

EXECUTIVE SUMMARY INTRODUCTION

This Executive Summary provides an overview of the Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Cadiz Groundwater Storage and Dry-Year Supply Program (Cadiz Project), a cooperative program between the Metropolitan Water District of Southern California (Metropolitan) and Cadiz Inc. located in the eastern Mojave Desert near Metropolitan's Colorado River Aqueduct (Figure ES-1). The Cadiz Project will use the groundwater basin underlying part of the Cadiz and Fenner valleys for the storage of Metropolitan water supplies from the Colorado River for later recovery and will provide for transfer of some indigenous groundwater to Metropolitan for use in dry years. The Cadiz Project components include a water conveyance facility, spreading basins, pumping plant, wellfield, power distribution facilities, and groundwater and air quality monitoring facilities. The EIR/EIS evaluates and documents the potential environmental impacts associated with four Cadiz Project Alternatives and the No Project Alternative.

Metropolitan is the California Environmental Quality Act (CEQA) lead agency for the Cadiz Project and is responsible for the environmental and technical studies conducted for this project and will be responsible for the design, construction, operation and maintenance of the facilities constructed for the selected project alternative. The United States Bureau of Land Management (BLM) is the federal lead agency for the preparation of the EIS in accordance with National Environmental Policy Act (NEPA). The National Park Service (NPS) and the U.S. Geological Survey (USGS) are cooperating agencies pursuant to NEPA. Because the Cadiz Project conveyance pipeline and electrical distribution system will cross federal lands administered by the BLM, the BLM must consider whether to: (1) amend the California Desert Conservation Area Plan (CDCA Plan) for an exception to the utility corridor element; and (2) issue a right-of-way grant for construction and operation of the project. Metropolitan and BLM have prepared this EIR/EIS and completed field studies and technical analyses in compliance with the applicable CEQA and NEPA regulations and guidelines.

The public has the opportunity to protest the BLM's proposed amendment to the CDCA Plan for an exception to the utility corridor element. Such protests must be filed during the 30-day period following publication of the Notice of Availability of the Final EIS by EPA in the Federal Register. The protest procedure is more fully described in Section 1.10.

PROJECT OVERVIEW

Formed pursuant to an enabling act of the California Legislature in 1928, Metropolitan is the primary supplier of supplemental water to approximately 17 million people in 240 cities and unincorporated areas in the six Southern California counties of San Bernardino, Riverside, San Diego, Orange, Los Angeles and Ventura. Metropolitan imports water from the Colorado River via its Colorado River Aqueduct and receives water from the Sacramento/San Joaquin Bay-Delta in northern California via the State Water Project's California Aqueduct. Metropolitan also operates an extensive system of storage facilities, water conveyance facilities and water treatment plants in Southern California. Metropolitan and its 26 member agencies are committed to effective water management programs including development and implementation of water conservation, groundwater management and water recycling.

As an element of these water management programs, the Cadiz Project is intended to meet projected dry-year water demand through 2020. The Cadiz Project will utilize the groundwater basin underlying the Cadiz and Fenner valleys for storage of part of Metropolitan's Colorado River

supplies, when available, for later recovery and use. To accomplish this, Colorado River water will be conveyed approximately 35 miles from Metropolitan's Colorado River Aqueduct to spreading basins in Fenner Gap, located between the Marble and Ship mountains, where the imported water will percolate into the groundwater basin. When needed, the stored water will be extracted by wells and returned to the Colorado River Aqueduct. In addition, indigenous groundwater could be transferred to Metropolitan during dry-year periods.

PURPOSE AND SCOPE OF THE EIR/EIS

The purpose of the EIR/EIS is to provide Metropolitan, BLM, other public agencies and the general public with a detailed project description and an analysis which fully evaluates the potential environmental impacts and mitigation measures for the proposed project. CEQA and NEPA specifically require that an EIR/EIS identify any potential adverse impacts. CEQA further requires identification of any significant adverse impacts and whether those impacts remain significant after mitigation. Detailed descriptions of impacts by specific topical category are provided in the EIR/EIS and are summarized later in this Executive Summary.

The EIS/EIR begins with a discussion of the need for the Cadiz Project, followed by a detailed discussion of the process used to screen potential projects and to formulate project alternatives. This is followed by a comprehensive description of the four project alternatives considered for detailed analysis. For each of these alternatives, a description of potential impacts including, but not limited to, the potential for growth inducement and cumulative impacts, and proposed mitigation measures is provided. This information is also provided later in Table ES-2.

In accordance with the requirements of CEQA and NEPA, Metropolitan and the BLM carried out a public information and participation program to ensure that public concerns have been fully addressed during the study of the Cadiz Project. In addition to mandated public involvement efforts, Metropolitan and the BLM conducted additional public scoping meetings, conducted in-depth informational briefings with interested organizations, agencies, and individuals and distributed informational materials and handouts. The scoping process ended in May 1999. Metropolitan and the BLM prepared a Draft EIR/EIS based on the input received and circulated this document for a 104-day public review and comment period that ended in March 2000. Many comments on the Draft EIR/EIS expressed concern of possible project impacts to groundwater resources and the potential for dust mobilization on the dry lakebeds. In response, Metropolitan and the BLM prepared a Supplement to the Draft EIR/EIS to fully address these concerns. The Supplement to the Draft EIR/EIS included a Groundwater Monitoring and Management Plan (Management Plan) designed to ensure that project operations will not result in adverse impacts to critical resources. The Supplement to the Draft EIR/EIS was circulated for an 80-day public review and comment period that ended in January 2001.

CHANGES TO THE PROJECT AND FINAL EIR/EIS IN RESPONSE TO PUBLIC COMMENTS

Numerous changes to the project have been incorporated, as summarized in the Final EIR/EIS, and have been made in response to comments on the Draft EIR/EIS and on the Supplement to the Draft EIR/EIS. The more significant of these include:

- Addition of Management Plan: Although identified as a mitigation measure in the Draft EIR/EIS, the Management Plan has since been fully incorporated as an element of the Cadiz

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Project to ensure that project operations will not result in any adverse impacts to critical resources.

- Finalization of the Structure of Management Plan Governance: For project operations, the roles and responsibilities of the project proponents and of agencies with jurisdiction over the project have been more clearly established. The BLM will have ultimate decision-making authority over enforcement of the provisions of the Management Plan.
- Continued Public Participation: Provisions have been added to provide for the continued participation of the public during project operations.
- Addition of Post-Operational Monitoring: Groundwater levels and groundwater quality will continue to be monitored for at least 10 years after project operations have ceased along with the obligation to mitigate any adverse impacts to critical resources.
- Clarification of Section 3 of the Draft EIR/EIS: The formulation and screening of potential projects, leading to the development of the four alternatives evaluated in detail in this Final EIR/EIS, is presented in a revised discussion in Section 3. In addition, a conveyance facility alternative which stays substantially in a designated utility corridor was considered. Selection of the preferred alternative has been moved to Section 11 in this Final EIR/EIS.

PROJECT NEED

As a part of Metropolitan's ongoing efforts to improve management of its water supplies, the Cadiz Project is proposed to meet part of the need for supplemental dry-year supply in Metropolitan's six-county service area shown on Figure ES-2. Based on population and demographic projections adopted by the Southern California Association of Governments and other regional planning agencies, dry-year demand is estimated to exceed dependable supply from all sources in 2020 by approximately 1,588,000 acre-feet, despite an aggressive water conservation program projected to save an additional 560,000 acre-feet per year. Metropolitan projects that approximately 870,000 acre-feet of this supply deficit can be met through currently identified programs in the Central Valley and/or in Metropolitan's service area. These programs include water and groundwater recycling and recovery, in-service area storage, Central Valley transfers and groundwater storage, and enhanced State Water Project programs.

To meet as much of the remaining dry-year supply deficit of 718,000 acre-feet as feasible on the Colorado River Aqueduct, Metropolitan has established a target of 594,000 acre-feet for Colorado River Aqueduct programs, including up to an estimated 424,000 acre-feet from a San Diego County Water Authority-Imperial Irrigation District transfer and a Metropolitan-San Diego County Water Authority exchange, lining of the Coachella and All-American canals, and the recently implemented Hayfield Valley Water Storage Program. The Cadiz Project is intended to provide up to 150,000 acre-feet per year, leaving a deficit of about 20,000 – 90,000 acre-feet in the Colorado River Resource Area. Even if all currently identified targets are reached in all resource areas, dry-year demand will still exceed dry-year supply by approximately 170,000 – 240,000 acre-feet in 2020, if the Cadiz Project is not implemented as shown in Table ES-1.

TABLE ES-1
COLORADO RIVER RESOURCE AREA DRY-YEAR NEED¹ (acre-feet)

Target for dry-year supply on the Colorado River Aqueduct	594,000
SDCWA-IID Transfer	130,000-200,000
All American and Coachella canals lining projects	74,000
Hayfield Valley Water Storage Program	150,000
Cadiz Groundwater Storage and Dry-Year Supply Program	150,000
Remaining Colorado River Resource Area Dry-Year Need²	20,000-90,000

¹The potential need for any one project may increase depending on actual yield realized from these proposed programs.

²Remaining need may be met by one or a combination of other potential projects under various stages of study.

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The Cadiz Project has the following objectives: (a) provide delivery capability to storage of up to 150,000 acre-feet of Colorado River water annually; (b) provide a storage capacity for up to 1.0 million acre-feet (maf) at any one time; (c) provide the maximum amount of indigenous groundwater for transfer consistent with the Management Plan; (d) provide recovery capability of stored or indigenous water at a rate of up to 150,000 acre-feet for delivery to the Metropolitan service area during dry years and (e) enhance water quality in the water delivery system. The accomplishment of these objectives will depend on the availability of Colorado River water for storage and the natural recharge of the groundwater basin, and will be governed by the Groundwater Monitoring and Management Plan (Management Plan). Consistent with Metropolitan's environmental policies, these objectives are to be achieved with acceptable levels of post-mitigation environmental impacts.

FORMULATION AND SCREENING OF POTENTIAL PROJECTS

Initially, 13 potential projects for meeting the dry-year supply deficit on the Colorado River Aqueduct were identified, primarily on the basis of numerous unsolicited proposals submitted to Metropolitan. These included ten groundwater storage and conjunctive-use projects, one transfer project, and two projects involving desalination of agricultural drainage water. These potential projects were evaluated and screened using the five criteria below:

1. Meet objectives for dry-year water storage and withdrawal;
2. Meet water quality objectives;
3. Be operational prior to 2005 - 2010;
4. Have acceptable levels of construction difficulty, and long-term maintenance (potential for subsidence, ground stability/ liquefaction effects, corrosion); and
5. Be feasible from an environmental perspective, with levels of potential environmental impacts that could be mitigated to acceptable levels.

Based on this analysis, the following projects were eliminated from further consideration, for the reasons outlined below:

- Arizona Banking Project: Proposal withdrawn by State of Arizona.
- Palen Valley Storage Project: Eliminated due to unacceptable environmental impacts to Joshua Tree National Park and desert tortoise, poor water quality and low storage potential.
- Pinto Valley Storage Project: Eliminated due to impacts to Joshua Tree National Park.
- Rice Valley Storage Project: Eliminated due to low storage capacity and poor water quality.
- Shavers Valley Storage Project: Eliminated due to low storage potential.
- Upper Chuckwalla Valley Storage Project: Eliminated due to impacts to Joshua Tree National Park and desert tortoise.
- Vidal Valley Storage Project: Eliminated due to low storage potential and poor water quality.
- Ward Valley Storage Project: Eliminated due to construction difficulties and uncertainty regarding storage potential and water quality.
- Alamo River Agricultural Drainage Desalination Project: Eliminated from short-term consideration due to unresolved environmental and technical issues.
- Whitewater River Agricultural Drainage Desalination Project: Eliminated from short-term consideration due to unresolved environmental and technical issues.

After eliminating these projects from further consideration due to technical and/or environmental issues, only the potential projects in the Hayfield Valley and the Cadiz Valley were found to meet all objectives with acceptable levels of impact. The Hayfield Groundwater Storage Project was evaluated in a separate CEQA document and is currently being implemented.

A combined Cadiz Groundwater Storage and Dry-Year Supply Project was then explored in detail. Feasible locations for project spreading basins and for connection to the Colorado River Aqueduct were developed. A spreading basin site was selected based on minimizing potential for adverse groundwater impacts and on minimizing environmental impacts by optimizing recharge rate per acre. Two potential connections to the Colorado River Aqueduct were identified (east and west of Iron Mountain) based on the need to minimize the distance (and associated impacts) between the Colorado River Aqueduct and the spreading basins, on the need to avoid highly corrosive soils at dry lake beds and on the need to avoid wilderness areas.

Seventeen possible pipeline and canal alignments were then evaluated. In response to comments, an additional project alternative which more closely follows existing utility corridors was considered but eliminated from further study because of extensive impacts to the desert tortoise, total length of the alignment and impacts associated with crossing Danby Dry Lake. Four feasible alignment alternatives were carried forward for detailed analysis in the Final EIR/EIS. These alignment alternatives were then formulated and studied in detail. A 500-foot wide corridor for each conveyance facility and power line access was defined. The location of spreading basins and wellfield was refined to avoid and minimize environmental effects. Power lines, pumping stations and other associated facilities were defined. Preliminary designs were formulated and the construction footprint for each alternative was defined, including permanent and temporary impact zones. These potential impact areas were then surveyed for a full range of environmental, cultural and social impacts as required by CEQA and NEPA. These alignment alternatives were refined as field data indicated ways to avoid and/or minimize impacts.

SUMMARY OF PROJECT DESCRIPTION AND KEY ISSUES

The Cadiz Project consists of five primary elements: project spreading basins in the Fenner Gap, water conveyance and power distribution facilities between the Colorado River Aqueduct and the spreading basins, pumping plants to pump water from the Colorado River Aqueduct through the water conveyance facility to the project spreading basins, a project wellfield in the Fenner Gap to extract water from the groundwater aquifer system and pump it back to the Colorado River Aqueduct, and groundwater basin and air quality monitoring and data gathering facilities located throughout the Cadiz and Fenner valleys. The Cadiz Project elements are generally shown on Figure ES-3.

The 390-acre spreading basins will be located to the south of the Burlington Northern and Santa Fe railroad lines, and northeast of the proposed wellfield. This location was selected to take advantage of hydrogeologic features and to avoid potential connection with highly saline soils underlying Bristol Dry Lake to the west and Cadiz Dry Lake to the south. Each spreading basin will range in size from about 10 to 15 acres. A total of 30 to 40 cells will be constructed. Individual cells will be about 400 feet wide and range from 1,700 to 2,100 feet long. It is the intent of the project spreading basin design to have balanced cut and fill over the entire basin area, which means that there will be no import or export of soil material in the construction of the spreading basins. Construction activities for the project spreading basins will include site preparation, clearing and grubbing, excavation, embankment or berm construction, utility preservation and/or relocation, pipe placement, backfill and the installation of gates, valves and appurtenances.

The project wellfield will be constructed in the Fenner Gap in the vicinity of the spreading basins to localize the recharge and extraction operations. It will consist of approximately 30 interconnected wells to recover from 200-250 cubic feet per second (cfs). The project wellfield will include three existing agricultural irrigation wells, which will be upgraded to meet the Cadiz Project requirements. Motors used to operate the wells will range from 1,000 to 1,250 horsepower, and will be electrically powered using power supplied through Metropolitan's existing Colorado River Aqueduct power transmission system. Most of the construction-related activities and installation will take place on the site of the wellfield facility. The only substantial off-site activities will be those associated with transporting construction materials and appurtenances, and process equipment to the site. Power will be supplied to the project wellfield via a 69kV overhead transmission line from the existing Iron Mountain Pumping Plant switchyard. Power to individual wells could be supplied overhead or underground. Power distribution facilities for the project wellfield will parallel the water conveyance facility between the Colorado River Aqueduct and the Fenner Gap area.

In addition to the project spreading basins and wellfield, several other elements are common to the four project-level alternatives. These include several staging areas for the temporary storage of equipment and materials during construction of the Cadiz Project. All pipelines will also be fitted with eight "blowoff" valves located at low points along the water conveyance facilities, generally where they cross a wash, to allow them to be drained for inspection and maintenance, and with access manholes for inspection. The wellfield will have extensive electronic monitoring equipment. The location and design of these appurtenant features will be determined during final design. Above ground power lines are anticipated for the length of each pipeline/canal water conveyance facility. Impacts associated with these features are addressed as part of the impact analysis for each conveyance facility.

Finally, a monitoring network containing a total of 24 different monitoring features will be included with any of the project alternatives as part of the Management Plan. These monitoring features include observation wells and well clusters, survey benchmarks, and weather and other climatological and air quality data stations. The technical team assembled to develop the Management Plan has specified the general location of the monitoring facilities proposed in the Management Plan. As the Management Plan is implemented, the technical team will define specific locations for all monitoring facilities.

Monitoring features described in the Management Plan will be installed within the general areas shown in Figure 4 of the Management Plan. Within these areas, specific locations will be selected that pose the least likelihood of creating adverse impacts. BLM or NPS, as appropriate, will review and consider for approval the location of individual monitoring features prior to installation. Pre-construction surveys required for installation of various elements of the Cadiz Project, such as the conveyance facilities, project wellfield, and spreading basins will also be conducted prior to installation of the monitoring features. These surveys will ensure that the appropriate mitigation measures for biological, cultural, and paleontological resources are implemented during construction in specific areas. Installation activities and periodic access to monitoring features located within the Mojave National Preserve will be approved by NPS prior to installation. No monitoring features will be located within designated wilderness areas. Periodic access to monitoring features required for long-term monitoring activities will be subject to all applicable mitigation measures identified in the Final EIR/EIS, including training of personnel for minimizing impacts to biological resources.

Each of the potential impacts described above is similar to impacts associated with the construction and operation of project facilities as identified throughout the Final EIR/EIS. As such,

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implementation of the Management Plan would be subject to the same mitigation measures as construction and operational activities associated with other elements of the Cadiz Project. Adherence to the mitigation measures identified in this Final EIR/EIS will minimize potential impacts associated with installation of Management Plan facilities.

Eastern Alternative (Proposed/Preferred Alternative)

The Eastern Alternative begins at the project spreading basins in the Fenner Gap area, approximately three miles north of unimproved Cadiz-Rice Road. The all-pipeline conveyance facility proceeds due south for three miles, then parallels Cadiz-Rice Road and the Arizona California Railroad Company (ARZC) rail lines in a southeasterly direction towards abandoned Chubbuck Station. Southeast of abandoned Chubbuck Station, the water conveyance facilities turn south, generally following the 820-foot contour for approximately three miles around the west edge of Danby Dry Lake. The pipeline then turns southeast, generally following the 820-foot contour, between the south side of Danby Dry Lake and along the Iron Mountains for approximately ten miles until crossing Metropolitan's power transmission right-of-way. The water conveyance facilities continue around the east side of the Iron Mountains where they connect to an unimproved road. The water conveyance facilities parallel the unimproved road, enter the Iron Mountain Pumping Plant site, and discharge into the existing Iron Mountain Pumping Plant forebay. The total length of the Eastern Alternative is approximately 34.6 miles.

Construction of the water conveyance facility will be conducted in segments and will include trench excavation, utility preservation and/or relocation, pipe placement, backfill, appurtenant construction and restoration along the entire pipeline route. The pipeline will be buried, with a minimum earth cover of three feet. Where the facilities cross drainages, the depth of cover might be up to ten feet, and scour protection for the pipeline will be provided. The rail line crossings will either be bore and jack or conventional tunnel with ribs and lagging or linear plate.

Throughout construction, the top four to six inches of topsoil will be removed from the trench areas and stockpiled. Vegetation that is cleared from the trenching areas will be mulched and set aside with the topsoil. At the completion of construction of each segment of the pipeline, the stockpiled topsoil and mulch will be re-spread over the re-contoured permanent right-of-way. The surface will be re-contoured to preserve the original runoff pattern. Topsoil and mulch will be stockpiled for a maximum of three months prior to re-spreading.

A temporary construction easement, 200 feet wide, will generally be required for construction of the water conveyance facilities, but in the vicinity of Chubbuck Station, a sensitive historic resource, the construction and permanent right-of-way will be narrowed to a maximum of 40 feet for approximately 1.25 miles adjacent to this site, in consultation with the project archaeologist. Otherwise, permanent right-of-way for facility inspection and maintenance will be 80 feet wide. The Cadiz Pumping Plant will be built adjacent to the existing Iron Mountain Pumping Plant on land owned by Metropolitan. It will be designed and constructed in a style compatible with the existing architecture of the Iron Mountain Pumping Plant complex.

The Eastern Alternative is estimated to require 503 acres of temporary construction easement and 336 acres of permanent right-of-way. The total cost of the Eastern Alternative is estimated at \$150 million.

Western Alternative

The Western Alternative would begin at a new pumping station on about eight acres at the West Portal of the Iron Mountain Tunnel. The pipeline would run north along the eastern edge of the Cadiz Valley and pass between the Kilbeck Hills and the Cadiz Dunes Wilderness Area. The pipeline would then follow the Eastern Alternative water conveyance facility to the spreading basins. New overhead power lines would be required from the Iron Mountain Pumping Plant to the new pumping plant, a distance of approximately eight miles. Right-of-way requirements (width of permanent and temporary construction easements) would be similar to those of the Eastern Alternative, with a total of 484 acres of temporary easements required and 323 acres of permanent rights-of-way for construction, operation, and maintenance.

Combination Alternative

The Combination Alternative follows the Western Alternative north from the new pumping plant until it reaches the south end of the Kilbeck Hills, where it turns east to skirt around the eastern boundary of these hills and thereby avoids the Cadiz Dunes Wilderness Area. The Combination Alternative joins the Eastern Alternative water conveyance facility at Chubbuck Station. The Combination Alternative would also require new power lines from the Iron Mountain Pumping Plant to the new pumping plant. Right-of-way requirements (width of temporary and permanent construction areas) would be similar to those of the Eastern Alternative, with a total of 495 acres of temporary easements required and 330 acres of permanent rights-of-way for construction, operation, and maintenance.

Eastern/Canal Alternative

This alternative follows the Eastern Alternative but would substitute an approximately eight-mile canal section for pipeline where the alternative extends southwest of Danby Dry Lake to a point at the south end of the Kilbeck Hills. Pumping stations would be required at both ends of this canal segment. The Eastern/Canal Alternative is otherwise identical to the Eastern Alternative, with a total of 525 acres of temporary easements required and 350 acres of permanent rights-of-way for construction, operation, and maintenance.

OPERATIONS AND MAINTENANCE

Project Spreading Basins

The project spreading basins will consist of multiple cells into which Colorado River water could be selectively discharged. As percolation rates in a given cell decline, water will be discharged to new spreading basin cells. Routine maintenance will include periodic cleaning of fine-grained sediment from the bottom of the spreading basins. All inspection and maintenance activities will be performed within the permanent Cadiz Project right-of-way on an easement obtained from Cadiz Inc.

Project Wellfield Facilities

The project wellfield facilities will be controlled and monitored remotely to maintain the water delivery rate at the Colorado River Aqueduct consistent with desired parameters. Routine inspection will be performed weekly and/or monthly. All inspection and maintenance activities will be performed within the permanent Cadiz Project right-of-way on an easement obtained from Cadiz Inc.

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Water Conveyance Facility

Routine maintenance will be performed weekly and will consist of two maintenance personnel driving the right-of-way to inspect the above ground facilities. Approximately every five years, the pipeline segments will be drained and maintenance personnel will enter the pipeline and perform an inspection of the underground facilities. All appropriate safety procedures for access and work in a confined space will be followed. If the Eastern/Canal Alternative were constructed, the canal segments would be drained on an annual basis for inspection and cleaning. All inspection and maintenance activities will be performed within the Cadiz Project grant of right-of-way provided by BLM.

ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

Table ES-2 summarizes the potential environmental impacts under each of the Cadiz Project alternatives, mitigation measures to avoid or substantially reduce significant adverse impacts and, in accordance with CEQA regulations, the level of significance of the impacts after mitigation. For many of the environmental parameters shown in this table, mitigation included in the Cadiz Project alternatives will avoid or substantially reduce potentially significant adverse project impacts to below a level of significance as defined under CEQA. For other environmental parameters, as described in the following sections, the Cadiz Project alternatives will result in significant adverse impacts, which cannot be avoided or mitigated to below a level of significance as defined under CEQA.

This Final EIR/EIS also provides a qualitative discussion of the types of impacts that could occur as a result of implementation of the Management Plan. Such impacts are related to the drilling of new monitoring wells at specific locations, utilization of existing wells for monitoring purposes, placement of other types of monitoring equipment within the potentially affected region, and visiting these facilities in order to collect data and to provide for maintenance of them.

**TABLE ES-2
SUMMARY OF IMPACTS,
MITIGATION MEASURES AND UNAVOIDABLE ADVERSE IMPACTS**

Resource	Impacts	Mitigation Measures	Unavoidable Adverse Impacts After Mitigation
Eastern Alternative			
Aesthetics	Construction of the Eastern Alternative could result in changes of views in the project area from undisturbed/agriculture to disturbed areas that could take a substantial period of time before the new vegetation is mature enough to be indistinguishable from the surrounding landscape. Some of these changes would be visible to viewers in wilderness areas near the Cadiz Project area. New night lighting would be introduced at the project wellfield, substations and pumping plants.	Mitigation measures AS-2 and AS-3 (lighting) address potential impacts associated with night lighting under the Cadiz Project. Mitigation measure AS-1 (pumping plant design) addresses the use of earth-toned materials for these facilities.	None.
Agriculture	Loss of less than six acres of agricultural land for permanent project easements. No impacts related to Prime Farmland, Unique Farmland or Farmland of Statewide Importance; General Plan land use designations and Williamson Act Contracts. Minor impacts during construction to Cadiz Inc. agricultural operation. Therefore, impacts of the Eastern Alternative related to agriculture would not be significant.	No mitigation is necessary.	None.
Air Quality	During construction, the Eastern Alternative would generate air emissions in excess of existing levels of non-attainment pollutants (NO _x , VOC and PM ₁₀).	Mitigation measures AQ-1 (minimize exposed soils), AQ-2 (disposal of excavated materials), AQ-3 (watering of the site and construction equipment), AQ-4 (dust control), AQ-5 (use of non-toxic soil stabilizers), AQ-6 (maintenance of construction equipment) and AQ-7 (rideshare and transit incentives) address short-term air quality emissions during construction of the Cadiz Project.	After implementation of mitigation measures AQ-1 through AQ-7, the short-term construction air quality impacts would contribute to the continued non-attainment for these pollutants. This would be a significant unavoidable adverse impact of the Cadiz Project that would occur during construction only.

**TABLE ES-2
SUMMARY OF IMPACTS,
MITIGATION MEASURES AND UNAVOIDABLE ADVERSE IMPACTS (Continued)**

Resource	Impacts	Mitigation Measures	Unavoidable Adverse Impacts After Mitigation
Air Quality (cont'd.)	The Eastern Alternative would not result in significant adverse air quality impacts in the long-term.	Mitigation measures AQ-8 (watering) and AQ-9 (soil binders) address PM ₁₀ emissions during spreading basin maintenance.	None.
Biological Resources	<p>The Eastern Alternative would have the potential to remove native vegetation and wildlife habitat, to adversely impact adjacent wildlife habitat, to impact the threatened desert tortoise and to interfere with movement of bighorn sheep.</p> <p>The Eastern Alternative would temporarily disturb 634 acres and permanently disturb 465.2 acres of Mojave creosote scrub; would temporarily disturb 148.7 acres and permanently disturb 16.5 acres of desert dunes/sand fields; and would temporarily disturb 11.5 acres and permanently disturb 2.2 acres of Mojave wash scrub.</p>	Mitigation measures B-1 through B-5 (native plant communities and wildlife habitat), B-6 (burrowing owl), B-7 (American badger and desert kit fox) and B-8 through B-34 (desert tortoise) address short and long-term impacts on native plant communities, wildlife habitat and wildlife during construction and operation of the Cadiz Project.	None.
Cultural Resources	The Eastern Alternative could affect cultural resources by destroying or altering the resources and/or their environments in such a way that their significant qualities would be diminished. There are no previously documented sites anticipated to be impacted by the Eastern Alternative.	Mitigation measures CR-2 (Buried Site Treatment Plan), CR-3 (monitoring during construction) and CR-4 (post-construction report) address potential impacts of the construction of the Cadiz Project on cultural resources.	None.
Energy and Mineral Resources	The Eastern Alternative would have the potential to interfere with the future recovery of economic mineral deposits but this would not be considered significant because of the limited area and prospective classification of most mineral resources in the Cadiz Project area. Construction of the Eastern Alternative could result in temporary access impacts or restriction to mineral resources.	Mitigation measure E-1 (access for mineral extraction operations) addresses potential construction-related impacts of the Cadiz Project on access to mineral extraction operations.	None.

**TABLE ES-2
SUMMARY OF IMPACTS,
MITIGATION MEASURES AND UNAVOIDABLE ADVERSE IMPACTS (Continued)**

Resource	Impacts	Mitigation Measures	Unavoidable Adverse Impacts After Mitigation
Energy and Mineral Resources (cont'd.)	The construction and operation of the Eastern Alternative would require the use of energy and some mineral resources. This demand would be within available resources in the region and would not be significant.	No mitigation is necessary.	None.
Environmental Justice	No disadvantaged populations, households or businesses are within the proposed construction zone of the Eastern Alternative, and none are expected to be in the future. Therefore, the Eastern Alternative would not result in adverse impacts related to environmental justice.	No mitigation is necessary.	None.
Hazardous Materials	<p>The Eastern Alternative would have the potential to unearth unexploded military ordnance during construction.</p> <p>During construction, there would be potential for the accidental release of fuels, oils and lubricants and for the required use of explosives during construction.</p>	<p>Mitigation measures HM-1 through HM-3 (ordnance) address impacts related to discovery of unexploded ordnance prior to and during construction of the Cadiz Project.</p> <p>The use, handling, storage, transport and disposal of hazardous materials during construction and operation of the Cadiz Project would be conducted consistent with existing federal, state and local regulations. Mitigation measures HM-4 (temporary fuel storage areas), HM-5 (oily water/residues) and HM-6 (hazardous wastes found during construction)</p>	<p>Measures HM-1 to HM-3 would not reduce impacts to below a level of significance related to the potential to unearth unexploded ordnance. Because survey and clearance techniques cannot absolutely remove this hazard, a potential significant adverse impact would remain after mitigation related to risks associated with unexploded ordnance.</p> <p>None.</p>

**TABLE ES-2
SUMMARY OF IMPACTS,
MITIGATION MEASURES AND UNAVOIDABLE ADVERSE IMPACTS (Continued)**

Resource	Impacts	Mitigation Measures	Unavoidable Adverse Impacts After Mitigation
Hazardous Materials (cont'd.)	There would be potential for temporary flooding in the event of catastrophic failure or rupture of the water conveyance facility.	address additional hazardous materials impacts during construction of the Cadiz Project. Mitigation measure HM-7 (design of the water conveyance facility) addresses potential impacts associated with failure of the pipeline.	None.
Indian Trust Assets	There are no Indian Trust Assets (ITAs) in the Cadiz Project area. Therefore, there would be no impacts on ITAs.	No mitigation is necessary.	None.
Land Use, Planning and Policies	The Eastern Alternative would require amendment of the California Desert Conservation Area (CDCA) Plan to allow an exception to the Energy Production and Utility Corridor Element for the water conveyance and power distribution facilities. Potential land use incompatibility would not be significant due to the general absence of existing sensitive uses in the Cadiz Project vicinity and the low level of development under the Cadiz Project. Incompatibility with the CDCA Plan would be potentially significant, if the CDCA Plan were not amended. Temporary delays on Cadiz-Rice Road during construction (refer to Transportation later in this table).	Because amendment to allow an exception of the Energy Production and Utility Corridor of the CDCA Plan is proposed as part of the Cadiz Project, no mitigation is necessary. Refer to Transportation.	None. None.
Noise	The Eastern Alternative would have the potential to generate short-term noise impacts during construction including short-term noise impacts on visitors to wilderness areas in the Cadiz Project area and short-term impacts associated with blasting.	Mitigation measures N-1 (construction equipment noise muffling) and N-2 (noise monitoring during blasting) address short-term noise impacts during construction of the Cadiz Project.	None.

**TABLE ES-2
SUMMARY OF IMPACTS,
MITIGATION MEASURES AND UNAVOIDABLE ADVERSE IMPACTS (Continued)**

Resource	Impacts	Mitigation Measures	Unavoidable Adverse Impacts After Mitigation
Noise (cont'd.)	Construction of the Eastern Alternative would not result in adverse noise impacts related to surface transportation, trains, or exposure of construction workers to noise and aircraft. Operation of the Eastern Alternative would not result in adverse noise impacts related to facility operations, raven control at the spreading basins and aircraft.	No mitigation is necessary.	None.
Paleontological Resources	The Eastern Alternative could affect paleontological resources by destroying or altering the resources and/or their environments in such a way that their significant quantities would be diminished.	Mitigation measures P-1 (document previously recorded fossil sites), P-2 (monitoring during construction), P-3 (salvage of fossils unearthed during construction), P-4 (collection of soil samples), P-5 (processing of fossils and soil samples) and P-6 (cost of paleontological resources program) address potential construction impacts of the Cadiz Project on paleontological resources.	Mitigation measures P-1 to P-6 would not reduce construction impacts of the Cadiz Project related to paleontological resources to below a level of significance.
Public Services	<p>During construction, the Eastern Alternative may result in slightly increased demand for police, fire and emergency medical services. Open trenches and construction areas could temporarily block access in the Cadiz Project area for emergency service providers.</p> <p>Operation of the Eastern Alternative would not result in adverse impacts related to police, fire and emergency medical services. Construction and operation of the Eastern Alternative would not result in adverse impacts related to schools and libraries.</p>	<p>Mitigation measures PS-1 (coordination with the San Bernardino County Fire Department), PS-2 (coordination with public service providers) and PS-3 (use of warnings/barriers at open trenches and active construction areas) address potential short-term impacts during construction of the Cadiz Project on emergency service providers.</p> <p>No mitigation is necessary.</p>	<p>None.</p> <p>None.</p>
Socioeconomics	Due to the temporary nature of impacts during project construction and the negligible impacts during operations and maintenance, the impacts of	No mitigation is necessary.	None.

**TABLE ES-2
SUMMARY OF IMPACTS,
MITIGATION MEASURES AND UNAVOIDABLE ADVERSE IMPACTS (Continued)**

Resource	Impacts	Mitigation Measures	Unavoidable Adverse Impacts After Mitigation
Socioeconomics (cont'd.)	the Eastern Alternative related to socioeconomics would not be significant.		
Topography, Geology, and Soils and Seismicity	The Cadiz Project area is composed of gently sloping, broad alluvial valleys and small hills. Substantial topographic alterations would not be required. This impact would not be significant.	No mitigation is necessary.	None.
	The Cadiz Project area is not subject to landslides, sand flow, tsunami/seiche, percolation of waste materials and volcanic hazards. Therefore, the Cadiz Project would not be subject to impacts related to these types of geologic hazards. The Cadiz Project would not result in the construction of substantial impervious surfaces.	No mitigation is necessary.	None.
	The Eastern Alternative would have the potential to create or expose people and project facilities to unstable soil conditions, including liquefaction, slope and foundation instability, erosion/sedimentation, land surface subsidence and hydrocompaction. These impacts would be potentially significant. The Eastern Alternative facilities would be exposed to regional seismic hazards throughout the life of the project.	Mitigation measures G-2 (liquefaction), G-3 (slope and foundation instability) and G-4 (erosion, sedimentation and flooding) address Cadiz Project impacts related to soil. Mitigation measures G-1 (seismicity) addresses Cadiz Project impacts related to faults and seismicity.	None.
Transportation	During construction, the Eastern Alternative would have the potential to cause delays to other users on Cadiz-Rice Road and could potentially interfere with movement of emergency vehicles.	Mitigation measures T-1 (coordination with local jurisdictions), T-2 (coordination with emergency service providers), T-3 (traffic assistance/controls during construction) and T-4 (increased surface transportation capacity on Cadiz-Rice Road) address short-term surface transportation impacts during construction of the Cadiz Project.	None.

**TABLE ES-2
SUMMARY OF IMPACTS,
MITIGATION MEASURES AND UNAVOIDABLE ADVERSE IMPACTS (Continued)**

Resource	Impacts	Mitigation Measures	Unavoidable Adverse Impacts After Mitigation
Transportation (cont'd.)	<p>Operation of the Eastern Alternative would not result in adverse impacts related to surface transportation delays or emergency access.</p> <p>The Eastern Alternative would not result in adverse impacts related to rail and air transportation during construction or operation.</p>	<p>No mitigation is necessary.</p> <p>No mitigation is necessary.</p>	<p>None.</p> <p>None.</p>
Utilities and Service Systems	<p>Construction of the Eastern Alternative would result in crossings of existing utility facilities and, therefore, could result in accidental damage to these lines during construction.</p> <p>Construction and operation of the Eastern Alternative would result in a slight increase in the demand for telephone, water, storm water, electricity and solid waste services in the area. These impacts would be within the capacity of existing services and facilities and, therefore, would not be significant.</p> <p>Construction of the Eastern Alternative would result in crossings of existing crude oil pipelines.</p>	<p>Mitigation measures USS-2 (utility crossings) and USS-3 (accidental damage) address potential impacts during construction associated with Cadiz Project crossings of existing utilities and accidental damage to existing utilities during construction, respectively.</p> <p>No mitigation is necessary.</p> <p>Mitigation measure USS-1 (pipeline crossings) addresses potential short-term impacts during construction of the Cadiz Project associated with crossings of existing crude oil lines.</p>	<p>None.</p> <p>None.</p> <p>None.</p>
Water Resources	Surface water would be affected primarily during construction of project spreading basins, water conveyance and power distribution facilities, appurtenances and the wellfield. The Eastern	Mitigation is provided by existing regulations (State Fish and Game Code Section 1601). No additional mitigation is necessary.	None.

**TABLE ES-2
SUMMARY OF IMPACTS,
MITIGATION MEASURES AND UNAVOIDABLE ADVERSE IMPACTS (Continued)**

Resource	Impacts	Mitigation Measures	Unavoidable Adverse Impacts After Mitigation
Water Resources (cont'd.)	<p>Alternative could introduce sediment and contaminants into surface waters. However, due to the general lack of surface water in the region, ability to control erosion and sedimentation, existing regulations on the use of potential contaminants and the ability to clean up accidental spills, combined with the short-term construction schedule, these impacts would not be significant.</p>		
	<p>Water quantity impacts would include potentially adverse changes in the volume and location of surface water flow. These impacts would be created by construction of project facilities and would generally continue through the term of the Cadiz Project. The Eastern Alternative would create small impermeable areas at the well heads and pumping plants. The spreading basins would be earthen and would not change surface water characteristics appreciably.</p>	No mitigation is necessary.	None.
	<p>Construction of the spreading basins would require diversion of surface water flows. Diverted flows would maintain existing volumes and return water to their existing paths downstream of project facilities. Consequently, the Eastern Alternative would not be anticipated to have a demonstrable adverse impact on surface water quantity and would have only minor adverse impacts due to the relocation of surface water flow.</p>	No mitigation is necessary.	None.
	<p>Groundwater quantity impacts would include reduction in flow or otherwise making groundwater</p>	The Groundwater Monitoring and Management Plan (identified as mitigation measure WR-1 in the	None.

**TABLE ES-2
SUMMARY OF IMPACTS,
MITIGATION MEASURES AND UNAVOIDABLE ADVERSE IMPACTS (Continued)**

Resource	Impacts	Mitigation Measures	Unavoidable Adverse Impacts After Mitigation
Water Resources (cont'd.)	<p>unavailable for existing beneficial uses due to groundwater elevation changes. The groundwater levels and volumes would be managed through Project operation. As required in Groundwater Monitoring and Management Plan (WR-1), groundwater elevations would be monitored and project operations adjusted to avoid significant adverse impacts.</p> <p>Groundwater quality impacts would include the introduction of undesirable constituents from Colorado River water into the groundwater aquifer system and the introduction of undesirable constituents from the indigenous groundwater into the Colorado River Aqueduct. Project operations would transfer undesirable constituents, however, such transfer would not cause exceedance of any drinking water standards. Therefore, this impact would be adverse but less than significant.</p>	<p>Draft EIR/EIS) addresses Cadiz Project impacts related to ground structure instability (subsidence, hydrocompaction and liquefaction) and water quality (changes in groundwater quality, aquifer characteristics and movement of the saline/fresh water interface).</p> <p>The Groundwater Monitoring and Management Plan (identified as mitigation measure WR-1 in the Draft EIR/EIS) addresses Cadiz Project impacts related to ground structure instability (subsidence, hydrocompaction and liquefaction) and water quality (changes in groundwater quality, aquifer characteristics and movement of the saline/fresh water interface).</p>	None.
Wilderness/Recreation	<p>Construction of the Eastern Alternative could result in short-term adverse impacts related to disruption of the Johnson Valley to Parker Corridor, views from adjacent wilderness areas and noise levels in adjacent wilderness areas.</p> <p>Operation of the Eastern Alternative would not result in adverse impacts on wilderness/recreation resources.</p>	<p>Mitigation measures REC-1 (construction scheduling near the Johnson Valley to Parker Corridor), AS-2 (Aesthetics), N-1 (noise) and N-2 (noise) address potential short-term adverse impacts on wilderness/recreation resources during construction of the Cadiz Project.</p> <p>No mitigation is necessary.</p>	None. None.

**TABLE ES-2
SUMMARY OF IMPACTS,
MITIGATION MEASURES AND UNAVOIDABLE ADVERSE IMPACTS (Continued)**

Resource	Impacts	Mitigation Measures	Unavoidable Adverse Impacts After Mitigation
Western Alternative			
Aesthetics	Construction of the Western Alternative could result in changes of views in the project area from undisturbed/agriculture to disturbed areas that could take a substantial period of time before the new vegetation is mature enough to be indistinguishable from the surrounding landscape. Some of these changes would be visible to viewers in wilderness areas near the Cadiz Project area. New night lighting would be introduced at the project wellfield, substations and pumping plants.	Mitigation measures AS-2 and AS-3 (lighting) address potential impacts associated with night lighting under the Cadiz Project. Mitigation measure AS-1 (pumping plant design) addresses the use of earth-toned materials for these facilities.	None.
Agriculture	The impacts of the Western Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Air Quality	The impacts of the Western Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Biological Resources	The Western Alternative would have the potential to remove native vegetation and wildlife habitat, to adversely impact adjacent wildlife habitat, to impact the threatened desert tortoise and to interfere with movement of bighorn sheep. The Western Alternative would temporarily disturb 650.7 acres of Mojave creosote scrub and permanently disturb 492.8 acres; would temporarily disturb 169.8 acres of desert dunes/sand fields and permanently disturb 18.9 acres; and would temporarily disturb 12.3 acres of Mojave wash scrub and permanently disturb 2.7 acres.	Mitigation measures B-1 through B-5 (native plant communities and wildlife habitat), B-6 (burrowing owl), B-7 (American badger and desert kit fox) and B-8 through B-34 (desert tortoise) address short and long-term impacts on native plant communities, wildlife habitat and wildlife during construction and operation of the Cadiz Project. See above.	None. None.

**TABLE ES-2
SUMMARY OF IMPACTS,
MITIGATION MEASURES AND UNAVOIDABLE ADVERSE IMPACTS (Continued)**

Resource	Impacts	Mitigation Measures	Unavoidable Adverse Impacts After Mitigation
Cultural Resources	The impacts of the Western Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Energy and Mineral Resources	The impacts of the Western Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Environmental Justice	The impacts of the Western Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Hazards and Hazardous Materials	The impacts of the Western Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Indian Trust Assets	The impacts of the Western Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Land Use, Planning and Policies	The impacts of the Western Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Noise	The impacts of the Western Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Paleontological Resources	The impacts of the Western Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Public Services	The impacts of the Western Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Socioeconomics	The impacts of the Western Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Topography, Geology, Soils and Seismicity	The impacts of the Western Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Transportation	The impacts of the Western Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Utilities and Service Systems	The impacts of the Western Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Water Resources	The impacts of the Western Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Wilderness/Recreation	The impacts of the Western Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.

**TABLE ES-2
SUMMARY OF IMPACTS,
MITIGATION MEASURES AND UNAVOIDABLE ADVERSE IMPACTS (Continued)**

Resource	Impacts	Mitigation Measures	Unavoidable Adverse Impacts After Mitigation
Combination Alternative			
Aesthetics	Construction of the Combination Alternative could result in changes of views in the project area from undisturbed/agriculture to disturbed areas that could take a substantial period of time before the new vegetation is mature enough to be indistinguishable from the surrounding landscape. Some of these changes would be visible to viewers in wilderness areas near the Cadiz Project area. New night lighting will be introduced at the project wellfield, substations and pumping plants.	Mitigation measures AS-2 and AS-3 (lighting) address potential impacts associated with night lighting under the Cadiz Project. Mitigation measure AS-1 (pumping plant design) addresses the use of earth-toned materials for these facilities.	None.
Agriculture	The impacts of the Combination Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Air Quality	The impacts of the Combination Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Biological Resources	The Combination Alternative would have the potential to remove native vegetation and wildlife habitat, to adversely impact adjacent wildlife habitat, to impact the threatened desert tortoise and to interfere with movement of bighorn sheep. The Combination Alternative would temporarily disturb 883.7 acres of Mojave creosote scrub and permanently disturb 518.7 acres; would temporarily disturb 177.8 acres of desert dunes/sand fields and permanently disturb 19.8 acres; and would temporarily disturb 13.2 acres of Mojave wash scrub and permanently disturb 2.8 acres.	Mitigation measures B-1 through B-5 (native plant communities and wildlife habitat), B-6 (burrowing owl), B-7 (American badger and desert kit fox) and B-8 through B-34 (desert tortoise) address short and long-term impacts on native plant communities, wildlife habitat and wildlife during construction and operation of the Cadiz Project.	None.

**TABLE ES-2
SUMMARY OF IMPACTS,
MITIGATION MEASURES AND UNAVOIDABLE ADVERSE IMPACTS (Continued)**

Resource	Impacts	Mitigation Measures	Unavoidable Adverse Impacts After Mitigation
Cultural Resources	<p>The Combination Alternative could affect cultural resources by destroying or altering the resources and/or their environments in such a way that their significant qualities would be diminished. There are no previously documented sites anticipated to be impacted by the Cadiz Project.</p> <p>Construction of the Combination Alternative could adversely affect one previously documented cultural resources site. (AE-CAD-7H)</p>	<p>Mitigation measure CR-2 (Burned Site Treatment Plan) CR-3 (monitoring during construction) and CR-4 (post-construction report) address potential impacts of the construction of the Cadiz Project on cultural resources.</p> <p>Mitigation measures CR-1 (Site AE-CAD-7H) addresses potential adverse impacts during construction of the Combination Alternative on cultural resources.</p>	None.
Energy and Mineral Resources	The impacts of the Combination Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Environmental Justice	The impacts of the Combination Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Hazards and Hazardous Materials	The impacts of the Combination Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Indian Trust Assets	The impacts of the Combination Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Land Use, Planning and Policies	The impacts of the Combination Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Noise	The impacts of the Combination Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Paleontological Resources	The impacts of the Combination Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Public Services	The impacts of the Combination Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Socioeconomics	The impacts of the Combination Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Topography, Geology, Soils and Seismicity	The impacts of the Combination Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.

**TABLE ES-2
SUMMARY OF IMPACTS,
MITIGATION MEASURES AND UNAVOIDABLE ADVERSE IMPACTS (Continued)**

Resource	Impacts	Mitigation Measures	Unavoidable Adverse Impacts After Mitigation
Transportation	The impacts of the Combination Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Utilities and Service Systems	The impacts of the Combination Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Water Resources	The impacts of the Combination Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Wilderness/Recreation	The impacts of the Combination Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Eastern/Canal Alternative			
Aesthetics	Construction of the Eastern/Canal Alternative could result in changes of views in the project area from undisturbed/agriculture to disturbed areas that could take a substantial period of time before the new vegetation is mature enough to be indistinguishable from the surrounding landscape. Some of these changes would be visible to viewers in wilderness areas near the Cadiz Project area. New night lighting will be introduced at the project wellfield, substations and pumping plants.	Mitigation measures AS-2 and AS-3 (lighting) address potential impacts associated with night lighting under the Cadiz Project. Mitigation measure AS-1 (pumping plant design) addresses the use of earth-toned materials for these facilities.	None.
Agriculture	The impacts of the Eastern/Canal Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Air Quality	The impacts of the Eastern/Canal Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Biological Resources	The Eastern/Canal Alternative would have the potential to remove native vegetation and wildlife habitat, to adversely impact adjacent wildlife habitat, to impact the threatened desert tortoise and to interfere with movement of bighorn sheep.	Mitigation measures B-1 through B-5 (native plant communities and wildlife habitat), B-6 (burrowing owl), B-7 (American badger and desert kit fox) and B-8 through B-34 (desert tortoise) address short and long-term impacts on native plant communities, wildlife habitat and wildlife during construction and operation of the Cadiz Project.	None.

**TABLE ES-2
SUMMARY OF IMPACTS,
MITIGATION MEASURES AND UNAVOIDABLE ADVERSE IMPACTS (Continued)**

Resource	Impacts	Mitigation Measures	Unavoidable Adverse Impacts After Mitigation
Biological Resources (cont'd.)	The Eastern/Canal Alternative would temporarily disturb 595.9 acres of Mojave creosote scrub and permanently disturb 505.0 acres; would temporarily disturb 130.0 acres of desert dunes/sand fields and permanently disturb 35.2 acres; and would temporarily disturb 11.0 acres of Mojave wash scrub and permanently disturb 2.2 acres.		
Cultural Resources	The impacts of the Eastern/Canal Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	None.
Energy and Mineral Resources	The impacts of the Eastern/Canal Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Environmental Justice	The impacts of the Eastern/Canal Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Hazards and Hazardous Materials	The impacts of the Eastern/Canal Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Indian Trust Assets	The impacts of the Eastern/Canal Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Land Use, Planning and Policies	The impacts of the Eastern/Canal Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Noise	The impacts of the Eastern/Canal Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Paleontological Resources	The impacts of the Eastern/Canal Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Public Services	The impacts of the Eastern/Canal Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Socioeconomics	The impacts of the Eastern/Canal Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Topography, Geology, Soils and Seismicity	The impacts of the Eastern/Canal Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Transportation	The impacts of the Eastern/Canal Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.

**TABLE ES-2
SUMMARY OF IMPACTS,
MITIGATION MEASURES AND UNAVOIDABLE ADVERSE IMPACTS (Continued)**

Resource	Impacts	Mitigation Measures	Unavoidable Adverse Impacts After Mitigation
Utilities and Service Systems	The impacts of the Eastern/Canal Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Water Resources	The impacts of the Eastern/Canal Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.
Wilderness/Recreation	The impacts of the Eastern/Canal Alternative would be the same as under the Eastern Alternative.	Refer to the Eastern Alternative.	Refer to the Eastern Alternative.

MITIGATION MONITORING PROGRAM

Pursuant to the California Public Resources Code (Section 21081.6) and State Assembly Bill 3180, a Mitigation Monitoring Plan has been developed to ensure the implementation of the mitigation measures identified in this Final EIR/EIS. The Metropolitan Board of Directors will adopt the Mitigation Monitoring Plan in conjunction with the findings required under CEQA, at the time the Board considers certification of the Final EIR. The Mitigation Monitoring Plan has been completed in conjunction with this Final EIR/EIS and includes the following elements:

- All the mitigation measures identified in Section 5 of the EIR/EIS as well as design features or elements of the project that have been included specifically to avoid impacts.
- Any revisions to the mitigation measures developed during the preparation of the responses to comments on the Draft EIR/EIS and the Supplement to the Draft EIR/EIS.
- The party or parties responsible for the implementation of each measure.
- The timing of implementation of each measure.
- The standards or criteria necessary to determine the satisfactory implementation of each measure.
- The documentation and reporting procedures for the Mitigation Monitoring Plan.

UNAVOIDABLE ADVERSE IMPACTS

Potential environmental impacts resulting from the Cadiz Project alternatives are evaluated for both construction and operations in the EIR/EIS. Construction impacts will occur during the building of the water conveyance facilities, power distribution facilities, pumping and/or booster stations, project spreading basins and the project wellfield. These impacts will be generally temporary, extending only through the construction period, but will typically be relatively short in duration at any one location along the Cadiz Project alignment (i.e. at any one place along the water conveyance facilities). Some construction activities will result in longer term impacts, such as scarification from trench excavation or displacement of existing uses or biological resources. Operations and maintenance activities could also result in environmental impacts.

Based on detailed analysis of impacts and proposed mitigation, the Cadiz Project will not result in significant adverse effects after mitigation related to the following parameters:

- Aesthetics
- Agriculture
- Biological Resources
- Cultural Resources
- Energy and Mineral Resources
- Environmental Justice
- Indian Trust Assets
- Land Use Plans and Policies
- Noise
- Public Services
- Socioeconomics
- Topography, Geology, Seismicity and Soils
- Transportation
- Utilities and Service Systems
- Water Resources
- Wilderness/Recreation

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For each of these resource areas, impacts have been avoided to the extent feasible by selecting the environmentally preferred alternative as the overall preferred alternative. Where there will be unavoidable residual impacts, they have been reduced through the mitigation measures shown on Table ES-2. The combination of monitoring to detect conditions which could lead to impacts and then adjusting operations to avoid these impacts and off-site protection of resources subject to impact reduces many potentially significant impacts to below a level of significance as defined under CEQA.

For the following parameters, however, the possibility of some adverse impacts remains, even after the implementation of the mitigation measures identified in the EIR/EIS:

- Air Quality
- Hazardous Materials
- Paleontological Resources

Air Quality

The Cadiz Project is anticipated to result in significant adverse air quality impacts during construction. Because of the magnitude of the project and the simultaneous construction by multiple construction teams, air emissions standards will be exceeded for CO, ROC (VOC), NO_x and PM₁₀. During operations of the Cadiz Project, maintenance and inspection activities will result in some emissions, but these will fall below the applicable significance thresholds. When not undergoing maintenance and not being used for water recharge, it is expected that the project spreading basins will contribute to PM₁₀ levels to the same degree as the surrounding open desert land. A soil crust will form within the spreading basins as a result of algae growth during their use. A soil binder may also be applied within the spreading basins as warranted to provide further control of disturbed soil surfaces.

Hazardous Materials

The Cadiz Project area was used in the past for military exercises resulting in the presence of unexploded ordnance in this area. Implementation of the Cadiz Project mitigation measures will substantially reduce potential impacts from unknown explosive wastes. However, methodologies used to detect ordnance and explosive wastes may not be 100 percent effective. Therefore, some ordnance may remain within the construction zone after pre-screening has been conducted. As a result, the potential hazards related to ordnance and explosive wastes remain an unavoidable adverse impact of the Cadiz Project.

Paleontological Resources

Much of the Cadiz Project area consists of lake beds, paleosols and carbonate beds with a high potential for subsurface paleontological resources. Prior projects in the general area recovered fossils from 23 of 24 identified sites. Paleosols along the Eastern Alternative are overlain by more recent alluvium. Depending on the depth of these resources, trenching for the pipeline may or may not disturb the paleosols along this alternative. Under the worst case, trenching may disturb a substantial portion of these subsoils, resulting in loss of paleontological resources. Therefore, the Cadiz Project could directly or indirectly destroy a unique paleontological resource on site. Whether or not this occurs cannot be determined until excavation begins. The mitigation measures for

paleontological resources will reduce these impacts to below a level of significance if trenching does not generally reach the depth of the paleosols or if only portions of the paleosols are disturbed. Under the worst case, however, significant and unmitigated adverse impacts to paleontological resources are anticipated under the Cadiz Project.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The planned life of the Cadiz Project is 50 years. For the evaluation of irreversible and irretrievable commitment of resources, it has been assumed that the water conveyance facilities will be a permanent facility that could be operated indefinitely and, therefore, it will not be feasible to restore all natural resources to their pre-Cadiz Project conditions. The irreversible and irretrievable commitments of resources that will occur as a result of the Cadiz Project will impact the categories of resources described in the following sections. Implementation of the Cadiz Project will not cause an irreversible or irretrievable commitment of resources as described in the EIR/EIS related to agriculture, air quality, environmental justice, hazards and hazardous materials, Indian Trust Assets, noise, public services, socioeconomics and growth inducement, transportation, utilities and service systems, and wilderness and recreation.

The primary long-term commitment of resources associated with the Cadiz Project will be related to the commitment of land. While some of the land required for the project will be located in and around previously disturbed areas, there will be a substantial commitment of land located in areas that are currently undeveloped and relatively undisturbed, including six acres of agricultural land committed to wells, 390 acres of land committed to the spreading basins, about eight acres of land committed to pumping stations, and 336 acres of land within the permanent rights-of-way for each conveyance facility.

Although construction will involve replacement of topsoils and cryptogamic soil crust may eventually be reestablished, exposed soils will suffer some long-term loss during and following construction as a result of wind erosion and runoff. Most losses will be relatively minor.

The Cadiz Project will have some minor long-term effects on water resources, including surface and subsurface flows, but no significant irretrievable or irreversible changes to water resources in the project area are anticipated. All naturally-occurring flows will pass largely unaffected to the downstream watersheds. The Management Plan, implemented as an integral part of the Cadiz Project, will include monitoring and adjustment of project operations based on the response of the groundwater basin to Cadiz Project operations to ensure no adverse impacts to critical resources.

The Cadiz Project will result in minor irreversible and irretrievable impacts to habitats and the species which depend on them over the life of the project. There will be long-term loss of habitat at spreading basins and along the project conveyance facility right-of-way. Compensatory mitigation for these losses will protect at least an equivalent area, which is now unprotected, from detrimental uses, and will therefore result in no net long-term loss of habitat or habitat value.

Consumption of construction grade minerals (sand, gravel, rock) in cement, bedding material, blocks, metallic minerals (iron, steel) will be necessary for the Cadiz Project. This will represent an irreversible and irretrievable commitment of these resources to this project.

The construction and operation of the Cadiz Project will result in minor permanent and irreversible changes in the visual nature of the area. These changes will be minor in scale and magnitude. They

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will diminish through time but are expected to be discernible after 2050. Therefore, these impacts are considered to be a irreversible and irretrievable resource commitment for visual resources.

If the Combination Alternative is built, one significant archaeological resource would be disturbed by construction of the Cadiz Project. Despite the best application of mitigation measures, some unavoidable losses could occur. Even data recovery will involve some loss because it requires removal of artifacts from their original context.

Under the worst-case scenario, potentially significant paleontological resources could be disturbed by construction of the Cadiz Project. Despite the best application of mitigation measures, some unavoidable losses could occur. Even data recovery involves some loss because it requires excavation and removal of artifacts from their depositional context.

GROWTH INDUCEMENT IMPACTS

Regional service and planning agencies, such as the Southern California Association of Governments, San Bernardino Association of Governments, San Diego Association of Governments, South Coast Air Quality Management District, the California Department of Finance and the California Department of Transportation, have prepared extensive studies and reports forecasting the region's economy, population and resources. The Growth Management Plan (GMP), Regional Mobility Plan (RMP) and Air Quality Management Plan (AQMP) and their respective EIRs have been approved and adopted by these agencies, in cooperation with local jurisdictions, as the most likely scenarios for growth in this region. The primary objectives of these demographic projections and the planning policies on which they are based are to evaluate the potential social, economic, environmental and fiscal impacts that may result from this level of projected growth and to identify mitigation required to reduce or eliminate these impacts.

The growth projections for Southern California anticipate and take into account the predicted adverse impacts of growth, and state and regional planning agencies project growth to occur despite shortfalls in water supply, heavy traffic, poor air quality and other factors which are often assumed to be growth limiting. Development of infrastructure is explicitly not considered a factor that induces growth. The Cadiz Groundwater Storage and Dry-Year Supply Program responds to projections of growth and the anticipated demand for dry-year water supply. Many factors affect the rate and location of growth in a region. However, the Cadiz Project will not significantly affect any of these factors. The Cadiz Project will neither induce growth nor remove a constraint shown to limit growth. This is clearly evident from growth rates in Southern California during previous dry years, including the significant droughts of 1976-1977 and 1987-1992. During these droughts, Southern Californians implemented significant conservation efforts to reduce demand. These temporary efforts did not affect population growth and development. For example, during the 1987 to 1992 drought, the rate of population growth in Southern California remained at 2.5 percent per year.

CUMULATIVE IMPACTS

There are no known closely related, past, present and reasonably foreseeable future projects in the Cadiz Project Area. A solid waste disposal project (Rail Cycle Project) was previously proposed for the region and a nuclear waste disposal facility (Ward Valley Project) was also proposed. Both of these projects are now unlikely to be implemented within the foreseeable future. In addition, official projections of population and development do not predict significant development in the region of the Cadiz Project. For purposes of cumulative analysis, then, impacts of the Cadiz Project were considered in conjunction with other current and anticipated water uses in the area and with

Metropolitan's Hayfield Groundwater Storage Project. In combination with other water uses and with the Hayfield Project, the Cadiz Project is not anticipated to result in significant cumulative impacts, after mitigation, as described below.

- Aesthetics: None of the identified projects will cause significant adverse aesthetic impacts during or following construction because all are in remote areas and provide for visible facilities to be consistent with existing aesthetics.
- Agriculture: No significant agricultural land conversion will occur with any of the identified projects.
- Air Quality: The Cadiz and Hayfield projects will cause temporary and significant short-term, construction impacts. Long-term operations of these projects, as well as other water uses in the area, will not significantly impact regional air quality.
- Biological Resources: Mitigation plans for each project will, where applicable, provide long-term protection of resources currently not protected, offsetting project-related impacts.
- Cultural Resources: None of the identified projects will cause significant adverse impacts related to cultural resources.
- Energy and Mineral Resources: Facilities for the Cadiz and Hayfield projects will be operated when Colorado River Aqueduct pumps are taken off line at Metropolitan's diversion point on the Colorado River, freeing up the existing available power supply. Energy use by other projects is minimal. The projects will not cumulatively have an adverse affect on mineral resources.
- Environmental Justice: None of the identified projects will have environmental justice impacts because no homes or businesses are located near them. Water supply from the Cadiz and Hayfield projects will be equitably distributed by Metropolitan consistent with Board policy.
- Hazards and Hazardous Materials: Construction of the Cadiz and Hayfield projects will include measures to avoid and minimize releases of hazardous materials. Although there is potential for the Cadiz Project to have adverse impacts associated with exposure of ordnance and explosives, the Hayfield and other identified projects have no such potential and, therefore, cumulative impacts are not anticipated.
- Indian Trust Assets: No Indian Trust Assets are located in the areas of these projects.
- Land Use, Planning and Policies: There are no significant conflicts with existing land uses for any of the identified projects. Granting an amendment to the CDCA Plan for an exemption to the utility corridor element by the BLM will not result in adverse impacts.
- Noise: None of the identified projects will result in significant adverse noise impacts.
- Paleontological Resources: No paleontological resources are known to be located within the impact areas of the Hayfield and other identified projects. Therefore, cumulative impacts of the all projects will not exceed the impacts of the Cadiz Project.
- Public Services: Due to their limited scope and/or remoteness, none of the projects will significantly affect demand for public services during construction or operations.
- Socioeconomics and Growth Inducement: None of the identified projects will result in displacement of housing, induced population growth or adverse impacts related to employment.
- Topography, Geology, Seismicity and Soils: None of the identified projects will result in adverse impacts related to these geologic parameters.
- Transportation: None of the identified projects will generate significant transportation impacts because background traffic levels are extremely low and work in the vicinity of railroads will be conducted to minimize potential impacts on rail operations.
- Utilities and Service Systems: None of the identified projects will significantly impact utilities. All projects use existing power and roads.
- Water Resources: Monitoring and management of groundwater resources will ensure that no significant impacts occur under each project.

EXECUTIVE SUMMARY

- Wilderness/Recreation: None of the identified projects will have significant short- or long-term impacts to wilderness areas or other recreation resources.

SHORT-TERM VERSUS LONG-TERM PRODUCTIVITY IMPACTS

The Cadiz Project will have positive short-term impacts on productivity due to jobs created by the project and demand for construction materials and will contribute to long-term steady productivity by maintaining water supply for business and industry during periods of drought. Some lands will be precluded from future development by the project, but development is extremely sparse in the project area. Regional productivity will not be affected by the project's demand for resources, as adequate supplies of construction materials are available in the region.

Adverse impacts to water resources are also not anticipated because the Cadiz Project will utilize water made available during surplus periods and will transfer indigenous groundwater only to the extent that this may be done without adverse impacts to critical resources. The Cadiz Project will not appreciably affect the short-term supply of energy in the region and will not impact mineral extraction in the area, in the short- and long-term. The amount of energy required to operate the Cadiz Project will be available from the dedicated electrical supply established by Metropolitan for their Iron Mountain Pumping Plant. The Cadiz Project will not appreciably create a long-term effect on wilderness or recreation resources and will, therefore, not adversely affect the long-term productivity of the region related to these resources.

PROJECT APPROVALS AND PERMITS

To construct the Cadiz Project, Metropolitan will be required to obtain permits and/or approvals from other agencies. These agencies and possible permits or approvals may include, but are not limited to, those listed in Table ES-3.

NEXT STEPS UNDER CEQA – FINAL EIR CERTIFICATION

Metropolitan is the CEQA lead agency for the EIR and has the responsibility for certifying the EIR as adequate pursuant to CEQA and implementing the Cadiz Project. In arriving at its decision whether to proceed with the Cadiz Project, the Metropolitan Board of Directors will consider the information in the EIR and will determine the adequacy of the environmental documentation under CEQA. In conjunction with the EIR certification, the Board will adopt the Mitigation Monitoring Plan to reduce or eliminate project-related impacts, and adopt Findings of Fact and a Statement of Overriding Considerations recognizing any significant adverse impacts that cannot be mitigated to below a level of significance, if it determines that the project warrants implementation despite these impacts.

NEXT STEPS UNDER NEPA – RECORDS OF DECISION

BLM is the NEPA lead agency for the EIS for consideration of the proposed amendment to the CDCA Plan for an exception to the utility corridor requirement, and for issuance of a right-of-way grant for construction and operation of the water conveyance facilities.

Upon its release, the Final EIS will be mailed and placed in selected libraries. It will also be available at offices of BLM and Metropolitan. The EPA and BLM will publish a Notice of Availability of the Final EIS in the Federal Register. Publication of this notice begins a 30-day

**TABLE ES-3
PERMITS AND OTHER APPROVALS REQUIRED TO IMPLEMENT THE PROJECT**

Federal Agencies	
United States Bureau of Land Management	Conformity Determination pursuant to the Federal Clean Air Act Permits for use of land for geotechnical exploration Permits for construction areas and associated activity, including paleontological field studies Amendment for an exception to the utility corridor requirements of the California Desert Conservation Area Plan Right-of-way grants for conveyance facilities, power distribution line, and monitoring facilities
United States Fish and Wildlife Service	Section 7 consultation pursuant to the Endangered Species Act
United States National Park Service	Special use permits for monitoring facilities
State Agencies	
California Department of Fish and Game	Section 1601 permit pursuant to the Fish and Game Code (Streambed Alteration Agreement) Section 2081 permit or Section 2080.1 consistency determination pursuant to the California Endangered Species Act
Regional Water Quality Control Board	Permit for construction water discharge certification for placement of fill
State Lands Commission	Construction easement (Western and Combination Alternatives)

public review period for the Final EIS, and also begins the 30-day period for protesting the proposed amendment to the CDCA Plan as described in Section 1.10.

In accordance with the BLM planning regulations (43 CFR 1610 et seq.), the proposed CDCA Plan amendment will be submitted to the governor of California with the Final EIS for a review of the consistency of the proposed plan amendment with State and local plans.

Upon resolution of any protests and completion of the governor’s consistency review, the BLM State Director will issue a decision on the proposed CDCA Plan amendment. This decision will be documented in a Record of Decision (ROD), which is a separate public record document that shows how environmental impacts and other factors were considered in BLM’s decision on the CDCA Plan amendment.

Following approval of the CDCA Plan amendment, the ROD for the right-of-way grant will be issued. The ROD describes the decision, mitigation measures that may be required as part of the decision, all of the alternatives considered, the alternative(s) considered to be environmentally preferable, whether or not all practicable measures to reduce environmental harm were adopted and if not, why not.