

### **3 ENVIRONMENTAL SETTING**

This section provides a general overview of the environmental setting for the proposed Project. More detailed descriptions of the environmental setting germane to each environmental issue can be found in Section 4.0, *Environmental Impact Analysis*.

#### **0.1 REGIONAL AND PROJECT AREA SETTING**

The Project Area is located in San Bernardino County and is comprised of the approximately 50 square-mile area currently served by the Park Water Company/Apple Valley Ranchos Water Company water supply system (AVR System). The majority of the Project Area is in the incorporated area of the Town of Apple Valley (Town), with the remainder of the Project Area located outside the Town's corporate boundary in a portion of the incorporated City of Victorville and unincorporated San Bernardino County as shown in Figure 2-1 in Section 2.0, *Project Description*. The Project Area is bordered by the City of Victorville to the west and City of Hesperia to the southwest, and surrounded by unincorporated areas of San Bernardino County to the north, east, and south.

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. The Project Area is located on gently sloping alluvial fans ranging in elevation from approximately 3,400 feet near the base of the Fairview Mountains to the northeast to 2,700 feet along the Mojave River to the west (Town of Apple Valley, 2009a). Through Apple Valley, the Mojave River is an intermittent river with most of its flow occurring underground and in surface channels that remain dry the majority of the time, appearing as a wide floodplain that generally defines Apple Valley's western boundary. Like the rest of southern California, the Project Area is within a seismically active region.

Climate in the Project Area is representative of a high desert ecosystem, with extreme fluctuations of daily temperature, strong seasonal winds, and relatively low annual precipitation. The mountains that surround the Project Area 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. Temperatures in the low lying areas of Apple Valley range from the lower teens during winter months to highs above 100 degrees Fahrenheit during summer months. The Town experiences average rainfall of approximately 7.5 inches per year, with the surrounding mountains receiving substantially more precipitation (Town of Apple Valley, 2009b).

The territory currently served by the AVR System is primarily residential in nature but also includes other land uses such as parks and open space as well as commercial, institutional, and industrial facilities. 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. Lands in the southern and central portion of the Town are the most developed. 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. Lands containing sparser development and lands remaining vacant are generally located in the northern one-third of the Town, northerly of Waalew Road. East of the Town of Apple Valley, the Project Area includes unincorporated San Bernardino County 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 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. The area to east of Apple Valley included in the AVR System service area is rural in nature with very low density residential development present.

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.

Apple Valley 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; 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 interconnects the local circulation network.

### **3.3 CUMULATIVE PROJECTS SETTING**

CEQA defines "cumulative impacts" as two or more individual events that, when considered together, are considerable or will compound other environmental impacts. Cumulative impacts are the changes in the environment that result from the incremental impact of development of the proposed Project and other nearby projects. For example, traffic impacts of two nearby projects may be insignificant when analyzed separately, but could have a significant impact when analyzed together. Cumulative impact analysis allows the EIR to provide a reasonable forecast of future environmental conditions and can more accurately gauge the effects of a series of projects.

For this analysis the cumulative projects are assumed to be the buildout of the 2009 Apple Valley General Plan, which was adopted on August 11, 2009 as well as selected specific development projects proposed in the vicinity of the Plan Area within the Town of Apple Valley and the unincorporated area of San Bernardino County east of the town where a portion of the AVR System service area is located. The Community Development Chapter of the Apple



Valley General Plan projects that implementation of the General Plan could result in a population of 185,858 persons in Apple Valley at buildout. This would be an increase of 115,766 persons from the General Plan’s 2008 population baseline of 70,092, and an increase of 114,462 persons from the City’s current population of 71,396 (California Department of Finance, 2015).

Specific development projects proposed in the vicinity of the Project Area included in the cumulative impacts analysis of this EIR are listed in Table 3-1. This list was sourced from the Town of Apple Valley Planning Department in June 2015.

**Table 3-1: Cumulative Projects**

No.	Cumulative Project	Location/Address	City/Jurisdiction	Description
1	Tapestry Specific Plan	Located on approximately 9,365 acres in the southeastern portion of the City of Hesperia at the southern edge of the San Bernardino County High Desert area. Project site is approximately eight miles east of Interstate 15. SR 173 generally serves as the Project site’s southern and eastern boundary. The northerly boundary is Rancho Road.	City of Hesperia	The Specific Plan proposes a maximum of 19,311 residential units with a mix of densities ranging from very low density and estate to high density and mixed-use. The Specific Plan also proposes: two mixed-use town centers with approximately 500,000 to 700,000 square feet of commercial and retail; approximately 367 acres of park land; trail systems; 12 schools; public and civic facilities; a wastewater reclamation plant; other supporting infrastructure; and preservation of approximately 3,526 acres of open space.
2	Desert Gateway	Desert Gateway is located at the interchange of the planned High Desert Corridor expressway and Interstate 15. Located at the northern edge of the City of Victorville, immediately northwest of the Town of Apple Valley.	City of Victorville	Desert Gateway comprises a 10,203-acre area, and provides for 26,100 residential units of varying sizes and densities, as well as 283 acres of commercial, 4,564 acres of institutional and 1,085 acres of industrial uses.
3	Hacienda at Fairview Valley	Located in the eastern portion of the Town of Apple Valley’s Sphere of Influence	County of San Bernardino	The Specific Plan provides for a master planned residential community. Supporting land uses include, but are not limited to, retail/commercial, parks, recreation, open space, public safety, and public facilities. The Specific Plan provides a mix of approximately 3,114 residential homes, 15 acres of Neighborhood Commercial, and approximately 336 acres of Parks/Recreation/Open Space.

Source: Town of Apple Valley Planning Department, June 2015



## 4 ENVIRONMENTAL IMPACT ANALYSIS

This section discusses the possible environmental effects of the proposed Project for the specific issue areas that were identified through the Initial Study and Notice of Preparation process as having the potential to experience significant impacts. “Significant effect” is defined by *State CEQA Guidelines* Section 15382 as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by a project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment, but may be considered in determining whether the physical change is significant.”

The assessment of each issue area begins with a discussion of the setting relevant to that issue. To be clear, the environmental setting and the CEQA “baseline” used for evaluating impacts throughout this EIR are the same. Specifically, and as permitted by *State CEQA Guidelines* Section 15125, the setting and the baseline are the physical conditions in the area of the Project site at the time that the Notice of Preparation was released. Following the setting is a discussion of the Project’s impacts relative to the issue. Within the impact analysis, the first subsection identifies the methodologies used and the “significance thresholds,” which are those criteria adopted by the Town, other agencies, universally recognized, or developed specifically for this analysis to determine whether potential impacts are significant. The next subsection describes each impact of the proposed Project, mitigation measures for significant impacts, and the level of significance after mitigation. Each impact is listed in bold text, with the discussion of the impact and its significance immediately following. Each bolded impact listing also contains a statement of the significance determination for the environmental impact as follows:

**Class I, Significant and Unavoidable:** An impact that cannot be reduced to below the threshold level given all reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the Project is approved.

**Class II, Significant but Mitigable:** An impact that can be reduced to below the threshold level given all reasonably available and feasible mitigation measures. Such an impact requires findings to be made.

**Class III, Not Significant:** An impact that may be adverse, but does not exceed the threshold levels and does not require mitigation measures. However, mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.

**Class IV, Beneficial:** An impact that would reduce existing environmental problems or hazards.

Following each environmental impact discussion is a listing of recommended mitigation measures (if required) and the residual effects or level of significance remaining after the implementation of the measures. In those cases where the mitigation measure for an impact



could have a significant environmental impact in another issue area, this impact is discussed as a residual effect.

The impact analysis concludes with a discussion of cumulative effects, which evaluates the impacts associated with the proposed Project in conjunction with the projects listed in Table 3-1 in Section 3.0, *Environmental Setting*.



## **4.1 AIR QUALITY**

This section analyzes the proposed Project's potential temporary and long-term impacts on local and regional air quality. Greenhouse gas emissions are discussed in Section 4.2, *Greenhouse Gas Emissions*.

### **4.1.1 Setting**

#### **a. Climate and Meteorology**

The Project Area is located in the Mojave Desert Air Basin within the southern portion of the Mojave Desert, which is considered a high desert, with elevations ranging from 2,000 to 5,000 feet above mean sea level. Correspondingly, the climate is representative of a high desert ecosystem, with extreme fluctuations of daily temperature, strong seasonal winds, and relatively low annual precipitation.

The mountains that surround the Project Area 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. Temperatures in the low lying areas of Apple Valley range from the lower teens during winter months to highs above 100 degrees Fahrenheit during summer months. The Town experiences average rainfall of approximately 7.5 inches per year, with the surrounding mountains receiving substantially more precipitation (Town of Apple Valley, 2009b).

Natural vegetation in the Town and surrounding region is sparse and widely spaced, thereby exposing surface soils to wind. Because the area is frequently subjected to strong winds, sand and dust can become airborne. 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 (Town of Apple Valley, 2009b).

#### **b. Criteria Air Pollutants**

The Federal and State Clean Air Acts regulate the emission of particular airborne pollutants of concern, referred to as criteria pollutants, from various mobile and stationary sources. These criteria pollutants are regulated due to their potential to result in adverse effects to human health and the natural environment. The seven criteria pollutants that are regulated under these acts include ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulates less than 10 microns in diameter (PM<sub>10</sub>), particulates less than 2.5 microns in diameter (PM<sub>2.5</sub>), and lead (Pb). The State of California also regulates sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. The general characteristics of these pollutants, their sources, and their potential harmful effects are described below.

- Ozone. Ozone is produced by a photochemical reaction (triggered by sunlight) between nitrogen oxides (NO<sub>x</sub>) and reactive organic gases (ROG). NO<sub>x</sub> is formed during the combustion of fuels, while ROG are formed during combustion and evaporation of organic solvents. Because ozone requires sunlight to form, it mostly occurs in substantial



concentrations between the months of April and October. Ozone is a pungent, colorless toxic gas with direct health effects on humans including respiratory and eye irritation and possible changes in lung functions. Groups most sensitive to ozone include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors.

- Carbon Monoxide. CO is a local pollutant that is found in high concentrations only near a source of CO. The major source of CO, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations, therefore, are usually only found near areas of high traffic volumes. CO's health effects are related to its affinity for hemoglobin in the blood. At high concentrations, CO reduces the amount of oxygen in the blood, causing heart difficulty in people with chronic diseases, reduced lung capacity, and impaired mental abilities.
- Nitrogen Dioxide. NO<sub>2</sub> is a by-product of fuel combustion, with the primary source being motor vehicles and industrial boilers and furnaces. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts rapidly to form NO<sub>2</sub>, creating the mixture of NO and NO<sub>2</sub> commonly called NO<sub>x</sub>. NO<sub>2</sub> is an acute irritant. A relationship between NO<sub>2</sub> and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 parts per million (ppm) may occur. NO<sub>2</sub> absorbs blue light and causes a reddish brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of PM<sub>10</sub> and acid rain.
- Particulate Matter. Atmospheric particulate matter is comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mists. The particulates that are of particular concern are small particulates (PM<sub>10</sub>), which measures no more than 10 microns in diameter, and fine particulates (PM<sub>2.5</sub>), which measures no more than 2.5 microns in diameter. The characteristics, sources, and potential health effects associated with PM<sub>10</sub> and PM<sub>2.5</sub> can be different. Major man-made sources of PM<sub>10</sub> are agricultural operations, industrial processes, combustion of fossil fuels, construction, demolition operations, and entrainment of road dust into the atmosphere. Natural sources include wind-blown dust, wildfire smoke, and sea spray salt. The finer PM<sub>2.5</sub> particulates are generally associated with combustion processes as well as being formed in the atmosphere as a secondary pollutant through chemical reactions. PM<sub>2.5</sub> is more likely to penetrate deeply into the lungs and poses a serious health threat to all groups, but particularly to the elderly, children, and those with respiratory problems. More than half of the small and fine particulate matter that is inhaled into the lungs remains there, which can cause permanent lung damage. These materials can damage health by interfering with the body's mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance.
- Sulfur Dioxide. SO<sub>2</sub> is one of a group of highly reactive gasses known as "oxides of sulfur." The largest sources of SO<sub>2</sub> emissions are from fossil fuel combustion at power plants (73 percent) and other industrial facilities (20 percent). Smaller sources of SO<sub>2</sub> emissions include industrial processes such as extracting metal from ore, and the burning of high sulfur containing fuels by locomotives, large ships, and non-road equipment. SO<sub>2</sub> is linked with a number of adverse effects on the respiratory system.



- **Lead.** Lead (or Pb) is a toxic metal that can be emitted from industrial sources, leaded aviation gasoline, and lead-based paint. Lead may cause a range of health effects, from behavioral problems and learning disabilities, to seizures and death. The Mojave Desert Air Basin (Basin) is currently in compliance with Federal and State standards for lead and monitoring is only conducted periodically since the primary sources of atmospheric lead (leaded gasoline and lead-based paint) are no longer available in the State.

**c. Existing Environment**

The existing environment includes sources of air emissions throughout Apple Valley as well as receptors that are sensitive to poor air quality.

*Air Quality.* Over the past few decades, a noticeable deterioration in air quality has occurred in the Town of Apple Valley and the region due to increased local development and population growth, traffic, construction activity and various site disturbances. Although air pollution is emitted from various sources locally, some of the degradation of air quality can be attributed to sources outside of the Basin, including air basins to the west and southwest. Additionally, the Town of Apple Valley is susceptible to air inversions, which trap a layer of stagnant air near the ground, where it can be further loaded with pollutants (Town of Apple Valley, 2009a).

Apple Valley is under the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD). As the local air quality management agency, MDAQMD is required to monitor air pollutant levels to ensure that State and Federal air quality standards are met and, if they are not met, to develop strategies to meet them. Depending on whether or not the standards are met or exceeded, the Basin is classified as being in “attainment” or “nonattainment.” Apple Valley is located in the portion of the Basin that is in nonattainment for both the Federal and State standards for ozone and PM<sub>10</sub>, as well as the State standard for PM<sub>2.5</sub>. Thus, the Basin currently exceeds several State and Federal ambient air quality standards and is required to implement strategies to reduce pollutant levels to acceptable standards (California Air Resources Board, 2015b). Table 4.1-1 lists the Federal and State standards for criteria pollutants.

**Table 4.1-1:  
 Federal and State Ambient Air Quality Standards**

<b>Pollutant</b>	<b>Averaging Time</b>	<b>Federal Primary Standards</b>	<b>California Standard</b>
Ozone	1-Hour	---	0.09 ppm
	8-Hour	0.075 ppm	0.070 ppm
Carbon Monoxide	8-Hour	9.0 ppm	9.0 ppm
	1-Hour	35.0 ppm	20.0 ppm
Nitrogen Dioxide	Annual	0.053 ppm	0.030 ppm
	1-Hour	0.100 ppm	0.18 ppm
Sulfur Dioxide	Annual	---	---
	24-Hour	---	0.04 ppm
	1-Hour	0.075 ppm	0.25 ppm





**Table 4.1-1:  
 Federal and State Ambient Air Quality Standards**

Pollutant	Averaging Time	Federal Primary Standards	California Standard
PM <sub>10</sub>	Annual	---	20 µg/m <sup>3</sup>
	24-Hour	150 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>
PM <sub>2.5</sub>	Annual	12 µg/m <sup>3</sup>	12 µg/m <sup>3</sup>
	24-Hour	35 µg/m <sup>3</sup>	---
Lead	30-Day Average	---	1.5 µg/m <sup>3</sup>
	3-Month Average	0.15 µg/m <sup>3</sup>	---

*ppm = parts per million; µg/m<sup>3</sup> = micrograms per cubic meter  
 Sources: California Air Resources Board, 2015b.*

The air quality monitoring station closest to Apple Valley is located at 14306 Park Avenue in Victorville, approximately three miles west of the Town. This station monitors all criteria pollutants, and is representative of the ambient air quality in and around the Project Area. Table 4.1-2 indicates the number of days that each of the standards has been exceeded at this station. As shown, in the period from 2012 to 2014, State and Federal air quality standards were exceeded for ozone (8-hour average) and PM<sub>10</sub>. Additionally, the State air quality standard for ozone (hourly average) was also exceeded. The most frequently exceeded air quality standard was the 8-hour ozone concentration, which exceeded the State standard 58 times in 2011, 60 times in 2012, and 40 times in 2013. No exceedances of either the State or Federal standards for NO<sub>2</sub> or CO have occurred at this monitoring station in the last three years.

**Table 4.1-2:  
 Ambient Air Quality Data**

Pollutant	2012	2013	2014
Ozone (8-Hour), Worst 8-Hour Average (in ppm)	0.095	0.097	0.097
Number of days of State exceedances (>0.070 ppm)	58	60	40
Number of days of Federal exceedances (>0.075 ppm)	28	31	18
Ozone (Hourly), Worst Hour (in ppm)	0.111	0.120	0.122
Number of days of State exceedances (>0.09 ppm)	6	9	3
Carbon Monoxide, Worst 8 Hours (in ppm)	1.83	*	*
Number of days of State/Federal exceedances (>9.0 ppm)	0	0	0
Nitrogen Dioxide, Worst Hour (in ppb)	56.0	64.6	66.6
Number of days of State exceedances (>180 ppb)	0	0	0
Number of days of Federal exceedances (>100 ppb)	0	0	0
Particulate Matter <10 microns, Worst 24 Hours (in µg/m <sup>3</sup> )	45.0	77.9	246.2
Number of samples of State exceedances (>50 µg/m <sup>3</sup> )	0	2	*
Number of samples of Federal exceedances (>150 µg/m <sup>3</sup> )	0	0	1
Particulate Matter <2.5 microns, Worst 24 Hours (in µg/m <sup>3</sup> )	12.0	13.1	24.1
Number of samples of Federal exceedances (>35 µg/m <sup>3</sup> )	0	0	0

*\* Insufficient data available to determine the value  
 Source: California Air Resources Board, 2015c.*



*Sensitive Receptors.* Sensitive receptors are persons or land uses that may be subject to respiratory stress or other significant adverse impacts as a result of exposure to air contaminants. The California 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, churches, and residential and hotel/motel facilities are all considered sensitive land uses. These types of land uses are distributed throughout the Town and are all considered to be sensitive receptors for the purposes of this analysis.

The closest sensitive receptors to the Apple Valley Ranchos Water Company's operation and maintenance (O&M) facility, where many system maintenance activities are performed and where maintenance vehicles enter and exit the lot, are as follows:

- The James A. Woody Community Center park grounds and athletic facilities; located adjacent to the O&M facility on the northern property line and approximately 300 feet to the east
- Residential properties directly adjacent to the O&M facility on the western and eastern property lines
- Residential property south of Ottawa Road, approximately 80 feet southwest of the facility's western driveway
- First Assembly of God church south of Ottawa Road, approximately 100 feet southeast of one of the eastern driveway

#### **d. Regulatory Setting.**

*Federal.* The United States Environmental Protection Agency (U.S. EPA) is the Federal agency responsible for administering the Clean Air Act. In this role, the U.S. EPA sets limits on certain criteria air pollutants, including limits on how much of any given pollutant can be in the air as well as limits on emissions from stationary sources of air pollutants, such as chemical plants, utilities, and steel mills.

*State.* The California Air Resources Board is the department within the California Environmental Protection Agency that is responsible for administering Federal air pollution control programs at the State level as well as State air pollution control programs. The California Air Resources Board sets the State's limits on criteria air pollutants, compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the State Implementation Plan (SIP) for compliance with the Federal program. The California Air Resources Board also establishes emissions standards for motor vehicles, consumer products, and various types of commercial equipment sold and used in the State, and sets fuel specifications to reduce emissions from vehicles.

*Local.* Local air quality management control and planning is provided through regional Air Pollution Control Districts (APCDs) established by the California Air Resources Board for the 14 air basins throughout the State. The California Air Resources Board is responsible for control of mobile emission sources, while the local APCDs are responsible for control of stationary sources and enforcing regulations. Apple Valley is located within the Mojave Desert Air Basin (Basin),



which is under the jurisdiction of MDAQMD. MDAQMD has adopted various plans that provide strategies for the attainment of State and Federal air quality standards, including:

- Mojave Desert Planning Area, Federal Particulate Matter (PM10) Attainment Plan (1995);
- MDAQMD 2004 Ozone Attainment Plan (State and Federal) (2004);
- List and Implementation Schedule for District Measures to Reduce PM Pursuant to Health & Safety Code §39614(d) (2005);
- 8-Hour Reasonably Available Control Technology – State Implementation Plan Analysis (RACT SIP Analysis) (2006);
- Smoke Management Program (2006);
- MDAQMD Federal 8-Hour Ozone Attainment Plan (Western Mojave Desert Non-attainment Area) (2008); and
- 8-Hour Reasonably Available Control Technology – State Implementation Plan Analysis (RACT SIP Analysis) (2015).

MDAQMD has also published significance thresholds for use when performing environmental assessments, as discussed below. A response to the Notice of Preparation for the proposed Project was provided by MDAQMD (included in Appendix A), stating that the District had no comment on the scope of the Draft EIR.

#### **4.1.2 Impact Analysis**

##### **a. Methodology and Significance Thresholds**

This analysis considers air emissions associated with existing and future operation and maintenance activities of the proposed Project, including emissions associated with traffic along area roadways. As the proposed Project does not include any new construction, no construction emissions would be generated and this activity is not discussed further. Air emissions are analyzed based on the significance thresholds contained in Appendix G of the State CEQA Guidelines as well as the significance thresholds provided by MDAQMD.

*Methodology.* This analysis considers air emissions associated with operation and maintenance of the proposed Project, including emissions from vehicles used to operate and maintain the water supply system. The proposed Project would entail the Town's acquisition and subsequent operation of the water supply system. The system would maintain its existing size and capacity, including approximately 23 groundwater wells with a total capacity of 37 million gallons per day, 11 storage tanks with a total capacity of 11.7 million gallons, 16 emergency generators, 8 booster pump stations, 22,431 service connections, 469 miles of pipelines. Therefore, system operation is expected to continue to require a staff of approximately 39 employees, including approximately 20 office workers and 19 technical and field staff. No new facilities are proposed under the Project; however, operation and maintenance events may occur as part of the ongoing operation and maintenance of the system. As discussed in Section 2.0, Project Description, the Town would operate the system out of the existing O&M facility at 21760 Ottawa Road, and therefore there would be little to no change in the length, distribution, or number of truck trips required to operate and maintain the system. This analysis discusses emissions from these



activities and the potential for the proposed Project to produce any air emissions beyond existing baseline conditions.

*Significance Thresholds.* In accordance with the Town’s CEQA Checklist and Appendix G of the State CEQA Guidelines, a significant air quality impact would occur if the proposed Project would:

- 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?

This analysis also considers the thresholds of significance provided by MDAQMD in its guidance for performing environmental assessments from its *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines* (2011). According to these guidelines, a project’s air emissions would be considered significant if the project:

- Generates total emissions (direct and indirect) in excess of the thresholds given in Table 4.1-3; and/or,
- 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 1.

**Table 4.1-3:  
Emission Significance Thresholds in the Mojave Desert Air Basin**

Criteria Pollutant	Annual Threshold (tons)	Daily Threshold (pounds)
Carbon Monoxide (CO)	100	548
Oxides of Nitrogen (NO <sub>x</sub> )	25	137
Volatile Organic Compounds (VOC)	25	137
Oxides of Sulfur (SO <sub>x</sub> )	25	137
Particulate Matter (PM <sub>10</sub> )	15	82
Particulate Matter (PM <sub>2.5</sub> )	15	82
Hydrogen Sulfide (H <sub>2</sub> S)	10	54
Lead (Pb)	0.6	3

Source: *Mojave Desert Air Quality Management District, 2011.*



The Initial Study for the proposed Project (Appendix A) found the Project would not create objectionable odors, and therefore this impact (Significance Threshold e) is not discussed further in this section.

**b. Project Impacts and Mitigation Measures.**

Threshold:	<i>Conflict with or obstruct implementation of the applicable air quality plan</i>
Threshold:	<i>Violate any air quality standard or contribute substantially to an existing or projected air quality violation</i>
Threshold:	<i>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)</i>
Threshold:	<i>Expose sensitive receptors to substantial pollutant concentrations</i>

**Impact AQ-1 Implementation of the proposed Project would result in air emissions associated with operation and maintenance of water supply system infrastructure as well as operation of vehicles and equipment in and around the Project Area. However, given that these activities would be similar to those performed under existing operations, the proposed Project would result in little to no increase in air emissions, and these impacts would be Class III, less than significant.**

Long-term air pollutant emission impacts are those associated with stationary sources and mobile sources related to operation of the AVR System. The existing water supply system is fully functional and would not require any additional new infrastructure as a result of the proposed Project, i.e. transfer of ownership to the Town. In addition, the proposed Project does not include any expansion in the delivery capacity of the AVR System nor does it contemplate any physical upgrades to any of the AVR System facilities (i.e., no construction is proposed). Although some level of maintenance activity would be required in order to operate and maintain the water supply system, this activity would be in line with what would occur under the existing ownership. Because the proposed Project would not result in any population increase or new physical facilities, it would not result in any increase in stationary operational emissions from increased water delivery or treatment. In addition, as operation of the system is expected to continue in much the same manner as under existing conditions, the proposed Project would not require installation of new equipment at any system location that would combust diesel nor would it require any new APCD-permitted stationary sources. Therefore, the proposed Project would not result in additional stationary operational emissions as compared to existing baseline conditions.

Mobile source emissions are generated from truck trips from the AVR System O&M facility to locations throughout the Town. As no new facilities are proposed under the Project, it is assumed that the system would require the same number of technical and field staff (19 employees) and the same number of truck trips to operate and maintain the system as under existing conditions; therefore, the proposed Project would not generate any new truck trips. Given that the AVR System would continue to be operated out of the existing AVR System O&M facility after the acquisition, and the only change would be that these activities would be



performed by the Town instead of by Apple Valley Ranchos Water Company following the acquisition, the proposed Project would not result in substantial changes in the distribution or length of these truck trips. Therefore, the number of vehicle miles travelled associated with operation and maintenance of the AVR System, and thus the associated amount of vehicular (mobile) air emissions, would not substantially increase as a result of the proposed Project.

Given that the proposed Project would not result in an increase in air emissions from operation or maintenance activities, it would not conflict with any air quality plans, violate any air quality standards, result in a cumulatively considerable net increase of any criteria pollutant, or expose sensitive receptors to substantial pollutant concentrations. Therefore, these impacts are less than significant.

**Mitigation Measures.** No mitigation is required.

**Significance After Mitigation.** Impacts would be less than significant without mitigation.

### **c. Cumulative Impacts.**

The EIR for the Apple Valley General Plan determined that buildout of the Town and the surrounding area would contribute to regional air pollution, and these impacts can be considered cumulatively significant. The air emissions that would be generated by the proposed Project have been ongoing since the time that the Apple Valley General Plan EIR was prepared and the emissions were fully accounted for in the General Plan EIR. As discussed under Impact AQ-1, the proposed Project would not result in an increase in daily operational emissions from stationary or mobile sources. Therefore, the proposed Project would not result in addition of criteria pollutants to the Basin. Given that the proposed Project would not contribute any additional air pollutants, it would not contribute to any cumulative impacts when considered in conjunction with other projects in the region, and it would not exceed MDAQMD thresholds. Therefore, the proposed Project's contribution to cumulative regional long-term air quality impacts would not be cumulatively considerable.

## **4.2 GREENHOUSE GAS EMISSIONS**

This section discusses global climate change, its causes and the contribution of human activities, as well as the existing regulatory framework related to greenhouse gas (GHG) emissions. This section describes the criteria for determining the significance of a project's GHG emissions, and analyzes the proposed Project's impacts related to global climate change and GHG emissions.

### **4.2.1 Setting**

#### **a. Climate Change and Greenhouse Gases.**

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. The term "climate change" is often used interchangeably with the term "global warming," but "climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures that occur during this process.

GHGs are gases that absorb and re-emit infrared radiation in the atmosphere. They are present in the atmosphere naturally, released by natural sources, or formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxides (N<sub>2</sub>O), fluorinated gases such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

GHGs are emitted by both natural processes and human activities. Of these gases, CO<sub>2</sub> and CH<sub>4</sub> are emitted in the greatest quantities from human activities. Emissions of CO<sub>2</sub> are largely by-products of fossil fuel combustion, whereas CH<sub>4</sub> results from off-gassing associated with agricultural practices and landfills.

All of the different types of GHGs have varying global warming potentials (GWPs). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO<sub>2</sub>) is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as "carbon dioxide equivalent" (CO<sub>2</sub>E), and is the amount of a GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, CH<sub>4</sub> has a GWP of 25, meaning its global warming effect is 25 times greater than CO<sub>2</sub> on a molecule per molecule basis. Man made GHGs, such as fluorinated gases, can have a GWP of up to 23,500 and stay in the atmosphere for thousands of years (United States Environmental Protection Agency [U.S. EPA], 2014).

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat trapping effect of GHGs, the Earth's surface would be about 34°C cooler (CalEPA, 2006). However, it is believed that emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the



concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. The following discusses the primary GHGs of concern.

*Carbon Dioxide.* The global carbon cycle is made up of large carbon flows and reservoirs. Billions of tons of carbon in the form of CO<sub>2</sub> are absorbed by oceans and living biomass (i.e., sinks) and are emitted to the atmosphere annually through natural processes (i.e., sources). When in equilibrium, carbon fluxes among these various reservoirs are roughly balanced (U.S. EPA, 2012). CO<sub>2</sub> was the first GHG demonstrated to be increasing in atmospheric concentration, with the first conclusive measurements being made in the last half of the 20<sup>th</sup> Century. The average annual CO<sub>2</sub> concentration growth rate was larger between 1995 and 2005 (average: 1.9 ppm per year) than it has been since the beginning of continuous direct atmospheric measurements (1960–2005 average: 1.4 ppm per year), although there is year-to-year variability in growth rates (NOAA, 2010). Currently, CO<sub>2</sub> represents an estimated 82.8% of total GHG emissions (Department of Energy [DOE] Energy Information Administration [EIA], 2010). The largest source of CO<sub>2</sub>, and of overall GHG emissions, is fossil fuel combustion.

*Methane.* Methane (CH<sub>4</sub>) is an effective absorber of radiation, though its atmospheric concentration is less than that of CO<sub>2</sub> and its lifetime in the atmosphere is limited to 10 to 12 years. It has a global warming potential approximately 25 times that of CO<sub>2</sub>. Anthropogenic sources of CH<sub>4</sub> include enteric fermentation associated with domestic livestock, landfills, natural gas and petroleum systems, agricultural activities, coal mining, wastewater treatment, stationary and mobile combustion, and certain industrial processes (U.S. EPA, 2012).

*Nitrous Oxide.* Concentrations of nitrous oxide began to rise at the beginning of the industrial revolution and continue to increase at a relatively uniform growth rate (NOAA, 2010). Nitrous oxide is produced by microbial processes in soil and water, including those reactions that occur in fertilizers that contain nitrogen, fossil fuel combustion, and other chemical processes. Use of these fertilizers has increased over the last century. Agricultural soil management and mobile source fossil fuel combustion are the major sources of nitrous oxide emissions. The GWP of nitrous oxide is approximately 298 times that of CO<sub>2</sub> (U.S. EPA, 2015).

*Fluorinated Gases (HFCS, PFCS and SF<sub>6</sub>).* Fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfurhexafluoride (SF<sub>6</sub>), are powerful GHGs that are emitted from a variety of industrial processes. Fluorinated gases are used as substitutes for ozone-depleting substances such as chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), and halons, which have been regulated since the mid-1980s because of their ozone-destroying potential and are phased out under the Montreal Protocol (1987) and Clean Air Act Amendments of 1990. Electrical transmission and distribution systems account for most SF<sub>6</sub> emissions, while PFC emissions result from semiconductor manufacturing and as a by-product of primary aluminum production. Fluorinated gases are typically emitted in smaller quantities than CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O, but these compounds have much higher GWPs.

## **b. Greenhouse Gas Emissions Inventory.**

Total U.S. GHG emissions were 6,821.8 MMT CO<sub>2</sub>E in 2009 (U.S. EPA, 2012). Total U.S. emissions have increased by 10.5 percent since 1990; emissions rose by 3.2 percent from 2009 to 2010 (U.S. EPA, 2012). This increase was primarily due to (1) an increase in economic output





resulting in an increase in energy consumption across all sectors; and (2) much warmer summer conditions resulting in an increase in electricity demand for air conditioning. Since 1990, U.S. emissions have increased at an average annual rate of 0.5 percent. In 2010, the transportation and industrial end-use sectors accounted for 32 percent and 26 percent of CO<sub>2</sub> emissions from fossil fuel combustion, respectively. Meanwhile, the residential and commercial end-use sectors accounted for 22 percent and 19 percent of CO<sub>2</sub> emissions from fossil fuel combustion, respectively (U.S. EPA, 2012).

Based upon the California Air Resources Board California Greenhouse Gas Inventory for 2000-2013 (California Air Resources Board, 2015d), California produced 459 MMT CO<sub>2</sub>E in 2011. The major source of GHGs in California is transportation, contributing 37 percent of the State's total GHG emissions. Industrial activity is the second largest source, contributing 23 percent of the State's GHG emissions (California Air Resources Board, 2015d). California emissions are due in part to its large size and large population compared to other states. However, a factor that reduces California's per capita fuel use and GHG emissions, as compared to other states, is its relatively mild climate. The California Air Resources Board has projected statewide unregulated GHG emissions for the year 2020 will be 509 MMT CO<sub>2</sub>E (California Air Resources Board, 2015e). These projections represent the emissions that would be expected to occur in the absence of any GHG reduction actions.

### **c. Potential Effects of Climate Change.**

According to the CalEPA's *2010 Climate Action Team Biennial Report*, potential impacts of climate change in California may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CalEPA, 2010). Below is a summary of some of the potential effects that could be experienced in California as a result of climate change.

*Sea Level Rise.* According to *The Impacts of Sea-Level Rise on the California Coast*, prepared by the California Climate Change Center (California Climate Change Center; 2009), climate change has the potential to induce substantial sea level rise in the coming century. The rising sea level increases the likelihood and risk of flooding. Sea levels are rising faster now than in the previous two millennia, and the rise is expected to accelerate, even with robust GHG emission control measures. The California Climate Adaptation Strategy (2009) estimates a sea level rise of up to 55 inches by the end of this century.

*Air Quality.* Higher temperatures, which are conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thereby ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (California Energy Commission, 2009).



*Water Supply.* Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future water supplies in California. However, the average early spring snowpack in the Sierra Nevada decreased by about 10 percent during the last century, a loss of 1.5 million acre-feet of snowpack storage. During the same period, sea level rose eight inches along California's coast. California's temperature has risen 1°F, mostly at night and during the winter, with higher elevations experiencing the highest increase. Many Southern California cities have experienced their lowest recorded annual precipitation twice within the past decade. In a span of only two years, Los Angeles experienced both its driest and wettest years on record (California Department of Water Resources [DWR], 2008; California Climate Change Center, 2009).

This uncertainty complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The Sierra snowpack provides the majority of California's water supply by accumulating snow during the State's wet winters and releasing it slowly when needed during the dry springs and summers. Based upon historical data and modeling, DWR projects that the Sierra snowpack will experience a 25 to 40 percent reduction from its historical average by 2050. Climate change is also anticipated to bring warmer storms that result in less snowfall at lower elevations, reducing the total snowpack (DWR, 2008). Some water management agencies, including the Mojave Water Agency, have access to underground aquifers that can capture rainfall and store water for later use. In some cases, recharge facilities have been developed to increase the amount of water entering the aquifer system.

*Hydrology.* As discussed above, climate change could potentially affect: the amount of snowfall, rainfall, and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. The rate of increase of global mean sea levels over the 2001-2010 decade, as observed by satellites, ocean buoys and land gauges, was approximately 3.2 mm per year, which is double the observed 20<sup>th</sup> Century trend of 1.6 mm per year (World Meteorological Organization [WMO], 2013). As a result, sea levels averaged over the last decade were about 8 inches higher than those of 1880 (WMO, 2013). Sea level rise may be a product of climate change through two main processes: expansion of sea water as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply due to salt water intrusion. Increased CO<sub>2</sub> emissions can cause oceans to acidify due to the carbonic acid it forms. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

*Agriculture.* California has a \$30 billion dollar a year agricultural industry that produces half of the country's fruits and vegetables. Higher CO<sub>2</sub> levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase, crop-yield could be threatened by a less reliable water supply and greater air pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year certain crops, such as wine



grapes, bloom or ripen, and thereby affect their quality (California Climate Change Center, 2006).

*Ecosystems and Wildlife.* Climate change and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increasing concentrations of GHGs are likely to accelerate the rate of climate change. Scientists project that the average global surface temperature could rise by 1.0-4.5°F (0.6-2.5°C) in the next 50 years, and 2.2-10°F (1.4-5.8°C) in the next century, with substantial regional variation. Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: (1) timing of ecological events; (2) geographic range; (3) species' composition within communities; and (4) ecosystem processes, such as carbon cycling and storage (Parmesan, 2006; Parmesan and Galbraith, 2004).

While the above-mentioned potential impacts identify the possible effects of climate change at a global and potentially statewide level, in general, scientific modeling tools are currently unable to predict what impacts would occur locally.

#### **d. Regulatory Setting.**

The following regulations address both climate change and GHG emissions.

Federal Regulations. The United States Supreme Court in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) held that the U.S. EPA has the authority to regulate motor-vehicle GHG emissions under the federal Clean Air Act. The U.S. EPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines, and requires annual reporting of emissions. The first annual reports for these sources were due in March 2011.

On May 13, 2010, the U.S. EPA issued a Final Rule that took effect on January 2, 2011, setting a threshold of 75,000 metric tons (MT) CO<sub>2</sub>E per year for GHG emissions. New and existing industrial facilities that meet or exceed that threshold will require a permit after that date. On November 10, 2010, the U.S. EPA published the "PSD and Title V Permitting Guidance for Greenhouse Gases." The U.S. EPA's guidance document is directed at state agencies responsible for air pollution permits under the federal Clean Air Act to help them understand how to implement GHG reduction requirements while mitigating costs for industry. It is expected that most states will use the U.S. EPA's new guidelines when processing new air pollution permits for power plants, oil refineries, cement manufacturing, and other large pollution point sources.

On January 2, 2011, the U.S. EPA implemented the first phase of the Tailoring Rule for GHG emissions Title V Permitting. Under the first phase of the Tailoring Rule, all new sources of emissions are subject to GHG Title V permitting if they are otherwise subject to Title V for another air pollutant and they emit at least 75,000 MT CO<sub>2</sub>E per year. Under Phase 1, no sources were required to obtain a Title V permit solely due to GHG emissions. Phase 2 of the Tailoring Rule went into effect July 1, 2011. At that time new sources were subject to GHG Title V permitting if the source emits 100,000 MT CO<sub>2</sub>E per year, or they are otherwise subject to Title V permitting for another pollutant and emit at least 75,000 MT CO<sub>2</sub>E per year.



On July 3, 2012 the U.S. EPA issued the final rule that retains the GHG permitting thresholds that were established in Phases 1 and 2 of the GHG Tailoring Rule. These emission thresholds determine when Clean Air Act permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities.

California Regulations. The California Air Resources Board is responsible for the coordination and oversight of State and local air pollution control programs in California. Various statewide and local initiatives to reduce the State's contribution to GHG emissions have raised awareness about climate change and its potential for severe long-term adverse environmental, social, and economic effects.

California's major initiative for reducing GHG emissions is outlined in Assembly Bill 32 (AB 32), the "California Global Warming Solutions Act of 2006," signed into law in 2006. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 (essentially a 15% reduction below 2005 emission levels; the same requirement as under S-3-05), and requires the California Air Resources Board to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires the California Air Resources Board to adopt regulations to require reporting and verification of statewide GHG emissions.

After completing a comprehensive review and update process, the California Air Resources Board approved a 1990 statewide GHG level and 2020 limit of 427 MMT CO<sub>2</sub>E. The Scoping Plan was approved by the California Air Resources Board on December 11, 2008, and includes measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. The Scoping Plan includes a range of GHG reduction actions that may include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms.

In early 2013, the California Air Resources Board initiated activities to update the AB 32 Scoping Plan. The first update to the Scoping Plan was adopted in October 2013. The 2013 Scoping Plan update defines ARB's climate change priorities and lays the groundwork to reach post-2020 goals set forth in Executive Orders S-3-05. The update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan (2008). It also evaluates how to align the State's longer-term GHG reduction strategies with other State policy priorities, such as for water, waste, natural resources, clean energy and transportation, and land use (California Air Resources Board, 2015d).

Executive Order (EO) S-01-07 was enacted on January 18, 2007. The order mandates that a Low Carbon Fuel Standard ("LCFS") for transportation fuels be established for California to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020.

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in California Environmental Quality Act (CEQA) documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the *State CEQA Guidelines*, which require lead agencies to identify, evaluate and mitigate to the extent feasible GHG emissions or the effects of GHG emissions. The adopted



guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts. However, recent case law suggests a quantitative analysis is preferred. To date, the Bay Area Air Quality Management District (BAAQMD), the South Coast Air Quality Management District (SCAQMD), the San Luis Obispo Air Pollution Control District (SLOAPCD), and the San Joaquin Air Pollution Control District (SJVAPCD) have adopted quantitative significance thresholds for GHGs.<sup>2</sup>

California Air Resources Board Resolution 07-54 establishes 25,000 MT of GHG emissions as the threshold for identifying the largest stationary emission sources in California for purposes of requiring the annual reporting of emissions. This threshold is just over 0.005 percent of California's total inventory of GHG emissions for 2004.

Senate Bill (SB) 375, signed in August 2008, enhances the State's ability to reach AB 32 goals by directing ARB to develop regional GHG emission reduction targets to be achieved from vehicles for 2020 and 2035. In addition, SB 375 directs each of the State's 18 major Metropolitan Planning Organizations (MPO) to prepare a "sustainable communities strategy" (SCS) that contains a growth strategy to meet these emission targets for inclusion in the Regional Transportation Plan (RTP). On September 23, 2010, the California Air Resources Board adopted final regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. The Southern California Association of Governments (SCAG) was assigned targets of an 8% reduction in GHGs from transportation sources by 2020 and a 13% reduction in GHGs from transportation sources by 2035. In the SCAG region, SB 375 also provides the option for the coordinated development of subregional plans by the subregional councils of governments and the county transportation commissions to meet SB 375 requirements.

Finally, in April 2011, Governor Brown signed SB 2X requiring California to generate 33% of its electricity from renewable energy by 2020.

For more information on the Senate and Assembly bills, Executive Orders, and reports discussed above, and to view reports and research referenced above, please refer to the following websites: [www.climatechange.ca.gov](http://www.climatechange.ca.gov) and [www.arb.ca.gov/cc/cc.htm](http://www.arb.ca.gov/cc/cc.htm).

Local Regulations. As noted previously, the adopted *State CEQA Guidelines* provide general regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts.

Apply Valley is located in the Mojave Desert Air Quality Management District (MDAQMD), which regulates air emissions in the Project Area. The MDAQMD, has adopted a GHG significance threshold of 100,000 tons of CO<sub>2</sub>e per year, not to exceed 548,000 pounds of CO<sub>2</sub>e per day, for use in CEQA analyses (MDAQMD, 2011). In 2010, the Town of Apple Valley

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<sup>2</sup> On March 5, 2012 the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds contained in the BAAQMD's 2010 CEQA Guidelines. The BAAQMD has been ordered to set aside the thresholds and is no longer recommending that these thresholds be used as a general measure of a project's significant air quality impacts. In August 2013, the First District Court of Appeal overturned the trial court and held that the thresholds of significance adopted by the BAAQMD were not subject to CEQA review. The California Supreme Court has agreed to hear an appeal of this case. The case is currently being briefed and the matter is still pending. Thus, BAAQMD will not issue a further recommendation until this litigation is complete.



adopted a Climate Action Plan, which was most recently updated in 2013. In this plan, the Town set a reduction target of 15% below 2005 levels by the year 2020 for both community and municipal operations. New projects that demonstrate a reduction in emissions of 15% or more are considered to be consistent with this Climate Action Plan. The plan includes policies aimed at meeting this goal, including Policy MO-24: Encourage Apple Valley Ranchos, Golden State and other water purveyors to replace water systems with energy efficient motors, pumps and other equipment.

## **4.2.2 Impact Analysis**

### **a. Methodology and Significance Thresholds**

Pursuant to the requirements of SB 97, the Resources Agency adopted amendments to the *State CEQA Guidelines* for the feasible mitigation of GHG emissions or the effects of GHG emissions in March 2010. These guidelines are used in evaluating the cumulative significance of GHG emissions from the proposed Project.

Methodology. This analysis considers GHG emissions associated with operation and maintenance of the proposed Project, including emissions from vehicles used to operate and maintain the water supply system. As the proposed Project does not include any new construction, no construction emissions would be generated and this activity is not discussed further. The proposed Project would entail the Town's acquisition and subsequent operation of the water supply system. The system would maintain its existing size and capacity, including approximately 23 groundwater wells with a total capacity of 37 million gallons per day, 11 storage tanks with a total capacity of 11.7 million gallons, 16 emergency generators, 8 booster/pump stations, 22,431 service connections, 469 miles of pipelines. Therefore, system operation is expected to continue to require a staff of approximately 39 employees, including approximately 20 office workers and 19 technical and field staff. No new facilities are proposed under the Project; however, maintenance events may occur as part of the ongoing operation and maintenance of the system. As discussed in Section 2.0, *Project Description*, the Town would operate the system out of the existing operations and maintenance facility at 21760 Ottawa Road, and therefore there would be little to no change in the length, distribution, or number of truck trips required to operate and maintain the system. This analysis discusses emissions from these activities and the potential for the proposed Project to produce any GHG emissions beyond existing baseline conditions.

- **On-Site Operational Emissions.** The day-to-day operations of the AVR System would be the same as they are under current ownership. Therefore, new sources of on-site operational emissions, including from energy use, would not occur.
- **Direct Emissions from Mobile Combustion.** The proposed project would not generate additional vehicle trips, therefore it would not result in any additional GHG emissions from mobile sources.

Significance Thresholds. According to the adopted *CEQA Guidelines*, impacts related to GHG emissions from the proposed Project would be significant if the Project would:



- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

The vast majority of individual projects do not generate sufficient GHG emissions to create a project-specific impact through a direct influence on climate change; therefore, the issue of climate change typically involves an analysis of whether a project’s contribution towards an impact is cumulatively considerable. “Cumulatively considerable” means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15355).

For future projects, the significance of GHG emissions may be evaluated based on locally adopted quantitative thresholds, or consistency with a regional GHG reduction plan (such as a Climate Action Plan). The MDAQMD, which regulates air emissions in the Project Area, has adopted a GHG significance threshold of 100,000 tons of CO<sub>2</sub>e per year, not to exceed 548,000 pounds of CO<sub>2</sub>e per day, for use in CEQA analyses (MDAQMD, 2011). Additionally, the Town of Apple Valley adopted a Climate Action Plan in 2010 (updated in 2013) that includes a list of GHG reduction measures. Although the plan does not include specific GHG significance thresholds for use in analyses under CEQA, it states that new projects demonstrating a reduction in emissions of 15% or more are considered to be consistent with the plan (Town of Apple Valley, 2013). Therefore, the proposed Project would result in a significant impact if it would:

- Produce more than 100,000 tons of CO<sub>2</sub>e per year
- Produce over 548,000 pounds of CO<sub>2</sub>e in any given day

In order to determine whether or not the proposed Project’s GHG emissions are “cumulatively considerable,” this analysis considers the proposed Project’s consistency with applicable GHG emissions reduction strategies.

**b. Project Impacts and Mitigation Measures.**

<i>Threshold</i>	<i>Would the proposed project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?</i>
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**Impact GHG-1**    **Implementation of the proposed Project could potentially result in GHG emissions associated with operation and maintenance of system infrastructure as well as operation of vehicles and equipment in and around the Project Area. However, given that these activities would be similar to those performed under the existing ownership, the proposed Project would result in little to no increase in GHG emissions, and these impacts would be Class III, less than significant.**



*Operational Emissions.* The existing water supply system is fully functional and would not require any additional new infrastructure as part of the proposed Project, i.e. transfer of ownership to the Town. Although some level of maintenance activity would be required in order to operate and maintain the water supply system, this activity would be in line with existing operations under the current ownership. Therefore, the proposed Project would not require new or expanded facilities, as the proposed Project would not result in an increase in the amount of water delivered or treated. A substantial increase in stationary operational GHG emissions would not occur.

*Transportation Emissions.* GHG emissions from mobile sources would be generated by truck trips to and from the AVR System O&M facility to locations throughout the Town. As no new facilities are proposed under the Project, it is assumed that the system would require the same number of technical and field staff (19 employees) and the same number of truck trips to operate and maintain the system as under existing conditions; therefore, the proposed Project would not generate any new truck trips. Given that the AVR System would continue to be operated out of the existing AVR System O&M facility following the acquisition, and the only change would be that these activities would be performed by the Town instead of by the Apple Valley Ranchos Water Company, the proposed Project would not result in substantial changes in the distribution or length of these truck trips. Therefore, the GHG emissions associated with mobile sources would not substantially increase, as mobile traffic would not substantially increase.

As the proposed Project would not functionally change the AVR System, GHG emissions that would be associated with the proposed Project, both stationary and mobile, would be emissions that are already a part of California’s total GHG emissions and below both the annual and daily MDAQMD thresholds. Therefore, these impacts are less than significant.

**Mitigation Measures.** No mitigation is required.

**Significance after Mitigation.** Impacts would be less than significant without mitigation.

<i>Threshold</i>	<i>Would the proposed project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?</i>
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**Impact GHG-2**    **The proposed Project would be consistent with SB 375, the 2008 Attorney General Greenhouse Gas Reduction Measures, and the Town of Apple Valley’s Climate Action Plan. Impacts would therefore be Class III, less than significant.**

As discussed under Impact GHG-1 above, the proposed Project would not generate any additional vehicle trips over the current operating level. No new Vehicle Miles Traveled (VMT) would be added and there would not be a significant increase in GHG emissions.

As described previously, SB 375 requires the inclusion of Sustainable Communities’ Strategies (SCS) in Regional Transportation Plans (RTPs) for the purpose of reducing GHG emissions. In





April 2012, SCAG adopted the 2012-2035 *Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS). The proposed Project would not involve development of new facilities nor alter operational and maintenance activities which are part of the current GHG emissions baseline. Therefore, the proposed Project would not impede the achievement of the GHG emission reduction goals in the adopted RTP/SCS.

GHG emissions reduction targets have not been set by the MDAQMD. However, the Apple Valley CAP does indicate that new projects demonstrating a reduction in emissions of 15% or more are considered to be consistent with the plan. The proposed Project, as described above, involves transfer of ownership from Apple Valley Ranchos to the Town and would not involve construction of new facilities or buildings. Also, any vehicles used in the operation and maintenance of the system would be subject to the required passenger vehicle emissions standards at that time. As such, emissions associated with operation of the system are part of the current baseline and are not new emissions. Therefore, a 15% reduction in GHG emissions would not be required for the Project to be consistent with the plan. In addition, operation of the system is not currently subject to the Town's GHG reduction goals for community and municipal operations. If the Town acquires the AVR System, it would fall within the Town's purview as a municipal operation and would allow the Town to work toward reducing GHG emissions associated with operation of the system. As such, the proposed Project would not conflict with any policies regarding GHG reductions.

The Attorney General's GHG Reduction Report, prepared in 2008, specifies measures that may reduce global warming related impacts at the individual project level. As appropriate, the measures can be included as design features of a project, required as changes to the project, or imposed as mitigation (whether undertaken directly by the project proponent or funded by mitigation fees). The proposed Project, as described above, would not involve construction of new facilities or buildings and also would not result in emission of GHGs requiring mitigation measures. As such, the proposed Project would not conflict with these measures.

As indicated above, the proposed Project would be consistent with SB 375, the 2008 Attorney General GHG Reduction Measures and the Town of Apple Valley's Climate Action Plan. Therefore, the proposed Project would be consistent with applicable plans, policies and regulation adopted for the purpose of reducing the emissions of GHGs, and its impact in this regard would not be significant.

**Mitigation Measures.** No mitigation is required.

**Significance after Mitigation.** Impacts would be less than significant without mitigation.

### **c. Cumulative Impacts.**

The General Plan EIR for the Town of Apple Valley did not include an assessment of the cumulative impact from GHG emissions. However, GHG emissions associated with buildout of the General Plan along with development throughout the wider region, including the proposed Specific Plans in proximity to the Town, would contribute to regional GHG emission volumes.



As discussed in impacts GHG-1 and GHG-2, the proposed Project would not result in an increase in daily operational emissions from stationary or mobile sources. Therefore, the proposed Project would not result in the addition of GHG emissions to the Basin. Given that the project would not contribute any additional GHG emissions, it would not contribute to any cumulative impacts when considered in conjunction with other projects in the region, and it would not exceed any thresholds for GHGs. Therefore, the proposed Project's contribution to cumulative regional GHG emissions would not be cumulatively considerable.



## **4.3 HYDROLOGY AND WATER QUALITY**

This section analyzes the proposed project's potential to substantially deplete groundwater supplies or interfere substantially with groundwater recharge. As discussed below in Section 4.3.2, other CEQA Checklist items relating to Hydrology and Water Quality are addressed in Appendix A, *Initial Study*, of this document.

### **4.3.1 Setting**

#### **a. Regional Hydrologic Setting**

The Project Area is located within the South Lahontan Hydrologic Region and Mojave River watershed. For management purposes, the Mojave Water Agency (MWA) splits the Mojave River Watershed (and associated groundwater resources) into five distinct subareas, including: 1) Oeste, 2) Este, 3) Alto, 4) Centro, and 5) Baja. The Apple Valley Ranchos Water Company is one of ten water purveyors within MWA's service area, and is located in the Alto Subarea. Supplemental imported State Water Project surface water supplies are obtained as needed by the Apple Valley Ranchos Water Company from The Metropolitan Water District of Southern California.

The MWA maintains a regional network of weather monitoring stations throughout the watershed, which collect various weather data on temperature, precipitation, and evaporation. Following is an overview of average climate data for the period 1997 through 2009: temperature - 61 degrees Fahrenheit; precipitation - seven inches; and evapotranspiration - 67 inches (Apple Valley Ranchos Water Company, 2010). Runoff in the area is conveyed by both natural waterways and constructed storm drains and channels.

#### **b. Groundwater Setting**

The Project Area is located within the Upper Mojave River Valley Groundwater Basin. Recharge of the Upper Mojave River Valley Groundwater Basin occurs from direct percolation of precipitation, ephemeral stream flow, infrequent surface flow of the Mojave River, and underflow of the Mojave River into the basin from the southwest. In addition, other waters that percolate into the ground and recharge the groundwater system include the following: treated wastewater effluent, septic tank effluent, effluent from two fish hatchery operations, and irrigation waters. A large but highly sporadic contribution to groundwater recharge occurs when there is flow in the Mojave River. The general direction of groundwater flow in this basin is toward the active channel of the Mojave River, where it generally follows the course of the river through the valley. The Helendale fault forms a barrier to groundwater flow in the southeast corner of the basin; this barrier causes groundwater to flow northwestward under a surface drainage divide into the Mojave River drainage instead of northeastward into Lucerne Lake (dry) in the Lucerne Valley Basin (DWR, 2004).

Groundwater quality in the Upper Mojave River Valley Groundwater Basin is characterized by calcium bicarbonate near the San Bernardino Mountains and the Mojave River channel, and sodium bicarbonate near Victorville. Sodium chloride waters are found in Apple Valley. Groundwater quality impairments include high nitrate concentrations in the southern portion

of the basin, and high iron and manganese concentrations near Oro Grande. Industrial pollutants are found near the former George Air Force Base, which is also a federal Superfund site, and contaminants associated with leaking underground storage tanks (LUSTs) are also present around Victorville (DWR, 2004).

The Upper Mojave River Valley Groundwater Basin is a portion of an area that was adjudicated in 1996, with the MWA functioning as the Watermaster, or the party responsible for implementing the court-issued Adjudication Judgment (DWR, 2004). MWA implements three basic management strategy alternatives to reduce and avoid overdraft issues in the basin, including water conservation, water supply enhancement, and water allocation (DWR, 2004). As a result of implementation of the Adjudication Judgment, groundwater production in the Alto Subbasin has decreased substantially, as recently evidenced by a decrease from approximately 99,000 AFY in 2006/2007 to approximately 78,000 AFY in 2013/2014 (MWA, 2015).

As part of the Adjudication Judgment, the Apple Valley Ranchos Water Company is allocated an annual Free Production Allowance (FPA), or amount of water that a producer may pump in a specific area (for the Apple Valley Ranchos Water Company, that is the Alto Subarea) within one year without incurring a Replacement Obligation, where the Replacement Obligation is a requirement to purchase from MWA or from another producer in the Subbasin an amount of water that is equal to the amount consumed in excess of the FPA.

As described in MWA's most recent Watermaster Report, which is produced on an annual basis and filed with the Court for compliance with the Adjudication Judgment, the Alto Subbasin is considered to be in a sustainable state, meaning that overdraft conditions are no longer present. Table 2-1, *Water Quotas for the Alto Subarea and the SVR System Service Area*, provided in Section 2.4.1, *Water Supply Source*, indicates that the AVR System Service Area FPA for the 2014/2015 year was 8,166 acre-feet. The 2015 Watermaster Report recommends to the Court that the FPA allocated to the Alto Subbasin for the coming 2015/2016 year should remain unchanged from the 2013/2014 year because groundwater levels within the Alto Subbasin are stable, including the Transition Zone area (along the Helendale Fault) (MWA, 2015).

Within the Alto Subbasin, the achievement of hydrologic balance described above is attributable to conservation, importation of State Water Project water, MWA's public outreach efforts, and implementation of the Adjudication Judgment. The current Watermaster Report states that under the conditions existing at this time, Rampdown of groundwater production in the Alto Subbasin is unnecessary, where "Rampdown" refers to the Court-ordered reduction in groundwater production rates to avoid potential overdraft conditions. During the 2013/2014 period, replacement water procured by the Apple Valley Ranchos Water Company for the Alto Subbasin via the MWA (as Watermaster) totaled 8,620 acre-feet, where 3,151 acre-feet was pre-purchased under the MWA Claim Program, and 1,149 acre-feet was pre-stored under a storage agreement (MWA, 2015).

### **c. Regulatory Setting.**

Methods available for managing groundwater resources in California include: (1) management by local agencies under authority granted in the California Water Code or other applicable State



statutes, (2) local government groundwater ordinances or joint powers agreements, and (3) court adjudications (DWR, 2003). The level of groundwater management in any basin or subbasin is often dependent on water availability and demand (DWR, 2003).

As noted previously, the Upper Mojave River Valley Groundwater Basin is a portion of an area that was adjudicated in 1996 (DWR, 2004). As part of the Adjudication Judgment, the MWA is required to file an annual Watermaster Report with the Court, detailing the information listed below on an annual basis (MWA, 2015).

- Review of Watermaster Activities
- Hydrologic Data
- Status of Subarea Obligations
- Purchases of Supplemental Water
- Recharge with Supplemental Water
- Revisions to the Rules and Regulations Adopted by Watermaster
- Proposed Administrative Budget for the next Water Year
- Proposed Assessment Rates for the next Water Year
- Projected Assessment Rates for the next two Water Years
- Proposed Free Production Allowances for Subareas
- Summary of Water Production
- Replacement and Makeup Water Obligations
- Replacement and Makeup Water Assessments
- Transfers of Base Annual Production Rights
- Transfers of Free Production Allowance during the Water Year
- Auditor's Report
- Fiscal Report
- Biological Trust Fund Financial Report
- Notice List

Information provided in the annual Watermaster Report is used to ensure compliance with the Adjudication Judgment, thereby ensuring that management efforts conducted in the basin are making effective progress towards achieving sustainability and water supply reliability.

State-wide legislation relevant to groundwater supply management includes Senate Bill 610, which requires the preparation of a Water Supply Assessment (WSA) for certain types of projects that are subject to CEQA; however, projects that are located in basins that are already adjudicated, such as the Upper Mojave River Valley Groundwater Basin, are exempt from requiring a WSA because implementation of an adjudication order would achieve the same goals towards water supply reliability planning as would a WSA. Similarly, in 2014 a package of bills referred to as the Sustainable Groundwater Management Act was passed to require that certain priority groundwater basins throughout the State are managed under a Groundwater



Management Plan per the direction of a Groundwater Sustainability Agency, although adjudicated basins may comply through implementation of the applicable Adjudication Judgment. As Watermaster of the Upper Mojave River Valley Groundwater Basin, the MWA considers the annual Watermaster Report to be useful for documenting sustainability of the groundwater basin in reference to the Sustainable Groundwater Management Act (MWA, 2015).

The Town of Apple Valley Municipal Code includes Ordinances that apply to water conservation towards the goals of minimizing per capita water demands and maintaining sustainable water supply to the area. These include Chapter 6.40, *Water Conservation Plan*, Section 6.40.030, *Water Regulations*, which requires that all water users in the Town of Apple Valley comply with specific water conservation measures. Exemptions are allowed to avoid undue hardship to a water user, to protect public health and safety, or under special circumstances subject to approval.

Also see Section 2.3, *Regulatory Setting*, of this EIR, which discusses regulatory requirements and agencies relevant to the regulatory setting for the issue area of hydrology and water quality, including the following: the federal Safe Drinking Water Act, the California Urban Water Management Planning Act (and California Water Conservation Act of 2009), the California Public Utilities Commission (regulates privately operated public utilities), and the State Water Resources Control Board (regulates public drinking water systems).

## **4.3.2 Impact Analysis**

### **a. Methodology and Significance Thresholds**

Based on the Town's CEQA Checklist and Appendix G of the State CEQA Guidelines, impacts to hydrology and water quality would be considered potentially significant if the proposed Project would meet one of the following significance thresholds:

- a. Violate any water quality standards or waste discharge requirements
- b. Substantially deplete ground water supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local ground water 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, or substantially increase the rate or amount of surface runoff, 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. Expose people or structures to inundation by seiche, tsunami, or mudflow

As described in Section 2.5, *Project Characteristics*, the proposed Project would acquire all of Apple Valley Ranchos Water Company's system facilities and related water rights, but would not change or expand the physical AVR System or the associated water rights, and the proposed Project also would not change the manner of operation of the AVR System or exercise of the associated water rights. As a result, the Initial Study (provided as Appendix A) found that in all cases the proposed project would have no impact relating to the CEQA checklist items listed above, except with regards to the potential to deplete groundwater supplies or interfere with groundwater recharge. No further discussion of the issues determined to have no impact in the Initial Study for the proposed Project is provided in this section.

### **b. Project Impacts and Mitigation Measures**

<i>Threshold:</i>	<i>Substantially deplete ground water supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local ground water 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.</i>
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**Impact WAT-1**    **The proposed Project would alter the entity that operates the existing AVR System, which could potentially alter the rate structure and fee charged for water service; if a reduction in pricing occurs, water use in the area could potentially increase because water use is linked to cost. However, the operator of the system would be required to comply with the water use reduction strategies and goals contained within the California Water Conservation Act of 2009, which requires specific reductions in urban water consumption by the year 2020. As a result, water use rates would continue to decline on a per capita basis regardless of potential changes**



**in the system operator or water rate structures. Therefore, potential impacts to groundwater supply would be Class III, less than significant.**

The proposed Project would not construct new infrastructure or facilities and therefore, would not introduce new impermeable areas that would have potential to affect groundwater recharge. Similarly, operation and maintenance activities that would occur under the proposed Project would utilize the same access roads as current operation and maintenance activities, and road improvements that could have potential to affect groundwater recharge would not be necessary under the proposed Project. Therefore, potential for the proposed Project to adversely affect groundwater supplies would be limited to the potential for increased groundwater use to occur as a result of the Project.

As described in the Initial Study provided as Appendix A, as well as in Section 2.0, *Project Description*, one of the objectives of the proposed Project is to provide greater local control over the rate setting process and rate increases. The municipalization, or public acquisition of the current private water system, would transfer authority and responsibility for system management and operation to the Town of Apple Valley. In achieving this Project objective of greater local control over water pricing and rates, water pricing may be reduced in the long term or, as is more likely, would not rise as rapidly as would have occurred under the system's current private ownership. Reduced water pricing could potentially result in increased water usage, as it is generally accepted that water use can increase with decreased cost, and decrease with increased cost. The amount of change in water use responding to changes in water cost can be a function of several factors including but not limited to: the availability of alternate water sources, price range and elasticity, and customer knowledge and understanding of bill information (Whitcomb, 2005). Accordingly, it would be speculative to numerically predict changes in water usage based on potential future changes in water rates. Nonetheless, and to fully address the issue consistent with *State CEQA Guidelines* Section 15145, the following discussion is provided.

If water customers in the AVR System area respond to changes in the AVR System ownership and potential rate decreases by increasing their rates of water use, the Town, as the new water provider, could respond by increasing supply to accommodate increased demand, potentially increasing its use of groundwater. However, this may in turn result in increased water rates associated with the need to procure replacement water (as a Replacement Obligation under the Adjudication Judgment) to maintain compliance with the Adjudication Judgment, which could subsequently result in water uses decreasing. Alternatively, transfers of water for unused water rights from another party within the Alto Subarea could be implemented to account for any excess water use (above the area's FPA, which fluctuates annually as determined by the Watermaster to maintain basin supply sustainability).

In addition to potential changes in water demands that could occur in response to potential changes in water pricing, compliance with the Adjudication Judgment and existing laws and regulations relevant to water conservation practices and goals would continue to be required. For instance, the California Water Conservation Act of 2009 (SBX7-7), mentioned in the Regulatory Setting above and described in Section 2.3, mandates conservation goals for urban retail water suppliers, including an ultimate goal of 20 percent reduction in per capita urban





consumption by 2020. Effective 2016, urban retail water suppliers that do not meet the water conservation requirements established by this bill are not eligible for state water grants or loans; other penalties may also apply. The AVR System is currently subject to the provisions of the California Water Conservation Act, and the current UWMP (2010) will be updated by July 1, 2016. Section 2.4, *Existing and Targeted Per Capita Water Use in AVRWC Service Area*, of the 2010 UWMP identifies a per capita water use goal of 245 gallons per capita day (GPCD) by the year 2020, which will be achieved using existing methods of conservation as well as additional methods to be identified in the 2015 UWMP (Apple Valley Ranchos Water Company, 2010).

Regularly updated UWMPs will be required into the future, under different operational responsibility structures, and it is reasonably anticipated that future UWMPs will include comparable data and requirements as are included in the current UWMP. The UWMP includes detailed discussion of Water Storage Contingency Planning, including examination of water supplies available under varying drought conditions, appropriate response to a catastrophic interruption in water supply or system, mandatory conservation measures and prohibitions, and penalties for excessive use. For instance, as described in the current UWMP, Section 7.8, *Penalties for Excessive Use*, the water purveyor (currently Apple Valley Ranchos Water Company) may impose “excess use penalties” to individual water users (per approval of the CPUC), in the form of fees billed for each billing period during which the user is in violation. If the excess water use continues despite fees imposed, the Apple Valley Ranchos Water Company may further impose flow-restricting devices on the service line, and eventually discontinue water service if nonessential or unauthorized water use continues (Apple Valley Ranchos Water Company, 2010). Similarly, conservation measures would also be available for implementation by the Town to achieve the required water use reductions, should the proposed Project be approved.

Therefore, although water pricing may change, either as a slowing in rate increases or in the more unlikely scenario of rate decreases, as a result of water system ownership changes included under the proposed Project, compliance with the existing Adjudication Judgment and other laws and regulations would avoid significant adverse impacts to groundwater supply reliability. Impacts of the proposed project on groundwater supplies and recharge would be less than significant, with no mitigation required.

**Mitigation Measures.** No mitigation measures are required as impacts would be less than significant.

**Significance After Mitigation.** Impacts would be less than significant without mitigation.

### **c. Cumulative Impacts**

Continued growth in the Project area, including buildout of the General Plan as well as implementation of the proposed Specific Plans identified in Table 3-1, would introduce increasing water requirements, and it is reasonably anticipated that local groundwater will continue to be a substantial source of water supply to the area. The General Plan EIR determined that implementation of the General Plan and annexation areas would result in increased demand for domestic water. While the 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, the General Plan EIR determined that General Plan buildout would contribute to a cumulative reduction in groundwater in the Basin.

However, with continued implementation of the Adjudication Judgment and the conservation efforts described above for compliance with local and State regulations, the change in system ownership that would occur under the proposed Project is not expected to contribute to cumulative impacts to groundwater supply reliability. The Project itself would not contribute to future increases in water supply demand, and its contribution to cumulative impacts in relation to groundwater supplies would not be considerable. Therefore, the proposed Project's contribution to cumulative impacts associated with water supply and water quality would not be cumulatively considerable.



## 4.4 LAND USE AND PLANNING

This section analyzes the proposed Project's potential to conflict with an applicable land use plan, policy, or regulation. As discussed below in Section 4.4.2, other CEQA Checklist items relating to Land Use and Planning are addressed in Appendix A, *Initial Study*, of this document.

### 4.4.1 Setting

#### a. Citywide Land Use Patterns

The Town of Apple Valley is in the high desert region of southwest San Bernardino County. The mountains and foothills of the San Bernardino Mountains are to the south and the San Gabriel Mountains are further southwest. Apple Valley is bordered by unincorporated San Bernardino County, the City of Victorville, the City of Hesperia, and the unincorporated Lucerne Valley. The Town encompasses 72 square miles and two annexation areas, Annexation 2008-001 (Golden Triangle) and Annexation 2008-002 (Northeast Industrial Area). The 4.3 square mile Golden Triangle is located in the northwestern portion of Apple Valley, and consists of mostly vacant land, with scattered single family residential. The 1.3 square mile Northeast Industrial Area is located in northeastern Apple Valley, contiguous to the North Apple Valley Industrial Specific Plan Area, and would provide additional lands for similar use. Apple Valley is more developed in its southern and central portions, with sparser development and vacant land being generally located in the northern third of the town.

The region has an overall rural character with established communities having a more urban land use pattern. Maintaining the existing rural character of the town is a primary goal of the Apple Valley General Plan. Open space, desert landscaping, multi-use trails, and large lots where keeping horses is allowed are all identified in the General Plan as important to maintaining quality of life.

#### b. Site and Surrounding Land Uses

Apple Valley is dominated by residential land uses, with over 70% of land being designated for residential or mixed use development. Other significant land designations include open space, street rights-of-way, general commercial, and specific plan/industrial. The central and southern portions of Apple Valley are primarily developed with residential. The northern third of Apple Valley has more open space and industrial use designations, including the North Apple Valley Industrial Specific Plan Area.

#### c. Regulatory Setting

The Town of Apple Valley regulates the mix of land uses within its incorporated area through its General Plan and Municipal Code. These regulatory documents establish policies that apply citywide, or to specific subareas within Apple Valley. The General Plan consists of nineteen elements, including Land Use, Water Resources, and Water, Wastewater, and Utilities. Each element sets goals, policies, and programs to guide decision making. The Municipal Code has established zoning districts that regulate the use of land and establishes minimum site development regulations and performance standards applicable to sites within the town.



## 4.4.2 Impact Analysis

### a. Methodology and Significance Thresholds

Based on the Town's CEQA Checklist and Appendix G of the State CEQA Guidelines, impacts to land use and planning would be considered potentially significant if the proposed Project would meet one of the following significance thresholds:

- 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, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect;
- c) Conflict with an applicable habitat conservation plan or natural community conservation plan.

As described in Section 2.5, *Project Characteristics*, the proposed Project would not change or expand the physical AVR System or the associated water rights, and the proposed Project also would not change the manner of operation of the AVR System. As a result, the Initial Study (provided as Appendix A) found that in all cases the proposed Project would have no impact relating to the CEQA checklist items listed above, except with regards to the potential to conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project. No further discussion of the issues determined to have no impact in the Initial Study for the proposed Project is provided in this EIR.

### b. Project Impacts and Mitigation Measures

*Threshold: 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, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.*

**Impact LU-1**      **The proposed Project would alter the entity that owns and operates the existing Apple Valley Ranchos Water System, but would not alter the nature or intensity of operation and maintenance of the water system. The Project would not alter existing compliance with applicable land use plans, policies, or regulations. Therefore, potential impacts would be Class III, less than significant.**

Implementation of the proposed Project would not affect any land use designations or intensity of development in Apple Valley, which are regulated by the adopted General Plan and Municipal Code. The General Plan does refer to the water system and Apple Valley Ranchos Water Company in multiple elements of the General Plan, including the Land Use Element,



Water Resources Element, and the Water, Wastewater, and Utilities Element. The following General Plan Policies relate to the proposed acquisition of the AVR System:

**Land Use Element.**

- Policy 8.A The Town shall coordinate with all public service providers to assure that adequate services are available to meet the demands of growth in Town.

**Water, Wastewater, and Utilities Element.**

- Policy 1.A The Town shall coordinate with the various domestic water service providers to ensure that local and regional domestic water resources and facilities are protected from over-exploitation and contamination.
- Policy 1.C The Town shall ensure that every effort is made to facilitate cost-effective and timely extension and expansion of community-development support services.

**Water Resources Element.**

- Policy 1.D 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.
- Policy 1.G To facilitate the sharing of information on potential groundwater contamination and potential sources, the Town shall confer and coordinate with the California Regional Water Quality Control Board, Apple Valley Ranchos Water Company, Golden State Water Company, other water purveyors that serve the Town and its Sphere of Influence.
- Policy 1.H The Town shall confer with appropriate water agencies and purveyors, as necessary, to assure adequate review and mitigation of potential impacts of proposed development on local water resources.

Implementation of the proposed Project would not conflict with any of the policies listed above as it would not impede the ability of the Town to coordinate/confer with public service or water service providers on the provision of services or on sources of groundwater contamination. Nor would the Project prevent the Town from facilitating cost-effective and timely expansion of support services or encouraging the use of reclaimed water in new development. Additionally, the purchase of Apple Valley Ranchos Water Company could, in fact, assist in the pursuit of some of the policies. For example, policies that require the Town to work with Apple Valley Ranchos Water Company, such as Water Resources Policies 1.G and 1.H and Water, Wastewater, and Utilities Policy 1.A, could instead be carried out by or pursued directly by the Town. While some policies still require coordination with other agencies, such as Water Resources Policy 1.G and Water, Wastewater, and Utilities Policy 1.A, the Town may be in a better position to work directly with the agencies if it is its own water provider. Water, Wastewater, and Utilities Policy 1.C requires the Town to work towards cost-effective and timely development of services. Being its own water provider would allow Apple Valley to



pursue cost-effective and timely water services development. Also, a stated goal of the proposed Project is to enable the Town to use reclaimed water for public facilities without invoking potential duplication of service issues with Apple Valley Ranchos Water Company. This objective is consistent with Water Resources Policy 1.D, which requires the Town to direct new development to use reclaimed water for irrigation of common landscaped areas.

Finally, as noted in the Section 2.0, *Project Description*, portions of the AVR System are located outside the Town's corporate boundary. The General Plan does not contain any policies discouraging the provision of services by the Town outside the corporate boundaries. Furthermore, the Town currently provides public services that extend outside of the Town's incorporated area through the provision of the Horsemen's Center equestrian park, located 1.2 miles east of the Town's boundary. Therefore, no conflicts with the General Plan would occur in this regard.

**Mitigation Measures.** No mitigation measures are required as impacts would be less than significant.

**Significance After Mitigation.** Impacts would be less than significant without mitigation.

### **c. Cumulative Impacts**

The General Plan EIR found that development of new residential, commercial and industrial projects within the General Plan and annexation areas will be consistent with that which has occurred in Town in the past, due to the policies and programs in the General Plan and that impacts associated with land use would not be cumulatively significant. The exception to this was the intensity of development in Annexation 2008-001, which was determined to be significantly different from that which has occurred to-date, or which is planned under the County General Plan, resulting in a cumulatively significant land use impact.

However, the proposed Project's contribution to cumulative land use impacts would not be cumulatively considerable as it would not alter any land use designations nor conflict with land use plans, policies, or regulations. The Apple Valley General Plan does not prohibit or restrict the Project. The proposed Project may assist in furthering the policies set forth in the General Plan and assist in their implementation.



## 4.5 NOISE

This section evaluates the potential impacts of the proposed Project on local noise conditions. This discussion is based on information from the Apple Valley General Plan and associated Environmental Impact Report, as well as U.S. Department of Transportation guidance for evaluating noise and vibration impacts.

### 4.5.1 Setting

#### a. Overview of Sound and Vibration Measurement

Noise levels (or volume) and vibration can be measured at a particular instant in time or over an extended period in order to understand the effect of an instantaneous event or to characterize the average amount of noise or vibration over a given period.

*Noise Levels.* Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound power levels that gives less weight to the very low and high frequency components of sound, similar to the human ear, resulting in an accurate correlation to the subjective reactions to noise. The most common sounds measure between 40 dBA (very quiet) and 100 dBA (very loud). A rural night-time environment typically measures about 25 dBA, while a jet engine measures 105 dBA.

Sound pressure level is measured on a logarithmic scale with the 0 dB level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dB, and a sound that is 10 dB less than the ambient sound level has no effect on ambient noise. Because of the nature of the human ear, a sound must be about 10 dB greater than the reference sound to be judged as twice as loud. In general, a 3 dB change in community noise levels is noticeable, while 1-2 dB changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while those along arterial streets are in the 50-60+ dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels typically attenuate (drop off) at a rate of 6 dB per doubling of distance from point sources such as industrial machinery. Noise from a linear source, such as a road or railroad tracks, typically attenuates at a rate of 3.0 to 4.5 per doubling of distance, depending on the type of ground surface it is traveling over (U.S. Department of Transportation, 2011).

In addition to the instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (Leq). The Leq is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). Typically, Leq is summed over a one-hour period.



The time period in which noise occurs is also important since noise that occurs at night tends to be more disturbing than that which occurs during the daytime. Two commonly used noise metrics – the Day-Night average level (Ldn) and the Community Noise Equivalent Level (CNEL) - recognize this fact by weighting hourly Leqs over a 24-hour period. The Ldn is a 24-hour average noise level that adds 10 dB to actual nighttime (10:00 p.m. to 7:00 a.m.) noise levels to account for greater sensitivity to noise during that time period. The CNEL is identical to the Ldn, except it also adds a 5 dB penalty for noise occurring during the evening (7:00 p.m. to 10:00 p.m.).

*Groundborne Vibration.* Groundborne vibration is vibration radiated through the ground. The rumbling sound associated with this vibration is caused by the vibration of room surfaces, and is called groundborne noise. Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors. Groundborne vibration related to human annoyance is generally expressed in vibration decibels (VdB). However, construction-related groundborne vibration in relation to its potential for building damage can also be measured in peak particle velocity (PPV) (U.S. Department of Transportation, 2012).

Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity level in residential and educational areas, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings, with the approximate threshold of perceiving vibration occurring at approximately 65 VdB for most people (Table 4.1-3; U.S. Department of Transportation, 2012).

**Table 4.5-1:  
 Human Response to Groundborne Vibration**

<b>Vibration Velocity Level</b>	<b>Associated Noise Level</b>	<b>Human Response</b>
65 VdB	20-35 dBA	Approximate threshold of vibration perception for most people.
75 VdB	30-45 dBA	Approximate dividing line between barely perceptible and distinctly perceptible.
85 VdB	40-55 dBA	Vibration acceptable only if there are an infrequent number of events per day.

*Source: U.S. Department of Transportation, 2012*

**b. Existing Environment**

The existing environment includes both sources of noise and vibration throughout the Town of Apple Valley as well as receptors that are sensitive to impacts from noise and vibration.

*Sources of Noise and Vibration.* The primary sources of noise in Apple Valley are related to transportation, including motor vehicle traffic throughout the town, railroad traffic along the train tracks, and aircraft noise from the Apple Valley Airport. Additionally, mechanical





equipment serving commercial and industrial lands, household appliances and garden maintenance equipment, as well as construction activities and equipment contribute to the town's noise environment (Town of Apple Valley, 2009a). Vibration impacts generally occur immediately surrounding train tracks and adjacent to heavy construction activity.

Existing noise levels were measured in the vicinity of the Apple Valley Ranchos Water Company's O&M facility and the Town's Public Works maintenance yard as part of this analysis. These locations had measured noise levels of Leq of 64.7 and 64.8 dBA, respectively, during a 10-minute interval in the period between 4:00 and 4:30 p.m. on Wednesday, July 8, 2015. For both locations traffic was the primary source of noise.

Noise measurements were also measured and reported in various areas of the town in the Environmental Impact Report for the Apple Valley General Plan. The closest measurements to the Apple Valley Ranchos Water Company's O&M facility were located in a residential area approximately 40 feet from Yucca Loma Road and approximately 0.8 miles from the Apple Valley Ranchos Water Company O&M facility, and at 12555 Navajo Road, approximately 100 feet east of the road and approximately 1 mile from the Apple Valley Ranchos Water Company O&M facility. These measurements were taken at 1:40 p.m. on May 20, 2008 and 3:00 p.m. on June 9, 2008, respectively. Although these measurements were taken seven years prior to this report, they are still relevant because there has been very little development in this area since that time, and as a result the noise environment has not changed substantially. The measured noise levels at these locations in Leq were 59.8 and 62.2 dBA, with most noise being attributed to the closest major roadway (Town of Apple Valley, 2009b).

*Sensitive Receptors.* Noise and vibration exposure goals for various types of land uses reflect the varying noise and vibration sensitivities associated with those uses. The Apple Valley General Plan Noise Element recognizes the following noise-sensitive and potentially noise sensitive uses:

- *Sensitive receptors:* residences, schools, libraries, churches, hospitals, nursing homes, and other health care facilities.
- *Potentially sensitive receptors:* Day care centers, parks, and other outdoor recreation areas.
- *Moderately sensitive receptors:* cemeteries, golf courses, hotels and motels, and dormitories.

Sensitive land uses generally should not be subjected to noise levels that would be considered intrusive in character. Therefore, the location, hours of operation, type of use, and extent of development warrant close analysis in an effort to ensure that noise sensitive receptors are not substantially affected by noise.

The closest sensitive and potentially sensitive receptors to the Apple Valley Ranchos Water Company's O&M facility, where many system maintenance activities are performed and where maintenance vehicles enter and exit the lot, are the following:

- The James A. Woody Community Center park grounds and athletic facilities; located adjacent to the O&M facility on the northern property line and approximately 300 feet to the east

- Residential properties that are directly adjacent to the facility on the western and eastern property lines
- Residential property south of Ottawa Road, approximately 80 feet southwest of the western of the driveway
- First Assembly of God church south of Ottawa Road, approximately 100 feet southeast of one of the eastern driveway

**c. Regulatory Setting**

*Federal.* The United States Noise Control Act of 1972 (NCA) recognized the role of the federal government in dealing with major commercial noise sources in order to provide for uniform treatment of such sources. Because Congress has the authority to regulate interstate and foreign commerce, regulation of noise generated by such commerce also falls under congressional authority. The Federal government specifically preempts local control of noise emissions from aircraft, railroads and interstate highways.

Title 23 of the U.S. Code of Federal Regulations Part 772 (23 CFR 772), "Procedures for Abatement of Highway Traffic Noise and Construction Noise," establishes standards for abatement of highway traffic noise to aid in protecting the public's health and welfare in terms of their noise environment. The U.S. Department of Transportation provides guidance regarding compliance with 23 CFR 772 and analysis of noise impacts, especially in regard to vehicular noise, in their 2011 document, *Highway Traffic Noise: Analysis and Abatement Guidance*.

*State.* Title 24 of the California Code of Regulations codifies Sound Transmission Control requirements establishing uniform minimum noise insulation performance standards for new hotels, motels, dormitories, apartment houses, and dwellings other than single-family dwellings. Specifically, Title 24 states that interior noise levels attributable to exterior noise sources shall not exceed 45 dBA CNEL in any habitable room of a new building. The State has also adopted guidelines for land use compatibility and community noise environment, shown in Table 4.5-2.

**Table 4.5-2:  
 Land Use Compatibility for Noise Environments**

Land Use Category	Community Noise Exposure Level (in dB)			
	Normally Acceptable <sup>1</sup>	Conditionally Acceptable <sup>2</sup>	Normally Unacceptable <sup>3</sup>	Clearly Unacceptable <sup>4</sup>
Low Density, Single-Family, Duplex, Mobile Homes	50-60	55-70	70-75	75+
Residential – Multiple Family	50-65	60-70	70-75	75+
Transient Lodging – Motel, Hotels	50-65	60-70	70-80	80+
Schools, Libraries Churches, Hospitals, Nursing Homes	50-65	60-70	70-80	80+
Auditoriums, Concert Halls, Amphitheaters	NA <sup>5</sup>	50-70	65+	NA



Sports Arenas, Outdoor Spectator Sports	NA	50-75	70+	NA
Playgrounds, Neighborhood Parks	50-70	NA	67-75	73+
Golf Courses, Riding Stable, Water Recreation, Cemeteries	50-75	NA	70-80	80+
Office Buildings, Business Commercial and Professional	50-70	67-77	75+	NA
Industrial, Manufacturing, Utilities, Agriculture	50-75	70-80	80+	NA

<sup>1</sup> **Normally Acceptable** – Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements

<sup>2</sup> **Conditionally Acceptable** – New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

<sup>3</sup> **Normally Unacceptable** – New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

<sup>4</sup> **Clearly Unacceptable** – New construction or development should generally not be undertaken.

<sup>5</sup> Not applicable.

Source: Town of Apple Valley, 2009.

*Town of Apple Valley.* The Town of Apple Valley’s Noise Ordinance includes policies and programs that support the Town’s goal of maintaining, “Noise levels that are consistent with the Town’s rural character and high quality of life.” These policies include new development review as well as policies related to transportation planning to reduce noise at sensitive receptors.

The Town also limits outdoor noise levels at various types of receptors though the Municipal Code in Section 9.73.050, *External and Internal Noise Standards*, with noise levels being restricted in single-family residential areas to 50 dBA from 7 a.m to 10 p.m. and 40 dBA from 10 p.m. to 7 a.m. (Table 4.5-3).

**Table 4.5-3:  
 Exterior Noise Limits (not to be exceeded more than 30 minutes in any hour)**

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

Source: Town of Apple Valley Municipal Code, Table 9.73.050-A

Section 9.73.060, *Prohibited Noise and Vibration*, of the Municipal Code also restricts vibration, requiring that no person unnecessarily make, continue, or cause to be made or continued any vibration which is above the vibration perception threshold of an individual at or beyond the



property boundary of the source if on private property or at 150 feet from the source if on a public space or public right-of-way.

Noise from work trucks is regulated under Section 9.73.070, *Motor Vehicles Operating on Public Right-of-Way*, of the Municipal Code, which states:

*No person shall operate or permit the operation of any motor vehicle with a gross vehicle weight rating (GVWR) in excess of 10,000 pounds, or any auxiliary equipment attached to such a vehicle, for a period longer than 15 minutes in any hour while the vehicle is stationary, for reasons other than traffic congestion on a public right-of-way or public space within 150 feet of a residential area or designated noise sensitive zone, between the hours of 10 PM and 7 AM.*

## **4.5.2 Impact Analysis**

### **a. Methodology and Significance Thresholds**

This analysis estimates noise levels and vibration associated with existing and future operation of the proposed Project, including potential noise and vibration associated with traffic along area roadways segments. The existing water supply system is fully functional and would not require any additional new infrastructure to facilitate the proposed change in ownership. Therefore, the proposed Project does not include any new construction and associated noise, and this activity is not discussed further.

*Methodology.* This analysis considers the noise environment associated with the proposed Project, including noise from vehicles used to operate and maintain the water supply system, and any components of the Project with the potential to increase nuisance noise. The proposed Project would entail the Town's acquisition and subsequent operation of the water supply system. The system would maintain its existing size and capacity, including approximately 23 groundwater wells with a total capacity of 37 million gallons per day, 11 storage tanks with a total capacity of 11.7 million gallons, 16 emergency generators, 8 booster pump stations, 22,431 service connections, and 469 miles of pipelines. Therefore, system operation is expected to continue to require a staff of approximately 39 employees, including approximately 20 office workers and 19 technical and field staff. No new facilities are proposed under the Project; however, maintenance events may occur as part of the ongoing operation and maintenance of the system as they would under the current ownership. As discussed in Section 2.0, *Project Description*, the Town would operate the system out of the existing O&M facility at 21760 Ottawa Road, and therefore there would be little to no change in the length, distribution, or number of vehicle trips required to operate and maintain the system. As discussed in Section 4.6, *Transportation and Traffic*, operation and maintenance of the results in an estimated 154 trips per day, with 39 occurring during both the AM and PM peak hours (i.e. between the hours of 7:00 AM to 9:00 AM or 4:00 PM to 6:00 PM).

*Significance Thresholds.* In accordance with the Town's CEQA Checklist and Appendix G of the State CEQA Guidelines, a significant noise impact would occur if the proposed Project would result in:



- 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 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; or
- 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.

The Initial Study for the proposed Project (Appendix A) found that aircraft noise does not create significant noise impacts in areas beyond the Apple Valley Airport property and that the Project would not involve any change in physical operational or maintenance activities in areas subject to aircraft-generated noise; therefore, the proposed Project would not expose people residing or working in the Project Area to excessive noise levels (Significance Thresholds e and f). These impacts are therefore not discussed further in this section.

The 23 CFR 772 does not provide significance thresholds for noise impacts, but rather allows state and local agencies to define their own thresholds. According to the EIR for the Town's General Plan, the Town has defined a significant impact to occur when a project results in a noise level that is greater than 65 dBA and the project-related increase is greater than 3 dBA. This threshold has been used for this analysis.

In contrast to noise, groundborne vibration is not a phenomenon that most people experience every day. The background vibration velocity level in residential areas is usually 50 Vdb or lower, well below the threshold of perception for humans, which is around 65 Vdb (U.S. Department of Transportation, 2012). The proposed Project was analyzed for potential contributions to groundborne vibration and resulting effects to sensitive receptors. Because there are no quantitative local or state thresholds for vibration that apply to the Project Area, the impact criteria for general assessment defined by the U.S. Department of Transportation were used for this analysis (Table 4.5-4). If residential development or other sensitive receptors would be exposed to project-related ground-borne vibration exceeding the criteria presented in Table 4.5-4, impacts would be potentially significant.

**Table 4.5-4:  
 Ground-Borne Vibration Impact Thresholds (in VdB)**

<b>Land Use Category</b>	<b>Frequent Events<sup>1</sup></b>	<b>Occasional Events<sup>2</sup></b>	<b>Infrequent Events<sup>3</sup></b>
Category 1: Buildings where vibration would interfere with interior operations.	65	65	65
Category 2: Residences and buildings where people normally sleep.	72	75	80
Category 3: Institutional land uses with primarily daytime use.	75	78	83

<sup>1</sup> Frequent Events is defined as more than 70 vibration events of the same kind per day.

<sup>2</sup> Occasional Events is defined as between 30 and 70 vibration events of the same kind per day.

<sup>3</sup> Infrequent Events is defined as fewer than 30 vibration events of the same kind per day.

<sup>4</sup> This threshold is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes.  
 Source: Federal Railroad Administration, September 2012

**b. Project Impacts and Mitigation Measures.**

<i>Threshold:</i>	<i>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.</i>
<i>Threshold:</i>	<i>A substantial permanent increase in ambient noise levels above levels existing without the project.</i>
<i>Threshold:</i>	<i>A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.</i>

**Impact N-1**

**Implementation of the proposed Project could potentially result in noise impacts associated with operation and maintenance of the water supply system due to maintenance of system infrastructure as well as operation of vehicles and equipment in and around the Project Area. However, given that these activities would be similar to those performed under the existing ownership, the proposed Project would result in little to no increase in noise. Therefore, noise levels would fall within existing ranges and would not expose sensitive receptors to levels exceeding applicable standards. This impact would be a Class III, less than significant.**

Although some level of maintenance activity would be required in order to operate and maintain the water supply system, this activity would be in line with existing operations. In addition, the proposed Project, i.e. transfer of ownership, would not result in the addition of stationary sources of noise, such as generators and other heavy equipment.

Noise has the potential to occur from vehicle trips on local roads; however, the proposed Project would not increase the length, distribution, or number of vehicle trips required to operate and



maintain the water supply system. Additionally, vehicle trips associated with operation and maintenance activities would be spread throughout the day and across the Project Area’s street system, rather than concentrated on any one roadway in any one hour. Even assuming that all of the estimated 154 vehicle trips to and from the O&M facility were new to the street system, the maximum number of trips in one hour would be the 39 inbound trips from arriving employees and 19 outbound trips from the departure of all field staff, for a total of 58 vehicles in one hour. This maximum number of vehicle trips would occur during either the AM or PM peak hours. During a traffic count performed on Ottawa Road on July 8, 2015 in support of this analysis, 50 vehicles were observed over a 15-minute interval, indicating that there are approximately 200 cars per hour that travel this road. This count was performed during the PM peak hour. Assuming the estimated maximum 58 vehicle trips were added to the roadway, this would represent a 29 percent increase in traffic. As discussed above, traffic would have to double in order for there to be a 3 dBA increase in the resulting level of noise. Therefore, even assuming that the Project would result in an increase of 58 vehicle trips, such an increase would not have a perceptible effect on the noise environment, and the increase in noise levels would not exceed the significance threshold for this analysis, which restricts increases in project-related noise levels to 3 dBA. Therefore, the proposed Project would not result in noise impacts to sensitive receptors and this impact would be less than significant.

**Mitigation Measures.** No mitigation is required.

**Significance After Mitigation.** Impacts would be less than significant without mitigation.

<i>Threshold</i>	<i>Would the proposed project expose persons to or generate excessive groundborne vibration or groundborne noise levels?</i>
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<b>Impact N-2</b>	<p><b>Implementation of the proposed Project could potentially result in vibration associated with equipment used to operate and maintain the water supply system and vehicles used to service the system. However, given that operation and maintenance activities would remain similar to existing activities, the proposed Project would result in little to no increase in vibration and would not generate excessive groundborne vibration or groundborne noise. This impact would be a Class III, less than significant.</b></p>
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Following the transfer of ownership of the water supply system from Apple Valley Ranchos Water Company to the Town of Apple Valley, ongoing maintenance activities would continue to occur similar to existing operations. Therefore, the proposed Project would not result in the addition of stationary sources of groundborne vibration, such as generators and other heavy equipment.

The proposed Project would require continued use of operation and maintenance vehicles on local roads throughout the Project Area; however, these trips would be in line with existing operations and would not result in additional vehicle trips. Additionally, the Town’s roadways



are well developed (i.e. smooth), and therefore vehicle traffic on these roads does not generally result in groundborne vibration or associated groundborne noise. Therefore, the proposed Project would not result in vibration impacts to sensitive receptors and this impact would be less than significant.

**Mitigation Measures.** No mitigation is required.

**Significance After Mitigation.** Impacts would be less than significant without mitigation.

### **c. Cumulative Impacts**

The General Plan EIR determined that increased traffic volumes within the Town and surrounding areas would result in the most significant noise impacts, with the most impacted areas expected to be lands adjacent to major arterials and regional roadways, which carry the highest traffic volumes. The General Plan EIR determined that the cumulative noise impact would not be significant as the General Plan includes a wide range of policies and programs which, when implemented, would reduce potential noise impacts to less than significant levels.

In addition, because the proposed Project would make no noticeable contribution to noise or vibration, it would also make no noticeable contribution to cumulative noise and vibration both in proximity to the Apple Valley Ranchos Water Company O&M facility and throughout the wider Project Area. Therefore, the proposed Project's cumulative contribution to cumulative noise and vibration in the Project Area and its immediate vicinity would not be cumulatively considerable.

