

US EPA ARCHIVE DOCUMENT

ENVIRONMENTAL ASSESSMENT

**WATER SUPPLY WELLS
FOR THE
CITY OF ARCADIA, CALIFORNIA**

Longley Well No. 3 and Camino Real Well No. 3

**ENVIRONMENTAL PROTECTION AGENCY
REGION 9**

JUNE 2009

TABLE OF CONTENTS

1.0	OVERVIEW OF THE PROPOSED ACTION AND ALTERNATIVES.....	1
1.1	INTRODUCTION.....	1
1.2	PURPOSE AND NEED	4
1.3	PROJECT HISTORY.....	5
1.4	PROPOSED ACTION	7
1.5	ALTERNATIVES	15
1.5.1	Preferred Alternative.....	15
1.5.2	Other Alternatives Excluded from Further Consideration	16
1.5.3	No Action Alternative.....	19
2.0	AFFECTED ENVIRONMENT	20
2.1	AIR RESOURCES	20
2.1.1	Air Quality	20
2.1.2	Noise	22
2.1.3	Odor	22
2.2	WATER RESOURCES.....	22
2.2.1	Groundwater.....	22
2.2.2	Water Supply System	24
2.2.3	Surface Water	24
2.2.4	Wetlands	26
2.2.5	Flood Plains.....	26
2.3	SURFACE RESOURCES	26
2.3.1	Topography	26
2.3.2	Soils.....	27
2.3.3	Geology/Seismic	27
2.3.4	Tsunami, Seiches and Storm Surges	28
2.3.5	Vegetation	29
2.3.6	Terrestrial Wildlife.....	29
2.4	THREATENED AND ENDANGERED SPECIES.....	30
2.5	CULTURAL RESOURCES.....	32
2.6	SOCIOECONOMIC RESOURCES	35
2.6.1	Land Use	35
2.6.2	Aesthetics.....	36
2.6.3	Socioeconomic Conditions	38
2.6.4	Waste Management	39
2.6.5	Transportation	40
2.6.6	Environmental Justice	42

TABLE OF CONTENTS

2.7	COASTAL BARRIER RESOURCES	44
2.8	COASTAL ZONES	44
2.9	SIGNIFICANT AND/OR IMPORTANT FARMLANDS.....	44
2.10	WILD AND SCENIC RIVERS.....	44
2.11	ESSENTIAL FISH HABITAT	44
3.0	ENVIRONMENTAL CONSEQUENCES	45
3.1	AIR RESOURCES	46
3.1.1	Potential Impacts on Air Quality	47
3.1.2	Potential Impacts on Noise.....	49
3.1.3	Potential Impacts on Odor	50
3.2	WATER RESOURCES.....	51
3.2.1	Potential Impacts on Groundwater	51
3.2.2	Potential Impacts on the Water Supply System.....	53
3.2.3	Potential Impacts on Surface Water	53
3.2.4	Potential Impacts on Wetlands	54
3.2.5	Potential Impacts on Flood Plains	55
3.3	SURFACE RESOURCES	55
3.3.1	Potential Impacts on Topography	56
3.3.2	Potential Impacts on Soil	56
3.3.3	Potential Impacts on Geological Resources	57
3.3.4	Potential Impacts, Tsunami, Seiche, and Storm Surges.....	57
3.3.5	Potential Impacts on Vegetation.....	58
3.3.6	Potential Impacts on Terrestrial Wildlife	59
3.4	THREATENED AND ENDANGERED SPECIES.....	60
3.5	CULTURAL RESOURCES.....	61
3.6	SOCIOECONOMIC RESOURCES	65
3.6.1	Potential Impacts on Land Use.....	65
3.6.2	Potential Impacts on Aesthetics	65
3.6.3	Potential Impacts on Socioeconomic Conditions	66
3.6.4	Potential Impacts on Waste Management	67
3.6.5	Potential Impacts on Transportation	68
3.6.6	Potential Impacts on Environmental Justice	69

TABLE OF CONTENTS

3.7 COASTAL BARRIER RESOURCES 70

3.8 COASTAL ZONES 70

3.9 SIGNIFICANT AND/OR IMPORTANT FARMLANDS..... 71

3.10 WILD AND SCENIC RIVERS 71

3.11 ESSENTIAL FISH HABITAT 71

3.12 CUMULATIVE IMPACTS 72

3.13 UNAVOIDABLE ADVERSE IMPACTS..... 73

4.0 CONCLUSION 75

5.0 BIBLIOGRAPHY 77

5.1 LIST OF PREPARERS..... 77

5.2 AGENCIES AND PERSONS CONSULTED..... 77

5.3 REFERENCES..... 78

6.0 APPENDIX 81

APPENDIX A California Department of Fish and Game
California Natural Diversity Database Information

APPENDIX B California Department of Fish and Game
California Natural Diversity Database Information
Spotted Owl Database Management System

APPENDIX C United States Department of the Interior, Fish & Wildlife Service
Inquiry to U.S. Department of the Interior, Fish & Wildlife Service
Response from U.S. Dept. of the Interior, Fish & Wildlife Service

APPENDIX D California Office of Historic Preservation, Parks and Recreation
Inquiry Letter to SHPO
Consultation Response from SHPO

California Historical Resources Information System
Records Search

APPENDIX E Native American Heritage Commission (NAHC)
Sacred Lands File Records Search
Inquiry to NAHC
Consultation Response from NAHC

Native American Tribes Inquiry Letter

Main San Gabriel Basin Watermaster
Inquiry to Main San Gabriel Basin Watermaster
Response from Main San Gabriel Basin Watermaster

TABLE OF CONTENTS

LIST OF TABLES

Table 2-1	Numbers of State and Federally Listed Species in California
Table 2-2	Summary of Socioeconomic Data

LIST OF FIGURES

Figure 1	Arcadia Vicinity Map
Figure 2	Well Project Location Map
Figure 3	Longley Well Site Plan
Figure 4	Aerial View of Longley Site
Figure 5	Existing View of Longley Site
Figure 6	View of Longley Facility Looking Southwest
Figure 7	Camino Real Well Site Plan
Figure 8	Aerial View of Camino Real Site
Figure 9	Existing View of Camino Real Site
Figure 10	View of Camino Real Facility Looking Northeast
Figure 11	PM10 Trends Summary
Figure 12	General Plan Land Use Map
Figure 13	Truck Route Map

1.0 OVERVIEW OF PROPOSED ACTION AND ALTERNATIVES

This document is an Environmental Assessment (EA) for the proposed Water Supply Wells Project in the City of Arcadia, California. This document evaluates environmental effects of the proposed water supply wells project. This EA fulfills the requirements of the National Environmental Policy Act (NEPA).

The project includes the construction of two water supply wells in the City of Arcadia at existing reservoir/well site locations within the City of Arcadia.

Special Appropriation Grant funds from the U.S. Environmental Protection Agency (EPA) in Fiscal Years 2005, 2006, and 2008 would be used to implement the proposed project. The Introduction section below provides background information on the City of Arcadia and the well projects. Section 1.2 provides a description of the purpose and need for the project. Section 1.3 provides the history of the project. The proposed action is discussed in Section 1.4 and the alternatives are discussed in Section 1.5.

1.1 INTRODUCTION

The City of Arcadia (City) is located in Los Angeles County, California (approximately 18 miles northeast of downtown Los Angeles) in the western portion of the San Gabriel Valley, at the base of the San Gabriel Mountains. Figure 1 is a vicinity map of the area. The City of Arcadia encompasses approximately 12 square miles and has a population of approximately 56,000. The City of Arcadia water service area is only about 11 square miles because several areas within the City, primarily at the surrounding boundaries, are served water by other agencies. Sunny Slope Water Company, East Pasadena Water Company and California-American Water Company serve an area along the western boundary of the City. Golden State Water Company serves residents along the south and east boundaries.

The City of Arcadia owns and operates its water supply system, which draws water from local groundwater basins in the San Gabriel Valley. The water supply for the City comes from three sources: (1) groundwater from wells in the Main San Gabriel Basin; (2) groundwater from wells in the East and West Raymond Basins; and (3) through direct delivery of treated imported water from Metropolitan Water District (MWD). Although, the City can receive treated imported water from MWD, it has rarely relied on this source in the last twenty years.

Through groundwater management, well maintenance, and capital improvement programs, the City has been able to minimize the City's reliance on imported water. The City owns and currently operates 11 water supply wells that tap the East Raymond, the West Raymond, and the Main San Gabriel Basins.

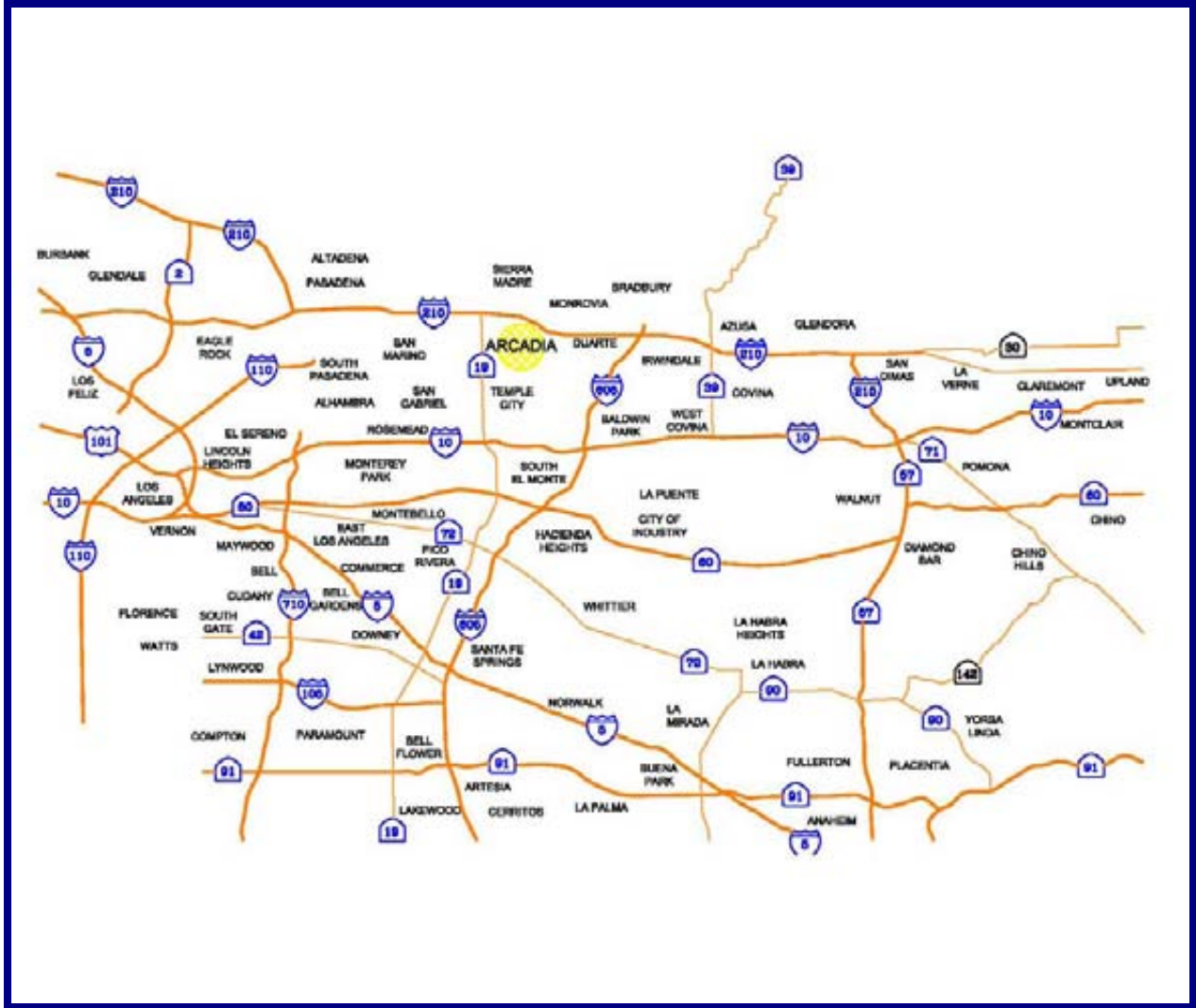


FIGURE 1
ARCADIA VICINITY MAP

In addition to the City's Metropolitan Water District (MWD) connection, the City also has four inter-tie connections with other water agencies for emergency use. These connections serve as short-term emergency exchange opportunities. The City has an 8-inch two-way connection with Golden State Water Company, a 6-inch two-way connection with Sunny Slope Water Company, a 4-inch two-way connection with San Gabriel Valley Water Company and an 8-inch two-way connection with the City of Sierra Madre.

The U.S. Army Corps of Engineers (USACE) Los Angeles District, has performed feasibility-level studies of the safeguarding of the water supply systems and other public works infrastructure from earthquake damage. The study area covered the cities of Arcadia and Sierra Madre. The feasibility-level studies were conducted in accordance with the provisions of Section 116(d) of the Water Resources Development Act of 1990 (Public Law [P.L.] 101-640).

The first study initiated the planning process by formulating and evaluating alternative water infrastructure corrective measures that would result in a positive net economic benefit and that would reduce the damage to the City of Arcadia's water supply system and length of time that the system may be unserviceable following a major seismic event. The study, entitled, "*City of Arcadia and Sierra Madre Water Infrastructure Restoration Special Study, Los Angeles County, California, Final Special Study Report,*" (USACE Study or Study) was supported by federal matching funds and was completed in August 1997. The report identified three levels of alternative programs grouped by priority and initial cost, with subsequent actions built on the previous program. The City of Arcadia used the USACE report and its internal planning documents to develop a specific list of priority water infrastructure improvement projects.

Development of the water infrastructure projects included considerable involvement on the part of the public, the City of Arcadia, and the USACE in the preparation of the study and design plans, and in the preparation of the environmental documents completed to date. In April 2000, USACE completed the second study, which included preparation of design plans, specifications, and cost estimates for the projects identified in the study.

The City of Arcadia completed a Mitigated Negative Declaration (MND) for the two well projects described in this EA, in accordance with the requirements of the California Environmental Quality Act (CEQA). The purpose of the MND was to determine whether the projects may have a significant effect on the environment. Completion of the MND included providing public notices and the opportunity to comment during the preparation of the CEQA documents. At its meeting on November 18, 2008, the City Council of the City of Arcadia certified the MND, which found that the project would not have a significant environmental impact. No public comments were received.

The City of Arcadia is proposing to fund a portion of the proposed water infrastructure improvement project, as defined further in Section 1.4, Proposed Action, with funds included in the EPA's fiscal years 2005, 2006 and 2008 budgets for special appropriation grant funds. The federal grant would supplement funding from the City of Arcadia and would be used to upgrade the existing water infrastructure for the City of Arcadia through the implementation of the proposed project.

This project must comply with requirements set forth under the National Environmental Policy Act (NEPA) of 1969, in accordance with regulations of the Council on Environmental Quality (CEQ) for implementing NEPA (40 Code of Federal Regulations [CFR] parts 1500 - 1508). As directed under NEPA and in accordance with CEQ regulations, EPA, as the lead federal agency, prepared this EA in concert with the City of Arcadia for the implementation of the water infrastructure improvement projects for the City of Arcadia.

1.2 PURPOSE AND NEED

The purpose of the water infrastructure project is to provide adequate infrastructure upgrades to meet existing and future normal and emergency water operating system needs of the City of Arcadia. The normal operating conditions of a water supply system are designed to function with a relatively constant pressure. Such constant pressure is achieved by economically designing reservoirs, wells, pumping equipment, and pipe sizes to adequately supply the existing and future needs of the service area. Emergency operating conditions are defined as those that occur after an earthquake event and include the additional water used by hospitals and in fighting fires, in addition to the normal operating condition needs.

The City of Arcadia's Water Master Plan 2008 Update identifies water system projects including the construction of two new wells. The City's 2005 Urban Water Management Plan also recommends the addition of new wells in order to increase self-sufficiency and to assure water availability.

By increasing the reliability of the water systems attained through seismic retrofitting, enhanced emergency response systems, redundancy in supplies, provision of emergency power, and pipe improvements to increase flexibility, a more dependable source of water would be available to help extinguish fires after earthquakes. Accordingly, the USACE Study identifies programs, which include specific projects that are recognized as sound engineering improvements to the water distribution systems, as well as emergency and operational program enhancements. The addition of water supply wells is a major component. The proposed project will result in meeting the following goals and objectives:

- Upgrade the City's aging water system infrastructure,
- Increase water system reliability in the event of an earthquake,
- Increase the capability to fight earthquake-related fires,
- Increase water system redundancy, and
- Enhance public health and safety.

The need for the proposed action is based on the environmental, social, and economic benefits of improving the water supply infrastructure within and adjacent to the City of Arcadia. The purpose of and need for the proposed action are analyzed further in Sections 2.0 and 3.0 of the EA.

1.3 PROJECT HISTORY

The USACE Study, prepared in 1997, evaluated numerous options and programs to identify potential future water infrastructure improvement projects and establish priorities among them for implementation. The entire USACE Study is an analysis of potential ways to achieve the goal of increased seismic reliability in the water infrastructure systems of the cities of Arcadia and Sierra Madre. The USACE Study evaluated the existing water infrastructure to determine which facilities were vulnerable to seismic events and developed plans to upgrade those facilities that were vulnerable.

The type of seismic event (design-basis earthquake) on which the water infrastructure improvement projects and the damages to the existing water infrastructure were based was derived from information about previous earthquakes in the region and about the faults in the area. The design-basis earthquake would result in a peak horizontal ground acceleration of 0.64 times the acceleration of gravity, which could result from an earthquake of a magnitude of 7.2 on the Richter Scale, with the epicenter occurring less than one mile from the northern portions of the cities of Arcadia and Sierra Madre.

The components of the study included a seismic evaluation, an evaluation of facility components, an evaluation of system operation, and an economic evaluation. The conditions that various water infrastructure improvement projects would create were compared with existing conditions, defined as the “without-project” conditions in the USACE Study, in terms of seismic hazards, availability of temporary power, performance of the water system, leak detection audit, hydrology and recoverable water analysis, and emergency disaster response.

The USACE Study concluded that the without-project conditions could result in economic damages on the order of magnitude of more than \$300 million (in 1997 dollars) if the water systems were disrupted by a seismic event equivalent to that of the design-basis earthquake. The economic damages would result primarily from fires after the seismic event that could not be extinguished because of disruptions on the water supply infrastructure. The USACE Study cites additional costs of damage associated with the repair or replacement of the physical system, such as pumps, pipes, reservoirs, and valves; lost business revenues; and the cost to the residential customer of obtaining water from alternative sources during a high-demand period, as well as finding alternative housing when property damage has occurred.

Although the USACE Study addresses the overall water system improvements, the two wells for which this EA is prepared is an integral part of the overall water system improvements. As discussed earlier, it is the wells that will provide the needed water supply to make the other infrastructure usable and provide the needed water system reliability.

The USACE Study identifies the following three alternative programs (Program) whereby each successive Program incorporates all the projects of the previous Program:

PROGRAM 1

Program 1 includes Emergency Response Enhancement Programs such as emergency response preparedness procedures, emergency response training programs, and prioritizing a list of tasks to be performed by the water operations staff after an emergency event.

Program 1 also includes Operation and Maintenance Programs such as maintenance and operational improvements at the Sierra Madre spreading ground and development of a maintenance and operations program for line valves and fire hydrants.

In addition, Program 1 contains Water Facility Component Improvements for the City of Arcadia including reconstruction of Arcadia reservoirs and forebays (St. Joseph, Santa Anita, Longden, and Chapman), replacement of two new Zone 3 wells, installation of new pipeline in Michillinda Avenue and Duarte Road (18,000 feet of 24-inch diameter pipe), installation of three pressure-reducing valves (PRV), implementation of backup power for all well and booster pumping sites, construction of gas storage tanks and fuel systems at St. Joseph and Peck well sites, and re-equipping of existing portable generators to simultaneously operate all the boosters and wells at the Orange Grove Plant.

PROGRAM 2

Program 2 includes all projects identified in Program 1 above, plus additional water facility component improvements in Arcadia including a 3.0-million-gallons (mg) Zone 1 reservoir, 10,000-gallon-per-minute (gpm) Zone 1 pump station at Baldwin Reservoir Site, north-south pipeline from Orange Grove Drive to Camino Real Avenue (17,000 feet of 24-inch pipe), and east-west interconnecting pipe in Duarte Road (13,000 feet of 24-inch pipe).

PROGRAM 3

Program 3 Includes all projects identified in Program 1 and Program 2 above, plus five million gallons of additional reservoir capacity in Arcadia's Zone 1 and replacement of all pipe smaller than 8-inch-diameter with 8-inch-diameter pipe (approximately 320,000 linear feet).

The extensive analysis of alternative programs and projects prepared by USACE has brought about the phased approach described above to the implementation of Program 3 water system improvements to reach the desired objective.

As a result of further analysis at the city level and in light of cost considerations, the programs that make up the proposed action were selected to meet the City's needs. Through past federal grants (in fiscal years 2000-2004), many projects identified in the USACE Study have been implemented and are now operational. The two water supply well projects that are included in this proposed action and that are evaluated in this EA would be a continuation of the phased water infrastructure improvement program that is supported by federal funds and city matching funds.

1.4 PROPOSED ACTION

The proposed action includes implementation of two water supply wells within the City of Arcadia. The two municipal water wells will serve as replacement wells for wells no longer in service. Each of these two wells will be constructed within its existing facility, produce the same or similar capacity, and serve the same distribution zone as the wells they are replacing. The proposed action would provide a safe and effective supply of water during both normal and emergency operating conditions. The proposed water supply wells would be installed in water supply Zone 3, reflecting current needs as defined by the City of Arcadia and in concert with the USACE Study identifying the need for two wells in Zone 3. Figure 2 shows the location of the two well sites within the City of Arcadia

The two water supply wells are proposed to ensure that adequate system capacity is available to use as a source of blend water to keep the St. Joseph Well #2, which is high in nitrates, operating in the event one of the City's existing wells becomes inoperable, and have an alternate source of supply in the event insufficient groundwater supplies are available from the Raymond Basin. The City also requires additional water supply redundancy within its system to ensure an adequate supply of water in the event that existing wells are out of service for scheduled maintenance, or out of service due to emergency or other unanticipated conditions.

The plan is to construct both wells concurrently, on property currently owned by the City of Arcadia at sites that have operated continuously as well sites since the 1920s and 1940s.

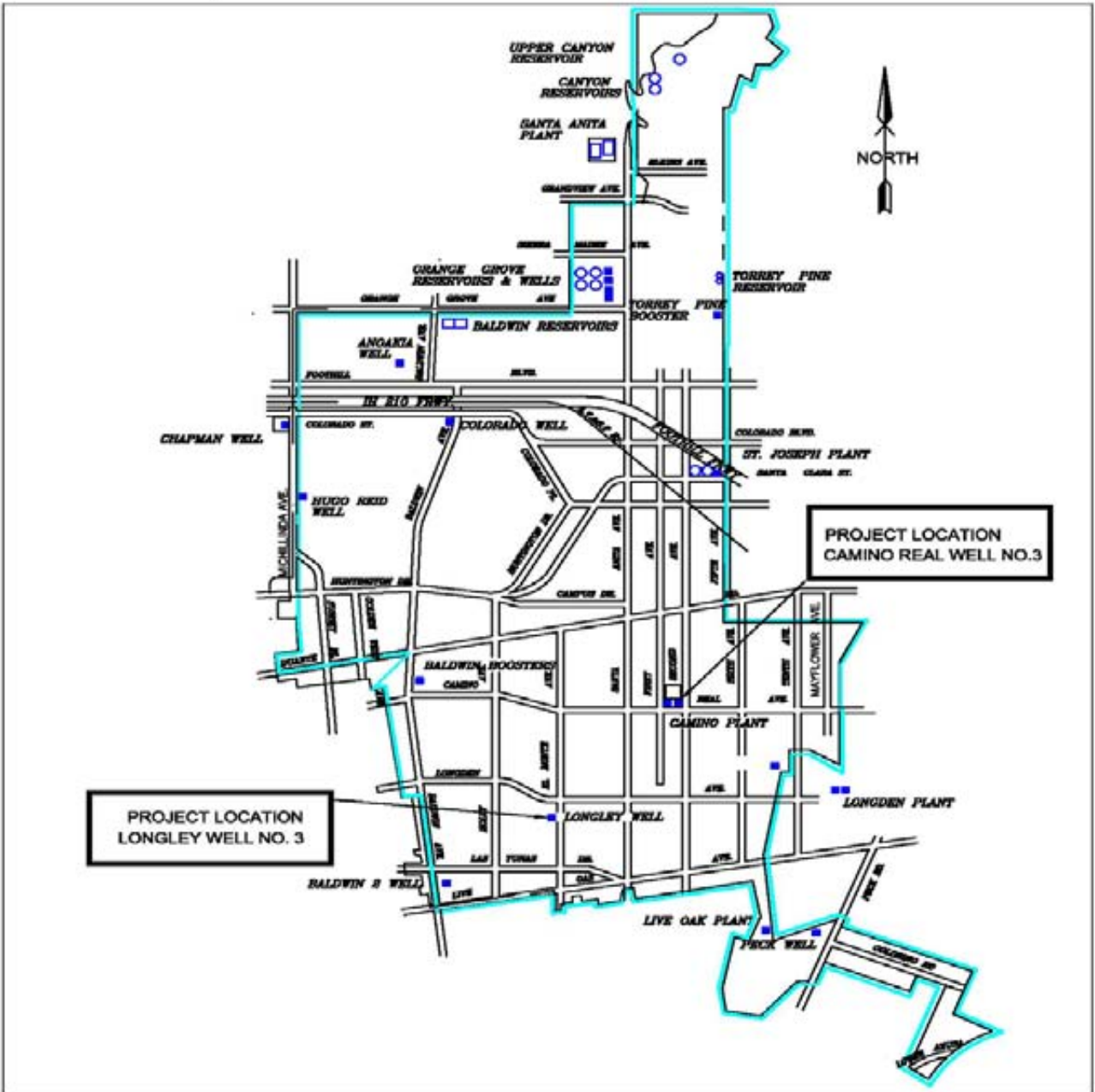


FIGURE 2
WELL PROJECT LOCATION MAP

Longley Well Site

The replacement Longley Well #3 will be located at the Longley Water Facility, 2401 El Monte Avenue, Arcadia. This well will be designed to discharge 1500 gallons per minute (GPM) and will replace Longley Well #2 which was placed out of service in 1979. Longley Well #2 was originally designed as a 2600 GPM well, but as of 1962, the output of the well was recorded at 1500 GPM.

The proposed well will be drilled to a depth of approximately 900-1200 feet, with perforations set at depths to provide the maximum flow and to avoid possible nitrate infiltration. The well will be used to provide additional system water to enhance/expand the California Department of Public Health approved nitrate blend plan for the St. Joseph Well #2, and to provide a redundant source of supply in the event the Live Oak Well, Peck Road Well and/or Longden Wells #1 or #2 are inactive.

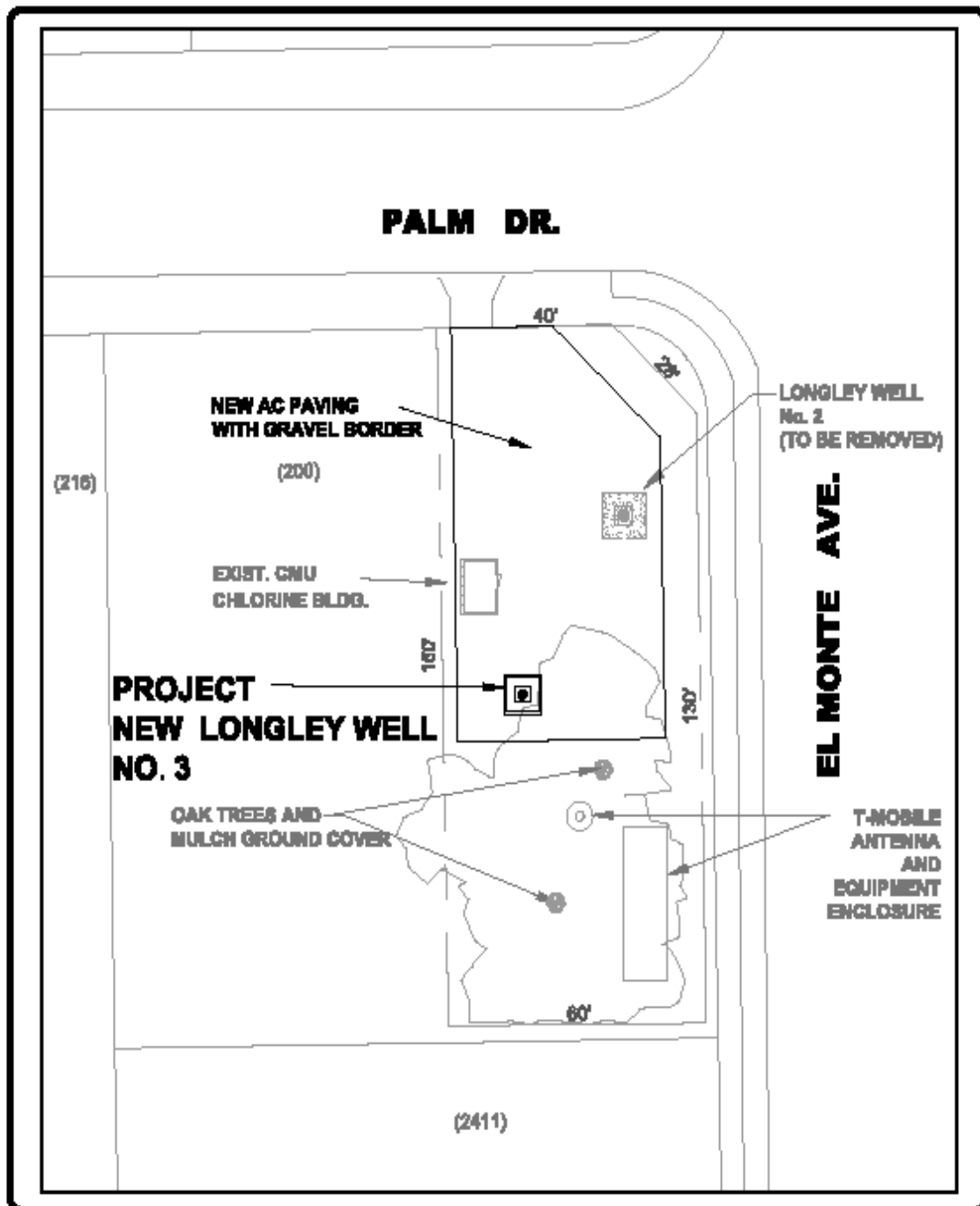
The Longley Well #3 site is an existing well site that has been out of service since 1979. The site is located on the southwest corner of Palm Drive and El Monte Avenue with the entrance to the site on Palm Drive. The site is 60 feet wide (Palm Drive) by 150 deep (El Monte Avenue), and is in a residential neighborhood with one residential neighbor to the west and one residential neighbor to the south. The site is basically flat, sloping very slightly from north to south. Figure 3 shows the Longley Well Site Plan.

The site was sold to the City of Arcadia in 1948 after having been used as a well facility for the Longley Ranch from about 1920 to 1940. The original well collapsed sometime after 1940. The second well, known as Longley Well #2 is a 620 foot deep well drilled in 1949. The well still exists, but it was placed out of service in 1979 and the pump removed due to poor production and excessive nitrates in the groundwater.

Since the removal of the well pump equipment, the site has been used for occasional tactical practice by the Arcadia Police Department SWAT team. Recently, a portion of the site has also been leased to T-Mobile Communications for use as a telecommunications antenna site.

The structures on site include a small masonry shed, originally used to house disinfecting materials associated with the well, the wellhead (no equipment), a small SWAT obstacle course, a 50 foot tall mono-pine telecommunications tower, and telecommunications equipment housed in an un-roofed masonry enclosure. The site has two oak trees (non-protected variety) on the south side of the property, and is surrounded by a six foot tall masonry and stucco wall with landscaping on the exposed perimeters facing Palm Drive and El Monte Avenue.

Figures 4, 5 and 6 are photographs of the Longley Well Site.



LONGLEY WELL FACILITY

FIGURE 3

DATE: 08/18/08
BY: TL
CHK'D BY:
SCALE:
NTS





FIGURE 4
AERIAL VIEW OF LONGLEY



FIGURE 5
EXISTING VIEW OF LONGLEY SITE



FIGURE 6
VIEW OF LONGLEY FACILITY LOOKING SOUTHWEST FROM EL MONTE AVENUE

Camino Real Well Site

The second well to be constructed is the Camino Real Well #3, located at the Camino Real Water Facility, 141 E. Camino Real Avenue, Arcadia. This well will be designed to discharge 2500 GPM and will replace Camino Real Well #1. Camino Real Well #1 was originally designed to discharge 2600 GPM. The discharge of the well had dropped to 780 GPM before being placed out of service in 1993. It is not uncommon for wells to reduce in capacity over time. The proposed well will be drilled to a depth of approximately 900-1200 feet, with perforations set at depths to provide the maximum flow and to avoid possible nitrate infiltration and will also be used as backup to the City's existing wells in a similar manner as described above for the Longley Well.

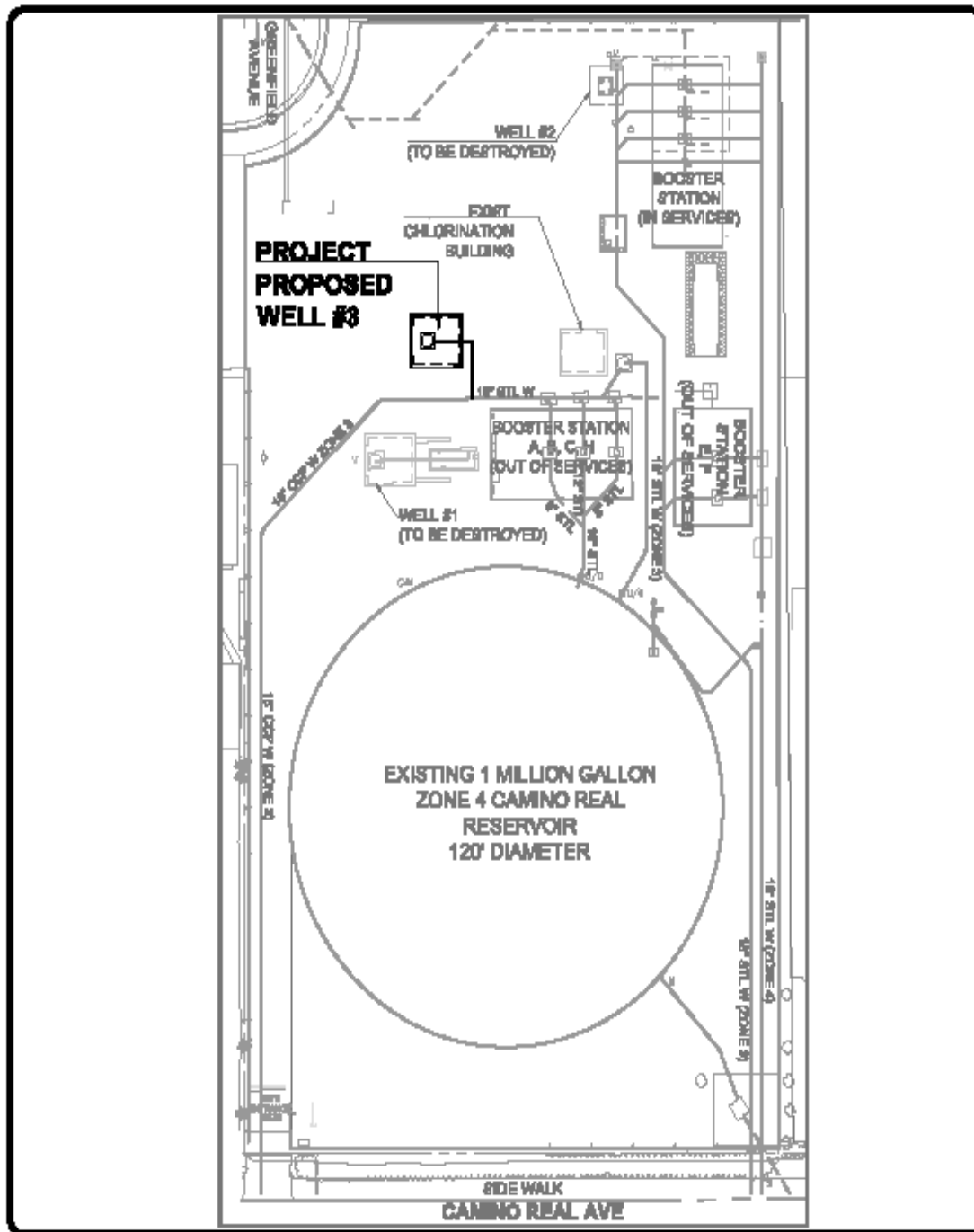
The Camino Real site is also an existing well facility. The facility currently includes two out of service wells (Camino Well #1 and Camino Well #2), a 4000 GPM booster pump station with a one million gallon forebay reservoir, and a 2200 GPM booster pump station. A new 7000 GPM booster pump station is currently under construction that will replace both booster stations currently in operation. Figure 7 shows the Camino Real Well Site Plan.

The site is located on Camino Real Ave between First Avenue and Second Avenue and is bordered by residential properties to the east, north and west. Access to the site is from Camino Real Avenue on the south. The site is basically flat, sloping very slightly to the south with a six-foot high masonry wall around the entire site. The site is landscaped where it fronts on Camino Real Avenue; otherwise the ground cover is partial asphalt and mostly dirt.

The site is an active water facility. Structures on the site include two masonry buildings which house booster pumps, one masonry building under construction that will house new booster pumps, a masonry shed which is empty, one well in a wooden shed, one well that will be demolished during construction of the new booster station, and one above-ground circular concrete reservoir with a wood and built-up composition roof.

The plan for the site will include the new booster station, two active wells, one of the existing booster stations to be remodeled and placed back in service, the concrete forebay reservoir, and pavement, gravel, or landscaped ground cover over the entire site. All out-of-service buildings and equipment will be removed.

Figures 8, 9 and 10 are photographs of the Camino Real Well Site.



 <p>CITY OF ARCADIA CALIFORNIA 1911 PUBLIC WORKS SERVICES DEPARTMENT</p>	<h3>CAMINO REAL FACILITY</h3> <p>FIGURE 7</p>	<p>DATE: 06/16/08 D/Y: TL CHK'D BY: SCALE: NTS</p>	 <p>NORTH</p>
---	---	--	--



FIGURE 8
AERIAL VIEW OF CAMINO REAL



FIGURE 9
EXISTING VIEW OF CAMINO REAL SITE



FIGURE 10
VIEW OF CAMINO REAL FACILITY LOOKING NORTHEAST FROM WESLEY LANE

1.5 ALTERNATIVES

This section describes the alternatives evaluated in the EA. The alternatives considered in sections 2.0 and 3.0 of the EA include the preferred alternative (presented in Section 1.4 as the proposed action) and the no action alternative, as well as other alternatives excluded from further consideration. The analyses, conclusions, and recommendations presented in previously cited documents related to the water system infrastructure, and City planning actions as discussed in Section 1.5 were used to support the evaluation and selection of the alternatives analyzed in this document.

1.5.1 Preferred Alternative

In the federally funded USACE Study, three (3) Programs were developed to address the need for additional water storage and supply to protect the City in the event of a major seismic event. One of the objectives of the Study was to develop Programs consisting of specific upgrades or additions to the Arcadia water system that would reduce the level of damage following a major earthquake.

As discussed above in Section 1.3, the USACE Study identified three Programs for the water infrastructure program. Program 1 included water system improvements including two water supply wells, water storage reservoirs and forebays, pipelines, and pressure reducing valves. Program 2 included all of the projects in Program 1 plus a reservoir, booster pump station and pipelines. Program 3 included all of the projects in Program 2 plus installation of fire hydrants and replacement of distribution system piping.

Analysis of all three Programs included evaluations of water system performance and economic considerations. It is evident by the conclusions in the USACE Study that in addition to two new wells, additional water storage reservoirs, a pumping station and upgraded water distribution pipelines are necessary in order for the City to provide adequate water system supply and pressure, safeguard the quality of the drinking water supply being served to the City's constituents, and to fight earthquake related fires. Furthermore the USACE Study concludes that there is a need and opportunity for the seismic upgrading of the water supply facilities.

As part of water master planning studies conducted by the City, new wells are deemed an essential component of the overall water infrastructure program. As part of the City planning, evaluations were made to determine suitable locations for the two wells. The City determined that from an operational standpoint the ideal placement of the two wells would be in close proximity to the existing well at each facility site location. In doing so, it precludes the considerable expense of additional pipelines, pressure regulators, and/or appurtenances.

It also places the new wells within the existing City utility sites and would not require the additional expense of purchasing or developing other site locations, or disturbing any existing undisturbed habitats in as much as the proposed sites have been developed as water facilities in excess of 50 years. Therefore, the selected site locations for the well

projects satisfy critical operational criteria (e.g., hydraulics; proximity to existing pipes, pump stations, and reservoirs) and economic criteria (e.g., cost of land or right-of way); investing in other infrastructure to provide the means to convey the water).

1.5.2 Other Alternatives Excluded from Further Consideration

Alternative A - Purchase MWD water through regional entity (Upper San Gabriel Valley Municipal Water District)

In order to provide additional water supply to the City's water system to meet the purpose and need of additional water supplies for emergency conditions such as earthquakes and fires, the City of Arcadia could purchase imported water from the local water retailer, rather than use groundwater supplies. The City of Arcadia can purchase treated imported water deliveries from Upper San Gabriel Valley Municipal Water District (Upper District) directly through its Metropolitan connection, USG-6.

Even though the City has the capability of purchasing water from the Upper District, it has not done so except in extreme emergency conditions. There are many reasons why it is not a viable option to augment the City's water supplies.

The City of Arcadia lies above three natural groundwater basins in the alluvial deposits of the San Gabriel Valley from which the City obtains its water supply. The water supply for the City comes from groundwater from wells in the Main San Gabriel Basin and groundwater from wells in the East and West Raymond Basins. Through groundwater management, well maintenance, and capital improvement programs the City has been able to minimize the City's reliance on imported water. The City wishes to continue developing groundwater sources to take advantage of the natural aquifer conditions. It is prudent to do so for many reasons, including:

1. Groundwater supplies are available through adjudication of the basin.
2. Groundwater supplies are less susceptible to drought conditions than imported water supplies which are more dependent on weather because the imported water is dependent on snow pack in the mountains in northern California, and therefore groundwater has proven to be a more secure source of supply consistently.
3. The whole of southern California as a region has been actively planning over the past few decades how to lessen the region's dependence upon imported water supplies, and therefore developing groundwater is in concert with regional planning and water management efforts.
4. The Metropolitan Water District of Southern California (MWD), the region's water wholesaler, recently announced an anticipated reduction of imported water supplies by as much as 30%.

5. The City may need to institute additional water system infrastructure and facilities to treat the imported water supplies to make the water compatible with groundwater sources, because different water treatment methods are used for each source, and the water cannot be mixed or blended without first doing so. When the City utilizes MWD water, it limits the use of that water to the northern portion of the City (Zones 1, 1A, 5, 6, and 7) and the City is required to treat the MWD water with zinc-orthophosphate and issue public notices informing the residents of the risks involved due to the change in disinfection.
6. The City can produce groundwater for significantly less cost than the cost of imported water supplies, thereby providing more reasonable water rates to its residential and business customers.

For these reasons, purchasing MWD water through Upper District is not feasible or practical at this time and therefore is excluded from further detailed analysis and consideration.

Alternative B – Purchase water through local water supply agencies

The City of Arcadia has water pipeline interconnections with local entities which could supply water to the City of Arcadia. Arcadia has one 4-inch two-way interconnection with San Gabriel Valley Water Company, one 6-inch two-way connection with Sunny Slope Water Company, one 8-inch two-way connection with Golden State Water Company, and one 8-inch two-way connection with Sierra Madre.

These connections are intended for emergency purposes and would not be able to supply the City with a consistent supply of water. The actual flow rates and pressures available to Arcadia may vary with existing demand, and any water taken through these interconnections would be subordinate to the producers' own water supply requirements. Therefore, importing water from nearby water producers is not a dependable option.

For these reasons, purchasing water through local water supply agencies is not a viable option and therefore is excluded from further detailed analysis and consideration.

Alternative C – Increase water production from existing wells

The City of Arcadia currently has eleven active wells which provide water to the distribution system. Increased production of these wells could only supply a limited additional amount of supply due to the age of the wells and capacity limitations. The intent of the proposed action is to provide water system redundancy for emergency conditions, to replace wells that have reached its useful lives, and to provide water for blending purposes. The amount of additional water that could be produced by the active wells could not provide the source of supply to meet the intended needs of the project. The proposed project would enable the City to distribute water more effectively and efficiently throughout the water system, including using the available power grid more efficiently.

For these reasons, increasing water production from existing wells could not satisfy the needs of the proposed action and therefore is excluded from further consideration.

Alternative D – Rehabilitate/reactivate inactive wells

This alternative is to rehabilitate and reactivate wells at the existing Longley and Camino well site locations that are not in service at this time. The Longley well is a 600 foot deep, cable tool well with a 50 foot concrete plug in the bottom of the well. The well was originally drilled in 1949. Deepening this existing well would not be feasible. The existing well at the Longley site is no longer useable. The Camino Well #1 was originally drilled in 1949 to a depth of 714 feet. The casing of the well is a 20-inch diameter steel casing with perforations starting at 236 feet below ground surface (bgs) and ending at 698 feet bgs. According to field crews and the contractor who most recently serviced the well, the casing of the well has collapsed and is no longer serviceable. Camino Well # 2 was destroyed in 2008.

Based on the above, rehabilitating and reactivating the inactive wells at the project sites is not a viable option and therefore is excluded from further detailed analysis and consideration.

Alternative E – Placing the two new wells at different locations than the proposed locations

The intent of the proposed action is to provide water system redundancy for emergency conditions, to replace wells that have reached its useful lives, and to provide water for blending purposes within specific water system locations.

The Longley site has a well on it that has been inactive since 1979. The location of this well site is beneficial to the distribution system because it is on the west side of the pressure zone it would serve and is in close proximity to a main transmission main. Most of the production for that zone is currently produced from the east side of the zone and pushed across to the west. The Camino Well would also utilize an existing water facility. The new well would tie into existing transmission piping.

The proposed plan is to construct two wells on property currently owned by the City at sites that have operated as well sites in the past. Utilizing existing well site locations precludes the purchase of new property and right-of-way. It also precludes the need for constructing extensive additional transmission and distribution pipelines to convey the water to its intended destination which is required to meet the purpose and need of the proposed project. Utilizing existing well site locations significantly minimizes environmental impacts that would be associated with developing new property locations. Furthermore, utilizing existing well site locations does not change the existing environmental setting of the existing sites.

For these reasons, placing the two new wells at different locations other than the proposed locations could not satisfy the needs of the proposed action and therefore is excluded from further detailed analysis and consideration.

1.5.3 No Action Alternative

Under the No Action Alternative, the water supply well project would not be implemented to reduce the susceptibility of the City of Arcadia's water system from deficiency or failure following a major earthquake. Accordingly, no construction activities would occur and associated short-term impacts (i.e. air quality, noise) as discussed herein would not occur. Also as discussed herein, no long-term improvements would occur with the No Action Alternative and the water system would continue to operate under current deficient conditions, leaving the City's infrastructure and populace susceptible to destruction by fire. Thus, the City would not benefit from the increased public health and safety benefits afforded by implementation of the project (i.e., the preferred alternative).

2.0 AFFECTED ENVIRONMENT

Section 2.0 describes the existing conditions of the environmental, social, and economic resources of the City of Arcadia and the southern California region in which the City is located. The baseline information was compiled from a multitude of sources including discussions with City staff, contact with agencies, website information, the City's MND and other technical and planning documents. In cases where data were not available specific to the project study area itself, data on the general region were used to characterize the resources in and around the project study area. Section 2.0, Affected Environment, and Section 3.0, Environmental Consequences are based on the best available information from these data sources. Sources are listed in Section 5.0, Resources, and are referenced within the text.

Discussed in this section are:

- Air resources, including air quality, noise, and odor
- Water resources, including groundwater, surface water, wetlands, and flood plains
- Surface resources, including topography, soils, geology, vegetation, terrestrial wildlife, and threatened and endangered species
- Cultural resources, including archaeological and historical resources
- Socioeconomic resources, including land use, aesthetics, socioeconomic conditions, waste management, transportation, and environmental justice

2.1 AIR RESOURCES

The following subsections describe the existing air quality, noise, and odor conditions in the City of Arcadia.

2.1.1 Air Quality

The City of Arcadia is located in the region of southern California regulated by the South Coast Air Quality Management District (AQMD). The AQMD is the air pollution control agency for the counties of Orange and Los Angeles, and portions of Riverside and San Bernardino. Arcadia is located in Los Angeles County within the South Coast Air Basin (SCAB). Other regulatory agencies include the California Air Resources Board and the U.S. Environmental Protection Agency.

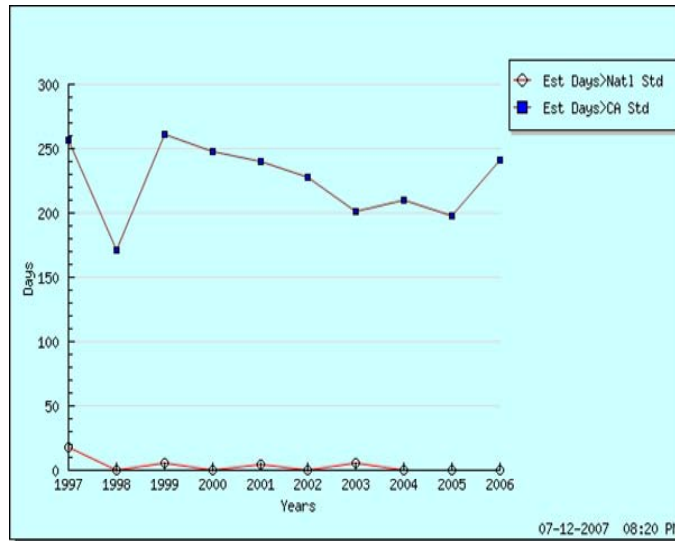
AQMD covers an area approximately 12,000 square miles with a population over 14 million. This represents about half the population of the state of California and is the second most populous urban area in the United States. Due in part to its geography, this region has some of the worst smog conditions in the country. Emissions from motor vehicles and other transportation sources, businesses, and industry also contribute to the air quality problems of the region.

In 1990, EPA established National Ambient Air Quality Standards (NAAQS) for six principal pollutants under the Clean Air Act Amendments. The region is in non-attainment for three of the six pollutants: carbon monoxide, ozone, and suspended particulates (particulate matter or PM10).

According to AQMD, there is a continuing trend of significant long-term improvement in air quality, however more effort is required to reduce air pollution because maximum pollutant concentrations in the region still exceed the federal standards for ozone, carbon monoxide and particulate matter. AQMD will continue its efforts toward achieving clean air standards by 2010 as established by state and federal law.

The only pollutant of concern for this project is the particulate matter pollutant. According to AQMD, for the years 1997 to 2006, the national standard was exceeded only in the years 1997, 1999, 2001, and 2003. The state standard however, was exceeded in all years. Figure 11 shows summary of data for PM10 for years 1997 through 2006. The data shows the number of days in each year that the PM10 parameter exceeded both national and state standards.

**PM10 Trends Summary
South Coast Air Basin**



Source: South Coast Air Management District

FIGURE 11

2.1.2 Noise

The project study area is located in an urban setting within the limits of the City of Arcadia. Current land uses in Arcadia include residential uses, commercial uses, industrial uses, mixed commercial/industrial uses, mixed commercial/multi-family, and other uses such as public facilities and horse racing (Santa Anita Race Track).

Noise is generated by a number of sources within the City of Arcadia including mobile and stationary sources. The main noise generators within the City consist of vehicular traffic along the Interstate-210, and major highways and thoroughfares such as Colorado Street, Huntington Drive and Duarte Street. Other noise emanates from industrial and commercial activities, construction, and everyday living activities. Typical ambient noise levels for the general land use categories within the City may range from 40 to 90 decibels.

The Longley Well #3 site is located at the southwest corner of Palm Drive and El Monte Avenue at an existing well site facility zoned R-1 residential. The Camino Real Well #3 site is located on Camino Real Avenue between First Avenue and Second Avenues at an existing well site facility zoned R-1 residential. Additional descriptions of the existing sites and photographs for each site are located in Section 1.4.

According to the City's *General Plan*, the established maximum exterior noise standard for the land use area is 65 dBA CNEL [decibel (dB) level as measured with a sound-level meter using the A weighting network]. The Arcadia Municipal Code (AMC) addresses noise in several sections. In Article IV, Part 1, *General Provisions*, Section 4610.3 "Noise Limits," the AMC designates a noise limit of 55 dBA for the designated land use. In Article IV, Part 6, *Nighttime Construction*, Section 4261 "Prohibited Hours Defined," Section 4262 "Construction Limited," Section 4262.1 "Same. Exception," and Section 4263 "Permit," the AMC stipulates that nighttime construction between the hours of 7:00 pm and 7:00 am and anytime on Sunday and holidays is prohibited unless a permit has been issued by the Arcadia Superintendent of Building and Safety, with any department of the City being excepted.

2.1.3 Odor

Existing conditions indicate that there are no major sources of odor in the project study area. Therefore, odor is not currently an issue in the area.

2.2 WATER RESOURCES

The following subsections describe the current groundwater, water supply system, surface water, wetlands, and flood plain resources of the City of Arcadia.

2.2.1 Groundwater

The City of Arcadia's water supply sources include groundwater rights in the Main San Gabriel Basin (Main Basin) and Raymond Basin.

The City of Arcadia pumps from six wells within the Main Basin, which overlies the San Gabriel Valley. The Main Basin includes essentially the entire valley floor of San Gabriel Valley with the exception of the Raymond Basin and Puente Basin. The boundaries of the Main Basin are the Raymond Basin on the northwest, the base of the San Gabriel Mountains on the north, the groundwater divide between San Dimas and La Verne and the lower boundary of the Puente Basin on the east, and the common boundaries between Upper District and Central District through Whittier Narrows on the southwest. Within the Main Basin there are a number of identified sub-basins. These include the Upper San Gabriel Canyon Basin, Lower San Gabriel Canyon Basin, Glendora Basin, Foothill Basin, Way Hill Basin and San Dimas Basin. In addition, the Puente Basin is tributary to the Main Basin from the southeast, between the San Jose and Puente Hills.

The Main Basin (administered by the Main Basin San Gabriel Basin Watermaster) is a large groundwater basin replenished by stream runoff from the adjacent mountains and hills, by rainfall directly on the surface of the valley floor, subsurface inflow from Raymond Basin and Puente Basin, and by return flow from water applied for overlying uses. Additionally, the Main Basin is replenished with imported water. The Main Basin serves as a natural storage reservoir, transmission system and filtering medium for wells constructed therein.

The total fresh water capacity of the Main Basin is estimated to be approximately 8.7 million acre-feet. Adjudication of the Main Basin in 1973 has provided groundwater management of the Basin. Although there is no limit on the quantity of water that may be extracted by parties to the Main Basin adjudication, including the City of Arcadia, groundwater production in excess of water rights or the proportional share (pumper's share) of the Operating Safe Yield, requires purchase of imported replacement water to recharge the Main Basin. The City of Arcadia has a prescriptive pumping right of 4.23099 percent of the Operating Safe Yield. For 2004-05, the Operating Safe Yield was determined at 170,000 acre-feet. Therefore the City was allowed to pump 7,192.68 acre-feet. However, the Operating Safe Yield for 2005-06 is 240,000 acre-feet, therefore for 2005-06, the City of Arcadia was allowed to pump 10,154.38 acre-feet. If the City pumps more than the allowed amount of water, replacement water must be purchased from MWD through Upper District.

The City of Arcadia pumps from seven wells located within the Raymond Basin; four of the wells overlie the East Raymond Basin and three are located in the West Raymond Basin. The Raymond Basin is a wedge in the northwesterly portion of the San Gabriel Valley and is bounded on the north by the San Gabriel Mountains, on the west by the San Rafael Hills and is separated from the Main Basin on the southeast by the Raymond Fault. The Raymond Basin is approximately 40 square miles and is divided into an eastern unit, which is the Santa Anita sub-area, and the Western unit which is the Pasadena sub-area and the Monk Hill Basin. Raymond Basin is recharged by the Arroyo Seco, a tributary to the Los Angeles River, and by Eaton Wash, Santa Anita Wash and other streams in the San Gabriel River watershed. Pumping rights to the Raymond Basin are adjudicated and are managed by the Raymond Basin Management Board. The City of Arcadia is allowed to pump 3,526 acre-feet from the Santa Anita Subarea (East Raymond Basin) and 2,118 acre feet from the Pasadena Subarea (West Raymond Basin).

2.2.2 Water Supply System

In addition to the groundwater supplies discussed above, the City of Arcadia can purchase treated imported water from MWD if necessary. The City can receive direct deliveries of treated imported water through its MWD connection, USG-6. The City has only purchased imported water from MWD twice in the past 20 years through 2008, however due to declining water levels in the Raymond Basin, the City recently has had to purchase MWD water for City of Arcadia Water Zones 1, 5, 6, and 7.

According to the City of Arcadia 2005 Urban Water Management Plan, the City of Arcadia's water system serves approximately 17,400 acre-feet per year through 13,556 service connections. In order to provide proper service to its service area with elevations varying from 300 feet to 1200 feet above mean sea level, the City's water system includes seven pressure zones, which float to open reservoirs, and two sub-zones served through pressure regulators. The City maintains 15 water storage reservoirs and two active forebays.

2.2.3 Surface Water

The City of Arcadia is located in the U.S. Geological Survey (USGS) hydrologic unit number 18070105, which covers approximately 809 square miles. USGS uses the hydrologic unit system to catalogue and identify watersheds throughout the United States. The watershed has five rivers and streams, including the Aliso Canyon Wash, Big Tujunga Canyon, Eaton Wash, the Los Angeles River, and Pacoima Creek, and 22 lakes that total 2,115 acres. None of the streams or rivers is located in Arcadia or Sierra Madre. (EA, Water Infrastructure Improvements for the City of Arcadia, 2001)

Two intermittent bodies of surface water feed the spreading grounds near the City of Arcadia: one located in the Santa Anita Canyon and the other in the Little Santa Anita Canyon. Those bodies of water supplement the groundwater supplies in the project study area through spreading operations at two spreading ground locations near Arcadia and Sierra Madre. (USACE Study 1997)

The Santa Anita Dam, owned and operated by the Los Angeles County Department of Public Works (DPW), regulates water flow from Santa Anita Canyon. Flows released by this dam travel approximately one mile downstream to the Santa Anita Diversion Dam, also owned and operated by DPW. At the diversion dam, the surface water is diverted toward the Santa Anita Spreading Grounds, where it may be drawn off for recharging or from which it may continue to the Sierra Madre Spreading Grounds. The Santa Anita Spreading Grounds, also owned and operated by DPW, are located on the eastern side of the Santa Anita Wash, just south of the Santa Anita Diversion Dam in the northeast section of the City of Arcadia. The City of Sierra Madre owns and operates the Sierra Madre Spreading Grounds. (USACE Study 1997)

The City of Sierra Madre has first appropriation rights to the surface water from the Santa Anita Diversion Dam. Surface water flow from Santa Anita Canyon that exceeds the capacity of the Sierra Madre Spreading Grounds is diverted to the Santa Anita Spreading

Grounds or to the local storm drain channels if the capacity of the Santa Anita Spreading Grounds also is exceeded.

Surface water currently flows unobstructed from Little Santa Anita Canyon past the Sierra Madre Debris Basin Dam. The Sierra Madre Debris Basin Dam was built in the early 1920s; DPW no longer operates the dam in a retention capacity because of concerns about seismic reliability. Little Santa Anita Canyon has much less surface flow than Santa Anita Canyon. Water that passes the debris basin dam now flows down the Sierra Madre Wash where it may be diverted to the Sierra Madre Spreading Grounds. Water may percolate into the Raymond Groundwater Basin by diversion of water from Santa Anita Canyon and Little Santa Anita Canyon into the Santa Anita and Sierra Madre spreading grounds. (USACE Study 1997)

The Santa Anita Spreading Grounds are made up of 12 recharge basins, which total approximately 8.5 acres. The 12 recharge basins receive water from the Santa Anita Diversion Dam. The Sierra Madre Spreading Grounds are made up of 19 recharge basins, which total approximately 14 acres. The basins of the spreading grounds range from 6 to 15 feet deep and are arranged in a parallel and series operation. In each spreading ground, the first basin receives stormwater runoff or water from Los Angeles County DPW, which subsequently supplies the remaining basins. (USACE Study 1997)

The City of Arcadia is located within the Los Angeles River Watershed. The Los Angeles River Watershed covers a land area of over 2,135 square kilometers (834 square miles) from the eastern portions of Santa Monica Mountains, and Simi Hills, and Santa Susana Mountains to the San Gabriel Mountains in the west. The Los Angeles River is hydraulically connected to the San Gabriel River through the Whittier Narrows Reservoir, although this occurs primarily during large storm events.

The Los Angeles River, which once flowed freely over the coastal plain, was channelized between 1914 and 1970 to control the runoff and reduce the impacts of major flood events in the region. The current flow in the river is effluent dominated with approximately 80 percent of its flow originating at dischargers and the remaining flow coming from storm drain runoff and groundwater reaching the surface.

The Los Angeles River Watershed has impaired water quality in the middle and lower portions of the basin due to runoff from dense clusters of commercial, industrial, residential, and other urban activities. The 1998 303d list of watershed impairments indicates a majority of the impairments in the watershed are due to point and nonpoint sources. These impairments include the following: pH, ammonia, a number of metals, coliform, trash, scum, algae, oil, chlorpyrifos as well as other pesticides, and volatile organics. (Los Angeles County Department of Public Works website)

2.2.4 Wetlands

There are no wetlands within the vicinity of the proposed project. No areas of the proposed action are located in or adjacent to federally protected wetlands.

2.2.5 Flood Plains

The Federal Emergency Management Agency (FEMA) provides Flood Insurance Rate Maps (FIRMs) to promote sound land use planning and floodplain development. FEMA delineates Special Flood Hazard Areas (SFHAs) on FIRMs, which are areas subject to inundation by a 100-year flood and also those areas subject to 500-year flood events.

The City of Arcadia is in Flood Zone D, which has no mandatory flood insurance purchase requirement. The City's Community Number is 065014, and no panel number has been mapped. (City of Arcadia website)

According to the *Arcadia General Plan*, the Arcadia General Plan study area receives a considerable amount of runoff generated from watershed areas in the San Gabriel Mountains. Five major channels carry this runoff through the study area. These are, from west to east, the Eaton Wash, Arcadia Wash, Santa Anita Wash, Sierra Madre Wash and the Sawpit Wash. A series of flood control channels within the planning area convey the water through the City to regional facilities to the south. Normal excess flow from these facilities is controlled by the use of spreading basins at specific locations throughout the area. Due to the existence of this system, there are currently no areas within the City that are within a 100-year floodplain. (Arcadia General Plan)

The City's *General Plan* also discusses flooding hazards. There are flood inundation areas for the Santa Anita Dam, the Morris S. Jones Reservoir, the Sierra Madre Dam and the Sawpit Dam. The Longley well site does not lie within a designated inundation area. The Camino Real site lies within the inundation area of the Santa Anita Dam. Nearly one-half of the City of Arcadia (the eastern half of the City) lies within the inundation area of the Santa Anita Dam.

2.3 SURFACE RESOURCES

The following subsections describe the existing conditions of the surface resources in the City of Arcadia, located in the San Gabriel Valley in Los Angeles County.

2.3.1 Topography

The San Gabriel Valley is a large, asymmetrical alluvial valley that lies at the foot of the San Gabriel Mountains and is approximately 20 miles wide and 8 miles long. The area surrounding the cities (the USACE Study characterizes the cities of Arcadia and Sierra Madre) is characterized generally by steep foothills rapidly rising to form the San Gabriel Mountains to the north. The project study area lies at the foot of Mount Wilson, which rises to an elevation of 5,710 feet. The valley floor slopes from north to south. The project study

area ranges in elevation from approximately 2,000 ft above mean sea level (amsl) in the north, to 400 to 700 ft amsl in the south. (USACE Study 1997)

The two proposed projects that make up the proposed action would be implemented in previously developed areas that already have been graded. The two well projects will be implemented at existing well or well/reservoir sites, and the topography of the sites will not change from the existing topography.

2.3.2 Soils

The soils in the cities of Arcadia and Sierra Madre consist of mostly alluvial material varying from coarse sand and gravel near the mouths of canyons to silty clay and gravel in the lower valley. The alluvial fill that forms the valley developed over a long period of time through repeated deposition of debris. Generally, soils in the San Gabriel Mountains are coarse and porous as a result of the faulting and weathering of sandstone and granitic formations. The soil mantle is fairly shallow because the mountain slopes are steep, further accelerating erosion. Soil that has washed down through the Santa Anita and Little Santa Anita canyons has formed alluvial plains. The plains consist of coarse sand and gravel soils which have accumulated near the mouths of the canyons. Valley soils generally are well-drained and have relatively few perched water tables. (USACE Study 1997)

The proposed projects would occur in developed areas of Arcadia and within existing well site properties that have been previously graded.

2.3.3 Geology/Seismic

The cities of Arcadia and Sierra Madre include a portion of the San Gabriel Mountains. The mountains are made up of highly fractured igneous rock, with large areas of granitic rock formation exposed above soils that are coarse and porous. The foothills of the San Gabriel Range consist of igneous and metamorphic bedrock that has been eroded to form steep-sided canyons and gullies. As foothills transition to valley areas, some older alluvial fan deposits are found. Those terrace deposits can be found at the top of the lower foothills. (USACE Study 1997)

The San Gabriel Mountains and the San Rafael Hills consist principally of igneous and metamorphic rocks, typically from the Jurassic age. Small outcrops of the Miocene Topanga Formation, which consist of consolidated sandstones and conglomerates, occur in the southwestern portion of the basin. Hydrologically, this substrate does not yield significant amounts of water and therefore is referred to as bedrock or non-water-bearing rocks.

The water-bearing alluvium consists of Quaternary alluvial deposits, Old Alluvium and Recent Alluvium. The Old Alluvium, distributed throughout the entire basin, has varying water-transmitting properties, depending upon the degree of weathering and cementation. Unconsolidated Recent Alluvium yields water readily and occurs locally in stream channels and flood plains, including the Arroyo Seco, Eaton Wash, and the Big and Little Santa Anita

Creeks. The total alluvial thickness ranges to as much as 1,100 feet thick. (USACE Study 1997)

In addition to the regional San Andreas and Whittier faults, the City of Arcadia is situated on two local faults, the Sierra Madre Fault and the Raymond Fault. The Sierra Madre Fault traverses the City of Sierra Madre in an east-west direction and crosses the northernmost point of Arcadia, and the Raymond Fault traverses Arcadia in an east-west direction and lies approximately 1.5 miles south of the City of Sierra Madre. Recent activity along the Sierra Madre Fault includes the 1971 San Fernando earthquake. The recent occurrence of activity shows that the fault system is active and could be the source of a seismic event that could affect Arcadia. (EA, Water Infrastructure Improvements, Arcadia 2001)

The Raymond Fault has been designated by the State of California as a “fault-rupture hazard zone,” as defined under the Alquist-Priolo Geologic Hazard Zones Act, adopted in 1972. Once a zone has been defined, regulations that govern the intensity and types of development allowed in that zones are implemented. The Sierra Madre Fault has not been designated as an official fault-rupture hazard zone. (EA, Water Infrastructure Improvements, Arcadia 2001). The Seismic Hazard Zones Map published by the California Department of Conservation (CDC), Division of Mines and Geology is located in Appendix E of the MND.

2.3.4 Tsunami, Seiche and Storm Surges

Since the City of Arcadia is not a coastal community, it is not considered to be susceptible to tsunami, seiche and storm surges.

A tsunami is a sea wave caused by any large-scale disturbance of the ocean floor that occurs in a short period of time and causes a sudden displacement of water. Tsunamis may be distantly generated or local. Large-scale tsunamis are not single waves, but rather a long train of waves. The most frequent causes of tsunamis are shallow underwater earthquakes and submarine landslides.

Southern California is generally protected from distantly-generated tsunamis by the Channel Islands and Point Arguello. Tsunamis generated by local earthquakes or landslides have historically posed only minor, localized risk to southern California. [Based on Historical Tsunami Record for Southern California - 1812 to Present, Hazards Assessment Study, City of Newport Beach, Earth Consultants]

A storm surge is an abnormal rise in sea water level associated with hurricanes and other storms at sea. Storm surges result from strong on-shore winds and/or intense low-pressure cells associated with ocean storms. This hazard affects primarily ocean front property, and adjacent low-lying areas.

Tsunamis and storm surges are not expected to impact the Arcadia well project sites. The Longley well site is located at approximately 370 feet above mean sea level, and the Camino Real well site is located at approximately 400 feet above mean sea level.

A seiche is a standing wave oscillation in an enclosed or semi-enclosed, shallow to moderately shallow water body or basin, such as a lake, reservoir, bay or harbor. Seiches can be caused by tidal action, wind action, or a seismic event.

There are no large bodies of open water located near the project sites, therefore seiches do not represent a potential hazard to the public safety.

2.3.5 Vegetation

According to the City's *General Plan*, the City of Arcadia's early development and planning efforts determined the location and density of the current residential neighborhoods, and established the foundations for the City's commercial sector. Development has occurred throughout the entire community, and the City is virtually built out. Arcadia has grown to be a well established, full service City. With a majority of the land in the City being developed, future development is not likely to alter the basic pattern of development, and will primarily consist of the recycling of land and intensification of existing development. Also according to the City's *General Plan*, the areas of biological sensitivity (wildlife habitat areas) within the City are located north of Foothill Boulevard where the City borders the Los Angeles National Forest. The areas of biological sensitivity are not near or within the proposed action sites; the proposed action sites are located in the southern part of the City.

The City of Arcadia supports primarily residential development, commercial uses, light industrial uses, urban infrastructure and institutional/open space uses. Accordingly, vegetation in the land use categories cited above is managed actively and consists primarily of ornamental plantings.

The project sites are located in developed, highly urbanized locations within the City. The project sites are existing well site locations, which have been disturbed and graded previously. Both sites are mostly dirt and/or gravel with some paved areas, and generally devoid of vegetation.

2.3.6 Terrestrial Wildlife

In general, wildlife habitat is located outside the developed areas of Arcadia. Most species found within the city limits are typical of species found in urbanized, human-dominated areas.

Some areas within the city limits maintain native vegetation and thus function as important habitat for a variety of native wildlife. Natural open spaces occur in small tracts in public parks, as well as in larger tracts at the periphery of the City, in such areas as the Arcadia Wilderness Park, the Los Angeles County Arboretum, and north of the City in the Angeles National Forest. The spaces may be valuable to various species that prefer ecotone habitats. Undeveloped hillsides that support chaparral vegetation and introduced tree species have moderate value as habitat with some evidence that wildlife continues to use whatever natural habitat is available. Wildlife movement corridors remain between city parks and other habitat areas, such as the national forest and the undeveloped hillsides within the city limits. This aspect of the landscape can be necessary to the survival of

species that live in a fragmented habitat. The existing general plan has defined the Arcadia Wilderness Park as a wildlife sanctuary, and it is designated as one of the City's open space and conservation areas on the City's land use maps. (USACE Study 1997)

2.4 THREATENED AND ENDANGERED SPECIES

The California Department of Fish and Game (CDFG), Resource Management and Planning Division, Biographic Data Branch was contacted regarding data available through the California Natural Diversity Database (CNDDDB) for:

- State and federally listed Endangered, Threatened, and Rare Plants of California, and
- State and federally listed Endangered and Threatened animals of California.

State listing is pursuant to §1904 (Native Plant Protection Act of 1977) and §2074.2 and §2075.5 (California Endangered Species Act of 1984) of the Fish and Game Code, relating to listing of Endangered, and Threatened Species of plants and animals. State-listed plants are listed in the California Code of Regulations, Title 14, Section 670.2, and the official California listing of Endangered and Threatened animals is contained in the California Code of Regulations, Title 14, Section 670.5.

Federal listing is pursuant with the Federal Endangered Species Act (ESA) of 1973, as amended. Significant amendments to the ESA have been enacted in 1978, 1982, and 1988, while the overall framework of the 1973 Act has remained essentially unchanged. The purpose of the ESA is to conserve the ecosystems upon which Endangered and Threatened Species depend and to conserve and recover listed species. Its intent is to provide programs for the conservation of Endangered and Threatened Species, thus preventing extinction of native plants and animals. Listing is the formal process through which species are added to the Federal List of Endangered and Threatened Wildlife and Plants.

Endangered means a species that is in danger of extinction (an extinct species is a species that is no longer in existence) within the foreseeable future throughout all or a significant portion of its range. A Threatened Species is an animal or plant species that is likely to become Endangered within the foreseeable future throughout all or a significant portion of its range. All species of plants and animals, except pest insects, are eligible for listing as Endangered or Threatened.

A Candidate Species is a plant or animal for which the U.S. Fish and Wildlife Service (FWS) or the National Oceanic and Atmospheric Administration – Fisheries (NOAA - Fisheries) has on file sufficient information on biological vulnerability and threats to support a proposal to list as Endangered or Threatened.

Previously, some species were designated a "Species of Concern". "Species of Concern" is an informal term that refers to those species which might be in need of concentrated

conservation actions. Such conservation actions vary depending on the health of the populations and degree and types of threats. At one extreme, there may only need to be periodic monitoring of populations and threats to the species and its habitat. At the other extreme, a species may need to be listed as a federal Threatened or Endangered Species. Species of Concern receive no legal protection and the use of the term does not necessarily mean that the species will eventually be proposed for listing as a Threatened or Endangered species. However, after careful consideration, the federal “Species of Concern” designation has been removed from the CNDDDB.

As of October, 2008, 1,932 species are federally listed worldwide, of which 1,358 are U.S. species. The list covers mammals, birds, reptiles, amphibians, fishes, snails, clams/mussels, crustaceans, insects, arachnids, corals, and plants. Groups with the most listed species are (in order) plants, birds, fishes, mammals, snails, and clams/mussels.

The federal law is administered by the U.S. Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration. The FWS has the primary responsibility for terrestrial and freshwater organisms, while NOAA - Fisheries responsibilities are mainly for marine species such as salmon and whales.

A summary of the numbers of state and federally listed plant and animal species in the state of California is shown in Table 2-1.

**TABLE 2-1
NUMBERS OF STATE AND FEDERALLY LISTED SPECIES IN CALIFORNIA**

Designation	Plants	Animals	Total
State-listed Endangered	134	47	181
State-listed Threatened	22	34	56
State-listed Rare	64	See Note 1	64
Federally-listed Endangered	139	84	223
Federally-listed Threatened	47	40	87
Both State and Federally-listed*	125	54	179

Note 1: As of January 1, 1985, all federal animal species designated as “Rare” were reclassified as “Threatened”

*Species may be state-only listed, federally-only listed, or listed under both state and federal acts

Source: California Department of Fish and Game, National Diversity Database, October 2008

Based upon information from the California Department of Fish and Game, Biographic Data Branch, and the California Natural Diversity Database, there may be animal and plant species that are listed as Threatened, Endangered or Candidate on either the federal or state or both listings within the U.S. Geological Survey, 7.5 Minute Series Quadrangle Maps for El Monte, Mt. Wilson, and Baldwin Park. The U.S. Geological Survey, 7.5 Minute Series Quadrangle Maps for El Monte, Mt. Wilson, and Baldwin Park were used as a basis for review because the two well site projects are located near where the three maps intersect. As indicated earlier, the project areas are very small parcels of land at existing city water infrastructure sites which are located in a highly developed area. The Longley site is approximately 0.21 acre and the Camino Real site is approximately 1.0 acre. Review of the CNDDDB indicates none of the Threatened, Endangered or Candidate species are within the vicinity of the project area. This is to be expected in such an urban setting where grading, excavation, and paving have previously occurred.

The U.S. Department of the Interior, Fish and Wildlife Service (FWS) has determined that no native habitat will be impacted and FWS does not expect the presence of federally listed Endangered, Threatened, proposed, and Candidate Species to occur in the area identified.

2.5 CULTURAL RESOURCES

The State's historical resources represent the contributions and collective human experiences of a diversified population spanning 10,000-12,000 years of occupancy in California. This heritage is embodied in the cultural and historical landscapes of California as evidenced by the archaeological remains, historic buildings, traditional customs, tangible artifacts, historical documents, and public records extant in California. All these evidences of the past contribute to the sum total of California's history. Such historical resources provide continuity with the past and enhance the quality of life.

The National Historic Preservation Act (16 U.S.C. Sec. 470 et seq.) as amended, was enacted in 1966. The purposes of the Act are to ensure that properties significant in national, state, and local history are considered in the planning of federal undertakings; and to encourage preservation initiatives by state and local governments and the private sector.

Registration is an integral part of the four essential components of historic preservation: identification, evaluation, registration and protection.

The National Register is the nation's official list of buildings, structures, objects, sites, and districts worthy of preservation. The National Register recognizes resources of local, state and national significance and contains only those properties that have retained enough physical integrity to accurately convey their appearance during their period of historical significance. The National Register Collection documents nearly 75, 000 properties listed in the Register since its inception in 1966. Together these files hold information on over one million individual resources and provide a link to the country's heritage at the national, state, and local levels. The documentation on each property consists of photographs, maps, and a National Register registration form, which provides a physical description of the place, information about its history and significance, and a bibliography.

The Office of Historic Preservation is the governmental agency primarily responsible for the statewide administration of the historic preservation program in California and for assisting local governments and citizens in the preservation of the state's rich and diverse cultural heritage. Its fundamental role is to manage specific information about historical resources, as well as reports describing how those resources were identified, evaluated, and treated. The mission of the Office of Historic Preservation and the State Historical Resources Commission, in partnership with the people of California and governmental agencies, is to preserve and enhance California's irreplaceable historic heritage as a matter of public interest so that its vital legacy of cultural, educational, recreational, aesthetic, economic, social, and environmental benefits will be maintained and enriched for present and future generations.

The State Historic Preservation Officer (SHPO) is responsible for the operation and management of the Office of Historic Preservation, as well as long range preservation planning. The SHPO assists the State Historical Resources Commission (Commission or SHRC) in accomplishing its goals and duties by developing and administering a program of public information, education, training, and technical assistance. The SHPO also serves as Executive Secretary to the Commission and is responsible for developing an administrative framework for the Commission and implementing the Commission's preservation programs and priorities.

The California Register of Historical Resources is an authoritative guide to California's significant historical and archaeological resources. The California Register includes the following:

- Resources formally determined to be eligible for, or listed in, the National Register of Historic Places through federal preservation programs administered by the OHP,
- State Historical Landmarks numbered 770 or higher,
- Points of Historical Interest recommended for listing by the State Historical Resources Commission (SHRC), and
- Resources nominated for listing and determined eligible in accordance with criteria and procedures adopted by the SHRC, including resources and districts designated as city or county landmarks pursuant to city or county ordinance when the designation criteria are consistent with California Register criteria.

According to the City of Arcadia *General Plan*, most of Arcadia's historic resources are within publicly owned properties, and are afforded adequate protection. The *General Plan* identifies the following historic resources within the City:

- The Queen Anne Cottage and Coach Barn, located at the Los Angeles County Arboretum
- The Hugo Reid Adobe, also located at the Los Angeles County Arboretum
- The Santa Ana Assembly Center, located at the Santa Anita Race Track
- Santa Anita Park Race Track
- The Santa Anita Depot, located at the Los Angeles County Arboretum
- The historical site designated CA-LAN-1868H, located within the National Forest Service Center in Arcadia

None of these historic resources are located within or adjacent to the well project sites.

According to the USACE Study, significant impacts to paleontological resources will not occur as geologic formations that are known to have a high sensitivity for such resources are not located within the City of Arcadia. The USACE Study indicates that unknown archaeological resources may be encountered during grading activities for new facilities or reconstruction of existing facilities, if existing undeveloped areas are disturbed.

In July 2008, a California Historical Resources Information System (CHRIS) records search by the South Central Coastal Information Center, California State University, Fullerton, California was conducted relative to the two well site locations. The CHRIS study indicates that no archaeological sites have been identified within a ½ mile radius of the project site, and no sites are located within the project sites.

In accordance with the CHRIS review, the California Points of Historical Interest (PHI), the California Historical Landmarks (CHL), the California Register of Historical Places (CR), the National Register of Historic Places (NR), and the California State Historic Resources Inventory (HRI) listings were reviewed for the project. The results of the CHRIS search are as follows:

- The California Point of Historical Interest (2008) of the Office of Historic Preservation, Department of Parks and Recreation, lists no properties within a ½ mile radius of the project site.
- The California Historical Landmarks (2006) of the Office of Historic Preservation, Department of Parks and Recreation, lists no properties within a ½ mile radius of the project site.
- The California Register of Historical Resources lists no properties within a ½ mile radius of the project site.
- The National Register of Historic Places lists no properties within a ½ mile radius of the project site.

- The California Historic Resources Inventory (2006) lists 12 properties that have been evaluated for historical significance within a ½ mile radius of the project site.

The Native American Heritage Commission (NAHC) was also contacted for consultation and a record search of its Sacred Lands File (SLF). The NAHC performed a record search of its SLF. The SLF failed to indicate the presence of Native American cultural resources in the immediate project area.

Five Native American tribes were contacted for cultural resource information either by telephone, postal mail and/or electronic mail. The letter of inquiry sent to the Native American tribes, the inquiry to NAHC, and the response letter from NAHC are located in Appendix D of this Environmental Assessment.

Of the five tribes contacted for cultural resource information, only the Tongva Ancestral Territorial Tribal Nation (TATTN) responded. In its response, TATTN did not raise any cultural resource issues, but did raise a concern pertaining to the City of Arcadia's water rights in the Main San Gabriel Basin. Additional discussion pertaining to TATTN is in Section 3.5 Cultural Resources.

2.6 SOCIOECONOMIC RESOURCES

The following subsections discuss the existing socioeconomic resources in the City of Arcadia. The socioeconomic resources include land use, aesthetics, socioeconomic conditions (population, employment, and income), waste management, transportation, and environmental justice. Information in this section is based on existing conditions and the data from the Bureau of the Census, U.S. Department of Commerce (Census Bureau) and regional and county-level planning agencies and the City's *General Plan* Elements.

2.6.1 Land Use

The following information identifies characteristics of both existing and future land uses in the City. The Land Use Plan is a critical component of the *General Plan*. It sets forth the long range objectives of the City of Arcadia with respect to the distribution and mix of land uses consistent with community goals. The Land Use Plan identifies the following goals to guide future land use decisions within the City:

- To direct the amount and location of land uses in a manner which enhances the environmental, social, physical, and economic well-being of Arcadia,
- To provide housing opportunities for all economic segments of the community and to protect the integrity and quality of existing residential neighborhoods,
- To ensure that issues of open space protection, environmental resources, public health and safety, and provision of municipal services and facilities are reflected in the location, intensity, style and quality of development within the City,

- To provide for the retail and commercial service needs of Arcadia residents and provide appropriate opportunities for employment-generating office and industrial uses in a manner consistent with the overall character of the community, and\
- To ensure an adequate supply of lands which can generate a municipal revenue stream which furnishes the City with the long-term ability to continue providing a high level of services to its residents and businesses.

In Arcadia, development has occurred throughout the entire community, and the City is virtually built out. Arcadia has grown to be a well-established, full service City. With a majority of land in the City being developed, planning efforts have included the redevelopment of local commercial areas, transition from lower to higher density residential within specific areas of the City, and maintenance of the City's infrastructure and community facilities. The future development within Arcadia is not likely to alter the basic pattern of development, and will consist primarily of the recycling of land and intensification of existing development (*Arcadia General Plan*).

Arcadia is composed of four general types of land uses, including neighborhood residential, commercial centers, employment generating uses, and recreation areas. Nearly 75% of the land within the General Plan study area is devoted to residential uses, the bulk of which are single family homes in traditional suburban neighborhood settings. Other land uses include commercial and retail centers, and recreational facilities. Approximately 10% of the City's land area is devoted to recreation including Arcadia County Park, Santa Anita Golf Course, the Los Angeles Arboretum, Arcadia Wilderness Park, and the Peck Road Conservation Park. (*Arcadia General Plan*). Figure 12 is the General Plan Land Use Map.

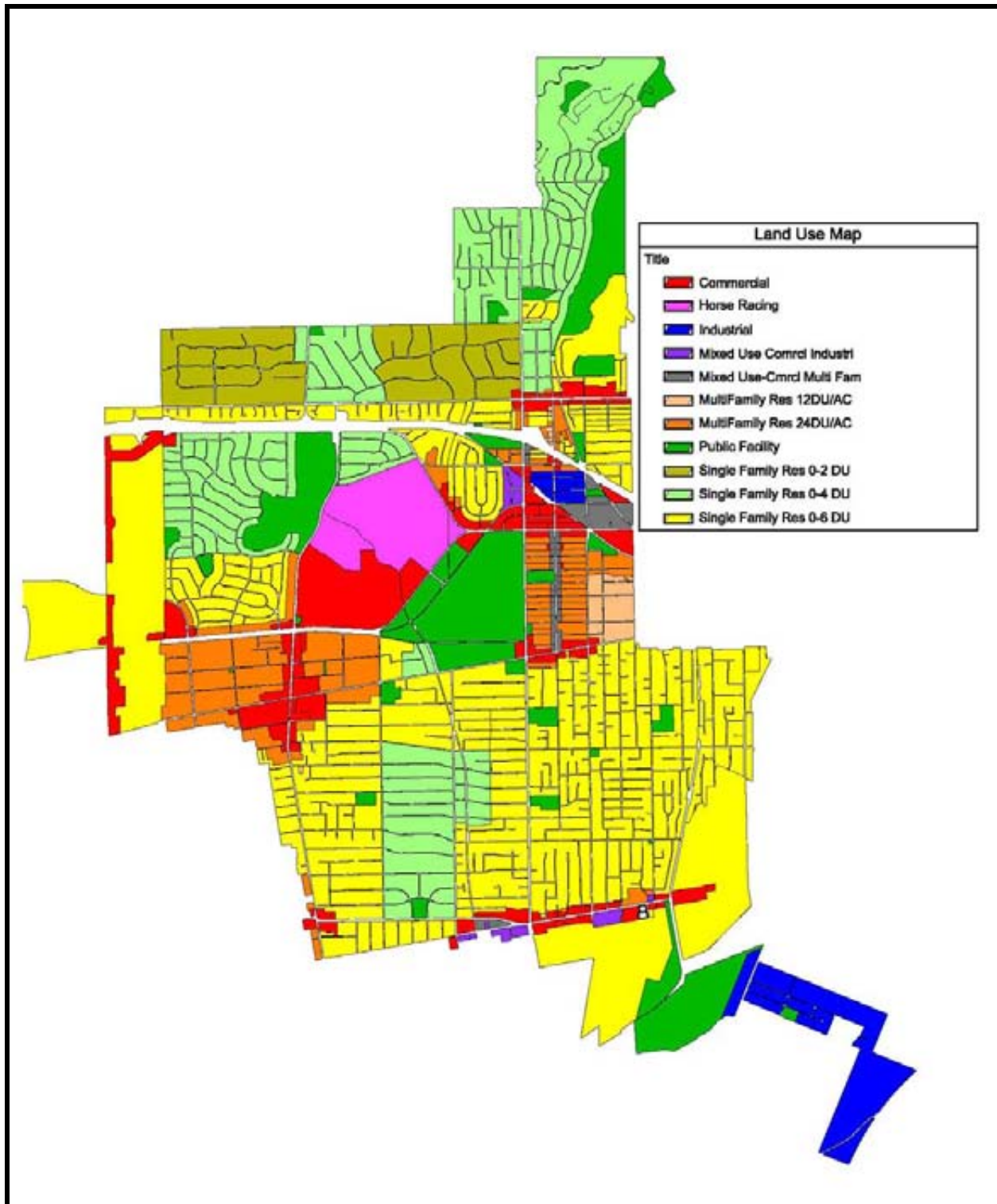
2.6.2 Aesthetics

The City of Arcadia is located in Los Angeles County, California (approximately 18 miles northeast of downtown Los Angeles) in the western portion of the San Gabriel Valley, at the base of the San Gabriel Mountains. The City of Arcadia encompasses approximately 12 square miles and has a population of approximately 56,000.

The general character of the Arcadia area is residential with industrial and commercial land uses with recreation areas providing an important source of visual relief within the urban environment and serves to enhance the aesthetic quality of the surrounding land uses.

Approximately 158 acres of natural hillside remain adjacent to the Angeles National Forest, which borders Arcadia to the north.

The well site locations are on existing City water system facility properties adjacent to residential areas.



DU/AC= Dwelling Unit/Acre

FIGURE 12
GENERAL PLAN LAND USE MAP

2.6.3 Socioeconomic Conditions

The following section discusses socioeconomic conditions in the City of Arcadia. Information is from the U.S. Bureau of the Census, Census 2000, and the Urban Water Management Plan 2005 (derived from data from the Southern California Association of Governments).

The City has a population of approximately 56,160 (2005). The population is 47% male and 53% female. Adults, aged 35 to 54, are the largest demographic group in the City representing 33% of the population; the median age is 40.5 years. The three predominant races in the City are Asian, White and Hispanic or Latino. Asian represents approximately 45.4%, White 40.1% and Hispanic 10.6% of the population. The remaining 3.9% consist of minor percentages of African Americans, American Indian, and Native Hawaiian and other Pacific Islander.

There are a total of 19,970 housing units in the City with approximately 62.3% owner-occupied. The average household size of owner-occupied units is 2.91 people; renter-occupied is 2.47 people. The median value of an owner-occupied housing unit is \$393,700.

Of the 42,634 people 16 years of age or older in the City, approximately 57.5% are employed in the labor force; 96.4% of the labor force commutes to work by car, truck, van, public transportation, walking or other means. The primary occupations are management, professional and related occupations representing 50.5%; sales and office occupations representing 31.8%; service occupations representing 8.8%; production, transportation, and material moving occupations representing 5.2% and construction, extraction, and maintenance occupations representing 3.7% of the work force.

The median household income in 1999 was \$56,100, with 18.5% of the population with household income in the \$50,000 to \$74,999 range. The poverty status level in 1999 was 6.7 percent below poverty level for families, and 7.9 percent below poverty level for individuals.

Table 2-2, Summary of Socioeconomic Data, presents a summary of selected information from the above discussion in addition to other pertinent demographic data.

**TABLE 2-2
SUMMARY OF SOCIOECONOMIC DATA**

Category	Value
Population (2005)	56,160
Projected population (2030)	62,175
Employment in the City (2000)	24,501
Median household income (annual, 1999)	\$56,100
Number of housing units (2000)	19,970
Number of owner-occupied housing units (2000)	11,932
Poverty Status-Family, Percent below poverty level	6.7%
Poverty Status-Individuals, % below poverty level	7.9%
Retail Sales tax Sales and Use Taxes(2006-2006)	\$25,398,160
Property Tax Revenue, In Lieu/VLF (2006-2007)	\$12,917,525

Source: U.S. Census Bureau, Census 2000; City of Arcadia Urban Water Management Plan 2005; and City of Arcadia Finance Department

2.6.4 Waste Management

Waste from the City of Arcadia is transported to solid waste landfills owned and operated by Los Angeles County and Waste Management, Inc. These include the Puente Hills Landfill and the City of Industry and Commerce Refuse-to-Energy Facilities which are owned and operated by the Country Sanitation Districts of Los Angeles County. It also includes the El Sobrante Landfill located in Corona, California, which is owned and operated by Waste Management, Inc.

The City of Arcadia has commercial and residential collection programs. Refuse and Recycling programs are essential to ensuring that the City remains clean and safe. In addition, refuse and recycling are necessary to comply with state law AB 939 which requires that all cities in California divert 50% of their trash away from landfills.

For residential refuse collection, the City contracts with Waste Management, Inc. to provide automated waste collection and curbside recycling for residents. There are three different carts designed to make waste collection and recycling more convenient:

- **Black Cart:** refuse and non-recyclable waste.
- **Blue Cart:** Recyclable items such as metal, glass, plastic, and paper.
- **Green Cart:** yard and garden waste only.

In addition, Waste Management provides four (4) free bulky item pickups per year for each residence. Bulky items include furniture, large kitchen appliances, used hot water heaters, electronic waste and extra green waste.

The collection of refuse for the commercial collection program is licensed by the City to four private haulers. The haulers are Allied Waste Services, Consolidated Waste Services, Waste Management, Inc., and Valley Vista.

Waste from construction sites within the City are generally the responsibility of the construction contractor in accordance with contract agreements, project specifications and local, state and federal regulations.

2.6.5 Transportation

The City of Arcadia is located in Los Angeles County. Los Angeles County is served by several airports, the largest of which is Los Angeles International Airport. The county also is served by the Los Angeles Rail Transit and the Los Angeles Metropolitan Transportation Authority (MTA) Metro Bus and Rail System. The public transportation systems run west to Glendale, Burbank, Woodland Hills and Santa Monica; south to El Monte, Norwalk, and Long Beach; and east to Azusa, San Dimas, and Pomona.

The City of Arcadia is served by a number of major local, state, and federal highways, including Interstates (I-) I-405, I-5, I-10, I-110, I-210, and I-605. Only I-210 traverses through the City of Arcadia, while the other interstates are in the vicinity. Local roadways in the City are classified as major arterials (eight travel lanes), primary arterials (four or more travel lanes), secondary arterials (four travel lanes), and collector roads (two travel lanes). Main traffic thoroughfares in the area include Foothill Boulevard, Colorado Boulevard, Huntington Drive, Duarte Road, Baldwin Avenue, and Santa Anita Avenue.

According to the *Arcadia General Plan*, the existing City's arterial and collector road system is capable of serving the traffic volumes at an adequate level of service (LOS), but a few streets have been identified as needing enhanced street sections to handle projected traffic volumes from future planned development.

The LOS is the relationship between capacity of a given street and the amount of traffic each street actually carries. Levels of Service range from LOS "A" to LOS "F", with LOS "A" being free flowing and LOS "F" being excessive delays, based upon information identified in the *Arcadia General Plan* with the source being the Highway Capacity Manual of the National Research Council as modified for the City of Arcadia.

The *Arcadia General Plan* indicates that Arcadia will ensure mobility within and through the City by maintaining LOS "D" or better along roadways and at intersections, and LOS "C" or better on local residential streets. It also indicates that the LOS standard for Michillinda Avenue between Colorado Boulevard and Sunset Boulevard is LOS "E". This is due to existing conditions and the impossibility of widening the roadway without significant loss of existing residences along the roadway's frontage, and that six intersections have been

identified as falling below LOS “D” in the future build-out condition. These intersections are:

- N. Baldwin Avenue/I-210 Westbound Ramps and Foothill Boulevard
- Baldwin Avenue and Duarte Road
- Santa Anita Avenue and I-210 Eastbound Ramps
- Santa Anita Avenue and Huntington Drive
- Santa Anita Avenue and Duarte Road
- Michillinda Avenue and Sunset Boulevard

There are several components that comprise the circulation system serving the City of Arcadia. A regional network provides for travel demand through the City (to and from destinations outside the City) and a local network provides for travel demand within the City.

Freeways

The Foothill Freeway (I-210) is the major east-west route for regional interstate travel between and Pasadena and San Bernardino. It is located in the central portion of the City. Other freeways in the vicinity that serve the region and Arcadia, but do not traverse the City of Arcadia, are the San Gabriel Freeway (I-605) which travels in a north – south direction paralleling the San Gabriel River to the east of the City, and the Santa Monica Freeway (I-10) which travels in an east-west direction to the south of the City.

Rail Transit

Although no rail transit stations are currently located within Arcadia, destinations throughout Los Angeles County can be reached via bus routes traveling through Arcadia to Metro rail lines and Metrolink trains. The nearest Metro access is located at Sierra Madre Villa station in Pasadena.

Bus Transit

Local route bus service to Arcadia is provided by the MTA. Bus service is provided on many local roadways including Santa Anita Avenue, Baldwin Avenue, Michillinda Avenue, Duarte Road and Huntington Drive.

The City of Arcadia also operates a public transportation system, the Arcadia Transit bus service. The system provides curb-to-curb transportation anywhere within city limits. Serving the community since 1975, Arcadia Transit is a convenient, safe and inexpensive method of traveling throughout the City of Arcadia. Arcadia Transit offers curb-to-curb transportation, responding to individual travel requests as they are received. Riders share the use of the vehicle, making the cost of the trip considerably less than a taxi. Each Arcadia Transit van is clearly marked and features comfortable seating, a two-way radio and is wheelchair accessible. The service is open to the general public and will take you to any destination within City limits. (City of Arcadia website 2008)

Streets and Roads

The local network of streets and roads consist of major and secondary arterial roads, and local and collector streets. Major arterials are thoroughfares carrying a large volume of regional through traffic. Secondary arterial highways distribute traffic between local streets and major arterial highways. The primary function of collector streets are to connect local traffic to larger streets such as major and secondary arterial highways, and to provide easy access to residential uses.

According to the *Arcadia General Plan*, Huntington Drive is the major arterial. Foothill Boulevard, Baldwin Avenue, Santa Anita Avenue, Las Tunas Drive and Live Oak Avenue are primary arterials. Duarte Road and Lower Azusa Road are secondary arterials.

Designated Truck Routes

The City of Arcadia has established a designated truck route system in order to minimize truck traffic impacts. Truck routes include Baldwin Avenue, Santa Anita Avenue, Colorado Street, Colorado Place, Huntington Drive, Foothill Boulevard, Duarte Road, Las Tunas Drive, Live Oak Avenue and Peck Road. Figure 13 shows the designated truck routes.

2.6.6 Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, mandates that federal agencies identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of programs on minority populations and low-income populations.

A minority population is defined in this document as a group of people or a community experiencing common conditions of exposure or impact that consists of persons classified in the United States Census as Negro/Black/African American; Hispanic; Asian or Pacific Islander; American Indian, Eskimo, or Aleut; or other non-white persons.

A low-income population is defined as a group of people or a community that, as a whole, lives below the national poverty level.

According to the 2000 US Census, the City of Arcadia has approximately 14,170 families, 12.8% of which have an income of \$35,000 to \$49,999, 19.6% of which have an income of \$50,000 to \$74,999, 14.7% of which have an income of \$75,000 to \$99,999, and 15.6% of which have an income of \$100,000 to \$149,999. The median family income is \$66,657. The census indicates that 7.3% of the families have an income of less than \$15,000. As indicated above in section 2.6.3, in 1999, 6.7% of families are below poverty level.



FIGURE 13

TRUCK ROUTE MAP

2.7 COASTAL BARRIER RESOURCES

In 1982, Congress enacted legislation (Coastal Barriers Resources Act, 16 USC §3501-3510) intended to discourage development in the Coastal Barrier Resources System, a collection of undeveloped and ecologically sensitive barrier formations along the Atlantic and Gulf Coasts of the United States, and the shore areas of the Great Lakes. Arcadia is not a coastal city. The proposed project is not within the Coastal Barrier Resources System.

2.8 COASTAL ZONES

In 1972, Congress amended the Marine Resources and Engineering Development Act to establish a national policy for the protection, beneficial use, and effective management and development of the nation's coastal zones. This Coastal Zone Management Act (16 USC §1451-1466) requires federal agencies to ensure that its activities in or that may affect coastal zones are consistent with the enforceable policies of state coastal zone management plans that have been approved by the Department of Commerce. The Act is also applicable to the coasts of the Great Lakes. Arcadia is not located in a coastal zone and the proposed project is not within a coastal zone.

2.9 SIGNIFICANT AND/OR IMPORTANT FARMLANDS

The Farmland Protection Policy Act was included in the Agriculture and Food Act of 1981 (7 USC §4201 et. seq.). The Act directed federal agencies to use criteria developed by the Department of Agriculture to identify the potential adverse effects of federal programs on farmland and its conversion to nonagricultural uses, to mitigate these effects, and to ensure that programs are carried out in a manner that is compatible with the farmland preservation policies of state and local governments, and private organizations. Arcadia is not an agricultural community. The proposed project does not impact farmland.

2.10 WILD AND SCENIC RIVERS

The Wild and Scenic Rivers Act (16 USC §1271-1287) preserves the special scenic, cultural, historic, recreational, geologic, and fish and wildlife values of the nation's free flowing rivers and related adjacent land. The Wild and Scenic Rivers Act establishes requirements for proposed projects that may affect the river, river segments, or the adjacent land. The proposed project does not impact wild and scenic rivers or adjacent land as identified by the Act.

2.11 ESSENTIAL FISH HABITAT

The Magnuson-Stevens Fishery Conservation and Management Act (16 USC §1801-1891) manages and conserves national fishery resources through fishery management plans, and the Act, as amended in 1996, added new requirements for the identification and protection of Essential Fish Habitat for included species. The proposed project does not impact fishery resources as identified by the Act.

3.0 ENVIRONMENTAL CONSEQUENCES

This section of the EA presents an evaluation of the anticipated environmental impacts that could result from implementation of the proposed action. A qualitative assessment of the level of significance of those impacts is also included.

Both short-term and long-term impacts are described and evaluated. Direct, indirect, and cumulative impacts, as defined at 40 CFR 1508.7 and 1508.8, are also presented.

Short-term impacts are usually associated with the construction of the proposed action, and are usually intermittent. Long-term impacts are associated with the operation phase of the proposed action.

Direct impacts are those caused by the proposed action which occur at the same time and place. Indirect impacts are those caused or induced by the proposed action that occur later in time or are removed in distance from the time and location of the proposed action.

Cumulative impacts are those impacts on the environment that result from the incremental effect of the proposed action, added to other past, present, or reasonably foreseeable future actions. Cumulative Impacts are discussed in Section 3.12.

Each impact whether direct or indirect, or short-term or long-term, or some combination of these assessing values, is further qualified and assessed a condition of significance. The levels of significance used in this evaluation are:

- 1) No effect,
- 2) No significant effect, and
- 3) Significant effect.

If it is determined that there is no significant impact, this is further assigned a degree of minor or moderate. If it is determined that there is a significant impact, a further assessment is made to determine if it is major or severe.

The above-described assessments are based on a review of all available information pertaining to the issue being evaluated, in conjunction with the professional judgment of the evaluator. Assessment considers such factors as:

- 1) permanence of an effect or the potential for natural attenuation of an impact;
- 2) uniqueness or replaceability of the resource;
- 3) abundance or scarcity of the resource; and
- 4) potential that mitigation measures can offset the anticipated effect.

The following sections discuss the potential impacts of the proposed action on air resources, water resources, surface resources, cultural resources, and socioeconomic resources. It also discusses appropriate potential mitigation measures to minimize the impacts, if any.

The proposed project consists of the drilling and equipping of two water supply wells at two different locations within the City of Arcadia.

As indicated in Section 1.2, the proposed action would:

- Upgrade the City's aging water system infrastructure,
- Increase water system reliability in the event of an earthquake,
- Increase the capability to fight earthquake-related fires,
- Increase water system redundancy, and
- Enhance public health and safety.

The proposed action constitutes construction of two new water supply well facilities at existing well site and water infrastructure locations. The wells will be underground with a small wellhead above ground. The well site properties are secure by fencing and locked gated entry. Landscaping around the perimeter of the facilities hides the facilities from view from adjacent properties. These will be unassuming facilities that will essentially go unnoticed upon completion.

Impacts resulting from the proposed action will be associated with construction of these facilities and pertain to noise, air and groundwater elements. Construction of the proposed action would be performed in accordance with local, state, and federal regulations, and in accordance with mitigation measures identified for the project. As a result, effects are anticipated to be short-term and not significant. The minor, insignificant effects that may occur during construction will cease after the wells are operational. Noise levels will revert to existing levels, and air emissions from construction vehicles will cease upon completion of the project. The City will pump groundwater in accordance with its adjudicated water rights, thereby having no significant effect on groundwater supplies.

Once the proposed action is completed, no long-term operational effects of significance are expected. Operation and maintenance activities at the existing reservoir/well sites will not increase due to project implementation. Maintenance levels will be equal to existing levels since there are no plans to increase maintenance staff. Well operation and monitoring will be conducted from a remote location using electronic data via a Supervisory Control and Data Acquisition (SCADA) system.

3.1 AIR RESOURCES

The following subsections present potential impacts and mitigation measures for the proposed action and the no action alternative in the areas of air quality, noise, and odor.

3.1.1 Potential Impacts on Air Quality

Proposed Action

There will be no air emissions from the project once the project is completed and in operation. Therefore, once the wells are in operation the air quality will be the same as existing ambient levels. Implementation of the project will not attract large numbers of users who arrive by vehicle, a major source of air pollutants in the region. As a result, there will be no significant impact to the air quality of the region on a long term basis.

On a short-term basis, minor construction-related air quality impacts will occur during construction activities. Sources of emissions during this phase include exhaust emissions generated by construction equipment and some dust during the construction of the wellhead facilities. Emissions of several criteria pollutants, including nitrogen oxides, carbon monoxide, sulfur dioxide, and fine particulate matter would be generated by the construction equipment and by construction crews traveling to and from the proposed construction sites. Such impacts would be direct, short-term, and minor because the implementation of the proposed action would involve a small number of construction vehicles, equipment and personnel.

Fugitive dust impacts would be direct, short-term, and minor because the implementation of the proposed action would involve intermittent use of vehicles for delivery of materials, transporting materials around the construction site, and removal of well boring spoils. Fugitive dust would be generated from truck and construction vehicle traffic only when the vehicles are on unpaved site areas. There will be no large scale grading of the site and minimal amounts of soil will be disturbed, therefore fugitive dust would be minimal during construction activities. It is estimated that, at any given time during the implementation of the proposed action, there would be approximately 2 to 5 large construction vehicles onsite, operating during the hours specified in the construction contract specifications and in accordance with the Arcadia Municipal Code. The duration of each project associated with the proposed action is 8 to 12 months.

Both Longley Well and Camino Well construction emissions were calculated using emission factors included in the CEQA Air Quality Handbook (Handbook). Emissions for the subsequent site construction were based on the Handbook methodology and the results are included in Appendix B of the MND. Because both of the sites are relatively small and already level, the use of heavy equipment would be limited and neither exhaust emissions nor dust generated from construction activities would be projected to exceed the SCAQMD daily or quarterly thresholds.

In accordance with SCAQMD methodology, any project that does not exceed the daily threshold values or can be mitigated to less than these values would not add to a cumulative impact. Both the Longley Well and the Camino Well projects are not expected to exceed daily threshold values. As such, the proposed projects would not conflict with or obstruct implementation of the Air Quality Management Plan (AQMP).

The MND evaluated air emissions during the well drilling and testing phase and the wellhead and pipeline construction phase. According to the MND, both the Longley Well and the Camino Well projects would not result in emissions in excess of the SCAQMD thresholds values nor expose sensitive receptors or substantial pollutant concentrations. Both the Longley Well and the Camino Well projects are consistent with the Air Quality Management Plan as well as the *Arcadia General Plan* and would not produce either short- or long-term significant quantities of criteria pollutants or violate air quality standards. (Arcadia MND 2008)

Although project related construction emissions are not significant, the SCAB is in a non-attainment area for ozone, carbon monoxide and PM10. It is therefore important to reduce project-related emissions to the maximum extent feasible.

Mitigation measures associated with the proposed action would include the use of best management practices (BMP) to minimize dust, and efficient construction management practices to minimize exhaust fumes by reducing vehicle traffic to and from the project site. It would be required that all construction contractors comply with the Rules and Regulations established by the South Coast Air Quality Management District (SCAQMD) in 1976, and as amended. Other mitigation measures include using low-emission construction equipment, suspending grading operations during first and second stage smog alerts, use of water spraying tanker trucks to wet down portions of the site during construction, maintaining construction equipment with properly tuned engines, using on-site power instead of portable generators, and coordinating construction operations to minimize traffic interference.

Emissions from construction related activities would cease upon completion of construction.

Summary of Mitigation Measures for Air Quality:

1. Mitigation Measure, Air Quality #1: Use Best Management Practices to minimize dust (e.g., use of water spraying trucks)
2. Mitigation Measure, Air Quality #2: Comply with rules and regulations of SCAQMD
3. Mitigation Measure, Air Quality #3: Comply with dust and suppression provisions of the City's Municipal Code
4. Mitigation Measure, Air Quality #4: Use low-emission construction equipment
5. Mitigation Measure, Air Quality #5: Suspend grading operations during first and second stage smog alerts
6. Mitigation Measure, Air Quality #6: Maintain construction equipment with properly tuned engines

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts related to air quality.

3.1.2 Potential Impacts on Noise

Proposed Action

The Longley Well No.3 site is an existing well site that has been out of service since 1979. The site is located on the south west corner of Palm Drive and El Monte Avenue with the entrance to the site on Palm Drive. The site is 60 feet wide (Palm Drive) by 150 deep (El Monte Avenue), and is in a residential neighborhood with one residential neighbor to the west and one residential neighbor to the south.

The Camino Real site is also an existing well facility. The facility currently includes two out of service wells (Camino Well No.1 and Camino Well No.2), a one million gallon reservoir, a chlorination building, and three booster pump stations, two of which are no longer in service. The site is located on Camino Real Ave between First Avenue and Second Avenue and is bordered by residential properties to the east, north and west.

The long-term operation of the proposed two water supply wells will not produce a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. The wells will be underground and will be sheltered with a fence behind a block wall. As such, the project will not expose persons to or generate noise levels in excess of standards by the City on a long-term basis. Longley Well #3 and Camino Well #3 are located in urbanized environments that have ambient noise levels in excess of the anticipated noise generated by the post-construction operation of these facilities. Furthermore, the completed Longley and Camino Wells will operate within equipment housings specifically designed for proper noise attenuation so that the noise levels at the adjacent properties will be within the allowable limits of the Arcadia Municipal Code.

The construction activities, however, will generate noise associated with the drilling of the well; minimal noise impacts are associated with the equipping of the wells. The construction related noise will be short-term, and mitigated through the use of noise reducing measures as much as possible. For a short time during construction, drilling of the well will involve a 24 hours per day process for three periods of 3 - 7 days each. Some groundborne vibration or construction related groundborne noise levels could occur during construction, but will be temporary and of minimal duration, and would be considered as having a less than significant impact. Some minor groundborne vibration could be felt during the drilling of the wells within the immediate vicinity of the project sites however, the magnitude of the vibration is not expected to cause damage based on experience with similar operations in the general area. Noise generated from construction trucks would be temporary in duration and localized on the construction site.

Notwithstanding, mitigation measures for short-term noise resulting from construction would be employed to assure minimal impact to local residents. Sound curtains will be installed to limit the noise to within the allowable limits of the Arcadia Municipal Code. In addition, activities will be limited to the hours of work as specified in the noise ordinance or the contract specifications. Furthermore, residents adjacent to the project sites will be notified of general construction schedules and locations prior to the commencement of construction. This notice will include a contact name and phone number for the City to facilitate specific inquiries and requests regarding potential conflicts between construction operations and any potential noise-sensitive activities.

Summary of Mitigation Measures for Noise:

1. Mitigation Measure, Noise #1: Limit construction to daylight hours, except in specific cases as necessary, in accordance with the City of Arcadia Municipal Code and/or the construction contract specifications
2. Mitigation Measure, Noise #2: Installation of noise-dampening equipment and use of noise barriers (e.g., noise curtains) to provide sound abatement
3. Mitigation Measure, Noise #3: Notify neighboring facilities of construction schedules

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts related to noise.

3.1.3 Potential Impacts on Odor

Proposed Action

Under existing conditions, there are no major sources of odor in the project study area, and the construction activities that make up the proposed action would not be expected to create any odor issues in the project study area. The completed project will not emit odors.

Summary of Mitigation Measures for Odor:

No mitigation measures are necessary

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts related to odor.

3.2 WATER RESOURCES

This section presents the potential impacts and mitigation measures for the proposed action and the no action alternative on water resources. Impacts on groundwater, the water supply system, surface water, wetlands, and flood plains are identified below.

3.2.1 Potential Impacts on Groundwater

Proposed Action

The implementation of the project will not adversely impact the hydrology or the existing water quality of the area. The City of Arcadia's water supply sources include groundwater rights in the Main Basin and Raymond Basin as discussed in section 2.2.1. These water rights (in part) will be used for groundwater extraction via the new wells. Operation of the wells would not substantially deplete groundwater supplies or interfere with groundwater recharge. Pumping rates and pumping levels will be monitored through the City's computerized control system (SCADA) and volumes pumped from the aquifer would be within the allowable water production rights granted to the City by the Main San Gabriel Basin Watermaster.

The Main San Gabriel Basin Watermaster is the agency responsible for managing groundwater resources within the watershed and groundwater basin and administering adjudicated water rights within the basin. The Watermaster was created in 1973 by the California Superior Court of Los Angeles County to administer the Basin's adjudicated water rights and to provide a basin-wide governing body for management of water resources. The Main San Gabriel Basin Watermaster consists of a nine-person board appointed by Court. The Judgment defined the water rights of 190 original parties to the legal action.

The Watermaster's primary responsibilities include the following:

- Manage and control the withdrawal and replenishment of water supplies in the Basin.
- Determine annually the Operating Safe Yield (the amount of groundwater that can safely be extracted) for the succeeding fiscal year, and notify the pumpers of their shares thereof.
- Acquire and spread replacement water as needed.
- Coordinate local involvement in efforts to preserve and restore the quality of groundwater in the Basin.
- Assist and encourage regulatory agencies to enforce water quality regulations affecting the Basin.
- Collect production, water quality, and other relevant data from producers.

- Prepare an annual report of Watermaster activities, including financial activities, and summary reports of pumping and diversion.

The Watermaster operates under a formal set of Rules and Regulations, which spell out the procedures by which Watermaster-controlled actions are to be carried out. Under the Rules and Regulations, water producers in the Basin must obtain Watermaster approval for activities such as:

- Constructing or modifying a well.
- Constructing a groundwater treatment plant.
- Increasing groundwater extraction.
- Spreading water in the Basin.
- Spreading and storing supplemental water under a cyclic storage agreement.

In order to fund its operation, the Watermaster is authorized to levy and collect assessments from the producers based upon their amounts of production during the preceding fiscal year. These assessments are applied primarily to the purchase of replacement water and to administrative costs.

The total fresh water capacity of the Main Basin is estimated to be approximately 8.7 million acre-feet. If the City of Arcadia (or any other party for that matter) pumped groundwater in excess of its proportional share (pumper's share) of the Operating Safe Yield, the City of Arcadia would be required to purchase imported replacement water to recharge the Main Basin, thus maintaining balance in the basin. The City of Arcadia has a prescriptive pumping right of 4.23099 percent of the Operating Safe Yield. In 2005-06, the City of Arcadia was allowed to pump 10,154.38 acre-feet. The 10,154.38 acre-feet is 0.11 percent of the 8.7 million gallons within the basin. Because of the Watermaster oversight, the basin is maintained to minimize any significant impacts to the basin. Therefore, the City exercising the pumping of its adjudicated proportional share does not significantly impact the operation or supply within the basin.

In addition, according to the City's 2005 Urban Water Management Plan, the California Department of Water Resources (DWR) Bulletin 118 does not identify Raymond Basin or Main Basin as being in overdraft.

Furthermore, the Corps Study concluded that any changes in groundwater elevations due to the water infrastructure improvements are not anticipated to significantly impact the direction or quality of the groundwater.

There will be no hazardous chemicals or materials used or stored during construction that could cause harm to the groundwater.

Summary of Mitigation Measures for Groundwater:

No mitigation measures are necessary

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts related to groundwater.

3.2.2 Potential Impacts on the Water Supply System

Proposed Action

The proposed action would have a direct long-term major impact on the public water supply system. The addition of two water supply wells will create water system redundancy and reliability and enhance emergency water needs following earthquakes and for fire fighting purposes. Overall, the proposed action will benefit the public through increased public safety.

Summary of Mitigation Measures for Water Supply System:

No mitigation measures are necessary

No Action Alternative

Under the no action alternative, the project would not be implemented resulting in less water system redundancy and reliability in the water supply system.

3.2.3 Potential Impacts on Surface Water

Proposed Action

The project site is not located in an area that would affect the course of any stream or river and would not result in substantial erosion or siltation on or off-site.

Neither the Longley site nor the Camino site will contribute any additional runoff or provide any substantial additional sources of polluted runoff. Both sites will produce additional flow to the storm drain system during start-up and shut-down of the well pumps, however. This additional flow will be restricted as to the quantity of discharge flow and to the time of flow not occurring during storm periods. The City will be required to obtain a Waste Discharge permit from the State of California Regional Water Quality Control Board (RWQCB) for the discharge of waste water during the aquifer testing, development and start-up of the well. This NPDES permit issued by the RWQCB will set limits of the significant physical properties of the waste water to ensure that the water will not have an adverse effect on the streams to which it discharges. The permit will require monitoring of discharges by qualified individuals, laboratory testing of the discharge water, and reporting to the RWQCB of the results of the tests. This process will guard against any violations of waste discharge water quality standards.

The operation of the new wells would be performed under the City's General NPDES permit where the City is a co-permittee under the County of Los Angeles. Standard procedure for all construction is to minimize storm water contamination through the implementation of Best Management Practices (BMP). Implementation of stormwater pollution control measures in accordance with state and local regulations will be required of the contractors selected for construction. General BMPs that would be implemented include:

- Construction would be done to prevent sloping, control erosion, and direct runoff to storm drains,
- Sandbags or straw bales would be used wherever necessary on site to prevent runoff from entering the storm drains directly, and
- Periodic spraying of construction area with water would be implemented to minimize the generation of dust.

Summary of Mitigation Measures for Surface Water:

1. Mitigation Measure, Surface Water #1: Use BMPs to minimize erosion and control stormwater runoff
2. Mitigation Measure, Surface Water #2: Comply with the City's NPDES requirements and construction contract requirements for stormwater runoff
3. Mitigation Measure, Surface Water #3: Maintain a spill contingency plan

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts related to surface water.

3.2.4 Potential Impacts on Wetlands

Proposed Action

The proposed action would have no impact on wetlands because the proposed action is not located in or adjacent to federally protected wetlands.

Summary of Mitigation Measures for Wetlands:

No mitigation measures are necessary

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts on wetlands.

3.2.5 Potential Impacts on Flood Plains

Proposed Action

The proposed action would have no impact on flood plains in or near the project site. The project sites are existing City water infrastructure facility sites, and the sites would not be altered in such a way to impact flood plains. The proposed action would not alter the course or flow of floodwaters. The proposed action would not generate or be subject to any significant impacts associated with surface water movements or supplies, flooding, or groundwater resources. These conclusions are based on the fact that the proposed action would not significantly affect any surface water drainage or groundwater bodies.

According to the *Arcadia General Plan* and as discussed in section 2.2.5, the City of Arcadia has five major channels that carry storm runoff and that due to the existence of this storm water control system, there are currently no areas within the City that are within a 100-year floodplain.

The City's *General Plan* also discusses flooding hazards. There are flood inundation areas for the Santa Anita Dam, the Morris S. Jones Reservoir, the Sierra Madre Dam and the Sawpit Dam. The Longley well site does not lie within a designated inundation area. The El Camino site lies within the inundation area of the Santa Anita Dam. Nearly one-half of the City of Arcadia (the eastern half of the City) lies within the inundation area of the Santa Anita Dam. As discussed in Section 3 of the MND, the projects are not associated in any way with a levee or dam and do not involve any significant structures that would impede or re-direct the flood flow.

Summary of Mitigation Measures for Flood Plains:

No mitigation measures are necessary

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts on flood plains.

3.3 SURFACE RESOURCES

This section presents the potential impacts of the proposed action and the no action alternative on surface resources. Presented below are discussions of the topography, soils, geological resources, vegetation, and wildlife.

3.3.1 Potential Impacts on Topography

Proposed Action

The proposed action would not result in any impacts on topography of the existing developed site. The drilling of a water supply well will not change existing topography. The post-construction topography would be the same as the pre-construction conditions. The project site does not exhibit significant topographic features.

Summary of Mitigation Measures for Topography:

No mitigation measures are necessary

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts on topography.

3.3.2 Potential Impacts on Soil

Proposed Action

The proposed action would not result in impacts on soil. All soil on the site has been disturbed previously. The project does not involve grading of the site or disturbance of the soil on the site. The project site has a flat terrain with the majority of the site developed with hardscape or landscaped surfaces, not prone to erosion. During the drilling of the well, there will be removal of insignificant amounts of soil as soil boring spoils.

During construction, sandbags will be used around the project site to prevent the loss of soil via storm water runoff in accordance with a storm water pollution prevention plan (SWPPP).

Summary of Mitigation Measures for Soil:

1. Mitigation Measure, Soil #1: Use BMPs to minimize erosion and control stormwater runoff, in accordance with the SWPPP
2. Mitigation Measure, Soil #2: Supervision by certified hydrologist
3. Mitigation Measure, Soil #3: Dispose of well boring spoils at an approved disposal location

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts on soil.

3.3.3 Potential Impacts on Geological Resources

Proposed Action

The proposed action would have no impact on geological resources. As discussed in Section 3 of the MND, the project does not lie over and is not adjacent to an active earthquake fault as delineated by the most recent Alquist-Priolo Fault Zoning Map (See Appendix E in the MND).

The MND indicates that the project site lies 4 kilometers south of the Raymond fault which has an expected maximum magnitude of 6.5 and is considered a Type B source with a Near Source Factor of 1.0 according to the California Building Code tables, 16A-U and 16A-S respectively. This classification is considered moderate and therefore strong seismic shaking is not expected to occur. ($M > 6.5$ with Slip-rate > 2).

The MND indicates that the project is not located in a liquefaction zone as designated by the Seismic Hazard Zones Map, published by the CDC, Division of Mines and Geology (See Appendix E in the MND).

The MND indicates that the project is not located in a landslide zone as designated by the Seismic Hazard Zones Map, published by the CDC, Division of Mines and Geology (See Appendix E in the MND).

Even though the project is not located in an unstable geologic area, however, due to the nature of the project and risks involved in well drilling, the contractor will be required to exercise caution while drilling the well and all drilling work will be under the supervision of a hydrologist, licensed in the State of California and experienced in well drilling.

Summary of Mitigation Measures for Geological Resources:

1. Mitigation Measure, Geological Resources #1: Supervision by certified hydrologist

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts on geologic resources.

3.3.4 Potential Impacts – Tsunami, Seiche, and Storm Surges

Proposed Action

The proposed action would not create an impact resulting from tsunami, seiche or storm surges. Since the City is not a coastal community, it is not considered to be susceptible to tsunami, seiche and storm surges.

Summary of Mitigation Measures for Tsunami, Seiche, and Storm Surges:

No mitigation measures are necessary

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts related to tsunami, seiche or storm surges.

3.3.5 Potential Impacts on Vegetation

Proposed Action

The proposed action would result in a direct short-term minor impact on vegetation. The site has been previously disturbed and thoroughly graded at various times resulting from construction of facilities from the time that the well sites were established in the 1920s and 1940s up to the current time. Throughout this time period, introduced vegetation has been planted on the site with perimeter landscaping. Much of the sites consist of paved areas, flat terrain exposed soil and/or gravel, and water infrastructure facilities such as other wells, reservoirs and pumping station facilities. Construction of the proposed action would not result in the removal of landscaping or exposed soil. There will be limited disturbance to existing soil due to construction truck traffic and stockpiling of construction materials on site during the term of construction, but it is not anticipated that any existing vegetation would be removed or destroyed.

No Endangered or Threatened Species or Species of Concern exist on the project site. The project site is not a suitable habitat for Endangered or Threatened Species or Species of Concern. It is anticipated that no Endangered or Threatened Species, Species of Concern or their habitats would be affected by implementation or operation of the project. A review of the California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDDB) for the project and surrounding area shows no recent occurrence data for Endangered or Threatened species or Species of Concern. This is to be expected in such an urban setting where grading, excavation, and paving have previously occurred, and ornamental landscaping has been planted. The CNDDDB information from the CDFG is located in Appendix A and Appendix B of this EA.

It is not anticipated that Endangered or Threatened species or Species of Concern s would be found on or near the project sites, and therefore the project would have no impact on listed Threatened and Endangered Species. As such, no mitigation measures would be necessary. However, if during construction there is note of any unusual biological resource, work would be halted in that area temporarily and field testing would be initiated.

The City of Arcadia contacted the California Department of Fish and Game to apply for the issuance of a "CEQA Filing Fee No Effect Determination Form." In September 2008, the California Department of Fish and Game issued the form indicating that based on a review of the project as proposed, the California Department of Fish and Game determined that for

purposes of the assessment of CEQA filing fees, the project has no potential effect on fish, wildlife and habitat and the project as described does not require payment of a CEQA filing fee. A copy of the form is located in Appendix C of the MND.

The U.S. Department of the Interior, Fish and Wildlife Service (FWS) was also contacted on March 5, 2008 to provide technical assistance and consultation in evaluating the potential occurrence of federally listed Endangered, Threatened, proposed, and Candidate Species that may occur in the vicinity of the project area. Based upon FWS review, FWS determined that no native habitat will be impacted and FWS does not expect the presence of federally listed Endangered, Threatened, proposed, and Candidate Species to occur in the area identified. The inquiry to FWS and its response letter is included in Appendix C of this Environmental Assessment.

Summary of Mitigation Measures for Vegetation:

No mitigation measures are necessary

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts on vegetation.

3.3.6 Potential Impacts on Terrestrial Wildlife

Proposed Action

The proposed action would not result in significant impact on wildlife. Any impact on wildlife that could occur would be minimal because there is a lack of vegetation and suitable habitat for wildlife at the project sites. As described earlier, the project sites are water infrastructure utility sites located in an urban environment. Also as discussed earlier, the project sites are devoid of vegetation except for perimeter ornamental plantings. The project sites have been graded and disturbed many times over the time period since they were developed as water infrastructure utility sites over 50 years ago. The wildlife that currently use or frequent the site are tolerant of human disturbances and would be displaced only temporarily during the construction phase.

No Endangered or Threatened Species or Species of Concern exist on the project site. The project site is not a suitable habitat for Endangered or Threatened Species or Species of Concern. It is anticipated that no Endangered or Threatened Species, Species of Concern or their habitats would be affected by implementation or operation of the project. A review of the California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDDB) for the project and surrounding area shows no recent occurrence data for Endangered or Threatened species or Species of Concern. This is to be expected in such an urban setting where grading, excavation, and paving have previously occurred, and ornamental landscaping has been planted. The CNDDDB information from the CDFG is located in Appendix A and Appendix B of this EA.

It is not anticipated that Endangered or Threatened species or Species of Concern s would be found on or near the project sites, and therefore the project would have no impact on listed Threatened and Endangered Species. As such, no mitigation measures would be necessary. However, if during construction there is note of any unusual biological resource, work would be halted in that area temporarily and field testing would be initiated.

As indicated above in Section 3.3.5 the City of Arcadia contacted the California Department of Fish and Game to apply for the issuance of a "CEQA Filing Fee No Effect Determination Form." In September 2008, the California Department of Fish and Game issued the form indicating that based on a review of the project as proposed, the California Department of Fish and Game has determined that for purposes of the assessment of CEQA filing fees, the project has no potential effect on fish, wildlife and habitat and the project as described does not require payment of a CEQA filing fee. A copy of the form is located in Appendix C of the MND.

Also as indicated above in Section 3.3.5, the U.S. Department of the Interior, Fish and Wildlife Service (FWS) was also contacted on March 5, 2008 to provide technical assistance and consultation in evaluating the potential occurrence of federally listed Endangered, Threatened, proposed, and Candidate Species that may occur in the vicinity of the project area. Based upon FWS review, FWS determined that no native habitat will be impacted and FWS does not expect the presence of federally listed Endangered, Threatened, proposed, and Candidate Species to occur in the area identified. The inquiry to FWS and the response letter from FWS are included in Appendix C of this Environmental Assessment.

Summary of Mitigation Measures for Terrestrial Wildlife:

No mitigation measures are necessary

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts on terrestrial wildlife.

3.4 THREATENED AND ENDANGERED SPECIES

This section presents the potential impacts of the proposed action and the no action alternative on Threatened and Endangered Species.

Proposed Action

The proposed action is located at existing well site locations which are actively managed and have been physically altered from its natural state over a half-century ago. The existing sites do not provide suitable habitat for the federally or state-listed species.

As indicated above in Sections 3.3.4 and 3.3.5, no Endangered or Threatened Species or Species of Concern exist on the project site. The project site is not a suitable habitat for Endangered or Threatened Species or Species of Concern. It is anticipated that no Endangered or Threatened Species, Species of Concern or their habitats would be affected by implementation or operation of the project. A review of the California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDDB) for the project and surrounding area shows no recent occurrence data for Endangered or Threatened Species or Species of Concern. This is to be expected in such an urban setting where grading, excavation, and paving have previously occurred, and ornamental landscaping has been planted. The CNDDDB information from the CDFG is located in Appendix A and Appendix B of this EA.

As indicated above in Sections 3.3.5 and 3.3.6, FWS was contacted on March 5, 2008 to provide technical assistance and consultation. Based upon FWS review, FWS determined that no native habitat will be impacted in the project area. FWS also determined that it does not expect the presence of federally listed Endangered, Threatened, proposed, and Candidate Species to occur in the project area. The letter from FWS is included in Appendix C of this Environmental Assessment.

As indicated above, it is not anticipated that these species would be found on or near the project sites, and therefore the project would have no impact on listed Threatened and Endangered Species. As such, no mitigation measures would be necessary. However, if during construction there is note of any unusual biological resource, work would be halted in that area temporarily and field testing would be initiated as needed.

Based on this information, the proposed action would have no impact on Threatened and Endangered Species or on Species of Concern.

Summary of Mitigation Measures for Threatened and Endangered Species:

No mitigation measures are necessary

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts on Threatened and Endangered Species.

3.5 CULTURAL RESOURCES

This section presents the potential impacts of the proposed action and the no action alternative on cultural resources.

Proposed Action

The proposed action would not have an impact on cultural resources. No known historical, archaeological, or paleontological resources are found within the boundary of the proposed

action. None of the archaeological or historical resources discussed or listed in Section 2.5 is located within or adjacent to the proposed project areas. The project sites are existing water infrastructure facilities located in an urban setting where grading and excavation have been done many times since the 1940s. The soil at the sites has been disturbed previously and there is no evidence that indicates that any artifacts have been found; therefore, it is not likely and not expected that any resources would be discovered during the implementation of the proposed action. The sites consist of paved areas, buildings/reservoir, gravel, flat-level exposed soil, and/or wood chips groundcover (approximately 85% unpaved surface at the Longley site and 55% unpaved surface at the Camino Real site). The sites are small in size measuring approximately 9,000 square feet (0.21 acre) for Longley Well #3 and 45,300 square feet (1.0 acre) for the Camino Real Well #3 site.

The amount of soil that will be disturbed for the proposed action is minimal. In the unlikely event that any historical, archaeological, or paleontological resources are unearthed during the construction of the proposed projects, work in the affected areas will halt or be redirected and proper consultation with state authorities and Native American representatives (if necessary) would be undertaken.

According to an environmental review conducted by the U.S Army Corps of Engineers in the USACE Study, the cultural records search revealed no recorded archaeological sites within the City of Arcadia. The USACE Study also indicates that no significant paleontological sites have been identified within the City limits. In addition, the environmental review states that significant impacts to paleontological resources will not occur as geologic formations that are known to have a high sensitivity for such resources are not located within the City of Arcadia. (USACE Study 1997)

The *Arcadia General Plan* identifies the following historic resources within the City:

- The Queen Anne Cottage and Coach Barn, located at the Los Angeles County Arboretum
- The Hugo Reid Adobe, also located at the Los Angeles County Arboretum
- The Santa Ana Assembly Center, located at the Santa Anita Race Track
- Santa Anita Park Race Track
- The Santa Anita Depot, located at the Los Angeles County Arboretum, and
- The historical site designated CA-LAN-1868H, located within the National Forest Service Center in Arcadia

None of these historic resources are located within or adjacent to the well project sites.

In July 2008, a California Historical Resources Information System (CHRIS) records search by the South Central Coastal Information Center, California State University, Fullerton, California was conducted relative to the two well site locations. The CHRIS study indicates

that no archaeological sites have been identified within a ½ mile radius of the project site, and no sites are located within the project sites.

In accordance with the CHRIS review, the California Points of Historical Interest (PHI), the California Historical Landmarks (CHL), the California Register of Historical Places (CR), the National Register of Historic Places (NR), and the California State Historic Resources Inventory (HRI) listings were reviewed for the project. The results of the CHRIS search are as follows:

- The California Point of Historical Interest (2008) of the Office of Historic Preservation, Department of Parks and Recreation, lists no properties within a ½ mile radius of the project site.
- The California Historical Landmarks (2006) of the Office of Historic Preservation, Department of Parks and Recreation, lists no properties within a ½ mile radius of the project site.
- The California Register of Historical Resources lists no properties within a ½ mile radius of the project site.
- The National Register of Historic Places lists no properties within a ½ mile radius of the project site.
- The California Historic Resources Inventory (2006) lists 12 properties that have been evaluated for historical significance within a ½ mile radius of the project site.

Based on the records search results, the CHRIS report concludes that no cultural resource impacts are anticipated to occur from project development. The CHRIS report does recommend however, that in the event that cultural materials are unearthed during construction, all work within the vicinity of the find must be halted until a qualified archaeologist can assess its significance and make recommendations.

A copy of the CHRIS report is located in Appendix D of this EA.

In March 2008, the Native American Heritage Commission (NAHC) was also contacted for consultation and a record search of its Sacred Lands File (SLF). The NAHC performed a record search of its SLF. The SLF failed to indicate the presence of Native American cultural resources in the immediate project area. The NAHC provided a list of Native American tribes in the Los Angeles County area and recommended contacting the Native American tribes for further cultural resource information in the project area. The NAHC also cited California Public Resources Code Section 5097.98 and Health and Safety Code Section 7050.5 which identifies provisions in the event that archeological resources are accidentally discovered. Each of the recommended Native American tribes was contacted for cultural resource information either by telephone, postal mail and/or electronic mail. The letter of inquiry sent to the Native American tribes, the inquiry to NAHC, and the response letter from NAHC are located in Appendix E of this Environmental Assessment.

Of the five tribes contacted for cultural resource information, only the Tongva Ancestral Territorial Tribal Nation (TATTN) responded. In its response, TATTN did not raise any cultural resource issues, but did raise a concern pertaining to the City of Arcadia's water rights in the Main San Gabriel Basin. TATTN's Tribal Administrator lodged an objection and opposition to the project based upon TATTN's perceived indigenous rights issues and claimed TATTN has senior water rights to any state or other entities.

The Main San Gabriel Basin Watermaster has verified that the City of Arcadia has specific water rights within the Basin in accordance with the Main San Gabriel Basin Judgment and provided supporting documentation including a definitive accounting of the City of Arcadia's water rights within the Main San Gabriel Basin. The Main San Gabriel Basin Watermaster also indicated in its letter that during the adjudication process, every effort was made to identify and acknowledge all water producers and existing water rights holders, and that no Native American water usage or rights were identified or claimed.

Furthermore, The Main San Gabriel Basin Watermaster states in its letter: "*With regard to the TATTN assertion of senior rights, Watermaster has no record of any such claim of rights. Certainly, any such rights, if they existed, would have been claimed at the time of adjudication. Additionally, federally-reserved Native American water rights must be associated with a federal reservation of land dedicated to the tribe. We are unaware of such reservation of land that would interfere with the ability of the Cities of Arcadia and Sierra Madre to produce water in the Basin.*"

A copy of the inquiry letter to the Main San Gabriel Basin Watermaster and its response letter are located in Appendix E of this EA.

The California Office of Historic Preservation, Department of Parks and Recreation and SHPO was contacted for consultation in October 2008, and was provided with the CHRIS Study results and supporting documentation. Based upon the review by SHPO, SHPO concluded that it has no objection to EPA's finding of No Historic Properties Affected. The inquiry letter to SHPO and its response are located in Appendix D of this Environmental Assessment.

Summary of Mitigation Measures for Cultural Resources:

1. Mitigation Measure, Cultural Resources #1: Consultation with the appropriate agencies if potential cultural resources are unearthed during construction

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts on cultural resources.

3.6 SOCIOECONOMIC RESOURCES

The following section describes potential impacts on land use, aesthetics, socioeconomic conditions, waste management, transportation, and environmental justice as a result of the proposed action. Potential impacts associated with the no action alternative are also discussed.

3.6.1 Potential Impacts on Land Use

Proposed Action

The proposed action will not alter existing or planned land uses in the project sites and vicinity, and would not conflict with existing land use regulations or policies. The *Arcadia General Plan* designation for the project sites is Single Family Residential. It is zoned as R-1. The existing land usage for the project sites is for water infrastructure facilities. Wells and/or water storage reservoirs are on the existing sites. Both sites will continue to be used for water infrastructure purposes. No change in land use designation will result from project implementation.

Summary of Mitigation Measures for Land Use:

No mitigation measures are necessary

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts on land use.

3.6.2 Potential Impacts on Aesthetics

Proposed Action

The proposed action would result in direct short-term minor impacts on aesthetics due to construction activities. The impacts would be considered short-term because they would occur during the construction phase of the proposed action. This includes use of heavy construction vehicles and equipment, and storage of materials.

No designated scenic views or notable view corridors exist on the project site or in the project vicinity, nor would implementation of the project substantially alter existing visual characteristics of the project site. The project involves the use of existing water infrastructure facilities within an urban environment. The construction of new wells on the sites will not alter existing aesthetics in any way. The proposed project will not significantly alter existing views from adjacent land uses. Existing perimeter landscaping and six-foot block walls will remain unchanged and shield the facilities from view.

During the course of construction, temporary work lights will be required to ensure safe working conditions for a period of approximately six weeks at each site. Prior to mitigation these lights could pose a significant impact to the adjacent residences. Mitigation will require that these lights be shielded and directed within the project boundaries and away from adjacent residences or traffic. The final well facility will utilize yard lighting that will be controlled by photo-electric/motion detection switches and will be directed away from adjacent residences.

Summary of Mitigation Measures for Aesthetics:

1. Mitigation Measure, Aesthetics #1: Temporary safety work lights will be shielded and directed within the project boundaries and away from adjacent residences or traffic
2. Mitigation Measure, Aesthetics #2: Final well facility lighting will be controlled by photoelectric/motion detection switches and will be directed away from adjacent residences or traffic

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts on aesthetics.

3.6.3 Potential Impacts on Socioeconomic Conditions

The following subsections describe the potential impacts on population, housing, employment, and income.

Proposed Action

The proposed action would not have any adverse impacts on the socioeconomic conditions of the City of Arcadia. It is a beneficial project which enhances existing water system infrastructure and creates increased water supply reliability and water system redundancy. The project will allow the City to continue its use of groundwater as its source of supply and therefore the City need not rely on imported water supplies. Since imported water supplies are more costly, use of groundwater will help maintain lower retail water rates. As such, the proposed action would provide an indirect long-term major impact on the population by increasing public health and safety and providing cost-effectiveness in the City's water supply.

The project will not induce substantial population growth, either directly or indirectly. The City is essentially built-out, with little room for substantial population growth in this area of the City. The proposed action therefore would not induce substantial population growth and would not substantially affect population or housing. The water supply capacity from the new wells replaces water supplies from closed or inactive wells. The Longley and Camino wells are municipal wells that are operated remotely by the Public Works Services

Department. The wells are replacement wells for wells that are out of service and are intended to increase reliability and system redundancy by providing additional sources of supply in the event that existing wells become inoperable due to a catastrophic event or maintenance. The wells are not intended to add to supply flow or contribute to any population growth. The project will not displace substantial numbers of existing housing, nor displace substantial numbers of people, and thus, would not necessitate the construction of replacement housing elsewhere.

Summary of Mitigation Measures for Socioeconomic Conditions:

No mitigation measures are necessary

No Action Alternative

Under the no action alternative, the project would not be implemented. The no action alternative could have adverse indirect long-term impacts on the socioeconomic conditions of Arcadia because not implementing the project would not provide for the increased water system reliability and water system redundancy for emergency or fire-fighting purposes and for public safety.

3.6.4 Potential Impacts on Waste Management

Proposed Action

The proposed action would generate minor amounts of solid waste in the form of well boring spoils and waste construction materials. The quantities of waste will be minimal and would not exceed permitted landfill capacities. There would be no long-term generation of solid waste as a result of the project.

During construction diesel fuel will be brought to the site for use in construction equipment. All diesel fuel stored on site will require the use of state-approved containers (with secondary containment), and the use of diesel fuel will be in accordance with state and federal laws.

Operation of the completed facility would involve the storage and use of Sodium Hypochlorite (NaClO) at 15% concentration for the disinfection of Municipal water supply. Sodium Hypochlorite will be used in accordance with state and federal laws, including the use of secondary containment for its proper storage. No gaseous chlorine will be used.

Summary of Mitigation Measures for Waste Management:

1. Mitigation Measure, Waste Management #1: Waste generated would be disposed of in accordance with appropriate local, state, and federal requirements

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts on waste management.

3.6.5 Potential Impacts on Transportation

Proposed Action

During the construction of the proposed action, there would be virtually no impact on local transportation. There are very few construction vehicles associated with the well projects. There will be need for large well drilling equipment and vehicles, but the number of vehicles will be few. Construction vehicles include the well drilling rig and truck vehicles to remove the well boring spoils, but the overall number of construction vehicles will be less than 10 at each site at any given time. This would include the vehicles needed for equipment delivery (e.g. well pumps) at each well site location. Once the large well drilling equipment is mobilized on the sites, there will only be minor traffic from construction workers to and from the site on a daily basis, and the trucks removing well boring spoils. This minor volume of traffic will cease upon completion of the installation of the well.

There will be no increase in traffic associated with the long term operation of the wells. Traffic conditions will revert to pre-construction volumes, once construction of the wells is complete. Existing conditions include traffic associated with vehicle traffic due to water department maintenance of the site and for routine deliveries of supplies to the site for the well and disinfection activities. These are considered negligible and would not affect the volume to capacity ratio on the roads or cause congestion at intersections. It will not exceed a level of service standard established by the County congestion agency, result in a change in traffic patterns, substantially increase hazards due to a design feature, result in inadequate emergency access, result in inadequate parking, or conflict with adopted policies, plans or programs supporting alternative transportation.

There will be no rerouting or redirection of traffic, or road closures. Emergency vehicle access will be available throughout the construction period. Parking of all construction vehicles will be on-site; there will be no parking on public streets. The staging area for all materials will be located on the well site; no materials will be stored on public streets. The contractor will coordinate with the City for the routing of all construction vehicles through public streets. The contractor will be responsible for traffic control (e.g., flag people during deliveries by large trucks), as required, and in accordance with state and local laws and contract specifications. Per the City's Municipal Code, trucks would be required to travel on designated truck routes, in accordance with the truck route map shown in Figure 5.

Mitigation measures associated with this element include preparation of a traffic control plan, specific access to and egress from the project site, proper signage, prohibiting local street blockages at any time to ensure emergency access, and advance notification to local residents and businesses.

Summary of Mitigation Measures for Transportation:

Mitigation Measure, Transportation #1: Adequate plans for traffic circulation and safety would be developed and implemented

Mitigation Measure, Transportation #2: Project-related construction traffic will be regulated by the use of the *Work Area Traffic Control Handbook* (WATCH) manual

Mitigation Measure, Transportation #3: Project-related construction traffic will use designated truck routes, as appropriate

Mitigation Measure, Transportation #4: Work areas will be limited to the project site and public right-of-way

Mitigation Measure, Transportation #5: Warning signs shall be placed along El Monte and Camino Real Avenues during construction to alert motorists and pedestrians to the presence of construction related traffic

Mitigation Measure, Transportation #6: Provide use of flag people as needed

Mitigation Measure, Transportation #7: Project contractors shall advise all employees of local safety concerns and require compliance with local speed limits

Mitigation Measure, Transportation #8: Notify local police and fire authorities during construction as to related traffic

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts on transportation.

3.6.6 Potential Impacts on Environmental Justice

Proposed Action

According to the 2000 US Census, the City of Arcadia has approximately 14,170 families, 12.8% of which have an income of \$35,000 to \$49,999, and 19.6% with an income of \$50,000 to \$74,999, and 14.7% of which have an income of \$75,000 to \$99,999. The median family income is \$66,657. The per capita income is \$28,400. The census indicates that 4.7% of the families have an income of less than \$10,000. As indicated above in Section 2.6.3, in 1999, 6.7% of families are below poverty level.

The proposed action is located in existing water infrastructure facility sites which are located in residential neighborhoods predominately with single family homes. According to the *Arcadia General Plan*, Arcadia is a “premier ‘community of homes’ featuring top quality, safe neighborhoods which exist in concert with the natural environment; a diverse population that is committed to community involvement and volunteerism; and a superb educational system.” The *Arcadia General Plan* also describes Arcadia as a “picturesque, affluent, largely built out, and primarily residential community.”

The proposed well site locations are not located in low-income areas. Minority populations would not be directly or indirectly impacted by the projects. Therefore, no impacts related to environmental justice are associated with the proposed action.

Summary of Mitigation Measures for Environmental Justice:

No mitigation measures are necessary

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts relating to environmental justice.

3.7 COASTAL BARRIER RESOURCES

Proposed Action

The City of Arcadia is not located within the Coastal Barrier Resources System. Therefore, the proposed action would not impact coastal barrier resources.

Summary of Mitigation Measures for Coastal Barrier Resources:

No mitigation measures are necessary

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts on coastal barrier resources.

3.8 COASTAL ZONES

Proposed Action

The City of Arcadia is not located in a coastal zone. Therefore, the proposed action would not impact coastal zone resources or coastal zone management plans.

Summary of Mitigation Measures for Coastal Zones:

No mitigation measures are necessary

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts on coastal zones.

3.9 SIGNIFICANT AND/OR IMPORTANT FARMLANDS

Proposed Action

The City of Arcadia is not an agricultural community. Therefore, the proposed action does not impact important farmland.

Summary of Mitigation Measures for Significant and/or Important Farmlands:

No mitigation measures are necessary

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts on important farmland.

3.10 WILD AND SCENIC RIVERS

Proposed Action

There are no wild and scenic rivers near the proposed action. Therefore the proposed action does not impact wild and scenic rivers or adjacent land as identified by the Act.

Summary of Mitigation Measures for Wild and Scenic Rivers:

No mitigation measures are necessary

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts on wild and scenic rivers or adjacent land as identified by the Act.

3.11 ESSENTIAL FISH HABITAT

Proposed Action

There are no Essential Fish Habitat in the City of Arcadia, and therefore no impact on fish.
Summary of Mitigation Measures for Essential Fish Habitat:

No mitigation measures are necessary

No Action Alternative

Under the no action alternative, the project would not be implemented and thus there would be no impacts on Essential Fish Habitat.

3.12 CUMULATIVE IMPACTS

The cumulative impacts associated with the proposed action would include impacts from the incremental effects of other past, present, or reasonably foreseeable future actions. The goal of cumulative impact analysis is to determine the magnitude and significance of environmental consequences of the proposed action in the context of such past, present, and reasonably foreseeable actions. The two well projects are considered high priority projects in the City of Arcadia due to its overall impact of increasing the health and safety of its residents.

As discussed in Section 2.6.1 Land Use and Section 3.6.3 Socioeconomic Conditions, the City of Arcadia is essentially a built-out community; thus, large scale development does not occur. The proposed action would not induce substantial population growth. Even though there are four development projects proposed over the next few years, these projects are not in the vicinity of or adjacent to the proposed project sites. The development projects include two senior citizen housing projects and other commercial/retail projects. It is not anticipated that these redevelopment projects would result in land use changes or create significant demands on current resources. Coupled with the determination that there are no significant impacts from the proposed well projects, it is reasonable to assume that potential for the project to generate impacts that are individually limited, but cumulatively considerable, is considered unlikely.

Further, it is reasonable to anticipate that these and other projects which may be implemented will, like the proposed project, be developed consistent with applicable policies, guidelines and standards; and incorporate any necessary mitigation measures, thereby reducing potential cumulative impacts of proposed projects within the City and region. Therefore, the potential for the project to generate impacts that are individually limited, but cumulatively considerable, is considered unlikely.

As discussed earlier, the land use designation for the site and the designation of the land use for the surrounding entities will not change as a result of this project. Long-term operation of the well facilities will not significantly impact the residential neighborhoods within which the wells are located. Site activities will continue to operate the same as current operations; thus there is no net impact change. Any potential future upgrades to the site, such as booster station upgrades, or destroying of outdated wells will not change the character of the site or change the land use of the site or create a further demand on resources. The project will not compete for other resources in the City.

Also, as discussed in Section 3.2.1, the Main San Gabriel Basin is actively managed by the Main San Gabriel Basin to maintain safe operating levels within the basin in accordance with the Judgment adjudicating the basin. Thus, there will be no cumulative impact to the basin over the long term resulting from the pumping of groundwater by the City of Arcadia.

The 9th Circuit ruled that federal agencies must assess carbon dioxide emissions and other climate change impacts in environmental review documents prepared under NEPA (see *Center for Biological Diversity v. National Highway Traffic Safety Administration*). The court noted that the “impact of greenhouse gas emissions on climate change is precisely

the kind of cumulative impact analysis that NEPA requires agencies to conduct). Greenhouse gas air emissions are linked to the construction related activities associated with this project. There will be no air emissions from the project once the project is completed and in operation.

The proposed action will be a long-term benefit to the City. The proposed action will result in a more secure water supply for the City by increasing water supplies for emergency and firefighting purposes.

3.13 UNAVOIDABLE IMPACTS

The proposed action would result in minor direct short-term impacts during the construction phase. Mitigation measures are proposed to minimize the impacts. As such, there will be no significant long-term impacts. As indicated earlier, the proposed action will be a long-term benefit to the City. The proposed action will result in a more secure water supply for the City by increasing water supplies for emergency and firefighting purposes.

For each environmental category addressed in this document, the project is considered to have either less than significant impact with mitigation, less than significant impact, or no impact. Based upon the evaluation of data and analysis presented herein, environmental impacts associated with the project are considered less-than-significant either individually or cumulatively. As such, the project will not cause substantial adverse effects on human beings.

As indicated in the discussion of the EA, there are minor impacts resulting from the construction of the proposed project in the areas of air quality, noise, surface water, soils, aesthetics and transportation. The discussion also indicates a long-term overall benefit to the water supply system and significant positive impact related to socioeconomic conditions. In comparison, the No Action Alternative would have no impacts on these resources because the project would not be implemented. However, the No Action Alternative would result in less water system redundancy and water system reliability, resulting in lesser capabilities for the City of Arcadia to cope with emergencies such as earthquakes and fires.

As indicated, the impacts associated with the Preferred Alternative are short term and occur only during the period of construction. In addition, it is also indicated that for all identified resources except water supply system and socioeconomic conditions, there is no effect, no significant effect, or no significant effect with the implementation of the specified mitigation measures on the identified resources. For the water supply system resource, the Preferred Alternative has a significant long-term effect due to the addition of critical water supply infrastructure within the City. Similarly for the socioeconomic conditions resource, the Preferred Alternative has a significant long-term effect by greatly enhancing public health and safety.

In comparison, the No Action Alternative would have no effect on any of the identified resources (other than the water supply system and socioeconomic conditions resources)

because no construction activities would occur. However, the No Action Alternative would have a significant effect on the water supply system and socioeconomic conditions resources because the water system would continue to operate under current deficient conditions, leaving the City's infrastructure and populace susceptible to destruction by fire, and the City would not benefit from the increased public health and safety benefits afforded by implementation of the project (i.e., the preferred alternative).

4.0 CONCLUSION

In accordance with the requirements under NEPA, this EA conducted the necessary investigation of data and evaluated the proposed action and the alternatives in terms of environmental, cultural, and socioeconomic impacts. This evaluation included documentation to support its findings relative to the proposed action as follows:

- Whether the proposed action is environmentally compliant with the applicable regulations,
- Whether the proposed action represents an environmentally sound decision, and
- Whether a finding of no significant impact or a notice of intent to prepare an environmental impact statement would be warranted.

Based upon the evaluation of environmental matters and consistent with the findings of this EA, EPA finds that:

1. The proposed action is environmentally compliant with the applicable regulations, including the appropriate local, state, and federal agencies. Those compliance activities include, but are not limited to:
 - Cultural resource record searches
 - Activities in response to Executive Order 11988, Flood Plain Management
 - Activities in response to Executive Order 11990, Protection of Wetlands
 - Activities in response to Executive Order 12898, Environmental Justice
 - Threatened and Endangered Species consultation with the federal and state Fish and Wildlife Service
 - Preparation of this EA, with the associated review period
2. The proposed action represents an environmentally sound decision. The analysis in this EA shows implementation of the proposed action would be a beneficial and sound environmental decision.
3. The preparation of a notice of decision will be documented for the public record through the formal submittal of a finding of no significant impact.

These findings are consistent with the findings contained in the Mitigated Negative Declaration prepared for this project by the City of Arcadia in accordance with the California Environmental Quality Act. The Mitigated Negative Declaration on the proposed action determined that the proposed project:

- Does not have a significant potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory;
- Does not have significant impacts which are individually limited, but cumulatively considerable; and
- Does not have significant environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly.

The City of Arcadia prepared a Mitigated Negative Declaration describing mitigation measures pertaining to:

- Aesthetics
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Transportation/Traffic

The Mitigated Negative Declaration determined that although the proposed action could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described in the Mitigation Monitoring Program have been added to the project.

5.0 BIBLIOGRAPHY

This chapter contains three sections – a list of persons involved in the preparation of the Environmental Assessment (EA), the persons and agencies consulted during the preparation of the EA, and a list of materials referenced during its preparation.

5.1 LIST OF PREPARERS

The following persons were involved in the preparation of the EA for the Water Supply Wells Project for the City of Arcadia:

Wayne T. Grandin, WTG Consulting Services

C. Stephen Bucknam, Jr., Bucknam and Associates, Inc.

5.2 AGENCIES AND PERSONS CONSULTED

The following persons were consulted during the preparation of the EA for the Water Supply Wells Project for the City of Arcadia:

Ken Herman, City of Arcadia

Tiffany Lee, City of Arcadia

Lisa Flores, City of Arcadia

Michelle Galaz, South Central Coastal Information Center (SCCIC), Department of Anthropology California State University, Fullerton

Kristine Donat, California Natural Diversity Database, Biographic Data Branch, California Department of Fish and Game

Leslee Newton-Reed, California Department of Fish and Game, South Coast Region, San Diego, CA

Karen A. Goebel, United States Department of the Interior, Fish and Wildlife Service, Carlsbad Fish and Wildlife Office

Milford Wayne Donaldson, Office of Historic Preservation, Department of Parks and Recreation, Sacramento, CA

Dave Singleton, Native American Heritage Commission, Sacramento, CA

5.3 REFERENCES

The following documents, websites or information were used in the preparation of the Environmental Assessment for the Water Supply Wells Project for the City of Arcadia:

City of Arcadia, *Mitigated Negative Declaration Report for Longley Well No. 3 and Camino Real Well No. 3*, September, 2008

City of Arcadia, *Longely and Camino Wells Planning Schedule*, September 2008

City of Arcadia, *Application to Drill Three New Water Wells*, January 2008

City of Arcadia, *Urban Water Management Plan*, December 2005

City of Arcadia, *General Plan*, June 1996

City of Arcadia, Municipal Code

City of Arcadia, website, web page address: www.ci.arcadia.ca.us

U.S. Environmental Protection Agency, *Environmental Assessment for the Water Infrastructure Improvements for the City of Arcadia*, 2001

U.S. Army Corps of Engineers, Los Angeles District, *Final Special Study Report, City of Arcadia and Sierra Madre Water Infrastructure Restoration Special Study, Los Angeles County, California*, August 1997

U.S. Army Corps of Engineers, Los Angeles District, *Final Special Study Report- Technical Appendices, City of Arcadia and Sierra Madre Water Infrastructure Restoration Special Study, Los Angeles County, California*, August 1997

U.S. Census Bureau, Census 2000, <http://censtats.census.gov/pub/Profiles.shtml>

U.S. Census Bureau, Census 1990, <http://censtats.census.gov> (Public Law 94-171 [1990 Census])

U.S. Census Bureau, Census 2000, "Table DP-1 Profile of General Demographic Characteristics: 2000, City of Arcadia, California".

Federal Emergency Management Agency, website, web page address: www.fema.gov

Main San Gabriel Basin Watermaster, website, web page address: www.watermaster.org

Los Angeles County Metropolitan Transportation Authority, website, web page address: www.metro.net

South Coast Air Quality Management District, web page address: www.aqmd.gov

Bailey, Robert G., *Descriptions of the Ecoregions of the United States*, March 1995; web page address: www.fs.fed.us/colorimagemap/ecoreg1_provinces.html.

Cotsen Institute of Archaeology at University of California at Los Angeles, web page address: <http://dal.ioa.ucla.edu>

California Department of Parks and Recreation, Office of Historic Preservation, web page address: www.ohp.parks.ca.gov

California Department of Parks and Recreation, Office of Historic Preservation, "Technical Assistance Series #3 – California Register of Historical Resources: Questions and Answers", from Website September 4, 2003, web page address: www.ohp.parks.ca.gov

California Department of Parks and Recreation, Office of Historic Preservation, "Technical Assistance Series #6 – California Register and National Register: A Comparison (for purposes of determining eligibility for the California Register)", May 23, 2001, web page address: www.ohp.parks.ca.gov

California Department of Parks and Recreation, Office of Historic Preservation, "Technical Assistance Series #10 – California State Law and Historic Preservation: Statutes, Regulations and Administrative Policies Regarding Historic Preservation and Protection of Cultural and Historical Resources", May 23, 2001, web page address: www.ohp.parks.ca.gov

U.S. Department of the Interior, Fish and Wildlife Service, web page address: www.fws.gov

U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office, web page address: www.fws.gov/carlsbad

California Department of Fish and Game, web page address: www.dfg.ca.gov

California Department of Fish and Game, Wildlife and Habitat Data Analysis Branch, California Natural Diversity Data Base.

California Department of Fish and Game, Wildlife and Habitat Data Analysis Branch, web page address: http://www.dfg.ca.gov/hcpb/cgi-bin/read_all.asp?specy=bird&character=AD.

U.S. Geological Survey, web page address: www.usgs.gov.

Center for Plant Conservation National Collection Plant Profile, web page address: www.centerforplantconservation.org

Hickman, J.C. 1993. The Jepson Manual: Higher plants of California. Berkeley: University of California Press. 1400p.

Keeley, J.E. 1988. Anaerobiosis as a stimulus to germination in two vernal pool grasses (*Tuctoria greenei* & *Orcuttia californica*). *American Journal of Botany*. 75, 7: 1086-9.

Riverside County Integrated Project, website address: www.rcip.org

California Nature Plant Society Inventory of Rare and Endangered Plants, CNPS, Sacramento, CA, website address: www.cnps.org/inventory.

The Center for Biological Diversity, website address: www.biologicaldiversity.org.

Laymon, S.A. 1998. Yellow-billed cuckoo. In *The Riparian Bird Conservation Plan: A Strategy for Reversing the Decline of Riparian-associated Birds in California*. California Partners in Flight, website address: www.prbo.org/calpif/htmldocs/riparian_v-2.html.

AOU. 1957. The AOU Checklist of North American Birds. Fifth Edition. American Ornithologists Union.

Grinnell, J. and A. H. Miller. 1944. The Distribution of the Birds of California. *Pacific Coast Avifauna* 27:1-608.

RHJV (RIPARIAN HABITAT JOINT VENTURE). 2004. Version 2.0. *The Riparian Bird Conservation Plan: A Strategy for Reversing the Decline of Riparian-associated Birds in California*, California Partners in Flight, Chapter 6 "Population Targets", 2004.

San Diego Sierra Club, website address: <http://sandiego.sierraclub.org/rareplants>.

Jepson Manual treatment for *Phacelia stellaris*. Website address: <http://ucjeps.berkeley.edu>

Wikipedia, the free encyclopedia, website address: www.wikipedia.org

The Owl Pages, website address: www.owlpages.com

Cornell University, All About Birds, website address: www.birds.cornell.edu

United States Environmental Protection Agency, *Environmental Review Guide for Special Appropriation Grants*, April 2008

6.0 APPENDIX

APPENDIX A

California Department of Fish and Game
California Natural Diversity Database Information

USGS El Monte Quadrangle
USGS Baldwin Quadrangle
USGS Mt. Wilson Quadrangle

APPENDIX B

California Department of Fish and Game
California Natural Diversity Database Information
Spotted Owl Database Management System

USGS Azusa Quadrangle
USGS Mt. Wilson Quadrangle

APPENDIX C

United States Department of the Interior, Fish and Wildlife Service
Inquiry to United States Department of the Interior, Fish and Wildlife Service
Response from United States Department of the Interior, Fish and Wildlife Service

APPENDIX D

California Office of Historic Preservation, Department of Parks and Recreation
Inquiry Letter to SHPO
Consultation Response from SHPO

California Historical Resources Information System
Records Search

APPENDIX E

Native American Heritage Commission
Sacred Lands File Records Search
Inquiry to Native American Heritage Commission
Consultation Response from Native American Heritage Commission

Native American Tribes Inquiry Letter

Main San Gabriel Basin Watermaster
Inquiry to Main San Gabriel Basin Watermaster
Response from Main San Gabriel Basin Watermaster