SECTION 2.0
PROJECT DESCRIPTION

Consistent with the requirements of Section 15124 of the State of California Environmental Quality Act Guidelines (State CEQA Guidelines), the project description of the 2008 Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan (2008 SIP)[1] (proposed project) includes the precise location and boundaries of the proposed project; a brief characterization of the existing conditions at the proposed project site; a statement of objectives for the proposed project; a general delineation of the proposed project's technical, economic, and environmental characteristics; and a statement describing the intended uses of the Subsequent Environmental Impact Report (EIR).

2.1 PROPOSED PROJECT LOCATION

The proposed project includes 15.1 square miles (9,664 acres) within the 110-square-mile (70,000-acre) dry Owens Lake bed, located within the Owens Valley, Inyo County, California (Figure 2.1-1, *Regional Vicinity Map*). 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 (Figure 2.1-1). The location of the proposed project is depicted on seven U.S. Geological Survey (USGS) 7.5-minute series topographic quadrangles: Bartlett,[2] Vermillion Canyon,[3] Owens Lake,[4] Keeler,[5] Dolomite,[6] Lone Pine,[7] and Olancha[8] (Figure 2.1-2, *USGS 7.5-Minute Map Index*). The topography of the site is 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 (Figure 2.1-1). 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) (Figure 2.1-3, *Project Vicinity Map*).[9]

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[1] PM_{10} refers to particulate matter up to 10 micrometers in size, a regulated air emission pursuant to the federal Clean Air Act Amendments of 1990.

[2] U.S. Geological Survey. 1987. 7.5-minute series Bartlett, CA topographic quadrangle. Denver, CO.

[3] U.S. Geological Survey. 1987. 7.5-minute series Vermillion Canyon, CA topographic quadrangle. Denver, CO.

[4] U.S. Geological Survey. 1987. 7.5-minute series Owens Lake, CA topographic quadrangle. Denver, CO.

[5] U.S. Geological Survey. 1987. 7.5-minute series Keeler, CA topographic quadrangle. Denver, CO.

[6] U.S. Geological Survey. 1987. 7.5-minute series Dolomite, CA topographic quadrangle. Denver, CO.

[7] U.S. Geological Survey. 1994. 7.5-minute series Lone Pine, CA topographic quadrangle. Denver, CO.

[8] U.S. Geological Survey. 1994. 7.5-minute series Olancha, CA topographic quadrangle. Denver, CO.

[9] Inyo County Planning Department. 5 October 2002. Map of Inyo County. Available at: http://www.sdsu.edu/Inyo/genplan.html

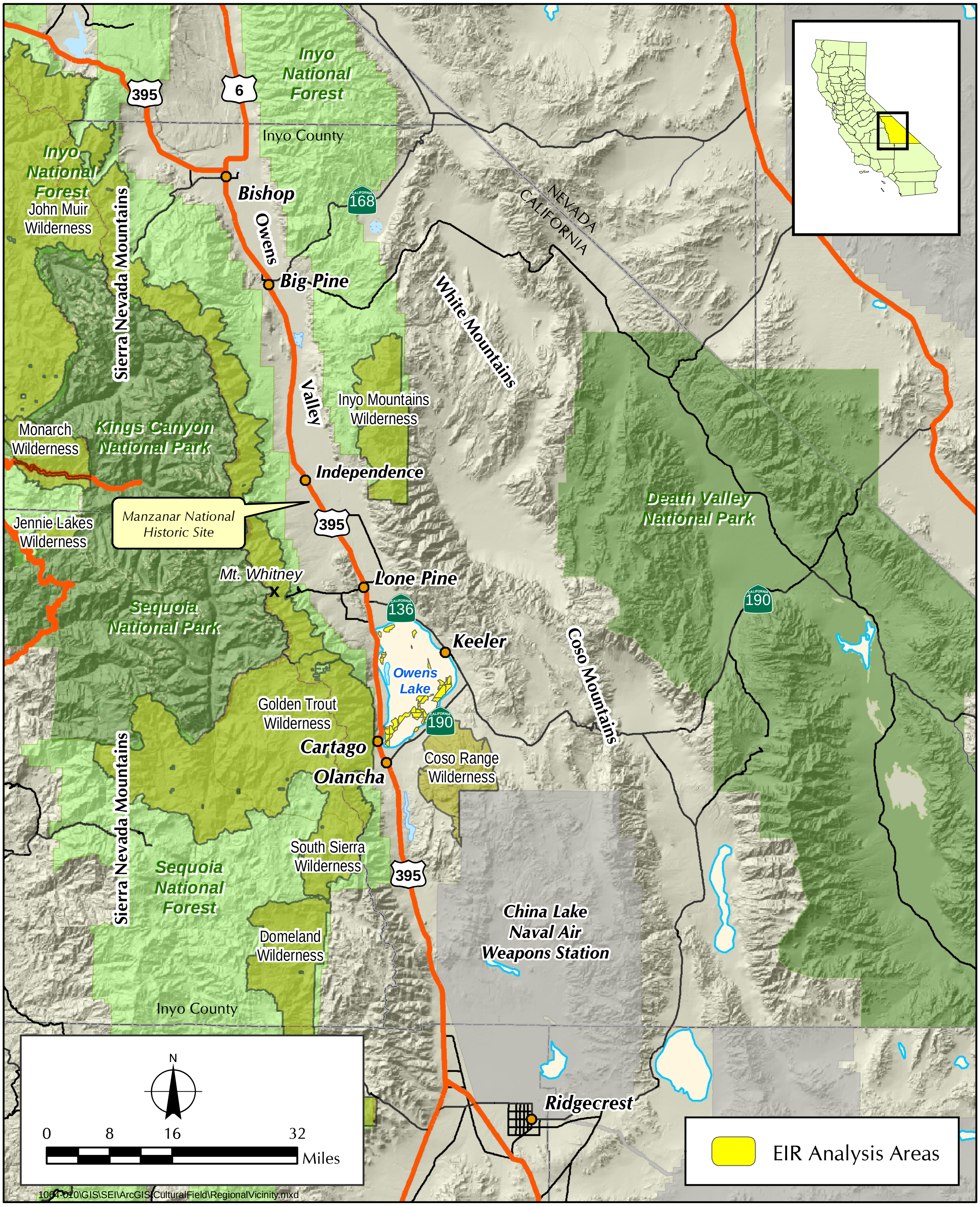

FIGURE 2.1-1
Regional Vicinity Map

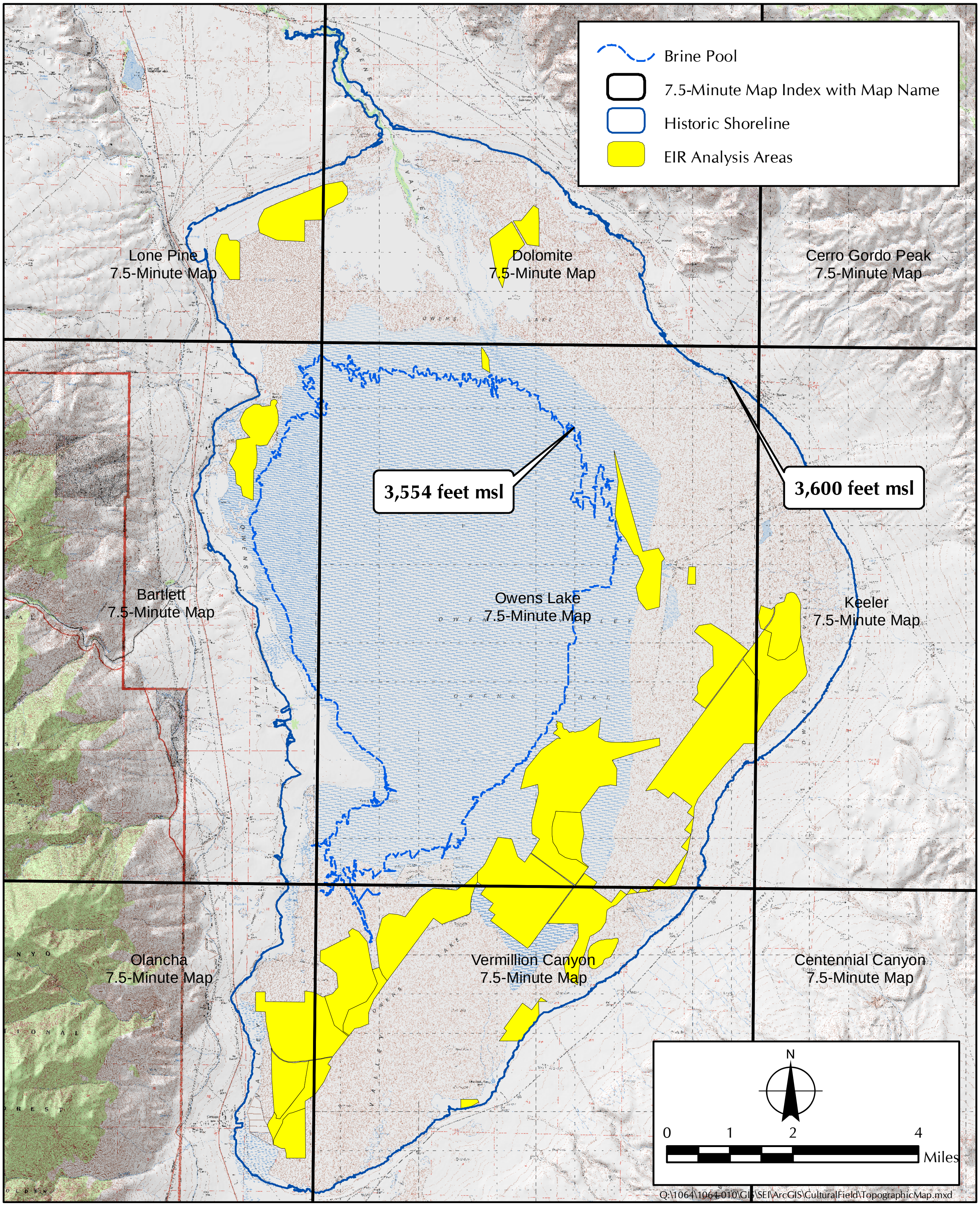

FIGURE 2.1-2

USGS 7.5-Minute Map Index

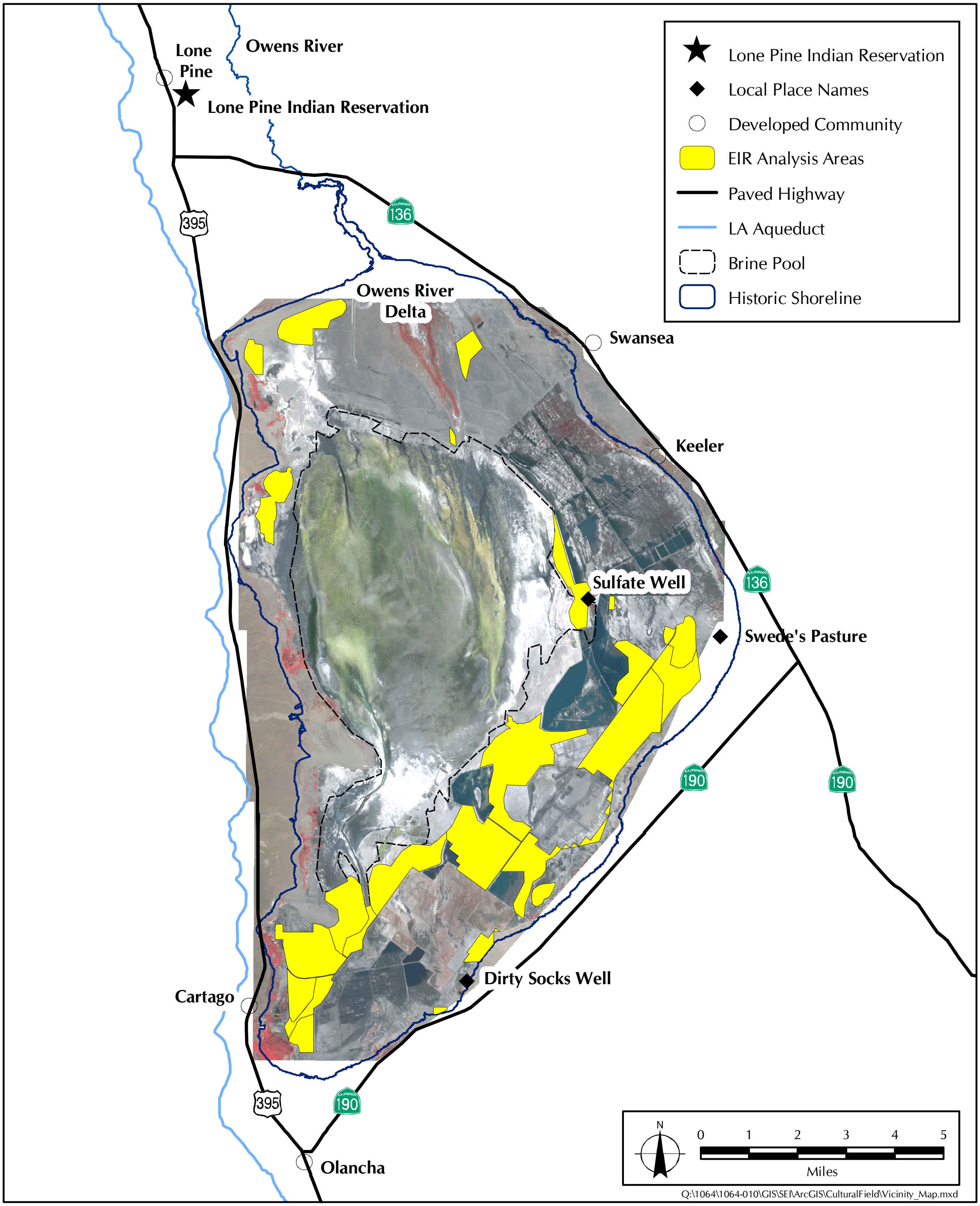

FIGURE 2.1-3

Project Vicinity Map

2.2 PROJECT PURPOSE AND NEED

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) (Figure 2.2-1, *Owens Valley Planning Area*). 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 (Figure 2.2-2, *Owens Valley Dust Storms*). 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's 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 (SIP), 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 (Figure 2.1-1). 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, in November 2003 the Great Basin Governing Board adopted a revised SIP 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 to 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.

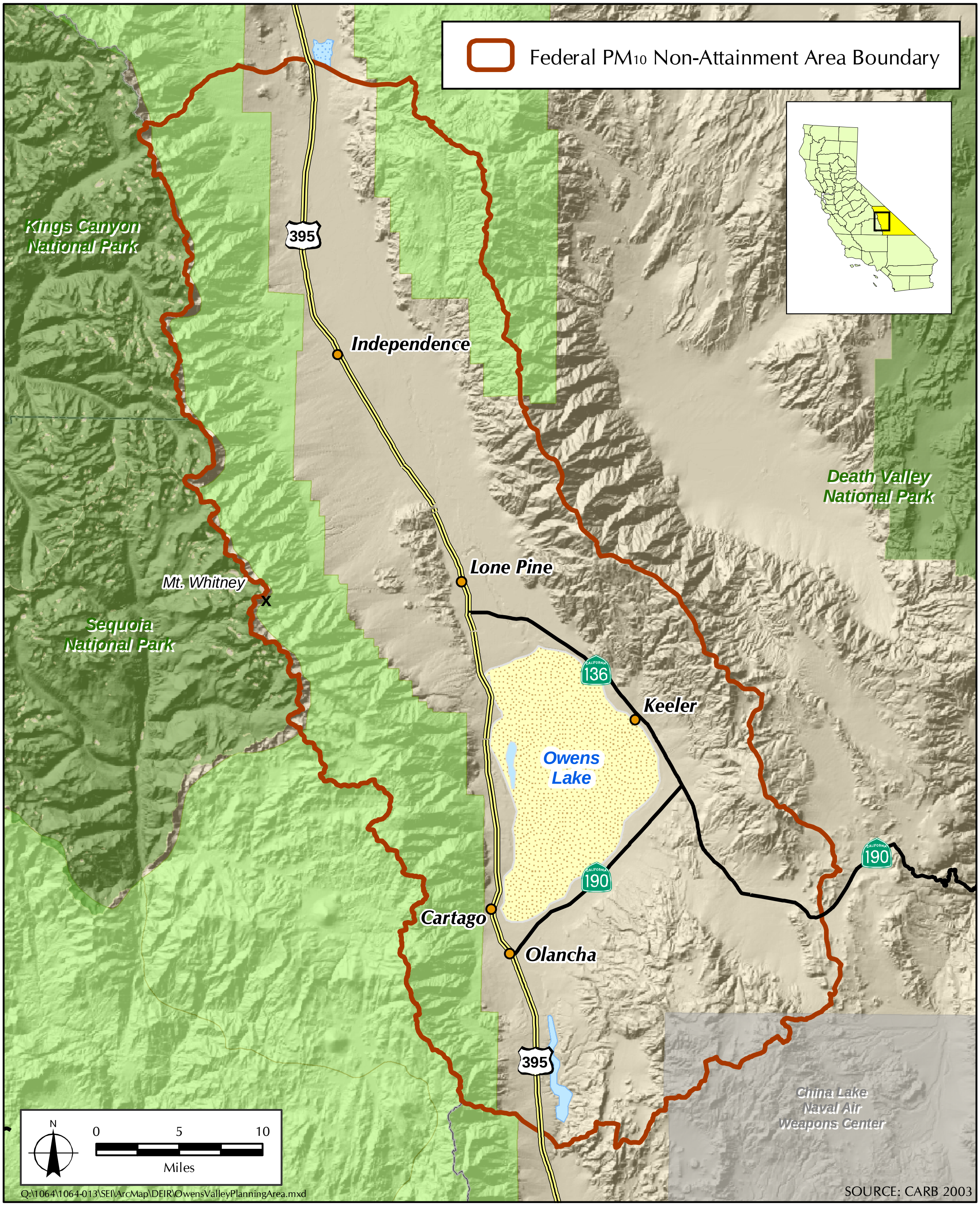

FIGURE 2.2-1

Owens Valley Planning Area

Owens Valley Dust Storm

Owens Valley Dust at Crest of Sierra Nevada

Owens Valley Dust at Ridgecrest

FIGURE 2.2-2
Owens Valley Dust Storms

Based on July 2002 through June 2004 data, on December 21, 2005, the APCO completed the 2003 SIP-required supplemental SCR analysis 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.

2.3 PROJECT BACKGROUND

Owens Lake is part of an ancient 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 southward 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 MSL is estimated to have occurred 15,000 to 16,000 years ago. Since that time, the surface extent of the water of Owens Lake has diminished, although two deep cores on the lake bed have failed to identify episodes of complete desiccation. Uplift processes in the Coso Range, combined with a postglacial 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 lake bed soils at the bottom of the Owens Valley basin. In the late 1800s, Owens Lake, at about 110 square miles, was one of the largest natural lakes in California. It was a saline terminal lake with a salinity of about 1.5 times that of seawater (Figure 2.3-1, *Owens Lake Historic Shoreline;* and Figure 2.3-2, *Photograph of Owens Lake Circa 1891*).

Although historic lake levels were as high as 3,597 feet in 1878, surface water diversions over the past 125 years have reduced the lake to less than one third of its original area and about five percent of its original volume. 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, by 1912, as the drought ended, the level had risen to 3,579 feet (Figure 2.3-1). In 1913, the LADWP completed a freshwater aqueduct system and began diverting waters of the Owens River 223 miles south to the City of Los Angeles (Figure 2.3-3, *Los Angeles Aqueduct*). By the 1920s, Owens Lake had shrunk to a small hyper-saline remnant brine pool of about 26 square miles and a few feet deep (Figure 2.3-1). Demand for exported water increased as Los Angeles grew and as 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.

The former or stranded shoreline was left behind at an approximate elevation of 3,600 feet (Figure 2.3-1). The former shoreline bounds the playa in aerial photographs and on most maps. Today, the 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 77 percent by weight.

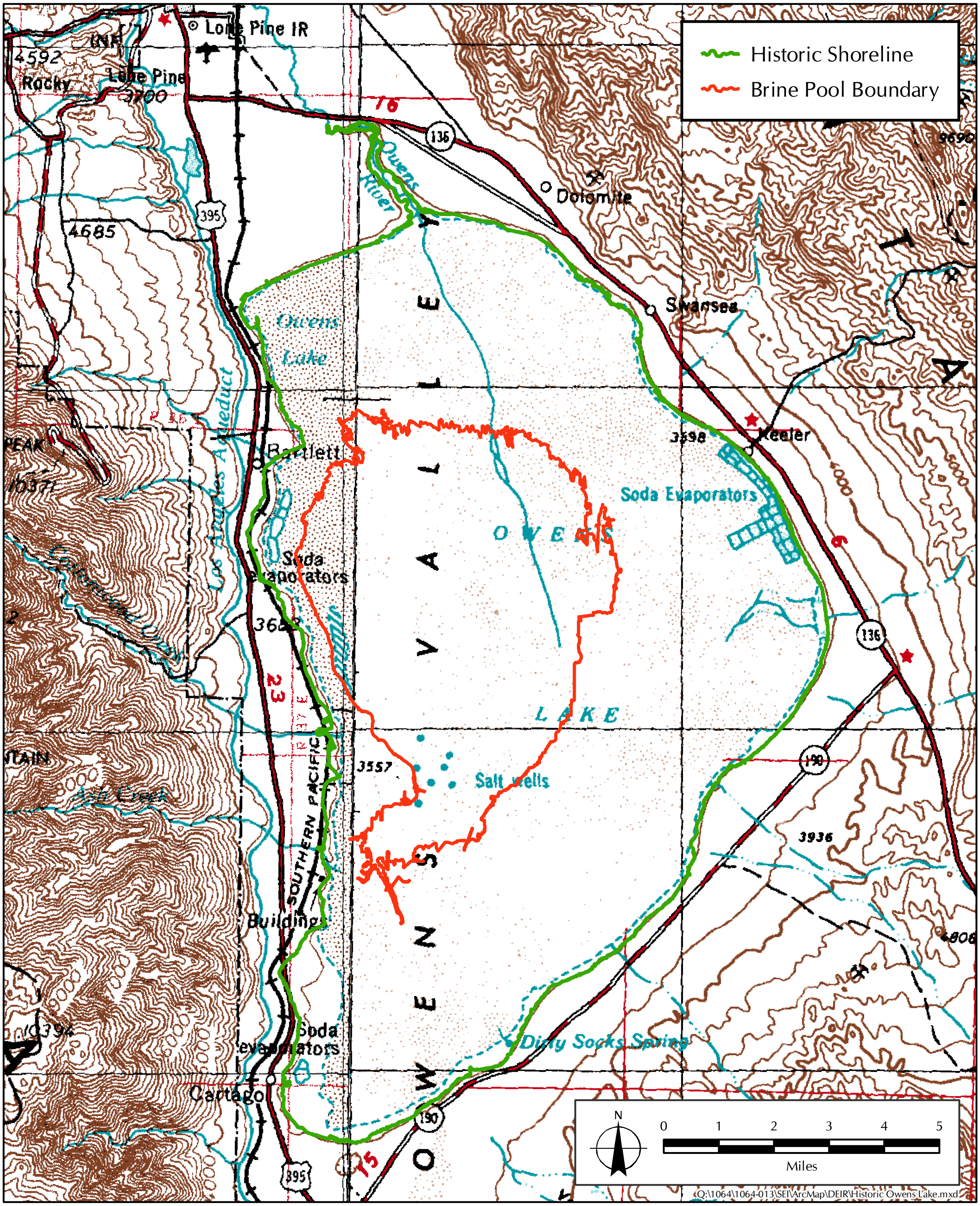

FIGURE 2.3-1

Owens Lake Historic Shoreline

SOURCE: Huntington Library

FIGURE 2.3-2
Photograph of Owens Lake Circa 1891

SOURCE: City of Los Angeles Department of Water and Power

FIGURE 2.3-3
Los Angeles Aqueduct

The exposed lake bed between the stranded shoreline and the brine pool consists largely of unstable saline soils that are highly emissive (Figure 2.3-4, *Sources of PM_{10} Emissions*). Exposed lake bed sediments are dispersed into the air by prevailing winds. The exposed Owens Lake bed has been identified as the largest single source of fugitive dust emissions in the United States (Figure 2.2-1). The airborne PM_{10} in these dust storms is small enough to travel great distances. These dust storms, with the highest episodes in the fall through spring months, have serious negative ecological and human health effects. In 1987, the U.S. EPA identified the Owens Valley Planning Area (OVPA) as one of the areas in the nation that violated the PM_{10} NAAQS. The U.S. EPA required the State of California to prepare a SIP for the OVPA demonstrating how PM_{10} emissions would be decreased to comply with the NAAQS. The District is the agency designated by the State to fulfill this requirement. An initial SIP was prepared by the District in 1988, approved by California Air Resources Board (CARB), and forwarded to the U.S. EPA. No action was taken by U.S. EPA to approve or deny the 1998 SIP. In 1997, the District identified three DCMs for controlling PM_{10} emissions from these wind-eroded salt crusts. These DCMs, Shallow Flooding, Managed Vegetation, and Gravel Cover, formed the basis of the 1998 SIP.

By January 2000, the District implemented a sand motion monitoring network in the centers of 1-square-kilometer grid cells (Sensit Grid) (Figure 2.3-5, *Sensit Grid*). The purpose of the Sensit Grid and Dust ID Program is to further refine the source and location of PM_{10} emissions that must be controlled to meet the PM_{10} NAAQS. Air quality monitoring and modeling efforts undertaken by the District have determined that a total of 43 square miles of DCMs need to be completed to meet the NAAQS for PM_{10} by 2010 (Figure 2.3-6, 2*003 SIP Project Area*).

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, in November 2003 the Great Basin Governing Board adopted a revised SIP and ordered the LADWP to implement DCMs on 29.8 square miles of the Owens Lake bed by December 31, 2006.

2.3.1 Areas of Previous 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 along with a 1997 SIP (Figure 2.3.1-1, *Previous SIP Analysis Areas*).[10] 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.[11] 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

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[10] Great Basin Unified Air Pollution Control District. 2 July 1997. *Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan Final Environmental Impact Report*. State Clearinghouse Number 96122077. Bishop, CA.

[11] 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*. State Clearinghouse Number *No. 96122077*. Bishop, CA.

Wind Eroded Salt Crusts

Emissive Soils at Dry Owens Lake Bed

Close-up of Heaved Salt Crust Exposing Emissive Material

FIGURE 2.3-4
Sources of PM_{10} Emissions

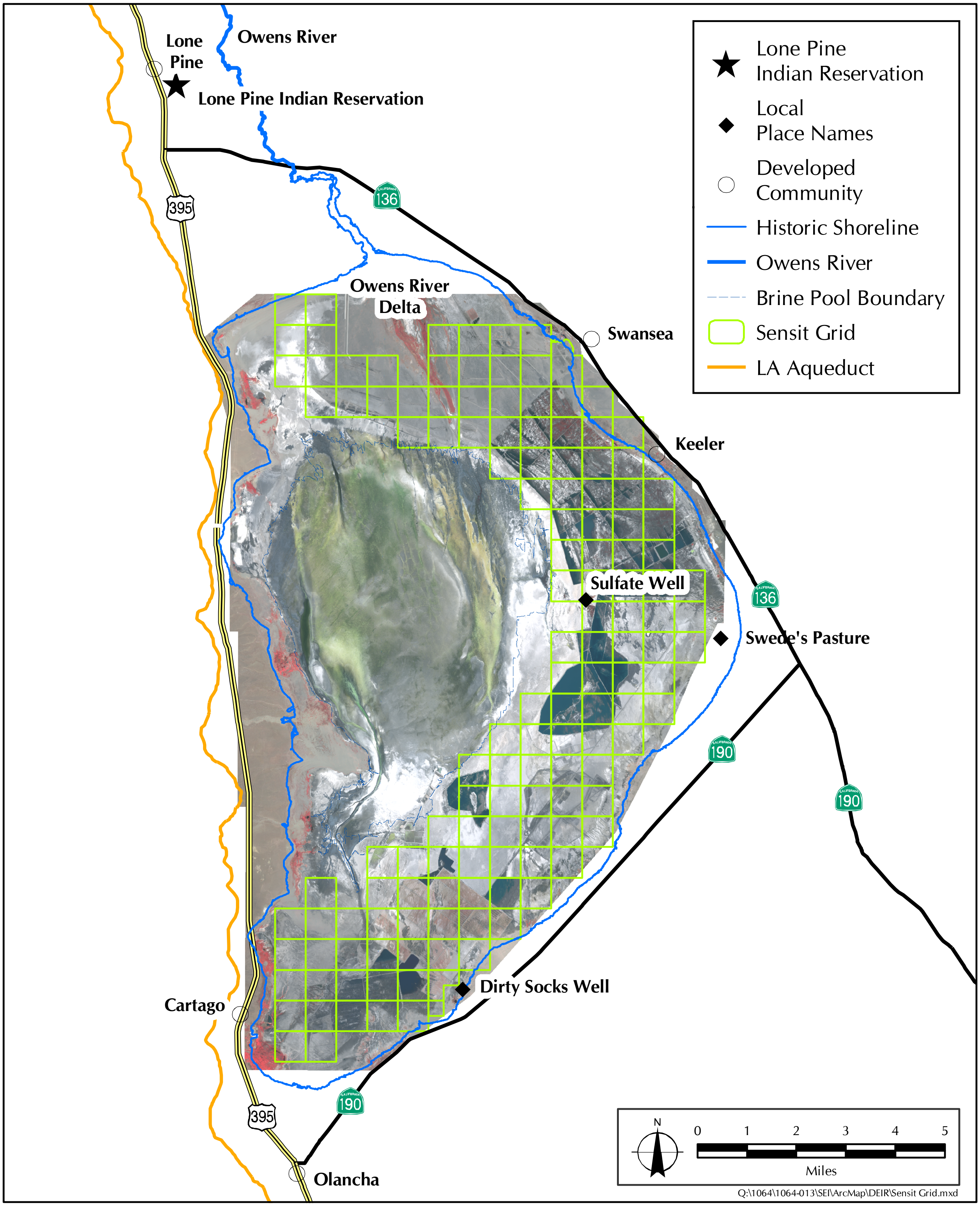

FIGURE 2.3-5

Sensit Grid

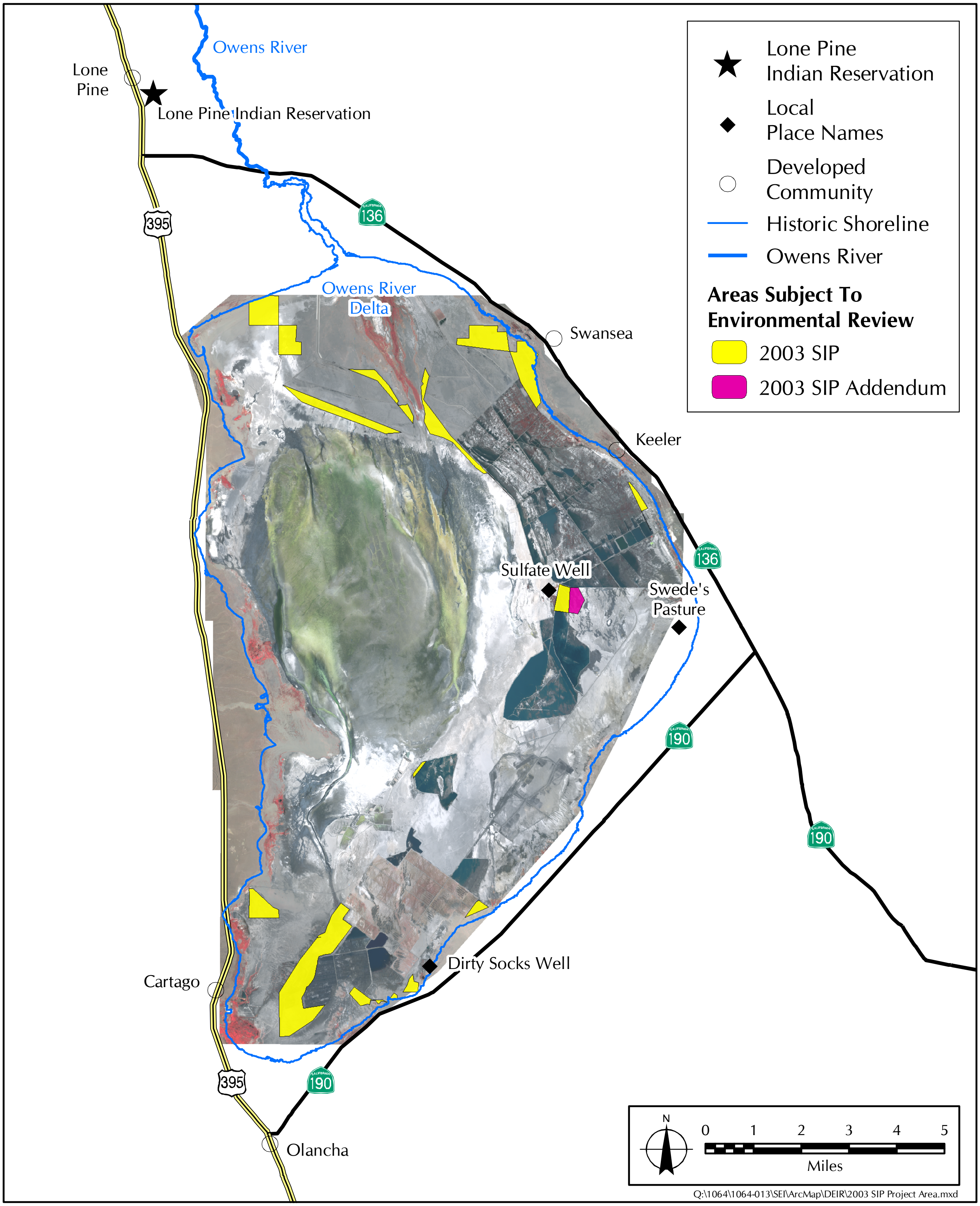

FIGURE 2.3-6

2003 SIP Project Area

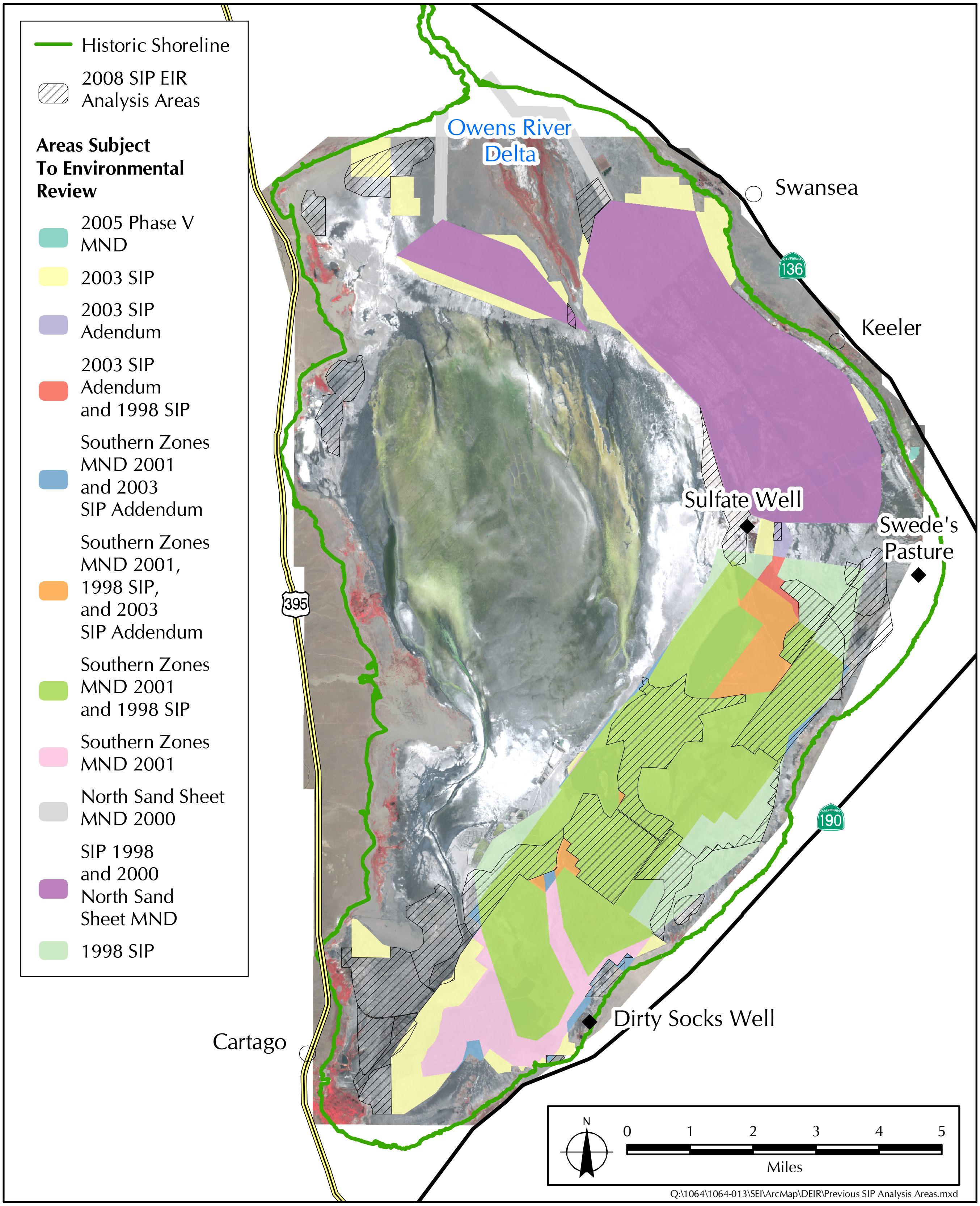

FIGURE 2.3.1-1

Previous SIP Analysis Areas

SIP EIR were analyzed on a project level for environmental impacts (Figure 2.3.1-1).[12] 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.[13] As of January 1, 2007, the 29.8 square miles of DCMs designated in the 2003 SIP and 2003 EIR were operational (Figure 2.3-6).[14]

2.4 EXISTING CONDITIONS

The existing conditions section provides a description of the physical environmental conditions in the vicinity of the proposed project site as they existed at the time of the Notice of Preparation of the Subsequent EIR from both a local and regional perspective (State CEQA Guidelines, Section 15125). This section constitutes the baseline physical conditions by which the District will determine if an impact is significant or not.

2.4.1 Regional Environmental Setting

The Owens Valley has been described as having a very rich variety of plants, with more than 2,000 species represented in the region, although they are limited in distribution at Owens Lake, to the stranded shoreline and nearby alluvial fans. Riparian, alkaline meadow, and alkali seep plant communities, which circumscribe Owens 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 winter. As many as 320 bird species have been reported for the Owens Valley floor, including permanent residents, summer residents, winter residents, and migrants (Figure 2.4.1-1, *Bird Habitat*). 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 wildlife resources are found in the vicinity of Owens Lake.

The Owens Valley has attracted the interest of archaeologists since at least the 1930s. The Riddells conducted the major work in the region in the 1940s and 1950s, recording several sites on the perimeter of Owens Lake, including important sites at Cottonwood Creek and Rose Spring. 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.

There are three communities in the vicinity of the project located in the unincorporated area of Inyo County (community of Lone Pine to the north, Lone Pine Indian Reservation to the north, community of Keeler to the east, and the community of Olancha/Cartago to the southwest) (Figure 2.1-3 and Figure 2.4.1-2, *Existing Human Settlements: Keeler*).

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[12] Great Basin Unified Air Pollution Control District. February 2004. *2003 Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan Integrated Environmental Impact Report*. State Clearinghouse House Number 2002111020. Prepared by: Sapphos Environmental, Inc., Pasadena, CA.

[13] 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.

[14] Great Basin Unified Air Pollution Control District. February 2004. *2003 Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan Integrated Environmental Impact Report*. State Clearinghouse House Number 2002111020. Prepared by: Sapphos Environmental, Inc., Pasadena, CA.


SOURCE: Sapphos Environmental, Inc.

Great Egret in Freshwater Marsh on Lower Owens River


SOURCE: CH2MHILL

American Avocets Foraging on Shallow Flood Dust Control Area

FIGURE 2.4.1-1
Bird Habitat

Community of Keeler

Looking West to Community of Keeler with Owens Lake in Background

SOURCE: Sapphos Environmental, Inc.

FIGURE 2.4.1-2
Existing Human Settlements: Keeler

Other existing regional activities include agricultural cattle grazing (Figure 2.4.1-3, *Cattle Grazing in Project Vicinity*); mining (Figure 2.4.1-4, *Existing Mining Operations*); recreation, including hiking and golf (Figure 2.4.1-5, Mt. Whitney Golf Club Near Lone Pine); water supply transfers (Figure 2.4.1-6, *Los Angeles Aqueduct West of Owens Lake*); and air quality monitoring (Figure 2.4.1-7, *Dirty Socks Air Monitoring Station*).

2.4.2 Local Environmental Setting

The proposed project area includes the exposed playa of Owens Lake. The exposed playa is composed of highly emissive saline soils (Figure 2.3-5). This area of the lake bed continues to produce large quantities of fugitive dust (PM_{10} particulate matter emissions) (Figure 2.2-2). Also contained within the local setting are existing leases for mineral resources notably the trona extraction occurring on the southwestern side of the dry Owens Lake bed, within the designated brine pool area.

2.4.3 Existing Dust Control Areas

All phases pursuant to the 1998 and 2003 SIPs have been constructed for a total of 29.8 square miles. The project is divided into increments and phases. Increment No. 1 (Phases 1–3) includes those DCMs that were constructed at the end of 2003. Increment No. 2 (Phase 5) includes those DCMs that have been in place since December 31, 2006. Increment No. 3 (Phase 7) includes the proposed project, which is necessary to achieve attainment of the NAAQS.

Pursuant to the 1998 SIP, Increments No. 1 and No. 2 DCMs, including Phase 1 Shallow Flooding, Phase 2 drip-irrigated Managed Vegetation, Phase 3 Shallow Flooding Project (i.e., Owens South Phase II), gravel, and reservoirs have been previously approved and are constructed, or under active construction, on 19.5 square miles (12,457 acres) of the emissive dry lake bed (Figure 2.2-2). This area is equivalent to an area about six times as large as downtown Sacramento. Two connections to the Los Angeles Aqueduct have been made, and a looped 30- to 60-inch water supply pipeline provides water for the project. Existing DCMs include 15.4 square miles of Shallow Flooding areas and 3.75 square miles of newly planted Managed Vegetation. The existing conditions were documented in a series of photographs (Figure 2.4.3-1, *Existing Dust Control Measures: Shallow Flooding*; and Figure 2.4.3-2, *Existing Dust Control Measures: Managed Vegetation*). Gravel Cover DCMs [0.14 square mile (90 acres)] have been approved and are utilized in only a small portion of the proposed project area (Figure 2.4.3-3, *Approved Dust Control Measure: Gravel Cover*).

DCMs have been implemented on the dry Owens Lake bed in multiple phases providing reduced PM_{10} emissions as described in the 2008 SIP.[15] Annual uncontrolled lake bed emissions in 2000 were estimated at 76,191 tons per year. This represents an uncontrolled emissions baseline that can be used to track emission reductions from the proposed project.

2.4.4 Previous Mitigation Areas

Mitigation for impacts that incurred during the implementation of the existing DCMs has been completed in various locations for the various impacts. The mitigation areas cover impacts to Dry Alkaline Meadow (DAM), Moist Alkaline Meadow (MAM), Saturated Alkaline Meadow (SAM), and

[15] Great Basin Unified Air Pollution Control District. September 2007. *2008 Owens Valley PM10 Planning Area Demonstration of Attainment State Implementation Plan*. Bishop, CA.

SOURCE: Sapphos Environmental, Inc.

FIGURE 2.4.1-3
Cattle Grazing in Project Vicinity

Mining in Project Vicinity

Mining Truck in Project Vicinity

SOURCE: Sapphos Environmental, Inc.

FIGURE 2.4.1-4
Existing Mining Operations

SOURCE: Sapphos Environmental, Inc.

FIGURE 2.4.1-5
Mt. Whitney Golf Club Near Lone Pine

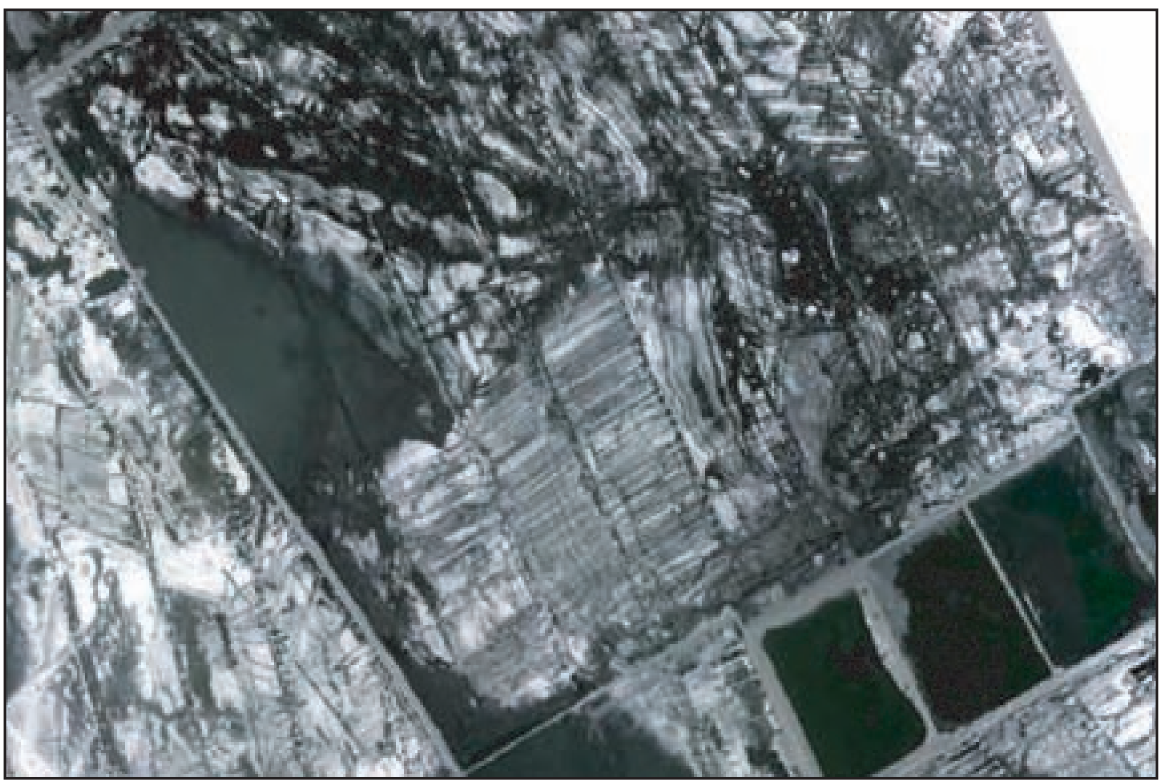
SOURCE: Sapphos Environmental, Inc.

FIGURE 2.4.1-6
Los Angeles Aqueduct West of Owens Lake

SOURCE: Great Basin Unified Air Pollution Control District

FIGURE 2.4.1-7
Dirty Socks Air Monitoring Station

Ground View of Shallow Flood Test Site



Aerial View of Shallow Flooding Dust Control Project on North East Part of Lake Bed near Keeler

SOURCE: Great Basin Unified Air Pollution Control District

FIGURE 2.4.3-1
Existing Dust Control Measures: Shallow Flooding

SOURCE: Great Basin Unified Air Pollution Control District

FIGURE 2.4.3-2
Existing Dust Control Measures: Managed Vegetation

SOURCE: Great Basin Unified Air Pollution Control District

FIGURE 2.4.3-3
Approved Dust Control Measure: Gravel Cover

shorebird habitat. In total 320 acres of DAM, 40 acres of SAM and MAM, and 152 acres of habitat Shallow Flooding have been created (Table 2.4.4-1, *Existing Mitigation Areas;* and Figure 2.4.4-1, *Existing Mitigation Areas*).

TABLE 2.4.4-1
EXISTING MITIGATION AREAS

CEQA/Regulatory Document	Type of Wetland/ Habitat Impacted	Total Impact Area (Acres)	Impact to Mitigation Ratio	Mitigation Requirement (Acres)	Mitigation Acreage (Location)	Remaining Mitigation Bank Area (acres)
1997 EIR	DAM	91.6	1:1	91.6		
Southern Zones MND	DAM	5.6	1:1	5.6		
2003 SIP FEIR	DAM	87.2	2:1	174.4		
Phase V MND	DAM	0.1	2:1	0.2		
Total DAM	**DAM**	**184.5**		**271.8**	**320 acres (T-8 Managed Vegetation Area)**	**87.3**
2003 SIP FEIR	MAM	27.7	1:1	27.7		
2003 SIP FEIR	SAM	6.6	1:1	6.6		
Total MAM & SAM	**SAM and MAM**	**34.3**		**34.3**	**40 acres (T-30 Wetland Area)**	**5.7**
CDFG 1601 Agreement R6-2001-060	Shorebird Habitat	63	2:1	145		
Total Habitat Shallow Flooding	**Shorebird Habitat**	**152**		**145**	**152 acres (T4-3)**	**7**

2.5 GENERAL PLAN LAND USE AND ZONING

The dry Owens lake bed is primarily owned and operated in trust for the people of the State of California by the State Lands Commission, and while not subject to local regulatory authority by the Inyo County, the County's General Plan recognizes the location of state and federally owned lands at Owens Lake. The Land Use element of the Inyo County General Plan designates the proposed project area as Natural Resources and State and Federal Lands.[16] This land use designation "is applied to land or water areas that are essentially unimproved and planned to remain open in character, [and] provides for the preservation of natural resources, the managed production of resources, and recreational uses."[17] The Inyo County Zoning Ordinance designates the proposed project area as predominantly OS-40: Open Space Zone, 40-acre minimum lot size.[18]

[16] Inyo County Planning Department. 11 December 2001. *Inyo County General Plan, Land Use Element*. Independence, CA.

[17] Inyo County Planning Department. 11 December 2001. *Inyo County General Plan, Land Use Element*. Independence, CA.

[18] County of Inyo. *County Code,* Title 18: "Zoning." Available at: http://www.countyofinyo.org/planning/zonord.html

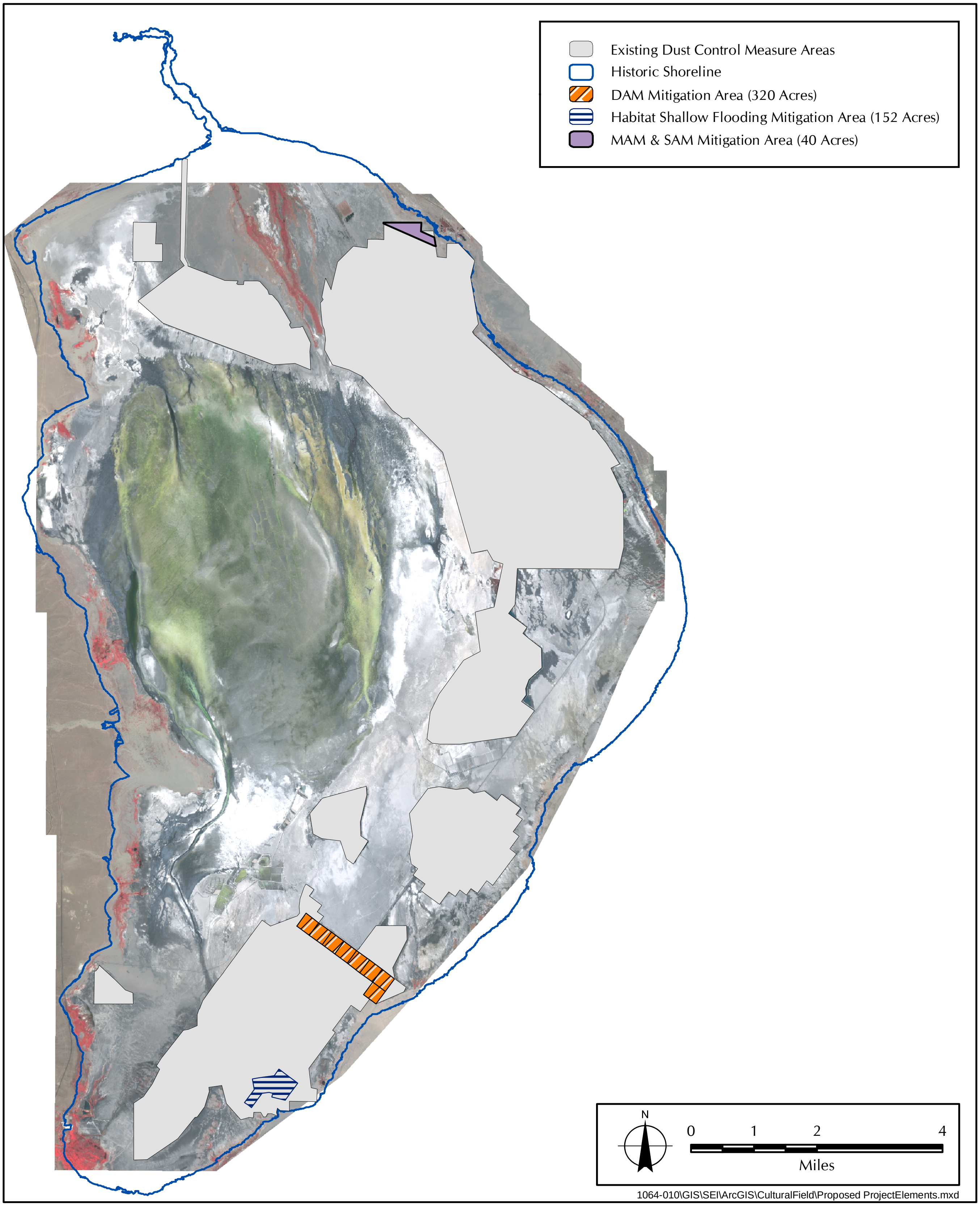


FIGURE 2.4.4-1

Exisiting Mitigation Areas

2.6 STATEMENT OF PROJECT GOAL AND OBJECTIVES

2.6.1 Project Goal

The primary goal of the proposed project is to implement DCMs on the bed of Owens Lake by 2010 sufficient to prevent emissions from the lake bed that cause or contribute to violations of the PM_{10} NAAQS. In addition, the proposed project must be consistent with the State of California's obligation of land and resource stewardship.

2.6.2 Project Objectives

- Implement all Owens Lake bed PM_{10} control measures by April 1, 2010 pursuant to the revised 2008 SIP to achieve the NAAQS
- Revise the approved 2003 SIP by July 1, 2008
- Minimize (or compensate for) long-term, significant, adverse changes to sensitive resources within the natural and human environment
- Provide a high technical likelihood of success without substantial delay
- Conform substantially to adopted plans and policies and existing legal requirements
- Minimize the long-term consumption of natural resources
- Minimize the cost per ton of particulate pollution controlled
- Be consistent with the State of California's obligation to preserve and enhance the public trust values associated with Owens Lake

2.7 PROPOSED PROJECT

The proposed project includes numerous elements to ensure that adequate DCMs are implemented on the dry Owens Lake bed to ensure attainment of the PM_{10} standard as mandated in the 2008 SIP.

2.7.1 Project Elements

The proposed project addresses 15.1 square miles (9,664 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 12.7 more square miles of dry lake bed and they may be required on up to 15.1 square miles (Figure 2.7.1-1, *Proposed Project Elements)*. The 15.1 square miles consists of 12.7 square miles of supplemental dust control areas (consisting of 9.2 square miles of Shallow Flooding and 3.5 square miles of Moat & 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. The Moat & Row DCM areas for this proposed project include 0.5 square mile of test sites that were approved by the California State Lands Commission (CSLC) and evaluated in previous environmental documentation.[19,20] By 2010, a total of at least 42.57 square miles of DCMs are to be operational. As much as a total of 44.92 square miles of lake bed may require controls at some

[19] California State Lands Commission. May, 2007. CSLC Lease to LADWP for Construction, Operation, Maintenance, and Monitoring of a Moat & Row Demonstration Project from May, 2007 to May, 2010. Lease PRC 8745.9. California State Lands Commission, Title Unit, 100 Howe Avenue, Suite 100-South, Sacramento, CA 95825-8202.

[20] CSLC environmental document for lease, either Neg Dec or Exemption

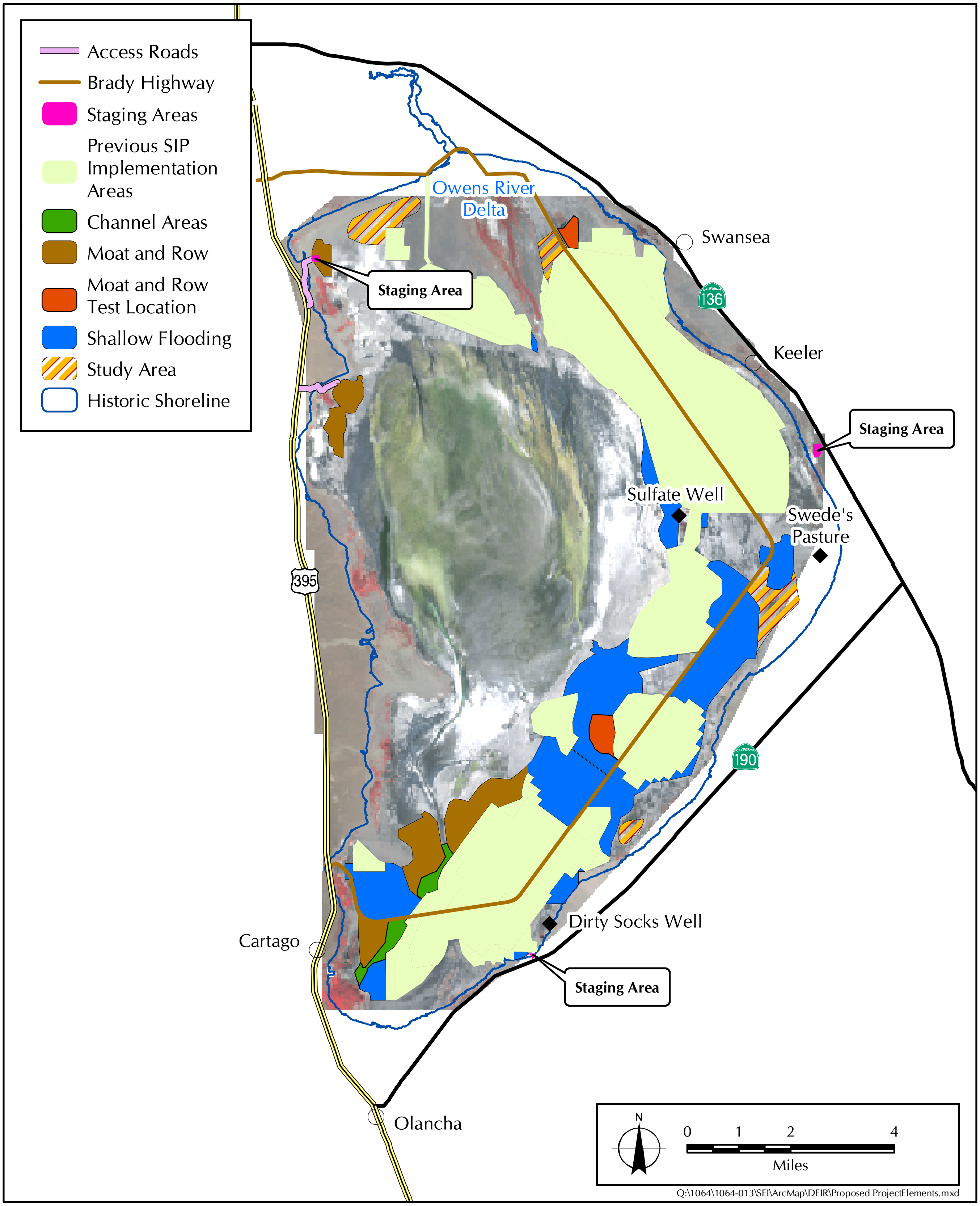


FIGURE 2.7.1-1

Proposed Project Elements

point. The purpose of this document is to subsequently analyze, based on the 2003 SIP EIR, the impacts from the construction, operation, and maintenance of supplemental DCMs on an additional 15.1 square miles of lake bed, which includes 12.7 square miles of mandatory DCM area, 0.5 square mile of channel area and 1.9 square miles of study area (Table 2.7.1-1, *Comparison of Proposed Project Elements*).

TABLE 2.7.1-1
COMPARISON OF PROPOSED PROJECT ELEMENTS

Supplemental Dust Control Area/Measure	Square Miles	Acres	Percentage
Shallow Flood	9.2	5,888	61%
Moat & Row	3.5	2,240	23%
Study area	1.9	1,216	13%
Channel area	0.5	320	3%
Total proposed project area	15.1	9,664	100%

Of the additional 15.1 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 (Figure 2.3.1-1). 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 15.1 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 this document is to subsequently analyze, based on the 2003 EIR, on a project level, the impacts of constructing supplemental DCMs on these 15.1 square miles of potentially emissive lake bed (Figure 2.7.1-1). The proposed project consists of applying DCMs specified in the approved 2003 SIP[21] and 1998 SIP,[22] as well as the application of a new DCM, Moat & Row, beyond the 29.8 square miles of DCMs applied by the LADWP through 2006, as shown in an satellite image in January 2007 (Figure 2.7.1-2, *Existing Dust Control Areas*).

The District has committed to modifying the 2003 SIP to incorporate new knowledge, provide for additional DCMs (including the new Moat & 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 15.1 additional square miles (9,664 acres) of emissive lake bed may require DCMs to meet the NAAQS after 2010 (Figure 2.7.1-1).

[21] Great Basin Unified Air Pollution Control District. February 2004. *2003 Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan Integrated Environmental Impact Report*. State Clearinghouse House Number 2002111020. Prepared by: Sapphos Environmental, Inc., Pasadena, CA.

[22] 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*. State Clearinghouse Number *No. 96122077*. Bishop, CA.

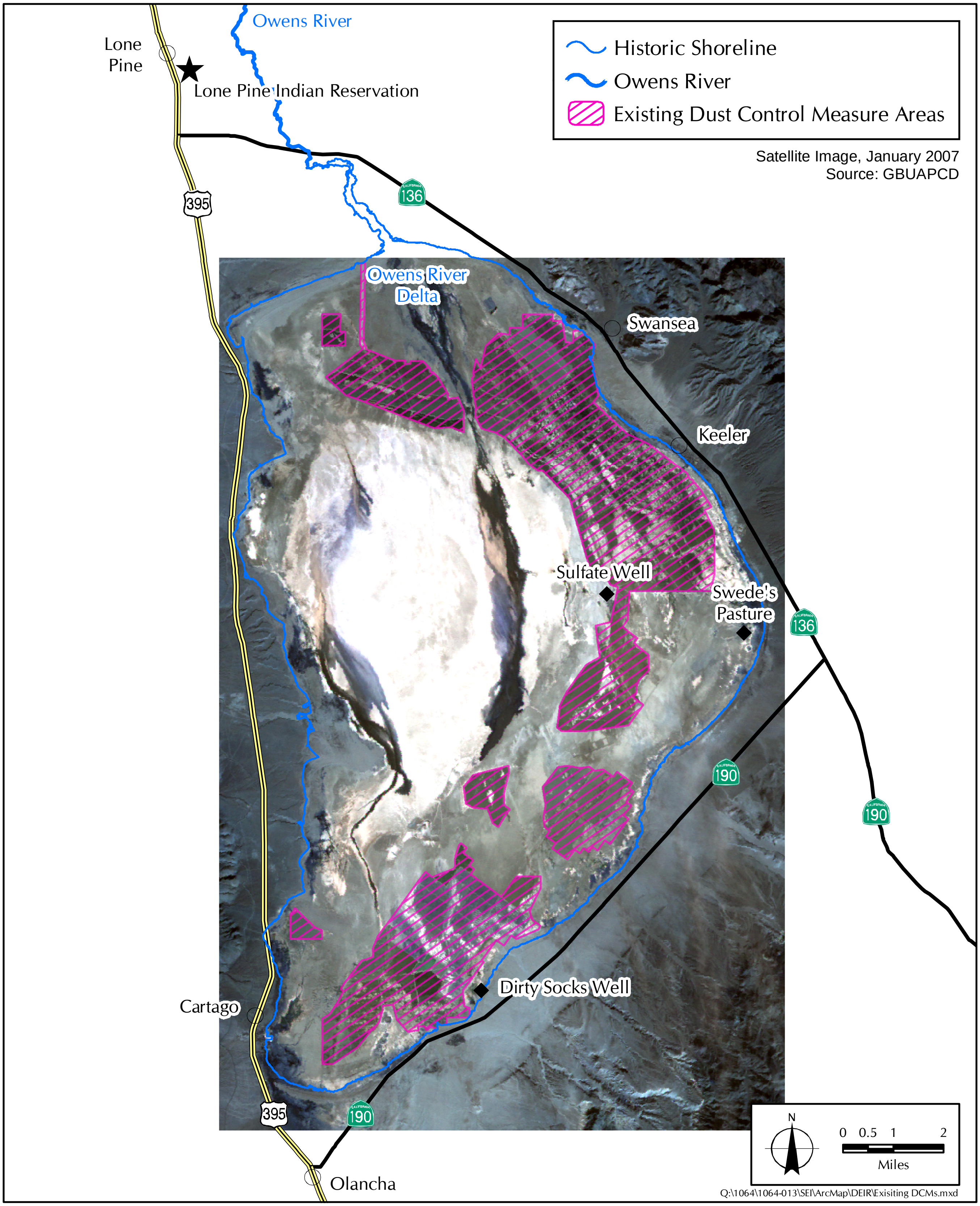


FIGURE 2.7.1-2

Exisiting Dust Control Areas

2.7.1.1 Dust Control Measures

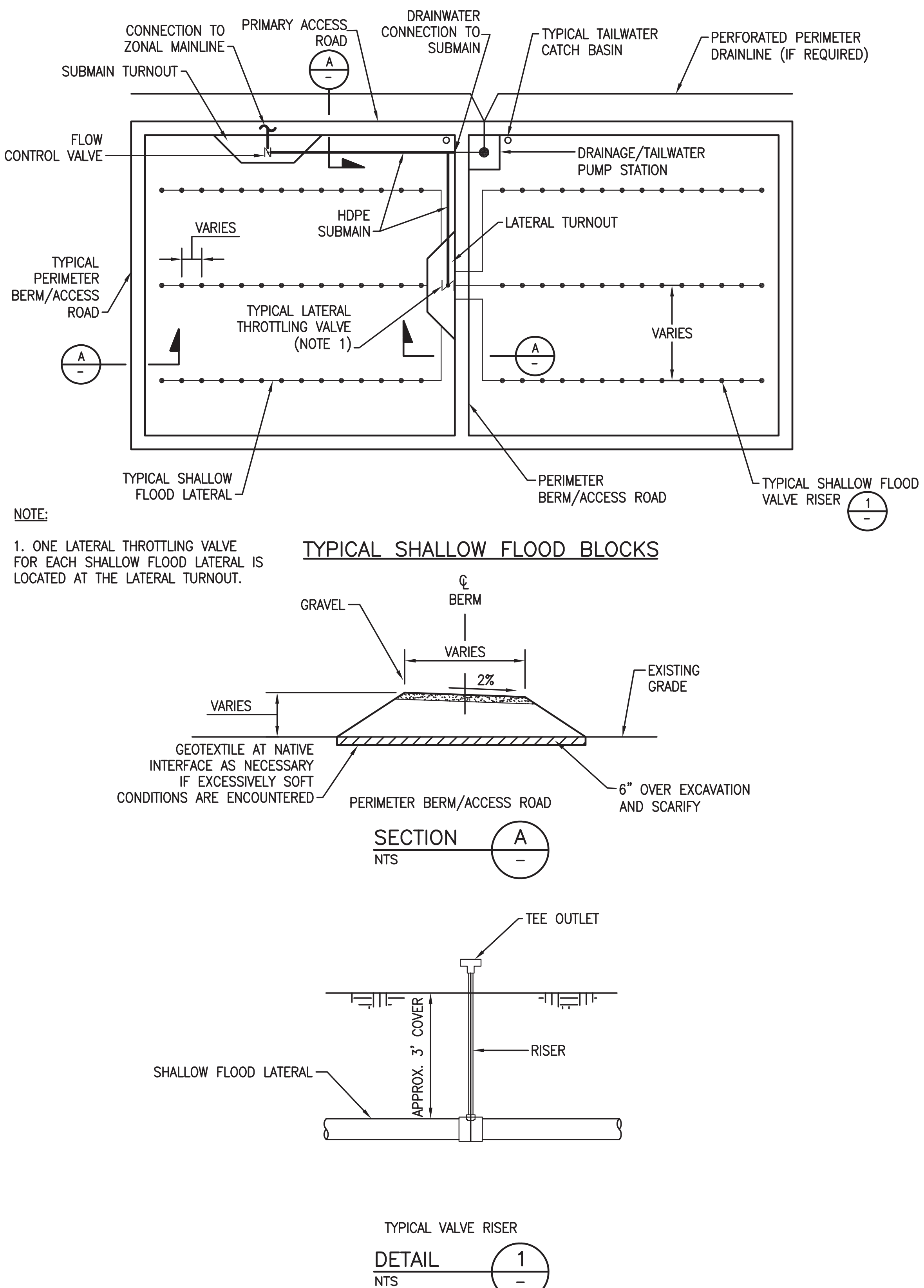
Shallow Flooding

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 (Figure 2.7.1.1-1a, *Typical Irrigation Layout for Two Blocks of Shallow Flooding;* Figure 2.7.1.1-1b, *Typical Layout for Two Blocks of Ponded Flooding;* Figure 2.7.1.1-1c, *Typical Ponded Flood Details; and* Figure 2.7.1.1-1d, *Typical Layout for Two Blocks of Shallow Flooding with Whiplines*. 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. The Shallow Flooding would include pumps for distribution of water. These pumps produce very little noise and have not been found to impact wildlife.

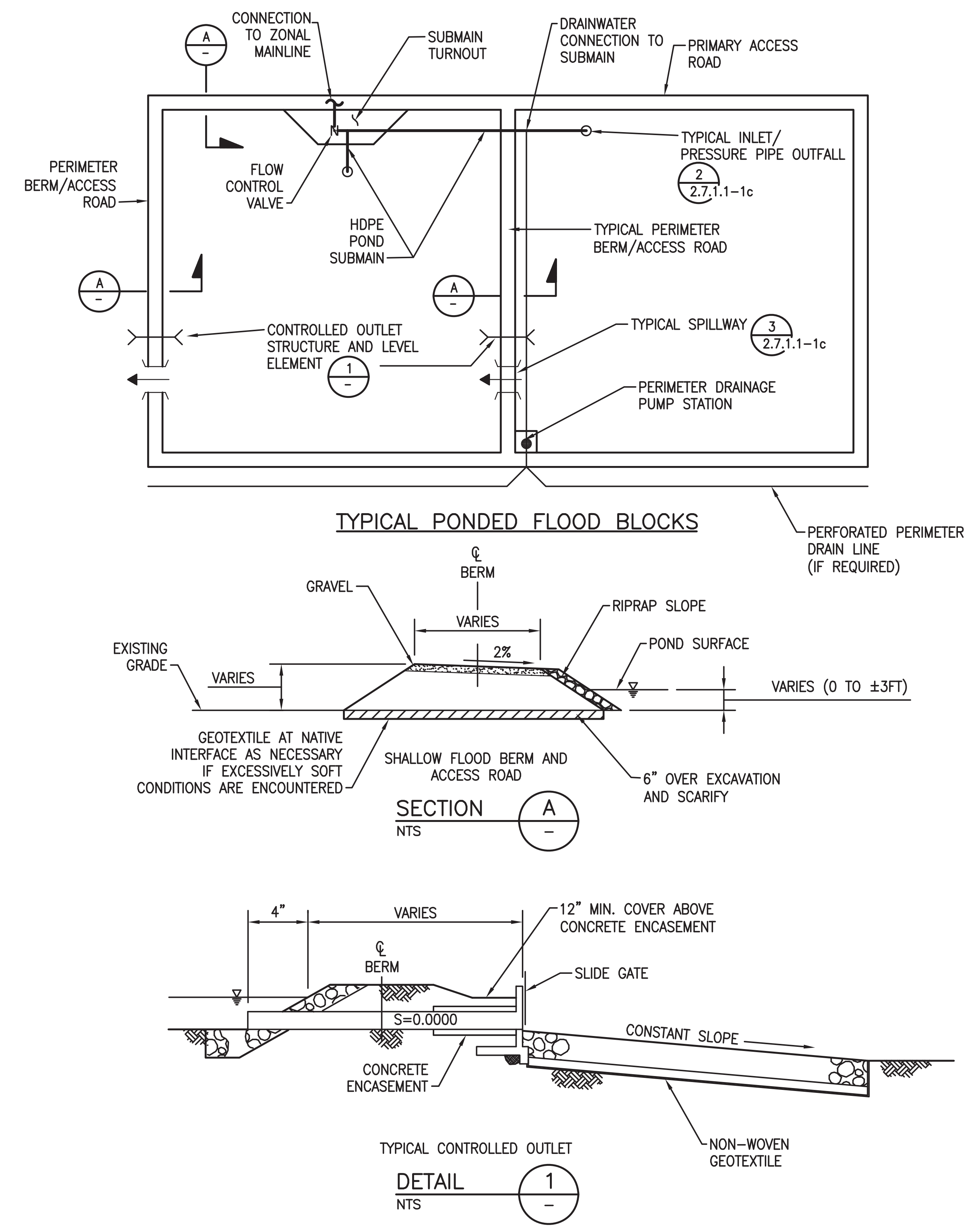
Moat & Row and Enhancements

The general form of the Moat & Row DCM is an array of earthen berms (rows) about 5 feet high with sloping sides and a base of about 11.6 feet, an access road on both sides of the row of approximately 14 feet, flanked on the other side by ditches (moats) about 4 feet deep and about 8.5 feet at the widest point (Figure 2.7.1.1-2, *Moat & Row DCM*). The Moat & Row includes placement of a 5-foot-high sand fence on the top of the row. The sand fences shall be constructed using Studded Galvanized T- Posts (for intermediate posts), 4″x4″ or 6″x6″ Treat Wood Posts (for the end posts), No. 8 Wire, and 2.5″ diameter PVC pipes. The PVC pipes shall be used to increase the stability of the intermediate posts by extending their embedment length into the playa and will be installed below grade. The sand fence fabrics shall be comprised of U.S. Fence Snow Fence materials (or equivalent materials) as utilized on the Moat & Row Demonstration Project. If guy wires are used to stabilize sand fences, sand fence fabric will be installed to fill in the gap between the guy wire and the sand fence posts. Moats serve to capture moving soil particles, and rows physically shelter the downwind lake bed from the wind. The individual Moat & 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 & Row array is intended to control emissions under the full range of principal wind directions (Figure 2.7.1.1-2). The predominant winds are from the North and the South with the North blowing wind the strongest but less frequent. Initial pre-test modeling indicates that Moat & 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 & Row area. 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 & 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 that were previously permitted and



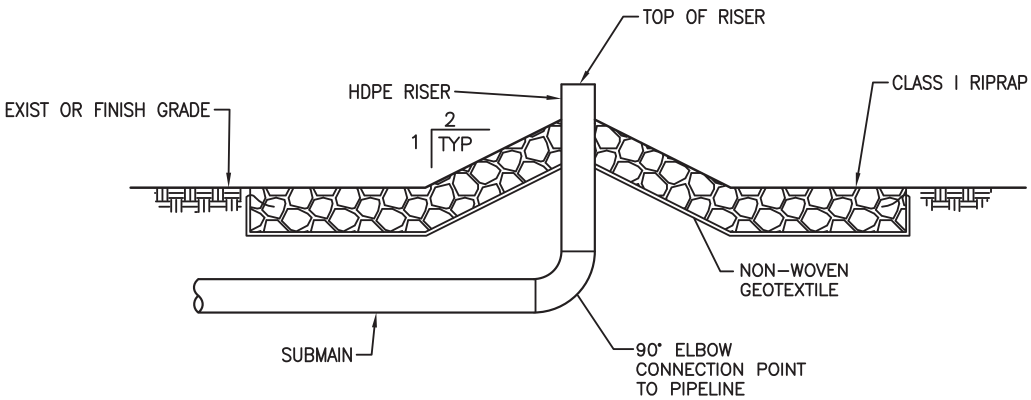
SOURCE: CDM

FIGURE 2.7.1.1-1a
Typical Irrigation Layout for Two Blocks of Shallow Flooding



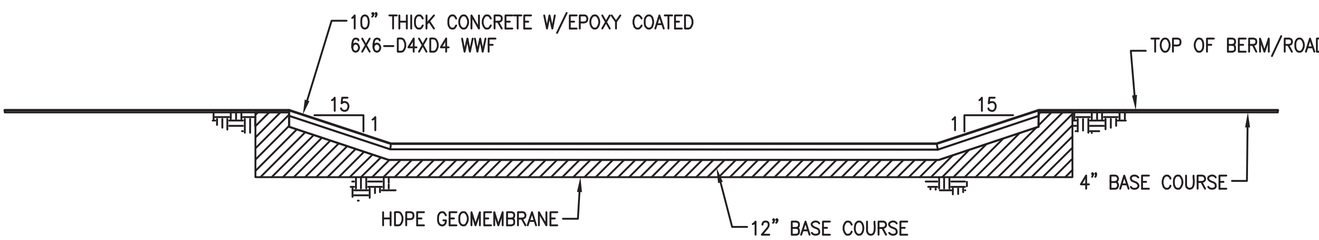
SOURCE: CDM

FIGURE 2.7.1.1-1b
Typical Layout for Two Blocks of Ponded Flooding



TYPICAL INLET/PRESSURE PIPE OUTFALL

DETAIL 2
NTS 2.7.1.1-1b

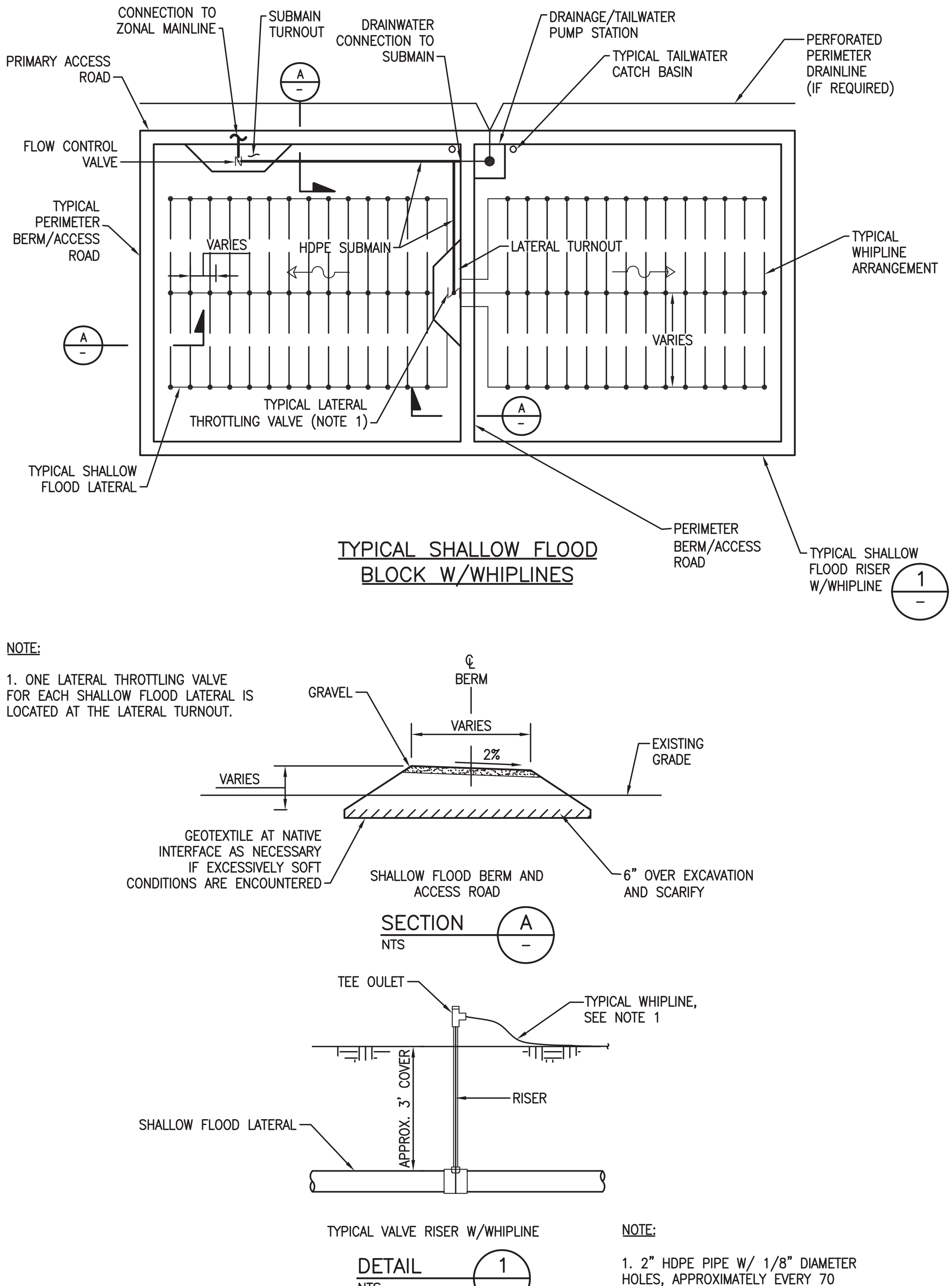


TYPICAL SPILLWAY

DETAIL 3
NTS 2.7.1.1-1b

SOURCE: CDM

FIGURE 2.7.1.1-1c
Typical Ponded Flood Details



SOURCE: CDM

FIGURE 2.7.1.1-1d
Typical Layout for Two Blocks of Shallow Flooding with Whiplines

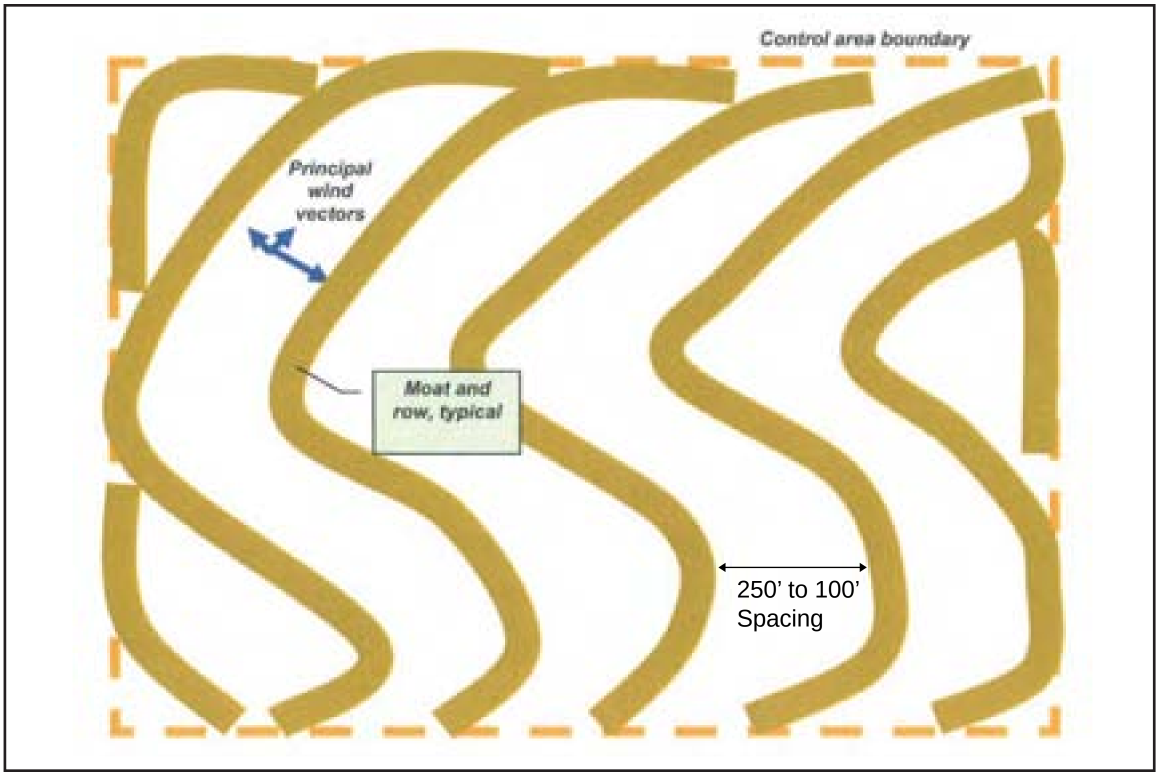


EXHIBIT 1
Moat & Row Array Plan View (Schematic)

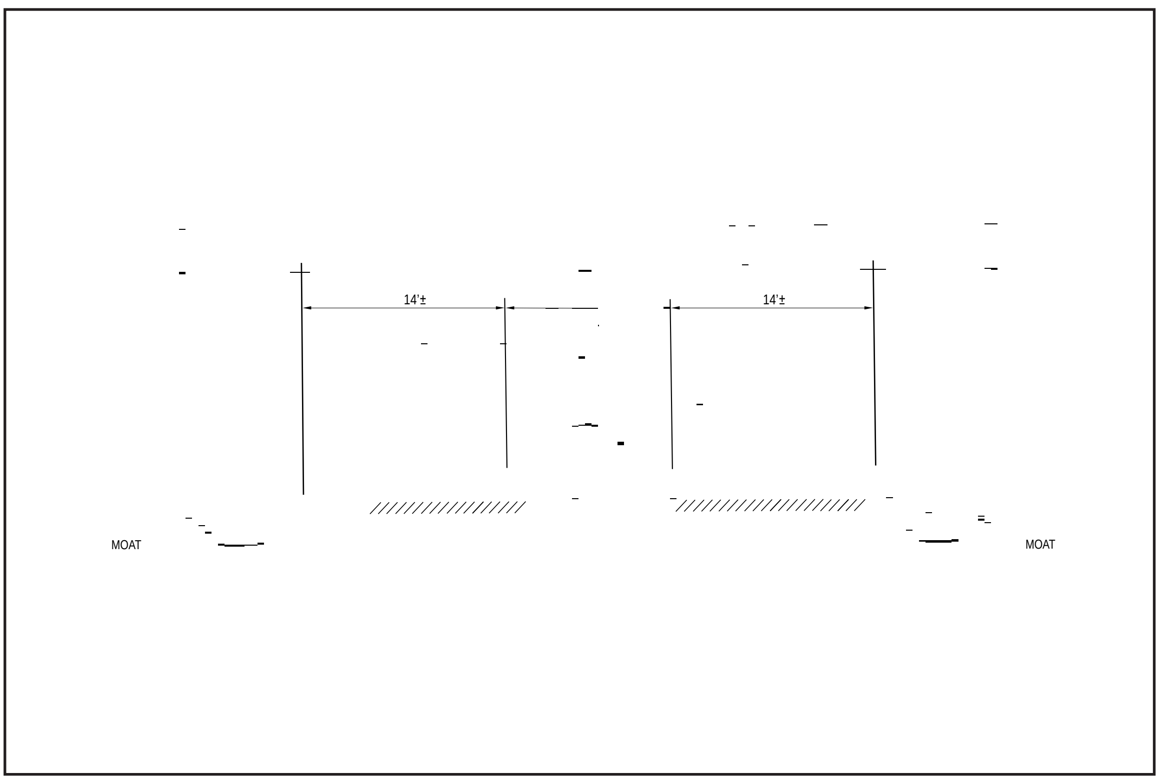


EXHIBIT 2
Profile of Moat & Row with Approximate Dimensions (Schematic)

FIGURE 2.7.1.1-2
Moat & Row DCM

underwent environmental review (Figure 2.7.1.1-3, *Moat & Row Test Sites*).[23,24] In addition, the final maintenance regime and needs will be identified following the completion of the test areas. In the event that, after construction, monitoring indicates that Moat & Row areas do not contribute to shoreline violations, only maintenance actions will be required. For purposes of the analysis in this EIR, moats in Moat & Rows were assumed to have sloped sides and not pose a barrier to wildlife movements. If moats were formed with vertical sides, additional environmental analysis would be required.

Enhancements

It is anticipated that the PM_{10} control effectiveness of Moat & Row will be enhanced by combining it with various approved DCMs and currently utilized measures, including Augmentation, Shallow Flooding, Application of Brine, Armoring, and Managed Vegetation (Figure 2.7.1.1-4, *Moat & Row Enhancements*). These enhancements will ensure that if significant dust sources (hot spots) develop within these areas, they will be addressed. Any single method or combination of the enhancements could be implemented for both primary and secondary wind vector mitigation. The primary Moat & Row DCMs include earthen Moat & Row and a sand fence. Enhancements to these methods include Managed Vegetation and irrigation/fertigation as required, Shallow Flooding facilities, and enhancing existing vegetation and natural topographic and surface drainage features at Owens Lake. Moat & Row earthwork and sand fences may also be enhanced through a number of additional methods. These measures include placing sand fences on the open playa, adding bands of Managed Vegetation, adding water from surrounding Shallow Flooding dust control areas (DCAs), and enhancing or protecting existing vegetation and natural topographic and surface drainage features at Owens Lake. These enhancements may be added during Phase 7 construction or during a later phase.

Augmentation

This method involves addition of Moat & Row lines in between those originally constructed, either in a parallel or different direction. This would have the effect of shortening fetch in these areas, enhancing capture of mobile sand, and reducing the rate of dust emission. This method would be limited in placement of additional Moat & Rows to less than a 25-percent increase in Moats & Rows. If greater than 25 percent of additional Moat & Rows will be required then additional environmental review will be required for that addition.

Shallow Flooding

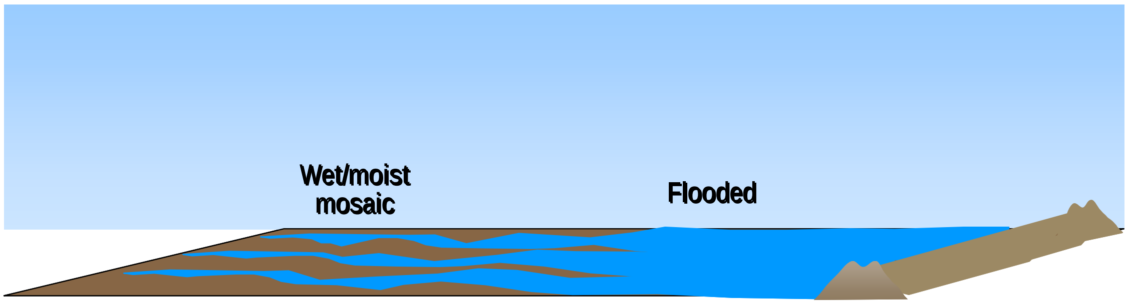
Application of water to the land surface during the dust emissions season have been found to stabilize emissive areas. This enhancement would involve facilities similar to the laterals in Shallow Flooding DCAs, but would require less water per unit area in all but the most emissive areas. This measure will include the extension of a lateral from a Shallow Flooding DCA or the Mainline to Moat & Row DCAs or the opening of a Shallow Flooding DCA controlled outlet that is adjacent to Moat & Row areas. This approach is best suited for areas that currently have patches of vegetation that would be encouraged by the addition of water. Seeding these areas with native

[23] California State Lands Commission. May, 2007. CSLC Lease to LADWP for Construction, Operation, Maintenance, and Monitoring of a Moat & Row Demonstration Project from May, 2007 to May, 2010. Lease PRC 8745.9. California State Lands Commission, Title Unit, 100 Howe Avenue, Suite 100-South, Sacramento, CA 95825-8202.

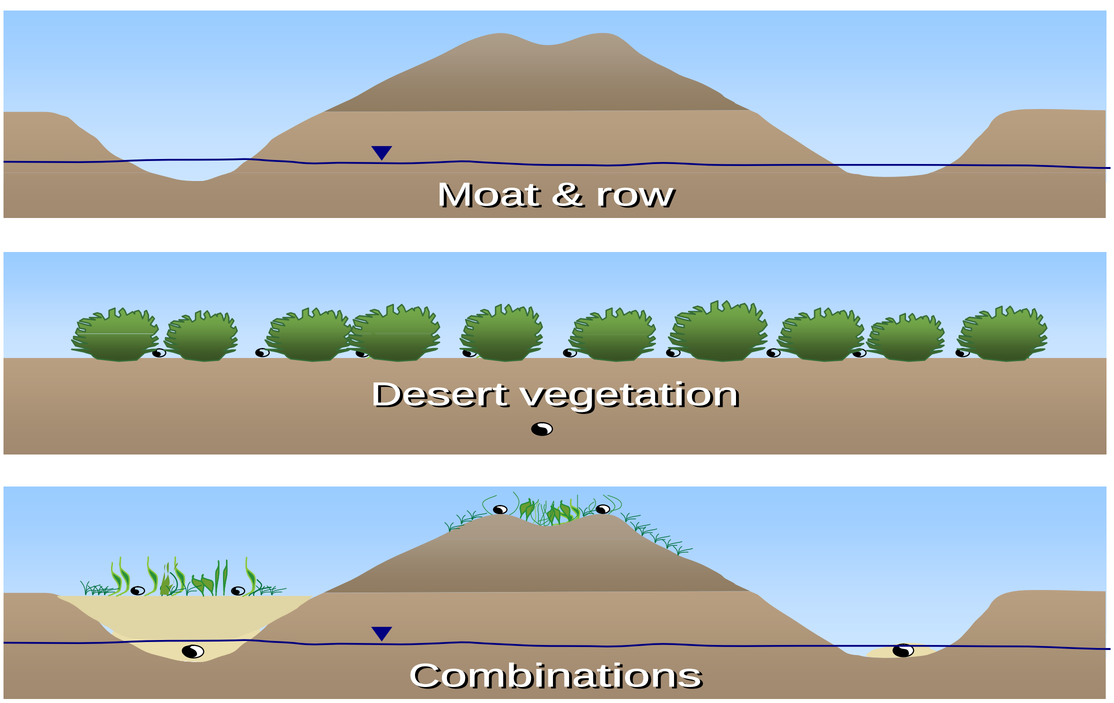
[24] CSLC environmental document for lease, either Neg Dec or Exemption

FIGURE 2.7.1.1-3

Moat and Row Test Sites



Shallow Flooding/Wetting Enhancement



Managed Vegetation Enhancement

FIGURE 2.7.1.1-4
Moat & Row Enhancement

populations of species already found in the Moat & Row DCAs may also encourage vegetative growth.

Application of Brine

This enhancement includes surface stabilization techniques, such as localized Application of Brine to enhance soil crusting. This method of dust control is currently utilized successfully on access roads throughout the project site and ensures that a salt crust develops on potential emissive soils. The brine is expected to be obtained by the existing sources LADWP filters from the existing Managed Vegetation and Shallow Flooding areas. It is anticipated that the brine will be applied by water trucks to the Moat & Row excavation and access road elements only. Brine will not be applied in between the Moat & Row elements.

Armoring

An additional enhancement may include Armoring Rows or intervening areas with rock or gravel layers. The armoring will be limited to an application similar to the armoring that is currently implemented for the berms of the Shallow Flooding areas. This method does not allow for complete covering of the moats or rows with gravel or rock, which would require additional environmental review.

Managed Vegetation

Managed Vegetation has been shown to be effective at controlling dust and is an approved DCM. Managed Vegetation as an enhancement would be either rows and/or the inter-row land surface to stabilize emissive or eroding areas. This would involve facilities similar to the drip irrigation system in Managed Vegetation, but with rows and plants more widely spaced, and likely planted with native drought and salt-tolerant vegetation, including, but not limited to, saltgrass (*Distichlis spicata*). Alternatively, surface irrigation (similar to the laterals in Shallow Flooding) may be employed, particularly in the inter-row areas. Wherever possible, subsurface drainage facilities would be avoided.

Managed Vegetation reduces sand motion by acting as a natural wind break and reduces erosion problems through the holding power of root systems. The enhancement works well for sandy and loose soils, allowing the roots to take easily and nutrients to reach the roots. A broad bed Managed Vegetation concept will be used as an enhancement to Phase 7 Moat & Row DCAs and will be placed on the undisturbed playa between or around the earthen Moat & Row. Broad beds will be spaced wider and have higher beds when compared to the traditional Managed Vegetation constructed during previous phases. Irrigation, fertigation, and subsurface drainage will be provided as required.

According to the information provided to the District by the LADWP, Managed Vegetation would be constructed in between the moats and rows to assist with the reduction of dust. The exact size and shape of the blocks would be adjusted to fit site-specific conditions, including avoidance of sensitive resources. Each block would be planted with locally adapted native plant species approved by the District, or other species approved by both the District and the CSLC. The Managed Vegetation DCMs installed by the City in the previous areas of Managed Vegetation are planted with saltgrass. Additional species, notably salt-tolerant Owens Valley native shrubs, have performed well in some conditions and could be effectively utilized in conjunction with Managed Vegetation, if approved by the District and California Department of Fish and Game. The typical layout of Managed Vegetation, which may be modified for enhancement with the Moat & Row for a 40-acre block includes a typical irrigation pipe layout, drip tube laterals, furrows, and flush fields (Figure 2.7.1.1-5, *Typical Irrigation Layout for a 40-Acre Block of Managed Vegetation*). The Managed Vegetation areas may include a 16-foot-wide perimeter service road. The service roads would typically be compacted native material, but would likely be surfaced with gravel or brine if necessary to reduce dust emissions or to improve accessibility.

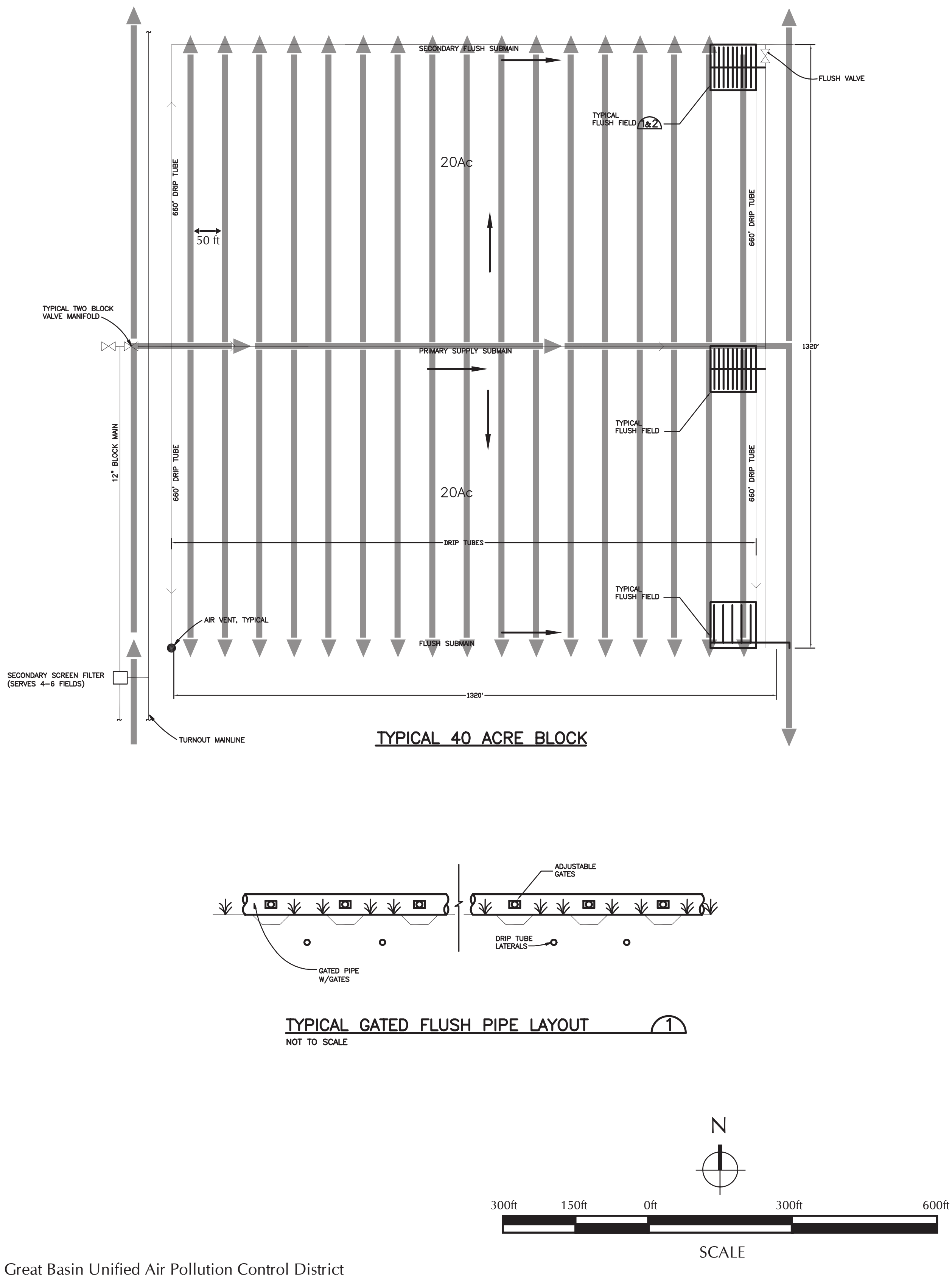
Turnout mainlines would convey water flow from the turnout connections to distribution manifolds and then to the Managed Vegetation areas (Figure 2.7.1.1-6, *Irrigation Distribution System*). Turnout mainlines would be constructed of plastic pipe with sizes up to approximately 18 inches in diameter. Water would flow from the manifold to the field submains and then into a network of subsurface drip tubes, sprinklers, or gated pipe, according to the irrigation plan used.

Where drip irrigation is used, flexible risers would convey water from the buried primary submains and secondary submains to the drip tubes. The drip system would consist of plastic submain lines and lateral tubing with in-line drip emitters. Drip tubing would likely range from 0.5 to 1.5 inches in diameter. A typical drip system arrangement would likely consist of one emitter per 10 square feet, with a 2-foot emitter spacing along tubing laid at 5-foot lateral spacing intervals, although drip tube alignments and emitter spacing would be expected to vary with site conditions and local needs.

Sprinkler irrigation would potentially be used in the Managed Vegetation fields as an alternative to drip systems. Sprinklers are able to wet the entire ground surface, providing greater flexibility in leaching and reclaiming difficult soils. Where sprinkler irrigation is used, water would be distributed from the turnout mainlines through 2- to 8-inch plastic piping. Field piping would be spaced 10 to 50 feet apart, typically with risers and spray nozzles at 20- to 50-foot intervals (Figure 2.7.1.1-6). To minimize ground disturbance impact to sensitive areas or to implement Managed Vegetation in areas where belowground construction is difficult, aboveground piping would be used to deliver water to the sprinklers. Temporary aboveground piping would potentially be used in addition to permanent drip irrigation to reclaim difficult soils or to provide additional water for short-term plant establishment.

Surface irrigation would potentially be used as another alternative to drip systems in Managed Vegetation fields. In this option, water would be distributed to the blocks through 2- to 12-inch plastic piping. Actual introduction of the water into the fields would likely be accomplished through gated plastic pipe, through a series of risers similar to those used in Shallow Flooding (Figure 2.7.1.1-6), or by direct spillage from a pipe outlet. Where surface irrigation is used, the blocks would typically be surrounded by low berms to contain ponded water until it seeps into the soil. These berms would be constructed of local material and may be up to 2 feet in height. The temporarily ponded water in these surface irrigated areas would generally be less than 4 inches deep, but may be deeper in some limited areas due to variation in local topography.

Fertilizer Injection and Water Treatment Systems. In areas where Managed Vegetation is implemented as an enhancement to Moat & Row, a Fertilizer Injection or "fertigation" and Water Treatment System may be required. These systems deliver fertilizer through the irrigation system. Each system would be located at turnouts adjacent to the freshwater conveyance mainlines and would be placed on an approximately 48-foot by 28-foot concrete pad. Each system would service between 320 acres and 800 acres. An independent fertigation and water treatment system would include four 88-inch-diameter fertilizer [nitrogen-phosphorus-potassium (NPK)] tanks (with a typical diameter of approximately 88 inches and a capacity of 1,600 gallons), a chlorine (NaOCl) tank



SOURCE: Great Basin Unified Air Pollution Control District

FIGURE 2.7.1.1-5
Typical Irrigation Layout for a 40-Acre Block of Managed Vegetation

Water Supply Mainline

Field Irrigation Lines

FIGURE 2.7.1.1-6
Irrigation Distribution System

(with a typical diameter of 97.5 inches and a capacity of 1,900 gallons), a sulfuric acid (H_2SO_4) tank (with a typical diameter of 88 inches and a capacity of 1,600 gallons), and a bromine (NaBr) tank (with a typical diameter of 72 inches and a capacity of 740 gallons). Tanks would generally range between 60 and 96 inches in height. Chemical injection tanks would consist of a 1,600-gallon, DS-75 descalent tank containing a product to prevent $CaCO_3$ lime scale formation in the drip tubes (similar to Cal-Gone dish rinse); a 1,600-gallon, 12-percent sodium hypochlorite (chlorine bleach) tank containing biocide; a 750-gallon, 40-percent sodium bromide tank used in conjunction with sodium hypochlorite to increase the biocidal effectiveness at high pH; and a 1,600-gallon, 93-percent sulfuric acid tank. The acid would be used as an agent to remove lime scale deposits in the irrigation filters and periodically reduce the pH of the irrigation water from pH 11 to pH 8.

The fertilizer tanks would consist of three 1,600-gallon tanks (4,800 gallons total) containing liquid potassium nitrate (KNO_3) formulated to an NPK ratio of 3-0-11. One of these tanks may periodically be used for another fertilizer, 28-percent magnesium chloride ($MgCl_2$). The systems also include fill stations, water hydrants, and concrete spill containment walls and secondary precautionary concrete containment walls.

Moat & Row Enhancement Alternatives Not Included

The use of other enhancements not described above would require additional and separate environmental analysis. Other alternatives include the use of Additional Sand Fences and Tillage. The addition of sand fencing in between Moat & Row lines originally constructed would be carried out either in a parallel or different direction. This would have the effect of shortening fetch in these areas, enhancing capture of mobile sand, and reducing the rate of dust emission. Tillage between the Moat & Row lines may also serve to reduce emissivity. The above suggested techniques for enhancement (Additional Sand Fences and Tillage) shall require further environmental analysis to assess the potential for significant impacts.

Study Areas

Included in the total 15.1 square miles of the total project area are 1.9 square miles of study areas (Figure 2.7.1-1). These are areas where the exact location and magnitude of dust emissions is uncertain. In order to provide as extensive an impact analysis as possible, these areas will be treated as other areas requiring dust control. The District will continue to collect data in these four areas to determine their emissivity through the course of the project.

Channel Areas

In addition to the above listed DCMs, this EIR addresses potential impacts to 0.5 square mile of channel areas (Figure 2.7.1-1). These areas contain natural drainage channels that have been observed to be emissive and require some level of dust control. These areas may have potentially significant resource issues and regulatory constraints that could affect the type and location of DCMs within these areas.

The Channel Area has significant topographic and biological resources that make it undesirable to construct traditional DCMs. However, only a portion of this area has been observed in the past to contribute to shoreline violations, and relatively low levels of control efficiency are required to avoid violations, as opposed to the 99 percent targeted by traditional dust control. Therefore, because existing vegetation is present within and alongside numerous and extensive Channel Areas, Managed Vegetation will be used to control dust in the Channel Area. Surface Flooding will enhance the coverage of existing vegetation. The effect of increasing vegetated cover will provide a level of dust control while enhancing habitat values. The required infrastructure will be designed and installed to avoid adverse impacts to existing vegetation.

Vegetation in the Channel Area will be enhanced by augmenting flow in the channels seasonally when these flows have the greatest potential to promote seed dispersal and plant expansion and growth. Flows will be supplied from adjacent dedicated conveyance facilities or flooded areas containing relatively fresh to brackish water (EC $<$ 15 dS/m).[25] Flow would generally be supplied in brief, intense surges, as has proven successful for riparian restoration throughout the upper and lower Owens Valley, Long Valley, Owens River Gorge, and in the Mono Basin as demonstrated by LADWP restoration projects. The pulsed flow will be managed to maximize the wetted area as the flow overtops the channel banks and spreads on adjacent terraces, some of which are already vegetated.

Where plant stands are sparse, seed of native populations of species already found in the channel area may be dispersed onto the wetted areas. These species will include, but is not limited to, saltgrass and alkali pink (*Nitrophila occidentalis*). Seeding will implemented using manually operated seeders to avoid disturbance to the Channel Area.

The water demand for pulse flows (flow rate or duration) will be determined considering the topography, infiltration rates, likely spreading of water, and water demands of the target vegetation. The criteria used to design the final outlet locations and flow rate performance during operation are as follows:

- Pulse will result in overbank flow from the channel and wetting of a broad area, while avoiding large amounts of concentrated infiltration to groundwater or impounded body of water.
- Pulse will result in wetting along portions of the full length of channel of interest.

The effectiveness of pulse flows will be maximized where necessary using diversions (i.e., sandbags or rock checks) to overbank surface flows toward existing vegetation stands or seeded areas. Use of intense pulsed flows and diversion techniques are in lieu of mass grading in the Channel Area.

Infrastructure within the Channel Area will be limited initially and augmented as needed to achieve maximum vegetative coverage. Overall, the infrastructure required for the enhancement of the Channel Area will be designed and installed at proposed facilities adjacent to the Channel Area to avoid negatively impacting existing vegetation within this area. The water for the pulsed flows will be through a pipeline extended to the area either from new Turnout T1A or from a submain serving area T2-2. Controlled outlets and/or culverts from new or existing adjacent Shallow Flooding areas to the Channel Area may also provide additional intermittent water with minimal intrusion of infrastructure.

If in the future vegetation coverage through flow pulses does not provide adequate dust control in the Channel Area, additional efforts to increase vegetation through surface saturation will be implemented. The initial infrastructure will accommodate potential future additions (i.e., dripline, whipline, and/or risers).

[25] EC (Electric Conductivity) is a measure of salinity in terms of total dissolved salts measured in dS/m (decisiemens per meter); as the value decreases salinity decreases.

2.7.1.2 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.

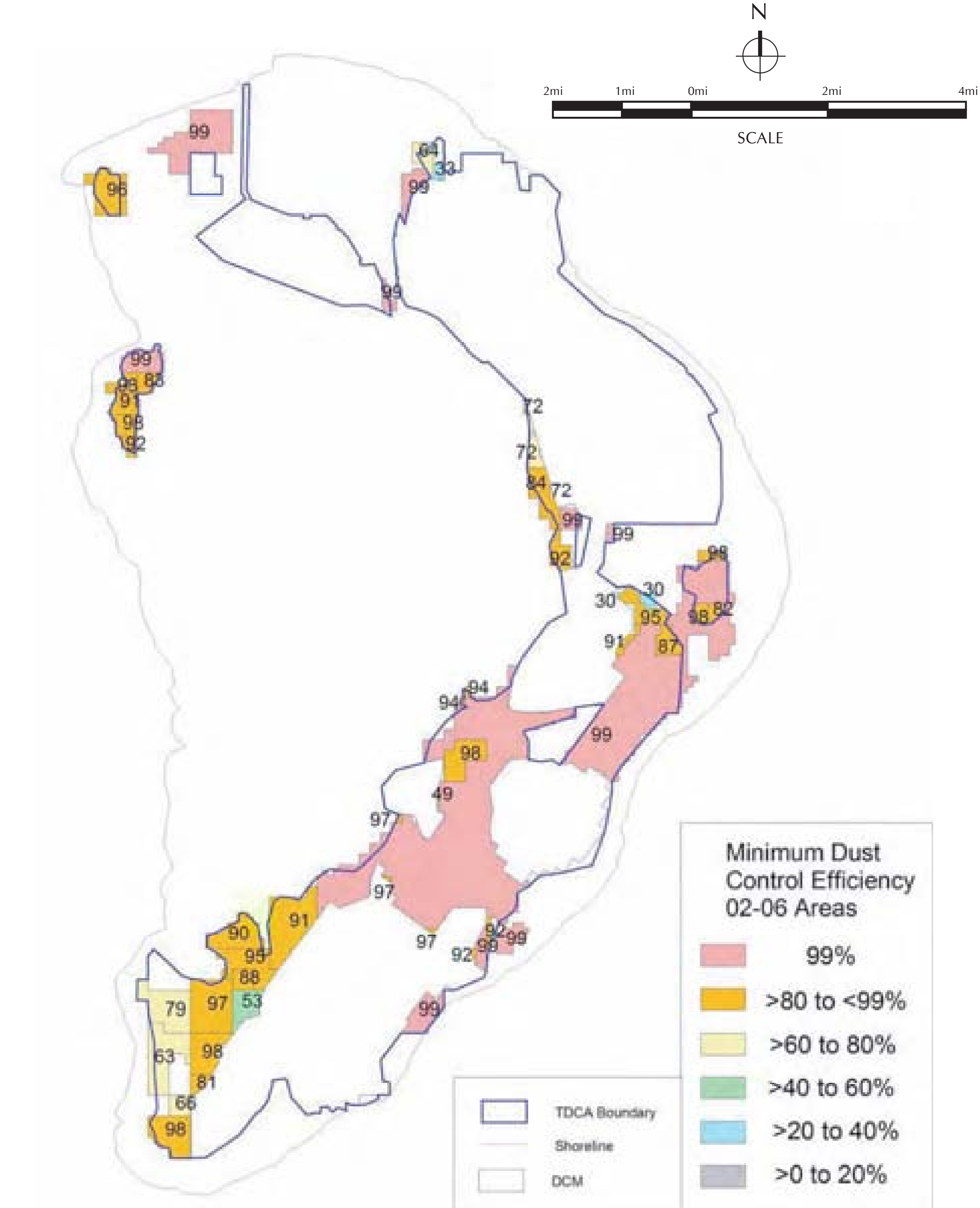
Water Supply Conservation

Another element of the proposed project to be analyzed is the refinement of the amount of water used to control dust in Shallow Flooding DCM areas. The District's Shallow Flooding 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 considered a conservative requirement on the actual amount of water required to provide 99 percent control may be less than 75 percent. The LADWP will conduct limited field testing on no more than 1.5 square miles of existing Shallow Flooding 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 new areas of the lake bed known as the minimum dust control efficiency (MDCE) (Figure 2.7.1.2-1, *Minimum Dust Control Efficiency Map*). The MDCEs for the new dust control areas vary from 99 percent to 0 percent. The percentage of area that must be wetted in the new Shallow Flooding areas to meet the MDCE is specified in Figure 2.7.1.2-2, *Shallow Flooding Control Efficiency Curve*. Although some of the new Shallow Flooding DCM areas will be constructed and operated to provide less than 99 percent dust control efficiency, existing Shallow Flooding DCMs will require 99 percent control efficiency and thus 75 percent of wetted area. In addition, the use of the Moat & Row DCM is expected to utilize less water when compared to Shallow Flooding.

Impacts of reducing the amount of water used to control dust in Shallow Flooding areas will be analyzed in this Subsequent EIR. The 2006 Agreement between the District and the LADWP provides that once DCMs are in place and operational on the entire 43-square-mile DCA for one full year and there have been no monitored violations of the federal standard, then the LADWP may reduce the wetness cover on Shallow Flooding areas by an average of 10 percent over Shallow Flooding areas that require 99-percent control (Appendix B, *2006 Settlement Agreement*).[26] Further reduction can only occur as long as the standard continues to be met and with the written approval of the APCO. If areas become too dry and causes or contributes to an exceedance of the federal standard at the historic shoreline, the amount of wetness must be increased. This provision of the Agreement may eventually allow the LADWP to save considerable amounts of water at Owens Lake.

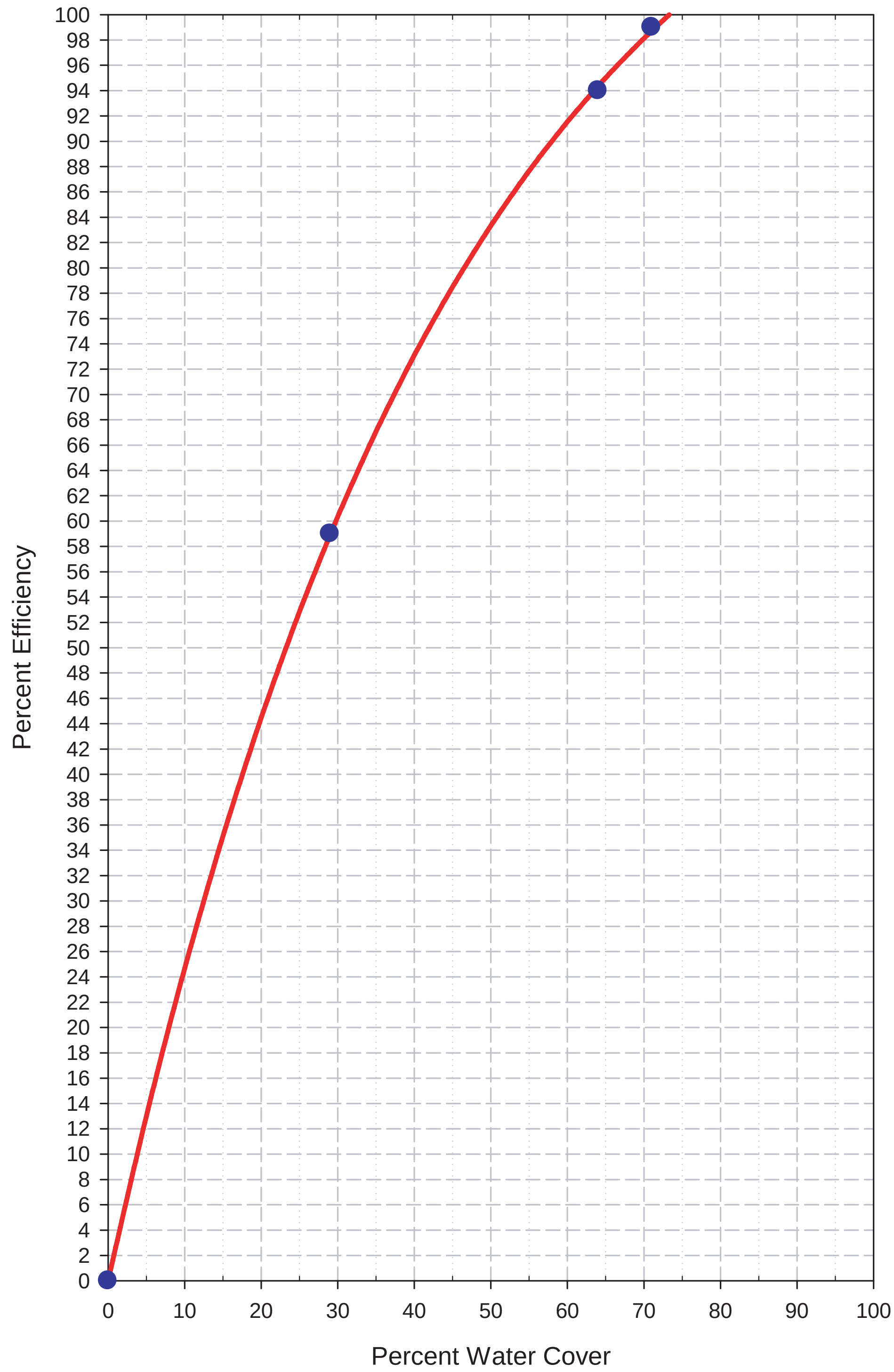
In addition, the District has determined, based on air quality data, that the federal standard will be attained if dust storms are eliminated from October 1 of every year through June 30 of the next year. Therefore, Shallow Flooding areas need to be wet for dust control only during that nine-month period. However, in general, dust emissions are 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

[26] 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. Los Angeles, CA.



SOURCE: Great Basin Unified Air Pollution Control District

FIGURE 2.7.1.2-1
Minimum Dust Control Efficiency Map



SOURCE: Great Basin Unified Air Pollution Control District

FIGURE 2.7.1.2-2
Shallow Flood Control Efficiency Curve

in 2010 there may be a reduction in Shallow Flooding 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.

Water Supply and Conveyance

Expanded water conveyance pipeline systems will be tied into existing mainlines on the proposed project site. The mainline capacity shall be increased by tying the existing brine line into the mainline and using the brine line in parallel with the mainline for transmission of water. In addition, paralleling of the mainline in selected reaches and tying LORPS directly to the submain are being considered. Those mainline improvements will be in existing disturbed operational areas or in the areas already analyzed in this EIR. The estimated water demand for the proposed project ranges between 0 and 4 acre-feet per year depending on the control measures selected and climatic and operational conditions. The source of water for this proposed project, analyzed in this EIR, is from the Los Angeles Aqueduct. The LADWP may seek to utilize other sources of water for dust control in the future such as groundwater from Inyo County. However, utilization of water for dust control from sources other than the Los Angeles Aqueduct would require separate environmental review and is not covered in this analysis.

Access Roads

Unpaved and gravel-paved, 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. Two new secondary access roads will be constructed directly off of U.S. Highway 395 for the northwestern areas of the DCAs, with the pathway being built on existing dirt roads rather than completely new construction for access. Pipelines and buried power lines would be placed and constructed under, along, or close to these access roads. All lake bed roads are to be maintained in a substantially non-emissive condition through the use of water, brine, and/or gravel.

Power Supply

Up to 2,000 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.

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, ponds, whiplines, tailwater pumping stations, and side and downslope berms. The number and size of the individual irrigation blocks may vary based on the final design and layout. However, the anticipated facilities would be similar to existing facilities.

Water will be distributed to each DCA through a submain inlet for ponds or through laterals that supply the bubblers and/or whiplines. Valves on the submains or laterals will be above ground and housed in enclosures extending approximately 4 to 5 feet above grade. Valves will not be installed in below ground vaults. The irrigation risers will have a tee outlet or a 2-inch whipline connection for distribution of the water across the irrigation blocks. Submains and lateral piping will be buried up to 3 feet deep to the top of the pipeline. The irrigation risers will distribute and apply water to the lake bed surface in the Shallow Flooding areas and deliver water to the drip and/or spray system in the Managed Vegetation areas

The electrical equipment for the pumping stations and turnouts will be installed in walk-in electrical buildings similar to existing facilities on site.

Soil berms will be constructed along the down-gradient and side boundaries of each Shallow Flooding 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 will be provided along the down gradient western boundary of the proposed project DCAs that will include Shallow Flooding and Managed Vegetation, if required, based on an evaluation of berm stability and potential subsurface water quality or quantity impacts. Drain tiles consist of perforated piping and 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. The pumps and motors will be located above grade. The pump may recirculate water into the irrigation laterals for Shallow Flooding reuse. The top of the pumps will be 5 to 6 feet above grade. The electrical equipment for the pumping stations and turnouts will be installed in walk-in electrical buildings similar to existing facilities on site. 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 and are shown in Figure 2.7.1.1-3. An alternative construction method, consisting of larger ponds with one main source of water as currently utilized for the existing Shallow Flooding DCM, may be utilized.

Staging Areas

Three 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 (Figure 2.7.1-1). 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 Lake. A secondary contractor staging area is located above the southeast shoreline of the lake bed near Dirty Socks Spring. A third staging area is located at T-37. It is anticipated that these areas will also suffice as staging areas for construction activities associated with the proposed project.

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. The LADWP will also install and operate additional air monitoring devices within the proposed project area.

2.7.2 Construction Scenario

Development of the proposed project would require approximately 1.5 years to complete from August 2008 through March 2010. The new Moat & Row DCM areas will be completed and fully operational by October 1, 2009, and the new Shallow Flooding DCM areas will be completed and operational by April 1, 2010.

The construction elements that would be required for the 15.1 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 drain line construction (trenching, pipeline installation, trench backfilling)
- DCM area dewatering
- Irrigation system installation within the DCM areas
- Power line and DCM controls installation
- Moat & Row shaping and enhancing
- Shallow Flooding 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 Inyo County codes.

Construction of DCMs will require a 50-foot buffer around the area of construction, except in sensitive areas amounting to a temporary construction impact of 0.3 square mile (Table 2.7.2-1 *Temporary Construction Impact Areas;* and Figure 2.7.2-1, *Temporary Construction Impact Areas*).

FIGURE 2.7.2-1

Temporary Construction Impact Areas

Therefore, temporary impacts related to construction of the DCMs would result in the addition of these construction buffer zones. LADWP construction requirements have been refined since the initial implementation of dust controls, in which a 200-foot-wide construction buffer zone was utilized.

Construction on Owens Lake is significantly harder and more challenging than construction on unimproved areas due to the variation in the soil conditions. The construction equipment is generally wider and equipped with wide tracts as well as floatation devices in order to avoid sinking into the soft playa. In certain places, plates and mats must be used in conjunction with the wide tract equipments. The larger equipment utilized on the lake bed typically requires greater turning radius. In addition, the buffer will allow for transportation of construction materials for the construction of the DCMs to ensure that construction activities are not halted in order to transport these materials throughout the construction site. In addition, survey stakes and monuments will be placed within these buffer zones for the construction of DCMs, and must be placed away from the construction activities in order to safeguard them and allow for uninterrupted operations.

TABLE 2.7.2-1
TEMPORARY CONSTRUCTION IMPACT AREAS

Supplemental Dust Control Area/Measure	Dust Control Area Square Miles	Temporary Construction Impact Areas Square Miles	Total Temporary and Permanent Impact Areas
Shallow Flood	9.2	0.1	9.3
Moat & Row	3.5	0.1	3.6
Study Area	1.9	0.1	2
Channel Area	0.5	0	0.5
Total proposed project area	15.1	0.3	15.4

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 2.7.2-2, *Anticipated Construction Equipment and Work Crews*. 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 & 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, contingent on County ordinances that define acceptable timeframes for authorized construction activities. 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 2.7.2-2
ANTICIPATED CONSTRUCTION EQUIPMENT AND WORK CREWS

Construction Activity	Brief Description	Activity Length (Estimate)	Equipment Requirement per Crew	Crew Composition (Estimate)	Number 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
Shallow Flooding and pond berms	Construction of earth berms in Shallow Flooding area includes excavation, backfill with soil, grading, 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
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 2.7.2-1
ANTICIPATED CONSTRUCTION EQUIPMENT AND WORK CREWS, Continued

Construction Activity	Brief Description	Activity Length (Estimate)	Equipment Requirement per Crew	Crew Composition (Estimate)	Number 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
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
Shallow Flooding 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
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

TABLE 2.7.2-1
ANTICIPATED CONSTRUCTION EQUIPMENT AND WORK CREWS, Continued

Construction Activity	Brief Description	Activity Length (Estimate)	Equipment Requirement per Crew	Crew Composition (Estimate)	Number of Crews
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. Hazardous materials expected to be utilized during construction include fuels, oils, lubricants, and solvents associated with the construction. 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 as documented in the proposed project's Waste Discharge Permits with the Regional Water Quality Control Board. If such erosion is observed, LADWP would take immediate corrective action, including implementation of best management practices (BMPs). 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.

2.8 INTENDED USES OF THE SUBSEQUENT EIR

The District is the lead agency for the proposed project. The District and the LADWP are joint project applicants. The District Governing Board will consider certification of the Subsequent EIR and is authorized to render a decision on the proposed project.

Specific project elements may be subject to additional permits as described in Table 2.8-1, *Permit Requirements*.

TABLE 2.8-1
PERMIT REQUIREMENTS

Agency	Permit/Other Approvals	Process
Federal		
U.S. Army Corps of Engineers	Discharge of dredge or fill material into "waters of the U.S.," including jurisdictional wetlands, is subject to approval by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act.	The District shall submit the updated jurisdictional delineation to the U.S. Army Corps of Engineers prior to consideration of the Final EIR. The City of Los Angeles Department of Water and Power shall be required to review final plans and specifications with the U.S. Army Corps of Engineers to demonstrate that waters of the United States are being avoided or obtain authorization for the discharge of dredge or fill materials pursuant to a nationwide or individual permit.
U.S. Bureau of Land Management	Temporary and permanent right-of-way grants on federal lands.	The City would be required to submit an application for Transportation and Utility Systems and Facilities on Federal Lands (Form 299) Plan of Activity to implement dust control measures on lands controlled by the U.S. Bureau of Land Management.

TABLE 2.8-1
PERMIT REQUIREMENTS, Continued

Agency	Permit/Other Approvals	Process
State		
California State Lands Commission	Land-use lease and permit for use of state lands, including some state land currently leased by U.S. Borax.	The City would need to amend their existing California State Lands Lease. LADWP shall be required to pay for CSLC staff costs associated with preparing amendments to U.S. Borax's legal description.
California Department of Fish and Game	A Streambed Alteration Agreement must be obtained from the California Department of Fish and Game for all ground-disturbing activities within jurisdictional areas pursuant to Section 1600 of the State Fish and Game Code. The California Department of Fish and Game has interpreted their jurisdiction to extend to the historic shoreline of Owens Lake. The City of Los Angeles Department of Water and Power believes that the jurisdiction of the California Department of Fish and Game is limited to the Ordinary High Water Marks.	It shall be the responsibility of the City to reach an agreement with the California Department of Fish and Game concerning the extent of California Department of Fish and Game jurisdiction on the dry Owens Lake bed, and to obtain a Streambed Alteration Agreement pursuant to California Fish and Game Code, Section 1600 for all ground-disturbing activities within the jurisdiction of the California Department of Fish and Game.
California Department of Transportation	Right-of-way Encroachment Permit for access/power off of State Route 190 and Highway 395.	The City would need to submit an application for an Encroachment Permit for access/power off of State Route 190 and Highway 395.
Regional		
California Regional Water Quality Control Board	Section 401 Water Quality Certification and Waste Discharge Requirements/Monitoring Reporting Plan	The City would be required to submit a request for Water Quality Certification, Stormwater Pollution Prevention Plan.

2.9 RELATED PROJECTS

The District coordinated with all interested parties in the Owens Valley to identify closely related past, present, and reasonably foreseeable probable future projects that should be considered in the evaluation of cumulative impacts. In addition to authorized PM_{10} control measures at Owens Lake, the District solicited information regarding potential related projects from the Bureau of Land Management, California State Lands Commission, Inyo County Planning Department, and the LADWP. The three projects called out below are related projects that were evaluated in the cumulative impact analyses with the various environmental issues. The LADWP may seek to utilize other sources of water for dust control in the future such as groundwater from Inyo County. The source of water for this proposed project, analyzed in this EIR, is from the Los Angeles Aqueduct. However, utilization of water for dust control from sources other than the Los Angeles Aqueduct would require separate environmental review and is not covered in this analysis due to the uncertainty of use and lack of information regarding the locations of groundwater wells, conveyance, and amount of groundwater use by the LADWP for DCMs.

2003 SIP

The analysis of impacts to environmental resources resulting from construction, operation, and maintenance of an additional 15.1 square miles (9,664 acres) of DCMs in the 2008 SIP considers the cumulative effects of these measures when combined with the related 29.8 square miles (19,072 acres) of DCMs that were installed between 1999 and 2006 as provided in the 2003 SIP. The 2003 SIP anticipated the need for additional dust control areas and the analysis in this EIR tiers the previous 2003 SIP EIR as a Subsequent EIR. The analysis of cumulative impacts includes the consideration of the impacts to the areas not currently consisting of DCMs in regard to the existing DCMs.

Lower Owens River Project

The Lower Owens River Project (LORP) is a joint effort between LADWP and Inyo County, which proposes to implement a large-scale habitat restoration project in the Owens Valley north of Owens Lake and outside the project area. The project's main objective is to mitigate impacts related to groundwater pumping by LADWP from 1970 to 1990. The LORP's project elements include (1) releasing water to the Lower Owens River to enhance native and game fisheries and riparian habitats along 62 miles of the river, (2) providing water to the Owens River delta to maintain and enhance various wetland and aquatic habitats, (3) enhancing a 1,500-acre off-river area with seasonal flooding and land management to benefit wetlands and waterfowl, and (4) maintaining several off-river lakes and ponds. In addition, the project also includes the construction of a pump station to capture and recover some of the water released to the river as well as range improvements and modified grazing practices on leases in the LORP project area. The EIR/EIS prepared for this project identified six unmitigable significant impacts to the environment:[27]

- Water quality degradation and fish kills during initial releases to the river
- Possible reduction in existing flows to the delta that could adversely affect existing wetland habitats
- Degradation of brine pool transition and associated shorebird habitat due to

[27] City of Los Angeles Department of Water and Power and Inyo County Water Department. 23 June 2004. *Final Environmental Impact Report and Environmental Impact Statement, Lower Owens River Project, Inyo County, California*. Bishop, CA.

reduced flow to the delta

- Conversion of 2,873 acres of native upland habitats to wetlands
- Potential increase in mosquito populations along the river
- Potential increase in saltcedar (a nonnative weed)

U.S. Borax, Owens Lake Expansion Project/Conditional Use Permit #02-13/ Reclamation Plan #02-1

The U.S. Borax, Owens Lake Expansion Project/Conditional Use Permit #02-13/Reclamation Plan #02-1 project proposes to install a trona ore processing facility at Owens Lake.[28] The facility would consist of portable and mobile washing equipment located on the lake bed and a calcining and drying unit on the western shore. The project's main objective is to allow U.S. Borax's Boron, California, operations to meet its soda ash requirements without purchasing processed trona ore from the market. The EIR for this project identified evaluated impacts to 10 environmental resources:[29]

- Aesthetics
- Air quality
- Biological resources
- Hazards and hazardous materials
- Hydrology and water quality
- Land use and planning
- Noise
- Recreation
- Transportation and traffic
- Utilities and service systems

2.10 PROJECT ALTERNATIVES

During the development of the proposed project, the District and LADWP explored numerous strategies and alternatives that would achieve the primary goal of attainment of the PM_{10} NAAQS by December 31, 2010, and would also meet most of the other project objectives. Between 2001 and 2006, the District has worked continuously to conduct research, share data, and work cooperatively with the LADWP to identify a dust control strategy and DCM placement that would most effectively achieve the NAAQS. Concurrently with these efforts, the District has worked to modify the recommended DCMs to avoid impacts to environmental resources to the maximum extent feasible, particularly vegetated habitats, cultural resources, and mineral resources. As a result of these efforts, most of the environmental impacts of the proposed project were resolved. However, there remains some potential for conflicts between maintenance activities required in conjunction with Shallow Flooding and Moat & Row DCMs and the breeding population of the western snowy plover. The District and the LADWP have developed a number of biologically sensitive mitigation measures to reduce impacts to the breeding population to the maximum extent feasible. These measures would reduce all significant impacts to below threshold of significance

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[28] Inyo County Planning Department. January 2004. *Trona Processing Upgrade Project Environmental Impact Report*. State Clearinghouse No. 2003041127. Independence, CA.

[29] Inyo County Planning Department. January 2004. *Trona Processing Upgrade Project Environmental Impact Report*. State Clearinghouse No. 2003041127. Independence, CA.

levels except regarding impacts to air quality in terms of Green House Gas Emissions from the construction of the DCMs.

A variety of potential project alternatives were dropped from further consideration because they would not be capable of meeting most of the basic objectives of the project. Four alternatives, including the No Project Alternative required under CEQA, have been carried forward for detailed analysis in this Subsequent EIR (refer to Section 4.0 for a full discussion on alternatives). The alternatives carried forward for detailed analysis include the following:

- No Project Alternative
- Alternative 1, All Shallow Flooding
- Alternative 2, All Managed Vegetation
- Alternative 3, Gravel Application