SECTION 5.0 ENVIRONMENTAL IMPACT ASSESSMENT

This section contains a discussion of the possible environmental effects of the proposed project for the specific issue areas that were identified, through the Initial Study process, as having the potential to experience significant impacts.

The assessment of each issue area begins with an introduction that summarizes the environmental effects considered for that issue area. This is followed by the issue area setting and impact analysis. Within each Impact Analysis, the first subsection identifies the criteria and significance thresholds. The significance thresholds are those criteria adopted by Los Angeles County or other agencies, and are universally recognized or developed specifically for impact analyses to determine whether potential effects are significant or less than significant.

Following criteria and significance thresholds, the next subsection describes each specific impact of that issue area related to the proposed project. Each issue area impact under consideration is separately listed with a discussion of that impact. Each impact listing contains a significance determination for the environmental impact. The recommended mitigation measures (if required), the level of significance after mitigation, and the residual effects (if any), are presented after each environmental impact discussion.

A residual effect is the level of significance remaining after the implementation of the recommended mitigation 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 for each issue area concludes with a discussion of cumulative effects, which evaluates the impacts associated with the project in conjunction with other future development in the area. Growth-inducing impacts are also be discussed for each issue area.

Impact Category Definitions

The following subsections define the four primary impact categories, including significant impacts, growth-inducing impacts, cumulative impacts, and less-than-significant impacts.

SIGNIFICANT IMPACTS

The California Environmental Quality Act (CEQA) defines a *Significant Effect* (or impact) as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the 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 (*State CEQA Guidelines* §15382).

A *Significant and Unavoidable Impact* is an effect that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an effect requires a Statement of Overriding Considerations to be issued if the project is approved per §15093 of the *State CEQA Guidelines*.

On the other hand, a *Significant but Mitigable Impact* is an effect that can be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an effect requires findings to be made under §15091 of the *State CEQA Guidelines*.

LESS-THAN-SIGNIFICANT AND BENEFICIAL IMPACTS

A *Less-than-Significant Impact* is an impact that may be adverse, but does not exceed the threshold levels and does not require mitigation. However, mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.

A *Beneficial Impact* an effect resulting from the project that would actually reduce existing environmental problems or hazards.

CUMULATIVE IMPACTS

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 less than significant when analyzed separately; however, they could have a significant impact when analyzed together. This method of 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. Cumulative impacts are discussed within each Impact Analysis subsection for each issue area.

State CEQA Guidelines Section 15064(i)(1) contains the definition of *Cumulatively Considerable*. When assessing a cumulative effect, the Lead Agency shall consider whether the cumulative effect is significant and whether the effects of the project are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

GROWTH-INDUCING IMPACTS

Sections 15126(d) and 15126.2 of the *State CEQA Guidelines* require discussions of a proposed project's potential to foster economic or population growth, including ways in which a project could remove an obstacle to growth. Growth does not necessarily create significant changes to the environment; however, depending upon the type, magnitude, and location of growth, it can result in significant adverse environmental effects. The proposed project's growth-inducing potential is considered significant if it could result in unavoidable significant effects in one or more environmental issue area. The project's potential to induce growth is discussed in this subsection for each issue area.

In addition to analyzing whether a project would influence the rate, location, and type of development within the Santa Clarita Valley area, potential growth-inducing impacts are also assessed based on the project's consistency with adopted plans that address growth management from a local and regional standpoint.

The water main project is to provide water service to existing, recorded, approved, and pending residential/commercial and future projects. This project description ensures the project will serve water customers in the Newhall County Water District (NCWD) service area within the Santa Clarita Area Plan projected population growth, and is not intended to remove obstacles to growth not anticipated by Area Plan. However, since groundwater supplies are currently insufficient to accommodate growth that may be permitted by the Santa Clarita Valley Area Plan, sizing the water main to provide capacity for more that existing, permitted, and pending development projects removes an existing impediment to growth, and may be considered growth inducing for one or more issue areas.

Removal of Impediment to Growth

Preparation of this EIR was determined to be necessary based on preliminary calculations that the water main had potential to result in growth-inducing impacts on one or more issue areas, as identified in the Initial Study Checklist, because additional water removes an existing impediment to growth. Approximately 300 dwelling units (DU) existing in the Vasquez Water Main Project service area are currently not served by NCWD. Another 555 DU are at various stages of approval by the County of Los Angeles. Therefore, the Vasquez Water Main Project is intended to serve at a minimum 855 DU (of which permits for approximately 119 DU have expired).

The Vasquez Water Main Project has the capacity to serve a little over 2,000 DU. The portion of "unallocated" water, available through the proposed Vasquez Water Main, is the portion that is considered growth inducing since it removes an existing impediment for additional growth in the service area. The Vasquez Water Main will have the capacity to provide water for an additional estimated 1,145 DU (1,264 includes expired tract applications).

Further analysis on (1) the number of users that could be served by the water main, (2) the number of users expressed as DU, and (3) the number of users that are authorized in the service area based on the existing Santa Clarita Valley Area of the Los Angeles County General Plan (General Plan), land use, and zoning, would allow for approximately 2,459 DU within the NCWD Vasquez Water Main service area. However, determining exactly how many users would be permitted, expressed as DU, is difficult to determine and is beyond the scope of this EIR[1]. Regardless, for the NCWD to determine the threshold at which it will induce additional growth as it relates to the Vasquez Water Main Project, the expected number of units per land use category was used to estimate the number of users that could use NCWD water.

The service area of NCWD includes the following Land Use Designations from the County of Los Angeles General Plan:

- Urban 1 (U1 estimated at 1.1 DU/acre);
- Urban 2 (U2 estimated at 3.4 DU/acre);
- Urban 3 (U3 estimated at 15 DU/acre);
- Non-Urban 2 (NU estimated at 1 DU/20 acre);
- Non-Urban Hillside Management (NUHM estimated at 1 DU/20 acres); and
- Open Space (OS estimated at 1 DU/20 acres).

Projections of possible acreage per land use designation, multiplied by the estimated DU possibility, produce the following estimates of potential build-out in the area:

Land Use Designation	Dwelling Units (DU)/acre	Potential DU
U-1	660 acres @ 1.1 DU/acre	726
U-2	240 acres @ 3.4 DU/acre	816
U-3	50 acres @ 15 DU/acre	750
NU	300 acres @ 1 DU/20 acres	15
NUHM	3,000 acres @ 1 DU/20 acres	150
OS	50 acres @ 1 DU/20 acres	2
		2,459

[1] The General Plan Land Use Element provides ranges of the number of DU possible in the land use area; however, other factors and formulas must be used to determine how many units would be permitted, which are performed on a parcel-by-parcel basis. The exact number and size of parcels within the service area are also unknown to the NCWD, and are not readily available without considerable time and effort.

The quantity of water that should be reserved for fire protection is equivalent to the water demand for approximately 560 DU; therefore, this quantity of water should be added to the existing water demand for the service area. This quantity of water, and the number of existing, already approved, pending, and planned DU (736), when subtracted from the Potential Dwelling Units, indicates that the Vasquez Water Main Project could provide water service for up to 1,169 DU beyond what is already existing/planned for the service area.

Based on this analysis, the proposed 18-inch water main would provide enough capacity for approximately 2,000 DU. The service area could accommodate approximately 2,460 DU. The portion of the water main that can support beyond 2,460 DU, which could be built under the existing General Plan, would be considered growth inducing. A ten percent increase in DU in the service area was used as the threshold of significance, according to SB 221 (Kuehl). SB 221 requires a "sufficient water supply" to be included as a condition of a tentative subdivision map for housing developments of more than 500 units, or when the subdivision would increase the customers of small water suppliers (5,000 customers or less) by more than ten (10) percent.

5.1 AESTHETICS

Mint Canyon is bordered by Bouquet Canyon to the west and Soledad Canyon to the east. The project site is approximately eight miles east of Saugus (a part of the City of Santa Clarita), and approximately 13 miles west of the community of Acton.

The total project site follows an approximate 2.4-mile path beginning on Sand Canyon Road (where a portion of the water main has already been installed), heading northeast on Sierra Highway, then heads northwest on Vasquez Canyon Road, intersecting Mint Canyon Creek, and ending on Vasquez Canyon Road north of Cruzan Mesa.

The Mint Canyon Creek portion of the project site flows generally in a southwesterly direction and runs generally parallel with Sierra Highway (see Figure 2-2). In addition to Mint Canyon Creek, two unnamed tributaries to Mint Canyon Creek also intersect with the water main route.

The route of the previously constructed water main portion passes through urban and semi-urban residential development on Sand Canyon Road and Sierra Highway. The proposed continuation of the water main project passes through semi-urban, semi-rural, residential, and industrial properties, along Sierra Highway and Vasquez Canyon Road.

5.1.1 Impact Analysis

Analysis of impacts to aesthetics resulting from installation of the pipeline considers direct, indirect, cumulative, and growth-inducing impacts, based on the criteria and significance thresholds described below.

5.1.1.a Criteria and Significance Thresholds

Thresholds of significance for aesthetics are maintained by the County of Los Angeles in the unincorporated area of the NCWD service area, and by the City of Santa Clarita for the incorporated area within NCWD. A project would normally have an impact on aesthetics if it would:

1. Have a substantial adverse effect on a scenic vista;
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
3. Substantially degrade the existing visual character or quality of the site and its surroundings; and/or
4. Create a new source of substantial light or glare that would adversely affect day or nighttime views.

5.1.1.b Project Impacts and Recommended Mitigation Measures

The proposed project will be placed beneath the surface of existing roads and highways. Only a temporary impact to aesthetics will occur resulting from construction activities, foreign material, and trash temporarily and locally obscuring the aesthetics existing onsite. This is considered to be *less than significant.* However, the project has the capacity to serve more development than is currently proposed in the area, and is therefore considered to be growth inducing. The long-term effects of the project may impact aesthetics as continued development occurs in the area.

DIRECT SIGNIFICANT IMPACTS

No significant direct impacts to aesthetics will result from the proposed project.

CUMULATIVE IMPACTS

No cumulative impacts to aesthetics will result from the proposed project since any project-related impacts would be temporary in nature.

GROWTH-INDUCING IMPACTS

By removing an impediment to growth in the Vasquez Water Main service area, a potential exists for impacts to aesthetic resources by:

- Having a substantial adverse effect on a scenic vista through additional development;
- Substantially damaging scenic resources through additional development;
- Substantially degrading existing visual character or quality of the site and its surroundings through additional development; and/or
- Creating new sources of substantial light or glare that would adversely affect day or nighttime views in the area through additional development.

Since substantial grading would be required by the County of Los Angeles for moderately or large-sized development projects to mitigate for geologic hazards (landslide and liquefaction hazard zones – see Section 5.6), it is likely that any such developments proposed within the Vasquez Water Main service area will substantially change the visual character of the area. Therefore, a *significant potential impact* to existing aesthetic resources within the service area may occur as a result making available additional water supply to potential new developments in the service area.

Recommended Mitigation Measure

There are no feasible mitigation measures available to NCWD to offset any significant impacts to aesthetic resources in the Vasquez Water Main service area since NCWD has no authority over projects that are approved by the County of Los Angeles.

NCWD is a special district, a legitimate subdivision of the State government, established under the authority of Section 3000, Division 12 of the California Water Code. Providing water service to municipal and industrial users is the essence of the mission of NCWD. As a special district, NCWD only has authority to control those issues currently enacted by ordinance by the Board of Directors. NCWD has no other authority over planning or development in their service area. Therefore, NCWD has no authority to control adverse impacts created by the potential growth from the water service. However, the normal discretionary permit process within the County of Los Angeles would identify and avoid, minimize, or reduce impacts according to CEQA, or require mitigation to do so.

Monitoring

NCWD has no authority over land use changes and increased demand for water and so cannot monitor for potential growth inducement.

Significance after Mitigation

The significance after mitigation would be *significant and unavoidable*; therefore, a Statement of Overriding Consideration must be adopted by the NCWD for this impact.

5.2 AGRICULTURE

5.2.1 Setting

Agricultural resources include lands that are used to grow crops for human or animal use, or for livestock forage, which are then sold as commodities. Agricultural crops include seasonal row crops, orchards, and alfalfa and hay. Forage resources typically consist of natural vegetation that is either harvested and baled, or eaten directly onsite by foraging livestock. Forage resources may or may not be supplemented with seeding of non-indigenous forage grass and forb species.

An examination of recent aerial photographs of the service area failed to identify any active crops or orchards within the service area. Onsite surveys along the pipeline route also failed to identify any crops or orchards. Therefore, only a very small percentage of the service area is expected to contain croplands.

Some large undeveloped parcels are used for livestock grazing; however, no forage crops appear to be planted or harvested. If present, the total acreage of crops and orchards is small and likely less than 100 acres total. A larger percentage of the land within the 4,480-acre service area is currently used for livestock grazing; however, no acreage values are currently available. For this analysis, it is assumed that 50 percent of the 4,480 acres are used for livestock grazing and foraging, which is most likely a high estimate.

The California Resources Agency has not designated any of the 4,480 acres of land within the service area as Prime Farmland. No parcels within the service area are under Williamson Act contracts.

5.2.2 Impact Analysis

Analysis of impacts to agricultural resources resulting from water main construction considers direct, indirect, cumulative, and growth-inducing impacts, based on criteria and significance thresholds described below.

5.2.2.a Criteria and Significance Thresholds

The thresholds of significance for agriculture are maintained by the County of Los Angeles in the unincorporated area and by the City of Santa Clarita for the incorporated area within the NCWD service area. A project would normally have an impact on agriculture if it would:

1. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) (as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency) to non-agricultural use;
2. Conflict with existing zoning for agricultural use, or a Williamson Act contract; and/or
3. Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use.

5.2.2.b Project Impacts and Recommended Mitigation Measures

DIRECT SIGNIFICANT IMPACTS

The project would not result in any impacts to agricultural resources. No impact to agricultural resources would occur as a result of installing the NCWD Vasquez Water Main since no croplands or grazing/foraging lands will be directly impacted by the pipeline.

Croplands expected to occur onsite represent less than 50 acres, representing only approximately one percent of the 4,480-acre service area, and would not be considered a significant amount of croplands lost if they were converted to other land uses.

A higher percentage of the service area is likely used for livestock. Even with 50 percent of the 4,480 acres used for livestock grazing, the loss of this agricultural resource would not have a significant impact on the resulting commodity of beef, goat, or lamb. Therefore, no significant direct, indirect, cumulative, or growth-inducing impacts to agricultural resources are expected to occur as a result of the Vasquez Water Main Project.

Recommended Mitigation Measure

Mitigation is not required since there are no impacts to agricultural resources.

Monitoring

Monitoring is not required since there are no impacts to agricultural resources.

Significance after Mitigation

Since no mitigation measures are required, significance after mitigation is not applicable here.

Residual Impacts

No residual impacts to agricultural resources would result from the proposed project.

CUMULATIVE IMPACTS

No cumulative impacts to agricultural resources would result from the proposed project.

GROWTH-INDUCING IMPACTS

No growth-inducing impacts to agricultural resources would result from the proposed project.

5.3 AIR QUALITY

The following air quality discussion and analysis is based primarily on David Magney Environmental Consulting's (DMEC's) subconsultant Marine Resource Services (Radis 2003) analysis, which is incorporated entirely in this section.

5.3.1 Setting

Daytime summer temperatures in the Santa Clarita area average about 90°F. Minimum nighttime summer temperatures are typically in the high 50s to low 60s, while the winter high temperature tends to be in the 60s. Minimum winter temperatures are in the 30s and 40s throughout most of the Santa Clarita Valley. Annual average rainfall in the Santa Clarita Valley is about 13 inches, while the surrounding mountains can receive over 22 inches annually.

Two types of temperature inversions (warmer air on top of colder air) are created in the area, subsidence and radiational (surface). The subsidence inversion is a regional effect created by the Pacific High, in which air is heated as it is compressed when it flows from a high-pressure area to low-pressure areas inland. This type of inversion generally forms at about 1,000 to 2,000 feet above the ground and can occur throughout the year, but is most evident during the summer months. Surface inversions are formed by the more rapid cooling of air near the ground during the night, especially during winter. This type of inversion is typically lower and is generally accompanied by stable air. Both types of inversions limit the dispersal of air pollutants within the regional airshed. The primary air pollutant of concern during the subsidence inversions is ozone, while the greatest pollutant problems during winter inversions are carbon monoxide and nitrogen oxides.

Construction of the NCWD proposed pipeline would include increased construction related emissions during the time of construction. This increase in construction related emissions would occur five days per week during the total estimated construction time of eight weeks. The increase in construction related emissions would be from the following equipment:

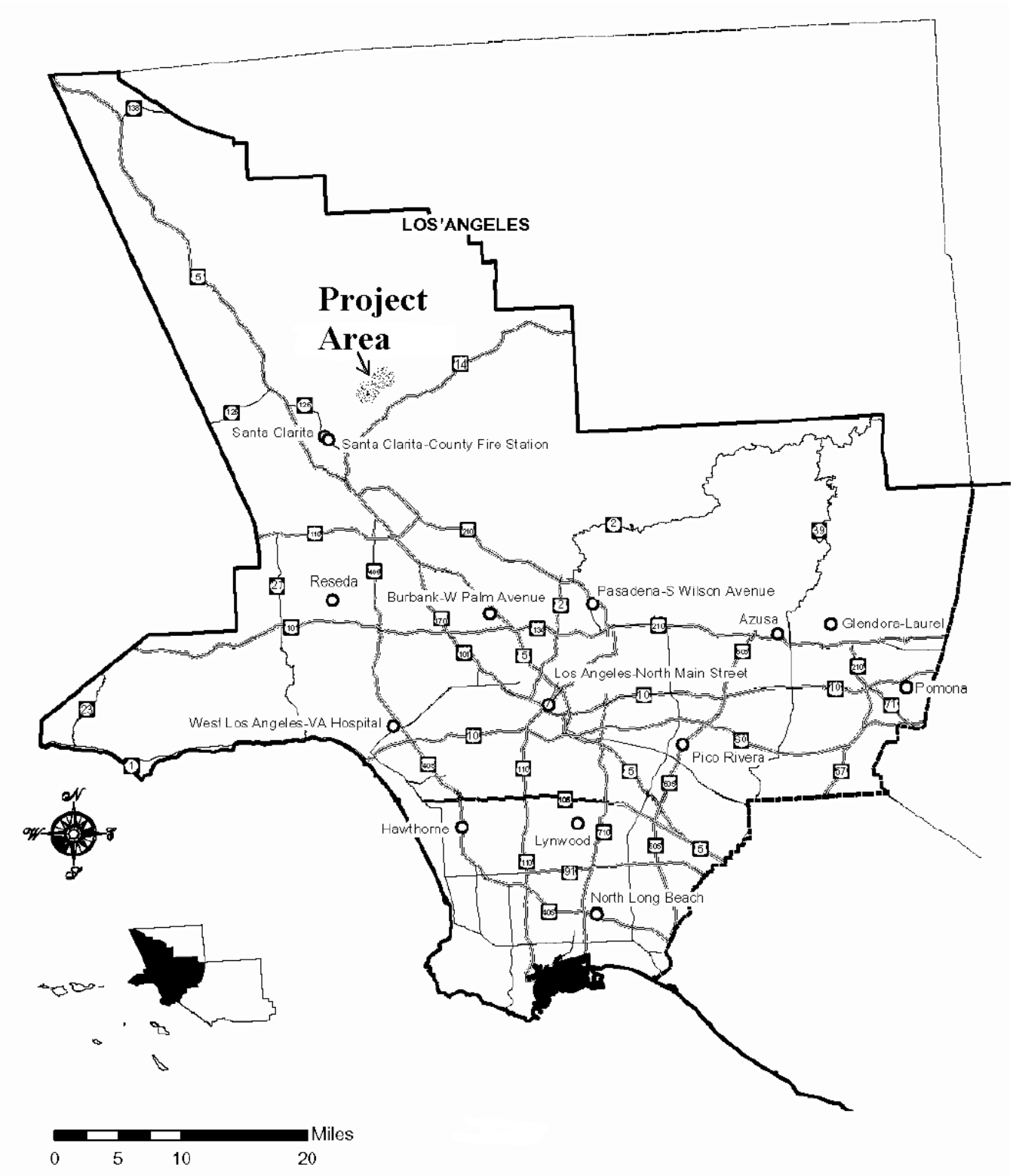
- Four 10-Wheel End-dump Trucks,
- One 311 Caterpillar (CAT) Excavator,
- One 950 CAT Loader,
- One 655 E Backhoe,
- One 1,800-gallon Water Truck,
- One Street Sweeper,
- Two 1-ton GMC Pickup Trucks,
- One ¾-ton Pickup Truck,
- One 10-Wheel Dump Truck, and
- Four light duty vehicles for construction workers transportation, including:
  - One 1999 GMC 1-ton Truck,
  - One 2000 GMC 1-ton Truck,
  - One 1998 ¾-ton Truck, and
  - One 1998 GMC Dump Truck.

5.3.1.a Current Ambient Air Quality

Depending upon whether or not state and federal standards are met or exceeded, individual air basins are classified as being in attainment or as in non-attainment. The South Coast Air Basin, which encompasses the non-desert portions of Los Angeles, Orange, San Bernardino, and Riverside Counties, is located in a non-attainment area for both the federal and state standards for ozone (O_3), carbon monoxide (CO), and nitrogen dioxide (NO_2), and the state standard for particulate matter PM_{10} (coarse particulate matter [PM] less than 10 microns in aerodynamic diameter). The nearest air monitoring station to the project site is located in Newhall, approximately twelve miles from the project site (Figure 5-1, Air Quality Monitoring Stations in the South Coast Air Basin). This station measures O_3, CO, NO_2, and PM_{10}.

Sulfur dioxide (SO_2) is a gas produced primarily from the combustion of sulfurous fuels by stationary sources and by mobile sources. Los Angeles County is in attainment of the California and National SO_2 standards.

Figure 5-1. Air Quality Monitoring Stations in the South Coast Air Basin



The two classes of particulate matter are PM_{10} and $PM_{2.5}$ (fine particulate matter 2.5 microns or less in aerodynamic diameter). Both consist of many different types of particles that vary in their chemical activity and toxicity. $PM_{2.5}$ tends to be a greater health risk because it cannot be removed from the lungs once it is deeply inhaled. The greatest PM emissions appear to originate from soils (via roads, construction, agriculture, and natural windblown dust). Other sources of PM include sea salt, particulate matter released during combustion processes, such as those in gasoline and diesel vehicles, and wood burning. Also, nitrogen oxides (NO_x) and sulfur oxides (SO_x) are precursors in the formation of secondary PM. Los Angeles County is designated as non-attainment of the National and California PM_{10} standards.

In 1997, the United States Environmental Protection Agency (EPA) added two new $PM_{2.5}$ standards, set at 15 micrograms per cubic meter ($\mu g/m^3$) and 65 $\mu g/m^3$, respectively, for the annual and 24-hour standards. In addition, the form of the 24-hour standard for PM_{10} was changed. The EPA is just beginning to collect data on $PM_{2.5}$ concentrations. Beginning in 2002, based on three years of monitor data, the EPA planned to start issuing designations for areas as non-attainment that do not meet the new $PM_{2.5}$ standards. Los Angeles County has ten air monitoring stations that monitor for $PM_{2.5;}$ two of which (in Lancaster) are close to the Vasquez Water Main service area. The results for the last three years (1999-2002) at these two stations indicate that the area's $PM_{2.5}$ levels are below the federal and the state standards for this pollutant. However, the results at other monitoring stations indicate that the $PM_{2.5}$ level in the Air Quality Management District (AQMD) jurisdiction region is significantly above the standards.

Lead (Pb) is a heavy metal that in ambient air occurs as a lead oxide aerosol or dust. Since lead stopped being added to gasoline or paint products, lead emissions have reduced significantly in recent years. Los Angeles County is in attainment with the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS) for lead. Sulfates are aerosols (i.e. wet particulates) that are formed by sulfur oxides in moist environments. They exist in the atmosphere as sulfuric acid and sulfate salts. The primary source of sulfate is from the combustion of sulfurous fuels. Los Angeles County is in attainment for the California sulfate standard. Hydrogen sulfide is an odorous, toxic, gaseous compound that can be detected by humans at very low concentrations. The gas is produced during the decay of organic material and is found naturally in petroleum. Los Angeles County is in attainment of the H_2S standard.

5.3.2 Air Pollution Regulation

The federal and state governments have been empowered by the federal and state Clean Air Acts to regulate the emission of airborne pollutants and have established ambient air quality standards for the protection of public health. The U.S. EPA is the federal agency designated to administer air quality regulation, while the Air Resources Board (ARB) is the state equivalent in the California EPA. Local control in air quality management is provided by the ARB through county-level Air Pollution Control Districts (APCDs). The ARB establishes state air quality standards and is responsible for controlling mobile emission sources, while the local APCDs are responsible for enforcing standards and regulating stationary sources. The City of Santa Clarita is located in the South Coast Air Basin under the jurisdiction of the South Coast AQMD, a multi-county APCD.

Federal and state standards have been established for ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulates less than ten microns in diameter (PM_{10}), and lead (Pb). California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. The EPA recently adopted stricter air quality standards for ozone and particulate matter. The existing significance thresholds for ozone, last revised in 1979, were previously set at concentration levels of 0.12 parts per million (ppm) for a one-hour period. PM_{10} threshold levels, established in 1987, are 150 $\mu g/m^3$ for a 24-hour period. The EPA has replaced the one-hour O_3 standard with a new 8-hour averaging time and lowered the standard from 0.12 to 0.8 ppm.

The particulate matter standard has been split into two subclasses: (1) a fine fraction (less than or equal to 2.5 microns in diameter, or $PM_{2.5}$), and (2) a coarse fraction (greater than 2.5 microns, but less than 10 microns in diameter, or PM_{10}). The annual $PM_{2.5}$ standard has been set at 15 $\mu g/m^3$, spatially averaged across an area. The new 24-hour $PM_{2.5}$ standard is based on the three-year average of the 98^{th} percentile of the 24-hour concentrations measured at each monitoring station.

Air quality is determined by measuring ambient concentrations of air pollutants that are known to have adverse health effects. For regulatory purposes, there are several air pollutants for which standards have been set. These pollutants are generally recognized as "criteria pollutants". For most criteria pollutants, regulations and standards have been in effect, in varying degrees, for more than 25 years; and control strategies are designed to ensure that the ambient concentrations do not exceed certain thresholds.

Another class of air pollutants that are subject to regulatory requirements is called hazardous air pollutants, air toxics, or toxic air contaminants. Substances that are especially harmful to health, such as those considered under the EPA's hazardous air pollutant program or California's Assembly Bill (AB) 1807 and/or AB 2588 air toxics programs, are considered to be air toxics. Regulatory air quality standards are based on scientific and medical research. These standards establish minimum concentration of an air pollutant in the ambient air that could cause adverse health effects.

For air toxics emissions, however, the regulatory process usually assesses the potential impacts to public health in terms of "risk" (such as the Air Toxics "Hot Spots" Program in California), or the emissions may be controlled by prescribed technologies (as in the new Federal approach for controlling hazardous air pollutants). Recently, the "green-house" gases – those gases category has been added, which influence the global climate of the world and contribute to global warming.

5.3.2.a Criteria Pollutants

The degree of air quality degradation for criteria pollutants is determined by comparing the ambient pollutant concentrations to health-based standards developed by government agencies. The current NAAQS and CAAQS for "criteria pollutants" are listed in Table 5-1, National and California Ambient Air Quality Standards for Criteria Pollutants. Ambient air quality monitoring for criteria pollutants is conducted at numerous sites throughout the state. Table 5-2, Ambient Air Quality Summary for Project Area – 1999 to 2002, presents reclaritalevant data from two monitoring stations located in the proposed service area. The locations of the Santa Clarita air quality monitoring stations, relative to the service area, are shown on Figure 5-1. A summary of the attainment status for Los Angeles County is provided in Table 5-3, Attainment Status of all Monitoring Stations in Los Angeles County.

Criteria pollutants are also categorized as inert or photochemically reactive, depending on their subsequent behavior in the atmosphere. By definition, inert pollutants are relatively stable and their chemical composition remains stable as they move and diffuse through the atmosphere. However, the primary photochemical pollutants may react to form secondary pollutants. For these pollutants, adverse health effects may be caused directly by the emitted pollutant or by the secondary pollutants.

Table 5-1. National and California Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California [c] Standards [a]	National Standards [b]	
			Primary [d]	Secondary [c,]
Ozone (O_3)	1 hour 8 hour	0.09 ppm (180 µg/m^3) 0.08 ppm	0.12 ppm (235 µg/m^3) 0.08 ppm	0.12 ppm (235 µg/m^3) 0.08 ppm
Carbon Monoxide (CO)	8 hour 1 hour	9.0 ppm (10 mg/m^3) 20.0 ppm (23 mg/m)	9.0 ppm (10 mg/m^3) 35 ppm (40 mg/m^3)	NS[6] NS
Nitrogen Dioxide (NO_2)	Annual Avg. 1 hour	NS 0.25 ppm (470 µg/m^3)	0.053 ppm (100 µg/m^3) NS	0.053 ppm (100 µg/m^3) NS
Sulfur Dioxide (SO_2)	Annual Avg. 24 hour 3 hour 1 hour	NS 0.05 ppm [f] (131 µg/m^3) NS 0.25 ppm (655 µg/m^3)	80 µg/m^3 (0.03 ppm) 365 µg/m^3 (0.14 ppm) NS NS	NS NS 1300 µg/m^3 (0.5 ppm) NS
Suspended Particulate Matter – PM_{10}	Annual Geometric Mean	30 µg/m^3	NS	NS
	Annual Arithmetic Mean	NS	50 µg/m^3	50 µg/m^3
	24 hour	50 µg/m^3	150 µg/m^3	150 µg/m^3
Suspended Particulate Matter – $PM_{2.5}$	Annual Arithmetic Mean	12 µg/m^3	15 µg/m^3	15 µg/m^3
	24 hour	NS	65 µg/m^3	65 µg/m^3
Sulfates (SO_4^{-2})	24 hour	25 µg/m^3	NS	NS
Lead (Pb)	30-day Avg. Calendar Qtr.	1.5 µg/m^3 NS	NS 1.5 µg/m^3	NS 1.5 µg/m^3
Hydrogen Sulfide (H_2S)	1 hour	0.03 ppm (42 µg/m^3)	NS	NS
Vinyl Chloride	24 hour	0.010 ppm (26 µg/m^3)	NS	NS
Visibility Reducing Particles	1 Observation	Insufficient amount to reduce the prevailing visibility [g] to less than 10 miles when the relative humidity is less than 70 percent (CA only).		

***Notes*:** µg/m^3=microgram/cubic meter; ppm=parts per million by volume; NS=No Standard.

a. California standards for O_3, CO, SO_2 (l-hour), NO_2, $PM_{2.5}$ and PM_{10} are values that are not to be exceeded. SO_4^{-2}, Pb, H_2S, Vinyl Chloride, and visibility-reducing particles standards are not to be equaled or exceeded. Sulfates are pollutants that include SO_4^{-2} ion in their molecule.

b. National Standards, other than ozone and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The O_3 Standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.

c. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon reference temperature of 25°C and a reference pressure of 760 mm of mercury. All measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibars); ppm in this table refers to ppm by volume or micromoles of pollutant per mole of gas.

d. Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health. Each state must attain the primary standards no later than three years after that state's implementation plan is approved by the EPA.

e. Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. Each state must attain the secondary standards within a "reasonable time" after the implementation plan is approved by the EPA.

f. At locations where the state standards for ozone and/or PM_{10} are violated. National standards apply elsewhere.

g. Prevailing visibility is defined as the greatest visibility, which is attained or surpassed around at least half of the horizon circle, but not necessarily in continuous sectors.

Table 5-2. Ambient Air Quality Summary for Project Area – 1999 to 2002

Pollutant	Year	Maximum Observed Concentration (Number of Standard Exceedances)*	
		Santa Clarita (County Fire Station)**	Santa Clarita**
Ozone, ppm			
1-hour 8-hour	1999	0.123 (18 days) 0.098 (11 days)	NA
1-hour 8-hour	2000	0.131 (36 days) 0.110 (12 days)	NA
1-hour 8-hour	2001	0.096 (1 day) 0.083 (0)	0.184 (44 days) 0.128 (25 days)
1-hour 8-hour	2002	NA	0.169 (81 days) 0.144 (52 days)
Carbon Monoxide (CO), ppm			
8-hour	1999	3.56 (0)	NA
8-hour	2000	4.79 (0)	NA
8-hour	2001	3.13 (0)	2.10 (0)
8-hour	2002	NA	1.74 (0)
NO2, ppm			
1-hour Annual Avg.	1999	0.099 (0) NA	NA
1-hour Annual Avg.	2000	0.096 (0) 0.025	NA
1-hour Annual Avg.	2001	0.076 (0) NA	0.109 (0) NA
1-hour Annual Avg.	2002	NA	0.086 (0) 0.019
PM10, ppm			
24-hour State MG Federal MA	1999	75.0 (12 days) 34 38	NA
24-hour State MG Federal MA	2000	64.0 (4 days) 29 32	NA
24-hour State MG Federal MA	2001	47.0 (0) 22 17	62 (4 days) 31 34
24-hour State MG Federal MA	2002	NA	61 (7 days) 30 33

Notes:

* = Number or percent of exceedances of the most restrictive standard (usually, the State Standard).

** = 1999-2001 data is available for Santa Clarita at County Fire Station monitoring station; 2001-2002 data is available for Santa Clarita monitoring station.

NA = No data available (the station does not measure this pollutant); State MG = State Annual Mean Geometrical; National MA = National Mean Arithmetic.

Source: Air Resources Board Air Quality Data Annual Summaries 1999-2002 (Internet web site www.arb.ca.gov).

Table 5-3. Attainment Status of all Monitoring Stations in Los Angeles County

Air Basin	O_3		CO		SO_2		$PM_{2.5}$		PM_{10}	
	State	Fed	State	Fed	State	Fed	State	Fed	State	Fed
Los Angeles County	N	N	N	N	U	U/A	U	U	N	N

Notes: A = Attainment of Standards; N = Non-Attainment; U = Unclassified; U/A = Unclassified/Attainment; NO_2 is in attainment.

Source: California Air Resources Board (CARB), http://www.arb.ca.gov/desig/adm/adm.htm (page updated 15 February 2001).

5.3.2.b Inert Pollutants

Criteria pollutants, that are considered inert, include carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), PM_{10}, lead, sulfates, and hydrogen sulfide (H_2S). Carbon monoxide is formed primarily by the incomplete combustion of organic fuels. Los Angeles County is in attainment of the California and National 1-hour and 8-hour CO standards. Nitric oxide (NO) is a colorless gas formed during combustion processes, which rapidly oxidizes to form NO_2, a brownish gas. The highest nitrogen dioxide values are generally measured in urbanized areas with heavy traffic. Los Angeles County is in attainment for all the California and National nitrogen dioxide standards.

5.3.2.c Photochemical Pollutants

Ozone is formed in the atmosphere through a series of complex photochemical reactions involving NO_x, reactive organic compounds, and sunlight occurring over a period of several hours. Because ozone is not emitted directly into the atmosphere, but is formed as a result of photochemical reactions, it is classified as a secondary or regional pollutant. Because these ozone-forming reactions take time, peak ozone levels are often found downwind of major source areas. Los Angeles County is designated non-attainment for the State 1-hour and National 8-hour ozone standard.

5.3.2.d Toxic Air Contaminants

Toxic Air Contaminants (TACs) are hazardous air pollutants that are known or suspected to cause cancer, genetic mutations, birth defects, or other serious illnesses to people. Air toxics are typically identified as all non-criteria air contaminants with known health effects. TACs may be emitted from three main source categories: (1) industrial facilities; (2) internal combustion engines (stationary and mobile); and (3) small "area sources" (such as solvent use). California Air Resources Board (CARB) publishes lists of Volatile Organic Compound Species Profiles for many industrial applications and substances. In addition to those sources, CARB identifies naturally occurring asbestos as a TAC. Serpentinite and ultramafic rocks are very common to California; these rocks are known to contain naturally occurring asbestos.

Generally, TACs behave in the atmosphere in the same way as inert pollutants (those that do not react chemically, but preserve the same chemical composition from point of emission to point of impact). The concentrations of toxic pollutants are, therefore, determined by the quantity and concentration emitted at the source, and the meteorological conditions encountered as the pollutants are transported away from the source. Thus, impacts from toxic pollutant emissions tend to be site-specific, and their intensity is subject to constantly changing meteorological conditions.

5.3.2.e Regional Emissions Inventory

CARB compiles emissions inventories for anthropogenic sources, those associated with human activity, and natural sources such as vegetation and wind erosion. The emissions inventory for the anthropogenic sources is

made up of stationary sources (both point and area sources are in this category) and mobile sources encompassing on-road and off-road mobile sources. On-road mobile sources include light-duty passenger vehicles; light-, medium-, and heavy-duty trucks; motorcycles; and buses. Off-road mobile sources include off-road vehicles, trains, ships, aircraft, and mobile equipment.

The Los Angles County emissions inventory includes the air contaminants NO_x, CO, SO_x, PM_{10}, and Reactive Organic Compounds (ROC). Since ozone is formed by photochemical reactions involving the precursors ROC and NOx, it is not inventoried. As shown in Table 5-4, Summary of Emissions by Source Category – Annual Average 2002 (ton/day), mobile sources are the major contributor to total emissions in the District (i.e. CO [95%], NO_x [85%], SO_x [50%], and ROC [59%]). The presence of mobile source PM_{10} in the atmosphere is mainly attributable to entrained road dust (7%).

Table 5-4. Summary of Emissions by Source Category – Annual Average 2002 (ton/day)

Source	ROC	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$
Fuel combustion	10.57	45.84	68.86	10.20	6.19	5.81
Waste burning	1.89	0.64	1.45	0.17	0.55	0.22
Cleaning and Surface Coatings	48.74	0.00	0.02	0.00	0.05	0.04
Petroleum process, storage, and transfer	24.34	8.90	6.50	14.54	1.78	0.89
Industrial processes	10.30	2.31	3.61	2.70	6.33	2.75
TOTAL Stationary	**95.84**	**57.69**	**80.44**	**27.61**	**14.90**	**9.71**
Solvent Evaporation	105.24	0.00	0.00	0.00	0.01	0.01
Miscellaneous	8.52	84.02	19.54	0.24	272.05	39.08
TOTAL Area-Wide	**113.76**	**84.02**	**19.54**	**0.24**	**272.06**	**39.09**
On-Road Mobile	220.41	2231.77	403.33	2.80	11.48	7.74
Off-Road Mobile	79.65	481.65	183.36	24.75	11.08	9.79
TOTAL Mobile	**300.06**	**2713.42**	**586.69**	**27.55**	**22.56**	**17.53**
TOTAL Natural Sources	**1.53**	**43.65**	**2.03**	**0**	**8.92**	**7.63**
TOTAL ALL SOURCES	**509.66**	**2855.13**	**686.67**	**55.40**	**309.52**	**66.33**

Source: California Air Resources Board (CARB) web site - http://www.arb.ca.gov/emisinv/maps/statemap/cntymap.htm

Notes: ROC = Reactive Organic Compounds; NO_x = Nitrogen oxides; CO = Carbon monoxide; SO_x = Sulfur oxides; PM_{10} = Suspended particulate less than 10 microns; $PM_{2.5}$ = Suspended particulate less than 2.5 microns.

5.3.3 Regulatory Setting

Federal, state, and local agencies have established standards and regulations that will affect the proposed project. A summary of the regulatory setting for air quality is provided below.

5.3.3.a Relevant Federal Regulations

The Federal Clean Air Act of 1970 directs the attainment and maintenance of the NAAQS. The 1990 Amendments to this Act included new provisions that address air emissions that affect local, regional, and global air quality.

The main elements of the 1990 Clean Air Act Amendments are summarized below:

- Title I. Attainment and Maintenance of NAAQS
- Title II. Motor Vehicles and Fuel Reformulation
- Title III. Hazardous Air Pollutants
- Title IV. Acid Deposition
- Title V. Facility Operating Permits
- Title VI. Stratospheric Ozone Protection
- Title VII. Enforcement

The EPA is responsible for implementing the Federal Clean Air Act and establishing the NAAQS for criteria pollutants. In 1997, the EPA adopted revisions to the Ozone and Particulate Matter Standards contained in the Clean Air Act. These revisions included a new 8-hour ozone standard and a new particulate matter standard for particles below 2.5 micron in diameter. These standards were suspended; however, in May 1999 the U.S. Court of Appeals for District of Columbia remanded the new ozone standard. In January 2001, the EPA issued a Proposed Response to Remand, where it stated that the revised ozone standard should remain at 0.08 ppm. In February 2001, the U.S. Supreme Court upheld the constitutionality of the Clean Air Act as EPA had interpreted it in setting health-protective air quality standards for ground-level ozone and particulate matter.

5.3.3.b Relevant State Regulations

CALIFORNIA AIR RESOURCES BOARD

California Air Resources Board (CARB) established the CAAQS. Comparison of the criteria pollutant concentrations in ambient air to the CAAQS determines State attainment status for criteria pollutants. CARB has jurisdiction over all air pollutant sources in the State; it has also delegated to Local air districts the responsibility for stationary sources and has retained authority for emissions from mobile sources. CARB, in partnership with the Local air quality management districts within California, has developed a pollutant-monitoring network to aid attainment of CAAQS. The network consists of numerous monitoring stations located throughout the state, which monitor and report various pollutants concentrations in ambient air.

CALIFORNIA CLEAN AIR ACT

This act went into effect on 1 January 1989, and was amended in 1992. The California Clean Air Act (California Health and Safety Code, Division 26) mandates achieving the health-based CAAQS at the earliest practical date.

Air Toxics "Hot Spots" Information and Assessment Act of 1987 (California Health & Safety Code, Division 26, Part 6) (the Hot Spots Act) requires an inventory of air toxics emissions from individual facilities, an assessment of health risk, and notification of potential significant health risk.

Asbestos Airborne Toxic Control Measure (ATCM) for Surfacing Applications (17 CCR Section 93106) applies to road construction and maintenance, construction and grading operations, and quarries and surface mines when the activity occurs in an area where naturally occurring asbestos is likely to be found. Areas are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units or if the Air Pollution Control Officer or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or naturally occurring asbestos on the site. The ATCM also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity. Road construction and maintenance operations must use dust control measures for a specified set of emission sources and prevent visible emissions crossing the project boundaries. The local air pollution control, or air quality management district, must also be notified before any work begins.

The Calderon Bill (Senate Bill 1889) (California Health & Safety Code Sections 25531-25543) (signed by Governor Pete Wilson in September 1996) sets forth changes in the following four areas:

1. Provides guidelines to identify a more realistic health risk;
2. Requires high risk facilities to submit an air toxic emission reduction plan;
3. Holds air pollution control districts accountable for ensuring that the plans will achieve their objectives; and
4. Requires high-risk facilities to achieve their planned emissions reduction.

5.3.3.c Los Angeles County Rules and Regulations

Local APCDs or AQMDs in California have jurisdiction over stationary sources in their respective areas and must adopt plans and regulations necessary to demonstrate attainment of federal and state air quality standards. As directed by the Federal and California Clean Air Acts, local air districts are required to prepare plans with strategies for attaining and maintaining state and federal ozone standards. In the proposed project area, air quality rules and regulations are promulgated by the South Coast AQMD. Achieving air quality standards requires rules and regulations that limit emissions and permissible impacts from proposed projects. Some rules also specify emission controls and control technologies for each type of emitting source.

5.3.4 Impact Analysis

5.3.4.a Criteria and Significance Thresholds

A significant adverse air quality impact may occur when a project individually or cumulatively interferes with progress toward the attainment of the ozone standard by releasing emissions that either (1) equal or exceed the established long-term quantitative thresholds for pollutants, or (2) causes an exceedance of a state or federal ambient air quality standard for any criteria pollutant.

A project will normally have a significant impact on the environment if it:

1. Conflicts with or obstructs implementation of the applicable air quality plan;
2. Violates any air quality standard or contribute substantially to an existing or protected air quality violation;
3. Results 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 that exceed quantitative thresholds for ozone precursors);
4. Exposes sensitive receptors to substantial pollutant concentrations; and/or
5. Creates objectionable odors affecting a substantial number of people.

SIGNIFICANCE CRITERIA

Significance criteria for construction projects are detailed in the South Coast AQMD CEQA Air Quality Handbook, Chapter 6. Section 6.4, in Chapter 6 of the Air Quality Handbook, states that a project is considered to have a significant impact if it emits quarterly emissions greater than:

- 2.5 tons of ROC,
- 2.5 tons of NO_x,
- 23.75 tons of CO,
- 6.75 tons of PM_{10}, or
- 6.75 tons of SO_x.

In addition, a construction project is considered to have a significant impact if it emits daily emissions greater than:

- 75 pounds per day of ROC,
- 100 pounds per day of NO_x,
- 550 pounds per day of CO,
- 150 pounds per day of $PM_{10,}$ or
- 150 pounds per day of SO_x.

CARB lists diesel particulate matter emissions from diesel-fueled engines as a toxic air contaminant with no identified threshold level below that there are no significant effects. If a project will result in the release of diesel emissions in areas with potential for human exposure, a finding of significance can be made, even if overall emissions are low. Factors that will be considered by AQMD staff, when determining significance of a project, include the expected emissions from diesel equipment, location of the project, and distance to sensitive receptors.

CARB identifies naturally occurring asbestos as a TAC. If a project has the potential to emit toxic or hazardous air pollutants, or is located in close proximity to sensitive receptors, impacts may be considered significant due to an increased cancer risk for the affected population, even at a very low level of emissions.

5.3.4.b Project Impacts and Recommended Mitigation Measures

All project traffic-related air quality impacts would be *less than significant,* and the proposed project does not change the level of significance of any of the affected streets to D level (although some of the streets' level of significance is already at D level). Therefore, it is assumed that the project would not contribute to the CO "hot spots", and CO "hot spots" have not been modeled.

The project would not emit any significant amounts of "green-house" gases. Therefore, this impact is *less than significant*.

The operation of the new section of the pipeline would not have any operational emissions, and it would not contribute to the population growth since no additional employees would be needed. For these reasons, the project is not expected to be inconsistent with NCWD's 1997 AQMP.

IMPACT 5.3-1: TEMPORARY DEGRADATION OF AIR QUALITY

Construction activities to install the pipeline would generate air emissions that could impact air quality in the area. This represents a *less-than-significant* (Class III level) impact.

Air emissions of CO, ROC, NO_x, $SO_{2,}$ and PM_{10} during construction would arise from construction equipment with internal combustion engines (e.g. loaders, excavators, trenchers) and from offsite vehicles (e.g. construction employees commute vehicles and trucks delivering equipment and materials). Air emissions from construction equipment were estimated using the emission factors from the EPA's AP-42 Compilation of Pollutants Emission Factors (EPA 1985) and South Coast AQMD CEQA Handbook (South Coast AQMD 1993). The list of construction equipment and periods of operation for each piece are summarized in the Project Description.

A large portion of PM_{10} emissions during construction (fugitive dust) would arise from large pieces of equipment traveling on disturbed soil, unpaved surfaces, and various soil-moving activities, such as trenching, soil dumping, soil storage piles, etc. Dust control measures would be employed during construction activities and would include spraying water from tank trucks over exposed areas at least twice daily, which typically reduces dust emissions by at least 50 percent. Table 5-5, Summary of Construction Emissions, presents all the calculations for estimated project air emissions and worst case, unmitigated construction air quality impacts.

Emissions are all below the AQMD thresholds. Additionally, construction emissions would cease after construction is completed. Therefore, these air quality impacts would be *less than significant*. Standard dust mitigation measures that are typically employed during projects involving soil-moving operations would further reduce the less-than-significant air quality impacts.

Table 5-5. Summary of Construction Emissions

Emission Source	Peak Daily Emission (pounds/day)					Quarterly Emissions (tons/quarter)				
	CO	ROC	NO_x	SO_2	PM_{10}	CO	ROC	NO_x	SO_2	PM_{10}
Construction Equipment	42.5	19.0	93.5	10.3	7.9	0.62	0.18	1.68	0.17	0.14
Offsite	45.2	10.5	4.4	0.4	0.1	1.41	0.33	0.14	0.01	0.00
Fugitives	-	-	-	-	10.1	-	-	-	-	0.30
Worst Case Total	87.7	29.5	97.9	10.7	18.1	2.03	0.51	1.82	0.18	0.45
AQMD Threshold(s)	**550**	**75**	**100**	**150**	**150**	**24.75**	**2.5**	**2.5**	**6.75**	**6.75**
Significant?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

Most of construction equipment is diesel-fueled. Some byproducts of diesel combustion are hazardous to human health. Benzene, for instance, is a known human carcinogen, while formaldehyde, acetaldehyde, 1,3-butadiene, and diesel particulate matter are probable human carcinogens. The project area is far from sensitive receptors. The project would only have short-term construction emissions. Therefore, any toxic air pollutants would be emitted only for short period as construction machinery moves along the pipeline construction corridor. Any hazardous effect from the toxic air pollutants would only occur if exposure is prolonged (over several years), and the distance to the pollutant source from the sensitive receptor is small (and therefore concentrations of the pollutants would be high). This project would not likely expose any sensitive receptor to pollutants for a prolonged time; therefore, health risk impacts are not expected to occur from installing the pipeline.

Soil or rocks containing asbestos are not expected to be encountered in the project area. However, CARB allows the Air Pollution Control Officer (see 17 California Code of Regulations Section 93106, Asbestos Airborne Toxic Control Measure for Surfacing Applications) to request a geologic evaluation of a project area for presence of asbestos-containing rocks (refer also to http://www.arb.ca.gov/toxics/atcm/asbeatcm.htm).

Recommended Mitigation Measure 5.3-1

Standard dust reduction measures are recommended because NCWD is not in attainment of the state and national PM_{10} standards. Asbestos investigations are also discussed below.

NCWD shall develop a fugitive dust control plan incorporating mitigation measures detailed in the South Coast AQMD CEQA Handbook, Section 11. This plan could include measures with reduction percentages shown, such as:

- Applying water sprays (45 to 85 percent);
- Limiting operations during higher winds (not qualified);
- Covering trucks that are hauling materials (7 to 14 percent);
- Street sweeping (25 to 60 percent);
- Limiting traffic speed on unpaved areas to 15 mph (40 to 70); and
- Ensuring that roads affected by construction are paved as soon as possible (up to 100 percent).

NCWD shall utilize Best Available Control Technology and Best Management Practices to reduce dust from construction and minimize emissions from construction equipment.

If a geological investigation identifies that naturally occurring asbestos could be present in the project area, NCWD may be required to develop an Asbestos Dust Reduction Plan. The Plan would include, but would not be limited to, the following asbestos dust reduction measures[2]):

1. Watering of excavation areas, soil storage piles;
2. Covering and wetting of exposed areas where asbestos-containing rocks are encountered;
3. Washing of equipment that was in contact with asbestos-containing dust/soils; and
4. Vegetating of exposed areas or paving of roads as soon as feasible (with non-invasive plant species).

Monitoring

NCWD will assign an air quality monitor during construction activities to ensure that the fugitive dust control plan is implemented and that it incorporates the above listed mitigation measures. The air quality monitor will monitor and expedite the use of Best Available Control Technology and Best Management Practices to reduce dust from construction and to minimize emissions from construction equipment. Monitoring may also be required to ensure asbestos dust reduction measures to comply with a Asbestos Dust Reduction Plan.

Significance after Mitigation

The significance after mitigation would be *less than significant*.

Residual Impacts

The residual impacts are *less than significant* (Class III).

CUMULATIVE IMPACTS

The proposed project is of a short duration. *No cumulative impacts are anticipated*.

GROWTH-INDUCING IMPACTS

By removing an impediment to growth in the Vasquez Water Main service area, a potential exists for impacts to air quality (a reduction in air quality) by:

- Increasing vehicle traffic in the area if additional residences and businesses are built in the service area as the result of additional water availability; and
- Increasing airborne PMs during construction activities associated with building new homes and businesses as a result of additional water availability.

Therefore, a significant potential impact to existing air quality within the service area may occur as a result making available additional water supply to potential new developments.

Recommended Mitigation Measure

No feasible mitigation measure is available to NCWD since NCWD has no authority over projects that are approved by the County of Los Angeles or within the South Coast Air Basin.

NCWD is a special district, a legitimate subdivision of the State government, established under the authority of Section 3000, Division 12 of the California Water Code. Providing water service to municipal and industrial users is the essence of the mission of NCWD. As a special district, NCWD only has authority to control those issues currently enacted by ordinance by the Board of Directors. NCWD has no other authority over planning or development in their service area. Therefore, NCWD has no authority to control adverse impacts created by

[2] See http://www.opr.ca.gov/clearinghouse/PDFs/asbestosdust.pdf for more information.

the potential growth from the water service. However, the normal discretionary permit process, within the County of Los Angeles, would identify and avoid, minimize, or reduce impacts according to CEQA, or would require mitigation to do so.

Monitoring

NCWD has no authority over projects or activities that have potential to degrade air quality resulting from projects implemented or approved by other agencies other than its own projects, and have no authority to conduct such monitoring.

Significance after Mitigation

The significance after mitigation would be *significant and unavoidable*; therefore, a Statement of Overriding Consideration must be adopted by the NCWD for this impact.

5.4 BIOLOGICAL RESOURCES

The water main project, within the vicinity of the Mint Canyon Creek portion of the project site, includes a maximum impact area of approximately 50 feet wide along the length of the water main (a maximum of 25 feet along each side). This water main creek crossing will result in filling activities of the Mint Canyon Creek portion of the project site, which contains jurisdictional waters of the U.S., including wetlands. In addition, the water main construction activities may substantially adversely affect existing fish and wildlife resources within the portion of Mint Canyon Creek, and existing vegetation and habitat resources in the vicinity of the project site.

5.4.1 Setting

The project site is located predominantly under existing roads, including a portion of Sand Canyon Road, Sierra Highway, and Vasquez Canyon Road; however, the proposed water main will intersect Mint Canyon Creek at the Vasquez Canyon Road bridge. The Mint Canyon Creek portion of the project site is approximately 0.27 acre in size, and includes three primary habitats: Fourwing Saltbush Series (upland habitat), Riverine Intermittent Sand Streambed (jurisdictional waters of the U.S.), and Palustrine Broad-leaved Winter-deciduous Forested Wetland (jurisdictional wetlands of the U.S.).

Habitat is present for several special-status plant species within the project site area, especially in the Mint Canyon Creek portion. The literature reviews (California Native Plant Society [CNPS] 2001; Boyd 1999) and California Natural Diversity Database (CNDDB) searches of RareFind2 (California Department of Fish and Game [CDFG] 2002a) and RareFind3 (CDFG 2003a) identified 90 special-status species of vascular plants that are known or that have potential to occur in the vicinity of the project site. Included in the 90 special-status plant species are taxa with ten or fewer populations recorded in the Liebre Mountains/Northwestern Los Angeles County region (Boyd 1999). No special-status plant species were observed onsite during field surveys along the pipeline route. One sensitive habitat type, Southern Cottonwood-Willow Riparian Forest, is present within the banks of Mint Canyon Creek, which may be substantially adversely affected by water main construction activities. Database searches also found 28 special-status wildlife species with the potential, or that are known, to occur in the vicinity of the project site and surrounding areas (CDFG 2002a; CDFG 2003a). No federally or state listed wildlife species were observed during the project site survey; however, one special-status wildlife species, *Phrynosoma coronatum blainvillei* (San Diego Horned Lizard), was observed in the Mint Canyon Creek portion of the Vasquez Water Main Project site. San Diego Horned Lizard has a status of CDFG California Special Concern and Forest Service Sensitive.

Technical biological investigations (floristic and wildlife field surveys) of the project site, and a wetland delineation of the site, were conducted on 8 and 15 May 2001. A subsequent field visit was conducted on 20

October 2001. The biological resources investigation objectives were to determine the existing conditions of the biological resources onsite, and to determine the presence of any special-status wildlife and plant species that could be negatively affected by the water main project.

This section summarizes the biological and wetland investigations, and includes an inventory and discussion of the following: (1) botanical and wildlife resources observed, detected, and expected onsite; (2) the vegetation types, wetland habitats, and wildlife habitats; and (3) the special-status plant and wildlife species and sensitive plant communities. The *Biological Resources Assessment for the Newhall County Water District Vasquez Water Main Project, Santa Clarita, California* (hereafter referred to as the biological resources assessment report) is included in its entirety as Appendix C. The *Delineation of Jurisdictional Waters and Riparian Habitats for the Newhall County Water District Vasquez Water Main Project, Santa Clarita, California* (hereafter referred to as the wetland delineation report) is included as Appendix D.

The NCWD Vasquez Water Main, which originates from an existing water main at the corner of Sand Canyon and Soledad Canyon Roads, will be installed under existing roads except in three locations where the water main will cross natural watercourses, including Mint Canyon Creek. The Mint Canyon Creek crossing will involve trenching through the creek bed just upstream from the Vasquez Canyon Road bridge (Figure 5-2, Aerial Photograph of Mint Canyon Creek at Vasquez Canyon Road). The remaining two water main crossings over two ephemeral drainages, will span the drainages, and will not involve soil disturbances in the channels.

The project site landscape includes important habitats that are composed of several unique plant species. The NCWD project site is inhabited primarily by Riparian Woodland (Palustrine Wetland), which exists along the banks of Mint Canyon Creek. The creek bed, comprised primarily of Riverwash materials (Riverine Intermittent Streambed), is less diverse than the creek banks and is sparsely vegetated, as this portion of the project site is prone to frequent natural and unnatural disturbances. Chenopod Scrub, Coastal Sage Scrub, California Annual Grassland, and Ruderal Grassland inhabit the upland areas immediately above the channel banks and along the street right of way of the Vasquez Water Main path, and these habitats consist of scattered drought-adapted shrubs, herbs, and grasses.

Mint Canyon Creek consists of a moderately species rich flora; however, the creek portion of the project site exists in a high-traffic area that is frequented often by humans, is littered with foreign material and trash, and is subject to high levels of air and noise pollution. Although the project site does not show significant evidence of a diverse fauna, several wildlife species are expected.

5.4.1.a Regulatory Setting

Regulatory authority over biological resources is shared by federal, state, and local authorities under a variety of legislative acts. Primary authority for general biological resources lies within the land use control and planning authority of local jurisdictions, and in this instance, the County of Los Angeles. The CDFG is a trustee agency for biological resources, throughout the state under CEQA, and it has direct jurisdiction under the California Fish and Game Code. Under the federal Endangered Species Act, the CDFG and the United States Fish and Wildlife Service (USFWS) have direct regulatory authority over specially designated organisms and their habitats. The U.S. Army Corps of Engineers (Corps) also has regulatory authority over specific biological resources, namely wetlands and waters of the United States, under Section 404 of the Federal Clean Water Act.

Figure 5-2. Aerial Photograph of Mint Canyon Creek at Vasquez Canyon Road

SPECIAL-STATUS SPECIES DEFINITIONS

In response to the above-mentioned legislative mandates, regulatory authorities have defined sensitive biological resources as those specific organisms that have regionally declining populations such that they may become extinct if population trends continue. Special-status species are plants (including nonvascular plants) and animals that are either (1) listed as endangered or threatened under the Federal or California Endangered Species Acts; (2) listed as rare under the California Native Plant Protection Act; or (3) considered to be rare (but not formally listed) by resource agencies, professional organizations (e.g. Audubon Society, CNPS, The Wildlife Society, California Lichen Society), and the scientific community. Habitats are also considered sensitive biological resources if they have limited distributions, have high wildlife function, include sensitive species, or are particularly susceptible to disturbance. Vegetation in California is accorded sensitivity rankings by CNPS and CDFG within the community classification of Holland (1986) and CNDDB (CDFG 2002a, 2002b, and 2003a), modified as appropriate to conform to more recently accepted series concepts of Sawyer and Keeler-Wolf (1995). Special-status species definitions are presented in the biological resources assessment report in Appendix C.

WETLANDS REGULATIONS

State and federal regulations have been established to protect wetland and water quality resources. Section 404 of the Clean Water Act regulates certain activities within waters of the U.S., including wetlands. The State Water Resources Control Board, through regional water quality control boards (Los Angeles RWQCB), regulates discharges into waters of the U.S. and the State, pursuant to Section 401 of the Clean Water Act. Waters of the U.S., including stream channels and wetlands, fall under the jurisdiction of the Corps under Section 404 of the Clean Water Act. Wetland regulations and definitions are presented in detail in the wetland delineation report provided as Appendix D.

The California Fish and Game Code protects and regulates activities associated with wildlife and wildlife habitats. Wetlands, such as habitats occurring in freshwater stream channels, are considered sensitive and declining by several regulatory agencies, including CDFG and USFWS. Stream channels and banks are specifically addressed by the CDFG Streambed Alteration Agreement, pursuant to Section 1600 *et seq.* of the California Fish and Game Code.

5.4.2 Regional Biological Context

The Vasquez Water Main Project is located in the Mint Canyon area, of the southern portion of the Liebre Mountains region (Western Transverse Ranges, California), at the eastern end of the City of Santa Clarita (Los Angeles County, California), but is outside (east of) the city limits.

The Liebre Mountains form a discrete unit of the Transverse Ranges in southern California. Geographically, the range is transitional to the San Gabriel Mountains, Inner Coast Ranges, Tehachapi Mountains, and Mojave Desert. The Liebre Mountains represent the easternmost end of the Western Transverse Ranges (Hickman 1993), and they occupy a transitional position between the Santa Susana, Topatopa, and Pine Mountain ranges to the west, and the San Gabriel Mountains to the east. The northern base of the Liebre Mountains (just northwest of Mint Canyon) defines the southwestern border of the Mojave Desert. The San Gabriel Mountains are just south of Mint Canyon and the southern border of the Liebre Mountains range, while the Santa Susana Mountains are to the southwest.

The physiography of the Liebre Mountains region (Mint Canyon exists within the southern portion of the Liebre Mountains region) is strongly controlled by two of southern California's major fault systems, including the San Andreas on the north and northeast, and the San Gabriel on the west and south (Dibblee 1982). The eastern boundary of the range, and its general separation from the San Gabriel Mountains, is defined by the

Soledad Fault. Topography is characterized by steep, rugged ridges and narrow, winding canyons. The principal drainages of the Liebre Mountains range include Soledad, Mint, Bouquet, San Franciquito, and Elizabeth Lake Canyons, which drain from the Liebre Mountain-Sawmill Mountain-Sierra Pelona crest southward to the Santa Clara River and ultimately out to the Pacific Ocean. Liebre Mountain itself is predominantly composed of granitic rocks. (Boyd 1999.)

The Liebre Mountains region exists within the foothills and interior mountainous areas of Los Angeles County, and this region borders the Mojave Desert, resulting in a diverse topography and a wide variation of microclimates. The Liebre Mountains region experiences a typical Mediterranean-type climate of warm, dry summers and cool, moist winters. Under this regime, most precipitation falls as rain resulting from Pacific frontal storms during the months of November through March. Winter snow, although generally light and short-lived, is frequent along the highest ridges of the crest during the winter and early spring. Topography, regional rainshadow effects, marine layer penetration, and cold air drainage all exert their effect on local microclimates, and are reflected in the distribution of various floristic elements and vegetation types (Boyd 1999).

5.4.3 Botanical Resources

Botanical resources include the plants present within the project site, including vascular (e.g. trees, shrubs, herbs, etc.) and nonvascular (e.g. lichens, liverworts, mosses) plant species. Some of these species may be considered special-status species for one or more reasons, as defined in detail in the biological resources assessment report (Appendix C). Botanical resources also include all vegetation and habitats, including wetlands and sensitive habitats, making up the landscape in the vicinity of the project site. The special-status plants and habitats are described below in the Special-Status and Sensitive Vegetation (Section 5.4.3.c).

5.4.3.a Flora

Various combinations of floristic taxa form unique plant communities and wildlife habitats contributing to the landscape of an area. The Vasquez Water Main Project site (within and immediately adjacent to the pipeline route) contains a moderately species-rich flora consisting of at least 62 vascular plant species. All plant species, observed and identified during the field surveys, are listed in the biological resources assessment report, as Table 1, Vascular Plants Observed at the Vasquez Water Main Project Site, in Appendix C of this report. The project site contains at least 62 vascular plants, 38 (61 percent) of which are native species, while the remaining 24 species (39 percent) are naturalized (nonnative) taxa.

Voucher specimens were collected for 18 of the 62 observed plant species in accordance with CNPS (2001) and CDFG (2000) botanical survey protocols. These voucher specimens are available for reference at the Herbarium of the University of California, Santa Barbara (UCSB).

5.4.3.b Vegetation Types

Three vegetation types currently exist in the immediate vicinity of the Mint Canyon Creek portion of the proposed Vasquez Water Main Project:

1. Upland Chenopod Scrub, or Fourwing Saltbush Series (Sawyer and Keeler-Wolf 1995) (approximately 0.14 acre);
2. Riverine Intermittent Sand Streambed (Cowardin et al. 1979) (approximately 0.02 acre); and
3. Palustrine Broad-leaved Winter-deciduous Forested Wetland (Cowardin et al. 1979), or Fremont Cottonwood-Arroyo Willow Series (Sawyer and Keeler-Wolf 1995) (approximately 0.11 acre).

The determination of these vegetation types and their approximate acreage are based on the combined results of the biological resources assessment and the wetland delineation (reports provided as Appendix C and D, respectively).

Three additional general upland vegetation types exist in the general vicinity of the proposed Vasquez Water Main Project (observed outside of the immediate Mint Canyon Creek channel), and they include:

4. Coastal Sage Scrub (Mixed Sage Series and California Buckwheat Series [Sawyer and Keeler-Wolf 1995]);
5. California Annual Grassland Series (Sawyer and Keeler-Wolf 1995); and
6. Ruderal Grassland Series.

These above-mentioned six vegetation types, and their associated plant communities, are described in detail in the following subsections. (Plant species' common [vernacular] names are only listed once for the first mention of the species.)

Natural vegetation within the Vasquez Water Main service area was generally mapped from color aerial photography and from field surveys along the pipeline route, and is shown on Figure 5-3, General Vegetation Types within the Vasquez Water Main Service Area.

UPLAND HABITATS

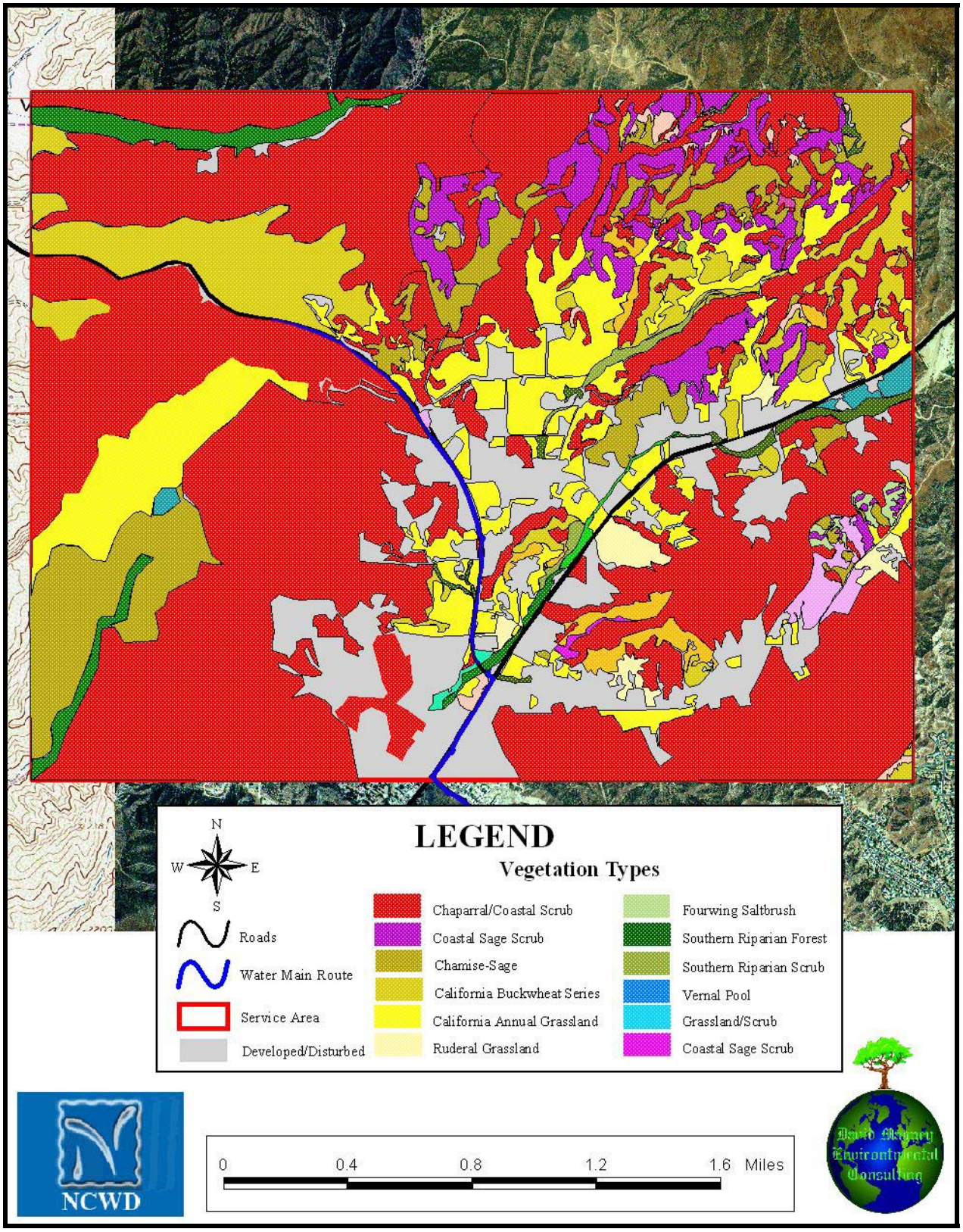
Upland habitats are generally occupied by plant communities that are dominated by plant species that do not require a permanent source of water (xerophytes). For example, upland plant communities typically consist of plant species that are adapted to dryer conditions and typically require only seasonal precipitation to obtain adequate water resources for growth and reproduction. The upland habitats, in the vicinity of the proposed water main path and areas adjacent to Mint Canyon Creek, either consist of shrubby, drought-deciduous vegetation represented by Fourwing Saltbush Series and Coastal Sage Scrub, or low-growing native or nonnative herbaceous and grass species.

Fourwing Saltbush Series

Fourwing Saltbush Series is a Chenopod Scrub plant community dominated by *Atriplex canescens* ssp. *canescens* (Sawyer and Keeler-Wolf 1995). The National List of Wetland Plants (Reed 1988) lists Fourwing Saltbush as a facultative upland species (FACU). Fourwing Saltbush inhabits scrublands and occupies clay to gravely soils (may be carbonate-rich) of flats and slopes (Hickman 1993).

Fourwing Saltbush Series, in the vicinity of the Vasquez Water Main Project site, exists on the lower gradual rocky slopes and on the flat areas along the creek fringes. This saltbush scrub forms an intermittent to open shrub canopy less than 2 meters tall, and is adapted to both upland and wetland habitats of elevations between 75 meters below sea level to 2,200 meters above sea level (Sawyer and Keeler-Wolf 1995). The associate shrub species observed occupying the Fourwing Saltbush plant community onsite include: *Artemisia californica* (California Sagebrush), *A. tridentata* (Great Basin [or Big] Sagebrush), *Encelia actoni* (Acton Brittlebush), *Eriogonum fasciculatum* var. *polifolium* (Hoary California Buckwheat), *Grayia spinosa* (Hopsage), *Lotus scoparius* var. *scoparius* (Deerweed), and *Salvia mellifera* (Black Sage). The herb and grass species observed growing below the shrub canopy consist of many of those listed below for California Annual Grassland Series.

Figure 5-3. General Vegetation Types within the Vasquez Water Main Service Area



Coastal Sage Scrub

Coastal Sage Scrub is a shrubland dominated by facultatively drought-deciduous, low-growing, soft-leaved, and grayish-green (malacophyllus) shrubs and subshrubs. Due to stand variations, Coastal Sage Scrub is often considered part of a collection of species-specific plant series. One of those is **Mixed Sage Series**, which is described by Sawyer and Keeler-Wolf (1995). Mixed Sage Series is a representative plant series of a typical or common Coastal Sage Scrub stand, and includes at least two species of *Salvia* (or sage, typically *S. mellifera*, *S. apiana* [White Sage], and/or *S. leucophylla* [Purple Sage]) with an equal canopy contribution by *Artemisia californica*. No single species or pair of species can dominate stands of this series; instead, three or more must equally share commonness and cover. Mixed Sage Series forms an intermittent to continuous canopy over a variable ground layer, and grows on sandy, rocky, shallow soils of upland slopes at elevations below 1,200 meters. (Sawyer and Keeler-Wolf 1995.)

Within the Liebre Mountains region, Coastal Sage Scrub plant series exhibit a patchy distribution, often in close association with areas inhabited by chaparral habitats. The best-developed stands are found in the lower elevations at the southwestern end of the range. (Note: At one time, the Santa Clarita Valley area, supported the region's most extensive development of sage and sagebrush scrub plant communities prior to urbanization.) Five sage and sagebrush scrub series are described for the Santa Clarita Valley area of the Liebre Mountains region, including:

- Black Sage Series,
- California Sagebrush Series,
- Mixed Sage Series,
- Purple Sage Series, and
- White Sage Series. (Boyd 1999.)

Although several sage and sagebrush series are described for the Santa Clarita Valley area, the most common and widespread series are those dominated, or co-dominated, by *Eriogonum fasciculatum* (Boyd 1999).

Davis et al. (1985[3]) determined as part of their GAP Analysis study of southern California habitats that Coastal Sage Scrub is a community at risk, with approximately 90 percent of it already lost to development (urban and agriculture) and that very little of it has been protected by any mechanisms, such as enforceable conservation easements.

California Buckwheat Series is dominated by *Eriogonum fasciculatum*. (Note: The buckwheat species observed during field surveys within Mint Canyon area is *E. fasciculatum* var. *polifolium* [Hoary California Buckwheat].) California Buckwheat Series forms an intermittent canopy (less than one meter tall) over a variable or grassy ground layer; and it requires shallow and rocky soils of dry, south-facing, upland slopes and canyons scattered throughout foothills and mountains at elevations below 1,200 meters. This series is likely to be seral to other plant communities and is most often found on slopes that have been disturbed within the last ten years. (Sawyer and Keeler-Wolf 1995.) The predominant California Buckwheat alliances described for the Santa Clarita Valley area of the Liebre Mountains region include:

- California Buckwheat Series,
- California Buckwheat-White Sage Series, and
- California Sagebrush-California Buckwheat Series.

These California Buckwheat series are especially prevalent on the southern flank of Liebre Mountain, and are associated with areas of deep, lose, decomposed granite. (Boyd 1999.)

The Coastal Sage Scrub habitats of the Santa Clarita Valley area include important associate shrub species, such as: *Artemisia tridentata*, *Atriplex canescens* ssp. *canescens*, *Baccharis pilularis* (Coyote Brush), *Encelia*

[3] Davis, F.W., P.A. Stine, D.M. Stoms, M.I. Borchert, and A.D. Hollander. 1995. Gap Analysis of the Actual Vegetation of California: 1. The Southwestern Region. *Madroño* 42(1):40-78.

actoni, *Grayia spinosa*, *Lotus scoparius* var. *scoparius*, and *Senecio flaccidus* var. *douglasii* (Shrubby Butterweed).

Important understory herbaceous associates include: *Calystegia macrostegia* ssp. *intermedia* (Intermediate Morning-glory), *Chaenactis glabriuscula* (Yellow Pincushion), *Clarkia* spp. (clarkia), *Cryptantha* spp. (forget-me-nots), *Galium angustifolium* (Chaparral Bedstraw), *Gnaphalium californicum* (Green Everlasting), *Keckiella cordifolia* (Heart-leaved Penstemon), *Lessingia filaginifolia* var. *filaginifolia* (Cudweed-aster), *Lotus strigosus* (Strigose Lotus), *Lupinus* spp. (lupines), *Marah fabaceus* ssp. *agrestis* (California Man-root), *Melica imperfecta* (Coast Melic Grass), *Salvia columbariae* (Chia), and *Solanum xantii* (Chaparral Nightshade). (Boyd 1999.)

California Annual Grassland Series

California Annual Grassland Series (Sawyer and Keeler-Wolf 1995) consists of low herbaceous vegetation that is dominated by introduced annual grasses and is often associated with several native wildflower species, as well as introduced forbs. California Annual Grassland Series is dominated by annual grasses of various genera that are primarily of Mediterranean origin, including: *Avena barbata* (Slender Oat), *A. fatua* (Wild Oat), *Bromus diandrus* (Ripgut Grass), *B. hordeaceus* (Soft Chess), *B. madritensis* ssp. *rubens* (Red Brome), and *Hordeum* spp. (barley). Because introduced annual grass species have irreversibly invaded the once native perennial stands, they are often referred to as naturalized, and are considered important grassland contributor species. (Zedler et al. 1997).

California Annual Grassland Series occurs on all topographic locations, especially gradual slopes, of all slope aspects and occur in deep, well-developed soils, at elevations below 1,200 meters in elevation (Sawyer and Keeler-Wolf 1995). Species composition varies among stands, as the associate species of California Annual Grassland Series may consist of several native herbs, including: *Ambrosia psilostachya* var. *californica* (Western Ragweed), *Amsinckia intermedia* (Ranchers Fire), *Castilleja* spp. (owls clovers), *Cryptantha* spp. (forget-me-nots), *Dichelostemma pulchellum* (Blue Dicks), *Eschscholzia californica* (California Poppy), *Gnaphalium californicum* (Green Everlasting), *Hemizonia fasciculata* (Fascicled Tarplant), *Lasthenia californica*, (California Goldfields), and *Lupinus* spp. (lupines). These wildflowers are important contributors to the ground layer, while emergent trees and shrubs may be present. The typical nonnative forb components of annual grassland include: *Anagallis arvensis* (Scarlet Pimpernel), *Carduus pycnocephalus* (Italian Thistle), *Centaurea melitensis* (Tocalote), *Chenopodium murale* (Nettle-leaved Goosefoot), *Erodium cicutarium* (Red-stem Filaree), *Hirschfeldia incana* (Summer Mustard), *Malva parviflora* (Cheeseweed), *Medicago polymorpha* (Bur-clover), *Rumex crispus* (Curly Dock), and *Sonchus oleraceus* (Common Sow-thistle). When these invasive herbaceous species predominate over the native annual herbs, California Annual Grassland Series then is classified as Ruderal Grassland Series (described below).

As part of a regional study of natural plant communities in California, Davis et al. (1995) found that grasslands occupy approximately 116,800 ha (288,613 ac) within the Southwestern Region, with only 31% in the Western Transverse Ranges and no perennial grasslands dominated by needlegrasses occupying areas greater than 100 ha (247.1 ac). They also found that only 300 ha (741.3 ac) of perennial grassland (measuring 100 ha or more) in the entire Southwestern Region (most of which occurs in the Peninsular Range Subregion). Davis et al. (1995) consider grasslands (all subtypes, except Ruderal Grassland Series) to be a community at risk.

The loss of grassland has been concentrated in the lower (elevation) portions of the Great Valley and coastal lowlands on the more fertile soils suitable for farming. Much of the original grasslands in the Santa Clarita Valley region have been converted to farmland or housing.

Ruderal Grassland Series

Ruderal Grassland Series is typically in early successional stages resulting from severe disturbance by natural or human causes, and/or is due to recurrent disturbance. These areas are dominated by pioneering herbaceous

plants that readily colonize disturbed ground. The ability of exotic species to invade disturbed areas arises from their relationship to old-world ancestors that have co-existed with humans for millennia, and thus are more adapted to exploit disturbed land. Ruderal communities are typically a threat to regional biodiversity since they continually distribute nonnative propagules into native plant communities. These exotic species can colonize natural disturbances, such as burns, and typically can successfully compete with the more desirable natives. However, if Ruderal Grassland is left undisturbed, it generally undergoes succession towards more stable and less weedy plant communities, such as Coastal Sage Scrub or California Annual Grassland Series. (Zedler et al. 1997.)

Many of the same grass species of California Annual Grassland Series are often abundant in Ruderal Grassland Series; however, Ruderal Grassland Series is dominated by introduced and often invasive plant species, such as *Brassica nigra* (Black Mustard), *Carduus pycnocephalus*, *Centaurea melitensis*, *Hirschfeldia incana*, *Picris echioides* (Prickly Ox-tongue), *Silybum marianum* (Milk Thistle), *Foeniculum vulgare* (Sweet Fennel), and *Lactuca serriola* (Prickly Wild Lettuce). Ruderal habitats typically do not provide functional habitat for wildlife species.

WETLAND AND AQUATIC HABITATS

Wetlands are lands where saturation with water (at least periodically saturated or covered by water) is the dominant factor determining the nature of the soil development and the type of plant and animal communities occupying the land. Wetlands are transitional between terrestrial and aquatic systems, where the water table is at or near the soil surface, or the land is covered by shallow water. Wetlands consist of one or more of the following three attributes:

(1) The land supports predominantly hydrophytic vegetation (plants that are adapted to areas that are seasonally flooded or have saturated soils for at least a portion of the growing season);

(2) The substrate is predominantly undrained hydric soil; and

(3) The substrate is nonsoil and is saturated at some time during the growing season. (Cowardin et al. 1979.)

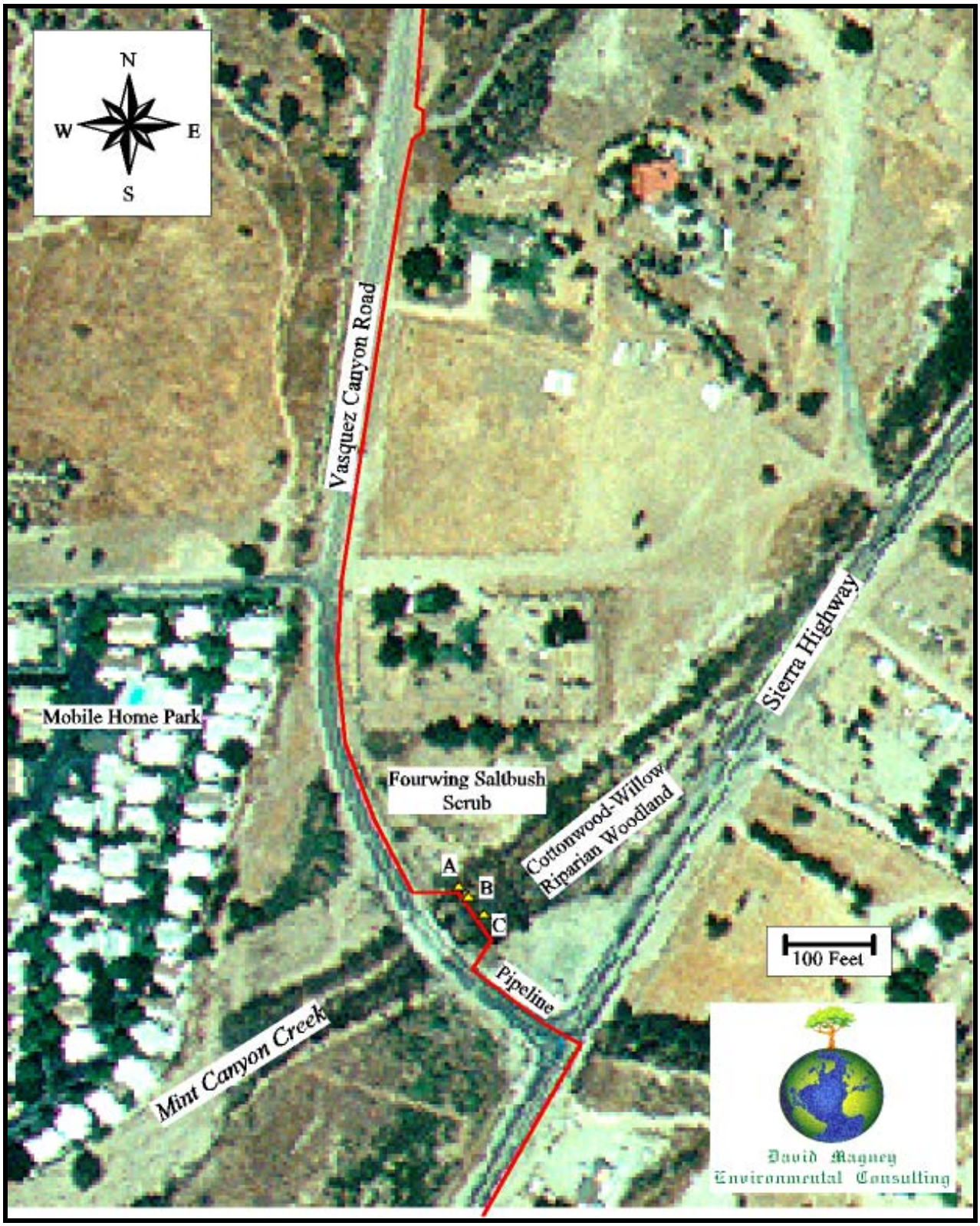
Please refer to the wetland delineation report (Appendix D) for a detailed account of the jurisdictional waters of the U.S., including wetlands, at the project site.

The habitats associated with jurisdictional waters and wetlands of the U.S. within the banks of Mint Canyon Creek are included in the Riverine and Palustrine systems (Cowardin et al. 1979). These systems are further classified as Palustrine Forested Wetland (Fremont Cottonwood-Arroyo Willow Series [Data Points A and C]) and Riverine Intermittent Streambed (Riverwash [Data Point B]), which are the habitat types determined at the project site during the wetland delineation.

Figure 5-4, NCWD Vasquez Water Main Project Site Affected Waters/Wetlands and Delineation Data Points, shows the habitats in Mint Canyon Creek and gives the location of the three data points surveyed during the wetland delineation (report provided as Appendix D).

The total amount of habitat associated with jurisdictional waters of the U.S. and present within the project site, prior to construction of the water main creek crossing, was determined to be approximately 0.13 acre, of which approximately 0.11 acre is jurisdictional wetlands. These numbers are based on an assessment of habitats of each impact area and a review of aerial and topographic maps of the project site.

Figure 5-4. NCWD Vasquez Water Main Project Site Affected Waters/Wetlands and Delineation Data Points



Palustrine Forested Wetland (Fremont Cottonwood-Arroyo Willow Series)

The riparian plant community observed and classified within the Palustrine system along the Mint Canyon Creek banks is Palustrine Broad-leaved Winter-deciduous Forested Wetland. The Forested Wetland class is characterized by woody vegetation that is at least 6 meters, and the Broad-leaved Winter-deciduous subclass includes dominant riparian species with large leaves that fall during the winter season (Cowardin et al. 1979).

The Palustrine System onsite is also classified as Fremont Cottonwood-Arroyo Willow Series (Sawyer and Keeler-Wolf 1995) and Southern Cottonwood-Willow Riparian Forest (Holland 1986). The CDFG's *List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database* (CDFG 2002b) lists Southern Cottonwood-Willow Riparian Forest as a sensitive habitat type known to occur in the vicinity of the project site.

Fremont Cottonwood-Arroyo Willow Series is a woodland plant community co-dominated by two broad-leaved winter-deciduous trees: *Populus fremontii* ssp. *fremontii* (Fremont Cottonwood) and *Salix lasiolepis* (Arroyo Willow). The National List of Wetland Plants (Reed 1988) lists both these trees as FACW, or a facultative wetland species that is usually found in wetlands. Fremont Cottonwood-Arroyo Willow Series occurs in intermittently or seasonally flooded or saturated freshwater wetland habitats and occurs at elevations below 2,400 meters. Cottonwood-willow habitat forms an intermittent to open tree canopy less than 25 meters tall, growing over sparse shrub layer and a variable ground layer. (Sawyer and Keeler-Wolf 1995.)

The Fremont Cottonwood-Arroyo Willow Series in the vicinity of the project site includes three important canopy contributors: *Salix exigua* (Narrow-leaved Willow), *S. lucida* ssp. *lasiandra* (Shining Willow), and *Sambucus mexicana* (Blue Elderberry). The plant community also includes a sparse shrub stratum of predominantly *Artemisia californica*, *A. tridentata*, *Baccharis salicifolia* (Mulefat), *Nicotiana glauca* (Tree Tobacco), and *Senecio flaccidus* var. *douglasii* (Shrubby Butterweed).

This Palustrine Forested Wetland habitat was determined along the riparian corridor onsite at Data Points A and C (see Figure 5-4), which were determined to be in jurisdictional wetlands based on the presence of positive indicators for all three wetland criteria. Soil is lacking in the Palustrine Riparian Woodland habitat at Data Points A and C, as these areas also consist of Riverwash nonsoil materials. The existing riparian woodland currently occupies approximately 0.11 acre of the project site.

Riverine Intermittent Streambed

The non-active, unvegetated, primary channel of Mint Canyon Creek, observed within the Riverine system throughout the vicinity of the proposed water main project, is further classified as Riverine Intermittent Sand Streambed. The Intermittently Exposed subsystem of the Riverine system exists where the channel contains nontidal flowing water for only part of the year. When active flows are not present, surface water may be absent or water may remain in isolated pools. The Streambed class includes all wetlands contained within the Intermittent subsystem of the Riverine system. Riverine Intermittent Streambed varies greatly in substrate and form depending on the gradient of the channel, velocity of the water, and sediment load. In most cases, streambeds are not vegetated because of the scouring effect when moving water is present, but they may be colonized by pioneering annuals and perennials during periods of low flows, or they may be too scattered to qualify as an Emergent or Scrub/Shrub Wetland. (Cowardin et al. 1979.)

The Riverine Intermittent Sand Streambed habitat onsite exists within the immediate creek bottom (within the scour lines) of Mint Canyon Creek and consists primarily of Riverwash materials (non-soils). Riverwash forms a natural barren habitat typical of active stream channels, and consists of highly stratified, water-deposited layers of stony, gravely, cobblestone sands. It contains relatively small amounts of silt and clay and typically results from streambank erosion. The substrate onsite consists of sand with patches of gravel, and pioneering annual and perennial herbs were scattered throughout the sand.

This Riverine habitat onsite, determined by Data Point B, is jurisdictional waters of the U.S., as it exists within the immediate stream bottom (within the scour lines) of Mint Canyon Creek, and consists of little to no vegetation. However, this Riverine habitat is not determined to be a wetland (for the purposes of Corps jurisdiction) since Data Point B, which was surveyed in this habitat, indicates the presence of only two of the three positive wetland indicators: (1) wetland hydrology, including drift lines, sediment deposits, and drainage patterns; and (2) sand, Riverwash hydric soils. Data Point B, located in the immediate inactive creek bottom, is not dominated by hydrophytes (relative cover), is lacking vegetation in general, and was determined to occupy approximately 0.02 acre of the Mint Canyon Creek portion of the project site.

5.4.3.c Special-Status and Sensitive Botanical Resources

This section provides tables listing the likelihood of occurrence, status, and habitat requirements of special-status vascular and nonvascular plants (lichens) and sensitive habitats known to occur in/near the project site.

SPECIAL-STATUS VASCULAR PLANTS

No special-status vascular plant species were observed on the NCWD project site during the botanical survey on 8 and 15 May 2001 by DMEC biologists. However, DMEC's literature review (CNPS 2001; Boyd 1999) and database searches (CDFG 2002a; CDFG 2003a) identified 66 special-status vascular plant species (including those considered locally rare and those listed by state and federal regulatory agencies) that are reported, expected, or have the potential to occur in the project area.

The CNDDB-tracked sensitive biological resources (special-status plant species, special-status wildlife species, and sensitive habitats) reported in the vicinity of the project site and service area are presented below in Figure 5-5, Map of CNDDB-Tracked Sensitive Biological Resources in the Region.

Table 5-6, Special-Status Vascular Plants Potentially in the Vasquez Water Main Service Area, summarizes the database searches, literature reviews, and field survey results for reported and potential special-status vascular plants in the project site vicinity. Table 5-6 includes:

- Scientific (alphabetically) and common names;
- Species status (Federal, State, CNDDB, and CNPS);
- Habitat requirements (Boyd 1999, CDFG 2002a, and CDFG 2003a); and
- Species likelihood of occurrence within the project site boundaries, including
    - Reported (occurrences tracked by CNDDB [CDFG 2003a] and/or reported by Boyd [1999] as occurring within the NCWD service area);
    - High (reported occurrences [Boyd 1999] within Mint Canyon);
    - Moderate (reported occurrences [Boyd 1999] in the canyons adjacent to Mint Canyon); and
    - Unlikely (reported in general region of the service area and/or suitable habitat is lacking onsite).

Table 5-6 was compiled according to CEQA definitions under Initial Study Checklist Section 6. In addition, this special-status species list was compiled from four primary sources:

(1) Review of the *Vascular Flora of the Liebre Mountains, Western Transverse Ranges, California* (Boyd 1999) to consider taxa with ten or fewer populations recorded in the Liebre Mountains/Northwestern Los Angeles County region with habitat requirements similar to the habitat types present onsite;

(2) Review of the CNPS *Inventory of Rare and Endangered Plants of California* (CNPS 2001) to consider taxa that are rare or uncommon throughout California;

(3) Search of the CNDDB RareFind2 (CDFG 2002a) and RareFind3 (CDFG 2003a) for the Mint Canyon, California Quadrangle and its surrounding quadrangles, including the Warm Springs Mountain, Green Valley, Sleepy Valley, Newhall, Agua Dulce, Oat Mountain, San Fernando, and Sunland, California Quadrangles (USGS 7.5-minute Series Topographic Maps); and

(4) Known records, observations, field searches, and published reports by DMEC botanists.

Figure 5-5. Map of CNDDB-Tracked Sensitive Biological Resources in the Region

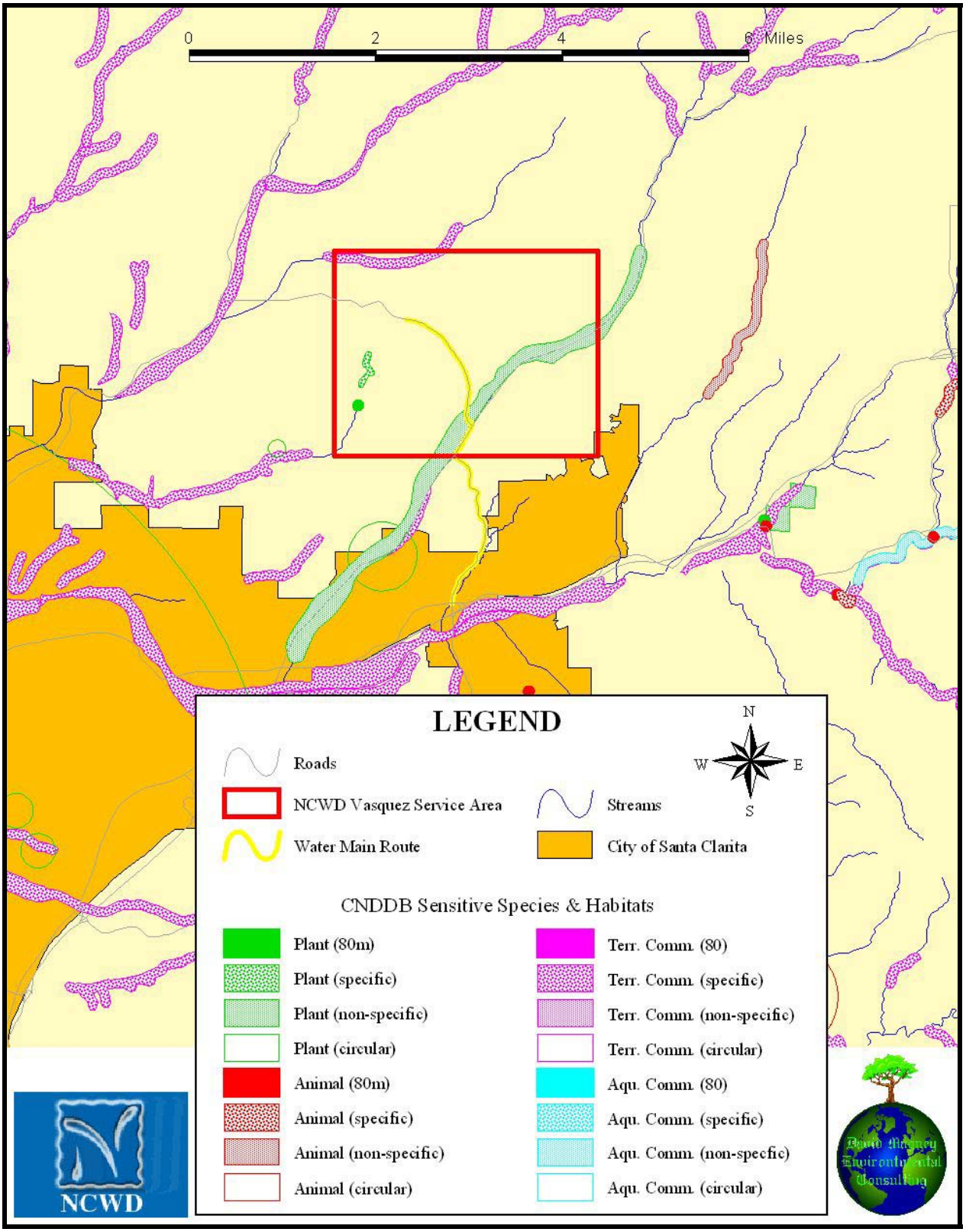


Table 5-6. Special-Status Vascular Plants Potentially in the Vasquez Water Main Service Area

Scientific Name[4]	Common Name	Status: Fed./State/ CNDDB/CNPS[5]	Preferred Habitat[6] and Nearest Known Occurrence	Likelihood of Occurrence[7]
Allophyllum glutinosum	Sticky Allophyllum	-/-/-/LR	Moist sites; rocky to sandy soil; known from Newhall	Moderate
Arabis pulchra var. *gracilis*	Desert Rockcress	-/-/-/LR	Canyons, slopes, washes; limestone soil; near Saugus	High
Argemone corymbosa	Prickly Poppy	-/-/-/LU	Dry slopes & flats; early collections in Mint, Soledad, & Bouquet Cyns	High
*Aster greatae**	Greata's Aster	-/-/G2, S2.3/1B, 2-1-3	Mesic canyons; springs below Oak Wld, near Cienaga Campground in Fish Cyn, early collection in Acton	Low
Atriplex serenana var. *serenana*	Bractscale	-/-/-/LR	Dry rocky stream channel at mouth of Agua Dulce Canyon	Moderate
Baccharis emoryi	Emory's Baccharis	-/-/-/LU	Sandy edges of rivers and washes; Agua Dulce Canyon, Barrel Spring	Low
*Berberis nevinii**	Nevin's Barberry	E/E/G2, S2.2/1B, 3-3-3	Chaparral, CmWld, CSS, Riparian Scrub, planted in LMR	Low
Bowlesia incana	Hoary Bowlesia	-/-/-/LR	Scrub habitats; Bouquet Canyon	Moderate
Calochortus clavatus var. *gracilis**	Slender Mariposa Lily	-/-/G4T1, S1.1?/1B, 3-2-3	Chaparral, CSS; burns; within LMR, endemic to LA County	High
*Calochortus plummerae**	Plummer's Mariposa Lily	-/-/G3, S3.2/1B, 2-2-3	Chap, Wld, CSS, rocky slopes, alluvial fans; granitic soils; above Bee Cyn Wash near Soledad Cyn	High
Cardamine californica var. *californica*	California Milkmaids	-/-/-/LU	Mesic shaded slopes, alluvial benches; Elizabeth Lake, San Francisquito, and Bouquet Canyons	Moderate
Cardamine californica var. *integrifolia*	Simple-leaf California Milkmaids	-/-/-/LU	Mesic shaded slopes, alluvial benches; Elizabeth Lake, San Francisquito, and Bouquet Canyons	Low
Carex schottii	Schott's Sedge	-/-/-/LR	Stream banks, swamps; early collection from S end Bouquet Cyn	Low
Castilleja exserta ssp. *exserta*	Purple Owl's Clover	-/-/-/LR	Open fields, grasslands, low elevations; southern edge of LMR	High
Chorizanthe parryi var. *fernandina**	San Fernando Valley Spineflower	FC/E/G2T1, S1.1/1B, 3-3-3	Grassland habitats; Newhall and Valencia	Moderate

[4] * = The special-status vascular plant species determined by DMEC's searches of the CNDDB RareFind2 (CDFG 2002a) and RareFind3 (CDFG 2003a) for the Mint Canyon and surrounding California Quadrangles. The remaining special-status plant species, with potential to inhabit the project site, were determined by a literature search of CNPS's *Inventory* (CNPS 2001) and the *Flora of Liebre Mountains* (Boyd 1999) for known locally rare plants within the southeastern portion of the Liebre Mountains.

[5] See the biological resources assessment report (Appendix C) for complete explanations of rarity and legal status codes: R = listed Rare; E = listed Endangered; T = listed Threatened; FC = Federal Candidate; FSC = Federally Species of Concern; SH = all sites historic in California; LR = Locally Rare; LU = Locally Uncommon.

[6] Definitions of abbreviations: AFSS = Alluvial Fan Sage Scrub; Chap = chaparral; ChScrub = Chenopod Scrub; CmWld = Cismontane Woodland; CSS = Coastal Sage Scrub; D = desert; Dist = disturbed; For = forest; GBS = Great Basin Sagebrush; Gld = grassland; JTWld = Joshua Tree Woodland; LA = Los Angeles; LMR = Liebre Mountain Range; LCFor = Lower Coniferous Forest; MDS = Mohavean Desert Scrub; Mtn = mountain; N = north; PJWld = Pinyon-Juniper Woodland; Rip = riparian; S = south; SoCal = southern California; Wld = woodland; VFGld = Valley & Foothill Grassland.

[7] Likelihood of occurrence determinations are based on the CNDDB searches (CDFG 2002a and 2003a), literature search (CNPS 2001), regional occurrences (Boyd 1999) not tracked by the CNDDB, and best professional judgment.

Scientific Name[4]	Common Name	Status: Fed./State/ CNDDB/CNPS[5]	Preferred Habitat[6] and Nearest Known Occurrence	Likelihood of Occurrence[7]
Chrysothamnus teretifolius	Round-leaved Rabbit Brush	-/-/-/LU	Rocky flats, slopes; D margin, near Parker Mtn. and Mint Canyon	Reported
Clarkia bottae	Nodding Clarkia	-/-/-/LU	Openings, Chaparral, woodland, CSS; Soledad Canyon region	Moderate
Claytonia parviflora ssp. *utahensis*	Utah Miner's Lettuce	-/-/-/LR	Vernally moist, Dist sites; from Bouquet Canyon and Lake Hughes	Low
Cyperus eragrostis	Umbrella Sedge	-/-/-/LU	Wet soil; Castaic Creek and in Soledad Canyon	Low
Deinandra kelloggii	Kellogg's Tarplant	-/-/-/LU	Open sites; Leona Valley and Bouquet Canyon	Moderate
*Deinandra minthornii**	Santa Susana Tarplant	-/R/G2, S2.2/1B, 2-2-3	Chaparral, CSS; known only from Los Angeles and Ventura Counties	(Very) Low
*Dodecahema leptoceras**	Slender-horned Spineflower	E/E/G1, S1.1/1B, 3-3-3	Chaparral, CSS, AFSS; Mint Cyn Cr., early collection near Newhall where extirpated	Reported
Eragrostis mexicana ssp. *virescens*	Orcutt Lovegrass	-/-/-/LR	Moist soil along stream in Ruby Cyn; ruderal situation in Newhall	Low
Eriogonum nudum var. *westonii*	Weston's Barestem Buckwheat	-/-/-/LU	Chaparral openings; head of Bouquet Canyon	Moderate
Eriogonum trichopes var. *hooveri*	Little Trumpet	-/-/-/LR	Clay, often serpentine origin; desert transition areas; early collection near head of Mint Canyon; also known near Cruzan Mesa	Reported
Filago depressa	Fluffweed	-/-/-/LR	Sandy washes, open alluvium; known at Bouquet Junction	High
Forestiera pubescens	Desert Olive	-/-/-/LU	Alluvial benches and about springs; Bouquet, Mint, and Clearwater Cyn	High
*Galium grande**	San Gabriel Bedstraw	-/-/G1, S1.2/1B, 3-1-3	CmWld, Chap, Broadleaf Upland For, LCFor; endemic to LA County	Low
Helianthus californicus	California Sunflower	-/-/-/LU	Along drainages; Bouquet and Agua Dulce Canyons	Moderate
Helianthus nuttallii ssp. *parishii**	Los Angeles Sunflower	-/-/G5TH, SH/1A, -	S edge Santa Clara River floodplain, approximately 0.8 air mile SSW of Castaic Junction; freshwater seep on S edge of floodplain	Low
Hesperolinon micranthum	Dwarf Flax	-/-/-/LR	Open areas, Wld margin, serpentine soil; early collection near Newhall	Moderate
Heterotheca sessiliflora ssp. *echioides*	Hairy Golden-aster	-/-/-/LR	Grassland, Oak Wld, lower elevations; Newhall-Saugus area	Moderate
Lepidium fremontii	Fremont Peppergrass	-/-/-/LU	Sandy washes, barren knolls, gravelly soil; Mint Canyon, upper desert transition area	High
Lepidium virginicum var. *pubescens*	Hairy Poorman's Peppergrass	-/-/-/LU	Dist sites, abandoned fields, meadows, roadsides; S edge of LMR	Moderate
Lithophragma affine	Woodland Star	-/-/-/LR	Open grassy slopes; known from early collections near Newhall and Bouquet Canyon	Moderate
Lotus hamatus	Grab Lotus	-/-/-/LR	CSS, desert canyons, washes, Dist sites; S end of LMR	Moderate
Lupinus albifrons var. *eminens*	Silver Bush Lupine	-/-/-/LU	Chaparral, foothill woodland, low elevations; Newhall, Valencia	Moderate

Scientific Name[4]	Common Name	Status: Fed./State/ CNDDB/CNPS[5]	Preferred Habitat[6] and Nearest Known Occurrence	Likelihood of Occurrence[7]
Lupinus latifolius ssp. *parishii*	Parish's Broad-leaved Lupine	-/-/-/LR	Moist sites; Bouquet Canyon near Saugus, and near Acton	Moderate
Madia exigua	Threadstem Tarplant	-/-/-/LU	Scrub openings; eastern flank of Red Mtn; early collection from Newhall	Moderate
*Malacothamnus davidsonii**	Davidson's Bush Mallow	FSC/-/G1, S1.1/1B, 2-2-3	Chap, CSS, Rip Wld; Threatened by urbanization in Los Angeles County	Moderate
Malacothrix coulteri	Snakeheads	-/-/-/LR	Sandy open areas, CSS, grassland, deserts; Bouquet Canyon	Moderate
Malacothrix glabrata	Desert Dandelion	-/-/-/LR	Coarse soils in open areas and among shrubs; Mint Canyon	High
Mentzelia gracilenta	Slender Stickleaf	-/-/-/LR	Steep talus, Pine/Oak Wld; widely scattered sites, Saugus and Acton	Low
*Navarretia fossalis**	Spreading Navarretia	T/-/G2, S2.1/1B, 2-3-2	Drying mud of vernal pools, ChScrub; on Cruzan Mesa and in adjacent Plum Cyn	Reported
Nemacladus ramosissimus	Nemacladus	-/-/-/LU	Dry sandy gravelly soil; widely scattered sites along S edge of LMR	Moderate
Nicotiana attenuata	Coyote Tobacco	-/-/-/LR	Open, well-drained slopes; early collections from S & W edge of LMR	Moderate
Opuntia basilaris var. *brachyclada**	Short-joint Beavertail	-/-/G5T1, S1.2/1B, 3-2-3	Chaparral, JTWld, MDS, PJWld, Riparian Woodland	Reported
Opuntia littoralis	Coastal Prickly-pear	-/-/-/LR	Coastal Sage Scrub, chaparral; early collection near Newhall	Moderate
*Orcuttia californica**	California Orcutt Grass	E/E/G2, S2.1/1B, 3-3-2	Vernal pools; known only in SoCal & Baja; Cruzan Mesa, Plum Canyon	Reported
Paeonia californica	California Peony	-/-/-/LU	Open scrub; Knapp Ranch, early collections near Newhall	Moderate
Petalonyx thurberi ssp. *thurberi*	Petalonyx	-/-/-/LU	Local on sandy alluvial benches; upper Mint Canyon, lower San Francisquito Canyon	High
Phoradendron californicum	Desert Mistletoe	-/-/-/LR	Desert habitats, on *Acacia, Cercidium, Olneya, Prosopis*; early collection from Mint Canyon	High
Purshia tridentata var. *glandulosa*	Antelope Bush	-/-/-/LR	Sagebrush Scrub, LCFor, Juniper Wld; early collection Bouquet Cyn	Moderate
Pycnanthemum californicum	Sierra Mint	-/-/-/LR	Moist sites, Chap, Oak Woodland, Coniferous Forest; lower Bouquet Canyon and near Newhall	Moderate
Rhus trilobata var. *anisophylla*	Skunkbrush	-/-/-/LR	Slopes, washes, shrubland; Mint Canyon	Reported
Schoenoplectus [*Scirpus*] *pungens*	Common Threesquare	-/-/-/LU	Wet soil; Castaic Ck, Soledad Cyn	Moderate
*Senecio aphanactis**	Rayless Ragwort	-/-/G3?, S1.2/2, 3-2-1	CmWld, CSS, burns; Newhall area	Low
Sidalcea malvaeflora ssp. *malvaeflora*	Checker Bloom	-/-/-/LR	Coastal prairie, scrub, open forest; Bouquet Canyon	Moderate
Sidalcea neomexicana ssp. *thurberi**	Salt Spring Checkerbloom	-/-/G4?, S2S3/2, 2-2-1	Chaparral, CSS, LCFor, MDS, playas; alkaline, mesic soil; early collection near Elizabeth Lake, and head of San Francisquito Canyon	Moderate

Scientific Name[4]	Common Name	Status: Fed./State/ CNDDB/CNPS[5]	Preferred Habitat[6] and Nearest Known Occurrence	Likelihood of Occurrence[7]
Sphaeralcea emoryi	Emory's Globemallow	-/-/-/LR	Fields, roadsides; desert transition areas; upper Mint Canyon	High
Stillingia linearifolia	Narrow-leaf Stillingia	-/-/-/LR	Xeric scrub habitat types in upper Bee Canyon near Agua Dulce	Low
*Stylocline masonii**	Mason Neststraw	-/-/G1, S1.1/1B, 3-3-3	ChScrub, PJ Wld; sandy benches of Soledad Canyon Wash near Acton	Moderate
Tetradymia comosa	Cotton-thorn	-/-/-/LU	Open scrub; south edge of LMR	Moderate
Thysanocarpus laciniatus var. *laciniatus*	Lace Pod	-/-/-/LU	Slopes, rocky ridges, shade; SW edge of LMR	Low
Xylorhiza tortifolia var. *tortifolia*	Mojave-aster	-/-/-/LU	Rocky hillsides in Mint Canyon	Reported
Zannichellia palustris	Horned Pondweed	-/-/-/LU	Flowing water, shaded Riparian Woodland in Bouquet Canyon	Low

Based on field survey, knowledge of the region, and assessment of project site habitat conditions (in part through an inventory of the special-status species survey results and literature review results), DMEC determined that the 90 special-status vascular plant species known in the vicinity of the service area include:

- 7 plant species federally and/or state listed as Rare, Threatened, or Endangered (including one federal Species of Concern and one federal Candidate);
- 6 species ranked by the CNDDB and listed by CNPS; and
- 53 plant species considered Locally Rare or Locally Uncommon in the Liebre Mountains (11 of which are reported as occurring at one time or another within Mint Canyon).

Although no special-status vascular plant species were observed in the Vasquez Water Main Project site, several of the special-status plant species (listed above in Table 5-6) have a greater potential for occurring within the service area. These species have a greater potential of occurring onsite since their habitat requirements are similar to the habitats currently existing onsite. The following are examples of such special-status plant species:

(1) *Stylocline masonii, Calochortus clavatus* var. *gracilis*, and *Dodecahema leptoceras* have a higher likelihood of inhabiting the Chenopod Scrub and Coastal Sage Scrub habitats onsite;

(2) *Castilleja exserta* ssp. *exserta* and *Chorizanthe parryi* var. *fernandina* might be found growing in the California Annual Grassland in the project vicinity;

(3) *Rhus trilobata* var. *anisophylla, Baccharis emoryi,* and *Stylocline masonii* are more likely to inhabit the sandy gravelly soil of the dry Mint Canyon Creek Riverwash streambed.

(4) *Berberis nevinii* and *Malacothamnus davidsonii* are likelier to grow in the Riparian Woodland habitat along the banks of Mint Canyon Creek; and

(5) *Sphaeralcea emoryi* might be found inhabiting the Ruderal Grassland in the service area.

The CNDDB-tracked special-status plant species, wildlife species, and sensitive habitat types reported in the vicinity of the project site are presented above in Figure 5-5. According to Figure 5-5, the *special-status plant species* reported within the project site and service area include *Dodecahema leptoceras* (Slender-horned Spineflower), *Navarretia fossalis* (Spreading Navarretia), *Opuntia basilaris* var. *brachyclada* (Short-joint Beavertail), and *Orcuttia californica* (California Orcutt Grass). In addition to these four species, *Calochortus clavatus* var. *gracilis* (Slender Mariposa Lily) and *C. plummerae* (Plummer's Mariposa Lily) are CNDDB-tracked within the Mint Canyon, California Quadrangle; however, these later two are not reported within the NCWD service area.

The potential for direct and indirect impacts to potential special-status species requiring riparian habitat is higher than the potential for impacts to special-status species with potential to occur in the more upland habitats of the project site. The potential for impacts to riparian species is higher, since a portion of the water main construction activities will be conducted within the banks of Mint Canyon Creek. The remaining construction activities will be conducted under existing roads, which will minimize potential impacts to special-status plant species expected in the upland plant communities.

The timing of the field surveys (May 2001) was just outside the preferred season to observe or detect some potential special-status plants (late winter/early spring). Winter or spring botanical surveys may be warranted.

SPECIAL-STATUS NONVASCULAR PLANTS (LICHENS)

The special-status nonvascular plants of the Vasquez Water Main project site include special-status lichens known to occur in the vicinity of the project area. Little is known about special-status lichen species, largely because much is still unknown about the distribution of California lichens. Riefner et al. (1995) and Hale and Cole (1988) identified a number of lichen taxa that they consider endangered to uncommon, and some of those species are used here as special-status lichens. In addition, Magney (1999) prepared a list of rare California lichens, on behalf of the California Lichen Society, which is also referenced to identify potential special-status lichen species of California.

Since no federally or state listed lichens occur in California, and the lichen flora diversity throughout the project site is of low species richness, specific surveys for special-status lichen species were not conducted for this project. Although it is unlikely that any special-status lichen species exist onsite, five (5) special-status species of lichen are known to occur in the region of the project site. The five special-status lichen species are summarized below in Table 5-7, Special-Status Lichens Potentially in the Vasquez Water Main Service Area. This table is a compilation of rare lichens known to occur in Los Angeles County (Magney 1999). Table 5-7 includes scientific and common names, species status (Magney 1999 [status assigned according to the CNDDB Global and State Ranking System]), habitat requirements, and likelihood of occurrence.

Table 5-7. Special-Status Lichens Potentially in the Vasquez Water Main Service Area

Scientific Name	Common Name[8]	Status: CALS[9]	Preferred Habitat	Likelihood of Occurrence[10]
Phaeophyscia decolor	Brown Blister Lichen	G2, S2.3	Oak trees	Low
Phaeophyscia kairomoi	Kairomo Brown Rock Lichen	G2, S2.3	Rock outcrops	Very Low
Teloschistes exilis	Shore Lichen	G3, S3.3	Oak trees	Low
Teloschistes flavicans	Yellow Shore Lichen	G3, S3.3	Shrubs, trees	Very Low
Toninia submexicana	Toninia Lichen	G4, S1.2	Basalt, serpentine	Very Low

SENSITIVE HABITATS

Sensitive habitat types include plant communities that are considered sensitive because they exhibit a limited distribution, have high wildlife value, contain sensitive species, or are particularly susceptible to disturbance. Sensitive habitat types are typically threatened by urbanization and are continually, and negatively, influenced by human activities. The database searches (CDFG 2002a; CDFG 2003a) and literature review (CDFG 2002b) resulted in twelve (12) sensitive habitat types known or expected to occur in the vicinity of the project site.

[8] Common names are devised here, as most lichens have not been assigned vernacular names.

[9] CALS = California Lichen Society (Magney 1999). See the biological resources assessment report (Appendix C) for complete definitions and explanations of the CNDDB Global and State Ranking System and other rarity and legal status codes.

[10] Likelihood of occurrence determinations are based on CALS's *Preliminary List of Rare California Lichens* (Magney 1999), and best professional judgment.

The sensitive habitats observed along the Mint Canyon Creek portion of the project site is Southern Cottonwood-Willow Riparian Forest and Southern Riparian Scrub (CDFG 2002b). Table 5-8, Sensitive Habitats in the Vasquez Water Main Project Area, summarizes the database search, literature review, and field surveys and includes each CNDDB Global and State Ranks assigned to each habitat.

Table 5-8. Sensitive Habitats in the Vasquez Water Main Project Area

	Name of Sensitive Habitat Types (Holland 1986)	CNDDB Status[11]	Observed Onsite?
1.	California Walnut Woodland	G2, S 2.1	No
2.	Mainland Cherry Forest	G1, S1.1	No
3.	Riversidian Alluvial Fan Sage Scrub	G1, S1.1	No
4.	Southern California Arroyo Chub/Santa Ana Sucker Stream	G?, S?	No
5.	Southern California Threespine Stickleback Stream	G?, S?	No
6.	Southern Coast Live Oak Riparian Forest	G4, S4	No
7.	**Southern Cottonwood Willow Riparian Forest**	**G3, S3.2**	**Yes**
8.	Southern Mixed Riparian Forest	G2, S2.1	No
9.	**Southern Riparian Scrub**	**G4, S4**	**Yes**
10.	Southern Sycamore Alder Riparian Woodland	G4, S4	No
11.	Southern Willow Scrub	G3, S2.1	No
12.	Valley Oak Woodland	G3, S2.1	No

Southern Cottonwood Willow Riparian Forest with Southern Riparian Scrub

STATUS		
Federal	***State / CNDDB***	***CNPS***
None	None / G3, S3.2	Not Applicable

The Southern Cottonwood Willow Riparian Forest (also described in detail above in Section 5.4.3.b, Vegetation Types) onsite forms a tall, open, broad-leaved, winter-deciduous, riparian canopy dominated by *Populus fremontii* (Fremont Cottonwood), and several tree willows (*Salix lasiolepis*, *S. lucida* ssp. *lasiandra*, and *S. exigua*). The shrub stratum is composed of shrubby species of willows and Mulefat and occurs as patches of Southern Riparian Scrub. The herb layer may include a mixture of hydrophytic and upland annual and perennial herbs, including many hearty introduced species as well. Required site factors include lands along rivers and streams that are sub-irrigated and frequently overflowed. The dominant plant species require moist, bare, mineral soil for germination and establishment. These soil conditions are typically provided after floodwaters recede, leading to uniform-aged stands in this seral type. Southern Cottonwood Willow Riparian Forest occurs along wet stream reaches of the Transverse and Peninsular ranges, from Santa Barbara County, south to Baja California Norte, and east to the desert edge. (Holland 1986.)

Although the habitat along the banks of Mint Canyon Creek is co-dominated by cottonwood and willow, it should be noted that the cottonwoods are not as dense as what is described for this habitat type (Holland 1986). For example, the cottonwood canopy onsite forms more of a woodland type habitat than a forest type habitat. In addition, the Southern Cottonwood-Willow Riparian Forest observed onsite is broken and includes areas of the sensitive Southern Riparian Scrub (CDFG 2002b), and these habitats share many similar plant species (willows, cottonwoods, Mulefat, California Sycamore, and several intergrading riparian herbs). Figure 5-5 (above in the Special-Status Vascular Plants subsection), shows that the *sensitive habitat* reported within the project site and service area is Southern Riparian Scrub.

[11] See the biological resources assessment report (Appendix C) for complete definitions and explanations of the CNDDB Global and State Ranking System and other rarity and legal status codes.

5.4.4 Wildlife Resources

Wildlife resources present at the Vasquez Water Main Project site include the observed and expected individuals and populations of animals, such as fishes, herptofauna (amphibians and reptiles), avifauna (birds), mammals, and invertebrates (spiders and insects) that frequent or occupy the project site habitats. Some of these species may be considered special-status species for one or more reasons, as defined in the Special-Status Species Section of the biological resources assessment report provided in Appendix C. In addition to wildlife species, the wildlife resources of the project site also include any functional wildlife habitat that provides shelter and foraging resources for wildlife species in the vicinity of the project site.

DMEC biologists (Mr. Magney, Mr. Castle, and Ms. Batchelor) conducted the wildlife field survey on 8 and 15 May 2001 for the Mint Canyon Creek portion of the project site. This area was concentrated on specifically since this area has the potential for the most direct impacts resulting from the proposed project (most of the water main will be installed under existing roads and highways). However, reconnaissance surveys were conducted throughout the water main path.

Wildlife survey objectives were to account for the wildlife species (including special-status species) inhabiting and frequenting the project site and to indicate functional wildlife habitat utilized by those species. Biologists used direct observation, and they used signs - such as calls, scat, and tracks - to determine what species are expected in the vicinity of the project site. In particular, DMEC looked for evidence, or suitable habitat, for special-status wildlife species, such as *Rana aurora draytonii* (California Red-legged Frog).

5.4.4.a Fauna

DMEC's May 2001 site visits allowed for a cursory survey of the wildlife diversity in the area. The Vasquez Water Main Project wildlife survey found evidence of frequent disturbance (natural and human) and high levels of pollution (air and noise), which create an environment typically unsuitable for rich faunal diversity. Therefore, the project area appears to be quite depauperate of wildlife species due to the relatively disturbed nature of the creek channel and adjacent habitats.

The biological resources assessment report (Appendix C) includes a wildlife species list (Table 6), which lists wildlife directly observed (by sight), detected (by sign), and expected in the Mint Canyon Creek portion of the project site. However, many additional wildlife species are reported and expected to use the habitats of the entire NCWD Vasquez Canyon Water Main Project site area, at least seasonally. Species richness is likely to be significantly higher than what is documented in the biological resources assessment report for Mint Canyon Creek alone, especially bird species.

Table 5-9, Wildlife Species of the Vasquez Water Main Project Site (presented below), includes the species observed and detected for the Mint Canyon Creek portion of the project site. It also includes reported and expected wildlife species based on literature reviews, personal communications, and best professional judgment. More specifically, literature reviews were conducted for the general NCWD water main project site vicinity, including EIRs prepared for projects in the Santa Clarita area (City of Santa Clarita 2001), and independent studies conducted in the Santa Clarita area (Cooper, pers. comm.; Langton, pers. comm.). One hundred twenty (120) wildlife species (invertebrates [Hogue 1993], amphibians and reptiles [Stebbins 1985], birds [Sibley 2003], and mammals [Williams 1986]) were either observed or detected onsite, or are reported or expected, to occur in the vicinity of the project site.

Table 5-9. Wildlife Species of the Vasquez Water Main Project Site

Common Name[12]	Scientific Name	CS	CSS	CAG	RG	RW	AH
Invertebrates							
Funnel Web Spider	*Agelenopsis* sp.		E	E		O	
Red Skimmer	*Libellula saturata*					E	E
Gray Bird Grasshopper	*Schistocerca nitens*	E	E			O	
Field Cricket	*Gryllus pennsylvanicus*			E	E	O	
Cabbage White Butterfly	*Pieris rapae*	E		E		O	
California Sister Butterfly	*Limenitis bredowii*	E				E	
Checkerspot Butterfly	*Occidryas chalcedona*	E				E	
Monarch Butterfly	*Danaus plexippus*	E				E	
Western Tiger Swallowtail	*Papilio rutulus*	E	E			E	
Crane Fly	*Tipula planicornis*					O	
Mosquito	*Culicidae*					O	
Convergent Lady Beetle	*Hippodamia convergens*		E			O	
Brown Weevil	*Sitophilus* sp.					O	
Argentine Ant*	*Iridomyrmex humilis*					O	
California Harvester Ant	*Pogonomyrmex californicus*		E			O	E
Yellow Jacket	*Vespula pensylvanica*					O	
European Honey Bee*	*Apis mellifera*		E	E		O	
Amphibians							
Western Toad	*Bufo boreas*					E	E
Pacific Tree Frog	*Pseudacris* [*Hyla*] *regilla*					E	E
Bullfrog*	*Rana catesbeiana*					E	E
California Slender Salamander	*Batrachoseps attenuatus*			E			
Reptiles							
Western Fence Lizard	*Sceloporus occidentalis*	O	E	E	E	O	
Side-blotched Lizard	*Uta stansburiana*		O	E		O	
San Diego Horned Lizard	*Phrynosoma coronatum blainvillei*	E	D			O	E
Western Skink	*Eumeces skiltonianus*		E				
Southern Alligator Lizard	*Gerrhonotus multicarinatus*	E	E				
Coastal Western Whiptail	*Cnemidophorus tigris multiscutatus*		E				
Gopher Snake	*Pituophis melanoleucus*	E	E			E	
Western Rattlesnake	*Crotalus viridis*	E	E	E		E	

[12] * = nonnative wildlife species.

[13] **Habitat Type Code definitions:** CS = Chenopod Scrub; CSS = Coastal Sage Scrub; CAG = California Annual Grassland; RG = Ruderal Grassland; RW = Riparian Woodland; AH = Aquatic Habitat (These are discussed in detail above in Section 5.4.3.b, Vegetation Types).

Presence Definitions: O = Observed (during May 2001 field surveys); D = Detected (based on sign, tracks, scat, call, etc.); R = Reported bird species occurrences (based on Cooper [pers. comm.] and Langton [pers. comm.]); E = Expected (based on review of nearby EIRs and best professional judgment). Habitat designations, for wildlife that are expected to frequent or inhabit, follow Hogue (1993), Stebbins (1985), Sibley (2003), Williams (1986), and best professional judgment.

Common Name[12]	Scientific Name	Habitat Type and Presence[13]					
		CS	CSS	CAG	RG	RW	AH
Birds							
American Bittern	*Botaurus lentiginosus*					R	R
Least Bittern	*Ixobrychus exilis*					R	R
Great Blue Heron	*Ardea herodias*			R		R	
Great Egret	*Ardea alba*			R		R	
Snowy Egret	*Egretta thula*					R	
Cattle Egret*	*Bubulcus ibis*			R			
Green Heron	*Butorides virescens*					R	
Black-crowned Night-Heron	*Nycticorax nycticorax*					R	
Turkey Vulture	*Cathartes aura*	R	R				
Ross' Goose	*Chen rossii*					R	
Mallard	*Anas platyrhynchos*					R	R
White-tailed Kite	*Elanus leucurus*		R	R		R	
Northern Harrier	*Circus cyaneus*		R			R	
Sharp-shinned Hawk	*Accipiter striatus*		R	R			
Cooper's Hawk	*Accipiter cooperii*		R			R	
Red-shouldered Hawk	*Buteo lineatus*		R	R			
Red-tailed Hawk	*Buteo jamaciaensis*	O	E	E		E	
Golden Eagle	*Aquila chrysaetos*		R				
Ferruginous Hawk	*Buteo regalis*		R			R	
American Kestrel	*Falco sparverius*			R		R	
American Peregrine Falcon	*Falco peregrinus anatum*		R			R	
California Quail	*Callipepla californica*	O	E			E	
American Coot	*Fulica americana*						R
Killdeer	*Charadrius vociferus*			R			
Mourning Dove	*Zenaida macroura*	R		R	R		
Greater Roadrunner	*Geococcyx californianus*	E	E	E			
Western Screech-Owl	*Otus kennicottii*					R	
Great Horned Owl	*Bubo virginianus*			R		R	
Northern Pygmy-owl	*Glaucidium gnoma*					R	
Anna's Hummingbird	*Calypte anna*		R			R	
Allen's Hummingbird	*Selasphorus sasin*					R	
Belted Kingfisher	*Ceryle alcyon*					R	
Northern Flicker	*Colaptes auratus*			R		R	
Acorn Woodpecker	*Melanerpes formicivorus*					R	
Lewis' Woodpecker	*Melanerpes lewis*					R	
Downy Woodpecker	*Picoides pubescens*					R	
Nuttall's Woodpecker	*Picoides nuttallii*					R	
Cassin's Kingbird	*Tyrannus vociferans*			R			
Loggerhead Shrike	*Lanius ludovicianus*		R	R		R	
Western Scrub-Jay	*Aphelocoma coerulescens*	R	R			R	
American Crow	*Corvus brachyrhynchos*	E	E	E	E	O	E

Common Name	Scientific Name	Habitat Type and Presence[13]					
		CS		CAG	RG	RW	
Common Raven	*Corvus corvax*	O	E	E	E	E	E
Barn Swallow	*Hirundo rustica*			R			
Mountain Chickadee	*Poecile gambeli*					R	
Plain Oak Titmouse	*Baeolophus inornatus*		R			R	
Bushtit	*Psaltriparus minimus*	R	R			R	
Bewick's Wren	*Thryomanes bewickii*		R				
Ruby-crowned Kinglet	*Regulus calendula*		R			R	
Blue-gray Gnatcatcher	*Polioptila caerulea*					R	
Western Bluebird	*Sialia mexicana*			R		R	
American Robin	*Turdus migratorius*			R		R	
Northern Mockingbird	*Mimus polyglottos*	R		R		R	
European Starling*	*Sturnus vulgaris*	R		R	R		
Cedar Waxwing	*Bombycilla cedrorum*		R			R	
Yellow-rumped Warbler	*Dendroica coronata*	R	R			R	
Common Yellowthroat	*Geothlypis trichas*						
Spotted Towhee	*Pipilo maculatus*	R	R				
California Towhee	*Pipilo crissalis*	O	E	E		O	
Southern California Rufous-crowned Sparrow	*Aimophila ruficeps canescens*	R	R	R	R		
Chipping Sparrow	*Spizella passerina*		R				
Brewer's Sparrow	*Spizella breweri*			R		R	
Lark Sparrow	*Chondestes grammacus*		R	R		R	
Savannah Sparrow	*Passerculus sandwichensis*			R	R		
Harris' Sparrow	*Zonotrichia querula*					R	
White-crowned Sparrow	*Zonotrichia leucophrys*	R	R	R	R		
Dark-eyed Junco	*Junco hyemalis*	R	R	R		R	
Red-winged Blackbird	*Agelaius phoeniceus*			R		R	
Tricolored Blackbird	*Agelaius tricolor*					R	
Brewer's Blackbird	*Euphagus cyanocephalus*	R	R		R		
House Finch	*Carpodacus mexicanus*	R		R			
American Goldfinch	*Carduelis tristis*					R	
Mammals							
Audubon's Cottontail	*Sylvilagus audubonii*	E		E		E	
Bobcat	*Lynx rufus*		E				
Brush Rabbit	*Sylvilagus bachmani*	E	E	E			
California Ground Squirrel	*Spermophilus beecheyi*	E	E	E	E		
California Pocket Mouse	*Perognathus californicus*		E	E			
Coyote (scat)	*Canis latrans*	E	D	E		D	D
Deer Mouse	*Peromyscus maniculatus*		E				
Deer Mouse	*Peromyscus maniculatus*	E	E	E		E	
Dog (tracks)*	*Canis familiaris*					D	D
Dusky-footed Woodrat (nest/scat)	*Neotoma* cf. *fuscipes*		D			D	

Common Name[12]	Scientific Name	Habitat Type and Presence[13]					
		CS	CSS	CAG	RG	RW	AH
Gray Fox	*Urocyon cinereoargenteus*		E	E			
House Mouse	*Mus musculus*		E	E	E		
Mule Deer (tracks)	*Odocoileus hemionus*					D	D
Pacific Kangaroo Rat	*Dipodomys agilis*					E	
Pocket gophers	*Thomomys* spp.		E				
Raccoon	*Procyon lotor*	E	E	E		E	
San Diego Black-tailed Jackrabbit	*Lepus californicus bennettii*		E	E			
Striped Skunk	*Mephitis mephitis*	E	E	E			
Virginia Opossum	*Didelphis virginianus*	E					
Western Harvest Mouse	*Reithrodontomys megalotis*			E	E		

The 120 wildlife species in Table 5-9 (above) include 17 invertebrates, 4 amphibians, 8 reptiles, 71 birds, and 20 mammals. Furthermore of those 120 wildlife species listed above:

- 20 wildlife species were observed during the May 2001 surveys (including 12 invertebrates, 3 reptiles, and 5 birds);
- 4 mammal species were detected during the May 2001 surveys;
- 66 bird species are reported as having occurred in the general project site vicinity; and
- 31 wildlife species are expected to frequent or inhabit the general project site vicinity (including 5 invertebrates, 4 amphibians, 5 reptiles, 1 bird, and 16 mammals).

5.4.4.b Wildlife Habitat

Plant communities generally determine which wildlife species occur in a given area, but a variety of other factors can also play an important role, including soils, water availability, climate, level of disturbance, and adjacent land uses. While a few species of wildlife are entirely dependent on a single plant community/vegetation type, most species require a mosaic of plant communities to provide necessary shelter, water, food, and other necessary resources (see Figure 5-5 in Section 5.4.3 above for a general map of vegetation/wildlife habitats within the service area). An accurate assessment of wildlife populations on a given site is generally difficult to obtain without extensive surveys, since some species only occur in a particular area for a short period of time during migration, some are inactive during one or more seasons, and some are nocturnal or reclusive in nature. Therefore, the characterization of wildlife on a particular site is discussed in qualitative terms, and is based on information derived from literature, from site-specific field surveys, and the quality and extent of available habitat. Habitats within the Vasquez Water Main service area support a modest range of animal species, mostly associated with Coastal Sage Scrub, alluvial, and/or disturbed habitats. Most species observed or expected to occur in these areas are typical of those occurring in natural habitats of northwestern Los Angeles County and eastern Ventura County. These include resident species and seasonal visitors. (City of Santa Clarita 2001.)

The field survey of habitat quality of the project site discerned six primary wildlife habitat types: Chenopod Scrub, Coastal Sage Scrub, California Annual Grassland, Ruderal, Riparian Woodland, and Aquatic. The habitat quality for each vegetation type providing food, shelter, cover, and breeding resources to wildlife is briefly described below. Detailed descriptions of the species-specific plant communities representing these general habitat types are provided above in the Botanical Resources section. Refer to Table 5-9 (above) for the wildlife taxa that were observed and detected, or are reported and expected, in the project site vicinity, and for the habitats in which those species are expected to frequent.

CHENOPOD SCRUB

The shrubby Chenopod Scrub in the upland portions of the project site and service area is represented by Fourwing Saltbush Series, which predominates immediately upland from channel banks and intermixes with Coastal Sage Scrub (discussed below) of the project site landscape. This plant community forms an open canopy over a sparse groundlayer of grasses and herbs. Plant species richness in the existing Chenopod Scrub alone is low to moderate, and provides marginal functional habitat for wildlife of the area. For example, the open shrub canopy inadequate structural diversity creates segmented foraging, shelter, and cover resources for wildlife attempting to frequent or inhabit the area. However, in areas where the Chenopod Scrub intermixes with Coastal Sage Scrub, species richness is higher and provides more suitable wildlife resources.

COASTAL SAGE SCRUB

Coastal Sage Scrub is relatively common in southern California generally along the coastward slopes of the Transverse, Central Coast, and Peninsular Ranges, and stands of this vegetation type are adapted to a Mediterranean climate. Coastal Sage Scrub is a shrubland dominated by drought-deciduous, low-growing shrubs and subshrubs that are soft-leaved and grayish-green in color. Shrub plant size is relative to the available water supply present onsite; however, these semi-woody plants are generally low growing since high temperatures and drying winds cause severe moisture stress. Many Coastal Sage Scrub species resprout between and after recurring fires, and they typically respond to seasonal drought by reducing transpiring surface area through leaf curling and loss of larger leaves. Few small green leaves remain on these shrubs even during the summer, which allows for a quick response to the first fall rains (Zedler et al. 1997.).

In an undisturbed state, Coastal Sage Scrub can support a high diversity of wildlife species, especially reptiles and birds, and is often required by several special-status wildlife species; however, human disturbances have disturbed some portions of the scrub habitats throughout the project area. Preserving and restoring Coastal Sage Scrub habitats is important for providing suitable habitat for special-status species. (City of Santa Clarita 2001.)

CALIFORNIA ANNUAL GRASSLAND

The California Annual Grassland in the vicinity of the project site is relatively undisturbed and is typically adjacent to Coastal Sage Scrub habitat, but is influenced by several nonnative herbaceous species. Regardless, Annual Grassland provides suitable foraging resources for several reptile, bird (especially raptors), and mammal species. For example, California Annual Grassland provides significant food resources for wildlife species that forage for invertebrates, seeds, grains, and tender annual foliage. Many of the wildlife species expected or observed in Coastal Sage Scrub are also expected to frequent the adjacent grassland habitats of the project site as well.

Airola and Davila (1992[14]) found that grasslands, native and non-native subtypes, had some of the highest species richness and diversity for birds of any vegetation type, comparable to riparian habitats. Species richness and diversity increases at sites that have more than one habitat type, such as at the northern expansion area site.

RUDERAL HABITATS

The Ruderal habitats (or Ruderal Grassland) onsite are often associated with other grassland habitats (California Annual Grassland) and are typically adjacent to Coastal Sage Scrub; however, these disturbed habitats typically do not provide significant forage, shelter, and cover resources for wildlife species. Ruderal habitats are low in species richness and habitat structural diversity and do not accommodate a large variety of

[14] Airola, D. and D. Davila. 1992. Reassembling the Pieces. Jones & Stokes Associates, Sacramento, California. Prepared for The Nature Conservancy of California, San Francisco, California.

native wildlife species. Regardless, when more favorable habitats are inaccessible, or are temporarily disturbed or unavailable, Ruderal habitats provide alternative forage resources and may be used as an area of movement between the more desirable habitats. Although Ruderal habitats do not typically provide functional habitat, several wildlife species can be found frequenting Ruderal Grassland.

RIPARIAN WOODLAND (PALUSTRINE FORESTED WETLAND)

The riparian woodland at the Vasquez Water Main Project site is represented by Southern Cottonwood-Willow Riparian Forest, which is sensitive habitat that occurs along each bank of Mint Canyon Creek portion of the project site. This riparian vegetation is comprised primarily of large and small hydrophytic (water-loving) trees growing over a variety of hydrophytic shrubs and herbs, and intergrading with scattered scrub species.

The Fremont Cottonwood-Arroyo Willow Series of Mint Canyon Creek is relatively disturbed, especially in the direct vicinity of the Vasquez Canyon Road bridge. A significant portion of the riparian vegetation appears to be dead or dying, and many of the riparian trees near the bridge appeared to be cut off at around mid-length (the cause of this is unknown). Farther northeast (upstream) from the bridge crossing, however, the riparian vegetation is well established and the tree and shrub strata form a continuous canopy (thickets in some places). Of the six habitats onsite, Riparian Woodland consists of the highest vegetative species richness and structural diversity. The riparian plant communities create suitable cover, nesting, and foraging resources for a variety of wildlife species, especially birds and amphibians. This habitat also provides a moderate corridor for wildlife movement in the area, allowing wildlife (especially mammals) to move between adjacent habitats.

AQUATIC (RIVERINE INTERMITTENT STREAMBED)

The general stream condition of the Mint Canyon Creek project portion is a relatively flat, low velocity, intermittent stream with a sinuosity value of one (when flows are present). Although no active flows were present onsite during the wildlife survey, the creek bed habitat is classified here as aquatic, since Mint Canyon Creek has the potential for active flows (an ephemeral creek) during the rainy seasons, and it consists predominantly of Riverwash materials and little to no riparian vegetation. Disturbances in the sandy open stretch of this habitat are frequent, and may be quite intense, including horse and pedestrian traffic, in-stream trash (including dumping), off road vehicle use, and flash-flooding. Very few wildlife species were directly observed in the immediate creek bed due to lack of vegetative cover; however, San Diego Horned Lizard and several insects were observed in the aquatic habitat onsite. San Diego Horned Lizard, which is a special-status species, was observed in the northern extension of the project site, foraging for ants in the open sandy materials forming the Riverine habitat.

5.4.4.c Wildlife Movement Corridors

The Mint Canyon Creek portion of the project site represents the presence of a linear habitat element that may function as a habitat link between patches of habitat; therefore, Mint Canyon Creek is expected to be a primary movement corridor in the project vicinity for several wildlife species, such as Bobcat, Coyote, and Mountain Lion. Most of the water main will be installed under existing roads, and the Mint Canyon Creek portion of the water main will be within a pre-disturbed bridged area (Vasquez Canyon Road bridge) of the creek. Therefore, the installment of the water main should only result in temporary impacts to wildlife movements within Mint Canyon Creek, at least until the water main construction and the restoration efforts are complete.

5.4.4.d Special-Status Wildlife Resources

A sensitive wildlife resource refers to any rare, threatened, or endangered animal species. Wildlife may also be considered species of local concern if they have limited distributions; are experiencing local or regional population declines; are vulnerable to current or future threats to their required habitat; and/or are of unusual scientific, recreational, or educational value.

This special-status species section provides tables listing the likelihood of occurrence, status, and habitat requirements of special-status wildlife with potential to occur in the vicinity of the project site. This section also discusses and describes in detail the special-status animal species actually observed inhabiting or frequenting the project site.

Database searches (CDFG 2002a; CDFG 2003a) and literature reviews (CDFG 2003b, Cooper, pers. comm., and Langton, pers. comm.) found a total of 51 special-status wildlife species have potential, or are known, to occur in the vicinity of the project site and surrounding areas. No federally or state listed wildlife species were observed during the project site survey; however, one CDFG Species of Special Concern, *Phrynosoma coronatum blainvillei* (San Diego Horned Lizard), was observed in the Mint Canyon Creek portion of the Vasquez Water Main Project site. Two colonies of a red ant species were observed onsite, and their presence indicates appropriate habitat and a significant food base for San Diego Horned Lizard. This special-status wildlife species is described in more detail later in this section.

Table 5-10, Special-Status Wildlife Species Potentially Occurring at the Vasquez Water Main Project Site, provides the following information regarding each special-status wildlife species with potential of occurring within the service area:

- The scientific (alphabetically) and common names;
- The species status (Federal, State, CNDDB, and CDFG; or Locally Rare);
- Habitat requirements (CDFG 2002a, CDFG 2003a, and Sibley 2003); and
- Presence or likeliness to occur onsite, including:
    - Observed (during the May 2001 surveys),
    - Reported (Cooper, pers. comm., Langton, pers. comm., and CDFG 2003a),
    - High (tracked by CNDDB [CDFG 2003a and 2003b] and required habitat present onsite),
    - Moderate (tracked by CNDDB but only marginal habitat present onsite), and
    - Low (required habitat not present onsite).

The likely designation for potential special-status wildlife species is based on the presence of suitable habitat requirements within the project site, especially in the vicinity of the Mint Canyon Creek portion of the project site. For example, certain special-status wildlife species - such as Arroyo Toad, San Diego Black-tailed Jackrabbit, Coastal California Gnatcatcher, and Two-striped Garter Snake - require soils, climate, altitude, and vegetative cover consistent with the environmental conditions and plant communities (Coastal Sage Scrub, Riparian Woodland, Annual Grassland, and intermittent streambed habitats) that are currently present within the project site and service area.

Table 5-10. Special-Status Wildlife Species Potentially Occurring at the Vasquez Water Main Service Area

Scientific Name[15]	Common Name	Status: Fed./State/CNDDB/ CDFG[16]	Preferred Habitat[17]	Likelihood of Occurrence[18]
Accipiter cooperii (nesting)	Cooper's Hawk	-/-/G5, S3/CSC	Open, interrupted, or marginal woodland types; nest sites mainly in riparian growths of deciduous trees, in canyon bottoms on river floodplains; also, live oaks.	Reported
Accipiter striatus (nesting)	Sharp-shinned Hawk	-/-/G5, S3/CSC	Ponderosa Pine, Black Oak, deciduous riparian Wld, mixed conifer and Jeffrey Pine habitats; prefers riparian areas; north-facing slopes with plucking perches are critical requirements; nests within 275 ft of water.	Reported
Agelaius tricolor (nesting colony)	Tricolored Blackbird	FSC/-/G2G3, S2/ CSC	Highly colonial species, most numerous in Central Valley; largely endemic to California; requires open water, protected nesting substrate, and foraging area with insects within a few km of the colony.	Reported
Aimophila ruficeps canescens	Southern California Rufous-crowned Sparrow	-/-/G5T2T4, S2S3/ CSC	Resident in SoCal CSS and sparse mixed chaparral; frequents relatively steep, often rocky hillsides w/grass and forb patches.	Reported
*Anniella pulchra pulchra**	Silvery Legless Lizard	FSC/-/G3G4T3T4, S3/CSC	Sandy or loose loamy soils under sparse vegetation; soil moisture is essential; they prefer soils with a high moisture content.	Low
Aquila chrysaetos (nesting & wintering)	Golden Eagle	-/-/G5, S3/CSC, FP	Rolling grassy foothills and mountain areas, sage-juniper flats, desert; frequents steep, rocky hillsides with grass and forb patches; reported near Santa Clara River at Sand Canyon Road.	Reported
Ardea alba (rookery)	Great Egret	-/-/G5, S4/-	Colonial nester in large trees; rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	Reported
Ardea herodias (rookery)	Great Blue Heron	-/-/G5, S4/-	Colonial nester in tall trees, cliff sides, and sequestered spots on marshes; rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	Reported
*Aspidoscelis hyperythrus**	Orange-throated Whiptail	-/-/G5, S2/CSC	Low elevation CSS, chaparral, and Valley Foothill Hardwood habitats (CDFG 2002a); Riversidian Alluvial Sage Scrub, S-facing slope; sandy-gravelly soil (CDFG 2003a).	Moderate

[15] * = Occurrences tracked by CNDDB RarreFind3 (CDFG 2003a) within Mint Canyon and adjacent Quadrangles.

[16] See the biological resources assessment report (Appendix C) for complete definitions and explanations of the CNDDB Global and State Ranking System and other rarity and legal status codes: E=listed Endangered; FC=Federal Candidate; CSC = CDFG Species of Special Concern; FP = CDFG Fully Protected Species; FSC=Federal Species of Concern; PE=proposed Endangered; T=listed Threatened.

[17] Definitions of abbreviations: Chap = chaparral; Co = County; CSS = Coastal Sage Scrub; ft = feet; Mtn(s) = Mountain(s); Rip = riparian; SoCal = southern California; S = south; Veg = vegetation; Wld = woodland. (Required habitats follow CDFG 2002a and 2003a, and Sibley 2003.)

[18] Likelihood of occurrence is based on CNDDB searches, regional occurrences not tracked by CNDDB, and best professional judgment.

Scientific Name[15]	Common Name	Status: Fed./State/CNDDB/ CDFG[16]	Preferred Habitat[17]	Likelihood of Occurrence[18]
Aspidoscelis [*Cnemidophorus*] *tigris stejnegeri*	Coastal Western Whiptail	-/-/G4T3T4, S2S3/-	Found in deserts and semiarid areas with sparse vegetation and open areas; Coastal Sage Scrub and Riparian Woodland; ground may be firm soil, sandy, or rocky.	High
Botaurus lentiginosus	American Bittern	FSC/-/G4, S3/-	Freshwater and slightly brackish marshes, coastal salt marshes, dense reed beds.	Reported
*Bufo californicus**	Arroyo Toad (Figure 5-6)	E/-/G2G3, S2S3/ CSC	Semi-arid washes, intermittent streams, foothill and desert riparian areas.	High
Buteo jamaciaensis	Red-tailed Hawk	(Fish & Game Code 3503.5)	Nests in tall trees with open feeding areas nearby; hunts mainly from perch.	Reported
Buteo lineatus	Red-shouldered Hawk	(Fish & Game Code 3503.5)	Dense woods with clearings and water; nests in tall trees; hunts from perch in forest.	Reported
Buteo regalis (wintering)	Ferruginous Hawk	FSC/-/G4, S3S4/CSC	Open grassland, sagebrush flats, desert scrub, low foothills, and pinyon-juniper fringes; mostly eats lagomorphs, ground squirrels, and mice; population trends may follow lagomorph population cycles.	Reported
*Catostomus santaanae**	Santa Ana Sucker	T/-/G1, S1/CSC	Endemic to Los Angeles Basin; in southern coastal streams.	Low
Ceryle alcyon	Belted Kingfisher	Locally Rare	Sheltered open water w/small fish; requires lookout perch to hover and hunt over water.	Reported
Chen rossii	Ross' Goose	Locally Rare	Large flocks in marshy Veg and agricultural fields; nests in colonies, low grassy tundra.	Reported
Chondestes grammacus	Lark Sparrow	FSC/-/G5, S?/-	Open grassy areas with scattered trees or grasslands adjacent to scrub or Wld habitats.	Reported
Circus cyaneus (nesting)	Northern Harrier	-/-/G5, S3/CSC	Coastal salt and freshwater marsh; nest and forage in grasslands, from salt grass in desert sink to Mtn cienagas; nests on ground in shrubby Veg, usually at marsh edge; nest built of a large mound of sticks in wet area; reported near Santa Clara River at Sand Canyon Road.	Reported
*Coccyzus americanus occidentalis**(nesting)	Western Yellow-billed Cuckoo	FC/E/G5T3, S1/-	Riparian Forest; nested along the broad lower flood-bottoms of larger river systems.	Low
*Danaus plexippus**	Monarch Butterfly	-/-/G4, S3/-	Winter roost sites extend along coast from northern Mendocino to Baja California, Mexico.	Moderate
Egretta thula (rookery)	Snowy Egret	FSC/-/G5, S4/-	Colonial nester, with nest sites situated in protected beds of dense tulles; rookery sites close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	Reported
Elanus leucurus (nesting)	White-tailed Kite	FSC/G5, S3/ DFG, FP	Rolling foothills, valley margins w/scattered oaks, and river bottomlands or marshes next to deciduous Wld; open grasslands, meadows, or marshes for foraging; dense-topped trees for nesting and perching.	Reported
Emys [*Clemmys*] *marmorata pallida**	Southwestern Pond Turtle	FSC/-/G3G4T2T3, S2/CSC	Permanent or nearly permanent bodies of water in many habitat types; below 6,000 ft.	Low

Scientific Name[15]	Common Name	Status: Fed./State/CNDDB/ CDFG[16]	Preferred Habitat[17]	Likelihood of Occurrence[18]
Falco peregrinus anatum (nesting)	American Peregrine Falcon	Delisted, FSC/ E/G4T3, S2/FP	Near wetlands, lakes, rivers; on cliffs, banks, dunes, mounds; also, human-made structures; nest consists of a scrape on a depression or ledge in open site.	Reported
Falco sparverius	American Kestrel	(Fish & Game Code 3503.5)	Open habitats, desert grassland, meadows, brushy fields; nests in tree cavities and house crevices.	Reported
*Gasterosteus aculeatus williamsoni**	Unarmored Threespine Stickleback	E/E/G5T1, S1/FP	Weedy pools, backwaters, emergent vegetation, small stream edges.	Low
Geococcyx californianus	Greater Roadrunner	Locally Rare	Dry, open, CSS, grassland, and desert habitats; requires open ground for running to capture prey of lizards and snakes.	Reported
*Gila orcutti**	Arroyo Chub	-/-/G2, S2/CSC	Los Angeles Basin; southern coastal streams	Low
Glaucidium gnoma	Northern Pygmy-owl	Locally Rare	Open forests with patches of brush and Chap; active in daylight, perching in trees on horizontal branches to hunt for small birds.	Reported
Gymnogyps californianus	California Condor	E/E/G1, S1/FP	Require vast expanses of open savannah, grassland, foothill chaparral; mountains of moderate altitude; deep canyons with clefts in the rocky walls provide nesting sites; forages up to 100 miles from roost/nest.	Moderate
Ixobrychus exilis (nesting)	Least Bittern	FSC/-/G5, S1/CSC	Colonial nester in marshlands, borders of ponds, and reservoirs that provide ample cover; nests placed low in tulles over water.	Reported
Lanius ludovicianus (nesting)	Loggerhead Shrike	FSC/-/G4, S4/CSC	Broken Wld, savannah, pinyon-juniper, Joshua Tree, Rip Wld, desert oases, scrub, & washes; prefers open country for hunting, perches for scanning, and dense shrubs for nesting; reported near Santa Clara River at Sand Canyon Road.	Reported
*Lepus californicus bennetti**	San Diego Black-tailed Jackrabbit	-/-/G5T3, S3?/CSC	Intermediate canopy stages of shrub habitats, open shrub/herbaceous habitat edges and tree/herbaceous habitat edges.	High
Melanerpes lewis (nesting)	Lewis' Woodpecker	FSC/-/G4, S?/-	Dry open pine forests, oak woodlands, orchards; preys on insects in-flight; reported east of Sand Canyon Road along S side of Santa Clara River.	Reported
*Neotoma lepida intermedia**	San Diego Desert Woodrat	-/-/G5T3?, S3?/CSC	Coastal southern California from San Diego County to San Luis Obispo County	Moderate
Nycticorax nycticorax (rookery)	Black-crowned Night-heron	-/-/G5, S3/-	Colonial nester, usually in trees, occasionally in tulle patches; rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, and marshes.	Reported
Oncorhynchus mykiss irideus	Southern Steelhead-Southern California Ecological Significant Unit	E/-/G5, S2/CSC	Federal listing refers to populations from Santa Maria River south to southern extent of range (San Mateo Creek, San Diego Co).	Low
Phrynosoma coronatum blainvillei*	**San Diego Horned Lizard** (Figure 5-8)	-/-/G4T3T4, S2S3/ CSC	CSS, chaparral, arid and semi-arid climates; prefers friable, rocky, or shallow sandy soils; observed in Mint Canyon Creek Riparian Woodland on 8 May 2001.	**Observed**

Scientific Name[15]	Common Name	Status: Fed./State/CNDDB/ CDFG[16]	Preferred Habitat[17]	Likelihood of Occurrence[18]
*Polioptila californica californica**	Coastal California Gnatcatcher	T/-/G3T2, S2/CSC	Obligate permanent resident of SoCal CSS below 2,500 ft; low, CSS in arid washes, on mesas and slopes; not all areas classified as CSS are occupied; require CSS .	Moderate
*Rana aurora draytonii**	California Red-legged Frog	T/-/G4T2T3, S2S3/ CSC	Lowlands and foothills in/near permanent deepwater sources with dense, shrubby/emergent riparian vegetation.	Low
*Rana muscosa**	Mountain Yellow-legged Frog	E/-/G2, S2/CSC	Federal Listing refers to populations in the San Gabriel, San Jacinto, and San Bernardino Mountains only.	Low
Rhinichthys osculus ssp. 3*	Santa Ana Speckled Dace	-/-/G5T1, S1/CSC	Headwaters of the Santa Ana and Gabriel Rivers; may be extirpated from Los Angeles River system.	Low
Selasphorus sasin	Allen's Hummingbird	FSC/-/G5, S?/-	Coastal Sage Scrub, chaparral, low riparian woodland.	Reported
Spea [*Scaphiopus*] *hammondii**	Western Spadefoot	FSC/-/G3, S3/CSC	Grassland habitats and Valley Foothill Hardwood Woodland. Tracked by CNDDB within the NCWD service area (Figure 5-5).	Reported
Spizella breweri (nesting)	Brewer's Sparrow	-/-/G5, S3/-	East of Cascade-Sierra Nevada Crest; Mtns and high valleys of Mojave Desert and Mtns at S end of San Joaquin Valley; high sagebrush plains, slopes and valleys w/Great Basin Sagebrush and Antelope Brush; reported at Bridgeport housing development along Newhall Ranch Road in Valencia.	Reported
Spizella passerina (nesting)	Chipping Sparrow	-/-/G5, S3S4/-	Oak woodland w/grassy understory; mixed deciduous-coniferous, pinyon-juniper and coniferous forests; usually nests in conifer tree, but deciduous tree or shrub also used.	Reported
*Thamnophis hammondii**	Two-striped Garter Snake (Figure 5-7)	-/-/G3, S2/CSC	Coastal California from vicinity of Salinas to NW Baja California from sea to about 7,000 ft elevation; highly aquatic, found in/near permanent fresh water; often along streams with rocky beds and Rip growth.	High
Vireo bellii pusillus (nesting)*	Least Bells Vireo	E/E/G5T2, S2/-	SoCal summer resident; low riparian growth near water or in dry river bottoms; below 2,000 ft in elevation.	Moderate
Zonotrichia querula	Harris' Sparrow	Locally Rare	Nests in open spruce woods near tundra; winters in flocks in brushy areas; CSS.	Reported

Of the 51 special-status wildlife species with potential of occurring in the project area:

- 1 species was observed onsite;
- 29 species (birds) are reported as being observed in the project area vicinity;
- 9 species are likely to inhabit or frequent the project site vicinity; and
- 12 species are unlikely to inhabit or frequent the project site vicinity.

The CNDDB-tracked special-status plant species, wildlife species, and sensitive habitat types reported in the vicinity of the project site are presented above in Figure 5-5. According to Figure 5-5, the one *wildlife species* reported within the service area is *Spea hammondii* (Western Spadefoot).

A one-time day and night survey was conducted for the Arroyo Toad (Figure 5-6). This survey was conducted in accordance with USFWS-approved survey protocol methods. The results of this one-time survey produced no Arroyo Toads. This is inconclusive, since a complete protocol, time-sequence survey was not conducted. This area supports habitat marginally acceptable for this species. No bird nests of any kind, including raptor nests, were observed nor located in the project site; however, many species of birds are known or expected onsite, including several reported raptor sightings.

Figure 5-6. Arroyo Toad

(Photo obtained from Center for Biological Diversity www.sw-center.org/swcbd/species/arroyotoad)

Figure 5-7. Two-striped Garter Snake

(Photo by Brad Hollingsworth)

OBSERVED SPECIAL-STATUS WILDLIFE SPECIES: SAN DIEGO HORNED LIZARD

STATUS			
Federal	***State***	***CNDDB***	***Other***
None	None	G4T3T4, S2S3	CDFG: California Special Concern; Protected (Full Species) Forest Service: Sensitive

San Diego Horned Lizard is 6.2-10 cm long (2.5-4 inches). General coloration is yellowish, brown, reddish, or gray, and it has a pair of dark blotches on it neck (Figure 5-8, San Diego Horned Lizard, below). Like other horned lizards ("horny toads"), the San Diego Horned Lizard is armed with dagger-like head spines ("horns") and sharp scales on its back. The number of rows of spines on each side of its body (2 rows) and throat (2-3 rows) helps distinguish this lizard from related subspecies.

Horned lizards are usually solitary. They often sit still when approached, and blend in very well with the ground; as a result, they are often difficult to see. The horned lizard diet consists mostly of ants and other insects. Females lay a clutch of 6-21 eggs between April and June. San Diego Horned Lizard belongs to the iguana family (Iguanidae).

San Diego Horned Lizard inhabits open chaparral and Coastal Sage Scrub habitats and open-canopy riparian woodlands that cross scrub habitats. It occurs mostly on sandy or friable substrates along the coastal slope of southern California. Habitat destruction and fragmentation are responsible for the continuing decline of this subspecies. It has been collected in arid upland habitats around Ojai, in the Santa Clara River Valley, and in the Santa Paula Creek and Sespe Creek drainages (Hunt 1995), which are west of the project site. Suitable habitat exists onsite on the sandy substrate associated with the sandy intermittent streambed and areas dominated by open riparian vegetation of Mint Canyon Creek, as well as adjacent scrub habitats that occur throughout the upland areas of the project site.

San Diego Horned Lizard was observed by DMEC in the aquatic habitat (Riverine Intermittent Streambed) onsite on 8 may 2001. This special-status species was observed in the northern extension of the Mint Canyon Creek portion of the project site at the Vasquez Canyon Road bridge, foraging for ants in the open sandy materials (Riverwash) forming the Riverine habitat. Two colonies of a red ant species were also observed onsite. Their presence indicates appropriate habitat and a significant food base for San Diego Horned Lizard.

Figure 5-8. San Diego Horned Lizard

(Photo by Jim Melli)

5.4.5 Impact Analysis

This section provides an assessment of potential project-related impacts on the biological resources of the project site. For all significant adverse impacts that the project is expected to have on these resources, DMEC provides mitigation measures and recommendations to avoid, minimize, or compensate for the impacts to less-than-significant levels.

DMEC botanists and biologists assessed the potential impacts, which may result from the Vasquez Water Main Project. The impact assessment is based primarily on best professional judgment, a search of referenced sources, and DMEC's experience with, and knowledge of, the habitats and requirements of the plant and animal species in the vicinity of the project site. The impact assessment was also performed by directly observing the resources existing prior to water main construction, and predicting potential impacts in order to implement measures to avoid and minimize those potential impacts to a maximum extent.

5.4.5.a Criteria and Significance Thresholds

A project would normally have an impact on Biological Resources if it would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS;
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS;
3. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

5.4.5.b Project Impacts and Recommended Mitigation Measures

The biological resources onsite may be directly and/or indirectly impacted by several general factors or mechanisms due to work performed by heavy equipment. Impact factors include: soil integrity degradation (i.e. increased erosion, soil compaction, sedimentation, and turbidity levels); vegetation damage, including sensitive/rare habitats; a temporary decrease in or alteration of habitat (quality) for plants and wildlife that might otherwise become established or frequent the area's habitats; noise and air pollution; and the potential for temporary or permanent damage or loss to wildlife and plant species, including special-status species.

Each of these potential impacts to the plants, wildlife, and habitats that may result from Vasquez Water Main Project construction contribute to the cumulative adverse affects of impacts to the total biological resources in the vicinity of the water main project and in the general region (Los Angeles County); however, not all of these impacts are considered *significant impacts*. If these impacts are determined to be significant, monitoring and/or mitigation measures are recommended for implementation to prevent and/or reduce potential impacts to less-than-significant levels.

Each of these identified potential impacts to the biological resources onsite are discussed further in the following subsections. Impacts are assessed for direct, indirect, and cumulative resource losses for the botanical and wildlife resources onsite. Mitigation measures are recommended for any significant adverse impacts resulting from the subject project.

IMPACTS TO BOTANICAL RESOURCES

The riparian vegetation onsite provides functional habitat for a number of plant and wildlife species. For example, riparian habitat is used for nesting and foraging sources for several species of birds, as well as cover and foraging habitat for small and large mammals, some of which may use the site as a movement corridor where the site vegetation provides cover from predators.

Impacts to botanical resources include permanent and temporary loss of, or damage to, plants and habitats at the project site, including the potential to impact special-status plant species observed or known to occur in the vicinity of the project site, and the potential to impact sensitive wetland habitats. No significant impacts to plant species of special status are expected to result from the water main construction work; however, damage or loss of any natural, native vegetation ultimately contributes to the degradation of a region's species diversity and ecological integrity.

Impact 5.4-1: Impact to Palustrine and Riverine Resources

The water main construction at the Mint Canyon Creek portion of the project site will result in a maximum impact area of approximately 50 feet along the length of the water main (25 feet along each side). To complete the Vasquez Water Main Project, NCWD is proposing to trench across Mint Canyon Creek (an approximate 0.27-acre total impact area) and span the two small tributary channels with the pipeline. These activities will result in a temporary impact to approximately 0.13 acre of waters of the U.S., including approximately 0.11 acre of Forested Wetland (approximately 0.03 at Data Point A, and approximately 0.08 acre at Data Point C) and approximately 0.02 acre of Riverine habitat. (See Appendix D for more details.)

Thus, the completion of the proposed project will have temporary negative effects on the overall ecosystem function of the project site creek and the associated riparian wetlands. However, the impacts to areas of jurisdiction will be compensated for, as NCWD will implement measures to avoid and minimize unnecessary impacts to waters of the U.S. and to biological resources. Furthermore, NCWD will implement a long-term monitoring program to ensure that the mitigation efforts are successful and to ensure that the impacts resulting from the project will be reduced to a less-than-significant level.

Direct impacts to wetland and riparian habitats are partially or wholly regulated by the Corps and/or CDFG pursuant to Section 404 of the Clean Water Act and Section 1600 et seq. of the California Fish and Game Code, respectively. Since over 90 percent of riparian wetland habitats have been lost in California over the last 200 years, the loss of, or damage to, riparian trees and shrubs that contribute to a sensitive habitat type is considered a *significant direct and cumulative impact*, directly and indirectly negatively affecting wildlife inhabiting it.

Palustrine (Riparian) Wetlands. Palustrine wetlands can be characterized as performing various hydrologic and geomorphologic functions; they also vary in respect to biogeochemistry, and provide functional and diverse habitat and resources for a variety of plant and wildlife species. The performance of these functions is largely dependent upon the maintenance of natural channel morphology and native plant communities.

Palustrine Broad-leaved Winter-deciduous Forested Wetland (described above in the Vegetation Types subsection) exists along the north and south bank of Mint Canyon Creek. This habitat consists of a moderately diverse flora, currently forms a stratified canopy and riparian corridor, and provides suitable and functional habitat for foraging, nesting, and migrating wildlife. Palustrine wetland is considered jurisdictional wetland since these areas of Mint Canyon Creek possessed positive indicators of all three wetland criteria (hydrophytic

vegetation dominant, hydric soils present, and hydrology present). Predominant hydrophytic vegetation in the Palustrine wetland onsite includes *Salix lasiolepis* (Arroyo Willow), *Salix lucida* ssp. *lasiandra* (Shining Willow), *Artemisia douglasiana* (Mugwort), *Urtica dioica* ssp. *holosericea* (Giant Creek Nettle), *Baccharis salicifolia* (Mulefat), *Populus fremontii* ssp. *fremontii* (Fremont Cottonwood), and *Sambucus mexicana* (Blue Elderberry).

Vegetation along the channel banks of the project site creek portion will need to be pruned, cut back, and/or removed in order to create access for the water main construction across the channel. These riparian plant species are adapted to frequent natural environmental stresses, and most are able to resprout after being broken or cut. However, the temporary alteration or removal of one or more of these tree species, in a concentrated area, will cause temporary fragmentation of an otherwise functional riparian habitat, depended upon by many species of wildlife including several expected special-status wildlife species.

The Palustrine Forested Wetland onsite is Southern Cottonwood Willow Riparian Forest (Holland 1986). This is a sensitive habitat (CDFG 2002b) since it is generally subjected to continual negative influences by humans. Its status (see Sensitive Habitats above, and Appendix C, biological resources assessment report) is primarily due to depletion by residential and commercial development, including flood control measures for such urban development. It is this combination of its rapid depletion, and dependency by wildlife, that makes this habitat, and other sensitive plant communities, subject to strict protection and mitigation measures.

The Vasquez Water Main construction activities, to be conducted in Mint Canyon Creek (an approximate 0.27-acre project site area), may substantially adversely affect existing biological resources of the project site and will result in the loss of, or disturbance to, a total of approximately 0.11 acre of the sensitive Forested Wetland. Although this number represents only a small portion of the creek to be impacted, all impacts should be minimized to the maximum extent possible, such as keeping the area of impact as small as possible. Impacts resulting from project construction activities within the sensitive riparian zone should also be compensated for by implementing specific mitigation measures (restoration).

Riverine (Aquatic) Habitats. The function of Riverine (aquatic) habitats is largely dependent upon the natural channel morphology and bordering native plant communities, both of which will be temporarily altered by the water main project. Thus, the completion of the proposed project will have temporary negative effects on the overall ecosystem function of the aquatic habitat of the Mint Canyon Creek portion of the project site.

The Riverine habitat is approximately 15 feet in width across the channel, is located within the immediate streambed (within the scour lines) of Mint Canyon Creek. The Riverine habitat onsite is classified as Riverine Intermittent Sand Streambed (described in detail above in Vegetation Types). This habitat is jurisdictional waters of the U.S., but is not determined to be a wetland under Corps jurisdiction, since it has positive indicators for the presence of only two of the three wetland criteria: (1) wetland hydrology, including drift lines, sediment deposits, and drainage patterns; and (2) sand, Riverwash hydric soils. The Riverine habitat located in the immediate active creek bottom is not dominated by hydrophytic vegetation. This habitat lacks vegetation in general, except for a few scattered *Hirschfeldia incana* (Summer Mustard) and *Ambrosia acanthicarpa* (Burweed). Approximately 0.02 acre of Riverine habitat will be impacted by the implementation of this project. (Refer to Appendix D, wetland delineation report)

Recommended Mitigation Measure 5.4-1

Two options are recommended depending on engineering feasibility: (1) avoiding direct impacts to Mint Canyon Creek by boring entirely under the creek (Option 5.4-1A), or (2) trenching through the creek (Option 5.4-1B). These options and mitigation measures are discussed below.

Option 5.4-1A. NCWD should avoid all direct impacts to Mint Canyon Creek and its habitats by boring (microtunnelling) entirely under the creek. This option would avoid impacts to existing habitats and eliminate the need to obtain permits from the Corps, CDFG, and Los Angeles Regional Water Quality Control Board

(RWQCB). It would also eliminate the need to implement habitat restoration as mitigation for temporary impacts to riparian and wetland habitats. If boring replaces the applicant proposed project, then the impacts would be *less than significant*. (See Alternative 3, Creek Avoidance, in Section 7.)

Option 5.4-1B. If NCWD implements the applicant-proposed project, NCWD must enter the creek to install the water main under Mint Canyon Creek by trenching. These activities will result in at least a temporary disturbance to the existing riparian vegetation. Impacts to the special-status Southern Cottonwood Willow Riparian Forest by trenching can be minimized to the maximum extent possible by implementing the following measures:

A. Ensure that construction equipment only cut back or cut down what is absolutely necessary for water main and construction equipment access;
B. All construction activities, within the banks of Mint Canyon Creek, should be conducted during seasons of no, or minimal, channel flows (summer/early fall);
C. A water main path through the creek channel should be selected that minimizes impacts to the existing riparian vegetation;
D. A fence should be placed around any (mature) trees, which are less efficiently replaced by mitigation/restoration efforts;
E. All active wildlife nests existing within the project site riparian vegetation should be protected and avoided by construction equipment; and
F. A biological monitor should be present during all construction activities within or adjacent to Mint Canyon Creek.

If work must be conducted when surface water flows are present, specific actions should be taken to avoid increasing water turbidity downstream. Surface water flows should be diverted around all construction activities, and no equipment should be allowed to actively work in flowing water without sedimentation and turbidity control measures in place. These control measures will be described in detail in the *Wetland Mitigation Plan and Monitoring Program for the NCWD Vasquez Water Main Project, Santa Clarita, California*, which will be adopted for impacts to biological resources.

After efforts to minimize the impacts to the riparian vegetation are implemented, NCWD should restore the project site to pre-construction conditions. This can be accomplished by implementing the following mitigation measures:

G. Regrading the project site to accommodate onsite revegetation and to accomplish natural sinuosity of the creek channel;
H. Replacing and planting selected portions of the site with indigenous riparian plant species;
I. Maintaining and irrigating the restored area;
J. Removing invasive exotic plants, such as Tocalote (*Centaurea melitensis*), and replacing them with native species to increase species diversity and habitat function; and
K. Monitoring the site for at least five (5) years after restoration plantings have been completed.

To compensate for the temporal loss of riparian habitat, the mitigation should be conducted at a ratio of 3:1. Suitable additional area for 3:1 mitigation is available immediately upstream from the water main-crossing site where habitat restoration and enhancement can be implemented to meet mitigation requirements.

In order to minimize impacts to aquatic habitat and aquatic wildlife due to alteration of the Riverine habitat onsite, DMEC recommends that the water main construction and installment be conducted during times of no active channel flows.

However, if water main construction must be conducted while active flows are present within the Riverine system, NCWD should implement these measures to minimize impacts:

L. Equipment contact with the active channel should be minimized to a maximum extent;
M. Flows should be diverted from the work area;
N. Sedimentation barriers should be installed and maintained;
O. Arising groundwater should be allowed to settle behind a downstream diversion berm prior to discharge to the primary flow channel;
P. Turbidity levels should be monitored and minimized (kept below a 20 percent increase over background turbidity); and
Q. All foreign materials and litter should be removed from the channel.

A detailed discussion and description of the mitigation and monitoring measures, that NCWD will implement to compensate for impacts resulting from the water main installment, will be adopted for the biological resources impacts.

Monitoring

A mitigation plan and monitoring program will be adopted for the biological resources impacts.

Significance after Mitigation

If the applicant proposed project is implemented, mitigation measures will be required, and the significance after mitigation would be *less than significant.*

Residual Impacts

No residual impacts to Palustrine and Riverine resources will result from the project.

Impact 5.4-2: Impact to Special-Status Plant Species

The botanical survey was conducted on 8 May 2001, and no special-status plant species were observed within the Vasquez Water Main Project site; however, several special-status plant species are expected and reported in the vicinity of the project site (as discussed above in Section 5.4.3.c, Special-Status and Sensitive Botanical Resources). There is potential to impact special-status plant species as a result of the Vasquez Water Main construction activities. However, the likelihood that any special-status plants will be affected by construction activities is low, especially considering that most of the pipeline will be constructed under existing roads, the relatively disturbed nature of the project site, and the limited area that will be disturbed.

Recommended Mitigation Measure 5.4-2

Depending on the timing of the water main construction in Mint Canyon Creek, supplemental field surveys for special-status plant species may be warranted. If the water main is not constructed until late winter, a botanical field survey should be conducted in late March to determine if any early flowering special-status plant species occur onsite. If the water main is constructed prior to March (i.e. Fall or Winter), a botanist should monitor all construction activities during work through and immediately adjacent to Mint Canyon Creek to ensure that sensitive botanical resources are not inadvertently impacted. In addition, the bounds of the work area should be fenced temporarily to clearly delineate where construction workers and equipment are, and are not, allowed.

Monitoring

A mitigation plan and monitoring program will be adopted for the biological resources impacts.

Significance after Mitigation

The significance after mitigation would be *less than significant.*

Residual Impacts

No residual impacts to special-status plant species will result from the project.

IMPACTS TO WILDLIFE RESOURCES

The identified potential impacts to the wildlife resources, as a result of constructing the Vasquez Water Main, include the following:

a. Permanent loss of, or temporary impacts to, all wildlife species, due to the use of heavy equipment and temporary streambed alteration at the project site, such as:
   - Loss of, or harm to, observed and expected terrestrial wildlife, including disturbance of breeding and nesting activities of various songbirds and fall migratory birds depending on the timing of construction,
   - Loss of, or harm to, expected aquatic wildlife species, and
   - Loss of, or harm to, the San Diego Horned Lizard and other special-status wildlife species; and

b. Permanent or temporary impacts to wildlife due to permanent loss of, or temporary alteration of, functional habitats, including:
   - The potential to impact sensitive riparian plant communities,
   - Temporary or long-term alteration of aquatic habitat, and
   - Temporary loss of foraging and cover habitats and temporary reductions in food sources for aquatic, semi-aquatic, and terrestrial wildlife (including special-status) species.

Impact 5.4-3: Impact to Wildlife Species, Including Special-Status Species

While significant impacts to the project site wildlife are not expected, the potential for temporary harm to, or permanent loss of, observed and expected **terrestrial wildlife** within the NCWD project area still exists, especially with use of heavy equipment during water main construction. For example, wildlife inhabiting areas below ground (rabbits, squirrels, snakes), amongst rocks (lizards, snakes, invertebrates), within fallen or deposited vegetation (mice, Pacific Kangaroo Rat, Virginia Opossum, Dusky-footed Woodrat, rabbits, invertebrates), or amongst the riparian canopy (invertebrates and predacious, migratory, or nesting birds), may be harmed or lost due to vegetation clearing and creek channel trenching activities associated with the use of heavy equipment. Such construction activities produce air and noise pollution, and it causes damage to riparian vegetation (tree) by trimming/removal, earth excavation, soil backfilling, and soil compaction.

Aquatic wildlife are not present onsite for most of the year; however, these resources may be present when water is flowing in Mint Canyon Creek during the winter and early spring months. The potential for temporary harm to, or permanent loss of, aquatic wildlife species will remain low as long as NCWD implements measures to prevent discharge or disturbance to the active stream channel to the maximum extent possible. However, even temporary streambed alterations and filling by heavy equipment, in an active stream channel, creates potential for increased erosion, sedimentation, and water turbidity levels, and it reduces the ecological integrity of an otherwise functional Riverine habitat.

The potential for impacts to aquatic wildlife species inhabiting the Riverine habitat onsite may increase in significance if project construction is conducted during seasons of peak channel flows. If construction activities are performed in the presence of active flows, several additional issues - including soil compaction, new channel morphology, potential for increased channel sedimentation and deposition, increased water turbidity levels, and increased erosion due to unstable bank soils - need to be addressed in order to ensure that

the Mint Canyon Creek Riverine System remains intact and sustainable after water main construction activities have ceased.

Temporary harm to, or permanent loss of, any **special-status wildlife** species is considered a *significant impact*; therefore, all potential impacts to San Diego Horned Lizard (*Phrynosoma coronatum blainvillei* [Figure 5-8]), a special-status wildlife species, which was observed during wildlife surveys onsite, should be avoided and minimized to the maximum extent possible. This water main installment project may contribute to this species' habitat destruction and fragmentation, which are ultimately responsible for the continuing decline of this reptile.

Other examples of expected special-status wildlife species that have a higher likelihood of inhabiting or frequenting the project site, including Arroyo Toad (*Bufo californicus* [Figure 5-6]) and Two-striped Garter Snake (*Thamnophis hammondii* [Figure 5-7]). These species require riparian scrub and riparian woodland habitats consistent with the Palustrine plant community present onsite. Impacts to these or any other special-status wildlife species is considered a *significant impact*; however, the potential for encountering and/or impacting these species is low considering the relatively degraded condition of the riparian vegetation present onsite. Project-related impacts to the habitat for these special-status species would be *temporary and mitigable*.

NCWD staff and heavy equipment operators should use photographs of expected special-status wildlife species, such as those in Figures 5-6, 5-7, and 5-8, to identify the special-status wildlife species that have a higher likelihood of frequenting or inhabiting the project site, and to avoid harming them during pipeline construction.

Recommended Mitigation Measures 5.4-3

To minimize impacts to **terrestrial wildlife** species observed and expected onsite, equipment operators are encouraged to avoid contact with or harm to any dens, middens, nests, etc. If nests, middens, or any other source of cover is discovered during construction activities, the nest should be flagged or fenced off as a protection measure. If wildlife is observed during construction activities, DMEC recommends that animals be allowed the chance to escape any danger that may result from construction activities. In addition, having a biological monitor onsite during construction activities is often the best means for (1) minimizing impacts to the area's wildlife (including special-status species) to the greatest extent possible, especially in the active channel and riparian vegetation; (2) handling trapped or harmed wildlife; and (3) documenting any permanent or temporary losses that require mitigation measures.

An important measure to minimize impacts to expected **aquatic wildlife** species inhabiting the project site is to ensure that the water main construction and installment will be conducted during times/seasons of no active channel flows. If construction activities are absolutely necessary at times when stream flows are present, then the same recommendations listed above in the Aquatic (Riverine) Habitat subsection should be implemented to reduce impacts as much as possible.

Since San Diego Horned Lizard, a **special-status wildlife species**, was observed onsite, the proposed project may result in negative impacts to special-status wildlife species. All areas with suitable habitat, especially the immediate area in which the lizard was observed, should be flagged or fenced off. In addition, the equipment operators should be informed of this species presence and its identification traits in order to aid in avoiding impacts to this species to the maximum extent possible (see Figure 5-8 and the Observed Special-status Wildlife Species subsection above for a detailed physical description of San Diego Horned Lizard).

To avoid impacts to all special-status wildlife species observed and expected onsite, equipment operators should avoid contact with or harm to any special-status species and any of their sources of cover (nest, midden, hole, etc.). If a special-status species is discovered or encountered during construction activities, animals should be allowed the chance to escape any danger that may result from construction work, and the onsite biological monitor should be notified in order to implement all measures necessary to protect the sensitive

species. Again, having a biological monitor onsite during construction activities is often the best means for minimizing impacts to special-status species to the greatest extent possible, handling trapped or harmed wildlife, and documenting permanent or temporary losses requiring mitigation measures.

All existing habitat for the San Diego Horned Lizard should be replaced onsite and in-kind after all water main installation activities have been completed. Implementation of the proposed wetlands mitigation and monitoring program should result in full restoration of the San Diego Horned Lizard habitat onsite.

Monitoring

A mitigation plan and monitoring program will be adopted for the biological resources impacts.

Significance after Mitigation

The significance after mitigation would be *less than significant.*

Residual Impacts

No residual impacts to wildlife species, including special-status species, will result from the project.

Impact 5.4-4: Impact to Foraging and Cover Habitats

The Palustrine Forested Wetland vegetation observed in the Mint Canyon Creek portion of the project site is used as nesting and foraging habitat for several species of birds, and cover and foraging habitat for small and large mammals, some of which may have used the site as a movement corridor where the site vegetation provided cover from predators. The function of the Palustrine habitat is improved by the presence of natural upland vegetation and habitats creating cumulative high species richness for the Mint Canyon area.

When functional wildlife habitat, consisting of ample foraging and cover resources, is degraded or negatively impacted, a temporary reduction in various food sources for aquatic, semi-aquatic, and terrestrial wildlife species typically follows. For example, stream channel disturbances - such as changes in channel morphology, filling of channel materials, surface water quality degradation (increased siltation, turbidity levels, and sedimentation), and removal of mature native vegetation within the water column of Riverine habitats - may result in short-term reductions of aquatic invertebrates, which are a valuable food source for many wildlife species. Furthermore, damaging or clearing plants contributing to a functional wildlife habitat will result in a shortage of cover, nesting, and breeding resources vital for several wildlife species' survival. Therefore, impacts to foraging and cover habitats, contributing to the function of a region's ecosystem, should be minimized and avoided as much as possible.

The Vasquez Water Main Project will result in unavoidable temporary impact to approximately 0.13 acre of waters of the U.S., including approximately 0.11 acre of Forested Wetland and approximately 0.02 acre of Riverine habitat. The installation of this water main will also result in unavoidable temporary impacts to approximately 0.14 acre of upland habitat (Chenopod Scrub) in the Vasquez Canyon Road bridge area.

Recommended Mitigation Measures 5.4-4

Two options are recommended depending on engineering feasibility: (1) avoiding direct impacts to Mint Canyon Creek by boring entirely under the creek (Option 5.4-4A), or (2) trenching through the creek (Option 5.4-4B). These options and mitigation measures are discussed below.

Option 5.4-4A. NCWD should avoid all direct impacts to Mint Canyon Creek and its habitats by boring (microtunnelling) entirely under the creek. This option would avoid impacts to existing habitats and eliminate the need to obtain permits from the Corps, CDFG, and Los Angeles RWQCB. It would also eliminate the need to implement habitat restoration as mitigation for temporary impacts to riparian and wetland habitats. If

boring replaces the applicant proposed project, then the impacts to foraging and cover habitats would be *less than significant*. (See Alternative 3, Creek Avoidance, in Section 7.)

Option 5.4-4B. If NCWD implements the applicant-proposed project, NCWD must enter the creek to install the water main under Mint Canyon Creek by trenching. These activities will result in at least a temporary disturbance to the existing vegetation. Impacts to the foraging and cover habitats, required by wildlife species of the project site, may be minimized by similar recommendations as listed above in the Terrestrial Wildlife Species subsection:

- Keep habitat impacts to only those areas absolutely required for the water main installation;
- Avoid contact or harm to any dens, middens, and nests;
- Allow any wildlife observed during construction activities the chance to escape any danger; and
- Have a biological monitor onsite during construction activities to help prevent harm to wildlife and to document impacts that require mitigation.

Monitoring

A mitigation plan and monitoring program will be adopted for the biological resources impacts.

Significance after Mitigation

The significance after mitigation would be *less than significant.*

Residual Impacts

No residual impacts to foraging and cover habitats will result from the project.

CUMULATIVE IMPACTS

The proposed project will be of short duration. *No cumulative impacts* to biological resources are anticipated.

GROWTH-INDUCING IMPACTS

By removing an impediment to growth in the Vasquez Water Main service area, a potential exists for impacts to existing biological resources by:

- Decreasing habitat as a direct and indirect result of building houses and other structures, and brush clearance for fire hazard control; and
- Increasing nonnative plant and wildlife species, some of which are invasive, into the service area, which would out-compete native species.

Therefore, significant potential impacts to existing biological resources within the service area may occur as a result making available additional water supply to potential new developments.

Recommended Mitigation Measure

There is no feasible mitigation measure available to NCWD since NCWD has no authority over projects that are approved by the County of Los Angeles.

NCWD is a special district, a legitimate subdivision of the State government, established under the authority of Section 3000, Division 12 of the California Water Code. Providing water service to municipal and industrial users is the essence of the mission of NCWD. As a special district, NCWD only has authority to control those issues currently enacted by ordinance by the Board of Directors. NCWD has no other authority over planning or development in their service area. Therefore, NCWD has no authority to control adverse impacts created by the potential growth from the water service. However, the normal discretionary permit process within the County of Los Angeles would identify and avoid, minimize, or reduce impacts according to CEQA, or require mitigation to do so.

Monitoring

NCWD has no authority over projects or activities that have potential to degrade biological resources resulting from projects implemented or approved by other agencies other than its own projects, and have no authority to conduct such monitoring.

Significance after Mitigation

The significance after mitigation would be *significant and unavoidable*. Therefore, a Statement of Overriding Consideration must be adopted.

5.5 CULTURAL RESOURCES

Conejo Archaeological Consultants prepared a Negative Archaeological Survey Report of approximately 1.5 linear miles for the NCWD Vasquez Canyon Road Water Pipeline Project (Maki 2001), and the following subsections summarize their findings. For additional information see Appendix E, Negative Archaeological Survey Report of Approximately 1.5 Linear Miles for the Newhall County Water District Vasquez Canyon Road Pipeline Project, Near Santa Clarita, Los Angeles County, California (USGS 7.5-minute Mint Canyon Quadrangle).

5.5.1 Setting

The project site lies within the historic territory of the Tataviam Native American group. Knowledge of this group is limited, although archaeological evidence indicates similarities to adjacent Takic, Hokan, and Yokut groups (King and Blackburn 1978). The Tataviam aboriginal way of life ended with Spanish colonization. Growth in the general project region was first fueled by the discovery of gold in Placerita Canyon in 1842.

5.5.1.a Prehistoric and Historic Resources

No prehistoric sites are recorded within a one-quarter mile radius of the project route; however, one historic site (19-002897) is recorded within one-quarter mile radius of the project route. Historic site 19-002897 consists of the foundation remains of a small hotel or residence, which was occupied primarily in the 1930s (Gensler et. al 2001). This site is located approximately 150 meters (500 feet) southwest of the southern most end of the project route and will not be impacted by the project implementation.

Five archaeological surveys have been conducted within one-quarter mile radius of the project route. Two encompassed the Sierra Highway portion of the project route as part of much larger surveys for oil pipeline and fiber optics projects (SAIC 1996, Lerch 1998). Two surveys border the middle section of the pipeline route along the west side of Vasquez Canyon Road (Dillon 1981, Whitley and Simon 1991). The majority of the project alignment along Vasquez Canyon Road was not subject to previous archaeological reconnaissance.

The listings of the National Register of Historic Places, California Historical Landmarks, California Register of Historical Resources, California Points of Historical Interest, and Los Angeles County Historic Landmarks include no properties within or adjacent to the project route.

5.5.2 Impact Analysis

5.5.2.a Criteria and Significance Thresholds

A project would normally have an impact on cultural and paleontological resources if it would:

1. Cause a substantial change in the significance of a historical resource as defined in Section 15064.5;
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;
3. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; and/or
4. Disturb any human remains, including those interred outside of formal cemeteries.

5.5.2.b Project Impacts and Recommended Mitigation Measures

IMPACT 5.5-1: IMPACT TO CULTURAL RESOURCES

Based on record search findings, field survey results, and the extent of previous ground disturbance along the NCWD water pipeline route, the proposed project is expected to have no impact on cultural resources. Therefore, no further archaeological investigation is warranted prior to or during project implementation.

Recommended Mitigation Measure 5.5-1

Although the proposed project is expected to have no impact on cultural resources, and because an archaeological survey can only confidentially assess the potential for encountering surface cultural resources remains, the following two recommendations should be incorporated as conditions of project approval:

1. In the event that prehistoric or historic resources are unearthed during project construction, all earth disturbing work within the vicinity of the find must be temporarily suspended or redirected until a qualified archaeologist has evaluated the nature and significance of the find. A Tataviam representative shall be retained to monitor any mitigation work associated with Native American cultural material.
2. If human remains are unearthed, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission.

Monitoring

With the implementation of the two mitigation measures, the proposed project is provided with the necessary monitoring during construction required for the protection of cultural and historic resources.

Significance after Mitigation

The significance after mitigation would be *less than significant.*

Residual Impacts

No residual impacts to cultural resources will result from the project.

CUMULATIVE IMPACTS

The proposed project would be of a short duration. *No cumulative* impacts to biological resources are anticipated or expected.

GROWTH-INDUCING IMPACTS

By removing an impediment to growth in the Vasquez Water Main service area, a potential exists for impacts to existing cultural resources by increasing the number of new structures and infrastructure and total area disturbed within the service area, which could result in direct and indirect impacts to those resources.

Therefore, significant potential impact to existing unknown cultural resources within the service area may occur as a result making available additional water supply to potential new developments.

Recommended Mitigation Measure

There is no feasible mitigation measure available to NCWD since NCWD has no authority over projects that are approved by the County of Los Angeles.

NCWD is a special district, a legitimate subdivision of the State government, established under the authority of Section 3000, Division 12 of the California Water Code. Providing water service to municipal and industrial users is the essence of the mission of NCWD. As a special district, NCWD only has authority to control those issues currently enacted by ordinance by the Board of Directors. NCWD has no other authority over planning or development in their service area. Therefore, NCWD has no authority to control adverse impacts created by the potential growth from the water service. However, the normal discretionary permit process within the County of Los Angeles would identify and avoid, minimize, or reduce impacts according to CEQA, or require mitigation to do so.

Monitoring

NCWD has no authority over projects or activities that have potential to impact cultural resources resulting from projects implemented or approved by other agencies other than its own projects, and have no authority to conduct such monitoring.

Significance after Mitigation

The significance after mitigation would be *significant and unavoidable*. Therefore, a Statement of Overriding Consideration must be adopted by the NCWD for this impact.

5.6 GEOLOGY AND SOILS

5.6.1 Setting

Mint Canyon is bordered by Bouquet Canyon to the west and Soledad Canyon to the east. The project site is approximately eight miles east of the City of Saugus, and approximately 13 miles west of the City of Acton.

The total project site follows an approximate 2.4-mile path beginning on Sand Canyon Road (where a portion of the water main has already been installed), heads northeast on Sierra Highway, then heads northwest on Vasquez Canyon Road, intersecting Mint Canyon Creek, and ending on Vasquez Canyon Road.

The Mint Canyon Creek portion of the project site flows generally in a southwesterly direction and runs more-or-less parallel with Sierra Highway (see Figures 2-2 and 5-5). In addition to Mint Canyon Creek, two unnamed tributaries to Mint Canyon Creek also cross the water main route.

5.6.2 Geologic Conditions and Topography

The Liebre Mountains region, in which Mint Canyon lies, is geologically complex (Jennings and Strand 1969). The Liebre Mountain-Sawmill Mountain-Sierra Pelona crest and adjacent uplands are eroded largely from pre-Cenozoic basement complex, as are significant portions of Portal Ridge. Liebre Mountain itself is

predominantly composed of granitic rocks, while Sawmill Mountain is dominated by gneiss. An extensive area of ancient Pelona schist nearly bisects the range from Sierra Pelona and adjacent Portal Ridge southwestward to San Franciquito Canyon. The lower, hilly regions to the west, south, and southeast of the crest are characterized by Cenozoic sedimentary and volcanic rocks, which are often deformed and eroded. The area occupied by these substrates represent two ancient depositional basins, including the Ridge Basin along the west and Soledad Basin along the southeastern edges of the range. These sediments were originally deposited under largely marine conditions. Subsequently, they have been extensively uplifted and deformed, resulting in areas of striking badlands topography, as well as the unusual formations in the Vasquez Rocks area near Agua Dulce. (Dibblee 1982; Boyd 1999.)

5.6.3. Soils

Several soil types are mapped along the path of the installed and proposed portions of the NCWD Vasquez Water Main project. Starting from the southern end of the pipeline path, the soil type mapped along Sand Canyon Road is Saugus loam, 30 to 50 percent slopes, eroded (ScF2). The two soil types mapped along Sierra Highway are Hanford sandy loam, 0 to 2 percent slopes (HcA) and Saugus loam, 30 to 50 percent slopes (ScF). Finally, the five soil types mapped along Vasquez Canyon Road include: HcA; ScF; Mocho loam, 2 to 9 percent slopes (MpC); Sorrento loam, 2 to 5 percent slopes (SsB); and Castaic-Balcom silty clay loams, 30 to 50 percent slopes, eroded. (Woodruff 1970.)

The Vasquez Water Main Project, which originates from an existing water main at the corner of Sand Canyon and Soledad Canyon Roads, will be installed under the above-mentioned existing roads (Sand Canyon Road, Sierra Highway, and Vasquez Canyon Road), except in three locations where the water main will cross natural watercourses, including Mint Canyon Creek. The Mint Canyon Creek crossing will involve trenching through the creekbed a few feet upstream from the Vasquez Canyon Road bridge. The remaining two water main crossings, which cross over two ephemeral drainages, will span the drainages and are not expected to involve any soil disturbances within the channels.

Since the pipeline will be installed under existing roads, below is a description of the soils in the Mint Canyon Creek portion of the project, where the water main will require trenching through the immediate creekbed. (Note: The soil types described below are also the soil types mapped at the two ephemeral drainage crossings.)

The Soil Conservation Service Soil Survey for the Antelope Valley Area, California (Woodruff 1970) mapped the Mint Canyon Creek area as consisting of Hanford Series and Mocho Series.

5.6.3.a Hanford Series

Hanford Series is an excessively drained soil that is formed in granitic alluvium on alluvial fans. The surface layer in a typical profile is pale-brown (10YR 6/3) coarse sandy loam about 8 inches thick. Below is light yellowish-brown (10YR 6/4) coarse sandy loam to 39 inches, and light yellowish-brown (10YR 6/4) gravelly loamy coarse sand that extends to a depth of at least 70 inches. The mapped soil unit, located in the immediate vicinity of the impact area (where the data points are established), is Hanford sandy loam, 0 to 2 percent slopes. This soil type is predominantly sandy loam and fine sandy loam throughout, runoff is slow, the hazard of erosion is slight, and fertility is moderate. An inclusion of the Hanford Series is Riverwash, which was determined onsite and is described below after Mocho Series. (Woodruff 1970.)

5.6.3.b Mocho Series

Mocho Series consists of moderately drained soils that have formed in sedimentary alluvium on alluvial fans along major drainage ways. Typically, the soil surface layer is grayish-brown loam (10YR 5/2) about 15 inches thick. Below is grayish-brown (2.5Y 5/2) calcareous loam to 29 inches, light brownish-gray (2.5Y 6/2) calcareous loam to 33 inches, and grayish-brown (2.5Y 5/2) calcareous loam again to 90 inches. The mapped soil unit, located upstream from the impact area (where the rest of the site was surveyed for biological resources), is Mocho loam, 2 to 9 percent slopes. This soil occupies fairly narrow alluvial fans, runoff is slow to medium, and the hazard of erosion is slight to moderate. (Woodruff 1970.)

5.6.3.c Riverwash

The soil material observed within the impact area of the Riverine system onsite (in the immediate creek channel) consists of Riverwash materials (a nonsoil), which is an inclusion of the mapped Hanford Series soil unit (described above). Riverwash generally occurs within the bed of intermittent streams, and consists of highly stratified, water-deposited layers of stony and gravely sand that contains relatively small amounts of silt and clay. It is characterized as having high permeability, but is present as the result of frequent and regular fluvial processes. Riverwash is frequently inundated during high water flow immediately following storms, where fresh deposits of alluvium are laid down and removed as the result of streambank erosion. Riverwash is subject to frequent disturbance, such as scouring and deposition, and the development and establishment of riparian vegetation is severely limited. It is considered hydric by the National Resource Conservation District (1992). (Woodruff 1970, Edwards et al. 1970.)

Soil is lacking in the Palustrine Riparian Woodland habitat, on the banks of Mint Canyon Creek, as these areas also consist of Riverwash nonsoil materials. The Soil Conservation Service (Woodruff 1970) maps the soils of the Palustrine Riparian Woodland habitat as consisting of the same soil units mapped for the Riverine system, including Hanford Series (with Riverwash as an inclusion of Hanford Series) and Mocho Series (described above).

5.6.4 Geologic Hazards

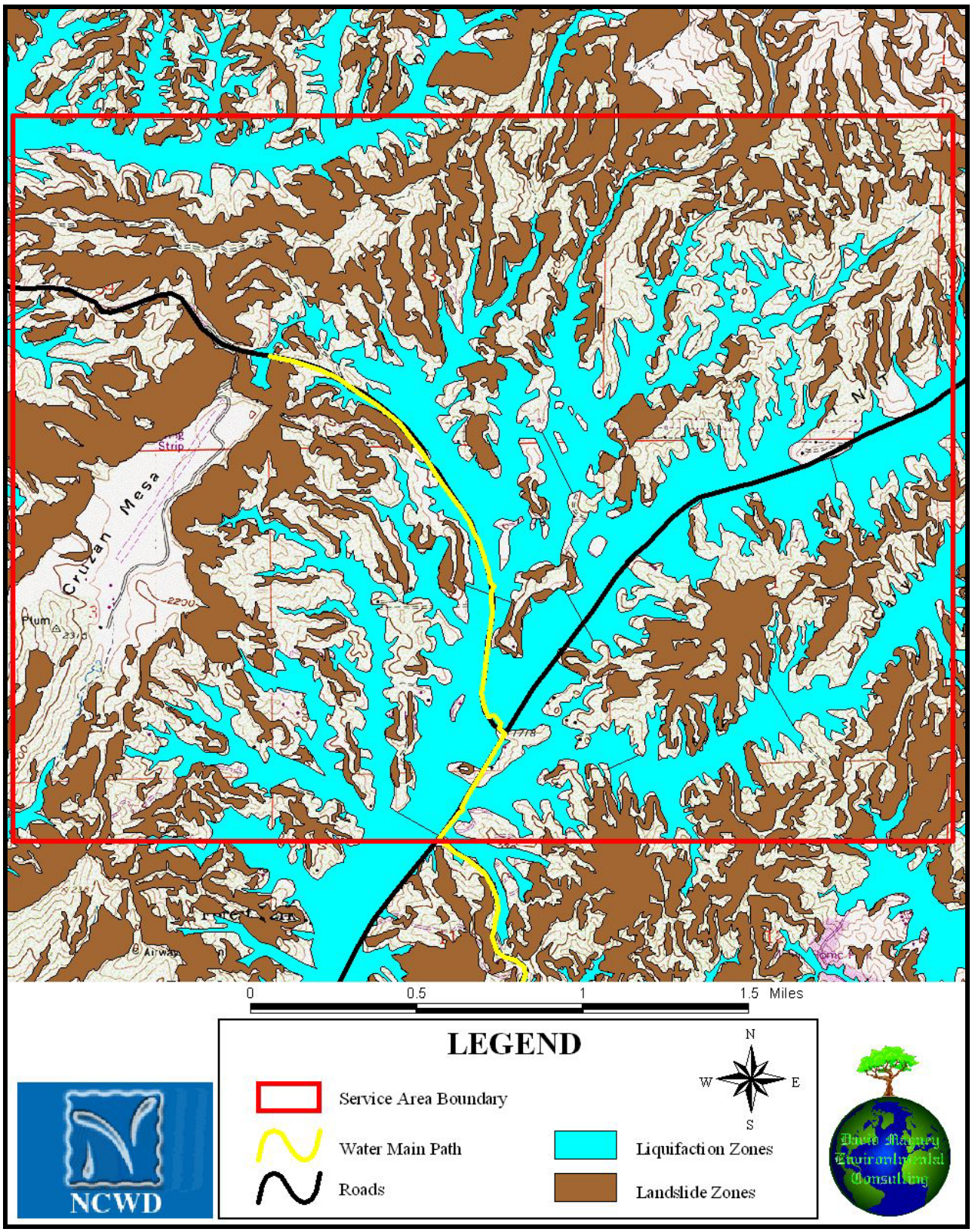
Geologic hazards for the purposes of this analysis include those hazards that put life and property at risk, such as soils that liquefy as the result of ground shaking, earthquake faults, and areas with unstable slopes prone to slumping, creep, or failure. The U.S. Geologic Survey and California Geologic Survey section of the State Department of Conservation (formerly the Department of Mines and Geology) have recently completed mapping of liquefaction and landslide areas, which is illustrated on Figure 5-9, Seismic Hazards Map for the Mint Canyon Quadrangle[19], which shows those areas within the service area that have potential for liquefaction and landslides.

5.6.4.a Liquefaction Hazard Zone

Liquefaction hazard zones occur within the Vasquez Water Main Project pipeline route and throughout the service area, located primarily on sandy soils, such as Riverwash and other lowland soils. More precise location mapping is illustrated on Figure 5-9, referenced above in this section. Subsidence and other earth movement in these zones could affect structures and facilities located in liquefaction hazard zones during seismic events. Construction in these zones is subject to State and County Uniform Building Code (UBC) requirements. The Vasquez Water Main Project pipeline will be subject to review by the County and construction will be consistent with UBC requirements.

[19] Geologic hazards data were downloaded from the California Department of Mines and Geology website in October 2003.

Figure 5-9. Seismic Hazards Map for the Mint Canyon Quadrangle



5.6.4.b Seismic Hazard Zone

Seismic hazard zones (sometimes referred to as Alquist-Priolo hazard zones) consist of areas containing active earthquake faults. Land located within these zones has the potential for ground surface vertical or lateral displacement that could cause damage to structures and infrastructure crossing them. The California Geologic Survey maintains and updates the mapping of these seismic hazard zones. The State and County UBC include code requirements for construction within and adjacent to these zones. Construction of the Vasquez Water Main Project will be subject to review by the County and construction will be consistent with UBC requirements.

5.6.4.c Landslide Hazard Zone

Landslide hazard zones are those areas, generally on steep slopes, that have high potential to lose their integrity and creep, slump, or slide downslope by gravitational forces. Such slope failure has potential to cause damage to structures and infrastructure onsite or located downslope. Areas of the service area considered to have landslide hazard potential are shown on Figure 5-9. Construction in these zones is subject to State and County (UBC) requirements. The Vasquez Water Main Project pipeline will be subject to review by the County and construction will be consistent with UBC requirements.

5.6.5 Impact Analysis

The entire project will be built below grade in the existing right-of-way on Sierra Highway, and Vasquez Canyon Road, with the exception of the crossing of Mint Canyon Creek. Therefore, it will not be affected by any geologic conditions in the area.

5.6.5.a Criteria and Significance Thresholds

A project will normally have an impact of geologic resources if the project would expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

1. Rupture of a known earthquake fault;
2. Strong seismic ground shaking;
3. Seismic-related ground failure;
4. Liquefaction; and/or
5. Landsides.

5.6.5.b Project Impacts and Recommended Mitigation Measures

DIRECT SIGNIFICANT IMPACTS

The proposed pipeline project will not result in any significant impacts to geological resources, or put humans or buildings and public structures at risk. There are no seismic hazards noted on the Seismic Hazards Map from the California Department of Mines and Geology (see Figure 5-9). The only possible impact may be strong ground shaking or movement in the event of fault rupture. This may cause the water line to rupture and spill potable water into the street. The possibility is not considered a significant impact on the environment. Therefore, the impact is considered *less than significant*.

Recommended Mitigation Measure

Since impacts to geology and soils are less than significant, no mitigation measures are required.

Monitoring

Since impacts to geology and soils are less than significant, none monitoring is required.

Significance after Mitigation

The significance after mitigation would remain *less than significant.*

Residual Impacts

No residual impacts to geology and soils will result from the project.

CUMULATIVE IMPACTS

There are *no cumulative impacts* associated with the proposed project. The project list in Table 3-2, Cumulative Projects Summary, shows past and present projects in the area. Further, the development in the area is shown to be consistent with the Santa Clarita Valley Area Plan for the County of Los Angeles. The permit process for discretionary projects will provide mitigation for any cumulative impacts that may occur. Therefore, there are *no cumulative impacts* associated with the NCWD pipeline project and are considered to be *less than cumulatively considerable*.

GROWTH-INDUCING IMPACTS

By removing an impediment to growth in the Vasquez Water Main service area, a potential exists for impacts to future structures and infrastructure by increasing the number of new structures and infrastructure that may be built on geologic hazard zones. However, existing building codes and regulations would prohibit anyone to build structures or infrastructure without designing the structure to avoid or accommodate potential affects from liquefaction, ground shaking from earthquakes, or landslides. The Vasquez Water Main Project would not result in significant growth-inducing impacts.

Recommended Mitigation Measure

There is no feasible mitigation measure available to NCWD since NCWD has no authority over projects that are approved by the County of Los Angeles.

NCWD is a special district, a legitimate subdivision of the State government, established under the authority of Section 3000, Division 12 of the California Water Code. Providing water service to municipal and industrial users is the essence of the mission of NCWD. As a special district, NCWD only has authority to control those issues currently enacted by ordinance by the Board of Directors. NCWD has no other authority over planning or development in their service area. Therefore, NCWD has no authority to control adverse impacts created by the potential growth from the water service. However, the normal discretionary permit process within the County of Los Angeles would identify and avoid, minimize, or reduce impacts according to CEQA, or require mitigation to do so.

Monitoring

NCWD has no authority over land use changes and increased demand for water and so cannot monitor for potential growth inducement.

Significance after Mitigation

The significance after mitigation would be *significant and unavoidable*; therefore, a Statement of Overriding Consideration must be adopted by the NCWD for this impact.

5.7 HAZARDS AND HAZARDOUS MATERIALS

5.7.1 Setting

During the construction of water pipelines, great care must be taken to ensure that bacteria do not contaminate the interiors of pipes when the pipe is sealed for water delivery. This potential for bacteria growth can contaminate the water and cause serious health and safety problems. Protocols for the disinfection of all new and repaired potable water mains are established by American National Standards Institute (ANSI) and the American Water works Association (AWWA). NCWD uses the protocols established by ANSI/AWWA in the Standard Operating Procedure (SOP), AWWA Standard for Disinfecting Water Mains, ANSI/AWWA C651-99.

5.7.1.a Hazardous Materials Related to Project Uses

According to the ANSI/AWWA SOP, all new water mains shall be disinfected before they are placed in service. Once the pipeline has been pressure tested the chlorinating process begins. A sodium hypochlorite solution not to exceed 70 mg/L is placed inside the new pipeline segment and must remain in the pipeline and have a constant contact time of 24 hours. The following basic disinfection procedures are performed:

1. Inspecting all materials to be used to ensure the integrity of the materials (pressure testing).
2. Preventing contaminating materials from entering the water main during storage, construction, or repair and noting potential contamination at construction site.
3. Removing, by flushing or other means, those materials that may have entered the water main.
4. Chlorinating any residual contamination that may remain and flushing the chlorinated water from the main.
5. Protecting the existing distribution system from backflow caused by hydrostatic pressure test and disinfection procedures.
6. Documenting that an adequate level of chlorine contacted each pipe to provide disinfection.
7. Determining the bacteriological quality by laboratory test after disinfection.
8. Final connection of the approved new water main to the active distribution system.

The flushing of chlorinated water in number 4 above is accomplished first by dechlorinating the water using sodium thiosulfate. This chemical neutralizes the chlorine in the water and makes it safe to discharge.

5.7.1.b Hazardous Materials Related to Current Surrounding Site Uses

Mint Canyon Elementary School is situated off Sierra Highway generally to the east. The school facility is over 400 feet from the highway and the proposed construction site for the water pipeline extension. A mobile home park is located northwesterly from Sierra Highway and from Vasquez Canyon Road. These two sensitive receptors are the only two possible receptors potentially impacted by the chemicals used to disinfect the pipeline material during construction.

All chemicals are contained within a specially built trailer for safety precautions, and the dechlorinated water released after disinfection is perfectly safe. Neither receptor would likely smell chlorine during the disinfection process.

5.7.2 Impact Analysis

Due to the safety features provided by NCWD, for the storage and use of the above mentioned chemicals, plus the widely accepted SOP by ANSI/AWWA for the disinfection of the water main pipeline, before they are placed into service, the possibility for risk of upset and accidental release of hazardous materials is extremely remote and is considered to be *less than significant.*

5.7.2.a Criteria and Significance Thresholds

The only potential for an impact is the use of Sodium Hypochlorite in close proxcimity to Mint Canyon elementary School. A project will have an impact if it will emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

5.7.2.b Project Impacts and Recommended Mitigation Measures

IMPACT 5.7-1: IMPACT FROM RISK OF HAZARDOUS MATERIALS

The only possibility for a potential impact related to the use of hazardous materials identified in the Initial Study is the following: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. No other risks were identified during this impact assessment. The proposed project would not likely release hazardous materials into the environment. However, accidents resulting from mishandling of hazardous materials could occur.

Recommended Mitigation Measure 5.7-1

The NCWD will implement all protocols for the disinfection of all new and repaired potable water mains established by ANSI and AWWA. NCWD currently uses the protocols established by ANSI/AWWA in the SOP, AWWA Standard for Disinfecting Water Mains, ANSI/AWWA C651-99, and will continue to use these protocols to prevent risk of spilling hazardous materials at the project site.

Monitoring

NCWD shall monitor for compliance on a daily basis. NCWD shall assign the duties for conducting the compliance monitoring to a staff member or contractor.

Significance after Mitigation

The significance after mitigation would be *less than significant.*

Residual Impacts

No residual impacts from risk of hazardous materials will result from the project.

CUMULATIVE IMPACTS

The proposed project is of short duration. *No cumulative impacts* to biological resources are anticipated.

GROWTH-INDUCING IMPACTS

By removing an impediment to growth in the Vasquez Water Main service area, a potential exists for impacts to sensitive receptors by increasing the number of new structures and infrastructure that may be built on service area. However, existing regulations would prohibit or regulate persons or entities using hazardous materials. The Vasquez Water Main Project would not result in significant growth-inducing impacts.

Recommended Mitigation Measure

There is no feasible mitigation measure available to NCWD since NCWD has no authority over projects that are approved by the County of Los Angeles.

NCWD is a special district, a legitimate subdivision of the State government, established under the authority of Section 3000, Division 12 of the California Water Code. Providing water service to municipal and industrial users is the essence of the mission of NCWD. As a special district, NCWD only has authority to control those issues currently enacted by ordinance by the Board of Directors. NCWD has no other authority over planning or development in their service area. Therefore, NCWD has no authority to control adverse impacts created by the potential growth from the water service. However, the normal discretionary permit process within the County of Los Angeles would identify and avoid, minimize, or reduce impacts according to CEQA, or require mitigation to do so.

Monitoring

NCWD has no authority over land use changes and increased demand for water and so cannot monitor for potential growth inducement.

Significance after Mitigation

The significance after mitigation would be *significant and unavoidable*; therefore, a Statement of Overriding Consideration must be adopted by the NCWD for this impact.

5.8 HYDROLOGY AND WATER QUALITY

5.8.1 Setting

The NCWD pipeline project is located within the existing right-of-way for a total of 2.4 miles along Vasquez Canyon Road (1.48 miles), Sierra Highway (Mint Canyon Road) (0.40 miles), and Sand Canyon Road (0.70 miles). The first phase of the project, a portion of the water main has already been installed immediately south of the southern project site boundary. This installed 18-inch diameter pipeline is approximately 0.70 mile in length that begins on Sand Canyon Road at the approximate coordinates of 34º26.671' N, 118º25.204' W and heads northwest for approximately 0.46 mile and then heads northeast on Sierra Highway for approximately 0.24 mile, ending where the proposed uninstalled portion of the project site begins.

The second phase of the project is to construct the second part of the pipeline within the project site, following the remaining approximate 1.64 miles of 18- inch diameter pipeline, beginning on Sierra Highway, at the approximate coordinates of 34º27.157' N, 118º25.273' W, heading northeast for approximately 0.16 mile, then heading north/northwest on Vasquez Canyon Road for approximately 1.48 miles.

5.8.1.a Topography

Topography of the project site and service area is described in Section 3.1.1.a. The pipeline will be installed below grade in existing roadways. The roadbed is generally flat with the portion from Sand Canyon descending to Sierra Highway and the portion from Sierra Highway to Vasquez Canyon as ascending. Mint Canyon Creek is the most important topographic feature along the project route. The topography of the service area consists of low hills and gently sloping valleys and canyons, which cause surface water to drain and flow towards Mint Canyon Creek at the south end of Vasquez Canyon Road. Since the stream channels in Vasquez Canyon are ephemeral with little to no wetland or riparian vegetation, a majority of the precipitation received in the service area is absorbed into the soils and geologic formations locally and recharges the local

groundwater aquifer(s). Groundwater is currently the only source of water to existing dwellings and businesses in the service area, supplemented by trucked-in water in some instances.

5.8.1.b Water Supply and Current Demand

NCWD is one of four water purveyors operating in the Santa Clarita area in conjunction with Castaic Lake Water Agency (CLWA). Below is a brief description of the four water purveyors operating in the Santa Clarita area:

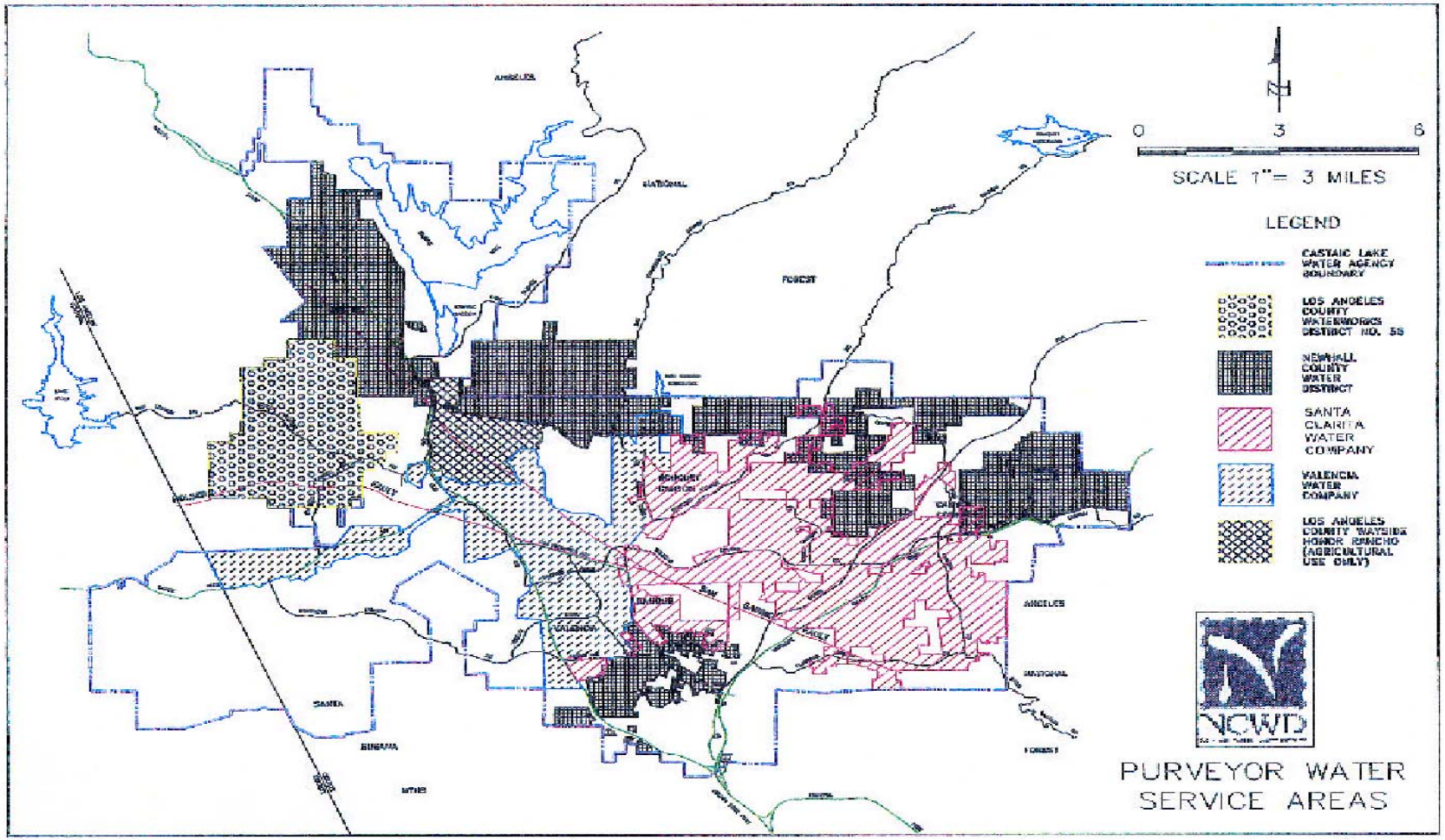
1. The NCWD service area lies in four distinct geographical areas of the Valley: Newhall, Pinetree, Tesoro, and Castaic. NCWD service connections are spread over a 34-square-mile area. The NCWD supplies water from both groundwater wells and Agency imported water.
2. The Los Angeles County Waterworks District No. 36 service area encompasses approximately 7,635 acres in the Hasley Canyon area and the unincorporated community of Val Verde. District No. 36 obtains its full water supply from the CLWA.
3. Santa Clarita Water Division (SCWD) of the Castaic Lake Water Agency service area includes portions of the City of Santa Clarita and unincorporated portions of Los Angeles County in the communities of Saugus, Canyon County, and Newhall. The SCWD supplies water from both groundwater wells and CLWA imported water.
4. Valencia Water Company (VWC) service area includes a portion of the City of Santa Clarita and several unincorporated communities. The service area is approximately 25 square miles. The VWC supplies water from both groundwater wells and CLWA imported water.

At the end of 1999, according to the Urban Water Management Plan (UWMP) 2000, the retail water purveyors served about 50,000 connections, as follows (and as illustrated on Figure 5-10, NCWD Purveyor Water Service Areas):

Newhall County Water District……..……..	6,758
Los Angeles County Waterworks District No. 36…	36,827
Santa Clarita Water Company……	21,100
Valencia Water Company……..	20,865
Total Connections…….	**49,550**

For southern California, the Southern California Association of Governments (SCAG) is responsible for analyzing economic trends and managing growth throughout the region. As part of its analysis, SCAG develops regional and sub-regional demographics, which include projected housing, jobs, and population migration patterns, and then produces regional growth management plans such as the 1998 Regional Transportation Plan (RTP). Some agencies and utilities use this information provided by SCAG to determine long-term trends. Currently, SCAG has determined the existing and projected demographics for the CLWA's service area through 2020.

Figure 5-10. NCWD Purveyor Water Service Areas



Reprinted from NCWD Urban Water Management Plan 2000.

Population growth projections for the CLWA's service area have been made several times by SCAG (Series II projections, and RTP). The first projection accomplished by SCAG was part of the Series II projection published in 1994. As part of this projection, SCAG projected the total population of the CLWA's service area would be in excess of 575,000 people by 2020. The second most recent projection accomplished by SCAG was part of the 1998 RTP. As part of this projection, SCAG projected the total population of the CLWA's service area would be about 506,000 people by 2020.

As evident between these two SCAG projections (four years apart), the projected population for the CLWA's service area has been lower by 15 percent. As discussed in SCAG's 1998 RTP, to provide for population growth, employment and new households will need to increase within the CLWA's service area. According to SCAG's plan, the total number of occupied households in the CLWA's service area will increase from 58,526 to 96,262 by 2010, representing an annual increase of about 3,775. In addition, to meet SCAG's projection, by 2020 the number of occupied households in the CLWA's service area will increase from 96,262 in 2010 to 149,215 in 2020, reflecting an average annual increase of about 5,300 new households per year (see Table 5-11, Total Existing and Planned Water Supplies [acre-feet per year]). NCWD staff has prepared population projections for their service areas and have determined that by the year 2020 approximately 65,000 people will inhabit the area.

Typically, water usage consists of residential, commercial, industrial, recreational, agricultural, public infrastructure, and other purposes, which include environmental, fire fighting, line cleaning, and system losses. Presently, the largest sector water use in the CLWA's service area is residential, accounting for approximately 60 percent of the total, with commercial/industrial and community landscaping making up 10 percent of the total, and agricultural accounting for 24 percent. As part of the CLWA's long-term Capital Improvement Program, funding has been established to provide for the future purchase of additional supplies, implementation of recycled water programs, and enhancement of groundwater banking/conjunctive-use programs both inside and outside the CLWA's service area. Implemented over time, these measures are expected to assure CLWA that sufficient supplies will exist to meet water demands (UWMP 2000).

Table 5-11. Total Existing and Planned Water Supplies (acre-feet per year)

Source[20]	Average/Normal Year	Dry Year
Local Supplies		
Groundwater:		
Alluvial Aquifer	30,000-40,000	30,000-35,000
Saugus Formation	7,500-15,000	11,000-15,000
Saugus Formation (new wells)*	--	10,000-20,000
Stormwater*	--	--
Recycled Water*	1,700-17,000	1,700-17,000
Imported Supplies		
SWP Supplies	56,800-95,200	37,900-75,800
Water Banking/conjunctive-use*	--	105,000
Water Transfers*	5,200-8,700	3,500-6,900
Desalination*	2,000-5,000	2,000-5,000
Total Supplies	**103,200-180,900**	**201,100-279,700**

[20] *=Planned programs for future implementation.

NCWD has completed many Water Supply and Demand Assessments, pursuant to Water Code Section 10910 and recent state legislation SB 610. These Water Supply and Demand Assessments are for development projects of 500 dwelling units or more (although large industrial projects are also weighed in the same balance for water availability). Should the legal jurisdiction in which the project is located, which would include the City of Los Angeles, the County of Los Angeles, and the City of Santa Clarita, determines that NCWD is the public water system which may supply water to the project, a Water supply and Demand Assessment is completed and approved by the NCWD Board of Directors.

This case-by-case review of available water supply is measured against the most recent UWMP. If the project was included in the UWMP, and the water availability planning for the area, and supported by evidence of water availability, the Board of Directors may make a positive finding with regards to that project. The Board of Directors has also made negative findings regarding water availability concerning projects not included in the UWMP.

The identification of existing water supply entitlements, water rights, and water service contracts of the district are outlined in the UWMP. A portion of NCWD water rights is derived from CLWA. Likewise, CLWA, as a State Water Project Contractor, is dependant on those contracts with the California Department of Water Resources to deliver 80 percent of a 95,200 acre-feet entitlement, 50 percent of the time. An amendment to the State Water Project Contracts, called the "Monterey Amendment", was challenged in court by the Planning and Conservation League; and, as a result of that litigation, further environmental assessments will be undertaken by the Department of Resources. The Friends of the Santa Clara River has challenged the recent EIR of CLWA, which was tiered upon the Monterey Amendment EIR. That legal challenge was recently resolved in the trial court by entry of a stipulated judgment granting a preemptory writ of mandate compelling CLWA to decertify its earlier EIR. The Court will retain jurisdiction until the CLWA complies with CEQA. The order further provides that CLWA is not prohibited from using water to which it is entitled, but it also provides that the petitioner is free to revive the dispute based upon what it considers to be the actual "improper" use of such additional water. Lastly, the Friends of the Santa Clara River and the County of Ventura have filed challenges in court against NCWD's UWMP. The trial court has rejected these challenges by but an appeal is likely.

As demonstrated above, the UWMP outlines the NCWD's supply of water to their service area. That supply is demonstrated to be adequate for the planning horizon of the General Plan and for the City of Santa Clarita. The final resolution of the above mentioned court cases might alter the status of water availability in the future. However, regarding the basis for this EIR, the information found in the UWMP, and the Water Supply and Demand Assessments (NCWD 2002a, 2002b, 2003a, 2003b), is the data from which water availability and demand review are based.

5.8.2 Impact Analysis

5.8.2.a Criteria and Significance Thresholds

A project will normally have an impact on Hydrology and Water Quality if the project would:

1. Violate any water quality standards or waste discharge requirements;
2. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge;
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site;
4. Substantially alter the existing drainage pattern of the site of area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;

5. Create or contribute runoff water that would exceed the capacity of existing stormwater drainage systems or provide substantial additional sources of polluted runoff;
6. Otherwise substantially degrade water quality;
7. 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 delineated map;
8. Place within a 100-year flood hazard area structures that will impede or redirect flood flows;
9. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as result of the failure of a levee or dam; and/or
10. Inundation by seiche, tsunami, or mudflow.

5.8.2.b Project Impacts and Recommended Mitigation Measures

The Vasquez Water Main Project will not have a significant impact on hydrology and water quality issues because it will not:

- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge;
- Create or contribute runoff water that would exceed the capacity of existing stormwater drainage systems or provide substantial additional sources of polluted runoff;
- 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 delineated map;
- Place within a 100-year flood hazard area structures that will impede or redirect flood flows;
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as result of the failure of a levee or dam; or
- Cause Inundation by seiche, tsunami, or mudflow.

IMPACT 5.8-1: POTENTIAL TO VIOLATE WATER QUALITY STANDARDS OF WASTE DISCHARGE REQUIREMENTS

Pipeline construction has potential to temporarily degrade water quality below waste discharge standards. No long-term or permanent impacts to water quality are expected.

Recommended Mitigation Measure 5.8-1

NCWD shall obtain all necessary grading permits, adhere to the Uniform Building Code, and comply with all conditions of approval for discretionary projects (by local and County jurisdictions) within the service area and the Standard Urban Stormwater Mitigation Plans (SUSMP). Temporary barriers will be constructed immediately downstream of pipeline construction adjacent to existing drainages and creeks to prevent accidental discharge of any contaminants.

Monitoring

NCWD shall develop a procedure to insure that all necessary permits have been obtained prior to construction. NCWD shall use a checklist as part of this procedure to track compliance with each permit and their respective conditions. NCWD shall designate a staff or contractor to serve as a compliance monitor to ensure Mitigation Measure 5.8-1 is followed.

Significance after Mitigation

The significance after mitigation would be *less than significant.*

Residual Impacts

No residual impacts, from the potential to violate water quality standards of waste discharge requirements, will result from the project.

IMPACT 5.8-2: POTENTIAL TO ALTER DRAINAGE PATTERNS, STREAMS, OR RIVERS (EROSION/SILTATION)

Construction of those portions of the pipeline that cross Mint Canyon Creek and the two unnamed tributaries could result in alterations to existing drainage patterns or alter Mint Canyon Creek by erosion and/or siltation.

Recommended Mitigation Measure 5.8-2

Two options are recommended depending on engineering feasibility: (1) avoiding direct impacts to Mint Canyon Creek by boring entirely under the creek (Option 5.8-2A), or (2) trenching through the creek (Option 5.8-2B). These options and mitigation measures are discussed below.

Option 5.8-2A. NCWD should construct the pipeline across Mint Canyon Creek by boring (microtunnelling) the pipeline under the creek, thereby avoiding all direct surface disturbances and impacts to drainage patterns from erosion and siltation within the creek bed and channel banks. The pipeline should be installed at a sufficient depth such that it will have no impact on the flow of the creek and will not cause erosion or siltation to occur. Construction should be conducted during the dry season providing no opportunity for alteration to drainage patterns or stream flows. (See Alternative 3, Creek Avoidance, in Section 7.)

Option 5.8-2B. If NCWD implements the applicant-proposed project, NCWD must enter the creek to install the water main under Mint Canyon Creek by trenching, and NCWD will construct the pipeline across the two unnamed tributaries by spanning the tributaries. Construction should only be conducted during the dry season providing no opportunity for alteration to drainage patterns or stream flows.

Monitoring

NCWD shall contract with a qualified biologist to monitor construction activities at Mint Canyon Creek and the two unnamed tributaries crossed by the pipeline to ensure that erosion and siltation of the creeks and drainages do not occur during construction. The monitor shall have the authority to stop any and all activities that directly or indirectly impact the streams and water quality onsite. The monitor shall log all monitoring on a daily basis.

Significance after Mitigation

The significance after mitigation would be *less than significant.*

Residual Impacts

No residual impacts from erosion and siltation will result from the project.

IMPACT 5.8-3: POTENTIAL TO ALTER DRAINAGE PATTERNS, STREAMS, OR RIVERS (INCREASED RUNOFF)

Construction of those portions of the pipeline that cross Mint Canyon Creek and the two unnamed tributaries could result in alterations to existing drainage patterns to cause increased runoff into Mint Canyon Creek.

Recommended Mitigation Measure 5.8-3

Two options are recommended depending on engineering feasibility: (1) avoiding direct impacts to Mint Canyon Creek by boring entirely under the creek (Option 5.8-3A), or (2) trenching through the creek (Option 5.8-3B). These options and mitigation measures are discussed below.

Option 5.8-3A. NCWD should construct the pipeline across Mint Canyon Creek by boring (microtunnelling) the pipeline under the creek, thereby avoiding all direct surface disturbances and impacts to drainage patterns from increased runoff within the creek bed and channel banks. The pipeline should be installed at a sufficient depth such that it will have no impact on the flow of the creek and will not cause erosion or siltation to occur. Construction should be conducted during the dry season providing no opportunity for alteration to drainage patterns or runoff. (See Alternative 3, Creek Avoidance, in Section 7.)

Option 5.8-3B. If NCWD implements the applicant-proposed project, NCWD must enter the creek to install the water main under Mint Canyon Creek by trenching, and NCWD will construct the pipeline across the two unnamed tributaries by spanning the tributaries. Construction should only be conducted during the dry season providing no opportunity for alteration to drainage patterns or stream flows.

Monitoring

NCWD shall contract with a qualified biologist to monitor construction activities at Mint Canyon Creek and the two unnamed tributaries crossed by the pipeline to ensure that runoff into Mint Canyon Creek does not occur during construction. The monitor shall have the authority to stop any and all activities that directly or indirectly impact the streams and water quality onsite. The monitor shall log all monitoring on a daily basis.

Significance after Mitigation

The significance after mitigation would be *less than significant.*

Residual Impacts

No residual impacts from increased runoff will result from the project.

IMPACT 5.8-4: POTENTIAL TO SUBSTANTIALLY DEGRADE WATER QUALITY

The installation of the pipeline through Mint Canyon Creek and the two unnamed tributaries may result in increased stream water turbidity and sediment levels if construction activities are conducted within active stream flows. The bed and banks could become unstable during construction activities and may substantially degrade water quality due to soil bank erosion, and may cause adverse effects to aquatic wildlife species and riparian vegetation.

Recommended Mitigation Measure 5.8-4

Two options are recommended depending on engineering feasibility: (1) avoiding direct impacts to Mint Canyon Creek by boring entirely under the creek (Option 5.8-4A), or (2) trenching through the creek (Option 5.8-4B). These options and mitigation measures are discussed below.

Option 5.8-4A. NCWD should construct the pipeline across Mint Canyon Creek by boring (microtunnelling) the pipeline under the creek and spanning across the two unnamed tributaries, thereby avoiding all direct surface disturbances and impacts to water quality within the creek bed and channel banks. The pipeline should be installed at a sufficient depth such that it will have no impact on the flow of the creek and will not cause erosion or siltation to occur. Construction should be conducted during the dry season providing no opportunity for alteration to drainage patterns or water quality. (See Alternative 3, Creek Avoidance, in Section 7.)

Option 5.8-4B. If NCWD implements the applicant-proposed project, NCWD must enter the creek to install the water main under Mint Canyon Creek by trenching, and NCWD will construct the pipeline across the two unnamed tributaries by spanning the tributaries. To mitigate for this potential impact, NCWD will conduct work during the dry season and install erosion control measures, as will be identified in a mitigation plan and monitoring program that will be adopted for the project.

Monitoring

NCWD shall contract with a qualified biologist to monitor construction activities at Mint Canyon Creek and the two unnamed tributaries crossed by the pipeline to ensure that runoff into Mint Canyon Creek does not occur during construction. The monitor shall have the authority to stop any and all activities that directly or indirectly impact the streams and water quality onsite. The monitor shall log all monitoring on a daily basis.

Significance after Mitigation

The significance after mitigation would be *less than significant.*

Residual Impacts

No residual impacts to water quality will result from the project.

CUMULATIVE IMPACTS

With the implementation of mitigation measures noted above in Recommended Mitigation Measure 5.8-2, 5.8-3, and 5.8-4, the cumulative impacts for flooding and drainage, water quality, and water supply and demand would be considered *less than cumulatively considerable.*

GROWTH-INDUCING IMPACTS

The pipeline project is potentially growth inducing, as it has the capacity to supply a significantly larger public than what the pipeline is initially intended. Therefore, hydrology and water quality, resulting from permanent habitat modifications and loss of hydrologic resources caused by that growth, may result in significant impacts. However, as can be seen from the analysis from the UWMP 2000, the area is planned for significant growth. Drainage patterns would be controlled on a case-by-case basis for development projects within the area by jurisdictions other than NCWD. Water quality issues would be addressed by the implementation of the SUSMP established by the California RWQCB and implemented by the County of Los Angeles.

By removing an impediment to growth in the Vasquez Water Main service area, a potential exists for impacts to existing hydrology and water quality by increasing the number of new structures and infrastructure that may be built on service area. Groundwater recharge could be impeded or reduced as the result of increases in impervious surfaces typically associated with urban and commercial development.

Therefore, significant potential impact to hydrologic resources within the service area may occur as a result of making available additional water supply to potential new developments.

Recommended Mitigation Measure

There is no feasible mitigation measure available to NCWD since NCWD has no authority over projects that are approved by the County of Los Angeles.

NCWD is a special district, a legitimate subdivision of the State government, established under the authority of Section 3000, Division 12 of the California Water Code. Providing water service to municipal and industrial users is the essence of the mission of NCWD. As a special district, NCWD only has authority to control those issues currently enacted by ordinance by the Board of Directors. NCWD has no other authority over planning or development in their service area. Therefore, NCWD has no authority to control adverse impacts created by the potential growth from the water service. However, the normal discretionary permit process within the County of Los Angeles would identify and avoid, minimize, or reduce impacts according to CEQA, or require mitigation to do so.

Monitoring

NCWD has no authority over projects or activities that have potential to impact hydrology and water quality resulting from projects implemented or approved by other agencies other than its own projects, and have no authority to conduct such monitoring.

Significance after Mitigation

The significance after mitigation would be *significant and unavoidable*. Therefore, a Statement of Overriding Consideration must be adopted by the NCWD for this impact.

5.9 LAND USE AND PLANNING

The current *Santa Clarita Valley Area Plan*, a component of the County of Los Angles General Plan, Comprehensive Update: 6 December 1990, is maintained by the Los Angles County Department of Regional Planning. The Area Plan states that for the Canyon Country (generally north of the City of Santa Clarita), including the Sand Canyon, Sierra Highway, and Vasquez Canyon areas, "Continued residential expansion is foreseen in Canyon Country within the constraints of the roadway networks". Development consistent with the General Plan designations for the area is continuing, as can be seen from the already recorded, approved, and pending projects located in the vicinity of the proposed NCWD water main project, as identified in Table 3-2, Cumulative Projects Summary (Section 3).

5.9.1 Setting

The Los Angeles County General Plan designations for the parcels adjacent to the proposed pipeline corridor include three Urban designations: Urban-1 (U-1 = 1.1 to 3.3 Dwelling Units/Acre [DU/AC]); Urban-2 (U-2 = 3.4 to 6.6 DU/AC); and Urban-3 (U-3 = 6.7 to 15 DU/AC). The General Plan designations for parcels in the vicinity of the project area include these three Urban designations as well as areas designated for Open Space, Hillside Management, Significant Ecological Areas, and Public Service Facilities.

5.9.1.a Regional Setting

The Santa Clarita Valley Areawide Policies found in the Area Plan include the Land Use Element. The Land Use Element section includes provisions for accommodation of projected land use and urban growth" as identified in the Plan and the Area Plan Maps. These provisions include, but are not limited to: a) development in the study area consistent with the plan; and b) promotion of a balanced, autonomous community with a full range of public and commercial services and a wide variety of housing and employment opportunities. The Land Use Element also includes four primary criteria for patterns of population and land use distribution:

a. Sensitivities of natural environmental systems;
b. Hazards or constraints of natural environmental systems of land use;
c. Infrastructure and service capacities; and
d. Need for the project.

The Land Use Element also includes provisions that encourage development of convenient services to meet the needs of Santa Clarita Valley residents to ensure adequacy of public services.

5.9.2 Impact Analysis

5.9.2.a Criteria and Significance Thresholds

A project will normally have an impact on Land Use if it will:

1. Physically divide an established community;
2. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; and/or
3. Conflict with any applicable habitat conservation plan or natural community conservation plan.

5.9.2.b Project Impacts and Recommended Mitigation Measures

The proposed NCWD pipeline is consistent with the Land Use provisions of the Area Plan Land Use Policies in that it will provide a needed water supply to existing home sites and commercial uses. It will also provide water service to the already recorded and approved projects in the service area, and will provide water service to the pending residential projects currently under review by the County Regional Planning Department. The pipeline project will also provide fire protection service water to areas not now served. Because the project will provide service future projects within the NCWD service area and the Santa Clarita Valley Area Plan, it may be considered to be growth inducing.

DIRECT SIGNIFICANT IMPACTS

No direct significant impacts to land use and planning will result from the proposed project.

CUMULATIVE IMPACTS

The Vasquez Water Main Project will not likely contribute to cumulative impacts to existing land use based on Table 3.1, Cumulative Project Summary, in Section 3. Future General Plan amendments that may increase zoning density and intensity are not within the scope of this EIR, and any attempt to analyze *potential cumulative impacts would be speculative in nature*.

GROWTH-INDUCING IMPACTS

By removing an impediment to growth in the Vasquez Water Main service area, a potential exists for impacts to land use by increasing the number of new structures and infrastructure that may be built in the NCWD service area. However, existing regulations and the County of Los Angeles General Plan and Zoning Ordinance would prohibit or regulate persons or entities building in the service area. The Vasquez Water Main Project may result in significant growth-inducing impacts.

Recommended Mitigation Measure

There is no feasible mitigation measure available to NCWD since NCWD has no authority over projects that are approved by the County of Los Angeles.

NCWD is a special district, a legitimate subdivision of the State government, established under the authority of Section 3000, Division 12 of the California Water Code. Providing water service to municipal and industrial users is the essence of the mission of NCWD. As a special district, NCWD only has authority to control those issues currently enacted by ordinance by the Board of Directors. NCWD has no other authority over planning or development in their service area. Therefore, NCWD has no authority to control adverse impacts created by

the potential growth from the water service. However, the normal discretionary permit process within the County of Los Angeles would identify and avoid, minimize, or reduce impacts according to CEQA, or require mitigation to do so.

Monitoring

NCWD has no authority over land use changes and increased demand for water and so cannot monitor for potential growth inducement.

Significance after Mitigation

The significance after mitigation would be *significant and unavoidable*; therefore, a Statement of Overriding Consideration must be adopted by the NCWD for this impact.

5.10 MINERAL RESOURCES

5.10.1 Setting

The Santa Clarita Valley Area Plan for the County of Los Angeles does not identify any mineral resources in the project area. No mineral resources are known to occur in the Vasquez Water Main Project service area that could be directly or indirectly affected by the pipeline.

5.10.2 Impact Analysis

DIRECT SIGNIFICANT IMPACTS

No direct significant impacts to mineral resources will result from the proposed project.

CUMULATIVE IMPACTS

The project list in Table 3-2 (Section 3) shows past and present projects in the area. Further, the development in the area is shown to be consistent with the Santa Clarita Valley Area Plan for the County of Los Angeles. The permit process for discretionary projects will provide mitigation for any cumulative impacts that may occur. Therefore, there are *no cumulative impacts* associated with the NCWD pipeline project and are considered to be *less than cumulatively considerable*.

GROWTH-INDUCING IMPACTS

No growth-inducing impacts to mineral resources will result from the proposed project.

5.11 NOISE

5.11.1 Setting

The noise environment for the area is dominated by traffic noise from Sierra Highway and Vasquez Canyon Road, plus industrial noise and ambient noise in the community.

5.11.1.a Overview of Sound Measurement

An exterior noise level of 60 dB(A) CNEL is considered to be a "normally acceptable" noise level for single family, duplex, and mobile homes involving normal, conventional construction, without any special noise insulation requirements. Exterior noise levels up to 65 dB(A) CNEL are typically considered "normally acceptable" for multi-family units and transient lodging without any special noise insulation requirements. Between these values and 70 dB(A) CNEL, exterior noise levels are typically considered "conditionally acceptable" and construction should only occur after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the project design. An exterior noise level of 70 dB(A) CNEL is typically the dividing line between an acceptable and unacceptable exterior noise environment for all noise sensitive uses, including schools, libraries, churches, hospitals, day care centers, and nursing homes of conventional construction.

Noise levels below 75 dB(A) CNEL are typically acceptable for office and commercial buildings, while levels up to 75 dB(A) CNEL are typically acceptable for industrial uses. The U.S. EPA has compiled data on the noise-generating characteristics of specific types of construction equipment. Noise levels generated by heavy equipment can range from approximately 68 dB(A) to noise levels in excess of 100 dB(A) when measured at 50 feet. However, these noise levels would diminish rapidly with distance from the construction site at a rate of approximately 6.0 to 7.5 dB(A) per doubling of distance. For example, assuming a "hard" site, a noise level of 68 dB(A) measured at 50 feet from the noise source to the receptor would reduce to 62 dB(A) at 100 feet from the source to the receptor, and further reduce by another 6.0 dB(A) to 56 dB(A) at 200 feet from the source to the receptor.

5.11.1.b Regulatory Policies

California DHS (for Mobile Source Noise), The State of California, DHS, Environmental Health Division, has published recommended guidelines for mobile source noise and land use compatibility referred to as the Land Use Compatibility Guidelines for Noise (the Guidelines). The Guidelines indicate that residential land uses and other noise sensitive receptors generally should be located in areas where outdoor ambient noise levels do not exceed 65 to 70 dB(A) (CNEL or Ldn). Although application of this compatibility matrix to development projects is not mandated by the Department of Health Services, each jurisdiction is required to consider these guidelines when developing its general plan noise element and when determining acceptable noise levels within its community.

The California Administrative Code and the Building Code (Reference 1 & 2) require that the interior noise levels from exterior sources do not exceed 45 CNEL in any habitable room for new residential construction. For typical community noises, the L_{dn} (Day–Night average sound level) is equivalent to CNEL. Acoustical terms are defined in the Appendix B of the *NCWD Vasquez Water Main DEIR Noise Study*, which is included as Appendix G to this EIR. This standard requires analysis of noise isolation for new residences in areas of long-term community noise above 60 CNEL. This does not apply to short-term construction noise or existing residential units. (Morris 2003.)

Caltrans and the Federal Highway Administration require evaluation of highway construction noise (References 10 through 14) only if construction noise is anticipated to be a substantial problem. Since construction noise is of a temporary nature, there are apparently no regulatory established limits for construction noise, although there are some recommended limits. For daytime construction, the 8-hour limits for various land uses are 80 L_{eq} for residential, 85 L_{eq} for commercial and 90 L_{eq} for industrial. The 30-day average limits are 75 L_{dn} for residential, 80 L_{eq} (24 hour) for commercial and 85 L_{eq} for industrial. In urban areas with very high ambient noise levels (L_{dn}>65 dBA), the L_{dn} from construction operations should not exceed existing ambient more than 10 dBA. The noise limits are specified at the sensitive receiver, such as five feet from the building wall, or the property line, etc. (Morris 2003.)

5.11.1.c Sensitive Receptors

Potentially impacted noise sensitive land uses are the Mint Canyon Elementary School at 16400 Sierra Highway, the mobile home park near the entrance to the school, another mobile home park at Gaspe Street and Vasquez Canyon Road and various homes near Vasquez Canyon Road. The school buildings are 350 to 400 feet from the centerline of Sierra Highway. The mobile home park units nearest the Sierra Highway are about 70 feet from the road centerline. The mobile homes at the park at Gaspe Street are at least 300 feet from the centerline of Vasquez Canyon Road. Most of the homes are several hundred feet from Vasquez Canyon Road. (Morris 2003.)

5.11.1.d Existing Noise Environment

Morning traffic noise was measured on 22 September 2003 at two locations. This was to determine the existing ambient sound levels. The traffic noise was 72.4 L_{eq} 60 feet east of the road centerline at 16613 Vasquez Canyon Road. This is near the north end of the proposed pipeline. Traffic noise was 70.1 L_{eq} 55 feet south of the road centerline at 16400 Sierra Highway, near the southwest end of the proposed pipeline.

Traffic volume counts were manually obtained at the same time to use in traffic noise prediction equations. Table 5-12, Highway Traffic Noise Calculations for NCWD, summarizes the traffic noise calculations for traffic noise 200 feet and 400 feet from the street centerline for these two locations. For Vasquez Canyon Road and Sierra Highway the calculated sound levels were 64.5 and 61.6 dBA at 200 feet and 60 and 57.1 dBA at 400 feet from the centerline. Table 5-13, Typical A-Weighted Sound Levels, presents typical sound levels for comparison to known noise sources. (Morris 2003.)

5.11.2 Impact Analysis

Using the equipment list and operation times in reference #15, the construction sound levels were calculated. Morris Engineering Company data and equipment sound data from several sources were used for maximum sound power levels. Figure 5-11, Construction Equipment Noise Levels, is a graphical presentation of some equipment noise levels from the EPA. The average sound power level was calculated for each piece of equipment based on the hours of operation. Then, the estimated sound levels at 50 and 200 feet were calculated. The calculations are summarized in Table 5-14, NCWD Vasquez Canyon Water Main Project Equipment Usage and Estimated Sound Levels. The sound levels are also combined for all pieces of equipment operating simultaneously. This is a very unlikely worst case, which most likely will never exist.

Table 5-12. Highway Traffic Noise Calculations for NCWD[21]

Data Description	Location of Highway Noise Calculation					
	Vasquez Canyon Road			*Sierra Highway*		
	Measured	200'	400'	Measured	200'	400'
INPUT DATA:						
Peak VPH(Vehicles Per Hour)	312	312	312	612	612	612
%MT (% Med. Trks, 6 Tires)	2.0	2.0	2.0	2.0	2.0	2.0
%HT (% Heavy Trk, 3+Axles)	1.0	1.0	1.0	1.0	1.0	1.0
MPH (Average Speed)	45.0	45.0	45.0	45.0	45.0	45.0
Dc (Horz. Dist. Center L.) -Feet	60.00	200.00	400.00	55.00	200.00	400.00
Dnc (Horz. Dist. Near C.L.) - Feet	6.00	6.00	6.00	12.00	12.00	6.00
Dfc (Horz. Dist. Far C.L.) - Feet	6.00	6.00	6.00	12.00	12.00	6.00
Dbc (Horz. Dist. Barr-C.L.) - Feet	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00
Es (Elev. Road Surface) - Feet	100.00	100.00	100.00	100.00	100.00	100.00
Eb (Elev. Top Barrier) - Feet	100.00	100.00	100.00	100.00	100.00	100.00
Er (Elev. Receiver) - Feet	105.00	105.00	105.00	105.00	105.00	105.00
Other Adjustments - dB	10.00	10.00	10.00	4.10	4.10	4.10
OUTPUT DATA:						
Car Volume - VPH	303	303	303	594	594	594
Medium Truck Volume - VPH	6	6	6	12	12	12
Heavy Truck Volume - VPH	3	3	3	6	6	6
Car & Med. Truck Speed - MPH	45.0	45.0	45.0	45.0	45.0	45.0
Heavy Truck Speed - MPH	45.0	45.0	45.0	45.0	45.0	45.0
De (Equiv. Horz. Dist.) - Feet	59.70	199.91	399.95	53.67	199.64	399.95
Without Any Barrier Effect:						
Leq - Cars	71.2	63.3	58.8	68.9	60.4	55.8
Leq - Medium Trucks	62.4	54.6	50.1	60.2	51.7	47.2
Leq - Heavy Trucks	64.0	56.1	51.6	61.8	53.2	48.7
Leq - All Vehicles	72.4	64.5	60.0	70.1	61.6	57.1
With Barrier:						
Sight Line Height(Cars) - Feet	0.00	0.00	0.00	0.00	0.00	0.00
Sight Line Height(MT) - Feet	0.00	0.00	0.00	0.00	0.00	0.00
Sight Line Height (Trucks) - Feet	0.00	0.00	0.00	0.00	0.00	0.00
Sight Line Stack (H.T.) - Feet	0.00	0.00	0.00	0.00	0.00	0.00
Leq - Cars	71.2	63.3	58.8	68.9	60.4	55.8
Leq - Medium Trucks	62.4	54.6	50.1	60.2	51.7	47.2
Leq - Heavy Trucks	64.0	56.1	51.6	61.8	53.2	48.7
TOTAL Barrier Field Insertion Loss	0.0	0.0	0.0	0.0	0.0	0.0
Leq - All Vehicles	72.4	64.5	60.0	70.1	61.6	57.1

Notes: Equations from FHWA RD-77-108 & FHWA/CA/TL-87/03 (Calveno). Er is at ear level (add 5 feet to surface elevation). Source Heights: Car 0.0 Ft; Med. Trk 2.3 Ft; H. Trk 8.0 Ft; Stack 11.5 Ft.

[21] Intersection location at 16613 Vasquez Canyon Road and 16400 Sierra Highway From Morris 2003, see Appendix G of this DEIR.

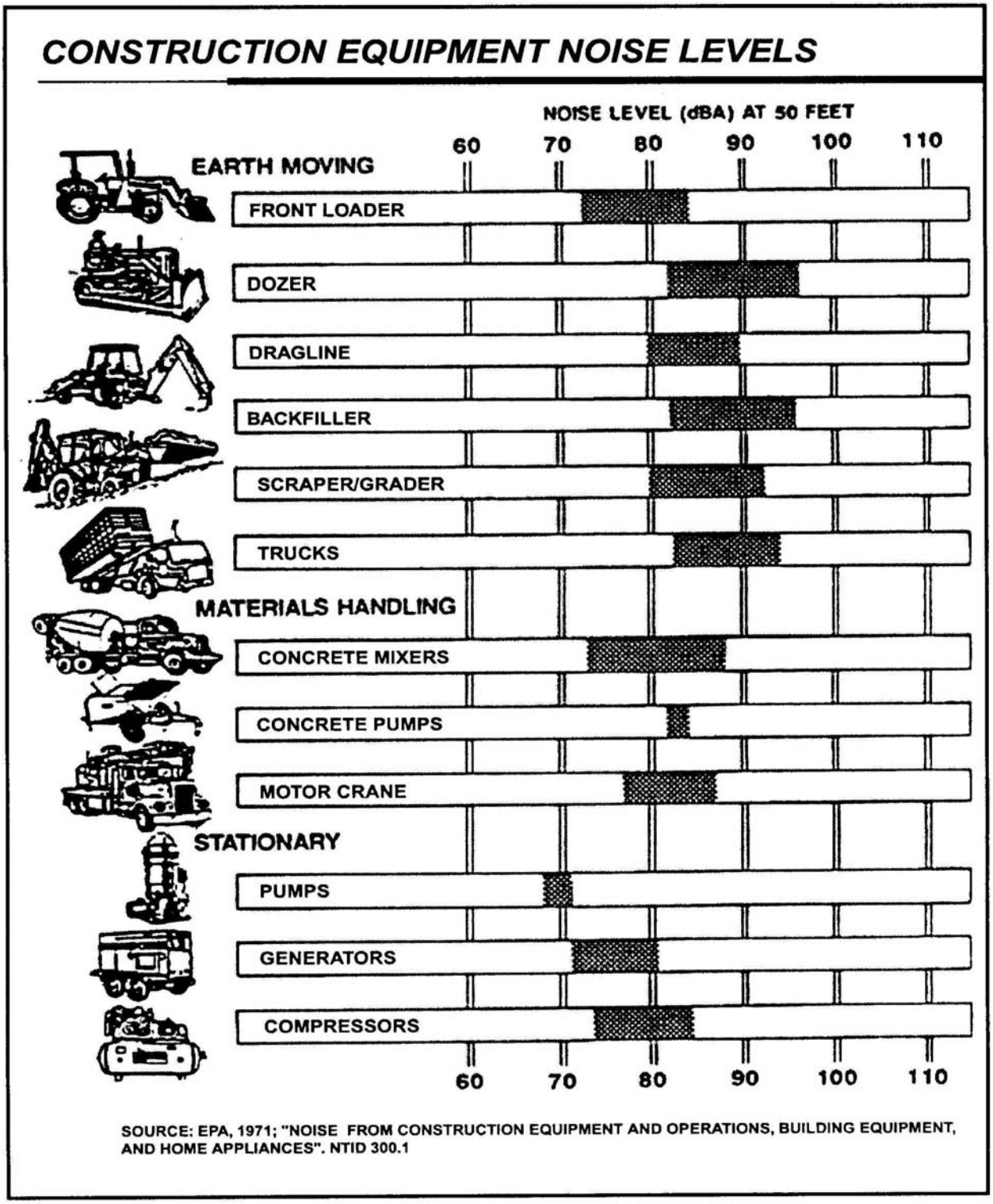
Table 5-13. Typical A-Weighted Sound Levels[22]

Given Distance From Noise Source	Decibels	Environmental
	RE 20□N m^2	
50 HP Siren (100')	**130**	Possible permanent hearing damage
	|	
	|	Pain threshold
	|	
Jet Take off (200')	|	
	120	
	|	
	|	
	|	
	|	
Riveting machine (3'), grinding (3')	**110**	Casting shake-out area
	|	
Power saw, paint spraying (3')	|	
Pneumatic peen hammer	|	
	|	
	100	Electric furnace area
	|	
Punch press (3')	|	
	|	
Textile weaving plant (3')	|	
50kw electric motor (3'); subway train (20')	**90**	Boiler room
	|	Printing press plant; Los Angeles 3rd floor apartment near freeway
Train (300')	|	Los Angeles - 3/4 mile from touchdown at airport [Ldn]
	|	
Pneumatic drill (50')	|	
Lathe (3')	**80**	Tabulating room
	|	Inside sport car (50 MPH)
	|	Harlem - 2nd floor apartment [Ldn]
	|	
	|	
Vacuum cleaner (10')	**70**	Stereo music [50 - 70 Leq]
Speech (1')	|	Boston-Row housing on major avenue [Ldn]
	|	Large office; normal conversation
	|	Large store: Watts-8 miles from LAX [Ldn]

[22] (Morris 2003.)

Given Distance From Noise Source	Decibels	Environmental
	|	Medium office; misc. business; near freeway (auto traffic)
	60	Small store; old residential area in Los Angeles [Ldn]
	|	Small office; accounting office
	|	TV listening [55 - 60 Leq]
	|	Residence - speech at 10 feet
Large transformer (200')	|	Private business office
Light traffic (100')	**50**	Insulated restroom; Fillmore - small town cul-de-sac [Ldn]
	|	Average residence
	|	Residence - no TV or radio
	|	Oxnard - tomato field on farm [Ldn]
	|	
	40	Minimum levels - residential area in Chicago at night
	|	
	|	
	|	
Soft whisper (5')	|	
	30	Studio (speech)
	|	
	|	
	|	
	|	
	20	Studio for sound pictures; very quiet bedroom
	|	
	|	
	|	
	|	
	10	
	|	
	|	
	|	
	|	
Threshold of hearing for youths at 1,000-4,000 Hz	**0**	

Figure 5-11. Construction Equipment Noise Levels[23]



[23] (Morris 2003.)

Table 5-14. NCWD Vasquez Canyon Water Main Project Equipment Usage and Estimated Sound Levels[24]

Equipment	Horsepower /kilowatts	Trips per Day	Time[1] in use: Days & Hours	Maximum PWL[2] dBA	Average PWL[3] dBA	SL[4] at 50' dBA	SL[4] at 200' dBA
4 NCWD Light Duty Trucks:							
GMC Work Truck # 5	255 / 190	20 for 4 trucks	60 days @ 2 Hrs	110	104	72	60
GMC Work Truck # 6	255 / 190	(800 total job)	60 days @ 2 Hrs	110	104	72	60
GMC Work Truck #21	300 / 224	"	60 days @ 2 Hrs	110	104	72	60
GMC Work Truck #66	230 / 172	"	60 days @ 2 Hrs	-	-	-	-
GMC Work Truck #68	250 / 186	"	60 days @ 2 Hrs	110	104	72	60
Total SL if simultaneous operation of trucks:					110	78	66
4 End Dumps & 1 Water Truck:							
(1) End Dump	450 / 336	30 trips	67 days @ 5 Hrs	116	114	82	70
(2) End Dump	450 / 336	(1200 total job)	67 days @ 5 Hrs	116	114	82	70
(3) End Dump	400 / 298	"	67 days @ 5 Hrs	116	114	82	70
(4) End Dump	400 / 298	"	67 days @ 5 Hrs	116	114	82	70
2000 Gal. Water Truck	210 / 157	"	60 days @ 8 Hrs	116	116	84	72
Total SL if simultaneous operation of dump and water trucks:					121	89	77
Excavation:							
312 CAT Excavator	84 / 63	N/A	60 days @ 8 Hrs	117	112	80	68
950G CAT Loader	197 / 147	N/A	60 days @ 8 Hrs	112	107	75	63
655E Backhoe	85 / 63	N/A	60 days @ 8 Hrs	112	107	75	63
AV Street Sweeper	300 / 224	N/A	35 days @ 8 Hrs	112	107	75	63
Total SL if simultaneous operation of excavation equipment:					115	83	71
Preparation, Backfill, etc.:							
Vermear Trencher	250 / 186	N/A	3 days @ 8 Hrs	121	116	84	72
Saw Cutting Equipment	35 / 26	N/A	5 days @ 8 Hrs	112	107	75	63
Andel Engineering Work Truck	190 / 142	N/A	30 days @ 8 Hrs	110	105	73	61
Geobase Work Truck	200 / 149	N/A	40 days @ 2 Hrs	110	99	67	55
Mikasa MT-T6D Wacker	4.8 / 3.6	N/A	14 days @ 8 Hrs	112	107	75	63
Vulcan Truck & Trailer	450 / 336	N/A	32 days @ 6 Hrs	116	109	78	66
Total SL if simultaneous operation of trencher and other equipment:					118	86	74
MAXIMUM EQUIVALENT PWL and SL - if all operated simultaneously:					**124**	**92**	**80**

Notes:
1. "Time in use" is used to calculate the Average Sound Power Level.
2. Maximum PWL is the estimated maximum Sound Power Level for the specific piece of equipment. Sound Power is total sound energy emitted.
3. Average PWL is the equivalent sound power energy for hours of operation during the day.
4. Sound Level is calculated from the PWL and distance to the source. For point sources the SL decreases 6 dB for every doubling of distance (SL = PWL -(20*LOG10(Distance) - 2.3).

[24] (Morris 2003.)

Most noise sensitive land uses are 200 feet or more from the construction areas. The school and homes will be exposed to construction noise levels well below 80 dBA. At 400 feet from the construction, the maximum sound level, if all equipment operated simultaneously would be below 74 dBA. Since all equipment will not be operating at the same time, the maximum sound levels will be lower than the total of all equipment. It is expected that the maximum hourly equivalent sound level at 50 feet will be near 84 dBA (trencher or water truck). The residences nearest the street, in the trailer park near 16400 Sierra Highway, could be exposed to sound levels up to 85 dBA. All other land uses within 50 feet are commercial, industrial, or rural open space with an 8-hour limit above 85 dBA. (Morris 2003.)

5.11.2.a Criteria and Significance Thresholds

A project will normally have an impact for noise if it would:

1. Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
2. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
3. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
4. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
5. 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; and/or
6. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

5.11.2.b Project Impacts and Recommended Mitigation Measures

The only area requiring mitigation of construction noise is the mobile home park near 16400 Sierra Highway. The equipment that can produce noise levels above 80 dBA are the Vermear Trencher, the 312 Cat excavator, the end dump trucks and the water truck. It is recommended that the mobile home park residents be contacted and informed of the short-term noise impact and given an estimated time frame of the disruption. The establishment of a good rapport with the community can provide high benefits for low cost. Instill an awareness of public attitudes and reactions in the equipment operators so that unnecessary annoyances are avoided. Have the operators keep the equipment in good repair to minimize excessive noise. If possible, use equipment designed for quiet operations. Keep mufflers in good repair. Keep equipment enclosure doors closed. Situate equipment, such as compressors, as far away as possible from noise sensitive areas. Limit construction to the daytime hours. If night or evening maintenance of equipment is performed, maintain the equipment away from the mobile home park or other noise sensitive land uses.

IMPACT 5.11-1: NOISE IMPACTS

The impacts related to noise are temporary in nature. The portion of the construction path on Sierra Highway past the mobile home park would be close enough to a noise sensitive area to cause a noise impact; however, the disturbance would last no longer than three days. This temporary impact is considered *significant but mitigable.*

Recommended Mitigation Measure 5.11-1

A modified work schedule is recommended for construction activities conducted past the mobile home park on Sierra Highway. The impact would only occur if all equipment were operating simultaneously. Therefore, for the segment of construction nearest the mobile home park, equipment operation will be limited to only those vehicles needed to ensure that the noise level is reduced.

Monitoring

The project manager will designate a person to monitor construction activities to ensure that mitigation measure 5.11-1 is followed.

Significance after Mitigation

The significance after mitigation would be *less than significant.*

Residual Impacts

The project is temporary in nature. *No residual impacts will occur.*

Recommended Mitigation Measure 5.11-2

It is recommended that the mobile home park residents be contacted and informed of the short-term noise impact and that they be given an estimated time frame of the disruption.

Monitoring

The project manager shall prepare a notice regarding the nature of the construction project and designate a person to contact the mobile home park residents and provide the construction schedule information to them.

Significance after Mitigation

The significance after mitigation would be *less than significant.*

Residual Impacts

The project is temporary in nature. *No residual impacts will occur.*

Recommended Mitigation Measure 5.11-3

The operators will keep the equipment in good condition and will be maintained and/or repaired to minimize excessive noise. If possible, operators should use equipment designed for quiet operations. Keep mufflers in good repair. Keep equipment enclosure doors closed. Locate equipment such as compressors as far away as possible from noise sensitive areas. Limit construction to the daytime hours.

Monitoring

The project manager shall designate a construction worker to monitor construction activities to ensure that:

1. Equipment is maintained and in good repair;
2. Equipment enclosure doors are closed;
3. Noise-producing equipment is kept as far away as possible from noise sensitive areas; and
4. Construction is limited to daytime hours.

Significance after Mitigation

The significance after mitigation would be *less than significant.*

Residual Impacts

The project is temporary in nature. *No residual* impacts will occur.

CUMULATIVE IMPACTS

Since the pipeline installation will represent a one-time, temporary impact, *no cumulative impacts* would occur along the project site or in the service area.

GROWTH-INDUCING IMPACTS

By removing an impediment to growth in the Vasquez Water Main service area, a potential exists for impacts to acoustics by increasing the number of new structures and infrastructure that may be built within the service area, adding additional temporary noise sources in the service area. These potential future noise sources would be highly localized, and the vast majority would occur long distances from known sensitive receptors as described above. Furthermore, existing regulations and the General Plan would prohibit or regulate persons or entities building in the service area without mitigating for additional noise generated. The Vasquez Water Main Project would not result in significant growth-inducing impacts as they relate to noise.

Recommended Mitigation Measure

There is no feasible mitigation measure available to NCWD since NCWD has no authority over projects that are approved by the County of Los Angeles.

NCWD is a special district, a legitimate subdivision of the State government, established under the authority of Section 3000, Division 12 of the California Water Code. Providing water service to municipal and industrial users is the essence of the mission of NCWD. As a special district, NCWD only has authority to control those issues currently enacted by ordinance by the Board of Directors. NCWD has no other authority over planning or development in their service area. Therefore, NCWD has no authority to control adverse impacts created by the potential growth from the water service. However, the normal discretionary permit process within the County of Los Angeles would identify and avoid, minimize, or reduce impacts according to CEQA, or require mitigation to do so.

Monitoring

NCWD has no authority over land use changes and increased demand for water and so cannot monitor for potential growth inducement.

Significance after Mitigation

The significance after mitigation would be *significant and unavoidable*; therefore, a Statement of Overriding Consideration must be adopted by the NCWD for this impact.

5.12 POPULATION AND HOUSING

5.12.1 Setting

The proposed water main extension, while large at 18 inches in diameter, is a long-term infrastructure investment for the NCWD. The pipeline capacity would be able to serve approximately 2000 equivalent dwelling units. Currently, 300 dwelling units exist that could be served by the pipeline extension. Subtracting the existing DU's from the total DU's leaves 1700 equivalent dwelling units that could be served by the project. This 1,700 dwelling unit figure multiplied by the County of Los Angeles countywide dwelling unit population average (2.89 persons/DU) would be equal to a 4,930 person population increase. This population increase would not occur at once, but rather over a period of time throughout the planning horizon for the City of Santa Clarita and the County of Los Angeles, and the normal discretionary and ministerial permit process.

5.12.2 Population Growth

The SCAG is the regional agency responsible for determining project consistency with regional growth policies. As part of its analysis, SCAG develops regional and sub-regional demographics, which include projected housing, jobs, and population migration patterns. It then produces regional growth management plans, such as the 1998 RTP. Some agencies and utilities use this information provided by SCAG to determine long-term trends. Currently, SCAG has determined the existing and projected demographics for the four Water Service Agency's service area through 2020.

Population growth projections for the Multi-Agency's service area have been made several times by SCAG (Series II projections, and RTP). The first projection accomplished by SCAG was part of the Series II projection published in 1994. As part of this projection, SCAG projected the total population of the Agency's service area would be in excess of 575,000 people by 2020. The second most recent projection accomplished by SCAG was part of the 1998 RTP. As part of this projection, SCAG projected the total population of the Agency's service area would be about 506,000 people by 2020.

As evident between these two SCAG projections (four years apart), the projected population for the Agency's service area has been lower by 15 percent. As discussed in SCAG's 1998 RTP, to provide for population growth, employment and new households will need to increase within the Agency's service area. According to SCAG's plan, the total number of occupied households in the Agency's service area will increase from 58,526 to 96,262 by 2010, representing an annual increase of about 3,775. In addition, to meet SCAG's projection by 2020, the number of occupied households in the Agency's service area will increase from 96,262 in 2010 to 149,215 in 2020, reflecting an average annual increase of about 5,300 new households per year.

The proposed Vasquez Water Main Project is consistent with the Land Use provisions of the Area Plan Land Use Policies in that it will provide a needed water supply to existing homes and commercial uses. The project will also provide water service to the already recorded and approved projects in the service area, and will provide water service to the pending residential projects currently under review by the County Regional Planning Department.

5.12.3 Impact Analysis

5.12.3.a Criteria and Significance Thresholds

A project would normally have and impact on Population and Housing if it would:

1. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);
2. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; and/or
3. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

5.12.3.b Project Impacts and Recommended Mitigation Measures

The Vasquez Water Main Project would not result in direct or indirect impacts to population and housing since it will not displace existing housing or a substantial number of people. However, by providing infrastructure (the water pipeline), creates the potential to cause an indirect impact by inducing population growth through removing an existing impediment to growth in the service area.

DIRECT SIGNIFICANT IMPACTS

No direct significant impacts to population and housing will result from the proposed project.

CUMULATIVE IMPACTS

No cumulative impacts to population and housing will result from the project.

GROWTH-INDUCING IMPACTS

The possibility that the water pipeline, as an extension of infrastructure, would induce growth in the area is a *potentially significant impact* for both project specific and cumulative impacts. The construction of the pipeline will be conducted by NCWD workers, and will have no impact on existing jobs. The Santa Clarita Valley Area Plan has a planning horizon from 1980 to 2010. The County of Los Angeles is currently updating the General Plan for the area. The planned growth in the service area of the water pipeline is planned within the horizon of the General Plan.

Because the project is sized to provide more capacity than is needed to serve existing, recorded, and approved/pending projects, according to the Santa Clarita Area Plan, it is considered to be growth inducing to population housing needs.

Recommended Mitigation Measure

There is no feasible mitigation measure available to NCWD.

NCWD is a special district, a legitimate subdivision of the State government, established under the authority of Section 3000, Division 12 of the California Water Code. Providing water service to municipal and industrial users is the essence of the mission of NCWD. As a special district, NCWD only has authority to control those issues currently enacted by ordinance by the Board of Directors. NCWD has no other authority over planning or development in their service area. Therefore, NCWD has no authority to control adverse impacts created by the potential growth from the water service. However, the normal discretionary permit process within the County of Los Angeles would identify and avoid, minimize, or reduce impacts according to CEQA, or require mitigation to do so.

Monitoring

NCWD has no authority over land use changes and an increased demand for water, and therefore, it cannot monitor for potential growth inducement.

Significance after Mitigation

The significance after mitigation would be *significant and unavoidable*. Therefore, a Statement of Overriding Consideration must be adopted by the NCWD for this impact.

5.13 PUBLIC SERVICES

5.13.1 Setting

Growth inducement and cumulative impacts from the proposed project, potential annexation areas, and additional development may result in increased demand for services and utilities. All of these potential future projects will be required to pay connection, service and assessment fees, which mitigate the increased demand by providing for additional services and facilities. The cumulative and growth-inducement impacts are *not expected to be significant or cumulatively considerable* to electricity, natural gas, telephone, sewerage, police, or fire services.

The proposed water pipeline extension by NCWD is within the Sulphur Springs School District. Kent Frison, Assistant Superintendent of Business Services for NCWD, has the responsibility of planning for future school capacity within NCWD (Frison, personal communication). Mr. Frison, states that in the area where the water main is to be installed, and where the potential for residential growth may occur, the school district has already expanded an elementary school by 300 seats. Another elementary school will also be expanded by an additional 300 seats. Further, the school district has plans for two new elementary schools. The combined seating for the new and expanded schools represents 1,800 to 2,000 new pupil seats within five years. The school district is actively planning for the Santa Clarita Valley Area Plan growth. (Frison, pers. comm.)

5.13.2 Impact Analysis

The Vasquez Water Main Project would not result in direct or indirect impacts to public services since it will not affect existing public services, such as fire, police, and transportation. However, providing infrastructure (the water pipeline) creates the potential to cause an indirect impact by inducing population growth through removing an existing impediment to growth in the service area, which would increase the demands for public services accordingly.

DIRECT SIGNIFICANT IMPACTS

No direct significant impacts to public services will result from the proposed project.

CUMULATIVE IMPACTS

No cumulative impacts to public services will result from the project.

GROWTH-INDUCING IMPACTS

The possibility that the water pipeline, as an extension of existing infrastructure, would induce growth in the area is a *potentially significant impact* for both project specific and cumulative impacts, based on the impact criteria and significance thresholds. The construction of the pipeline will be conducted by NCWD workers, and will have no impact on existing jobs. The Santa Clarita Valley Area Plan has a planning horizon from 1980 to 2010. The County of Los Angeles is currently updating the General Plan for the area. The planned growth in the service area of the water pipeline is planned within the horizon of the current General Plan.

Because the water main is sized to provide more capacity than is needed to serve existing, recorded, and approved/pending projects, according to the Santa Clarita Area Plan, it is considered to be growth inducing to current planned population housing needs by potentially increasing demands on existing public services (other than water supply).

Impacts to public services in the service area as the result of removing an existing impediment to growth (growth-inducing impacts) is expected to result in significant impacts; however, these impacts cannot be quantified since the locations of such impacts are not known at this time.

Recommended Mitigation Measure

There are no feasible mitigation measure available to NCWD.

NCWD is a special district, a legitimate subdivision of the State government, established under the authority of Section 3000, Division 12 of the California Water Code. Providing water service to municipal and industrial users is the essence of the mission of NCWD. As a special district, NCWD only has authority to control those issues currently enacted by ordinance by the Board of Directors. NCWD has no other authority over planning or development in their service area. Therefore, NCWD has no authority to control adverse impacts created by the potential growth from the water service. However, the normal discretionary permit process within the

County of Los Angeles would identify and avoid, minimize, or reduce impacts according to CEQA, or require mitigation to do so.

Impacts to public services (other than water supply) resulting from removing an existing impediment to urban growth may or may not be mitigable. Regardless, NCWD has not authority to regulate or condition developments that may significantly impact existing public resources.

Monitoring

NCWD has no authority over land use changes and increased demand for water, and therefore it cannot monitor for potential growth inducement.

Significance after Mitigation

The significance after mitigation would be *significant and unavoidable*. Therefore, a Statement of Overriding Consideration must be adopted by the NCWD for this impact.

5.14 RECREATION

5.14.1 Setting

Recreation within the vicinity of the project site and service area includes several activities, such as bicycling, roller-blading, hiking, walking, skateboarding, bird watching, equestrian, etc. Bicycling, roller-blading, and skateboarding are conducted along existing roadways, while hiking, bird watching, and equestrian activities are more prevalent within Mint Canyon Creek and throughout accessible open undeveloped areas. No county recreational facilities are present within the service area.

5.14.2 Impact Analysis

5.14.2.a Criteria and Significance Thresholds

A project will normally have an impact on recreation if the project would:

1. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; and/or
2. Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

5.14.2.b Project Impacts and Recommended Mitigation Measures

The project would pose only a temporary inconvenience for recreation since temporary alternate routes within the project site or construction area would have to be considered for recreational purposes. There are no cumulative impacts to recreation; however, there is a possibility that the water pipeline would induce growth in the area, which would result in a potentially significant growth-inducing impact to recreation.

TEMPORARY IMPACT TO RECREATION

The project would result in a temporary inconvenience for recreation since pedestrians, skaters, bladders, and bicyclists would be forced to use alternate routes to get to their destinations. Furthermore, horseback riders and hikers, which were evident in the Mint Canyon Creek portion of the project site (tracks), would temporarily not be allowed to ride or hike under the Vasquez Canyon Road bridge until construction activities and/or mitigation measures were completed. The temporary inconvenience to recreation associated with the proposed project is considered a *temporary adverse but less-than-significant impact*.

Recommended Mitigation Measure

Since the impact to recreation is less than significant, *no mitigation is required*.

Monitoring

Since the impact to recreation is less than significant, *no monitoring is required*.

Significance after Mitigation

The significance remains *less than significant* since no mitigation is required.

Residual Impacts

There are *no residual impacts* associated with recreation.

CUMULATIVE IMPACTS

The project list in Table 3-2 (Cumulative Projects Summary in Section 3) shows past and present projects in the area. Further, the development in the area is shown to be consistent with the Santa Clarita Valley Area Plan for the County of Los Angeles. The permit process for discretionary projects will provide mitigation for any cumulative impacts that may occur. Therefore, there are *no cumulative impacts* to recreation associated with the NCWD pipeline project, and are considered to be *less than cumulatively considerable*.

GROWTH-INDUCING IMPACTS

The possibility that the water main, as an extension of infrastructure, would induce growth in the area is a *potentially significant impact*. The Santa Clarita Valley Area Plan has a planning horizon from 1980 to 2010. The County of Los Angeles is currently updating the General Plan for the area. The planned provision for recreation in the service area of the water pipeline is planned within the horizon of the current General Plan.

Because the project is sized to provide more capacity than is needed to serve existing, recorded, and approved/pending projects, according to the Santa Clarita Area Plan, it is considered to be growth inducing to existing recreation facilities in the region of the service area if population growth expands beyond the capacity of existing or planned recreational facilities.

Recommended Mitigation Measure

There is no feasible mitigation measure available to NCWD.

NCWD is a special district, a legitimate subdivision of the State government, established under the authority of Section 3000, Division 12 of the California Water Code. Providing water service to municipal and industrial users is the essence of the mission of NCWD. As a special district, NCWD only has authority to control those issues currently enacted by ordinance by the Board of Directors. NCWD has no other authority over planning or development in their service area. Therefore, NCWD has no authority to control adverse impacts created by the potential growth from the water service. However, the normal discretionary permit process within the County of Los Angeles would identify and avoid, minimize, or reduce impacts according to CEQA, or require mitigation to do so.

Monitoring

NCWD has no authority over land use changes and increased demand for water, and therefore it cannot monitor for potential growth inducement.

Significance after Mitigation

The significance after mitigation would be *significant and unavoidable*. Therefore, a Statement of Overriding Consideration must be adopted by the NCWD for this impact.

5.15 TRANSPORTATION AND TRAFFIC

5.15.1 Setting

The Circulation Element of the Santa Clarita Valley Area Plan includes a Circulation Plan that describes a system of arterial highways for the Santa Clarita Valley. This system, intended to protect rights-of-way in area consistent with potential growth, indicates many of the existing roads appear to be adequate for future needs. It also provides for modifications of the Circulation Plan as developments are approved, including provisions that require development project proponents to fund road improvements necessary to support their project-induced traffic increases.

5.15.2 Road Network

Vasquez Canyon Road, Sierra Highway, and Sand Canyon Road are all part of the existing Circulation Plan for the Santa Clarita Valley Area Plan. The proposed Vasquez Water Main Project would not require widening, lengthening, or other changes to these existing roadways. However, operations of the streets, intersections, and sidewalks of these roadways will be temporarily inconvenienced.

5.15.2.a Roadway Operations

Construction of the Vasquez Water Main Project would affect existing traffic and roadway operations during the time of construction since temporary road closures and delays will develop throughout the roadways of the water main path. The water main construction activities would affect existing intersection operations at two major intersections and only during a small portion of the period of water main construction. The affected intersections include the Vasquez Canyon Road-Sierra Highway and Sand Canyon Road-Sierra Highway. Construction of the Vasquez Water Main Project would affect existing pedestrian/bicycle activities along the pipeline corridor during the time of construction since sidewalks will likely be closed and alternate routes may be required.

5.15.2.b Trip Generation

Construction of the Vasquez Water Main Project would include increased construction related traffic during the time of construction. This increased traffic is anticipated to include:

- Four 10-Wheel End-dump Trucks,
- One 311 Caterpillar [CAT] Excavator,
- One 950 CAT Loader,
- One 655 E Backhoe,
- One 1,800-gallon Water Truck,
- One Street Sweeper,
- Two 1-ton GMC Pickup Trucks,
- One ¾-ton Pickup Truck,
- One 10-Wheel Dump Truck, and
- Four light duty vehicles for construction workers transportation, which would include:
    - One 1999 GMC 1-ton Truck,
    - One 2000 GMC 1-ton Truck,
    - One 1998 ¾-ton Truck, and
    - One 1998 GMC Dump Truck.

This increased trip generation will occur five days per week during the total estimated construction time of eight weeks. The estimated total traffic generation is found in Table 5-15, NCWD Vasquez Water Main Project Trip Generation. However, the period of construction should only be about eight weeks. Therefore, there will be no long-term trip generation impacts from the proposed pipeline project.

Table 5-15. NCWD Vasquez Water Main Project Trip Generation

Vehicle Type	Trips Per Day	Total Trips During Construction (60 days)
Light Duty	20 (4 NCWD trucks	800
Heavy Duty	30 (4 End dumps – 1 water truck)	1200
Excavation	Work on-site all day (1 Cat Excavator, 1 Loader, 1 Backhoe, 1 street sweeper)	Unknown

5.15.2.e Trip Distribution

NCWD has a pipeline crew consisting of five members. These regular employees of NCWD will compose the construction crew for the project. Two additional employees of NCWD will be assigned to traffic control for the duration of the project. Therefore, there will be no new additional trips for these employees excepting those from the NCWD office to the work site.

The Light Duty vehicles will consist of vehicles bringing construction workers to the site, and will include trips required for supervision of the project during construction. This traffic will include traffic from workers traveling to the site as well as construction supervision traffic traveling from NCWD offices to the site. The roads that construction workers will use to get to the site in currently unknown; however, only five to seven actual construction workers will be onsite at any given time. Traffic from the NCWD offices will travel State Route 14, and is estimated to be no more than 20 trips each day during the 8-week construction period. This increased traffic is not expected to adversely impact existing roadways because it represents only 51 trips per day for five days a week for approximately 8 weeks.

5.15.3 Impact Analysis

Quantification is difficult for cumulative and growth-inducement impacts, as it would require speculative estimates of impacts including, but not limited to, the following:

- The geography of impacts, as impacts of future development may affect different areas;
- Variations in time of impacts, as many of the project impacts, as well as future development impacts (particularly those that are short-term), would occur at different times, and would be reduced or removed before other short-term impacts could occur;
- Complete data sets not available for all future development; and
- Data for future development may change, following subsequent approvals.

The following cumulative impact discussion is based primarily on build-out of the Santa Clarita Valley area, in accordance with the General Plan. Potential growth inducement and cumulative impacts of the proposed project, in combination with cumulative development projects, are discussed below. Precise impacts of future development have been, or will be, discussed in appropriate environmental documentation for those projects, depending on the current project approval stage.

5.15.3.a Criteria and Significance Thresholds

According to The County Regional Planning Office the only traffic information available is from development projects in the area that have completed a traffic study. At present, no such studies exist for the proposed project area (Alfonso, pers. comm.). The county has taken 24-hour volume counts on Sierra Highway and Vasquez Canyon Road. On 4 April 2001, at Sierra Highway (south of Sand Canyon Road), the 24-hour traffic volume count was 10,026. On 17 April 2001, the count was 10,403. For Vasquez Canyon Road, east of Bouquet Canyon Road, the 24-hour volume count was 6,168 on 21 Aug 2001. The proposed project will add approximately 50 vehicle trips per day to these intersections for a period of 60 days.

A project would normally have an impact on the environment if it would:

1. Cause an increase in traffic that is substantial in relation to the existing traffic and capacity of the street system;
2. Exceed, either individually or cumulatively, a level of service established by the county congestion management agency for designated roads or highways;
3. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in a substantial safety risk;
4. Substantially increase hazards due to a design feature or incompatible uses;
5. Result in inadequate emergency capacity; and/or
6. Conflict with adopted policies, plans, or programs supporting alternative transportation.

5.15.3.b Project Impacts and Recommended Mitigation Measures

The Vasquez Water Main Project would not have any project-specific impacts associated with the 50 vehicle trips to be added to the capacity of these two-lane highways and collector streets. The proposed water main extension, while large at 18 inches in diameter, is a long-term infrastructure investment for the NCWD. The pipeline capacity would be able to serve approximately 2,000 equivalent dwelling units. Currently, 300 existing dwelling units could be served by the pipeline extension. Subtracting the existing DU's from the total DU's leaves 1,700 equivalent dwelling units that could be served by the project. This 1,700 dwelling unit figure multiplied by the County of Los Angeles countywide dwelling unit population average (2.89 persons/DU) would equal a 4,930-population increase. This population increase would not occur at once; rather, it would occur over a period of time through the normal discretionary permit process.

Quantification is difficult for cumulative and growth-inducement impacts, as it would require speculative estimates of impacts including, but not limited to, the following:

- The geography of impacts, as impacts of future development may affect different areas;
- Variations in time of impacts, as many of the project impacts, as well as future development impacts (particularly those that are short-term), would occur at different times, and would be reduced or removed before other short-term impacts could occur;
- Complete data sets not available for all future development; and
- Data for future development may change, following subsequent approvals.

IMPACT 5.15-1: IMPACTS TO TRANSPORTATION AND TRAFFIC

The Vasquez Water Main Project will result in temporary traffic delays during the construction period, which is considered an *adverse but mitigable impact*. Based on the significance thresholds, this impact is considered a *less-than-significant impact* to transportation and traffic; however, traffic flows will likely be impeded during construction of the pipeline, which can be reduced some through traffic control measures. The period of construction should only be approximately eight weeks; therefore, no long-term roadway operations impacts would result from the proposed pipeline project.

Recommended Mitigation Measure 5.15-1

To reduce impacts to transportation and traffic, roadwork directional signs will be required to inform traffic of the construction activities. NCWD may be required to direst traffic in problem areas such as major intersections, and should post any traffic delays during the construction period. NCWD will deploy two employees to direct traffic during the construction of the pipeline to reduce traffic delays and allow safe passage of traffic around or through construction sites.

Monitoring

The NCWD project manager will ensure that employees and/or contractors direct traffic during the construction of the pipeline.

Significance after Mitigation

The significance after mitigation would be *less than significant.*

Residual Impacts

No residual impacts to transportation and traffic will result from the proposed project.

CUMULATIVE IMPACTS

No cumulative impacts to transportation and traffic will result from the proposed project.

GROWTH-INDUCING IMPACTS

The impacts created by residential and commercial development, and the concomitant traffic increase precipitated by that Los Angeles County would regulate development, during the discretionary permit process. Possible mitigation measures would include, but would not be limited to, exactions for road improvements from individual development projects, traffic mitigation fees, traffic studies, and intersection improvements.

The possibility that the water pipeline, as an extension of infrastructure, would induce growth in the area is a *potentially significant impact* for both project specific and cumulative impacts. The Santa Clarita Valley Area Plan has a planning horizon from 1980 to 2010. The County of Los Angeles is currently updating the General Plan for the area. The planned growth in the service area of the water pipeline is planned within the horizon of the current General Plan.

Because the project is sized to provide more capacity than is needed to serve existing, recorded, and approved/pending projects, according to the Santa Clarita Area Plan, it is considered to be growth-inducing to current planned transportation needs.

The impacts created by residential and commercial development, and the concomitant traffic increase precipitated by that development would be regulated by Los Angeles County during the discretionary permit process. Possible mitigation measures would include, but would not be limited to, exactions for road improvements from individual development projects, traffic mitigation fees, traffic studies, and intersection improvements.

NCWD is a special district, a legitimate subdivision of the State government, established under the authority of Section 3000, Division 12 of California Water Code. Providing water service to municipal and industrial users is the essence of the mission of NCWD. As a special district, NCWD only has authority to control those issues currently enacted by ordinance by the Board of Directors. NCWD has no other authority over planning or development in their service area. Therefore, NCWD has no authority to control adverse impacts created by the potential growth from the water service. However, the local discretionary permit process within the County of Los Angeles, and regional agencies, such as South Coast AQMD, would identify and avoid, minimize, or reduce impacts according to CEQA.

Recommended Mitigation Measure

There is no feasible mitigation measure available to NCWD.

Monitoring

NCWD has no authority over transportation and related land use changes or increased demand for water and so cannot monitor for potential growth inducement.

Significance after Mitigation

The significance after mitigation would be *significant and unavoidable*. Therefore, a Statement of Overriding Consideration must be adopted by the NCWD for this impact.

5.16 UTILITIES AND SERVICE SYSTEMS

5.16.1 Setting

Growth inducement and cumulative impacts from the proposed project, potential annexation areas, and additional development may result in increased demand for services and utilities. All of these potential future projects will be required to pay connection, service and assessment fees which mitigate the increased demand by providing for additional services and facilities.

5.16.2 Impact Analysis

5.16.2.a Criteria and Significance Thresholds

A project would normally have an impact on Utilities and Service Systems if it would:

1. Exceed wastewater treatment requirements of the Los Angeles Regional Water Quality Control Board (Los Angeles RWQCB);
2. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of that could cause significant environmental effects;
3. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
4. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;
5. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
6. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; and
7. Comply with federal, state, and local statutes and regulations related to solid waste.

5.16.2.b Project Impacts and Recommended Mitigation Measures

Public services would not be adversely affected by installation of the pipeline since none of the criteria and significance thresholds (described above) are exceeded.

DIRECT SIGNIFICANT IMPACTS

No direct significant impacts to utilities and service systems will result from the proposed project.

CUMULATIVE IMPACTS

The cumulative impacts are *not expected to be significant or cumulatively considerable* to electricity, natural gas, telephone, wastewater treatment, and police or fire services.

GROWTH INDUCING IMPACTS

The project, as proposed, is considered to be growth inducing for Land Use Impacts (see Section 5.9- Impact Analysis) and would also increase demands on public services.

The impacts created by residential and commercial development, and the concomitant increased demand on utilities and service systems precipitated by that Los Angeles County would regulate development, during the discretionary permit process. Possible mitigation measures would include, but would not be limited to, exactions for improvements and/or expansion of utility systems and service, excluding water services.

Specific public services likely to be significantly impacted by increased growth beyond existing and approved levels include electricity, transportation facilities, and natural gas.

Recommended Mitigation Measure

There is no feasible mitigation measure available to NCWD.

NCWD is a special district, a legitimate subdivision of the State government, established under the authority of Section 3000, Division 12 of California Water Code. Providing water service to municipal and industrial users is the essence of the mission of NCWD. As a special district, NCWD only has authority to control those issues currently enacted by ordinance by the Board of Directors. NCWD has no other authority over planning or development in their service area. Therefore, NCWD has no authority to control adverse impacts created by the potential growth from the water service. However, the local discretionary permit process within the County of Los Angeles, and regional agencies, such as South Coast AQMD and the Los Angeles RWQCB, would identify and avoid, minimize, or reduce impacts according to CEQA.

Monitoring

NCWD has no authority over the provision of other utilities and their respective service systems, or increased demand for water and so cannot monitor for potential growth inducement.

Significance after Mitigation

The significance after mitigation would be *significant and unavoidable*. Therefore, a Statement of Overriding Consideration must be adopted by the NCWD for this impact.