INITIAL STUDY / ENVIRONMENTAL ASSESSMENT

FOR THE

BIG BEAR DEPARTMENT OF WATER AND POWER

WATER SYSTEM CAPITAL IMPROVEMENT PROGRAMS

Prepared for:

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1.0 PURPOSE AND NEED OF THE PROPOSED PROJECT

1.1 INTRODUCTION

The City of Big Bear Lake Department of Water and Power (Athe DWP or Department@) is a municipal water purveyor serving the Big Bear Lake/Moonridge, Sugarloaf/Erwin Lake, Fawnskin, Lake Williams, and Rim Forest areas within the jurisdiction of the City of Big Bear Lake and the County of San Bernardino. Figure 1 shows the Big Bear Area. The Department is proposing to construct new and replacement water system facilities to serve the residents within its service area. It is the intent of this project to replace water distribution facilities in order to meet fire flow requirements, and to increase water production to meet peak day demand requirements of existing development and future connections.

Grant funding is being sought from the U.S. Department of Agriculture (USDA) to partially pay for constructing the following facilities to meet this objective: water transmission/distribution system facilities that will serve the City of Big Bear Lake and the unincorporated communities of Fawnskin, Erwin Lake, Lake William, Sugarloaf, and Moonridge; and drilling and equipping groundwater production wells within the Big Bear Lake, Moonridge, and Fawnskin areas. These improvements are essential to meet current and projected water demands and to deliver adequate fire flow within the Department=s service area.

1.2 PURPOSE OF THE ENVIRONMENTAL ASSESSMENT

Because the Department is seeking federal funds from the USDA for this project, compliance with the National Environmental Policy Act (NEPA) must be completed before federal funds can made available to support implementation of the proposed action/project summarized above. The Department intends to implement the proposed project and must, therefore, also demonstrate compliance with the California Environmental Quality Act (CEQA) under its procedures. This environmental document is being prepared as a joint CEQA/NEPA environmental document, termed an Initial Study/Environmental Assessment (IS/EA). This document will provide the necessary information to determine if further environmental documentation is required before the project can be implemented, or whether it is appropriate to adopt a Mitigated Negative Declaration (MND) and Finding of No Significant Impact (FONSI) for CEQA and NEPA compliance, respectively.

Thus, once the IS/EA is completed, the USDA will either issue a FONSI or decide to prepare an Environmental Impact Statement (EIS) to comply with NEPA. The Department will either adopt a MND or decide to prepare an Environmental Impact Report (EIR) under CEQA. Should further documentation be required, it is likely that it would also be in the form of a joint CEQA/NEPA document, an EIS/EIR. Only after these procedures are completed (under NEPA) can the funding from the USDA be approved and released. Similarly, the Department cannot begin physical implementation/construction of the project facilities until the environmental review under CEQA is completed.

1.3 PURPOSE AND NEED

The proposed project has three general objectives:

1. Construct new and replacement water transmission and distribution pipelines to provide an adequate water supply system to meet the Department=s current and future domestic water supply demand and to remedy fire flow deficiencies.

2. Construct additional water production wells to increase water production and meet peak day demand requirements of existing and future connections throughout the Department's water service area.

2.0 PROPOSED ACTION, INCLUDING ALTERNATIVES

2.1 PROPOSED ACTION SUMMARY

As previously described, this project consists of the construction and installation of a combination of new wells and conveyance facilities consisting of new and replacement transmission and distribution system pipelines. The Department intends to drill and/or equip a total of six wells within the Big Bear Lake, Moonridge, and Fawnskin areas (refer to Appendix 2). The proposed project also includes the installation of approximately 37,121 linear feet of pipeline throughout the Department=s service area (refer to Appendix 2).

This IS/EA evaluates the potential effects on the environment from constructing these new facilities and the Department=s subsequent water system operations. To facilitate the use of this document by both the USDA and the Department, this document uses a combined format. Specifically, the USDA=s EA format is utilized to organize the document, but it is combined with the standard Initial Study Environmental Checklist Form used for compliance with CEQA. Thus, this IS/EA evaluates all environmental issues required by the USDA, while presenting the issues through the 16 specific environmental issues contained in the standard Checklist Form. The IS/EA will determine whether there are any potentially significant or substantially adverse environmental effects under either CEQA or NEPA criteria from implementing the proposed project, and determine whether mitigation will be required to reduce potential adverse effects to a less than significant level.

2.1.1 Location

The City of Big Bear Lake Department of Water and Power provides water to approximately 9.3 square miles of land divided into four service areas that serve approximately 19,900 full- and part-time residents. The Department operates five water systems to serve the various communities within it=s service area. The ABig Four@ system is the largest of the water systems. It serves the City of Big Bear Lake, portions of Big Bear City, unincorporated portions of San Bernardino County in the Moonridge area to the southeast of the City, and the communities of Sugarloaf and Erwin Lake to the east. The system is supplied by 26 active groundwater wells and a number of slant wells. Currently, there are 15,717 active connections in the ABig Four@ water system.

The Lake William system serves the community of Lake William, located to the southeast of Erwin Lake along Highway 38. The Lake William system is supplied by three active groundwater wells that pump into a reservoir with a high water level of 7,430 ft. As of 2006, there were 119 active water services in this system.

The Fawnskin system serves the community of Fawnskin, which is located along Highway 38 on the north shore of Big Bear Lake. Water supply is provided by six groundwater wells that pump directly into the water system or into the existing reservoirs. Currently, there are 699 active connections in the Fawnskin system.

The RV Park system serves a small RV Park along Highway 38 on the north shore of Big Bear Lake. The entire park is considered a single connection and it is served by two groundwater production wells that pump into a small onsite reservoir.

The Rimforest system serves the community of Rimforest, located between the communities of Crestline and Lake Arrowhead along Highway 18. The Rimforest system is supplied through a single connection to Crestline-Lake Arrowhead Water Agency (CLAWA), a regional agency that provides treated imported water from the State Water Project to a number of small communities in the San Bernardino Mountains. Currently, there are 299 active connections in this system. The Rim Forest system has a separate rate structure and is not included in this project.

The existing water supply system consists of the following components: approximately 178 miles of water pipeline; 32 active vertical wells; 23 slant wells; 16 storage reservoirs, 12 booster pump stations; 23 chlorination stations; and 22 sample stations. Current annual production from the above-described system is estimated to be 2,552 acre-feet, consisting of 66 acre-feet purchased for the Rim Forest area from the Crestline-Lake Arrowhead Water Agency; an estimated 2,450 acre-feet of groundwater; transfer in of 25 acre-feet; and approximately 11 acre-feet of recycled water; for a total of 2,552 acre-feet. Current drought conditions and individual operating wells removed from operation for varying reasons have reduced the well production such that the Department has determined it is necessary to locate additional well sites to maintain adequate public water supplies.

The proposed project includes improvements to the ABig Four@ system, as well as the Fawnskin system. The project proposes to construct and install new water facilities within the Big Bear Lake/Moonridge, Erwin Lake/Sugarloaf, and Fawnskin service areas.

2.1.2 Environmental Setting

The Department=s service area affected by this proposed action is located generally in the Bear Valley area within the San Bernardino Mountains in San Bernardino County. The Bear Valley area includes approximately 135 square miles of unincorporated area surrounding the City of Big Bear Lake. The area is entirely surrounded by the San Bernardino National Forest. The Big Bear community is located in an approximate 12-mile long valley with an average elevation of 7,200 feet above sea level. The Valley is surrounded by mountain ridges and rugged slopes. Land surface elevations range from 6,000 to 9,900 feet. The elevation of Big Bear Lake itself is 6,740 feet. Big Bear Lake has a surface area of approximately 10 square miles and 23 miles of shoreline.

The project area consists of steep, rugged terrain located within the San Bernardino Mountains, bound on the west by the San Andreas Fault. The Big Bear Valley is a bedrock-enclosed basin filled with alluvial and colluvial deposits. The bedrock in the western portion of the valley consists predominantly of granitic rock.

The most prominent land use within the project area is single-family residential. The second most prominent land use is commercial. The third and fourth most prominent land use in the project area are government and institutional and industrial. Access to the project area is by Rim of the World Highway (SR 18) and State Route 38 (SR 38).

The project area is located within the Big Bear Lake Watershed. The groundwater subunits within the Big Bear Lake Watershed include Gray=s Landing, Grout Creek, North Shore, Division, Rathbun, Village, and Mill Creek. The Department obtains its water supply from local groundwater and does not obtain surface water from the Lake.

The climate in the Big Bear Lake watershed varies significantly from Big Bear Dam at the west end to Big Bear City at the east end of the valley. Precipitation at the dam has averaged 35.4 inches per year while precipitation at the Big Bear Lake Fire Department and at the Big Bear Community Services District (CSD) averaged 19.79 inches and 14.46 inches per year, respectively. The Valley offers clear skies and sunshine approximately 300 days per year. Average temperatures range from a low of approximately 34 degrees in December to a high of 64 degrees in July. Air quality in the Big Bear Valley is impacted by the transport of pollutants, primarily ozone, from the coastal air basins to the west. Locally generated particulate matter also causes air quality degradation. The project area is located within the South Coast Air Basin (SoCAB or Basin) and the South Coast Air Quality Management District (SCAQMD) manages air quality for this Basin.

2.1.3 Project Characteristics

The proposed project is the development of water production wells and construction and installation of water distribution pipelines. The proposed water facilities will be located within the Big Bear Lake Department of Water and Power Service Area within the jurisdiction of the City of Big Bear Lake and the County of San Bernardino. There are two emergency supply interconnections with the Big Bear City Community Services District (BBCCSD), which is the other major water provider in the Big Bear Area, and the two interconnections consist of a hard plumbed connection and two hydrant interconnections that can be activated in emergency situations.

The Department=s 2005 Urban Water Management Plan evaluated best and worst-case scenarios of water production, maximum day requirement and projected growth. The existing water supply system consists of the following components: approximately 178 miles of water pipeline; 32 active vertical wells; 23 slant wells; 16 storage reservoirs, 12 booster pump stations; 23 chlorination stations; and 22 sample stations. Current annual production from the above-described system is estimated to be 2,552 acre-feet, consisting of 66 acre-feet purchased for the Rim Forest area from the Crestline-Lake Arrowhead Water Agency; an estimated 2,450 acre-feet of groundwater; transfer in of 25 acre-feet; and approximately 11 acre-feet of recycled water; for a total of 2,552 acre-feet. Current drought conditions and individual operating wells removed from operation for varying reasons have reduced the well production such that the Department has determined it is necessary to locate additional well sites to maintain adequate public water supplies.

The objective of the proposed wells is to increase water production to meet peak day demand requirements for existing development and future connections. The proposed well facilities would allow increased well pump cycling so that existing Department wells could be rested more frequently, thereby reducing localized water table drawdown associated with pumping. The proposed production wells would also serve to replace production lost because existing wells have been removed from production for maintenance, water quality or other reasons.

The objective of the proposed water distribution pipelines is to enhance fire flow capacity and augment circulation in the system. The Department=s Water Master Plan (2006) evaluated existing distribution pipelines within the Department=s water service system. Distribution facilities within various areas of the Department=s service system were determined to be undersized and deficient to meet fire flow requirements. The proposed new and replacement distribution pipelines would be 8 to 12 inches in diameter to meet the Department=s fire flow requirements.

2.1.3.1 Production Wells

The proposed project includes the testing, development and equipping of six water production wells within the Department=s Big Bear Lake/Moonridge and Fawnskin water systems. The drilling and development of each production well will take approximately 3 to 4 weeks. The area around the well sites will be disturbed to the least extent possible (typically 100' x 100') and, after the well installation is completed, the temporarily disturbed areas will be returned to present conditions. The wells will be drilled using the fluid reverse circulation rotary drilling method and will require at least two separate drilling passes. A submersible pump will be located inside the wells when completed. The wells will be enclosed in a 15-foot by 20-foot wood frame building designed and painted to blend with the surrounding buildings.

Construction equipment required for well drilling and equipping would include, but not be limited to the following: one drilling rig, one small backhoe, one skip loader, one small crane (18 ton), one water truck, one forklift, one air compressor, one generator, one man lift, and one welder. The estimated number of construction personnel present at any given time is 5. The development of each well may take up to 90 days, of which 6 to 10 days would include 24-hour drilling activity for casing and gravel pack installation and well performance testing.

Well testing and development is anticipated to produce approximately 312,100 gallons of groundwater for each well that will be discharged to the local sanitary sewer system or natural drainage system in accordance with NPDES requirements. The contractor will settle out suspended sediment by passing water through a series of three large storage tanks. If the water does not meet NPDES requirements after passing through the storage tanks, the final water will be blended with water from a fire hydrant so that it meets requirements prior to discharge to the natural drainage course. If necessary, an in-line sand filter or equivalent equipment will be installed in the tanks to remove sufficient suspended sediment to meet NPDES requirements.

2.1.3.2 Distribution Pipelines

The proposed project includes the installation of approximately 37,121 linear feet of water distribution pipeline. The proposed pipelines will range in size from 8 to 12-inches in diameter. The pipeline will be installed by opening a trench about 60-inches wide and up to 10-feet deep along the proposed alignments; installing the new water pipeline; and then closing the trench, including compacting the soil cover to meet compaction requirements needed to protect the pipeline. Construction equipment required for pipe installation would include, but not be limited to the following: two excavators, two loaders, one crane, one dozer, one air compressor, one welder, one water pump, one water truck, and one generator. The estimated number of construction personnel present at any given time is 12. The estimated length of pipeline to be installed each day is 300 feet per team. Two teams laying pipeline at the same time would install 600 feet per day which equates to about 80 days of construction. At this time it is not clear whether all of the pipe would be installed in sequence (about 4 months), or whether pipeline installation would be spread out over a longer period.

The following pipeline segments would be installed under the proposed project.

2.1.3.3 Big Bear Lake/Moonridge System

BBM 1
The proposed BBM 1 facilities consist of the construction and installation of approximately 860 linear feet of 8-inch water distribution pipeline within the Alta Vista Avenue right-of-way, between Lucerne Avenue and Jasper Avenue. The proposed pipeline is the replacement of an existing 2-inch diameter pipeline along this alignment. Land uses along the proposed pipeline alignment within Alta Vista Avenue consist of residential development.

BBM 2
The proposed BBM 2 facilities consist of the construction and installation of approximately 400 linear feet of 8-inch water distribution pipeline within the Lucerne Drive right-of-way, between Vine Avenue and Villa Grove Avenue. Land uses along the proposed pipeline alignment consist of residential development.

BBM 3
The proposed BBM 3 facilities consist of the construction and installation of approximately 800 linear feet of 8-inch water distribution pipeline within the Vine Avenue right-of-way, between Sahuaro Avenue and McAllister Road. The proposed pipeline is the replacement of an existing 2-inch diameter pipeline along this alignment. Land uses along the proposed pipeline alignment within Vine Avenue consist of residential development.

BBM 4
The proposed BBM 4 facilities consist of the construction and installation of approximately 400 linear feet of 8-inch water distribution pipeline within the Sahuaro Avenue right-of-way, from Alta Vista Avenue to the end of Sahuaro Avenue. The proposed pipeline is the replacement of an existing 4-inch diameter pipeline along this alignment. Land uses along the proposed pipeline alignment within Sahuaro Avenue consist of residential development.

BBM 5
The proposed BBM 5 facilities consist of the construction and installation of approximately 3,400 linear feet of 8-inch water distribution pipeline within the Menlo Drive right-of-way, between Butte Drive and Sheephorn Road. Land uses along the proposed pipeline alignment within Sahuaro Avenue consist of residential development.

BBM 6
The proposed BBM 6 facilities consist of the construction and installation of approximately 2,150 linear feet of 8-inch water distribution pipeline within the Sheephorn Road right-of-way, from Menlo Drive to just north of Luna Road. Land uses along the proposed pipeline alignment within Sheephorn Road consist of residential development.

BBM 7
The proposed BBM 7 facilities consist of the construction and installation of approximately 1,000 linear feet of 8-inch water distribution pipeline within the Deer Canyon Road right-of-way, between Siskiyou Drive and Moonridge Road. The proposed pipeline is the replacement of an existing 5-inch diameter pipeline along this alignment. Land uses along the proposed pipeline alignment within Deer Canyon Road consist of residential development.

BBM 8
The proposed BBM 8 facilities consist of the construction and installation of approximately 1,550 linear feet of 8-inch water distribution pipeline within the Sand Canyon Road right-of-way, between Ridgecrest Road and the Rathbone Creek channel crossing. The proposed pipeline is the replacement of an existing 5-inch diameter pipeline along this alignment. Land uses along the proposed pipeline alignment within Sand Canyon Road consist of residential development.

BBM 9
The proposed BBM 9 facilities consist of the construction and installation of approximately 470 linear feet of 8-inch water distribution pipeline within the Sand Canyon Road right-of-way, between Deer Canyon Road and Bow Canyon Road. The proposed pipeline is the replacement of an existing 5-inch diameter pipeline along this alignment. Land uses along the proposed pipeline alignment within Sand Canyon Road consist of residential development.

BBM 10
The proposed BBM 10 facilities include the construction and installation of approximately 1,100 linear feet of 8-inch water distribution pipeline within the Chipmunk Lane right-of-way, between Peak Lane and Chincapin Road, and the installation of 8-inch pipeline within the Cienega Road right-of-way, from Chincapin Road south for approximately 1,400 linear feet. The proposed pipelines are the replacement of existing 4-inch diameter pipelines along these alignments. Land uses along the proposed pipeline alignments consist of residential development.

BBM 11
The proposed BBM 11 facilities consist of the construction and installation of approximately 280 linear feet of 10-inch water distribution pipeline within the Forest Road right-of-way, between Knoll Road and Lakeview Drive. The proposed pipeline is the replacement of an existing 6-inch diameter pipeline along this alignment. Land uses along the proposed pipeline alignment within Forest Road consist of residential development.

BBM 12
The proposed BBM 12 facilities consist of the construction and installation of approximately 840 linear feet of 8-inch water distribution pipeline within the Crocus Drive right-of-way, between Iris Lane and Tulip Lane. Land uses along the proposed pipeline alignment within Crocus Drive consist of residential development.

BBM 13
The proposed BBM 13 facilities consist of the construction and installation of approximately 216 linear feet of 8-inch water distribution pipeline within the Hill Lane right-of-way from Crocus Drive until it ends. Land uses along the proposed pipeline alignment within Hill Lane consist of residential development.

BBM 14
The proposed BBM 14 facilities consist of the construction and installation of approximately 775 linear feet of 8-inch water distribution pipeline within the Tulip Lane right-of-way, between Crocus Drive and Big Bear Boulevard. Land uses along the proposed pipeline alignment within Tulip Lane consist of residential development.

BBM 15
The proposed BBM 15 facilities consist of the construction and installation of approximately 1,000 linear feet of 8-inch water distribution pipeline within the North Lahontan Road right-of-way, from Eureka Drive to just west of Jeffries Road. The proposed pipeline is the replacement of an existing 2-inch diameter pipeline along this alignment. Land uses along the proposed pipeline alignment within North Lahontan Road consist of residential development.

BBM 16
The proposed BBM 16 facilities consist of the construction and installation of 8-inch water distribution pipeline within the Maryland Road right-of-way from the intersection of Maryland Road and Knight Avenue west for approximately 730 linear feet. Land uses along the proposed pipeline alignment consist of residential development.

BBM 17
The proposed BBM 17 facilities consist of the construction and installation of approximately 260 linear feet of 8-inch water distribution pipeline within the Knight Avenue right-of-way, between Terrapin Road and Maryland Road. Land uses along the proposed pipeline alignment consist of residential development.

BBM 18
The proposed BBM 18 facilities consist of the construction and installation of approximately 1,900 linear feet of 8-inch water distribution pipeline within the Mount Whitney Road right-of-way, between Rocky Mountain Road and Snow Ridge Road. The proposed pipeline is the replacement of an existing 4-inch diameter pipeline along this alignment. Land uses along the proposed pipeline alignment within Mount Whitney Road consist of residential development.

BBM 19
The proposed BBM 19 facilities consist of the construction and installation of approximately 250 linear feet of 8-inch water distribution pipeline within the Division Drive right-of-way, between North Shore Highway and Rocky Mountain Road. The proposed pipeline is the replacement of an existing 4-inch diameter pipeline along this alignment. Land uses along the proposed pipeline alignment within Division Drive consist of residential development and public/open space areas.

BBM 20
The Lakeplant Well No. 6 facilities are located on a DWP owned property already developed with other well facilities. The Lakeplant Well No. 6 has been drilled and this project consists of equipping Lakeplant Well No. 6 as a source of supply for DWP. The property is a strip of land located between existing commercial developments and bounded on the northeast by Big Bear Boulevard and on the south by Fox Farm Road. Surrounding land uses are a mix of open area and commercial uses. The proposed site has an existing dirt drive providing access to the existing well facilities from Fox Farm Road.

BBM 21
The Division Well No. 8 facilities are located on a DWP owned property already developed with other well facilities. The Division Well No. 8 has been drilled and this project consists of equipping Division Well No. 8 as a source of supply for DWP. The property is a strip of land located between existing commercial developments and bounded on the west by Division Road.

Surrounding land uses are a mix of open area and commercial uses. The proposed site has an existing dirt drive providing access to the existing well facilities from Division Road.

BBM 22 & 23
The proposed Lakeplant Well No. 7 site is located on a DWP owned property along Fox Farm Road. These two projects include drilling the Lakeplant Well No. 7 (BBM 22) and equipping the well after drilled (BBM 23). The property is a parcel of land located just east of the Big Bear Lake shoreline, surrounded by existing public facilities, with residential and commercial development to the east. The Big Bear City Airport is located northeast of the site on the east side of Division Drive. The site is bounded on the east by Division Drive and Big Bear Lake to the northwest.

2.1.3.4 Erwin Lake/Sugarloaf System

ELS 1
The proposed ELS 1 facilities consist of the construction and installation of approximately 2,500 linear feet of 8-inch water distribution pipeline within the Vista Lane right-of-way, between Magnolia Lane and Mahogany Lane. The proposed pipeline is the replacement of an existing 2-inch diameter pipeline along this alignment. Land uses along the proposed pipeline alignment within Vista Lane consist of residential development.

ELS 2
The proposed ELS 2 facilities consist of the construction and installation of approximately 1,750 linear feet of 8-inch water distribution pipeline within the Clark Lane right-of-way, between San Bernardino Avenue and Highland Lane. Land uses along the proposed pipeline alignment within Clark Lane consist of residential development.

ELS 3
The proposed ELS 3 facilities consist of the construction and installation of approximately 1,760 linear feet of 8-inch water distribution pipeline within the Moreno Lane right-of-way, between Magnolia Lane and Eucalyptus Lane. The proposed pipeline is the replacement of an existing 2-inch diameter pipeline along this alignment. Land uses along the proposed pipeline alignment within Moreno Lane consist of residential development.

ELS 4
The proposed ELS 4 facilities consist of the construction and installation of approximately 1,690 linear feet of 8-inch water distribution pipeline within the Seventh Lane right-of-way, between Woodland Drive and Willow Lane. Land uses along the proposed pipeline alignment consist of residential development.

ELS 5
The proposed ELS 5 facilities consist of the construction and installation of approximately 1,140 linear feet of 8-inch water distribution pipeline within the Willow Lane right-of-way, between Seventh Lane and First Lane. Land uses along the proposed pipeline alignment within Willow Lane consist of residential development.

ELS 6
The proposed ELS 6 facilities consist of the construction and installation of approximately 1,330 linear feet of 8-inch water distribution pipeline within the Juniper Lane right-of-way,

between Willow Lane and Cypress Lane. Land uses along the proposed pipeline alignment within Juniper Lane consist of residential development.

ELS 7
The proposed ELS 7 facilities consist of the construction and installation of approximately 1,300 linear feet of 8-inch water distribution pipeline within the Juniper Lane right-of-way, between Cypress Lane and D Lane. Land uses along the proposed pipeline alignment within Juniper Lane consist of residential development.

ELS 8
The proposed ELS 8 facilities consist of the construction and installation of approximately 640 linear feet of 8-inch water distribution pipeline within the D Lane right-of-way, between South Oak Lane and State Lane. The proposed pipeline is the replacement of an existing 2-inch diameter pipeline along this alignment. Land uses along the proposed pipeline alignment within D Lane consist of residential development.

ELS 9
The proposed ELS 9 facilities consist of the construction and installation of approximately 620 linear feet of 8-inch water distribution pipeline within the State Lane right-of-way, between D Lane and G Lane. Land uses along the proposed pipeline alignment within State Lane consist of residential development.

ELS 10 & 11
The proposed Magnolia Well site is located on a DWP owned property at the northwest corner of the intersection of Magnolia Lane and Wabash Avenue in the community of Sugarloaf. These two projects include drilling the Magnolia Well (ELS 10) and equipping the well after drilled (ELS 11). Surrounding land uses are residential to the east, north and south and an existing DWP compound to the west.

2.1.3.5 Fawnskin System

FS 1
The proposed FS 1 facilities consist of the construction and installation of approximately 600 linear feet of 8-inch water distribution pipeline within the Canyon Road right-of-way, between North Shore Drive and Mesquite Drive. The proposed pipeline is the replacement of an existing 4-inch diameter pipeline along this alignment. Land uses along the proposed pipeline alignment within Canyon Road consist of residential development.

FS 2
The proposed FS 2 facilities consist of the construction and installation of approximately 480 linear feet of 8-inch water distribution pipeline within the Flicker Road and Chinook Road rights-of-way, between Mesquite Drive and Canyon Road. The proposed pipeline is the replacement of an existing 1.5-inch diameter pipeline along this alignment. Land uses along the proposed pipeline alignment consist of residential development.

FS 3
The proposed FS 3 facilities consist of the construction and installation of approximately 1,920 linear feet of 8-inch water distribution pipeline within the Ridge Road right-of-way from Fire Hydrant 67 to the end of Ridge Road. The proposed pipeline is the replacement of an

existing 2-inch diameter pipeline along this alignment. Land uses along the proposed pipeline alignment within Ridge Road consist of residential development.

FS 4
The proposed FS 4 facilities consist of the construction and installation of 12-inch water distribution pipeline within the Ridge Road right-of-way, extending from the Racoon Drive intersection with Ridge Road for approximately 950 linear feet. Land uses along the proposed pipeline alignment within Ridge Road consist of residential development.

FS 5
The Cherokee Well site is located south of the intersection of Cherokee Street and North Shore Drive in the community of Fawnskin. This well has been drilled and DWP will equip this well to serve as a source of water supply. Surrounding land uses are residential to the east and south and commercial to the north. A culvert crosses the site and is broken midway across the site. Water flows from the broken culvert, creates a very small drainage and flows across the site into a culvert that runs under Cherokee Street and into Grout Creek. The development of the Cherokee Well will include repairing the broken culvert.

FS 6 & 7
The North Shore Well #1 Replacement Well, is located 160 feet west of North Shore Drive, on Cherokee Street. These two projects consist of drilling the North Shore Well #1 (FS 7) and equipping the well after it is drilled (FS 8).

2.2 ALTERNATIVES

2.2.1 No-Action Alternative

The No-Action alternative will result in water production and distribution facilities not being installed as outlined above. The No-Action alternative does not contribute to the improvement of the Department=s water system to ensure the system=s reliability in meeting current and future system demand as envisioned in both the Department=s 2005 Urban Water Management Plan and Water Master Plan (2006).

The No-Action alternative would result in the fewest direct natural environmental effects of available alternatives, because no physical changes to the environment within the area of potential impact would result from construction activities. However, the result of implementing this alternative is the continued degradation and inadequacy of the Department=s water system. Therefore, this alternative is not considered a feasible or reasonable alternative for consideration by the District.

2.2.2 Other Alternatives

Other alternatives could include alternative sites and alignments for the proposed facilities and a reduced scope alternative. These alternatives were rejected from further consideration based on the following findings:

a. The locations of each of the facilities either follows existing pipeline alignments which cannot be located in an alternative alignment or specific locations selected by technical

engineering methods, such as well locations. Because no functional alternatives exist, the potential for alternative locations will not be given further consideration.

b. A reduced scope alternative, such as less pipeline installation, or reduction in the number of wells could be evaluated, and would reduce potential environmental effects. However, this alternative would not meet the Department's purpose and need to provide an adequate water distribution system. Because a reduced scope alternative cannot meet project objectives, it will not be given further consideration in this document.

3.0 AFFECTED ENVIRONMENT/ENVIRONMENTAL CONSEQUENCES

3.1 LAND USE / IMPORTANT FARMLAND / FORMALLY CLASSIFIED LANDS

3.1.1 Regulatory Setting

The National Environmental Policy Act of 1969 as amended (NEPA) establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and aesthetically and culturally pleasing surrounds [42 U.S.C. 4331(b)(2)]. Final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

Land use management is not generally activated through federal or state policy and management systems, unless the federal or state governments own the land. Since land ownership at almost all locations is private, the project area is subject to regional and local planning guidance and regulations. The only federal and state land use policies or regulations that would potentially affect the project are those for specific resources (such as for mineral and biological resources). Otherwise, the project area is subject to county-wide and regional planning efforts in regional growth management and environmental management, particularly for congestion management (transportation) and solid waste management issues. The project area is also subject to regional planning efforts, in which regional comprehensive plans for growth management, mobility/transportation, and air quality management apply. The governing land use documents are the County of San Bernardino General Plan and associated Zoning Ordinance and Development Code, and the General Plan and Development Code of the City of Big Bear Lake.

Land use issues are included as a topic for evaluation in this EA in order to determine if any potential land use or growth inducement impacts are associated with the construction of the proposed project within the Department=s service area. Any facilities that are constructed as a part of the project need to be consistent with the General Plans of the agencies with land use jurisdiction along the corridor. Additionally, these facilities must be constructed to minimize incompatibilities with existing and prospective future uses on adjacent and/or affected properties

3.1.2 Affected Environment

3.1.2.1 Consistency with State, Regional and Local Plans

There are currently no adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, state habitat conservation plans associated with the proposed project area. Therefore, no potential exists for conflicts with any such plans from implementing the proposed project.

There are no designated Wild and Scenic Rivers in the project area and the area is not within a Coastal Zone Management Area. There are no Wild and Scenic Rivers in southern California and the location of the proposed facilities is in the San Bernardino Mountains, more than 60 miles from the coast. Therefore, the federal and state plans associated with such designated areas do not apply to the proposed project.

San Bernardino County has a Regional Congestion Management Plan (CMP) that addresses the impact of local growth on the regional transportation system and the County=s mobility needs. The CMP must contain (according to Section 65089 of the California Government Code) the following elements:

I. A system of highways and roadways with minimum level of service performance measurements;

II. A performance element that includes performance measures to evaluate multi-modal systems;

III. A travel demand element promoting alternative transportation;

IV. A program to analyze the impacts of local land use decisions on the regional transportation system, including an estimate of the cost of mitigating those impacts;

V. A 7-year capital improvement program of projects that benefit the CMP systems; and

VI. A deficiency plan.

The CMP is incorporated into a 20-year Regional Transportation Plan, contained in the Southern California Association of Government=s (SCAG) Regional Comprehensive Plan and Guide (RCPG), to establish the magnitude of congestion problems that face the region and types of solutions that will be necessary to maintain mobility. The CMP relates these long-term regional mobility goals to specific actions at the County and local levels. It also describes implementation strategies, and establishes a system to monitor the effectiveness of transportation improvements. Under the CMP, local jurisdictions are required to evaluate impacts of development, and provide mitigation measures, which include transportation demand and system management programs and measures.

The Regional Comprehensive Plan and Guide, developed through SCAG, is a framework for decision-making by local governments to meet federal and state mandates consistent with regional goals. It functions to bring together air quality goals with transportation and development goals for San Bernardino County by coordinating all planning efforts. The three key planning issues that need coordination are considered to be Air Quality, Mobility and Transportation, and population growth. Air quality planning is discussed further in the Air Quality Section of this EA. The Regional Transportation Plan is discussed further under Section 3.9.2, Transportation.

The proposed project has no potential to conflict with the CMP and RCPG and is fully consistent with these documents. Specifically, this project will provide water production and distribution facilities to meet existing development within Bear Valley. Growth is limited by adopted General Plans of the City of Big Bear Lake and the County of San Bernardino, and by the Department, which has established limitations on the number of connections permitted annually. The proposed CIP facilities are not forecast to increase growth within the project area based on a detailed analysis of growth inducement later in this document.

The City of Big Bear Lake and San Bernardino County have established several policies relating to housing in their General Plan Housing Elements. These are discussed under the Socioeconomic Impacts section of this document.

3.1.2.2 Farmlands/Timberlands

The project area of potential effect (APE) does not contain any timberlands or farmlands of importance. No agriculture activities occur within the City of Big Bear Lake or the Bear Valley community. Therefore, no agricultural operations will be adversely impacted by the proposed project. The general project vicinity does include timberlands, primarily under the jurisdiction of the San Bernardino National Forest, but due to the location of the proposed CIP facilities, no timberlands will be adversely affected by the proposed project.

A review of the whole project APE indicates that no formal grazing leases and no extensive grazing areas occur. None of the sites are located within areas with timber leases or areas where tree cutting operations may occur. Thus, no adverse effects on either timber or grazing resource values can result from implementing the proposed project.

3.1.2.3 Big Bear Lake and Project Area Land Uses

The Big Bear Lake and Bear Valley area consists of a mix of public land/open space, residential, commercial and limited industrial uses. Land use within the project area of impact is under the jurisdiction of the City of Big Bear Lake and San Bernardino County. Land use designations and regulations are based on the City of Big Bear Lake General Plan and the County of San Bernardino General Plan, Bear Valley Community Plan. For the City, development is constrained by topographic and elevation limitations. According to the City=s General Plan (1999), residential uses comprised approximately 68 percent of the City=s lands, with most in the form of single-family residences. Commercial and industrial land uses comprised 19 percent, and public/quasi-public uses (parks, floodways, civic center lands) comprised 13 percent at that time.

For the Bear Valley areas of the County of San Bernardino, Single Residential (RS) comprised 37 percent of the land within the Bear Valley Community Plan (2007) area. Rural Living (RL) makes up 26 percent, and Floodway (FW) and Resource Conservation (RC) uses make up 18 percent and 11 percent of the total land area, respectively.

The proposed water production wells and water distribution facilities are located within the within the City of Big Bear Lake and the unincorporated Bear Valley areas and Fawnskin. The proposed water production wells are located on parcels within residential and commercial areas, as described in the project description. The proposed water distribution system CIP facilities, including a wells and pipelines, are proposed to be installed primarily within road rights-of-way or on parcels where existing or comparable water facilities exist. Water lines are an allowed use within any land use designation as such infrastructure is required to support all land uses, except undeveloped public open space.

A map of the San Bernardino National Forest was carefully reviewed and a review of pipeline easements was conducted. The National Forest surrounds private land in the Big Bear and Baldwin Lake valleys, but based on the referenced review, none of the pipeline easements or well locations occur on National Forest land, nor is any of the proposed project locations located

on National Forest land. Thus, there will be no need to obtain easements, rights-of-way or permits from the San Bernardino National Forest.

3.1.3 Environmental Consequences

3.1.3.1 Alternative 1 (Preferred Alternative)

Generally, the potential for land use conflicts is considered as the most adverse impact from implementing a project and these conflicts consist of activities allowed in adjacent land uses. A project=s impacts can be considered substantial and adverse if:

- The project causes an unavoidable conflict with a general plan land use designation or zoning classification;
- The project conflicts with, or is inconsistent with, applicable environmental plans or policies adopted by agencies with jurisdiction over the project to the extent that the conflict is unavoidable and unresolvable;
- The project is incompatible with existing land use in the vicinity;
- The project results in an unavoidable disruption or division in the physical arrangement of an established community (including a low-income or minority community); or
- The project induces significant growth within the project area or region.

The proposed water production wells will be located on sites designated for residential and commercial uses. Further, several of the well sites are already developed with existing water facilities. Public facilities are permitted to be located in all land use designations. The entire project area is designated for residential, commercial, and public/open space uses, with limited industrial development. The proposed project would not physically divide the community. The installation of the water distribution facilities involves placing water pipelines below the ground surface and once installed, no change in the aboveground use will occur and no division of the community will result.

Temporary construction activities will impact adjacent land uses at certain locations, such as at road crossings. Alternative routes (detours) will be provided, but it is still expected that access to certain businesses and residential areas may be affected for short terms during the construction period. No substantial unavoidable adverse land use effects are forecast to result from implementing the proposed project.

No significant adverse conflicts with applicable planning policies are forecast to occur and no mitigation is proposed. The project will implement mitigation to conform with requirements for mitigating disturbance of stream channels, natural features and habitat, and other measures required to comply with planning requirements (for example noise attenuation) that apply to the proposed well sites and water pipeline alignments. Further, the project area is not located within the boundary of any adopted habitat conservation plan or natural community/conservation plan.

As the proposed project will only improve existing water services in an already-established water production and distribution system, and not create new services that might induce growth or result in major land use changes, no cumulative adverse impacts to land use are identified.

Aesthetics

Aesthetics issues are typically addressed in local (city or county) planning documents. These documents identify particular locations that are sensitive to physical changes in visual setting, or locations where the desire is to upgrade from the existing visual setting/conditions. Policies are specified in general plans; as well as ordinances to be found in development codes or zoning ordinances. Thus, in order to determine adverse effects under this issue, the local characteristics must be examined in relation to the proposed project to see if a project site or, in this case the project alignment, is within an aesthetically sensitive location. Also, the project's consistency with policies or ordinances must be demonstrated, otherwise an inconsistency may be considered an adverse impact.

The project area is located within the Bear Valley area, which consists of an approximate 12-mile long valley surrounded by mountain ridges and rugged slopes. The proposed water facilities will be located within areas developed with existing commercial and/or residential development. As previously indicated, several of the proposed well sites are already developed with water facilities. No historical buildings will be removed as part of the proposed project. Drilling, testing and development of the wells in the short term will require a drill rig and equipment on the site for approximately 60 days. After construction, the wells will be housed within split-face block buildings with an asphalt shingle roof. The buildings will be tan in color to visually blend with adjacent residential, commercial, and/or Department of Water and Power structures.

The installation of the water distribution facilities involves placing water pipelines below the ground surface. Construction activities and equipment are common within roadway alignments, so the short-term construction impacts are not considered to be a significant aesthetic impact. The proposed pipeline alignments will be returned to pre-project conditions following construction and installation of the proposed pipelines. Therefore, the project will not change land uses, or substantially affect the existing scenic vistas in the project area or visual aspects of the area. The construction activities will be temporary and localized.

Based on the above, it is concluded this project will not have a substantial adverse effect on a scenic vista or substantially degrade the visual character or quality of the project area. Potential impacts to the visual characteristics of the existing visual setting are considered less than adverse based on the proposed modifications to the existing visual environment described above.

The County of San Bernardino=s General Plan indicates that State Highways 18 and 38 are County designated scenic highways. In addition, State Highway 38 is a State designated scenic highway from east of the South Fork Campground to State Lane. State Highways 18 and the remainder of State Highway 38 within the Bear Valley area are eligible for listing as State scenic highways.

All project impacts to scenic highways will be temporary due to construction activities. Over the long-term, pipelines will be below the ground surface where they will not affect the permanent scenic values of Highways 18 and 38. As previously stated, construction activities and equip-

ment are common within the roadway alignments, so the short-term construction impacts are not considered to be a significant aesthetic impact.

The well housing structures may include work lights and security lights. Additional artificial lights may also be used during well testing and development activities. All pipeline construction activities are proposed to occur during daylight hours. However, if evening construction is carried out, artificial lights may be used during the pipeline construction and installation. Mitigation will be implemented to mitigate potentially significant night lighting impacts.

No other activities have been identified to which the proposed project would make a cumulatively considerably contribution to adverse aesthetic impacts. Thus, no cumulative adverse aesthetic impacts are forecast to result from implementing the proposed project.
No unavoidable, adverse aesthetic effects have been identified in association with the implementation of the proposed project.

Sensitive Land Uses

Wild and Scenic Rivers
There are no wild and scenic rivers within or near the proposed project alignment.

Farmlands/Timberlands
Generally, the direct or indirect conversion of agricultural land to non-agricultural land uses is considered a substantial adverse effect. In addition, land use proposals that conflict with existing agricultural-zoned areas may also be considered to have adverse effects.

There are no agricultural resources that occur within the project area. Therefore, no potential exists to convert farmlands to non-agricultural use if the proposed project is implemented. None of the physical facilities proposed will cause loss of any farmland.

The proposed project will not affect any zoning and none of the land within the project area is under a Williamson Act contract. Based on the fact that the project can not have any conflicts with zoning for agricultural uses or Williamson Act contracts, no impact to these issues can result from implementing the proposed project.

There are timberlands within the Big Bear Valley. However, most of these timberlands are on federal public land and the proposed project will not adversely impact any federal public land. The project may result in removal of one or more trees on proposed well sites, but no whole-scale timber removal is proposed by the project.

3.1.3.2 No-Action Alternative

The no-action alternative would result in no land use impacts as conditions within the proposed project would remain in their existing state. Short-term land use conflicts from installing the proposed water infrastructure would be eliminated and both short- and long-term aesthetic effects will be eliminated by the alternative. However, by not installing the water infrastructure, potential deterioration of the community from more restricted water supplies in the future may occur, which could be much more widespread than the limited long-term visual changes associated with the proposed project.

3.1.4 Mitigation

Mitigation measures in the Transportation, Air Quality, and Noise section of this EA will be applied to this project in order to avoid, minimize, or reduce the potential conflicts or impacts on existing land uses as a result of project implementation. One exception to the visual impact issue is a potential to create new night lighting impacts adjacent to the new wells.

The following mitigation will be required in order to mitigate potentially significant night lighting impacts.

3.1.4-1 Night lighting will be located and shielded so as to avoid creating a nuisance to nearby sensitive light receptors, such as residences. Light from night lighting shall not spill off the site onto adjacent occupied structures or light sensitive uses.

Based on the potential lack of substantial agricultural or timberland resource impacts identified in the analysis above, the proposed project can be implemented without causing any substantial adverse agricultural/timberland resource effects with no mitigation required.

3.2 WATER RESOURCES / FLOODPLAINS

3.2.1 Regulatory Setting

Water resources are regulated by federal, state, regional, and local and agencies. Section 401 of the federal Clean Water Act (CWA) requires a Water Quality Certification for any work proposed in stream crossings, stream banks or stream courses, or wetlands. Section 404 of the Act requires a permit to discharge fill into waters of the United States (U.S.) from the U.S. Army Corps of Engineers (ACOE).

The State Water Resources Control Board (SWRCB or Board) regulates California's water quality and administers water rights. The Board, through its nine regional boards, establishes wastewater discharge requirements and carries out water pollution control programs. It also issues permits for new water rights and assists in determining existing rights.

SWRCB has established a statewide construction General Permit applicable to the project. Under this general permit, it is the responsibility of the project proponent to submit a Notice of Intent (NOI) to the SWRCB, prepare and implement a Stormwater Pollution Prevention Plan (SWPPP), and adapt the SWPPP as necessary as construction conditions change. The Best Management Practices (BMPs) within the SWPPP must include both structural and non-structural measures, where applicable, and the assignment of long-term maintenance responsibilities that protect water quality. The Santa Ana Regional Water Quality Control Board (Regional Board) is the jurisdictional entity that enforces the construction General Permit and SWPPP. The Regional Board also issues the Section 401 Water Quality Certifications for projects located within its jurisdiction. These agencies oversee the implementation of the SWPPP and ensure that the BMPs are fully implemented and effective through routine monitoring and enforcement actions.

A San Bernardino County Flood Control District encroachment permit is required for activities that affect watercourses and drainage facilities in the unincorporated County areas of the proposed project. A drainage permit from the City of Big Bear Lake, through its Storm Water Management Program is also required.

There are three aspects to the existing regulatory setting related to hydrology and flood hazards. The federal components include: control of development within 100-year flood hazard areas, as designated by the Federal Emergency Management Agency (FEMA); control of erosion and sedimentation during construction under the General Construction permit required for compliance with the Environmental Protection Agency=s National Pollution Discharge Elimination System (NPDES) permits for non-point sources of pollution; and the requirement to control long-term sources of water pollution through the implementation of a Water Quality Management Plan (WQMP). These latter two programs are implemented at the state level through the State Board and the Regional Board, and at the local level by San Bernardino County.

Local and regional land use jurisdictional agencies participate in the National Flood Hazard Insurance Program. Under this program, flood hazards have been determined based on 500-year and 100-year storm events. General Plans identify, and specific projects are reviewed in light of, the 100-year flood zones which could create hazardous conditions if they are developed. The 100-year flood areas are generally adjacent to creek and drainage channels.

The Office of Emergency Services (OES) is the County's centralized emergency response agency responsible for organizing and directing emergency services and disaster programs. This agency comes under the administration and management of the California Department of Forestry which has also been contracted by the County to provide fire fighting services. The OES receives updated dam inundation information from the State Office of Emergency Services and is responsible for identifying evacuation routes based on this data.

3.2.2 Affected Environment

3.2.2.1 Groundwater

Groundwater is a significant source of water supply in the proposed project area. The water supply within the Big Bear Watershed is supplied by runoff from precipitation in the form of rainfall and snowfall that percolates through the valley=s alluvial deposits. According to the Bear Valley Community Plan, the project area is located in the San Bernardino Mountains where there are no large, deep, groundwater basins. The groundwater subunits within the Big Bear Lake Watershed include Gray=s Landing, Grout Creek, North Shore, Division, Rathbun, Village, and Mill Creek. None of the groundwater aquifers within the Big Bear Watershed are considered Sole Source Aquifers under the Sole Source Aquifer protection program is authorized by section 1424(e) of the Safe Drinking Water Act of 1974 (Public Law 93-523, 42 U.S.C. 300 et seq.).

The Big Bear Lake Department of Water and Power system consists of 5 separate service areas; Fawnskin, Rimforest, Lake William, Erwin Lake/Sugarloaf and the City of Big Bear Lake/Moonridge systems. The Big Bear Lake/Moonridge water system and the Fawnskin water system have individual water supply facilities and are not physically connected to each other. The three remaining systems are the Rimforest water system, the Erwin Lake/Sugarloaf and Lake William water systems, located in the unincorporated area of the County of San Bernardino. The Rimforest water system is physically distant from the rest of the Department=s system and is not physically connected to them. The water supply for Rim Forest is provided by imported water from the Crestline Lake Arrowhead Water Agency. The project area is served

by 15 pressure zones. The Department extracts groundwater from 55 wells throughout the Big Bear Valley area. According to the Department=s Urban Water Management Plan, groundwater accounted for 98-99 percent of the Department=s total supply between the years 2000 and 2005. Average yearly production for the period was 2,738 acre-feet per year. The amount of groundwater projected to be pumped in 2010 is 2,916 acre-feet per year, which accounts for 98 percent of the Department=s supply. The projected amount of water to be pumped declines to 69 percent of the Department=s supply in 2015, 72 percent in 2020, and 74 percent in 2025.

None of the groundwater basins in the DWP service area are adjudicated. According to the Department=s 2005 Urban Water Management Plan, the Village subunit is in overdraft.

3.2.2.2 Surface Waters

A number of creeks flow during periods of precipitation or during periods of snowmelt. Four major creek watersheds occur within the District's service area. These include: Rathbun Creek and Mill Creek on the south side of Big Bear Lake; and Grout Creek and Van Dusen/Caribou Creek on the north side of the Valley. Most of these creeks are located within the vicinity of the proposed water facilities.

3.2.2.3 Water Quality

As stated previously, the Department=s potable water supplies are primarily obtained from local groundwater, with a small amount of imported water utilized for the Rimforest water system. Therefore, the Department does not have the option of blending the local groundwater supplies with the imported supplies, since the imported water is delivered to a service area that is not physically connected to the rest of the Department=s service area. According to the Department=s Urban Water Management Plan, groundwater is blended in the system to help mitigate against water quality impacts.

The quality of groundwater is determined primarily by salt concentrations, and to a lesser degree by levels of nutrients, pesticides and other contaminants. According to the Bear Valley Community Plan, good quality groundwater is found throughout the Bear Valley area. Out of the fifty-five wells in the Department=s system, three wells were identified by the Urban Water Management Plan to have water quality issues. The Pennsylvania well presently had high levels of manganese being treated via Ion Exchange treatment plant at the well head. In addition, the Knickerbocker well had levels of arsenic that exceeded the 2006 MCL (but not prior to 2006). As a result, the well was taken out of service while the Department pursues the installation of Ion Exchange well head treatment for this facility. The Monte Vista well also exceeded Fluoride MCL levels, but was blended with the Onyx well to bring Flouride level into compliance. There was also concern about fluoride levels at several other wells in a few subunits in the system; however, the fluoride levels were not near regulatory levels.

The improper location and/or operation of septic tanks and other individual wastewater systems can also affect the quality of groundwater and seriously impair the use of water for water supply, recreation and fish and wildlife habitat. Most individual systems are septic tanks, which provide primary treatment only. Septic tanks do provide basic bacteriological breakdown of solids to a liquid state allowing discharge into a subsurface leach field. Effluent then percolates or evaporates. Such systems still contain nitrates which can percolate through the soil and find its way into the shallow groundwater table. In areas where prolonged flooding can occur, such as

in the project area, leach fields and percolation can be compromised, adding to the inability to dilute nutrients remaining after septic tank treatment.

3.2.2.4 Hydrology and Floodplain

The County Flood Damage Prevention Ordinance contains specific requirements for development in various flood zones designated on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) panels. According to the City=s General Plan, both Big Bear Lake and Rathbun Creek have floodplain zoning to restrict development within flood hazard areas. The following FEMA FIRM panels encompass the project area and copies of these maps are provided in Appendix 3: Panel 7290H, 7295H, 7315H, 8005H, 8007H, 8010H, and 8026H. According to the FEMA FIRM panels of the project area, several of the project areas are located within the 100-year flood zone for Big Bear Lake and Rathbun Creek. Specifically, the proposed Cherokee Well (FS 6), Lakeplant Well Nos. 6 and 7 (BBM 20, 22 and 23), and Division Well No. 8 (BBM 21) are within the 100-year flood zone for Big Bear Lake. No occupiable structures are proposed to be located within 100-year flood hazard zone.

3.2.2.5 Dam Inundation

Dam failures can result from a number of natural or manmade causes such as earthquakes, erosion, improper siting, rapidly rising flood waters and structural/design flaws. A dam failure can cause loss of life, damage to property, and other ensuing hazards, as well as the displacement of persons residing in the inundation path. Damage to the electric generating facilities and transmission lines associated with hydroelectric dams, could also impact life support systems in communities outside the immediate hazard areas. A catastrophic dam failure, depending on the size of the dam and population downstream, could exceed the response capability of local communities. According to the City of Big Bear Lake General Plan, the Bear Valley Dam was seismically retrofitted prior to 1992, and is considered to be safe. However, in the unlikely event that the dam fails, no direct substantial adverse impacts would be expected within the project APE, but substantial adverse impacts to downstream areas and communities could occur.

3.2.3 <u>Environmental Consequences</u>

Simply stated, this project proposes the drilling of groundwater production wells and the installation of new potable water pipelines. Test pumping of individual wells may produce approximately 312,100 gallons of groundwater for each well, which will be discharged to the local drainage systems in accordance with NPDES requirements and ultimately enter Big Bear Lake or Erwin Lake. The contractor will settle out suspended sediment by passing water through a series of three large storage tanks. If the water does not meet NPDES requirements after passing through the tanks, the final water will be blended with water from a fire hydrant so that it meets requirements. If necessary, an in-line sand filter or similar equipment will be installed in the tanks to remove sufficient suspended sediment to meet NPDES requirements. Prior to pumping large quantities of water from the test wells, the Department proposes to test the quality of the water to verify that it does not contain contaminants that would exceed standard water quality objectives for Big Bear Lake or Erwin Lake.

The discharge of groundwater generated from well drilling and development activities is covered by a General Permit within the Santa Ana Regional Water Quality Control Board's jurisdiction.

This General Permit establishes specific performance requirements for discharges from well activities and the proposed project must comply with these requirements. Implementation of mitigation measures identified in the Public Health and Safety Section establishes performance criteria for reducing sediment and pollutants in runoff water.

Installation of the proposed water distribution facilities does not include any activities that would violate any water quality standards or waste discharge requirements.

Based on the above discussion, compliance with General Permit water quality management requirements, prior tests of groundwater quality, and compliance with mitigation measures in the Public Health and Safety Section of this document, no adverse water quality impacts can occur. No contaminants which could affect surface water quality will be discharged in quantities that could adversely impact water quality from implementation of the project.

The Big Bear Lake Department of Water and Power 2000 Urban Water Master Plan (Plan) determined that the lower safe yield of extraction from the groundwater basin would be exceeded prior to 2005 and the upper safe yield exceeded prior to 2010. The Department has developed guidelines to ensure that the groundwater levels are maintained at sustainable levels. The guidelines identify conservation actions that are triggered during periods of drought when groundwater levels are recharged at slower than average rates.

Recent drought conditions reduced the well production such that the Department has determined it is necessary to develop additional well sites to maintain water supplies at levels evaluated in the Plan. The proposed production wells would allow increased well pump cycling so that existing Department wells could be turned off more frequently thereby reducing localized water table drawdown associated with pumping. The proposed production wells would also serve to replace production lost because existing wells have been removed from production for maintenance, water quality or other reasons. Based on the data available, the well production will not cause or contribute to significant overdraft of the area aquifers= safe yield.

The purpose of the proposed water distribution facilities is to deliver additional water to the Department=s service area to ensure adequate water pressure of the local water system to meet mandatory pressure and fire flow requirements. Installation of the proposed water pipelines will not result in an increased use or demand for water. Therefore, the proposed water distribution facilities cannot further contribute to depleting the limited groundwater resources of the Bear Valley region.

The proposed projects will not directly affect any existing stream channels outside of existing road rights-of-way. Several of the proposed wells are proposed to be installed within the 100-year floodplain area, but none of the well locations occur within existing defined stream channel bed and bank areas. The underground well drilling equipment and underground pipelines have no potential to interfere with the discharge of stormwater in the future. A small amount of new hard surfacing (less than 0.1 acre per well site) will result from installation of the well sites and protective exterior housing.

Cities and counties have adopted a set of best management practices (BMPs) designed to control discharges of surface runoff with urban road pollution, which may cause a substantial adverse impact to surface water quality. Stormwater pollution prevention best management practices (BMPs) will be incorporated to control pollution from construction and road use

activities. These are incorporated into a Stormwater Pollution Prevention Plan (SWPPP) that must be implemented for the pipeline construction and well drilling activities. The implementation of BMPs are mandatory, as are the measures for ongoing non-point source pollution controls implemented by the local jurisdictions once the new facilities are installed. The mandatory pollution controls applied in conjunction with mitigation measures identified in the Public Health and Safety Section are deemed sufficient to reduce potential surface water quality impacts to a less than adverse impact level.

As previously stated, several of the project areas are within the 100-year flood zone for Big Bear Lake and Rathbun Creek. Refer to the FEMA FIRM panels in Appendix 3. The project does not propose any housing, and does not place facilities in an established bed and bank stream channel area. As such there is no potential to place housing at risk to flooding or impede the flow of stormwater. In addition, the project has no potential to expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

The project area is situated in close proximity to Big Bear Lake. There is limited potential for the proposed water facilities to be exposed to a seiche that could adversely impact the proposed well sites. However, previous studies indicate that the maximum seiche on the lake would be approximately 6 feet. Damage to the well sites from seiche is not considered to be a substantial adverse impact.

Appendix 3 contains a discussion of the potential adverse effects on several well sites that are in or closely proximate to the 100- and 500-year floodplains. The analysis in Appendix 3 was prepared by Water Systems Consulting, Inc. (WSC) and utilized the USDA's Eight-Step Decision Making Process for Floodplain Impact Assessment and Executive Order No. 11988 in performing the review. The WSC analysis reached the following conclusions: the North Shore Well No. 1 Replacement is the only "critical" facility; no reasonable alternative exists to this proposed well location; and the proposed new facilities will be constructed in accordance with applicable floodplain development requirements because the well pumps and other sensitive facilities will be elevated above the flood hazard elevations. Please refer to the discussion in Appendix 3.

3.2.3.1 No-Action Alternative

The no-action alternative would result in no direct adverse impacts to water resources as conditions within the proposed project would remain in their existing state. However, the Department's ability to provide adequate water supplies within its service area would be adversely impacted, and the potential effect on groundwater resources due to inability to more effectively manage pumping throughout the service area could be substantially adverse.

3.2.4 Mitigation

Construction of the water facilities identified in the proposed project has the potential to result in substantial adverse water resource/water quality effects if not mitigated. Compliance with General Permit water quality management requirements; prior tests of groundwater quality from the new wells before discharge of the groundwater to the local drainage system; and compliance with mitigation measures in the Public Health and Safety Section of this document are sufficient to control potential water quality and stormwater runoff effects to a less than

substantial level. Their implementation will also not cause substantial additional water quality effects not already evaluated in this Subchapter of the EA.

3.3 WETLANDS

3.3.1 Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (33 U.S. C. 1344) is the primary law regulating wetlands and waters. The Clean Water Act (CWA) regulates the discharge of dredged or fill material into waters of United States, including wetlands. Water of the United States include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils subject to saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CAA.

Section 404 of the CAA establishes a regulatory program that provides that no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation=s waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (Corps) with participation and some oversight by the federal Environmental Protection Agency (EPA).

The Executive Order for the Protection of Wetlands (E. O. 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this EO states that a federal agency, such as the FRA, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: (1) that there is no practicable alternative to construction and (2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the California Department of Fish and Game (CDFG) and the Santa Ana Regional Water Quality Control Board (Regional Board or RWQCB). Sections 1600-1607 of the Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFG before beginning construction. If CDFG determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFG jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider.

The Regional Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. This is done through the issuance of water quality certifications in compliance with Section 401 of the Clean Water Act when the area of potential effect is located in waters of the United States. When only State waters are involved in the discharge of dredged or fill material, the Regional Board can review and issue waste discharge requirements (WDR) under the Porter-Cologne Act to achieve the same water quality protection objectives.

3.3.2 Affected Environment

The Big Bear Valley contains a variety of wetlands and aquatic habitat, including the Lake, a number of stream channels with riparian habitat, and typical wetlands on the edge of the Lake and at locations where streams discharge into the Lake. A biological resource survey and report for the proposed project's area of potential effect have been compiled and a copy provided in Appendix 4 of this document. Based on the field surveys and findings in Appendix 4, none of the temporary or permanent areas of disturbance associated with this project contain any wetlands, riparian or aquatic habitat.

3.3.3 Environmental Consequences

Even though pipelines will cross channels that could be considered waters of the United States and State of California, these pipelines are located within existing paved or graded roadway alignments where due to historic fill of the channels, no new disturbance or discharge of fill will occur into these channels. At this time no wetlands will be directly impacted and no regulatory permits will need to be acquired. Therefore, based on the finding that none of the project well sites or pipeline alignments contains any wetland habitat, the proposed project has no potential cause any direct adverse effects on such resources. By implementing mitigation measures to control water quality in stormwater and well test discharges, no indirect adverse effects to wetland habitat or resources will result from implementing the proposed project.

3.3.4 Mitigation

No direct or indirect impact to wetland resources is forecast to occur. Therefore, no mitigation is required.

3.4 CULTURAL AND HISTORIC PROPERTIES

3.4.1 Regulatory Setting

The National Historic Preservation Act of 1996 (NHPA), as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings structures and objects included in or eligible for the National Register of Historic Places (NRHP). Section 106 of NHPA requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 CFR 800).

The Archaeological Resources Protection Act (ARPA) applies when a project may involve archaeological resources located on federal or tribal land. ARPA requires that a permit be obtained before excavation of an archaeological resource on such land can take place. Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the Ause@ of land with historic properties.

Historical resources are considered under the California Environmental Quality Act (CEQA), as well as California Public Resources Code (PRC) Section 5024.1, which established the California Register of Historical Resources. PRC Section 5024 requires state agencies to identify and protect state-owned resources that meet National Register of Historic Places listing

criteria. It further specifically requires the Department of Transportation to inventory state-owned structures in its right-of-way.

3.4.2 Affected Environment

To evaluate the potential for cultural resources within the project APE, a cultural resources records check and field survey of project facility sites and alignments were carried out by CRM TECH. A copy of the CRM TECH report of findings, a Historic Property Survey Report (HPSR) and supporting documentation, is provided as Appendix 5 to this document. The following information regarding cultural resources has been abstracted from Appendix 5. The proposed undertaking involves the construction or replacement of approximately seven miles of pipelines and the drilling and/or equipping of six wells in the Big Bear Lake Department of Water and Power (DWP) service area. The area of potential effect (APE) consists of 33 pipeline segments located within existing road rights-of-way and six well sites, all lying within Sections 11, 13, 23 and 24, T2N R1W, Sections 10, 15, 20-24, and 26-27, T2N R1E, and Sections 19-20, T2N R2E, San Bernardino Base Meridian.

In anticipation of project review by the U. S. Department of Agriculture (USDA), this study was also performed in compliance with Section 106of the National Historic Preservation Act. The purpose of the study is to provide the DWP and the USDA with the necessary information and analysis to determine whether the proposed undertaking would have an effect on any “historic properties,” as defined by 36 CFR 800.16(1), or “historical resources,” as defined by Title 14 CCR §15064.5(a)1)-(3), that may exist in or near the APE. In order to identify such historic properties, CRM TECH conducted an historical/archaeological resources records search, pursued historical background research, contacted local historic preservation groups and Native American representatives, and carried out a systematic field survey.

The results of the records search revealed that one historic-period archaeological site (36-007049 and two prehistoric isolates (36-003708 and 36-060169) were previously recorded as lying partially within the APE. Site 36-007049 represents the original route of the circa 1915 Rim of the World Drive, a once-famed roadway credited in large part for literally paving the way for the development of the Big Bear Lake area as a year-round mountain resort. Not surprisingly, given the dramatic changes that have occurred in the physical landscape in the region since the completion of the historic road, no trace of Site 36-007049 was found in or near the APE during the field survey. Site 36-007049, therefore, no longer exists where it once crossed the APE.

The two prehistoric isolates, designated 36-003708 and 36-060169, consisted of a metate and three jasper flakes, respectively. None of these artifacts were observed at their recorded locations during this study. No other historical/archaeological resources, either prehistoric or historic in origin, were encountered during the course of the study. Based on these research results, the present study concludes that no “historic properties” or “historical resources” exist within or adjacent to the APE.

3.4.3 Environmental Consequences

Nevertheless, the past discovery of the isolates within the APE, along with other Native American archaeological resources recently reported near portions of the APE, specifically the Woodlands neighborhood near Erwin Lake, where the isolates were recorded, and around

Mount Whitney Drive and Division Drive at the eastern end of Big Bear Lake, suggest a heightened potential for subsurface archaeological deposits in these areas, especially if undisturbed native soils are encountered. Such soils may be exposed within the ten-foot-deep trenches proposed for the undertaking. Accordingly, the cultural resources survey recommends that archaeological monitoring should be required during trenching activities in the areas identified above. In addition, contingency measures are recommended to address the potential accidental exposure of random subsurface cultural resources.

3.4.4 Mitigation

The following cultural resources mitigation measures shall be implemented during installation of the DWP water system facilities.

3.4.4-1 ***The Department will conduct archaeological monitoring of trenching activities in portions of the APE in the Woodlands neighborhood near Erwin Lake and in the Mount Whitney Drive and Division Driver area at the eastern end of Big Bear Lake. A qualified professional shall conduct the monitoring and a report of findings, including any management actions required to protect any exposed subsurface resources, shall be completed and submitted to the Department.***

3.4.4-2 ***If cultural resources (historic, pre-historic or paleontological) are discovered during project construction, all work in the area of the find shall cease, and a qualified professional retained by the Airport shall investigate the find and make recommendations on the disposition of any buried resources. This shall include assessing the value of objects, determining whether the resource deserves curation, and preparing and implementing a curation plan to protect such resources. The qualified professional shall compile a report of findings and make it available to peers for review and use of the information.***

3.4.4-3 ***If human remains are accidentally exposed during construction activities, all work shall cease in the area of discovery and the San Bernardino county Coroner's Office shall be contacted pursuant to procedures set forth in Section 7050.5 of the Health and Safety Code. Any discoveries of Native American human remains will be address under the procedures in PRC Section 5097.98 et al.***

3.5 BIOLOGICAL RESOURCES

3.5.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC), Section 1531, et. seq. See also 50 CFR Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species (listed species) and the ecosystem upon which they depend. Under Section 7 of this act, federal agencies are required to consult with the U.S. Fish and Wildlife Service (FWS) to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an incidental take permit. Section 3 of FESA defines take as Aharass, harm pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct.@

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code, Section 2050, et. Seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to avoid or offset project caused losses of listed species populations and their essential habitats. CDFG is the agency responsible for implementing CESA. Section 2081 of the Fish and Game Code prohibits Atake@ of any species determined to be an endangered species or a threatened species (listed species). Take is defined in Section 86 of the Fish and Game Code as Ahunt, pursue, catch, capture, or kill, or otherwise attempt to hunt, pursue, catch, capture or kill.@ CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFG under Section 2081. For projects requiring a Biological Opinion under Section 7 of the FESA, CDFG may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.2 of the Fish and Game Code.

3.5.2 Affected Environment

To evaluate the potential for biological resources within the project APE, a biological resources records check and field survey of project facility sites and alignments were carried out by Tom Dodson & Associates (TDA) biologists. A copy of the TDA report of findings, a biological assessment and supporting documentation, is provided as Appendix 4 to this document.

According to the Biological Resources Report, area where the project is located consists of steep, rugged terrain dominated by Westside Ponderosa Pine Forest, a mixed association of evergreen and broadleaf trees. This vegetation community consists of a variety of well-spaced large trees dominated by ponderosa pine *(Pinus ponderosa),* Jeffrey pine *(Pinus jeffreyi),* sugar pine *(Pinus lambertiana),* white fir *(Abies concolor),* and black oak *(Quercus kelloggii).* Nevada currant *(Ribes nevadense)* is the most dominant shrub species within the project area. The forb layer is dominated by annuals and perennials including yarrow *(Achillea millefolium),* golden yarrow *(Eriophyllum conferriflorum),* California goldenrod *(Solidago califarnica),* tansy mustard *(Descurainia incise* ssp. *incisa),* western wallflower *(Erysimum capitatum),* happy plant *(Gayophytum diffusum),* goose grass *(Galium aparine),* and mountain bugler *(pensteman labrosus).* Grasses and grass-like plants include California brome *(Bromus carinatus),* cheat grass *(Bromus tectorum),* California fescue *(Festuca californica),* and mutton grass *(Poa fendleriana ssp. longiligula).*

Wildlife observations made during the survey were dominated by bird species. Common bird species observed include acorn woodpecker *(Melanerpes formicivorus),* Stellar's jay *(Cyanocitta stelleri),* mountain chickadee *(Poecile gambeli),* dark-eyed junco *(Junco hyemalis),* American robin *(Turdus migratorius),* spotted towee *(Pipilo erythrophthalmus),* and mourning dove *(Zenaida macroura)*.

Identification of mammals within the project area was generally determined by physical evidence rather than direct visual identification because many of the mammal species that have the potential to occur within the project area are nocturnal and would not have been active during the survey. According to the Biological Resources Report, the project area provides many benefits for mammal species including use for foraging, nesting, burrowing, and wildlife movement. The most common mammals expected to occur in the project area include small mammals such as Western gray squirrel *(Sciurus griseus),* Merriam's chipmunk *(Tamias merriami),* Lodgepole chipmunk *(Tamias speciosus),* ornate shrew *(Sorex omatus),* broadfooted

mole *(Scapanus latimanus),* Botta's pocket gopher *(Thomomys bottae),* deer mouse *(Peromyscus maniculatus),* house mouse *(Mus musculus),* dusky-footed woodrats *(Neotoma fuscipes),* raccoons *(Procyon lotor),* long-tailed weasel *(Mustela frenata),* striped skunk *(Mephitis mephitis)* and spotted skunk *(Spilogale gracilis).* Larger mammals expected to occur include the black bear *(Ursm americanus),* mule deer *(Odocoileus hemionus),* and coyote *(Canis latrans).*

Reptiles observed within the Project Area include the western fence lizard *(Sceloporus occidentalis)* and the western skink *(Wumeces skiltonianus).* No amphibians were observed within the Project Area, but they are expected to occur. In addition, no permanent water sources capable of supporting fish were identified within the project area.

3.5.2.1 Threatened and Endangered Plant Species

No special-status plants were observed in the project area during the spring time botanical surveys. However, the following Federal and/or State-listed plants are known to occupy habitats similar to those identified within the project area and are also known to occur within less than three miles of the project area.

California Taraxacum (*Taraxacum califotnicum*): This species was not detected during surveys; however, the presence of potential habitat at the proposed Division Well No. 8 (BBM 21) and Cherokee Well (FS 5) site locations indicates a low to moderate potential for occurrence. California Taraxacum is a federally endangered species.

San Bernardino blue grass (*Poa atropurpurea*): Although this species was not detected during surveys, the presence of potential habitat at the proposed Division Well No. 8 (BBM 21) and Cherokee Well (FS 5) site locations indicates a low to moderate potential for occurrence. San Bernardino bluegrass is a federally endangered species.

ash-gray paintbrush (*Castilleja cinerea*): Although this species was not detected during surveys, the presence of potential habitat at the proposed Division Well No. 8 (BBM 21) and Cherokee Well (FS 5) site locations indicates a low to moderate potential for occurrence. Ash-gray paintbrush is a federally threatened species.

3.5.2.2 Threatened and Endangered Wildlife Species

Mountain Yellow-Legged Frog (*Rana muscosa*): The mountain yellow-legged frog is Federally listed as threatened, State listed as a species of special concern, and is considered sensitive by the San Bernardino National Forest. No mountain yellow-legged frogs were observed and are not expected to occur due to lack of suitable habitat

Southwestern Willow Flycatcher (*Empidonax traillii extimus*): The southwestern willow flycatcher is Federally and State-listed as endangered. The southwestern willow flycatcher was not observed during the biological surveys and it is not expected to occur due to the lack of suitable habitat.

Bald Eagle (*Haliaeetus leucocephalus*): The bald eagle is State-listed as endangered. There is adequate habitat near the proposed well sites; however, it is unlikely that the bald eagle would

roost at the well sites because suitable roosting habitat can be found much closer to winter foraging on Big Bear Lake.

Southern rubber boa (*Charina bottae umbratica*): Southern rubber boa is a Federally listed species of concern and a State threatened species. The proposed well sites contain few characteristics associated with the boa. The probability of boas on the project sites is unlikely.

3.5.2.3 Species of Special Concern

California spotted owl (*Strix occidentalis*): The California spotted owl is a species of special concern and is listed as sensitive by the San Bernardino National Forest. Spotted owls are found in Big Bear and Lake Arrowhead and are known to occur within three miles of the project area. However, suitable habitat does not occur within the project area and this species was not detected during the biological survey. The California spotted owl is not expected to occur on site or in the near vicinity.

San Bernardino flying squirrel (*Glaucomys sabrinus californicus): The San Bernardino flying squirrel is a State listed species of special concern and a U.S. Forest Service sensitive species.* This species was not observed within the project area. However, potential habitat is found in the general vicinity of the pipe alignments and well locations.

San Bernardino mountain kingsnake (*Lampropeltis zonata parvirubra*): The San Bernardino mountain kingsnake is a Federal species of concern and a State species of special concern. This species is expected to occur throughout the Big Bear area on north and south-facing slopes of the mountain range. The proposed well sites contain few characteristics associated with this species. The probability of kingsnakes on the project sites is unlikely because most are paved or graded.

Further, no Critical Habitat, as designated by USFWS, for threatened and endangered species occurs within the project area.

3.5.3 <u>Environmental Consequences</u>

As indicated above, the project area lies within the range of several sensitive species; however, no sensitive species are likely to occur in or adjacent to the any of the pipeline alignments. All of the pipeline alignments will occur within paved or compacted dirt road rights-of-way and are surrounded by residential development.

The project is also not anticipated to result in impacts to any sensitive species at the Lakeplant Well No. 6 (BBM 20), Lakeplant Well No. 7 (BBM 22 & 23), Magnolia Well (ELS 10 & 11), or North Shore Well #1 Replacement Well (FS 6 & 7) sites. The Lakeplant Well No. 6 (BBM 20) site is disturbed by weed abatement activities and frequent foot traffic. The Biological Resources Report found that while the site is located within the range of several special status species, it is extremely unlikely that any occur under the existing onsite conditions. The Lakeplant Well No. 7 (BBM 22 & 23) site is disturbed with snow plows dumping snow from clearing in the winter with the accumulation of several years of debris and soil. The Magnolia Well (ELS 10 & 11) site is located within an area developed with residential uses. It is an unfenced lot that is generally bare. The North Shore Well #1 Replacement Well (FS 6 & 7) site is unfenced, surrounded by residential development and highly disturbed with weedy vegetation.

These well site locations do not have appropriate habitat for any of the special status species that occur in the area.

The Division Well No. 8 (BBM 21) and Cherokee Well (FS 5) sites have some habitat suitable for supporting sensitive botanical species. The Division Well No. 8 (BBM 21) site is an unfenced lot with existing water district facilities and evidence of frequent foot traffic and dumping along Division Road. Accoring to the Biological Resources Report, there is marginally appropriate habitat for a number of special status plant species but these have not been found to occur on previous surveys. Further, it is recommended that the proposed footprint of the pipeline on this site is surveyed to confirm the presence/absence of special status plant species.

The Cherokee Well (FS 5) site is an unfenced lot located in a residential area. Evidence of frequent foot traffic and some illegal dumping are present onsite. However, there is some native vegetation near the back of the lot and north of the proposed well site. The Biological Resources Report recommends surveying these areas at the appropriate time of year to determine presence/absence of the special status plant species known to occur in the area.

The land disturbance related to equipping the proposed wells will be minimal and is not anticipated to result in the removal of trees capable of supporting flying squirrel, bald eagle, or spotted owl. Therefore, no potential impacts to these species are identified. No sensitive plants or wildlife was observed within the project areas during the biological survey and none are expected to occur. The proposed project is not anticipated to remove any trees or shrubs and will not disrupt suitable habitat for birds, flying squirrels, or snakes. Further, the proposed well sites do not support habitat suitable for southern rubber boa or San Bernardino Mountain kingsnake. Based upon the site conditions observed during the biological survey at each well location, no adverse impacts to sensitive wildlife will result as part of drilling or equipping the proposed wells.

Appendix 4 contains summary tables of the potential for federal or state listed species to occur within the project APE. There is little to no potential for such species to occur because the project APE occurs primarily in highly disturbed circumstances, including paved or graded roadways or areas disturbed by existing well locations. No effect on listed or special status species are forecast to occur if the project is implemented as proposed.

3.5.4 Mitigation

3.5.4-1 ***Within 30-days prior to the onset of ground disturbing activities at the Division Well No. 8 (BBM 21), and Cherokee Well (FS 5) work sites, a qualified biologist shall conduct a preconstruction clearance survey for herpetofauna including Southern rubber boas and/or San Bernardino Mountain king snakes. In the event a rubber boa and/or king snake has migrated onto the site the appropriate regulatory agency shall be contacted and avoidance measures shall be developed prior to the commencement of work. Large diameter snags shall be left in place or placed strategically to act a barrier into the work zone.***

3.5.4-2 ***Any removal of vegetation should be conducted outside of the nesting season for migratory birds (roughly April-September) covered under the Federal Migratory Bird Treaty Act, or pre- construction nesting bird surveys should be conducted by a qualified biologist.***

3.5.4-3 ***Trenching and excavation for the pipelines should be limited to the minimum width practicable, and trenches should be covered at night to minimize injury/stranding of wildlife.***

With implementation of these mitigation measures, the proposed project will not result in substantial or significant adverse impacts to wildlife or sensitive biological resources.

3.6 COASTAL RESOURCES

The proposed project area is located approximately 100 miles from the California coast. Therefore, as stated in Section 3.1.2, the project area is not located within a Coastal Zone Management Area and no adverse impact to coastal resources can occur.

3.7 SOCIO-ECONOMIC / ENVIRONMENTAL JUSTICE ISSUES

3.7.1 Regulatory Setting

3.7.1.1 Socio-Economic Conditions

The National Environmental Policy Act (NEPA) of 1969 established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings [42 U.S.C. 4331(b)(2)]. Final decisions regarding projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as, destruction or disruption of human-made resources, community cohesion and the availability of public facilities and services.

3.7.1.2 Environmental Justice

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President Clinton on February 11, 1994. This EO directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law.

3.7.2 Affected Environment

3.7.2.1 Population

According to the Department=s Urban Water Management Plan, the population within the Department's service area is expected to grow from 19,905 to 23,075 people between 2005 and 2010. Based on growth since 2000, the estimated rate of population growth ranges from 1.0 to 3.0 percent per year through the year 2025. However, due to the large number of part-time homeowners and the recreational character of the service area, the City of Big Bear Lake Chamber of Commerce estimated that the population of the Department's service area can peak at 80,000 to 100,000 on the weekends and holidays. Therefore, the population growth rate is anticipated to be 3.0 percent per year through the year 2025. Further, the Census Bureau estimates that 75 percent of the homes in the Department's service area are what is considered "vacant," which means that they are for seasonal, recreational or occasional use, and that only 25 percent of the homes are occupied full time.

3.7.2.2 Ethnic Classification

According to the 2000 Census, Hispanics account for 12.9 to 13.7 percent of the population; Caucasians account for 81.5 to 81.6 percent of the population; and non-Hispanics and others account for the remaining 4.8 to 5.5 percent of people within the Big Bear Lake and Big Bear City areas.

According to the City of Big Bear Lake General Pan Land Use Element, the City has a low median household income. The County's General Plan Housing Element also indicates that the median household income for residents within unincorporated areas of the County tend to be lower than in the rest of the County. In addition, the City of Big Bear Lake and County General Plans indicate that the median home price within the Department's service area tend to be higher than other areas of the County.

3.7.2.3 Community Character and Cohesion

This issue concerns the human environment, in terms of profiling a community in regards to boundaries and neighborhoods. Local businesses, homes and activity centers play a part in defining a community, as well as demographic characteristics, economic base, locations of community facilities and other relevant characteristics. Consideration of possible impacts of a proposed project is given to increasing or decreasing public access, dividing neighborhoods, separating residences from community facilities, growth, changes in the quality of life, and increasing urbanization or isolation.

As indicated in the Land Use Section of this document, the proposed project would not physically divide any of the communities in which the proposed water facilities will be installed. The entire project area is designated for residential, commercial, and public/open space uses, with limited industrial development. The installation of the water distribution facilities involves placing water pipelines below the ground surface and once installed, no change in the above ground use will occur and no division of the community will result. Similarly, the Department maintains wells throughout the project area, and the installation of several new wells within the service area has no potential to create substantial changes in community character and cohesion.
The proposed water facilities are not expected to directly or indirectly induce substantial population growth as this project has been undertaken to meet water demand from existing and permitted development during the current drought. The Department has determined that it is necessary to develop additional well sites and install distribution facilities to maintain adequate public water supplies. The proposed water system improvement project is considered growth accommodating not growth inducing. New growth within the Department's service area is subject to City or County development oversight through zoning and permit processes. Note that for the past several years the number of new water connections has been severely limited due to the drought conditions in the Department's service area. Over this period fewer applications for service connections have been received than allocated by the Department, so growth has been very low over the past several years.

3.7.2.4 Relocation

In terms of possible relocations, the Department=s Relocation assistance program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act

of 1970 (as amended) and Title 49 Code of Federal Regulations (CFR) Part 24. The purpose of RAP is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 U.S.C. 2000d, et seq.). These relocation requirements are embodied in the Caltrans Director=s Title VI Policy Statement.

The development of the Northshore Well No. 1 Replacement Well (FS 7 & 8) will require the acquisition of property. However, the proposed project will not adversely affect or eliminate any existing residences, it would not result in the relocation of any persons living in the area and no homes would become uninhabitable as a result of project implementation. The proposed project would be located within existing road rights-of-way, on properties already developed with water facilities, or on DWP owned lands, or lands to be acquired that do not contain and residences or structures.

3.7.3 Environmental Consequences

3.7.3.1 Alternative 1 (Preferred Alternative)

The project site is located within a community that is generally below the economic level of other communities in the County, due to having a high percentage of seasonal residents. However, there are no industries or contaminated sites in or around the project area such that this project would comprise a new hazard and additional hazard to a particular population. The proposed project will temporarily impact those residents along the pipeline routes and in the vicinity of the well sites, but it has no potential to focus adverse impacts on any low income or ethnic communities over the short term or the long term. The project itself will be an improvement to area services that will benefit the whole of the population within the Department's service area.

The construction and operation of the proposed project will not require the acquisition of any property that contains housing resources. As stated above, the proposed project would be located within existing road rights-of-way, on properties already developed with water facilities, or on DWP owned lands or vacant land with no private occupants or structures that would require relocation.

This project does not propose the development of any new housing nor any new long-term employment in the area that could create an indirect demand for housing. This project is considered growth-accommodating and not growth-inducing in that it is intended to maintain adequate water supplies and fire flow for the existing and planned developments within the Department's service area.

Community Character and Cohesion
As stated above, the proposed project would not physically divide any community. The entire project area is designated for residential, commercial, and public/open space uses, with limited industrial development. The installation of the water distribution facilities involves placing water pipelines below the ground surface and once installed, no change in the above ground use will occur and no division of the community will result. The proposed wells will be installed on discrete parcels of land with no potential to adversely affect community character and cohesion.

Relocation
The proposed project would not result in the relocation of any persons living in the area and no homes would become uninhabitable as a result of project implementation. The proposed project would be located within existing road rights-of-way, on properties already developed with water facilities, or on DWP owned lands or vacant land with no private occupants or structures that would require relocation

3.7.3.2 No-Action Alternative

No adverse impacts would occur as a result of implementing the no-action alternative as land use conditions would remain under existing conditions.

3.7.4 Mitigation

Implementation of the proposed project will not cause substantial adverse community cohesion, housing resource, or relocation effects. No mitigation is recommended.

3.8 MISCELLANEOUS ISSUES

3.8.1 Air Quality

3.8.1.1 Regulatory Setting

Introduction
All levels of government have some responsibility for protecting air quality. This section outlines the responsibilities of federal, state, regional and local government agencies in air quality matters and provides an explanation regarding how they interact.

Federal
At the federal level, the Environmental Protection Agency (EPA) has been charged with implementing national air quality programs. The EPA's air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA). The FCAA was signed into law in 1970. The Act was substantially amended in 1977 and again in 1990.

The FCAA required the EPA to set National Ambient Air Quality Standards (NAAQS) for several problem air pollutants on the basis of human health and welfare criteria. NAAQS were established for the following "criteria" air pollutant (so called because they were established on the basis of health criteria):

- Carbon monoxide (CO)
- Ozone (O_3)
- 10-micron or less particulate matter (PM-10)
- 2.5 microns or less particulate matter (PM-2.5)
- Nitrogen dioxide (NO_2)
- Sulfur dioxide (SO_2)
- Lead (Pb)

NAAQS are intended to protect, with an adequate margin of safety, those persons most susceptible to respiratory distress, such as people suffering from asthma or other illness, the elderly, very young children, or others engaged in strenuous work or exercise.

The FCAA required each state to prepare an air quality improvement plan called the State Implementation Plan (SIP) for those pollutants that exceed NAAQS. The SIP is a dynamic document and through an ongoing review process it is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The EPA has responsibility to review all state SIPs to determine if they conform to the mandates of the FCAA and will achieve air quality goals when implemented. If the EPA determines a SIP to be inadequate, it may prepare a Federal Implementation Plan (FIP) for the non-attainment area and may impose additional control measures.

State
The California Air Resources Board (ARB) is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing its own air quality legislation called the California Clean Air Act (CCAA), adopted in 1988. The ARB has primary responsibility in California to develop and implement air pollution control plans designed to achieve and maintain the NAAQS established by the EPA. The ARB also has the responsibility to produce a major part of the SIP for pollution sources, such as automobiles, that are state-wide in scope. It relies on the local air districts to provide additional strategies for site-specific sources such as factories, power plants, etc. The ARB combines its data with all local district data and submits the completed SIP to the EPA.

The FCAA allows states to establish their own clean air standards, provided the state standards are at least as stringent as the NAAQS. California had established California Ambient Air Quality Standards (CAAQS) even before the first FCAA was ever adopted. The current inventory of NAAQS and CAAQS is shown in Table 3.8.1-1. The health effects of various criteria air pollutants are shown in Table 3.8.1-2.

Table 3.8.1-1
STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS

		(State) SAAQS[a]		(Federal) NAAQS[b]	
Pollutant	**Averaging Time**	**Standard**	**Attainment Status**	**Standard**	**Attainment Status**
Ozone (O3)	1-hour	0.09 ppm	**N**	NA	See Note (c)
	8-hour	0.07 ppm	**N**	0.075 ppm	**N**(d)
Carbon Monoxide (CO)	1 hour	20 ppm	A	35 ppm	A
	8 hour	9.0 ppm	A	9 ppm	A
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm	A	NA	NA
	Annual	0.030 ppm	A	0.053 ppm	A
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm	A	NA	NA
	24 hour	0.04 ppm	A	0.14 ppm	A
	Annual	NA	NA	0.03 ppm	A
Particulate Matter (PM10)	24 hour	50 $\mu g/m^3$	**N**	150 $\mu g/m^3$	U
	Annual[e]	20 $\mu g/m^3$	**N**	NA	NA
Fine Particulate Matter (PM2.5)	24 hour	NA	NA	35 $\mu g/m^3$	**N**(f)
	Annual	12 $\mu g/m^3$	**N**	15 $\mu g/m^3$	A
Sulfates	24 hour	25 $\mu g/m^3$	A	NA	NA
Lead	30 day	1.5 $\mu g/m^3$	A	NA	NA
	Quarter	NA	NA	1.5 $\mu g/m^3$	A
Hydrogen Sulfide	1 hour	0.03 ppm	U	NA	NA

NOTES: A = Attainment; **N** = Nonattainment; U = Unclassified; NA = Not Applicable or no applicable standard; ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

a SAAQS = state ambient air quality standards (California). SAAQS for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All other state standards shown are values not to be equaled or exceeded.

b NAAQS = national ambient air quality standards. NAAQS, other than ozone and particulates, and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the three-year average of the fourth highest daily concentration is 0.08 ppm or less. The 24-hour PM10 standard is attained when the three-year average of the 99th percentile of monitored concentrations is less than the standard. The 24-hour PM2.5 standard is attained when the three-year average of 98th percentile is less than the standard.

c The national 1-hour ozone standard was revoked by the U.S. EPA on June 15, 2005.

d. In 2008, U.S. EPA lowered the 8-hour federal standard for ozone to 0.075 ppm. EPA will issue final designations based upon this standard at which point the Bay Area Air Basin is expected to be designated as non-attainment.

e State standard = annual geometric mean; national standard = annual arithmetic mean.

f Effective April, 2009. SOURCE: BAAQMD, 12/30/08

Table 3.8.1-2
HEALTH EFFECTS OF MAJOR CRITERIA POLLUTANTS

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	• Contaminated soil.	• Impairment of blood functions and nerve construction. • Behavioral and hearing problems in children.
Fine Particulate Matter (PM-10)	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardio respiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Fine Particulate Matter (PM-2.5)	• Fuel combustion in motor vehicles, equipment, and industrial sources. • Residential and agricultural burning. • Industrial processes. • Also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.	• Increases respiratory disease. • Lung damage. • Cancer and premature death. • Reduces visibility and results in surface soiling.
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board 2002

Local
State law recognized that air pollution does not respect political boundaries and therefore required the ARB to divide the state into separate air basins based on similar geographic and meteorological conditions. Each air basin is governed by an air district that has the primary responsibility for control of air pollution from all sources other than emissions directly from motor vehicles, which are the responsibility of the ARB and the EPA. Air districts adopt and enforce rules and regulations to achieve state and federal ambient air quality standards and enforce applicable state and federal law.

Currently, the South Coast Air Quality Management District (SCAQMD) has jurisdiction over air quality matters in the South Coast Air Basin (SoCAB). The SCAQMD is the air pollution control agency for all of Orange County and the urban portions of Los Angeles, Riverside and San Bernardino counties. In order to bring the SoCAB into compliance with State and Federal clean air standards, the SCAQMD has developed and adopted an Air Quality Management Plan (AQMP), which identified rules to reduce emissions from various sources.

3.8.1.2 Affected Environment

Environmental Setting: Air Quality
Generally, the project area is located in the San Bernardino Mountains and just within the South Coast Air Basin (SoCAB), one of the major air management basins established for managing air quality within California. Further, the area lies wholly within the jurisdiction of the South Coast Air Quality Management District (SCAQMD). BBARWA currently operates diesel generating equipment to provide electricity (power) to its existing WWTP operations, and maintains a Permit to Operate (Permit #F49224, A/N 396528) the diesel generator at the WWTP. There is very little monitoring data for the Big Bear Valley because it is at the very northeastern edge of the SoCAB. The data below provides general information regarding existing air quality for the region, but because Big Bear Valley is not located near the major passes (Cajon Pass and Banning Pass) where air pollution is transported out of the basin, overall air quality is generally believed to be better than elsewhere in the Basin, both during the summer and winter.

Climate/Meteorology and Air Quality
The area is characterized by an alpine climate, with substantial winter precipitation in the form of snow. Daily temperatures in the summer average 60°F- 70°F. Temperatures in the winter average approximately 35°F-40°F. On average the Bear Valley area receives approximately 24 inches of precipitation per year, with a sharp transition between the western edge of the Valley at the dam and the eastern edge at Baldwin Lake. Historical precipitation consists of both rainfall and snowfall. Within the Big Bear watershed, the precipitation varies with location. The west end of the lake, at the Big Bear dam, receives an average of 38 inches per year, whereas the east end of the lake receives 14 inches per year (CH2M Hill, 2004).

Air quality is generally considered good. There are two large stationary sources of air pollutants in the Big Bear Valley. Both ski resorts (Snow Summit and Bear Mountain, currently under single ownership), operate several megawatts of diesel generators (both portable and stationary) to support both snow-making and winter and summer recreation operations. Otherwise, emissions are generated from vehicle traffic and from wood stoves. Additionally, local logging operations from the recent removal of numerous dead and dying trees (due to drought and bark beetle infestation), are expected to contribute particulates for a number of years.

Although the Big Bear Valley area has good air quality generally, according to federal classification for the SoCAB, it is subject to ozone and particulate (PM10) pollution. Ozone does not originate from vehicle and industrial exhaust in the area. Rather, the ozone comes from pollutant transport from smog blowing from the south and southwest from the coastal plain portion of the SoCAB, which is located southwest of Big Bear Valley. Ozone concentrations are highest in the summer months. The colder winter temperatures and reduced solar insolation reduce the reactions that form smog, so ozone pollution rarely exceeds air quality standards during the winter.

Table 3.8.1-3 as follows shows recent data for ozone and particulates, both coarse (PM_{10}) and fine ($PM_{2.5}$). This information is based on the nearest regularly sampled air quality monitoring station to Big Bear Lake, which is located at an elevation 1,000 feet lower than the project site in Crestline. This is station No. 5181, termed Central San Bernardino Mountains. Due to its lower elevation and proximity to Cajon Pass, air quality is somewhat worse than what would be found for Big Bear Lake. Particulates have been monitored at this station for coarse (PM_{10}) particulates. There are fine ($PM_{2.5}$) particulates data for station No. 5818, termed the East San Bernardino Mountains station. Particulate matter violations in the San Bernardino Mountains are rare as indicated by the data in Table 3.8.1-3. Historic data indicates that even with combustion of wood in stoves and fire places, particulate concentrations rarely exceed the particulate matter standards.

Table 3.8.1-3
AIR QUALITY DATA FOR
CENTRAL AND EAST SAN BERNARDINO MOUNTAINS

Year Sta. No. 5181	Days exceeding State Ozone standard	Days exceeding Federal Ozone standards	Maximum 1-hour reading in ppm
2003	84	34(74)	0.163
2002	91	22(82)	0.161
2001	88	26(74)	0.171
2000	85	17(73)	0.18
Year Sta. No. 5181	**Percent of Samples exceeding State PM10 standard**	**Percent of Samples exceeding Federal PM 10 standard**	**Maximum 24-hour reading in ug/m^3**
2003	0	0	47
2002	5	0	52
2001	-	-	-
2000	0	0	49
Year Sta. No. 5818	**Annual Arithmetic Mean for PM 2.5**	**Percent of Samples exceeding Federal PM 2.5 standard**	**Maximum 24-hour reading in ug/m^3**
2003	10.5	0	35.0
2002	11.3	0	34.1
2001	10.9	0	34.6
2000	10.6	0	29.0

Notes:
Ozone State Standard: 0.09 ppm based on 1-hr average
Ozone Federal Standards: 0.12 ppm based on 1-hr average (and 0.08 ppm based on 8-hr average)
PM10 State Standard: 50 ug/m^3 based on 24-hr average
PM10 Federal Standard: 150 ug/m^3 based on 24-hr average

PM2.5 Federal standard is AAM: 15 ug/m^3
ppm = parts per million
ug/m^3 = micrograms per cubic meter

Source: SCAQMD Air Quality Summary Data (www.aqmd.gov)

3.8.1.3 Environmental Consequences

The proposed DWP Capital Improvement Program (CIP) consists of the installation of about 37,000 lineal feet of new pipeline, ranging from 8" to 12" throughout the Big Bear Valley. It also consists of drilling and equipping six new wells to assist the District to meet its water supply obligations. To address the potential short- and long-term air emissions associated with this project, JE Compliance Services, Inc. compiled an air quality evaluation of the proposed facilities, titled: "Air Quality Analysis for the Big Bear Lake Department of Water and Power Project in Big Bear Lake, California." A copy of this document is provided in Appendix 6. Note that some of the facilities, pump station and reservoir, are no longer included in the Department's CIP, but the analyses of these facilities have been retained because if the Department seeks to install such facilities in the future, the basic air emission forecast will be available.

The following is a summary of facts and findings regarding the project's air pollution emissions if the project is implemented as proposed. For a detailed discussion of construction assumptions and modeling assumptions please refer to Appendix 6. The following analysis evaluates the potential construction and operating emissions of the proposed project in the context of the South Coast Air Quality Management District's (SCAQMD) screening thresholds of significance and provides an evaluation of the proposed project's conformity with the State Implementation Plan (SIP) as required by federal regulations. Greenhouse gas emissions are also forecast and an evaluation of the scale of these emissions is also provided in this document.

SCAQMD publishes screening levels to determine if a project is regionally significant. Additionally, SCAQMD provides guidance on determining localized significance thresholds (LSTs) for a project. SCAQMD provides mass rate LSTs look up tables that are a function of the project location, project size and sensitive receptor distance. A site size of one acre and a receptor distance of 25 meters were used to determine the LSTs for the proposed CIP facilities. The references to table in the text below are to the tables in Appendix 6.

Unmitigated criteria pollutant emissions from the construction phase of the project are provided in **Table 1** through **Table 5**. Unmitigated emissions of PM10 and PM2.5 from the pipeline phase exceed the LSTs and unmitigated emissions of NOx exceed the regional significance threshold. Unmitigated emissions of the remaining criteria pollutants from the pipeline phase do not exceed the LSTs or regional significance thresholds. Unmitigated emissions of criteria pollutants from the production well phase do not exceed the regional significance levels; however, unmitigated emission of PM10 and PM2.5 from the production well phase exceed the LSTs. No other criteria pollutants from the production well phase exceed the LSTs.

Un mitigated criteria pollutant emissions from the operational phase of the project are provided in **Table 6** through **Table 8**. Un mitigated criteria pollutant emissions from the operational phases of the project do not exceed regional significance thresholds or LSTs.

Mitigated criteria pollutant emissions from the construction phase of the project are provided in **Table 9** through **Table 12**. The mitigated emissions of criteria pollutants from installing pipelines and wells do not exceed the regional significance thresholds or the LSTs.

Federal Conformity

The South Coast Air Basin (SoCAB) is designated as a non-attainment area for PM10, PM2.5 and ozone. The SoCAB is designated as an attainment area with a maintenance plan for CO and nitrogen dioxide (NO2). The SoCAB is designated as an attainment area for SO2. The attainment status of the criteria pollutants is summarized in **Table 13**.

Unmitigated construction and operational emissions do not exceed the *de minimis* thresholds established in 40 CFR 92.153. Construction and operational emissions (in tons per year) for the project and the corresponding *de minimis* thresholds are provided in **Table 14** through Table 17.

The air emission facts and findings demonstrate that the proposed project will not cause substantial local or regional (cumulative) adverse effects if implemented under the assumptions contained in Appendix 6. As indicated above, the project assumptions have been modified since the air quality impact forecast was completed. Specifically, the new pump station will not be installed as part of this project and the demolition of the existing Cline Miller reservoir and construction of a replacement reservoir will also not occur as part of this project. In addition, three of the new wells will not need to be drilled, they will only require equipping the wells with pumps and other production equipment. Based on these project modifications, the pipeline installation and well drilling activities can be implemented concurrently.

3.8.1.4 Mitigation

The following mitigation measures must be implemented during pipeline construction and well installation to meet emission levels that will not result in a substantial adverse air quality impact.

3.8.2 <u>Transportation</u>

3.8.2.1 Regulatory Setting

The Federal Highway Administration (FHWA) directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (23 CRF 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

The involved agencies of the state of California and the FHWA are committed to carrying out the 1990 Americans with Disabilities Act (ADA) by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public will be provided to persons with disabilities. See also the discussion under land use above.

3.8.2.2 Affected Environment

Local Area Circulation System

The existing roadway system in Bear Valley is characterized by a combination of state highways and local roadways. The main access to the Bear Valley area is provided via Rim of the World Highway (SR 18) and State Route 38 (SR 38). SR 38 is a two-lane highway extending north from the I-10 Freeway in the City of Redlands and continuing northeast through the San Bernardino National Forest before joining Rim of the World Highway (SR-18) east of Big Bear Lake. SR-18 is a two-lane State Highway that provides access to the mountain region from both the valley region to the south and the desert region to the north. This roadway operates as the primary access for the Bear Valley community and other mountain communities such as Crestline and Lake Arrowhead. Both the SR 38 and SR18 are classified as mountain major highways under San Bernardino County roadway classification standards. Refer to Appendix 1 which shows the alignment of these roadways.

Average daily traffic (ADT) volumes along SR 38 in 2004 ranged from 4,000 to 13,000 throughout the Bear Valley area. Average daily traffic (ADT) volumes along SR 18 in 2004 ranged from 3,000 to 19,500 throughout the Bear Valley area. At buildout conditions, ADTs are expected to be up to 16,050 along SR 38 and up to 25,400 along SR 18. According to the Bear Valley Community Plan, future 2030 conditions on major County roads are projected to continue to operate at acceptable levels of service. Further, the conditions on some segments of SR 38 and SR 18 are projected to improve, while other segments are projected to worsen. Most segments of the SR 38 and SR 18 that operated at acceptable levels of service in 2004 will continue to do so in 2030, while those segments that did not operate at acceptable levels of service in 2004 are not forecast to change.

The proposed well sites are to be located within residential and commercial parcels. The pipelines are to be placed primarily within local roadway easements.

3.8.2.3 Environmental Consequences

The proposed project will have its greatest impact on traffic during the period of construction. Construction activities will result in an increase in traffic due to construction worker commuting and equipment and materials deliveries. A total of 100 vehicle trips per day are expected during the construction period. The roads in the immediate area of the project area include SR 38, SR 18, and various local roadways. Average daily traffic (ADT) volumes along SR 18 in 2004 ranged from 3,000 to 19,500 throughout the Bear Valley area. At buildout conditions, ADTs are expected to be up to 16,050 along SR 38 and up to 25,400 along SR 18. Thus, the additional traffic for the construction period, estimated to be about 100 trips per day, should not bring traffic volumes to levels out of the ranges expected.

Operation impacts on the circulation system should be minimal. Overall, it is not anticipated that the well sites will require more than a 1 to 2 vehicle trips per week by employees. Regarding the water pipeline alignments, once the pipelines are emplaced, there should be little maintenance required such that traffic would be generated on a routine basis. Mitigation to address short-term construction impacts on traffic flow are provided below.

No-Action Alternative
The no-action alternative would result in no impacts to the transportation system as the existing conditions would not be changed.

3.8.2.4 Mitigation

The following mitigation measures will be implemented during project construction in order to mitigate potentially significant impacts on the local transportation system:

3.8.2-1 ***The construction contractor will provide adequate traffic management resources, such as protective devices, flag persons, and police assistance for traffic control, to maintain safe traffic flow on local streets affected by facility and pipeline construction at all times.***

3.8.2-2 ***The construction contractor will identify traffic hazards created by construction, such as rough road or potholes, freshly paved locations, and minimize total traffic and vehicle speed through such hazards.***

3.8.2-3 ***The construction contractor will ensure that traffic safety hazards, such as uncovered or unfilled open trenches, will not be left in roadways during period of time when construction personnel are not present, such as nighttime and weekends.***

3.8.2-4 ***The construction contractor will repair all roads adequately after construction to ensure that traffic can move in the same manner as before construction.***

3.8.2-5 ***At all times during construction, the contractor will ensure that emergency fire, police or medical vehicles are able to access all adjacent areas. Additionally, construction equipment or activities must not obstruct or hinder traffic that might be generated during an evacuation.***

Implementation of the above measures will ensure that no substantial short-term traffic hazards will be caused by the proposed project.

Following completion of the proposed project, there is no potential to cause substantial adverse effects to any circulation system components within the project area.

3.8.3 Noise

3.8.3.1 Regulatory Setting

NEPA and CEQA provide the broad basis for analyzing and addressing noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation differ between NEPA and CEQA.

Noise Standards

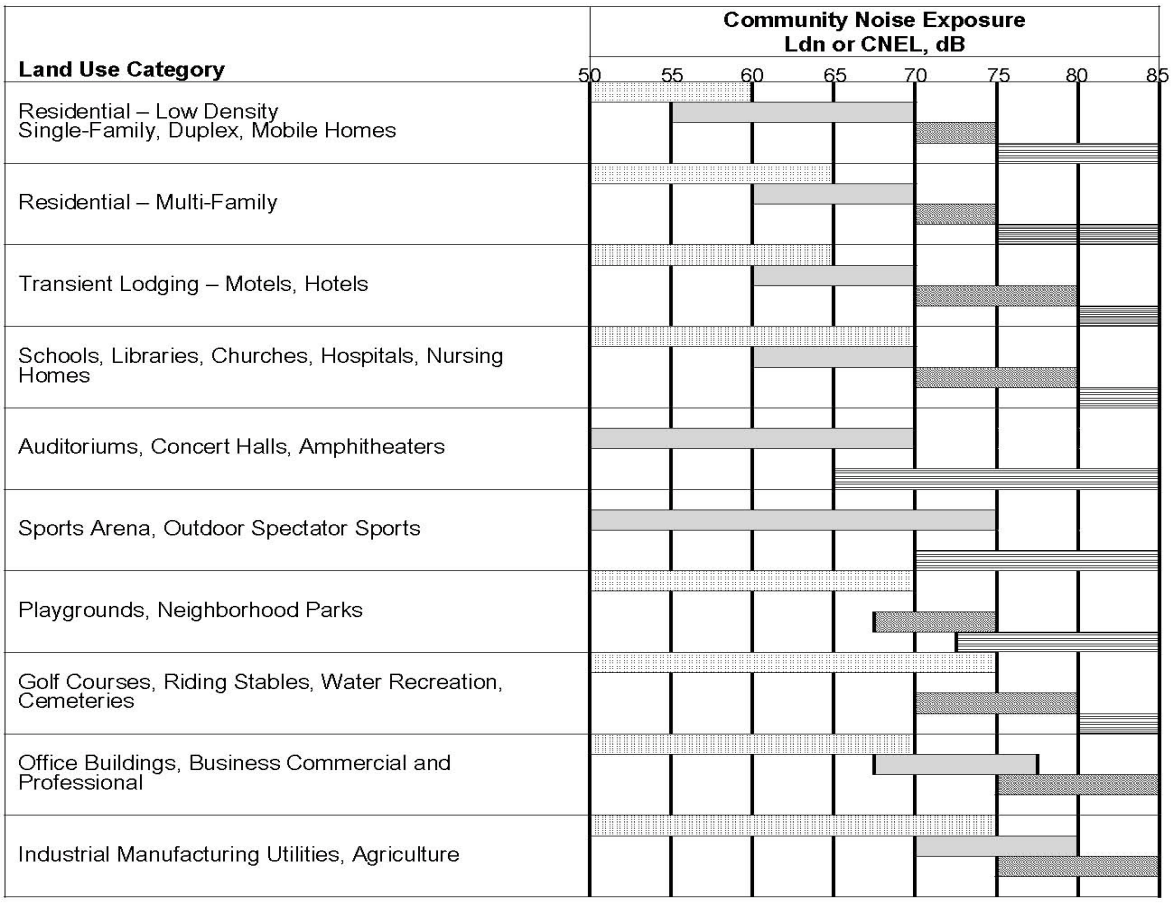
State of California Guideline
The State of California has established guidelines for acceptable community noise levels that are based on the CNEL rating scale. The guidelines rank noise land use compatibility in terms of "normally acceptable," "conditionally acceptable," and "clearly unacceptable" noise levels for various land use types. The State Guidelines in Table 3.8.3-1, Land Use Compatibility for

Community Noise Exposure, single-family homes are "normally acceptable" in exterior noise environments up to 60 dB CNEL and "conditionally acceptable" up to 70 dB CNEL based on this scale. Multiple family residential uses are "normally acceptable" up to 65 dB CNEL and "conditionally acceptable" up to 70 CNEL. Schools, libraries and churches are "normally acceptable" up to 70 dB CNEL, as are office buildings and business, commercial and professional uses.

The City has adopted a goal of 60 dB CNEL in any usable outdoor space for new residential uses. Levels up to 65 dB CNEL are acceptable if all reasonable mitigation has been exhausted to reach 60 dB CNEL. Commercial and industrial uses are considered less sensitive to noise and levels to 70-75 dB CNEL are allowed within such areas.

Federal Guidelines
Noise standards promulgated by various agencies differ somewhat from one agency to another. The Federal Highway Administration (FHWA) has adopted Noise Abatement Criteria (NAC) which are based upon the noisiest single hour of the day (Leq[1]). Exterior noise levels of 67 dB Leq in usable outdoor space are considered the maximum desirable noise exposure for noise-sensitive land uses as shown in Table 3.8.3-2. If there are no exterior uses at such receiver sites, attainment of 52 dB Leq is considered the maximum desirable interior noise exposure.

Table 3.8.3-1
LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS



INTERPRETATION

Normally Acceptable: Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

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

Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable: New construction or development should generally not be undertaken.

Source: State of California Governor's Office of Planning and Research, General Plan Guidelines, 1990.

Table 3.8.3-2
FEDERAL NOISE ABATEMENT CRITERIA

Activity Category	Noise Abatment Criteria Level – Leq	Description of Activity Category
A	57 (exterior)	Tracts of land in which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of open spaces, or historic districts which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B	67 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas and parks which are not included in Category A and residences, motels, hotels, public meeting rooms, schools, churches, libraries, and hospitals.
C	--	Undeveloped lands.
D	72 (exterior)	Developed lands, properties or activities not included in Category A or B above.
E	52 (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

3.8.3.2 Affected Environment

With the exception of traffic on the two major roadways, SR 18 and SR 38, the project area consists of a low ambient background noise environment of a rural residential setting. Traffic levels along SR 18 and SR 38 (within the project area) are high enough to generate noise levels exceeding a 60 dBA 24-average noise level, i.e., Community Noise Equivalent Level (CNEL) within 100 feet of these highways. Otherwise, background noise levels were below 65 dBA CNEL and suitable for the residential uses that occur within the project area of potential impact.

The Big Bear City Airport is a public airport, located one-half mile east of Big Bear City. According to the Big Bear City Airport Comprehensive Land Use Plan, the noise corridor, or the 65 CNEL, does not extend beyond the airport boundaries or into the proposed project areas.

The proposed project includes the installation of water production wells and distribution facilities. The proposed pipelines will be primarily installed within existing road rights-of-way. The proposed well sites are located within areas developed with commercial and residential uses.

3.8.3.3 Environmental Consequences

<u>Alternative 1 (Preferred Alternative)</u>
Implementation of the project will generate noise. Generally, pipeline construction and installation and well drilling equipment can generate noise levels of about 70 to 90 dBA at a distance of 50 feet from the equipment. Drilling of the test boreholes will be conducted over the full 24-hour period until the well is completed to the design depth of about 300 feet. Drilling can range from 3-10 days depending upon the depth to the productive portion of the aquifer at a

specific location. Stationary source noise diminishes at a rate of about 6 dB for each doubling of the distance from the source. This means that periodic construction noise levels at the nearest receptor can be about 80 dBA on the exterior of the closest receptor. Drilling of the boreholes will be conducted on a continual basis for ten to twelve days for each well. The well drilling and development will likely exceed the City's and County's noise standard of 65 dBA at the exterior of residential and commercial uses. This increase in noise levels will be short term (about twelve days per well). After initial drilling, well development and structure construction activities may last another 20 to 30 days, but will occur during the less noise sensitive daylight hours. The increased noise levels will not be severe enough to pose a health or hearing hazard, but could be considered a short-term nuisance. Mitigation measures identified below are intended to prevent substantial short-term noise impacts.

People working near the heavy equipment will be exposed to high noise levels for short periods of time. This level, however, is below the Occupational Safety and Health Administration (OSHA) noise exposure limit of 90 dBA for 8 hours per day. The Department and its private contractor are required to comply with OSHA requirements for employee protection during construction.

The proposed production wells include placing a pump within the well shaft below the surface of the ground. The well will be housed within a wood frame or concrete block structure that will further buffer noise associated with the pump. The combination of the depth of the pump underground and the housing of the well station will reduce noise associated with the pump to nonsignificant levels at nearby residences.

The Big Bear City Airport is a public airport, located one-half mile east of Big Bear City. The proposed project involves placing water facilities within the vicinity of the Big Bear Airport. Routine aircraft overflights and public airport operations occur within the project area. However, these overflights occur independent of the actions associated with the proposed project. Noise levels greater than 65 dB CNEL occur within the vicinity of the airport, but due to the type of activities, well installation and testing, groundwater production, and pipeline installation, the aircraft operation noise activities will not create a significant adverse impact to the proposed project and the personnel conducting the well drilling and pipeline installation.

No-Action Alternative

Under the no-action alternative there would be no construction. Therefore there would be no short-term noise impacts. All long-term impacts would remain the same as without the proposed project.

3.8.3.4 Mitigation

There would be no substantial adverse long-term effects to noise or vibration resulting from operation of the proposed project. To reduce potential for short-term affects of noise to a less than substantial impact level, the following measures will be implemented:

3.8.3-1 ***The Department will require the implementation of adequate measures to reduce noise levels to the greatest extent feasible, including portable noise barriers or scheduling specific construction activities to avoid conflict with adjacent sensitive receptors.***

3.8.3-2 ***The Department will require that all construction equipment be operated with mandated noise control equipment (mufflers or silencers). Enforcement will be***

accomplished by random field inspections by applicant personnel during construction activities.

3.8.3-3 ***The Department will establish a noise complaint/response program and will respond to any noise complaints received for this project by measuring noise levels at the affected receptor. If the noise level exceeds an Ldn of 65 dBA exterior or an Ldn of 45 dBA interior at the receptor, the applicant will implement adequate measures to reduce noise levels to the greatest extent feasible, including portable noise barriers or scheduling specific construction activities to avoid conflict with adjacent sensitive receptors.***

3.8.3-4 ***Pipeline construction shall be restricted to daylight hours, unless an emergency exists.***

3.8.4 Geology and Soils

3.8.4.1 Regulatory Setting

The key federal law related to these issues is the Historic Sites Act of 1935, which established a national registry of natural landmarks and protects Aoutstanding examples of major geological features.@

Hazards as they relate to public safety are also concerns for project design. Of primary importance to the project area is that of seismic hazards. The anticipated Maximum Credible Earthquake (MCE) and location of fault zones are important criteria that drive the design and retrofit of structures. The state, county and local hazards overlays are used to assess the risks of proposed projects.

3.8.4.2 Affected Environment

Major Geologic Features
There are no major geologic features that would warrant protection under the Historic Sites Act of 1935 within the project area. The project facilities will be installed on a flat to gently sloping alluvial plain or within the lower, shallow slopes of the adjacent bedrock mountains.

Earthquake Faults
The San Bernardino AMountain Region@ consists of the San Bernardino Mountains and the easternmost portion of the San Gabriel Mountains. These two ranges are separated by the San Andreas Fault in the Cajon Pass area. According to the County=s General Plan, most of the mountain areas are comprised of Mesozoic Age granitic rocks and Precambrian age metamorphic rocks, which are typically overlain by relatively thin ribbons of alluvium in the canyon bottoms. The San Andreas, the San Jacinto, and the Cucamonga faults are prominent faults that cross, or are in close proximity to the Mountain Region.

According to the City of Big Bear Lake and County of San Bernardino General Plans, there are no identified active earthquake faults within the project area. Further, the San Bernardino County General Plan indicates that no Alquist-Priolo Earthquake Fault Zones occur within the project area. However, there are several faults that could cause damage to structures, including water facilities, as a result of a large earthquake event. The nearest fault of major significance is the San Andreas Fault. Also located in close proximity to the project area are the Helendale Fault, the North Frontal Fault, the Lenwood Fault, the San Gorgonio-Banning Fault, and the

Johnson Valley Fault. These faults would be the primary sources of seismic activity in the Bear Valley area.

Further discussion of earthquake faults and the risks associated with them is provided in the Public Health and Safety section of this EA.

Soil Erosion

Soil erosion is a natural process which can become accelerated by human activities such as construction and agricultural practices. Key factors affecting erosion and sedimentation are the extent of vegetation, vegetative cover, slopes, amount of rainfall and soil porosity. Development induced erosion resulting from construction activities, is the greatest source of localized sedimentation problems; primarily caused by vegetation removal, compaction of porous soils and large drainage areas. Through cooperation with the Soil Conservation Service and local resource conservation districts, San Bernardino County maintains a high level of erosion control awareness and practice. Most development in the County requires an erosion control plan and permit.

Soil Types

The Big Bear Valley consists of a bedrock-enclosed basin infilled with alluvial, colluvial, and lake sediments or deposits.

The following soils are present within the project area:

- Avawatz-Oak Glen, dry families association, 2 to 15 percent slopes;
- Lizzant family-Lithic Xerorthents, calcareous association, 15 to 30 percent slopes;
- Merkel-Switchback families complex, 15 to 30 percent slopes;
- Morical, very deep-Hecker families complex, 2 to 15 percent slopes;
- Morical, very deep-Hecker families complex, 15 to 30 percent slopes;
- Morical, very deep-Hodgson families association, 2 to 15 percent slopes;
- Olete-Kilburn-Goulding families complex, 30 to 50 percent slopes;
- Pacifico-Preston families complex, 2 to 30 percent slopes;
- Pacifico-Wapi families complex, 15 to 30 percent slopes; and
- Pacifico-Wapi families complex, 30 to 50 percent slopes.

(Natural Resources Conservation Service, USDA, Web Soil Survey, Available online at **http://websoilsurvey.nrcs.usda.gov**, accessed October 2009).

Further discussion of soils and geology is provided in the Farmlands/Timberlands and Public Health and Safety sections of this EA.

3.8.4.3 Environmental Consequences

Alternative 1 (Preferred Alternative)

No known or suspected earthquake faults occur within the project area. However, Alquist-Priolo Special Studies Zones (potential fault rupture zone) do exist within the project area. In addition, the proposed project area, as with most of southern California, is in a seismically active area and will most likely be subject to substantial groundshaking during the life of the project. Habitable structures are not proposed as part of the project. The well and water pipeline

facilities do not expose people or structures to seismic hazards. Therefore, no significant impact from groundshaking is forecast to result from project implementation.

According to the City's General Plan, the project area contains areas of potential liquefaction, particularly those within the vicinity of Big Bear Lake. However, due to the type of facilities proposed by the project, no adverse impact is forecast to occur if liquefaction occurs. No human occupied structures will be adversely impacted due to project implementation.

Exhibit EH-2 in the City=s General Plan indicates that the project area is susceptible to landslides, where slopes occur. The project sites and surrounding areas are generally flat (less than 10% slope), but a few pipeline locations (Fawnskin) occur in areas adjacent to slopes. The project involves the installation of water distribution pipelines within existing road rights-of way and the testing and development of water production wells within developed areas. The disturbed area for each of the well sites will be approximately 0.20-acre in size and surface sediments will not be disturbed other than by the drilling and set up of the well pad. No hills, cliffs or earthen cuts exist or are proposed. Therefore, it is concluded this project has no potential to expose people or property to landslides or to create unstable earth conditions or cause changes to geological substructures.

According to the City's General Plan, there is no expansive soils hazard in the Big Bear Lake area because of the relatively minor amount of clay present in the alluvial soils derived from the regional granitic bedrock. Additionally, no habitable structures are proposed as part of the project.

During construction, the project site has a potential for soil erosion. Any erosion that may occur on the proposed well sites due to water will be controlled by directing all flows into the appropriately designated facilities. The drilling contractor will settle out suspended sediment by passing water through a series of large storage tanks (Baker tanks or similar tanks). The number of such tanks will be determined in the field based on the volume of water and the need to treat it. If the final stage water does not meet NPDES requirements, the final water will be blended with water from a fire hydrant so that it meets requirements. If necessary, an in line sand filter or similar equipment will be installed in the tanks to remove sufficient suspended sediment to meet NPDES requirements.

Due to the relatively small area of disturbance associated with pipeline installation activities, the shallow depth of the proposed excavation and the surfacing proposed, it is concluded that the potential for the proposed pipeline installation to cause substantial soil erosion does not constitute a potential substantial adverse impact. However, mitigation measures identified below will ensure that this project will have no potential to cause unstable earth conditions. Further, appropriate mitigation measures and best management practices will be employed during construction to minimize any impacts, as presented in the air quality and hydrology and water quality sections of this analysis. Even without these measures, no substantial impacts are identified due to the small size of the project.

<u>No-Action Alternative</u>
Under the no-action alternative, no project would be implemented. Therefore there would be no impacts to soil and geology resources or constraints within the proposed project area.

3.8.4.4 Mitigation

The following mitigation measures will ensure that the project will have no potential to cause unstable earth conditions or substantial erosion/sedimentation:

3.8.4-1 ***Stored backfill material shall be covered with water resistant material during periods of heavy precipitation to reduce the potential for rainfall erosion of stored backfill material. If covering is not feasible, then measures such as the use of straw bales or sand bags shall be used to capture and hold eroded material on the project site for future cleanup.***

3.8.4-2 ***Excavated areas shall be properly backfilled and compacted. Paved areas disturbed by this project will be repaved in such a manner that roadways and other disturbed areas are returned to as near the pre-project condition as is feasible.***

3.8.4-3 ***All exposed, disturbed soil (trenches, stored backfill, etc.) will be sprayed with water or soil binders twice a day or more frequently if fugitive dust is observed migrating from the site within which the water facilities are being installed.***

3.8.4-4 ***The length of trench which can be left open at any given time will be limited to that needed to reasonable perform construction activities. This will serve to reduce the amount of backfill stored onsite at any given time.***

The following mitigation measure will be implemented to ensure the discharge of groundwater or surface runoff from the site does not result in significant soil erosion or loss of topsoil.

3.8.4-5 ***The Department shall identify best management practices (BMPs) to ensure that the discharge of the groundwater pumped to the surface by the proposed wells do not cause erosion downstream of the discharge point. This shall be accomplished by reducing the energy of any site discharge through an artificial energy dissipator or equivalent device. If any substantial erosion or sedimentation occurs as a result of discharging groundwater from the project well, any erosion or sedimentation damage shall be restored to pre-discharge conditions.***

Implementation of the above measures in conjunction with mitigation measures identified in the Water Quality Section will adequately mitigate potential impacts associated with the water-related erosion of soil. Please refer to the detailed discussion and mitigation measures addressing wind-related soils erosion (fugitive dust) in the Air Quality section.

3.8.5 <u>Public Health and Safety</u>

3.8.5.1 Regulatory Setting

<u>Fire and Police Protection</u>
Fire and police protection services are provided to the project area by three fire districts within the Bear Valley Community. These districts are Big Bear City Community Service District, Big Bear Lake Fire Protection District, and CSA 53B – These emergency response personnel also respond to earthquakes, flooding, and other emergency situations.

<u>Hazardous Materials</u>
The principal agency for managing contamination from illegal or accidental releases of hazardous materials and wastes in the State of California is the Department of Toxic Substances Control (DTSC). In addition to enforcing state regulations (California Code of Regulations (CCR) Titles 17, 19, and 22), the DTSC was granted authorization from the federal

EPA in 1992 to be the agency responsible for regulating the generation, transport, and disposal of hazardous waste under the authority of the Resource Conservation and Recovery Act (RCRA) in California. Other agencies that may periodically coordinate with DTSC or with the enforcement of regulations that address site activities include: San Bernardino County Office of Emergency Services, San Bernardino County Fire Department, the Regional Water Quality Control Board (RWQCB), Santa Ana, the State Water Resources Control Board, the South Coast Air Quality Management District (SCAQMD), the Department of Transportation, and the California Highway Patrol.

Hazard vs. Risk
Worker and public health are potentially at risk whenever hazardous materials are present or will be used. It is important to differentiate between the "hazard" of these materials and the acceptability of the "risk" they pose to human health and the environment. A hazard is any situation that has the potential to cause damage to human health and the environment. The risk to human health and the environment is determined by the probability of exposure to the hazardous substance and the severity of harm such exposure would pose. The likelihood and means of exposure, in addition to the inherent toxicity of a substance, determine the degree of risk to human health. When the risk of an activity is judged acceptable by society in relation to perceived benefits, the activity is judged to be safe.

Means of Exposure
Exposure to hazardous materials could occur in the following manner: (1) improper handling or use of hazardous materials during the course of business, particularly by untrained personnel; (2) failure of storage containment systems; (3) environmentally unsound treatment/disposal methods; (4) transportation accidents; (5) fire, explosion or other emergencies; or (6) permitted release of hazardous materials by regulatory agencies. The following factors influence the health effects of exposure to hazardous materials:

- the dose to which the person is exposed,
- the frequency of exposure, the duration of exposure,
- the exposure pathway (route by which a chemical enters a person's body), and
- the individual's unique biological susceptibility.

The means of exposure as outlined above would determine the way in which toxic materials are absorbed into the body and, therefore, the bodily organs or systems affected. The major ways in which toxic materials may enter and be absorbed by the body are through the mouth (ingestion), the skin (penetration), or the lungs (inhalation). How a hazardous substance gets into the body and what damage it causes depends on the form or physical properties of the substance (i.e., liquid, solid, gas, dust, fibers, fumes or mist). A chemical may be toxic by one route (inhalation) and not another (ingestion).

Health effects from exposure to toxic materials may be acute or chronic. Acute effects, usually resulting from a single exposure to a toxic material, may include significant immediate damage to organs and systems in the body, and possibly death. Chronic effects, usually resulting from long term exposure to a toxic or hazardous substance, may also include systemic and organ damage, as well as birth defects, genetic damage and cancer.

Hazardous Material Handling

Hazardous materials will routinely be utilized during short-term construction activities. Petroleum products, such as diesel fuel, gasoline, lubricants, etc. are required to support construction equipment in the field, and such materials can be accidentally released to the environment. Ongoing water production well operations also involve the use and/or transport of hazardous substances. Table 3.8.5-1 lists federal, state and local regulatory agencies that oversee hazardous substances handling and management, and the statutes and regulations that these agencies administer. The following discussion contains a summary review of regulatory controls pertaining to hazardous materials.

Federal

Federal agencies that regulate hazardous and toxic materials include the EPA, the Occupational Safety and Health Administration (OSHA), the Nuclear Regulatory Commission (NRC), the U.S. Department of Transportation (DOT), and the National Institutes of Health (NIH). The following federal laws and guidelines govern hazardous materials. Hazardous materials handling and management associated with the proposed project must comply with applicable regulations as follows:

- Federal Water Pollution Control Act
- Clean Air Act
- Occupational Safety and Health Act
- Federal Insecticide, Fungicide, and Rodenticide Act
- Comprehensive Environmental Response, Compensation, and Liability Act
- Guidelines for Carcinogens and Biohazards
- Superfund Amendments and Reauthorization Act Title III
- Resource Conservation and Recovery Act
- Safe Drinking Water Act
- Toxic Substances Control Act

Table 3.8.5-1
SUMMARY OF HAZARDOUS MATERIALS REGULATORY AUTHORITY

Regulatory Agency	Jurisdiction	Authority
	FEDERAL AGENCIES	
Dept. of Transportation	Federal	Hazardous Materials Transportation Act - Code of Federal Regulations (CFR) 49
Environmental Protection Agency	Federal	Federal Water Pollution Control Act Clean Air Act Resource Conservation & Recovery Act (RCRA) Comprehensive Environmental Response, Compensation & Liability Act Superfund Amendments & Reauthorization Act (SARA) Federal Insecticide, Fungicide & Rodenticide Act
Occupational Safety and Health Administration	Federal	Occupational Safety and Health Act & CFR 29
	STATE AGENCIES	
Dept. of Toxic Substances Control	State	California Code of Regulations (CCR) Titles 17, 19, & 22
Dept. of Industrial Relations (CAL-OSHA)	State	California Occupational Safety & Health Act, CCR Title 8
State Water Resources Control Board & Regional Water Quality Control Board	State	Porter-Cologne Water Quality Control Act Underground Storage Tank Law
Health & Welfare Agency	State	Safe Drinking Water & Toxic Enforcement Act
Air Resources Board & Air Pollution Control District	State	Air Resources Act AB 1807 Air Toxics ☿Hot Spots☿ Information and Assessment Act
Office of Emergency Services	State	Hazardous Materials Release Response Plans/Inventory Law Acutely Hazardous Materials Law
Dept. of Fish and Game	State	Fish and Game Code
Dept. of Food and Agriculture	State	Food and Agriculture Code
State Fire Marshal	State	Uniform Fire Code, CCR Title 19
	COUNTY AGENCIES	
San Bernardino Fire Department and Office of Emergency Services	County	Uniform Fire Code Hazardous Waste Control Statutes, H&S 25100 et. seq. Hazardous Materials Release Response Plans/Inventory Statutes, H&S 25500 et. seq. Acutely Hazardous Materials Regulations, CCR Titles 19, 22, & 23

Regulatory Agency	Jurisdiction	Authority
REGIONAL AGENCIES		
South Coast Air Quality Management District	South Coast Air Basin	Air Toxics ♉Hot Spots♉ Information and Assessment Act

Source: Urban Logic Consultants 1/98 and Local General Plans

Until August 1992, the principal agency at the federal level regulating the generation, transport and disposal of hazardous waste was the EPA under the authority of the RCRA. However, effective August 1, 1992, the California Environmental Protection Agency (Cal-EPA) and the DTSC, were authorized to implement the State's hazardous waste management program in lieu of the EPA.

State
The Cal-EPA and the State Water Resources Control Board generally govern the use of hazardous materials and the management of hazardous waste. The California Highway Patrol (CHP) and the California Department of Transportation (Department) enforce hazardous substance transportation regulations. Chemical suppliers must comply with all applicable packaging, labeling and shipping regulations.

Applicable state and local laws include the following:

- Public Safety/Fire Regulations/Building Codes
- Hazardous Waste Control Law
- Hazardous Substances Information and Training Act
- Hazardous Materials Release Response Plans and Inventory Act
- Porter-Cologne Water Quality Control Act
- Tanner Toxics Act

DTSC has primary regulatory responsibility for the management of hazardous materials/substances and the generation, transport and disposal of hazardous waste under the authority of the Hazardous Waste Control Law (HWCL). DTSC can delegate enforcement to local jurisdictions that enter into agreements with the State agency. State regulations applicable to hazardous materials are indexed agreements in Title 26 of the CCR.

Regional
The SCAQMD works with the CARB and is responsible for developing and implementing rules and regulations to control the emission of air toxics on a local level. The SCAQMD establishes permitting requirements, inspects emission sources, and enforces measures through educational programs and/or fines. The Santa Ana Regional Water Quality Control Board controls the discharge of toxic materials in wastewater and from disposal facilities through the issuance of waste discharge requirements and NPDES permits under authority from the State Water Resources Control Board and the federal EPA.

Local
The project is located within portions of San Bernardino County and the City of Big Bear Lake. The General Plan safety elements address hazardous materials and the risk of upset. The fire

departments of these jurisdictions follow state and federal regulations in responding to hazardous-waste related incidents.

Hazardous Materials Transportation

Federal
The DOT has the regulatory responsibility for the safe transportation of hazardous materials between states and to foreign countries. DOT regulations govern all means of hazardous materials transportation (except for those packages shipped by mail, which are covered by the U.S. Postal Service regulations), including transportation by rail. DOT regulations are contained in the Code of Federal Regulations Title 49.

Under RCRA, the EPA sets standards for transporters of hazardous waste. In turn, the federal government authorized the State of California to carry out EPA regulations concerning transportation of hazardous wastes originating in, or passing through, the State.

State
The State of California has adopted regulations for the intrastate movement of hazardous materials. State regulations are indexed in the CCR Title 26. The CHP has primary responsibility for enforcing federal and State regulations related to the transport of hazardous materials over streets and highways, including hazardous materials labeling and packaging regulations. The CHP also responds to hazardous materials transportation emergencies. The goal of these regulations is to prevent leakage and spills of material in transit and to provide detailed information to clean-up crews in the event of an accident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are all part of the responsibility of the CHP, which conducts regular inspections of licensed transporters to assure regulatory compliance.

Common carriers which transport hazardous materials on roadways are licensed by the CHP under conditions specified in CCR Title 26, Division 14.1 Transportation of Hazardous Material, Section 32000.5, License to Transport Hazardous Materials. This section requires licensing of every motor (common) carrier who transports, for a fee, in excess of 226.8 kilogram (kg) (500 lbs) of hazardous materials at one time, and every carrier, if not for hire, who carries more than 453.6 kg (1,000 lbs) of hazardous materials of the type requiring placards. If the supplier or distributor carries fewer than 453.6 kg (1,000 lbs) of material, a license is not required.

Hazardous Materials Worker Safety Requirements

Federal
The Federal Occupational Safety and Health Administration (Fed/OSHA) is the agency responsible for ensuring worker safety. Fed/OSHA sets federal standards for implementation of training in the work place, exposure limits, and safety procedures in the handling of hazardous materials (as well as other hazards). Fed/OSHA also establishes criteria by which each state can implement its own health and safety program.

State
The California Department of Industrial Relations, Division of Occupational Safety and Health Administration (Cal/OSHA), assumes primary responsibility for developing and enforcing work

place safety regulations within the State. Cal/OSHA standards are often more stringent than federal regulations.

Cal/OSHA regulations concerning the management of hazardous materials include requirements for safety training, availability of safety equipment, hazardous materials exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces the hazard communication program regulations, which include provisions for identifying and labeling hazardous materials, providing employees with Material Safety Data Sheets (MSDSs), describing the hazards of chemicals, and documenting employee training programs.

Both federal and state laws include special provisions for hazard communication to employees in research laboratories, including training in chemical work practices. The training must include safe methods for handling hazardous materials, an explanation of MSDSs, use of emergency response equipment, and building emergency response plans and procedures.

Seismic Safety
The Alquist-Priolo Earthquake Fault Zoning Act (1973) was created to prohibit the location of most structures for human occupancy across the traces of active faults, thus lessening the hazard of fault rupture. Cities and counties affected by the zones must regulate certain development within the zones and withhold development permits until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting.

Hazards as they relate to public safety are of concerns for project design. Of primary importance to the project area is that of seismic hazards. The anticipated Maximum Credible Earthquake (MCE) and location of fault zones drive the design and retrofit of structures. The state, county and local hazards overlays are used to assess the risks of proposed projects. In addition, the Department has its own strict design standards that account for seismic activity and its effect on water facilities design and operation.

3.8.5.2 Affected Environment

Fire Protection
According to the Bear Valley Community Plan, the entire Mountain Region exhibits a combination of several factors which exposes development and natural resources to potential disaster from wildland fires.

The Big Bear City Community Service District provides suppression, prevention, rescue, Advanced Life Support (ALS) and ambulance transport services. The Big Bear Lake Fire Protection District provides structural, watershed, suppression, prevention, rescue and first aid services. CSA 53B provides structural, watershed, first aid, rescue, prevention and inspection services. The San Bernardino County Fire Department provides hazardous materials regulation, dispatch communication and disaster preparedness to the other fire districts in the valley. The San Bernardino County Fire Department also provides services to the CSA 38 and Baldwin Lake areas.

The Big Bear City Community Services District operates two fire stations within the Big Bear City area. The Big Bear Lake Fire Protection District operates three fire stations within the City of Big Bear Lake. The County of San Bernardino operates one fire station located in Fawnskin.

Police Protection

The San Bernardino County Sheriff=s Department provides police protection services throughout the County. The San Bernardino County Sheriff=s office within the project area is located at 477 Summit Boulevard, Big Bear, California. In the event that the Sheriff=s Department requires assistance or is unable to respond within the unincorporated areas surrounding the cities, local Police Departments dispatch officers as needed, upon request of the Sheriff=s Department. The Sheriff=s Department has full law enforcement authority in the unincorporated areas of San Bernardino County, and the California Highway Patrol also has full traffic enforcement responsibility for State Highways routes in unincorporated areas of the County.

Hazards

The Department utilizes small quantities of hazardous materials in support of existing operations. Examples include petroleum products and chemicals, such as sodium hypochlorite for water system disinfection.

In addition to Department use of hazardous material and generation of hazardous waste or waste that requires special management, a number of existing contaminated sites exist within the overall project area. These are identified and discussed in Appendix 7. According to the data and analysis in Appendix 7, five of the proposed facilities are located within one-half mile of active remediation sites. These include the following pipelines: BBM 15 (from Eureka Drive to just west of Jeffries Road). Two well sites are also located within one-half mile of active remediation sites, including: BBM 20 and BBM 22/23 (Big Bear Boulevard and Fox Farm Road).

Seismic Setting

According to the City of Big Bear Lake and County of San Bernardino General Plans, there are no identified active earthquake faults within the project area. Further, the San Bernardino County General Plan indicates that no Alquist-Priolo Earthquake Fault Zones occur within the project area. However, there are several faults that could cause damage to structures, including water facilities, as a result of a large earthquake event. The nearest fault of major significance is the San Andreas Fault. Also located in close proximity to the project area are the Helendale Fault, the North Frontal Fault, the Lenwood Fault, the San Gorgonio-Banning Fault, and the Johnson Valley Fault. These faults would be the primary sources of seismic activity in the Bear Valley area.

Ground-shaking can cause damage by itself or through the potential secondary effects such as fire, and dam failure. Ground settlement may also occur in the unconsolidated valley sediments, many of which are saturated with water. These sediments represent the poorest kind of soil condition for resisting seismic shock waves. The changes that occur, such as liquefaction and loss of strength in fine-grained materials, can result in ground cracking, unequal settlement, subsidence and other surface changes.

A great deal of soil compaction and settlement can also result from seismic ground shaking. If the sediments which compact during an earthquake are saturated with water, soil can liquefy and lose its capacity to support structures. The extent of damage ranges from minor displacement to total collapse of a building. Engineering treatment of either the ground or structures or both can sometimes stabilize hazards, such as liquefaction. Although no specific liquefaction hazard areas have been identified within the project area by the County=s General Plan, the City=s General Plan indicates that most of the project area is susceptible to potential

liquefaction hazards. The project area is not identified as being within a subsidence area by the City and County General Plans.

Flood Inundation Areas
Most floods in the project area are produced by extended periods of rainfall during the winter months. Dam failure is another source of potential flooding which was addressed separately in the water resources section of this EA. As previously stated, several portions of the project area are within the 100-year floodplain. These flood hazard areas are shown on the FEMA FIRM panels included in this document in Appendix 3.

3.8.5.3 Environmental Consequences

Alternative 1 (Preferred Alternative)
A variety of land uses, including residential, commercial, and public/open space uses, are adjacent to the proposed well sites and pipeline alignments. Inherent to the use of hazardous materials is the risk of an accidental release. Because of this risk, Federal, State and local agencies have established regulations to minimize the likelihood of such occurrences. During construction or maintenance activities in support of the proposed project, fuels, oils, solvents, and other petroleum materials classified as "hazardous" will be used to support these operations.

There are two approaches to managing hazards: (1) minimize the potential release of hazardous or toxic substances into the environment; and (2) if released, have the resources and techniques on hand to respond to an accidental release, including controlling a release, managing any adverse exposure from a release; cleaning up (remediating) a release; and properly disposing of the material contaminated by the release.

Mitigation measures designed to reduce, control or remediate potential accidental releases must be implemented to prevent the creation of new contaminated areas that may require remediation in the future and to minimize exposure of humans to public health risks from accidental releases. Such measures are presented in the following section. These measures are provided to reduce the potential for such accidents to occur (use of spill prevention countermeasure practices to minimize potential for accidental releases as part of construction activities); to immediately collect and store or remove the primary source of contamination, including soils; and to remediate any residual contamination to levels that do not exceed regulatory thresholds for allowable use in the future. By implementing these measures, potentially substantial adverse environmental impacts from accidental releases associated with construction of the proposed project can be reduced to a less than significant level.

It does not appear that any of the proposed facilities will directly impact existing contaminated sites identified within the project area. However, the data indicates that a potential does exist to encounter unknown contamination during facility construction activities. Therefore, mitigation is proposed that will provide adequate resources to properly manage any accidentally exposed subsurface contamination or to address groundwater pumping that may encounter any unknown sources of groundwater contamination, primarily due to petroleum contamination. With implementation of the required mitigation, no substantial adverse impact is forecast to result from accidental exposure of unknown contamination.

Should an accident occur during construction activities, adequate emergency medical facilities are located within the Bear Valley community. The random requirement for these services makes it impossible to quantify, but demand for fire and emergency response during the window of construction is not forecast to pose any unusual risks or to constitute a substantial demand for these services. The only other police or fire protection likely to be required for operations would be trespass or theft of equipment or material at the well sites. Standard protection measures are implemented by the Department to protect its facilities and equipment and materials, which will also be applied to the proposed project. No other mitigation is required.

The proposed project itself is an improvement in public services for an existing population. It is not forecast to cause any population growth during construction or future operations. Thus, no additional demand for school, park and recreation facilities is forecast to occur.

No Project Alternative

Under the no project alternative no direct demand for public services would occur over the short-term or long-term. However, as stated above, the proposed project itself is an improvement in public services for an existing population; therefore, the benefits from improvements in the water distribution system that would result from implementation of either the preferred alternative would also not occur.

3.8.5.4 Mitigation

The following mitigation measures are recommended as conditions of project implementation. These measures will be implemented to minimize the potential for hazard effects from implementing the proposed project.

3.8.5-1 ***Before determining that an area contaminated as a result of an accidental release is fully remediated, specific thresholds of acceptable clean-up shall be established and sufficient samples shall be taken within the contaminated area to verify that these clean-up thresholds have been met.***

3.8.5-2 ***During construction activities within existing road rights-of-way or other areas where continuous access is required, a road operation management plan shall be prepared and implemented. At a minimum this plan shall define how to minimize the amount of time spent on construction activities; how to minimize disruption of vehicle and alternative modes of traffic at all times, but particularly during periods of high traffic volumes; adequate signage and other controls, including flagpersons, to ensure that traffic can flow adequately during construction; the identifycation of alternative routes that can meet the traffic flow requirements of a specific area, including communication (signs, webpages, etc.) with drivers and neighborhoods where construction activities will occur; and at the end of each construction day roadways shall be prepared for continued utilization without any significant roadway hazards remaining. This plan shall be submitted to local jurisdiction for review and comment prior to initiating construction within a given area.***

The following mitigation measure will ensure that effects of the project on emergency services are avoided or minimized.

3.8.5-3 ***Prior to initiating construction of the proposed project, the Department shall submit and have approved a fire or medical emergency response access plan that meets each affected jurisdiction's response time frame. Success for this measure will be determined by the local fire agency approving and verifying that the specific access response plan and measures will allow them to continue meeting their emergency response time frame objectives.***

3.8.5-4 ***Prior to initiating construction of the proposed project, the Department shall submit and have approved a police emergency response access plan that meets each affected jurisdiction's response time frame. Success for this measure will be determined by the local law enforcement agency approving and verifying that the specific access response plan and measures will allow them to continue meeting their emergency response time frame objectives.***

3.8.5-5 ***Prior to initiating construction of the proposed project, the Department shall submit and have approved an access control plan to its staging and equipment storage areas that meets each affected jurisdiction's crime minimization standards. Success for this measure will be determined by the local law enforcement agency approving and verifying that the access control plan and measures will minimize trespass and theft activities in accordance with local requirements.***

3.8.5-6 ***If the construction contractor encounters contaminated soil (discolored or odiferous), the Department shall have on call an industrial hygiene firm to evaluate and determine a course of action to remediate the contamination or to close in place after the new water facility is installed. Regulatory agencies shall be notified of the contamination and shall participate in defining the method of remediation, including overseeing any remediation or site closure. If a well encounters contamination, the Department shall decide whether to close the well and notify the regulatory agencies, or to pump and treat the contaminated well to meet current potable water quality requirements. Success for this measure will be determined by the Department, industrial hygiene professional and regulatory agencies that any exposed contamination will not cause public health hazards when construction is completed.***

The hazards, risk of upset and human health evaluation presented above indicates that the proposed project has a potential to cause adverse health risk effects from implementing the proposed water system improvements project activities. It is possible to control or avoid the potential these potential health risk effects by implementing the identified mitigation measures. Therefore, no substantial adverse hazard, risk of upset or human health effects are forecast to occur if the proposed project and identified mitigation are implemented.

3.8.6 Contaminated Sites

Refer to the discussion under 3.8.5 and the data in Appendix 7.

3.8.7 Recreation and Section 4(f) Properties

3.8.7.1 Regulatory Setting

The County and City traversed by the proposed project determine the number and types of parks and recreational facilities that are appropriate to serve their respective jurisdictions. They also provide and maintain those facilities. Many recreation areas are located in the vicinity of the proposed projects. There are no specific federal or state regulations applicable to recreation. Local regulations related to recreation are set forth in adopted plans and ordinances of the project proponents

3.8.7.2 Affected Environment

The Bear Valley community is completely surrounded by the San Bernardino National Forest. The Bear Valley area also contains Bureau of Land Management and State-owned lands. The Bear Valley Community Plan area contains the Snow Summit and Bear Mountain ski/resort

areas, Big Bear Discovery Center, Big Bear Solar Observatory, Moonridge Zoo, a number of campgrounds, organization camps and hiking trails, Big Bear Lake, Baldwin Lake, and Erwin Lake. The following Big Bear Recreation and Park District parks are located within the Bear Valley area: Big Bear City Park, Meadow Edge Park, Erwin Lake Park, Sugarloaf Park, Grout Bay Park, and Dana Point Park. No recreation facilities occur within the proposed project APE.

There are also several public and private schools near the proposed project alignment that provide recreational opportunities.

3.8.7.3 Environmental Consequences

Alternative 1 (Preferred Alternative)
A number of parks occur within the Bear Valley community. However, as park facilities are not located within the project areas of impact, none of the construction or operation activities associated with the proposed project will have a direct impact on parks.

The project is not forecast to cause any increase in demand for any recreational facilities in the project area since no increase in population is forecast to occur as a result of implementing the project. This finding applies to both the construction and operation period of the project.

No Project Alternative
Due to the lack of any recreational resources within the project areas of impact, neither project has any potential to impact or be impacted by recreational issues.

3.8.7.4 Mitigation

No substantial adverse effects to parks and recreation or 4(f) properties will result from implementing the proposed project. Therefore, no mitigation is required.

3.8.8 Utilities and Public Services

3.8.8.1 Regulatory Setting

This is considered to be a local jurisdictional environmental issue, such that a regulatory setting section is not required to be included in the EA.

3.8.8.2 Affected Environment

Water Facilities
Water in the project area is provided by the Big Bear Lake Department of Water and Power and the Big Bear Community Services District. A number of private groundwater wells are operated within the project area. Groundwater is a primary source of water with limited quantities of surface water and recycled water serving as secondary sources. Detailed discussion of water is included in the water resources section of this EA.

Wastewater Facilities
According to the Bear Valley Community Plan, most of the Bear Valley community area is serviced by the Big Bear Area Regional Wastewater Agency (BBARWA). BBARWA also serves the City of Big Bear Lake. All of the waste is transported to, and treated at, the Agency=s plant

located adjacent to Baldwin Lake. BBARWA typically treats an average of 2.2 million gallons per day (MGD) of domestic wastewater. The wastewater system has a total design treatment capacity of 4.8 MGD and a design capacity of 9.2 MGD. The average daily wastewater flow is currently 46 percent of the design treatment capacity.

Solid Waste

The proposed project area solid waste disposal needs are served by the County of San Bernardino Department of Public Works, the Big Bear City Community Services District (CSD), the City of Big Bear Lake Department of Public Works, and Big Bear Disposal. The Landfills used are the Azusa Land Reclamation Co. Landfill, Bakersfield Metropolitan Sanitary Landfill, the Barstow Sanitary Landfill, the Landers Sanitary Landfill, the Mid-Valley Sanitary Landfill, the San Timoteo Sanitary Landfill, and the Victorville Sanitary Landfill. The Permitted capacity in tons per day for the Bakersfield Metropolitan Sanitary Landfill is 4,500 tons per day; for the Barstow Sanitary Landfill is 750 tons per day; the Landers Sanitary Landfill is 1,200 tons per day; the Mid-Valley Sanitary Landfill is 7,500 tons per day; the San Timoteo Sanitary Landfill is 1,000 tons per day; and the Victorville Sanitary Landfill is 3,000 tons per day. The total capacity of the Bakersfield Metropolitan Sanitary Landfill is 53,000,000 cubic yards with 44,818,958 cubic yards capacity remaining. The total capacity of the Barstow Sanitary Landfill is 3,584,500 cubic yards with 924,401 cubic yards remaining. The total capacity of the Landers Sanitary Landfill is 3,080,000 cubic yards with 1,100,000 cubic yards capacity remaining. . The total capacity of the Mid-Valley Sanitary Landfill is 62,000,000 cubic yards with 35,270,000 cubic yards capacity remaining. The total capacity of the San Timoteo Sanitary Landfill is 20,400,000 cubic yards with 9,491,163 cubic yards capacity remaining. The total capacity of the Victorville Sanitary Landfill is 83,200,000 cubic yards with 82,200,000 cubic yards capacity remaining.

Public Schools

According to the City=s General Plan, the school district serving the project area is the Bear Valley Unified School District. The school district operates 6 schools serving Kindergarten through Grade 12 (K-12). The schools within the vicinity of the project area include Big Bear High School in Big Bear City; Chautauqua Continuation High School adjacent to Big Bear High School; Big Bear Middle School and Big Bear Elementary School within the City of Big Bear Lake; North Shore Elementary School north of the City; and Baldwin Lane Elementary School in Big Bear City.

Stormwater

All of the cities and the larger unincorporated communities in San Bernardino County have stormwater drainage facilities. Other small, unincorporated communities drain to retention basins and detention basins with a natural drain or into an irrigation district canal.

The City of Big Bear Lake requires the construction of methods of soil stabilization, the construction of desilting ponds, and the use of natural channelization as necessary with new development.

Electricity

Electricity in the project area is supplied by the Bear Valley Electric Service, which has electricity delivered to its system by Southern California Edison. Existing transmission facilities are adequate to meet present and projected demand.

Natural Gas
Southwest Gas provides natural gas throughout project area.

3.8.8.3 Environmental Consequences

Alternative 1 (Preferred Alternative)
The utility issues of concern in this evaluation are increased demand for utility capacity without adequate existing capacity, or comparable increases in capacity from implementing the proposed

The proposed project will not require connection to any utility systems, except electricity and the stormwater drainage system. Well electricity consumption is based on a maximum 100 horse-power electric motor for each proposed well. One horsepower hour is equivalent to about .75 kilowatt hour. Thus, the hourly demand by the proposed wells is forecast to be 75 kwh and the 24-hour demand would be for about 1.90 megawatt hours of electricity. With six potential new wells in operation, the actual total electricity demand will depend upon how much additional pumping of groundwater occurs because some existing wells may be rested while the new wells are producing water. For planning purposes it is assumed that four new wells will be pumping at any give time, which, based on the data above, equates to a maximum instantaneous demand of 300 kwh, or assuming 24 hours of pumping for four wells and daily demand of 7.60 megawatt hours of electricity. By balancing water production operations with availability of electricity, the Department can provide adequate electricity to support the new wells without incurring a substantial adverse impact on the existing electricity system.

The stormwater drainage system impacts of the proposed project are discussed in the Water Resources section of this EA. The proposed project may require relocation of existing utilities, where such utilities cross the proposed pipeline alignments. The potential impacts of this utility relocation are addressed below.

The proposed project may require the relocation of all utilities that may conflict with installation of the proposed water distribution pipelines. Utility relocation is commonly a major component of the construction activities associated with the proposed project. These activities are addressed as part of other specific issue discussions, such as water resources, air quality, cultural resources, etc. For the purpose of relocating the utility systems and ensuring that they will function properly, the mitigation measure presented in the Geology and Soils, Water Resources, and Public Health and Safety sections will be implemented by the Department to ensure that utility capacity and service is not diminished or significantly affected by the proposed project. Implementation of these measures will ensure that potential substantial adverse effects associated with utility system relocation are fully mitigated to a non-substantial level during both the short- and long-term.

The proposed project consists of the improvement of an existing water system. No wastewater treatment is associated with the implementation of the project. However, the proposed drilling, development and operation of water production wells will result in the release of groundwater in accordance with NPDES requirements. The contractor will settle out suspended sediment by passing water through a series of three large storage tanks. If the water does not meet NPDES requirements after passing through the storage tanks, the final water will be blended with water from a fire hydrant so that it meets requirements. If necessary, an in line sand filter or similar equipment will be installed in the tanks to remove sufficient suspended sediment to meet

NPDES requirements. The project will not directly generate wastewater, but the discharge of groundwater under this condition is governed by requirements by the Santa Ana Regional Water Quality Control Board. Mitigation measures identified in the Water Resources section will ensure that the discharge of the groundwater will comply with NPDES general requirements and prevention of significant degradation of water quality.

As indicated above, the project well testing and development activities will discharge groundwater from the pump test into the local sewer or stormwater drainage system for a short period. The proposed project will not substantially increase surface water runoff from the site or alter present drainage patterns. This project will not affect existing offsite drainage patterns. Once the wells are operational, an area less than 0.2-acre will be hard-sided and developed as a result of the project. With mitigation outlined below, no permanent or significant modifications to area drainage system will result from project implementation.

The proposed project is a water supply project and the Department has the authority to install the proposed production wells to provide backup and augmented supplies during this drought period. No significant adverse impact on water supplies is forecast to result from implementing the proposed project

Other than a small amount of construction wastes generated over the period of well development and pipeline installation, this project will not generate solid wastes and will not adversely affect the existing solid waste collection and disposal system. Based upon the information presented within the Solid Waste discussion within Section 3.8.8.2, there is sufficient capacity at the local landfills to handle this small volume without incurring any adverse impact.

No-Action Alternative
The no action alternative would result in no adverse effects to and utilities but would also not result in the improvement of the existing water system as with the other two alternatives.

3.8.8.4 Mitigation

The following mitigation measure will be implemented to ensure that all utility lines within the project alignment that must be relocated will be relocated in a manner consistent with maintaining the continued operation of the utility with a minimum of disruption.

3.8.8-1 ***Prior to initiating relocation of any utility system located within the pipeline alignments, the Department will notify the pertinent utility of the construction plans. The Department shall submit sufficient engineering data to verify that remaining utility systems will function as effectively after relocation as it does before relocation.***

Mitigation measures identified in the Water Resources section will ensure that the discharge of the groundwater will comply with NPDES general requirements and prevent significant impacts to water quality. In addition, the following mitigation measures will ensure that the water used for fugitive dust control and other construction activities will be recycled water, where it is available and permitted for such use by the Regional Water Board.

3.8.8-2 ***Where available and permitted, the construction contractor shall utilize recycled water to control fugitive dust. The contractor shall make a positive demonstration to the Department that such recycled water is or is not available prior to initiating ground disturbing activities requiring fugitive dust control.***

3.8.8-3 Approving and verifying the traffic management and access control plan and measures will minimize trespass and theft activities in accordance with local requirements.

4.0 SUMMARY OF MITIGATION

3.1.4-1 Night lighting will be located and shielded so as to avoid creating a nuisance to nearby sensitive light receptors, such as residences. Light from night lighting shall not spill off the site onto adjacent occupied structures or light sensitive uses.

3.4.4-1 The Department will conduct archaeological monitoring of trenching activities in portions of the APE in the Woodlands neighborhood near Erwin Lake and in the Mount Whitney Drive and Division Driver area at the eastern end of Big Bear Lake. A qualified professional shall conduct the monitoring and a report of findings, including any management actions required to protect any exposed subsurface resources, shall be completed and submitted to the Department.

3.4.4-2 If cultural resources (historic, pre-historic or paleontological) are discovered during project construction, all work in the area of the find shall cease, and a qualified professional retained by the Airport shall investigate the find and make recommendations on the disposition of any buried resources. This shall include assessing the value of objects, determining whether the resource deserves curation, and preparing and implementing a curation plan to protect such resources. The qualified professional shall compile a report of findings and make it available to peers for review and use of the information.

3.4.4-3 If human remains are accidentally exposed during construction activities, all work shall cease in the area of discovery and the San Bernardino county Coroner's Office shall be contacted pursuant to procedures set forth in Section 7050.5 of the Health and Safety Code. Any discoveries of Native American human remains will be address under the procedures in PRC Section 5097.98 et al.

3.5.4-1 Within 30-days prior to the onset of ground disturbing activities at the Division Well No. 8 (BBM 21), and Cherokee Well (FS 5) work sites, a qualified biologist shall conduct a preconstruction clearance survey for herpetofauna including Southern rubber boas and/or San Bernardino Mountain king snakes. In the event a rubber boa and/or king snake has migrated onto the site the appropriate regulatory agency shall be contacted and avoidance measures shall be developed prior to the commencement of work. Large diameter snags shall be left in place or placed strategically to act a barrier into the work zone.

3.5.4-2 Any removal of vegetation should be conducted outside of the nesting season for migratory birds (roughly April-September) covered under the Federal Migratory Bird Treaty Act, or pre- construction nesting bird surveys should be conducted by a qualified biologist.

3.5.4-3 Trenching and excavation for the pipelines should be limited to the minimum width practicable, and trenches should be covered at night to minimize injury/stranding of wildlife.

3.8.2-1 The construction contractor will provide adequate traffic management resources, such as protective devices, flag persons, and police assistance for traffic control, to

maintain safe traffic flow on local streets affected by facility and pipeline construction at all times.

3.8.2-2 The construction contractor will identify traffic hazards created by construction, such as rough road or potholes, freshly paved locations, and minimize total traffic and vehicle speed through such hazards.

3.8.2-3 The construction contractor will ensure that traffic safety hazards, such as uncovered or unfilled open trenches, will not be left in roadways during period of time when construction personnel are not present, such as nighttime and weekends.

3.8.2-4 The construction contractor will repair all roads adequately after construction to ensure that traffic can move in the same manner as before construction.

3.8.2-5 At all times during construction, the contractor will ensure that emergency fire, police or medical vehicles are able to access all adjacent areas. Additionally, construction equipment or activities must not obstruct or hinder traffic that might be generated during an evacuation.

3.8.3-1 The Department will require the implementation of adequate measures to reduce noise levels to the greatest extent feasible, including portable noise barriers or scheduling specific construction activities to avoid conflict with adjacent sensitive receptors.

3.8.3-2 The Department will require that all construction equipment be operated with mandated noise control equipment (mufflers or silencers). Enforcement will be accomplished by random field inspections by applicant personnel during construction activities.

3.8.3-3 The Department will establish a noise complaint/response program and will respond to any noise complaints received for this project by measuring noise levels at the affected receptor. If the noise level exceeds an Ldn of 65 dBA exterior or an Ldn of 45 dBA interior at the receptor, the applicant will implement adequate measures to reduce noise levels to the greatest extent feasible, including portable noise barriers or scheduling specific construction activities to avoid conflict with adjacent sensitive receptors.

3.8.3-4 Pipeline construction shall be restricted to daylight hours, unless an emergency exists.

3.8.4-1 Stored backfill material shall be covered with water resistant material during periods of heavy precipitation to reduce the potential for rainfall erosion of stored backfill material. If covering is not feasible, then measures such as the use of straw bales or sand bags shall be used to capture and hold eroded material on the project site for future cleanup.

3.8.4-2 Excavated areas shall be properly backfilled and compacted. Paved areas disturbed by this project will be repaved in such a manner that roadways and other disturbed areas are returned to as near the pre-project condition as is feasible.

3.8.4-3 All exposed, disturbed soil (trenches, stored backfill, etc.) will be sprayed with water or soil binders twice a day or more frequently if fugitive dust is observed migrating from the site within which the water facilities are being installed.

3.8.4-4 The length of trench which can be left open at any given time will be limited to that needed to reasonable perform construction activities. This will serve to reduce the amount of backfill stored onsite at any given time.

3.8.4-5 The Department shall identify best management practices (BMPs) to ensure that the discharge of the groundwater pumped to the surface by the proposed wells do not cause erosion downstream of the discharge point. This shall be accomplished by reducing the energy of any site discharge through an artificial energy dissipator or equivalent device. If any substantial erosion or sedimentation occurs as a result of discharging groundwater from the project well, any erosion or sedimentation damage shall be restored to pre-discharge conditions.

3.8.5-1 Before determining that an area contaminated as a result of an accidental release is fully remediated, specific thresholds of acceptable clean-up shall be established and sufficient samples shall be taken within the contaminated area to verify that these clean-up thresholds have been met.

3.8.5-2 During construction activities within existing road rights-of-way or other areas where continuous access is required, a road operation management plan shall be prepared and implemented. At a minimum this plan shall define how to minimize the amount of time spent on construction activities; how to minimize disruption of vehicle and alternative modes of traffic at all times, but particularly during periods of high traffic volumes; adequate signage and other controls, including flagpersons, to ensure that traffic can flow adequately during construction; the identifycation of alternative routes that can meet the traffic flow requirements of a specific area, including communication (signs, webpages, etc.) with drivers and neighborhoods where construction activities will occur; and at the end of each construction day roadways shall be prepared for continued utilization without any significant roadway hazards remaining. This plan shall be submitted to local jurisdiction for review and comment prior to initiating construction within a given area.

3.8.5-3 Prior to initiating construction of the proposed project, the Department shall submit and have approved a fire or medical emergency response access plan that meets each affected jurisdiction's response time frame. Success for this measure will be determined by the local fire agency approving and verifying that the specific access response plan and measures will allow them to continue meeting their emergency response time frame objectives.

3.8.5-4 Prior to initiating construction of the proposed project, the Department shall submit and have approved a police emergency response access plan that meets each affected jurisdiction's response time frame. Success for this measure will be determined by the local law enforcement agency approving and verifying that the specific access response plan and measures will allow them to continue meeting their emergency response time frame objectives.

3.8.5-5 Prior to initiating construction of the proposed project, the Department shall submit and have approved an access control plan to its staging and equipment storage areas that meets each affected jurisdiction's crime minimization standards. Success for this measure will be determined by the local law enforcement agency approving and verifying that the access control plan and measures will minimize trespass and theft activities in accordance with local requirements.

3.8.5-6 If the construction contractor encounters contaminated soil (discolored or odiferous), the Department shall have on call an industrial hygiene firm to evaluate and determine a course of action to remediate the contamination or to close in place after the new water facility is installed. Regulatory agencies shall be notified of the contamination and shall participate in defining the method of remediation, including overseeing any remediation or site closure. If a well encounters contamination, the Department shall decide whether to close the well and notify the regulatory agencies, or to pump and treat the contaminated well to meet current potable water quality requirements. Success for this measure will be determined by the Department, industrial hygiene professional and regulatory agencies that any exposed contamination will not cause public health hazards when construction is completed.

3.8.8-1 Prior to initiating relocation of any utility system located within the pipeline alignments, the Department will notify the pertinent utility of the construction plans. The Department shall submit sufficient engineering data to verify that remaining utility systems will function as effectively after relocation as it does before relocation.

3.8.8-2 Where available and permitted, the construction contractor shall utilize recycled water to control fugitive dust. The contractor shall make a positive demonstration to the Department that such recycled water is or is not available prior to initiating ground disturbing activities requiring fugitive dust control.

3.8.8-3 Approving and verifying the traffic management and access control plan and measures will minimize trespass and theft activities in accordance with local requirements.

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6.0 EXHIBITS / MAPS

Figure 1 Regional Location

Figure 2 Vicinity Map

7.0 LIST OF PREPARERS

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APPENDIX 2
Site Maps (Topos)

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FEMA FIRM Panels

APPENDIX 4
Biological Analysis

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