

Impact On Delta Recreation

*An Assessment of the CALFED Bay-Delta Program
Programmatic EIS/EIR*

DRAFT

*Supplemental Analysis for:
Alternatives 1C, 2B and 3B
and Updated ERPP Findings*

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Executive Summary

Executive Summary

This study is a follow-up to a prior analysis undertaken by this firm in April, 1998, of potential recreation associated impacts and opportunities resulting from the Calfed Bay-Delta Program. Continuing from the premise that the Sacramento-San Joaquin Delta and its 1,000 miles of waterways is one of California's most important recreation resources, this analysis reassesses the Calfed Bay-Delta Program in terms of its potential recreation impacts based on the three preferred conveyance and storage alternatives identified by Calfed staff:

- Alternative 1C,
- Alternative 2B
- Alternative 3B.

A significant finding of this analysis suggests that regardless of which water and conveyance alternative is ultimately selected, the combined environmental restoration and water development facilities will have a significant impact on existing recreation facilities and use patterns in the Delta. Boating circulation, access, and support facilities as well as selected shore use areas will be impacted regardless of which of the three Calfed programs is implemented. The ERPP and components of the alternative storage and conveyance proposals also have the potential to enhance or increase certain recreation opportunities in the Delta.

This analysis has identified what is considered to be the significant recreation impact points or "hot spots" where proactive or interventive planning are suggested. Then, further identified are recommended mitigative measures to address these high impact areas. A final offshoot of this study is a discussion of potential emergent recreation opportunities associated with the preferred water conveyance/storage and ERPP strategies.

Emergent recreation opportunities require evaluating the Delta resources, the Calfed program elements and other contributing variables collectively and comprehensively. When viewed collectively, extraordinary "synergistic" combinations of existing and potential uses become apparent. These synergistic potentials include creative partnerships, innovative incentive programs for stakeholder engagement, multiple use concepts and creative management strategies. The desirable result of a comprehensive approach would enable a Delta planning process that integrates recreation planning with habitat, storage and conveyance objectives. Habitat objectives can be met, project impacts to existing recreation uses could be reduced and an improved quality of life could be facilitated for Californians who may wish to frequent the Delta in the future.

This study has identified several emergent opportunity areas. An effort has been made to look beyond the individual projects to discover the synergistic relationships that exist between recreation, environmental, and agricultural uses that now occur and are contemplated to occur in the future as a result of the preferred alternative CalFed projects. The range of these expanded concepts include:

- **Agriculture/Recreation/Tourism Related Concepts:** Numerous opportunities exist in the Delta to form partnerships between agriculture and recreation through Agri-tourism related activities. For instance, agriculture related tours, special events, food festivals, u-pick operations, and direct sales to Delta tourists.
- **Habitat/Wildlife Recreation Concepts:** Delta Eco-system restoration offers the potential to tell its story to people from all over the state, nation, and the world who visit the San Francisco Bay Delta Region. As this project is perhaps the largest ecosystem restoration effort in the world, and it should be interpreted and showcased accordingly.
- **Boating Enhancements Concepts:** Power boating, water skiing, and jet skiing are the three types of boating activities that will be most impacted by the installation of barriers and restricted boating speed zones related to ERPP projects. It is possible, through creative planning, to design boat-in beaches and protected water ski areas as part of these projects.
- **Public Private Partnerships:** Partnerships with other agencies, organizations, non-profits, and corporate sponsors offer the opportunity to go beyond developing projects on a one for one in-kind mitigation basis which only perpetuates the status quo. These types of enhanced projects are possible through synergistic planning that meet the combined needs of more than one entity.
- **Fisheries and Fishing Enhancement Concepts:** The ERPP programs will most likely improve fishing opportunities and the quality of experience for the fisherman group. Outreach through interpretive programs targeting this group can help broaden the support of the ecological objectives and values of the ERPP.

A more detailed discussion of these greater opportunity concepts is found in the recommendation section of this report.

Areas of Concern and Key Impacts/Hot Spots

Areas of Concern

- If recreation issues and concerns are not addressed as part of the current Strategic Ecological Planning effort in order to identify and table the range of significant recreation-related overlaps and interfaces with ERPP and conveyance strategies, there will be a lesser potential for cooperatively resolving impacts identified in this analysis.
- The ERPP consists of a programmatic analysis and Calfed has not undertaken definitive mapping of existing sensitive habitat areas or mapping of the specific ERPP project areas. A comprehensive assessment of the relationships between critical habitat areas and proposed project areas to existing recreation facilities and use areas can not be accurately determined.
- Without placeholder points to flag potential recreation issues and concerns, the subject of Delta recreation may not be adequately addressed at the localized and focused ERPP planning stage.
- Continued reference to Delta water based and shore associated recreation uses as “stressors” and “disturbances” will exacerbate latent resistance to the Calfed restoration and water conveyance proposals and inhibit reasonable dialogue towards collaborative solutions to emerging conflicts.
- Although reviewed recent studies have helped clarify the existing range and extent of recreation uses in the Delta, greater detail and statistical substantiation are necessary to complete a comprehensive understanding of existing recreation activities in the Delta.

Key Impacts

- Temporary, seasonal and permanent operational modifications to Delta waterways and facilities will result in disruption of existing boating related uses and recreation use patterns throughout the Delta causing great dissatisfaction by the boating community.
- Reduced boating opportunities in the northeastern and southern areas of the Delta will result in boating concentration shifts to areas already subject to heavy use such as the Sacramento River and San Joaquin River adjoining Frank’s Tract, Bethel and Andrus Island and Rio Vista. These shifts in use areas could result in unanticipated impacts to water quality, levee erosion, wildlife, boating safety and quality of visitor experiences.
- Stressor-related use-restrictions associated with sensitive habitat areas and ERPP project areas have broad and potentially significant short term and long term impacts on recreation uses and yet the effectiveness of such restrictions for either habitat or erosion protection has not been fully substantiated.

Alternative 1C Impacts

- Eight identified marinas in the south Delta region will be isolated from the main body of the Delta by fish and flow control barriers implemented as part of this alternative (see Figure 5).
- Boating access and circulation through Grant Line Canal and portions of Old River will be adversely impacted as a result of barrier installation. Boaters will most likely be deterred from using these waterways (see figure 5).

1C Restoration Associated Impacts

- Recreational boating uses and associated facilities may be at least temporarily impacted in the northern and western Delta areas with seasonal closures and other habitat-related restrictions. This may force a higher concentration of boat users to the south Delta area.

Alternative 2B Impacts

- Two marinas on New Hope Tract will be permanently impacted as a result of setback levee construction (see figure 7).
- One anchorage will be lost in Lost Slough as a result of flooding Williamson-McCormack Tract (see figure 7).
- Boating and overnight mooring in Delta Meadows and Snodgrass Slough could be adversely impacted as a result of conveyance and habitat improvements in the area.

2B Restoration Associated Impacts

- Recreational facilities and boating uses may be displaced from the channels south and east of the flow and stage control structures on Middle River, Grant Line Canal and Old River.
- Long term impacts to water recreation uses may will occur along shallow water habitat areas located in the eastern Delta along the South Fork of the Mokelumne River and associated dead end sloughs.
- Permanent impacts to existing recreation facilities including Wimpy's Marina, New Hope Landing, and Westgate Landing & Anchorage, may occur in this habitat focus area.

Alternative 3B Impacts

- Two marinas on New Hope Tract will be permanently impacted as a result of setback levee construction (see figure 7).
- Boating and other recreation at Delta Meadows and Snodgrass Slough could be adversely impacted as a result of conveyance and habitat improvements in the area.
- Specific impacts as a result of the Isolated Facility will include loss of water skiing areas at White Slough State Recreation Area.
- Specific impacts as a result of the Isolated Facility will include loss of park lands at Buckley Cove Park in the City of Stockton

- Specific impacts as a result of the Isolated Facility will include loss of preserve lands at Stone Lakes and Woodbridge Preserves.

3B Restoration Associated Impacts

- Long term impacts to water recreation uses may be expected for shallow water habitat areas located in the eastern Delta along the South Fork of the Mokelumne River and associated dead end sloughs.

Introduction

Study Purpose

The purpose of this analysis is:

1. To identify potential short and long-term impacts on current recreation uses from each of the preferred alternative water conveyance, storage, and habitat restoration projects proposed in the CALFED Bay-Delta Program Draft Programmatic Environmental Impact Statement/ Environmental Impact Report (DPEIS/EIR) filed March 16, 1998.
2. To identify if additional mitigation of negative impacts to recreation may be required.
3. To identify opportunities to enhance recreation as a benefit of project alternatives.

This study is meant to supplement the previous "Impact on Delta Recreation" report completed by Dangermond & Associates in April, 1998. This report focuses a more in-depth analysis on the three preferred CalFed alternatives. The recommendations stated in this report should be used in conjunction the material presented in the April, 1998 study.

Study Methodology

The Delta Program EIR/EIS addresses thirteen alternative options for water conveyance and storage combined with the Ecological Restoration Plan/Program (ERPP) elements which will be integrated with and adjusted to the selected water conveyance alternative. The previous assessment "Impact on Delta Recreation", evaluated the full range of the proposed alternatives and habitat restoration elements from the perspective of their potential impact to existing and future recreation opportunities in the Delta.

This study continues with the Delta Program EIR/EIS definition of recreation, "Recreation resources in the Calfed study area include water-based and land-based activities and their supporting infrastructure" The primary evaluative criterion is also retained from the previous study: "Program actions would have a significant impact on recreation opportunities if they resulted in a significant reduction in recreational use of a resource or facility."

The purpose of this study is to focus the assessment of potential recreation impacts from a general overview of the prior thirteen potential Calfed alternatives to a narrower set of preferred conveyance and storage alternatives combined with a reassessment of the ERPP elements based on Calfed's most current strategies. This study is therefore a follow-up to

the prior evaluative work which narrows the focus of evaluation to the following three preferred water conveyance and storage alternatives:

- Alternative 1C,
- Alternative 2B and
- Alternative 3B.

The study also reviews the proposed ERPP elements based on additional background and field observational information. From this focused evaluation the study has attempted to identify;

- Significant recreation impact points -“hot spots” where special attention in terms of proactive or interventive planning is suggested
- Recommended mitigative measures to address the identified “hot spots”
- Emergent recreation opportunities associated with the preferred water conveyance/storage and ERPP strategies

The preparation of this report involved four primary steps:

1. Review of Pertinent Background Materials
 2. Delta Field Survey - Three hour fly-over and ground survey
 3. Interviews with Calfed Personnel
 4. Preparation of Summary Findings and Recommendations
1. **Review of Pertinent Background Materials:** Review of the Delta Program EIR/EIS and supplemental materials and the previous assessment of the Delta Program EIR/EIS, *Impact on Delta Recreation*, April 23, 1998 Dangermond & Associates and supplemental reports and background materials review including:
 - Calfed-Bay Delta Program - Phase II Interim Report, 1998
 - Calfed-Bay Delta Program - Programmatic EIR/EIS, 1998
 - Draft EIR/EIS Interim South Delta Program, 1996
 - Sacramento-San Joaquin Delta Recreation Survey, Calif. State Parks, 1997
 - Hal Schell's Delta Map & Guide, 1995
 - Delta Compass Maps: Map of 1000 Miles of Waterways,
 - Delta Aerial Photograph Composite, 1993
 - Guide Number 7, Map & Text, Sacramento - San Joaquin DELTA
 - Delta Inventory, Delta Protection Commission, 1997
 - Other related background materials
 2. **Field Survey:** Two D&A personnel and a Calfed representative conducted an aerial field survey involving a three hour fly over of the Delta. Subsequent ground trips were also made. One of the purposes of the aerial trip over the Delta was to observe boating traffic during a prime use period. To meet that objective, Memorial weekend was selected as the optimum time to do the fly over. Unfortunately, due to relatively cooler weather conditions than expected, boating use was much less evident than

anticipated for a major holiday weekend. Photographic documentation, including print, slide and video was also carried out.

3. **Interviews with Calfed Personnel:** Preliminary questions and assumptions were formulated from the activities encompassed in steps One and Two outlined above and then presented to key Calfed personnel involved with water conveyance and storage, levee improvements and the ERPP elements. Discussion resulting from this interview with Calfed personnel were then incorporated as refinements, corrections updates or anecdotes to our basic set of assumptions regarding the Calfed programs.
4. **Preparation of Summary Findings and Recommendations:** A summary report identifying Key Impacts, Recommendations and Recreation Opportunities was then formulated from the information gained through the steps outlined above.

Alternative 1C- Major Features

Storage, Conveyance and Levee Program

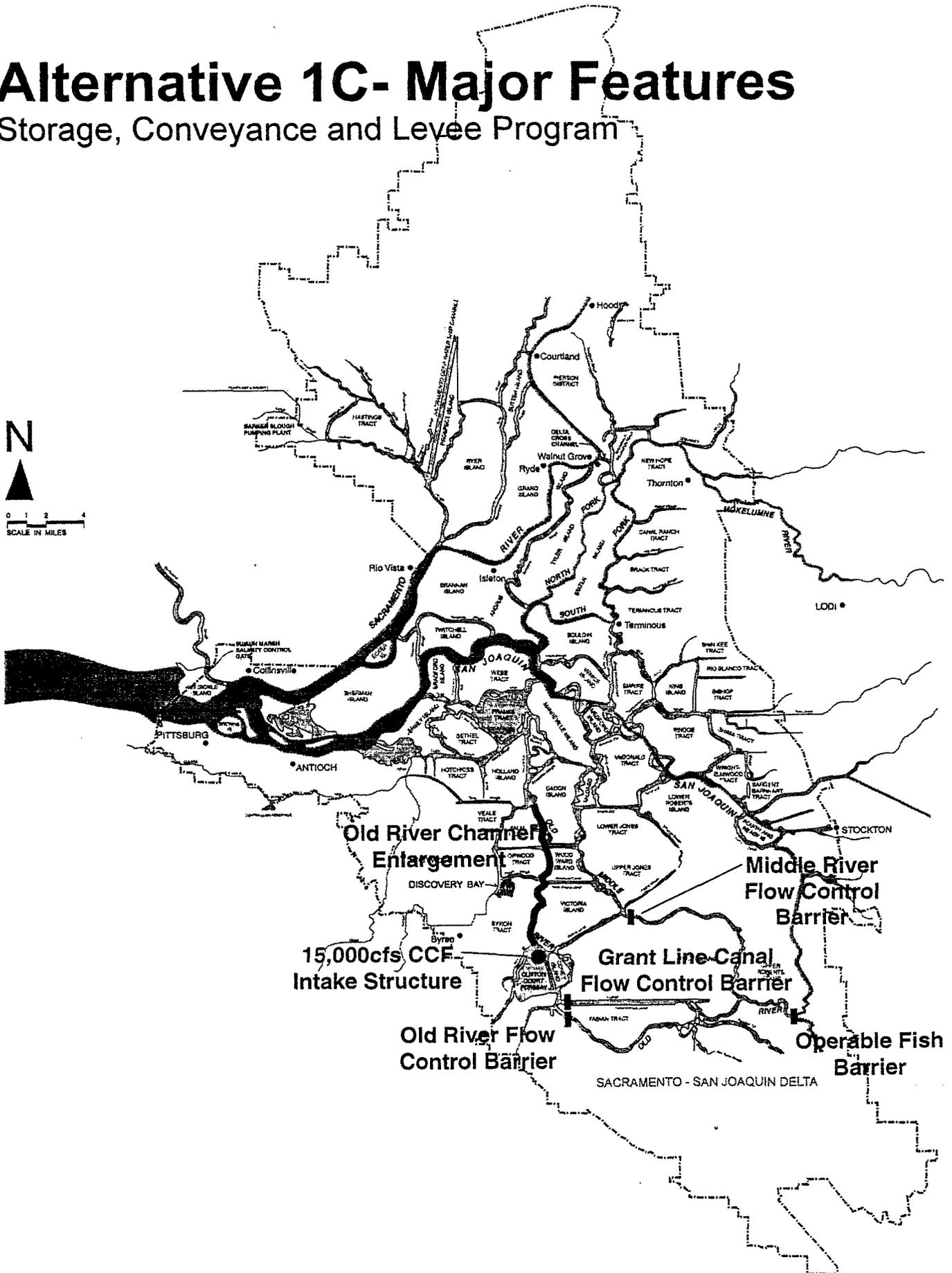


Figure 1. Alternative 1C Features

Alternative 2B- Major Features

Storage, Conveyance and Levee Program

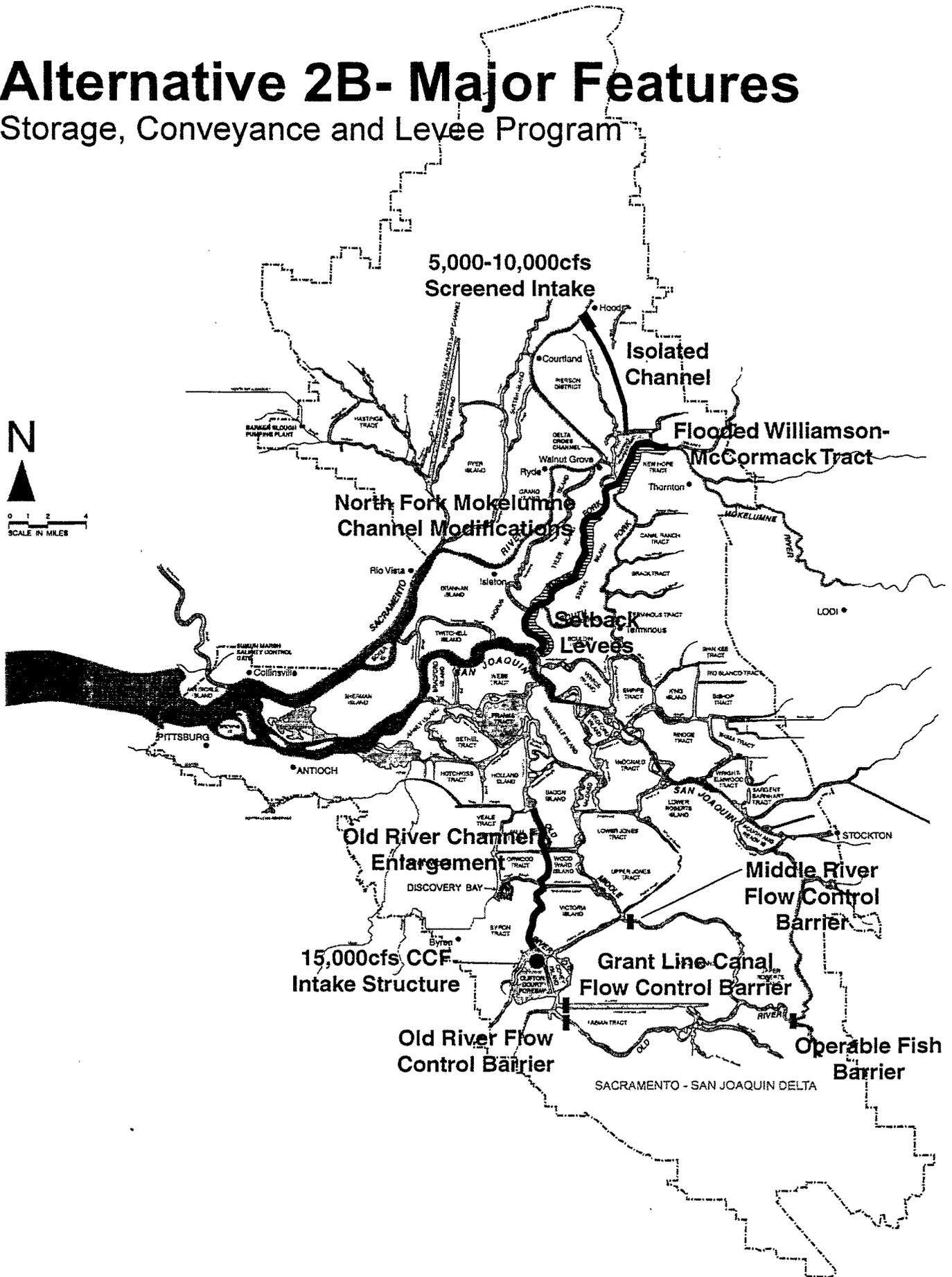


Figure 2. Alternative 2B Features

Alternative 3B- Major Features

Storage, Conveyance and Levee Program

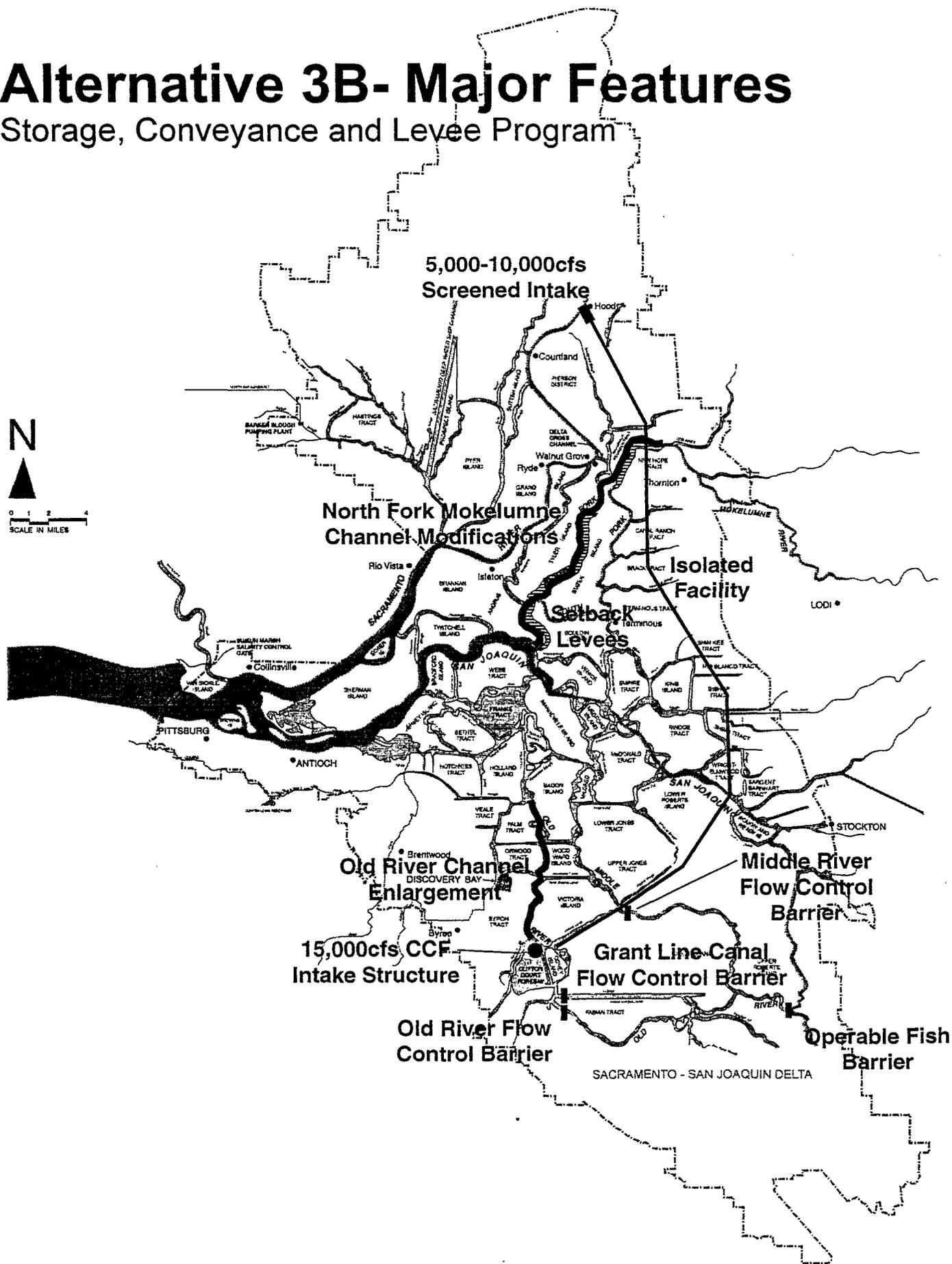


Figure 3. Alternative 3B Features

Recommendations

Recommendations

General Recommendations

- Informational literature, signage, workshops and web site information should be disseminated to educate and inform boaters of alternate routes, barrier operation, seasonal boating restrictions, and construction delays. Make information available at all CalFed improvement facilities, sites and Delta marinas.
- An “In-kind” mitigation policy should be adopted for any recreation facilities or resources lost to CalFed storage, conveyance or habitat improvements.
- When relocation of an existing recreation facility or resource is required, consideration should be given to promote a more balanced distribution of recreation amenities throughout the Delta. A planning process should be initiated that considers optimal locations for relocation in order to avoid congestion or over use in areas of the Delta.
- Minimize adverse impacts to boating during construction of proposed storage, conveyance and habitat improvements by managing construction activities to accommodate to the extent possible existing boating usage.
- Fish and control barrier design and operation are anticipated to heavily impact boating circulation in the south Delta. These facilities should be designed to minimize interruption of existing boating patterns. Barrier design should allow free movement of small craft during periods of natural flow.
- CalFed should initiate a process utilizing public workshops or other public forums whereby recreation interests (and other related interests) in the Delta region can voice concerns and contribute to the planning process.
- Impact to existing boating patterns resulting from proposed storage and conveyance features should be considered as a significant factor in selecting a preferred alternative.

ERPP Recommendations

- Recreation issues and concerns should be addressed as a part of the current Strategic Ecological Planning effort in order to identify and table the range of significant recreation overlaps and interfaces with ERPP and conveyance strategies.
- Definitive mapping of existing sensitive habitat areas as well as mapping of the specific ERPP project areas should be prepared in order to fully assess the relationship of critical habitat areas and proposed project areas to existing recreation facilities, use areas and use patterns.
- Discussion of recreation uses within the Delta needs to evolve beyond the “stressor” and “disturbance” categorizations in order to begin a productive dialogue with the boating community and other key recreation interests towards collaborative and synergistic solutions to ERPP objections.

- Placeholder points are needed for recreation issues, concerns and constituencies in order to ensure that they are incorporated in the localized and focused ERPP planning stage.
- Collaborative and integrative strategies which acknowledge the existing diversity and complexity of uses and conditions in the Delta should be pursued to the greatest extent possible.
- More detailed surveys and assessments of existing and projected recreational use of the Delta should be utilized to refine and embellish the present fundamental assumptions regarding existing and potential recreation uses within the Delta.
- Follow-up investigations should be conducted regarding existing habitat areas that have been subject to stressor-related use restrictions to help determine the effectiveness of imposed restrictions.

Alternative 1C Recommendations

- Take measures to remedy business-associated impacts to marinas adversely impacted by barrier installation along Old River, Grant Line Canal and San Joaquin River.
- Construction should be scheduled to avoid major holidays when boating traffic is high. Floating equipment used in construction of conveyance and habitat improvements should allow for small craft navigation and passage at all times if possible.
- Unobstructed navigation through barriers should be allowed during periods of natural flow.
- Planning for CCF intake structure construction should attempt to minimize impacts on wildlife viewing by avoiding sensitive areas and scheduling of activities to avoid critical breeding periods. Access by construction vehicles should avoid Eucalyptus Island.

Alternative 2B Recommendations

- Include all recommendations from Alternative 1C
- Relocate two marinas lost on New Hope Tract and anchorage in Lost Slough
- Consider the North Fork Mokelumne as an important conduit for boat circulation from the San Joaquin River to the Walnut Grove area and attempt to minimize disruptions during construction of channel modifications.
- Conduct a comprehensive study to determine cumulative impacts on recreation patterns through Snodgrass Slough and Delta Meadows as a result of the flooding of McCormack-Williamson Tract, increased water flows through the area associated with the proposed isolated channel and the Mokelumne River channel modifications.

Alternative 3B Recommendations

- Include all recommendations from Alternative 1C
- Relocate two marinas lost on New Hope Tract and anchorage in Lost Slough

- Consider the North Fork Mokelumne as an important conduit for boat circulation from the San Joaquin River to the Walnut Grove area and attempt to minimize disruptions during construction of channel modifications.
- Conduct a comprehensive study to determine cumulative impacts on recreation patterns through Snodgrass Slough and Delta Meadows as a result of Mokelumne River channel modifications and levee setback improvements.
- Provide in-kind replacement of water skiing resources and facilities located at White Slough State Recreation Area.
- Provide in-kind mitigation of any recreation resources or facilities lost at Buckley Park.
- Provide in-kind mitigation of impacts to wildlife preserves affected by the isolated facility alignment.

Possible Recreation Opportunities and Enhancements

As outlined in the following evaluation, there is a high probability that the proposed water conveyance/storage and habitat restoration proposals will adversely impact certain existing recreation uses and facilities throughout the Delta. An observation reached in this analysis suggests that there are also potential recreation opportunities that may be created by various Calfed projects. These opportunities require reassessing the existing and potential Delta resources collectively and comprehensively.

There are extraordinary potential opportunities for recreation as “synergistic” combinations of existing and potential uses by focusing on creative partnerships, innovative incentive programs for stakeholder engagement, multiple use concepts and creative management strategies. The desirable result of a comprehensive approach would enable a Delta planning process that integrates recreation planning with habitat, storage and conveyance objectives. Habitat objectives can be met, project impacts to existing recreation uses could be reduced and an improved quality of life could be facilitated for Californians who may wish to frequent the Delta in the future.

A comprehensive and integrative approach to recreation planning avails great opportunities to improve public participation and awareness of the unique attributes that make up the Delta region thereby engendering broader constituency support. Also, the expanding of recreation uses beyond the current range of primarily boating and fishing related uses can serve to enhance and preserve the Delta’s unique cultural, natural and agricultural character. This approach also presents a wide array of recreation opportunities that in turn could bring benefits of greater economic diversity and prosperity to the region.

This study has identified several emergent opportunity areas that have the potential to provide increased benefits to the 8 to 12 million Californians who recreate annually in the Delta. This is most evident when one considers the aggregate of existing recreation use patterns in the Delta and the changes proposed for the Delta that are related to both conveyance alternatives and ERPP proposals.

In performing this analysis, care has been taken to view recreation in its broader sense to encompass its ties to the environment, active pursuits, passive pursuits, Agri-tourism and Eco-tourism. Recreation is part of the travel and tourism industry which comprises a major segment of the California economy and is the main engine next to agriculture driving the economy of the communities and cities located in the legal Delta region.

An effort has been made to look beyond the individual projects to discover the synergistic relationships that exist between recreation, environmental, and agricultural uses that now occur and are contemplated to occur in the future as a result of the preferred alternative CalFed projects. It is the experience of this firm that a higher degree of consensus among divergent stakeholder groups is possible when maximum coordination and participation occurs throughout the planning process.

The following concepts represent preliminary thoughts regarding recreation opportunities and associated strategies for the Delta:

Agriculture/Recreation/Tourism Related Concepts

Numerous opportunities exist in the Delta to form partnerships between agriculture and recreation through Agri-tourism related activities. For instance, agriculture related tours, special events, food festivals, u-pick operations, and direct sales to Delta tourists.

- Using agri-tourism concepts such as those utilized in the Napa Valley, consider methods for integrating recreation and agriculture attractions while generating associated economic benefits to the area such as produce tours, wine tasting, food festivals, u-pick operations, and direct sales to Delta tourists.
- Improve auto, boat and train access to selected agricultural product retail areas throughout the Delta. Promote increased direct sales opportunities.
- Consider creating a Delta boat tour system that focuses on the bounty and variety of agricultural products. Include such attractions as wine tasting, meals and food festivals.
- Investigate the possibility of a grant or incentive concepts to encourage farmer participation in levee improvements that enable recreation access. For example, a boat landing could serve as a direct sale produce market place.
- Investigate a compensation program as an incentive for farmers to participate in the conversion of farmland to habitat with passive recreational components in a sense encouraging farmers to “grow” needed habitat areas.

Habitat/Wildlife Recreation Concepts

Eco-tourism is a major component of the travel and tourism industry. Today people are concerned about and sensitive to the environment and desire nearby natural lands to be preserved. Along with this emerging attitude, there is also a growing interest in communing with nature and enjoying being in the outdoors. The opportunity exists in the Delta to provide for public interaction with ecosystem restoration projects in educational, interpretive, and passive ways that are compatible with both water and land preservation objectives. Delta Eco-system restoration offers the potential to tell its story to people from all over the state, nation, and the world who visit the San Francisco Bay Delta Region. As this project is perhaps the largest ecosystem restoration effort in the world, and it should be interpreted and showcased accordingly.

- Investigate opportunities to enhance wildlife viewing and interpretation throughout the Delta.
- Create a Delta fisheries laboratory and natural/cultural history museum.
- Create a Delta ecolodge network for wildlife interpretation accessible by water and or land.
- Promote festivals/symposia focusing on wildlife of the Delta and seasonal migratory bird events such as a Sandhill Crane Viewing festival.
- Consider the conversion of Sherman and/or Twitchell Islands to habitat conservation areas. Consider multiple species including large mammals as apart of the reintroduced wildlife community.

Boating Enhancements Concepts

Power boating, water skiing, and jet skiing are the three types of boating activities that will be most impacted by Installation of barriers and restricted boating speed zones related to ERPP projects. Conveyance Alternatives 1C, 2B and 3B contain projects that involve improving water conveyance through channel widening and set back levees on Old River and the North Mokelumne River respectively. It is possible, through thoughtful planning, to design boat-in beaches and protected water ski areas as part of these projects. In this way some of the otherwise displaced boating activity can be relocated to these areas. This strategy would respond to the need to mitigate boating impacts from the ERPP.

One of the most popular overnight mooring areas in the Delta is in the Delta Meadows and Snodgrass Slough area. These areas may be impacted by restoration projects locally. Since there is a large demand for mooring areas in the Delta, an excellent strategy would be to establish areas similar in environment throughout the Delta in existing or future publicly owned lands. This type of boating activity is passive in nature and could be compatible with some types of ecosystem restoration projects.

- Create primitive areas similar in character to Delta Meadows for boat camping and other related activities in strategic areas throughout the Delta.
- Expand boating opportunities for Canoes and Kayaks and other non-motorized boating throughout the Delta.. Develop a water trail concept.

- Improve boating day camp and mooring areas along enlarged channels of the Mokelumne and Old River.

Public Private Partnerships

Partnerships with other agencies, organizations, non-profits, and corporate sponsors offer the opportunity to go beyond developing projects on a one for one in-kind mitigation basis which only perpetuates the status quo. These types of enhanced projects are possible through synergistic planning that meet the combined needs of more than one entity.

Alternative 3B will displace a Water Ski State Recreation Area. This creates the necessity to replace the facility in-kind. It also creates the opportunity to bring others into the equation from the private sector (Ski boat and water ski equipment manufactures) and from the non-profit sector (Water ski associations) to join with the California Department of Parks and Recreation and the California Department of Water Resources to leverage capital to build a new facility that is several times the caliber of the original site. In this way the mitigation funding can serve as the seed money to leverage more resources to build a better facility. The point in giving this example is that this impacted recreation facility and use by the canal has the potential to create a great amount of public dissatisfaction or a great amount of public satisfaction depending on the way in which the project is approached.

Alternative 3B also extends a 2000 wide foot easement across the western extent of the Stockton Metropolitan Area. This easement will in all likelihood become the limit of development in future years. Therefore, the opportunity exists to plan ahead for the use of this alignment as a linear green belt that has the potential to become a asset to the City of Stockton in the future. This strategy could cause the City of Stockton to have a more favorable attitude towards the route of the Isolated Facility across the western edge of its jurisdiction.

This approach is possible with several projects including existing preserves in the Delta. Other enhancement concepts are outlined below:

- East Bay Regional Park District- i.e. Recreation enhancements along Old River corridor.
- California Parks and Recreation- i.e. Sightseeing train from Sacramento to Hood with a Delta activity and sales area, highlighting the many elements that make up the region.
- Yolo Basin Foundation- i.e. Expansion and improved public access to Yolo Basin Wetlands for public interpretation and education.
- The Nature Conservancy- i.e. Expansion of existing Consumnes Preserve with improved public access opportunities.

Fisheries and Fishing Enhancement Concepts

The ERPP and its potential positive contributions to the diversity and abundance of aquatic wildlife in the Delta will most likely improve fishing opportunities and the quality of experience for the fisherman group. An expanded opportunity related to this group will be to convey to them the ecological objectives and values of the ERPP program through interpretive and other outreach efforts. This in turn can increase the public's role as supporters and guardians of the ERPP measures. Other integrative improvements could include:

- Improve access for shoreline fishing opportunities throughout the Delta.
- Improve shoreline fishing at existing and proposed fish and flow control barrier sites.

In summary, it is possible through synergistic planning and the leveraging of resources from various agencies, organizations, non-profits, and corporate sponsors to improve recreation opportunities in the Delta as a result of CalFed projects. However, in order to do so recreation needs to be viewed, not as a "stressor" in general but as an opportunity to bring together the agricultural, environmental, and recreational communities in a series of partnerships that will improve services in the Delta, reduce conflicting uses, and stimulate the local economy at the same time.

Recreation Opportunities

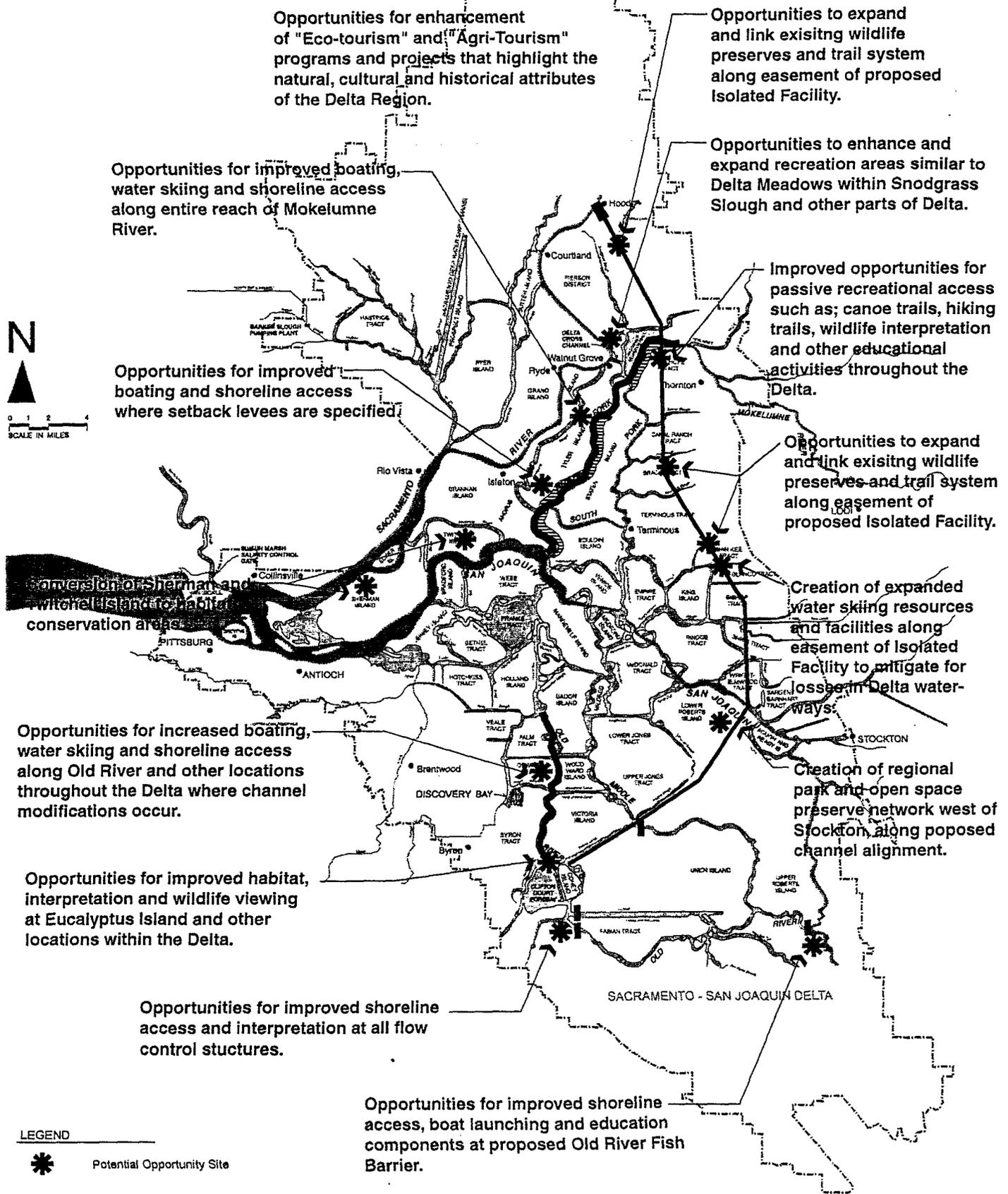


Figure 4. Recreation Opportunities

**ERPP and Proposed Alternatives 1C, 2B and 3B:
Analysis of Impacts and Mitigation**

CalFed ERPP Recreation Impact Summary

1. Levee Setbacks

Assumptions

- a. Levee setback improvements, increasing the channel width by moving the levee structures a greater distance away from the centerline of the channel, will only be used in conjunction with water conveyance alternatives and to support enhanced flood storage capabilities and therefore not used solely for habitat improvements. (CALFED/Recreation Coordination meeting, June 3)
- b. Land acquisition for the levee setback projects will be by condemnation and eminent domain. (CALFED/Recreation Coordination meeting, June 3)
- c. Land acquisition for the ERPP projects will be done through willing sellers and through the use of existing conservation easements. (CALFED/Recreation Coordination meeting, June 3)
- d. Public shoreline access to improved levees is assumed to be limited (similar to current conditions)
- e. The sensitivity of adjoining farmlands & other private lands is the primary rationale for limiting public access along improved levees.
- f. Where public roads or other public lands exist along segments of levees slated for improvements, there may be opportunities for improved public access.

Impacts

- Limiting the application of the set-back levee concept to be applied only for water conveyance and flood control projects dramatically changes the magnitude of change that the ERPP proposals will be likely able to achieve. Without the setback levee feature, target habitat improvements areas will be generally narrowed to the existing channel margins and the limited instances where levee breaching is proposed. Although the extent of ERPP project areas will be reduced, restoration projects will be concentrated within the existing levee channel margins and consequently impacts to recreation may be greater than with the levee setback feature.
- Land acquisition for ERPP projects through willing sellers may also lessen the magnitude of impacts of the ERPP proposals by changing the driving determinant to where projects are located from being purely ecologically based to being shaped by suitable lands actually available.
- Limited shoreline access to improved levees may not be considered a significant impact since current shoreline access is already generally limited or restricted. However, from a recreation perspective, maintaining the present limited access standards for the improved levee structures may be a major

impact in terms of lost potential opportunities for additional recreation experiences in the Delta for which demand exists.

Mitigation/Recommendations

- Where setback levees are proposed, shoreline and water-based recreation components should be incorporated as integral features if and where possible.

Opportunities

- Setback levee construction offers one of the greatest opportunities for land and water based recreation if the reconfiguration is undertaken in a comprehensive manner with integrated recreation-related concepts. This is especially true where aquatic habitat is not included as part of the levee configuration since there may be more opportunities for active recreation uses in those instances.

2. Existing Preserve Area Expansion (i.e. Stone Lakes, Yolo Basin, etc.)

Assumptions

One of the vision statements of the ERPP, addresses expanding and enhancing some of the existing Delta habitat & open space preserves for improved habitat opportunities. This includes the Yolo Basin area, Stone Lakes, portions of the Cache Creek Slough and the Consumnes Preserve. According to the June 3, CALFED/Recreation Coordination discussions, policies pertaining to possible access and recreation use for expanded preserve areas have not been matured. However, given the language and intent regarding “Disturbances” as described in the vision section of Volume II of the Ecosystem Restoration Plan, both water and land access to these areas is assumed to be limited in these expanded or enhanced preserve areas.

Impacts

- Without clear policies addressing the extent and nature of both water and terrestrial public access to new or expanded preserve areas, we assume that whatever recreation potentials there might have been will not be actualized.
- Specific impacts to existing recreation activities may include seasonal or speed restrictions to impacted waterways and seasonal or permanent impacts to existing uses such hunting clubs.

Mitigation/Recommendations

- Make recreational access and use of expanded existing Delta habitat & open space preserves a focus topic for the Strategic Ecological Planning effort.
- Incorporate recreation interests in the focused and localized planning sessions scheduled to follow the Strategic Ecological Planning Program.

Opportunities

- Expanded public access and use of existing preserves could serve multiple purposes for both recreation interests as well as for habitat and conservation.

Controlled and interpreted passive access to preserve areas offers tremendous new public recreational opportunity while serving to inform the public about the sensitivities of the complex Delta ecosystem. Interpretive centers, ecolodges and delineated interpretive areas such as Jepson Prairie are examples of expanded public use opportunities.

3. Connecting Existing Preserves with ERPP Habitat Restoration Areas

Assumptions

- a. The ERPP proposes improving linkages between habitat restoration areas and the existing Delta preserve areas through both ground and water-based corridors. These corridors will most likely occur as easements through privately owned lands. Associated with this concept is the increasing of fresh water flows between these areas. There are two primary focus areas for these improvements:
 - The north Delta area with corridor improvements between the Yolo Basin habitat area/ Cache Creek Slough and the Sacramento River through the Yolo Bypass. *(Freshwater flows are proposed for the Yolo Basin drainage with possible additional channels to facilitate drainage and additional land purchases to expand existing habitat areas. Upstream weirs (Sacramento River) will provide water flows. Similar floodway management is envisioned for the San Joaquin drainage in the south Delta.)*
 - The Stone Lakes Consumnes Preserves with improved corridor linkages with the Mokelumne River and Snodgrass Slough areas.
- b. According to discussions during the CALFED/Recreation Coordination meeting on June 3, policies pertaining to access & recreation use for the corridor linkages with preserve areas have not been matured. Specific implications to recreation opportunities or impediments therefore can not be determined at this time.

Impacts

- Existing recreational uses (e.g. hunting clubs) within these corridors may be seasonally constrained due to increased water flows. However larger amounts of water may have the effect of attracting greater numbers of water fowl to these areas and therefor enhance hunting opportunities.
- Specific implications to potential recreation opportunities or impediments associated with improving linkages between habitat restoration areas and the existing Delta preserve areas through both ground and water-based corridors are difficult to ascertain since there has been no specific policies formulated to address potential recreation uses for these linkages. Also, since much of the

majority of these lands will remain in private ownership, impacts other than those outlined above are assumed to be negligible.

Mitigation/Recommendations

- Make land & water based recreational use of improved linkages between habitat restoration areas and the existing Delta preserve areas a focus topic for the Strategic Ecological Planning effort.

Opportunities

- Both water and land-based corridor concepts open entirely new potentials for Delta recreation opportunities. Terrestrial linear parks or trails for bicycles and hikers or water trails for kayak/canoe or other non-motorized boating are examples of these new opportunities.

4. Expanded Floodways

Assumptions

- a. New floodways will increase the flood bearing capacity of the existing Mokelumne and San Joaquin River configurations. Levee setbacks would be employed in some instances to accommodate increased flood water flows.
- b. Floodwater management and structures are essential components to an expanded floodway system

Impacts

- The majority of lands potentially impacted by expanded floodways are under private ownership and not generally accessible to the public. Assuming that the management of these lands would be similar to the flood management in the Yolo Bypass and given their non-public status, recreation impacts are assumed to be less than significant. Exceptions could be some seasonal access limitations for existing recreation users such as hunting clubs. However, increased floodway areas may have the effect of attracting greater numbers of water fowl to these areas thereby enhancing their recreational benefit..
- CALFED Alternative-associated flood control operations of the Delta Cross Channel is anticipated to have major (boating access & circulation) recreation impacts:
 - Alternative 3 The DCC to be open two months of the year
 - Alternatives 1 & 2 The DCC to be open four months of the year
- Extended closure of the DCC should it result from any of the Calfed Alternatives would be considered a significant impact to low profile boating and boating circulation.

Mitigation/Recommendations

- Make recreational use of new floodway habitat areas a focus topic for the Strategic Ecological Planning effort and subsequent focused and localized planning sessions.

Opportunities

- Public/private accords will be required to implement additional floodway habitat through lands currently under private agricultural uses. Potential opportunities exist in the structuring of those accords which could enable some seasonal for some passive recreational uses such as wildlife viewing or non-motorized boating.

5. Improved Fresh Water Flows (addressed under improved linkage)

It is assumed that improving fresh water flows into the Delta will have minimal to positive impacts on public access and recreation in the Delta and that there typically will be no impediments to existing water use associated with modifying water flows such as flow gate structures or other similar facilities envisioned. Freshwater flows are proposed for the Yolo Basin drainage with possible additional channels to facilitate drainage and additional land purchases to expand existing habitat areas. Upstream weirs will provide water flows. Similar floodway management is envisioned for the San Joaquin drainage in the south Delta.

6. Stressor Reduction

Assumptions

Reducing biological and human induced stress factors in the Delta are intended to lessen the disturbance to remnant existing and newly created habitat throughout the Delta as well as to prevent the further degradation of the levees system. According to the ERPP, most activities associated with recreation are considered to be "disturbances" adversely affecting wildlife, habitat areas and levee systems. The concept of stressor reduction was intended to address an assortment of disturbances associated with recreational boating, angling, picnicking, airplane and vehicle traffic, as well as the secondary effects of human activities and uses adjoining the Delta. Stressor reduction objectives are applicable to both land and water-based recreation uses. Associated stressor restrictions to support ERPP projects will be primarily implemented to:

- provide protection for specific species habitat
 - provide wake protection to prevent erosion
- (CALFED/Recreation Coordination meeting, June 3)

Impacts

- Reduction in “ stressors” include limiting access for angling, picnicking and other shoreline uses in sensitive habitat areas and areas slated for restoration. Seasonal restrictions, speed controls or prohibitions for motorized boat users may be imposed in restoration or sensitive habitat areas. This user group is therefore the most likely group to be impacted by disturbance-related limitations. Impacts to existing recreation uses can only be assessed based on the specific and actual implementation of stressor reduction measures. It is assumed that these measures could have a significant impact on a wide range of existing recreation uses in the Delta including:
 - Circulation: limiting existing water and shore access routes.
 - Seasonal closures could force higher concentrations of shoreline users into those areas with lessor or no restrictions of use causing a higher intensity of use, more boating safety issues and more general wear and tear on those accessible areas.
 - Existing Facilities: Existing facilities as sources of “stressor” disturbances that are located near restoration or sensitive habitat areas may be impacted.
 - Active uses such as motorized boating are likely to be the most impacted category of uses

Mitigation/Recommendations

- Given the extent of existing recreation use in the Delta (8-12 million use-days per year) all the possible avenues for allowing for integrated solutions that will not impair current water use patterns (beyond levels of significant unmitigatable impacts) should be pursued.
- Similarly, shoreline use strategies, which can employ stressor reduction measures but enable shore-based recreational use, needs to be integrated into the ERPP proposals
- According to interviewed Calfed personnel, there are existing areas within the Delta (we have not been apprised to their locations) where access and use restrictions have already been implemented for habitat & erosion control purposes. Locations for those areas subject to controls These areas should be analyzed in comparison with areas without controls to assess the relative merits of regulated restrictions on use with respect to the quality and status of those protected habitat areas. Follow-up investigations of these areas to evaluate the effects of restrictions will be useful in formulating more specific policies related to regulating recreation access and use.

7. Land Reclamation for Habitat

Assumptions

According to the ERPP, land reclamation for habitat is proposed for agricultural lands generally within tidal emergent elevations and adjoining shallow water habitat restoration project areas. The land adjoining the South Fork of the Mokelumne and the adjacent dead end sloughs including Beaver, Hog and Sycamore is an example of a candidate area for possible land reclamation for habitat. Levee breaching or removal would be accompanied by shallow water and riparian habitat improvements. The Subsided levee lands between the sloughs would be converted to floodplain overflow basins and ultimately gradually converted to tidal marshes.

Impacts

- Impacts would primarily apply to water uses especially motorized uses along the adjoining channels. Closure or restrictions during construction would assumedly be followed by seasonal closures, speed restrictions and other access limitations.
- Other impacts could include possible road closures and submergence of existing public lands.
- An enhanced aesthetic environment as well as improved aquatic habitats could result in positive impacts and facilitate new recreation opportunities such as wildlife viewing.

Mitigation/Recommendations

- Incorporate recreational use of land reclamation for habitat areas a focus topic for the Strategic Ecological Planning effort and subsequent focused and localized planning sessions.

Opportunities

- Integrated planning including interpretive features for improved terrestrial and aquatic habitats could facilitate new recreation benefits such as wildlife viewing and build greater public support for restoration efforts in general.

8. Non-Tidal Wetland Habitat on Deeper Islands

Assumptions

Some of the deeper islands are candidates for seasonal non-tidal inundation of existing agricultural lands. We presume that this type improvement will not have any significant impacts on recreation activities in the Delta. We assume that some kind of incentive concept will be necessary to successfully persuade land owners to assist with this concept.

Impacts

- Negligible adverse impacts to existing recreation uses
- Potential opportunities for passive recreation uses such as wildlife viewing and walking.

Mitigation/Recommendations

- Investigate various private/public partnership options for gaining private owners support for habitat or recreation-based uses of these lands.
- Explore financial strategies from the stand point of compensation for the removal of farm lands from a productive mode

9. Combined Agricultural, Urban Native habitat Improvements**Assumptions**

For lands adjoining the Highway 4 corridor a combined urban, agricultural and habitat concept is envisioned.

Impacts

- Negligible adverse impacts to existing recreation uses

Opportunities

- This is a model opportunity strategy to be considered for other restoration categories as well. Integrated solutions which consider the critical issues for each of the major Delta constituent groups allows for concepts that can accommodate the diverse Delta interests.

10. General Mitigation/Recommendations

There are critical timing issues related to enabling the proper assessment and consideration of recreation issues as they relate to the ERPP proposals and the specific CALFED alternatives. The current Ecological Strategic Planning effort is a primary window of opportunity and there is a need for putting recreation issues on the table in that forum to ensure that recreation issues become part of the overall planning problem set. This input then can serve as a place holder to prepare for the subsequent detailed planning conducted in a workshop forum approach and addressed on a local implementation level.

CALFED Alternative Projects Recreation Impact Summary

Alternative 1C

1. Clifton Court Forebay(CCF) Northern Intake Structure-

Assumptions

The CalFed program for the proposed intake structure at Clifton Court Forebay(CCF) differs from the Draft-Interim South Delta Program (ISDP) design, in that CalFed envisions a combination of tidal and pumped intake methods with screens. The ISDP study proposes a 25-30,000cfs tidal intake at the CCF, where the CalFed alternative proposes a 15,000cfs screened intake. The proposed CalFed program serves two purposes; (1. reduces cross channel flows which would interrupt boating patterns in and around the intake structure and (2. reduce impacts to fisheries through reduced velocities into the structure. For the purposes of this report the CalFed Intake alternative is considered. (see Appendix 2 for ISDP Intake Structure alternative)

Impacts

- Construction and operation of the new intake structure is not anticipated to disrupt boating, fishing and water-skiing through the area. A 1996 boating survey conducted by Department of Water Resources(DWR) in the south Delta indicates that fishing boats and ski boats comprise the majority of boating traffic in this area.¹
- Bird watching and wildlife viewing, are a popular activity in nearby areas. Eucalyptus Island supports a heron rookery which draws many bird watchers. It is anticipated that noise and truck traffic during construction of the facility will adversely impact wildlife viewing opportunities.
- This conveyance feature is considered a less than significant adverse impact to existing recreation patterns through the area. Impacts to wildlife viewing are expected to be temporary.

Mitigation/Recommendations

- Intake design and operation should minimize adverse impacts to boating in the area. Intake amounts should attempt to minimize cross channel currents at Old River which could impact water skiing and fishing.

¹ Department of Water Resources, Boat Survey Report, 3/96

- Intake construction should attempt to minimize impacts on wildlife and wildlife viewing by avoiding sensitive areas and schedule construction activities to avoid critical breeding periods. Access by construction vehicles should avoid Eucalyptus Island.
- Note: Refer to Draft EIR/EIS Interim South Delta Program, 1996 EIR Volume 1 for specific mitigation options.

2. Old River Channel Enlargement

Assumptions

Channel enlargement has not been defined by CalFed although it is anticipated that a combination of dredging, channel widening and setback levees will be considered.

Impacts

- Construction and dredging associated with channel enlargement along the 4.9 mile stretch of Old River is anticipated to cause temporary adverse affects to the Lazy M Marina located at the southern end of Italian Slough. Boating access to and from Italian Slough may be adversely impacted during construction.
- It is anticipated that channel widening and setback levee construction would temporarily impact boating and terrestrial recreation patterns.
- Equipment used in the dredging activities along Old River should allow for limited safe small craft navigation through the area with limited periods of obstruction.
- An unknown number of private hunting clubs and piers could be adversely impacted along the channels alignment.
- Boating circulation and access to Discovery Bay may be impacted during construction although it is not anticipated. This issue should be noted as a possible area of concern.
- This conveyance feature is considered a less than significant adverse impact to existing recreation patterns through the area. Some temporary adverse impacts to recreation will be evident during construction.

Mitigation/Recommendations

- Compensation for any lost revenues by the Lazy M Marina during construction when access may be adversely impacted.
- In-kind replacement of any water and land-based recreation improvements lost to proposed conveyance feature.

Opportunities

- Configure channel enlargement to accommodate improved boating, water skiing and jet skiing opportunities along 4.9 mile stretch.

- Configure setback levees to provide improved terrestrial access to waterway for activities such as shoreline fishing, hiking/biking, wildlife viewing and boat launching. Improve access from Orwood Road and Highway 4.
- This location could be considered as a mitigation source area for any lost boating recreation in other parts of the Delta affected by conveyance features or other CalFed improvements. Boating recreation impacted through Grant Line Canal and Old River resulting from barrier implementation could be shifted to improved Old River channel.

3. Old River Operable Fish Control Barrier

Assumptions

CalFed has not yet defined the design and program for the proposed operable fish control barrier at Old River, although it is anticipated to be of similar design to the facility proposed in the Draft-ISDP. For the purposes of this report the ISDP alternative will be used to evaluate recreation impacts.(see Appendix 2 for illustrative)

Impacts

- The placement of an operable fish control barrier is anticipated to adversely impact several marinas and existing boating circulation patterns in the area. Four recreation facilities will be impacted; Dos Rios Park, Mossdale Crossing Park, Mossdale Marina, and Mossdale Trailer Park. Placement of a barrier will restrict boating access to Old River and Grant Line Canal from marina locations along the San Joaquin River.
- Heavy weekend and holiday boating use through this area will be adversely impacted. Although the facility is proposed to incorporate a jib crane to move boats over the structure, it is anticipated that many boaters will be deterred.
- A 1996 boating survey conducted by DWR in the south Delta indicates that Ski boats and Jet Skis comprise the majority of boating traffic in this area.²
- This conveyance feature is considered a significant adverse impact to existing recreation patterns and facilities through the area.

Mitigation/Recommendations

- Construction of the facility should be scheduled to avoid major holidays when boat traffic is highest.
- Informational literature, signage, workshops and a web site should be established to inform boaters about jib crane operation, times of facility operation and alternate routes.
- Design and operation of facility should minimize impacts to boating circulation through the area.

² Department of Water Resources, Boat Survey Report, 3/96

Opportunities

- Provide educational opportunities at the facility to inform public of its purpose and overall benefits to Delta ecology and recreation. Tours of the facility should be part of its program.
- Improve shoreline fishing and boat launching opportunities at proposed facility as well as improved auto access from San Joaquin Road.

4. Middle River Flow Control Structure

Assumptions

Calfed has not yet defined the design and program for the proposed flow control barrier along Middle River, although it is anticipated to be of similar design to the facility proposed in the ISDP. For the purposes of this report the ISDP alternative will be used to evaluate recreation impacts. (see Appendix 2 for illustrative)

Impacts

- Placement of a flow control structure at middle river is anticipated to have minimal adverse impacts to recreation in the area. Although the facility is designed with a boat ramp to move craft around the structure it is anticipated that many boaters will be deterred.
- A 1996 boating survey conducted by DWR in the south Delta indicates that fishing boats comprise the majority of boating traffic in this area.³ Boating east of the proposed facility has been historically limited because of shallow water and snags.
- The Union Point Marina located on the western end of river is not anticipated to be adversely impacted by the structure as most boating access is from the north and west on the Middle River, Victoria Canal and North Canal.
- This conveyance feature is considered a less than significant adverse impact to existing recreation patterns through the area. Some temporary adverse impacts to recreation will be evident during construction.

Mitigation/Recommendations

- Construction of the facility should be scheduled to avoid major holidays when boat traffic is highest.
- Design radial gates to allow small craft access. Allow free movement of boats through radial gates during ecologically non-sensitive seasons and periods of natural or high flow.
- Informational literature, signage, workshops and a web site should be established to inform boaters about boat ramp operation, times of facility operation and alternate routes.

³ Department of Water Resources, Boat Survey Report, 3/96

Opportunities

- Provide educational opportunities at the facility to inform public of its purpose and overall benefits to Delta ecology and recreation. Tours of the facility should be part of its program.
- Improve shoreline fishing and boat launching opportunities at proposed facility as well as improved auto access from Highway 4.

5. Grant Line Flow Control Structure

Assumptions

Calfed has not yet defined the design and program for the proposed flow control barrier along Grant Line Canal, although it is anticipated to be of similar design to the facility proposed in the Draft-ISDP. For the purposes of this report the ISDP alternative will be used to evaluate recreation impacts. (see Appendix 2 for illustrative)

Impacts

- Placement of a flow control structure at the west end of Grant Line Canal is anticipated to adversely impact fishing and boating in the area. Grant Line Canal is considered one of the best fishing areas in the Delta and is a very popular water skiing and jet skiing area also.
- The structure is designed with a boat lock to allow craft passage, but it is anticipated that boaters will be deterred from the area.
- Two marinas will be impacted, Del's Boat Harbor and Tracy Oasis Marina, boating access from the west to Tracy Oasis Marina will be seriously impeded.
- A 1996 boating survey conducted by DWR in the south Delta indicates that fishing boats, ski boats and jet skis comprise the majority of boating traffic in this area. The area is heavily used during weekends and holidays.⁴
- This conveyance feature is considered a significant adverse impact to existing recreation patterns and facilities through the area.

Mitigation/Recommendations

- Construction of the facility should be scheduled to avoid major holidays when boat traffic is highest.
- Design radial gates to allow small craft access. Allow free movement of boats through radial gates during ecologically non-sensitive seasons and periods of natural or high flow.
- Informational literature, signage, workshops and a web site should be established to inform boaters about boat ramp operation, times of facility operation and alternate routes.

⁴ Department of Water Resources, Boat Survey Report, 3/96

- Purchase, relocation or ongoing compensation for the Tracy Oasis Marina as it will be significantly impacted by conveyance feature.
- In-kind replacement of any other water-based recreation opportunities lost to conveyance feature.

Opportunities

- Provide educational opportunities at the facility to inform public of its purpose and overall benefits to Delta ecology and recreation. Tours of the facility should be part of its program.

6. Old River Flow Control Structure

Assumptions

Calfed has not yet clearly defined the design and program for the proposed flow control barrier along Old River, although it is anticipated to be of similar design to the facility proposed in the Draft-ISDP. For the purposes of this report the ISDP alternative will be used to evaluate recreation impacts. (see Appendix 2 for illustrative)

Impacts

- Placement of a flow control structure at Old River is anticipated to adversely impact fishing and boating in the area. The area is a preferred boating and fishing location in the south Delta.
- The structure is designed with a boat lock to allow craft passage, but it is anticipated that boaters will be deterred from the area.
- Two marinas will be impacted, Del's Boat Harbor and Heinbockle Harbor, boating access to both will be impeded. Access to Heinbockle Harbor from the west will be seriously impeded.
- A 1996 boating survey conducted by DWR in the south Delta indicates that fishing boats, ski boats and jet skis comprise the majority of boating traffic in this area. Overall boating in the area is considered relatively light, although this area receives more fishing boats than the other areas surveyed.⁵
- This conveyance feature is considered a significant adverse impact to existing recreation patterns and facilities through the area.

Mitigation/Recommendations

- Construction of the facility should be scheduled to avoid major holidays when boat traffic is highest.
- Design radial gates to allow small craft access. Allow free movement of boats through radial gates during ecologically non-sensitive seasons and periods of natural or high flow.

⁵ Department of Water Resources, Boat Survey Report, 3/96

- Informational literature, signage, workshops and a web site should be established to inform boaters about boat ramp operation, times of facility operation and alternate routes.
- Purchase, relocation or ongoing compensation for the Heinbockle Harbor as it will be significantly impacted by conveyance feature.
- In-kind replacement of any other water-based recreation opportunities lost to conveyance feature.

Opportunities

- Provide educational opportunities at the facility to inform public of its purpose and overall benefits to Delta ecology and recreation. Tours of the facility should be part of its program.
- Improve shoreline fishing and boat launching opportunities at proposed facility as well as improved access from Lindemann Road

7. CVP-SWP Improvements

- New fish screens at the Skinner Fish Facility and Tracy Pumping Plant are not anticipated to have any adverse impacts to existing recreation patterns or facilities.
- The proposed intertie between Tracy Pumping Plant and CCF is not anticipated to have any adverse impacts to recreation patterns or facilities.

8. Out of Delta Storage

- Any proposed out-of-Delta storage is not anticipated to impose any adverse impacts to recreation patterns or facilities within the legal Delta.

ERPP Modifications to Alternative 1C

1. Water Flows

Assumptions

Operational changes in environmental water flows will be achieved through the purchase of water from willing sellers rather than by regulatory mandates. Some environmental water flows would be met through use of new storage specifically allocated to environmental water supplies.

Impacts

- Negligible adverse impacts to existing recreation uses and facilities

2. Habitat Restoration Projects

Assumptions

Habitat restoration of tidal emergent wetland and tidal perennial wetland identified for the south Delta area would be relocated to the northern & western Delta. This change would provide for intensive habitat restoration targeting fisheries located sufficiently distant from the South Delta pumping facilities.

Impacts

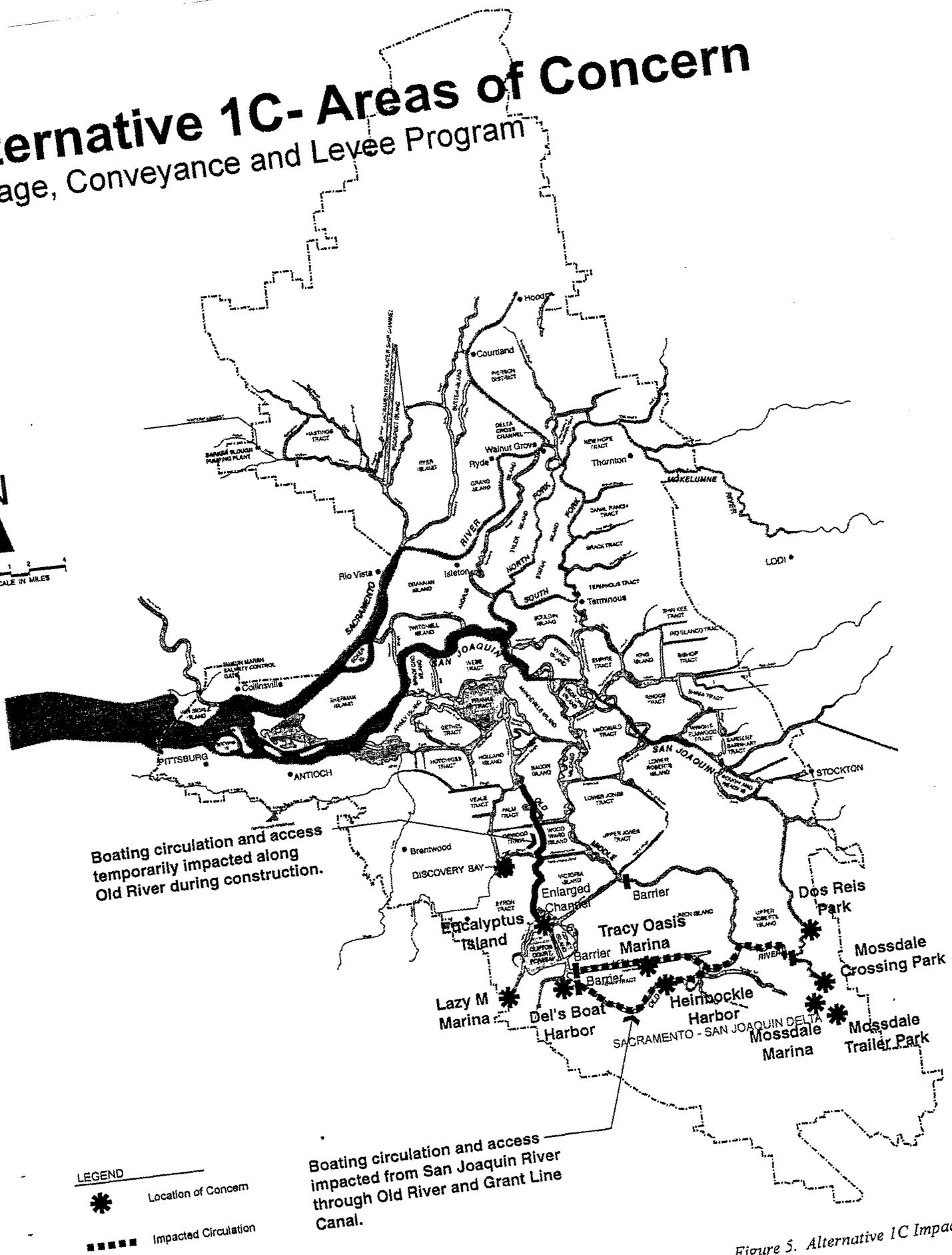
- Recreational boating uses may be at least temporally displaced from the northern and western Delta areas.
- Seasonal closures and other habitat restrictions may be enforced to a greater extent in the western and northern Delta areas forcing higher concentration of users in the south Delta area.
- Temporary impacts to existing recreation facilities may occur in the habitat focus areas.
- Improved aquatic and fishery habitat may ultimately result in greater sport fishing opportunities throughout the northern and western Delta areas.

Mitigation/Recommendations

- In kind replacement is required for any significant loss of recreation associated resources or facilities. Integrated solutions which consider the critical issues for each of the major Delta constituent groups allows for concepts that can accommodate the diverse Delta interests.

Alternative 1C- Areas of Concern

Storage, Conveyance and Levee Program



LEGEND

- Location of Concern
- Impacted Circulation

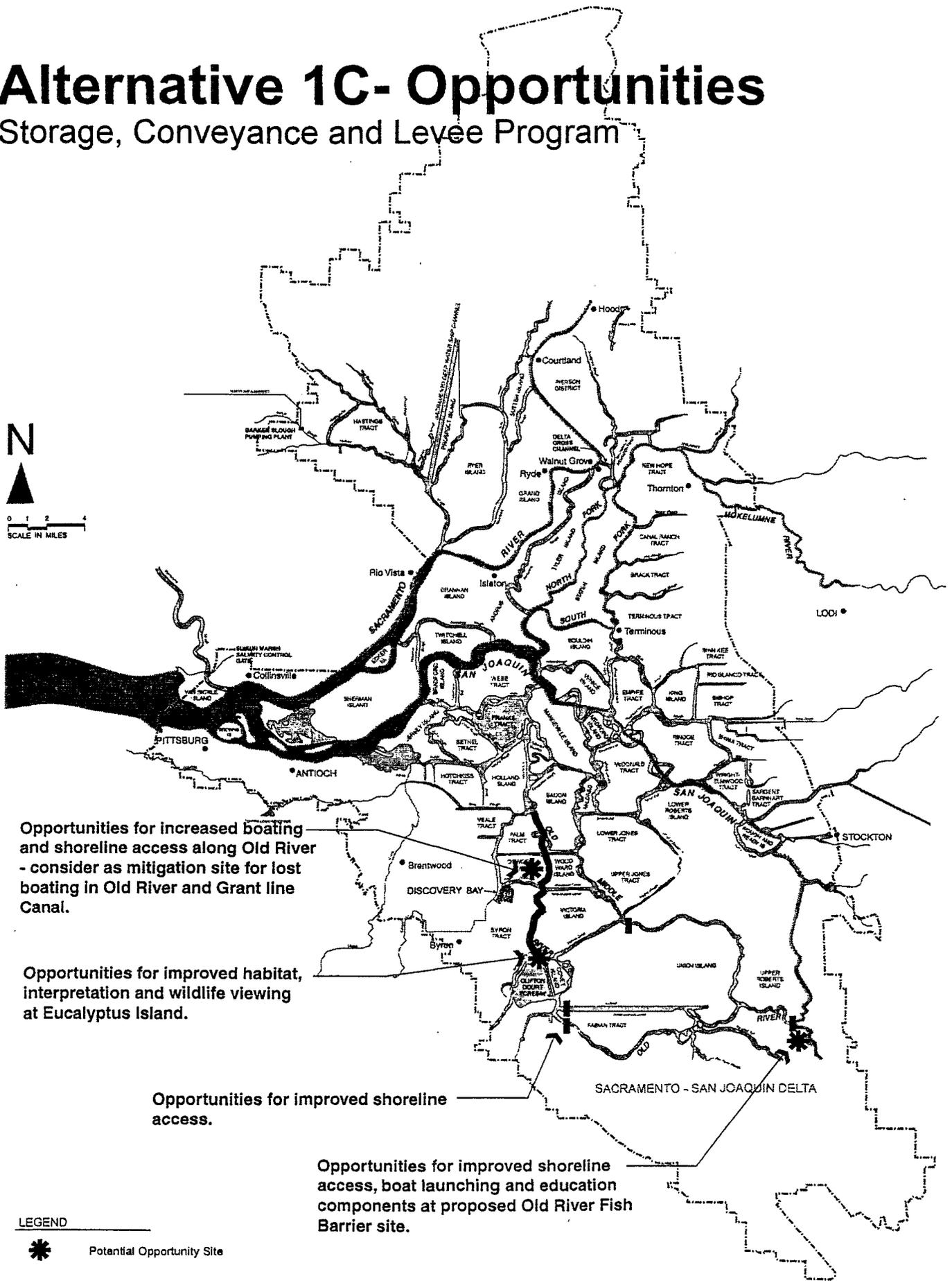
Boating circulation and access temporarily impacted along Old River during construction.

Boating circulation and access impacted from San Joaquin River through Old River and Grant Line Canal.

Figure 5. Alternative 1C Impacts

Alternative 1C- Opportunities

Storage, Conveyance and Levee Program



Opportunities for increased boating and shoreline access along Old River - consider as mitigation site for lost boating in Old River and Grant line Canal.

Opportunities for improved habitat, interpretation and wildlife viewing at Eucalyptus Island.

Opportunities for improved shoreline access.

Opportunities for improved shoreline access, boat launching and education components at proposed Old River Fish Barrier site.

LEGEND



Potential Opportunity Site

Figure 6. Alternative 1C Opportunities

Alternative 2B

1. Include all proposed conveyance and storage methods from alternative 1C.
2. **10,000cfs Intake at Hood with Isolated Channel from Hood to McCormack-Williamson Tract**

Assumptions

CalFed has not yet defined the design and program of the proposed conveyance feature. Impacts to recreation have not been fully studied, potential affects suggested in this report are based on focused meetings on June 3rd with CalFed staff and represent preliminary thoughts on potential impacts.

Impacts

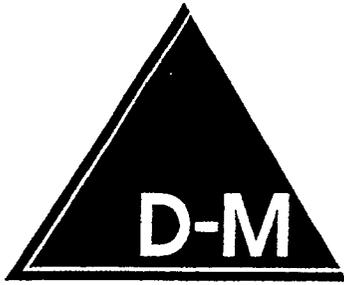
- It is anticipated that an isolated facility from Hood to McCormack-Williamson Tract could have potential adverse impacts on recreation in the area.
- Existing recreation in Snodgrass Slough and Lost Slough, such as boat camping and fishing enhanced by mature riparian forest may be adversely impacted by this conveyance, thereby reducing the value of the waterway as a recreation destination.
- The hydrology of Lost and Snodgrass Sloughs could be altered resulting in changes to existing warm water fisheries.
- Although any adverse impacts to this area will need further investigation it should be considered a potential area of concern for disruption to existing recreation use patterns.

Mitigation/Recommendations

- In-kind replacement of any water-based recreation opportunities lost to conveyance feature at its outlet at Lost Slough.

Opportunities

- Create habitat along conveyance feature and provide trails for hiking and nature interpretation as well as shoreline fishing areas.
- Provide free access to non-motorized boaters.
- Provide improved auto access and parking at Twin Cities Road for recreation users along channel and Snodgrass Slough.



GAP

NOTED

3. Flooded McCormack-Williamson Tract

Assumptions

CalFed has not yet defined the design and program of the proposed conveyance feature. Impacts to recreation have not been fully studied, potential affects suggested in this report are based on focused meetings on June 3rd with CalFed staff and represent preliminary thoughts on potential impacts.

Impacts

- It is anticipated that a flooded McCormack-Williamson Tract could have some
- adverse impacts on recreation in the area.
- The area is popular for cruising, boat camping and fishing along Snodgrass Slough. Any modifications to the Slough could adversely impact current recreation patterns.
- An anchorage located on the north end of the tract along Lost Slough would be potentially eliminated.
- Construction associated with Flooding McCormack-Williamson Tract is anticipated to cause temporary impacts to the several marinas near Locke and Walnut Grove. Boating access may be adversely impacted on a temporary basis during construction.
- It is anticipated that boating traffic through the main channels of Snodgrass and Lost Sloughs would not be impacted as a result of levee breaches and shallow water habitat creation on the interior of the island.
- An unknown number of private hunting clubs and piers could be adversely impacted in the advent of island flooding.
- Although any adverse impacts to this area will need further investigation it should be considered a potential area of concern for disruption to existing recreation use patterns.

Mitigation/Recommendations

- In-kind replacement of any water-based recreation opportunities lost to conveyance feature/habitat at Snodgrass and Lost Sloughs.
- In-kind replacement of anchorage at Lost Slough.

Opportunities

- Provide opportunities for passive recreation uses such as canoeing, hiking and wildlife viewing in shallow water habitat created as a result of flooding.
- Allow limited no-wake boating access on McCormack-Williamson Tract during ecologically non-sensitive seasons.
- Provide auto and recreation access points along Lauffer and Vial Road for passive recreation and educational usage near shallow wetland habitat created on McCormack-Williamson Tract. Areas for wildlife viewing, hiking trails and education could also be incorporated.

- Expansion of mature oak woodland environment similar to Delta Meadows on newly flooded tract. Enhance boat camping opportunities throughout the area.
- Link management and programs to TNC's Cosumnes River Preserve.
- Incorporate amenities through design, such as quiet sloughs for exploration and boat camping.

4. Modified Mokelumne River Channels

Assumptions

CalFed has not yet defined the design and program of the proposed conveyance feature. Impacts to recreation have not been fully studied, potential effects suggested in this report are based on focused meetings with CalFed staff and represent preliminary thoughts on potential impacts. Channel widening has not been defined by CalFed although it is anticipated that a combination of dredging, physical channel widening and setback levees will be considered.

Impacts

- It is anticipated that channel widening and setback levees along the Mokelumne River will have adverse impacts to New Hope Landing and Wimpy's Marinas on the New Hope Tract. These marinas will most likely be removed as part of setback levee construction.
- Construction associated with channel widening and setback levees along the North Fork Mokelumne River is anticipated to cause temporary adverse effects to the several marinas on Andrus Island. Boating access to and from Andrus Island may be adversely impacted during construction.
- An unknown number of private hunting clubs and piers could be adversely impacted along the channels alignment.
- This is considered a significant adverse impact to existing recreation use patterns and facilities throughout the area.

Mitigation/Recommendations

- In-kind replacement of any water or land-based recreation opportunities lost to conveyance feature along Mokelumne River.
- In-kind replacement of Wimpy's and New Hope Landing Marinas as a result of setback levee construction.
- Minimize any construction impacts to marinas on Andrus Island associated with construction of setback levees and channel widening.

Opportunities

- Improved auto and shoreline access at Walnut Grove Road and Mokelumne River.
- Provide improved boating opportunities in North Fork Mokelumne main channel. New recreation enhancements in this channel could act as a source of mitigation for lost recreation elsewhere in the delta.

- Incorporate improved auto and shoreline access as part of levee improvements along south end of Tyler Island Road.
- Improve habitat and aesthetic qualities along edges of channels.
- Create areas off main channel for exploration and anchorage. This will provide for a more diversified and quality recreation experience through the corridor.

ERPP Modifications to Alternative 2B

1. Water Flows

Assumptions

Operational changes in environmental water flows achieved through the purchase of water from willing sellers and use of the new storage allocated to environmental water supplies.

Impacts

- Negligible adverse impacts to existing recreation uses and facilities

2. Habitat Restoration Projects

Assumptions

- Habitat restoration projects identified for the South Delta area would all be located west of the flow and stage control structures on Middle River, Grant Line Canal and Old River.
- Habitat improvements along the North Fork of the Mokelumne River would be limited to establishing a riparian habitat corridor associated with setback levees constructed to modify channel conveyance.
- Shallow water habitat identified for the Delta would be located in the eastern Delta by breaching select portions of the east levee along the South Fork of the Mokelumne River and protecting interior levee slopes.
- Habitat restoration identified for the South Delta area would be located west of the flow & stage control structures on Middle River, Grant Line Canal and Old River.
- Habitat improvements along the North Fork of the Mokelumne would be limited to establishing a riparian habitat corridor associated with setback levees constructed to modify channel conveyance.

Impacts

- Recreational boating uses may be at least temporally displaced from the channels south and east of the flow and stage control structures on Middle River, Grant Line Canal and Old River.
- Temporary closures or restricted uses could be expected during implementation of the ERPP projects for both water and land-based uses.
- Existing facilities south of the flow and stage control structures may be impacted during the implementation period.
- Short term impacts would be expected along the North Fork of the Mokelumne River where a riparian habitat corridor associated with setback levees constructed to modify channel conveyance is proposed. But long term beneficial impacts to recreational boating may be assumed since restoration proposals do not involve aquatic habitats for which boating restrictions would be more severe.
- More stringent and long term impacts to water recreation uses may be expected for shallow water habitat areas located in the eastern Delta along the South Fork of the Mokelumne River and associated dead end sloughs.
- Temporary impacts to existing recreation facilities including Wimpy's Marina, New Hope Landing, and Westgate Landing & Anchorage, may occur in this habitat focus area.
- Improved aquatic and fishery habitat may ultimately result in greater sport fishing opportunities throughout the eastern and northern Delta areas.

Mitigation/Recommendations

- In kind replacement is required for any significant loss of recreation associated facilities or uses resulting from the ERPP proposals associated with Alternative 2b as described above. Recreation facilities requiring relocation should be sited to achieve an improved distribution of recreation infrastructure throughout the Delta. Incentive concepts encouraging private land owners to participate in farm to habitat conversions should be explored. Integrated solutions should be pursued which consider the critical issues for each of the major Delta constituent groups allows for concepts that can accommodate the diverse Delta interests..

Alternative 2B- Areas of Concern

Storage, Conveyance and Levee Program



Boating circulation and access temporarily impacted along North Fork Mokelumne during construction.

Boating circulation and access temporarily impacted along Old River during construction.

Boating circulation and access impacted from San Joaquin River through Old River and Grant Line Canal.

LEGEND

- Location of Concern
- Impacted Circulation

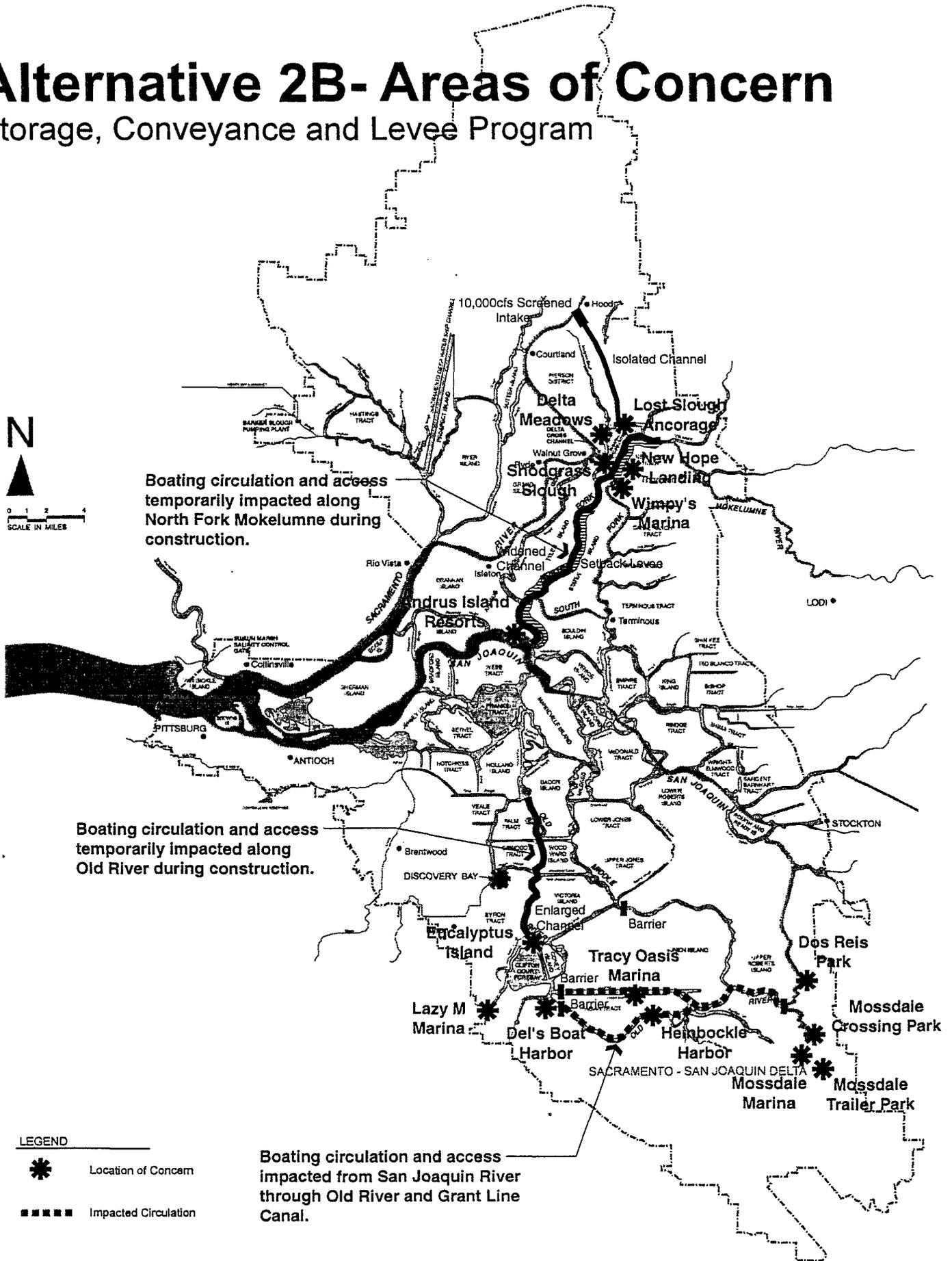


Figure 7. Alternative 2B Impacts

Alternative 2B- Opportunities

Storage, Conveyance and Levee Program

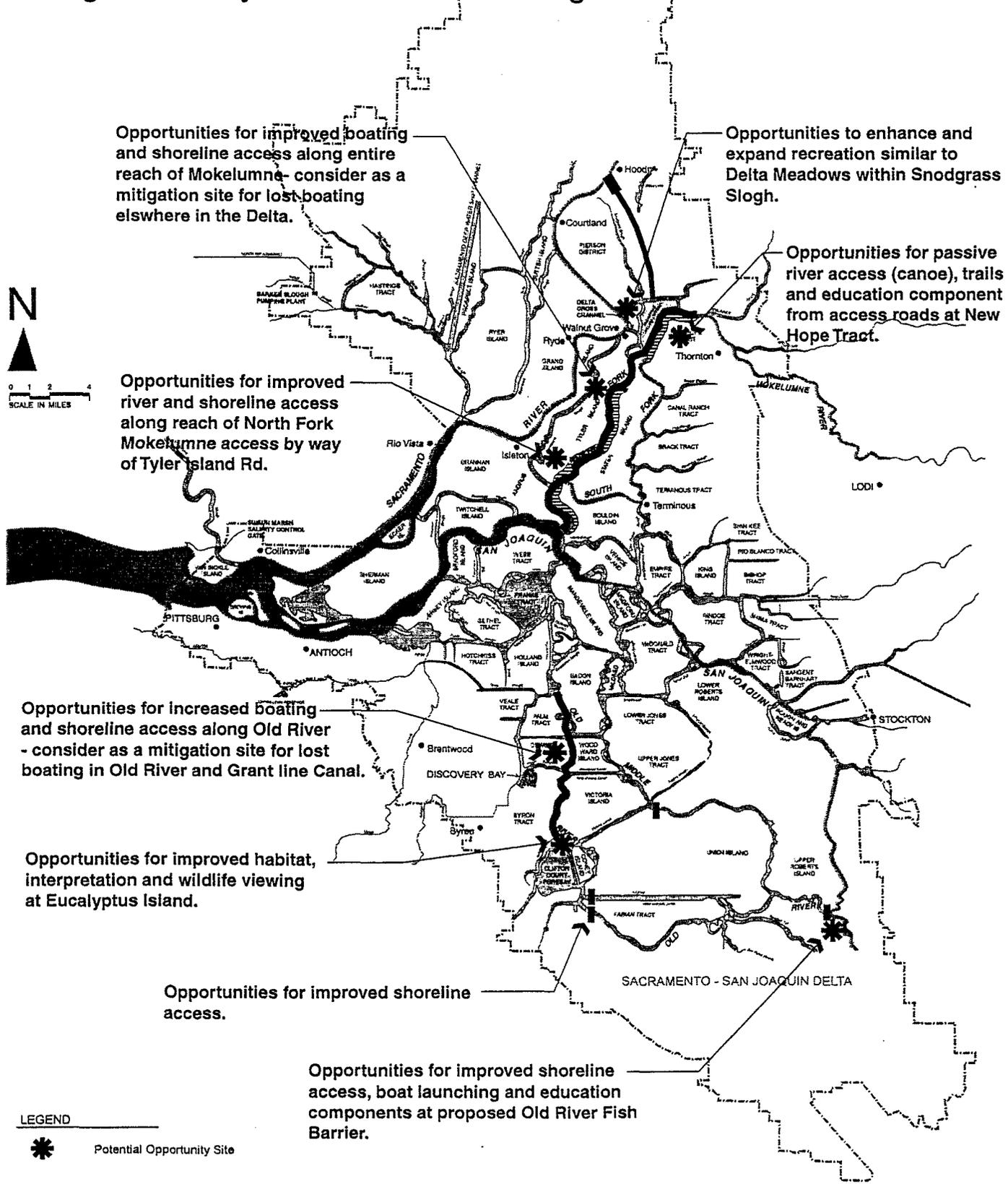


Figure 8. Alternative 2B Opportunities

Alternative 3B

1. Include all proposed conveyance and storage methods from alternative 1C.
2. **Modified Mokelumne River Channels**

Assumptions

CalFed has not yet defined the design and program of the proposed conveyance feature. Impacts to recreation have not been fully studied, potential effects suggested in this report are based on focused meetings with CalFed staff and represent preliminary thoughts on potential impacts. Channel widening has not been defined by CalFed although it is anticipated that a combination of dredging, physical channel widening and setback levees will be considered.

Impacts

- It is anticipated that channel widening and setback levees along the Mokelumne River will have adverse impacts to New Hope Landing and Wimpy's Marinas on the New Hope Tract. These marinas will most likely be removed as part of setback levee construction.
- Construction associated with channel widening and setback levees along the North Fork Mokelumne River is anticipated to cause temporary adverse effects to the several marinas on Andrus Island. Boating access to and from Andrus Island may be adversely impacted during construction.
- An unknown number of private hunting clubs and piers could be adversely impacted along the channels alignment.
- This is considered a significant adverse impact to existing recreation use patterns and facilities throughout the area.

Mitigation/Recommendations

- In-kind replacement of any water or land-based recreation opportunities lost to conveyance feature along Mokelumne River.
- In-kind replacement of Wimpy's and New Hope Landing Marinas as a result of setback levee construction.
- Minimize any construction impacts to marinas on Andrus Island associated with construction of setback levees and channel widening.

Opportunities

- Improved auto and shoreline access at Walnut Grove Road and Mokelumne River.

- Provide improved boating opportunities in North Fork Mokelumne main channel. Recreation enhancements in this channel could act as a source of mitigation for lost recreation elsewhere in the delta.
- Incorporate improved auto and shoreline access as part of levee improvements along south end of Tyler Island Road.
- Improve habitat and aesthetic qualities along edges of channels.
- Create areas off main channel for exploration and anchorage. This will provide for a more diversified and quality recreation experience through the corridor.

3. 10,000cfs Open Channel Isolated Facility From Hood to Clifton Court Forebay-

Assumptions

CalFed has not yet defined the design and program of the proposed conveyance feature. Impacts to recreation have not been fully studied, potential affects suggested in this report are based on focused meetings on June 3rd with CalFed staff and represent preliminary thoughts on potential impacts. The capacity of the feature has been upgraded from 5,000cfs in alternative 3B to 10,000cfs.

Impacts

- It is anticipated that the proposed 10,000cfs Isolated Facility will have adverse impacts on recreation areas along its designated alignment. Both long term and temporary impacts can be expected.
- The proposed channel will impact portions of the following wildlife preserves and associated recreation in each; Stone Lakes Preserve(USFWS), Cosumnes River Prerserve(TNC) and the Woodbridge Preserve(CFDG).
- It is not anticipated that the Isolated Facility will require the removal of any established marinas along its alignment. Although temporary impacts may impair access and circulation to some marinas during construction of the conveyance feature.
- The proposed Harbor Cove and Marina is located in the alignment of the propose channel and should be considered an area of concern.
- The proposed channel will impact portions of the following city parks and state recreation facilities; White Slough State Recreation Area, Buckley Cove Park-City of Stockton. White Slough is a popular water ski area.
- An unknown number of private hunting clubs and piers could be adversely impacted along the channels alignment.
- It is not anticipated that recreation will be allowed within the easement of the conveyance feature since little or no recreation benefits are associated with the open channel in the EIR/EIS.
- It is anticipated that boating access and circulation will be temporarily impacted during construction of the facility.

- This is considered a significant adverse impact to existing recreation patterns and facilities throughout the area.

Mitigation/Recommendations

- In-kind replacement will be necessary for any water or land-based recreation opportunities lost to this conveyance feature along its designated alignment. Water skiing in White Slough will require special consideration for mitigation.
- A portion of the required mitigation resulting from impacts associated with construction of the channel should be targeted towards recreation improvements in the Delta.

Opportunities

- Provide trail system and fishing access along 2000ft wide easement of proposed conveyance feature. An opportunity exists to create a rural trail system that connects Sacramento and Stockton.
- Provide hunting and wildlife viewing opportunities at points along proposed channel.
- Provide for a future linear parkway within the 2,000ft easement of the proposed channel alignment. A regional greenway would be a valuable amenity to Stockton as its urban expands westward into the Delta.
- Create a greenway and open space preserve on western edge of Stockton as an amenity to the city. The greenway could also act as an urban edge and gateway to the Delta for the city.
- Utilize easement to link wildlife area along the segment of the proposed channel.
- Create an off channel water ski park as mitigation for lost White Slough recreation area. Soil excavated for the park could be used in setback levee construction.

ERPP Modifications to Alternative 3B

1. Water Flows

Assumptions

Operational changes in environmental water flows would be achieved through the purchase of existing water from willing sellers.

Impacts

- Negligible adverse impacts to existing recreation uses and facilities are anticipated.

2. Habitat Restoration Projects

Assumptions

- Operational changes in environmental water flows would be achieved through the purchase of existing water from willing sellers.
- Habitat improvements along the North Fork of the Mokelumne River would be limited to establishing a riparian tree corridor associated with the setback levees for modified channel conveyance.
- Shallow water habitat identified for the Delta would be located in the eastern Delta and created by breaching select portions of the east levee segments along the South Fork of the Mokelumne River and portions of levee structures along the adjoining dead-end sloughs.

Impacts

- Short term impacts would be expected along the North Fork of the Mokelumne River where a riparian habitat corridor associated with setback levees are constructed to modify channel conveyance as proposed. But long term beneficial impacts to recreational boating may be assumed since restoration proposals do not involve aquatic habitats for which boating restrictions would be more severe.
- More stringent and long term impacts to water recreation uses may be expected for shallow water habitat areas located in the eastern Delta along the South Fork of the Mokelumne River and associated dead end sloughs.
- Recreational boating uses may be at least temporally displaced from some of the eastern and south Delta areas
- Seasonal closures and other habitat restrictions may be enforced to a greater extent in the western and northern Delta areas forcing higher concentration of users in the south Delta area.
- Temporary impacts to existing recreation facilities may occur in the habitat focus areas.
- Improved aquatic and fishery habitat may ultimately result in greater sport fishing opportunities throughout the northern and western Delta areas.

Mitigation/Recommendations

- In kind replacement is required for any significant loss of recreation serving facilities or uses resulting from the ERPP proposals associated with Alternative 3b as described above. Incentive concepts encouraging private land owners to participate in farm to habitat conversions should be explored. Integrated solutions should be pursued which consider the critical issues for each of the major Delta constituent groups allows for concepts that can accommodate the diverse Delta interests.

Alternative 3B- Areas of Concern

Storage, Conveyance and Levee Program



Boating circulation and access temporarily impacted along North Fork Mokelumne during construction.

Boating circulation and access temporarily impacted along Old River during construction.

Boating circulation and access impacted from San Joaquin River through Old River and Grant Line Canal.

- LEGEND**
- Location of Concern
 - Impacted Circulation

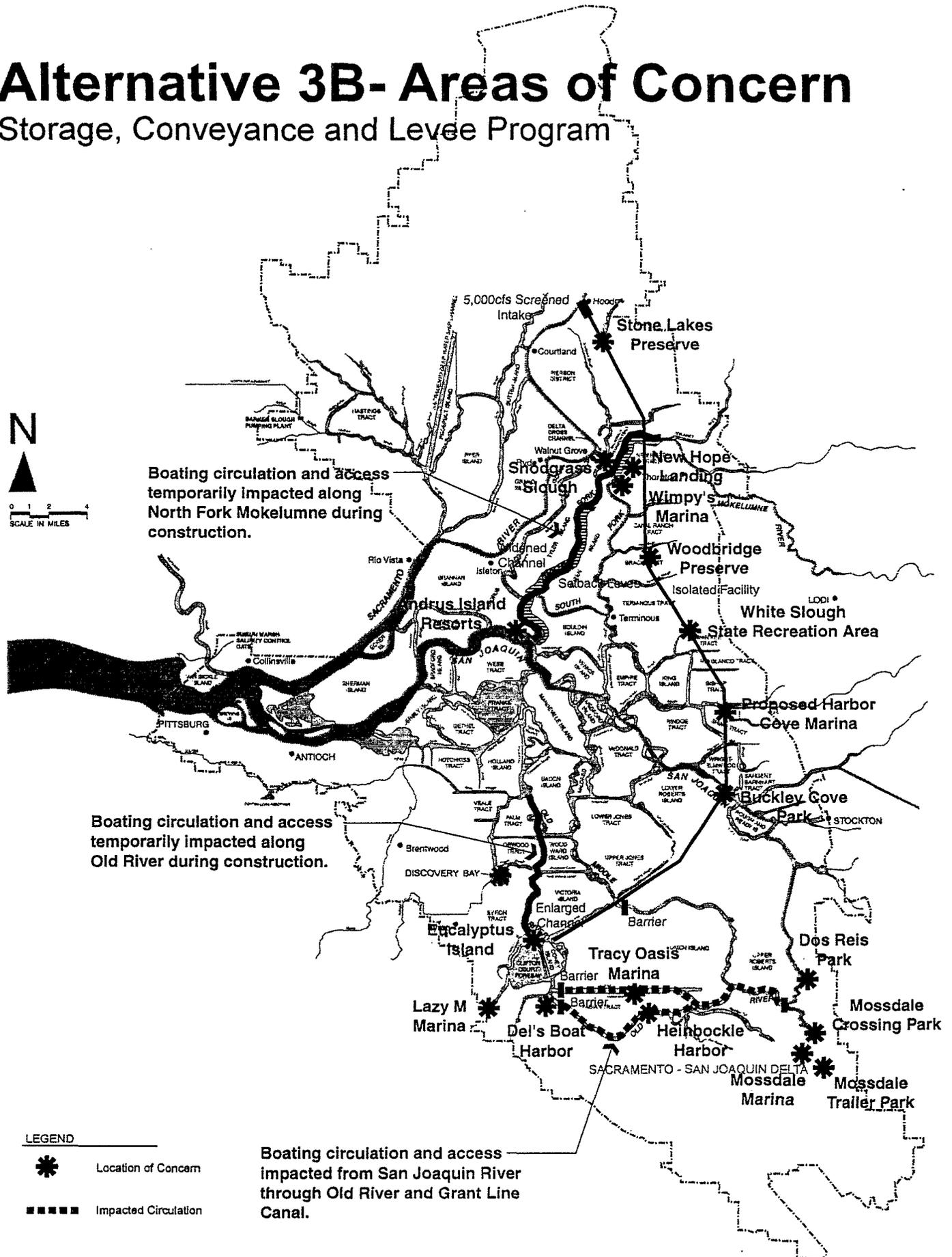
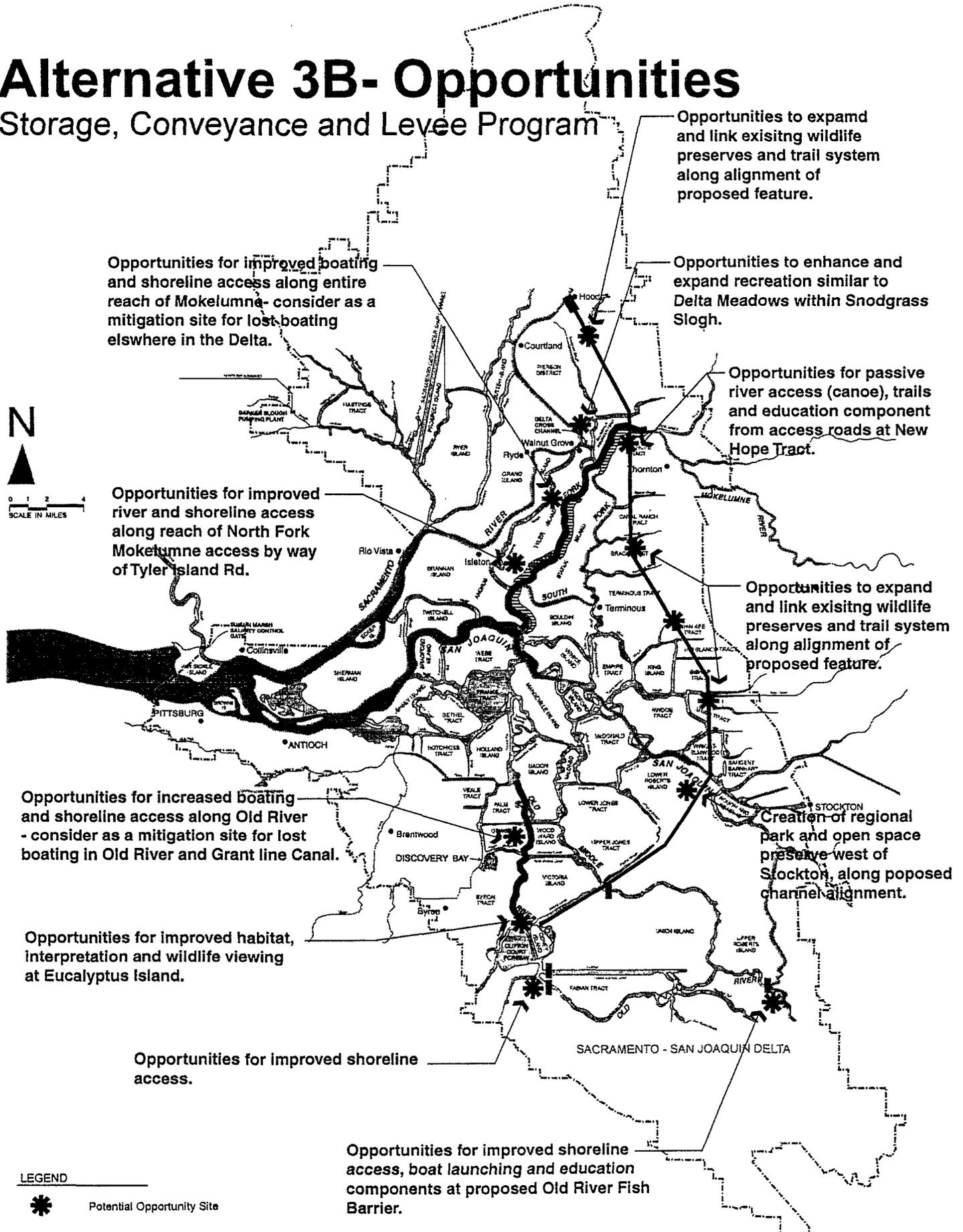


Figure 9. Alternative 3B Impacts

Alternative 3B- Opportunities

Storage, Conveyance and Levee Program



LEGEND
 Potential Opportunity Site

Figure 10. Alternative 3B Opportunities

Appendices

Appendix 1

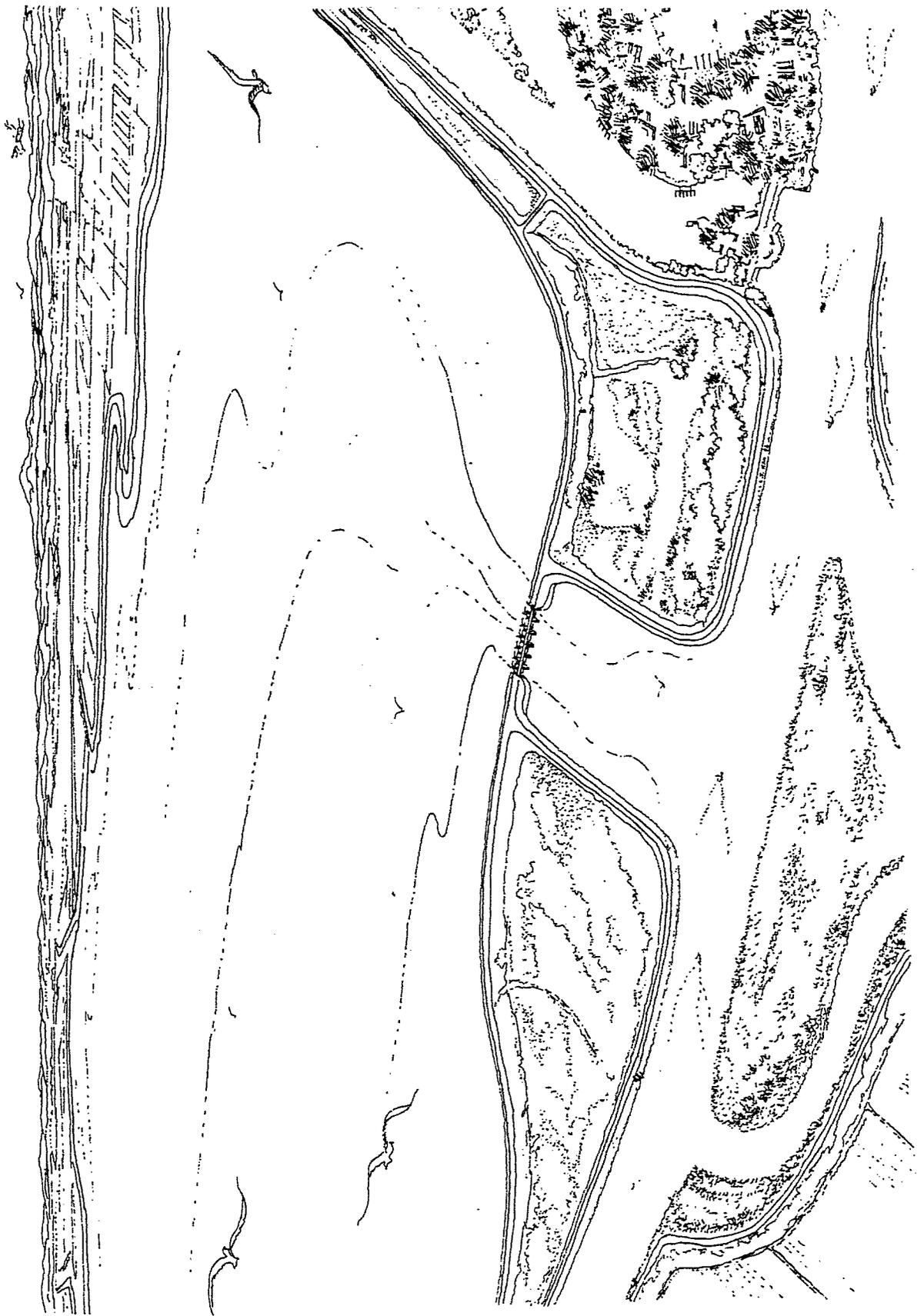
Glossary

Categories of Recreation Use

1. *Automobile Touring* (River town touring, Sunday drives)
2. *Camping* (RV, tent/car, tent/bike)
3. *Day Use Facilities* (picnicking, wildlife viewing, environmental education, etc.)
4. *Fishing* (levee, shore, dock, boat)
5. *Non-motorized Boating* (canoeing, kayaking, sailing, rafting, wind surfing)
6. *Pleasure Boating* (house boating, yacht cruising, boat camping)
7. *Power Boating* (pleasure power boating, water skiing, personal watercraft)
8. *Recreation resources* (include water-based and land-based activities and their supporting resources which include natural resources and man made infrastructure)
9. *Trail Use* (bicycling, hiking, equestrian)
10. *Waterfowl Hunting* (flooded and dry land)

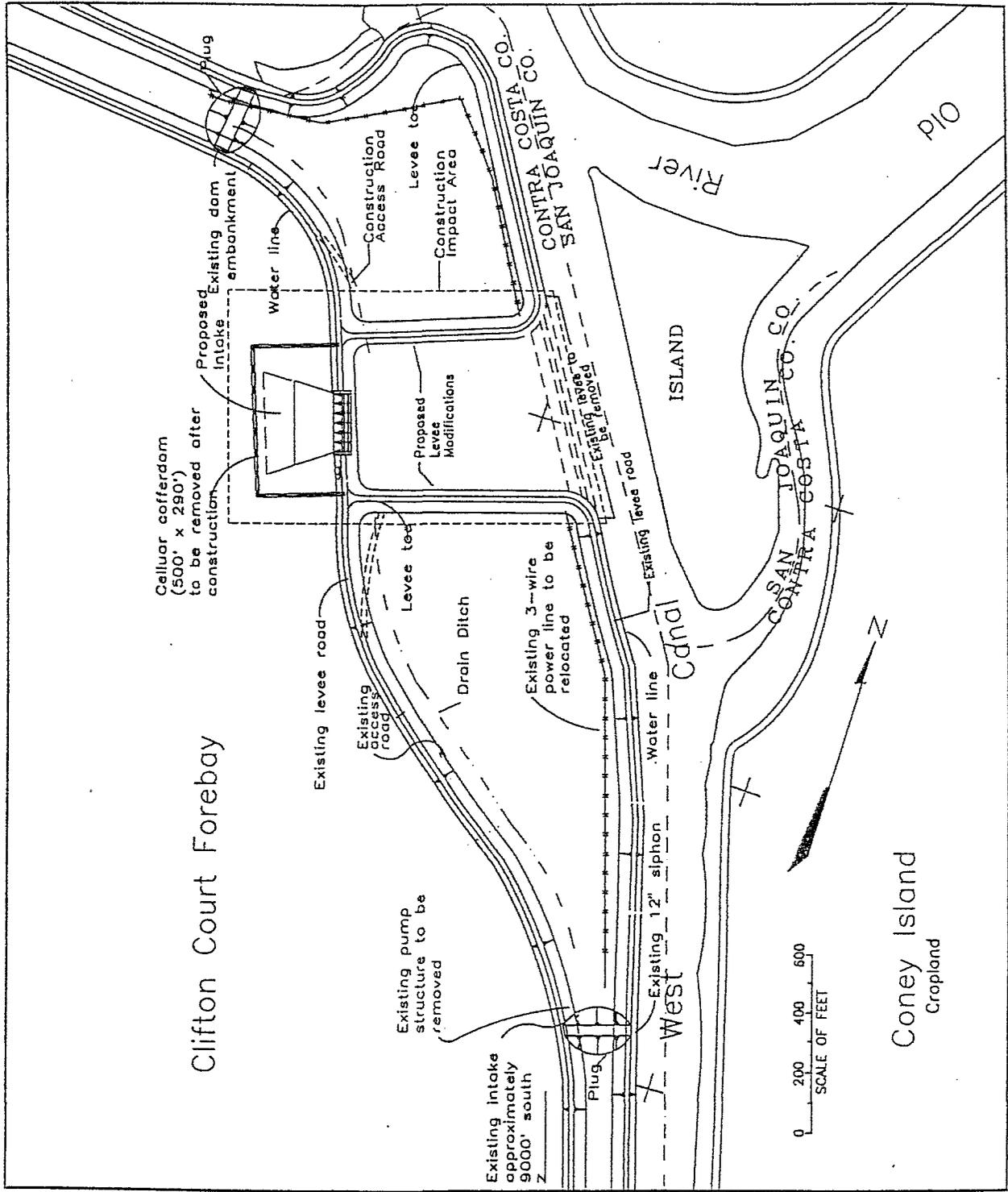
Appendix 2

Glossary- Fish and Flow Control Structure Illustrations



Source: Draft EIR/EIS Interim South Delta Program, 1996

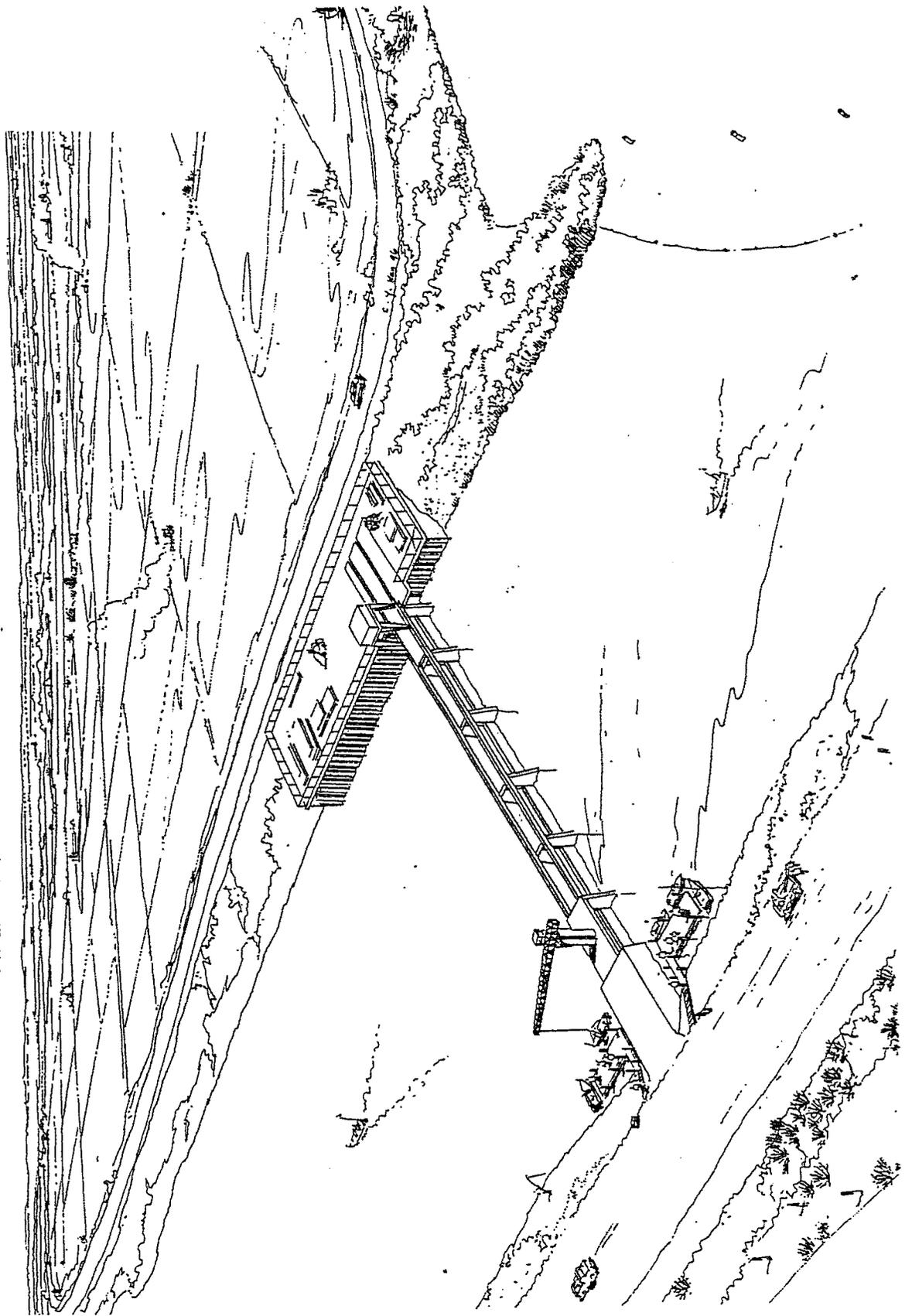
ISDP CCF Intake Structure



Clifton Court Forebay

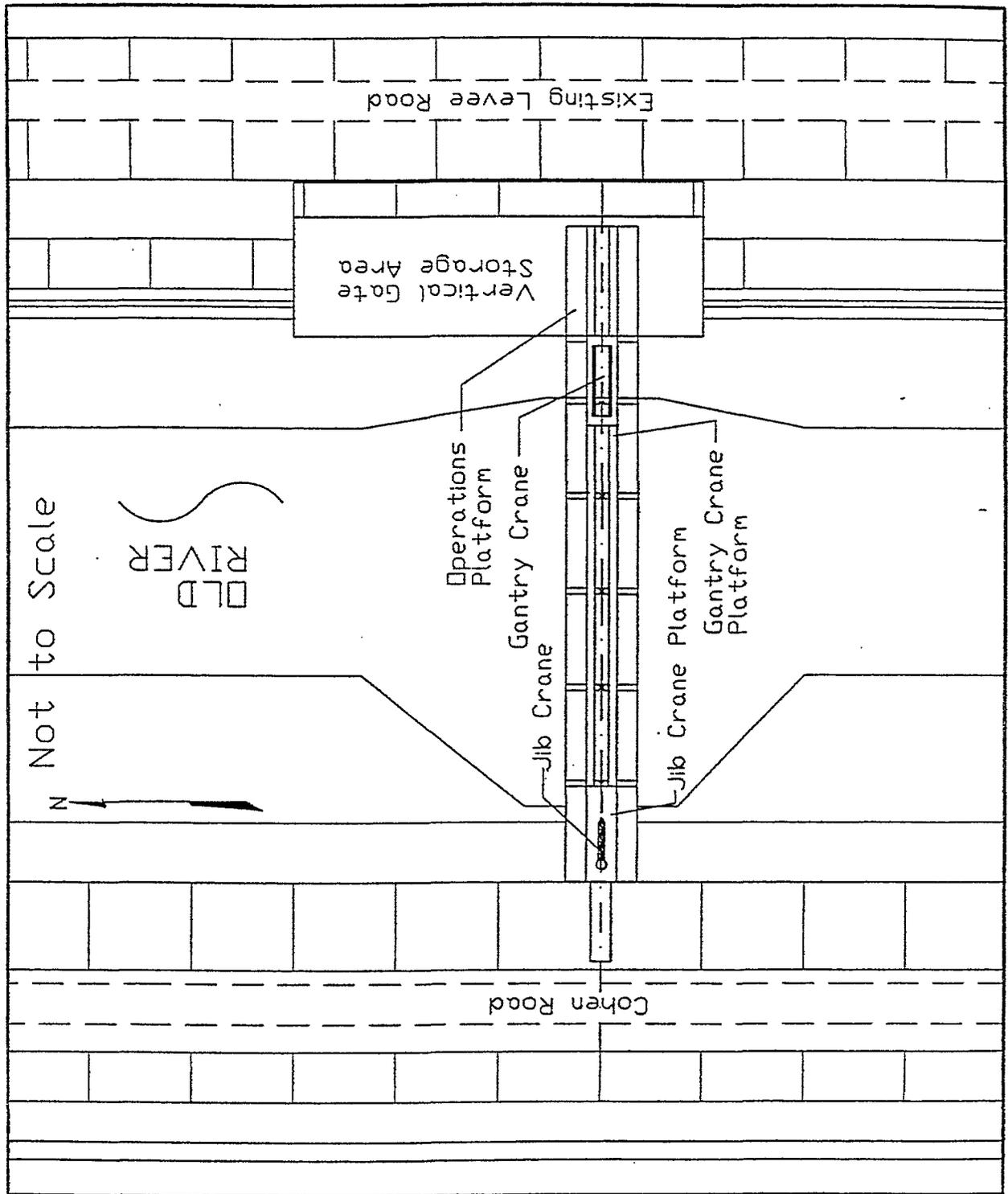
Source: Draft EIR/EIS Interim South Delta Program, 1996

ISDP CCF Intake Structure



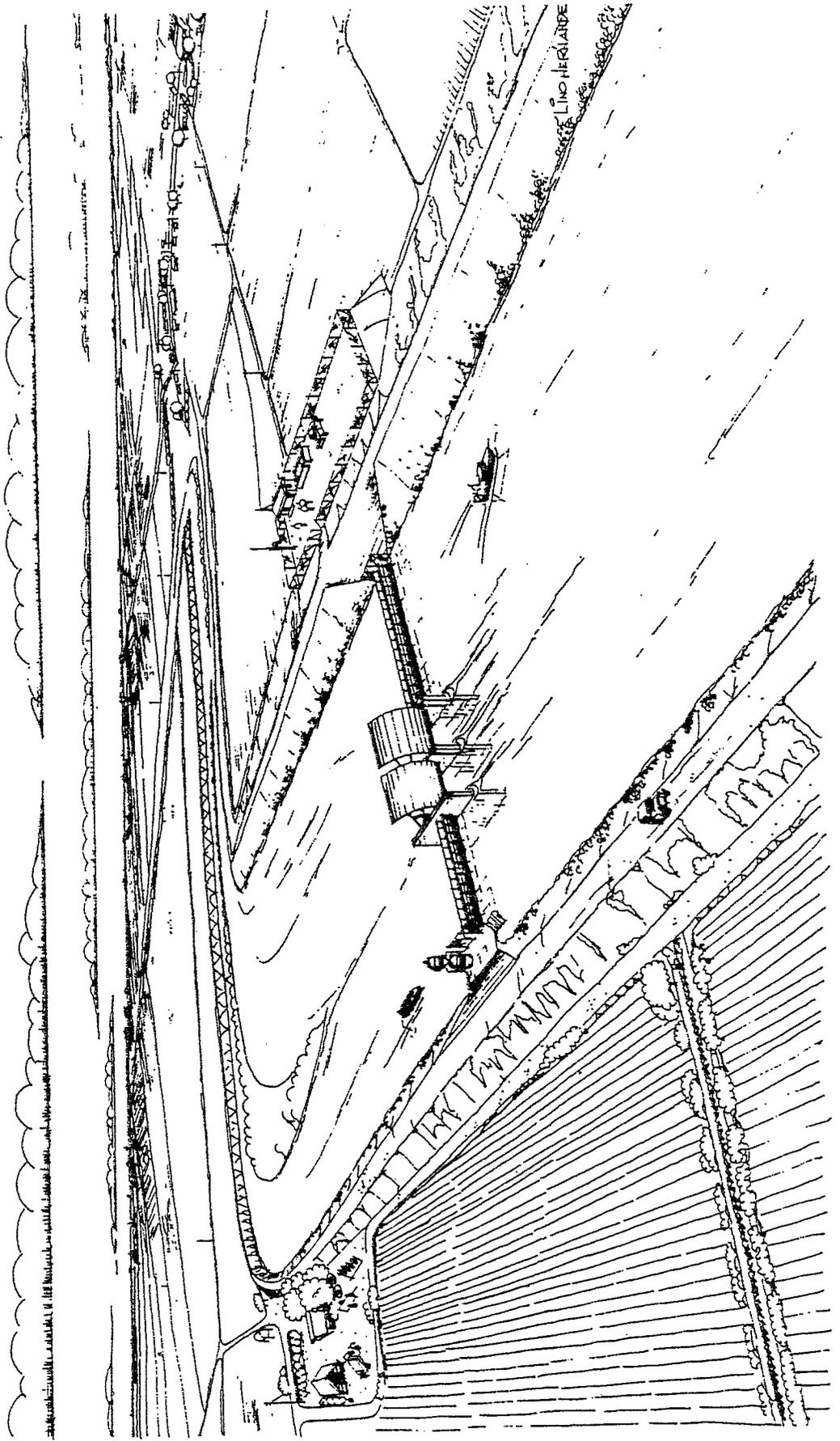
Source: Draft EIR/EIS Interim South Delta Program, 1996

Old River Fish Control Barrier



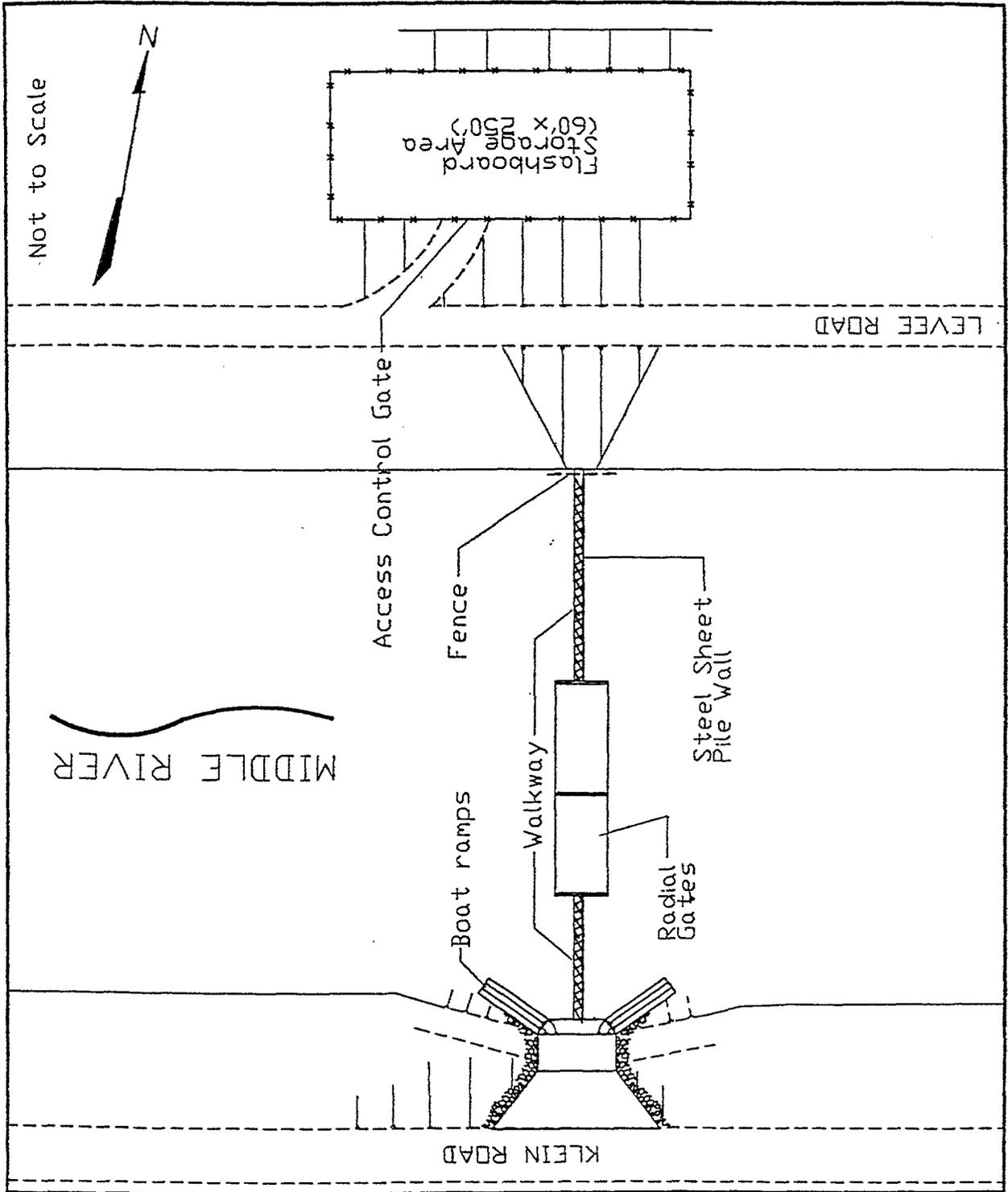
Source: Draft EIR/EIS Interim South Delta Program, 1996

Old River Fish Control Barrier



Source: Draft EIR/EIS Interim South Delta Program, 1996

Middle River Flow Control Barrier



Source: Draft EIR/EIS Interim South Delta Program, 1996

Middle River Flow Control Barrier

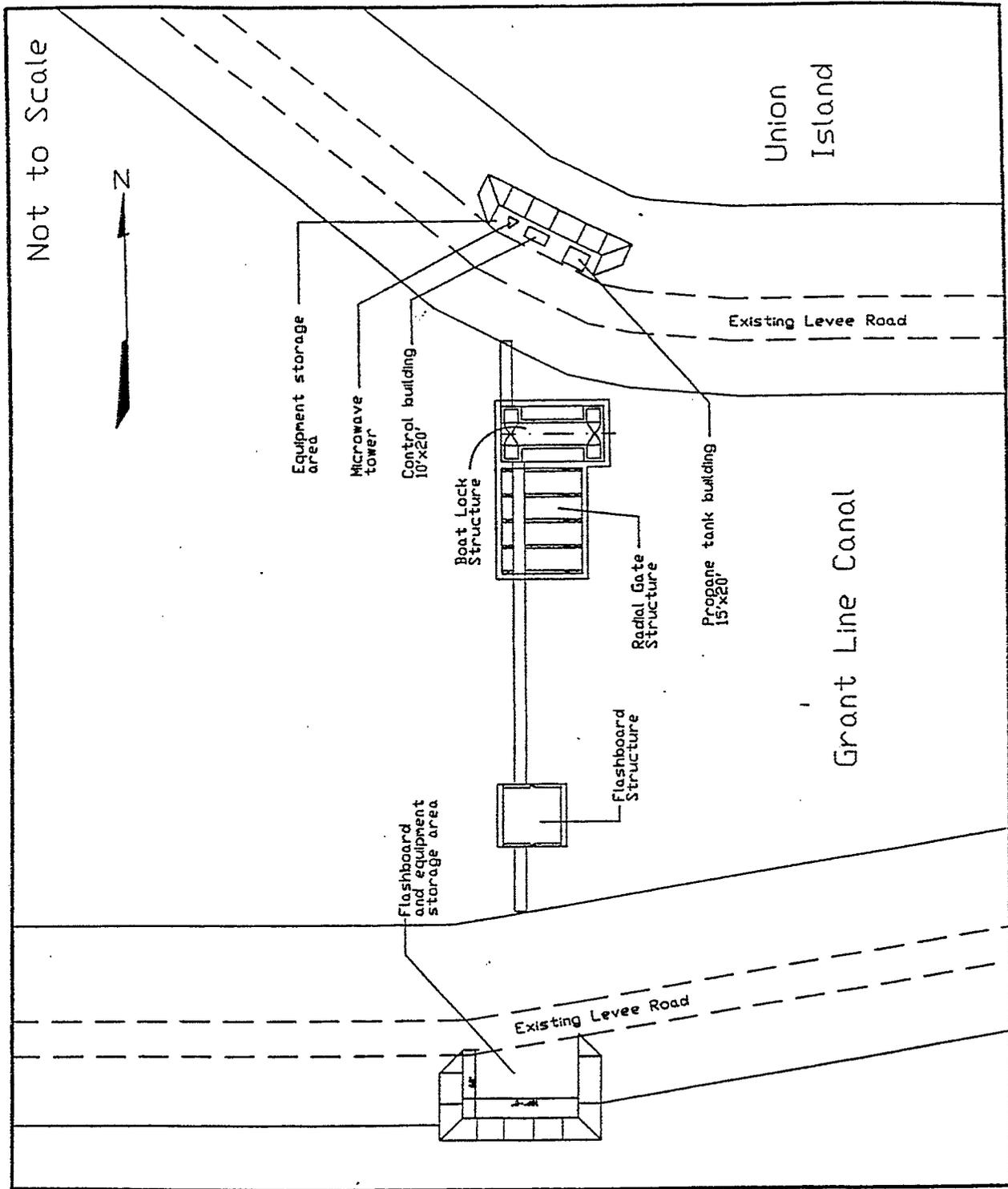


Source: Draft EIR/EIS Interim South Delta Program, 1996

Grant Line Flow Control Barrier

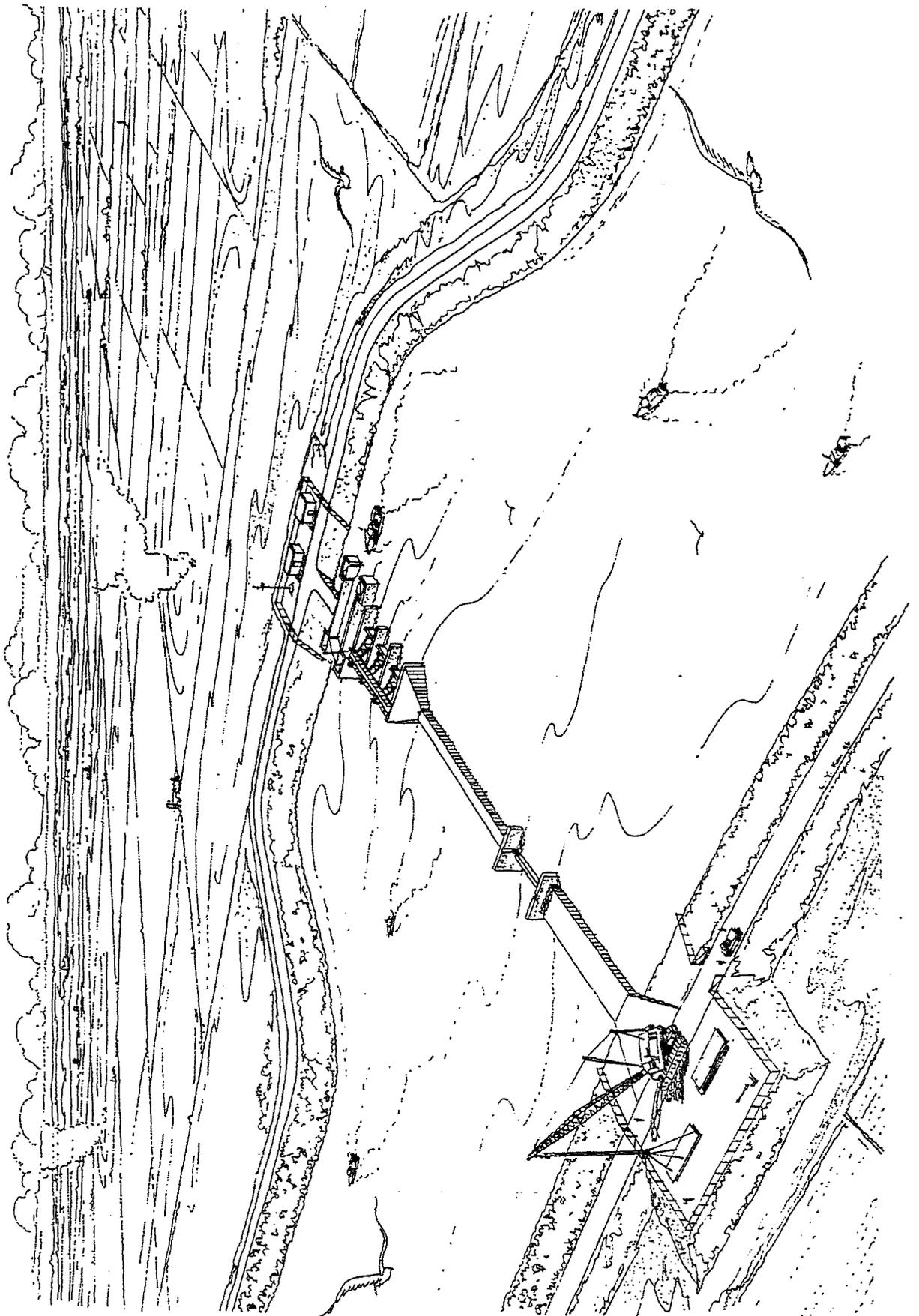
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Source: Draft EIR/EIS Interim South Delta Program, 1996

Grant Line Flow Control Barrier

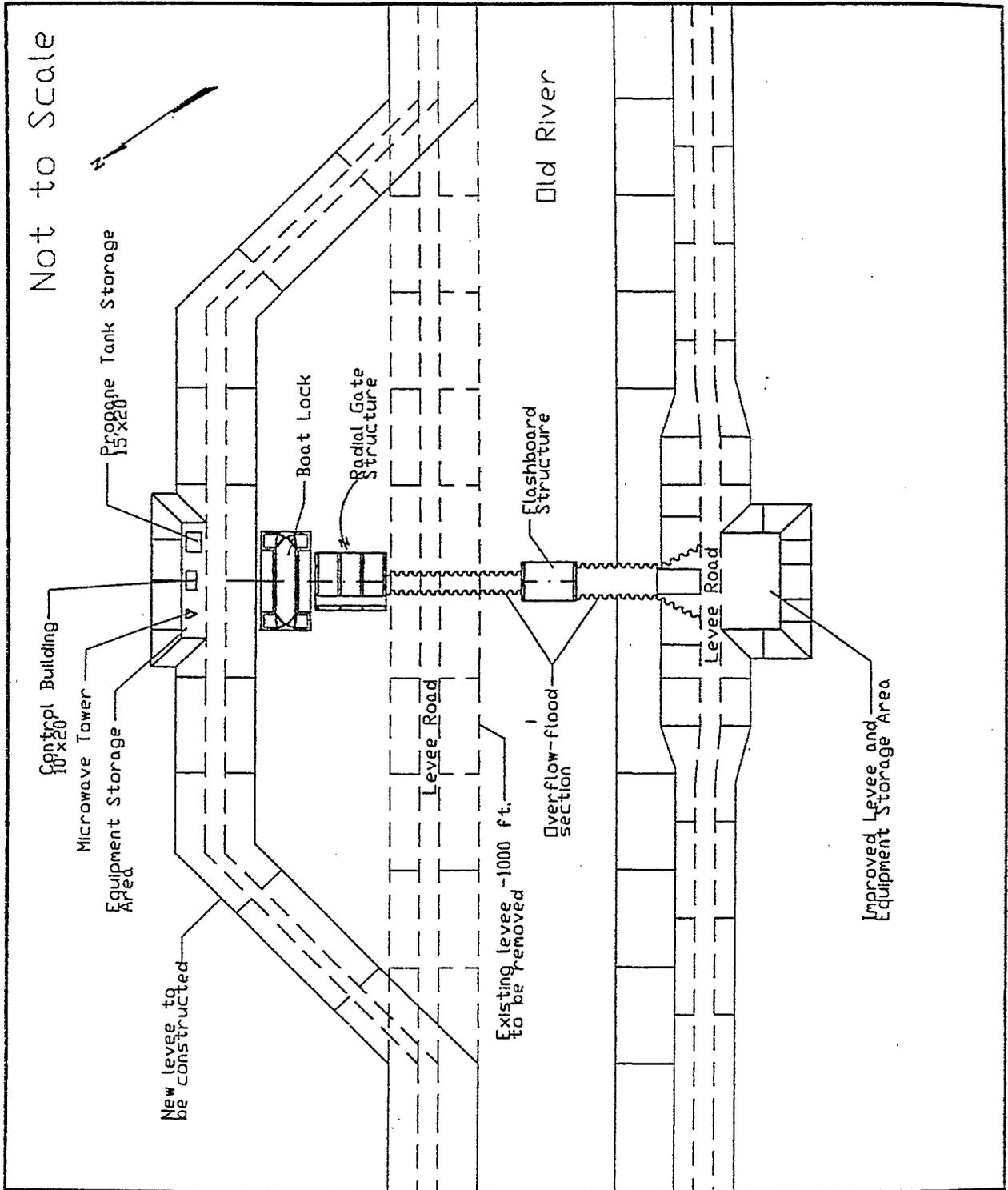


Source: Draft EIR/EIS Interim South Delta Program, 1996

Old River Flow Control Barrier

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Source: Draft EIR/EIS Interim South Delta Program, 1996

Old River Flow Control Barrier