

US EPA ARCHIVE DOCUMENT

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# Environmental Assessment for the City of Roseville Northeast Water Storage Reservoir Replacement Project

Prepared for:

U. S. Environmental Protection Agency

Prepared by:

EIP Associates, *a Division of PBS&J*

September 2006

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## TABLE OF CONTENTS

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<u>Section</u>	<u>Page</u>
1. EXECUTIVE SUMMARY .....	1
2. PURPOSE AND NEED FOR PROPOSED ACTION .....	1
3. SCOPE OF THE EA .....	2
4. PROPOSED PROJECT .....	2
Project Background.....	2
Project Location .....	3
Existing Facility .....	4
Project Elements .....	4
Replacement Storage Reservoir.....	4
Interconnecting Piping.....	8
Drainage.....	8
Erosion Control.....	9
Pavement .....	9
Demolition .....	9
Project Schedule .....	10
Construction Staging.....	10
5. ANALYSIS OF ALTERNATIVES.....	10
No Action Alternative.....	11
Description .....	11
Comparative Analysis of Impact .....	11
Conclusion.....	12
Tank Repair Alternative: Option 1 .....	12
Description .....	12
Comparative Analysis of Impact .....	13
Conclusion.....	14
Tank Repair Alternative: Option 2 .....	14
Description .....	14
Comparative Analysis of Impacts .....	14
Conclusion.....	15
Alternatives Considered But Not Evaluated in this EA.....	15
6. PRESENT ENVIRONMENT.....	16
Community Location.....	16
Utilities and Public Services.....	17

Service Area..... 17

Population Served ..... 17

Topography..... 18

Geology..... 18

Climate and Air Quality..... 19

Environmental Inventory..... 20

    Wetlands..... 20

    Groundwater Resources ..... 21

    Floodplain..... 21

    Important/Significant Agricultural Lands ..... 21

    Coastal Zones..... 21

    Wild and Scenic Rivers ..... 21

    Coastal Barriers ..... 21

    Major Botanical Features..... 21

    Important Fish and Wildlife..... 22

    Endangered or Threatened Species ..... 22

    Critical Habitats ..... 22

    Environmentally Sensitive Areas..... 23

    National Natural Landmarks ..... 23

    Historic, Prehistoric, Architectural, Archeological, and Cultural Sites ..... 23

    Aesthetic Resources..... 23

Present Facilities ..... 24

    Wastewater Projects ..... 24

    Water Projects ..... 24

Quality of Present Receiving Waters..... 25

    Water Quality Problems ..... 26

Characteristics of the Air Basin..... 26

7. EVALUATION OF DIRECT AND INDIRECT IMPACTS AS A RESULT OF THE PROPOSED ACTION WITH MITIGATION MEASURES CONSIDERED ..... 26

    Description of Impact and Mitigation Measures..... 26

        Wetlands..... 26

        Floodplain..... 26

        Significant and/or Important Farmlands..... 26

        Coastal Zones..... 27

        Wild and Scenic Rivers ..... 27

        Coastal Barrier Resources..... 27

        Air Quality ..... 27

        Important Vegetation Types ..... 31

        Endangered or Threatened Species and Critical Habitat..... 31

        Topography ..... 31

        Groundwater ..... 31

        Hazardous Materials..... 32

        Environmentally Sensitive Areas..... 33

        Geology/Seismic Considerations/Soils ..... 34

        National Natural Landmarks ..... 36

        Historical, Architectural, Archeological, and Cultural Sites ..... 36

        Aesthetic Resources..... 37

Land Use and Zoning ..... 46

Socioeconomic Impacts..... 46

Utilities ..... 46

Transportation and Access..... 46

Climate ..... 48

Noise Considerations ..... 48

Environmental Justice Considerations ..... 52

Tribal Issues..... 52

Energy ..... 52

Summary of Significant Impacts and Mitigation Measures..... 52

Water Quality Benefits of the Proposed Action..... 52

Short-Term Use of the Environment versus Long-Term Productivity ..... 52

Irreversible and Irretrievable Commitment of Resources..... 53

8. CUMULATIVE IMPACTS..... 53

9. DOCUMENTATION, SOURCES AND REFERENCES ..... 54

    Federal Publications ..... 54

    State Publications and Websites..... 54

    Special District Publications and Websites..... 54

    Local Government Agencies, Ordinances and Publications ..... 54

    Persons Consulted..... 54

    Executive Orders..... 55

APPENDICES

A. Air Quality Technical Study..... A-1

B. Noise Technical Study..... B-1

C. State Historical Preservation Office Correspondence ..... C-1

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**LIST OF FIGURES**

---

---

<u>Figure</u>		<u>Page</u>
1	Regional Location .....	3
2	Project Location .....	5
3	Site Layout.....	6
4	Proposed Cross-Section Placement.....	7
5	Viewpoint Map: View Locations shown in Figures 6 through 11 .....	39
6	View 1 From Sutter Medical Center southwest of the Project Site.....	40
7	View 2 From Secret Ravine Parkway southwest of the Project Site.....	41
8	View 3 From Neighboring Residence east of the Project Site .....	42
9	View 4 From Neighboring Residence east of the Project Site .....	43
10	View 5 From Field west of the Project Site .....	44
11	View 6 From Community Park.....	45

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## ENVIRONMENTAL ASSESSMENT: NORTHEAST WATER STORAGE RESERVOIR REPLACEMENT PROJECT

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### 1. EXECUTIVE SUMMARY

This document is an Environmental Assessment (EA) for the proposed Northeast Water Storage Reservoir Replacement Project (proposed action) located near the city of Roseville, California. The proposed action addressed in this EA will be implemented by the Environmental Utilities Department of the City of Roseville, California (the City). The City is seeking partial federal funding from the United States Environmental Protection Agency (USEPA) for the construction of the proposed project on the City's existing Northeast Tank Facility. This EA was developed in accordance with 40 CFR Part 6 and 40 CFR 1500.1 through 1500.28. This EA for the proposed project was prepared by the City in cooperation with the USEPA and was issued by the USEPA, Region 9.

The proposed action consists of the demolition of an existing seismically deficient six-million-gallon (6 MG) storage reservoir after the construction of a 7.25 MG replacement reservoir (or tank) designed to meet current seismic codes. The project site is located within the corporate boundaries of the city of Rocklin, California but is owned and operated by the City of Roseville. The new storage reservoir would be located adjacent to the existing 6 MG reservoir and would be designed to have similar height and volume as the existing reservoir. Construction of the proposed new reservoir would require site grading, excavation, installation of water pipelines and valves, site drainage improvements, paving, lighting and security improvements, and would conclude with the demolition of the existing reservoir. These elements are discussed in greater detail below.

The City of Roseville Environmental Utilities Department is the operator of the Northeast Tank Facility and is the grantee for the federal funds used in support of the proposed action. This EA includes the following discussions: project background; purpose and need; alternatives; existing environmental conditions; potential direct and indirect impacts of the preferred alternative and the no-action alternative; proposed mitigation measures; and cumulative impacts. Information sources are identified and additional materials are provided in the appendices.

### 2. PURPOSE AND NEED FOR PROPOSED ACTION

In the City of Westminster, California, a 5 MG concrete reservoir spontaneously ruptured in 1998. The post-disaster investigation revealed that corroded reinforcing steel in the tank's base ring foundation was the cause of the failure. The existing 6 MG tank proposed for replacement by the City of Roseville is of a similar design to that of the tank that failed in Westminster. Concerned that the City could suffer a similar failure, the City's Environmental Utilities Department commissioned an engineering evaluation of the 34-year-old tank to assess the condition of the tank and ring footing, estimate what magnitude earthquake the tank could withstand and the probability of such



an earthquake occurring, and then analyze repair alternatives. Field tests determined the ring footing reinforcing steel on the Roseville tank is in place and not significantly corroded, meaning that failure is not imminent; however, the tank does not meet current seismic requirements, and the result was that the Environmental Utilities Department made a recommendation that the tank be replaced.

The purpose and need of the project is as follows:

To eliminate the potential seismic hazards presented by the existing 6 MG tank at the City's Northeast Tank Facility, and have a tank that meets current seismic safety standards, in order to maintain reliable and flexible treated water service to the City's residential, industrial and commercial customers.

### **3. SCOPE OF THE EA**

In accordance with the requirements of NEPA, this EA evaluates potential direct and indirect project impacts on a broad variety of environmental resources. The results of this evaluation are presented below. The Title 40 of the Code of Federal Regulations (CFR), Chapter V, Part 1508, Section 1508.8 states that alternatives for an EA shall include alternatives as required by NEPA Section 102(2) (E), which states that all federal agencies shall "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources". In addition, "cumulative" impacts of the project (i.e., the incremental impacts of the project when added to similar impacts from past, ongoing and foreseeable future projects) is also evaluated in this EA.

### **4. PROPOSED PROJECT**

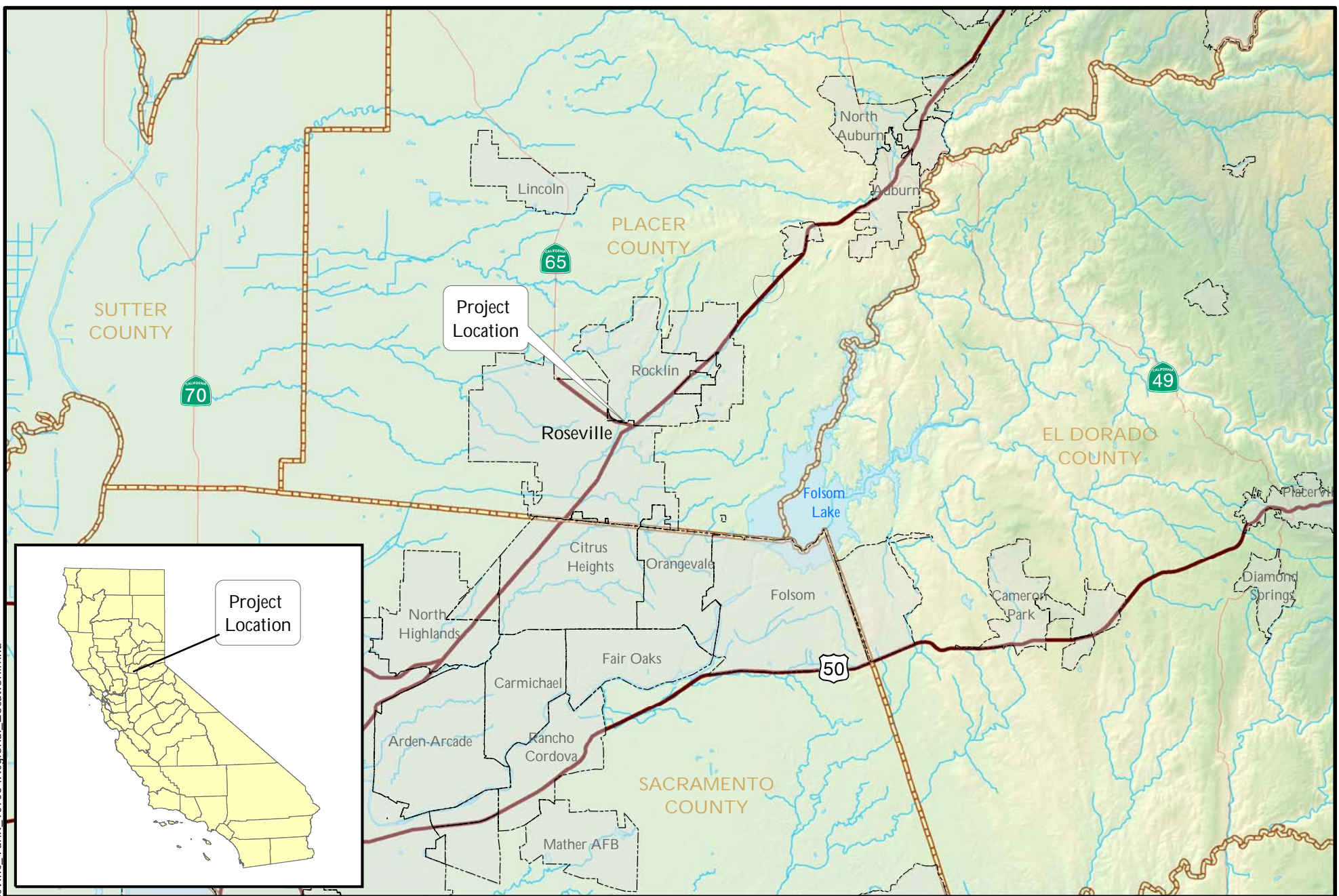
#### **Project Background**

A Notice of Preparation (NOP) for a joint Environmental Impact Report and Environmental Assessment was circulated by the City of Roseville on January 2, 2004. The NOP described the proposed action and noted that the proposed Joint EIR/EA would be intended to meet the environmental review requirements for both the State of California Environmental Quality Act (CEQA) of 1970 (as amended) (California Public Resources Code 2105 *et. seq.*) and NEPA. The CEQA Lead Agency for the proposed action was identified as the City of Roseville, and as noted above, the USEPA was the NEPA Lead Agency. Upon further discussion between the City and USEPA decided to proceed with separate EIR and EA documents as opposed to a joint document. This was due mainly to the City's determination that the proposed project's potential impact on visual resources would be significant and unavoidable using the City's criteria for determining significance under CEQA. Contrary to the findings of the City and in keeping with the analysis and impact significance criteria presented later in this EA, USEPA determined the impact to be less than significant using their own significance criteria. The Draft EIR was circulated for public review on August 3, 2006 through September 26, 2006.

#### **Project Location**

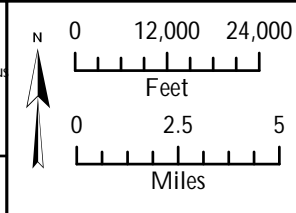
The site for the proposed action is an eight-acre parcel located in the City of Rocklin in Placer County, California (Figure 1). Although the project site is located in the City of Rocklin's corporate

N:\GISProjects\NE\_Roseville\_Tank\_10903\Regional\_Location.mxd



Source: California Resources Agency, Legacy Project, California 90 Meter Hillshade, Nov. 2003; CADFG, County Boundaries, July 2004; US Census Bureau, City Boundaries, July 2000; USGS, Hydrology, Dec. 1998, and EIP Associates GIS Program, July 16, 2004.

GIS Data Projection: UTM Zone 11, NAD 83, units meters



- County Boundary
- City Boundary
- Lakes and Reservoirs
- Interstate and State Highways
- Primary road
- Rivers and Streams

**FIGURE 1  
REGIONAL  
LOCATION**

NE Roseville Tank  
Roseville, CA

boundaries, the parcel is owned by and is under the jurisdiction of the City of Roseville (Figure 2). The parcel contains the City of Roseville's Northeast Tank Facility, which is bound to the north and west by undeveloped properties, to the east by a community park and Ballantrae Way, and to the south by the recently completed Scarborough Drive. Single-family residences occur to the east of the project site across Ballantrae Way. Residential and roadway development is currently planned for areas immediately west and north of the project site. Directly adjacent to the tank facility is an eight-acre park which serves the neighboring subdivisions.

### **Existing Facility**

The proposed action would occur on approximately six acres of the eight-acre Northeast Tank Facility. The existing facility consists of two reservoirs (one 6 MG and one 10 MG) and associated infrastructure to deliver water (such as pipelines and a pump house as shown in Figure 3). The remainder of the site is undeveloped, but used for operations support when required (i.e., storage, water treatment sludge drying, etc.) The facility also contains a Placer County Water Agency (PCWA) pump station. The pump station provides the PCWA water from the reservoir complex when needed and also allows the City of Roseville to pump water from the PCWA resources in emergencies. The PCWA purchased 710,000 gallons of water storage space in the reservoir complex.

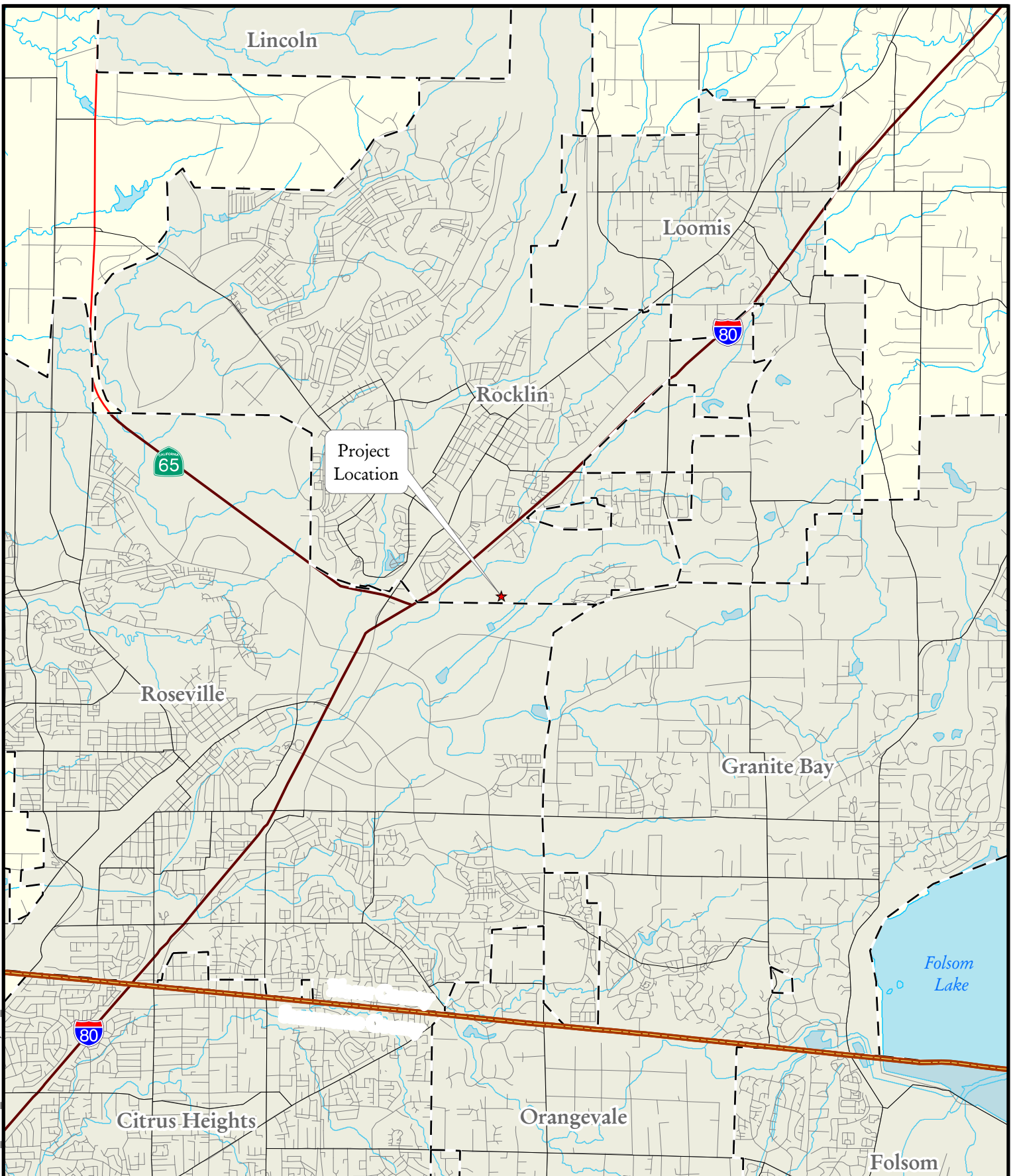
The tank facility is surrounded by an approximately 10-foot high masonry wall, except for a rolling iron gate located at the only entrance to the facility on the south end of the west wall. Storm drainage from the undeveloped portion of the project site flows through drainage holes in the bottom of the masonry wall at the northwest corner of the facility and into a swale to the west. Drainage from developed areas in the facility flows out through a stormwater drainage pipe which discharges to an off-site storm drainage system in the subdivision to the south of the reservoir complex.

### **Project Elements**

#### **Replacement Storage Reservoir**

The replacement storage reservoir would be constructed of pre-stressed reinforced concrete, approximately 246 feet in diameter and 24 feet tall. The reservoir would be partially buried with the bottom elevation at 357 feet above mean sea level (ft msl) and the top of the roof at an elevation of approximately 381 ft msl, matching the elevation of the existing 10 MG tank. The new replacement reservoir would have an overall capacity of approximately 7.25 MG and the same height as the existing 10 MG tank. The existing ground elevation is nearly level across the project site at elevation 356 ft msl, except for the northwest corner which drops to an elevation of approximately 348 ft msl. The new reservoir would be set back from the masonry block wall at least 25 feet (refer to Figure 4).

The increased storage capacity of the replacement storage reservoir (1.25 MG) would be used to provide operational flexibility to the City's water system. The operational flexibility would include extra storage during emergencies or in situations when other facilities in the system are under extended maintenance periods. The combined storage capacity at the reservoir complex was previously planned for approved growth in the City's General Plan. Further, the increased storage capacity at the reservoir complex would not exceed the City's appropriated water supply or water demand projected in the General Plan.



Source: California Resources Agency, Legacy Project, California 90 Meter Hillshade, Nov. 2003; CADFG, County Boundaries, July 2004; US Census Bureau, City Boundaries, July 2000; USGS, Hydrology, Dec. 1998, and EIP Associates GIS Program, Jan. 5, 2005.

- City Boundary
- County Boundary
- Rivers, Streams, and Creeks
- Lakes and Reservoirs
- Highway
- Primary road
- Secondary Road

**FIGURE 2  
PROJECT  
LOCATION**  
Northeast Roseville  
Water Storage Reservoir  
Replacement Project  
Roseville, CA

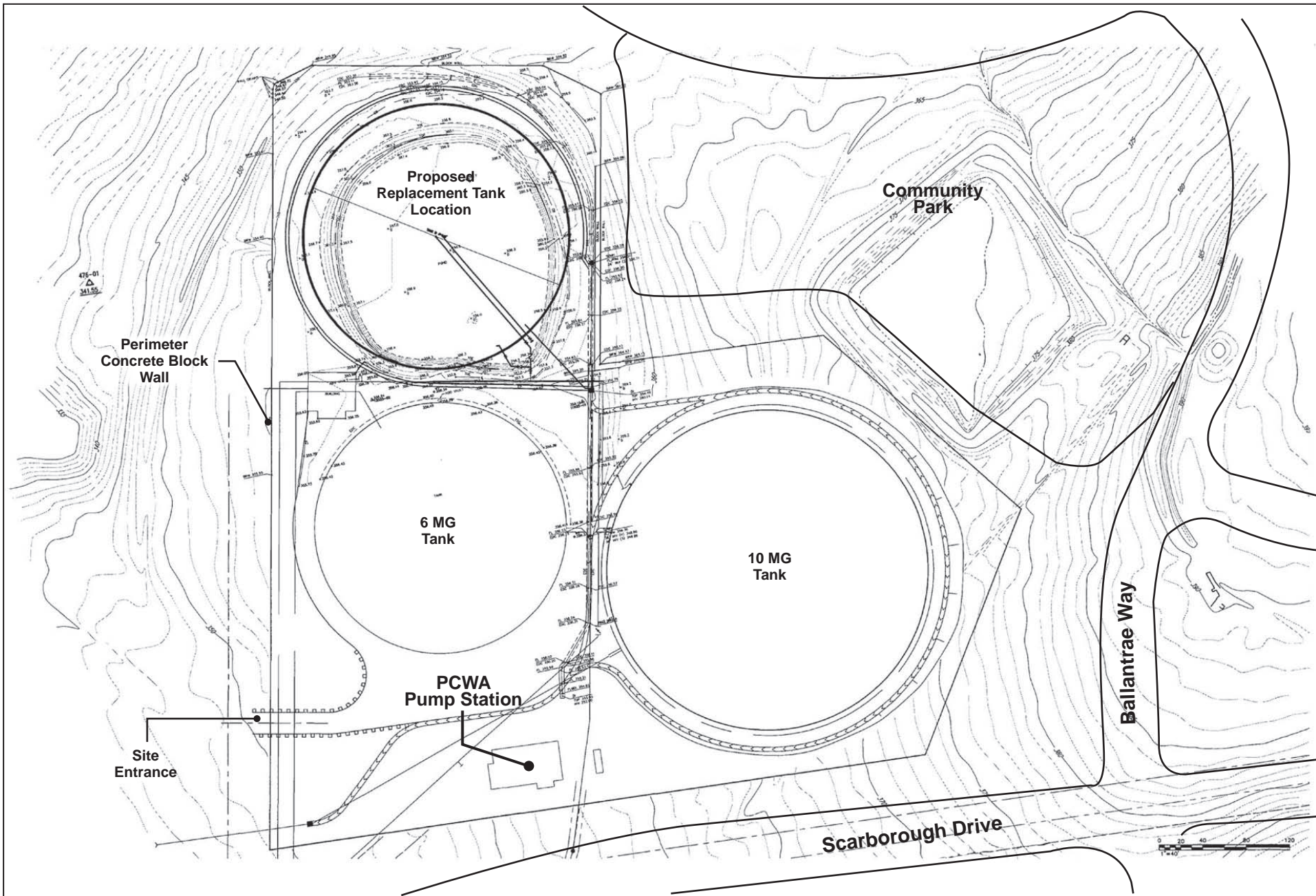


FIGURE 3  
Site Layout

10903-00

Source: Kennedy/Jenks Consultants, 2004

City of Roseville



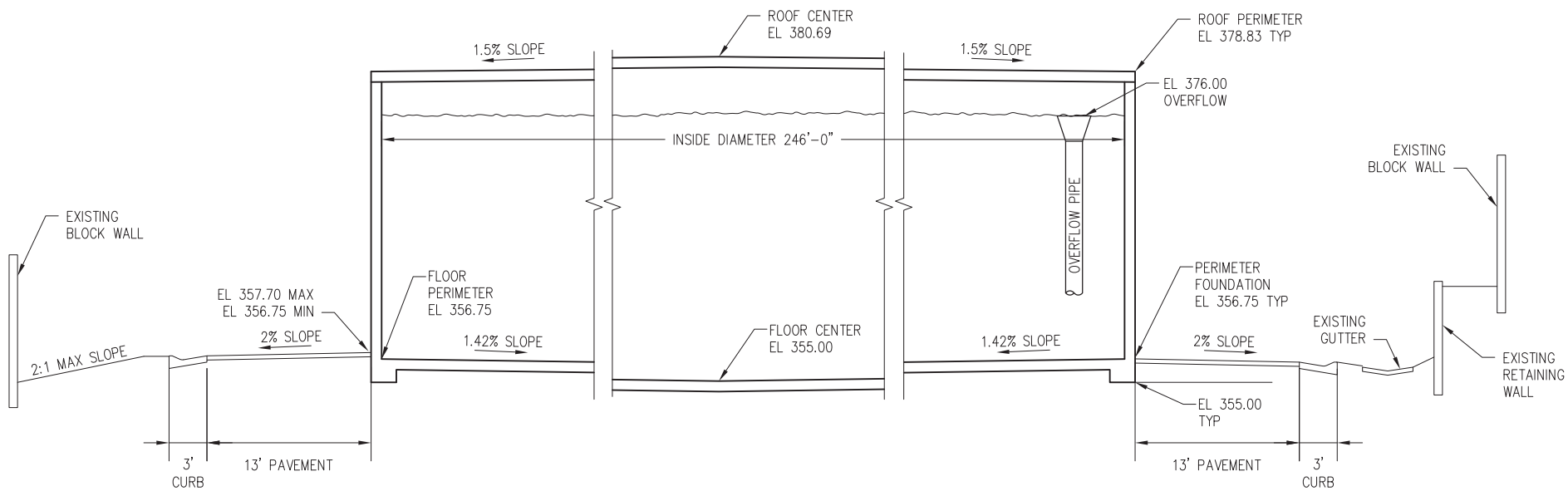


FIGURE 4  
**Proposed Cross-Section Replacement Reservoir**

Scale: 1/8" = 1'- 0"

10903-00

Source: Kennedy/Jenks Consultants, 2004

City of Roseville



The water storage reservoir construction would include limited earthwork, including the removal of an existing berm. Excavation for the new reservoir would result in an open pit down to approximately elevation 350 ft msl, with minimum 2:1 (horizontal: vertical) side slopes. It is expected that the excavation would encounter cobbly and dense silt materials that would not require blasting. Excess material would be hauled off site for disposal. The water storage reservoir construction would include a poured-in-place concrete floor, footing, columns and roof slab. The reservoir exterior wall finish would consist of pneumatically-placed concrete. The roof of the reservoir would have a broom finish. The color would match that of the existing 10 MG reservoir tank, which is a neutral grey color.

Power and lighting would be provided for maintenance operations and security-level lighting. However, the reservoir complex would not require supplemental lighting under normal conditions. Proposed lighting would be downcast lighting at levels necessary for security purposes and consistent with what is currently present on the project site.

Upon final construction of the replacement reservoir, disinfection would be performed prior to connecting the replacement reservoir to the water delivery system. When the new tank is operational, demolition of the old 6 MG reservoir will be carried out. All products of the demolition process will be removed from the site for proper disposal.

### **Interconnecting Piping**

Construction of the existing 10 MG reservoir included two 36-inch-diameter pipeline tees off of the transmission pipeline, each with a short segment of pipe and a dished head, intended for eventual use with a new reservoir. One of these pipe tees is adjacent to the proposed reservoir location and would be used to connect the new reservoir to the transmission system. Although each of the existing reservoirs has a single inlet/outlet pipeline to fill and empty the reservoirs, the proposed new reservoir would incorporate separate inlet and outlet pipelines (directed by check valves) to improve water circulation within the reservoir.

The diameter of the proposed inlet pipeline is 24 inches, which is the same diameter as the overflow pipe. The proposed outlet pipeline has a 30-inch diameter, which is the same diameter as the existing 6 MG reservoir. During normal operation, the new reservoir and the existing 10 MG reservoir would drain in parallel into the distribution system, with the velocity in the proposed outlet pipeline approximately equal to the velocity in the 10 MG reservoir outlet pipeline (36-inch-diameter).

The inlet and outlet pipeline check valves will each be installed in a below-ground vault with a hinged access hatch. The inlet and outlet pipelines will be isolated from the transmission pipeline with valves which can be closed for tank inspection and maintenance. All pipelines beneath the reservoir floor and footings would be encased in concrete and all pipelines would be provided with flexible joints outside of the wall footings to accommodate movement due to differential settlement or seismic activity. The proposed action would not include construction of new off-site infrastructure.

### **Drainage**

Most of the stormwater that originates in the improved areas of the reservoir complex flows to a 30-inch-diameter storm drain pipeline, which exits the complex southeast of the PCWA pump

station building and discharges south of Scarborough Drive. Surface water runoff from remaining areas currently drains off-site into natural drainage features in the undeveloped area west of and downhill from the facility at three points: the 24-inch-diameter storm drain pipeline near the south end; the 6-inch-diameter valve vault drain pipeline near the center; and ground-level openings in the wall at the north end of the complex.

The proposed action would consist of an asphalt concrete-paved perimeter access road, with curbs that direct surface drainage from the entire new reservoir area to an existing drop inlet located southeast of the new reservoir and into the existing 30-inch-diameter storm drain pipeline. This configuration is intended to reduce stormwater runoff that currently flows through the ground-level openings in the wall at the northeast corner of the reservoir complex. The new reservoir overflow also connects into the 30-inch-diameter storm drain pipeline.

The proposed new reservoir underdrain pipeline surfaces in the northwest corner of the complex for surface flow through the wall openings. Underdrain flows would be minimal, and would not generally coincide with high stormwater flows, so total runoff through the wall openings would be expected to decrease after construction of the new reservoir. Alternately, the underdrain pipeline could be connected into the existing 6-inch-diameter drain pipe that serves the existing valve vault and 6 MG reservoir.

The proposed new reservoir drain pump-out pipeline would terminate above ground adjacent to the reservoir, with a capped quick-connect/disconnect fitting for a pump suction connection. The drain pump-out pipeline would not connect into the storm drain and would not be used for surface discharge. The proposed action would not include improvements to the 24-inch-diameter storm drain pipeline, the 6-inch-diameter valve vault drain pipeline, or the wall drains.

### **Erosion Control**

In order to minimize erosion and sediment-laden runoff from the site, the construction contract documents would include temporary and permanent erosion control measures such as hay bales, straw wattles, silt fences, and grass seeding of construction-disturbed areas that are not paved or otherwise improved.

### **Pavement**

In addition to the reservoir perimeter access road, a small portion of the existing pavement near the valve vault requires overlay to prevent surface water ponding and to redirect water to the proposed new gutter. The proposed pavement section is identical to that currently used at the reservoir site.

### **Demolition**

The demolition of the existing 6 MG reservoir would be performed according to a demolition plan developed by the contractor that will include details of on-site demolition procedures, disposal of the debris from the demolition, and implementation of dust control measures. The demolition process would not start until the new reservoir is installed, tested, connected to the water network, and is fully acceptable to the City of Roseville. The existing 6 MG reservoir must be emptied prior to demolition. To minimize discharge concerns, the City would drain the existing 6 MG reservoir until nearly empty into the distribution system by temporarily isolating all other reservoirs from the



distribution system, then isolating the existing 6 MG reservoir. The other reservoirs will then be returned to service.

The existing reservoir will need to be cleaned prior to demolition. The contractor would remove any of the silt in the reservoir and dispose of it in a nearby landfill, as has been done in the past. The contractor would perform the final cleaning and remove the debris to a landfill site.

Demolition activities would include the removal of any attached piping, metal components and electrical conduits, and disconnecting and plugging existing pipelines. The existing 6 MG reservoir would be demolished by using demolition excavators, a wrecking ball and crane, or similar technique and equipment. The demolition excavator is the same as most excavators, except that the bucket is removed and appropriate hydraulic attachments are added to the excavator's boom. This allows the demolition to be performed at a distance from any falling material. Rubble would then be hauled by truck to an appropriate disposal facility; this method could cause significant amounts of dust that would need to be controlled by the contractor. Spraying the work area with water could control most dust particles. The contractor would include surface water runoff control in its demolition plan to handle water used for dust control.

When all concrete and existing pipes under the reservoir are removed, the area would be backfilled with native material. The demolition area would then be covered with aggregate base and sloped so that water would not collect in the depression.

### **Project Schedule**

Construction of the proposed action would occur over approximately one year, with project initiation occurring in Fall 2006 and concluding in Fall 2007.

### **Construction Staging**

All staging for construction and demolition activities would use the space available within the walls of the reservoir complex and would not encroach on the neighboring open space surrounding the project site.

## **5. ANALYSIS OF ALTERNATIVES**

This section of the EA analyzes a range of alternatives to the proposed action. In accordance with Title 40 of the Code of Federal Regulations (CFR), Chapter V, Part 1508, Section 1508.8, alternatives presented in this EA include alternatives that meet the requirements of NEPA Section 102(2)(E), which states that all federal agencies shall "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources". The choice of alternatives is guided primarily by the need to reduce potential impacts associated with the proposed action, while still achieving the purpose and need of the proposed action.

In developing a reasonable range of alternatives to the proposed action for use in this document, a number of scenarios were considered. These include:

- continued use of the existing tank without replacement (the no action alternative);

- repair of the existing tank to comply with current seismic standards;
- demolition of the existing tank and construction of the replacement tank in the footprint of the old tank;
- burial or partial burial the replacement tank in order to mitigate views of the tank from neighboring residences;
- demolition or decommissioning of the existing tank and construction the replacement tank at an alternate site; and
- decommissioning the existing tank without replacement.

Three alternatives to the proposed action were selected for full evaluation in this EA in keeping with the requirements of NEPA for an Environmental Assessment. These alternatives are:

- A. No Action Alternative;
- B. Tank Repair Alternative (Option 1); and
- C. Tank Repair Alternative (Option 2).

The following discussion presents a description of each of the proposed action alternatives, an analysis of each alternative's ability to meet the project purpose and need, and a complete comparative analysis of the potential impacts of each alternative relative to the proposed action.

### **No Action Alternative**

#### **Description**

In accordance with NEPA [40 CFR Sect. 1502.14(d)] the "no action" alternative to the proposed action is continued operation of the existing tank without constructing its proposed replacement.

#### **Comparative Analysis of Impact**

Without replacement of the existing 6 MG tank at the Northeast Roseville Facility, all effects of the proposed action related to construction and operation of the proposed tank would be avoided. Potential project impacts in the following issue areas were found to be potentially significant but mitigable to less than significant with the implementation of the mitigation measures:

- cultural resources
- noise
- hazards and hazardous materials
- air quality
- transportation and traffic

The No Action alternative would avoid all impacts related to construction and operation of the proposed action, and, therefore would avoid the need to implement mitigation. Because all significant impacts for the proposed action are avoided with mitigation, however, the significance of these impacts for the proposed action and the No Action Alternative are not significant.

However, it is important to consider that the No Action Alternative could result in impacts that would not occur with the proposed action. As noted in the Project Description, a 5 MG concrete reservoir spontaneously ruptured in the City of Westminster, California, and the existing 6 MG reservoir at the Northeast Roseville Facility is similar in design to that of the failed reservoir. The subsequent investigation revealed that corroded reinforcing steel in the tank's base ring foundation was the cause of the failure. Concerned that the City of Roseville could suffer a similar failure, the City's Environmental Utilities Department commissioned an engineering evaluation of the existing tank. The evaluation was conducted by Montgomery Watson, the results of which were published in a Technical Memorandum (dated 4/22/01) titled, "Seismic Analysis of 6 MG Reservoir." The evaluation found that, while the ring footing reinforcing steel on the 6 MG tank is in place and not significantly corroded, the tank does not meet current seismic requirements. The study recommends replacement to avoid possible failure during an earthquake.

## Conclusion

Continued operation of the 6 MG reservoir would not correct its seismic deficiency but instead would increase the risk of failure. Such a failure could have a significant impact on utility services by compromising the City's ability to deliver water to its customers. Failure would also have a significant impact on public health and safety due to the hazard created with rupture of the tank, the sudden release of the contained water supply, and the loss of dependable water supplies for a significant period of time.

## Tank Repair Alternative: Option 1

### Description

As an alternative to replacement of the 6 MG reservoir, the 2001 Montgomery Watson study<sup>1</sup> evaluated upgrading the existing reservoir to meet current seismic standards. Two options for the potential upgrade of the tank were presented in the study. Option 1 describes several improvements to the existing tank that could be implemented in order to achieve current standards. These improvements are described below.

### Ring Footing

The ring footing has a failure mode that is susceptible to corrosion. The vertical failure plane through the footing is critical to the support of the reservoir. Because a similar reservoir has failed due to accumulated corrosion across a crack in the footing, Montgomery Watson recommended that the grout fill and the concrete cover on the critical reinforcing in the footing be chipped out and the reinforcing inspected for corrosion. Under Option 1, the existing footing would be strengthened by adding reinforcing to the footing. Under Option 1, the existing slab inside the reservoir would be cut, and new concrete poured. This option would require that the tank be taken off-line for the period of time necessary to construct the repairs and the existing walls of the tank to be drilled. Taking the existing tank off-line during construction raises the potential for reduced or interrupted services to City potable water customers. Drilling would increase the risk that the water tightness of the tank may be compromised, which could increase the chance of corrosion and future problems with the reservoir.

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1. Montgomery Watson. Technical Memorandum: Seismic Analysis of 6 MG Reservoir. April 22, 2001.

### Wall Panels

Under the repair alternative, the wall panels of the 6 MG tank would be thickened in order to carry the “in-plane shear” caused in an earthquake. This would be done by applying a layer of “shotcrete” to the thin shell of the wall panels. Shotcrete is the general term for either wet-mix or dry-mix concrete applied by spraying. The 2001 Montgomery Watson technical memo noted that “the existing wall panels have a vertical crack located at the midpoint of the panel, which show signs of weeping. Unless there is significant leakage through these cracks, they are not of structural concern.” The memo further noted that it is likely the crack will “reflect through” the shotcrete that is used to thicken the panel.

### Columns

Under the alternative, the support columns for the tank walls would be upgraded to bring them up to current code requirements. This would be done by encasing the existing columns within new concrete and reinforcing that would meet the requirements. The thin (4-inch width) concrete addition would be accomplished using shotcrete.

## **Comparative Analysis of Impact**

As noted in this EA, the proposed action would have no significant impact on the following resources:

- aesthetics and visual resources
- agricultural resources
- biological resources
- geology and soils
- hydrology and water quality
- land use and planning
- mineral resources
- population and housing
- public services
- utilities and service systems

Similarly, the Tank Repair Alternative: Option 1 would have no significant impact on the above resources. This EA finds potentially significant impacts on the following resources would be reduced to a less than significant level only with implementation of a number of mitigation measures identified in the EA:

- cultural resources
- air quality
- noise
- hazards and hazardous materials
- transportation and traffic

With the Tank Repair Alternative: Option 1, construction activities would present the potential for impact that are similar to the proposed action, resulting in the need to implement the same measures

required for the proposed action. Construction activities would also be reduced relative to the proposed action, and demolition activities would not be required because the existing 6 MG tank would remain in service. In addition, any long-term impact of the proposed action on aesthetics and visual resources would be avoided because the existing tank would remain. However, the need to take the tank off-line during repairs would result in a potential loss of service to the City's potable water customers. Though the appearance of the tank may be altered due to the application of shotcrete to the wall panels, this is not considered to have a significant impact on the current appearance of the tank.

Because construction activities related to the Tank Repair Alternative (Option 1) would be reduced relative to the proposed action and because demolition would no longer be necessary, project impacts on air quality and noise would be reduced as well, but not completely avoided. Air quality could still be affected by construction and repair equipment that would most likely be diesel-fueled. As stated in the Air Quality evaluation in this EA, the specific types and numbers of construction equipment are not known; it was concluded that construction emissions could exceed Placer County Air Pollution Control District's (PCAPCD) daily thresholds of significance, and that Air Quality Mitigation Measure should be implemented. As stated in the Noise evaluation in this EA, construction equipment would create groundborne vibrations that could impact nearby residences, but again, construction activities will not be conducted during recognized sleeping hours if Noise Mitigation Measure is implemented. Though air quality and noise impacts for the Alternative were not quantified as part of this alternative analysis, we expect that implementation of the Air Quality Mitigation Measure and Noise Mitigation Measure would still be required to reduce potential air quality and noise impacts of the Alternative to less-than-significant levels.

## **Conclusion**

Although the Tank Repair Alternative (Option 1) would provide a lesser degree of impact, it is not cost competitive with the proposed project and does not provide the flexibility required under the project's purpose and need.

## **Tank Repair Alternative: Option 2**

### **Description**

Instead of adding reinforcing to the footing as proposed for Option 1, Option 2 would add a thrust block around the base of the tank that would serve to carry the "kick out" forces from the wall panels to prevent failure of the tank walls during an earthquake. Under Option 2, no work would be done inside the reservoir, and the strength of the existing footing would not be relied upon because of the placement of thrust block. As stated in the 2001 Montgomery Watson Technical Memo, cited above Option 2 would be more expensive than Option 1, but would provide greater reliability. Corrosion of the existing footing would not be important in the Option 2 upgrade, and the water tightness of the reservoir would not be compromised as may happen with implementation of Option 1.

### **Comparative Analysis of Impacts**

As with Option 1 discussed above, Tank Repair Alternative: Option 2 would upgrade the existing 6 MG tank to meet current seismic standards as opposed to replacing the existing tank. Under

Option 2, repairs to the tank's wall panels and support columns would be identical to those described above for Option 1. The approach to upgrading the tank's ring footing, however, would be different under Option 2. The impacts of constructing Tank Repair Alternative Options 1 and 2 are not substantively different. We therefore refer the reader to the comparative analysis for Option 1 presented above. This discussion of the comparative impact of the proposed action relative to Option 1, in its entirety, also applies to Option 2.

## Conclusion

Although Tank Repair Alternative (Option 2) would provide a lesser degree of impact, it is not cost competitive with the proposed project and does not provide the flexibility required under the project's purpose and need.

### Alternatives Considered But Not Evaluated in this EA

It should be noted that prior to conducting the evaluation of the three project alternatives presented above, the EA preparer identified a number of other potential project alternatives. These included:

- demolition of the existing tank and construction of the replacement tank in the footprint of the old tank;
- burial or partial burial the replacement tank in order to mitigate views of the tank from neighboring residences;
- demolition or decommissioning of the existing tank and construction the replacement tank at an alternate site; and
- decommissioning the existing tank without replacement.

The USEPA determined that these alternatives are not considered viable or appropriate alternatives to the proposed action under NEPA. Therefore, these alternatives were not evaluated further in this EA. The rationale for this determination is as follows:

Demolition of the existing tank and construction of the replacement tank in the footprint of the old tank was rejected from further evaluation in the EA because operation of the City's treated water distribution system requires the distribution system storage currently provided by the existing 6 MG tank. Taking the existing tank "off-line" during the construction of the replacement tank would produce a significant temporary shortage in available storage and could result in reduced or interrupted service to City potable water customers. This would be inconsistent with the purpose and need of the proposed action.

Burial or partial burial of the replacement tank on the Northeast Tank Facility site is considered infeasible from an operational standpoint. The two existing tanks currently operate in parallel with their respective water surfaces always at the same elevation. This requires that the top and the bottom of both tanks be at approximately the same elevation; otherwise pump(s) would be required to use the entire height of both tanks. In order to facilitate effective coordinated operation with the existing 10 MG on the site, without the use of pumps, water elevation in the new tank must be equal or similar to that of the other on-site tank; consequently, the existing 10 MG tank is partially buried into the hillside. The replacement tank is intended to operate in the same manner. Burial or partial burial of the replacement tank would substantially adversely affect coordinated operation of the

tanks. Further, the proposed action elevation reduces the need for additional pumps downstream in the distribution system. Therefore, this alternative is considered to be inconsistent with the purpose and need for the proposed action and was eliminated from further consideration.

Construction of the proposed tank at an alternative location was considered but rejected from further consideration in this EA for the following reasons. First, the proposed action site is unique in that it currently supports a tank facility within an enclosed compound surrounded by a masonry wall. Areas within the facility have been either developed or disturbed, substantially limiting the potential for action impacts on onsite resources such as biological or cultural resources. In addition, because the proposed action site is already developed as a tank facility land use consistency issues and other impacts associated with the development and preparation of a previously undeveloped site are avoided. Lastly, although the proposed action site would affect views from neighboring residences, the proposed action would not substantially alter the existing visual character of the proposed action site, because the site is currently developed as a tank facility. Relocating the proposed tank to an alternative location would not substantially reduce any identified impacts on visual resources generated by the proposed action, yet could significantly alter views at the alternate location. For these reasons, relocating the proposed action to an alternate site was rejected for further consideration in this EA.

Decommissioning the existing 6 MG tank without replacement would substantially reduce the City's distribution storage capacity and would severely limit the City's ability to maintain reliable water service to the City's residential, industrial and commercial customers. This alternative would not meet the purpose and need for the proposed action and, therefore, is not considered to be an appropriate alternative under NEPA.

## 6. PRESENT ENVIRONMENT

### Community Location

Location: The site for the proposed action is an eight-acre parcel located in the City of Rocklin in Placer County, California (Figure 1). Although the project site is located in the City of Rocklin's corporate boundaries, the parcel is owned by and is under the jurisdiction of the City of Roseville (Figure 2). The parcel contains the City of Roseville's Northeast Tank Facility, which is bound to the north and west by undeveloped properties, to the east by Ballantrae Way, and to the south by the recently-completed Scarborough Drive.

Surrounding Communities: Single-family residences occur to the east of the project site across Ballantrae Way and to the south across Scarborough Drive. Development of residences is underway directly north of the project site. Residential and roadway development is currently planned for areas immediately west and north of the project site. Directly adjacent and northeast to the tank facility is an eight-acre park for the neighboring subdivisions.

Major Economic Activities: The economy of the Cities of Roseville and Rocklin are tied to the booming housing and real estate markets in the greater Sacramento area, along with growth in employment in the technical and private business sectors, and service industries (i.e., restaurants).

Land Use: The City's Tanks Facility is zoned for public/quasi-public use and is used for the storage and treatment of potable water. The City's service area includes many different land use designations, including residential, business, commercial, and institutional.

### **Utilities and Public Services**

Fire Protection: The project area is in a low-severity zone for wildland fire hazards. Fire protection services are provided by the City's Fire Department. The California Department of Forestry and the City of Roseville Fire Department are jointly responsible for areas designated as State Responsibility Areas outside of the City's boundaries.

Law Enforcement: Law enforcement services are provided by the City of Roseville Police Department.

Schools: The City of Roseville School District serves the project area, which includes kindergarten through 12<sup>th</sup> grade.

Power and Natural Gas: Electricity is supplied to the project area by Roseville Electric, and natural gas is supplied by Pacific Gas and Electric Company (PG&E). Natural gas is supplied through a network of underground distribution pipelines and electric power is supplied by a combination of overhead and underground utility lines.

Communications: Telephone communications are provided to the project area by Surewest through underground and overhead utility lines. Cable television is supplied through overhead and underground lines by Comcast and Surewest.

Potable Water: The City's Environmental Utilities Department serves water to customers within the City boundaries.

Wastewater Treatment and Disposal: The City's Environmental Utilities Department is the public utility that provides wastewater collection, treatment, and disposal services to all residences and businesses in the City.

Sewer and Septic Tanks: The City's Environmental Utilities Department is the public utility that provides sewer services to all residences and businesses in the City. There are no septic tanks located in the City.

Solid Waste: The City's Environmental Utilities Department is the public utility that provides solid waste services to all residences and businesses in the City.

### **Service Area**

The City of Roseville's Environmental Utilities Department serves the residents and businesses within the City boundaries. The proposed project is a key part of the entire water delivery system.



## **Population Served**

The City of Roseville's 2002 Urban Water Management Plan (UWMP) projected a population of 95,200 for 2005. The UWMP states that in 2001 the City served 1,696 commercial, 17 industrial, 58 institutional (e.g., schools, hospitals, etc.), and 25,609 residential accounts with an additional 6,445 multi-family units with a portion of the commercial accounts. The City has projected its water use and demand rates based on growth in residential development within the City boundaries with a plateau in population levels in 2010.

## **Topography**

Topography in the project area is characteristic of the Central Valley border with the Sierra Nevada foothills. In general this transition zone is characterized by low-lying rolling hills, native grasslands interspersed with oak woodlands, and natural drainages with riparian vegetation. The City is heavily urbanized with plateaus where subdivisions have been built along the slopes and on tops of hills. Elevations in the area range from 100 to 300 feet above mean sea level, with the lowest elevations on the western edge of the City.

## **Geology**

Seismic Activity and Faults: The site is located in a geologically stable area that is classified as a low-severity earthquake zone by the California Department of Mines and Geology. No active faults are known to exist in Placer County and no known geologic faults exist on the site. Two faults exist adjacent to the site area but have not been historically active. Major faults in the region are related to the Bear Mountain Fault Zone and the Foothill-Melones Fault System located along the Sierra Nevada Mountain front. The Bear Mountain Fault Zone has been mapped approximately 20 miles east of the proposed action area. According to earlier studies, the action area is located in the "low severity zone," implying a probable maximum earthquake intensity of VII (Modified Mercalli Scale). Generally, the area is considered to be in a low geologic and seismic hazard category.

Further, no geologic hazards have been identified on the site and the site is not within any California Special Studies Zones that require special zoning under the Alquist-Priolo Special Studies Zone Act.

Soils: Soils types in the proposed action area were delineated by the U. S. Department of Agriculture (USDA) and the Natural Resource Conservation Service (NRCS) and were reported in the Soil Survey of Placer County, California Western Part. Based on this survey, the predominant soil types within the site are Inks cobbly loam and Exchequer very stony loam.

Soils that have limitations for structural loading could potentially be located in the proposed action area. These limitations can vary substantially over short distances. Some clayey soils tend to expand when wet and contract upon drying, which can cause structural damage if not accounted for in construction designs. Soils on the site are cobbly and stony loams with low shrink-swell potential and do not pose a hazard of this kind.

Erosion Potential: The project site is level, graded, and compacted and the areas surrounding the project site have been graded and/or fully developed with residences. The predominant geologic

formation at or near the surface of the project site is the Mehrten Formation.<sup>2</sup> The soil type at the project site is categorized as Hydrologic Group D<sup>3</sup> and is underlain by bedrock at shallow depths (within 20 inches from the surface). The soil in the project site is somewhat stony, but has been previously excavated and graded for the purpose of constructing the replacement storage reservoir. These characteristics of the soil and underlying bedrock at the site provide stable soil conditions with low potential for erosion.

### **Climate and Air Quality**

The proposed project area is located in the City of Roseville in western Placer County, within the Sacramento Valley Air Basin (SVAB). Weather patterns throughout the basin, including Roseville, are affected by geography. The SVAB extends from south of Sacramento to north of Redding, and is bounded by the Sierra Nevada on the east, the Coast Range on the west, and the Cascade Range on the north. These mountain ranges tend to buffer the basin from the marine weather systems that originate over the Pacific and are drawn inland by the jet stream. The Carquinez Strait serves as the only westerly breach in this barrier, and exposes the midsection of the Valley to the Pacific Coast marine weather regime. Western Placer County is noticeably affected by this marine influence, which moderates climatic extremes and transports air pollutants into the area from distant sources, such as the San Francisco Bay Area and the Sacramento region. Temperature moderation is especially evident on summer evenings when cooling occurs as a result of the penetration of sea breezes.

Weather in Roseville is typically characterized by hot, dry summers and mild, wet winters. Summer temperatures range from an average low of 70°F to an average high of 90°F with temperatures in excess of 100°F being fairly common. This high average summer temperature, combined with very low relative humidity, produces hot, dry summers that contribute to ozone buildup. The winter season is characterized by overcast days and lengthy periods of rain and drizzle. Winter temperatures range from an average low of 40°F to an average high of 57°F, with occasional overnight freezing temperatures. During the winter months, carbon monoxide accumulation is of concern due to winter use of wood stoves and fireplaces. Annual precipitation averages 25 inches, with 90 percent falling from November through April. Prevailing winds are from the southwest, with a secondary concentration from the northwest.

Surface or elevated temperature inversions are common in late summer and fall. Surface inversions are formed when the air close to the surface cools more rapidly than the warm layer of air above it. Elevated inversions occur when a layer of cool air is suspended between warm air layers above and below it. Both situations result in air stagnation. Air pollutants accumulate under and within inversions, subjecting people in the region to elevated pollution levels and ensuing health concerns.

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2. Fugro, *Draft Environmental Impact Report for The Highlands, General Plan Amendment* (SCH#92122014), City of Rocklin, December 1994, page X-2.
  3. U.S. Department of Agriculture Soil Conservation Service, *Soil Survey of Placer County, California, Western Part*, July 1980, Table 13.

## Air Quality

The USEPA, California Air Resources Board (CARB), and the Placer County Air Pollution Control District (PCAPCD) regulate air quality in Placer County. These agencies develop rules or regulations to implement the goals or directives of legislative actions. Although USEPA regulations may not be superseded, both State and local regulations may be more stringent than the federal standards. In general, air quality evaluations are based on standards developed by the federal and State governments. Local agencies generally control individual stationary sources of air pollutants, while mobile sources of air pollutants are largely controlled through federal and State agencies.

Criteria air pollutants are a group of pollutants for which federal or State regulatory agencies have adopted ambient air quality standards. This group includes ozone, carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter (PM<sub>10</sub>), and lead (Pb). Ozone is a secondary pollutant that is formed in the atmosphere by chemical reactions between oxides of nitrogen (NO<sub>x</sub>) and reactive organic gases (ROG). Criteria emissions are generated through processes such as the burning of fuel or through the use of products that contain organic compounds.

Criteria air pollutants are classified in each air basin or county, or in some cases within a specific urbanized area. The classification is determined by comparing actual monitoring data with State and federal standards. If a pollutant concentration is lower than the standard, the area is classified as an “attainment” area for that pollutant. If an area exceeds the standard, the area is classified as “non-attainment” for that pollutant. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as “unclassified.” The criteria pollutants mentioned above are described in Appendix A, along with Placer County’s attainment status for each.

The PCAPCD and the CARB maintain a number of air monitoring stations within Placer County. The monitoring stations collect data on ambient concentrations of various criteria pollutants. The closest station to the project site is the Rocklin Road site in Rocklin. Table A-2 in Appendix A presents monitoring data from the station over the last three years for various criteria pollutants.

Many different sources of criteria air pollutants exist in Placer County. These sources can be divided into two categories, mobile and stationary/area sources. Mobile sources consist primarily of vehicles driven on and off roadways, as well as watercraft and other special mobile sources such as locomotives. Stationary/area sources include all other man-made emission sources. The CARB maintains an emission inventory of air pollutants for the State’s air basins as well as for the counties inside those air basins. The most recent emission inventory for Placer County is shown in Table A-3 of Appendix A. On-road mobile sources are the single largest source of ROG in Placer County and off-road mobile sources are the single largest source of NO<sub>x</sub>.

Placer County is currently in non-attainment for both federal and State ozone standards. There are no other known existing or projected air quality violations within the City’s service area. There are no existing City facilities at the Tank Facility which generate emissions and air quality within the City’s water service area is generally good.

## **Environmental Inventory**

The following list describes the environmental inventory present or adjacent to the proposed project site:

### **Wetlands**

Not Applicable. The proposed project is located in a hilltop that has been graded, leveled, and compacted for development of the Tank Facility and adjacent residential developments.

### **Groundwater Resources**

Not Applicable. There are no sole source aquifers in the region. Further, the project site is located on a thin veneer of soil, with bedrock as shallow as 20 inches beneath the ground surface.

### **Floodplain**

The Federal Emergency Management Agency's Flood Insurance Rate Map designates the project site as Zone X, which is determined to be outside the 500-year floodplain.

### **Important/Significant Agricultural Lands**

Not Applicable. The proposed action site is designated as Urban and Built-Up Land by the California Department of Conservation.<sup>4</sup> There are no agricultural uses currently on the proposed action site or within the immediate vicinity of the site, and the site is not under a Williamson Act contract. The site does not contain any farmland of significance, agricultural resources or operations that could be affected by the proposed action. The entire site is enclosed by a perimeter wall and fencing that prohibits any routine public access. The area surrounding the proposed action consists of residential areas in all directions.

### **Coastal Zones**

Not Applicable. The project site is located in the Central Valley.

### **Wild and Scenic Rivers**

Not Applicable. There are no designated wild and scenic rivers in Roseville or Rocklin.

### **Coastal Barriers**

Not Applicable. The project site is located in the Central Valley.

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4. California Department of Conservation, Division of Land Resource Protection, *Placer County Important Farmland Map, 1998, 1999.*

## Major Botanical Features

The project site is graded, leveled, and developed with pavement, water tanks, a perimeter wall, and other water facilities. The area where the proposed new replacement tank would be located was cleared and graded some time ago and there are no trees or shrubs on the proposed action site. Only minimal earthwork and grading activities are expected for the new replacement tank location. The only habitat found on the proposed action site is composed of highly disturbed ruderal non-native annual grasses. The dominant plant species that occur on the site are mustard (*Brassica nigra*), soft brome (*Bromus hordeaceus*), yellow star thistle (*Centaurea solstitialis*), wild oat (*Avena fatua*), long-beaked filaree (*Erodium botrys*), and prickly sow thistle (*Sonchus asper*).

## Important Fish and Wildlife

The only habitat found on the proposed action site is composed of highly disturbed ruderal non-native annual grasses. The proposed action site does not support specific habitat requirements for fish species or important wildlife. There are no shrubs, trees or wetlands on the site; therefore, it is extremely unlikely that the site supports any special-status species. In summary, the proposed project site supports non-native grassland plant species that grow in highly disturbed areas and does not support habitat for special-status species.

## Endangered or Threatened Species

EIP Associates conducted a biological reconnaissance survey on July 14, 2004 of the project site and surroundings for wildlife and found no threatened or endangered species. The search of the California Natural Diversity Database<sup>5</sup> (also known as the CNDDDB) on both the Rocklin and Roseville U.S. Geological Survey (USGS) Quadrangle maps revealed that five special-status species have the potential to occur in the area; vernal pool fairy shrimp (*Branchinecta lynchi*), Swainson's hawk (*Buteo Swainsoni*), Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*, VELB), vernal pool tadpole shrimp (*Lepidurus packardii*), and Boggs Lake hedge hyssop (*Gratiola heterosepala*). Except for Swainson's hawk and VELB, all of the special-status species occur in vernal pool-type habitats or seasonal wetlands. The VELB uses the elderberry shrub as host for its life cycle, and Swainson's hawks use fairly large trees for nesting and open agricultural/grassland areas for foraging. The proposed action site does not support these specific habitat requirements. There are no shrubs, trees or wetlands on the site; therefore, it is extremely unlikely that the site supports any special-status species.

## Critical Habitats

An oak woodland is located approximately 370 feet to the northwest of the wall surrounding the Northeast Tank Facility. Riparian habitat is located further down-slope from the oak woodland. Swainson's hawk and VELB are supported by some oak woodlands and riparian habitats in the region. The July 14, 2004 biological reconnaissance survey, however, focused on the project site and areas immediately adjacent to the site that could be directly or indirectly affected by project construction and operation. Oak woodlands and riparian areas located over 300 feet from the project site were not included in that survey. Areas immediately surrounding the project site

5 California Department of Fish and Game's Wildlife and Habitat Data Analysis Branch.

contain no critical habitat and consist of landscape trees and sod recently planted with construction of the community park site east of the project site, paved roadway, graded unpaved access roadways and disturbed annual grassland.

The July 14, 2004 biological reconnaissance survey found no threatened or endangered on the project site. No trees, shrubs or wetlands are located on the project site, and, therefore, the project site contains no critical habitat for listed species that could potentially be in the area (see previous section).

### **Environmentally Sensitive Areas**

The project site is located within the City's Tank Facility on an area with existing pavement and graded, leveled, and stable soils. There are no environmentally sensitive areas in the project site.

### **National Natural Landmarks**

Not applicable. There are no National Natural Landmarks in or near the project site.

### **Historic, Prehistoric, Architectural, Archeological, and Cultural Sites**

The Valley Nisenan, a Penutian-speaking ethnic group, inhabited the drainages of the American, Yuba, and Bear Rivers and lower portions of Feather River. "Native American archaeological sites in this portion of Placer County tend to be situated along streams."<sup>6</sup> The site is in the low foothills near several water sources. "The project site is located adjacent to the Secret Ravine which was the scene of considerable gold mining in the 1850's and 1860's."<sup>7</sup> Granite quarries were also common in the area. Ranching and farming took over when quarries closed.

The North Central Information Center (NCIC) performed a records search in July, 2003 for the proposed project. Three records of archaeological studies within the project area and one in the adjacent area are on record at the NCIC. Three sites are located in the area surrounding the project site and the record search determined that "given the environmental setting, there is a moderate potential for Native American sites in the project area."<sup>8</sup> The search determined that "the proposed project area contains no recorded Native American or historic-period archaeological resources listed." Additionally, no structures over 45 years old are located on the project site or would be affected by the proposed project.

Documentation was provided to the Office of Historic Preservation. In a letter from the State Historic Preservation Officer dated October 14, 2004, a "finding of no historic properties

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6. Davis McCullough, Jr., Researcher, North Central Information Center, July 22, 2003 Record Search Results letter, page 3.
  7. Davis McCullough, Jr., Researcher, North Central Information Center, July 22, 2003 Record Search Results letter, page 1.
  8. Davis McCullough, Jr., Researcher, North Central Information Center, July 22, 2003 Record Search Results letter, page 2.

affected” for the proposed project was issued.<sup>9</sup> This letter is contained in Appendix C of this EA.

### **Aesthetic Resources**

There are no scenic roads, resources, or views within or adjacent to the proposed action area. Long-range views include views of the rolling foothills leading up to the Sierra Nevada range to the northeast while short-range views include views of adjacent residential and undeveloped lands to the south and west. Development within this area will change existing views. There are many visual and aesthetic resources throughout the City’s service area including oak woodlands, riparian areas, hilltops, views of the Sierra Nevada of the Central Valley.

### **Present Facilities**

#### **Wastewater Projects**

Not applicable because the proposed project is a potable water project, not a wastewater project.

#### **Water Projects**

##### **Water System Facilities**

Currently, the City has a water storage capacity of 22 million gallons (MG). Two water storage reservoirs at the water treatment plant, 2 MG and 4 MG, and two water storage reservoirs at the Northeast reservoir complex, 6 MG and 10 MG, provide this capacity. Another 6 MG reservoir has been designed and will be constructed at the water treatment plant to provide additional storage capacity for a total of 28 MG. The proposed project will replace the existing 6 MG reservoir to maintain total future water storage of 28 MG.

All water needs are currently met by the City of Roseville’s recently expanded 60 million-gallon per day (mgd) treatment plant (WTP). The WTP is located on Barton Road in the community of Granite Bay in unincorporated Placer County. Future expansion of the plant will increase the capacity to 100 mgd as needed to supply the service area. Although the City is capable of supplying all its water needs through a single treatment facility, contingency water sources are available. The City maintains four water wells and interties with four surrounding agencies. These features allow the water system to be supplemented as needed, and interties allow for wheeling of water through the City’s distribution system.

Raw water is conveyed to the WTP from U.S. Bureau of Reclamation (USBR) facilities at Folsom Reservoir on the American River through parallel 48” and 60” transmission mains. Water is treated at the WTP through conventional treatment processes of flocculation/sedimentation, filtration, and disinfection. Treated water is also fluoridated for human health and pH adjusted for corrosion protection of the distribution system. After treatment, water is conveyed in the service area through parallel 42” and 66” transmission mains.

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9. Milford Wayne Donaldson, State Historic Preservation Officer, Office of Historic Preservation, Department of Parks and Recreation, Letter dated October 14, 2004.

The service area is currently divided into five pressure zones which cover the entire service area of the City. On the service area's western edge, pressure is reduced through pressure reducing stations. All other pressure zones are higher and require boosting or service by adjacent water agencies that have pressure sufficient to serve those customers.

The City maintains a contract for 32,000 acre feet (ac-ft) of water from USBR and additional water contract options for 30,000 ac-ft with Placer County Water Agency (PCWA). In addition, the City has negotiated an allotment of 800 ac-ft of water from the San Juan Water District for Foothills Business Park. All these sources of surface water come from Folsom Reservoir and are transported through USBR facilities.

Water from Folsom Reservoir is considered very high quality with low turbidity, cool temperatures, and low pathogen levels. Raw water is tested by the City as follows: daily for temperature, turbidity, alkalinity, pH, hardness, and total dissolved solids; monthly for coliform bacteria and TOC; annually for nitrates; every three years for VOCs, SOCs, and nitrite; and every six years for inorganics, secondary standards, and general minerals.

The City's water treatment plant is designed to treat raw water to State of California Title 22 drinking water standards. The WTP treatment methods that are designed to meet these stringent drinking water standards are described below.

#### Water Treatment Plant Facilities and Processes

Facilities on the site currently include: an operations building, two inlet structures, two 80-foot diameter and one 120-foot upflow-type clarifiers, eight filters, two washwater reclamation basins, four sludge lagoons, and three above-ground water storage tanks. In addition, the site includes a chemical storage building, a storage shed, and a flocculation/sedimentation basin. The remainder of the site is undeveloped with areas that are landscaped immediately adjacent to the operations building.

#### Water Treatment Plant Operations and Future Expansion Project

The existing water treatment plant is in the process of expansion in plant capacity from 60 to 100 mgd. Provision of the added capacity will occur through increasing the flocculation/sedimentation and filtration capacities at the WTP, increasing the washwater handling capacity, and providing facilities to mechanically dewater solids from the treatment process. Pipelines within the existing site boundaries will connect the new and existing facilities, and allow independent operation of the two process trains between the raw water pipelines and the treated water reservoirs.

In total, the expansion project includes the following facilities:

1. Two new flocculation and sedimentation basins,
2. Four new filters,
3. New clearwell structure with backwash pumps,
4. Sludge thickener,
5. Mechanical dewatering facilities,



6. Flash mix facilities,
7. Two new washwater basins, and
8. Workshop facility
9. New connection to 72-inch effluent pipeline,
10. Modifications to existing chemical storage and feed systems, and
11. Off-site chlorine residual monitoring station.

### **Quality of Present Receiving Waters**

Not applicable. The proposed project site is a water storage facility and does not discharge water to surface drainage systems, except from stormwater runoff which enters the City's stormwater collection system.

### **Water Quality Problems**

The City's water supply system has had no health department violations, cease and desist orders, non-conformance with basin plans, or other water quality violations administered by the State Water Resources Control Board or Regional Water Quality Control Board.

### **Characteristics of the Air Basin**

The PCAPCD and the CARB maintain a number of air monitoring stations within Placer County. The monitoring stations collect data on ambient concentrations of various criteria pollutants. The closest station to the project site is the Rocklin Road site in Rocklin. Table A-2 in Appendix A presents monitoring data from the station over the last three years for various criteria pollutants.

Many different sources of criteria air pollutants exist in Placer County. These sources can be divided into two categories, mobile and stationary/area sources. Mobile sources consist primarily of vehicles driven on and off roadways, as well as watercraft and other special mobile sources such as locomotives. Stationary/area sources include all other man-made emission sources. The CARB maintains an emission inventory of air pollutants for the State's air basins as well as for the counties inside those air basins. The most recent emission inventory for Placer County is shown in Table A-3 of Appendix A. On-road mobile sources are the single largest source of ROG in Placer County and off-road mobile sources are the single largest source of NO<sub>x</sub>.

Placer County is currently in non-attainment for both federal and State ozone standards. There are no other known existing or projected air quality violations within the City's service area. There are no existing City facilities at the reservoir complex which generate emissions and air quality within the City's water service area is generally good.

## **7. EVALUATION OF DIRECT AND INDIRECT IMPACTS AS A RESULT OF THE PROPOSED ACTION WITH MITIGATION MEASURES CONSIDERED**

### **Description of Impact and Mitigation Measures**

#### **Wetlands**

Not applicable; there are no wetlands located on the project site. No impact is expected.

**Floodplain**

Not applicable: the project site is located outside the 500-year floodplain. No impact is expected.

**Significant and/or Important Farmlands**

Not applicable; there are no significant or important farmlands located on or adjacent to the project site. No impact is expected.

**Coastal Zones**

Not applicable: the project site is not designated as a Coastal Zone. No impact is expected.

**Wild and Scenic Rivers**

Not applicable: there are no wild and scenic rivers located in the vicinity of the project site. No impact is expected.

**Coastal Barrier Resources**

Not applicable: the project site is located in the Central Valley and is not a coastal project. No impact is expected.

**Air Quality**Construction Impacts

Air quality is affected by the rate, amount, and location of pollutant emissions and the associated meteorological conditions that influence pollutant movement and dispersal. Atmospheric conditions including wind speed, wind direction, and air temperature, in combination with local surface topography (i.e., geographic features, such as mountains and valleys), determine the effect of air pollutant emissions on local air quality. Another important meteorological factor that determines the overall air quality in the Sacramento Valley is the frequent presence of temperature inversions, which occur when air becomes warmer at higher elevations, making it difficult for air at different heights to mix. When mixing is minimal, polluted air nearer the ground is trapped and cannot disperse. Inversion layers are significant in determining the severity of concentrations of pollutants.

The analysis in this section focuses on the nature and magnitude of the change in the air quality environment due to construction and operation of the proposed action. Air pollutant emissions associated with the proposed action would result mostly from construction activities; emissions could also possibly be generated by operation. The net increase in emissions generated by these activities has been estimated and compared to thresholds of significance recommended by the Placer County Air Pollution Control District. The daily emissions associated with construction-related and operational activities have been calculated using the URBEMIS 2002 computer model developed for the CARB. This model is the newest model available and uses emission factors that have

superseded those in the URBEMIS7G model. For a complete description of the URBEMIS models, please refer to Appendix A, Air Quality, of this EA.

As the agency principally responsible for comprehensive air pollution control in the Sacramento Valley Air Basin, the PCAPCD recommends that projects should be evaluated in terms of air pollution control thresholds established by the PCAPCD, which were developed provide quantifiable levels to which projects can be compared. The City of Roseville uses the PCAPCD's thresholds that are recommended at the time that development projects are proposed to assess the significance of quantifiable impacts. The quantifiable thresholds are currently recommended by the PCAPCD and are used to determine the significance of construction-related and operational air quality impacts associated with the proposed action, and they are listed in Appendix A.

Demolition has the potential to generate emissions of ROG, NO<sub>x</sub> and PM<sub>10</sub>. PM<sub>10</sub> would be produced as concrete material is disturbed. The construction equipment utilized for the demolition, such as the excavator, crane, tractors, and heavy-duty trucks, would generate ROG and NO<sub>x</sub>. Since the URBEMIS 2002 model does not have inputs specific to a concrete tank, the tank's demolition emissions were approximated by modeling a building with a volume of 19,687.5 cubic feet. Demolition emissions would exceed PCAPCD daily thresholds of significance, and could contribute to an air quality violation. This would be a potentially significant impact.

Equipment used for the construction of the new tank would most likely be diesel-fueled; emissions could also be generated by equipment used for earthwork that would occur prior to construction of the actual 7.25 MG tank. Since the specific types and numbers of construction equipment are not known, equipment was estimated based on other proposed actions of similar size, and it was concluded that construction emissions could exceed PCAPCD daily thresholds of significance for NO<sub>x</sub>, which conflicts with the applicable air quality plan. This would be a less than significant impact with mitigation incorporated.

Because there are residences near the site of the proposed action that could be affected by high concentrations of particulate matter (PM<sub>10</sub>), the following Air Quality Mitigation Measure (AQMM) will be incorporated. The AQMM will ensure that concentrations of PM<sub>10</sub> are minimized during demolition of the existing water tank. The measure will effectively reduce PM<sub>10</sub> concentrations from demolition activities associated with removal of the existing 6 MG tank. NO<sub>x</sub> emissions during the demolition phase, while reduced by the AQMM, would not be mitigated below the PCAPCD threshold of 82 pounds per day. Therefore, the AQMM contains the requirement that the City contribute to PCAPCD's Offsite Air Quality Mitigation Fund.

The reader should note that when Air Quality Mitigation Measure (c) is applied to the demolition phase of the project, off-road diesel emissions would be reduced by 20 percent. Total daily NO<sub>x</sub> emissions would equal approximately 118 pounds per day; this is 36 pounds above the PCAPCD threshold of significance. Demolition activities for the proposed project are estimated to take place over a 13-day period. Consequently, 468 total pounds of NO<sub>x</sub> would be generated in excess of PCAPCD standards over the construction period. The PCAPCD currently implements an Offsite Air Quality Mitigation Fund for applicants to pay into when a project exceeds PCAPCD standards. The money collected from the applicants is used to fund NO<sub>x</sub> reduction programs in the County and the larger Sacramento Ozone Nonattainment Area. Currently, the PCAPCD has calculated a "price per ton" of NO<sub>x</sub> to be \$13,600. Since 468 pounds of NO<sub>x</sub> represents 23 percent of one ton, \$3,128 would be paid into the PCAPCD fund to mitigate the impact from demolition activity.

Implementation of Air Quality Mitigation Measure below, would reduce the potential impact of construction impacts on air quality to less than significant levels.

*Air Quality Mitigation Measure*

- (a) *The applicant shall ensure that all exterior surfaces of structures are wetted during demolition. Structural debris shall be completely wetted during any period when the material is being disturbed, such as during the removal from the construction site.*
- (b) *Prime contractors shall submit to the APCD a comprehensive inventory (i.e., make, model, year, emission rating) of all the heavy-duty off-road equipment (50 brake horsepower or greater) that will be used for an aggregate of 40 or more hours for the construction project. The inventory shall be updated monthly throughout the duration of project construction, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the prime contractors shall provide the APCD with the anticipated construction timeline including start date, and name and telephone number of the project manager and onsite foreman (which could be used for enforcement purposes).*
- (c) *Heavy-duty off-road vehicles to be used in the construction of the project, including vehicles owned and/or leased by the prime contractors and those operated by subcontractors, shall achieve a project-wide fleet average 20 percent reduction of NO<sub>x</sub> and 45 percent particulate reduction compared to the most recent ARB fleet average. To calculate this average, to determine what constitutes “late model”, or to determine compliance with required reduction requirements, the reader should please refer to the Construction Mitigation Calculator found on the Sacramento Metropolitan AQMD’s website.<sup>10</sup> Acceptable options for reducing emissions may include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available and cost-effective.*
- (d) *Construction equipment operators shall shut off equipment when not in use to avoid unnecessary idling. As a general rule, vehicle idling should be kept below 10 minutes.*
- (e) *Contribute to the PCAPCD Offsite Air Quality Mitigation Fund an amount deemed appropriate by PCAPCD criteria to mitigate for project NO<sub>x</sub> emissions that exceed PCAPCD thresholds.*

Sensitive Receptors

“Sensitive receptors” are individuals that are, for one reason or another, more likely to experience health impacts from exposure to air pollution. Reasons for greater sensitivity include existing health problems, proximity to an emission source, or duration of exposure to air pollutants. Land uses such as primary and secondary schools, convalescent homes, and hospitals are considered to be sensitive receptors to poor air quality. The very young, the elderly, and the infirm are more susceptible to respiratory infections and other air quality related health problems than the general public. Residential uses are considered sensitive because people in residential areas are often at home for extended periods of time, and can be exposed to substantial concentrations of pollutants.

10. The Sacramento Metropolitan AQMD website is located at [www.airquality.org](http://www.airquality.org).

Because the proposed action is near developed areas, sensitive receptors in the proposed action vicinity consist of nearby residences that are in the jurisdiction of the City of Rocklin.

Part of any air quality analysis includes an evaluation of whether odor impacts will occur as a result of the proposed action. The apparent presence of an odor depends on the specific characteristics of the odor itself, its concentration when it is emitted from a source, and its distance to a receptor. Odors can be generated by a variety of land uses, some of which are very common. Everyday sources of odors include land uses such as restaurants and dry cleaning facilities. Since odor impacts cannot be quantified, and since the proposed project would not create any new odor receptors, an evaluation of potential odor impacts would consist of determining whether the proposed project will create odors and, if so, whether those odors significantly affect existing receptors.

During construction of the proposed action, existing nearby residences may experience some odor impacts as a result of fuel being burned by construction equipment. Odors may also occur from the chemicals that will initially be used to treat and disinfect the new tank. Any odors from these chemicals will be reduced or eliminated once the tank is filled. Further, any odor impacts that do occur as a result of construction would be temporary.

The PCAPCD's *Rule 205 – Nuisance* would apply to construction activity associated with the proposed action. This rule prohibits any source from discharging material that could cause annoyance to, or endanger the comfort of, the public. Since Rule 205 is enforced on a complaint basis, nearby residents would have recourse if construction activities would create significantly offensive odors.

In conclusion, since any odor impacts created by construction would be temporary, and since PCAPCD Rule 205 regulates nuisances such as odors, the proposed project would have a less-than-significant impact.

#### Toxic Air Contaminants

Toxic Air Contaminants (TACs) are known to be highly injurious, even in small quantities. TACs are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic) adverse human health effects (i.e., injury or illness). There are hundreds of substances that can be toxic when inhaled, but unfortunately, air quality standards have not been set for most of them.

TACs can be emitted from a variety of common sources, including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. Natural source emissions include windblown dust and wildfires. Farms, construction sites, and residential areas can add to air toxic emissions. Research facilities can also be a source of TACs, which include both organic and inorganic chemical substances such as chlorinated hydrocarbons (like certain solvents), certain metals, and asbestos.

No large TAC-producing sources currently exist on the property. Since the proposed action would not create new TAC receptors, the TAC analysis in this EA concentrates on potential TACs that could be generated by the proposed action and the effect of those TACs on nearby sensitive receptors. The project, once built, would not have the capacity to generate criteria emissions or TACs. Consequently, over the long term the proposed action would not contribute to levels of

criteria pollutants for which the region is in non-attainment, nor would the proposed action contribute any TAC emissions that could combine with TACs from other sources to impact human health. Because the proposed action is benign and would not produce emissions that could combine with other emission sources to create a significant impact, the proposed action would have a less-than-significant impact.

No Action Alternative. The No Action Alternative would not impact air quality because no construction activities would occur.

### Important Vegetation Types

Not applicable: the project site was previously graded and is entirely within the reservoir complex. There are no important vegetation types within or adjacent to the project site that would be affected by project construction. No impact is expected.

### Endangered or Threatened Species and Critical Habitat

The search of the California Natural Diversity Database<sup>11</sup> (also known as the CNDDDB) on both the Rocklin and Roseville U.S. Geological Survey (USGS) Quadrangle maps revealed that five special-status species have the potential to occur in the area; vernal pool fairy shrimp (*Branchinecta lynchi*), Swainson's hawk (*Buteo Swainsoni*), Valley elderberry longhorn beetle (*Desmocerus californicus dimorphis*, VELB), vernal pool tadpole shrimp (*Lepidurus packardii*), and Boggs Lake hedge hyssop (*Gratiola heterosepala*). Except for Swainson's hawk and VELB, all of the special-status species occur in vernal pool-type habitats or seasonal wetlands. The VELB uses the elderberry shrub as host for its life cycle, and Swainson's hawks use fairly large trees for nesting and open agricultural/grassland areas for foraging.

As noted above, results of the biological reconnaissance survey indicate no critical habitat for Swainson's hawk or VELB on or adjacent to the proposed project site. The entire site is surrounded by an approximately 8-foot high masonry wall which will serve to contain on-ground disturbance to areas within the project site and the existing tank facility. It is at least 370 feet from the nearest occurrence of oak woodland and riparian habitat. Therefore, the oak woodland and riparian habitat is sufficiently well removed from the project so that no impact on these resources is expected.

There are no shrubs, trees or wetlands on the site; therefore, it is extremely unlikely that the site supports any special-status species. The proposed site supports non-native grassland plant species that grow in highly disturbed areas and does not support habitat for special-status species. Therefore, the project would have no impact.

### Topography

Not applicable: the project site is graded and level. Only minor grading and excavation would occur under the proposed action. No impact is expected.

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11. California Department of Fish and Game's Wildlife and Habitat Data Analysis Branch.

## Groundwater

Project Action: Groundwater in the vicinity of the project site ranges from approximately 90 to 100 feet below the ground surface.<sup>12</sup> Grading for the proposed action is not expected to intercept groundwater, and temporary or permanent dewatering is not anticipated. Further, depth to bedrock in the project site occurs approximately eight to 20 inches below ground surface. Further, the proposed action would not rely upon or extract water from groundwater sources at the project site. However, in the event of seepage or other unforeseen conditions that could require dewatering to maintain safe construction conditions, any water removed would be discharged in accordance with State and City requirements for construction site dewatering. The dewatering activities would also be subject to the requirements of the SWRCB's Waste Discharge Requirements General Order for Dewatering and Other Low-Threat Discharges to Surface Waters permit, which would ensure that public safety and water quality is monitored and protected. Finally, existing site conditions do not promote substantial infiltration of surface water into an underlying aquifer. The proposed action site would not additionally restrict or change the potential for groundwater recharge and would have a less-than-significant impact.

## Hazardous Materials

### Site Preparation, Construction, and Demolition

Site preparation, construction, and demolition activities of the proposed action would involve the use of heavy equipment and vehicles containing fuel, oil, and grease, as well as materials such as cements, asphalt, and paints and solvents, glues and cement, and cleaners. Fluids such as oil or grease could leak from construction vehicles or be inadvertently released in the event of an accident, potentially releasing petroleum compounds laden with metals and other pollutants. Unless properly managed, such releases could result in adverse human health or environmental effects. However, construction and site preparation for the proposed action would be completed in compliance with federal, State, and local laws and regulations pertaining to the use, storage, transport, and disposal of such products. Therefore, impacts are expected to be less than significant from construction activities.

### Operation and Maintenance

Operation and maintenance of the proposed action would involve the use of vehicles containing fuel, oil, and grease, as well as materials such as cements, asphalt, and paints and solvents, glues and cement, cleaners, and pesticides and herbicides. Fluids such as oil or grease could leak from construction vehicles or be inadvertently released in the event of an accident, potentially releasing petroleum compounds laden with metals and other pollutants. Chlorinated compounds would be used to disinfect the new replacement reservoir tank (according to national drinking water standards) prior to bringing the new tank online. Use of these disinfecting chlorinated compounds is standard practice, but could result in spills during application. Unless properly managed, such releases could

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12. California Department of Water Resources, Water Data Library, [http://well.water.ca.gov/gw/gw\\_data/hyd/Rpt\\_Hist\\_Data5\\_gw.asp?wellNumber=10N07E07E002M](http://well.water.ca.gov/gw/gw_data/hyd/Rpt_Hist_Data5_gw.asp?wellNumber=10N07E07E002M), accessed on July 7, 2004.

result in adverse human health or environmental effects. However, operation and maintenance of the proposed project would be completed in compliance with federal, State, and local laws and regulations pertaining to the use, storage, transport, and disposal of such products. Because no additional water would be treated at the site due to implementation of the proposed action, no additional materials would be used. Therefore, the proposed action would not change the potential over existing conditions for hazardous materials incidents. Therefore, no impacts are expected from operation activities.

### Hazardous Materials Sites

The proposed action site is not included on the list of hazardous materials sites compiled pursuant to Government Code 65962.5 (“Cortese List”).<sup>13</sup> No Preliminary (Phase 1) Environmental Site Assessment is known to have been completed for the site, but the site is not listed on the State of California Hazardous Waste and Substances Sites List.<sup>14</sup> The City has owned and operated potable water supply facilities on the site for the past 40 years, before which the land was used for grazing. Because the site has been in use for storage of water since it was developed, little potential exists for substantial subsurface contamination of soil or groundwater to result from past uses. The northern portion of the site has been used as a temporary drying bed for water treatment sludge in the area where the existing berm is located. The water treatment sludge was brought to the reservoir complex from the Barton Road water treatment plant, spread out in the drying area until dried, then trucked off-site to a local landfill for disposal. No hazardous substances are known to be associated with the water treatment plant sludge.

However unlikely, project -related construction could disturb building or other materials in the soil that may contain hazardous materials, such as petroleum compounds, asbestos, polychlorinated biphenyls (PCBs), lead, or mercury. If such materials were not identified before demolition or renovation was to begin, workers or the environment could be unintentionally exposed to hazards that exceed relevant safety standards. Therefore, the proposed action could result in a potentially significant impact.

Hazardous Materials Mitigation Measure, below, would be implemented as part of the proposed action and would reduce the impacts to less than significant levels.

#### *Hazardous Materials Mitigation Measure*

*In the event that during construction evidence of contamination, illicit hazardous waste disposal, underground storage tanks, abandoned drums, or other environmental impairment at the project site is discovered, the City shall stop work and prepare a plan that shall (1) specify measures to be taken to protect workers and the public from exposure to potential site hazards and (2) certify that the remediation measures would clean up the contaminants, dispose of the wastes, and protect public health in accordance with federal, State, and local requirements. Commencement of work in the areas of potential hazard shall not proceed until the site remediation plan has been completed. Depending on the nature of any contamination, appropriate agencies shall be notified (e.g., the Central Valley Regional Water*

13. State of California, *Hazardous Waste and Substances Sites List*, April 1998.

14. California Environmental Protection Agency, Department of Toxic Substances Control, State of California Hazardous Waste and Substances Sites List, [http://www.dtsc.ca.gov/database/Calsites/Cortese\\_List.cfm](http://www.dtsc.ca.gov/database/Calsites/Cortese_List.cfm), website accessed, July 6, 2004.



*Quality Control Board (CVRWQCB) for groundwater contamination and the Department of Toxic Substances Control (DTSC) for soil contamination [or Placer County Environmental Health Division]). Provisions of the site remediation plan would be adopted by the City as part of the proposed action.*

## Environmentally Sensitive Areas

Not applicable: there are no identified environmentally sensitive areas in the vicinity of the project site. No impact is expected.

## Geology/Seismic Considerations/Soils

### Seismic Hazards

The site is located in a geologically stable area that is classified as a low-severity earthquake zone by the California Department of Mines and Geology. No active faults are known to exist in Placer County and no known geologic faults exist on the site. Two faults exist adjacent to the site area but have not been historically active. Major faults in the region are related to the Bear Mountain Fault Zone and the Foothill-Melones Fault System located along the Sierra Nevada Mountain front. The Bear Mountain Fault Zone has been mapped approximately 20 miles east of the proposed action area. According to earlier studies, the action area is located in the “low severity zone,” implying a probable maximum earthquake intensity of VII (Modified Mercalli Scale). Generally, the area is considered to be in a low geologic and seismic hazard category.

No geologic hazards have been identified on the site and the site is not within any California Special Studies Zones that require special zoning under the Alquist-Priolo Special Studies Zone Act. Three inactive faults have been identified in the vicinity of the City of Roseville northeast of the site. Development of the replacement storage tank would not directly increase the number of people that could be affected by seismic ground shaking because the proposed action does not include the introduction of a new population. As explained in the Project Description, the demolition of the existing storage tank is required due to outdated and deficient seismic safety standards which could result in the failure of the 6 MG tank during a large seismic event. Construction contractors are required to comply with the California Building Code (CBC), and the proposed replacement tank would be designed and constructed to meet current applicable seismic safety standards. All facilities would be designed and constructed to meet the current CBC for areas that have the potential for seismic activity. Therefore, impacts from seismic activities would be less than significant.

### Soils

Soils types in the proposed action area were delineated by the U. S. Department of Agriculture (USDA) and the Natural Resource Conservation Service (NRCS) and were reported in the *Soil Survey of Placer County, California Western Part*. Based on this survey, the predominant soil types within the site are Inks cobbly loam and Exchequer very stony loam.<sup>15</sup>

15. United States Department of Agriculture, Soil Conservation Service in cooperation with University of California Agricultural Experiment Stations *Soil Survey of Placer County, California, Western Part*, July 1980, pages 41, 46, 72 through 86, and 125 through 204.

Soils that have limitations for structural loading could potentially be located in the proposed action area. These limitations can vary substantially over short distances. Some clayey soils tend to expand when wet and contract upon drying, which can cause structural damage if not accounted for in construction designs. Soils on the site are cobbly and stony loams with low shrink-swell potential and do not pose a hazard of this kind.

Liquefaction is a phenomenon whereby granular material (i.e., silt and sand) is transformed from a stable state into a freely moving liquid-like state as a result of an increase in pore-water (water between the grains) pressure due to an earthquake. The site is underlain by soils with a low depth to rock (generally less than 40 inches), and therefore is not at high risk for liquefaction. In addition, the proposed action would comply with applicable State seismic safety standards to minimize risk from liquefaction. The proposed action would not introduce any new impacts associated with seismic risk, including fault rupture, seismic ground shaking, or seismic ground failure due to the liquefaction of soils. Therefore, impacts would be less than significant.

### Erosion

Development of the site would require removal of ground cover vegetation, which could result in exposure of the site to increased incidence of erosion; however, because the area to be developed is relatively flat, the potential for landslides or mudflow hazards is considered low. Therefore, impacts would be less than significant.

### Unstable Conditions

The reservoir complex is located on a plateau which slopes gradually to the west. The area within the wall that encloses the project site has been graded and is relatively level. Some minor excavation and grading activities for the proposed replacement tank would require standard construction equipment, but would not require blasting because the site has been previously excavated. The predominant geologic formation at or near the surface of the project site is the Mehrten Formation.<sup>16</sup> The soil type at the project site is categorized as Hydrologic Group D<sup>17</sup> and is underlain by bedrock at shallow depths (within 20 inches from the surface). The soil in the project site is somewhat stony, but has been previously excavated and graded for the purpose of constructing the replacement storage reservoir. These characteristics of the soil and underlying bedrock at the site provide a strong base for the foundation of the replacement water storage reservoir.

The State of California provides minimum standards for building design through the California Uniform Building Code (CUBC) (California Code of Regulations [CCR], Title 24). The CUBC is based on the UBC used widely throughout the U.S., and has been modified for California conditions with numerous more detailed and/or stringent regulations. Specific minimum seismic safety requirements are set forth in Chapter 23 of the CUBC. Prior to construction of structures, the CUBC requires that geotechnical investigations be conducted to determine the site-specific soil

16. Fugro, *Draft Environmental Impact Report for The Highlands, General Plan Amendment* (SCH#92122014), City of Rocklin, December 1994, page X-2.

17. U.S. Department of Agriculture Soil Conservation Service, *Soil Survey of Placer County, California, Western Part*, July 1980, Table 13.

conditions that could possibly constrain building designs, such as soils susceptible to liquefaction or landslides. In addition, the State earthquake protection law (California Health and Safety Code 191000 et seq.) requires that structures be designed to resist stress produced by lateral forces that are caused by earthquakes. Current codes in effect in the City of Roseville (Section 16.04.100) incorporate the 2001 California Building Code (CCR Title 24) and incorporate the 1997 Uniform Building Code, including appendix Chapters 15 and 33. Because the requirements of the CUBC are in effect in the City, the proposed action would be required to comply with State seismic safety, unstable slope, and unstable soils design requirements. Earthquake-resistant design and materials are required to meet or exceed the current seismic engineering standards of the CUBC Seismic Zone 3 improvements. The proposed action would be designed to meet current seismic safety standards and would not result in on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse.

Shrink-swell potential is the potential for volume changes in a soil with a loss or gain in moisture. If the shrink-swell potential is rated moderate to high, damage to buildings, roads, and other structures can occur. Based on information developed by the SCS for western Placer County, all of the site soils have a low shrink-swell (expansion) potential.<sup>18</sup> The City of Roseville Improvement Standards (revised May 1993) provide the minimum construction standards required for proposed actions. All grading and other construction activities associated with the proposed action would occur in accordance with the City's Improvement Standards and impacts would be less than significant.

### **National Natural Landmarks**

Not applicable: there are no National natural landmarks located in the vicinity of the project site. No impact is expected.

### **Historical, Architectural, Archeological, and Cultural Sites**

Project Action: The Valley Nisenan, a Penutian-speaking ethnic group, inhabited the drainages of the American, Yuba, and Bear Rivers and lower portions of Feather River. "Native American archaeological sites in this portion of Placer County tend to be situated along streams."<sup>19</sup> The site is in the low foothills near several water sources. "The project site is located adjacent to the Secret Ravine which was the scene of considerable gold mining in the 1850's and 1860's."<sup>20</sup> Granite quarries were also common in the area. Ranching and farming took over when quarries closed.

The North Central Information Center (NCIC) performed a records search in July, 2003 for the proposed project. Three records of archaeological studies within the project area and one in the adjacent area are on record at the NCIC. Three sites are located in the area surrounding the project site and the record search determined that "given the environmental setting, there is a moderate

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18. U.S. Department of Agriculture, Soil Conservation Service, *Soil Survey of Placer County, California, Western Part*, July 1980, Table 12.
  19. Davis McCullough, Jr., Researcher, North Central Information Center, July 22, 2003 Record Search Results letter, page 3.
  20. Davis McCullough, Jr., Researcher, North Central Information Center, July 22, 2003 Record Search Results letter, page 1.

potential for Native American sites in the project area.”<sup>21</sup> The search determined that “the proposed project area contains no recorded Native American or historic-period archaeological resources listed.” Additionally, no structures over 45 years old are located on the project site or would be affected by the proposed project. Documentation was provided to the Office of Historic Preservation. In a letter from the State Historic Preservation Officer dated October 14, 2004, a “finding of no historic properties affected” for the proposed project was issued.<sup>22</sup>

Construction of the replacement tank and demolition of the existing tank would involve earthmoving and excavation activities. These activities could result in adverse changes to undiscovered historical and archeological resources or result in disturbing undocumented human remains. Since the project site has been disturbed from previous excavation and grading, the likelihood of encountering undisturbed areas with cultural resources in the project site is low. However, the proposed project could still result in a potentially significant impact to cultural resources.

Impact would be reduced to less than significant levels with implementation of Historical, Architectural, Archeological and Cultural Sites Mitigation Measure, below.

*Historical, Architectural, Archeological and Cultural Sites Mitigation Measure*

*If evidence of an archaeological site, human remains, or other suspected cultural resource is uncovered during any construction activities, work shall be halted within 100 feet of the find and the City of Roseville Community Development Department shall hire a qualified archeologist to identify the find. Any identified cultural resources shall be recorded on the appropriate DPR 523 (A-J) form and filed with the NCIC.*

## **Aesthetic Resources**

### Impacts on Views or Visual Resources

Implementation of the proposed action would involve the construction of a replacement water reservoir (tank) on a cleared site that currently contains two water tanks and a small pumping plant. Under the proposed action, one of the existing tanks would be demolished and removed upon completion of the replacement tank.

There are no scenic roads, resources, or views within or adjacent to the proposed action area. Long-range views include views of the rolling foothills leading up to the Sierra Nevada range to the northeast while short-range views include views of adjacent residential and undeveloped lands to the south and west. Development within this area would change existing views, and impacts are discussed below with the aid of visual simulations. The views from which these simulations were taken are shown in Figure 5. Figures 6 through 11 show both the existing view (without the proposed action) and the simulated view (with the proposed action) for each of the view points described below.

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21. Davis McCullough, Jr., Researcher, North Central Information Center, July 22, 2003 Record Search Results letter, page 2.
  22. Milford Wayne Donaldson, State Historic Preservation Officer, Office of Historic Preservation, Department of Parks and Recreation, Letter dated October 14, 2004.

The vantage point for View 1 is to the southwest of the proposed action site from the Sutter Roseville Medical Center, looking northeast at the proposed action site (Figure 6). The existing tank and surrounding wall are visible from this vantage point, as is residential development beyond the proposed action site. Portions of the walls are obscured by vegetation. The proposed tank would be located behind the existing wall and obscured further by the existing vegetation (Figure 6). Residential development is also proposed between the site and this vantage point and would further obscure any views of the site from this location.

The vantage point for View 2 is to the southwest of the proposed action site along Secret Ravine Parkway, looking northeast at the proposed action site (Figure 7). The existing tank is highly visible behind the wall from this location as would be the proposed tank. Residential development is also proposed between the tank site and this vantage point and, in the future, will obscure any views of the proposed action site from this location.

The vantage points for Views 3 and 4 are east of the proposed action site and the adjacent park along Ballantrae Way (Figures 8 and 9, respectively). Residences along this street and further north have clear views of the site either from their front or back yards. Figures 8 and 9 simulate how the proposed tank will look from the residences to the east. As shown in the figures, the proposed tank would partially block views to the west, but the full skyline would remain unbroken. Trees and shrubs seen along the wall in the park will continue to grow and will eventually partially screen views of the proposed action site.

The vantage point for View 5 is west of and adjacent to the proposed action site (Figure 10). This view is taken slightly downhill from the proposed action site, looking east at the site. The wall is currently the dominate feature from this vantage point. A portion of the proposed tank would be visible above the wall as seen in Figure 10.

As discussed above, the proposed tank would be constructed on a site that has already been cleared and developed. The existing facility is surrounded by a masonry wall, which would conceal the majority of the proposed tank from most vantage points. The proposed tank would be a neutral grey in color, as to not disrupt public views from the park site, and would be similar in appearance to the 10 MG existing tank which will remain onsite. As seen from View 6 (Figure 11) the proposed tank would be in keeping with the visual character of the existing site and would not substantially degrade that character. However, the proposed tank could slightly impair views of the surrounding landscape from existing and future residential development surrounding the proposed action site and would be visible from View 6 from the Community Park (Figure 11). As noted above, this impairment would be partial and would not block full views of the skyline to the west. In addition, demolition and removal of the existing 6 MG tank will open up some views from neighboring residences that currently are partially obscured.

Whether the proposed action “significantly” affects the quality of the human environment is determined by considering the context in which the action occurs and the intensity of the action [40 C.F.R. 1508.27]. Given that the proposed action would occur on a currently developed site, would not change the nature of the visual character of the site, and would only partially obscure some existing views from a small number of neighboring residences, the proposed action would have a less-than-significant impact.



SITE OF PROPOSED TANK

FIGURE 5  
Viewpoint Map: Viwe locations shown in Figures 6 thoghuh 11



10903-00

Source: Kennedy/Jenks Consultants, 2006

Not to Scale



City of Roseville



Without Project



With Project

FIGURE 6  
View 1 From Sutter Medical Center southwest of the Project Site



Without Project



With Project

FIGURE 7  
View 2 From Secret Ravine Parkway southwest of the Project Site





Without Project



With Project

FIGURE 8  
View 3 From Neighboring Residence east of the Project Site



Existing 10 MG Tank

Existing Wall

Without Project



Existing 10 MG Tank

Proposed Tank

Existing Wall

With Project

FIGURE 9  
View 4 From Neighboring Residence east of the Project Site



Existing Wall

Existing 10 MG Tank

Without Project



Proposed Tank

Existing Wall

Existing 10 MG Tank

With Project

FIGURE 10  
View 5 From field west of the Project Site



Without Project



With Project

FIGURE 11  
View 6 From Community Park

### New Sources of Light/Glare

The surrounding residential development provides a varying amount of glare and light throughout the day and night from sources such as homes, vehicles, and streetlights. The adjacent park site is illuminated with security lighting at night. The proposed action site also contains minimal artificial lighting for the existing facilities. The proposed action would include additional night-lighting sources for security purposes. The existing vegetation between the proposed action site and the existing residential neighborhood would only partially block light from spilling onto adjacent parcels and from the view of surrounding neighbors; the amount of light created by the proposed action would be minimal, and lighting would be contained to the site to the extent feasible. Therefore, the proposed action would have a less-than-significant impact.

### **Land Use and Zoning**

The proposed action would be located within the corporate boundaries of the City of Rocklin, but on land owned by the City of Roseville. Therefore, the proposed action is subject to the jurisdiction of the City of Roseville, including City of Roseville ordinances, goals and policies. The project site is adjacent to existing or planned low density residential uses on all sides, and is immediately adjacent to a developed park site northeast of the project site.

The replacement tank would be consistent with the City of Roseville's General Plan policies to provide adequate domestic water to meet future planned demand and to ensure that adequate public facilities and services are provided that protect the public's health, safety, and welfare. Therefore, the project does not conflict with any applicable land use plan, policy or regulation or any agency with jurisdiction over the project, and no impacts are expected.

### **Socioeconomic Impacts**

Not applicable: no impact is expected.

### **Utilities**

Project Action: Not applicable; the proposed action would occur on City property that has been prepared for construction of a tank and other associated water supply infrastructures. No impact is expected.

### **Transportation and Access**

#### Traffic

The proposed action would not introduce a new population into a community or cause an increase in the number of employees at the tank facility that would generate new vehicle trips. In addition, the completed project would not involve any activity that would induce traffic. The proposed action would not cause an increase in operational traffic that would be substantial in relation to the existing traffic load and capacity of the street system or exceed an existing level of service standard.

Construction vehicles would travel to and from the site via Scarborough Drive east to Sierra College Boulevard or south to Roseville Parkway. Up to 50 truck trips would be made per day during peak

construction periods. The effects of construction-related traffic for proposed action, which includes the proposed construction/demolition of tanks, would have a potentially significant impact, although temporary, on local traffic patterns.

Transportation Mitigation Measures 1 and 2 would be implemented as part of the proposed action and would reduce potential impacts on traffic to less-than-significant levels.

*Transportation Mitigation Measure 1*

*The City of Roseville shall require that the construction contractor implement specific traffic control measures to reduce safety hazards along Scarborough Drive. The traffic control plan shall be reviewed and agreed upon prior to commencement of construction activities by the City of Roseville and City of Rocklin Public Works Departments. The City of Roseville and City of Rocklin Public Works Departments shall agree to the final details of the traffic control measures that shall be implemented, including but not limited to, the following:*

- (a) Emergency Service providers in the City's of Roseville and Rocklin shall be notified of any lane closures along Scarborough Drive or any significant construction generated delays to the local street network.*
- (c) Approach speeds and signage shall be used along Scarborough Drive*
- (b) Signs shall be placed along Scarborough Drive to identify the presence of trucks entering and exiting the site during construction.*

*Transportation Mitigation Measure 2*

- (a) To minimize disruption of traffic flows, transit service, and bicycle/pedestrian access during construction, a Traffic Control Plan shall be prepared and implemented concurrent with construction. The plan will be subject to approval by the City of Roseville, the City of Rocklin and Placer County. The City of Roseville, City of Rocklin, and Placer County shall require that the contractor prepare and implement a "Traffic Control Plan" which conforms to Caltrans guidelines as well as local requirements. Construction traffic guidelines are outlined in the Caltrans Traffic Manual. This document provides information relative to construction signs, reduced speeds in work areas, channelization through construction areas and traffic controls (including flaggers to direct traffic through reduced width roadways in construction areas).*
- (b) The Traffic Control Plan shall also address the notification of the general public in the area of the proposed action via media press release or signage, announcing expected delays from construction activities. The City of Roseville Public Information Officer shall be responsible for coordinating the noticing process for the proposed action.*
- (c) The Traffic Control Plan shall also address ingress and egress of construction traffic at the site and continued access to fire hydrants during construction.*
- (d) Where sidewalk or bicycle lanes would be closed due to construction, provisions shall also be made for continued pedestrian and bicycle access along roadways and across affected intersections.*

### Road Construction

The proposed action would not alter existing roadways, and therefore would not introduce design features that would increase road hazards or result in inadequate emergency access. In addition, the proposed action would not promote incompatible uses, such as that of farm equipment, which could create a road hazard or restrict emergency access. Therefore, there would be no impact.

### Parking

Construction activities for the proposed action would involve temporary and short-term increases in the number of employees at the site. The project site would have adequate space for the temporary increase in employees during construction activities. Operation of the new replacement reservoir would not cause an increase in the number of employees at the site. Therefore, there would be no demand for increased parking facilities in the area, and no impact would occur.

### Access

The proposed action would not remove, block, or otherwise interfere with existing bus turnouts or bicycle racks, and would not conflict with adopted alternative transportation policies, plans, or programs. Therefore, no impact would occur.

### **Climate**

Not applicable: no impact is expected.

### **Noise Considerations**

The area around the project site has relatively little noise. Noise that does exist at the project site includes the typical noise associated with residential uses, traffic noise on local roads, and intermittent noise from activity from a nearby playground. Nearby periodic construction activities also contribute to the noise environment at the site.

### Fundamentals of Sound and Environmental Noise

Sound can be described in terms of amplitude (loudness) and frequency (pitch). The standard unit of sound amplitude measurement is the decibel (dB). The decibel scale is a logarithmic scale that describes the intensity of the pressure vibrations that make up a sound. The pitch of the sound is correlated to the frequency of the sound's pressure vibration. Because humans are not equally sensitive to a given sound level at all frequencies, a special scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) does this by placing more importance on frequencies that are more noticeable to the human ear.

Noise is typically defined as unwanted sound. A typical noise environment consists of a base of steady "background" noise that is made up of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These can vary from an occasional aircraft or train passing by to virtually continuous noise from, for example, traffic on a major highway.

Several rating scales have been developed to analyze the adverse effect of noise on people. Since environmental noise fluctuates over time, these scales consider that the effect of noise upon people is largely dependent upon the volume of the noise, as well as the time of day when the noise occurs. Those that are applicable to this analysis are as follows:

- $L_{eq}$ , the equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the  $L_{eq}$  of a time-varying noise source and that of a steady noise source are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
- $L_{dn}$ , the Day Night Average Level, is a 24-hour average  $L_{eq}$  with a 10 dBA “weighting” added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the nighttime.
- $L_{max}$ , the maximum instantaneous noise level experienced during a given period of time.

Noise caused by natural sources and human activities is usually well represented by median noise levels during the day, night, or over a 24-hour period. Environmental noise levels are generally considered low when the  $L_{eq}$  is below 60 dBA, moderate in the 60-to 70-dBA range, and high above 70 dBA. Examples of settings with low daytime background noise levels are isolated, natural settings that can provide noise levels as low as 20 dBA and quiet, suburban, residential streets that can provide noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise settings are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most people living or working in urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA) accept the higher noise levels commonly associated with these land uses.

When evaluating changes in community noise levels, or  $L_{dn}$ , a difference of 3 dBA is a barely perceptible increase to most people. A 5 dBA increase is readily noticeable, while a difference of 10 dBA would be perceived as a doubling of loudness.

Noise levels from a particular source decline as distance to the receptor increases. Other factors, such as the weather or the shielding of a receptor from a noise source, can also help intensify or reduce the noise level at any given location. For roadway noise, a commonly used rule of thumb is that for every doubling of distance from the source, the noise level is reduced by about 3 dBA at acoustically “hard” locations (i.e., the area between the noise source and the receptor is nearly complete asphalt, concrete, hard-packed soil, or other solid materials) and 4.5 dBA at acoustically “soft” locations (i.e., the area between the source and receptor is normal earth or has vegetation, including grass). Noise from stationary or point sources is reduced by about 6 to 7.5 dBA for every doubling of distance at acoustically hard and soft locations, respectively. Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA. The manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows. The exterior-to-interior reduction of newer residential units is generally 30 dBA or more.



## Fundamentals of Groundborne Vibration

Vibration is sound radiated through the ground. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. The ground motion caused by vibration is measured in the U.S. as vibration decibels (VdB).

The background vibration velocity level in residential and educational areas is usually around 50 VdB. Groundborne vibration is normally perceptible to humans at approximately 65 VdB. A vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for most people.

Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. The general human response to different levels of groundborne vibration velocity levels is described in Table B-2 in Appendix B, Noise Technical Study.

### Existing Sensitive Receptors

The proposed project site is located on the side of a hill. Existing receptors at the project site consist of residences located on the hillside above the site of the proposed project to the south. These are the nearest receptors and are approximately 300 yards away from the site. Receptors also exist below the project site to the west. A busy road runs adjacent to these residences, running between the homes and the project site, which is approximately 1/4 - 1/2 mile away.

### Existing Ambient Noise Levels

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA.

Sound levels were measured at three locations around the project site. These measurements show that the closest receptors to the project site experience relatively quiet conditions, while the next closest receptors below the project site experience much higher noise levels due to traffic noise. The noise  $L_{eq}$  measurements are shown in Appendix B.

Please note, for a complete discussion on applicable federal, State, and local regulations and ordinances governing noise in the project area, please refer to the "Regulatory Context" section of Appendix B.

The analysis in this section focuses on the nature and magnitude of the change in the noise environment associated with implementation of the proposed project. The primary sources of noise associated with the project would be temporary noise generated during demolition and construction activities. Secondary sources of noise would include any new noise generated during operations of the proposed project. The increase in noise levels and groundborne vibration associated with construction activities have been quantitatively estimated using methods discussed below. The levels

are then compared to applicable noise standards and thresholds of significance. Potential noise from operations of the Proposed Project is discussed qualitatively to determine whether applicable standards would be exceeded.

Construction noise levels were estimated using data published by the USEPA. The USEPA has identified typical noise levels for construction equipment that will be used during construction of the reservoir replacement. Potential noise levels from construction are identified for existing noise receptors in the proposed action area.

#### Exposure of Persons to Noise from Construction

One of the existing tanks on the proposed action site is slated for demolition. The tank is constructed of pre-stressed concrete and would be demolished with a hydraulic demolition excavator, wrecking ball and crane, or similar equipment. Once demolished, the concrete material would be removed from the site with hauling trucks. This activity would create substantial noise. Construction of the new tank would create noise as well, primarily from construction equipment used for grading and fabrication. According to the above tables, construction activities could create temporary noise levels up to 98 dBA at 50 feet from the noise source. Since sound attenuates at approximately 6 dBA per doubling of distance, construction noise levels could reach 86 dB at the nearest receptors. This would exceed the City of Rocklin “acceptable” noise standard of 60  $L_{dn}$  for residential development and result in a potentially significant impact.

To ensure that construction activities comply with the City of Roseville Noise Ordinance, and to ensure that noise does not occur during recognized sleep hours, implementation of Noise Mitigation Measure would reduce impacts to less-than-significant levels.

##### *Noise Mitigation Measure*

*Construction activities shall only occur between the hours of 7 a.m. and 6 p.m. Monday through Friday.*

While demolition and construction activity would create noise levels in excess of City of Rocklin standards, because the project site is owned by the City of Roseville, the City of Rocklin’s Noise Standards do not apply. Further, construction noise would be temporary and in compliance with the City of Roseville Municipal Code, which exempts construction noise as long as certain measures are taken to reduce noise from construction machinery, such as factory installed muffling devices and other measures identified in the ordinance.

#### Exposure of Persons to Groundborne Vibrations

Heavy-duty equipment used during demolition and construction activities would create groundborne vibration that could impact those residences nearest the site of the proposed action. Table B-6 in Appendix B shows vibration source levels for construction equipment. The nearest residences are approximately 200 feet from the proposed action site. According to Table B-6, maximum levels of 75 VdB could be experienced at 100 feet if a bulldozer is used. Consequently, residences over 100 feet away would not be exposed to vibration levels that would exceed the 80 VdB threshold of significance. However, construction would not occur during recognized sleep hours or exceed thresholds of significance and impacts would be less than significant.

### Noise from Operations

Once the project is constructed, its function will be to store water for use by the City of Roseville. No noise-generating operations will be needed for the tank to perform this function. Periodic service and maintenance trips to the proposed action site may also create noise for limited amounts of time. However, since the new 7.25 MG tank will be replacing an existing tank, it is unlikely that there would be an increase in the number of service visits to the site. Since the new tank would not produce noise while in operation, and since all other conditions would not change significantly, there would be no impact from the proposed action during operation.

### **Environmental Justice Considerations**

The project site is located on an existing reservoir facility and is adjacent to new and future residences. No impact is expected.

### **Tribal Issues**

As discussed above, no impact on culturally significant resources is expected due to the proposed action.

### **Energy**

The proposed action would not change the energy requirements of the City. No impact is expected.

### **Summary of Significant Impacts and Mitigation Measures**

The adverse and beneficial impacts associated with implementation of the proposed project are both short- and long-term in duration and effect. The short-term impacts are related to construction of the proposed project, while the long-term impacts are related to operation of the proposed project.

Mitigation measures that reduce impacts to less than significant have been developed for the potential impacts identified in the previous section. Beneficial impacts from the proposed project include the development of a safe and reliable storage tank that meets seismic safety standards, and operational flexibility in the City's water supply system.

### **Water Quality Benefits of the Proposed Action**

The purpose and need for the proposed project is to maintain reliable and flexible treated water service to the City's residential, industrial, and commercial customers. The proposed project does not involve discharges to surface or groundwater resources in the area, so there would be no benefits to water quality other than those provided from prevention of failure from the seismically-deficient tank (e.g., discharge of large volume of water into local stormwater system and natural drainages).

### **Short-Term Use of the Environment versus Long-Term Productivity**

Construction of the proposed project would accomplish the long-term objectives of the City to maintain a safe and reliable supply of water, prevent future emergency situations with the existing

seismically-deficient tank, and create operational flexibility within the water supply system. The short-term use of the environment would result in temporary impacts from construction of the project, including inconvenience to humans. However, the short-term impacts of the project would be less than significant with mitigation measures. The short-term impacts would allow the City to achieve the long-term project objectives. The long-term effects of the project were analyzed and determined to be less than significant.

### **Irreversible and Irretrievable Commitment of Resources**

The following is a description of the impacts that would result in irreversible and irretrievable commitment of resources. Construction, operation, and maintenance of the proposed project would require the irreversible and irretrievable use of construction materials such as cement, aggregate, wood, steel, and other building materials. Further, the project would result in irreversible and irretrievable use of financial and energy resources and use of land for constructing the replacement tank.

## **8. CUMULATIVE IMPACTS**

NEPA requires an EA to analyze the “cumulative impact” of a proposed action. This analysis looks at the impact of the proposed action in combination with similar impacts associated with past, present and planned development, that has occurred (or will occur) independent of the proposed action under consideration. By requiring an evaluation of cumulative impacts, NEPA attempts to minimize the potential that large-scale environmental impacts would be ignored due to the project-by-project nature of project-specific analyses. Cumulative analyses need not be undertaken in the same manner as the project-specific impacts identified in an EA.

In accordance with the above requirements, the cumulative context for this EA is defined as impacts attributable to urban growth forecast (buildout) in the Roseville General Plan and approved specific plans. Growth and development in the project vicinity will occur largely as a result of implementing land use policies in the Roseville General Plan and specific plans within the City’s water service area. As of 2005, the City approved nine specific plans (including the West Roseville Specific Plan) that were used to comprehensively plan the City’s growth areas. Additional specific plans may be developed for potential future growth areas.<sup>23</sup>

It is in the above context that the potential impacts of the proposed action were viewed in relation to their potential contribution to cumulative impacts related to planned regional development. In all issue areas assessed in this EA for the proposed action, impacts were found to be less than significant or less than significant with mitigation. Because construction-related impacts associated with the proposed action are short-term and less-than-significant with mitigation, the incremental contribution of the proposed action to impacts in all areas is not considerable. The proposed action will have no long-term operational impacts and will not substantially change the nature of the existing site, which currently supports the City’s water storage reservoir facility. The proposed action would, therefore, not result in significant cumulative adverse impacts.

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23. City of Roseville, 2004 General Plan Land Use Element, February 2004, page II-59.

In addition, please note the discussion in Section 6 above which specifically addresses the proposed project's potential impact on regional air quality and finds the proposed project's contribution to cumulative air quality impacts to be less than significant.

## 9. DOCUMENTATION, SOURCES AND REFERENCES

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### **State Publications and Websites:**

California Department of Conservation, Division of Land Resource Protection, *Placer County Important Farmland Map 1998*, 1999.

California Department of Water Resources, Water Data Library, [http://well.water.ca.gov/gw/gw\\_data/hyd/Rpt\\_Hist\\_Data5\\_gw.asp?wellNumber=10N07E07E002M](http://well.water.ca.gov/gw/gw_data/hyd/Rpt_Hist_Data5_gw.asp?wellNumber=10N07E07E002M), website accessed July 7, 2004.

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California State Water Resources Control Board, Storm Water Municipal Program, [http://www.swrcb.ca.gov/stormwtr/sm\\_municipal\\_swmp.html](http://www.swrcb.ca.gov/stormwtr/sm_municipal_swmp.html), website accessed October 6, 2004.

### **Special District Publications and Websites:**

Sacramento Metropolitan Air Quality Management District. *Air Quality Thresholds of Significance*, 1994, First Edition.

### **Local Governmental Agencies, Ordinances and Publications:**

City of Rocklin, *Draft Environmental Impact Report for The Highlands, General Plan Amendment (SCH#92122014)*, December, 1994.

City of Roseville, 2004 General Plan Land Use Element, February 2004.

### **PERSONS CONSULTED (Personal Communication)**

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Norton, Tammara. Far Western Anthropological Research Group.

Wakim, Tony. Electrical Engineering Lead, Kennedy Jenks Consultants.

#### Consultants

Andregg, Inc., Survey and Mapping Services

España Geotechnical Consulting, Geotechnical Investigations

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### **EXECUTIVE ORDERS:**

#### **Executive Order 11988 – Floodplain Management**

Executive Order 11988 was issued in 1977 to address the long and short term adverse impacts associated with the occupancy and modification of floodplains, and to address the direct or indirect support of floodplain development wherever there is a practicable alternative.

As stated in the EO, each federal agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for the following activities:

- acquiring, managing, and disposing of federal lands, and facilities;
- providing federally undertaken, financed, or assisted construction and improvements; and

- conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

The Northeast Roseville Water Storage Reservoir Replacement action is not located within a 100-year floodplain as designated by the Federal Emergency Management Agency (FEMA) and construction and demolition will not occur with any floodplain. Therefore, the proposed action is consistent with the executive order and its provisions because it would not have any impacts on floodplains.

### **Executive Order 11990 – Wetlands**

Executive Order 11990 was issued in 1977 to address the long- and short- term adverse impacts associated with the destruction or modification of wetlands throughout the nation, and to address the direct or indirect support of new construction in wetlands wherever there is a practicable alternative. The order directs federal agencies to provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for the following activities:

- acquiring, managing, and disposing of federal lands and facilities; and
- providing federally undertaken, financed, or assisted construction and improvements; and
- conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

The proposed action is located entirely within the existing Northeast Tanks Facility, and construction and demolition activities would be confined to within the walls of the tank facility. No wetlands exist within the facility; therefore, the proposed action is consistent with the executive order and its provisions because it would not have any impacts on wetlands.

### **Executive Order 12898 – Environmental Justice**

Executive Order 12898 was issued in 1994 to address the issue of environmental justice. The EO states that federal agency shall make achieving environmental justice part of its mission by identifying and addressing disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States. The EO instructs federal agencies to develop environmental justice strategies to:

- promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations;
- ensure greater public participation;
- improve research and data collection relating to the health of and environment of minority populations and low-income populations; and
- identify differential patterns of consumption of natural resources among minority populations and low-income populations. In addition, the environmental justice strategy shall include, where appropriate, a timetable for undertaking identified revisions and consideration of economic and social implications of the revisions.

Implementation of the proposed action would not result in new developments, programs, policies, or activities or result in any adverse human health or environmental effects on minority or low income populations. Therefore, the proposed action is consistent with the executive order.

### **Executive Order 13007 – Indian Sacred Sites on federal Land**

Executive Order 13007 was issued in 1996 in order to protect and preserve Indian religious practices. The EO states that in managing federal lands, each executive branch agency with statutory or administrative responsibility for the management of federal lands shall, to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions: (1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and (2) avoid adversely affecting the physical integrity of such sacred sites. Where appropriate, agencies shall maintain the confidentiality of sacred sites.

The proposed action is located within the existing Northeast Tanks Facility, and construction and demolition activities would be confined to within the walls of the tank facility. No Indian sacred sites exist within the facility; therefore, the proposed action is consistent with the executive order.

### **Executive Order 12372 - Intergovernmental Review of Federal programs**

Executive Order 12372 was issued in 1982 in order to foster intergovernmental partnerships by relying on State and local processes for coordination and review of proposed federal financial assistance and direct federal development. The EO states that federal agencies shall provide opportunities for consultation by elected officials of those State and local governments that would provide the non-federal funds for, or that would be directly affected by, proposed federal financial assistance or direct federal development.

The proposed action would be consistent with all applicable State, area-wide and local planning programs and would therefore be consistent with this EO.

### **Section 106 of the National Historic Preservation Act**

This act requires Federal agencies to review all actions which may affect a property listed on the National Register of Historic Places, or which may affect a property eligible for listing. Specifically, §106 of the Act (16 U.S.C. 470(f)) requires that a federal agency involved in a proposed action or activity is responsible for initiating and completing the review process. The agency must confer with the State Historic Preservation Officer and the NHPA. Federal actions include, but are not limited to, construction, rehabilitation, and repair projects, demolition, licenses, permits (e.g., Clean Water Act §404 permits), loans, loan guarantees, grants, and federal property transfers. The agency sponsoring of one of these activities is obligated to seek Advisory Council on Historic Preservation (ACHP) comments.

Again, the proposed action is located within the existing Northeast Tanks Facility, and construction and demolition activities would be confined to within the walls of the tank facility. No portion of the property on which the proposed action is located is listed on the National Register of Historic Places exist within the facilities, therefore, provisions of the act do not apply. Additionally, no structures over 45 years old are located on the proposed action site or would be affected by the proposed action. Documentation was provided to the Office of Historic Preservation. In a letter



from the State Historic Preservation Officer dated October 14, 2004, a “finding of no historic properties affected” for the proposed action was issued.

### **Federal Wild and Scenic River Act**

The Federal Wild and Scenic River Act declares a national policy to:

- Preserve certain rivers and their immediate environments;
- Maintain free-flowing condition;
- Protect water quality; and
- Fulfill other vital national conservation purposes.

The Act provides a national policy and program to preserve and protect selected rivers, or segments of rivers, in their free-flowing condition in the National System. The Act states:

It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations.

The federal act establishes a river corridor along designated segments and can be as wide as ¼ mile. Federal agencies are required to develop and implement management plans to ensure river protection.

The proposed action is located within the existing Northeast Tanks Facility, and construction and demolition activities would be confined to within the walls of the tank facility. There are not designated Wild and Scenic Rivers in the proposed action area, therefore provision of this act do not apply to this proposed action.

### **California Wild and Scenic Rivers Act**

The California Wild and Scenic Rivers Act was passed in 1972 to preserve designated rivers possessing extraordinary scenic recreation, fishery, or wildlife values. The act was patterned after the 1968 National Wild and Scenic Rivers Act. The primary purpose of both the State and federal acts is to prohibit new water impoundments on designated rivers. Unlike the federal Wild and Scenic River Act, the State act provide protection only to the first line of permanent riparian vegetation and does not require a management plan like its federal counterpart.

No dam, reservoir, diversion, or other water impoundment facility may be constructed on any river segment included in the system. Agencies of the State of California may not assist local, State and federal agencies in the planning and construction of any dam reservoir, diversion, or other water impoundment facility that could adversely affect the free-flowing condition and natural character of river segment included in the system or of rivers otherwise protected under the Act.

The proposed action is located within the existing Northeast Tanks Facility, and construction and demolition activities would be confined to within the walls of the tank facility. There are no

designated Wild and Scenic Rivers in the proposed action area, therefore provision of this act do not apply to this proposed action.



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APPENDIX A

AIR QUALITY TECHNICAL STUDY

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## APPENDIX A

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### AIR QUALITY TECHNICAL STUDY

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This section assesses the potential air quality effects of the proposed project and recommends mitigation measures to reduce or eliminate significant impacts. First, the section summarizes pertinent baseline information: (1) the climate in the project area; (2) existing air quality conditions in the project area for both “criteria air pollutants” and “toxic air contaminants”; and (3) federal, State, and regional air quality standards. Secondly, the section analyzes the air quality effects caused by stationary and mobile sources related to the proposed project.

#### ENVIRONMENTAL SETTING

##### Regional Climate and Topography

Air quality is affected by the rate, amount, and location of pollutant emissions and the associated meteorological conditions that influence pollutant movement and dispersal. Atmospheric conditions including wind speed, wind direction, and air temperature, in combination with local surface topography (i.e., geographic features, such as mountains and valleys), determine the effect of air pollutant emissions on local air quality.

The project site is located in the City of Rocklin, Placer County. Placer County extends from the Sacramento Valley east into the Sierra Nevada foothills and mountains. The prevailing wind in the project vicinity is from the south, primarily because of marine breezes through the Carquinez Straits, although during winter, the sea breezes diminish and winds from the north occur more frequently. Winter storms, however, can bring strong southerly winds.

Another important meteorological factor that determines the overall air quality in the Sacramento Valley is the frequent presence of temperature inversions. Temperature inversions occur when air becomes warmer at higher elevations, making it difficult for air at different heights to mix. When mixing is minimal, polluted air near the ground is trapped and cannot disperse. Inversion layers are significant in determining the severity of concentrations of pollutants.<sup>24</sup>

##### Criteria Air Pollutants and Regional Air Quality

*Criteria air pollutants* are a group of pollutants for which federal or State regulatory agencies have adopted ambient air quality standards. This group includes ozone, carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter (PM<sub>10</sub>), and lead (Pb). Ozone is a secondary pollutant that is formed in the atmosphere by chemical reactions between oxides of nitrogen (NO<sub>x</sub>) and reactive organic gases (ROG).

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24 Air Quality Thresholds of Significance –Sacramento Metropolitan Air Quality Management District. 1994, First Edition. Page 2.

Criteria air pollutants are classified in each air basin, county, or in some cases, within a specific urbanized area. The classification is determined by comparing actual monitoring data with State and federal standards. If a pollutant concentration is lower than the standard, the area is classified as an “attainment” area for that pollutant. If an area exceeds the standard, the area is classified as “non-attainment” for that pollutant. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as “unclassified.” The criteria pollutants mentioned above are described below, along with Placer County’s attainment status for each.

- *Ozone ( $O_3$ )* is a gas that is formed when ROGs and  $NO_x$ , both byproducts of internal combustion engine exhaust, undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant. Placer County is currently in non-attainment for both federal and State ozone standards.
- *Carbon Monoxide (CO)* is a colorless, odorless gas produced by the incomplete combustion of fuels. CO concentrations tend to be the highest during the winter morning, with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, unlike ozone, motor vehicles operating at slow speeds are the primary source of CO in the SVAB. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections. Placer County attains the federal CO standard; however, only the southern portion of Placer County is in attainment of the State CO standard. The northern portion is unclassified.
- *Respirable Particulate Matter ( $PM_{10}$ )* consists of extremely small, suspended particles 10 microns or smaller in diameter. Some sources of suspended particulate matter, like pollen and dust raised by windstorms, occur naturally. However, in populated areas, most fine suspended particulate matter is caused by road dust, diesel soot, combustion products, abrasion of tires and brakes, and construction activities. Placer County is unclassified for the federal  $PM_{10}$  standard and in non-attainment for the State standard.
- *Sulfur dioxide ( $SO_2$ )* is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When sulfur dioxide oxidizes in the atmosphere, it forms sulfates ( $SO_4$ ). Together, these pollutants are referred to as sulfur oxides ( $SO_x$ ). Placer County attains both federal and State  $SO_2$  standards.

Table A-1 presents the health effects associated with criteria pollutants.

The PCAPCD and the CARB maintain a number of air monitoring stations within Placer County. The monitoring stations collect data on ambient concentrations of various criteria pollutants. The closest station to the project site is the Rocklin Road site in Rocklin. Table A-2 presents monitoring data from the station over the last three years for various criteria pollutants.

<b>TABLE A-1</b>	
<b>HEALTH EFFECT SUMMARY OF THE MAJOR CRITERIA AIR POLLUTANTS</b>	
<b>Air Pollutant</b>	<b>Adverse Effects</b>
Ozone	Eye irritation Respiratory function impairment
Carbon Monoxide	Impairment of oxygen transport in the blood stream Aggravation of cardiovascular disease Impairment of central nervous system function Fatigue, headache, confusion, dizziness Can be fatal in the case of very high concentrations in enclosed places
Particulate Matter	May be inhaled and lodge in and irritate the lungs Increased risk of chronic respiratory disease with long exposure Altered lung function in children May produce acute illness with sulfur dioxide
Nitrogen Dioxide	Increased risk of acute and chronic respiratory disease
Sulfur Dioxide	Irritation of lung tissue Increased risk of acute and chronic respiratory disease
Source: CARB website – <a href="http://www.arb.ca.gov/research/health/fs.fs.htm">www.arb.ca.gov/research/health/fs.fs.htm</a> . Accessed 6/24/04.	

<b>TABLE A-2</b>			
<b>SUMMARY OF AIR POLLUTANT DATA FROM ROCKLIN-ROCKLIN ROAD MONITORING STATION, ROCKLIN (WITH DAYS VIOLATING FEDERAL AND STATE STANDARDS)</b>			
<b>Pollutant</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
<b>OZONE (1-hour)</b>			
Highest 1-hour (ppm)	0.128	0.135	N/A
Days>0.125 ppm (Fed)	1	2	N/A
Days>0.09 ppm (Cal)	18	21	N/A
<b>OZONE (8-hour)</b>			
Highest 8-hour (ppm)	0.097	0.111	N/A
Days>0.08 (Fed) <sup>1</sup>	8	15	N/A
<b>CARBON MONOXIDE</b>			
Highest 8-hour (ppm)	1.90	2.81	1.59
Days>=9.5 ppm (Fed)	0	0	0
Days>=9.1 ppm (Cal)	0	0	0
<b>PARTICULATE MATTER (PM<sub>10</sub>)</b>			
Highest 24-hour (ug/m <sup>3</sup> )	57.0	36.0	N/A
Days>50 ug/m <sup>3</sup> (Cal)	2	0	N/A
Days>150 ug/m <sup>3</sup> (Fed)	0	0	N/A
<b>PARTICULATE MATTER (PM<sub>2.5</sub>)<sup>2</sup></b>			
Highest 24-hour (ug/m <sup>3</sup> )	49.0	53.0	30.0
Days>65 ug/m <sup>3</sup> (Fed)	0	0	0
<b>NITROGEN DIOXIDE</b>			
Highest 1-hour (ppm)	0.086	0.075	0.083
Days>.25 ppm (Cal) <sup>3</sup>	0	0	0
<sup>1</sup> There is no State 8-hour ozone standard. <sup>2</sup> Placer County is still unclassified for PM <sub>2.5</sub> by EPA, and will remain so until enough annual data has been collected. <sup>3</sup> There is no federal standard for nitrogen dioxide. Source: California Air Resources Board. <a href="http://www.arb.ca.gov">www.arb.ca.gov</a> Site accessed 6/2/04			

### Existing Sources of Criteria Air Pollutants

Many different sources of criteria air pollutants exist in Placer County. These sources can be divided into two categories, mobile and stationary/area sources. Mobile sources consist primarily of vehicles driven on and off roadways, as well as watercraft and other special mobile sources such as locomotives. Stationary/area sources include all other man-made emission sources. The CARB maintains an emission inventory of air pollutants for the State's air basins as well as for the counties inside those air basins. The most recent emission inventory for Placer County is shown in Table A-3. On-road mobile sources are the single largest source of ROG in Placer County and off-road mobile sources are the single largest source of NO<sub>x</sub>. Off-road mobile sources are sources such as aircraft, trains, and off-road equipment.

<b>TABLE A-3</b>				
<b>2003 ESTIMATED ANNUAL EMISSIONS SUMMARY FOR PLACER COUNTY</b>				
<b>(TONS/DAY)</b>				
<b>Source Category</b>	<b>ROG</b>	<b>CO</b>	<b>NO<sub>x</sub></b>	<b>PM<sub>10</sub></b>
<b>Stationary Sources</b>				
Fuel Combustion	0.41	1.59	3.25	0.17
Waste Disposal	0.17	-	-	-
Cleaning and Surface Coatings	2.56	-	-	-
Petroleum Production and Marketing	1.08	-	-	-
Industrial Processes	1.48	0.10	0.13	0.96
<b>Total Stationary Sources</b>	<b>5.70</b>	<b>1.69</b>	<b>3.37</b>	<b>1.13</b>
<b>Area-Wide Sources</b>				
Solvent Evaporation	3.01	-	-	-
Miscellaneous Processes	3.53	46.88	1.15	21.73
<b>Total Area-Wide Sources</b>	<b>6.54</b>	<b>46.88</b>	<b>1.15</b>	<b>21.73</b>
<b>Mobile Sources</b>				
On-Road Vehicles	9.06	87.29	13.75	0.41
Other Mobile	6.75	44.66	14.35	0.78
<b>Total Mobile Sources</b>	<b>15.80</b>	<b>131.96</b>	<b>28.09</b>	<b>1.19</b>
<b>Natural (Non-Anthropogenic) Sources</b>				
Total Natural Sources	0.02	0.34	0.01	0.06
<b>TOTAL</b>	<b>68.07</b>	<b>180.87</b>	<b>32.62</b>	<b>24.21</b>
Source: California Air Resources Board. Website accessed 6/2/04				

### Toxic Air Contaminants

Toxic Air Contaminants (TACs) are known to be highly injurious, even in small quantities. TACs are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic) adverse human health effects (i.e., injury or illness). There are hundreds of substances that can be toxic when inhaled, but air quality standards have not been set for most of them.

TACs can be emitted from a variety of common sources, including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. Natural source emissions include windblown dust and wildfires. Farms, construction sites, and residential areas can add to air toxic emissions. Research facilities can also be a source of toxic air contaminants. TACs include both



organic and inorganic chemical substances. Examples include certain chlorinated hydrocarbons, such as solvents, and certain metals and asbestos.

The proposed project site is the Northeast Roseville Tank Facility. No large TAC-producing sources currently exist on the property. Since the proposed project would not create new TAC receptors, the TAC analysis in this appendix concentrates on potential TACs that could be generated by the proposed project and the affect of those TACs on nearby receptors.

### Odors

Part of any air quality analysis includes an evaluation of whether odor impacts will occur as a result of the proposed project. The apparent presence of an odor depends on the specific characteristics of the odor itself, its concentration when it is emitted from a source, and its distance to a receptor. Odors can be generated by a variety of land uses, some of which are very common. Everyday sources of odors include land uses such as restaurants and dry cleaning facilities.

Since odor impacts cannot be quantified, and since the proposed project would not create any new odor receptors, an evaluation of potential odor impacts would consist of determining whether the proposed project will create odors and, if so, will those odors significantly affect existing receptors.

### Sensitive Receptors

Some individuals are considered to be more sensitive than others to air pollution. These “sensitive receptors” are individuals that are, for one reason or another, more likely to experience health impacts from exposure to air pollution. Reasons for greater sensitivity include existing health problems, proximity to an emission source, and duration of exposure to air pollutants. Land uses such as primary and secondary schools, convalescent homes, and hospitals are considered to be sensitive receptors to poor air quality because the very young, the old and the infirm are more susceptible to respiratory infections and other air quality related health problems than the general public. Residential uses are considered sensitive because people in residential areas are often at home for extended periods of time, allowing them to be exposed to pollutants for extended periods.

Because the project is near developed areas, sensitive receptors in the project vicinity consist of nearby residences that are in the jurisdiction of the City of Rocklin. Also, new development is proposed in the vicinity of the proposed project in the near future.

## **REGULATORY CONTEXT**

Air quality in Placer County is regulated by the USEPA, the CARB, and the PCAPCD (PCAPCD). These agencies develop rules or regulations to implement the goals or directives of legislative actions. Although USEPA regulations may not be superseded, both state and local regulations may be more stringent than the federal standards. In general, air quality evaluations are based on standards developed by the federal and State governments. Local agencies generally control individual stationary sources of air pollutants, while mobile sources of air pollutants are largely controlled through federal and State agencies.

## **Federal**

The USEPA is the federal agency responsible for setting and enforcing the federal ambient air quality standards for atmospheric pollutants. The EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives.

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, State, and local plan components and regulations to identify a strategy to reduce pollution, using a combination of performance standards and market-based programs.

## **State**

The CARB, a part of the California EPA, is responsible for the coordination and administration of both federal and State air pollution control programs within California. The CARB conducts research, sets State ambient air quality standards, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. The CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicle emissions. The CARB also has primary responsibility for the development of California's SIP, on which it works closely with the federal government and the local air districts.

## **Local**

The PCAPCD is the primary agency responsible for federal and State air quality standards in Placer County. On a regional scale, Placer County is part of the larger Sacramento Ozone Nonattainment Area that covers multiple air districts in the Sacramento Valley Air Basin (SVAB). All of the air districts in the Ozone Nonattainment Area work together to achieve the federal ozone standard in the SVAB. In order to demonstrate the ability to eventually meet these standards in the SVAB, the districts maintain the region's portion of the SIP for ozone. The PCAPCD's part of the SIP is a compilation of plans and regulations that govern how Placer County will do its part to comply with the federal Clean Air Act requirements to attain and maintain the federal ozone standards.

In June of 2004, the federal ozone standard was changed from a one-hour standard to an eight-hour standard. The districts of the Ozone Nonattainment Area had produced a Regional Ozone Attainment Plan (1994) to meet the one-hour standard. With the adoption of the eight-hour standard, the districts were required to develop a new SIP to meet the new standard. In the case of the Sacramento Ozone Nonattainment Area, the SIP must show attainment of the eight-hour standard by 2013. This SIP is still under development.

### Local Air District Rules

The PCAPCD has several rules that relate to the proposed project, which are summarized below:

#### *Rule 207 Particulate Matter*

A person shall not release or discharge into the atmosphere from any source or single processing unit, exclusive of sources emitting combustion contaminants only, particulate matter in excess of 0.1 grains per cubic foot of gas at standard conditions.

#### *Rule 218 Architectural Coatings*

1. Except as provided in Subsections (D)(2) and (D)(5) a person shall not sell or offer for sale, apply or manufacture for sale any architectural coating which at the time of sale or manufacture:
  - a. Contains more than 250 grams of VOC's per liter of coating excluding water and any colorant added to tint bases, or
  - b. Is recommended for use as a bituminous pavement sealer unless it is an emulsion-type coating.
2. A person shall not sell, offer for sale, apply or manufacture for sale any non-flat architectural coating which at the time of sale or manufacture has a VOC content excluding water and colorant added to tint bases in excess of the following:
  - a. 380 grams of VOC per liter of coating if manufactured prior to September 1, 1989.
  - b. 250 grams of VOC per liter of coating if manufactured on or after September 1, 1989.

#### *Rule 205 Nuisance*

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause to have a natural tendency to cause injury or damage to business or property.

### City of Roseville General Plan

The City of Roseville General Plan also contains language that is pertinent to air quality. The Air Quality Element of the General Plan, Chapter IV states the following goals:

#### GOALS:

#### AIR QUALITY

Goal 1 Improve Roseville's air quality by:

- a) Achieving and maintaining ambient air quality standards established by the U.S. Environmental Protection Agency and the California Air Resources Board; and,
- b) Minimizing public exposure to toxic or hazardous air pollutants and air pollutants that create a public nuisance through irritation to the senses (such as unpleasant odors).

Goal 2 Integrate air quality planning with the land use and transportation planning process.

Goal 3 Encourage the coordination and integration of all forms of public transport while reducing motor vehicle emissions through a decrease in the average daily trips and vehicle miles traveled and by increasing the commute vehicle occupancy rate by 50% to 1.5 or more persons per vehicle.

Goal 4 Increase the capacity of the transportation system, including the roadway system and alternate modes of transportation.

Goal 5 Provide adequate pedestrian and bikeway facilities for present and future transportation needs.

Goal 6 Promote a well-designed and efficient light rail and transit system.

Goal 7 While recognizing that the automobile is the primary form of transportation, the City of Roseville should make a commitment to shift from the automobile to other modes of transportation.

#### POLICIES DEVELOPED TO MEET THESE GOALS INCLUDE:

Policies: Air Quality - General

Implementation Measures

1. Cooperate with other agencies to develop a consistent and effective approach to air pollution planning

- Interagency Coordination
- Development Review Process
- Transportation System Management (TSM) Ordinance

2. Work with the PCAPCD to monitor air pollutants of concern on a continuous basis.

- Interagency Coordination
- Air Quality Funding

3. Develop consistent and accurate procedures for evaluating the air quality impacts of new projects.

- Interagency Coordination
- Development Review Process

4. As part of the development review process, develop mitigation measures to minimize stationary and area source emissions.

- Mitigation Strategies: Area and Stationary Sources

Policies: Air Quality, Transportation, and Circulation – Related Implementation Measures

5. Develop transportation systems that minimize vehicle delay and air pollution.

- Mitigation Strategies: Motor Vehicles

6. Develop consistent and accurate procedures for mitigating transportation emissions from new and existing projects.

- TSM Ordinance
- Air Quality Funding
- Mitigation Strategies: Motor Vehicles

7. Encourage alternative modes of transportation including pedestrian, bicycle, and transit usage.

- Mitigation Strategies: Motor Vehicle Alternatives

Policies: Air Quality - Land Use-Related Implementation Measures

8. Separate air pollution-sensitive land uses from sources of air pollution.

- -Mitigation Strategies: Land Use

9. Encourage land use policies that maintain and improve air quality.

- Interagency Coordination
- Mitigation Strategies: Land Use

Policies: Air Quality - Energy Conservation-Related Implementation Measures

10. Conserve energy and reduce air emissions by encouraging energy efficient building designs and transportation systems.

- -Development Review Process
- Mitigation Strategies: Area and Stationary Sources
- Mitigation Strategies: Motor Vehicles
- Mitigation Strategies: Motor Vehicle Alternatives
- Mitigation Strategies: Land Use

Policies: Air Quality - Hazardous Materials-Related Implementation Measures

11. Protect City residents from the risks involved in the transport, distribution, storage, use, and disposal of hazardous materials.

- Interagency Coordination
- Development Review Process
- Hazardous Materials Regulation

City of Rocklin General Plan

The City of Rocklin General Plan also contains language that is pertinent to air quality. The Circulation Element of the General Plan states the following goal:

“To provide and maintain a safe and efficient system of streets, highways, and public transportation to meet community needs and promote sound land use.”

Policies developed to meet this goal include:

“To coordinate and cooperate with the Placer County Air Pollution District in the development of stationary and mobile source control measures affecting the City of Rocklin, to be included in the California Clean Air Act Plan for Placer County.”

**IMPACTS AND MITIGATION MEASURES****Methods of Analysis**

The analysis in this section focuses on the nature and magnitude of the change in the air quality environment due to construction and operation of the proposed project. Air pollutant emissions associated with the proposed project would result mostly from construction activities. Emissions could also possibly be generated by operation of the proposed project. The net increase in emissions generated by these activities have been estimated and compared to thresholds of significance recommended by the PCAPCD.

The daily emissions associated with construction and operational activities have been calculated using the URBEMIS 2002 computer model developed for the CARB. This model is the newest model available and uses emission factors that have superseded those in the URBEMIS7G model.

**Standards of Significance**

For the purposes of this Appendix, air quality impacts are considered significant if the proposed project would:

- contribute substantially to an existing or projected air quality violation;
- expose sensitive receptors to substantial pollutant concentrations;
- expose sensitive receptors to toxic air contaminants that would adversely impact their health and well being;
- conflict with or obstruct implementation of the applicable air quality plan; or
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard.

As the agency principally responsible for comprehensive air pollution control in the SVAB, the PCAPCD recommends that projects should be evaluated in terms of air pollution control thresholds established by the PCAPCD. These thresholds were developed by the PCAPCD to provide quantifiable levels that projects can be compared to. The City of Roseville uses the PCAPCD's thresholds that are recommended at the time that development projects are proposed to assess the significance of quantifiable impacts. The following quantifiable thresholds are currently

recommended by the PCAPCD and are used to determine the significance of construction-related and operational air quality impacts associated with the proposed project:

- 82 pounds per day of ROG;
- 82 pounds per day of NO<sub>x</sub>;
- 550 pounds per day of CO; and
- 82 pounds per day of PM<sub>10</sub>.

<b>Impact 1</b>	<b>Demolition of the existing 6 MG tank could generate emissions of criteria pollutants.</b>
Applicable Policies and Regulations	PCAPCD Thresholds of Significance
Significance with Policies and Regulations	Significant
Mitigation Measures	1: Minimize Dust and Combustion Emissions During Construction and Demolition
Significance After Mitigation	Less than significant

As part of the proposed project, the existing 6 MG tank is proposed for demolition. A new 7.25 MG tank would be built to replace the tank to be demolished. Demolition activity has the potential to generate emissions of ROG, NO<sub>x</sub> and PM<sub>10</sub>.

The 6 MG tank to be demolished is constructed of pre-stressed, reinforced concrete. Demolition of the tanks would be accomplished by hydraulic demolition excavator, wrecking ball and crane, or similar equipment. Demolition material would then be transported from the site using excavating equipment and haul trucks. PM<sub>10</sub> would be produced during each of these activities as the concrete material is disturbed. The construction equipment utilized for the demolition, such as the excavator, crane, tractors, and heavy-duty trucks, would generate ROG and NO<sub>x</sub>.

Since the URBEMIS 2002 model does not have inputs specific to a concrete tank, the tank's demolition emissions were approximated by modeling a building with a volume of 19,687.5 cubic feet. The modeled demolition emissions are shown in Table A-4 below. As shown, demolition emissions would exceed PCAPCD daily thresholds of significance. This would be a significant impact.

Because there are residences near the site of the proposed project that could be affected by high concentrations of particulate matter, the following mitigation will be incorporated. This measure will ensure that concentrations of PM<sub>10</sub> are minimized during demolition of the existing water tank. Mitigation Measure 1 will effectively reduce PM<sub>10</sub> concentrations from demolition activities associated with removal of the existing 6 MG tank. NO<sub>x</sub> emissions during the demolition phase, while reduced by Mitigation Measure 1, would not be mitigated below the PCAPCD threshold of 82 pounds-per-day. Therefore, the measure contains the requirement that the City contribute to PCAPCD's Offsite Air Quality Mitigation Fund. This contribution to the fund would help

implement NO<sub>x</sub> reduction programs in the region. Implementation of Mitigation Measure 1 would reduce the potential impact of tank demolition to *less than significant*.

Emissions Source	Peak Day Emissions in Pounds Per Day			
	ROG	NO <sub>x</sub>	CO	PM <sub>10</sub>
<b>Demolition Phase</b>				
Fugitive Dust	-	-	-	8.27
Off-Road Diesel	16.43	112.74	132.77	5.05
On-Road Diesel	1.66	27.59	6.13	0.87
Worker Trips	0.18	0.22	3.87	0.02
<b>TOTAL</b>	<b>18.27</b>	<b>140.55</b>	<b>142.77</b>	<b>14.21</b>
APCD Thresholds	82.00	82.00	550.00	82.00
Significant Impact?	No	Yes	No	No

Source: EIP Associates, 2003. Air quality model outputs are provided in Appendix D.

#### *Mitigation Measure 1*

- (a) *The applicant shall ensure that all exterior surfaces of structures are wetted during demolition. Structural debris shall be completely wetted during any period when the material is being disturbed, such as during the removal from the construction site.*
- (b) *Prime contractors shall submit to the APCD a comprehensive inventory (i.e., make, model, year, emission rating) of all the heavy-duty off-road equipment (50 brake horsepower or greater) that will be used an aggregate of 40 or more hours for the construction project. The inventory shall be updated monthly throughout the duration of project construction, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the prime contractors shall provide the APCD with the anticipated construction timeline including start date, and name and telephone number of the project manager and onsite foreman (used for enforcement purposes).*
- (c) *Heavy-duty off-road vehicles to be used in the construction of the project, including vehicles owned and/or leased by the prime contractors and those operated by subcontractors, shall achieve a project-wide fleet average 20 percent reduction of NO<sub>x</sub> and 45 percent particulate reduction compared to the most recent ARB fleet average. To calculate this average, to determine what constitutes "late model", or to determine compliance with required reduction requirements, please refer to the Construction Mitigation Calculator found on the Sacramento AQMD's website.<sup>25</sup> Acceptable options for reducing emissions may include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available and cost-effective.*
- (d) *Construction equipment operators shall shut off equipment when not in use to avoid unnecessary idling. As a general rule, vehicle idling should be kept below 10 minutes.*

25 The Sacramento Metropolitan AQMD website is located at [www.airquality.org](http://www.airquality.org).

- (e) *Contribute to the PCAPCD Offsite Air Quality Mitigation Fund an amount deemed appropriate by PCAPCD criteria to mitigate for project NO<sub>x</sub> emissions that exceed PCAPCD thresholds.*

The reader should note that when Mitigation Measure 1 (c) is applied to the demolition phase of the project, off-road diesel emissions would be reduced by 20 percent. Total daily NO<sub>x</sub> emissions would equal approximately 118 pounds per day. This is 36 pounds above the PCAPCD threshold of significance. Demolition activities for the proposed project are estimated to take place over a 13-day period. Consequently, 468 total pounds of NO<sub>x</sub> would be generated in excess of PCAPCD standards over the construction period.

The PCAPCD currently implements an Offsite Air Quality Mitigation Fund for applicants to pay into when a project exceeds PCAPCD standards. The money collected from the applicants is used to fund NO<sub>x</sub> reduction programs in the County and the larger Sacramento Ozone Nonattainment Area. Currently, the PCAPCD has calculated a “price per ton” of NO<sub>x</sub> to be \$13,600. Since 468 pounds of NO<sub>x</sub> represents 23 percent of one ton, \$3,128 would be paid into the PCAPCD fund to mitigate the impact from demolition activity.

<b>Impact 2</b>	<b>Construction of the new water tank could generate emissions of criteria pollutants.</b>
Applicable Policies and Regulations	PCAPCD Thresholds of Significance
Significance with Policies and Regulations	Significant
Mitigation Measures	Minimize Dust and Combustion Emissions During Construction and Demolition
Significance After Mitigation	Less than significant

Equipment used for the construction of the new tank would most likely be diesel-fueled. This equipment would produce ROG, NO<sub>x</sub>, and PM<sub>10</sub> during use. PM<sub>10</sub> emissions could also be generated by earthwork that would occur prior to construction of the actual 7.25 MG tank. This would include the removal of a berm and excavation of an open pit to approximately 350 feet msl. Any excess material produced as a result of the earthwork would be hauled off-site for disposal. There would be no emissions from the use of architectural coatings since the application of exterior paint is not planned for the new tank.

As discussed in Impact 1, URBEMIS 2002 model does not have inputs specific to a concrete tank, so the tank’s construction emissions were approximated by modeling a building with a volume equivalent to that of the tank. Since the specific types and numbers of construction equipment are not known, equipment was estimated based on other projects of similar size. The modeled construction emissions are shown in Table A-5. As shown, construction emissions would exceed PCAPCD daily thresholds of significance for NO<sub>x</sub>. All other pollutants of concern would be below applicable thresholds. With implementation of the following measure, the impact would be considered *less than significant*.



*Mitigation Measure 2:*

*Implement Measure to Minimize Dust and Combustion Emissions During Construction and Demolition.*

This mitigation measure requires off-road construction equipment to reduce NO<sub>x</sub> 20 percent below the ARB fleet average. There are a number of ways that the applicant could comply with this requirement, such as through the use of a lean-NO<sub>x</sub> or diesel oxidation catalyst. Based on air quality modeling conducted for the proposed project, when a 20 percent NO<sub>x</sub> reduction is applied to the anticipated off-road equipment in the URBEMIS model, emissions of NO<sub>x</sub> for the construction phase are reduced below the PCAPCD significance threshold of 82 pounds per day for NO<sub>x</sub>. Therefore, with implementation of mitigation measure, construction NO<sub>x</sub> emissions would be reduced to a *less-than-significant level*.

Emissions Source	Peak Day Emissions in Pounds Per Day			
	ROG	NO <sub>x</sub>	CO	PM <sub>10</sub>
<b>Grading Phase</b>				
Site Grading	--	--	--	11.83
Off-Road Diesel Equipment	5.40	37.59	43.23	1.69
Construction Worker Trips	0.01	0.01	0.14	-
<b>TOTAL</b>	<b>5.41</b>	<b>37.60</b>	<b>43.37</b>	<b>13.52</b>
APCD Thresholds	82.00	82.00	550.00	82.00
Significant Impact?	No	No	No	No
<b>Tank Construction Phase</b>				
Tank Construction Off-Road Diesel Equipment	14.54	97.96	117.59	4.26
Tank Construction Worker Trips	1.37	0.83	17.46	0.20
Architectural Coatings Off-Gas	-	--	--	--
Architectural Coatings Worker Trips	-	-	-	-
Asphalt Paving Off-Gas	0.06	--	--	--
Asphalt Paving Off-Road Diesel Equipment	-	-	-	-
Asphalt Paving On-Road Diesel Vehicles	0.01	0.20	0.04	-
Asphalt Paving Worker Trips	-	-	-	-
<b>TOTAL</b>	<b>15.98</b>	<b>98.99</b>	<b>135.10</b>	<b>4.37</b>
APCD Thresholds	82.00	82.00	550.00	82.00
Significant Impact?	No	Yes	No	No

Source: EIP Associates, 2003. Air quality model outputs are provided in Appendix D.

<b>Impact 3</b>	<b>Temporary odor impacts may be created during construction of the Proposed Project.</b>
Applicable Policies and Regulations	PCAPCD Rule 205
Significance with Policies and Regulations	Less than significant
Mitigation Measures	None required
Significance After Mitigation	Not applicable

During construction of the proposed project, existing nearby residences may experience some odor impacts as a result of fuel being burned by construction equipment. Odors may also occur due to the chemicals that will initially be used to treat and disinfect the new tank. Any odors from these chemicals will be reduced or eliminated once the tank is filled. Since the offensiveness of a perceived odor is subjective and can vary from person to person, potential odor impacts are difficult to estimate. However, any odor impacts that do occur as a result of construction would be temporary.

PCAPCD *Rule 205 – Nuisance* would apply to construction activity associated with the Proposed Project. This rule prohibits any source from discharging material that could cause annoyance to, or endanger the comfort of, the public. Since Rule 205 is enforced on a complaint basis, nearby residents would have recourse if construction activities would create offensive odors.

Since any odor impacts created by construction would be temporary, and since PCAPCD Rule 205 regulates nuisances such as odors, the proposed project would have a *less than significant impact*.

<b>Impact 4</b>	<b>Operations of the Proposed Project would not create emissions of criteria pollutants or TACs.</b>
Applicable Policies and Regulations	AB 2588
Significance with Policies and Regulations	No impact
Mitigation Measures	None required
Significance After Mitigation	Not applicable

Criteria emissions are generated through processes such as the burning of fuel or through the use of products that contain organic compounds. TACs, likewise, are generated through specific processes. Essentially, the proposed project would be a stationary receptacle whose sole purpose would be to contain water for use by the City of Roseville. As such, the proposed project, once built, would not require any processes to occur that would generate criteria pollutants or TACs. Consequently the Project would have *no impact*.

<b>Impact 5</b>	<b>The proposed project would not create a cumulatively considerable impact.</b>
Applicable Policies and Regulations	PCAPCD Thresholds of Significance
Significance with Policies and Regulations	Less than significant
Mitigation Measures	None required
Significance After Mitigation	Not applicable

As discussed in Impact 4, the proposed project, once built, would not have the capacity to generate criteria emissions or TACs. Consequently, over the long term the proposed project would not contribute to levels of criteria pollutants for which the region is in non-attainment, nor would the proposed project contribute any TAC emissions that could combine with TACs from other sources to impact human health. Because the Proposed Project is benign and would not produce emissions that could combine with other emission sources to create a significant impact, the Project would have *no cumulative impact*.



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**APPENDIX B**

**NOISE TECHNICAL STUDY**

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## APPENDIX B

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### NOISE TECHNICAL STUDY

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This section describes the existing noise environment in the area of the proposed project and the regulatory programs or adopted plans that shape the noise environment. The section also analyzes the effects of the project on the existing and future noise environment. Topics addressed in this section include:

- construction-related noise impacts to existing receptors; and
- any noise impacts from the operations of the proposed project on existing or future development in the area.

#### **ENVIRONMENTAL SETTING**

The area around the project site has relatively little noise. Noise that does exist at the project site includes the typical noise associated with residential uses, traffic noise on local roads, and intermittent noise from activity from a nearby playground. Nearby periodic construction activities also contribute to the noise environment at the site.

#### **Fundamentals of Sound and Environmental Noise**

Sound can be described in terms of amplitude (loudness) and frequency (pitch). The standard unit of sound amplitude measurement is the decibel (dB). The decibel scale is a logarithmic scale that describes the intensity of the pressure vibrations that make up a sound. The pitch of the sound is correlated to the frequency of the sound's pressure vibration. Because humans are not equally sensitive to a given sound level at all frequencies, a special scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) does this by placing more importance on frequencies that are more noticeable to the human ear.

Noise is typically defined as unwanted sound. A typical noise environment consists of a base of steady "background" noise that is made up of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These can vary from an occasional aircraft or train passing by to virtually continuous noise from, for example, traffic on a major highway. Table B-1 lists representative noise levels for the environment.

Several rating scales have been developed to analyze the adverse effect of noise on people. Since environmental noise fluctuates over time, these scales consider that the effect of noise upon people is largely dependent upon the volume of the noise, as well as the time of day when the noise occurs. Those that are applicable to this analysis are as follows:

Table B-1

## Representative Environmental Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	—110—	Rock Band
Jet Fly-over at 100 feet		
	—100—	
Gas Lawnmower at 3 feet		
	—90—	
		Food Blender at 3 feet
Diesel Truck going 50 mph at 50 feet	—80—	Garbage Disposal at 3 feet
Noisy Urban Area during Daytime		
Gas Lawnmower at 100 feet	—70—	Vacuum Cleaner at 10 feet
Commercial Area		Normal Speech at 3 feet
Heavy Traffic at 300 feet	—60—	
		Large Business Office
Quiet Urban Area during Daytime	—50—	Dishwasher in Next Room
Quiet Urban Area during Nighttime	—40—	Theater, Large Conference Room (background)
Quiet Suburban Area during Nighttime		
	—30—	Library
Quiet Rural Area during Nighttime		Bedroom at Night, Concert Hall (background)
	—20—	
		Broadcast/Recording Studio
	—10—	
Lowest Threshold of Human Hearing	—0—	Lowest Threshold of Human Hearing

Source: California Department of Transportation 1998.

- $L_{eq}$ , the equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the  $L_{eq}$  of a time-varying noise source and that of a steady noise source are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
- $L_{dn}$ , the Day Night Average Level, is a 24-hour average  $L_{eq}$  with a 10 dBA “weighting” added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the nighttime.
- $L_{max}$ , the maximum instantaneous noise level experienced during a given period of time.

Noise caused by natural sources and human activities is usually well represented by median noise levels during the day, night, or over a 24-hour period. Environmental noise levels are generally considered low when the  $L_{eq}$  is below 60 dBA, moderate in the 60-to 70-dBA range, and high above 70 dBA. Examples of settings with low daytime background noise levels are isolated, natural settings that can provide noise levels as low as 20 dBA and quiet, suburban, residential streets that can provide noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise settings are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most people living or working in urban residential or residential-

commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA) accept the higher noise levels commonly associated with these land uses.

When evaluating changes in community noise levels, or  $L_{dn}$ , a difference of 3 dBA is a barely perceptible increase to most people. A 5 dBA increase is readily noticeable, while a difference of 10 dBA would be perceived as a doubling of loudness.

Noise levels from a particular source decline as distance to the receptor increases. Other factors, such as the weather or the shielding of a receptor from a noise source, can also help intensify or reduce the noise level at any given location. For roadway noise, a commonly used rule of thumb is that for every doubling of distance from the source, the noise level is reduced by about 3 dBA at acoustically “hard” locations (i.e., the area between the noise source and the receptor is nearly complete asphalt, concrete, hard-packed soil, or other solid materials) and 4.5 dBA at acoustically “soft” locations (i.e., the area between the source and receptor is normal earth or has vegetation, including grass). Noise from stationary or point sources is reduced by about 6 to 7.5 dBA for every doubling of distance at acoustically hard and soft locations, respectively. Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA. The manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows. The exterior-to-interior reduction of newer residential units is generally 30 dBA or more.

### **Fundamentals of Groundborne Vibration**

Vibration is sound radiated through the ground. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. The ground motion caused by vibration is measured in the U.S. as vibration decibels (VdB).

The background vibration velocity level in residential and educational areas is usually around 50 VdB. Groundborne vibration is normally perceptible to humans at approximately 65 VdB. A vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for most people.

Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. The general human response to different levels of groundborne vibration velocity levels is described in Table B-2 below.

### **Existing Sensitive Receptors**

The proposed project site is located on the side of a hill. Existing receptors at the project site consist of residences located on the hillside above the site of the proposed project to the south. These are the nearest receptors and are approximately 300 yards away from the site. Receptors also exist below the project site to the west. A busy road runs adjacent to these residences, running between the homes and the project site, which is approximately 1/4 - 1/2 mile away.



**Table B-2****Human Response to Different Levels of Groundborne Vibration**

<b>Vibration Velocity Level</b>	<b>Human Reaction</b>
65 VdB	Approximate threshold of perception for many people.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.

Source: Federal Railroad Administration 1998.

**Existing Ambient Noise Levels**

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA.

Sound levels were measured at three locations around the project site. These measurements show that the closest receptors to the project site experience relatively quiet conditions, while the next closest receptors below the project site experience much higher noise levels due to traffic noise. The noise  $L_{eq}$  measurements are shown below in Table B-3.

**Table B-3****Existing Daytime Noise Levels at Selected Locations**

<b>Noise Measurement Location</b>	<b>Primary Noise Sources</b>	<b><math>L_{eq}</math></b>
Playground near project site	Very light traffic	46.2
Residential homes just south of playground and project site.	Very light traffic	46.2
Residential below project site, 1/2 - 1/4 mile away.	Heavy traffic	69.1

Source: EIP Associates, 2005.

**REGULATORY SETTING****Federal and State**

There are no federal regulations related to noise that apply to the proposed project. While there are no specific State regulations related to noise that apply to the proposed project, the California State Office of Planning and Research has published General Plan Guidelines (1998) for use by local jurisdictions. The General Plan Guidelines contain recommended community noise exposure levels for various land uses. Local jurisdictions do not have to adopt these noise exposure levels into their general plans, but the recommendations do provide a useful tool for jurisdictions when developing their general plan noise elements.

## Local

### Cities of Roseville and Rocklin General Plans

The proposed project, while it would occur on land owned by the City of Roseville, is actually physically located within the boundaries of the City of Rocklin. Consequently, regulations or policies concerning noise in both city General Plans and Municipal Codes are considered in this Appendix.

The general plan noise elements of the cities of Rocklin and Roseville are mechanisms for incorporating noise control into the planning process. It is a tool that City planners use to achieve and maintain consistent noise levels for existing and proposed land uses.

For residential uses, both Noise Elements recommend “normally acceptable” noise levels as found in the State of California Office of Planning and Research’s General Plan Guidelines. The limit of this normally acceptable range is 60  $L_{dn}$ . The City of Roseville also specifies an interior noise standard of 45  $L_{dn}$  for residential uses. In Rocklin’s noise element, this 60  $L_{dn}$  standard applies to all sources of noise. In Roseville’s General Plan, the 60  $L_{dn}$  standard applies to transportation noise only. For non-transportation stationary source noise, the Roseville General Plan specifies hourly  $L_{eq}$  levels of 50 dB and maximum levels of 70 dB from 7 a.m. to 10 p.m. and hourly  $L_{eq}$  levels of 45 dB and maximum levels of 65 dB from 10 p.m. to 7 a.m.

There are no ordinances in the Rocklin Municipal Code that pertain to noise that would apply to the proposed project. The Roseville Municipal Code has provisions related to acceptable noise levels, but Section 9.24.030 (Exemptions) exempts short-term construction noise from these provisions as long as certain measures are taken. Section 9.24.030(G) states that noise is exempt from “Private construction (e.g., construction, alteration or repair activities) between the hours of seven a.m. and seven p.m. Monday through Friday, and between the hours of eight a.m. and eight p.m. Saturday and Sunday, are allowed provided that all construction equipment shall be fitted with factory installed muffling devices and that all construction equipment shall be maintained in good working order.”

## **IMPACTS AND MITIGATION MEASURES**

### Methods of Analysis

The analysis in this section focuses on the nature and magnitude of the change in the noise environment associated with implementation of the proposed project. The primary sources of noise associated with the project would be temporary noise generated during demolition and construction activities. Secondary sources of noise would include any new noise generated during operations of the proposed project. The increase in noise levels and groundborne vibration associated with construction activities have been quantitatively estimated using methods discussed below. The levels are then compared to applicable noise standards and thresholds of significance. Potential noise from operations of the Proposed Project is discussed qualitatively to determine whether applicable standards would be exceeded.

Construction noise levels were estimated using data published by the USEPA. The USEPA has identified typical noise levels for construction equipment that will be used during construction of the

reservoir replacement. Potential noise levels from construction are identified for existing noise receptors in the Project area.

**Standards of Significance**

For purposes of this Appendix, impacts are considered significant if the proposed project would:

- generate or expose people to noise levels in excess of the standards established in the local general plans or noise ordinances;<sup>26</sup>
- generate or expose people to excessive groundborne vibration levels;<sup>27</sup> or
- cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.<sup>28</sup>

<b>Impact 1</b>	<b>Demolition and construction activity would generate temporary noise.</b>
Applicable Policies and Regulations	City of Roseville and Rocklin General Plans
Significance with Policies and Regulations	Significant
Mitigation Measures	Limit Construction Activities to Daytime Hours
Significance After Mitigation	Less-than-significant

One of the existing tanks on the project site is slated for demolition. The tank is constructed of pre-stress concrete and would be demolished with hydraulic demolition excavator, wrecking ball and crane, or similar equipment. Once demolished, the concrete material would be removed from the site with haul trucks. This activity would create substantial noise. Construction of the new tank would create noise as well, primarily from construction equipment used for grading and fabrication. Table B-4 and Table B-5, below, show noise ranges for construction equipment and typical outdoor construction noise levels by phase.

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26. The City General Plan Noise Elements of Rocklin and Roseville prescribe a “normally acceptable” noise level for residential development of no more than 60 Ldn for transportation sources. Additionally, the City of Roseville specifies hourly Leq levels of 50 dB and maximum levels of 70 dB from 7 a.m. to 10 p.m. and hourly Leq levels of 45 dB and maximum levels of 65 dB from 10 p.m. to 7 a.m

27. While the CEQA Guidelines do not define levels at which groundborne vibration is considered “excessive”, the Federal Railway Administration has published vibration impact thresholds for sensitive buildings and residences of 80 VdB. This 80 VdB threshold will be used for the purposes of this section.

28. While the City of Rocklin focuses its standards on new development and does not have noise standards for existing development, the Noise Element of the City of Roseville’s General Plan indicates that its noise standards apply to both new and existing development. Consequently, the applicable transportation and non-transportation noise source standards will apply to existing receptors as well.

Table B-4

## Noise Ranges of Typical Construction Equipment

Construction Equipment	Noise Levels in dBA $L_{eq}$ at 50 feet <sup>1</sup>
Front Loader	73-86
Trucks	82-95
Cranes (moveable)	75-88
Cranes (derrick)	86-89
Vibrator	68-82
Saws	72-82
Pneumatic Impact Equipment	83-88
Jackhammers	81-98
Pumps	68-72
Generators	71-83
Compressors	75-87
Concrete Mixers	75-88
Concrete Pumps	81-85
Back Hoe	73-95
Pile Driving (peaks)	95-107
Tractor	77-98
Scraper/Grader	80-93
Paver	85-88

Notes:

1. Machinery equipped with noise control devices or other noise-reducing design features does not generate the same level of noise emissions as that shown in this table.

Source: U.S. EPA, 1971.

Table B-5

## Typical Outdoor Construction Noise Levels

Construction Phase	Noise Levels at 50 Feet (dBA $L_{eq}$ )	Noise Levels at 50 Feet with Mufflers (dBA $L_{eq}$ )
Ground Clearing	84	82
Excavation, Grading	89	86
Foundations	78	77
Structural	85	83
Finishing	89	86

Source: U.S. EPA, 1971.

The nearest residences are approximately 200 feet from the proposed project site. According to the above tables, construction activities could create temporary noise levels up to 98 dBA at 50 feet from the noise source. Since sound attenuates at approximately 6 dBA per doubling of distance, construction noise levels could reach 86 dB at the nearest receptors. This would exceed the City of Rocklin “acceptable” noise standard of 60  $L_{dn}$  for residential development.

While demolition and construction activity would create noise levels in excess of City of Rocklin standards, because the project site is owned by the City of Roseville, the City of Rocklin’s Noise Standards do not apply. Further, construction noise would be temporary and in compliance with the City of Roseville Municipal Code, which exempts construction noise as long as certain measures are taken to reduce noise from construction machinery, such as factory installed muffling devices and other measures identified in the ordinance. To ensure that construction activities comply with the City of Roseville Noise Ordinance, and to ensure that noise does not occur during recognized sleep hours, implementation of the following Noise Mitigation Measure would reduce impacts to *less-than-significant levels*.

*Noise Mitigation Measure*

*Construction activities shall only occur between the hours of 7 a.m. and 6 p.m. Monday through Friday.*

<b>Impact 2</b>	<b>Demolition and construction activities would create groundborne vibration.</b>
Applicable Policies and Regulations	n/a
Significance with Policies and Regulations	Less than significant
Mitigation Measures	None required
Significance After Mitigation	Not applicable

Heavy-duty equipment used during demolition and construction activities would create groundborne vibration that could impact those residences nearest the site of the proposed project. Table B-6, below, shows vibration source levels for construction equipment. The nearest residences are approximately 200 feet from the project site. According to Table B-6, maximum levels of 75 VdB could be experienced at 100 feet if a bulldozer is used. Consequently, residences over 100 feet away would not be exposed to vibration levels that would exceed the 80 VdB threshold of significance. Also, in accordance with Mitigation Measure 1, construction activities will be limited to the hours of 7 a.m. and 6 p.m. Thus, construction would not occur during recognized sleep hours or exceed thresholds of significance, and there would be a *less-than-significant* impact.

<b>Impact 3</b>	<b>Operation of the project would not create noise impacts.</b>
Applicable Policies and Regulations	Roseville and Rocklin General Plan Noise Elements
Significance with Policies and Regulations	No impact
Mitigation Measures	None required
Significance After Mitigation	Not applicable

Once the proposed project is constructed, its function will be to store water for use by the City of Roseville. No noise-generating operations will be needed for the tank to perform this function. Periodic service and maintenance trips to the project site may also create noise for limited amounts of time. However, since the new 7.25 MG tank will be replacing an existing tank, it is unlikely that there would be an increase in the number of service visits to the site.

Since the new tank would not produce noise while in operation, and since all other conditions would not change significantly, there would be *no impact* from the proposed project during operation.

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**Table B-6**

**Vibration Source Levels for Construction Equipment**

Construction Equipment	Approximate VdB				
	25 Feet	50 Feet	60 Feet	75 Feet	100 Feet
Large Bulldozer	87	81	79	77	75
Loaded Trucks	86	80	78	76	74
Jackhammer	79	73	71	69	67
Small Bulldozer	58	52	50	48	46

Source: Federal Railroad Administration, 1998; and EIP Associates, 2003.

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APPENDIX C

STATE HISTORICAL PRESERVATION OFFICE CORRESPONDENCE

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**Transmittal**

To: Milford Wayne Donaldson

Date: September 09, 2004

State Historic Preservation Office

Office of Historic Preservation, Department of Parks and Recreation

P.O. Box 942896

Sacramento, CA 94296-0001

Job Name: NE Roseville Tank Project (EPA 040729A) Job # 10903-00

We are sending the following:

Attached

Under Separate Cover

1. Archaeological Review and Reconnaissance of the City of Roseville Water Facilities Project
2. Project description

Comments

In response to your letter of August 12, 2004 I am sending the attached report. You also requested that more information be provided as to the undertaking (i.e the type of ground disturbance). The site would be excavated to a maximum depth of 7 feet to allow a portion of the tank to be located below grade. See attached Draft Project Description.

If any further information is required to concur with the recommended finding of effect for this project please let me know. Ph (916) 325-4800.

Thank you

Via

Messenger

First Class Mail

Parcel Service

Overnight Mail

Other \_\_\_\_\_

Transmitted

As Requested

For Your Use

For Approval

For Review and Comments

\_\_\_\_\_

Name Amber Grady

- 1200 Second Street, Suite 200, Sacramento, CA 95814 Telephone 916.325.4800 Facsimile 916.325.4810 email [sac@eipassociates.com](mailto:sac@eipassociates.com)
- 353 Sacramento Street, Suite 1000, San Francisco, CA 94111 Telephone 415.362.1500 Facsimile 415.362.1954 email [sf@eipassociates.com](mailto:sf@eipassociates.com)
- 300 Esplanade Drive, Suite 900, Oxnard, CA 93030 Telephone 805.981.3993 Facsimile 805.981.3994 email [vc@eipassociates.com](mailto:vc@eipassociates.com)
- 12301 Wilshire Boulevard, Suite 430, Los Angeles, CA 90025 Telephone 310.268.8132 Facsimile 310.268.8175 email [la@eipassociates.com](mailto:la@eipassociates.com)





27 July 2004

Project Review and Compliance Unit  
Office of Historic Preservation  
P.O. Box 942896  
Sacramento, CA 94296-0001

SUBJECT: NE Roseville Tank Project

To whom it may concern,

EIP Associates is preparing an EA/EIR for the NE Roseville Tank Project. The project proposes to build a new water tank adjacent to an existing approximately 35 year old water tank which will be demolished upon completion of the new tank. The project site is owned by the City of Roseville and is located in the City of Rocklin. Compliance with NEPA requirements for environmental review is necessary because the City of Roseville (the project proponent) has applied to the USEPA for partial federal funding of the proposed project.

The North Central Information Center (NCIC) performed a records search. Three records of archaeological studies of the project area and one study of the adjacent area are on record at the NCIC. The search determined that "the proposed project area contains no recorded Native American or historic-period archaeological resources listed." Three sites are located in the area surrounding the project site. The proposed project is limited to the construction of one tank and the demolition of another. No structures over 45 years old are located on the project site or would be affected by the proposed project.

From the information obtained it appears that no historic properties would be affected by the proposed project; therefore, Section 106 compliance would not be required. Confirmation is sought that Section 106 compliance would not be required for the proposed project. If additional information is required please call me at (916) 325-4800.

Sincerely,

A handwritten signature in cursive script that reads "Amber Grady".

Amber Grady  
Associate Manager

Attached:

Maps  
Photo  
NCIC Record Search

July 9, 2004

Mr. David McCullough  
North Central Information Center  
Department of Anthropology  
California State University, Sacramento  
6000 J Street  
Adams Building #103  
Sacramento, CA 95819-5162

SUBJECT: Records Search for NE Roseville Tank Project

Dear Mr. McCullough:

This letter serves as a request for the North Central Information Center, Department of Anthropology, to prepare a records search for the NE Roseville Tank Project located in the City of Rocklin in Placer County. We are in the process of preparing an Environmental Impact Report for this project and request that a cultural resource records search be performed to identify if any significant historic or prehistoric resources have been documented on the project site.

The project site is located in the City of Rocklin. The project site is identified on the attached maps.

Please send the invoice to EIP Associates, 1200 2<sup>nd</sup> Street, Ste. 200, Sacramento, CA 95814; Attention Amber Grady (Project # 10903-00). If you have any questions, please feel free to contact me at (916) 325-4800.

Sincerely,

Amber Grady  
Associate Manager

Attachments

**OFFICE OF HISTORIC PRESERVATION  
DEPARTMENT OF PARKS AND RECREATION**

P.O. BOX 942896  
SACRAMENTO, CA 94296-0001  
(916) 653-6624 Fax: (916) 653-9824  
calshpo@ohp.parks.ca.gov  
www.ohp.parks.ca.gov

**RECEIVED**

OCT 20 2004

**EIP Associates**

October 14, 2004

Reply to: EPA040729A

Amber Grady  
EIP Associates  
1200 Second Street, Suite 200  
Sacramento, California 95814

RE: NE Roseville Tank Project/Review of Archaeological Study and Results

Dear Ms. Grady:

Thank you for submitting the additional documentation requested in our letter of August 12, 2004, regarding the proposed installation of a new steel water tank adjacent to an existing tank that will be demolished upon completion of the new tank. As described in your letter, the replacement storage reservoir would be constructed of prestressed reinforced concrete, and the storage reservoir construction would include limited earthwork, including removal of a berm.

The cultural study performed by Wohlgemuth and Carpenter (1997), with contributions by Stephen J. Mikesell, identified a group of properties associated with water delivery in the Rocklin-Roseville areas together with an isolated basalt cobble pestle and mine tailings. None of the sites identified in the project area of potential effects (APE) were found to be National Register (NR) eligible.

I have reviewed the supporting documentation, and concur with your finding that the group of properties identified as the water conveyance system and storage features, the mine tailings, and the isolated basalt cobble pestle, do not appear to be eligible for the NR, and I concur with your finding of no historic properties affected.

Thank you for considering historic properties during project planning. If you have any questions, please contact Dana Supernowicz at (916) 653-4533 or by e-mail at [dsupe@ohp.parks.ca.gov](mailto:dsupe@ohp.parks.ca.gov).

Sincerely,

Milford Wayne Donaldson  
State Historic Preservation Officer