 **Map Index:** 69192 **EO Index:** 69971

**Occ Rank:** Good
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 2007-05-06
**Site:** 2007-05-06
**Record Last Updated:** 2007-07-13

**Quad Summary:** Hesperia (3411743/133A)
**County Summary:** San Bernardino

**Lat/Long:** 34.47867° / -117.30712°
**UTM:** Zone-11 N3815275 E471797
**Radius:** 80 meters
**Elevation:** 3,004 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 04W
**Section:** 33 **Qtr:** NW
**Meridian:** S

**Location:** BETWEEN BURWOOD AVENUE AND SILICA DRIVE, ALONG THE EASTERN EDGE OF THE FIFTH AVENUE FUTURE EXTENSION IN VICTORVILLE.

**Ecological:** HABITAT SURROUNDING BURROW SITES CONSISTS OF CREOSOTE SCRUB DOMINATED BY LARREA TRIDENTATA, EPHEDRA NEVADENSIS, SALAZARIA MEXICANA, AND CHRYSOTHAMNUS NAUSEOSUS. SOILS: SANDY-LOAM. ASPECT: NE, ON ROLLING HILLS.

**Threat:** THREATENED BY URBAN ENCROACHMENT (SITE WILL PROBABLY BE DEVELOPED WITHIN 1 YEAR). ALSO: TRASH, WEEDS ILLEGAL DUMPING.

**General:** MALE AND FEMALE BUOW OBSERVED ON 3 MAY 2007 DURING A PRECONSTRUCTION SURVEY. DURING A TWO-HOUR SITE REVISIT ON 6 MAY 2007, TWO BREEDING PAIRS WERE CONFIRMED, WITH BURROWS ~100 METERS APART.

**Owner/Manager:** PVT

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**Occurrence No.** 923 **Map Index:** 69262 **EO Index:** 70042

**Occ Rank:** Fair
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 2006-04-06
**Site:** 2006-04-06
**Record Last Updated:** 2007-07-13

**Quad Summary:** Apple Valley North (3411752/157C)
**County Summary:** San Bernardino

**Lat/Long:** 34.52663° / -117.20800°
**UTM:** Zone-11 N3820570 E480910
**Radius:** 80 meters
**Elevation:** 2,850 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 03W
**Section:** 16 **Qtr:** NE
**Meridian:** S

**Location:** APPLE VALLEY, ABOUT 1 MILE EAST OF APPLE VALLEY COUNTRY CLUB, AT END OF APACHE RD, SOUTH OF THUNDERBIRD RD.

**Location Detail:** MAPPED ACCORDING TO MAP ATTACHED TO SOURCE. COORDINATES GIVEN POINT TO JUST NW OF SITE ON MAP WHEN USING NAD83 (WGS84 WAS GIVEN IN SOURCE).

**Ecological:** DESERT SCRUB (ALLSCALE SERIES): SPARSE ALLSCALE, SILVER SAGEBRUSH, SALTBUSH.

**Threat:** DEVELOPMENT, DISTURBANCE.

**General:** BREEDING SITE. 4 ADULTS AND 3 JUVENILES OBSERVED ON 4 APR 2006. ALTHOUGH NO BURROW WAS MENTIONED, THE PRESENCE OF YOUNG INDICATES THE LIKELIHOOD THAT A BURROW IS FOUND NEARBY.

**Owner/Manager:** PVT

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## *Athene cunicularia*

burrowing owl

**Element Code:** ABNSB10010

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G4 | **CDFG Status:** SC |
| **State:** None | **State:** S2 | |

**Habitat Associations**

**General:** OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

**Micro:** SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

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**Occurrence No.** 924 **Map Index:** 69286 **EO Index:** 70070

**Occ Rank:** Fair
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 2006-08-22
**Site:** 2006-08-22
**Record Last Updated:** 2007-07-13

**Quad Summary:** Apple Valley South (3411742/132B)
**County Summary:** San Bernardino

**Lat/Long:** 34.43765° / -117.18743°
**UTM:** Zone-11 N3810699 E482780
**Area:**
**Elevation:** 3,052 ft

**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POLYGON

**Township:** 04N
**Range:** 03W
**Section:** 15 **Qtr:** NW
**Meridian:** S

**Location:** APPLE VALLEY, SW OF INTERSECTION OF PIONEER RD AND TUSSING RANCH RD.

**Location Detail:** MAPPED ACCORDING TO LAT/LONG COORDS PROVIDED BY SOURCE. SOURCE ALSO GIVES DESCRIPTION "ABOUT 0.5 MI SW OF TUSSING RANCH RD X PIONEER RD" & T-R-S DATA AS NW 1/4 OF NW 1/4 OF SEC 15, BUT COORDS POINT TO LOCATION IN SW 1/4 OF NW 1/4 OF SEC 15.

**Ecological:** GENERALLY FLAT W/ SANDY SOILS. CREOSOTE SCRUB (LARREA TRIDENTATA) W/ SOME YUCCA BREVIFOLIA, MOJAVE YUCCA YUCCA SCHIDIGERA, CHRYSOTHAMNUS NAUSEOSUS, LYCIUM COOPERI, SALAZARIA MEXICANA AND GUTIERREZIA MICROCEPHELA.

**Threat:** DEVELOPMENT, OHV USE, TRASH DUMPING.

**General:** BURROW SITE. 2 ADULTS OBSERVED AT 2 BURROWS (1 ADULT AT EACH BURROW) ON 22 AUG 2006.

**Owner/Manager:** PVT

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**Occurrence No.** 928 **Map Index:** 69266 **EO Index:** 70048

**Occ Rank:** Fair
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 2006-11-07
**Site:** 2006-11-07
**Record Last Updated:** 2007-07-13

**Quad Summary:** Hesperia (3411743/133A)
**County Summary:** San Bernardino

**Lat/Long:** 34.47925° / -117.29674°
**UTM:** Zone-11 N3815336 E472750
**Area:** 8.0 acres
**Elevation:** 3,000 ft

**Mapping Precision:** SPECIFIC
**Symbol Type:** POLYGON

**Township:** 05N
**Range:** 04W
**Section:** 33 **Qtr:** NE
**Meridian:** S

**Location:** ABOUT 3.6 MILES NORTH OF HESPERIA, 0.8 MILES NNW OF INTERSECTION OF HESPERIA RD AND BEAR VALLEY RD.

**Location Detail:** MAPPED ACCORDING TO UTM COORDINATES PROVIDED BY SOURCE.

**Ecological:** DISTURBED CREOSOTE BUSH SCRUB. SOILS SANDY. SMALL SANDY WASH RUNNING SOUTHWEST THROUGH SITE.

**Threat:** DEVELOPMENT, OHVS, TRASH DUMPING.

**General:** BURROW SITE. 3 OWLS OBSERVED AT 3 DISTINCT ACTIVE BURROW COMPLEXES WITHIN APPROXIMATELY 100-150' OF ONE ANOTHER ON 7 NOV 2006. TWO POTENTIALLY ACTIVE BURROW COMPLEXES ALSO ON SITE.

**Owner/Manager:** PVT

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**Occurrence No.** 930 **Map Index:** 69283 **EO Index:** 70067

**Occ Rank:** Good
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 2005-07-12
**Site:** 2005-07-12
**Record Last Updated:** 2007-05-15

**Quad Summary:** Apple Valley North (3411752/157C)
**County Summary:** San Bernardino

**Lat/Long:** 34.55628° / -117.24648°
**UTM:** Zone-11 N3823866 E477386
**Area:**
**Elevation:** 3,060 ft

**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POLYGON

**Township:** 05N
**Range:** 04W
**Section:** 01 **Qtr:** NE
**Meridian:** S

**Location:** NE OF APPLE VALLEY, ABOUT 0.7 AIR MILES NNE OF INTERSECTION OF CORWIN RD AND WINTON RD.

**Ecological:** CREOSOTE BUSH SCRUB. HILLY TERRAIN WITH STEEP HILLSIDES.

**General:** 2 ADULTS AND 3 JUVENILES OBSERVED ON 12 JUL 2005. ALTHOUGH NO BURROW WAS MENTIONED, THE PRESENCE OF YOUNG INDICATES THE LIKELIHOOD THAT A BURROW IS FOUND NEARBY.

**Owner/Manager:** PVT

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## *Athene cunicularia*

burrowing owl

**Element Code:** ABNSB10010

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G4 | **CDFG Status:** SC |
| **State:** None | **State:** S2 | |

**Habitat Associations**

**General:** OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

**Micro:** SUBTERRANEAN NESTER. DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

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**Occurrence No.** 941 **Map Index:** 69385 **EO Index:** 70164

**Occ Rank:** None
**Origin:** Natural/Native occurrence
**Presence:** Possibly Extirpated
**Trend:** Unknown

**Dates Last Seen**
**Element:** 2004-09-15
**Site:** 2004-09-15
**Record Last Updated:** 2007-07-13

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.53106° / -117.33743°
**UTM:** Zone-11 N3821093 E469034
**Radius:** 80 meters
**Elevation:** 2,930 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 04W
**Section:** 07 **Qtr:** SE
**Meridian:** S

**Location:** 0.15 MILE NORTH OF MOJAVE DRIVE AND 0.4 MILE WEST OF AMARGOSA ROAD, VICTORVILLE.

**Ecological:** HABITAT CONSISTS OF CREOSOTE BUSH SCRUB, DOMINATED BY LARREA TRIDENTATA, AMBROSIA DUMOSA, AND YUCCA BREVIFOLIA. SLOPE: GENTLY SLOPING, ON A SANDY LOAM SUBSTRATE.

**Threat:** DEVELOPMENT, ORV USE, TRASH DUMPING.

**General:** SITE IS CURRENTLY BEING DEVELOPED; OWL WAS RELOCATED BY PETER BLOOM.

**Owner/Manager:** PVT

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**Occurrence No.** 944 **Map Index:** 69398 **EO Index:** 70176

**Occ Rank:** Good
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 2006-02-27
**Site:** 2006-02-27
**Record Last Updated:** 2007-07-13

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.53382° / -117.35295°
**UTM:** Zone-11 N3821405 E467610
**Radius:** 80 meters
**Elevation:** 2,930 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 05W
**Section:** 12 **Qtr:** SE
**Meridian:** S

**Location:** 0.5 MILE NW OF THE INTERSECTION OF MOJAVE DRIVE AND EL EVADO ROAD, VICTORVILLE.

**Ecological:** HABITAT CONSISTS OF CREOSOTE BUSH SCRUB, DOMINATED BY LARREA TRIDENTATA AND AMBROSIA DUMOSA; OTHER SPECIES INCLUDE EPHEDRA MOHAVENSIS, ERIOGONUM FASCICULATUM, YUCCA BREVIFOLIA, AND OPUNTIA SPP. SLOPE: NORTH. SOILS: ALLUVIAL.

**Threat:** THREATENED BY DEVELOPMENT, ORVS, ILLEGAL DUMPING, DIRT ACCESS ROADS.

**General:** 1 ADULT OBSERVED IN 2005 IN AN ADJACENT BURROW. 1 ADULT OBSERVED ON 27 FEB 2006.

**Owner/Manager:** PVT

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**Occurrence No.** 960 **Map Index:** 69439 **EO Index:** 70218

**Occ Rank:** Fair
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 2006-01-14
**Site:** 2006-01-14
**Record Last Updated:** 2007-07-13

**Quad Summary:** Hesperia (3411743/133A)
**County Summary:** San Bernardino

**Lat/Long:** 34.47185° / -117.30013°
**UTM:** Zone-11 N3814516 E472437
**Radius:** 80 meters
**Elevation:** 3,023 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 04W
**Section:** 33 **Qtr:** SE
**Meridian:** S

**Location:** NORTH SIDE OF BIG BEAR CUTOFF, 0.5 MILE WEST OF HESPERIA ROAD, ON THE NORTH EDGE OF HESPERIA.

**Ecological:** HABITAT SURROUNDING BURROW CONSISTS OF CREOSOTE BUSH SCRUB DOMINATED BY LARREA TRIDENTATA, YUCCA BREVIFOLIA, EPHEDRA NEVADENSIS, ERIOGONUM FASCICULATUM, AND AMBROSIA DUMOSA. SOILS: BRYMAN LOAMY FINE SAND; 5-9% SLOPES.

**Threat:** THREATENED BY RAPID URBAN ENCROACHMENT; AREA WILL PROBABLY BE DEVELOPED BY 2007. ALSO: WEEDS, ORVS, DUMPING, CAMPS.

**General:** 1 OWL AND OBSERVED AT AN ACTIVE WINTER BURROW ON 14 JAN 2006, AND OWL FLEW TO OTHER BURROWS ON-SITE; MANY CALIFORNIA GROUND SQUIRREL BURROWS PRESENT.

**Owner/Manager:** PVT

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## *Athene cunicularia*

burrowing owl

**Element Code:** ABNSB10010

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G4 | **CDFG Status:** SC |
| **State:** None | **State:** S2 | |

**Habitat Associations**

**General:** OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION

**Micro:** SUBTERRANEAN NESTER. DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

**Occurrence No.** 961 **Map Index:** 69440 **EO Index:** 70219

**Occ Rank:** Poor
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 2005-12-13
**Site:** 2005-12-13
**Record Last Updated:** 2007-07-13

**Quad Summary:** Hesperia (3411743/133A)
**County Summary:** San Bernardino

**Lat/Long:** 34.48816° / -117.32011°
**UTM:** Zone-11 N3818331 E470607
**Area:**
**Elevation:** 3,000 ft

**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POLYGON

**Township:** 05N
**Range:** 04W
**Section:** 29 **Qtr:** SE
**Meridian:** S

**Location:** NE OF THE INTERSECTION OF NISQUALLI ROAD AND 9TH AVENUE, EAST OF I-15, VICTORVILLE

**Location Detail:** LOCATED ON A 20-ACRE PARCEL. SITE CONTAINED SEVERAL SMALL MAMMAL BURROWS WITH BUOW SIGN AT EACH BURROW. SW1/4 OF SE1/4 SEC 29

**Ecological:** HABITAT CONSISTS OF A HIGHLY-DISTURBED DIRT LOT THAT WAS PREVIOUSLY GRADED. VEGETATION DOMINATED BY BROMUS MADRITENSIS, B. TECTORUM, AND SCHISMUS BARBATUS, WITH TRACE AMOUNTS OF LARREA TRIDENTATA, SALAZARIA MEXICANA, AND EPHEDRA NEVADENSIS.

**Threat:** THREATENED BY BOTH NATIVE (RAVENS) AND NON-NATIVE PREDATORS (DOGS) AND URBAN ENCROACHMENT. ALSO, WEEDS, TRASH DUMPING.

**General:** 8 ACTIVE BURROWS AND 1 WINTERING ADULT OBSERVED ON 13 DEC 2005. AN ESTIMATED TWO PAIRS LIKELY USE THIS SITE DURING THE BREEDING SEASON.

**Owner/Manager:** PVT

## *Camissonia boothii ssp. boothii*

Booth's evening-primrose

**Element Code:** PDONA03052

**Status**
**Federal:** None
**State:** None

**NDDB Element Ranks**
**Global:** G5T4
**State:** S2.3

**Other Lists**
**CNPS List:** 2.3

**Habitat Associations**
**General:** JOSHUA TREE WOODLAND, PINYON-JUNIPER WOODLAND.
**Micro:** 900-2400M.

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**Occurrence No.** 1 **Map Index:** 57417 **EO Index:** 57433

**Dates Last Seen**
**Element:** 1991-08-27
**Site:** 1991-08-27
**Record Last Updated:** 2004-10-15

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Quad Summary:** Lake Arrowhead (3411732/132C), Silverwood Lake (3411733/133D), Apple Valley South (3411742/132B)
**County Summary:** San Bernardino

**Lat/Long:** 34.36150° / -117.24201°
**UTM:** Zone-11 N3802267 E477745
**Radius:** 1 mile
**Elevation:** 2,880 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 03N
**Range:** 04W
**Section:** 12
**Meridian:** S
**Qtr:** XX

**Location:** 1.0 MILE N OF MOJAVE FORKS DAM, MOJAVE RIVER, NEAR HESPERIA, AT THE FOOT OF THE SAN BERNARDINO MOUNTAINS.

**Location Detail:** EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB, IN THE VICINITY OF THE MOJAVE RIVER, 1.0 MILE N OF THE SPILLWAY OF MOJAVE RIVER FORKS RESERVOIR.

**General:** ONLY INFORMATION FOR THIS SITE IS REFERENCE TO COLLECTION IN MADRONO. PER WHITE & SANDERS, MORPHOLOGY SUGGESTS INTROGRESSION WITH C. BOOTHII SSP. INTERMEDIA. UNKNOWN NUMBER OF PLANTS SEEN. NEEDS FIELDWORK.

**Owner/Manager:** UNKNOWN

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**Occurrence No.** 2 **Map Index:** 57419 **EO Index:** 57435

**Dates Last Seen**
**Element:** 1901-XX-XX
**Site:** 1901-XX-XX
**Record Last Updated:** 2004-10-15

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Quad Summary:** Hesperia (3411743/133A)
**County Summary:** San Bernardino

**Lat/Long:** 34.42696° / -117.30001°
**UTM:** Zone-11 N3809538 E472433
**Radius:** 1 mile
**Elevation:** 3,100 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 04N
**Range:** 04W
**Section:** 21
**Meridian:** S
**Qtr:** XX

**Location:** HESPERIA.

**Location Detail:** EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB, IN THE VICINITY OF HESPERIA.

**General:** ONLY INFORMATION FOR THIS SITE IS REFERENCE TO COLLECTION IN RAVEN'S 1969 ARTICLE "GENUS CAMISSONIA". PER WHITE & SANDERS, MORPHOLOGY SUGGESTS INTROGRESSION WITH C. BOOTHII SSP. INTERMEDIA. UNKNOWN NUMBER OF PLANTS SEEN. NEEDS FIELDWORK.

**Owner/Manager:** UNKNOWN

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**Occurrence No.** 3 **Map Index:** 57423 **EO Index:** 57439

**Dates Last Seen**
**Element:** 1989-09-26
**Site:** 1989-09-26
**Record Last Updated:** 2004-10-15

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Quad Summary:** Apple Valley North (3411752/157C), Hesperia (3411743/133A), Victorville (3411753/158D), Apple Valley South (3411742/132B)
**County Summary:** San Bernardino

**Lat/Long:** 34.50101° / -117.24972°
**UTM:** Zone-11 N3817738 E477074
**Radius:** 1 mile
**Elevation:** 2,800 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 04W
**Section:** 24
**Meridian:** S
**Qtr:** XX

**Location:** YUCCA VALLEY ROAD AT THE MOJAVE RIVER, APPLE VALLEY.

**Location Detail:** EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB, IN THE VICINITY OF THE MOJAVE RIVER AND YUCCA VALLEY ROAD, E OF APPLE VALLEY, S OF VICTORVILLE.

**General:** ONLY INFORMATION FOR THIS SITE IS REFERENCE TO COLLECTION IN MADRONO. PER WHITE & SANDERS, MORPHOLOGY SUGGESTS INTROGRESSION WITH C. BOOTHII SSP. INTERMEDIA. UNKNOWN NUMBER OF PLANTS SEEN. NEEDS FIELDWORK.

**Owner/Manager:** UNKNOWN

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## *Camissonia boothii ssp. boothii*

Booth's evening-primrose — **Element Code:** PDONA03052

**Status**
**Federal:** None
**State:** None

**NDDB Element Ranks**
**Global:** G5T4
**State:** S2.3

**Other Lists**
**CNPS List:** 2.3

**Habitat Associations**
**General:** JOSHUA TREE WOODLAND, PINYON-JUNIPER WOODLAND.
**Micro:** 900-2400M.

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**Occurrence No.** 4 **Map Index:** 57425 **EO Index:** 57441

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1981-08-11
**Site:** 1981-08-11
**Record Last Updated:** 2004-10-15

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.81059° / -117.34801°
**UTM:** Zone-11 N3829915 E468276
**Radius:** 3/5 mile
**Elevation:** 2,800 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 06N
**Range:** 04W
**Section:** 18 **Qtr:** W
**Meridian:** S

**Location:** MOJAVE RIVER 0.5 MILE UPSTREAM FROM ORO GRANDE, SOUTHERN MOJAVE DESERT.
**Location Detail:** EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB, IN THE VICINITY OF THE MOJAVE RIVER, 0.5 MILE N OF ORO GRANDE.
**Ecological:** SOIL VERY SANDY.
**General:** ONLY INFORMATION FOR THIS SITE IS REFERENCE TO COLLECTION IN MADRONO. PER WHITE & SANDERS, MORPHOLOGY SUGGESTS INTROGRESSION WITH C. BOOTHII SSP. INTERMEDIA. UNKNOWN NUMBER OF PLANTS SEEN. NEEDS FIELDWORK.
**Owner/Manager:** UNKNOWN

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**Occurrence No.** 5 **Map Index:** 03434 **EO Index:** 57442

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1916-XX-XX
**Site:** 1916-XX-XX
**Record Last Updated:** 2004-10-15

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.53609° / -117.29532°
**UTM:** Zone-11 N3821638 E472900
**Radius:** 1 mile
**Elevation:** 2,860 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 04W
**Section:** 10 **Qtr:** E
**Meridian:** S

**Location:** VICTORVILLE.
**Location Detail:** EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB, IN THE VICINITY OF VICTORVILLE.
**General:** ONLY INFORMATION FOR THIS SITE IS REFERENCE TO COLLECTION BY RAVEN IN HIS 1969 ARTICLE "GENUS CAMISSONIA". PER WHITE & SANDERS, MORPHOLOGY SUGGESTS INTROGRESSION WITH C. BOOTHII SSP. INTERMEDIA. UNK. NUMBER OF PLANTS SEEN. NEEDS FIELDWORK.
**Owner/Manager:** UNKNOWN

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## *Chaetodipus fallax pallidus*

pallid San Diego pocket mouse — **Element Code:** AMAFD05032

**Status** — **NDDB Element Ranks** — **Other Lists**

**Federal:** None — **Global:** G5T3 — **CDFG Status:** SC
**State:** None — **State:** S3

**Habitat Associations**

**General:** DESERT BORDER AREAS IN EASTERN SAN DIEGO CO. IN DESERT WASH, DESERT SCRUB, DESERT SUCCULENT SCRUB, PINYON-JUNIPER, ETC.
**Micro:** SANDY HERBACEOUS AREAS, USUALLY IN ASSOCIATION WITH ROCKS OR COARSE GRAVEL.

**Occurrence No.** 48 — **Map Index:** 60523 — **EO Index:** 60559
**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1976-07-27
**Site:** 1976-07-27
**Record Last Updated:** 2005-03-14

**Quad Summary:** Apple Valley South (3411742/132B), Fifteenmile Valley (3411741/132A)
**County Summary:** San Bernardino

**Lat/Long:** 34.39018° / -117.11197°
**UTM:** Zone-11 N3805425 E489707
**Radius:** 1 mile
**Elevation:** 4,100 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 04N
**Range:** 02W
**Section:** 32 **Qtr:** XX
**Meridian:** S

**Location:** ARRASTRE CANYON ABOUT 10.9 MILES ESE OF HESPERIA.
**Location Detail:** MAPPED AS BEST GUESS USING LOCALITY DESCRIPTION. ASSUMED COLLECTED AT ARRASTRE CANYON. 2 COLLECTION SITES: A-"HESPERIA, 2.1 MI S, 9.15 MI E; TRIBUTARY OFF WESTSIDE OF ARRESTRE CANYON" & B-"HESPERIA, 2.2 MI S, 10.7 MI E; ARRESTRE CANYON."
**General:** A-13 MALES & 11 FEMALES ON 7 & 27 JUL 1976 BY P. COMPTON (LACM #78427-78450). B- 13 MALES & 8 FEMALES ON 13 & 27 JUL 1976 BY P. COMPTON (LACM # 78451-78471).
**Owner/Manager:** UNKNOWN

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**Occurrence No.** 53 — **Map Index:** 03372 — **EO Index:** 60567
**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1920-05-23
**Site:** 1920-05-23
**Record Last Updated:** 2005-03-14

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.59630° / -117.33701°
**UTM:** Zone-11 N3828327 E469096
**Radius:** 1 mile
**Elevation:** 2,700 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 06N
**Range:** 04W
**Section:** 18 **Qtr:** SE
**Meridian:** S

**Location:** ORO GRANDE
**Location Detail:** EXACT LOCATION NOT KNOWN. MAPPED ACCORDING TO LAT/LONG COORDINATES PROVIDED BY MANIS WITH AN UNCERTAINTY OF 1000 METERS (~0.63 MILES).
**General:** 2 MALES COLLECTED 10 MAR 1903 BY E. HELLER AT "ORO GRANDE" (FMNH #11798 & 11801). 1 MALE COLLECTED 23 MAY 1920 BY R. HUNT & F. SUMNER AT "ORO GRANDE" (MVZ #31490).
**Owner/Manager:** UNKNOWN

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**Occurrence No.** 58 — **Map Index:** 03434 — **EO Index:** 60574
**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1921-03-09
**Site:** 1921-03-09
**Record Last Updated:** 2005-03-14

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.53609° / -117.29532°
**UTM:** Zone-11 N3821638 E472900
**Radius:** 1 mile
**Elevation:** 2,860 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 04W
**Section:** 10 **Qtr:** E
**Meridian:** S

**Location:** VICTORVILLE
**Location Detail:** EXACT LOCATION NOT KNOWN. MAPPED ACCORDING TO LAT/LONG COORDINATES PROVIDED BY MANIS WITH AN UNCERTAINTY OF 1000 METERS (~0.63 MILES).
**General:** ALL COLLECTED AT "VICTORVILLE." 1 UNDATED MALE SPECIMEN (LACM #30076). 1 MALE & 1 FEMALE COLLECTED 9 MAR 1921 BY WYMAN (LACM #998 & 999). 1 MALE & 1 FEMALE COLLECTED 30 MAR 1907 BY J. GRINNELL (MVZ #5966 & 5967).
**Owner/Manager:** UNKNOWN

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## *Chaetodipus fallax pallidus*

pallid San Diego pocket mouse — **Element Code:** AMAFD05032

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G5T3 | **CDFG Status:** SC |
| **State:** None | **State:** S3 | |

**Habitat Associations**

**General:** DESERT BORDER AREAS IN EASTERN SAN DIEGO CO. IN DESERT WASH, DESERT SCRUB, DESERT SUCCULENT SCRUB, PINYON-JUNIPER, ETC.

**Micro:** SANDY HERBACEOUS AREAS. USUALLY IN ASSOCIATION WITH ROCKS OR COARSE GRAVEL.

**Occurrence No.** 59 **Map Index:** 60539 **EO Index:** 60575

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1954-08-20
**Site:** 1954-08-20
**Record Last Updated:** 2005-03-14

**Quad Summary:** Fairview Valley (3411751/157D)
**County Summary:** San Bernardino

**Lat/Long:** 34.52960° / -117.08291°
**UTM:** Zone-11 N3820883 E492391
**Radius:** 1 mile
**Elevation:** 4,000 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 02W
**Section:** 15 **Qtr:** XX
**Meridian:** S

**Location:** ABOUT 1.7 MILES EAST OF APPLE VALLEY AND 12.5 MILES EAST OF VICTORVILLE IN THE GRANITE MOUNTAINS.

**Location Detail:** EXACT LOCATION NOT KNOWN. MAPPED BEST GUESS ACCORDING TO LOCALITY DESCRIPTION BECAUSE LAT/LONG COORDINATES PROVIDED BY MANIS FELL NW OF VICTORVILLE RATHER THAN EAST AS SPECIFIED IN THE LOCALITY DESCRIPTION.

**General:** FROM "12 MI E OF VICTORVILLE, GRANITE MTS." 4 FEMALES & 3 MALES COLLECTED 17-20 AUG 1954 BY T. VAUGHAN (KU #63592-63598). FROM 13 MI E OF VICTORVILLE, GRANITE MTS." 2 MALES & 1 FEMALE COLLECTED 16 AUG 1954 BY T. VAUGHAN (KU # 63599-63601).

**Owner/Manager:** UNKNOWN

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**Occurrence No.** 60 **Map Index:** 60576 **EO Index:** 60612

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1954-08-26
**Site:** 1954-08-26
**Record Last Updated:** 2005-03-16

**Quad Summary:** Fifteenmile Valley (3411741/132A)
**County Summary:** San Bernardino

**Lat/Long:** 34.40034° / -117.02161°
**UTM:** Zone-11 N3806546 E498013
**Radius:** 1 mile
**Elevation:** 3,500 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 04N
**Range:** 01W
**Section:** 30 **Qtr:** XX
**Meridian:** S

**Location:** ABOUT 18.5 MILES ESE OF VICTORVILLE & 5 MILES SW OF LUCERENE VALLEY ALONG ATCHISON, TOPEKA & SANTA FE RR TRACKS.

**Location Detail:** EXACT LOCATION NOT KNOWN. MAPPED AS BEST GUESS BASED UPON LOCALITY DESCRIPTION BECAUSE LAT/LONG COORDINATES PROVIDED BY MANIS FELL NORTHWEST OF VICTORVILLE RATHER THAN SOUTHEAST OF.

**General:** BOTH COLLECTED BY T. VAUGHAN. FROM "VICTORVILLE, 18 MI SE OF; SAN BERNARDINO MTS; DESERT SLOPE;" 1 MALE ON 17 AUG 1954 (KU #63602). FROM "VICTORVILLE, 19 MI SE OF; SAN BERNARDINO MTS; DESERT SLOPE;" 1 FEMALE ON 26 AUG 1954 (KU #63603).

**Owner/Manager:** UNKNOWN

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**Occurrence No.** 61 **Map Index:** 60577 **EO Index:** 60613

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1954-09-22
**Site:** 1954-09-22
**Record Last Updated:** 2005-03-16

**Quad Summary:** Fawnskin (3411638/131C), Fifteenmile Valley (3411741/132A), Lucerne Valley (3411648/131B), Butler Peak (3411731/132D)
**County Summary:** San Bernardino

**Lat/Long:** 34.37711° / -116.98369°
**UTM:** Zone-11 N3803971 E501499
**Radius:** 1 mile
**Elevation:** 4,250 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 03N
**Range:** 01W
**Section:** 04 **Qtr:** XX
**Meridian:** S

**Location:** ABOUT 21 MILES SOUTHEAST OF VICTORVILLE & 5 MILES SSW OF LUCERNE VALLEY NEAR SILVER CREEK.

**Location Detail:** EXACT LOCATION NOT KNOWN. MAPPED AS BEST GUESS BASED UPON LOCALITY DESCRIPTION BECAUSE LAT/LONG COORDINATES PROVIDED BY MANIS FELL NORTHWEST OF VICTORVILLE RATHER THAN SOUTHEAST OF.

**General:** 2 MALES & 2 FEMALES COLLECTED 17-22 SEP 1954 AT "VICTORVILLE, 21 MI SE OF, SAN BERNARDINO MTS; DESERT SLOPE" BY T. VAUGHAN (KU #63604-63607).

**Owner/Manager:** UNKNOWN

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## *Coccyzus americanus occidentalis*

western yellow-billed cuckoo

**Element Code:** ABNRB02022

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** Candidate | **Global:** G5T2 | **CDFG Status:** |
| **State:** Endangered | **State:** S1 | |

**Habitat Associations**

**General:** RIPARIAN FOREST NESTER, ALONG THE BROAD, LOWER FLOOD-BOTTOMS OF LARGER RIVER SYSTEMS.

**Micro:** NESTS IN RIPARIAN JUNGLES OF WILLOW, OFTEN MIXED WITH COTTONWOODS. W/ LOWER STORY OF BLACKBERRY, NETTLES, OR WILD GRAPE.

**Occurrence No.** 138 **Map Index:** 03489 **EO Index:** 25568

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1978-06-30
**Site:** 1978-06-30
**Record Last Updated:** 1988-08-10

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.51387° / -117.26448°
**UTM:** Zone-11 N3819167 E475723
**Radius:** 1/5 mile
**Elevation:** 2,800 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 04W
**Section:** 23 **Qtr:** NE
**Meridian:** S

**Location:** "UPPER NARROWS" AREA SE OF VICTORVILLE, MOJAVE RIVER

**Ecological:** HABITAT CONSISTS OF EXTENSIVE AND DENSE WILLOW AND COTTONWOOD FOREST BORDERING BOTH SIDES OF THE RIVER AND COVERING NEARLY TWO SECTIONS; THE FOREST IS BORDERED BY GRAZED MEADOWS.

**General:** ONE CUCKOO OBSERVED DURING THE 1978 BLM SURVEY.

**Owner/Manager:** UNKNOWN

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## *Corynorhinus townsendii*

Townsend's big-eared bat — **Element Code:** AMACC08010

**Status**
**Federal:** None
**State:** None

**NDDB Element Ranks**
**Global:** G4T3T4
**State:** S2S3

**Other Lists**
**CDFG Status:** SC

**Habitat Associations**
**General:** THROUGHOUT CALIFORNIA IN A WIDE VARIETY OF HABITATS. MOST COMMON IN MESIC SITES.
**Micro:** ROOSTS IN THE OPEN, HANGING FROM WALLS & CEILINGS. ROOSTING SITES LIMITING. EXTREMELY SENSITIVE TO HUMAN DISTURBANCE.

**Occurrence No.** 18 **Map Index:** 03909 **EO Index:** 24318
**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1955-05-14
**Site:** 1955-05-14
**Record Last Updated:** 1996-01-10

**Quad Summary:** Apple Valley South (3411742/132B), Fifteenmile Valley (3411741/132A)
**County Summary:** San Bernardino

**Lat/Long:** 34.47266° / -117.12470°
**UTM:** Zone-11 N3814572 E488548
**Radius:** 1/5 mile
**Elevation:** 3,023 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 02W
**Section:** 31 **Qtr:** SE
**Meridian:** S

**Location:** DEAD MANS POINT, APPLE VALLEY; 0.25 MILE UP ROUTE 18 FROM JUNCTION WITH LAGUNA SECA DRIVE.

**General:** SPECIMEN #1190 AT CSUSB.

**Owner/Manager:** UNKNOWN

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## *Cymopterus deserticola*

desert cymopterus

**Element Code:** PDAPI0U090

**Status**
**Federal:** None
**State:** None

**NDDB Element Ranks**
**Global:** G3
**State:** S3.2

**Other Lists**
**CNPS List:** 1B.2

**Habitat Associations**
**General:** JOSHUA TREE WOODLAND. MOJAVEAN DESERT SCRUB. MOST OCCURRENCES LOCATED NEAR OR IN EDWARDS AFB.
**Micro:** ON FINE TO COARSE, LOOSE, SANDY SOIL OF FLATS IN OLD DUNE AREAS WITH WELL-DRAINED SAND. 625-910M.

**Occurrence No.** 10 **Map Index:** 03635 **EO Index:** 7046
**Occ Rank:** None
**Origin:** Natural/Native occurrence
**Presence:** Possibly Extirpated
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1941-04-19
**Site:** 1988-03-31
**Record Last Updated:** 1993-10-19

**Quad Summary:** Apple Valley North (3411752/157C)
**County Summary:** San Bernardino

**Lat/Long:** 34.52547° / -117.22189°
**UTM:** Zone-11 N3820444 E479635
**Area:**
**Elevation:** 2,930 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POLYGON
**Township:** 05N
**Range:** 03W
**Section:** 17 **Qtr:** XX
**Meridian:** S

**Location:** 5 MI SOUTHEAST OF VICTORVILLE ALONG HWY 18.
**Location Detail:** MAPPED ALONG HWY 18 IN APPLE VALLEY.
**Ecological:** IN LOOSE SANDY SOIL.
**Threat:** HEAVY URBANIZATION IN THIS AREA; ORVS AND TRAMPLING ALSO THREATEN. HEAVY JACKRABBIT BROWSING NOTED IN 1941.
**General:** SPECIES COLLECTED FROM THIS AREA IN 1915, 1920, AND 1941. SEARCHED FOR BUT NOT SEEN IN 1986, 1988. VERY LITTLE SUITABLE HABITAT REMAINS, LARGELY DUE TO COMMERCIAL AND RESIDENTIAL DEVELOPMENT. INCLUDES FORMER OCCURRENCE 11.
**Owner/Manager:** PVT

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*Dendroica petechia brewsteri*

yellow warbler

**Element Code:** ABPBX03018

| Status | | NDDB Element Ranks | | Other Lists | |
|---|---|---|---|---|---|
| **Federal:** | None | **Global:** | G5T3? | **CDFG Status:** | SC |
| **State:** | None | **State:** | S2 | | |

**Habitat Associations**

**General:** RIPARIAN PLANT ASSOCIATIONS. PREFERS WILLOWS, COTTONWOODS, ASPENS, SYCAMORES, & ALDERS FOR NESTING & FORAGING.

**Micro:** ALSO NESTS IN MONTANE SHRUBBERY IN OPEN CONIFER FORESTS.

**Occurrence No.** 29 **Map Index:** 03321 **EO Index:** 24913

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1953-05-10
**Site:** 1953-05-10
**Record Last Updated:** 1989-08-10

**Quad Summary:** Baldy Mesa (3411744/133B), Silverwood Lake (3411733/133D), Hesperia (3411743/133A), Cajon (3411734/133C)

**County Summary:** San Bernardino

**Lat/Long:** 34.37527° / -117.35977°
**UTM:** Zone-11 N3803825 E466922
**Radius:** 1 mile
**Elevation:** 3,660 ft

**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT

**Township:** 03N
**Range:** 05W
**Section:** 01 **Qtr:** SW
**Meridian:** S

**Location:** 5 MI SW OF HESPERIA.

**General:** SBCM #S-2245.

**Owner/Manager:** UNKNOWN

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## *Empidonax traillii extimus*

southwestern willow flycatcher

**Element Code:** ABPAE33043

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** Endangered | **Global:** G5T1T2 | **CDFG Status:** |
| **State:** Endangered | **State:** S1 | |

**Habitat Associations**

**General:** RIPARIAN WOODLANDS IN SOUTHERN CALIFORNIA.

**Micro:**

**Occurrence No.** 36 **Map Index:** 58964 **EO Index:** 59000

**Occ Rank:** Good
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1990-07-08
**Site:** 1990-07-08
**Record Last Updated:** 2004-12-23

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.52804° / -117.27943°
**UTM:** Zone-11 N3820742 E474355
**Radius:** 1/10 mile
**Elevation:** 2,740 ft

**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT

**Township:** 05N
**Range:** 04W
**Section:** 15 **Qtr:** NE
**Meridian:** S

**Location:** MOJAVE RIVER CHANNEL, 0.6 MI SE OF INTERSECTION OF HWY 18 & ATCHISON, TOPEKA, & SANTE FE RAILROAD, MOJAVE NARROWS RP

**Location Detail:** 1921. COLLECTED AT VICTORVILLE.

**Ecological:** SOUTHERN RIPARIAN SCRUB ALONG MOJAVE RIVER CHANNEL

**Threat:** OFF-ROAD VEHICLES, BROWN-HEADED COWBIRDS (NEST PARASITISM).

**General:** UCLA #J-1364, COLLECTED 28 SEP 1921 - UNKNOWN IF BREEDING OR MIGRANT. ONE SINGING INDIVIDUAL OBSERVED, AND POSSIBLY ON SITE FROM 16 JUNE - 8 JULY, 1990.

**Owner/Manager:** SBD COUNTY

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## *Falco mexicanus*

prairie falcon

**Element Code:** ABNKD06090

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G5 | **CDFG Status:** SC |
| **State:** None | **State:** S3 | |

**Habitat Associations**

**General:** INHABITS DRY, OPEN TERRAIN, EITHER LEVEL OR HILLY.

**Micro:** BREEDING SITES LOCATED ON CLIFFS. FORAGES FAR AFIELD, EVEN TO MARSHLANDS AND OCEAN SHORES.

**Occurrence No.** 103 **Map Index:** 04260 **EO Index:** 26338 — **Dates Last Seen**

**Occ Rank:** Unknown — **Element:** 1980-05-08
* SENSITIVE * **Origin:** Natural/Native occurrence — **Site:** 1980-05-08
**Presence:** Presumed Extant
**Trend:** Unknown — **Record Last Updated:** 1989-08-10

**Quad Summary:** Fifteenmile Valley (3411741/132A)
**County Summary:** San Bernardino

| * SENSITIVE * | | | | | |
|---|---|---|---|---|---|
| **Lat/Long:** | | | | **Township:** | |
| **UTM:** | | | | **Range:** | |
| **Radius:** | | **Mapping Precision:** | | **Section:** | **Qtr:** |
| **Elevation:** | | **Symbol Type:** | | **Meridian:** | |

**Location:** *SENSITIVE* Location information suppressed.
**Location Detail:** Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.
**Owner/Manager:**

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**Occurrence No.** 104 **Map Index:** 03853 **EO Index:** 13077 — **Dates Last Seen**

**Occ Rank:** Unknown — **Element:** 1980-04-25
* SENSITIVE * **Origin:** Natural/Native occurrence — **Site:** 1980-04-25
**Presence:** Presumed Extant
**Trend:** Unknown — **Record Last Updated:** 1989-08-10

**Quad Summary:** Apple Valley North (3411752/157C)
**County Summary:** San Bernardino

| * SENSITIVE * | | | | | |
|---|---|---|---|---|---|
| **Lat/Long:** | | | | **Township:** | |
| **UTM:** | | | | **Range:** | |
| **Radius:** | | **Mapping Precision:** | | **Section:** | **Qtr:** |
| **Elevation:** | | **Symbol Type:** | | **Meridian:** | |

**Location:** *SENSITIVE* Location information suppressed.
**Location Detail:** Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.
**Owner/Manager:**

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**Occurrence No.** 105 **Map Index:** 03813 **EO Index:** 26332 — **Dates Last Seen**

**Occ Rank:** Unknown — **Element:** 1980-04-25
* SENSITIVE * **Origin:** Natural/Native occurrence — **Site:** 1980-04-25
**Presence:** Presumed Extant
**Trend:** Unknown — **Record Last Updated:** 1989-08-10

**Quad Summary:** Apple Valley North (3411752/157C)
**County Summary:** San Bernardino

| * SENSITIVE * | | | | | |
|---|---|---|---|---|---|
| **Lat/Long:** | | | | **Township:** | |
| **UTM:** | | | | **Range:** | |
| **Radius:** | | **Mapping Precision:** | | **Section:** | **Qtr:** |
| **Elevation:** | | **Symbol Type:** | | **Meridian:** | |

**Location:** *SENSITIVE* Location information suppressed.
**Location Detail:** Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.
**Owner/Manager:**

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## *Gopherus agassizii*

desert tortoise

**Element Code:** ARAAF01010

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** Threatened | **Global:** G4 | **CDFG Status:** |
| **State:** Threatened | **State:** S2 | |

**Habitat Associations**

**General:** MOST COMMON IN DESERT SCRUB, DESERT WASH, AND JOSHUA TREE HABITATS; OCCURS IN ALMOST EVERY DESERT HABITAT.

**Micro:** REQUIRE FRIABLE SOIL FOR BURROW AND NEST CONSTRUCTION. CREOSOTE BUSH HABITAT WITH LG ANNUAL WILDFLOWER BLOOMS PREFERRED.

**Occurrence No.** 1 **Map Index:** 03129 **EO Index:** 14806

**Occ Rank:** Good
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Decreasing

**Dates Last Seen**
**Element:** 2004-04-12
**Site:** 2004-04-12
**Record Last Updated:** 2006-08-04

**Quad Summary:** Minneola (3411677/161D), Adelanto (3411754/156C), Helendale (3411763/158A), Wild Crossing (3411773/183D), Redman (3411778/185C), Barstow (3411781/182A), Twelve Gauge Lake (3411783/183A), Edwards (3411788/185B), Williams Well (3511628/208B), Water Valley (3511712/207C), Boron NW (3511726/209B), Johannesburg (3511736/234C), Saltdale NW (3511748/235B), Mojave NE (3511821/211A), Cinco (3511831/236D), Harvard Hill (3411686/180B), Yermo (3411687/181A), Hinkley (3411782/182B), Rosamond Lake (3411871/186D), Bissell (3411881/186A), Lane Mountain (3511618/206C), The Buttes (3511714/208C), Saddleback Mtn. (3511715/209D), Boron (3511716/209C), North Edwards (3511717/210D), Fremont Peak (3511724/208B), Boron NE (3511725/209A), Cuddeback Lake (3511734/233C), Red Mountain (3511735/234D), Saltdale SE (3511737/235D), Shadow Mountains SE (3411755/159D), Turtle Valley (3411762/157B), Hodge (3411772/182C), Red Buttes (3411775/184D), Leuhman Ridge (3411786/184B), Coyote Lake (3511617/206D), Mud Hills (3511711/207D), Lockhart (3511713/208D), California City South (3511718/210C), Superior Lake (3511721/207A), Galileo Hill (3511727/210A), California City North (3511728/210B), Superior Valley (3511731/232D), Blackwater Well (3511733/233D), Cantil (3511738/235C), West Ord Mountain (3411668/156B), Daggett (3411678/181C), Nebo (3411688/181B), Victorville (3411753/156D), Stoddard Well (3411761/157A), Victorville NW (3411764/158B), Shadow Mountains (3411765/159A), Adobe Mountain (3411766/159B), Hi Vista (3411767/160A), Barstow SE (3411771/182D), Astley Rancho (3411774/183C), Jackrabbit Hill (3411776/184C), Rogers Lake South (3411777/185D), Kramer Hills (3411784/183B), Kramer Junction (3411785/184A), Rogers Lake North (3411787/185A), Alvord Mtn. West (3511616/205C), Langford Well (3511626/205B), Paradise Range (3511627/206A), Opal Mountain (3511722/207B), Bird Spring (3511723/208A), Slocum Mtn. (3511732/232C), West of Black Hills (3511744/233B), Klinker Mtn. (3511745/234A), El Paso Peaks (3511746/234B), Garlock (3511747/235A), Ridgecrest South (3511756/257C), Inyokern SE (3511757/258D), Sanborn (3511811/211D)

**County Summary:** Los Angeles, San Bernardino, Kern

**Lat/Long:** 35.02758° / -117.38310°
**UTM:** Zone-11 N3876168 E465052
**Area:** 1,782,558.0 acres
**Elevation:**
**Mapping Precision:** SPECIFIC
**Symbol Type:** POLYGON
**Township:** 11N
**Range:** 06W
**Section:** 34 **Qtr:** XX
**Meridian:** S

**Location:** FREMONT-STODDARD; FREMONT VALLEY SOUTH TO THE VICINITY OF ADELANTO AND HWY 14 EAST TO CALICO MOUNTAINS, W MOJAVE DESERT.

**Location Detail:** LARGEST OF 4 PRIMARY POPS IN CALIF. IN 1977; ESTIMATED DENSITIES WERE 20 TO >250 TORTOISES/SQ MI. AS OF 1987, EVIDENCE SUGGESTS MAJOR DECLINES IN ESTIMATED DENSITY IN MOST AREAS.

**Ecological:** AREA COVERS APPROX. 1700 SQ MILES, FROM 2000 TO >4000 FT ELEV W/SEVERAL VEG COMMUNITIES INCLUDED.

**Threat:** INCREASING HUMAN DISTURBANCE, GRAZING, DEVELOPMENT AND HABITAT FRAGMENTATION.

**Owner/Manager:** BLM, PVT, DFG, DOD, STATE

**Occurrence No.** 20 **Map Index:** 04324 **EO Index:** 14788

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1986-XX-XX
**Site:** 1986-XX-XX
**Record Last Updated:** 1996-01-02

**Quad Summary:** Fifteenmile Valley (3411741/132A), Lucerne Valley (3411648/131B), White Horse Mtn. (3411658/156C), Fairview Valley (3411751/157D)

**County Summary:** San Bernardino

**Lat/Long:** 34.50311° / -116.98963°
**UTM:** Zone-11 N3817942 E500951
**Area:** 5,544.1 acres
**Elevation:**
**Mapping Precision:** SPECIFIC
**Symbol Type:** POLYGON
**Township:** 05N
**Range:** 01W
**Section:** 21 **Qtr:** XX
**Meridian:** S

**Location:** W SIDE LUCERNE LAKE AT BASE OF GRANITE MTNS, LUCERNE VALLEY.

**Location Detail:** SMALL AREA WITH ESTIMATED TORTOISE DENSITIES OF 20 TO 50/SQ MI.

**Owner/Manager:** BLM, PVT

## *Helminthoglypta mohaveana*

Victorville shoulderband — **Element Code:** IMGASC2340

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G1 | **CDFG Status:** |
| **State:** None | **State:** S1 | |

**Habitat Associations**

**General:** KNOWN ONLY FROM ALONG THE MOJAVE RIVER IN SAN BERNARDINO COUNTY.

**Micro:** FOUND AMONG GRANITE BOULDERS AND AT THE BASE OF ROCKY CLIFFS.

**Occurrence No.** 1 **Map Index:** 03336 **EO Index:** 23089

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** XXXX-XX-XX
**Site:** XXXX-XX-XX
**Record Last Updated:** 2005-11-29

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.61088° / -117.35353°
**UTM:** Zone-11 N3829949 E467587
**Area:**
**Elevation:** 2,640 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POLYGON
**Township:** 06N
**Range:** 05W
**Section:** 13 **Qtr:** XX
**Meridian:** S

**Location:** WEST BANK OF MOHAVE RIVER ABOVE ORO GRANDE.

**Location Detail:** FOUND IN A ROCKY OUTCROP; AESTIVATES AMONG AND UNDER LOOSE ROCKS ON DRY HILLSIDES.

**Threat:** COULD BE ENDANGERED BY QUARRYING OPERATIONS.

**General:** TYPE #6304, IN THE BERRY COLLECTION; TOPOTYPES IN THE COLLECTIONS OF EMERY P. CHASE AND ANSP (#146100)

**Owner/Manager:** PVT

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**Occurrence No.** 3 **Map Index:** 03399 **EO Index:** 23087

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1939-03-04
**Site:** 1939-03-04
**Record Last Updated:** 2005-11-29

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.56616° / -117.31156°
**UTM:** Zone-11 N3824977 E471411
**Area:**
**Elevation:** 2,800 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POLYGON
**Township:** 06N
**Range:** 04W
**Section:** 33 **Qtr:** NE
**Meridian:** S

**Location:** RIGHT BANK OF MOJAVE RIVER JUST ABOVE VICTORVILLE.

**Ecological:** HABITAT IS AT THE BASE OF ROCKY CLIFFS; LIVING SNAILS FOUND SPARYINGLY IN AESTIVATION AMONG AND UNDER LOOSE ROCKS.

**Owner/Manager:** PVT

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*Icteria virens*

yellow-breasted chat — **Element Code:** ABPBX24010

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G5 | **CDFG Status:** SC |
| **State:** None | **State:** S3 | |

**Habitat Associations**

**General:** SUMMER RESIDENT: INHABITS RIPARIAN THICKETS OF WILLOW & OTHER BRUSHY TANGLES NEAR WATERCOURSES.

**Micro:** NESTS IN LOW, DENSE RIPARIAN, CONSISTING OF WILLOW, BLACKBERRY, WILD GRAPE; FORAGES AND NESTS WITHIN 10 FT OF GROUND.

**Occurrence No.** 55 **Map Index:** 03469 **EO Index:** 9334

**Occ Rank:** Good
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Increasing

**Dates Last Seen**
**Element:** 1990-07-08
**Site:** 1990-07-08
**Record Last Updated:** 1992-04-15

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34 52530° / -117 27607°
**UTM:** Zone-11 N3820437 E474663
**Area:**
**Elevation:** 2,740 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POLYGON
**Township:** 05N
**Range:** 04W
**Section:** 14 **Qtr:** XX
**Meridian:** S

**Location:** MOJAVE NARROWS REGIONAL PARK, JUST SE OF VICTORVILLE.

**Location Detail:** 1.5 MILE SECTION OF MOJAVE RIVER.

**Ecological:** MOJAVE RIPARIAN FOREST DOMINATED BY POPULUS FREMONTII AND SALIX EXIGUA.

**Threat:** MUCH OF PARK DEGRADED BY ORV USE IN RIVERBED AND ADJACENT RIPARIAN HABITAT. COWBIRDS VERY ABUNDANT IN 1990.

**General:** 1987: ONE SINGING MALE OBSERVED HIGH IN POPULUS FREMONTII; 1990: 5 SINGING MALES OBSERVED THROUGHOUT BREEDING SEASON.

**Owner/Manager:** SBD COUNTY

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## *Lasiurus cinereus*

hoary bat

**Element Code:** AMACC05030

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G5 | **CDFG Status:** SC |
| **State:** None | **State:** S4? | |

**Habitat Associations**

**General:** PREFERS OPEN HABITATS OR HABITAT MOSAICS, WITH ACCESS TO TREES FOR COVER & OPEN AREAS OR HABITAT EDGES FOR FEEDING.

**Micro:** ROOSTS IN DENSE FOLIAGE OF MEDIUM TO LARGE TREES. FEEDS PRIMARILY ON MOTHS. REQUIRES WATER.

**Occurrence No.** 90 **Map Index:** 03434 **EO Index:** 68853

**Dates Last Seen**

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Element:** 1984-04-28
**Site:** 1984-04-28
**Record Last Updated:** 2007-03-16

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.53609° / -117.29532°
**UTM:** Zone-11 N3821638 E472900
**Radius:** 1 mile
**Elevation:** 2,860 ft.

**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT

**Township:** 05N
**Range:** 04W
**Section:** 10 **Qtr:** E
**Meridian:** S

**Location:** MOJAVE NARROWS REGIONAL PARK, VICTORVILLE

**Location Detail:** EXACT LOCATION UNKNOWN. MAPPED AS BEST ESTIMATE NEAR MOJAVE NARROWS AND VICTORVILLE.

**General:** 1 FEMALE (LSU #29131) COLLECTED BY B.N. HEINEN JR. ON 28 APR 1984.

**Owner/Manager:** UNKNOWN

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## *Microtus californicus mohavensis*

Mohave river vole

**Element Code:** AMAFF11031

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G5T1 | **CDFG Status:** SC |
| **State:** None | **State:** S1 | |

**Habitat Associations**

**General:** OCCURS ONLY IN WEEDY HERBACEOUS GROWTH IN WET AREAS ALONG THE MOJAVE RIVER. MAY BE FOUND IN SOME IRRIGATED PASTURES.

**Micro:** BURROWS INTO SOFT SOIL. FEEDS ON LEAFY PARTS OF GRASSES, SEDGES AND HERBS. CLIPS GRASSES TO FORM RUNWAYS FROM BURROW.

**Occurrence No.** 1 **Map Index:** 03487 **EO Index:** 23896

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1967-07-16
**Site:** 1967-07-16
**Record Last Updated:** 2005-02-01

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.51667° / -117.27133°
**UTM:** Zone-11 N3819479 E475095
**Area:** 675.9 acres
**Elevation:** 2,780 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POLYGON
**Township:** 05N
**Range:** 04W
**Section:** 14 **Qtr:** XX
**Meridian:** S

**Location:** 1 MILE SE OF VICTORVILLE

**Location Detail:** MAPPED AT MOJAVE NARROWS REGIONAL PARK. COORDINATES PROVIDED BY MANIS FALL JUST NORTHEAST OF VICTORVILLE WITH AN UNCERTAINTY OF 5000 METERS (~3.2 MILES).

**General:** 1 MALE SPECIMEN COLLECTED BY T. VAUGHAN 11 SEP 1954 AT "VICTORVILLE, 0.5 MI SE OF; MOJAVE RIVER." 1 SPECIMEN COLLECTED 16 JUL 1967 AT "1 MI SE OF VICTORVILLE" (CSULB #6405).

**Owner/Manager:** SBD COUNTY

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**Occurrence No.** 5 **Map Index:** 03354 **EO Index:** 23892

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1930-05-28
**Site:** 1930-05-28
**Record Last Updated:** 2005-02-01

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.59789° / -117.34767°
**UTM:** Zone-11 N3828507 E468119
**Area:**
**Elevation:** 2,600 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POLYGON
**Township:** 06N
**Range:** 05W
**Section:** 24 **Qtr:** SE
**Meridian:** S

**Location:** ORO GRANDE, 5 MILES NORTH OF VICTORVILLE

**Location Detail:** KNOWN ONLY FROM THE MOIST BOTTOMLANDS OF THE MOHAVE RIVER. LAT/LONG COORDINATES PROVIDED BY MANIS FALL NEAR THE CITY OF ORO GRANDE & HAVE AN UNCERTAINITY OF 1000 METERS (~0.63 MILES) & 4881 METERS (~3 MILES).

**General:** AT "ORO GRANDE." 2 F & 3 M COLLECTED 12-16 MAR 1903 BY E. HELLER (FMNH #12722-12726) & 2 F COLLECTED 17 & 18 FEB 1918 BY H. WHITE (MVZ #28270 & 28271). AT "ORO GRANDE, BENNETT RANCH;" 1 MALE COLLECTED 28 MAY 1930 BY R. HUNT (MVZ#31446).

**Owner/Manager:** UNKNOWN

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**Occurrence No.** 6 **Map Index:** 03434 **EO Index:** 49902

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1930-10-02
**Site:** 1930-10-02
**Record Last Updated:** 2005-02-01

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.53809° / -117.29532°
**UTM:** Zone-11 N3821638 E472900
**Radius:** 1 mile
**Elevation:** 2,860 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 04W
**Section:** 10 **Qtr:** E
**Meridian:** S

**Location:** VICTORVILLE

**Location Detail:** EXACT LOCATION UNKNOWN. ALL SPECIMENS COLLECTED AT "VICTORVILLE." LAT/LONG COORDINATES PROVIDED BY MANIS FALL WITHIN THIS OCCURRENCE AND HAVE AN UNCERTAINTY OF 1000 METERS (~0.63 MILES) OR 6439 METERS (~3.96 MILES).

**General:** 4 M & 6 F IN 1904 (MVZ #6336-6340, 6346-6349 & 7005). 6 F & 5 M IN 1905 (MVZ# 6335, 6341-6345, 6350-6353 & 7006). 4 F & 6 M IN 1907 (MVZ#5984-5994 & 6824). ALL MVZ COLLECTED BY J. GRINNELL. 4 IN 1930 BY G. CANTWELL (LACM #1908-1911).

**Owner/Manager:** UNKNOWN

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## *Opuntia basilaris var. brachyclada*

short-joint beavertail

**Element Code:** PDCAC0D053

**Status**
**Federal:** None
**State:** None

**NDDB Element Ranks**
**Global:** G5T1
**State:** S1.2

**Other Lists**
**CNPS List:** 1B.2

**Habitat Associations**
**General:** CHAPARRAL, JOSHUA TREE WOODLAND, MOJAVEAN DESERT SCRUB, PINYON-JUNIPER WOODLAND, RIPARIAN WOODLAND.
**Micro:** SANDY SOIL OR COARSE, GRANITIC LOAM. 425-1800M.

**Occurrence No.** 13 **Map Index:** 38928 **EO Index:** 33935
**Occ Rank:** Fair
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1991-10-27
**Site:** 1991-10-27
**Record Last Updated:** 1998-06-12

**Quad Summary:** Silverwood Lake (3411733/133D), Hesperia (3411743/133A)
**County Summary:** San Bernardino

**Lat/Long:** 34.37488° / -117.31117°
**UTM:** Zone-11 N3803767 E471390
**Radius:** 80 meters
**Elevation:** 3,350 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 03N
**Range:** 04W
**Section:** 04 **Qtr:** SW
**Meridian:** S

**Location:** ANTELOPE VALLEY ABOUT 0.3 MILE SOUTHEAST OF HESPERIA AIRPORT, SOUTH OF HESPERIA.
**Location Detail:** MAPPED ALONG DIRT ROAD WITHIN THE NW 1/4 SW 1/4 SECTION 4.
**Ecological:** CALIFORNIA JUNIPER WOODLAND WITH JUNIPERUS CALIFORNICA, CHRYSOTHAMNUS NAUSEOSUS, YUCCA BREVIFOLIA, AND HAPLOPAPPUS LINEARIFOLIUS.
**Threat:** ORV TRAILS THROUGHOUT THE AREA.
**General:** 1 PLANT OBSERVED IN 1991.
**Owner/Manager:** UNKNOWN

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## *Phrynosoma coronatum (blainvillii population)*

Coast (San Diego) horned lizard — **Element Code:** ARACF12021

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G4G5 | **CDFG Status:** SC |
| **State:** None | **State:** S3S4 | |

**Habitat Associations**
**General:** INHABITS COASTAL SAGE SCRUB AND CHAPARRAL IN ARID AND SEMI-ARID CLIMATE CONDIT
**Micro:** PREFERS FRIABLE, ROCKY, OR SHALLOW SANDY SOILS

**Occurrence No.** 215 **Map Index:** 03335 **EO Index:** 28012
**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown
**Dates Last Seen** — **Element:** XXXX-XX-XX; **Site:** XXXX-XX-XX
**Record Last Updated:** 1989-08-10

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.60110° / -117.34839°
**UTM:** Zone-11 N3828863 E468055
**Radius:** 1/5 mile
**Elevation:** 2,600 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 06N **Range:** 05W **Section:** 24 **Meridian:** S **Qtr:** NE

**Location:** 0.5 MI W ORO GRANDE RR STATION.
**General:** LACM SPECIMEN. DATE OF COLLECTION UNKNOWN.
**Owner/Manager:** UNKNOWN

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**Occurrence No.** 217 **Map Index:** 03436 **EO Index:** 28011
**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown
**Dates Last Seen** — **Element:** XXXX-XX-XX; **Site:** XXXX-XX-XX
**Record Last Updated:** 1994-08-11

**Quad Summary:** Hesperia (3411743/133A)
**County Summary:** San Bernardino

**Lat/Long:** 34.48469° / -117.29572°
**UTM:** Zone-11 N3815939 E472846
**Radius:** 1 mile
**Elevation:** 3,020 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 04N **Range:** 04W **Section:** 33 **Meridian:** S **Qtr:** XX

**Location:** 3 MI S VICTORVILLE.
**General:** LACM SPECIMEN. DATE OF COLLECTION UNKNOWN.
**Owner/Manager:** PVT

---

**Occurrence No.** 405 **Map Index:** 30137 **EO Index:** 4883
**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown
**Dates Last Seen** — **Element:** 1978-05-09; **Site:** 1978-05-09
**Record Last Updated:** 1994-08-11

**Quad Summary:** Apple Valley South (3411742/132B)
**County Summary:** San Bernardino

**Lat/Long:** 34.39558° / -117.23779°
**UTM:** Zone-11 N3806044 E478142
**Radius:** 1/5 mile
**Elevation:** 2,910 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 04N **Range:** 03W **Section:** 31 **Meridian:** S **Qtr:** NW

**Location:** ALONG DEEP CREEK ROAD, ADJACENT TO THE MOJAVE RIVER, 3.5 MILES ESE OF HESPERIA
**Ecological:** SANDY FLOOD PLAIN WITH CHRYSOTHAMNUS AND CEANOTHUS
**General:** ONE ADULT MALE OBSERVED 5/9/78
**Owner/Manager:** UNKNOWN

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## *Piranga rubra*

summer tanager

**Element Code:** ABPBX45030

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G5 | **CDFG Status:** SC |
| **State:** None | **State:** S2 | |

**Habitat Associations**

**General:** SUMMER RESIDENT OF DESERT RIPARIAN ALONG LOWER COLORADO RIVER, & LOCALLY ELSEWHERE IN CALIFORNIA DESERTS.

**Micro:** REQUIRES COTTONWOOD-WILLOW RIPARIAN FOR NESTING AND FORAGING, PREFERS OLDER, DENSE STANDS ALONG STREAMS.

**Occurrence No.** 18 **Map Index:** 03367 **EO Index:** 14630

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1986-08-10
**Site:** 1986-08-10
**Record Last Updated:** 1996-01-08

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.58195° / -117.33222°
**UTM:** Zone-11 N3826734 E469530
**Area:** 225.3 acres
**Elevation:** 2,670 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POLYGON
**Township:** 06N
**Range:** 04W
**Section:** 30 **Qtr:** E
**Meridian:** S

**Location:** EAST SIDE OF MOJAVE RIVER, 3.5 MI NW OF VICTORVILLE.

**Location Detail:** ONE OR TWO PAIRS OBSERVED.

**Ecological:** YOUNG COTTONWOOD/WILLOW FOREST CONTAINING LOTS OF SANDBAR WILLOW.

**Threat:** ORV USE IN MOJAVE RIVER BED IS MAIN THREAT/DISTURBANCE. PROLONGED FLOODING AND VEG REMOVAL ARE THREATS ALSO.

**Owner/Manager:** UNKNOWN

---

**Occurrence No.** 19 **Map Index:** 03487 **EO Index:** 14629

**Occ Rank:** Good
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Stable

**Dates Last Seen**
**Element:** 1990-07-08
**Site:** 1990-07-08
**Record Last Updated:** 1999-08-10

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.51687° / -117.27133°
**UTM:** Zone-11 N3819479 E475095
**Area:** 675.9 acres
**Elevation:** 2,780 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POLYGON
**Township:** 05N
**Range:** 04W
**Section:** 14 **Qtr:** XX
**Meridian:** S

**Location:** MOJAVE NARROWS REGIONAL PARK, ALONG THE MOJAVE RIVER, JUST SOUTHEAST OF VICTORVILLE.

**Ecological:** MOJAVE RIPARIAN FOREST DOMINATED BY POPULUS FREMONTII, SALIX SPP., & ALNUS RHOMBIFOLIA. PATCHY UNDERSTORY OF SALIX EXIGUA & OTHER WILLOWS, ELYMUS TRITICOIDES, & JUNCUS SP.

**Threat:** MUCH OF AREA DEGRADED BY ORV USE IN RIVERBED AND ADJACENT RIPARIAN HABITAT. BROWN-HEADED COWBIRDS ARE VERY ABUNDANT.

**General:** 2-6 INDIVIDUALS OBSERVED DURING 1986. 3 PAIRS OBSERVED ALL SPRING DURING 1987 BREEDING BIRD ATLAS FIELDWORK. 8 PAIRS PRESENT DURING 1990 BREEDING SEASON.

**Owner/Manager:** SBD COUNTY

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## *Plebulina emigdionis*

San Emigdio blue butterfly — Element Code: IILEPG7010

**Status**
Federal: None
State: None

**NDDB Element Ranks**
Global: G2G3
State: S2S3

**Other Lists**
CDFG Status:

**Habitat Associations**
General: FOUND IN DESERT CANYONS AND ALONG RIVERBEDS ON THE SOUTHERNMOST EDGE OF THE SAN JOAQUIN VALLEY.
Micro: HOSTPLANT IS ATRIPLEX CANESCENS. MAYBE LOTUS PURSHIANUS ALSO.

---

Occurrence No. 5 — Map Index: 03434 — EO Index: 60825

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

**Dates Last Seen**
Element: 1982-04-11
Site: 1982-04-11
Record Last Updated: 2005-04-04

Quad Summary: Victorville (3411753/158D)
County Summary: San Bernardino

Lat/Long: 34.53609° / -117.29532°
UTM: Zone-11 N3821838 E472900
Radius: 1 mile
Elevation: 2,960 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 05N
Range: 04W
Section: 10 — Qtr: E
Meridian: S

Location: VICTORVILLE
Location Detail: SOME SPECIMENS TAKEN FROM MOJAVE RIVER AREA EAST OF VICTORVILLE.
General: 36 SPECIMENS DEPOSITED IN UC DAVIS BOHART MUSEUM OF ENTOMOLOGY; COLLECTED ON VARIOUS DATES BETWEEN 25 APR 1950 AND 11 APR 1982.
Owner/Manager: UNKNOWN

---

Occurrence No. 6 — Map Index: 03467 — EO Index: 60826

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

**Dates Last Seen**
Element: 1987-04-11
Site: 1987-04-11
Record Last Updated: 2005-04-04

Quad Summary: Victorville (3411753/158D)
County Summary: San Bernardino

Lat/Long: 34.51667° / -117.27133°
UTM: Zone-11 N3819479 E475095
Area: 675.9 acres
Elevation: 2,780 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 05N
Range: 04W
Section: 14 — Qtr: XX
Meridian: S

Location: MOJAVE NARROWS.
Location Detail: SOUTH OF HWY 18 NEAR APPLE VALLEY.
General: 5 SPECIMENS DEPOSITED IN UC DAVIS BOHART MUSEUM OF ENTOMOLOGY.
Owner/Manager: SBD COUNTY

---

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## *Rana aurora draytonii*

California red-legged frog — **Element Code:** AAABH01022

**Status**
**Federal:** Threatened
**State:** None

**NDDB Element Ranks**
**Global:** G4T2T3
**State:** S2S3

**Other Lists**
**CDFG Status:** SC

**Habitat Associations**
**General:** LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION
**Micro:** REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT

**Occurrence No.** 13 **Map Index:** 25141 **EO Index:** 5939

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** XXXX-XX-XX
**Site:** XXXX-XX-XX
**Record Last Updated:** 1994-02-17

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.53464° / -117.28755°
**UTM:** Zone-11 N3821476 E473612
**Area:**
**Elevation:** 2,750 ft

**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POLYGON

**Township:** 05N
**Range:** 04W
**Section:** 10 **Qtr:** XX
**Meridian:** S

**Location:** VICTORVILLE

**General:** CAS #42848. HISTORICAL LOCATION. OBSERVATION DATE UNKNOWN.

**Owner/Manager:** UNKNOWN

## *Saltugilia latimeri*

Latimer's woodland-gilia

**Element Code:** PDPLM0H010

**Status**
**Federal:** None
**State:** None

**NDDB Element Ranks**
**Global:** G2
**State:** S2.2

**Other Lists**
**CNPS List:** 1B.2

**Habitat Associations**
**General:** CHAPARRAL, MOJAVEAN DESERT SCRUB
**Micro:** ROCKY OR SANDY SUBSTRATE. 400-1900M.

**Occurrence No.** 14 **Map Index:** 60251 **EO Index:** 60267

**Dates Last Seen**
**Element:** 1996-05-31
**Site:** 1996-05-31
**Record Last Updated:** 2005-02-25

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Quad Summary:** Fawnskin (3411638/131C), Butler Peak (3411731/132D), Lucerne Valley (3411648/131B), Fifteenmile Valley (3411741/132A)
**County Summary:** San Bernardino

**Lat/Long:** 34.36771° / -117.00127°
**UTM:** Zone-11 N3802929 E499883
**Area:**
**Elevation:** 5,100 ft

**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POLYGON

**Township:** 03N
**Range:** 01W
**Section:** 05 **Qtr:** SE
**Meridian:** S

**Location:** SAN BERNARDINO MOUNTAINS, ABOUT 1.7 MILES EAST OF NORTH PEAK, WEST OF SILVER CREEK.

**Location Detail:** BASED ON COLLECTION (WHITE #4099) AND MAPPED FROM T,R,S PROVIDED: T3N R1W SE 1/4 SEC. 5 AND NE 1/4 SEC. 8. PLANTS ON HILLSIDES, RIDGETOPS, AND ALLUVIAL FAN WEST OF SILVER CREEK AND JUST SOUTH OF PLEUSS-STAUFER HAUL RD. TO WHITE KNOB QUARRY.

**Ecological:** HILLSIDES AND RIDGETOPS (GRANITIC AND CARBONATE), AND ALLUVIAL FANS (GRANITIC). ASSOCIATED WITH PRUNUS FASCICULATA, YUCCA BREVIFOLIA, PINUS MONOPHYLLA. MOST OF SITE "RECENTLY BURNED" (AS OF 1996).

**General:** PLANTS OCCUR FROM 4800-5400 FEET IN ELEVATION.

**Owner/Manager:** USFS-SAN BERNARDINO NF

## *Sauromalus ater*

chuckwalla

**Element Code:** ARACF13010

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G5 | **CDFG Status:** |
| **State:** None | **State:** S4 | |

**Habitat Associations**

**General:** FOUND IN A VARIETY OF DESERT WOODLAND & SCRUB HABITATS, BUT MOST OFTEN IN CREOSOTE COMMUNITIES

**Micro:** REQUIRES LARGE ROCK OUTCROPS, BOULDER PILES OR SCATTERED LARGE ROCKS. SANDY, WELL-DRAINED SOIL NEEDED FOR NESTING.

**Occurrence No.** 2 **Map Index:** 41375 **EO Index:** 41375

**Occ Rank:** Good
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1995-06-22
**Site:** 1995-06-22
**Record Last Updated:** 1999-07-13

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.61341° / -117.31127°
**UTM:** Zone-11 N3830217 E471462
**Area:** 6.4 acres
**Elevation:** 3,610 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POLYGON
**Township:** 06N
**Range:** 04W
**Section:** 16 **Qtr:** NW
**Meridian:** S

**Location:** 0.3 MILE SOUTH OF ORO GRANDE CANYON ROAD, 1.3 MILES WEST OF QUARTZITE MTN 1.5 MILES NE OF ORO GRANDE.

**Location Detail:** BOULDER FIELD ALONG RIDGELINE; SW FACING SLOPE; 60% SLOPE. LAND USE OPEN DESERT, ADJACENT ROCK AND GRAVEL MINE.

**Ecological:** MOJAVE CREOSOTE BUSH SCRUB WITH LARREA TRIDENTATA DOMINANT; ASSOCIATES INCLUDE BRICKELLIA ARGUTA VAR. ARGUTA, SALAZARIA MEXICANA, ENCELIA ACTONI.

**Threat:** PROPOSED AS ROCK AND GRAVEL MINE; DIRT ROADS THROUGH THE AREA.

**General:** 2 INDIVIDUALS WERE OBSERVED BASKING ON TOP OF BOULDERS.

**Owner/Manager:** PVT

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***Scutellaria bolanderi ssp. austromontana***

southern skullcap

**Element Code:** PDLAM1U0A1

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G4T2 | **CNPS List:** 1B.2 |
| **State:** None | **State:** S2.2? | |

**Habitat Associations**

**General:** CHAPARRAL, CISMONTANE WOODLAND, LOWER MONTANE CONIFEROUS FOREST.

**Micro:** IN GRAVELLY SOILS ON STREAMBANKS OR IN MESIC SITES IN OAK OR PINE WOODLAND. 425-2000M.

**Occurrence No.** 15 **Map Index:** 03434 **EO Index:** 28961

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1915-06-25
**Site:** 1915-06-25
**Record Last Updated:** 2004-05-14

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.53609° / -117.29532°
**UTM:** Zone-11 N3821638 E472900
**Radius:** 1 mile
**Elevation:** 2,860 ft

**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT

**Township:** 05N
**Range:** 04W
**Section:** 10 **Qtr:** E
**Meridian:** S

**Location:** MOJAVE DESERT, VICTORVILLE.

**Ecological:** MEADOWS.

**General:** MAIN SOURCE OF INFORMATION IS 1915 COLLECTION BY PARISH FROM "VICTORVILLE, MOHAVE DESERT". 1886 COLLECTION BY PARISH FROM "BANKS OF THE MOHAVE RIVER" ATTRIBUTED TO THIS SITE.

**Owner/Manager:** UNKNOWN

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## *Spermophilus mohavensis*

Mohave ground squirrel — **Element Code:** AMAFB05150

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G2G3 | **CDFG Status:** |
| **State:** Threatened | **State:** S2S3 | |

**Habitat Associations**

**General:** OPEN DESERT SCRUB, ALKALI SCRUB & JOSHUA TREE WOODLAND. ALSO FEEDS IN ANNUAL GRASSLANDS. RESTRICTED TO MOJAVE DESERT.

**Micro:** PREFERS SANDY TO GRAVELLY SOILS, AVOIDS ROCKY AREAS. USES BURROWS AT BASE OF SHRUBS FOR COVER. NESTS ARE IN BURROWS.

**Occurrence No.** 11 **Map Index:** 03300 **EO Index:** 24275

**Dates Last Seen**
**Element:** 1977-07-01
**Site:** 1977-07-01
**Record Last Updated:** 1992-11-19

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Quad Summary:** Hesperia (3411743/133A)
**County Summary:** San Bernardino

**Lat/Long:** 34.48114° / -117.36808°
**UTM:** Zone-11 N3815567 E466201
**Radius:** 1/5 mile
**Elevation:** 3,160 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 05W
**Section:** 35 **Qtr:** NE
**Meridian:** S

**Location:** NEAR MTN VIEW 4.2 MI N, 4 MI W OF HESPERIA

**Ecological:** DESERT SCRUB HABITAT. DOMINANTS: EPHEDRA NEVADENSIS, AMBROSIA DUMOSA, AND LARREA TRIDENTATA. 7% VEGETATION COVER. MUCH SMALL ROCK AND LITTER. SOILS GRAVELLY.

**Threat:** HOUSING DEVELOPMENTS AND ALFALFA FARMING.

**General:** ONE SQUIRREL TRAPPED 30 JUN-1 JUL 1977. WESSMAN STUDY SITE NO. 33. L.A. CO. MUS. #075256

**Owner/Manager:** UNKNOWN

---

**Occurrence No.** 12 **Map Index:** 03440 **EO Index:** 24273

**Dates Last Seen**
**Element:** 1977-06-28
**Site:** 1977-06-28
**Record Last Updated:** 1993-01-05

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.57443° / -117.29116°
**UTM:** Zone-11 N3825889 E473294
**Radius:** 1/5 mile
**Elevation:** 2,840 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 06N
**Range:** 04W
**Section:** 27 **Qtr:** SW
**Meridian:** S

**Location:** 2.5 MI N AND 0.5 MI E OF VICTORVILLE.

**Ecological:** HABITAT IS MOJAVE CREOSOTE BUSH SCRUB; DOMINANTS: LARREA TRIDENTATA, AMBROSIA DUMOSA, HYMENOCLEA SALSOLA, AND LYCIUM ANDERSONII. MUCH SMALL ROCK AND LITTER. SOILS ARE SANDY AND FINE. 9% VEGETATION COVER.

**Threat:** HOUSING DEVELOPMENT, AND ALFALFA AND WHEATGRASS FARMING.

**General:** ONE SQUIRREL TRAPPED ON 28 JUN 1977. WESSMAN STUDY SITE NO. 31. D. CLARK #5. DC54 (CLA92U02).

**Owner/Manager:** UNKNOWN.

---

**Occurrence No.** 22 **Map Index:** 03372 **EO Index:** 7889

**Dates Last Seen**
**Element:** 1920-05-24
**Site:** 1920-05-24
**Record Last Updated:** 1992-11-19

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.59630° / -117.33701°
**UTM:** Zone-11 N3828327 E469096
**Radius:** 1 mile
**Elevation:** 2,700 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 06N
**Range:** 04W
**Section:** 18 **Qtr:** SE
**Meridian:** S

**Location:** ORO GRANDE.

**Ecological:** NO HABITAT INFORMATION GIVEN.

**Threat:** UNKNOWN.

**General:** ONE FEMALE COLLECTED ON 24 MAY 1920. UC BERKELEY MUSEUM OF VERTEBRATE ZOOLOGY #31515.

**Owner/Manager:** UNKNOWN

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## *Spermophilus mohavensis*

Mohave ground squirrel — **Element Code:** AMAFB05150

**Status**
**Federal:** None
**State:** Threatened

**NDDB Element Ranks**
**Global:** G2G3
**State:** S2S3

**Other Lists**
**CDFG Status:**

**Habitat Associations**
**General:** OPEN DESERT SCRUB, ALKALI SCRUB & JOSHUA TREE WOODLAND. ALSO FEEDS IN ANNUAL GRASSLANDS. RESTRICTED TO MOJAVE DESERT.
**Micro:** PREFERS SANDY TO GRAVELLY SOILS. AVOIDS ROCKY AREAS. USES BURROWS AT BASE OF SHRUBS FOR COVER. NESTS ARE IN BURROWS.

**Occurrence No.** 33 **Map Index:** 03909 **EO Index:** 24260

**Dates Last Seen**
**Element:** 1955-04-06
**Site:** 1955-04-06
**Record Last Updated:** 1992-11-17

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Quad Summary:** Apple Valley South (3411742/132B), Fifteenmile Valley (3411741/132A)
**County Summary:** San Bernardino

**Lat/Long:** 34.47266° / -117.12470°
**UTM:** Zone-11 N3814572 E488548
**Radius:** 1/5 mile
**Elevation:** 3,023 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 02W
**Section:** 31 **Qtr:** SE
**Meridian:** S

**Location:** DEADMANS PT, APPLE VALLEY
**Ecological:** NO HABITAT INFORMATION GIVEN
**Threat:** UNKNOWN
**General:** ONE FEMALE COLLECTED ON 6 APR 1955 (CAL STATE UNIV-LONG BEACH #1265)
**Owner/Manager:** UNKNOWN

---

**Occurrence No.** 47 **Map Index:** 22563 **EO Index:** 872

**Dates Last Seen**
**Element:** 1919-03-02
**Site:** 1919-03-02
**Record Last Updated:** 1993-03-22

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.53623° / -117.30403°
**UTM:** Zone-11 N3821656 E472100
**Radius:** 1 mile
**Elevation:** 2,900 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 04W
**Section:** 09 **Qtr:** XX
**Meridian:** S

**Location:** VICTORVILLE
**General:** ONE INDIVIDUAL COLLECTED (USNM - ACCESSION# UNKNOWN) BY J.E. BARRY, ON 2 MAR 1919
**Owner/Manager:** UNKNOWN

---

**Occurrence No.** 48 **Map Index:** 21959 **EO Index:** 8092

**Dates Last Seen**
**Element:** 1954-08-21
**Site:** 1954-08-21
**Record Last Updated:** 1993-02-17

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Quad Summary:** Fifteenmile Valley (3411741/132A)
**County Summary:** San Bernardino

**Lat/Long:** 34.45801° / -117.07615°
**UTM:** Zone-11 N3812944 E493005
**Radius:** 1 mile
**Elevation:** 3,300 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 04N
**Range:** 02W
**Section:** 03 **Qtr:** XX
**Meridian:** S

**Location:** 15 MILES SE OF VICTORVILLE.
**General:** ONE FEMALE TRAPPED ON 21 AUG 1954. KANSAS UNIVIVERSITY MUSEUM #83589
**Owner/Manager:** UNKNOWN

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California Department of Fish and Game
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## *Spermophilus mohavensis*

Mohave ground squirrel

**Element Code:** AMAFB05150

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G2G3 | **CDFG Status:** |
| **State:** Threatened | **State:** S2S3 | |

**Habitat Associations**

**General:** OPEN DESERT SCRUB, ALKALI SCRUB & JOSHUA TREE WOODLAND. ALSO FEEDS IN ANNUAL GRASSLANDS. RESTRICTED TO MOJAVE DESERT

**Micro:** PREFERS SANDY TO GRAVELLY SOILS. AVOIDS ROCKY AREAS. USES BURROWS AT BASE OF SHRUBS FOR COVER. NESTS ARE IN BURROWS

**Occurrence No.** 269 **Map Index:** 22829 **EO Index:** 21421

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1931-03-09
**Site:** 1931-03-09
**Record Last Updated:** 1993-02-18

**Quad Summary:** Hesperia (3411743/133A)
**County Summary:** San Bernardino

**Lat/Long:** 34.41865° / -117.30332°
**UTM:** Zone-11 N3808618 E472127
**Radius:** 3/5 mile
**Elevation:** 3,200 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 04N
**Range:** 04W
**Section:** 21 **Qtr:** XX
**Meridian:** S

**Location:** HESPERIA

**General:** ONE SQUIRREL COLLECTED ON 9 MAR 1931 BY L.A. CO. MUSUEM OF NATURAL HISTORY (#000592). DC198

**Owner/Manager:** UNKNOWN

---

**Occurrence No.** 283 **Map Index:** 22843 **EO Index:** 21847

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1980-06-03
**Site:** 1980-06-03
**Record Last Updated:** 1993-02-18

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.56568° / -117.33509°
**UTM:** Zone-11 N3824931 E469261
**Radius:** 1/5 mile
**Elevation:** 2,800 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 06N
**Range:** 04W
**Section:** 31 **Qtr:** XX
**Meridian:** S

**Location:** NEAR ADELANTO ROAD, WEST OF MOJAVE HEIGHTS.

**General:** TWO SQUIRRELS DETECTED BY MCKERNAN 3 JUN 1980 (DC264).

**Owner/Manager:** UNKNOWN

---

**Occurrence No.** 329 **Map Index:** 89139 **EO Index:** 89916

**Occ Rank:** Good
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 2007-04-24
**Site:** 2007-04-24
**Record Last Updated:** 2007-05-02

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.62303° / -117.36943°
**UTM:** Zone-11 N3831302 E466134
**Radius:** 80 meters
**Elevation:** 2,800 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 06N
**Range:** 05W
**Section:** 11 **Qtr:** E
**Meridian:** S

**Location:** 0.6 MILE SE OF THE INTERSECTION OF COLUSA ROAD AND HELENDALE ROAD, 7 MILES NW OF VICTORVILLE.

**Ecological:** HABITAT CONSISTS OF MOHAVE CREOSOTE BUSH SCRUB, DOMINATED BY LARREA TRIDENTATA, LYCIUM COOPERII, AND AMBROSIA DUMOSA. SOILS: LOAMY SAND. ASPECT: NE. SLOPE: 1-2%. DESERT TORTOISE AND BURROWING OWL SIGN ALSO FOUND IN THE VICINITY.

**Threat:** THREATENED BY A PROPOSED INDUSTRIAL DEVELOPMENT (RAIL YARD).

**General:** 1 ADULT CAPTURED ON 24 APR 2007; FECAL SAMPLES TAKEN WERE GREEN AND WET (DROUGHT YEAR), AND SUSPECT FORAGE SOURCE IS LYCIUM COOPERII.

**Owner/Manager:** PVT-SOCAL LOGISTICS AIRBASE

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## *Symphyotrichum defoliatum*

San Bernardino aster

**Element Code:** PDASTE80C0

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G3 | **CNPS List:** 1B.2 |
| **State:** None | **State:** S3.2 | |

**Habitat Associations**

**General:** MEADOWS AND SEEPS, MARSHES AND SWAMPS, COASTAL SCRUB, CISMONTANE WOODLAND, LOWER MONTANE CONIFEROUS FOREST, GRASSLAND.

**Micro:** VERNALLY MESIC GRASSLAND OR NEAR DITCHES, STREAMS AND SPRINGS; DISTURBED AREAS. 2-2040M.

**Occurrence No.** 39 **Map Index:** 60560 **EO Index:** 60596

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1991-10-03
**Site:** 1991-10-03
**Record Last Updated:** 2005-03-15

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.51989° / -117.27976°
**UTM:** Zone-11 N3819838 E474323
**Area:**
**Elevation:** 2,730 ft

**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POLYGON

**Township:** 05N
**Range:** 04W
**Section:** 15 **Qtr:** SE
**Meridian:** S

**Location:** MOHAVE NARROWS REGIONAL PARK, VICTORVILLE.

**Location Detail:** AT THE LOWER SLOUGH, 0.25 MI NORTH OF HORSESHOE LAKE. NE 1/4 OF SE 1/4 OF SECTION 15.

**General:** 1924 COLLECTION "NEAR POND, SOUTH OF VICTORVILLE", 1924 COLLECTION "MEADOW AT RANCHO VERDE, VICTORVILLE", AND 1928 COLLECTION "BORDERS OF LAGOON SOUTH OF VICTORVILLE" ALSO ATTRIBUTED TO THIS SITE.

**Owner/Manager:** UNKNOWN

## *Toxostoma bendirei*

Bendire's thrasher — **Element Code:** ABPBK06050

**Status**
**Federal:** None
**State:** None

**NDDB Element Ranks**
**Global:** G4G5
**State:** S3

**Other Lists**
**CDFG Status:** SC

**Habitat Associations**
**General:** MIGRATORY; LOCAL SPRING/SUMMER RESIDENT IN FLAT AREAS OF DESERT SUCCULENT SHRUB/JOSHUA TREE HABITATS IN MOJAVE DESERT
**Micro:** NESTS IN CHOLLA, YUCCA, PALOVERDE, THORNY SHRUB, OR SMALL TREE, USUALLY 0.5 TO 20 FEET ABOVE GROUND

**Occurrence No.** 141 **Map Index:** 04075 **EO Index:** 24599
**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1987-05-15
**Site:** 1987-05-15
**Record Last Updated:** 1989-08-10

**Quad Summary:** Fairview Valley (3411751/157D)
**County Summary:** San Bernardino

**Lat/Long:** 34.59499° / -117.07894°
**UTM:** Zone-11 N3828133 E492761
**Radius:** 1/5 mile
**Elevation:** 3,600 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 06N
**Range:** 02W
**Section:** 22 **Qtr:** NW
**Meridian:** S

**Location:** ALONG JOHNSON RD, SW OF SIDEWINDER MTN, APPROX 10 MI NE OF APPLE VALLEY
**Location Detail:** ONE HEARD DURING 1987 BREEDING SEASON IN SUITABLE HABITAT. OBSERVED DURING 1986 SURVEY
**Ecological:** VEGETATION WITHIN A 50 M RADIUS INCLUDES YUCCA BREVIFOLIA, Y. SCHIDIGERA, EPHEDERA, HYMENOCLEA SALSOLA, LARREA TRIDENTATA & OPUNTIA SP
**Threat:** DIRT ROAD OCCURS IN HABITAT
**Owner/Manager:** BLM

---

**Occurrence No.** 142 **Map Index:** 04184 **EO Index:** 24598
**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1987-05-15
**Site:** 1987-05-15
**Record Last Updated:** 1989-08-10

**Quad Summary:** Fairview Valley (3411751/157D)
**County Summary:** San Bernardino

**Lat/Long:** 34.58249° / -117.04782°
**UTM:** Zone-11 N3826745 E495614
**Radius:** 1/5 mile
**Elevation:** 3,940 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 06N
**Range:** 02W
**Section:** 28 **Qtr:** NE
**Meridian:** S

**Location:** SOUTH OF SIDEWINDER MOUNTAIN, 9.3 MI E ALONG JOHNSON RD FROMBELL MOUNTAIN RD
**Location Detail:** ONE OBS DURING 1987 BREEDING SEASON IN SUITABLE HABITAT. TWO OBSERVED AND A THIRD HEARD DURING 1986 BREEDING SEASON
**Ecological:** VEGETATION WITHIN A 50 M RADIUS INCLUDES YUCCA BREVIFOLIA, LARREA TRIDENTATA, HYMENOCLEA SALSOLA, OPUNTIA SPP. AND EPHEDERA
**Threat:** SOME OFF-ROAD VEHICLE ACTIVITY/DIRT RD IN AREA
**Owner/Manager:** BLM

---

**Occurrence No.** 143 **Map Index:** 04277 **EO Index:** 24597
**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1986-06-05
**Site:** 1986-06-05
**Record Last Updated:** 1989-08-10

**Quad Summary:** Fairview Valley (3411751/157D)
**County Summary:** San Bernardino

**Lat/Long:** 34.58138° / -117.00559°
**UTM:** Zone-11 N3826621 E499487
**Radius:** 1/5 mile
**Elevation:** 3,400 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 06N
**Range:** 01W
**Section:** 29 **Qtr:** NE
**Meridian:** S

**Location:** SE OF SIDEWINDER MOUNTAIN, 11.7 MI E ALONG JOHNSON ROAD FROMBELL MOUNTAIN RD
**Location Detail:** ONE OBSERVED DURING 1986 BREEDING SEASON IN SUITABLE HABITAT
**Ecological:** VEGETATION WITHIN A 50 M RADIUS INCLUDES LARREA TRIDENTATA, AMBROSIA DUMOSA, YUCCA SCHIDIGERA, HILARIA RIGIDA, OPUNTIA ECHINOCARPA, HYMENOCLEA SALSOLA & EPHIDERA
**Threat:** DIRT ROAD OCCURS IN HABITAT
**Owner/Manager:** BLM

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***Toxostoma lecontei***

Le Conte's thrasher

**Element Code:** ABPBK06100

**Status**
**Federal:** None
**State:** None

**NDDB Element Ranks**
**Global:** G3
**State:** S3

**Other Lists**
**CDFG Status:** SC

**Habitat Associations**
**General:** DESERT RESIDENT; PRIMARILY OF OPEN DESERT WASH, DESERT SCRUB, ALKALI DESERT SCRUB, AND DESERT SUCCULENT SCRUB HABITATS.
**Micro:** COMMONLY NESTS IN A DENSE, SPINY SHRUB OR DENSELY BRANCHED CACTUS IN DESERT WASH HABITAT, USUALLY 2-8 FEET ABOVE GROUND.

**Occurrence No.** 17 **Map Index:** 03433 **EO Index:** 24539
**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1917-12-12
**Site:** 1917-12-12
**Record Last Updated:** 1989-08-10

**Quad Summary:** Hesperia (3411743/133A)
**County Summary:** San Bernardino

**Lat/Long:** 34.42472° / -117.29782°
**UTM:** Zone-11 N3809290 E472634
**Radius:** 1/5 mile
**Elevation:** 3,200 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 04N
**Range:** 04W
**Section:** 21 **Qtr:** NE
**Meridian:** S

**Location:** HESPERIA
**General:** UCLA MUSEUM SPECIMEN #11941
**Owner/Manager:** UNKNOWN

---

**Occurrence No.** 18 **Map Index:** 04189 **EO Index:** 24543
**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1925-04-17
**Site:** 1925-04-17
**Record Last Updated:** 1989-08-10

**Quad Summary:** Fairview Valley (3411751/157D)
**County Summary:** San Bernardino

**Lat/Long:** 34.53360° / -117.04726°
**UTM:** Zone-11 N3821324 E495663
**Radius:** 1 mile
**Elevation:**
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 02W
**Section:** 12 **Qtr:** SW
**Meridian:** S

**Location:** 14 MI E OF VICTORVILLE
**General:** LACM SPECIMEN #4992
**Owner/Manager:** UNKNOWN

---

**Occurrence No.** 19 **Map Index:** 03710 **EO Index:** 24542
**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1963-08-10
**Site:** 1963-08-10
**Record Last Updated:** 1989-08-10

**Quad Summary:** Apple Valley South (3411742/132B), Apple Valley North (3411752/157C)
**County Summary:** San Bernardino

**Lat/Long:** 34.50444° / -117.18383°
**UTM:** Zone-11 N3818106 E482197
**Radius:** 1 mile
**Elevation:** 2,940 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 03W
**Section:** 21 **Qtr:** SE
**Meridian:** S

**Location:** APPLE VALLEY, NEAR THE INTERSECTION OF STATE ROUTE 18 AND KIOWARD.
**General:** SBCM SPECIMEN #S-3480.
**Owner/Manager:** UNKNOWN

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## *Toxostoma lecontei*

Le Conte's thrasher — **Element Code:** ABPBK06100

**Status** — **Federal:** None; **State:** None

**NDDB Element Ranks** — **Global:** G3; **State:** S3

**Other Lists** — **CDFG Status:** SC

**Habitat Associations**

**General:** DESERT RESIDENT, PRIMARILY OF OPEN DESERT WASH, DESERT SCRUB, ALKALI DESERT SCRUB, AND DESERT SUCCULENT SCRUB HABITATS

**Micro:** COMMONLY NESTS IN A DENSE, SPINY SHRUB OR DENSELY BRANCHED CACTUS IN DESERT WASH HABITAT, USUALLY 2-8 FEET ABOVE GROUND.

**Occurrence No.** 20 **Map Index:** 03782 **EO Index:** 24540

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1932-04-17
**Site:** 1932-04-17
**Record Last Updated:** 1989-08-10

**Quad Summary:** Apple Valley North (3411752/157C)
**County Summary:** San Bernardino

**Lat/Long:** 34.54054° / -117.16004°
**UTM:** Zone-11 N3822104 E485314
**Radius:** 1 mile
**Elevation:** 2,910 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 03W
**Section:** 11 **Qtr:** NE
**Meridian:** S

**Location:** 7 MI E OF VICTORVILLE (NEAR THE INTERSECTION OF CAHUILLA RD AND JOSHUA RD.)

**General:** SBCM EGG SET #6287

**Owner/Manager:** UNKNOWN

---

**Occurrence No.** 21 **Map Index:** 03434 **EO Index:** 28960

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1921-09-27
**Site:** 1921-09-27
**Record Last Updated:** 1989-08-10

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.53609° / -117.29532°
**UTM:** Zone-11 N3821638 E472900
**Radius:** 1 mile
**Elevation:** 2,860 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 04W
**Section:** 10 **Qtr:** E
**Meridian:** S

**Location:** VICTORVILLE

**General:** UCLA SPECIMEN #J1357

**Owner/Manager:** UNKNOWN

---

**Occurrence No.** 73 **Map Index:** 03873 **EO Index:** 24512

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1916-05-08
**Site:** 1916-05-08
**Record Last Updated:** 1989-08-10

**Quad Summary:** Fairview Valley (3411751/157D), Apple Valley North (3411752/157C)
**County Summary:** San Bernardino

**Lat/Long:** 34.53637° / -117.13088°
**UTM:** Zone-11 N3821638 E487989
**Radius:** 1 mile
**Elevation:** 3,000 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 05N
**Range:** 03W
**Section:** 07 **Qtr:** SW
**Meridian:** S

**Location:** 10 MILES EAST OF VICTORVILLE IN MOHAVE DESERT, 3 MILES NE OF THE TOWN OF APPLE VALLEY

**General:** EGG SET FROM NEST IN CHOLLA

**Owner/Manager:** UNKNOWN

---

## *Toxostoma lecontei*

Le Conte's thrasher

**Element Code:** ABPBK06100

**Status**
**Federal:** None
**State:** None

**NDDB Element Ranks**
**Global:** G3
**State:** S3

**Other Lists**
**CDFG Status:** SC

**Habitat Associations**
**General:** DESERT RESIDENT, PRIMARILY OF OPEN DESERT WASH, DESERT SCRUB, ALKALI DESERT SCRUB, AND DESERT SUCCULENT SCRUB HABITATS.
**Micro:** COMMONLY NESTS IN A DENSE, SPINY SHRUB OR DENSELY BRANCHED CACTUS IN DESERT WASH HABITAT. USUALLY 2-8 FEET ABOVE GROUND.

**Occurrence No.** 100 **Map Index:** 03948 **EO Index:** 24481
**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1986-06-04
**Site:** 1986-06-04
**Record Last Updated:** 1989-08-10

**Quad Summary:** Fifteenmile Valley (3411741/132A)
**County Summary:** San Bernardino

**Lat/Long:** 34.44229° / -117.11335°
**UTM:** Zone-11 N3811204 E489586
**Radius:** 1/5 mile
**Elevation:** 3,240 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 04N
**Range:** 02W
**Section:** 17 **Qtr:** NW
**Meridian:** S

**Location:** APPLE VALLEY, 2.2 MI SSE OF DEADMAN POINT, 0.6 MI W JCT MILPAS DRIVE AND DESERT VIEW.
**Location Detail:** TWO OBS AND ONE HEARD DURING 1986 BREEDING SEASON IN SUITABLE HABITAT. NONE OBS IN 1987.
**Ecological:** VEG WITHIN 50 M RADIUS INCLUDES LARREA TRIDENTATA, HYMENOCLEA SALSOLA, EPHEDRA, OPUNTIA ECHINOCARPA AND YUCCA BREVIFOLIA.
**Threat:** TWO TRANSMISSION LINES AND RAILROAD TRACKS IN AREA.
**Owner/Manager:** UNKNOWN

---

**Occurrence No.** 101 **Map Index:** 04156 **EO Index:** 24480
**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1987-05-14
**Site:** 1987-05-14
**Record Last Updated:** 1989-08-10

**Quad Summary:** Fifteenmile Valley (3411741/132A)
**County Summary:** San Bernardino

**Lat/Long:** 34.44248° / -117.06031°
**UTM:** Zone-11 N3811220 E494459
**Radius:** 1/5 mile
**Elevation:** 3,040 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT
**Township:** 04N
**Range:** 02W
**Section:** 14 **Qtr:** NW
**Meridian:** S

**Location:** APPLE VALLEY, 0.9 S OF FIFTEENMILE POINT.
**Location Detail:** ONE OBS DURING 1987 BREEDING SEASON IN SUITABLE HABITAT. ALSO HEARD IN 1986.
**Ecological:** VEG WITHIN A 50 M RADIUS INCLUDES HYMENOCLEA SALSOLA, LARREA TRIDENTATA, ATRIPLEX, OPUNTIA ECHINOCARPA, YUCCA BREVIFOLIA, EPHEDRA & AMBROSIA DUMOSA.
**Threat:** GRADED ROAD AND TRANSMISSION LINE IN AREA.
**Owner/Manager:** UNKNOWN

---

**Occurrence No.** 145 **Map Index:** 04199 **EO Index:** 6569
**Occ Rank:** Excellent
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1991-03-12
**Site:** 1991-03-12
**Record Last Updated:** 1993-09-27

**Quad Summary:** Fifteenmile Valley (3411741/132A)
**County Summary:** San Bernardino

**Lat/Long:** 34.42812° / -117.04444°
**UTM:** Zone-11 N3809827 E495916
**Radius:** 80 meters
**Elevation:** 3,180 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 04N
**Range:** 02W
**Section:** 24 **Qtr:** NW
**Meridian:** S

**Location:** ALONG THE SOUTH SIDE OF FOOTHILL ROAD, 0.75 MILES WEST OF HIGH ROAD, FIFTEENMILE VALLEY.
**Ecological:** HABITAT CONSISTS OF OPEN CREOSOTE BUSH SCRUB, WITH A LOT OF OPUNTIA ECHINOCARPA PRESENT.
**General:** IN 1988, A PAIR AND NEST OBSERVED IN DENSE OPUNTIA ECHINOCARPA; NO EGGS OR YOUNG PRESENT. IN 1991, ONE PAIR WAS OBSERVED.
**Owner/Manager:** UNKNOWN

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## *Toxostoma lecontei*

Le Conte's thrasher — **Element Code:** ABPBK06100

**Status:** Federal: None; State: None

**NDDB Element Ranks:** Global: G3; State: S3

**Other Lists:** CDFG Status: SC

**Habitat Associations**

**General:** DESERT RESIDENT, PRIMARILY OF OPEN DESERT WASH, DESERT SCRUB, ALKALI DESERT SCRUB, AND DESERT SUCCULENT SCRUB HABITATS.

**Micro:** COMMONLY NESTS IN A DENSE, SPINY SHRUB OR DENSELY BRANCHED CACTUS IN DESERT WASH HABITAT, USUALLY 2-8 FEET ABOVE GROUND.

**Occurrence No.** 161 **Map Index:** 24362 **EO Index:** 6607

**Occ Rank:** Fair
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1991-03-06
**Site:** 1991-03-06
**Record Last Updated:** 1993-09-27

**Quad Summary:** Apple Valley South (3411742/132B)
**County Summary:** San Bernardino

**Lat/Long:** 34.43973° / -117.16052°
**UTM:** Zone-11 N3810929 E483415
**Radius:** 80 meters
**Elevation:** 3,100 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 04N
**Range:** 03W
**Section:** 15 **Qtr:** NE
**Meridian:** S

**Location:** JUST EAST OF PIONEER ROAD, 0.2 MILE SOUTH OF TUSSING RANCH ROAD, APPLE VALLEY.

**Location Detail:** A PAIR OF BIRDS WAS OBSERVED ALONG THE RAILROAD TRACKS. MALE WAS SINGING FROM YUCCA SCHIDIGERAS.

**Ecological:** HABITAT CONSISTS OF SPARSE CREOSOTE BUSH SCRUB, WITH SOME SCATTERED MOHAVE YUCCA (YUCCA SCHIDIGERA).

**Threat:** THREATS INCLUDE ORV ACTIVITY AND THE PROXIMITY OF A RESIDENTIAL NEIGHBORHOOD (0.25 MILE NORTH).

**General:** ONE PAIR OBSERVED IN 1991.

**Owner/Manager:** UNKNOWN

---

**Occurrence No.** 162 **Map Index:** 24363 **EO Index:** 6606

**Occ Rank:** Good
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1991-11-15
**Site:** 1991-11-15
**Record Last Updated:** 1993-09-27

**Quad Summary:** Apple Valley South (3411742/132B)
**County Summary:** San Bernardino

**Lat/Long:** 34.42771° / -117.23007°
**UTM:** Zone-11 N3809605 E478860
**Radius:** 80 meters
**Elevation:** 2,880 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 04N
**Range:** 03W
**Section:** 18 **Qtr:** SE
**Meridian:** S

**Location:** OCOTILLO ROAD, WHERE IT INTERSECTS THE EAST BANK OF THE MOJAVE RIVER, APPLE VALLEY.

**Ecological:** HABITAT CONSISTS OF SPARSE CREOSOTE BUSH SCRUB AND JOSHUA TREE WOODLAND, SAND DUNES ALONG THE MOJAVE RIVER BANK WITH SPARSE PERENNIAL AND ANNUAL GRASSES AND FORBS.

**Threat:** THREATS INCLUDE PERIODIC BULLDOZING OF RIVER FOR FLOOD CONTROL AND PROXIMITY OF RURAL RESIDENCES.

**General:** ONE PAIR OBSERVED IN 1991.

**Owner/Manager:** UNKNOWN

---

**Occurrence No.** 163 **Map Index:** 24905 **EO Index:** 8573

**Occ Rank:** Excellent
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1991-03-12
**Site:** 1991-03-12
**Record Last Updated:** 1993-09-27

**Quad Summary:** Fifteenmile Valley (3411741/132A)
**County Summary:** San Bernardino

**Lat/Long:** 34.42931° / -117.04661°
**UTM:** Zone-11 N3809759 E495717
**Radius:** 80 meters
**Elevation:** 3,070 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 04N
**Range:** 02W
**Section:** 13 **Qtr:** SE
**Meridian:** S

**Location:** ALONG THE NORTH SIDE OF FOOTHILL ROAD, 0.35 MILE WEST OF HIGH ROAD, FIFTEENMILE VALLEY.

**Ecological:** HABITAT CONSISTS OF CREOSOTE BUSH SCRUB, WITH A LOT OF OPUNTIA ECHINOCARPA PRESENT.

**General:** ONE PAIR OBSERVED IN 1991.

**Owner/Manager:** UNKNOWN

## *Toxostoma lecontei*

Le Conte's thrasher

**Element Code:** ABPBK06100

**Status**
**Federal:** None
**State:** None

**NDDB Element Ranks**
**Global:** G3
**State:** S3

**Other Lists**
**CDFG Status:** SC

**Habitat Associations**
**General:** DESERT RESIDENT; PRIMARILY OF OPEN DESERT WASH, DESERT SCRUB, ALKALI DESERT SCRUB, AND DESERT SUCCULENT SCRUB HABITATS.
**Micro:** COMMONLY NESTS IN A DENSE, SPINY SHRUB OR DENSELY BRANCHED CACTUS IN DESERT WASH HABITAT, USUALLY 2-8 FEET ABOVE GROUND.

**Occurrence No.** 164 **Map Index:** 24369 **EO Index:** 6572
**Occ Rank:** Excellent
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1991-03-12
**Site:** 1991-03-12
**Record Last Updated:** 1993-12-30

**Quad Summary:** Fifteenmile Valley (3411741/132A)
**County Summary:** San Bernardino

**Lat/Long:** 34.42797° / -117.03663°
**UTM:** Zone-11 N3809610 E496634
**Radius:** 80 meters
**Elevation:** 3,030 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 04N
**Range:** 02W
**Section:** 24 **Qtr:** NE
**Meridian:** S

**Location:** ALONG THE SOUTH SIDE OF FOOTHILL ROAD, 0.2 MILE WEST OF HIGH ROAD, FIFTEENMILE VALLEY.
**Ecological:** HABITAT CONSISTS OF OPEN CREOSOTE BUSH SCRUB, WITH A LOT OF OPUNTIA ECHINOCARPA AND OPUNTIA RAMOSISSIMA PRESENT.
**General:** IN 1991, 1 MALE WAS OBSERVED SINGING FROM LYCIUM COOPERI, YUCCA BREVIFOLIA, AND OPUNTIA RAMOSISSIMA.
**Owner/Manager:** UNKNOWN

---

**Occurrence No.** 165 **Map Index:** 24858 **EO Index:** 28578
**Occ Rank:** Excellent
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1991-03-12
**Site:** 1991-03-12
**Record Last Updated:** 1993-09-27

**Quad Summary:** Fifteenmile Valley (3411741/132A)
**County Summary:** San Bernardino

**Lat/Long:** 34.42800° / -117.02132°
**UTM:** Zone-11 N3809613 E498041
**Radius:** 80 meters
**Elevation:** 3,000 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 04N
**Range:** 01W
**Section:** 19 **Qtr:** NE
**Meridian:** S

**Location:** ALONG THE SOUTH SIDE OF FOOTHILL ROAD, 0.25 MILE WEST OF WILLOW WELLS AVENUE, FIFTEENMILE VALLEY.
**Ecological:** HABITAT CONSISTS OF OPEN CREOSOTE BUSH SCRUB, WITH A LOT OF OPUNTIA ECHINOCARPA PRESENT.
**General:** ONE PAIR OBSERVED IN 1991.
**Owner/Manager:** UNKNOWN

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**Occurrence No.** 166 **Map Index:** 24857 **EO Index:** 17950
**Occ Rank:** Good
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1991-06-20
**Site:** 1991-06-20
**Record Last Updated:** 1993-09-27

**Quad Summary:** Fifteenmile Valley (3411741/132A)
**County Summary:** San Bernardino

**Lat/Long:** 34.43592° / -117.02374°
**UTM:** Zone-11 N3810492 E497618
**Radius:** 80 meters
**Elevation:** 2,950 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 04N
**Range:** 01W
**Section:** 18 **Qtr:** SE
**Meridian:** S

**Location:** ALONG THE EAST SIDE OF WILLOW WELLS AVENUE, 0.5 MILE NORTH OF FOOTHILL ROAD, FIFTEENMILE VALLEY.
**Ecological:** HABITAT CONSISTS OF ALKALI SCRUB.
**General:** ONE PAIR OBSERVED IN 1991.
**Owner/Manager:** UNKNOWN

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## *Toxostoma lecontei*

Le Conte's thrasher

**Element Code:** ABPBK06100

**Status**
**Federal:** None
**State:** None

**NDDB Element Ranks**
**Global:** G3
**State:** S3

**Other Lists**
**CDFG Status:** SC

**Habitat Associations**
**General:** DESERT RESIDENT; PRIMARILY OF OPEN DESERT WASH, DESERT SCRUB, ALKALI DESERT SCRUB, AND DESERT SUCCULENT SCRUB HABITATS.
**Micro:** COMMONLY NESTS IN A DENSE, SPINY SHRUB OR DENSELY BRANCHED CACTUS IN DESERT WASH HABITAT, USUALLY 2-8 FEET ABOVE GROUND.

**Occurrence No.** 167 **Map Index:** 24366 **EO Index:** 6605
**Occ Rank:** Good
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1991-03-29
**Site:** 1991-03-29
**Record Last Updated:** 1993-09-27

**Quad Summary:** Fifteenmile Valley (3411741/132A)
**County Summary:** San Bernardino

**Lat/Long:** 34.44501° / -117.05330°
**UTM:** Zone-11 N3811501 E495103
**Radius:** 80 meters
**Elevation:** 3,020 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 04N
**Range:** 02W
**Section:** 11 **Qtr:** SE
**Meridian:** S

**Location:** 0.2 MILE NORTH OF DESERT VIEW ROAD AND 1.1 MILES WEST OF HIGH ROAD, FIFTEENMILE VALLEY.
**Ecological:** HABITAT CONSISTS OF CREOSOTE BUSH SCRUB, WITH A LOT OF OPUNTIA ECHINOCARPA PRESENT, AND SCATTERED JOSHUA TREES.
**General:** ONE MALE OBSERVED SINGING FROM THE TOP OF A JOSHUA TREE IN 1991.
**Owner/Manager:** UNKNOWN

---

**Occurrence No.** 168 **Map Index:** 24899 **EO Index:** 6570
**Occ Rank:** Good
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1991-03-29
**Site:** 1991-03-29
**Record Last Updated:** 1993-09-27

**Quad Summary:** Fifteenmile Valley (3411741/132A)
**County Summary:** San Bernardino

**Lat/Long:** 34.44235° / -117.05718°
**UTM:** Zone-11 N3811206 E494746
**Radius:** 80 meters
**Elevation:** 3,040 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 04N
**Range:** 02W
**Section:** 14 **Qtr:** NE
**Meridian:** S

**Location:** ALONG THE SOUTH SIDE OF DESERT VIEW ROAD AND 1.7 MILES EAST OF CORTO ROAD, FIFTEENMILE VALLEY.
**Ecological:** HABITAT CONSISTS OF CREOSOTE BUSH SCRUB, WITH A LOT OF OPUNTIA ECHINOCARPA PRESENT, AND SCATTERED JOSHUA TREES (YUCCA BREVIFOLIA).
**General:** ONE MALE OBSERVED SINGING FROM THE TOP OF A JOSHUA TREE.
**Owner/Manager:** UNKNOWN

---

**Occurrence No.** 169 **Map Index:** 24900 **EO Index:** 6571
**Occ Rank:** Good
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1991-03-29
**Site:** 1991-03-29
**Record Last Updated:** 1993-09-27

**Quad Summary:** Fifteenmile Valley (3411741/132A)
**County Summary:** San Bernardino

**Lat/Long:** 34.44234° / -117.06330°
**UTM:** Zone-11 N3811205 E494184
**Radius:** 80 meters
**Elevation:** 3,080 ft
**Mapping Precision:** SPECIFIC
**Symbol Type:** POINT
**Township:** 04N
**Range:** 02W
**Section:** 14 **Qtr:** NW
**Meridian:** S

**Location:** ALONG THE SOUTH SIDE OF DESERT VIEW ROAD, 1.3 MILES EAST OF CORTO ROAD, FIFTEENMILE VALLEY.
**Ecological:** HABITAT CONSISTS OF CREOSOTE BUSH SCRUB, WITH A LOT OF OPUNTIA ECHINOCARPA, AND SCATTERED JOSHUA TREES.
**General:** ONE SINGING MALE OBSERVED IN 1991.
**Owner/Manager:** UNKNOWN

California Department of Fish and Game
Natural Diversity Database
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## *Vireo bellii pusillus*

least Bell's vireo

**Element Code:** ABPBW01114

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** Endangered | **Global:** G5T2 | **CDFG Status:** |
| **State:** Endangered | **State:** S2 | |

**Habitat Associations**

**General:** SUMMER RESIDENT OF SOUTHERN CALIFORNIA IN LOW RIPARIAN IN VICINITY OF WATER OR IN DRY RIVER BOTTOMS; BELOW 2000 FT.

**Micro:** NESTS PLACED ALONG MARGINS OF BUSHES OR ON TWIGS PROJECTING INTO PATHWAYS, USUALLY WILLOW, BACCHARIS, MESQUITE.

**Occurrence No.** 265 **Map Index:** 54540 **EO Index:** 54540

**Occ Rank:** Good
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 2003-07-29
**Site:** 2003-07-29
**Record Last Updated:** 2004-03-03

**Quad Summary:** Victorville (3411753/158D)
**County Summary:** San Bernardino

**Lat/Long:** 34.51704° / -117.26599°
**UTM:** Zone-11 N3819518 E475585
**Radius:** 1/10 mile
**Elevation:** 2,760 ft

**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT

**Township:** 05N
**Range:** 04W
**Section:** 14 **Qtr:** XX
**Meridian:** S

**Location:** MOHAVE NARROWS REGIONAL PARK, ALONG THE MOHAVE RIVER & WEST OF HORSESHOE LAKE, SE OF VICTORVILLE

**Ecological:** HABITAT CONSISTS OF SALIX SPP. AND POPULUS FREMONTII. CANOPY HEIGHT = 8M. SURFACE WATER OR SATURATED SOIL IS PRESENT AT SITE. SURROUNDING LAND COMPRISED OF SAN BERNARDINO PARK LAND.

**General:** 1 BREEDING PAIR OBSERVED BEWTEEN 27 APR AND 29 JUL 2003.

**Owner/Manager:** SBD COUNTY

California Department of Fish and Game
Natural Diversity Database
Full Condensed Report for Selected Elements - Multiple Records per Page

## *Vireo vicinior*

gray vireo

**Element Code:** ABPBW01140

| Status | NDDB Element Ranks | Other Lists |
|---|---|---|
| **Federal:** None | **Global:** G4 | **CDFG Status:** SC |
| **State:** None | **State:** S2 | |

**Habitat Associations**

**General:** DRY CHAPARRAL, WEST OF DESERT, IN CHAMISE-DOMINATED HABITAT, MOUNTAINS OF MOJAVE DESERT. ASSOCIATED WITH JUNIPER & ARTEM

**Micro:** FORAGE, NEST, AND SING IN AREAS FORMED BY A CONTINUOUS GROWTH OF TWIGS, 1-5 FT ABOVE GROUND.

**Occurrence No.** 27 **Map Index:** 03424 **EO Index:** 24938

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1949-05-08
**Site:** 1949-05-08
**Record Last Updated:** 1989-08-10

**Quad Summary:** Hesperia (3411743/133A)
**County Summary:** San Bernardino

**Lat/Long:** 34.38276° / -117.30171°
**UTM:** Zone-11 N3804638 E472263
**Radius:** 1/5 mile
**Elevation:** 3,260 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT

**Township:** 03N
**Range:** 04W
**Section:** 04 **Qtr:** NE
**Meridian:** S

**Location:** 3 MI S OF HESPERIA

**General:** SBCM #E1020

**Owner/Manager:** UNKNOWN

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**Occurrence No.** 34 **Map Index:** 03421 **EO Index:** 24943

**Occ Rank:** Unknown
**Origin:** Natural/Native occurrence
**Presence:** Presumed Extant
**Trend:** Unknown

**Dates Last Seen**
**Element:** 1937-XX-XX
**Site:** 1937-XX-XX
**Record Last Updated:** 1989-08-10

**Quad Summary:** Hesperia (3411743/133A)
**County Summary:** San Bernardino

**Lat/Long:** 34.42160° / -117.30158°
**UTM:** Zone-11 N3808945 E472287
**Radius:** 1/5 mile
**Elevation:** 3,200 ft
**Mapping Precision:** NON-SPECIFIC
**Symbol Type:** POINT

**Township:** 04N
**Range:** 04W
**Section:** 21 **Qtr:** NE
**Meridian:** S

**Location:** HESPERIA

**General:** EGGS; SBCM #5871

**Owner/Manager:** UNKNOWN