

MINUTE ITEM

This Calendar Item No. 26
was approved as Minute Item
No. 26 by the State Lands
Commission by a vote of 2
to 0 at its 5/22/86
meeting.

MINUTE ITEM

26

05/22/86
W 23451
Horn
Gorfain

CONSIDERATION OF INTERIM REPORT ON THE SACRAMENTO RIVER
CARRYING CAPACITY STUDY AND APPROVAL OF AUGMENTATION
OF CONTRACT IN AN AMOUNT NOT TO EXCEED \$30,000

During consideration of Calendar Item 26 attached,
Commission-Alternate Ordway requested that the Final Report on
the River Study be presented to the Commission prior to the
August 28 Commission Meeting, if possible.

The River Study Consultants indicated that additional studies
could be completed by mid-July.

Lance Kiley, Chief of Land Management and Conservation,
indicated that staff would apply every effort possible to
present final report to the Commission prior to August 28.

Upon motion duly made and carried, the Resolution in Calendar
Item 26 was approved as presented, by a vote of 2-0.

Attachment: Calendar Item 26.

CALENDAR ITEM

26

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05/22/86
W 23451
Horn
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CONSIDERATION OF INTERIM REPORT ON THE SACRAMENTO RIVER
CARRYING CAPACITY STUDY AND APPROVAL OF
AUGMENTATION OF CONTRACT IN AN AMOUNT NOT TO EXCEED \$30,000

BACKGROUND:

On July 12, 1984, the State Lands Commission imposed a moratorium on marina development along the Sacramento River within Sacramento and Yolo counties, until a comprehensive study of the cumulative effect of existing and proposed marina development on the River's carrying capacity is completed.

The moratorium was precipitated by a recent proliferation of new marina and marina expansion proposals, a growing concern over the competing use conflicts on the river, and the potential adverse effects which could result from piecemeal development.

STUDY APPROACH

The purpose of the study was to assess the marina carrying capacity of the Sacramento River from River Mile (RM) 44.8, approximately 1 1/2 miles below Freeport, upriver to RM 76.0, just above the Sacramento/Sutter county line. Carrying capacity is defined as "the extent to which the Sacramento River and its adjacent banks can carry marina development without significant negative impact on other human, ecological or water quality benefits associated with the river system."

A principal focus of the study was to develop criteria which could be used by the Commission and local agencies to evaluate what level of marina development could be accommodated within the study area, in balance with competing uses for the river and with resource protection. The study would provide the Commission, other public agencies, and prospective developers

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with a common information base to: a) use in their respective planning efforts; b) assess specific project proposals in a more comprehensive way; and, c) incorporate relevant information into future project and site specific environmental impact reports.

PLANNING AND CONDUCTING THE STUDY

After the Commission directed the staff to proceed with the study process, the staff conducted several meetings with local government officials, and politicians representing a cross-section of the population of the study area. The purpose of these meetings was to scope the study, and to familiarize policy makers with the concept of the study. The staff then conducted a water-borne tour of the study area for the affected decision makers. After scoping was complete, the staff met with a number of potential consultants to discuss the proposed scope and the probable cost of the study. Armed with information from this process, staff, with the concurrence of the Commission, developed funding through the budget process for the 85-86 fiscal year, selected a consultant, and began the study.

The contractor, a joint venture of Riparian Systems of Mill Valley and Meyer Resources of Davis, was charged with examining a number of marina-related factors that were thought to affect the river and its users. Some of these factors included: 1) effects of boat wakes on the levee system; 2) competing uses of the river; 3) river congestion; 4) air and noise pollution; 5) water quality; 6) aesthetic environment; 7) riparian habitat; 8) fisheries habitat; 9) local and regional plans and land use; and 10) archaeological impacts.

STUDY CONCLUSIONS AND RECOMMENDATIONS

An executive summary is attached as an exhibit which details report findings, conclusions and recommendations. The contractor has submitted a detailed report in support of its findings which contains a wide range of specific conclusions and recommendations on such diverse topics as: a) Traveling Conditions for Boats on the River, b) Multiple Use Conflicts and Crowding on the River, c) Economic Viability of Marinas; d) Threatened and Endangered Species; e) Waste Control; f) River Levees; and g) Off-Stream Marinas.

CALENDAR ITEM NO. 26 (CONT'D)

The consultant has emphasized the importance of participation in the policy-making process by all affected agencies and by the public. Staff strongly agrees. User group input, especially, is very important in the decision-making process. Because many of the report's conclusions and recommendations may affect the rights of the public and other governmental agencies, staff recommends that the report be submitted to all local governments and other interested persons for review and comment.

ADDITIONAL STUDY

The Contractor believes that additional field work is needed to substantiate some of the conclusions in the report concerning congestion on the river resulting from launching ramps and peak-use periods. The additional work is necessary because the contractor could not begin the study until last fall and therefore could not measure the effects of peak-use of the river which usually occurs during the summer months. Staff review of the report leads us to conclude that the additional effort regarding peak-use would be useful and provide corroborative data in support of the study's conclusions and recommendations.

Staff review of the study indicates that the section dealing with marinas and river levees (Section 11 of the Executive Summary and various pages within the report), while it does deal adequately with the issue of the integrity of the levee system itself, does not address the effects of boat wave-wash on the berms waterward of the levees in the study area. Many residences are built on the berms, and the staff believes that further study of the wave-wash issue is warranted. The consultant has pointed out to staff that no definitive study of wave-wash from small vessels exists, except for classified studies done for the United States Navy. The consultant proposes to individually survey property owners in the affected areas, and to consult designers of shore protection facilities who have worked on the berm areas. Staff recommends that this further study be authorized and that this information be included in the final report to the Commission.

Staff recommends that Commission's moratorium on commercial marina development not be lifted until the peak-use/wave-wash study, and the public review and comment process, are completed.

TIMING

The peak use study should be timed to include at least the Memorial Day Weekend and the Fourth of July Weekend, as well as intervening summer weekends. The additional work on wave-wash could be done simultaneously. Staff proposes to continue the public and agency review process of the main body of the study, if it is approved for release today, through July 31, and to have a final report for the Commission for the August calendar.

EXHIBIT: A. Executive Summary.

IT IS RECOMMENDED THAT THE COMMISSION:

1. FIND THAT THE CONSIDERATION OF THIS INTERIM REPORT ON THE RIVER STUDY REPORT IS EXEMPT FROM THE REQUIREMENTS OF THE CEQA PURSUANT TO 14 CAL. ADM. CODE 15061 BECAUSE THE ACTIVITY IS NOT A PROJECT AS DEFINED BY P.R.C. 21065 AND 14 CAL. ADM. CODE 15378.
2. AUTHORIZE THE DISTRIBUTION OF THE INTERIM SACRAMENTO RIVER MARINA CARRYING CAPACITY STUDY BY RIPARIAN SYSTEMS/MEYER RESOURCES, WHICH IS ON FILE IN THE PRINCIPAL OFFICE OF THE COMMISSION AND BY REFERENCE MADE A PART HEREOF, FOR PUBLIC REVIEW AND COMMENT; AND DIRECT STAFF TO REPORT BACK TO THE COMMISSION AT THE AUGUST COMMISSION MEETING.
3. APPROVE AUGMENTATION OF CONTRACT # C 8462 FOR AN AMOUNT NOT TO EXCEED \$30,000 TO SUPPLEMENT THE DATA PRESENTED IN THE ABOVE-REFERENCED STUDY.
4. MAINTAIN ITS MORATORIUM ON FURTHER DEVELOPMENT OF COMMERCIAL MARINA FACILITIES IN THE SACRAMENTO RIVER UNTIL A FINAL STUDY REPORT IS COMPLETED AND SUBMITTED WHICH INCORPORATES PUBLIC REVIEW AND COMMENTS, ALONG WITH THE RESULTS OF THE ADDITIONAL STUDY OF PEAK USE AND WAVE-WASH EFFECTS ON BERMS IS COMPLETED AND SUBMITTED TO THE COMMISSION FOR ITS CONSIDERATION.

EXHIBIT "A"

Sacramento River Marina Carrying Capacity Analysis

Executive Summary

The purpose of this analysis is to assess the marina carrying capacity of the Sacramento River from River Mile (RM) 44.8, approximately 1 1/2 miles below Freeport, upriver to RM 76.0, just above the Sacramento/Sutter county line. Carrying capacity is defined as "the extent to which the Sacramento River and its adjacent banks can carry marina development without significant negative impact on other human, ecological or water quality benefits associated with the river system." This analysis further divides the river study area into 5 reaches. These reaches are described in Executive Table 1 and illustrated in Figure 1 (following page 4 of the main report).

There are presently 21 operating marinas on the river. In general, they have a 95+ percent occupancy rate in the May through August/ September peak period, with an approximate 75 percent occupancy rate in winter months. It appears clear that demand for moorage exceeds supply during the peak use period, particularly for vessels in larger size classes. For boaters who moor at marinas, slip rental is estimated to account for a relatively small portion of average boating costs, and industry-wide rental charges do not widely affect demand for moorage. Considerable price competition exists between individual facilities, however, particularly from public agency marinas which characteristically charge less for slip rentals. This practice is considered economically destabilizing by private marina operators. Tie up facilities not offering permanent moorage are treated separately in our report.

Executive Table 1River Reaches in the Study Area

<u>Reach No.</u>	<u>River Mile Reference</u>	<u>Reach Description</u>
1	RM 44.8 to 53.5	This reach begins just below the proposed Sacramento County marina, and includes Cliff's, Freeport, Dock Holiday, Light 29, Garcia Bend and Stan's Marinas.
2	RM 53.5 to 55.5	This reach begins downstream of the Four Seasons Marina, and extends upriver two miles to include Sherwood Marina, Sacramento Yacht Club and Captain's Table.
3	RM 55.5 to 57.5	This reach extends upriver from the Sacramento Yacht Club to the Sacramento Deep Water Ship Channel.
4	RM 57.5 to 62.0	This reach extends from the Sacramento Deep Water Ship Channel upstream to the gaging station near Bryte Yard. It includes the Sacramento Yacht Harbor at Miller Park, Ramos Oil, Raley's, Discovery Park, the Broderick boat ramp, Chart Room, Viewpoint, River Galley, Village, Riverbank, Virgin Sturgeon, Riverview, and Dwyer's Landing marinas, and proposed facilities at Sacramento and Broderick.
5	RM 62.0 to 76.0	This reach extends from Bryte Yard to the upstream end of the study area just downstream from Rio Ramaza. It includes Metro and Alamar marinas, a proposed marina at Sand Cove and boat ramps at Elkhorn Regional Park (Yolo), and at the Elkhorn Ferry Site (Sacramento).

The greatest majority of boat owners in Sacramento and Yolo counties reach the river via launching ramps. However, during peak weekend days, launching ramps so constrain access by these boaters that it appears traffic generated from launching ramps and from marinas may be about equal on the river. During non-peak times, boats from launching ramps are more numerous. Boater activity during peak periods is relatively intense from urban Sacramento downstream to the southern study boundary (Reaches 1 through 4). Activity in Reach 5 upstream from Bryte is less intense. Overall, boat fishing accounts for almost 60 percent of boater activity in the study area. General cruising accounts for about 36 percent. Water and jet skiing accounts for less than 5 percent of total activity.

Strongest constraints to further marina expansion on the river relate to ability of boats to maintain a reasonable speed while traveling, and to the need to protect remnant riparian vegetation, fish and wildlife. The Sacramento River is relatively narrow, and traveling craft must slow to 5 MPH when within 200 feet of moored vessels. In Reach 4 from Dwyer's Landing downstream to Miller Park, existing marinas now largely constrain river travel to the 5 MPH limit. Unmanaged future marina development in the study area could progressively reduce the ability of both recreation and commercial boats to maintain a reasonable traveling speed in other river reaches. Riparian vegetation along the Sacramento River has been reduced to a remnant 5 percent of its pre-development abundance. Remaining trees, shrubs and associated vegetation are vitally important to human enjoyment of the river corridor and to birds and animals. In this report, we propose a "no further net loss" policy

for riparian vegetation, together with a strategy to make that objective compatible with further marina expansion. Maintenance of water quality and management of user conflicts on the river, particularly respecting water and jet skiing, are also significant concerns. A full display of the marina related issues and effects we have examined, with associated recommendations, is provided in Executive Table 2. Jurisdictional issues associated with our conclusions and recommendations are discussed in Section VIII (pg. 101 ff.)

The Sacramento River provides a diverse array of human, ecological, water quality and recreation benefits to citizens of Sacramento and Yolo counties. Left to random development, the river corridor is rapidly reaching carrying capacity limitations in several areas. With proper management, we believe these limitations can be overcome, and that marina patrons and other river users can enjoy the river for many years into the future.

Executive Table 2-1A Summary of Conclusions and Recommendations Concerning
Marina Development and its Effects on Other River -
Related BenefitsStudy
ConclusionsRecommendationsReport Page
ReferencesHUMAN USE AND BENEFITS1. Traveling Conditions for Boats on the River

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|---|---|-----------------------------------|
| 1a. Traveling at speed is now largely pre-empted in Reach 4. | 1.1 Restrict new instream marina development to Reach 4, and apply a 5 MPH boating speed limit in that reach. | 1-12, 20-22, 48, 139-143, 157-160 |
| 1b. Traveling boats are now generally required to reduce speed or go to the far side of the channel when passing instream marinas in other river reaches. | 1.2 Do not allow new marinas in Reach 4 to intrude further into the river than existing marinas. | |
| 1c. New instream marina development in Reaches 1, 2, 3, & 5 will eventually limit traveling speeds in these reaches, as it has in Reach 4. | 1.3 Expansion of existing marinas could be a permitted use in all river reaches, subject to meeting other criteria specified in this report (including Rec. 1.2 above). | |
| 1d. Boats traveling at speed too close to marinas create damage and inconvenience with their wakes. | 1.4 Do not allow new instream marinas to be constructed directly opposite an existing marina. | |
| | 1.5 Develop stable funding to ensure continued operation of the accessing lock to the Sacramento Deep Water Ship Channel. | |
| | 1.6 Encourage a cooperative speed signing program on the river. | |
| | 1.7 Establish a more effective standard to assess and remove inebriated/irresponsible boaters from the river. | |
| | 1.8 Encourage a cooperative review of enforcement and safety capabilities on the river. | |

Executive Table 2-2

<u>Study Conclusions</u>	<u>Recommendations</u>	<u>Report Page References</u>
<u>2. Multiple Use Conflicts and Crowding on the River</u>		
2a. Generally, river user densities in the study area have not reached levels that would constrain further marina development.	2.1 Prohibit water/jet skiing in Reach 4.	22-48, 138-139, 143-147, 157-160
	2.2 Prohibit water/jet skiing between RM 46 and 50 during fishing seasons.	
2b. Sport fishing hot spots at the mouth of the American River and between Garcia Bend and Freeport (approx. RM 46 to 50) can be adversely affected by other river users during periods of intense fishing.	2.3 Consider prohibition of water/jet skiing opposite all study area instream marinas	
	2.4 Consider prohibition of water/jet skiing in areas adjacent to private docks (primarily RM 62-68) during the off-peak season (September-May).	
2c. Conflicts between water/jet skiers and other users are among those potentially most severe on the river.	2.5 Post other areas for water/jet skiing, with subsequent private dock development proceeding at owner's risk.	
2d. Impact of boat noise upon shore bank residents may be a locally severe problem.	2.6 Sign all marinas and launching ramps, re. boater responsibilities- particularly for wave wash.	
	2.7 Post speed signs at fishing hot spots during fishing season.	
	2.8 Post warning signs where there are extensive private docks along the river.	
	2.9 Allow no marina development on the Sacramento side to intrude into the waters in front of the American River Parkway.	
	2.10 Adept noise regulations for the river study area.	

Executive Table 2-3

<u>Study Conclusions</u>	<u>Recommendations</u>	<u>Report Page References</u>
<u>3. Economic Viability of Marinas</u>		
3a. A healthy demand appears to exist for some expansion of marina facilities in the study area.	3.1 Other things being equal, the Commission should give priority to marinas that propose, or are expanding toward a diverse array of enterprise centers. (We do not consider condominiums, office buildings or residential developments to be marina enterprise centers).	1-19, 148
3b. The economic viability of individual marinas depends on the skills and perspectives of their management and on the degree to which each marina has also diversified into non-moorage enterprise centers (i.e., fuel stations, restaurants/bar, shops).		
3c. All private marinas complain of price undercutting from public facilities.		
3d. A financially sound private marina is better able to meet its non-revenue public obligations.		
<u>4. Public Access to the River</u>		
4a. In general, Sacramento and Yolo counties, and the City of Sacramento emphasize public access to the river as a policy. No coordinated plan to provide such access is in place, however.	4.1 The Commission should participate with the City and the 2 counties to develop a joint urban riverfront linear access policy, and a Sacramento River Corridor Plan.	51-52, 131-132, 148-159
	4-2 Alternatively, the Commission should encourage the 3 local planning agencies to jointly develop a Sacramento River Corridor element of their General Plans.	

Executive Table 2-4Study
ConclusionsRecommendationsReport Page
ReferencesECOLOGICAL USES AND BENEFITS5. General Ecological Wellbeing

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| 5a. Riparian vegetation provides important benefits to human, wildlife and fishery populations-and is a useful indication of ecological wellbeing in the study area. | 5.1 To the extent possible, combine avoidance and restorative strategies to ensure no net loss of riparian habitat within each marina development/expansion site. | 58-86,
111-113,
150-160 |
| 5b. Remaining riparian vegetation along the Sacramento River amounts to less than 5 percent of its pre-development abundance. | 5.2 Where 5.1 is not fully effective, the marina developer should use acquisition and planting techniques to ensure restoration of productively equivalent riparian habitat elsewhere in the same river reach. | |
| 5c. On the basis of 5a and 5b, above, we conclude that residents, wildlife and fish of the Sacramento River study area can afford no further net loss of riparian habitat. | 5.3 Where 5.1 and 5.2 are not fully effective, the marina developer should extend strategy 5.2 to the full study area. | |
| | 5.4 Replacement through acquisition or restoration of riparian habitat outside the study area is not recommended, because it does not respond to the loss of local habitat productivity. | |
| | 5.5 Experts from the California Department of Fish and Game and the U.S. Fish and Wildlife Service should be consulted with respect to equivalent riparian habitat productivity. | |
| | 5.6 Strong emphasis should be placed on exhausting possibilities under strategy 5.1, before strategies 5.2 and 5.3 are considered. | |

Executive Table 2-5

<u>Study Conclusions</u>	<u>Recommendations</u>	<u>Report Page References</u>
6. <u>Threatened or Endangered Species</u>		
6a. Three threatened species, the Swainson's Hawk, the California Yellow Billed Cuckoo and the Valley Elderberry Longhorned Beetle have been reported to use the the study area, and require special treatment in any policy governing marina expansion.	6.1 The California Department of Fish and Game and the U.S. Fish and Wildlife Service should be closely consulted with respect to avoidance and protection of threatened species and their habitats.	73-80, 84-86
	6.2 Where riparian habitats or threatened species may be significantly impacted by a proposed marina development, an EIR should be required.	

WATER QUALITY USES AND BENEFITS**7. Waste Control**

7a. The greatest portion of human sewage from boats is presently being discharged directly into the river. To the best of our knowledge, only one pumpout station is presently operational on the river. This situation is not acceptable in a river frequented by fishermen and swimmers.	7.1 The Commission should require adequate and <u>operational pumpout stations</u> and holding tank facilities at all marinas, as a condition of development, expansion or lease renewal. Boat hookups should be placed on the in-channel side of marinas, and in all instances should be accessible to boaters.	89-90, 92-93, 115-117, 153-154
	7.2 The need for similar facilities at launching ramps should be closely examined, and if a need is confirmed, similar requirements instituted there.	
	7.3 All marinas should be required to place litter disposal bins on their docks, at locations convenient to boaters.	

Executive Table 2-6Study
ConclusionsRecommendationsReport Page
References

- 7.4 The Commission should encourage local jurisdictions to conduct a joint assessment of the adequacy of public washrooms in the study area, and to provide for any facility needs that are identified.
- 7.5 The Commission should consider standards for mooring, waste holding and shore service umbilicals for all live-aboard vessels during their ongoing staff study of residential use of tidal and submerged state lands.

8. Toxins

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| 8a. Early evidence suggests that tributyltin-oxide, now widely used in bottom paints for boats, may be extremely toxic to fish, with possible deleterious effects for humans as well. | 8.1 The Commission should request an immediate determination from appropriate State authority as to whether use of paints containing tributyltin-oxide is hazardous. | 98-101,
116-119,
154-155 |
| 8b. Off-stream marina basins can become toxic sinks, if marina design and systems for water circulation are not adequate. | 8.2 An expert workshop should be considered to focus available knowledge on the problem identified in 8a. | |
| | 8.3 An interim advisory notice concerning the possible consequences of use of paints containing tributyltin-oxide should be issued and posted at all marinas and launching ramps. | |
| | 8.4 An approved "best wood preservative" list should be developed and distributed to marina owners and boaters. | |

Executive Table 2-7

<u>Study Conclusions</u>	<u>Recommendations</u>	<u>Report Page References</u>
	8.5 Boat maintenance facilities should be monitored for their handling of hull paint residues.	
	8.6 Engine and hull washing detergents should be certified as safe for use on the Sacramento River.	
	8.7 Control measures and safe disposal standards should be established for boat maintenance and haul-out facilities.	
	8.8 Off stream marina sites should be engineered to provide adequate water circulation, and maintenance dredge spoil should be monitored for toxins.	
9. <u>Fuel Spills</u>		
9a. Fuel spills are possible at marina facilities, but are avoidable through installation and proper maintenance of adequate equipment.	9.1 Highest quality automatic shut-offs on all fueling hoses, and EPA approved fuel storage tanks should be a minimum requirement for any new boat fueling facilities.	94-95, 117, 155
10. <u>Other Water Quality Issues</u>		
10a. Bilge water and similar drainage discharge is often dumped back into the river when boats are taken out at launching ramps.	10.1 Consider installation of grates transverse drains across launching ramps to collect bilge discharges and convey them to a dump or buried tank for eventual safe disposal.	91-92, 98-99, 118, 155-156
10b. Urban runoff in areas ancillary to marinas can also pose a problem.	10.2 New ancillary areas should consider porous pavement designs, grading to direct drainage away from the river and periodic mechanical sweeps of parking areas.	

Executive Table 2-8Study
ConclusionsRecommendationsReport Page
ReferencesMARINAS AND RIVER LEVEES11. River Levees

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|---|---|-----------------------------------|
| 11a. Boats/skiers travelling at speed can erode levees in the study area during higher water periods (where the river flows against the levee, not the berm). This will generally occur in the non-summer period. | 11.1 Levee integrity must be an overriding factor during any marina development, on or off-stream. | 83-86,
69-71,
95-98,
156 |
| 11b. The presence of marinas, by reducing boat speed to 5 MPH, will reduce levee erosion in adjacent areas. | 11.2 Procedures for preserving <u>both</u> levee safety and ecological productivity along the river bank are available from the State Reclamation Board, the California Department of Fish and Game and the California Department of Water Resources - and should be utilized during marina development or expansion. | |
| 11c. Where marina development is coupled with levee improvement work, flood control objectives will be enhanced. | 11.3 Non-essential vessel travel should be prohibited in the study area during high water periods when levee safety is threatened. | |
| 11d. Multiple use levee management is a preferred objective in the study area. Reference to documents from the State Reclamation Board, DWR and CF&G dealing with joint management to provide flood control and protect ecological values suggests that this objective is attainable. | 11.4 The Commission should consider convening an inter-agency task force on multiple use management of levees in the study area. | |

Executive Table 2-9Study
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ReferencesOTHER ISSUES12. Tie-Up Facilities

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| 12a. Tie-up facilities designed to provide temporary moorage so boaters may go to a restaurant, shop, etc. likely do not preempt traveling capabilities in adjacent river areas. | 12.1 Tie-up facilities should be permitted in all river reaches, as long as they don't extend more than 60-70 feet into the river. | 1,
156-157 |
| | 12.2 Tie-up facilities should meet all ecological and water quality criteria advanced in this report. | |
| | 12.3 New facilities should not be allowed to expand to marina status after initial designation as tie-up facilities. | |

13. Off-Stream Marinas

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| 13a. Off-stream marinas do not impede traveling craft, but involve most of the other issues raised here. | 13.1 Off-stream marinas may be considered in all river reaches. | 58-86,
87-99,
100,
150-160 |
| | 13.2 Off-stream marinas should meet all ecological and water quality criteria advanced in this report. | |

14. Historic/Archeological Concerns

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| 14a. Sensitivity for Historic and archeologic sites in the marina study area is estimated to be quite high. | 14.1 Historic and archeological concerns should be met on a project specific basis through the EIR/EIS process and with site investigations. | 52-55 |
| 14b. Historic and archeologic resources seem to be dispersed throughout the study area. | | |

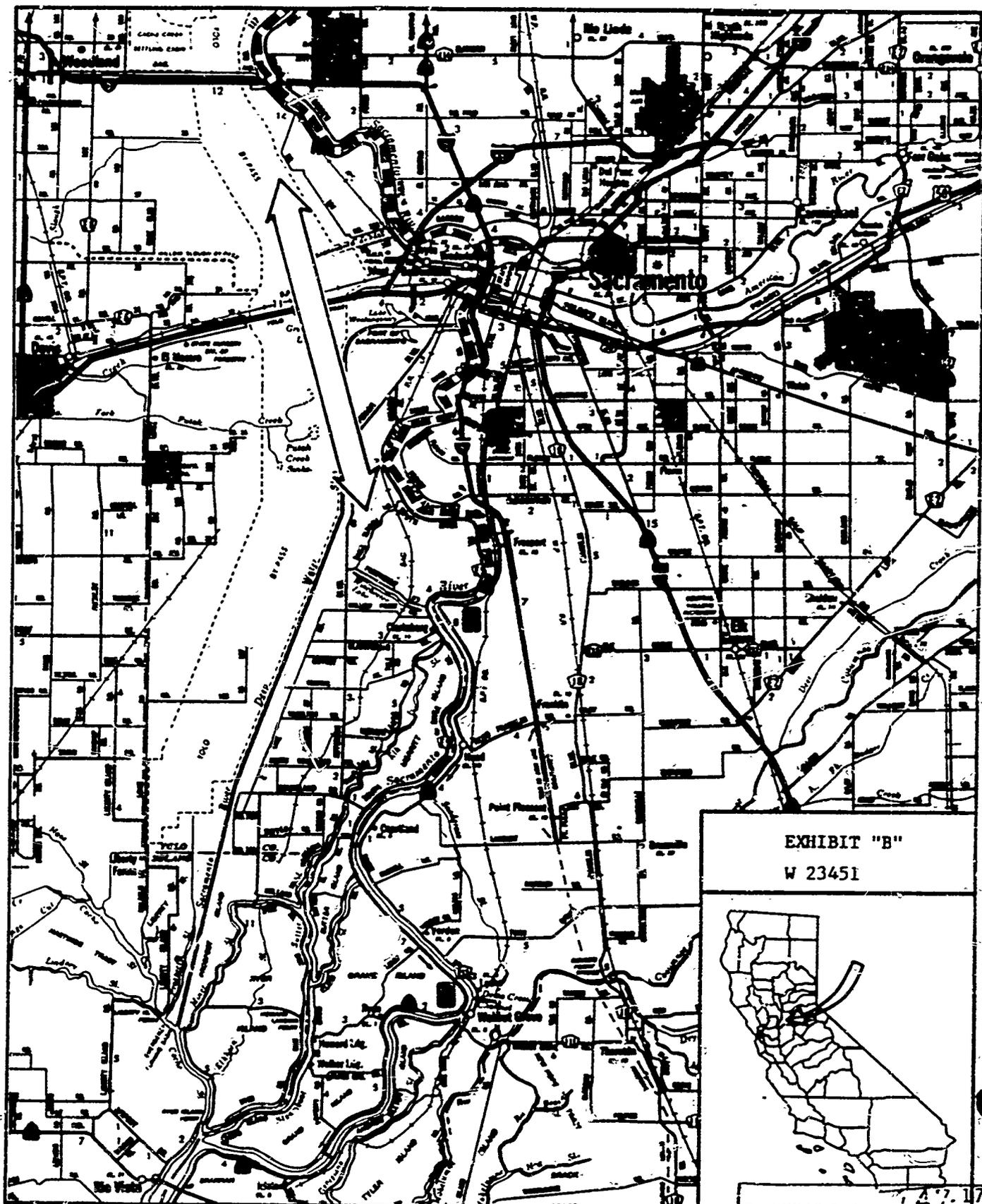


EXHIBIT "B"

W 23451



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