

PLANNING CASE STUDIES

TAB 2

Objectives and Constraints

The previously identified Federal objective is not specific enough for direct use in plan formulation for this study. Instead, the problems and opportunities identified in this study will be used to describe specific planning objectives that represent desired positive changes in the without project conditions and provide focus for the formulation of alternative plans. The primary objectives for this study were developed by resource agency, Corps and Sponsor representatives based on public input, meetings, and identification of the problems and needs. The primary ecosystem restoration study objectives are:

“Restore, enhance, optimize and maintain the ecological values for fish and wildlife, including sensitive communities in and around the Upper Newport Bay Ecological Reserve, to provide a diversity of use for resident and migratory species.” and,

“Restore, maintain and manage a healthy and productive mix of habitat types including subtidal marine, intertidal mudflat, cordgrass dominated low salt marsh and pickleweed dominated mid-salt marsh.”

Constraints have been identified through the study process, particularly during meetings with resource agency representatives. At times, the constraints have provided formidable obstacles to attaining some of the study objectives. The most difficult consideration is how to increase the trapping efficiency of one or more sediment basins, or better maintain sediment deposition, thereby minimizing the adverse impacts related to more widespread sedimentation without significantly altering the total balance of existing habitat types. Study objectives have been refined to allow for the full consideration of the constraints placed upon the study by resource agency representatives. Constraints are indicated by the symbol ▶. The resource agency constraints are as follows:

- ▶ ***Avoid any net loss in salt marsh habitat in the ecological reserve.***

Complying with this constraint means that the sediment basin(s) must remain in the same areas that were already used for the construction of the two existing basins. Sediment control alternative measures locate the basins in these general areas. Depths and general dimensions of the basins vary for the alternatives.

- ▶ ***Limit future changes to all habitat types in the ecological reserve.***

In addition to no net loss in salt marsh, resource agencies wanted to see less than a 10% change in any habitat type. The 10% change constraint does not allow for enough flexibility in the preparation of alternative measures and has therefore been modified to be more realistic and attainable. This constraint affects the design of sediment control measures and timeframes for triggering maintenance activities. The percent change in habitat types will be addressed for each alternative.

- ▶ ***Prevent the advance one habitat or species at the cost of another, unless supported by the ecological habitat analyses (HEP).***

This constraint ensures that an ecosystem restoration approach is truly followed, instead of any favoritism to certain fish or bird species, and has been a key factor in the development of the modified HEP analysis.

- ▶ ***Minimize and/or avoid disturbance to general wildlife species, especially Federally listed***

threatened and/or endangered species.

Monitoring studies of sensitive nesting areas within the reserve were performed during the Unit III dredging project. No significant disturbance was identified. The Unit III lessons learned has been applied to the design and construction considerations for each alternative, and is fully addressed in the engineering appendix and the EIS/R.

Consideration of these constraints led to the preparation of the following objectives indicated by the ⇨ symbol.

- ⇨ ***Manage sediment deposition within the Bay to sustain the existing balance of estuarine habitats.***

This objective is addressed by the investigation of different designs for sediment basins, and is similar to the objective to limit future changes to habitat types. Basins will be analyzed in order to increase trapping efficiency, allowing for more controlled and localized sediment deposition, lessening adverse impacts to the bay.

- ⇨ ***Develop a sediment maintenance plan that initiates dredging activities before there is any loss in open water areas within the ecological reserve.***
- ⇨ ***Reduce the frequency of shoaling in navigation channels by improving the design of sediment basins and/or developing a better sediment maintenance plan.***

These two objectives and the previous objective are similar in their goal to trigger dredging maintenance activities before there are changes to habitat types and before vessels are running aground due to extensive shoaling. More specifically, there are concerns about open water transitioning to mudflat in the future. This leads to the following specific constraint.

- ▶ ***Ensure sediment deposition does not extend above -3 feet Mean Sea Level (MSL) before dredging maintenance activities begin.***

This elevation is where open water transitions to mudflat. Extensive open water areas of the Upper Bay filled in over the last dozen years transitioning to mudflat or marsh before maintenance dredging began as part of the Unit III project. A similar TMDL objective (see TMDL's) would eliminate this current problem.

- ⇨ ***Implement sediment control measures in Upper Newport Bay such that the basins need not be dredged more frequently than about once every 10 years, with the long-term goal of reducing the frequency of dredging to once every 20 to 30 years.***

This objective is important to address in the formulation and evaluation of alternative measures, but is not taken verbatim as an objective of this study, allowing for the analyses of alternatives to consider the benefits and detriments of designs that may require more frequent maintenance than once every 10 years. The Sponsor is also interested in extending the average maintenance frequency beyond existing levels.

-
- ⇒ ***Maintain ability for the Department of Fish and Game personnel to access least tern habitat areas for vegetation clearing.***

Currently, access to the least tern islands by boat is only available at the highest of tides. This is the only effective way for Fish and Game staff to access the habitat areas to clear vegetation. Alternative measures will include consideration of the need for the managers of the reserve to have easy access to these areas.

- ⇒ ***Remove natural and man-made features within and around the ecological reserve that provide little or no value to the estuarine environment.***

This objective includes the removal of dredge spoil from Shellmaker Island, Northstar Beach, and the bullnose piece of land in the northwestern portion of the Unit III basin. Man-made features include the potential removal of the remnant berms (dikes) from the marsh areas in the old salt works of Segment 1, but resource agencies may prefer that this measure be addressed in the updated ecological reserve management plan. The removal or segmenting of the eastern portion of the main dike, which is favored by the resource agencies, will also be addressed by this objective. The mouth of Big Canyon is also an area that may be investigated for restoration, in concert with Fish and Game's updated management plan. There is an old parking lot that was damaged in storms that may be removed. There is also the possibility of the removal of some freshwater plant species in the freshwater marsh at the mouth of the canyon. Participation in these measures will be based on the feedback from the Department of Fish and Game.

- ⇒ ***Improve or restore estuarine habitats in areas within the Upper Bay identified by the resource agencies, considering locations in relation to sediment control measures.***

The members of the habitat evaluation group (HEG) presented various options for potential restoration opportunities within different areas of the Upper Bay. Public views were also considered in the selection process. The Department of Fish and Game may pursue some proposed restoration measures in their update of the reserve management plan. Agency representatives raised concerns about some of the other restoration measures because of potential disturbance to existing marsh habitats and sensitive species. Examples of measures that are no longer under consideration include the construction of small, dendritic channels through marsh areas to increase tidal circulation through all Upper Bay islands and large marsh areas of Segment 1. Locations of proposed channels were identified using infrared aerial photos of the Upper Bay. Agency representatives were concerned about construction methods and disturbances, and these measures were dropped from further consideration. Measures that will be pursued include the removal of vegetation from tern islands, placing new sand on the tern islands, new tern islands, restoration of former dredge spoil areas on Shellmaker Island, Big Canyon mouth, Northstar Beach and the bullnose section of land in the northwest corner of the Unit III basin. A small channel through a portion of Shellmaker Island is also included as a pilot project for consideration of future similar restoration measures.

- ⇒ ***Increase tidal circulation in stagnant water areas, including the channels around the least tern islands, New Island, Middle Island, and Shellmaker Island.***

Stagnant water areas typically have low levels of dissolved oxygen and nuisance algae blooms. Alternative measures will investigate ways to increase the tidal circulation in these areas within the Bay to improve the water quality.

⇒ ***Reduce potential human or predator access to sensitive, threatened, and endangered species sites.***

Another benefit to the restoration of the channels around the islands in the previous objective is the isolation of sensitive species from land-based human or predator access. This measure was also going to be used to investigate the restoration of a small channel on the eastern edge of Upper Island, now a peninsula, to isolate sensitive species from Back Bay Drive access. Resource agencies do not want to disturb the Upper Island habitat, so this measure will not be pursued for this project. Segmenting or removing the eastern portion of the Main Dike will also eliminate relatively easy access to sensitive habitat areas by humans, coyotes, raccoons, foxes, dogs and cats.

⇒ ***Improve public use and access, and educational and recreational opportunities including trails and interpretive displays.***

When the construction of the interpretive center in the northwestern portion of the Upper Bay is completed by the fall of 2000, there will be the need to reconstruct some of the trail systems that have been damaged in the past. Stabilizing the eroding barrancas and restoring a trail on the western bluff of the Unit II basin area may be investigated during this study. There are also opportunities to provide information kiosks near the interpretive center and other heavily used areas in the Upper Bay including Back Bay Drive. The access issues related to slope failures along Back Bay Drive might also be addressed in this study. There is also interest in providing an interpretive center display of some of the study results, including the numerical modeling.