
SECTION 10 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

10.1 INTRODUCTION

The Cadiz Project is planned to store and extract water from the groundwater basin underlying the spreading basins and wellfield for a period of 50 years. For this evaluation of irreversible and irretrievable commitment of resources, it has been assumed that the water conveyance facilities could be operated indefinitely and that it would not be feasible to restore all natural resources to their pre-project conditions.

The Cadiz Project will irreversibly and irretrievably commit resources in the categories described in the following sections.

10.2 LAND USE

The use of land for the Cadiz Project will result in an irreversible and irretrievable commitment of slightly less than six acres of agricultural land at Cadiz for the Project wellfield. Substantial open space values will be retained as a result of the overall land acquisition requirements of the Cadiz Project.

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.

Pipeline segments of the water conveyance facilities will be constructed using cut-and-cover methods in undeveloped desert areas and will result in a long-term commitment of land resources. The presence of the water conveyance facilities and the need for a surface-level right-of-way overlying and along side the pipeline segments will prevent the development of other surface land uses except perhaps non-structural uses such as open space. The canal segment of the Eastern/Canal Alternative is a physical facility that represents a long term land use commitment. The commitment of these land areas as rights-of-way for the water conveyance facilities is an irreversible commitment of resources to the Cadiz Project.

10.3 TOPOGRAPHY, GEOLOGY, SEISMICITY AND SOILS

Although construction will involve replacement of topsoils and cryptogamic soil crust may eventually be reestablished, exposed soils will suffer some loss during and following construction as a result of wind erosion and runoff. Most losses will be relatively minor. The Cadiz Project will have minor impacts to topography. The surface elevation of the project spreading basin is only 40 feet higher than the surface elevation of the Iron Mountain Pumping Plant approximately 35 miles away. The intervening terrain is composed of broad, gently sloping valleys and small hills. No large-scale landform modification will be necessary. The water conveyance facilities will be below ground and the project spreading basin berms will be approximately five feet high.

All Cadiz Project facilities will be designed and constructed to the appropriate seismic standards.

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No unique geologic features or formations would be impacted by the Cadiz Project.

Soils in the permanent rights-of-way and those covered by Cadiz Project features such as the project wellfields, pumping plants, project spreading basins and the operation and maintenance roads will be precluded from other uses during the 50-year term of the Cadiz Project, as would the canal segment of the Eastern/Canal Alternative.

10.4 WATER RESOURCES

The Cadiz Project will have relatively limited effects on surface and subsurface flows. All naturally-occurring flows will pass largely unaffected to the downstream watersheds.

The water quality impacts of Cadiz Project construction will mostly be of short duration and will not permanently change the availability or quality of the resource from baseline conditions. Therefore, the Cadiz Project will not result in any irreversible or irretrievable commitments of water resources with respect to water quality.

A Groundwater Monitoring and Management Plan will be implemented as an integral part of the Cadiz Project. It will include monitoring and adjustment of project operations, if and when appropriate, based on the aquifer system's response to Cadiz Project operations. No irreversible changes to groundwater hydrology are expected as a result of the Cadiz Project.

10.5 BIOLOGICAL RESOURCES

The permanent removal of vegetation and wildlife habitat for construction of the Cadiz Project spreading basins, project wellfield, water conveyance and power distribution facilities represents an irreversible and irretrievable commitment of these resources. Biological habitats will be temporarily disturbed during construction of the water conveyance facilities. Given sufficient time and adequate conditions, all these areas, except the maintenance access roads, project spreading basins, project wellfield and the canal segment of the Eastern/Canal Alternative, would be expected to recover to a state approximating pre-disturbance conditions.

10.6 ENERGY AND MINERALS

Consumption of construction grade minerals (sand, gravel, rock) in cement, bedding material, blocks, metallic minerals (iron, steel) for water conveyance facilities, power distribution facilities, pumping stations, wellfield and spreading basins will be necessary for the Cadiz Project. This will represent an irreversible and irretrievable commitment of these resources to this project.

10.7 AESTHETICS

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

10.8 CULTURAL RESOURCES

The potentially significant adverse impacts of the Cadiz Project on cultural resources will be mitigated to below a level of significance. However, 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.

10.9 PALEONTOLOGICAL RESOURCES

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.