

SECTION 4.0

ALTERNATIVES TO THE PROPOSED PROJECT

This section of the Subsequent Environmental Impact Report (EIR) describes alternatives to the 2008 Owens Valley PM₁₀ Planning Area Demonstration of Attainment State Implementation Plan (SIP) (proposed project). Alternatives have been analyzed consistent with the recommendations of Section 15126.6 of the State of California Environmental Quality Act (CEQA) Guidelines, which require evaluation of a range of reasonable alternatives to the proposed project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the proposed project, and evaluation of the comparative merits of the alternatives. The discussion of alternatives is intended to focus on the following criteria:

- Alternatives to the project or its location that may be capable of avoiding or substantially reducing any significant effects that a project may have on the environment
- Alternatives capable of accomplishing most of the basic objectives of the project and potentially avoid or substantially lessen one or more of the significant effects
- The provision of sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project
- The no project analysis of what would be reasonably expected to occur in the foreseeable future if the project were not approved

Pursuant to Section 15126.6(e)(2) of the State CEQA Guidelines, if the environmentally superior alternative is the No Project Alternative, the Subsequent EIR shall also identify an environmentally superior alternative among the feasible action alternatives. The analysis of alternatives should be limited to those that the Great Basin Unified Air Pollution Control District (District) determines could feasibly attain most of the basic objectives of the project. Section 15364 of the State CEQA Guidelines defines feasibility as “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.”

Alternatives addressed in this Subsequent EIR were derived from work undertaken by the District and LADWP, as well as from comments that were received in response to the Notice of Preparation of the Subsequent EIR and the comments provided by interested parties who attended the public scoping meeting.

The resulting range of alternatives considered in this Supplemental EIR consists of:

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

The effectiveness of each of the alternatives to achieve the basic objectives of the proposed project has been evaluated in relation to the statement of objectives described in Section 2, Project

Description, of this Subsequent EIR. A summary of the ability of the proposed project and alternatives under consideration to meet the objectives of the project is presented in Table 4-1, *Summary of Adequacy of Proposed Project and Alternatives to Attain Project Objectives*. As shown in Table 4-1, the proposed project would meet all of the basic objectives of the District. Although the No Project Alternative is not capable of meeting most of the basic objectives of the proposed project, it has been analyzed, as required by CEQA.

**TABLE 4-1
SUMMARY OF PROPOSED PROJECT AND ALTERNATIVES' ABILITY
TO ATTAIN PROJECT OBJECTIVES**

Objective	Proposed Project	No Project	All Shallow Flooding	All Managed Vegetation	Gravel Application
1. Implement all Owens Lake bed PM ₁₀ control measures by April 1, 2010 pursuant to the revised 2008 SIP to achieve the NAAQS	Yes	No	Yes	Yes	Yes
2. Revise the approved 2003 SIP by July 1, 2008	Yes	No	Yes	Yes	Yes
3. Minimize (or compensate for) long-term, significant, adverse changes to sensitive resources within the natural and human environment	Yes	No	Yes	Yes	No
4. Provide a high technical likelihood of success without substantial delay	Yes	No	Yes	No	No
5. Conform substantially to adopted plans and policies and existing legal requirements	Yes	No	Yes	Yes	No
6. Minimize the long-term consumption of natural resources	Yes	No	No	Yes	Yes
7. Minimize the cost per ton of particulate pollution controlled	Yes	No	Yes	No	No
8. Be consistent with the State of California's obligation to preserve and enhance the public trust values associated with Owens Lake	Yes	No	Yes	Yes	No

4.1 NO PROJECT ALTERNATIVE

Under the No Project Alternative, the 2003 Owens Valley PM₁₀ Planning Area Demonstration of Attainment SIP would continue to be implemented, which includes the installation of dust control measures (DCMs) on 29.8 square miles of the Owens Lake bed as of December 31, 2006. In addition to requiring the City of Los Angeles Department of Water and Power (LADWP) to construct and begin operating 29.8 square miles of DCMs on the lake bed by the end of 2006, the 2003 SIP also contained provisions requiring the District to continue monitoring air pollution emissions from the lake bed and identify any additional areas beyond the 29.8 square miles that may require PM₁₀ 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 allows for the Air Pollution Control Officer (APCO) to complete a Supplemental Control Requirements (SCR) analysis and make a determination as to whether additional dust controls are required on the lake based on continuous air quality data collected.

4.1.1 Alternative Components

The project components of the No Project Alternative are identical to the project components of the 2003 SIP. They include Shallow Flooding, gravel, and Managed Vegetation DCMs (and associated infrastructure) installed over 29.8 square miles of the Owens Lake bed.

4.1.2 Objectives and Feasibility

Under the No Project Alternative, the objectives of the project would not be met as specified in Table 4-1. The No Project Alternative would not allow the District to meet its primary project objective of attaining the National Ambient Air Quality Standards (NAAQS) for PM₁₀ by April 1, 2010 (Objective 1), since only 29.8 square miles of DCMs would be implemented by that time. Nor would the No Project Alternative meet the District's secondary objective of revising the approved 2003 SIP by July 1, 2008 (Objective 2). The No Project Alternative may minimize adverse changes to sensitive resources (Objective 3). The No Project Alternative would not have the capability of being implemented with a high technical likelihood of success without delay, since it would not allow for the needed 43 square miles of DCMs to meet attainment of the NAAQS (Objective 4). The No Project Alternative would not allow for flexibility in use of water, thus potentially increasing long-term consumption of natural resources such as water (Objective 5). In addition, the No Project Alternative would not conform to adopted plans, policies, and legal requirements, as required by Objective 6. The No Project Alternative would not minimize the cost per ton of particulate matter controlled (Objective 7) because it may not allow the most efficient DCM construction to take place through installation on the most emissive areas of the lake bed. Finally, the No Project Alternative would not be consistent with the State of California's obligation to preserve and enhance the public trust values associated with Owens Lake.

4.1.3 Construction Scenario

Under the No Project Alternative, no additional DCMs would be constructed except in accordance with the 2003 SIP.

4.1.4 Comparative Impacts

Air Quality

The No Project Alternative would not be preferable to the proposed project when considering impacts to air quality. Although, there would be no construction-related air quality impacts from the No Project Alternative, PM₁₀ emissions would not be brought into compliance with the NAAQS for PM₁₀ with maximum efficiency. Section 3.1, Air Quality, of this EIR provides mitigation measures for short- and long-term construction and operation impacts that would occur as a result of the proposed project. In addition, any impacts to air quality related to PM₁₀ and O₃ emissions would be mitigated to below the level of significance for each alternative. The No Project Alternative is the only alternative that avoids significant, unavoidable impacts to air quality as they relate to greenhouse gases (GHG). However, the No Project Alternative does not accomplish the proposed project's goals and objectives of drastically improving air quality in the area by attaining NAAQS for PM₁₀ by 2010, and it does not revise the approved 2003 SIP by July of 2008. The No

Project Alternative would be preferable to the proposed project when considering only potential impacts to air quality related to GHG.

Biological Resources

The No Project Alternative would not be preferable to the proposed project when considering impacts to biological resources. Under the No Project Alternative, only 29.8 square miles (19,072 acres) of DCMs would be installed, whereas under the proposed project up to 44.6 square miles (28,544 acres) would be installed. Neither the No Project Alternative, nor the proposed project would result in short- or long-term impacts to biological resources; DCMs would be placed primarily in salt pan areas of similar habitat. Section 3.2, Biological Resources, of this EIR provides mitigation measures for short- and long-term construction and operation impacts that would occur as a result of the proposed project.

Cultural Resources

The No Project Alternative avoids potential impacts to cultural resources that could result from the implementation of the proposed project. Section 3.3, Cultural Resources, of this EIR provides mitigation measures for short- and long-term construction and operation impacts that would occur as a result of the proposed project. Unlike the proposed project, the No Project Alternative would not entail conversion of vacant land including grading, paving, and construction, and implementation of the mitigation measures would not be required. The No Project Alternative would not result in short- or long-term impacts to cultural resources. The No Project Alternative would be preferable to the proposed project when considering only potential impacts to cultural resources.

Hazards and Hazardous Materials

The No Project Alternative avoids potential impacts to hazards and hazardous materials that could result from the implementation of the proposed project. Section 3.4, Hazards and Hazardous Materials, of this EIR provides mitigation for short- and long-term construction and operation impacts that would occur as a result of the proposed project. Unlike the proposed project, this alternative would not entail conversion of vacant land including grading, paving, and construction and implementation of additional mitigation measures would not be required. Potential operational impacts from hazards or hazardous materials would not occur. The No Project Alternative would not result in short- or long-term impacts from hazards and hazardous materials. However, the 2003 SIP includes DCMs on 29.8 square miles and would continue the use of potentially hazardous materials associated with the operation of the Managed Vegetation.

Hydrology and Water Quality

The No Project Alternative avoids impacts to hydrology and water quality that could result from the implementation of the proposed project. Section 3.5, Hydrology and Water Quality, of this EIR provides mitigation for short- and long-term construction and operation impacts that would occur as a result of the proposed project. Unlike the proposed project, the No Project Alternative would not entail conversion of the playa to DCMs via grading and installation of infrastructure for dust control, and implementation of the mitigation measures specified for the proposed project would not be required. However, the No Project Alternative would not provide control of emissive dust.

Land Use and Planning

The No Project Alternative would not be preferable to the proposed project when considering impacts to land use and planning. Under the No Project Alternative, only 29.8 square miles (19,072 acres) of DCMs would be installed, whereas under the proposed project up to 44.6 square miles (28,544 acres) would be installed. Section 3.6, Land Use and Planning, of this EIR provides mitigation measures for short- and long-term construction and operation impacts that would occur as a result of the proposed project. Impacts to land use and planning would be mitigated to less than significant levels for each alternative. However, the No Project Alternative would not be preferable to the proposed project when considering potential impacts to land use and planning because it does not drastically improve air quality in the area by attaining NAAQS for PM₁₀ by 2010, and it would not result in the revision of the approved 2003 SIP by July of 2008. Therefore, the No Project Alternative has the potential to conflict with local and regional adopted plans.

Mineral Resources

The No Project Alternative avoids potential impacts to mineral resources that could result from the implementation of the proposed project. Section 3.7, Mineral Resources, of this EIR provides mitigation measures for short- and long-term construction and operational impacts that would occur as a result of the proposed project. Unlike the proposed project, this alternative would not entail the construction of new structures to support the proposed DCMs and implementation of the mitigation measures specified for the proposed project would not be required. The No Project Alternative would be preferable to the proposed project when considering only potential impacts to mineral resources.

Transportation and Traffic

No Project Alternative avoids potential impacts to transportation and circulation that could result from the implementation of the proposed project. Section 3.8, Transportation and Traffic, of this EIR provides mitigation measures for short- and long-term construction and operation impacts that would occur as a result of the proposed project. Unlike the proposed project, this alternative would create no additional transportation components, which could cause greater damage to existing roadways, and implementation of the mitigation measures would not be required. The No Project Alternative would be preferable to the proposed project when considering only potential impacts to transportation and traffic.

Utilities and Service Systems

The No Project Alternative avoids potential impacts to utilities and service systems that could result from the implementation of the proposed project. Section 3.9, Utilities and Service Systems, of this EIR provides mitigation measures for short- and long-term construction and operation impacts that would occur as a result of the proposed project. Unlike the proposed project, this alternative would not include the implementation of any additional DCMs or the proposed new Moat & Row DCM, and thus would not entail construction of new storm water control infrastructure. Therefore, implementation of the mitigation measures specified for the proposed project would not be required. The No Project Alternative would be preferable to the proposed project when considering only potential impacts to utilities and service systems.

4.2 ALTERNATIVE 1: ALL SHALLOW FLOODING

Alternative 1, All Shallow Flooding, would involve the use of the known and effective Shallow Flood DCM over 15.1 square miles, including the 12.2 square miles of supplemental dust control areas (Figure 4.2-1, *Alternative 1: All Shallow Flooding*).

4.2.1 Alternative Components

The project elements described for the proposed project would be constructed or carried forward with the exception of the use of the Managed Vegetation, gravel, or moat and row DCMs on the proposed project area. Alternative 1 does not include additional components to those described for the proposed project. However, this alternative would require the installation of more Shallow Flooding associated infrastructure (mainline, sub-main, lateral, and riser pipes, perimeter berms, and tailwater recycling facilities) than the proposed project. In addition, it would require the use of a greater amount of water.

4.2.2 Objectives and Feasibility

As shown in Table 4-1, Alternative 1 would be capable of meeting seven of the eight project objectives identified by the District:

- Implement all Owens Lake bed PM₁₀ control measures by April 1, 2010 pursuant to the revised 2008 SIP to achieve the NAAQS
- 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 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

Alternative 1 would only entail the use of one DCM, Shallow Flooding, and thus would not be able to meet the objective of minimizing the long-term use of natural resources. Implementation of this alternative would result in more consumption of freshwater resources than the proposed project.

4.2.3 Construction Scenario

The construction scenario for Alternative 1 would be similar to the description in Section 2, Project Description, for Shallow Flooding, but would entail additional berms and infrastructure for the distribution of water to the Shallow Flood areas.

4.2.4 Comparative Impacts

Air Quality

As with the proposed project, Alternative 1 would result in potentially significant impacts to air quality. The area covered by DCMs would be the same as that under the proposed project. Overall emission reductions would be expected to be the same under this alternative, and the NAAQS

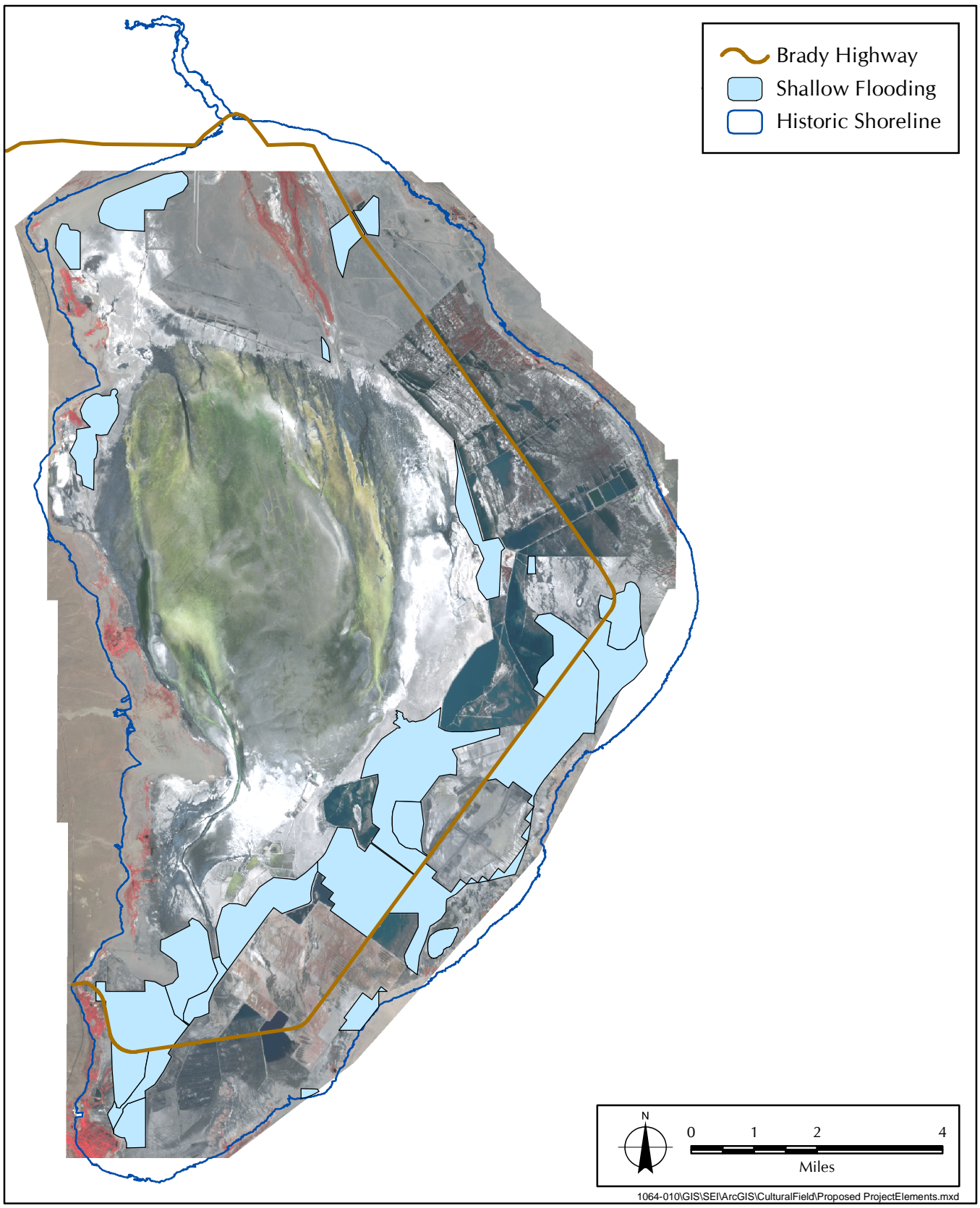


FIGURE 4.2-1
Alternative 1: All Shallow Flooding

would be expected to be met. Construction-related air quality impacts would be the same as those of the proposed project. Implementation of mitigation measures Air-1 through -6 specified for the proposed project would reduce these significant impacts to below the level of significance. As current regulations and standards with regard to GHG have not yet been developed and finalized, it cannot be determined to a reasonable degree of certainty that Alternative 1 would not result in a cumulatively considerable, incremental contribution to the significant cumulative impact of global climate change. Therefore, as with the proposed project, the impacts resulting from implementation of Alternative 1 on global climate change may be considered significant and unavoidable.

Biological Resources

As with the proposed project, Alternative 1 would result in potentially significant impacts to biological resources. Section 3.2, Biological Resources, of this EIR provides mitigation measures for short- and long-term construction and operation impacts that would occur as a result of the proposed project. As with the proposed project, potentially significant impacts related to biological resources resulting from Alternative 1 would be reduced to below the level of significance through the incorporation of measures Biology-1 through -14. However, there is potential for Alternative 1 to provide more habitat for western snowy plover (*Charadrius alexandrinus nivosus*) than the proposed project as it would provide a greater acreage of Shallow Flooding.

Cultural Resources

As with the proposed project, implementation of Alternative 1 would require ground disturbance activities that may result in significant impacts to cultural resources. Construction of the Shallow Flooding DCM would cause a substantial adverse change in the significance of an historical resource as defined in Section 15064.5 of the State CEQA Guidelines. Construction of the berms, designed to contain water, requires movement of earth and construction equipment, both of which would cause significant adverse impacts to the historical resources. Excavations would result in the displacement of artifacts and historical deposits, resulting in loss of site integrity. Excavations may also result in the loss of diagnostic artifacts, which are vital to the historical significance of a site, and heavy equipment movement would likely result in the breakage of artifacts.

Operation of Shallow Flooding would result in significant adverse impacts to the historical sites in several ways. First, the water flow into the site area would move and redistribute artifacts, resulting in loss of site integrity. Second, the Shallow Flooding would be expected to expedite the deterioration of the resource fabric, particularly those sites that are substantially composed of wood and metal. Lastly, covering the sites with water precludes further investigations for information important to history. Finally, maintenance of Shallow Flooding would be expected to involve subsequent land leveling and trenching for repairs to the irrigation system that would have the potential to alter in situ historic materials. Section 3.3, Cultural Resources, of this EIR provides mitigation measures for impacts that could occur as a result of the proposed project. As with the proposed project, potentially significant impacts related to cultural resources resulting from Alternative 1 would be reduced to below the level of significance through the incorporation of mitigation measures Cultural-1 through -4.

Hazards and Hazardous Materials

Implementation of Alternative 1 would avoid some potential impacts to hazards and hazardous materials that could result from the implementation of the proposed project. Section 3.4, Hazards

and Hazardous Materials, of this EIR provides mitigation measures for short- and long-term construction and operation impacts that would occur as a result of the proposed project. Unlike the proposed project, this alternative would not entail additional use of Managed Vegetation, which utilizes and generates the greatest use of chemicals and has the greatest potential for release. Therefore, implementation of the mitigation measures specified for the proposed project would not be required. Potential impacts from hazards or hazardous materials during operation of Alternative 1 would not occur, with the exception of actions currently occurring on the lake for the 2003 SIP. Alternative 1 would not result in short- or long-term impacts from hazards and hazardous materials.

Hydrology and Water Quality

As with the proposed project, Alternative 1 would result in potentially significant impacts related to hydrology and water quality. However, this alternative would avoid some potential impacts that would result from use of chemicals in Managed Vegetation and potential moat and row impacts from storm flows. Section 3.5, Hydrology and Water Quality, of this EIR provides mitigation for short- and long-term construction and operation impacts that would occur as a result of the proposed project. Unlike the proposed project, Alternative 1 would not require the use of additional chemicals for vegetation growth, but would still require implementation of mitigation measures Hydrology-1 through -5 specified for the proposed project to reduce impacts to below the level of significance.

Land Use and Planning

As with the proposed project, Alternative 1 would result in potentially significant impacts related to land use and planning. Section 3.6, Land Use and Planning, of this EIR provides mitigation for impacts that could occur as a result of the proposed project. Unlike the proposed project, Alternative 1 would entail the use of one DCM, Shallow Flooding, which would require installation of more Shallow Flooding associated infrastructure (mainline, submain, lateral and riser pipes, perimeter berms, and tailwater recycling facilities) than the multiple DCMs of the proposed project. Alternative 1 would require implementation of mitigation measure Land Use and Planning-1 specified for the proposed project to reduce impacts to below the level of significance.

Mineral Resources

As with the proposed project, Alternative 1 would result in potentially significant impacts related to mineral resources. Section 3.7, Mineral Resources, of this EIR provides mitigation for impacts that could occur as a result of the proposed project. As with the proposed project, potentially significant impacts related to mineral resources resulting from Alternative 1 would be reduced to below the level of significance through the incorporation of mitigation measures Minerals-1 and Hydrology-3 and -4 specified for the proposed project.

Transportation and Traffic

As with the proposed project, Alternative 1 would result in potentially significant impacts related to transportation and traffic. Section 3.8, Transportation and Traffic, of this EIR provides mitigation for impacts that could occur as a result of the proposed project. As with the proposed project, potentially significant impacts related to transportation and traffic resulting from Alternative 1 would be reduced to below the level of significance through the incorporation of mitigation measures Traffic-1 through -5.

Utilities and Service Systems

As with the proposed project, Alternative 1 may result in potential impacts to utilities and service systems. Section 3.9, Utilities and Service Systems, of this EIR provides mitigation measures for impacts that could occur as a result of the proposed project. Unlike the proposed project, Alternative 1 would entail the use of one DCM, Shallow Flooding, which would require installation of more Shallow Flooding associated infrastructure (mainline, submain, lateral and riser pipes, perimeter berms, and tailwater recycling facilities) than the multiple DCMs of the proposed project. The Shallow Flooding DCM uses water at a rate of approximately 2.7 acre-feet/acre, which is greater than the proposed project. Thus, implementation of Alternative 1 has the increased potential of using more water resources than the proposed project. As with the proposed project, potentially significant impacts related to utilities and service systems resulting from Alternative 1 would be reduced to below the level of significance through the incorporation of mitigation measures Hydrology-3 and -4.

4.3 ALTERNATIVE 2: ALL MANAGED VEGETATION

Alternative 2, All Managed Vegetation, would involve the use of the known and effective Managed Vegetation DCM on the proposed 15.1 square miles, including the 12.7 square miles of supplemental dust control areas (Figure 4.3-1, *Alternative 2: All Managed Vegetation*).

4.3.1 Alternative Components

The project elements described for Managed Vegetation in the proposed project would be constructed or carried forward with the exception of the use of Shallow Flooding, gravel, or moat and row DCMs on the proposed project areas. Alternative 2 does not include additional components to those described in the proposed project. Alternative 2 would require the installation of more Managed Vegetation associated infrastructure (mainline, submain, lateral and riser pipes, irrigation lines, fertilizer injection, water treatment systems, perimeter berms, and tailwater recycling facilities) than the proposed project. This DCM may utilize less water than Shallow Flooding, but would require increased amounts of infrastructure, increased use of chemicals, and an increased cost of implementation per acre over the proposed project.

4.3.2 Objectives and Feasibility

As shown in Table 4-1, Alternative 3 would be capable of meeting six of the eight project objectives identified by the District:

- Implement all Owens Lake bed PM₁₀ 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
- Conform substantially to adopted plans and policies and existing legal requirements
- Minimize the long-term consumption of natural resources
- Be consistent with the State of California's obligation to preserve and enhance the public trust values associated with Owens Lake

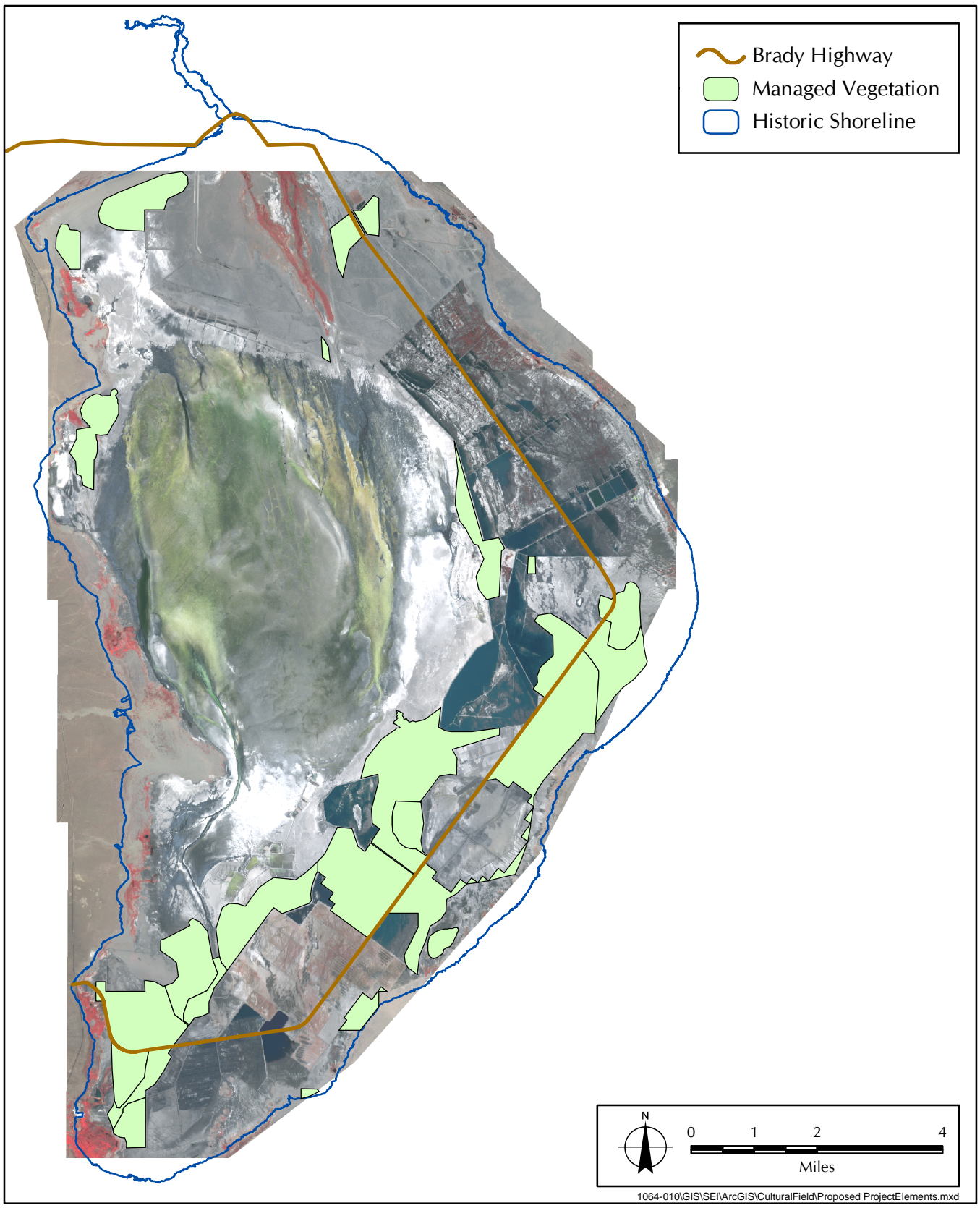


FIGURE 4.3-1
Alternative 2: All Managed Vegetation

However, due to the needed time for plants to reach the level of growth required for dust control, the likelihood for success of the project objectives may be difficult to achieve by the determined date of April 2010. In addition, implementation of Managed Vegetation would result in a higher cost per acre.

4.3.3 Construction Scenario

The construction scenario for Alternative 2 would be similar to the construction scenario for the proposed project provided in Section 2, Project Description. However, all Managed Vegetation would require an increased amount of infrastructure, such as irrigation lines, fertilizer injection, water treatment systems, perimeter berms, and tailwater recycling facilities. Therefore, construction-related impacts would be similar to the proposed project.

4.3.4 Comparative Impacts

Air Quality

As with the proposed project, Alternative 2 would result in potentially significant impacts related to air quality. The area covered by DCMs would be the same as that under the proposed project. Overall emission reductions would be expected to be the same under this alternative, and the NAAQS would be expected to be met. Construction-related air quality impacts would be the same as under the proposed project. Implementation of mitigation measures Air-1 through -6 specified for the proposed project would reduce these significant impacts to below the level of significance. As current regulations and standards with regard to GHG have not been developed and finalized, it cannot be determined to a reasonable degree of certainty that Alternative 2 would not result in a cumulatively considerable, incremental contribution to the significant cumulative impact of global climate change. Therefore, as with the proposed project, the impacts of Alternative 2 on global climate change may be considered significant and unavoidable.

Biological Resources

Alternative 2 would have greater impacts on biological resources than the proposed project. Alternative 2 would remove habitat suitable for nesting western snowy plovers and special-status plant and invertebrate species. The proposed project would potentially provide additional habitat for western snowy plovers and other shorebird species, as well as improve wetland habitat. This alternative would have greater effects than the proposed project when considering potential impacts to biological resources, thus requiring the incorporation of mitigation measures to reduce impacts to below the level of significance. As with the proposed project, potentially significant impacts related to biological resources resulting from Alternative 2 would be reduced to below the level of significance through the incorporation of measures Biology-1 through -14.

Cultural Resources

As with the proposed project, implementation of Alternative 2 would cause a substantial adverse change in the significance of a paleontological resource or site or unique geological feature. Excavations required for the berms and water conveyance systems, and the compression of the sediment caused by the movement of heavy equipment during implementation of the measure would result in the destruction of unique paleontological resources in those areas that have the potential to contain paleontological resources.

Alternative 2 would cause a substantial adverse change in the significance of an archaeological and historical resource as defined in Section 15064.5 of the State CEQA Guidelines. Previous implementation of this DCM at Owens Lake required excavation to facilitate the supply of water and earth removal for the construction of berms in the area where the vegetation was planted. Excavations required for the implementation of this alternative would result in site disturbance, including loss of site integrity, loss of diagnostic artifacts, and breakage of artifacts. Vegetation would also have the potential to fracture friable materials, as well as permanently obscure visibility and the ability to relocate resources. As with the proposed project, potentially significant impacts related to cultural resources resulting from Alternative 2 would be reduced to below the level of significance through the incorporation of mitigation measures Cultural-1 through -4.

Hazards and Hazardous Materials

As with the proposed project, Alternative 2 would result in potentially significant impacts related to hazards and hazardous materials. Section 3.4, Hazards and Hazardous Materials, of this EIR provides mitigation for short- and long-term construction and operation impacts that would occur as a result of the proposed project. This alternative would likely require use of additional hazardous materials. As with the proposed project, potentially significant impacts related to hazards and hazardous materials resulting from Alternative 2 would be reduced to below the level of significance through the incorporation of mitigation measures Hazards-1 through -4.

Hydrology and Water Quality

As with the proposed project, Alternative 2 would result in potentially significant impacts related to hydrology and water quality. Section 3.5, Hydrology and Water Quality, of this EIR provides mitigation measures for short- and long-term construction and operation impacts that would occur as a result of the proposed project. This alternative would reduce potential impacts from moat and row and Shallow Flooding DCMs in terms of flood risk, but would have the potential to affect water quality. As with the proposed project, potentially significant impacts related to hydrology and water quality resulting from Alternative 2 would be reduced to below the level of significance through the incorporation of mitigation measures Hydrology-1 through -5.

Land Use and Planning

As with the proposed project, Alternative 2 would result in potentially significant impacts related to land use and planning. Section 3.6, Land Use and Planning, of this EIR provides mitigation measures for short- and long-term construction and operation impacts that would occur as a result of the proposed project. As with the proposed project, potentially significant impacts related to land use and planning resulting from Alternative 2 would be reduced to below the level of significance through the incorporation of mitigation measure Land Use and Planning-1.

Mineral Resources

As with the proposed project, Alternative 2 would result in potentially significant impacts related to mineral resources. Section 3.7, Mineral Resources, of this EIR provides mitigation measures for short- and long-term construction and operation impacts that would occur as a result of the proposed project. As with the proposed project, potentially significant impacts related to mineral resources resulting from Alternative 2 would be reduced to below the level of significance through the incorporation of mitigation measures Minerals-1 and Hydrology-3 and -4.

Transportation and Traffic

As with the proposed project, Alternative 2 would result in potentially significant impacts related to transportation and traffic. Section 3.8, Transportation and Traffic, of this EIR provides mitigation measures for short- and long-term construction and operation impacts that would occur as a result of the proposed project. As with the proposed project, potentially significant impacts related to transportation and traffic resulting from Alternative 2 would be reduced to below the level of significance through the incorporation of mitigation measures Traffic-1 through -5.

Utilities and Service Systems

Alternative 2 may result in potential impacts to utilities and service systems. Section 3.9, Utilities and Service Systems, of this EIR provides mitigation for impacts that could occur as a result of the proposed project. Unlike the proposed project, Alternative 2 would entail the use of one DCM, Managed Vegetation, which would require the installation of more Managed Vegetation-related infrastructure (mainline, submain, lateral and riser pipes, irrigation lines, fertilizer injection, water treatment systems, perimeter berms, and tailwater recycling facilities) than the multiple DCMs of the proposed project. The Managed Vegetation DCM uses approximately 1.2 acre-feet/acre, which is greater than the proposed project with the inclusion of Moat & Row. Thus, implementation of Alternative 2 has the potential to use more water resources than the proposed project. As with the proposed project, potentially significant impacts related to utilities and service systems from Alternative 2 would be reduced to below the level of significance through the incorporation of mitigation measures Hydrology-3 and Hydrology-4.

4.4 ALTERNATIVE 3: GRAVEL APPLICATION

Alternative 3, Gravel Application, would involve the use of an effective DCM, which involves applying a layer of gravel to cover the proposed 15.1 square miles, including the 12.2 square miles of supplemental dust control areas (Figure 4.4-1, *Alternative 3: Gravel Application*).

4.4.1 Alternative Components

Gravel is one of the three potential DCMs allowed under the 1998 SIP and proposed as an option under the 2003 SIP. The Gravel Cover DCM was analyzed in the 1998 Program EIR and the Southern Zone Mitigated Negative Declaration. This alternative would apply gravel over the entire proposed dust control area.

Once the Gravel Cover has been applied to the playa, limited maintenance would be required to preserve the gravel blanket. The gravel would be visually monitored to ensure that the gravel blanket was not filled with sand for dust, or has not been inundated or washed out from flooding. If any of these conditions are observed over areas larger than 1 acre, additional gravel would be transported to the playa and applied to the playa surface. Operation of the gravel alternative would require an average ongoing maintenance amount of gravel of 7,000 cubic yards per square mile per year (this allows for complete gravel replacement once every 50 years).

4.4.2 Objectives and Feasibility

As shown in Table 4-1, Alternative 3 would be capable of accomplishing only three of the eight objectives identified by the District:

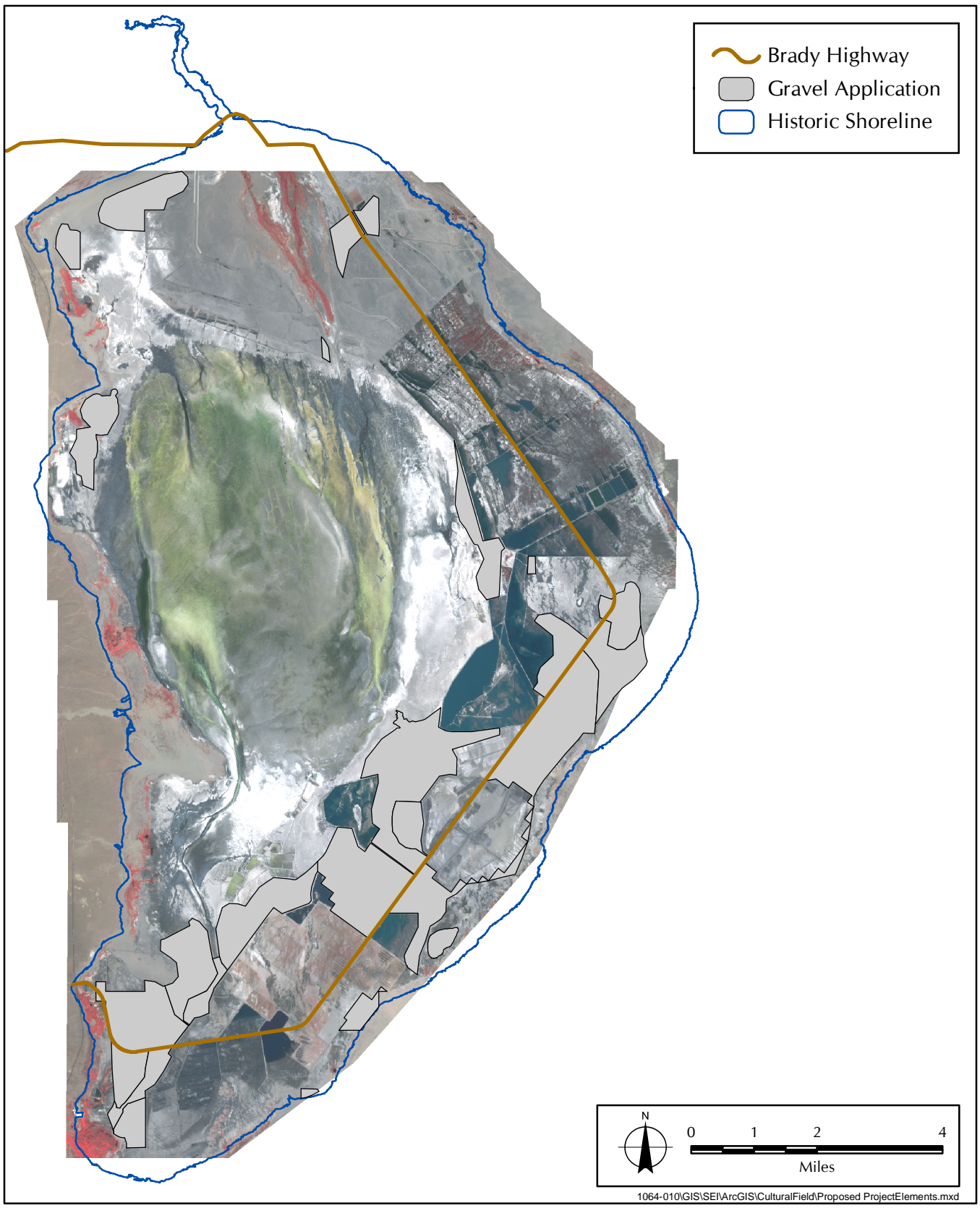


FIGURE 4.4-1
Alternative 3: Gravel Application

- Implement all Owens Lake bed PM₁₀ 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 the long-term consumption of natural resources

Alternative 3 would not minimize the long-term significant, adverse changes to sensitive resources as it would essentially cover all potential resources. It would not provide a high likelihood of success as it would require large amounts of gravel. Available sources of aggregate are difficult to obtain. In addition, there are high costs associated with mining, processing, and hauling the aggregate. Lastly, the Gravel Cover would not conform to adopted plans and policies. In addition, this alternative is incompatible with the State of California's public trust values.

4.4.3 Construction Scenario

Alternative 3 entails application of a 4-inch layer of coarse gravel to be laid on the surface of the Owens Lake playa to prevent PM₁₀ emissions by: (a) preventing the formation of efflorescent evaporite salt crusts as a result of the large spaces between the gravel particles interfering with the capillary forces that transport saline water to the surface where it evaporates and deposits salts, and (b) raising the threshold wind velocity required to lift the large gravel particles (i.e., larger than 0.5-inch diameter) so that transport of the particles is not possible by wind speeds typical in the Owens Lake area. Gravel blankets can work effectively on essentially any type of soil surface. Gravel placed onto the lake bed surface would be durable enough to resist wind and water deterioration, physical/mechanical weathering by salts and leaching, and would be approximately the same color as the existing lake bed.

Under certain limited conditions of sandy soils combined with high groundwater levels, it may be possible for some of the gravel blanket to settle into lake bed soils, and thereby lose effectiveness in controlling PM₁₀ emissions. To prevent the loss of any protective gravel material into lake bed soils, a permeable geotextile fabric may be placed between the soil and the gravel, where necessary. This would prevent the settling of gravel into lake bed soils.

To prevent pore space infilling and possible capillary rise of emissive salts to the surface, gravel areas must be protected from water- and wind-borne soil and dust. This would minimize wind-borne depositions into the gravel blanket. Gravel areas would be protected from flood deposits with flood control berms, drainage channels, and desiltation/retention basins. The large pore spaces between the coarse gravel particles must be maintained to ensure that the gravel blanket would remain an effective PM₁₀ control measure for many years.

4.4.4 Comparative Impacts

Air Quality

As with the proposed project, Alternative 3 would result in potentially significant impacts related to air quality. The area covered by the gravel DCM would be the same as that under the proposed project. Overall emission reductions would be expected to be the same under this alternative, and the NAAQS would be expected to be met. Construction-related air quality impacts would be the same as under the proposed project. Implementation of mitigation measures Air-1 through -6 specified for the proposed project would reduce these significant impacts to below the level of significance. As current regulations and standards in regards to GHG have not been developed and finalized, it cannot be determined to a reasonable degree of certainty that Alternative 3 would not

result in a cumulatively considerable, incremental contribution to the significant cumulative impact of global climate change. However, the associated hauling for the gravel application would be expected to increase hauling trips and GHG emissions. Therefore, the impacts of Alternative 3 on global climate change may be considered significant and unavoidable.

Biological Resources

Alternative 3 would have the greatest impacts to biological resources when compared with all other alternatives, including the proposed project. Alternative 3 would remove sensitive wetland habitats, as well as remove suitable habitat for all special-status species occurring in the proposed project site without improving habitat for any plant or wildlife species. This alternative would have greater impacts to biological resources than the proposed project, requiring a higher level of implementation of mitigation measures for loss of habitat and impacts to sensitive resources. As with the proposed project, potentially significant impacts related to biological resources resulting from Alternative 3 would be reduced to below the level of significance with the incorporation of measures Biology-1 through -14.

Cultural Resources

Implementation of Alternative 3 would cause a substantial adverse change in the significance of a paleontological resource or site or unique geological feature. The combined effect of the heavy equipment and the placement of gravel would result in significant adverse impacts to a unique paleontological resource in those areas that have the potential to contain paleontological resources.

Implementation of Alternative 3 would cause a substantial adverse change in the significance of an archaeological and historical resource as defined in Section 15064.5 of the State CEQA Guidelines. This DCM involves the movement of equipment on the surface of the lake to place and evenly distribute gravel. The combined effect of the heavy equipment and the placement of gravel would result in significant adverse impacts to cultural resources located on the lake surface. The process of placing, distributing, and leveling the gravel on the surface of the lake bed would result in the displacement of artifacts, resulting in loss of site integrity, and the loss of diagnostic artifacts, which are vital to the historical significance of a site. The heavy equipment movement would also result in the breakage of artifacts.

As a result, implementation of Alternative 3 would result in significant impacts related to archaeological and historical resources. As with the proposed project, potentially significant impacts related to cultural resources resulting from Alternative 3 would be reduced to below the level of significance through the incorporation of mitigation measures Cultural-1 through -4.

Hazards and Hazardous Materials

Implementation of Alternative 3 would reduce the potential impacts from release of hazards and hazardous materials resulting from the proposed project. Section 3.4, Hazards and Hazardous Materials, of this EIR provides mitigation for short- and long-term construction and operation impacts that would occur as a result of the proposed project. Unlike the proposed project, this alternative would entail reduced use of chemicals, but may still result in release of hazardous materials from construction equipment related to gravel hauling and dumping, therefore requiring implementation of mitigation measures specified for the proposed project. Potential operational impacts from hazards or hazardous materials would not occur with the gravel application. As with the proposed project, potentially significant impacts related to hazards and hazardous materials

resulting from Alternative 3 would be reduced to below the level of significance through the incorporation of mitigation measures Hazards-1 through -3.

Hydrology and Water Quality

Alternative 3 would reduce some of the potential impacts associated with the proposed project due to the reduced application of water or use of chemicals associated with the application of gravel. Section 3.5, Hydrology and Water Quality, of this EIR provides mitigation measures for short- and long-term construction and operational impacts that would occur as a result of the proposed project. However, this alternative may result in construction release of hazardous materials from equipment related to gravel hauling and dumping requiring construction-related mitigation measures as specified in Section 3.5. The use of a 4-inch-thick Gravel Cover as a DCM does not require the application of water. However, during rainfall events, the gravel soil cover would potentially enhance the rate of rainfall recharge by reducing soil evaporation rates. The relative enhancement of rainfall recharge by the gravel is anticipated to be low given the relatively low amounts of seasonal precipitation that generally occur in the region. As with the proposed project, potentially significant impacts related to hydrology and water quality resulting from Alternative 3 would be reduced to below the level of significance through the incorporation of mitigation measures Hydrology-1 and -2.

Land Use and Planning

Alternative 3 may result in significant impacts related to land use and planning. Section 3.6, Land Use and Planning, of this EIR provides mitigation for impacts that could occur as a result of the proposed project. Unlike the proposed project, Alternative 3 would entail the use of one DCM, Gravel Cover. Implementation of this alternative would not be consistent with adopted plans and policies in the proposed project area, and may therefore result in a greater impact than the proposed project in terms of land use and planning. Therefore, Alternative 3 may require additional mitigation measures to reduce these potential impacts such as the creation of additional habitat that is in compliance with applicable land use plans and consistent with the California State's Public Trust Values.

Mineral Resources

Alternative 3 avoids potential impacts to mineral resources that could result from the implementation of the proposed project. Section 3.8, Mineral Resources, of this EIR provides mitigation for short- and long-term construction and operation impacts that would occur as a result of the proposed project. This alternative would have the potential for lesser impacts related to mineral resources than the proposed project because it does not include a provision for the use of high amounts of freshwater resources or the possible channeling of those resources. However, the potential increase in recharge to shallow groundwater from precipitation may affect mineral resources similar to the proposed project and would require mitigation measures to reduce these potential impacts, including Hydrology measure-2 for continued monitoring of water quality.

Transportation and Traffic

Alternative 3 would have the potential for greater impacts related to transportation and traffic than the proposed project. Alternative 3 would be expected to increase road damage to related roadways during transport of the higher volumes of gravel to the proposed project site. As with the proposed project, potentially significant impacts related to transportation and traffic from

Alternative 3 would be reduced to below the level of significance with the incorporation of mitigation measures Traffic-1 through -3.

Utilities and Service Systems

Alternative 3 would not result in potential impacts to utilities and service systems. Section 3.9, *Utilities and Service Systems*, of this EIR provides mitigation for impacts that could occur as a result of the proposed project. Unlike the proposed project, Alternative 3 would entail the use of one DCM, gravel application, which would require the use of a 4-inch-thick Gravel Cover over a porous geotextile blanket as a DCM, and would not require the application of water. Therefore, this DCM may utilize less water than the proposed project and reduce those anticipated impacts from the proposed project.