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FINAL TRAFFIC IMPACT STUDY

2008 OWENS VALLEY STATE IMPLEMENTATION PLAN

Owens Valley, California
June 22, 2007

Prepared for:

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STATE IMPLEMENTATION PLAN PROJECT

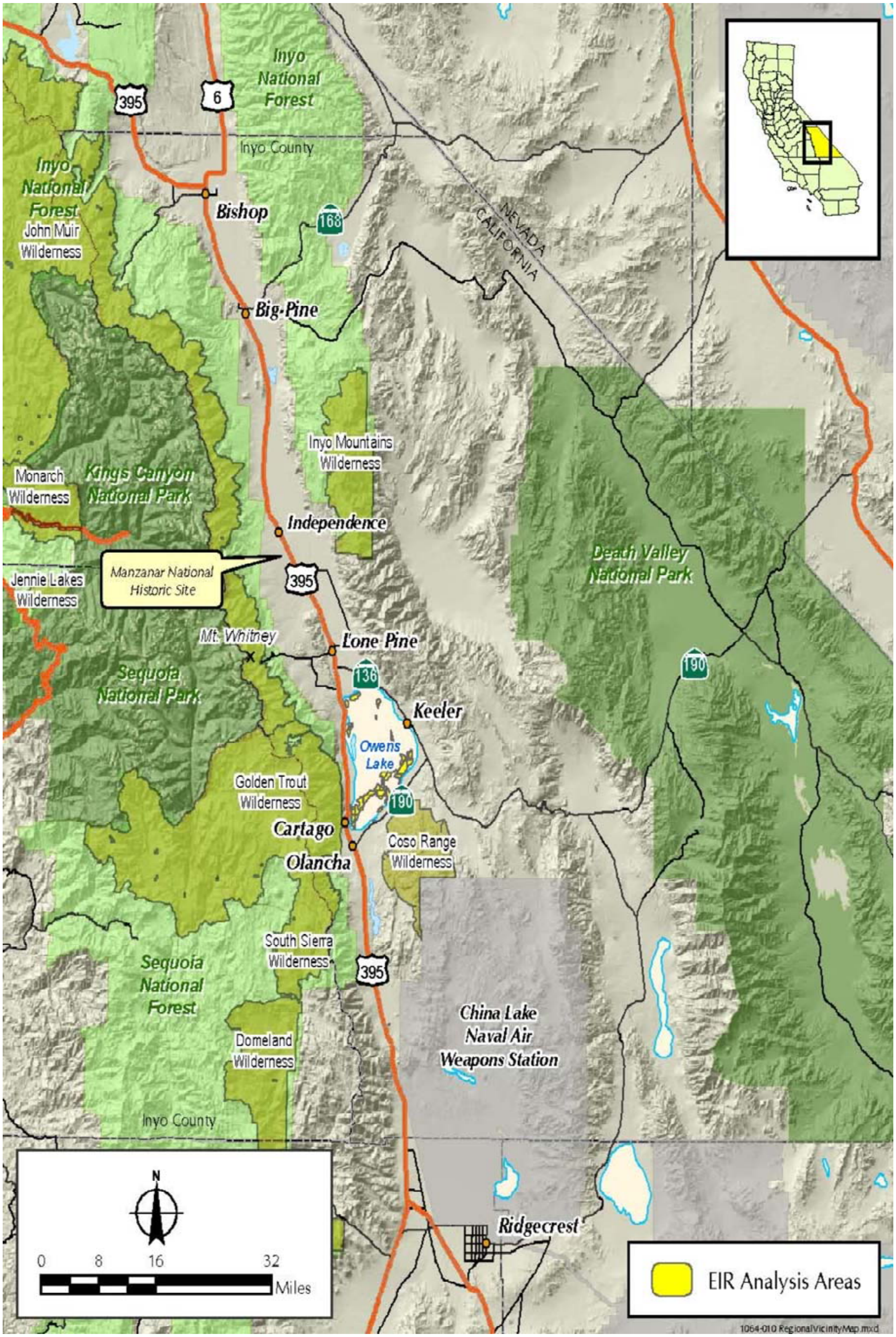
Owens Valley, California
June 22, 2007

1.0 INTRODUCTION

This traffic analysis has been prepared to identify and evaluate the potential transportation impacts associated with implementation of the Dust Mitigation Program for Owens Lake in Inyo County, California. The Dust Mitigation Program includes the construction and subsequent operation of Shallow Flooding, Managed Vegetation, and Gravel Dust Control Measures (DCMs) planned for the emissive areas on Owens Dry Lake (ODL) to comply with the 2008 State Implementation Plan (SIP) project.

Owens Lake is located in Inyo County in eastern central California. It is situated at the south end of the long, narrow Owens Valley with the Sierra Nevada Mountains to the west, the Inyo Mountains to the east, and the Coso Range to the south. The predominantly dry, alkaline Owens Lake playa is located approximately five miles south of the community of Lone Pine (approximately 61 miles south of the City of Bishop), approximately 48 miles north of the town of Ridgecrest, 11 miles east of Sequoia National Park and 10 miles west of Death Valley National Park. The communities of Olancha/Cartago and Keeler/Swansea are located on the southwestern and eastern shores of the lakebed, respectively. The lakebed extends about 17 miles north to south and 10 miles east to west, covering an area of approximately 110 square miles (70,000 acres). The Owens Lake area and regional vicinity are shown in ***Figure 1-1***. The Owens Lake project area and general vicinity are shown in ***Figure 1-2***.

This traffic evaluation is being included as part of the 2008 Owens Lake SIP project and the corresponding Environmental Impact Report (EIR). The evaluation has been prepared in accordance with the California Environmental Quality Act (CEQA), as amended, and the Guidelines for Implementation of the California Environmental Quality Act (State CEQA Guidelines). This analysis is intended to describe the potential impacts of the proposed project and provide recommendations for mitigation requirements in the vicinity of the project within the context of existing traffic conditions as well as under future with project traffic conditions. Level of Service C or better has been identified as satisfactory traffic operation conditions for roadway segments in the project vicinity.



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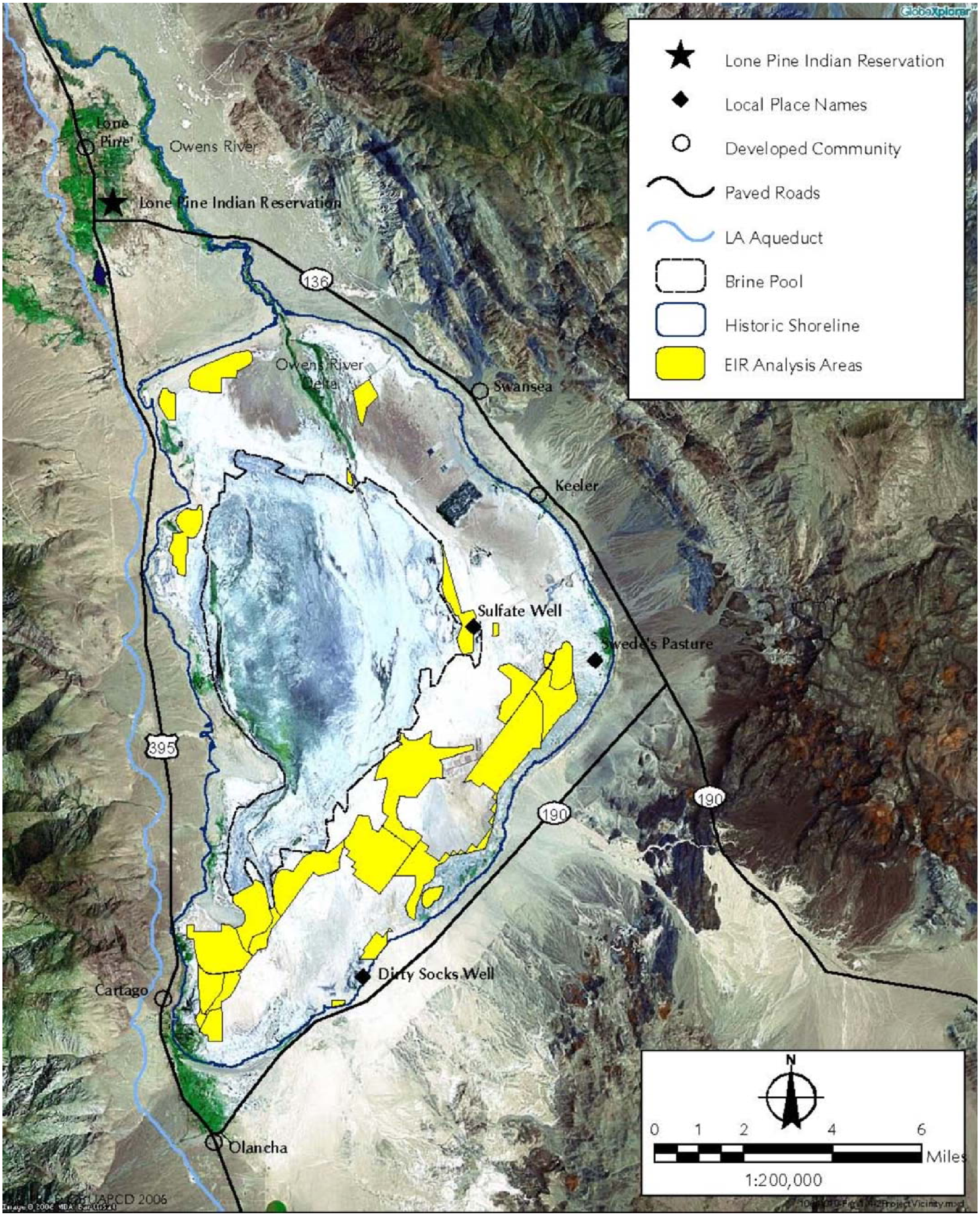
MAP SOURCE: SAPPHOS ENVIRONMENTAL, INC.

FIGURE 1-1
REGIONAL VICINITY MAP



MAP SOURCE: GBUAPCD, CH2MHILL, SEI

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FIGURE 1-2
PROJECT VICINITY MAP

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2008 OWENS LAKE SIP PROJECT

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1.1 Project Background

The Great Basin Unified Air Pollution Control District (District) regulates fugitive dust (PM_{10}) emissions in the Owens Valley Planning Area consistent with the requirements of the National Ambient Air Quality Standards (NAAQS). The dried Owens Lake bed has been the largest single source of PM_{10} emissions in the United States for many years, with annual PM_{10} emissions of more than 80,000 tons and 24-hour concentrations as high as 130 times the federal air quality standard. In the five years from 2000 through 2004, of the 100 highest 24-hour PM_{10} value days measured in the entire United States, 78 days occurred at Owens Lake, 21 days occurred at Mono Lake, and 1 day occurred elsewhere (El Paso, Texas). The air pollution at Owens Lake and Mono Lake is caused by the City of Los Angeles' diversion of water from the Eastern Sierra. Water has historically been diverted from the lakes to the City of Los Angeles via the Los Angeles Aqueduct.

Exposed dry lake bed sediments are dispersed into the air by prevailing winds. These dust storms, with the highest episodes in the spring and fall months, have the potential to cause significant ecological and human health effects. The airborne particulate matter that exists in these dust storms is small enough to travel great distances and can be inhaled deeply by humans, which may result in serious respiratory ailments. The District estimates that approximately 40,000 permanent residents that live in or visit the area are affected by Owens Lake particulate emissions. In 1987, the U.S. Environmental Protection Agency (EPA) designated the Owens Valley Planning Area as non-attainment for the NAAQS for PM_{10}. The result of this designation was that a plan, known as a State Implementation Plan, was required to be prepared to demonstrate how the NAAQS would be attained. The proposed project is designed to improve air quality through the reduction of PM_{10} emissions in all of the communities in the Owens Valley, including the City of Ridgecrest in Kern County; Sequoia National Park; Death Valley National Park; the Manzanar National Historic Site; and the John Muir, Golden Trout, Dome Land, and South Sierra Wilderness areas (refer to *Figure 1-1)*. The proposed project may also improve air quality in more distant locations because, under certain circumstances, PM_{10} emissions from Owens Lake have been tracked to more densely populated sections of Southern California.

As a result of a SIP prepared by the District and approved by the U.S. EPA in 1998, the City of Los Angeles Department of Water and Power (LADWP) began constructing dust control measures (DCMs) on the lake bed with a goal of implementing the controls necessary to meet the federal PM_{10} standards by the end of 2006. In the same 1998 SIP, the District committed to continue to study the lake bed and to revise the SIP in 2003 to refine the actual areas necessary for control. Based on those additional studies, the Great Basin Governing Board adopted a revised SIP in November 2003 and ordered the LADWP to implement DCMs on 29.8 square miles of the Owens Lake bed by December 31, 2006.

In addition to requiring the LADWP to construct and begin operating 29.8 square miles of DCMs on the lake bed by the end of 2006, the 2003 SIP also contained provisions requiring the District to continue monitoring air pollution emissions from the lake bed and identify any additional areas beyond the 29.8 square miles that may require PM_{10} controls in order to meet the standards.

The federal Clean Air Act requires all SIPs to contain "contingency measures" that will be implemented in case the initial control strategy (29.8 square miles of controls) fails to bring the facility (lake bed) into compliance. One such contingency measure was for the Air Pollution Control Officer (APCO) to complete a Supplemental Control Requirements (SCR) analysis and determination as to whether additional dust controls are required on the lake based on continuous air quality data collected.

Based on July 2002 through June 2004 data, the APCO completed the 2003 SIP-required supplemental SCR analysis on December 21, 2005 and issued an SCR determination that additional areas of the lake bed would require DCMs in order to meet the PM_{10} standards. Based on that SCR analysis and subsequent discussions with the LADWP, an agreement with LADWP has been reached to construct the additional DCMs necessary to bring the lake bed into compliance with the NAAQS for PM_{10}. These additional DCMs beyond the 29.8 square miles completed at the end of 2006 are the subject of the proposed project.

1.2 Prior Environmental Documentation

The implementation of the 29.8 square miles of dust control areas has been subject to previous environmental documentation. This analysis will be based on the analysis from the 2003 SIP EIR, which anticipated 29.8 square miles of DCMs.

The 1997 EIR was adopted by the District Board on July 2, 1997[1] along with a 1997 SIP. Addendum No. 1 to the 1997 Final EIR, prepared to account for changes to the 1997 SIP project description approved in a Memorandum of Agreement between the District and the City of Los Angeles (approved July 28, 1998), was adopted by the District Board in 1998 along with a revised 1998 SIP.[2] Based on additional information gathered after the adoption of the 1998 SIP and EIR, it was determined that additional DCMs up to 29.8 square miles would need to be implemented. Of these total 29.8 square miles, approximately 5.5 square miles (3,520 acres) of the 10.3 square miles (6,592 acres) of new area covered in the 2003 SIP EIR were analyzed on a project level for environmental impacts.[3] An addendum to the 2003 SIP EIR was prepared in 2005 to exchange 1.3 square miles originally designated for managed vegetation to shallow flooding and an addition of 223 acres of shallow flooding outside the 2003 SIP EIR footprint.[4] As of January 1, 2007, the 29.8 square miles of DCMs designated in the 2003 SIP and 2003 EIR were operational.[5]

[1] Great Basin Unified Air Pollution Control District. 1997. *Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan Final Environmental Impact Report, Volumes I and II* (SCH No. 961220777). Bishop, CA.

[2] Great Basin Unified Air Pollution Control District. 1998. *Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan Addendum No.1 to the Final Environmental Impact Report* (SCH No. 96122077). Bishop, CA.

[3] Great Basin Unified Air Pollution Control District. 2003. *2003 Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan Final Environmental Impact Report, Volumes I and II* (SCH No. 2002111020). Bishop, CA.

[4] City of Los Angeles Department of Water and Power. 2004. *Environmental Impact Report Addendum No. 1 to the 2003 Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan.* Los Angeles, CA.

[5] Great Basin Unified Air Pollution Control District. November 2003. *Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan.* Bishop, CA.

2.0 PROJECT DESCRIPTION[6]

The proposed project addresses 14.6 square miles (9,344 acres) for the placement of potential DCMs to ensure that the District will meet the NAAQS after 2010. Pursuant to the 2003 SIP, the APCO determined on December 21, 2005 that supplemental control requirements were required to meet the NAAQS. Based on discussions between the District and LADWP, DCMs will be required on at least an additional 12.7 square miles of dry lake bed and they may be required on up to 14.6 square miles, as shown in ***Figure 2-1***. The 14.6 square miles of proposed project elements illustrated in *Figure 2-1* consist of the following:

- 12.2 square miles of Supplemental Dust Control Areas (consisting of 9.2 square miles of shallow flooding and 3.0 square miles of moat and row DCMs);
- 0.5 square mile of channel area that may require DCMs; and
- 1.9 square miles of study area of which some or all may require controls after 2010.

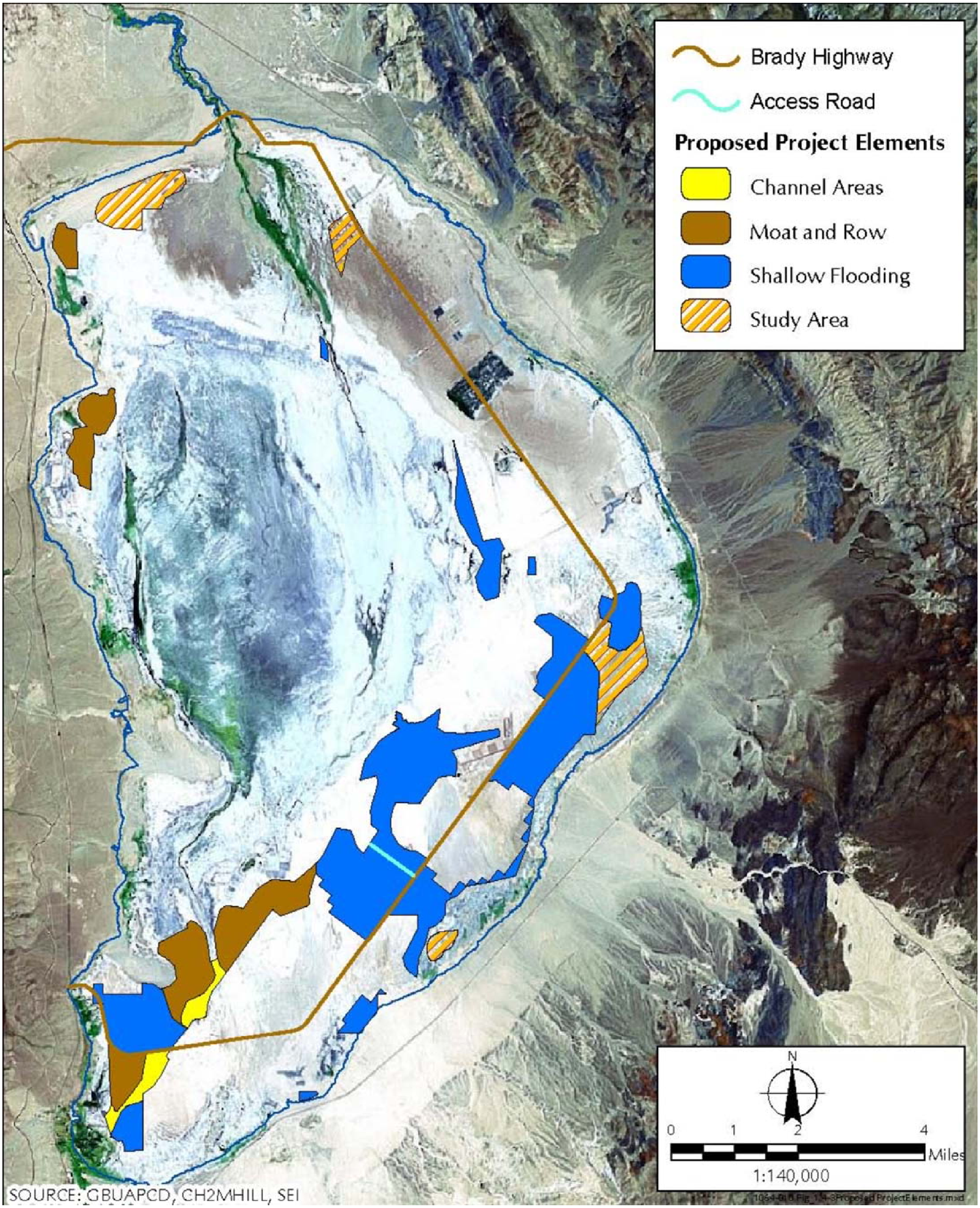
By 2010, a total of at least 42.57 square miles of DCMs are to be operational. As much as 44.92 square miles may require controls at some point. The purpose of this document is to subsequently analyze, based on the 2003 SIP EIR, the impacts from the construction of supplemental DCMs on an additional 14.6 square miles of potentially emissive lake bed, which includes 12.2 square miles of mandatory DCM area, 0.5 square mile of channel area and 1.9 square miles of study area that may be emissive. A summary of the comparison of the proposed project elements is presented in ***Table 2-1***.

TABLE 2-1

COMPARISON OF PROPOSED PROJECT ELEMENTS

Supplemental Dust Control Area/Measure	Square Miles	Acres	Percentage
Shallow flood	9.2	5,888	63%
Moat and row	3.0	1,920	21%
Study area	1.9	1,216	13%
Channel area	0.5	320	3%
Total proposed project area	14.6	9,344	100%

[6] Project Description source: Sapphos Environmental, Inc.



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MAP SOURCE: GBUAPCD, CH2MHILL, SEI

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FIGURE 2-1
PROPOSED PROJECT ELEMENTS

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2008 OWENS LAKE SIP PROJECT

Of the additional 14.6 square miles that may need DCMs, approximately 8.5 square miles (5,440 acres) have been analyzed in previous environmental documents on at least a programmatic level. Environmental documents may either analyze impacts at the programmatic or project level. Programmatic-level documentation analyzes impacts at a broad level, whereas project-level documentation requires more in-depth impact analysis based on a detailed project description. However, of the additional 14.6 square miles that may need DCMs, less than 2 percent of the area was covered in terms of project level documentation. Therefore, the purpose of the EIR document is to subsequently analyze, based on the 2003 EIR, on a project level, the impacts of constructing supplemental DCMs on these 14.6 square miles of potentially emissive lake bed (refer to *Figure 2-1*). The proposed project consists of applying DCMs specified in the approved 2003 SIP[7] and 1998 SIP,[8] as well as the application of a new DCM, moat and row, beyond the dust control applied by the LADWP through 2006.

The District has committed to modifying the 2003 SIP to incorporate new knowledge, provide for additional DCMs (including the new moat and row DCM), and provide for attainment of the PM_{10} NAAQS after April 1, 2010. The consideration of the application of DCMs to an expanded area of the bed of Owens Lake is consistent with the adopted 2003 SIP and 1998 SIP. The 1998 SIP and District Board Order required LADWP to continue to implement control measures on an additional 2 square miles of lake bed in 2004 and every year thereafter until the NAAQS is attained. The 2003 SIP and Board Order required LADWP to implement and have in operation DCMs on all additional areas of the lake bed that may require controls in order to meet the NAAQS. The District estimates that, in addition to the areas controlled by the end of 2006, up to 14.6 additional square miles (9,344 acres) of emissive lake bed may require DCMs to meet the NAAQS after 2010 (refer to *Figure 2-1*).

2.1 Project Location

The proposed project includes 14.6 square miles within the 110-square-mile (70,000-acre) dry Owens Lake bed, located within the Owens Valley, Inyo County, California (refer to *Figure 1-1*). The proposed project is located approximately 5 miles south of the community of Lone Pine and approximately 61 miles south of the City of Bishop. The proposed project is located approximately 10 miles to the west of Death Valley National Park, approximately 11 miles to the east of Sequoia National Park, and approximately 48 miles north of the City of Ridgecrest (refer also to *Figure 1-1*). The location of the proposed project is depicted on seven U.S. Geological Survey (USGS) 7.5-minute series topographic quadrangles: Bartlett,[9] Vermillion Canyon,[10] Owens Lake,[11] Keeler,[12] Dolomite,[13] Lone Pine,[14] and Olancha[15] . The topography of the site is

[7] Great Basin Unified Air Pollution Control District. November 2003. *Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan.* Bishop, CA.

[8] Great Basin Unified Air Pollution Control District. November 2003. *Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan.* Bishop, CA.

[9] U.S. Geological Survey. 1988. 7.5-minute series Bartlett, CA topographic quadrangle. Denver, CO.

[10] U.S. Geological Survey. 1988. 7.5-minute series Vermillion Canyon, CA topographic quadrangle. Denver, CO.

[11] U.S. Geological Survey. 1988. 7.5-minute series Owens Lake, CA topographic quadrangle. Denver, CO.

[12] U.S. Geological Survey. 1988. 7.5-minute series Keeler, CA topographic quadrangle. Denver, CO.

exceptionally flat with an approximate elevation ranging from 3,600 feet above mean sea level (msl) as defined by the historic shoreline to approximately 3,554 feet above msl as defined by the remnant existing brine pool. There is only a 46-foot difference between the highest and the lowest area of the 110-square-mile lake bed. The proposed project site lies southwest of the Inyo Mountains, northwest of the Coso Range, and east of Mount Whitney in the Sierra Nevada mountain range. The proposed project is bounded on the north-northeast by State Highway 136, on the east by State Highway 136 and State Highway 190, on the south by the intersection of State Highway 190 and U.S. Highway 395, and on the west by U.S. Highway 395. There are three communities in the vicinity of the proposed project located in the unincorporated area of Inyo County (the community of Lone Pine to the north, the community of Keeler to the east, and the community of Olancha/Cartago to the southwest) and one designated Indian reservation (Lone Pine Indian Reservation to the north).

2.2 Existing Project Site

The effects of surface water diversions on Owens Lake were described in the 1997 Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan Environmental Impact Report (1997 EIR) and are repeated here to create a context for understanding the environmental setting and the need for the proposed project.[16] The description provided in the 1997 EIR[17] has been updated to reflect the implementation of 2003 SIP.[18]

Owens Lake is part of a chain of lakes formed during the late Pleistocene epoch, about 1.8 million years ago. The lakes extended from Mono Lake (previously a much larger lake known as Lake Russell) in the north to Manley Lake, the southernmost of the chain, in what is now Death Valley. During much of this time, water from the Owens Valley basin flowed out of Owens Lake through Rose Valley and into China Lake. The high stand of the lake that produced the shorelines at an elevation of 3,880 feet above mean sea level (all elevations will be given in feet above mean sea level) is estimated to have occurred 15,000–16,000 years ago. Since that time, the surface extent of the water of Owens Lake has been diminishing—although two deep cores on the lake bed have failed to identify any previous episodes of complete desiccation.[19,20] Uplift

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[13] U.S. Geological Survey. 1988. 7.5-minute series Dolomite, CA topographic quadrangle. Denver, CO.

[14] U.S. Geological Survey. 1988. 7.5-minute series Lone Pine, CA topographic quadrangle. Denver, CO.

[15] U.S. Geological Survey. 1988. 7.5-minute series Olancha, CA topographic quadrangle. Denver, CO.

[16] Great Basin Unified Air Pollution Control District. 1997. *Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan Final Environmental Impact Report, Volumes I and II.* (SCH No. 961220777). Bishop, CA.

[17] Great Basin Unified Air Pollution Control District. 1997. *Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan Final Environmental Impact Report, Volumes I and II.* (SCH No. 961220777). Bishop, CA.

[18] Great Basin Unified Air Pollution Control District. November 2003. *Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan.* Bishop, CA. p. 2-5 to 2-6.

[19] Smith, G.I., and J.L. Bischoff (eds.). 1993. Core OL-92 from Owens Lake, Southeast California. U.S. Geological Survey Open File Report 93-683.

[20] Smith, G.I., and W.P. Pratt. 1957. Core Logs from Owens, China, Searles, and Panamint Basins, California. U.S. Geological Survey Bulletin 1045-A.

processes in the Coso Range, combined with a post-glacial drying trend eliminated overland outflow from the basin about 3,000 years ago. As a result, the lake basin became closed, losing water only through surface evaporation and transpiration. This internal drainage, combined with the arid environment, created the highly saline condition of remaining surface waters and playa soils at the bottom of the Owens Valley basin. Even in the 1800s, when it was used as a navigable waterway, Owens Lake was an alkali lake.

Although historic lake levels were as high as 3,597 feet in 1878,[21] surface water diversions over the last 130 years have reduced the lake to less than one-third of its original area and about five percent of its original volume.[22] From the 1860s to the early 1900s withdrawals from the Owens River for agricultural purposes substantially reduced surface water inflow to the lake. Extensive irrigation projects compounded by drought caused the lake level to drop as low as 3,565 feet in 1906. However, as the drought ended, by 1912 the level had risen to 3,579 feet.[23] In 1913, City of the Los Angeles Department of Water and Power completed a fresh water aqueduct system and began diverting waters of the Owens River south to the City of Los Angeles. Demand for exported water increased as Los Angeles grew, and diversions for irrigation continued in the Owens Valley (mainly on City-owned property). These factors resulted in Owens Lake becoming virtually dry by 1930; its level having dropped to an elevation of 3,554 feet.[24,25]

A former or stranded shoreline was left behind at an approximate elevation of 3,600 feet. The former shoreline bounds the playa in aerial photographs and on most maps. Today, a small permanent brine pool is present in the lowest portion of the basin, surrounded by dry playa soils and crusts. The ordinary high water mark of this remnant brine pool has been defined by the U.S. Army Corps of Engineers to be that portion of the lake basin below 3,553.55 feet. Evaporite deposits and brines cover much of the brine pool area; the concentration of dissolved solids (salts) can be as high as 35 percent by weight.

Although limited in distribution at Owens Lake, the Owens Valley has been described as having a very rich variety of plants with over 2,000 species represented in the region.[26] Riparian, alkaline meadow, and alkali seep plant communities which circumscribe Owens Dry Lake provide important habitat for resident and migratory wildlife species. Many of the diverse wildlife resources that are characteristic of the Sierra Nevada, Inyo, and Coso mountain ranges surrounding Owens Lake will occasionally be found on the valley floor, particularly during

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[21] Lee, C.H. 1915. *Report on Hydrology of Owens Lake Basin and the Natural Soda Industry as effected by the Los Angeles Aqueduct Diversion.* LADWP internal report, Los Angeles, CA.

[22] Mihevc, T.M., and G.F. Cochran. October 1992. *Simulation of Owens Lake Water Levels: A Preliminary Model.* Desert Research Center, Water Resources Center, University of Nevada, Reno.

[23] Lee, C.H. 1915. *Report on Hydrology of Owens Lake Basin and the Natural Soda Industry as effected by the Los Angeles Aqueduct Diversion.* LADWP internal report, Los Angeles, CA.

[24] Saint-Amand, P., L.A. Mathews, C. Gaines, and R. Reinking. 1986. *Dust Storms from Owens and Mono Valleys, California, Naval Weapons Center, China Lake, California, NWC TP 6731.* p. 79.

[25] City of Los Angles Department of Water and Power. 1966. *Record of Means and Totals.* Unpublished database.

[26] DeDecker, M. 1984. *Flora of the Northern Mojave Desert, California.* Special Publication No. 7. Berkeley, CA: California Native Plant Society.

winter. As many as 320 bird species have been reported for the Owens Valley floor including permanent residents, summer residents, winter residents, and migrants.[27] Ephemerally flooded areas in the vicinity of Owens Lake provide excellent resting and foraging habitat for winter migrants and prime opportunities for bird watching. Several sensitive wildlife resources are found at Owens Dry Lake.

The Owens Valley has attracted the interest of archeologists since at least the 1930s. The major work in the region was conducted in the 1940s and 1950s, recording several sites on the perimeter of Owens Lake, including important sites at Cottonwood Creek and Rose Spring.[28,29] Two California State Historic Landmarks and two California Points of Historic Interest are located in the vicinity of Owens Lake. Ethnographic data indicate that the east shore of Owens Lake was used by Native American groups. Historic resources related to mining and transportation have been identified along the stranded shoreline.

The City of Los Angeles completed installation of the North Sand Sheet Shallow Flooding Project in 2001. That project resulted in the conversion of 13.5 square miles of primarily barren playa to shallow flooding. The affected area was described as Zones 1 and 2 in the 1998 SIP.[30] Pipelines, buried power lines, and access roads were developed in conjunction with the shallow flooding project. Specifically, a 210-foot-wide water conveyance pipeline corridor was developed to distribute water from the Los Angeles Aqueduct to the east side of the bed of Owens Lake. A 50-foot-wide power line easement and an 80-foot-wide north access road corridor were constructed. Compliant shallow flooding requires the maintenance of 75 percent surface-saturated soil or standing water within the control area between October 1 and June 30.

The City of Los Angeles completed installation of approximately 6 square miles of the Southern Zones Dust Control Project in 2002. That project resulted in the conversion of barren playa and transmontane alkaline meadow to managed vegetation and habitat shallow flooding. The Southern Zones Dust Control Project includes facilities appurtenant to the implementation of DCMs, such as irrigation systems, drainage systems, power supply systems, and auxiliary facilities. Compliant managed vegetation consists of at least 50 percent of the land surface on each acre consisting of substantially evenly distributed live and dead vegetation. Managed vegetation completed to date has been accomplished with saltgrass (*Distichlis spicata*).

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[27] Heindel, T., and J. Heindel. 1995. "Birds." In *Deepest Valley: Guide to Owens Valley*. Edited by J. Putnam and G. Smith. Mammoth Lakes, CA: Genny Smith Press.

[28] Riddell, H.S. 1951. "The Archaeology of a Paiute Village Site in Owens Valley." *Reports of the University of California Archaeological Survey*, No. 12: 14-28. Berkeley, CA.

[29] Riddell, H.S., and F.A. Riddell. 1956. "The Current Status of Archaeological Investigations in Owens Valley, California." *Reports of the University of California Archaeological Survey*, No. 33, Paper 38. Berkeley, CA.

[30] Great Basin Unified Air Pollution Control District. 1998. *Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan Addendum No.1 to the Final Environmental Impact Report* (SCH No. 96122077). Bishop, CA.

In December 2006, the City of Los Angeles completed installation of Phase 5 of DCMs pursuant to the 2003 SIP to achieve a total of 29.8 square miles of dust controls, consisting of approximately 26 square miles of shallow-flooded lake bed and 3.8 square miles of managed vegetation..

2.3 Proposed Project Dust Control Measures

2.3.1 *Shallow Flooding*

This DCM consists of releasing water along the upper edge of the Owens Lake bed and allowing it to spread and flow down-gradient toward the center of the lake. To attain the required PM_{10} control efficiency, at least 75 percent of each square mile of the control area must be wetted to produce standing water or surface-saturated soil, between October 1 and June 30 of each year. It is estimated that about 4 acre-feet of water is required annually to control PM_{10} emissions from an acre of lake bed. Except for limited habitat maintenance flows, water will be turned off between July 1 and September 30 to allow for facility maintenance activities. This is typically a period when dust storms do not occur.

The primary management objective for shallow flooding will be dust control. Surface water salinity in these areas will vary over a wide range [10,000 to 450,000 milligrams/liter (mg/l) total dissolved solids (TDS)] and will at times exceed levels suitable for biological production. However, selected portions of shallow flooding areas will be operated according to specific criteria to maintain conditions intended to provide habitat. These areas are called "habitat" shallow flooding.

2.3.2 *Moat and Row*

The general form of the moat and row DCM is an array of earthen berms (rows) about 5 feet high with sloping sides, flanked on either side by ditches (moats) about 4 feet deep. Moats serve to capture moving soil particles, and rows physically shelter the downwind lake bed from the wind. The individual moat and row elements are constructed in a serpentine layout across the lake bed surface, generally parallel to one another, and spaced at variable intervals, so as to minimize the fetch between rows along the predominant wind directions. The serpentine layout of the moat and row array is intended to control emissions under the full range of principal wind directions. Initial pre-test modeling indicates that moat and row spacing will generally vary from 250 to 1,000 feet, depending on the surface soil type and the PM_{10} control effectiveness required on the moat and row area. The PM_{10} control effectiveness of moat and row may be enhanced by combining it with other dust control methods such as vegetation, water, gravel, sand fences, or the addition of other features that enhance sand capture and sheltering or directly protect the lake bed surface from wind erosion. The effectiveness of the array may also be increased by adding moats and rows to the array by decreasing the distance between moats and rows within the array. As the moat and row DCM is not a currently approved measure, the final form of this DCM will largely be determined from the results of testing at test areas on the lake bed at two locations undergoing separate environmental review.

2.3.3 *Study Areas*

Included in the total 14.6 square miles of the total project area are 1.9 square miles of study areas. These are areas where there is a suspicion of dust emissions, but where either the location or magnitude of emissions is uncertain. In order to provide as extensive an impact analysis as possible, these areas will be addressed in the Initial Study as being emissive Dust Control Areas. The District will continue to collect data in these four areas to determine their emissivity through the course of the project until 2010.

2.3.4 *Channel Areas*

In addition to the above listed DCMs, this Initial Study will also address potential impacts to 0.5 square mile of channel areas. These areas represent areas containing natural drainage channels that have the potential to act as emissive areas thus requiring DCMs. These areas may have potentially significant resource issues and regulatory constraints that could affect the type and location of DCMs within these areas.

2.4 Other Project Elements

Other project elements include water supply conservation activities and appurtenant infrastructure that consist of water supply and conveyance, access roads, power supply, and water distribution facilities (submain and lateral piping, irrigation risers, drip and spray systems, drain tile, drain pump stations, and downslope berms), staging areas, and an Effectiveness Monitoring Program.

2.4.1 *Water Supply Conservation*

Another element of the proposed project to be analyzed is the refinement of the amount of water used to control dust in shallow flood DCM areas. The District's shallow flood research conducted in the 1990s indicated that 99 percent control was achieved when 75 percent of an area consisted of standing water or surface-saturated soil. This is a conservative requirement for two reasons: 1) the actual amount of water required to provide 99 percent control may be less than 75 percent on certain soil types and 2) some of the existing shallow flood DCMs may not require 99 percent control in order to meet the federal standard. The LADWP will conduct limited field testing on no more than 1.5 square miles of existing shallow flood areas to refine the amount of water required to achieve 99 percent control. Based on data collected from January 2000 through June 2006 the level of control required to reduce lake bed emissions to below the federal standard has been identified for areas of the lake bed known as the minimum dust control efficiency (MDCE). The MDCEs for the new dust control areas vary from 99 percent to 30 percent. Although some of the new shallow flood DCM areas will be constructed and operated to provide less than 99 percent dust control efficiency, existing shallow flood DCMs will require 99 percent control efficiency and thus 75 percent of wetted area.

Impacts of reducing the amount of water used to control dust in shallow flood areas will also be analyzed in this Initial Study. The 2006 Agreement between the District and the LADWP also provides that once DCMs are in place and operational on the entire 43-square-mile dust control area for one full year and there have been no monitored violations of the federal standard, then the LADWP may begin reducing the wetness cover on shallow flood areas.[31] The reductions will occur in small, annual steps of about 10 percent and reductions can only continue to occur as long as the standard continues to be met. If areas become too dry, the amount of wetness must be increased immediately. This provision of the Agreement may eventually allow the LADWP to save considerable amounts of water at Owens Lake.

The District also has determined, based on air quality data, that the federal standard will be attained if dust storms are eliminated from October 1 of every year through June 30 of the next year. Therefore, shallow flooding areas need to be wet for dust control only during that nine-month period. However, dust emissions are generally significantly less during the beginning and end of the dust season than they are in the middle of it. In order to provide enough water for adequate dust control during the fall and late spring shoulder seasons, while at the same time acknowledging that lower levels of control efficiency are appropriate during these periods, starting in 2010 there will be a reduction in shallow flood wetness from October 1 through October 15 and from May 16 through June 30. The wetness level will ramp up to maximum wetness on October 16 and then ramp down starting on May 16 through June 30. By the end of June, the wetness is allowed to be 15 percent less than the maximum.

2.4.2 *Water Supply and Conveyance*

The estimated water demand for the proposed project ranges between 1 and 4 acre-feet per acre per year depending on the control measures selected and climatic and operational conditions. The SIP does not require project water to be supplied from any particular source; however, based on the LADWP's previous decisions, the source of water for the proposed project is assumed to be the Los Angeles Aqueduct. Expanded water conveyance pipeline systems will be tied into existing mainlines on the proposed project site.

2.4.3 *Access Roads*

Unpaved, permanent all-year access roads will be constructed and used for construction, operation, and maintenance of the dust control areas. New secondary access roads will connect to existing primary access roads. Secondary access roads will be about 10 feet wide, with centerline elevation 2 feet above existing grade and shoulder slopes of 3:1. The elevation of the access roads may increase to about 4 feet above existing grade on portions of the lake bed. Access is currently provided from U.S. Highway 395 via the existing north and south mainline pipeline access roads, from State Route 136 via the existing Sulfate Road, and from State Route 190 via the existing Dirty Socks access road. Pipelines and buried power lines would be placed and constructed under, along, or close to these access roads.

[31] Great Basin Unified Air Pollution Control District and City of Los Angeles Department of Water and Power. November 2006. Settlement Agreement Resolving City's Challenge to the District's Supplemental Control Requirement (SCR) Determination for the Owens Lake Bed (issued on December 21, 2005, and modified on April 4, 2006). Los Angeles, CA.

2.4.4 *Power Supply*

Up to 1,000 kilovolts of electrical power may be required to operate proposed project facilities, including the shallow flooding facilities. This power will be supplied from existing line power facilities to the site provided by the LADWP. Underground power lines will be buried 18 to 30 inches below ground surface and will be located generally in the vicinity of access roads and pipelines. Up to several thousand feet of underground power line may be installed.

Existing overhead power lines run along the north end and down the east side of Owens Lake, generally paralleling the historic shoreline on the north and State Route 136 on the east. Power drops from nearby overhead lines are connected to the underground power lines that carry power to the lake bed control measure facilities. In addition, small portable generators mounted on construction vehicles will provide some temporary construction and emergency power.

2.4.5 *Water Distribution Facilities*

Shallow flooding areas will be subdivided into smaller irrigation blocks to improve water use efficiency. It is anticipated that approximately half of the units will be operated simultaneously, with water being supplied nearly continuously during peak demand periods.

Water distribution facilities within the irrigation blocks include irrigation, submain pipelines, lateral pipelines, irrigation risers, drip and spray irrigation systems, tile drains, drain pump stations, and side and downslope berms. The number and size of the individual irrigation blocks may vary based on the final design and layout selected by the project contractor. However, the anticipated facilities would be similar to existing facilities.

Water will be distributed to each irrigation block through submain pipelines. One pressure-regulating valve and one flow meter will be installed on each submain. These valves will be housed in underground vaults buried up to 4 feet deep and extending approximately 18 to 24 inches above the surrounding grade. The submain pipelines, which are buried 18 to 30 inches deep, will deliver water to irrigation laterals. Lateral piping buried 4 to 12 inches deep at evenly spaced (approximately 300- to 800-foot) intervals within each irrigation block will distribute water across the irrigation blocks that will feed water to the irrigation risers. The irrigation risers will distribute and apply water to the lake bed surface in the shallow flood areas and deliver water to the drip and/or spray system in the managed vegetation areas.

Soil berms will be constructed along the down-gradient and side boundaries of each shallow flood irrigation block. These berms will be keyed into the lake bed and will be used to collect excess surface water along the downslope borders of each irrigation block. Drain tiles consisting of perforated piping will be installed along the side and down-gradient boundaries of each irrigation block to capture any excess water resulting from surface application or subsurface flows. This piping will slope to drain pump stations where the water will be collected. A submersible pump inside each drain pump station will pump recirculated water into the irrigation laterals for shallow flooding reuse. The top of the drain pump stations will be about 24 inches above the surrounding grade. An electrical pedestal will be installed near each drain pump station and will house the electrical disconnect switch and motor starters. The pedestal will have an approximate 4-foot-centerline elevation set at 2 feet above grade, with shoulder slopes above the surrounding grade. It is anticipated that the placement of individual submain pipelines, risers, sprinklers, drip systems, berms, and access roads internal to each zone will differ based on site requirements and final design decisions to be made by the LADWP. Existing water distribution facilities have been constructed on the lake bed. An alternative construction method, consisting of larger ponds with one main source of water as currently utilized for existing shallow flood DCM, may be utilized.

2.4.6 *Staging Areas*

Staging areas have been established to provide contractor(s) currently working on ongoing implementation of approved DCMs with storage and placement of heavy equipment and construction materials and supplies. One contractor staging area is located south of Sulfate Road and west of State Route 136 near their junction, just above the eastern historic shoreline of Owens dry lake. A secondary contractor staging area is located above the southeast shoreline of the lake bed near Dirty Socks Spring. It is anticipated that these areas will also suffice as staging areas for construction activities associated with the proposed project.

2.4.7 *Effectiveness Monitoring Program*

A dust emissions monitoring program, known as the Dust ID Program, has been established by the District. The program consists of air monitoring devices, a grid of sand motion monitoring devices deployed on the lake bed, remote cameras, visual observations, and global positioning system mapping to measure and map dust emissions from the lake bed. The District and the LADWP, with assistance of third-party technical experts, will work cooperatively to improve the Dust ID Program by 2010. The Dust ID Program will continue to operate during and after DCM installation.

3.0 EXISTING STREET SYSTEM

The roadway network in the vicinity of the Owens Lake includes U.S. Highway 395, SR 136 and SR 190. It should be noted that there are several unimproved roads that provide access to the Owens Lake playa. The existing lane configurations on U.S. Highway 395, SR 136 and SR 190, and at the intersections of these roadways are displayed in ***Figure 3-1***. A description of these roadways is provided in the following subsections.

3.1 Roadway Classifications

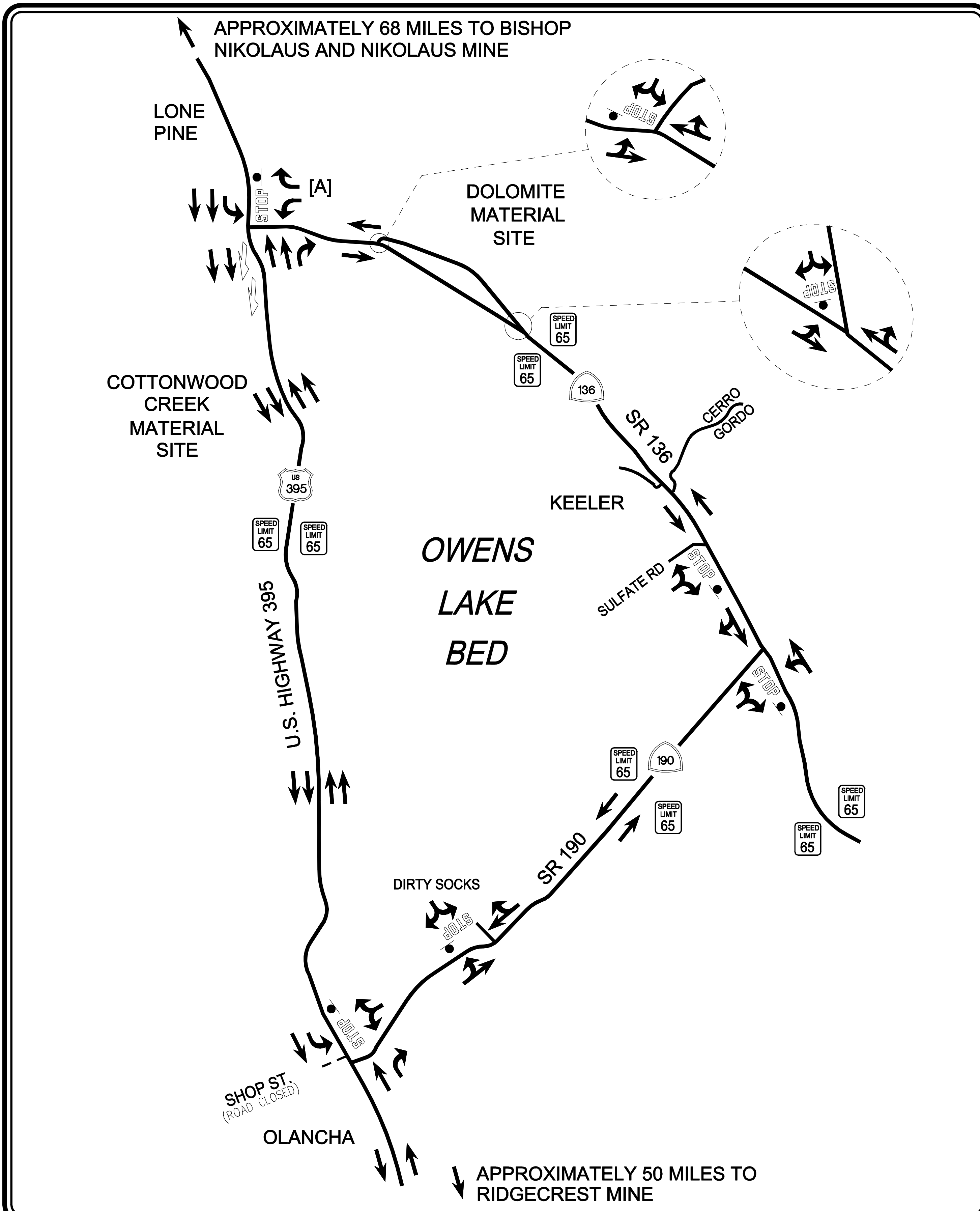
The following roadway categories are recognized by regional, state and federal transportation agencies. There are four categories in the roadway hierarchy, ranging from freeways with the highest capacity to two-lane undivided roadways with the lowest capacity. The roadway categories are summarized as follows:

- *Freeways* are limited-access and high speed travel ways included in the state and federal highway systems. Their purpose is to carry regional through-traffic. Access is provided by interchanges with typical spacing of one mile or greater. No local access is provided to adjacent land uses.

- *Arterial* roadways are major streets that primarily serve through-traffic and provide access to abutting properties as a secondary function. Arterials are generally designed with two to six travel lanes and their major intersections are signalized. This roadway type is divided into two categories: principal and minor arterials. Principal arterials are typically four-or-more lane roadways and serve both local and regional through-traffic. Minor arterials are typically two-to-four lane streets that service local and commute traffic.

- *Collector* roadways are streets that provide access and traffic circulation within residential and non-residential (e.g., commercial and industrial) areas. Collector roadways connect local streets to arterials and are typically designed with two through travel lanes (i.e., one through travel lane in each direction) that may accommodate on-street parking. They may also provide access to abutting properties.

- *Local* roadways distribute traffic within a neighborhood, or similar adjacent neighborhoods, and are not intended for use as a through-street or a link between higher capacity facilities such as collector or arterial roadways. Local streets are fronted by residential uses and do not typically serve commercial uses.



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[A] FREE-FLOW MOVEMENT

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FIGURE 3-1
EXISTING ROADWAY CONFIGURATIONS

LINSCOTT, LAW & GREENSPAN, engineers

2008 OWENS LAKE SIP PROJECT

3.2 Roadway Descriptions

A brief description of the important roadways in the project site vicinity is provided in the following subsections.

3.2.1 *U.S. Highway 395*

U.S. Highway 395 is the main transportation route through Inyo County. U.S. Highway 395 is included on the Inter-Regional Road System and is functionally classified as a Rural Principal Arterial. The highway connects the project area with Mono County and Reno to the north and with the southern California metropolitan area to the south.

Adjacent to Owens Lake, the majority of U.S. Highway 395 is a divided four lane expressway with a posted speed limit of 65 miles per hour. U.S. Highway 395 is a major highway used by commercial traffic traveling within the Owens Valley and by recreational traffic traveling between Death Valley and the Sierra Nevada Mountain Range. U.S. Highway 395 is a four-lane divided highway from Cartago to just south of State Route 136, where it transitions to a two-lane highway.

At the U.S. Highway 395 intersection with SR 136, one exclusive left-turn lane and two through lanes are provided at the southbound approach on U.S. Highway 395, and two through lanes and channelized right-turn only lane are provided at the northbound approach on U.S. Highway 395. A southbound departure auxiliary lane is also provided for the westbound left-turn movement from SR 136 to southbound on U.S. Highway 395. Twelve foot wide lanes with unimproved gravel shoulders are provided in each direction on U.S. Highway 395 near the SR 136 intersection and in the project vicinity. The posted speed limit along U.S. Highway 395 at SR 136 varies from 55 miles per hour south of intersection to 45 miles per hour north of the intersection.

At the U.S. Highway 395 intersection with SR 190, one exclusive left-turn lane and one through lane is provided at the southbound approach on U.S. Highway 395, and one through lane and one right-turn only lane is provided at the northbound approach on U.S. Highway 395. Twelve foot wide lanes with unimproved gravel shoulders are provided in each direction on U.S. Highway 395 near the SR 190 intersection and in the project vicinity. The posted speed limit along U.S. Highway 395 at SR 190 is 55 miles per hour just north of the intersection.

3.2.2 *State Route 190*

SR 190 is a two-lane highway that is oriented southwest to northeast between U.S. Highway 395 to the west and SR 136 to the east, and then is oriented to the southeast from the SR 136 intersection. Twelve foot wide lanes with unimproved gravel shoulders are provided in each direction on SR 190 in the project vicinity. Primary access to the southerly portions of Owens Lake is provided via SR 190.

At the SR 190 intersection with U.S. Highway 395, stop control is provided at the westbound approach on SR 190 and the west leg of the intersection has been recently closed. One combination left-turn/right-turn lane is provided at both the eastbound approach on SR 190 at the U.S. Highway 395 intersection.

At the SR 190 intersection with SR 136, which is a "Tee" intersection, one-way stop sign control is provided at the eastbound approach on SR 190. One combination left-turn/right-turn lane is provided at the eastbound approach on SR 190 at the SR 136 intersection.

3.2.3 *State Route 136*

SR 136 is a two-lane highway that is oriented northwest to southeast between U.S. Highway 395 to the north and SR 190 to the south. Twelve foot wide lanes with unimproved gravel shoulders are provided in each direction on SR 136 in the project vicinity. Primary access to the northerly and easterly portions of Owens Lake is provided via SR 136. A speed limit of 65 miles per hour is posted along SR 136.

At the SR 136 intersection with U.S. Highway 395, which is a "Tee" intersection, one-way stop sign control is provided at the westbound approach on SR 136. One combination left-turn/through lane and one channelized right-turn only lane are provided at the westbound approach on SR 136 at the U.S. Highway 395 intersection.

At the SR 136 intersection with SR 190, which is a "Tee" intersection, one-way stop sign control is provided at the eastbound approach on SR 190. One combination through/right-turn lane and one combination left-turn/through lane are provided at the southbound and northbound approaches on SR 136, respectively, at the SR 190 intersection.

4.0 EXISTING TRAFFIC COUNTS

Recent traffic counts for U.S. Highway 395, SR 136 and SR 190 in the project vicinity were researched from data provided in *2005 Traffic Volumes on California State Highways*, June, 2006, published by the California Department of Transportation (Caltrans). The Caltrans publication lists 2005 traffic volumes for all count locations on the California state highway system. Peak hours, peak month average daily traffic (ADT) volumes and annual ADT (AADT) volumes are shown for each count location in the publication. Significant volume changes (breakpoints) in the traffic profile along each route are counted and identified by name and milepost value.

Annual ADT is the total traffic volume for the year divided by 365 days. The traffic count year data is collected from October 1st through September 30th. Very few locations in California are actually counted continuously. Traffic counting is generally performed by electronic counting instruments moved from location to location throughout the State in a program of continuous traffic count sampling. The resulting counts are adjusted to an estimate of annual average daily traffic by compensating for seasonal influence, weekly variation and other variables which may be present. Annual ADT is necessary for presenting a statewide picture of traffic flow, evaluating traffic trends, computing accident rates, planning and designing highways and other purposes.

The annual ADT volumes on U.S. Highway 395, SR 136 and SR 190 in the vicinity of Owens Lake are presented in ***Figure 4-1***. The 2005 traffic counts were increased by 4.6 percent (i.e., an annual average rate increase of 2.3 percent per the traffic trend contained in the Caltrans publication) to reflect year 2007 existing traffic volumes. Thus, the existing traffic volumes utilized in this analysis (i.e., annual ADT figure, etc.) reflect year 2007 conditions. Summary data worksheets of the annual ADT counts from the Caltrans publication are contained in ***Appendix A***.

4.1 U.S. Highway 395 Traffic Volumes

The AADT volume on U.S. Highway 395 between SR 136 and SR 190 varies between 6,695 and 6,590 vehicles per day, with a peak hour traffic volume of 1,175 vehicles (year 2005 traffic volumes adjusted to reflect year 2007 conditions). This AADT volume is well below the capacity of the four lane section of the highway, extending between SR 136 and SR 190. Based on the capacity of the four-lane segment, traffic volumes could increase by a factor of approximately 2.5 before an undesirable Level of Service would be expected.

4.2 State Route 136 Traffic Volumes

The AADT along SR 136 ranges from approximately 630 vehicles east of U.S. Highway 395 to approximately 450 vehicles near SR 190 at the Olancha cutoff (year 2005 traffic volumes adjusted to reflect year 2007 conditions) The peak hour traffic volume at both of these locations is 105 vehicles, respectively. The current traffic volume data indicates that this route is currently operating well below capacity. Current traffic volumes could increase by as much as a factor of 12 before approaching an undesirable Level of Service.

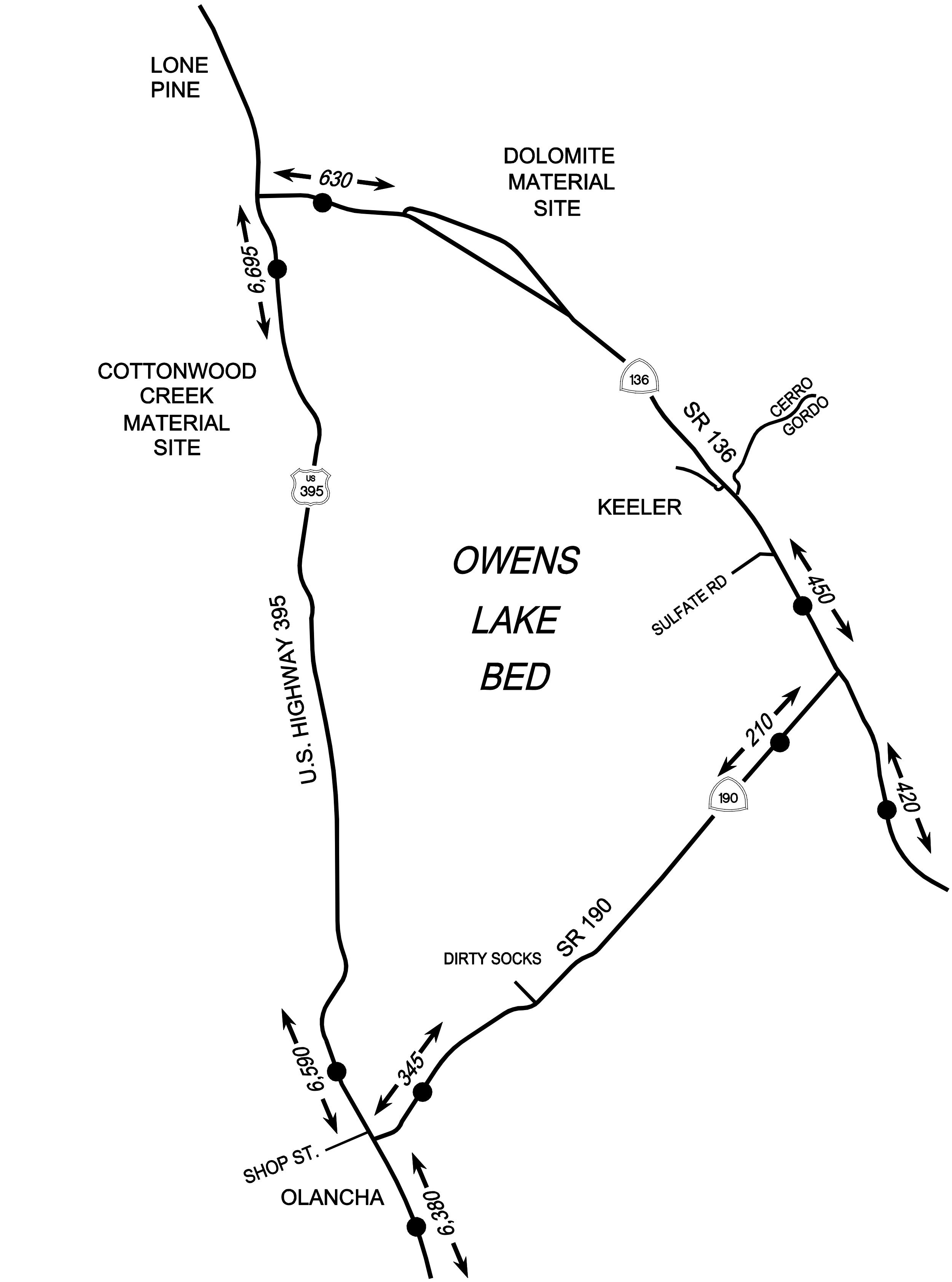

FIGURE 4-1
EXISTING YEAR 2007 ANNUAL ADT VOLUMES

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2008 OWENS LAKE SIP PROJECT

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4.3 State Route 190 Traffic Volumes

The SR 190 AADT volume east of U.S. Highway 395 is approximately 345 vehicles while west of SR 136 is approximately 210 vehicles (year 2005 traffic volumes adjusted to reflect year 2007 conditions). Peak hour traffic volumes range between 85 and 40 vehicles per hour along this segment. The current traffic volume data indicates that this route is currently operating well below capacity. Current traffic volumes could increase by as much as a factor of 10 before approaching an undesirable Level of Service.

5.0 TRAFFIC FORECASTING METHODOLOGY

In order to estimate the traffic impact characteristics of the 2008 Owens Valley SIP project, a multi-step process has been utilized. The first step is trip generation, which estimates the total arriving and departing traffic volumes on a peak hour and daily basis. The traffic generation potential is forecast by applying appropriate vehicle trip calculations for the project development tabulation.

The second step of the forecasting process is trip distribution, which identifies the origins and destinations of inbound and outbound project traffic volumes. These origins and destinations are typically based on demographics and existing/anticipated travel patterns in the study area.

The third step is traffic assignment, which involves the allocation of project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway links and intersection turning movements throughout the study area.

With the forecasting process complete and project traffic assignments developed, the impact of the proposed project is isolated by comparing operational (i.e., Levels of Service) conditions at the selected key roadway locations using expected future traffic volumes with and without forecast project traffic. The need for area traffic improvements can then be evaluated and the significance of the project's impacts identified.

5.1 Project Traffic Generation During Construction

A summary of the Owens Lake dust control project activities, including construction requirements for equipment and personnel is provided in Section 9.0 of this report (refer to ***Table 9-1***). As summarized in greater detail in Section 9.0, it is anticipated that the peak construction period for the revision of the 2003 SIP (2008 SIP) would not exceed that experienced during installation of the 1998 SIP DCMs. The peak period of construction experienced in conjunction with the 1998 SIP occurred in late spring and early summer of 2002 when approximately 250 pieces of equipment and 200 construction personnel were mobilized on-site. Similarly, it is anticipated that peak construction for the 2008 SIP DCMs would be expected between late spring 2009 and early summer 2009, during installation of the moat and row DCM. Construction activities are expected to occur six days a week for 12 hours a day. However, construction activities may occur seven days a week for 24 hours a day to complete construction on schedule. It is anticipated that, at the end of each shift, construction crews who have just completed their shift would generally leave the site and return home, and the next crews would already be on site and would start working when the shift changes.

It is assumed that a total of 2.5 construction personnel trips per day would be made to and from the project site. Based on construction equipment and labor requirements, the project is anticipated to generate a total of approximately 200 daily trips. Assuming a conservative estimate of up to72 truck trips per day, a total of 272 daily trips may be generated by the project during peak construction activities.

Heavy equipment associated with construction would be on the site at any given time. The work crews are anticipated to be working simultaneously in different areas of the project site. The approximate number of equipment used on-site by the crews would total 45 pieces. The majority of all equipment would be left on-site for the duration of construction. The transport of the equipment to the project site, including the hauling of pipelines, may result in a one-time, temporary, short-term impact.

5.2 Project Traffic Generation During Operations

Routine maintenance and inspection of site facilities would be required for the duration of the project. The majority of all activities during operation would not require the use of heavy trucks or a significant number of vehicles accessing the site (three to four daily vehicle trips during initial operation and one to two daily vehicle trips during long-term operation). Assuming 3 to 4 vehicle trips per day, a total of 20 vehicle trips would be generated per week during operations.

5.3 Project Traffic Distribution and Assignment

Project-related (construction and subsequent operation) traffic volumes both entering and exiting the site have been distributed and assigned to the adjacent roadway system based on the following considerations:

- The site's proximity to major traffic corridors (i.e., U.S. Highway 395, SR 136, SR 190);
- Expected localized traffic flow patterns based on adjacent roadway channelization and presence of traffic signals;
- Existing intersection traffic volumes;
- Ingress/egress availability at the project site; and
- The location of existing and proposed construction areas.

6.0 TRAFFIC IMPACT ANALYSIS METHODOLOGY

The number of vehicle trips anticipated to be generated by the proposed project were estimated based on information presented in the Sections 5.0 and 9.0 of this report. The *2005 Traffic Volumes on California State Highways* publication was used to determine the existing traffic volumes. As the proposed project does not generate a significant number of vehicle trips, no Level of Service analyses were prepared for the roadway system. Therefore, the impacts of the construction and subsequent operation of the project on roadway operations and safety were qualitatively analyzed and discussed.

6.1 Impact Criteria and Thresholds

Level of Service (LOS) is a qualitative measure of traffic operating conditions whereby a letter grade A through F, corresponding to progressively worsening operating conditions, is assigned to an intersection or roadway segment. LOS A, B, and C are generally considered satisfactory to most motorists, while LOS D is marginally acceptable. LOS E and F are associated with severe congestion and delay, and are unacceptable to most motorists.

For purposes of this EIR, LOS C is considered the minimum acceptable standard for roadway segments as identified in the Inyo County General Plan. Degradation of roadway segment LOS below an adopted County standard or concept is a potentially significant impact.

6.2 Traffic Impact Analysis Scenarios

Traffic impacts at the study intersections were analyzed for the following conditions:

[a] Existing conditions.

[b] Condition [a] plus 6.9 percent (6.9%) ambient traffic growth through year 2010.

[c] Condition [b] following construction of the project and with future operations of the proposed project.

[d] Condition [c] with implementation of project mitigation measures, where necessary.

The traffic volumes for each new condition were added to the volumes in the prior condition to determine the change in utilization and corresponding LOS at the study locations.

7.0 TRAFFIC ANALYSIS

7.1 Existing Conditions

The following subsections present a summary of the existing conditions at each of the roadway segments included as part of this traffic analysis.

7.1.1 *U.S. Highway 395 Existing Conditions*

The AADT volume on U.S. Highway 395 between SR 136 and SR 190 varies between 6,695 and 6,590 vehicles per day, with a peak hour traffic volume of 1,175 vehicles (year 2005 traffic volumes adjusted to reflect year 2007 conditions). This AADT volume is well below the capacity of the four lane section of the highway, extending between SR 136 and SR 190. U.S Highway 395 currently operates at LOS A under existing conditions.

7.1.2 *State Route 136 Existing Conditions*

The AADT along SR 136 ranges from approximately 630 vehicles east of U.S. Highway 395 to approximately 450 vehicles near SR 190 at the Olancha cutoff (year 2005 traffic volumes adjusted to reflect year 2007 conditions). The peak hour traffic volume at both of these locations is 105 vehicles, respectively. The current traffic volume data indicates that this route is currently operating well below capacity. State Route 136 currently operates at LOS A under existing conditions.

7.1.3 *State Route 190 Existing Conditions*

The AADT volume along SR 190 ranges from approximately 345 vehicles east of U.S. Highway 395 to approximately 210 vehicles west of SR 136 (year 2005 traffic volumes adjusted to reflect year 2007 conditions). Peak hour traffic volumes currently range between 85 and 40 vehicles per hour along this segment. The current traffic volume data indicates that this route is currently operating well below capacity. State Route 190 currently operates at LOS A under existing conditions.

7.2 Future Pre-Project Conditions

The following subsections present a summary of the future pre-project conditions at each of the roadway segments included as part of this traffic analysis. The future pre-project conditions were determined through application of the annual average rate increase published in the *2005 Traffic Volumes on California State Highways* publication (i.e., an annual average rate increase of 2.3 percent per year, or a total increase of 6.9% ambient traffic growth between year 2007 and year 2010).

7.2.1 *U.S. Highway 395 Future Pre-Project Conditions*

The future pre-project AADT volume on U.S. Highway 395 between SR 136 and SR 190 is forecast to vary between 7,155 and 7,045 vehicles per day, with a peak hour traffic volume of 1,255 vehicles (year 2007 traffic volumes adjusted to reflect year 2010 conditions). This AADT volume is well below the capacity of the four lane section of the highway, extending between SR 136 and SR 190. U.S Highway 395 is forecast to operate at LOS A under the future pre-project conditions.

7.2.2 *State Route 136 Future Pre-Project Conditions*

The future pre-project AADT along SR 136 is forecast to range from approximately 675 vehicles east of U.S. Highway 395 to approximately 480 vehicles near SR 190 at the Olancha cutoff (year 2007 traffic volumes adjusted to reflect year 2010 conditions). The peak hour traffic volume at both of these locations is forecast at 112 vehicles, respectively. The forecast traffic volume data indicates that this route would operate well below capacity. State Route 136 is forecast to operate at LOS A under the future pre-project conditions.

7.2.3 *State Route 190 Future Pre-Project Conditions*

The future pre-project SR 190 AADT along State Route 190 is forecast to range from approximately 370 vehicles east of U.S. Highway 395 to approximately 225 vehicles west of SR 136 (year 2007 traffic volumes adjusted to reflect year 2010 conditions). Peak hour traffic volumes are forecast to range between 90 and 45 vehicles per hour along this segment. The forecast traffic volume data indicates that this route would continue operating well below capacity. State Route 190 is forecast to operate at LOS A under the future pre-project conditions.

7.3 Future With Project Conditions

As the construction of the project results in the highest level of overall vehicle trip generation, the future with project conditions analysis only considers the construction phases of the project. In order to provide a conservative worst-case analysis, all 272 daily vehicle trips anticipated to be generated by the project during the construction phase, were assigned to each highway in the project vicinity. Based on the roadway lane capacities of the highways, the future year 2010 daily traffic volumes on the State highways, and the forecast daily project trip generation, no significant impacts are expected to occur along U.S. Highway 395, SR 136, and SR 190, as discussed further in the following sections. However, periodic events during which equipment is hauled to the site may result in safety hazards associated with other oncoming or turning vehicles on U.S. Highway 395, SR 136 and SR 190. In addition, overweight trucks transporting material, equipment, and gravel may result in damage to roadway surface of State Highways. Therefore, these impacts can be potentially significant. Refer to Section 8.0 of this report for further discussion.

7.3.1 *U.S. Highway 395 Future With Project Conditions*

The future with project AADT volume on U.S. Highway 395 between SR 136 and SR 190 is forecast to vary between 7,430 and 7,320 vehicles per day, with a peak hour traffic volume of 1,325 vehicles (year 2010 conditions). This AADT volume is well below the capacity of the four lane section of the highway, extending between SR 136 and SR 190. U.S Highway 395 is forecast to operate at LOS A under the future with project conditions.

7.3.2 *State Route 136 Future With Project Conditions*

The future with project AADT along SR 136 is forecast to range from approximately 950 vehicles east of U.S. Highway 395 to approximately 750 vehicles near SR 190 at the Olancha cutoff (year 2010 conditions). The peak hour traffic volume at both of these locations is forecast at 180 vehicles, respectively. The forecast traffic volume data indicates that this route would operate well below capacity. State Route 136 is forecast to operate at LOS A under the future with project conditions.

7.3.3 *State Route 190 Future With Project Conditions*

The future with project SR 190 AADT along State Route 190 is forecast to range from approximately 640 vehicles east of U.S. Highway 395 to approximately 500 vehicles west of SR 136 (year 2010 conditions). Peak hour traffic volumes are forecast to range between 160 and 115 vehicles per hour along this segment. The forecast traffic volume data indicates that this route would continue operating well below capacity. State Route 190 is forecast to operate at LOS A under the future with project conditions.

8.0 TRANSPORTATION IMPROVEMENT MEASURES

The following project mitigation measures are recommended to reduce the potential impacts due to the construction of the project to less than significant levels:

- The State of California Department of Transportation shall determine the necessity for traffic safety equipment to be installed and maintained on U.S Highway 395, SR 136 and SR 190 in order to ensure traffic safety during the construction of the proposed project. Some examples of typical traffic safety equipment/measures include warning lights, signage, and cones. Any required traffic safety equipment, which would warn oncoming motorists that there may be large, slow-moving trucks ahead, would be designed consistent with Caltrans standards.

- Flag persons should be utilized where necessary to warn motorists that there may be large, slow-moving trucks ahead, particularly during peak periods and times of large load deliveries.

- Traffic safety equipment shall be installed prior to use of U.S. Highway 395, SR 136, and SR 190 for gravel hauling or other heavy truck trips such as the delivery of heavy equipment and construction vehicles to the Project site and shall be funded by the Department.

- Any roadways that are damaged by project construction activities shall be repaired and the roadways shall be returned to pre-project conditions. The Dirty Socks and Sulfate Road driveways shall conform with State standards. All road repairs will be scheduled and conducted to ensure that safe operating conditions are maintained.

In addition to the above measures and as previously noted, traffic controls and signage and all additional safety specifications resulting from mitigation measures, permit conditioning, and conditions of approval shall be employed.

9.0 PROJECT CONSTRUCTION

Development of the proposed project would require approximately 1½ years to complete, extending from August 2008 through March 2010. The new moat and row DCMs areas will be completed and fully operational by October 1, 2009, and the new shallow flood DCMs area will be complete and operational by April 1, 2010.

The construction elements that would be required for the 14.6 square miles of new DCMs to meet the NAAQS standard for PM_{10} emissions by 2010 consists of eight primary activities:

- Site preparation (surface grading and earth moving)
- Berm construction and access road grading
- Irrigation and drainline construction (trenching, pipeline installation, trench backfilling)
- DCM area dewatering
- Irrigation system installation within the DCM areas
- Power line and DCM controls installation
- Moat and row DCM shaping
- Shallow flood DCM flooding

Supporting activities would include fence installation, material delivery, and transportation of crews. All site preparation and construction activity would be undertaken in accordance with applicable federal, state, and County of Inyo codes.

A summary of the types of construction activities for each component of the proposed project and construction labor and equipment requirements is provided in ***Table 9-1***. It is anticipated that the peak construction period for the revision of the 2003 SIP (2008 SIP) would not exceed that experienced during installation of the 1998 SIP DCMs. The peak period of construction experienced in conjunction with the 1998 SIP occurred in late spring and early summer of 2002 when approximately 250 pieces of equipment and 200 construction personnel were mobilized on site. Similarly, it is anticipated that peak construction for the 2008 SIP DCMs would be expected between late spring 2009 and early summer 2009, during installation of the moat and row DCM. Construction activities are expected to occur six days a week for 12 hours a day. However, construction activities may occur seven days a week for 24 hours a day to complete construction on schedule. It is anticipated that, at the end of each shift, construction crews who have just completed their shift would generally leave the site and return home, and the next crews would already be on site and would start working when the shift changes. During construction, as-needed nighttime lighting would be directed away from the roads and communities to the maximum extent practicable.

TABLE 9-1

ANTICIPATED CONSTRUCTION EQUIPMENT AND WORK CREWS

Construc-tion Activity	Brief Description	Activity Length (Estimate)	Equipment Requirement per Crew	Crew Composition (Estimate)	No. of Crews
Site Preparation	Clearing the proposed site of mainly existing surface features, leveling and clearing of minimal vegetation and other debris	30 days	1 bulldozer 1 front end loader 1 grader 2 dump trucks 1 scraper	4 operators 2 surveyors 4 laborers 1 foreman	1
Earth Moving	Excavation, grading for drainage, and ripping the project area.	60 days	2 bulldozer w/ disc plow 1 scraper	3 operators 1 foreman	2
Storm Water Control Berms	Construction of earth berms along perimeter of project site, includes excavation, backfill, grading and compaction	30 days	1 excavator 1 front-end loader 1 compactor 1 water truck 1 job pickup 1 scraper 2 haul trucks	6 operators 5 laborers 1 foreman	1

TABLE 9-1 ANTICIPATED CONSTRUCTION EQUIPMENT AND WORK CREWS					
Construction Activity	**Brief Description**	**Activity Length (Estimate)**	**Equipment Requirement per Crew**	**Crew Composition (Estimate)**	**No. of Crews**
Shallow Flooding and Pond Berms	Construction of earth berms in shallow flood area includes excavation, backfill with soil, grading, and compaction and riprap placement.	150 days	2 excavator 1 front-end loader 1 compactor 1 water truck 2 job pickups 4 scraper 4 haul trucks	12 operators 1 foreman 6 laborers	2
Dewatering	Dewatering and discharge of on-site groundwater within and outside project limits	300 days	2 job pickups, pumps (see end of table for generators)	2 laborers 1 foreman	1
Turnout Mainline Pipelines	Excavation, pipeline delivery, pipeline excavation, installation, and backfilling	60 days	1 tracked excavator/trencher w/conveyor 1 tracked chain machine trencher 1 bulldozer 1 front-end loader 1 crane/pipelayer 1 compactor 3 pipe delivery trucks 3 job pickups	5 operators 1 grade checker 2 welders 3 laborers 1 foreman	1

TABLE 9-1 ANTICIPATED CONSTRUCTION EQUIPMENT AND WORK CREWS					
Construction Activity	**Brief Description**	**Activity Length (Estimate)**	**Equipment Requirement per Crew**	**Crew Composition (Estimate)**	**No. of Crews**
Supply Submain Installation	Excavation, pipeline delivery, pipeline excavation, installation, and backfilling	90 days	1 tracked excavator/ trencher w/ conveyor 1 tracked chain-machine trencher 1 bulldozer 1 crane/pipelayer 1 compactor 2 pipe delivery trucks 2 job pickups	6 operators 1 grade checker 3 laborers 1 foreman	2

TABLE 9-1

ANTICIPATED CONSTRUCTION EQUIPMENT AND WORK CREWS

Construction Activity	Brief Description	Activity Length (Estimate)	Equipment Requirement per Crew	Crew Composition (Estimate)	No. of Crews
Lateral Drains Installation	Excavation, pipeline delivery, pipeline excavation, installation, and backfilling	120 days	1 tracked excavator/ trencher w/ conveyor 1 tracked chain-machine trencher 1 bulldozer 1 front-end loader 1 compactor 2 pipe delivery trucks 2 job pickups	5 operators 1 grade checker 4 laborers 1 foreman	4

TABLE 9-1

ANTICIPATED CONSTRUCTION EQUIPMENT AND WORK CREWS

Construction Activity	Brief Description	Activity Length (Estimate)	Equipment Requirement per Crew	Crew Composition (Estimate)	No. of Crews
Collector Drains Installation	Excavation, pipeline delivery, pipeline excavation, installation, and backfilling	90 days	1 tracked excavator/ trencher w/ conveyor 1 tracked chain-machine trencher 1 crane/pipelayer 1 bulldozer 1 compactor 2 material delivery trucks 2 job pickups	5 operators 3 laborers 1 foreman	2

TABLE 9-1 ANTICIPATED CONSTRUCTION EQUIPMENT AND WORK CREWS					
Construction Activity	**Brief Description**	**Activity Length (Estimate)**	**Equipment Requirement per Crew**	**Crew Composition (Estimate)**	**No. of Crews**
Shallow Flood Drains Installation	Excavation, pipeline delivery, pipeline excavation, installation, and backfilling	60 days	1 tracked excavator/ trencher w/ conveyor 1 tracked chain-machine trencher 1 crane/pipelayer 1 bulldozer 1 compactor 1 material delivery truck 2 job pickups	5 operators 3 laborers 1 foreman	1
Power Line and SCADA Line Installation	Site and area power and control distribution pole lines and/or underground conduits, service meter and switchboard, and distribution switchgear	75 days	1 post-hole digger/ crane truck 2 backhoes 1 come-a-long vehicle 2 cable reel truck 1 delivery truck 1 job pickup truck	8 operators 4 laborers 1 foreman	1

TABLE 9-1

ANTICIPATED CONSTRUCTION EQUIPMENT AND WORK CREWS

Construction Activity	Brief Description	Activity Length (Estimate)	Equipment Requirement per Crew	Crew Composition (Estimate)	No. of Crews
Road Construction	Construction of elevated roads on berms using native materials, placement of soils, compaction, grading, and gravel placement	75 days	1 excavator 2 compactor 2 grader 3 haul trucks 1 water truck 1 job pickup 1 scraper	9 operators 4 laborers 1 foreman	1
Management Activities	Construction management and field inspection	312 days	10 job-site vehicles	2 contractor superintendents 3 field engineers 6 inspectors 4 office staff	1
Environmental Mitigation Crews	Environmental mitigation crews will conduct environmental surveys and mitigation monitoring activities	Ongoing	All-terrain vehicles, 4-wheel-drive passenger vehicles	2 to 6 people per survey	7

All hazardous materials would be stored, handled, disposed, and transported in accordance with local ordinances, and state and federal regulatory requirements. Chemicals used during construction and operations would be contained in tanks placed on concrete slabs within containment walls, double-wall tanks, or berms and would comply with existing chemical safety and storage regulations. LADWP would be required to obtain a Certified Unified Program Agency permit from the Inyo County Health Services Department, and would disclose to the local fire emergency services any stored/handled/disposed hazardous materials wastes prior to construction. All combustible materials would be handled in accordance with fire and safety requirements. All unused construction materials would be removed from the project site upon completion of improvements. Solid waste generated during construction or operation of the proposed project would be transported to a permitted solid waste disposal facility. The proposed project site would be monitored for excessive erosion. If such erosion is observed, LADWP would take immediate corrective action, including implementation of best management practices. A typical construction crew would be composed of about 10 workers. The majority of construction activities would involve one to three work crews. Local construction crews would be used as much as possible to keep lodging and housing demands to a minimum; otherwise, non-local construction crews would be used. In the event that temporary housing is needed, lodging at local motels in Lone Pine would be arranged. Sanitation service would be provided by portable units. Medical treatment would be available at the Northern Inyo Hospital in Bishop or Southern Inyo Hospital in Lone Pine.

Trailer-mounted temporary lights would be used during night construction to illuminate areas where there is substantial construction activity. Each illuminated construction area would be approximately 400 to 500 square feet. Other areas would be illuminated minimally and only as necessary to ensure adequate safety for access and egress. The existing construction staging areas would have minimal lighting at night associated with the contractor's trailers, repair work, and safety lighting. Approximately ten 50-horsepower diesel generators may be used to power lights used for nighttime construction activities. Additional lights would be mounted on heavy construction vehicles such as scrapers, loaders, tractors, and dozers, and other equipment as necessary to provide adequate lighting for nighttime construction activities. Construction lights would be directed away from roads and communities to the maximum extent possible. With the exception of the delivering of plant material for managed vegetation, nighttime delivery of equipment and materials would be minimized.

10.0 CONCLUSIONS

This traffic analysis has been prepared to identify and evaluate the potential transportation impacts associated with implementation of the Dust Mitigation Program for Owens Lake in Inyo County, California. The Dust Mitigation Program includes the construction and subsequent operation of Shallow Flooding, Managed Vegetation, and Gravel Dust Control Measures planned for the emissive areas on Owens Dry Lake to comply with the 2008 State Implementation Plan project. The purpose of the project is to reduce PM_{10} emissions from Owens Lake bed.

The impacts of the construction and subsequent operation of the project on roadway operations and safety were qualitatively analyzed and discussed. Based on the roadway lane capacities of the highways, the future year 2010 daily traffic volumes on the State highways, and the forecast daily project trip generation, it is concluded that no significant impacts are expected to occur along the U.S. Highway 395, SR 136, and SR 190. However, it is also concluded that periodic events associated with hauling equipment to the site may result in safety hazards on U.S Highway 395, SR 139 and SR 190. In addition, overweight trucks transporting material, equipment, and gravel may result in damage to the roadway surfaces. Therefore, these impacts can be considered potentially significant. Mitigation measures are recommended to reduce the potential impacts due to the construction of the project to less than significant levels.

APPENDIX A

TRAFFIC COUNT DATA

2005 traffic volumes on california state highways

Caltrans

Milepost	Description	Peak Hour	ADT Pk. Mo.	ADT Annual
16.77	Santa Maria, Donovan Road			
		2,700	33,500	31,000
		1,750	21,600	20,000
17.81	Santa Maria, Jct. Rte. 101			

ROUTE 136. Route 395 Near Lone Pine to Route 190 Via Keeler

DISTRICT 9

Inyo County

Milepost	Description	Peak Hour	ADT Pk. Mo.	ADT Annual
0.00	Jct. Rte. 395; Lone Pine, South			
		100	900	600
17.73	Jct. Rte. 190 at Olancha Cutoff; Keeler, South	100	800	430

ROUTE 137. Route 43 Near Corcoran to Route 65 Near Lindsay

DISTRICT 6

Kings County

Milepost	Description	Peak Hour	ADT Pk. Mo.	ADT Annual
0.00	Jct. Rte. 43			
		400	2,900	2,550
2.06 =0.00	**Kings County** **Tulare County**	440	4,050	3,800
		370	3,400	3,200
1.86	Road 28			
		390	3,600	3,350
		300	2,750	2,550
13.28	Road 84/Enterprise Street			
		290	2,600	2,450
		660	6,100	5,700
14.26	Tulare, South West Street (Road 92)			
		850	9,200	8,500
		1,100	10,400	9,600
14.76	Tulare, Pratt/Brooklyn Streets			
		1,500	14,000	13,000
		1,250	12,300	11,400
R15.38	Tulare, South J Street			
		630	6,200	5,700
R15.53	Tulare, South L Street			
		790	8,900	7,500
R15.60	Tulare, M Street at Inyo			
		570	5,700	5,200
15.78	Tulare, M Street at Tulare			
		1,650	15,400	15,100
		1,550	14,600	14,300
16.12	Tulare, Cherry Avenue			
		2,100	19,700	19,300
16.49	Tulare, Blackstone Avenue			
16.49	Tulare, Blackstone Avenue			
		2,400	22,500	22,100
16.63	Tulare, Jct. Rte. 99			
		2,150	20,200	19,800
17.01	Tulare, Laspina Street (Road 112)			
		1,350	16,400	16,100
17.51	Jct. Rte. 63 North, Mooney Boulevard	1,650	15,600	15,300
		1,300	12,500	11,200
		980	11,100	10,900
20.46	Lovers Lane (Road 140)			
		970	11,300	10,800
		920	10,700	10,200
23.90	Farmersville Road (Road 168)			
		990	12,100	11,000
27.40	Cairns Corner, Jct. Rte. 65			

ROUTE 138. Route 5 Near Gorman to Route 18 in Crestline

DISTRICT 7

Los Angeles County

Milepost	Description	Peak Hour	ADT Pk. Mo.	ADT Annual
0.00	Jct Rte. 5, Golden State Freeway			
1.70	End Freeway	510	4,600	4,200
1.71	Gorman Post Road			
		560	6,000	5,400
4.11	Old Ridge Route Road			
		580	6,300	5,700
		400	4,800	4,300
14.53	245th Street West			
		390	4,650	4,150
		570	4,050	3,750
28.05	110th Street West			
		580	4,150	3,850
36.87	Jct. Rte. 14 North, Antelope Valley Freeway	700	4,950	4,600
	(Break in Route)			
43.42	Palmdale, Jct. Rte. 14, Antelope Valley Freeway			
		3,100	40,000	38,000
		3,350	43,500	41,500
44.42	Palmdale, Sierra Highway			
		2,950	37,500	35,500
		2,550	32,000	30,500
44.69	Palmdale, 10th Street East			
		2,950	36,500	34,500
45.71	Palmdale, 20th Street East			
		2,600	33,000	31,000
46.73	Palmdale, 30th Street East			

Mile-post	Description	Peak Hour	ADT Pk. Mo.	ADT Annual
5.73	San Leandro, Davis Street, Jct. Rte. 112 West			
		1,700	21,200	20,700
		2,100	26,500	26,000
7.24	Oakland, 98th Avenue			
		2,150	27,000	26,500
		2,050	26,000	25,500
8.69	Oakland, 73rd Avenue			
		2,400	30,000	29,500
		2,300	29,000	28,500
9.75	Oakland, 55th Avenue			
		2,050	26,000	25,500
		2,400	30,000	29,500
10.38	Oakland, 44th Avenue			
		470	6,800	5,800
		280	4,100	3,500
10.47	Oakland, High/12th Streets			

ROUTE 186. Near Algodones at the Mexican Boundary to Route 8

DISTRICT 11

Imperial County

Mile-post	Description	Peak Hour	ADT Pk. Mo.	ADT Annual
0.00	Mexican Boundary			
		730	8,000	7,500
		690	7,600	7,100
2.07	Jct. Rte. 8			

ROUTE 187. Route 1 in Los Angeles to Cadillac Avenue in Los Angeles

DISTRICT 7

Los Angeles County

Mile-post	Description	Peak Hour	ADT Pk. Mo.	ADT Annual
3.50	Los Angeles, Jct. Rte. 1, Lincoln Avenue			
		3,850	41,000	39,000
		4,450	50,000	47,500
4.78	Los Angeles, Centinela Avenue			
5.83	Los Angeles, Jct. Rte. 405, San Diego Freeway	4,100	47,500	45,500
		5,100	57,000	54,000
5.91	Los Angeles, Sepulveda Boulevard			
		4,900	52,000	49,500
6.00	Los Angeles, Bentley Avenue			
		5,600	57,000	54,000
6.62	Los Angeles, Overland Avenue			
		5,500	54,000	52,000
7.63	Los Angeles, Culver Boulevard			
		6,900	68,000	65,000
		5,300	51,000	49,000
8.64	Los Angeles, La Cienega Boulevard			
8.64	Los Angeles, La Cienega Boulevard			
8.80	Los Angeles, Jct. Rte. 10, Santa Monica Freeway	3,950	38,000	36,500
		4,850	45,000	43,000
8.91	Los Angeles, Cadillac Avenue			

ROUTE 188. Mexican Boundary Near Tecate to Route 94 Near Portrero

DISTRICT 11

San Diego County

Mile-post	Description	Peak Hour	ADT Pk. Mo.	ADT Annual
0.00	Mexican Boundary			
		680	7,800	7,700
0.05	U. S. Customs Station			
		540	6,300	6,200
1.85	Jct. Rte. 94			

ROUTE 189. Route 18 East of Crestline to Route 173 at Lake Arrowhead

DISTRICT 8

San Bernardino County

Mile-post	Description	Peak Hour	ADT Pk. Mo.	ADT Annual
0.00	Jct. Rte. 18			
		400	3,950	3,800
0.03	Lake Gregory Drive			
		400	4,050	3,800
1.81	Twin Peaks, Rose Lane			
		520	5,500	5,000
2.81	Grass Valley Road			
		760	7,900	6,900
3.09	Daley Canyon Road			
		900	9,300	8,200
5.57	Lake Arrowhead, Jct. Rte. 173; Village Road	560	5,800	5,100

ROUTE 190. Route 99 in Tipton to Quaking Aspen Camp; Route 395 in Olancha to Route 127 at Death Valley Junction

DISTRICT 6

Tulare County

Mile-post	Description	Peak Hour	ADT Pk. Mo.	ADT Annual
0.00	Jct. Rte. 99; Tipton, South			
		430	5,200	4,400
		450	5,400	4,600
9.47	Poplar, Road 192/Dettle Avenue			
		580	6,800	5,800
		950	11,300	9,500
R15.24	Porterville, Jct. Rte 65 (Road 238)			

Mile-post	Description	Peak Hour	ADT Pk. Mo.	ADT Annual
R15.24	Porterville, Jct. Rte 65 (Road 238)			
		2,500	29,500	25,000
16.45	Porterville, South Porter-ville Overhead/Main Street	2,300	27,500	23,000
		2,100	25,000	21,000
16.97	Porterville, Plano Street (Road 252)			
		2,000	23,500	19,800
		1,850	22,400	18,800
18.45	Porterville, Hospital Road			
		1,100	13,600	11,400
21.10	Worth Road (Road 284)			
		820	9,900	8,300
22.55	Government Access Road to Success Dam	790	9,500	8,000
24.45	Tule Indian Reservation Road (Avenue 160)	620	7,400	6,300
		700	8,300	7,100
		620	7,400	6,300
27.30	River Island Road (Road 320)			
		620	7,400	6,300
		500	5,400	4,600
R31.55 =31.68	Sprongville, Cramer Drive			
		480	5,300	4,500
		410	5,300	3,800
R32.70	Balch Park/Milo Roads			
		140	1,600	1,100
R33.90 =33.96	Milepost Equation			
		100	1,250	830
47.98	Camp Nelson Road			
		55	640	430
56.57	Quaking Aspen Camp			
	(Break in Route)			

DISTRICT 9

Inyo County

Mile-post	Description	Peak Hour	ADT Pk. Mo.	ADT Annual
9.85	Olancha, Jct. Rte. 395			
		80	490	330
		40	300	200
24.55	Jct. Rte. 136 Northwest			
		70	550	400
63.88 =R63.70	Milepost Equation			
R67.96 =67.68	Milepost Equation			
		230	1,600	950
85.83	Stovepipe Wells			
		300	1,900	1,050
93.21	Scotty's Castle Road			
		180	1,250	810
99.77	Beatty Cutoff Road			
		370	2,050	1,250
110.72	Furnace Creek Ranch			
		340	1,500	1,050
111.73	Bad Water Road			
		170	1,200	1,000
140.69	Death Valley Junction, Jct. Rte. 127	100	850	650

ROUTE 191. Route 70 Near Wicks Corner to Paradise

DISTRICT 3

Butte County

Mile-post	Description	Peak Hour	ADT Pk. Mo.	ADT Annual
0.00	Jct. Rte. 70			
		670	5,500	5,200
3.53	Durham Pentz Road			
		670	5,900	5,500
3.93	Butte College Drive			
		670	6,700	6,600
8.66	Paradise, Airport Road			
		650	6,700	6,600
10.08	Paradise, Easy Street			
		880	9,700	9,600
11.13	Paradise, Bushman Road			
		940	10,300	9,500
11.39	Paradise, Pearson Road			

ROUTE 192. Route 154 in Santa Barbara to Route 150 Near Rincon Creek

DISTRICT 5

Santa Barbara County

Mile-post	Description	Peak Hour	ADT Pk. Mo.	ADT Annual
R0.02	Jct. Rte. 154; Santa Barbara, West			
		1,450	13,800	13,500
0.18	Cieneguitas Avenue			
		1,700	14,600	13,500
1.64	Santa Barbara, Ontare Road			
		1,850	11,900	10,400
		320	3,750	3,500
4.15	Santa Barbara, Mountain Drive			

Milepost	Description	Peak Hour	ADT Pk. Mo.	ADT Annual
8.62	Bear Valley Road			
		2,550	25,500	24,000
10.21	Luna Road			
11.18	Victorville, Jct. Rte.18, Palmdale Road	2,650	27,000	25,000
		1,350	16,800	15,600
15.71	Adelanto, George Air Force Base Road	1,400	17,000	15,800
17.78	Adelanto, El Mirage Road/Valley Drive	1,300	16,400	15,000
		1,250	11,200	10,200
		910	8,400	7,600
45.95	Beechers Corners, Jct. Rte. 58			
		750	6,300	5,500
		750	6,300	5,500
72.77	Trona Road			
73.52	**San Bernardino-Kern County** Line	600	5,200	4,200
	DISTRICT 6			
0.00	**San Bernardino-Kern County** Line			
		570	4,950	4,000
R1.15	Redrock Randsburg Road			
		630	5,400	4,500
R1.45 =1.47	Milepost Equation			
		660	5,700	4,700
R15.00	China Lake Road			
		410	3,600	2,950
		420	4,400	2,850
R23.48	Jct. Rte. 178			
		530	4,150	3,550
R25.59 =26.88	Milepost Equation			
R29.64	Jct. Rte. 14; Homestead North Junction	520	4,250	3,350
		1,050	7,700	6,200
R36.82	**Kern-Inyo County** Line			
	DISTRICT 9			
R0.00	**Kern-Inyo County** Line			
		1,050	7,700	6,200
R17.87	Coso Junction Safety Roadside Rest Area			
		1,100	7,500	6,100
34.67	Olancha, Jct. Rte. 190 East			
		1,150	7,800	6,300
		1,100	7,900	6,400
55.83	Lone Pine, Jct. Rte. 136 Southeast			
		1,200	9,000	6,900
57.67	Lone Pine, Whitney Portal Road			

Milepost	Description	Peak Hour	ADT Pk. Mo.	ADT Annual
57.67	Lone Pine, Whitney Portal Road			
		1,150	7,900	6,400
58.81	Pangborn Lane			
		1,100	8,200	6,400
73.41	Independence, Market Street			
		1,150	8,300	6,800
73.85	Independence Maintenance Station			
		1,100	8,500	6,400
R83.99	Division Creek Safety Roadside Rest Area			
R89.35 =89.83	Milepost Equation			
		1,100	7,900	6,400
100.83	Big Pine, Jct. Rte. 168 Northeast			
		1,400	11,300	8,400
		2,000	12,300	11,700
115.20	Bishop, South Street			
115.40	Bishop, Jct. Rte. 168 West, West Line Street	1,550	15,700	14,000
		1,700	18,600	16,500
		1,800	20,300	15,800
116.25	Bishop, Jct. Rte. 6 North			
		1,550	16,300	14,100
		1,550	16,300	14,100
117.30	Bishop Bike Path			
		1,550	16,000	13,500
120.95	Ed Powers Road			
		1,100	9,300	8,300
R126.14	Pine Creek Road			
		1,000	8,100	6,300
R129.46 =R0.00	**Inyo County** **Mono County**			
		1,100	9,200	7,200
R16.62	Crowley Lake, Mc Gee Creek Road			
		990	10,100	6,000
R18.75 =19.34	Milepost Equation			
		1,200	11,700	9,100
R25.75	Casa Diablo, Jct. Rte. 203 West			
		770	7,600	4,550
R27.28 =26.97	Milepost Equation			
32.42	Crestview Safety Roadside Rest Area			
38.40 =R38.70	Milepost Equation			
40.34	June Lake Junction, South Jct. Rte. 158	640	5,800	3,750

Mile-post	Description	Peak Hour	ADT Pk. Mo.	ADT Annual
40.34	June Lake Junction, South Jct. Rte. 158			
		660	6,300	4,000
45.96	South Jct. Rte. 120 East			
46.40	North Jct. Rte. 158			
50.74	Tioga Pass Junction, North Jct. Rte. 120 West	710	6,700	4,000
		650	6,600	4,550
51.69	North Limits Lee Vining			
		630	5,700	3,700
58.24	Jct. Rte. 167 East			
		600	5,100	3,500
R67.21 =67.24	Milepost Equation			
		560	5,300	3,500
76.30	Bridgeport, Jct. Rte. 182 North			
		670	6,000	3,800
80.61	Farm House			
		500	4,650	3,050
		550	4,850	3,100
93.70	Sonora Junction, Jct. Rte. 108 West			
		500	4,700	3,150
		600	5,400	3,700
107.11	Mill Creek Bridge			
116.97	Slinkard Junction, Jct. Rte. 89 Northwest	600	5,400	3,750
		540	5,100	3,650
		520	5,000	3,800
120.49	Nevada State Line			
	(Break in Route)			
	DISTRICT 3			
	Sierra County			
R0.00	Nevada State Line (Northwest of Reno)			
		1,450	12,100	9,700
R3.12	**Sierra-Lassen County** Line			
	DISTRICT 2			
R0.00	**Sierra-Lassen County** Line			
		1,450	12,100	9,700
R2.10	Begin Freeway			
R4.62	Jct. Rte. 70 West, Hallelujah Junction	1,450	12,200	9,600
		850	7,100	5,500
R5.10	End Freeway			
R24.84 =24.83	Milepost Equation			
		600	7,400	5,200
29.84	Garnier/South Herlong Roads			

Mile-post	Description	Peak Hour	ADT Pk. Mo.	ADT Annual
29.84	Garnier/South Herlong Roads			
		680	6,100	4,650
49.53	Honey Lake Safety Roadside Rest Area			
		770	7,400	5,700
51.87	Standish Road			
		800	8,900	6,100
55.18	Janesville Road			
		830	9,800	8,400
R61.09	Johnstonville, Jct. Rte. 36 West			
		500	4,950	4,500
R61.59 =61.37	Milepost Equation			
70.12	Standish, Buntingville Road/County Road A-3	180	2,050	1,900
		220	2,200	2,000
72.94	Litchfield, County Road A-27			
		190	2,150	1,850
		180	1,900	1,600
R76.93	Wendel Road			
		210	1,950	1,400
R78.01 =78.08	Milepost Equation			
96.50	Secret Valley Safety Roadside Rest Area			
		200	2,000	1,400
108.46	Ravendale			
		200	2,000	1,400
129.20	Madeline, Ash Valley Road			
		180	1,500	1,150
138.98 =0.06	**Lassen County** **Modoc County**			
		180	1,400	1,000
3.22	Likely, Jess Valley Road			
		190	1,850	1,300
		200	1,950	1,350
R20.98	Glenn Street			
		240	2,250	2,050
R21.05 =21.80	Milepost Equation			
		810	8,000	7,200
22.07	Alturas, First Street			
		810	8,000	7,200
		730	8,300	7,100
22.76	Alturas, Jct. Rte. 299 West			
		510	5,800	5,000
23.04	Alturas State Highway Maintenance Station	370	3,650	3,050
		370	3,650	3,050
26.99	Alturas Quarantine Station			
		300	1,850	1,650
28.29	Jct. Rte. 299 East			
		140	1,000	880
61.56	Oregon State Line			