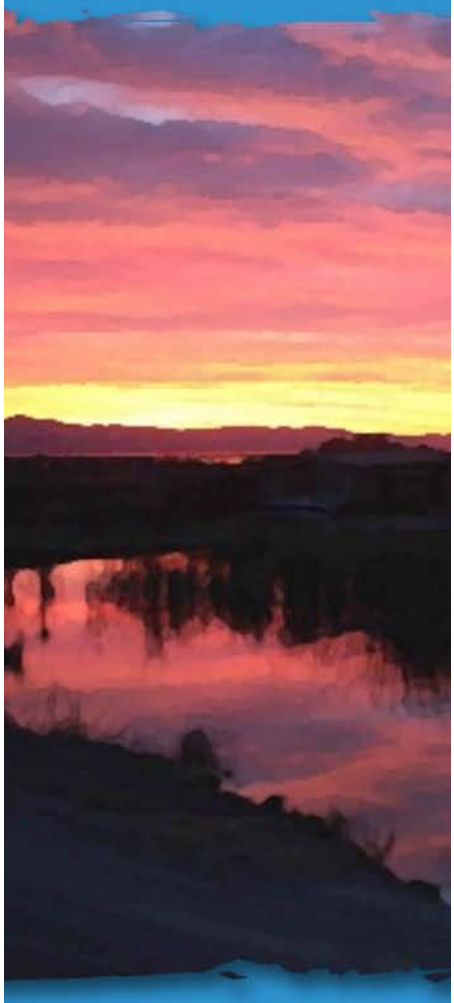
Section G

Findings Related to Project Alternatives



G. Findings Related to Project Alternatives

CEQA requires that an EIR discuss a reasonable range of alternatives that could avoid, or substantially lessen, the significant environmental impacts of the proposed program, even if the alternative might impede to some degree attainment of program objectives, or if the program would be more costly. The discussion of each program alternative should provide sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed program. An EIR must also evaluate the impacts of the "No Program Alternative" to allow decision makers to compare the impacts of approving the proposed program with the impacts of not approving the proposed program.

Chapter 2 of the Final PEIR identifies, discusses, and compares program alternatives for controlling water hyacinth in the Delta and surrounding tributaries, including the selected alternative and a No Program Alternative. Chapter 2 of the PEIR also briefly discusses five (5) additional alternatives that the DBW considered, but rejected as infeasible. In the remainder of this section, we briefly describe six (6) program alternatives, including five (5) program alternatives that the DBW determined were infeasible based on various operational, environmental, economic, and legal factors.

Program Alternative 1 (Selected Alternative) – Integrated Management

The selected program alternative consists of an integrated management approach, emphasizing chemical treatment, with limited handpicking and herding, and continued assessment of biological controls. Selected herbicides are 2,4-D and glyphosate, with 2,4-D to be used for the majority of treatments. Both herbicides are applied with an adjuvant, Agridex®. The DBW will continue to research and evaluate other less toxic herbicides and adjuvants. For each particular treatment site, the DBW will evaluate characteristics of the site, and select the most appropriate treatment option(s). The selected program alternative is guided by the general National Pollution Discharge Elimination System (NPDES) permit and United States Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration – Fisheries (NOAA-Fisheries) biological opinions issued for the program.

Program Alternative 2 – Chemical Control Only

The chemical control only alternative would include only the chemical control aspects of the selected program alternative. The DBW would utilize 2,4-D and glyphosate to treat water hyacinth, following existing program operational requirements. This alternative would not include handpicking or the ongoing evaluation or use of biological control agents.

The DBW rejected the chemical control only alternative because it would result in all of the alternative 1 potential impacts related to the use of herbicides, without the additional flexibility that an integrated management approach would provide. This chemical only approach would not allow for adaptive adjustment of treatment methods to site-specific and season-specific needs and requirements. In addition, the chemical only approach would not provide any treatment alternatives during the majority of the year, when chemical treatments are limited or prohibited.

Program Alternative 3 – Handpicking Only

The handpicking only alternative would include expanded, year-round, handpicking of water hyacinth. The current handpicking program is generally conducted only from November through February. Two-person field crews utilize boats, 30-gallon barrels, and lawn-grooming rakes for handpicking. Each crew consists of one person driving the boat and one person handpicking water hyacinth. Once collected, the crew disposes of the water hyacinth in a pre-selected dispersal area, defined as levees or other previously surveyed areas with no- and low-habitat values.

Handpicking avoids all impacts resulting from application of herbicides. Handpicking is likely to result in impacts to utilities and agricultural irrigation due to release of small plants that are not captured by raking. While handpicking only volumes would be relatively low, a handpicking only alternative would potentially result in solid waste impacts, as more water hyacinth would be deposited on shorelines.

Handpicking only would result in fewer recreational and ecosystem benefits, as compared to the selected program alternative, because significantly less water hyacinth would be controlled in any given year.

The DBW rejected the handpicking only alternative as infeasible due to the high cost and labor requirements, potential solid waste impacts, and relatively low acreage managed.

Program Alternative 4 – Biological Control Only

Biological control is the use of biological agents, typically insects or pathogens, to control undesirable plants. The biological control only alternative would consist of expanded introduction of the water hyacinth weevil, *Neochetina bruchi*, as well as other biological control agents (the moth, *Sameodes albiguttailis*, and/or new agents as they are developed and approved) into the Delta. The history of biological control agents in the Delta demonstrates that this alternative is not likely to result in substantial control of water hyacinth.

Implementation of the biological control only alternative would require a significant increase in deployment of biological controls in the Delta. The biological control only alternative would also require extensive monitoring to determine the impacts of this deployment.

When it is effective, biological control of water hyacinth is attractive because of low potential environmental impacts, long-term sustainability, and low cost. However, this alternative as been shown to have severely limited effectiveness in the Delta. In addition, researchers and waterway managers generally recommend that biological control alone is not a solution, and it should be part of an integrated management approach. The biological control only alternatives would result in fewer recreational and ecosystem benefits, as compared to the selected program alternative, because significantly less water hyacinth would be controlled in any given year.

For these reasons, the DBW rejected the biological control only alternative as infeasible.

Program Alternative 5 – Mechanical Harvesting Only

Mechanical harvesters utilize equipment which cuts (and in some cases collects) aquatic plants. There are several types of mechanical harvesters, ranging from simple hydraulic cutters attached to pontoon or airboats, to 10,000 pound capacity harvesters with conveyors to remove the cut plant material to the shore. Because mechanical harvesting can be costly, it is often used only when immediate removal of weeds is required. In addition to the high cost, concerns with mechanical harvesting include disposal costs and permitting, rapid regrowth of plants following harvesting, nutrient loading due to cut plants in the water, potential release of mercury, and the impact of harvesting on non-target aquatic species.

A study of mechanical harvesting of water hyacinth in the Delta found that, at least for the three different mechanical harvesters tested, cutting water hyacinth in the Delta had limited effectiveness. The primary concern with mechanical harvesting was that the shredding operation could actually worsen the infestation by increasing the spread and recruitment of plants. Mechanical harvesting would not achieve goals of the WHCP, and would likely increase the amounts of water hyacinth in the Delta. Because of these issues, the DBW has rejected mechanical harvesting, even within their integrated management approach.

Program Alternative 6 – No Program Alternative

The "No Program Alternative" would be in conflict with existing law. In 1982, Senate Bill 1344 amended the California Harbors and Navigation Code to designate the California Department of Boating and Waterways as the lead agency for controlling water hyacinth in the Delta. The Harbors and Navigation Code, Section 64, specifies that it is "necessary that the state, in cooperation with agencies of the United States, undertake an aggressive program for the effective control of water hyacinth and *Egeria densa* in the Delta, its tributaries, and the marsh [Suisun Marsh]." Thus, the DBW is mandated to conduct water hyacinth control efforts.

In addition, the uncontrolled growth of water hyacinth which would result from the "No Program Alternative" would lead to negative impacts to navigation, recreation, agriculture, and Delta ecosystems. While it would avoid potential impacts due to herbicides, the "No Program Alternative" would not achieve any goals of the WHCP. For these reasons, the DBW rejected the "No Program Alternative".

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