Lake Elsinore & San Jacinto Watersheds Authority

City of Lake Elsinore • City of Canyon Lake • County of Riverside
Elsinore Valley Municipal Water District • Santa Ana Watershed Project Authority

REQUEST FOR PROPOSALS (RFP)

For

FACILITATION OF A STRATEGIC PLAN

August 2023

LESJWA

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NOTICE TO SUBMITTING FIRMS

1. Proposals submitted in response to this RFP as described herein, will be submitted to Planet Bids at: https://pbsystem.planetbids.com/portal/52676/portal-home electronically, as a single Adobe Acrobat (PDF) file, with search capability to ensure readability and compatibility, not more than 12 pages long (not including cover letter, exhibits and resumes), and not more than 10 megabytes in size.
2. All proposals must be received by **4:00 p.m. on Friday, September 29, 2023**.
3. If additional information is needed, contact Melissa Bustamonte at (951) 840-0230 or mbustamonte@sawpa.org.
4. Any changes to this RFP are invalid unless specifically modified by LESJWA and issued as a separate addendum document. Should there be any question as to changes to the content of this document, LESJWA's copy shall prevail. It is the submitting firm's sole responsibility to ensure that their submittal, inclusive of any or all addenda, is received at the proper place at the proper time. LESJWA will not accept submittals after the due date/time listed above.

Section I – PROJECT INTRODUCTION AND OVERVIEW

GENERAL OVERVIEW

The Lake Elsinore and San Jacinto Watersheds Authority (LESJWA) is a joint powers authority (JPA) formed in 2000 as result of State water bond language encouraging the formation of a joint powers agency consisting of the City of Lake Elsinore, the Santa Ana Watershed Project Authority (SAWPA), the Elsinore Valley Municipal Water District, and other agencies. The specific bond language citing the organization formation is defined in Proposition 13 Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Act of 2000 wherein the organization formation was called out under Article 6 Lake Elsinore and San Jacinto Watershed Program, Section 79104.110. The joint powers authority was established initially to administer $15 million dollars in bond funding for the implementation of programs to improve the water quality and habitat of Lake Elsinore and its back basin, consistent with the Lake Elsinore Master Plan/Economic Feasibility Study 1995-2015 (**Attachment A**). The members of the JPA are the following agencies, along with the current representatives:

City of Canyon Lake	Dale Welty, Chair
City of Lake Elsinore	Robert Magee, Vice Chair
Elsinore Valley Municipal Water District	Andy Morris, Secretary-Treasurer
Santa Ana Watershed Project Authority	Brenda Dennstedt
County of Riverside	Karen Spiegel

The LESJWA Board has authorized SAWPA to serve as the administrator for the organization. Rachel Gray, SAWPA's Water Resources and Planning Manager, serves as the Authority Administrator.

Between its formation and 2014, LESJWA fully used and expended the $15 million made available through the Proposition 13 Water Bond, as well as other grant funding applied for by LESJWA to benefit Lake Elsinore, Canyon Lake, and the San Jacinto River Watershed. LESJWA's annual budget consist of contributions and expenses associated with Lake Elsinore and Canyon Lake Nutrient TMDL Task Force and funding for LESJWA administration and projects comes from an annual contribution from each member agency and grant funding.

LESJWA provides support to the Lake Elsinore and Canyon Lake (LE/CL) Nutrient Total Maximum Daily Load (TMDL) Task Force which shares LESJWA goals of water quality improvement at both Lake Elsinore and Canyon Lake. The Task Force was formed in 2006 to address a Santa Ana Regional Water Quality Control Board issued nutrient TMDL for Lake Elsinore and Canyon Lake. Because the focus of the TMDL is on water quality of Lake Elsinore and Canyon Lake, LESJWA is the appropriate organization to serve as the administrative entity for the Task Force. This role is a similar role that SAWPA staff plays in administering the task forces in the Middle Santa Ana River Pathogen TMDL Task Force.

The Task Force selected LESJWA as the administrative support because LESJWA has implemented numerous improvement projects at both lakes, as well as extensive modeling and monitoring at the lakes and watershed in the past. Further, the governing board of the LESJWA JPA has a history of administering lake improvements based on the previous decade of improvement at the lakes. Still, the staff that operates LESJWA is the SAWPA staff, so all activities and resources to operate the LE/CL TMDL Task Force generally are seamless with SAWPA's operations other than the separate fund accounting and the recognition of the LESJWA Board of Directors for all LESJWA-related activities and improvements.

LESJWA's mission and goals as defined in the 2014 Business Plan (**Attachment B**) are as follows:

The purpose of the Authority is to implement projects and programs to rehabilitate and improve the San Jacinto and Lake Elsinore Watersheds and the water quality of Lake Elsinore and Canyon Lake, in order to preserve agricultural land, protect wildlife habitat, protect and enhance recreational resources, and improve surface and subsurface water quality, all for the benefit of the general public.

LESJWA has established the following goals for its organization:

- To support planning, design and implementation of projects to improve water quality at both Lake Elsinore, Canyon Lake and the San Jacinto River Watershed;
- To work with stakeholders to secure reliable funding to operate and maintain water quality improvement projects at both Lake Elsinore, Canyon Lake and the San Jacinto River Watershed;
- To serve as administrator of the Lake Elsinore and Canyon Lake TMDL Task Force; and,
- To seek ongoing reliable revenue to operate the LESJWA JPA in fulfillment of its mission.

LESJWA wishes to retain a firm experienced in developing a Strategic Plan consisting of Purpose and objectives, Critical Success Factors, and Processes, Activities and Tasks. The format for the updated Strategic Plan should be simple and results oriented with a potential for progress evaluation/measurement.

Specific tasks:

1. Meet with LESJWA staff to develop issues for discussion and preliminary plan outline;
2. Conduct workshops with member agencies key staff to evaluate areas of opportunity and need;
3. Conduct listening sessions with Board of Directors Members (at least 5 sessions);
4. Conduct Board of Directors workshops (at least 2);
5. Meet with other key LESJWA partners;
6. Working with staff to draft findings and formulate strategic plan contents;
7. Conduct Board of Directors workshop to review draft results; and,
8. Finalize the Strategic Plan.

B. PURPOSE OF REQUEST FOR PROPOSALS

LESJWA is issuing this Request for Proposals (RFP) to select a qualified firm to provide the requested services. The consultant will facilitate an update of the strategic plan based on input from member agencies, stakeholders, Board of Directors, and staff. Work will be directed by LESJWA Administrator, Rachel Gray.

C. HOW THE SELECTED CONSULTANT WILL BE UTILIZED

The selected firm shall execute an Agreement for Services General Services Agreement. A Task Order will be executed for the agreed upon services. Work shall be performed on an hourly basis with an agreed upon maximum amount.

The terms and conditions contained herein constitute the full and complete understanding of the parties. However, should you or your firm request additional contractual terms and conditions for consideration, such requests must be clearly identified in **Exhibit E** and submitted at the time of qualification submittals.

No additional terms and conditions will be accepted following receipt of qualification submittals, and LESJWA will consider such additional contractual terms and conditions as part of its evaluation process.

The following table identifies the estimated dates/time frame for receipt, evaluation, and award of this RFP. Please note the following key dates when preparing your response to this RFP.

Description	Date
Release of RFP	August 21, 2023
Deadline for Written Questions Regarding RFP	September 1, 2023
Responses to Written Questions Regarding RFP	September 8, 2023
Proposal Submittal Due Date 4:00 p.m.	September 29, 2023
Proposal Submittal Review and Short List	October 6, 2023
Interviews (if required)	October 9-16, 2023
Selection Recommendation to Board	October 19, 2023
Finalize Agreement, Start Work	November 1, 2023

E. SELECTION CRITERIA

The criteria for vendor selection shall be based on, but not limited to, the following:

1. Approach to development of Strategic Plan.
2. Qualifications and Experience (Firm and Personnel) – Consultant and consultant's primary representative(s) shall have demonstrated experience in Strategic Plan facilitation or related experience, by the references provided in **Exhibit A**, and resumes of key people to address experience and qualifications, educational background, and skills.
3. References
4. Price & Payment Terms – **Exhibit C**
5. Exceptions Taken to RFP – **Exhibit E**
6. Quality of Submittal (Firm provided all information requested in the RFP, submittal is well-organized and clear).

F. EVALUATION AND SELECTION PROCESS

1. Submittal Review: LESJWA will review and evaluate each submittal to determine if it meets the requirements for the service defined herein. Failure to meet the requirements will be cause for eliminating the applicant from further consideration.
2. Selection: Based on LESJWA's evaluation, the firms will be ranked. It is anticipated that a contract will be awarded with the highest-ranking firm being selected. However, LESJWA reserves the right to consider the overall distribution of contracts and may award agreements as it deems necessary, regardless of the assigned rank.

Section II – PROPOSAL REQUIREMENTS

A. The submittal must emphasize responding to the requirements set forth herein. Firms must demonstrate their capabilities, background, and expertise, in order for LESJWA to effectively evaluate the submittals, and select the firm(s) that provide the best value to LESJWA based on the selection criteria in Section 1. The Proposal Submittal should include, at a minimum, the following information:

   1. Cover Letter, including name, telephone number, fax number, and address of the firm.
   2. Executive Summary –including a brief summary of the firm's project approach, origin, background, and size of the company, an organizational chart, the overall capabilities of the organization, appropriate licenses and certifications (if applicable), and proximity of company's resources to SAWPA's offices and facilities.
      a. Qualifications and Experience (Firm and Personnel) – a description of the firm's expertise related to services requested and a full discussion of the firm's recent experience directly related to providing facilitation services or related activities for a public agency. Include resume(s) of key staff to address experience and qualifications, educational background, and skills.
         i. Must have experience in strategic plan facilitation or related activity and preparation for public agencies and for the water industry.
         ii. Have an understanding of the needs of California water/wastewater agencies and special district issues.
   3. References (**Exhibit A**) – list three (3) former municipal (preferred) or private clients for whom comparable services have been performed within the last five years. Include the name, mailing address, telephone number, and e-mail address of each client's principal representative.
   4. List of Subcontractors (**Exhibit B**) – if required, otherwise state "none".
   5. Cost Proposal – (**Exhibit C**) a table indicating tasks, task hours by labor category, hourly rates for each labor category; costs for sub-consultants and reimbursable expenses. The rates shall be valid for the term of the contract. Note LESJWA will not pay for travel time.
   6. Consultant Business Information (**Exhibit D**).
   7. Additions, Deletions and/or Exceptions (**Exhibit E**) – compliance with LESJWA's contractual terms and/or RFP requirements. The firm shall note any additions, deletions and/or exceptions to the contractual terms and/or RFP requirements. If there are no exceptions taken, note in writing that there are none.

B. LESJWA reserves the right to withhold award of contract for a period of one hundred and twenty (120) days following RFP opening. All submittals received are considered firm for that 120-day period.

C. An Agreement for Services (**Attachment C**) incorporating the terms and conditions contained herein will be sent to the successful firm(s). Any additional terms and conditions requested by the firm must be submitted at the time of your response as part of **Exhibit E** (Additions, Deletions and/or Exceptions) and will be considered as part of the selection/negotiation process.

D. LESJWA may make such investigations as it deems necessary to determine the ability of the firm to provide the goods and/or service as specified, and the firm shall furnish to LESJWA, as is

commercially reasonable, all such information and data for this purpose. LESJWA may discuss or negotiate with one or more firms prior to award and reserves the right to reject any submittal.

E. Any questions as to the meaning of the scope of work and/or technical specifications or other pre-proposal submittal documents must be submitted in writing and shall be directed to Rachel Gray, Administrator of LESJWA, at (951) 354-4242 or (rgray@sawpa.org) who will provide instructions for submitting requests. All addenda so issued shall become part of the contract documents. Under no circumstances may the firm contact any other department for clarification or interpretation of any requirements herein.

F. LESJWA reserves the right to reject any or all submittals, either separately or as a whole and to waive any informality in a submittal or to accept any submittal presented which it deems best suited to the interest of LESJWA, and is not to be bound to accept the lowest price.

G. The cost for developing the submittal is the sole responsibility of the firm. All submittals shall become the property of LESJWA.

H. Be advised that all information contained in the submittal in response to this solicitation may be subject to the California Public Records Act (Government Code Section 6250 et seq.), and information's use and disclosure are governed by this Act.

Section III – SCOPE OF WORK

Strategic Plan

A. OBJECTIVE

LESJWA is seeking a consultant to provide facilitation services to develop an agency Strategic Plan.

FOCUS

Efficiency of process to complete the plan, simplicity of written document, and the ability to measure progress through the definition of metrics or other means.

B. SPECIFIC TASKS

1. Meet with LESJWA staff to develop questions, issues for discussion, LESJWA's role, preliminary desired outcomes, potential metrics, and preliminary plan outline. The detailed process and schedule will also be reviewed and the list of partners to be coordinated with finalized.
2. Conduct workshop with member agencies key staff.
3. Meet with key LESJWA partners.
4. Conduct listening sessions with Board of Directors Members.
5. Conduct Board of Directors workshops.
6. Work with staff to draft findings, strategic plan contents including Mission, Goals, Objectives, and Desired Outcomes. Review draft documents with member agency General Managers.
7. Conduct Board of Directors workshop to review draft results.
8. Finalize Strategic Plan. Prepare a single page summary in addition to the plan.
9. Present final plan to Board.

C. SCHEDULE

The scope of work shall be completed over a 8-month period.

EXHIBIT A

REFERENCES

Proposer shall provide a minimum of three (3) Customer References for whom comparable services have been performed within the last five (5) years. Local and similar size contract references are preferred.

REFERENCE #1	
NAME OF FIRM	
ADDRESS	
CITY, STATE, ZIP CODE	
TELEPHONE #	( )
E-MAIL ADDRESS	
CONTACT	
PROJECT NAME	
COMPLETION DATE	
APPROX. COST	
REFERENCE #2	
NAME OF FIRM	
ADDRESS	
CITY, STATE, ZIP CODE	
TELEPHONE #	( )
E-MAIL ADDRESS	
CONTACT	
PROJECT NAME	
COMPLETION DATE	
APPROX. COST	
REFERENCE #3	
NAME OF FIRM	
ADDRESS	
CITY, STATE, ZIP CODE	
TELEPHONE #	( )
E-MAIL ADDRESS	
CONTACT	
PROJECT NAME	
COMPLETION DATE	
APPROX. COST	

EXHIBIT B
LIST OF SUBCONTRACTORS

NAME UNDER WHICH SUBCONTRACT IS LICENSED	LICENSE NUMBER	ADDRESS AND PHONE NUMBER OF OFFICE, MILL OR SHOP	SPECIFIC DESCRIPTION SUBCONTRACT

EXHIBIT C
LAKE ELSINORE AND SAN JACINTO WATERSHEDS AUTHORITY
PRICE FORM

Task		
1		
2		
3		
4		
5		
6		
7		
8		
Total		

The Project shall begin immediately upon receipt of order or notice to proceed.

Price(s) shall include **all** labor, equipment, materials, transportation, overhead, travel, profit, insurance, sales and other taxes, licenses, incidentals, and all other related costs necessary to meet the work requirements. Note LESJWA will not pay for travel time.

LESJWA encourages a discount for early payment and will include such offers in the evaluation criteria. If a discount is offered, the terms are: 5% discount if paid in full within 15 days.

PROPOSERS:

Your signature on this document, should you be awarded a contract as defined in this RFP, signifies that you have fully read and understood this proposal and will comply with all specifications, conditions, unit prices, terms, and delivery of the proposal unless otherwise noted in the "exceptions" portion of the proposal.

Name of Firm:		Title:	
Authorized Signature:		Date:	
Printed/Typed Name:		Mailing Address:	
Phone:		City, State, Zip	
Fax:		E-Mail Address:	

EXHIBIT D

PROPOSER'S BUSINESS INFORMATION

All proposers shall submit the information as requested below.

1. Length of time your firm has been in business: _____
2. Length of time at current location: _____
3. List types and business license number(s): _____

   _____

   _____
4. California State Contractor's License number: _____
5. Names and titles of all officers of the firm: _____

   _____

   _____

   _____

   _____
6. Is your firm a sole proprietorship doing business under a different name?
   YES ☐ or NO ☐
7. If yes, please indicate sole proprietorship name and the name you are doing business under: _____

   _____
8. Please indicate your Federal Tax Number: _____
9. Is your firm incorporated? YES ☐ or NO ☐
10. Name and remittance address that will appear on invoices: _____

    _____

    _____
11. Physical Address: _____

    _____

EXHIBIT E

ADDITIONS, DELETIONS AND/OR EXCEPTIONS

Please state any and all Additions, Deletions and Exceptions that you are taking to any portion of this proposal and General Services Agreement (GSA) (**Attachment C**) and Task Order (**Attachment D**). If not addressed below, then Lake Elsinore and San Jacinto Watersheds Authority assumes that the vendor will adhere to all terms and conditions listed.

LESJWA will issue an Agreement in its standard form to the successful firm(s) for the services contemplated herein; a copy of which is attached hereto, and incorporated herein. Any deletion, exception, or modification taken to Agency contract terms and conditions will be evaluated, in addition to the specified criteria; and may, itself, result in non-acceptance by the Agency. Any request for deletion, exception, or modification, if so taken, must be submitted at the time of proposal.

LAKE ELSINORE MASTER PLAN / ECONOMIC FEASIBILITY STUDY 1995 - 2015

FOR
CITY OF LAKE ELSINORE
130 South Main Street
Lake Elsinore, CA 92530

BY
NOBLE CONSULTANTS, INC.
2201 Dupont Drive, Suite 620
Irvine, CA 92715

September 16, 1994

ACKNOWLEDGEMENTS

The following people are acknowledged in completing this Master Plan/Economic Feasibility Study for Lake Elsinore:

Gary M. Washburn, Mayor
Dan Bender, Mayor Pro Tem
Kevin Pape, Councilman
George Alongi, Councilman
Pam Brinley, Councilwoman
Ron Molendyk, City Manager
Phyllis Rogers, Assistant City Manager
Dick Watenpaugh, Manager of Special Projects

A special thanks to the members of the City's Lake Advisory Committee for their input and assistance.

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I. EXECUTIVE SUMMARY

During the previous decades, Lake Elsinore was used for recreational boating, fishing, swimming and camping by thousands of people from the Los Angeles, Orange County and San Diego areas. There were reported to be as many as 1,000 to 1,200 boats on the lake and along its shoreline at any one time. In more recent times, with the development of many first class recreational complexes in Southern California, and with the ongoing problems of water quality and either a lake water level that was too high or too low, most of the earlier recreational crowd from nearby counties have chosen to go elsewhere. However, now with significant growth taking place within Lake Elsinore Valley and Riverside and San Bernardino Counties, Lake Elsinore should and could be returned to an extremely valuable recreational resource.

Presently, there is minimum boat access to the lake by use of launch ramps when water levels exceed 1,240 feet; there are no marinas for the berthing of boats; and there are minimum recreational and commercial facilities along the lake's shoreline. The objective of this Master Plan Study is to develop management strategies, lake water use capacities, and a lake water access plan to maximize recreation and water sport activities on and around the lake, and to recommend new facilities and show their economic feasibility to accomplish this maximization of recreation and water sports.

1. PROPOSED LAKE OPERATIONS

The following management strategies are recommended:

- Designated water areas for:
  - Five miles per hour/no wake buffer zone
  - High speed boat operations
  - Personal watercraft
  - Water ski take-off and drop-off from shore
  - Swimming
  - Fishing
  - Special events activities
  - Waterskiing concession

- Boat travel direction of:
  - Counter-clockwise movement beyond the five miles per hour/no wake buffer zone, except for sailboats.
  - Any direction within five miles per hour/no wake buffer zone.
  - Counter-clockwise direction in the designated high boat speed and PWC areas.

- Maximum boat speed of:
  - Forty miles per hour within the interior active lake area, except higher speeds are allowed within the restricted high boat speed area.
  - Five miles per hour or less, if boat wake occurs, within the five miles per hour/no wake buffer zone.

- Maximum boat size of:
  - Thirty feet in length, except for special authorized commercial pontoon boats or other boats approved by the City.
  - Majority of boats should be no longer than 26 feet in length.

- Boat operating hours of:
  - Sunrise to sunset (maximum not-to-exceed between 6:00 am to 9:00 pm in summer, and 7:00 am to 6:00 pm in winter), except for special authorized commercial boats.
  - 7:00 am to 6:00 pm (for summer) and 8:00 am to 4:00 pm (for winter) in high boat speed designated area.

- Lake patrol to:
  - Adequately patrol the lake.
  - Enforce the adopted lake rules and regulations.

The planned lake operating level is between elevations 1,240 and 1,249 feet, and there are approximately 3,000 water surface acres available for boating operations in the lake during an average lake level of 1,245 feet. In addition, there are approximately 80 acres of water surface area available for water ski school concessions and competition boating special events within the San Jacinto Channel during a lake level of 1,245 feet. Of the available

3,000 acres of water surface area for boating activities in the main lake, 2,236 of these acres are within the active zone (5 to 40 miles per hour and designated high speed zone), while the remainder are within the lake's perimeter five miles per hour/no wake zone.

A maximum water use capacity of 1,200 boats at any one time is recommended after the lake has been improved in accordance with this Master Plan. It is expected that no more than 500 boats would be operating at any one time within the active zone, while the remainder of the 1,200 boats would be either within the five miles per hour/no wake zone or temporarily beached/docked along the shoreline. The maximum peak day boat count would be 1,560 boats when using a conservative 30 percent turnover rate. Initially, prior to constructing the recommended lakefront improvements, a water use capacity of 650 to 750 boats operating on the lake at any one time should be adopted.

The proposed water access improvement plan recommended to support a maximum boating capacity of 1,200 boats operating on the lake at any one time with a peak day boat count of 1,560 boats, and to provide a diversity of water sports and shoreside recreational activities, is presented in Figure I-1. The main elements of this plan consist of the following:

- Launch ramps and marinas for boater's access to the lake;
- Boat rental concessions;
- Boat excursion concessions;
- Long stretches of boat beaches where boaters can stop for picnicking and shoreside activities;
- Visitor boat slips in marina and retail areas for boaters to shop;
- Fishing areas;
- Swimming beaches and lagoons where families can enjoy waterfront activities;
- Waterskiing concession area where all levels of water-skiers can train and be taught;
- Special events area for power boat, waterskiing, rowing and sailing races;
- Restricted water use areas for high speed boats and personal watercraft;
- Improved lakefront R.V. park and campground facilities.

2. RECOMMENDED DEVELOPMENT PLAN

The proposed water access improvements are identified in Figure I-1. In addition, this Master Plan Study recommends the development of lakefront facilities to both support the proposed lake access improvements and to provide commercial recreation amenities such as a resort hotel/restaurant complex, R.V. and campground facilities, marinas, and various marine concessions. The proposed lakefront development along Lakeshore Drive consists of the following facilities:

- Seaport Boat Trailer/Car Parking Area
- Seaport Boat Beach
- Seaport Boat Launch Ramp
- Seaport Marina
- Seaport Non-Power Boat Concession Beach
- Seaport Swimming Beach
- Boat Beaches
- Fishing Beach and Pier

Perspective drawings of conceptual designs for the Seaport boat launch ramp, boat trailer/car parking, and marina complex including restaurant and concession buildings are presented in Figures I-2 and I-3.

Proposed lakefront development along Riverside Drive includes improvements to the existing City Park and Campground facility and to the existing Elsinore West Marina R.V. Park and Campground facility. Proposed improvements for both facilities include development of marina dock systems and swimming beaches, and enhancements to the existing boat launch ramps and campground facilities.

Proposed lakefront development along Grand Avenue consists of the development of a Nautical Center on approximately 40 acres of land which includes the existing old Military Academy. This development would include rowing and yacht club facilities, a non-power boat beach and swimming beach, a yacht brokerage/boat sales center, a marine retail center, and an aquarium/marine museum.

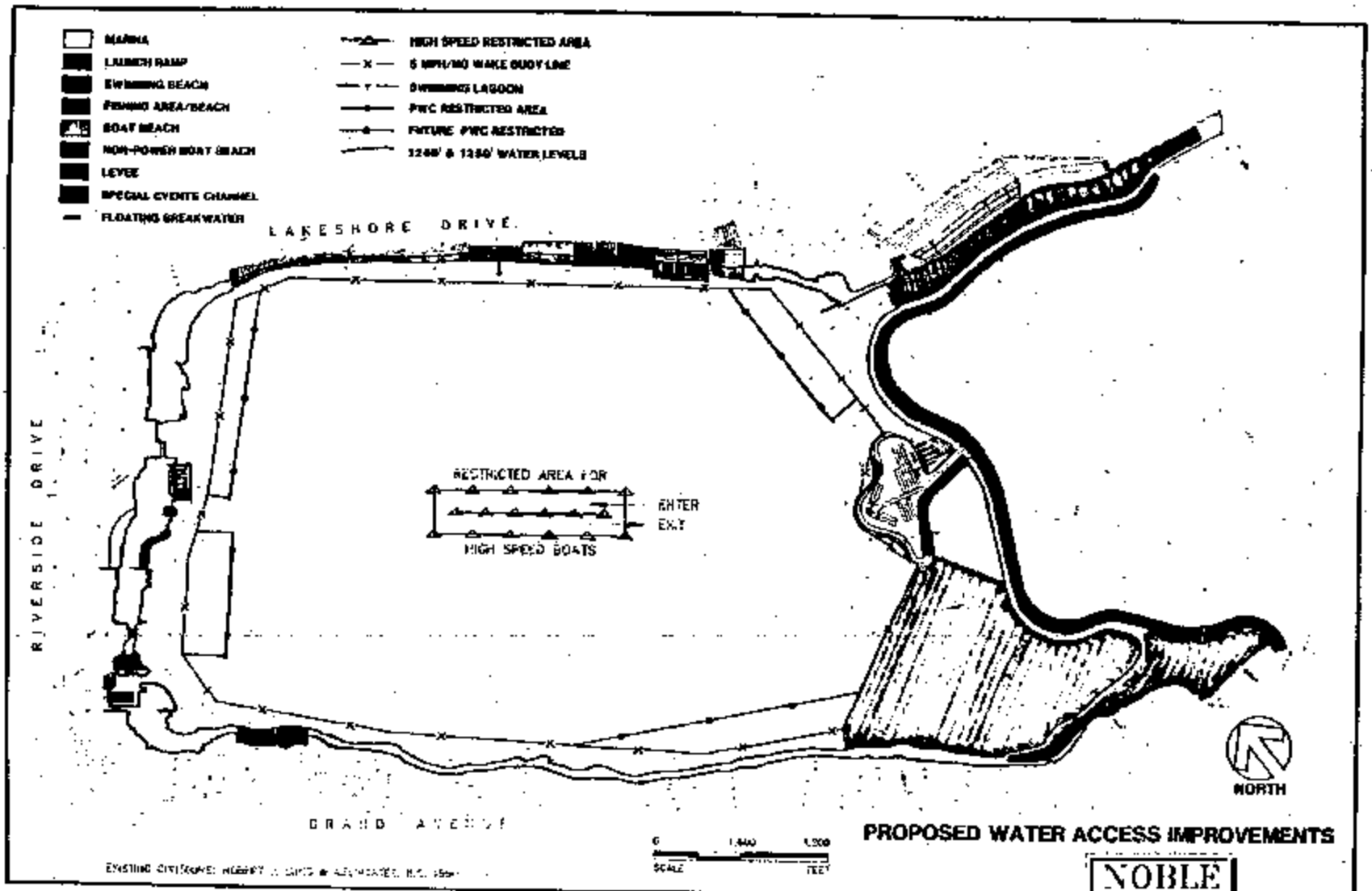
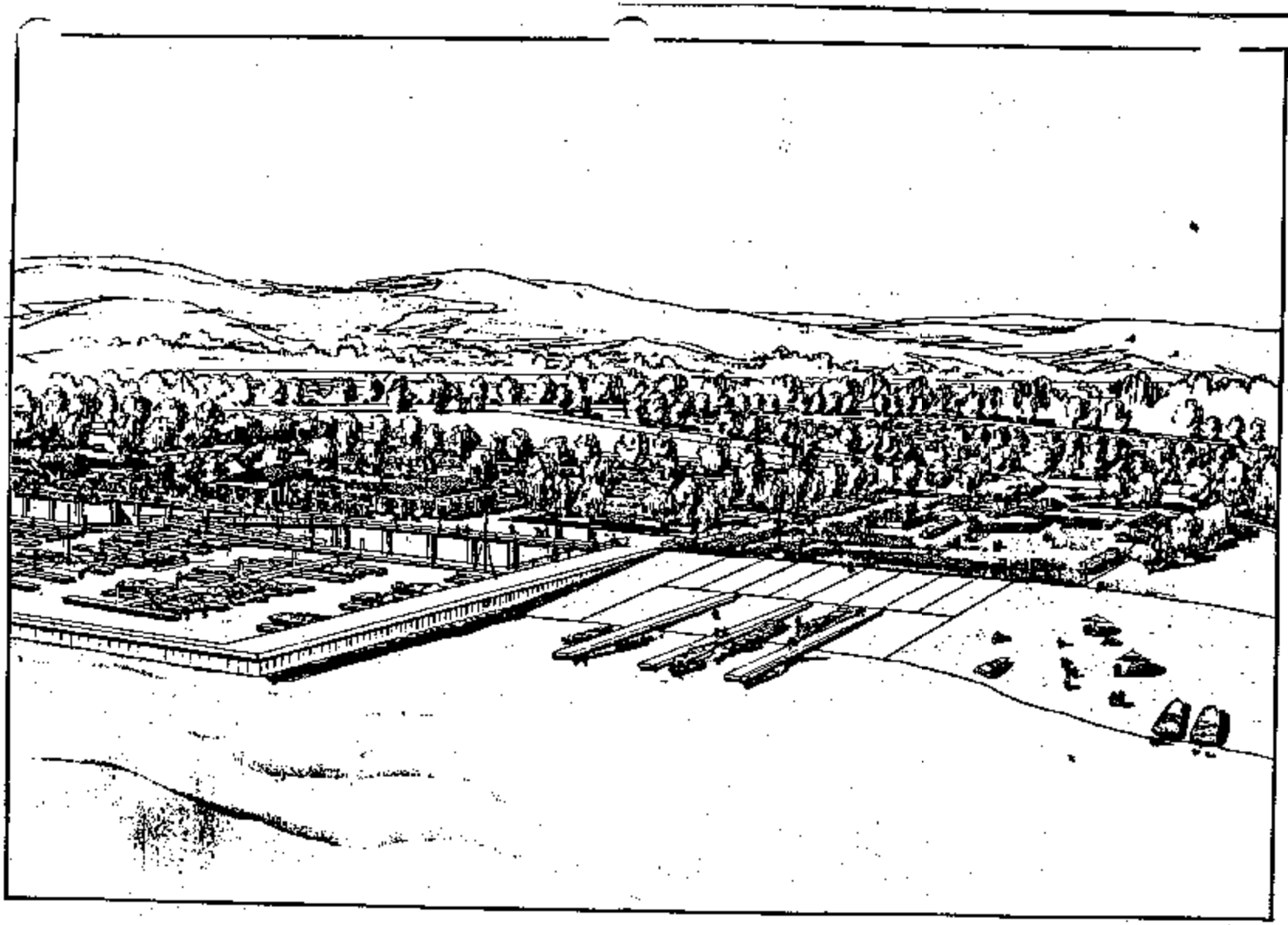

MARINA
LAUNCH RAMP
SWIMMING BEACH
FISHING AREA/BEACH
BOAT BEACH
NON-POWER BOAT BEACH
LEVEE
SPECIAL EVENTS CHANNEL
FLOATING BREAKWATER
HIGH SPEED RESTRICTED AREA
5 MPH/NO WAKE BUOY LINE
SWIMMING LAGOON
PWC RESTRICTED AREA
FUTURE PWC RESTRICTED
1240' & 1250' WATER LEVELS
LAKESHORE DRIVE
RIVERSIDE DRIVE
GRAND AVENUE
RESTRICTED AREA FOR
ENTER
EXIT
HIGH SPEED BOATS
NORTH
SCALE
FEET
PROPOSED WATER ACCESS IMPROVEMENTS
NOBLE
CONSULTANTS

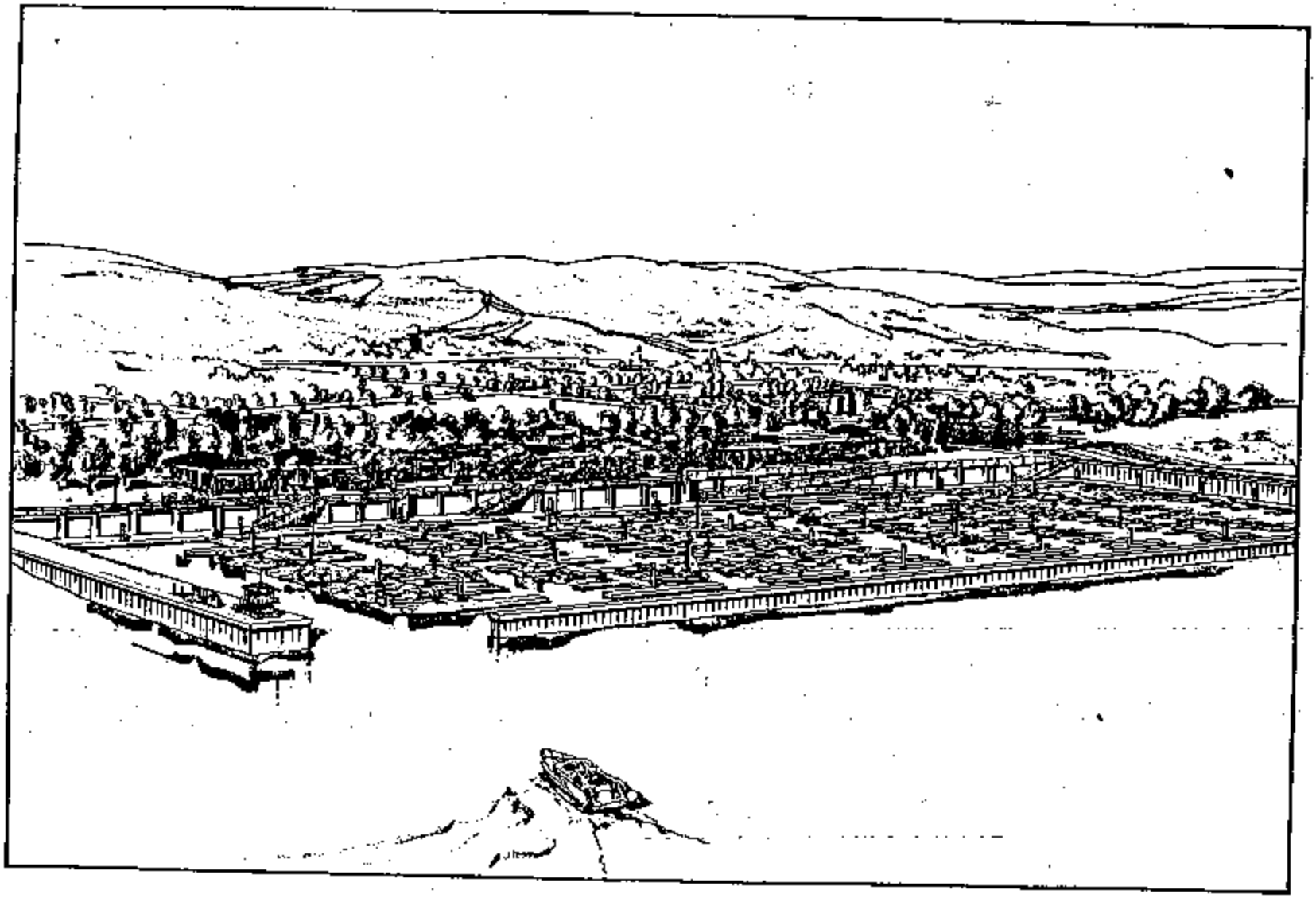
FIGURE 1-1



SEAPORT BOAT LAUNCH RAMP

NOBLE

FIGURE 4-3



SEAPORT MARINA

NOBLE

FIGURE 4-3

Along the eastern perimeter of the lake, it is proposed that the existing 17,800 lineal feet of earthen levee be improved into a linear greenbelt pedestrian walkway for walking, jogging, bicycling, picnicking, and enjoying lake views. A major improvement is recommended for the existing Operations Island which is connected to the earthen levee by a causeway. It is proposed that this island be developed into Recreation Island and consist of a world class resort hotel/restaurant complex, a swimming beach and lagoon area, a boat marina complex with marine concession facilities, a youth and group facility, parklands, and water ski take-off and drop-off beaches. Perspective drawings showing the conceptual design of these proposed facilities are presented in Figures I-4, I-5 and I-6.

The existing San Jacinto Channel is an ideal long, narrow and fairly protected water and shoreline area for development into a combination water ski school concession/special events channel, and a swimming beach facility. A perspective drawing showing a portion of this proposed development is presented in Figure I-7.

3. ECONOMIC FEASIBILITY

The proposed Lake Elsinore improvements presented in this Master Plan represent a public and private investment of approximately $100 million (1994 dollars), exclusive of any land acquisition costs, and development costs associated with the proposed resort hotel/restaurant complex on Recreation Island. These improvements will generate substantial revenue for the City in the form of lease revenues, Transient Occupancy Tax (TOT), sales taxes, business licenses, development fees, user fees, etc. The success of Lake Elsinore will depend partially on an adequate, sustained level of both public and private improvements.

It is recommended that the City operates the lake as an enterprise fund in order to both secure dedicated revenue at the lake to fund its improvements, and to create incentives for more efficient management by enhancing revenue and operating efficiently. It is also recommended that the capital improvements be phased over the 20-year planning period to help minimize the need for debt financing, and that all types of public funding be pursued including the obtaining of State and Federal grants.

In order to initiate the active recreational use of the lake and to encourage the private sector's active participation in its development, it is recommended that initial development

of proposed lakefront facilities be prioritized in the order presented below:

1. Public boat launch ramp that can accommodate the range in design lake water levels, and that has sufficient adjacent boat trailer/car parking and other necessary improvements;

2. Special events area that can successfully promote and stage professional level competition boating events;

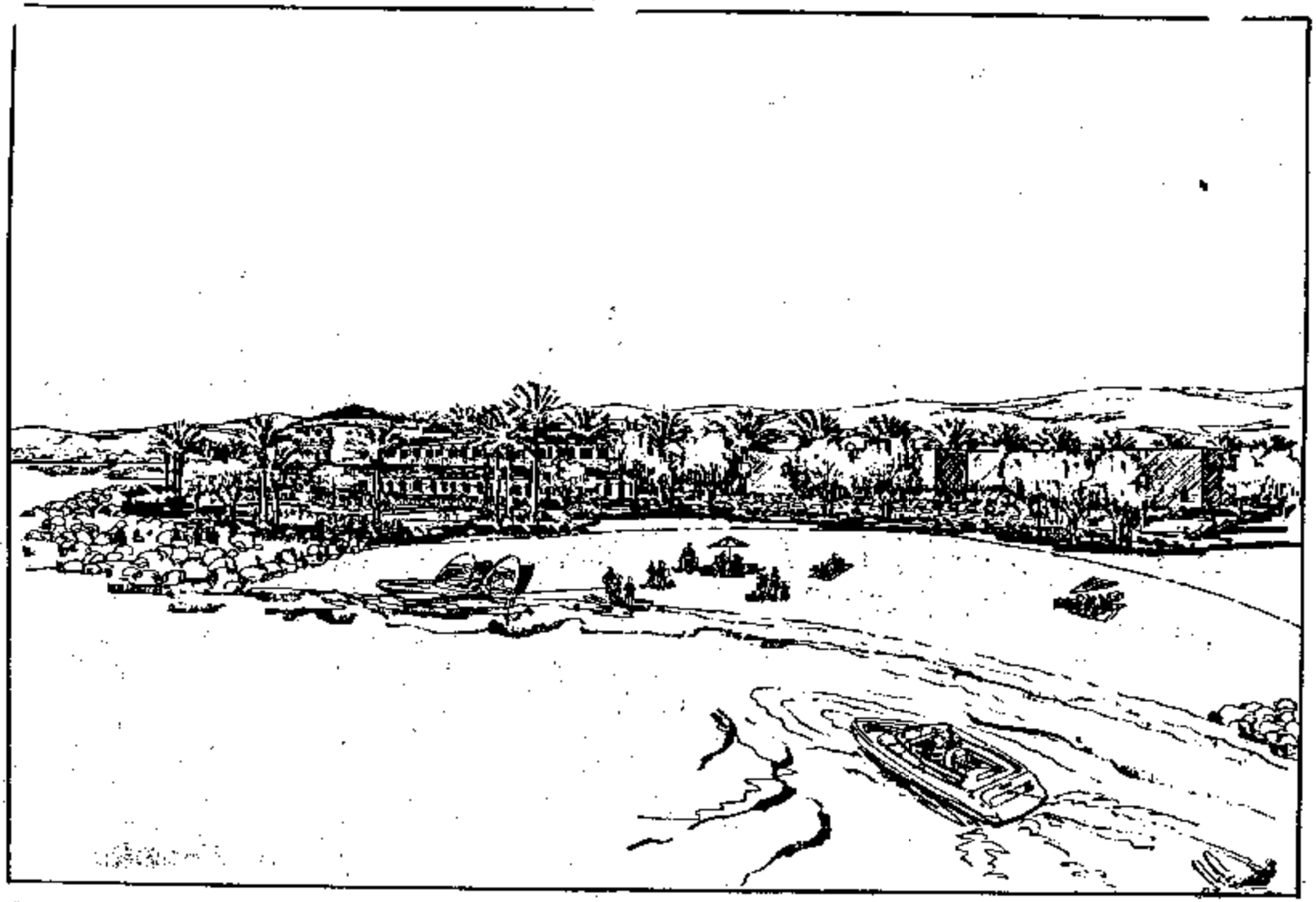
3. Swimming beach area with sufficient supporting facilities for families to truly enjoy the recreational beachside activities provided by the lake;

4. Marina boat berthing facility with supporting landside marine concessions and a restaurant for the general public's enjoyment of waterfront boating activities;

5. Improvement of either the existing City Park and Campgrounds or the existing Elsinore West Marina R.V. Park and Campgrounds to allow for enhanced waterside camping sites for the general public, and to provide additional boat launching, beach and marina facilities;

6. Development of Recreation Island as a world class destination resort in combination with a marina, swimming beach, parkland and a youth and group facility for the general public's use;

7. Development of public shoreline areas with pedestrian linear greenbelt walkway, boat beaches, benches, shade structures and restroom facilities.



SKI BEACH DROP-OFF/HOTEL COMPLEX

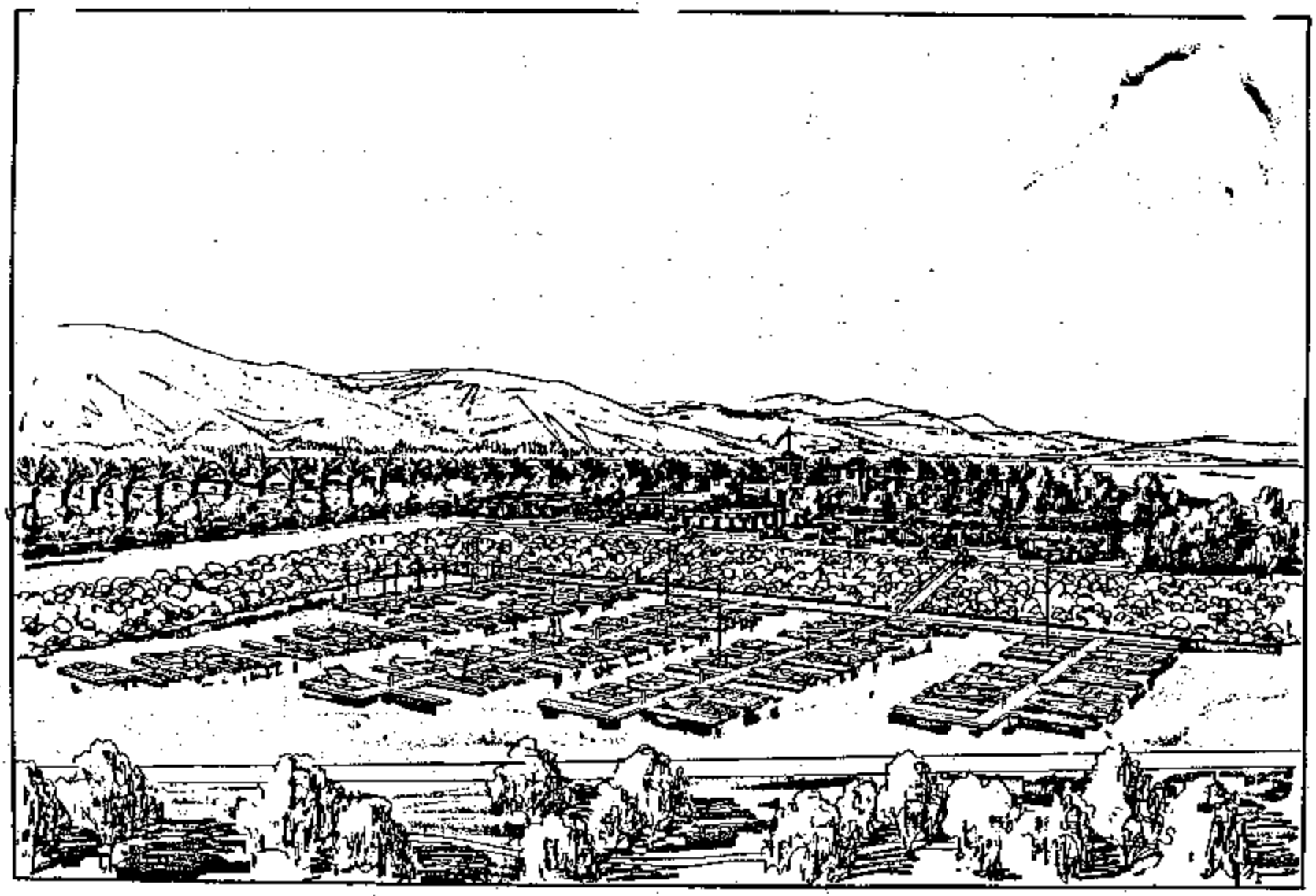
NOBLE

FIGURE I-4

RECREATION ISLAND SWIM LAGOON/BEACH AREA

NOBLE

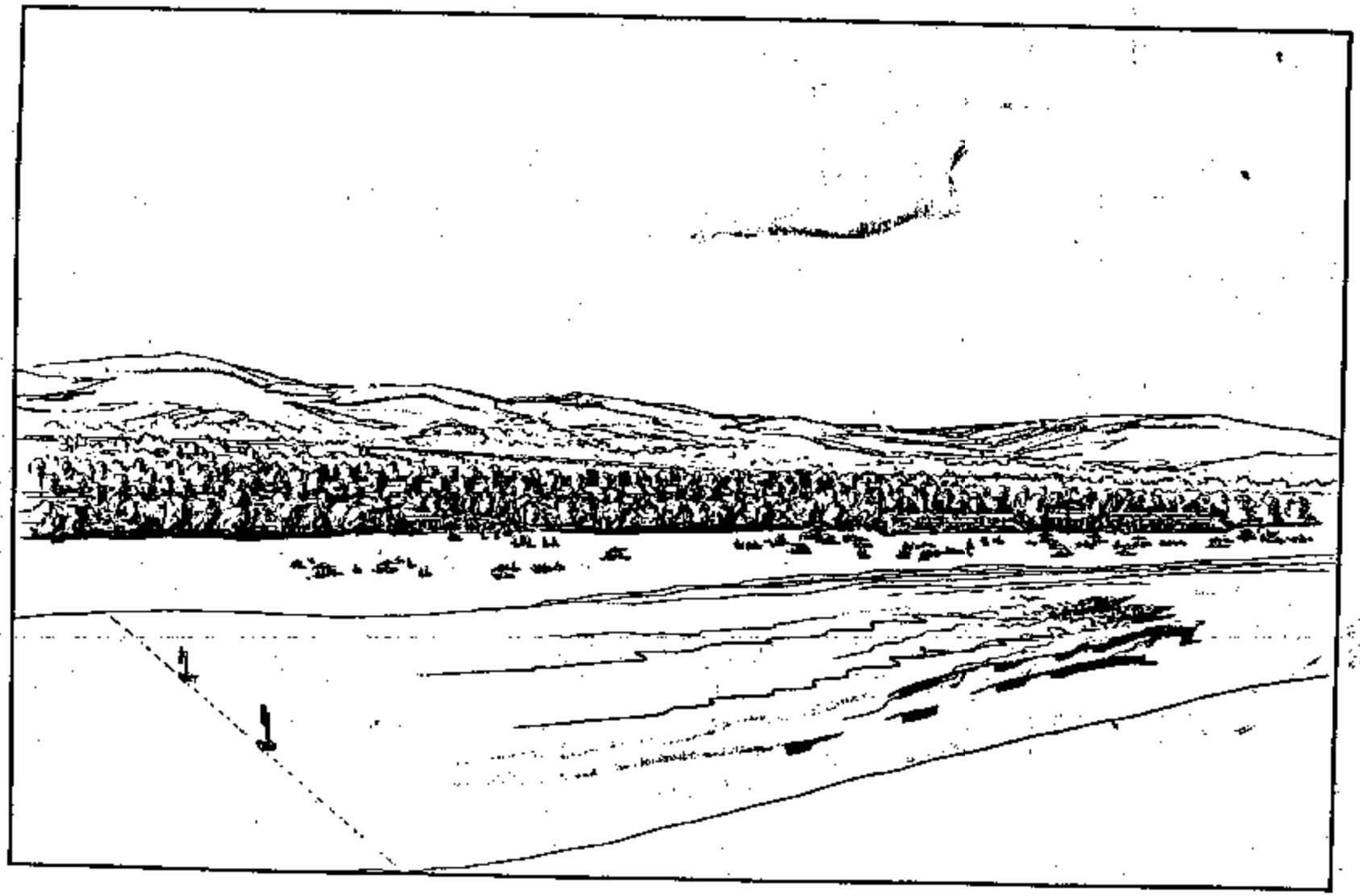
FIGURE 4-5



RECREATION ISLAND MARINA

NOBLE

FIGURE 16



SPECIAL EVENTS CHANNEL

NOBLE

FIGURE I-7

II. INTRODUCTION

1. BRIEF HISTORY OF LAKE ELSINORE

The Lake Elsinore Valley has had three distinct periods in its history. The lake was called "Etenguo Wumona" by its earliest Indian inhabitants, "Laguna Grande" by the Spaniards and "Lake Elsinore" by the American settlers. Throughout its history, the lake has served as a source of inspiration for its inhabitants.

The "Etenguo Wumona" period spanned several centuries until 1858 and the "Laguna Grande" period extended to 1883. During these two periods, the development related to the lake was minimal. Living in balance and respect for nature characterizes these periods in the history of the valley.

In 1883, the "Lake Elsinore" period began and the City of Lake Elsinore was incorporated in 1888. Since that time, the economic stability, growth and development of the community have been significantly influenced by the elevation of the lake. Throughout the drought of 1940 to 1978, a number of individuals and public agencies started to address the lake's management and stabilization. In 1949, the Lake Elsinore Recreation and Parks District was formed to manage and administer a program of lake stabilization and recreation facility development. In 1957, the State legislature established Lake Elsinore as a unit of the State park system. In 1993, the lake was turned over to the City of Lake Elsinore.

In an effort to stabilize the lake's water level, and thus the economic stability of the City, the City of Lake Elsinore and several other agencies, including the City of Lake Elsinore Redevelopment Agency, California Department of Parks and Recreation, Elsinore Valley Municipal Water District, Santa Ana Watershed Project Authority and the County of Riverside, have formed the Lake Elsinore Management Authority (LEMA). This joint powers agency has developed the Lake Elsinore Management Project, a construction program designed to allow the lake's water level to be managed and to provide other lake improvements.

With the implementation of the Lake Elsinore Management Project, other forward-minded civic projects were also proposed to stimulate the growth and prosperity of the City. The

Lake Master Plan is one of the projects, which will enhance the water recreation activities within the lake.

2. PURPOSE

The purpose of this Master Plan Study is to provide the City with a document that presents an orderly methodology for the successful development of Lake Elsinore to expand the diversity and quality of recreation, and protect the aquatic wildlife. This depends on the balanced provision of public recreation, the management of environmental resources, and the operation of economically successful commercial leisure enterprises.

From a recreation objective it is important that the lake's land and water acreage support a diversity of water sports and recreational activities such as power boating, sailing, rowing, fishing, waterskiing, special events, swimming, beaching, picnicking, walking, jogging, bicycling, and simply enjoying the lake's views. From a commercial perspective, it is important that the lake attract and expand on a number of economically viable leisure-industry leases such as resort hotels and restaurants, various marine concessions, marinas, and recreational vehicle camping. In addition, not-for-profit leases such as youth and group facilities, and rowing and sailing facilities are important to the overall lakefront development plan. From an environmental viewpoint, it is essential that the lake's water quality be enhanced, that its water level be stabilized and that the surrounding wetlands and upland habitats be conserved.

3. SCOPE

The scope of work for preparation of this Master Plan Study as identified by the City, consists of the following elements:

- Master Plan Elements

  <u>Management Strategies</u>:
  - Time and space allocations
  - Waterskiing - public
  - Waterskiing - school

- Personal watercraft (jet skis and wave runners)
  - entire lake
  - designated area
- Sailing/cruising
- High speed area
- Fishing

Water Use Capacity (Maximum Size of Boat/Draw or Draft):
- Power crafts
- Personal watercraft
- Sailing
  - sailboards
  - catamarans

  Need weekday, weekend, off-season, peak season

Water Access:
- Boat launching facilities - private boat docks and standards
- Day use facilities
- Marinas - wet slips and moorings
  - dry storage
  - parking
- Swimming areas

Rules and Regulations:
- Boating
- Swimming
- Sailboarding
- Personal watercraft
- Fishing

Concessions/Leases:
- Campground
- Water leases (yacht clubs, ski clubs, personal watercraft clubs)
- Dock leases
- Land leases

Special Events:

- International hot boats
- Thunder boats
- Triathlons/biathlons
- Sailboat regattas
- Sailboard events
- Jet ski races
- Water ski competitions and shows
- Rowing regattas

- Economic Feasibility Elements

New Facilities:

- Impact on current concession (based on capacity)

Development Costs:

- Types of improvements
- Estimated costs

Operational Costs:

- City operated
- Private or concession (to include water, land and facilities)

Revenue Generations:

- Estimated land leases
- Water leases
- Public versus private
- Boat launch and lake use (resident, non-resident, commercial)
- Annual launch/use fee

III. LAKE SETTING

Lake Elsinore, situated within the southwestern segment of Riverside County, is located about 75 miles southeast of downtown Los Angeles, about 22 miles south of the City of Riverside, and about 80 miles north of the City of San Diego, as shown in Figure III-1. The lake, acting as a natural sink for the San Jacinto River, is bounded by the Santa Ana Mountains to the northwest, by the Elsinore Mountains to the south and by the Community of Lake Elsinore to the north and northeast, as illustrated in Figure III-2.

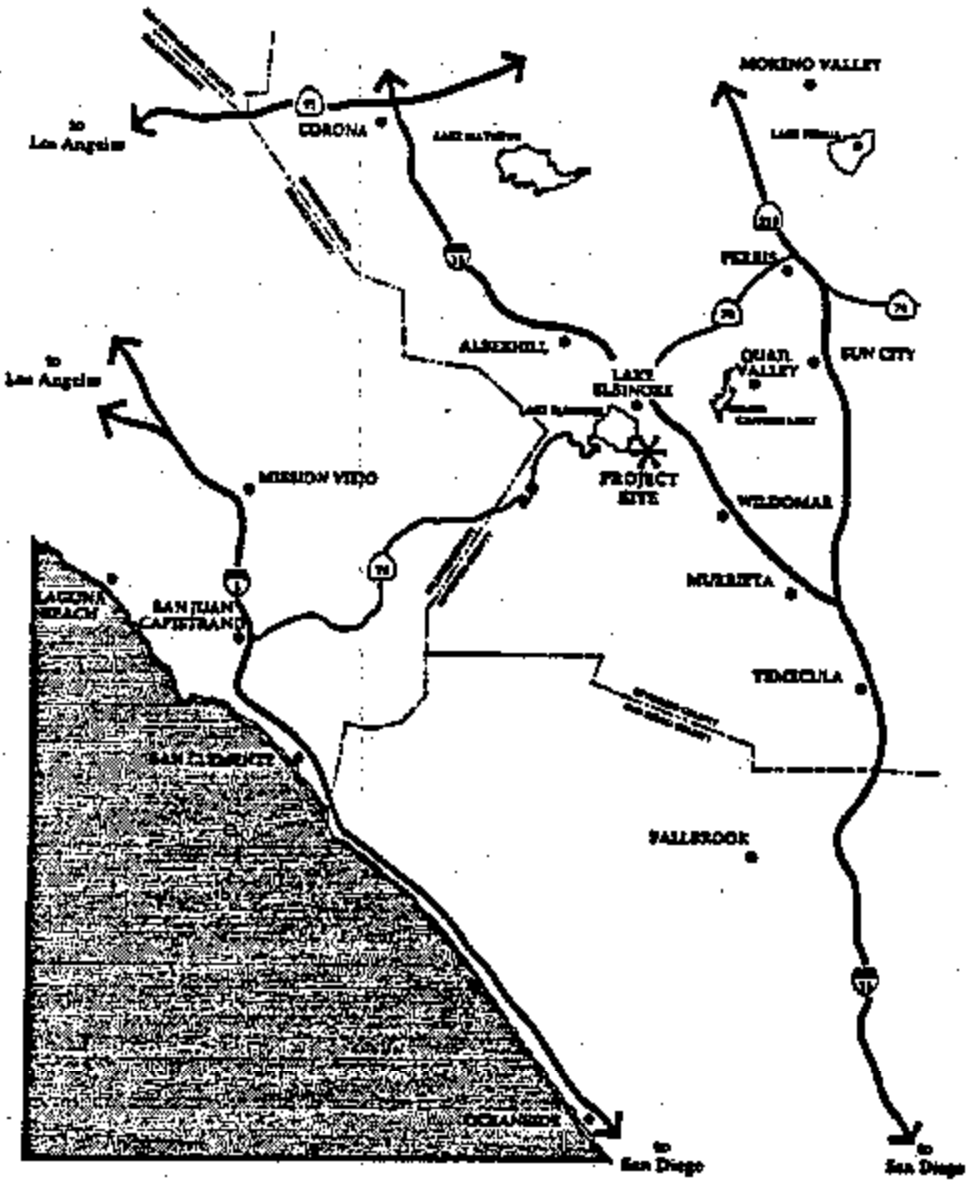
1. PHYSICAL CHARACTERISTICS

Lake Elsinore, a natural lake, has a rectangular shape with the major axis orientated northwest to southeast. The lake is comprised of a main basin and a flood control plain situated on the southeastern portion of the lake, as shown in Figure III-2. The lake, in general, is shallow with the deepest area located in the southwest section of the main basin. However, the lake bottom is nearly level at an elevation of 1,223 feet, NGVD. The approximate volume and surface area of the lake in relation to its elevation within the main basin is listed in Table III-1.

TABLE III-1
LAKE LEVEL AND VOLUME IN THE MAIN BASIN

Lake Elevation (Feet)	Lake Volume (Acres-Feet)	Surface Area (Acres)
1,236	26,935	2,892
1,240	38,519	3,074
1,245	54,504	3,319
1,250	71,443	3,463
1,255	89,114	3,606
1,260	107,877	3,882

Source: Black and Veatch, 1991



N.T.S

LOCATION MAP

Source: East Lake Specific Plan, 1993

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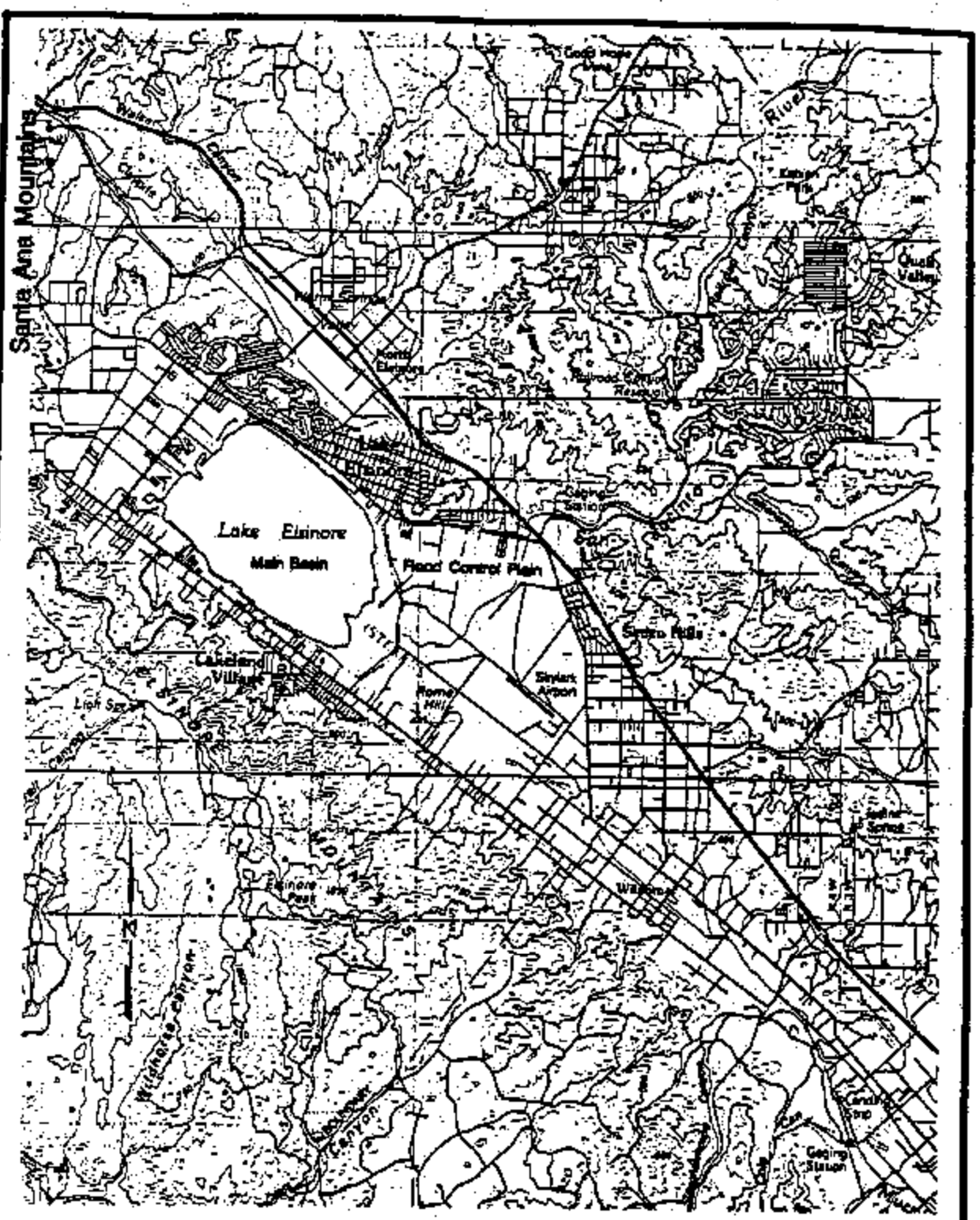
FIGURE III-1



SCALE 1 : 100,000

VICINITY MAP

Source: Topographic Map, 1983.

NOBLE CONSULTANTS

FIGURE III-2

Based on recent aerial mapping performed by Lung and Associates (1990), for the above water surface elevation of 1,227 feet, NGVD, steeper shoreline slopes are observed on the north and the south banks (5 to 10 percent), while flatter slopes are reported on the east and west banks (1.5 to 2 percent).

Lake Elsinore lies in the peninsular ranges geomorphic province which has a distinct northwest structural groin, expressed by alignment of mountains, valleys and faults. This province is a large batholic block, uplifted along the eastern edge and tilted upward. A complex faulted trough with an elongated and depressed crustal block forms the so-called Elsinore Valley. The valley is bounded by northwest trending faults, known as the Elsinore fault, which consists of two major zones: the Willard fault zone on the west and the Wildomar fault zone on the east.

The Lake Elsinore area contains a variety of rock types which include an assemblage of mildly to moderately metamorphosed rocks of sedimentary and igneous origin, intruded by younger igneous rocks. These collectively consist of a group of rock units called the "basement complex". The basement complex rocks are exposed in all the mountain areas around the lake. Overlying the basement complex is the pleistocene-aged Pauba formation composed of medium to coarse grained granite, boulder bearing non-marine sandstone conglomerate, siltstone, and beds of clay which are the principal water-holding formation under the lake. Above the Pauba formation, an alluvium layer consisting of sand, silt and some gravel forms the lake bottom and shoreline.

2. CLIMATOLOGY

The climatology of the Lake Elsinore area is mediterranean, with a mean annual temperature of 63.6 degrees Fahrenheit. Winter temperatures below freezing are reached occasionally, and temperatures of more than 100 degrees Fahrenheit are common during the summer. Average daily minimum/maximum winter temperatures range from 35 to 65 degrees Fahrenheit, while the corresponding summer temperatures are about 90 to 100 degrees Fahrenheit. Table III-2 shows the mean, average maximum, and average minimum temperatures for Lake Elsinore.

Most precipitation occurs during the winter months. Summer rainfall is unusual, but thunderstorms do occur occasionally. Table III-3 shows the mean monthly precipitation,

TABLE III-2
TEMPERATURE RECORDS AT LAKE ELSINORE, CALIFORNIA

Month	Mean (F°)	Average Maximum (F°)	Average Minimum (F°)
January	50.9	66.0	35.8
February	53.2	68.3	38.0
March	55.2	70.2	40.1
April	59.3	75.3	43.3
May	64.9	81.4	48.4
June	72.0	90.0	53.9
July	78.9	98.7	59.1
August	78.6	97.8	59.1
September	75.0	94.1	56.0
October	66.1	84.2	47.9
November	57.2	73.9	40.4
December	51.7	67.7	35.6

Note: Latitude 33°40', Longitude 117°20', Elevation 1,285 feet, NGVD
Source: National Ocean Atmospheric Administration, 1982

with a mean annual precipitation of 11.66 inches. It is understandable that there can be large year-to-year variability in monthly as well as annual precipitation.

Snow in Southern California is relatively uncommon at elevations below 4,000 feet and is extremely rare below 2,000 feet. Although even the valley floor has experienced light snow on isolated occasions, snowfall and snowmelt are not considered to be significant hydrologic factors in the Lake Elsinore area.

The average monthly evaporation rate derived from recorded pan evaporation rates is presented in Table III-4. In summer months, average monthly evaporation can reach about eight inches.

The prevailing daily wind pattern in the Lake Elsinore area is a daytime sea breeze followed by a nighttime land breeze. In winter months, winds from the southeast are ahead of an approaching storm and average 25 to 35 miles per hour, with occasional gusts to more

TABLE III-3
PRECIPITATION DATA AT LAKE ELSINORE, CALIFORNIA

Month	Mean (inches)
January	2.75
February	2.34
March	1.89
April	0.76
May	0.20
June	0.02
July	0.03
August	0.17
September	0.32
October	0.22
November	1.19
December	1.77
ANNUAL:	11.66

Note: Latitude 33°40', Longitude 117°20', Elevation 1,285 feet, NGVD
Source: National Ocean Atmospheric Administration, 1982

than 50 miles per hour. West to northwest winds that are behind storms can sometimes exceed 40 miles per hour. The wind pattern may be broken by the northeasterly dry Santa Ana winds coming from the mountains and deserts.

Table III-5 lists the seasonal recorded wind data by wind directions and average speed for a nearby station at Riverside.

3. EXISTING LAKEFRONT FACILITIES

When the lake water level is between 1,232 and 1,255 feet, NGVD, the lake is popular to a wide variety of water sport enthusiasts. All forms of passive and active recreation are practiced including waterskiing, personal watercrafting, general pleasure boat cruising, fishing, sailing, rowing and swimming. It has been estimated that roughly 95 percent of the

TABLE III-4
AVERAGE MONTHLY TOTAL EVAPORATIONS
FROM LAKE ELSINORE

Month	Average Total Evaporation (ft.)
January	0.15
February	0.13
March	0.24
April	0.37
May	0.48
June	0.56
July	0.65
August	0.66
September	0.55
October	0.43
November	0.27
December	0.19
TOTAL:	4.68 feet

Source: National Oceanic and Atmospheric Administration, 1982
Black and Veatch, 1991

use on Lake Elsinore has been from some form of power boating. Sailboats account for only a minor percentage of boating use. Fishing boats are most popular during the off season (October through March).

Existing lakefront facilities to serve the water-related recreation activities around the lake's perimeter are tabulated in Table III-6 and illustrated in Figure III-3. Existing lakefront facilities along Lakeshore Drive include the City's temporary boat launch ramp, fishing beach, day use picnic beach and swimming beach. These facilities are operated and maintained by the City of Lake Elsinore. When the lake's water level dropped below 1,255 feet in November 1993, the City's temporary boat launch ramp became unusable.

Recreational facilities located along Riverside Drive are operated by concession contract (Lake Elsinore City Park) or by private commercial owners (Lake Park Resort and Motel,

TABLE III-5
SEASONAL AND ANNUAL AVERAGE WIND DATA AT RIVERSIDE

Direction	Winter		Spring		Summer		Fall		Annual	
	% of Time	Mean Speed (mph)	% of Time	Mean Speed (mph)	% of Time	Mean Speed (mph)	% of Time	Mean Speed (mph)	% of Time	Mean Speed (mph)
N	6.9	5.6	2.9	3.5	1.7	5.9	4.5	5.1	4.1	5.2
NNE	7.6	3.9	3.1	2.1	1.5	3.2	3.6	4.1	3.5	3.5
NE	11.0	2.2	2.7	1.6	1.2	2.5	5.2	2.1	4.4	2.1
ENE	7.8	1.7	2.9	1.8	1.0	1.4	4.2	1.7	3.5	1.7
E	6.7	1.3	2.9	2.1	2.1	1.2	4.9	1.6	4.2	1.5
ESE	7.1	1.6	4.0	2.0	2.0	1.6	4.6	1.8	4.1	1.8
SE	7.1	1.5	4.6	2.0	4.2	1.7	5.7	1.6	5.9	1.8
SSE	4.6	1.5	4.7	2.0	6.0	2.0	5.7	2.0	5.4	1.9
S	3.7	2.3	4.2	2.1	5.8	2.1	5.0	1.8	5.1	2.0
SSW	3.5	2.7	2.6	3.0	3.0	2.1	3.5	2.1	3.1	2.4
SW	3.6	3.4	5.4	4.3	4.2	2.8	5.3	3.0	4.7	3.3
WSW	7.0	3.2	12.9	5.9	12.7	4.5	13.0	4.6	11.9	4.5
W	11.1	3.6	29.5	5.9	39.2	6.4	22.9	5.4	27.5	5.9
WNW	3.6	2.5	9.6	3.9	10.9	4.5	6.0	3.4	8.0	4.6
NW	2.8	2.0	4.2	2.6	2.8	2.7	3.2	2.0	3.2	2.4
NNW	2.0	3.4	3.4	2.5	1.6	4.5	2.9	3.3	2.2	3.8

Note: Station at Latitude 33°57', Longitude 117°24', Elevation 817 feet.
Source: California Surface Wind Climatology, 1984.

Kay's Barn, Elsinore West Marina, and Butterfield Village). These facilities include boat launch ramps, campgrounds, R.V. parks, mobile home residences and a motel. The boat launch ramp at the City Park is unusable for all lake water levels above 1,240 feet.

The general flavor of the Riverside Drive area is one of a dense and, in part, cluttered recreational use area. On the other hand, the dense canopy of trees makes this one of the most pleasant spots along the Lake Elsinore shoreline, especially through the hot, dry summer. The area is extensively landscaped with a variety of non-native shrubs.

Private commercial lake use development along Grand Avenue provides facilities which include boat launch ramps, R.V. parks, campgrounds and a marine repair shop. The only

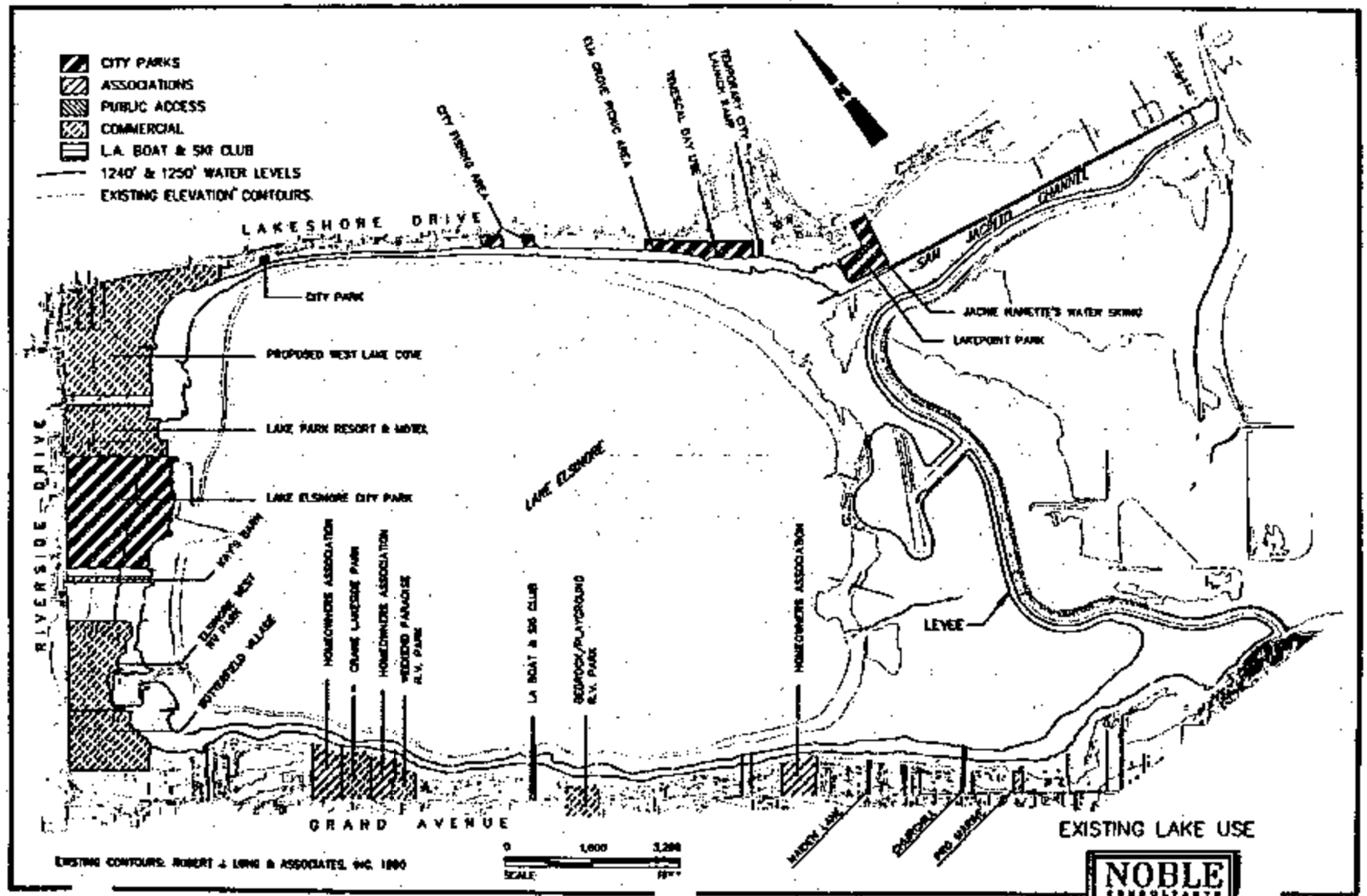

CITY PARKS
ASSOCIATIONS
PUBLIC ACCESS
COMMERCIAL
L.A. BOAT & SKI CLUB
1240' & 1250' WATER LEVELS
EXISTING ELEVATION CONTOURS
LAKESHORE DRIVE
CITY FISHING AREA
ELM GROVE PICNIC AREA
TEMESCAL DAY USE
TEMPORARY CITY LAUNCH RAMP
SAN JACINTO CHANNEL
JACKIE KANETTE'S WATER SKIING
LAKEPOINT PARK
CITY PARK
PROPOSED WEST LAKE COVE
LAKE PARK RESORT & MOTEL
LAKE ELSINORE CITY PARK
RIVERSIDE DRIVE
LAKE ELSINORE
KAY'S PARK
ELSINORE WEST RV PARK
ROSEFIELD VILLAGE
HOMEOWNERS ASSOCIATION
CRANE LAKESIDE PARK
HOMEOWNERS ASSOCIATION
WEEKEND PARADISE R.V. PARK
L.A. BOAT & SKI CLUB
SEQUOYA/PLAYGROUND R.V. PARK
HOMEOWNERS ASSOCIATION
LEVEE
GRAND AVENUE
MARION LANE
CHAPARRAL
PINE GROVE
EXISTING CONTOURS: ROBERT J. LONG & ASSOCIATES, INC. 1990
0
1,600
3,200
SCALE
EXISTING LAKE USE
NOBLE CONSULTANTS

FIGURE III-3

TABLE III-6
EXISTING BOATING FACILITIES AND ACTIVITIES

Location	Lake Frontage (ft)	Boat Launch Ramp		R. V. Park	Camping	Picnicking & Fishing	Dockage	
		No. of Lanes					Boat Slips	
		Boat	PWC				Present	Future
Lakeshore Drive Area:								
City of Lake Elsinore		4(a)	0	No	No	Yes	0	0
Riverside Drive Area:								
Lake Park Resort and Motel	800	0	0	Yes	Yes	Yes	0	?
City Marina Park	2,000	10(a)	0	Yes	Yes	Yes	1	?
Kay's Barn	100	1	0	Yes	Yes	Yes	0	?
Elsinore West Marina	1,600	11(b)	10(b)	Yes	Yes	Yes	1	?
Butterfield Village	300	0	0	Yes (c)	No	No	0	?
Grand Avenue Area:								
Crane Lakeside Park	443	1	0	Yes (c)	Yes	Yes	0	24
Weekend Paradise R.V. Park	246	2	0	Yes	No	Yes	0	0
Pro-Marine	160	1	0	No	No	No	10	16
Bedrock/Playland R.V. Park	552	2	0	Yes	No	No	0	20
San Jacinto Channel Area:								
Jackie Nanette's Waterskiing	(d)	0	0	No	No	No	0	0

Notes: (a) Ramp unusable for operating lake levels
(b) Ramp has much lower capacity due to limited parking and traffic circulation
(c) Mobile Homes
(d) San Jacinto Inlet Channel

existing water recreation facility located along the lake's eastern shoreline is the waterskiing school located off the City's Lakepoint Park, on the San Jacinto Channel, which is operated by Jackie Nanette through a concession contract.

4. LAKE STABILIZATION

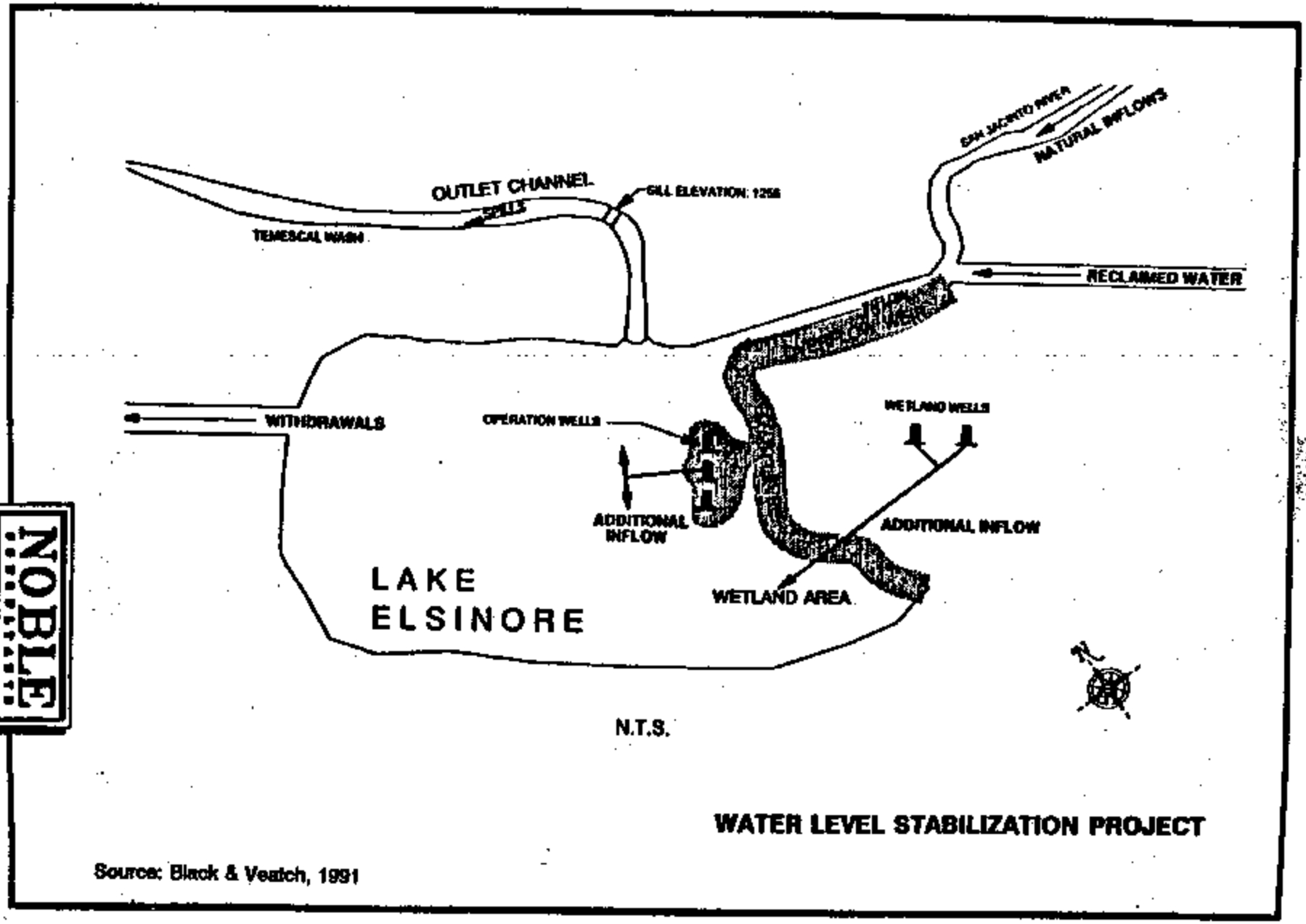
Historical lake levels have fluctuated drastically during the past 50 years. When the lake water level drops to low levels, the lake becomes unusable for recreation. During normal lake operations, the lake pool will now be managed between elevations 1,240 and 1,249, NGVD. A pool at elevation 1,240 will provide an adequate minimum level of water quality and recreation benefits, while elevation 1,249 maintains adequate reserve storage for flood protection as determined in previous studies (Black and Veatch, 1991).

To prevent a large difference in the lake water levels, a major management project including the excavation and embankment construction to create the lake type inlet, wetlands, levee structure and operations island has been undertaken by the Lake Elsinore Management Authority (LEMA) and supervised by the Santa Ana Watershed Project Authority (SAWPA) since 1989 (Black and Veatch, 1991). A 17,800-foot rolled earth-filled levee was constructed to separate the main basin from the flood plain, as illustrated in Figure III-4. An outlet channel with a sill elevation of 1,255 feet, NGVD was also proposed to drain the excessive water during the flood events, and is currently under construction. In addition, a 1,600-foot overflow weir was also constructed from the end of the levee across the San Jacinto River Channel to divert excess flood water ,which cannot be absorbed by the lake and the outflow channel, into the back basin for storage.

During the drought period, existing project wells (three) that were placed on the operation island are planned to provide supplemental lake make-up water. When restored, the wells will be capable of producing approximately 10,320 acre-feet per year. Groundwater to stabilize the lake will be supplemented with recycled water imported from Eastern Municipal Water District that meets Title 22 water quality standards and is approved for body contact by State and Local Departments of Health. Also, new wells (two) are planned north of the wetlands to provide a continuous water supply for the wetland habitat.

5. WATER QUALITY

Changes in water quality (aquatic chemistry) take place over periods of time. Evaporation will produce increases in total dissolved solids. Nutrients tend to accumulate and cycle between aquatic plants and algae and the various dissolved particulate chemical forms of nitrogen and phosphorus, both in the water column and the benthos (bottom muds).



NOBLE

FIGURE II-4

Lake Elsinore has encountered numerous water quality problems in the past. Due to the flooding condition which occurred in 1993, algae bloom became significant in the summer months of 1993. Mitigation measures, such as microbes treatment, were implemented to significantly improve the lake's water quality. The continuous monitoring and management of the lake's water quality is essential to warrant the successful implementation of water recreational activities.

The City, in cooperation with the Lake Elsinore Management Authority (LEMA), has completed a water quality management plan study which evaluated 14 management alternatives. This study, prepared by Black and Veatch (1993), evaluated the effects of future reclaimed wastewater used as replenished water supply, and different restoration alternatives such as nutrient and algae control and dissolved oxygen improvement on the water quality. Black and Veatch's final recommendations have been broken down with eight (8) options for dealing with "Nutrient Control"; five (5) options for dealing with "Algae Control"; and three (3) options for improving Dissolved Oxygen Content.

Of the options proposed, the City and LEMA are actively pursuing the Algae Harvesting through oil technology method and the lake aeration system. There will be a pilot program with the Pelican Boat (harvesting) this summer and, if successful, an ongoing program will be developed. In addition, an aeration program test area has been funded to test the results of aerating the lake to improve Dissolved Oxygen and water quality.

IV. LAKE MASTER PLAN ELEMENTS

1. MANAGEMENT STRATEGIES

Over the years, Lake Elsinore has been utilized and enjoyed by a wide variety of water sport enthusiasts including water-skiers, power boaters, fishermen, personal watercraft users, rowers, paddle boaters, canoeists and kayakers, sailors and swimmers. Also, the lake has been utilized for organized water sports such as power boat racing, water ski racing and sailing regattas. However, there have been numerous lean years of water sports activity on the lake during periods of either extremely low or high water levels or due to poor water quality conditions. A stabilized lake with good water quality, available for the recreational water sport activities year-round, will be a major asset to the immediate and surrounding communities alike.

A growing population in both the City of Lake Elsinore and Riverside County, and an increasing diversity of water recreation activities will place even greater demands on a stabilized and clean lake. It is therefore imperative that the lake be managed efficiently by adapting a plan that addresses water-use space and time allocations, and water access limitations.

The first requirements for lake management are to stabilize the lake's water level and improve its year-round water quality. These two lake improvements are not within the scope of this Master Plan; however, the entire plan is based on their successful implementation. The Lake Elsinore Management Project, overseen by LEMA, is a phased construction program underway that is designed to allow the lake's water level to be managed. The lake level is to be operated between the 1,240 feet and 1,249 feet elevations with a maximum 100-year flood level of 1,263.3 feet. The City of Lake Elsinore is currently addressing water quality management issues for keeping the lake clean year-round.

In order to maximize the safety of a diversity of water sport activities on and around the lake, the following management strategies are recommended:

- Designated water areas for:
  - Five miles per hour/no wake buffer zone
  - High speed boat operations

- Personal watercraft
- Water ski take-off and drop-off from shore
- Swimming
- Fishing
- Special events activities
- Waterskiing concession

- Boat travel direction of:
  - Counter-clockwise movement beyond the five miles per hour/no wake buffer zone, except for sailboats.
  - Any direction within five miles per hour/no wake buffer zone.
  - Counter-clockwise direction in the designated high boat speed and PWC areas.

- Maximum boat speed of:
  - Forty miles per hour within the interior active lake area, except higher speeds are allowed within the restricted high boat speed area.
  - Five miles per hour or less, if boat wake occurs, within the five miles per hour/no wake buffer zone.

- Maximum boat size of:
  - Thirty feet in length, except for special authorized commercial pontoon boats or other boats approved by the City.
  - Majority of boats should be no longer than 26 feet in length.

- Boat operating hours of:
  - Sunrise to sunset (maximum not-to-exceed between 6:00 am to 9:00 pm in summer, and 7:00 am to 6:00 pm in winter), except for special authorized commercial boats.
  - 7:00 am to 6:00 pm (for summer) and 8:00 am to 4:00 pm (for winter) in high boat speed designated area.

- Lake patrol to:
  - Adequately patrol the lake.
  - Enforce the adopted lake rules and regulations.

Figure IV-1 identifies the location and size for the above-described designated water areas. Personal watercraft are allowed within the entire lake, as long as they fully obey the governing rules and regulations. Otherwise, they are allowed only in their identified restricted areas, which are exclusively for PWC. Initially, only two PWC restricted areas are to be utilized, with two additional future restricted areas available if the demand warrants their use. Water-skiers should start and stop within the lake's active zone, except they may take-off and drop-off from shore at the identified Recreation Island locations.

San Jacinto Channel is restricted for special events and waterskiing concessions. No waterskiing jumps, slalom courses, or concessions are allowed within the lake. Certain special events will be allowed within the lake, besides those events planned for the channel area. The designated fishing water area is not solely restricted to fishermen. Other boats may enter this area if they maintain the five miles per hour/no wake speed limitations.

In general, it is expected that a majority of the non-powered boats less than eight feet in length will operate within the five miles per hour/no wake buffer zone. This zone consists of 635 acres at the 1,240-foot water level and 964 acres at the 1,250-foot water level. This zone extends around the lake's perimeter, and is set sufficiently away from the shoreline edge to allow for safe boat operations in either direction.

Figure IV-1 also presents the location of other proposed water access improvements that are described later. However, these improvements have been proposed to facilitate the above-identified management strategies.

2. WATER USE CAPACITIES

Table IV-1 presents the number of boats registered with the State of California for the five counties most likely to use Lake Elsinore for recreational boating. Tables IV-2 and IV-3 present a yearly summary of boat counts and a monthly summary of boat counts for 1993 for Big Bear Lake, Lake Castaic and Lake Perris. Based on the numbers shown for Lake Perris, a stabilized, clean and improved Lake Elsinore should attract a heavy boating population.

In order to determine a maximum water use boat capacity that is considered reasonable for Lake Elsinore, many factors and assumptions must be taken into account. However, after

TABLE IV-1
COUNTY BOAT REGISTRATION

YEAR	San Diego County	Riverside County	San Bernardino County	Orange County	Los Angeles County	Statewide
1976	26,469	10,396	14,932	40,847	102,770	502,325
1980	32,650	13,906	18,081	46,743	98,071	538,707
1981	30,397	13,603	18,256	43,285	86,637	503,369
1982	33,268	14,692	19,403	45,624	91,047	529,410
1983	35,611	15,736	20,421	48,070	95,581	559,964
1984	40,153	17,109	22,242	52,656	104,122	609,530
1985	41,759	18,293	23,245	53,963	105,181	627,296
1986	45,195	20,455	25,460	56,929	109,753	664,062
1987	47,650	22,320	27,452	59,178	112,900	692,630
1988	50,338	24,551	29,725	61,715	116,795	718,449
1989	52,500	27,541	32,345	63,682	117,937	743,833
1990	55,037	30,405	35,289	66,528	122,027	778,037
1991	55,608	31,822	37,030	66,846	121,068	790,419
1992	55,790	32,844	37,918	67,236	119,831	796,496
1993	55,834	33,942	38,608	67,479	118,525	804,340

Source: California Department of Motor Vehicles

identifying and evaluating the various site parameters, reasonable assumptions can be made to arrive at the maximum number of watercraft that should be permitted in any given body of water. The more important parameters consist of:

- Water body acreage
- Management strategies/designated areas
- Percentage mixture of boating activities
- Shoreline perimeter and improved uses
- Percentage of boats along shoreline

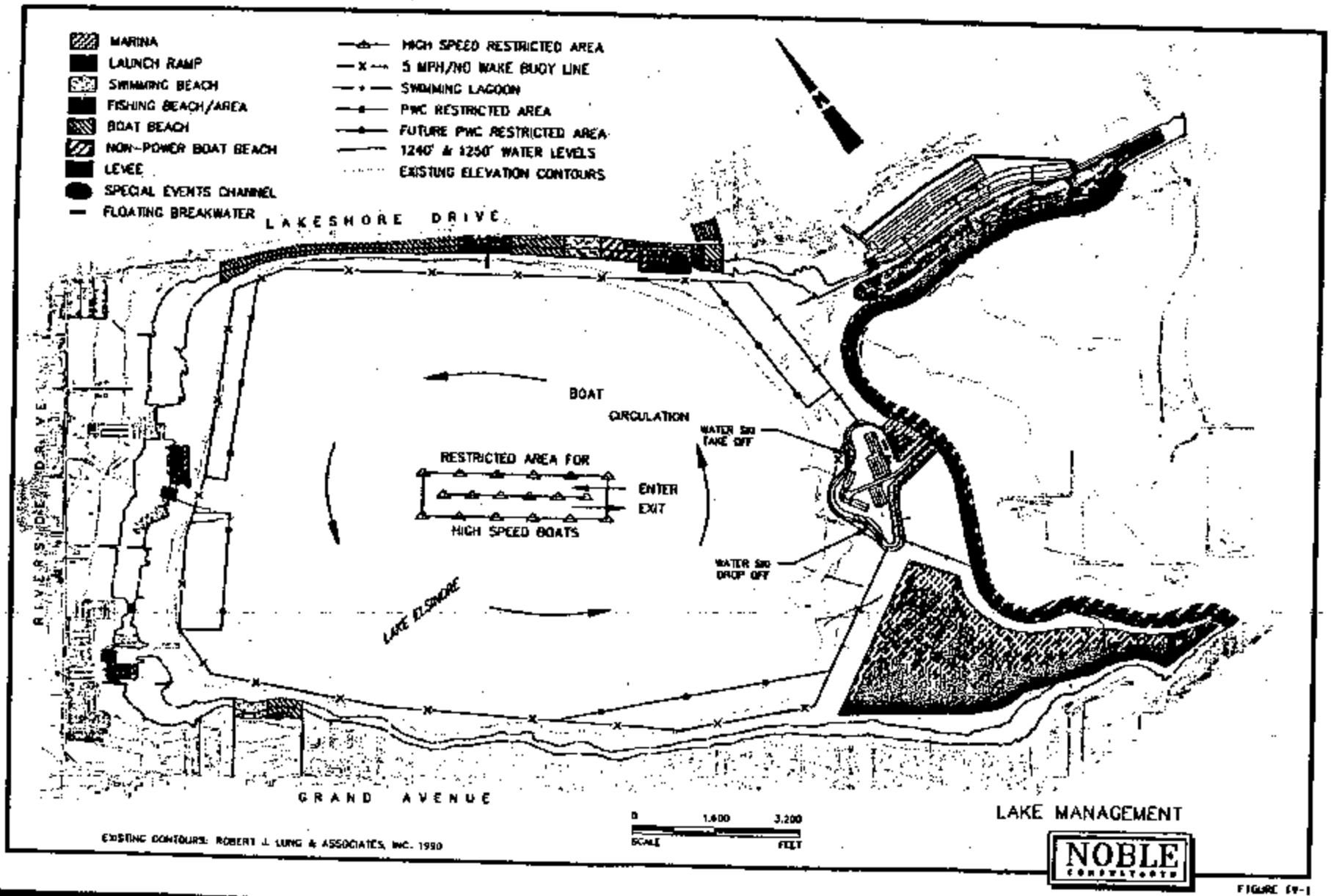

MARINA
LAUNCH RAMP
SWIMMING BEACH
FISHING BEACH/AREA
BOAT BEACH
NON-POWER BOAT BEACH
LEVEE
SPECIAL EVENTS CHANNEL
FLOATING BREAKWATER
HIGH SPEED RESTRICTED AREA
5 MPH/NO WAKE BUOY LINE
SWIMMING LAGOON
PWC RESTRICTED AREA
FUTURE PWC RESTRICTED AREA
1240' & 1250' WATER LEVELS
EXISTING ELEVATION CONTOURS
LAKESHORE DRIVE
RIVERSIDE DRIVE
BOAT
CIRCULATION
RESTRICTED AREA FOR
HIGH SPEED BOATS
ENTER
EXIT
WATER SKI TAKE OFF
WATER SKI DROP OFF
LAKE ELSINORE
GRAND AVENUE
0
1,600
3,200
SCALE
FEET
EXISTING CONTOURS: ROBERT J. LUNG & ASSOCIATES, INC. 1990
LAKE MANAGEMENT
NOBLE
CONSULTANTS

FIGURE IV-1

TABLE IV-2
YEARLY SUMMARY OF BOAT COUNTS

Year	Big Bear Lake*	Lake Castaic	Lake Perris
1983	36,701		
1984	39,199		
1985	44,771		
1986	54,378		
1987	53,033		
1988	57,069	87,076	90,298
1989	62,064	82,864	87,546
1990	52,649	77,204	113,029
1991	44,579	86,110	101,033
1992	37,469	68,971	117,656
1993	43,234	73,181	122,713

*For six-month season.

TABLE IV-3
MONTHLY SUMMARY OF BOAT COUNTS FOR 1993 SEASON

Month	Big Bear Lake	Lake Castaic	Lake Perris
January		2,016	2,032
February		2,824	2,818
March		7,111	7,712
April	800 *	5,374	14,275
May	5,987	8,244	16,203
June	5,266	9,002	16,331
July	8,970	11,788	19,234
August	7,392	10,564	19,417
September	5,224	7,669	11,513
October	2,309 **	4,482	7,467
November		2,246	3,503
December		1,861	2,208

Notes: * Only last eight days of April counted.
** Only first eight days of October counted.

- Percentage of boats operating within five miles per hour/no wake buffer zone
- Daily boat turnover percentage

The available water body surface areas for Lake Elsinore are presented in Table IV-4. Table IV-5 presents the assumed percentage distribution of boating activities and their expected ideal and more realistic actual operational area requirements. Dividing the total lake surface area of 3,000 acres by an average boating operational area of 2.5 acres per boat results in a total capacity of 1,200 boats, as shown in Table IV-6. In actuality, these 1,200 boats would be distributed along the shoreline, within the five miles per hour/no wake zone, and within the lake's active interior zone.

The percentage of boats temporarily along the shoreline versus the boats operating on the water has been observed to range at other recreational lakes from a low of 25 percent to a high of 75 percent. This study has assumed a low side number of 29 percent, even though the recommended shoreline improvement plan should maximize the use of shoreline areas for the boaters. It has further been assumed that the five miles per hour/no wake buffer zone contains an average of one boat for every two acres of buffer area. The assumed distribution of boats within this zone could be on the high side in comparison to other lakes; however, the proposed shoreline improvement and water access plan should promote more boating close to the shoreline, especially for the smaller non-power boats.

Table IV-7 presents the above-discussed distribution of boats using a lake capacity of 1,200 boats. This table shows that the active lake area may have only 475 boats operating at any given moment of the 1,200 boats, which results in an average of 4.7 acres per boat. A rough rule of thumb that has been used for water body areas with a mixture of boating usage is five acres per boat.

The maximum water use capacity of 1,200 boats at any one time is only recommended after the lake has been improved with the types of water access improvements presented within this plan. Initially, the maximum capacity should be reduced until it is proven that the lake's operations and shoreline improvements can safely accommodate a higher boat count. A starting capacity of around 650 to 750 boats should be considered until lake improvements have been initiated. In addition, if more than 500 boats at any given time are operating within the lake's active zone (5 to 40 miles per hour zone), then a reduced maximum boat capacity would be recommended.

TABLE IV-4
LAKE ELSINORE WATER AREAS

Lake Elevation (ft. MSL)	Area Description	Surface Area (Acres)		
		Lake	Channel	Total
1,240	5 mph/No Wake Zone*	835		
	Active Zone**	2,236		
	Swimming Lagoon	46		
	Subtotal	2,917	68	2,985
1,250	5 mph/No Wake Zone*	964		
	Active Zone**	2,236		
	Swimming Lagoon	57		
	Subtotal	3,257	96	3,353

Notes: * Fishing area includes 257 acres at 1,240' or 351 acres at 1,250'.
** High speed area includes 64 acres.

Use:

Active zone	2,236	
5 mph/no wake zone	800	(Avg. between 1,240 and 1,250)
Delete for Marinas, etc.	-36	
Total	3,000	acres

TABLE IV-5
SUMMARY OF SINGLE UNIT BOAT OPERATING CAPACITIES

Type of Boat	Population Usage %	Single Unit Area			
		Ideal Conditions*		Actual Conditions**	
		sq. ft	acres	sq. ft	acres
Power Boat (General Recreation)	45	165 x 350	1.5	300 x 400	3.0
Power Boat (Fishing)	5	125 x 250	0.75	150 x 300	1.0
Power Boat (Waterskiing)	15	270 x 400	2.5	325 x 600	4.5
Personal Watercraft PWC	25	125 x 250	0.75	200 x 325	1.5
Sailboat	5	125 x 250	0.75	150 x 300	1.0
Non-power Boat	5	100 x 210	0.5	100 x 210	0.5
Average Value	-	175 x 340	0.75	275 x 400	2.52

Notes: "Sailboat" Includes Mono Hauls, Catamarans and Sailboards
"Non-Power Boat" Includes Canoes, Kayaks and Paddle Boats
* Good boating operator skills, calm lake conditions, minimum interference from other boat wakes and a well maintained boat that is safely operated.
** Average conditions expected from the boat, operator and lake; however, it still expects the safe operation of boats obeying the lake's posted rules and regulations.

TABLE IV-6
BOAT CAPACITY BASED ON AVERAGE SINGLE BOAT OPERATING CRITERIA

Lake Body Water Area	Designated Acreage (acres)	Single Boat Area (acres)	Boat Capacity (no. of boats)
Active Area (5 to 40 mph zone)	2,236	2.5*	895 (2,236/2.5=895)
Buffer Area (5 mph/no wake zone)	764**	2.5*	305 (764/2.5=305)
Total Water Area	3,000	-	1,200

Note: * Based on average value of single unit boat operating capacity.
** Average acreage between lake levels at 1,240 ft. and 1,250 ft. with exclusion of 36 acres of inactive marina area.

TABLE IV-7
ZONE DISTRIBUTION OF BOAT POPULATION

Lake Body Water Area	Designated Acreage (acres)	Boat Capacity (no. of boats)	Equivalent Single Boat Operating Area (acres)
Total Water Area +Beach Area	3,000	1,200 (3,000/2.5=1,200)	2.5
Beach Area *** (Shoreline zone)	0	343 (1,200/3.5=343)*	0
Total Water Area	3,000	857 (1,200-343=857)	3.5 (3,000/857=3.5)
Buffer Area (5 mph/no wake zone)	764	382 (764/2.0=382)	2.0**
Active Area (5 to 40 mph zone)	2,236	475 (857-382=475)	4.7 (2,236/475=4.7)

Notes: * Assume a ratio of 2.5 boats operating on lake versus 1.0 boats beached.
** Assume 2.0 acres/boat on average.
*** Beach area includes boats pulled up along the beach and boats temporarily docked at visitor boat docks around the lake's edge.

A daily boat turnover rate of 30 percent has been used in this study to develop total lake boat counts and revenue generation. This turnover rate is low when compared to other lakes. For instance, a review of the Lake Perris boat count statistics shows a maximum turnover rate of 120 percent. Therefore, the same annual total lake boat count and revenue generation as used in this study could still be generated for a lower maximum boat capacity associated with a higher turnover rate.

Using the 30 percent turnover rate results in a peak day boat count of 1,560 boats when using the 1,200 maximum boat capacity. For comparison, the peak day count at Lake Perris during 1993 was 1,133 boats for a lake that has approximately 73 percent of the surface area as Lake Elsinore. Table IV-8 presents the maximum expected peak boat counts at Lake Elsinore for the season and weekday of operation. These seasonal and weekday distributions are based on actual operating conditions experienced at Lake Perris as shown in Table IV-9. Appendix A contains boat counts, camping site use and vehicle counts for years 1988 through 1993 at Lake Perris. Daily, weekday, weekend and monthly statistics and graphs are included within this Appendix. Table IV-10 presents lake boat capacity comparisons for Lakes Castaic, Perris, and Arrowhead, and for Big Bear Lake.

3. WATER ACCESS

The proposed water access improvements are presented in Figure IV-2, and are discussed in detail under Section V, "Specific Lake Development Plan". These proposed improvements are recommended in order to maximize and control the recreational water sports usage of Lake Elsinore. This is accomplished by providing for a balanced diversification of water sport activities around the lake's perimeter, consisting of:

- Launch ramps and marinas for boater's access to the lake
- Boat rental concessions
- Boat excursion concessions
- Long stretches of boat beaches where boaters can stop for picnicking and shoreside activities
- Visitor boat slips in marina and retail areas for boaters to stop
- Fishing areas
- Swimming beaches and lagoons where families can enjoy waterfront activities

TABLE IV-8
MAXIMUM PROBABLE DAILY BOAT CAPACITY

Maximum Operating Boats within total Water Area (no. of boats)	Maximum Daily Operating Boats (no. of boats)	Peak Season Maximum Daily Operating Boats		Off Season Maximum Daily Operating Boats	
		Weekday	Weekend	Weekday	Weekend
		(no. of boats)		(no. of boats)	
1,200	1,560* (1,200*1.3=1,560)	869**	1,560	136**	390**

Notes: * Daily boat turnover rate of 30%.
** Based on 6 years of visitation records at Lake Perris.

TABLE IV-9
BOAT COUNTS AT LAKE PERRIS

MONTHLY BOAT COUNTS

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
1988	2,149	3,597	6,838	7,051	8,963	11,796	16,209	16,161	8,839	6,329	1,877	1,269	90,298
1989	2,172	2,490	5,649	10,280	7,921	11,067	13,171	12,280	8,995	5,882	4,840	2,788	87,545
1990	1,855	3,112	6,732	8,709	11,161	17,311	19,529	16,986	12,779	7,407	4,400	2,028	113,029
1991	2,647	4,827	4,466	8,339	10,845	12,237	15,129	17,249	11,233	5,182	4,196	1,880	101,033
1992	2,462	3,700	3,990	12,414	14,955	16,436	19,257	19,134	12,533	7,542	4,205	2,026	117,656
1993	2,032	2,818	7,712	14,275	16,200	16,331	19,234	19,417	11,813	7,467	3,503	2,309	122,719
AVG.	2,220	3,474	5,898	10,346	11,841	14,202	16,754	16,701	10,999	7,135	3,804	2,000	

MONTHLY AVERAGE WEEKEND BOAT COUNTS

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1988	137	306	506	396	561	619	675	693	509	389	101	48
1989	153	199	261	535	368	484	494	457	446	382	280	149
1990	117	242	384	538	646	687	690	634	706	446	311	104
1991	217	354	309	563	643	583	782	675	666	518	256	82
1992	148	246	251	781	811	859	947	918	755	481	242	123
1993	111	199	547	753	816	780	881	913	675	426	336	112
AVG.	147	257	377	594	641	702	761	782	629	434	238	103

MONTHLY AVERAGE WEEKDAY BOAT COUNTS

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1988	37	69	121	188	224	311	403	388	221	111	39	37
1989	36	45	155	247	216	329	392	374	237	123	116	62
1990	40	59	149	239	261	444	534	446	287	167	87	47
1991	40	100	65	174	248	320	395	426	240	178	80	45
1992	58	74	79	280	328	435	498	474	295	154	98	48
1993	44	81	145	378	383	459	514	509	378	183	75	57
AVG.	42	68	119	248	276	383	453	457	280	147	84	49

Note: Number for August 1988 is an average value, not an actual count.

TABLE IV-10
LAKE BOAT CAPACITY COMPARISONS

Item	Lake Castaic	Lake Perris	Big Bear Lake	Lake Elsinore*	Lake Arrowhead
Water Surface Area (ac)	2,200	2,200	3,000	3,000	782
Active Surface Area** (ac)	1,650	1,500	?	2,236	
Maximum One Time Boat Capacity	500	450	no limit	1,200 (a)	no limit
Maximum Daily Recorded Boats	Approx. 800(b)	1,133	822	1,350(c)	1200-1400 (d) 450-600 (e)
Maximum Boat Turnover Rate	1.6	2.2	-	1.8	
Annual Boat Pass Sold in 1993	1,142	2,212	4,414	1,306 (f)	2,483 (g)
Maximum PWC Capacity	75	Included	Included	Included	
Maximum Nonpower	Included	Included	Included	Included	
Boats in Water/ Boats on Shore	75/25	65/25 -75/25	?	71/29	?
Boats in Active Zone/ Boats in No Wake Zone	80/20	90/10	?	55/46	?
Average Boat Unit in Active Zone (ac/boat)	4.6 (h)	5.3 (i)	?	4.7 (j)	?
Total Water Area/ Maximum Daily Boats	0.96	0.52	0.27	0.52	0.64
PWC only area (ac)	150	none	none	184.6(k)	none
Marina Slips	0	300	1,244(l)	928(m)	2,328 (n)
Dry Storage	0	100	winter storage lake freezes	300	winter storage lake freezes

Notes:
- * Proposed Design Criteria
- ** Water area that allows boat speeds of over 5 mph
- (a) Based on 843 boats in shoreline zone (0 mph), 382 boats in no wake zone (5 mph), and 475 boats in active zone (5-40 mph).
- (b) Personal communication with Mr. Brian Roney, Lake Castaic.
- (c) Design maximum daily capacity based on turnover rate of 30%.
- (d) On 4th of July (5 mph or less).
- (e) On Labor Day (35 mph or less).
- (f) Annual passes assumed for generation of lake use revenue for year 2001 in Table VI-13. This number could be increased.
- (g) Registered boats for 1993 season.
- (h) 1650/(576*0.75*0.8) = 4.8
- (i) 1500/(450*0.7*0.6) = 5.3
- (j) 2236/(1200*0.715*0.65) = 4.7
- (k) Present 75.7 ac; future additional 96.8 ac.
- (l) 577 single slips, 238 double slips, 106 end ties, 72 side ties and 148 mooring buoys.
- (m) Proposed three marinas = 671 slips; future fourth marina (City Park) = 257 additional slips.
- (n) 2,128 private slips plus 200 marina boat slips.

Sources:
- Mr. Brian Roney, Castaic Lake, 1993
- Ms. Raelene Manson, Big Bear Lake, 1993
- Mr. Paul Frost, Lake Perris, 1993
- Ms. Paula Corso, Lake Arrowhead, 1993

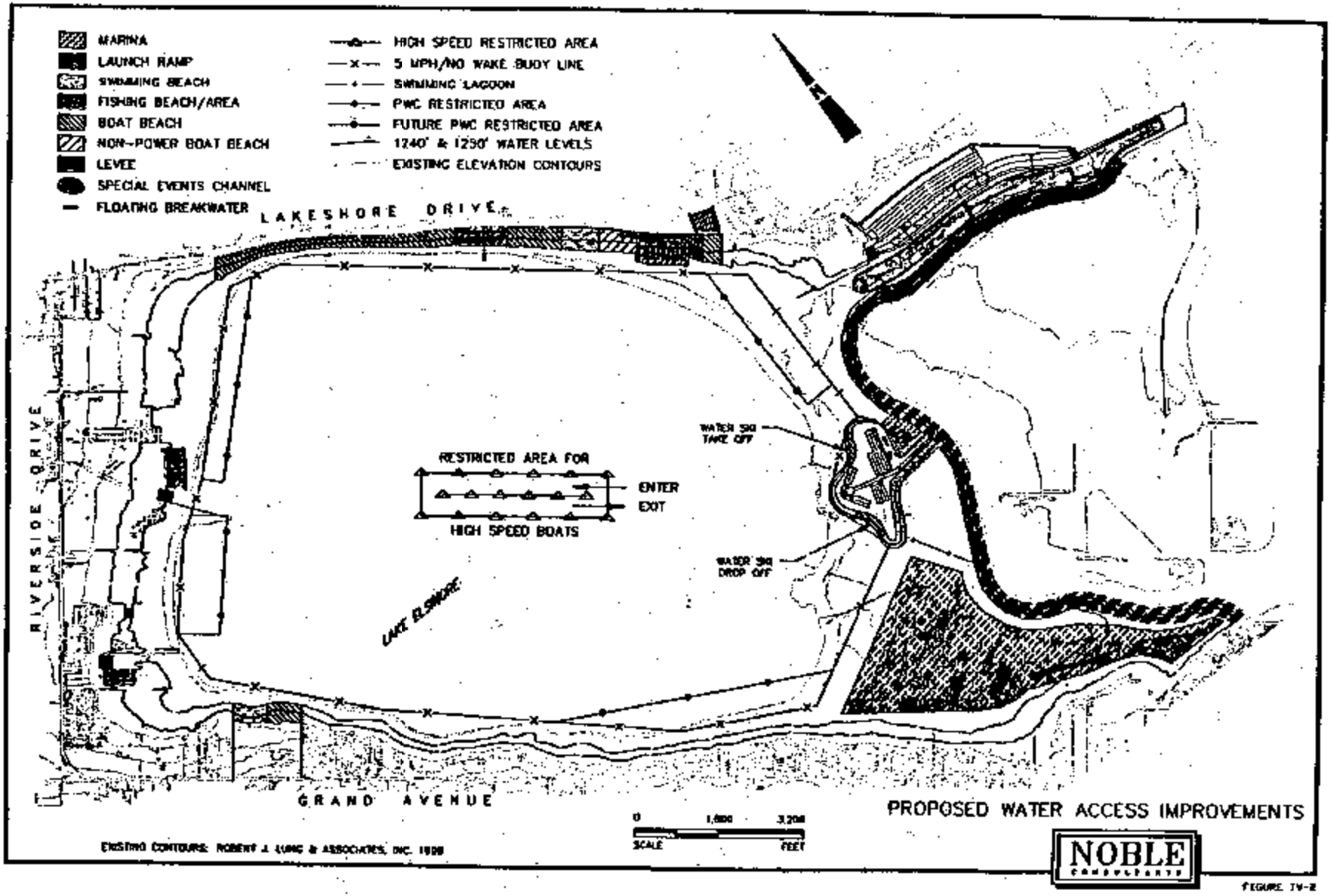
- Waterskiing concession area where all levels of water-skiers can train and be taught
- Special events area for power boat, waterskiing, rowing and sailing races
- Restricted water use areas for high speed boats and personal watercraft
- Improved lakefront R.V. park and campground facilities
- Shoreline linear greenbelt walkway

Proposed shoreline and water access improvements along Lakeshore Drive between Lakepoint Park and Four Corners consist of a new marina complex with launch ramp, boat slips, restaurant, marine concessions, boat rental concessions, swimming beach and boat beaches; a fishing beach and pier; and a long stretch of boat beach. This plan supports the previous proposed Seaport Village, a retail/restaurant complex extending down Spring Street to the lakefront.

Proposed water access improvements along Riverside Drive consist of the eventual development of a marina at the City R.V. Park and Campgrounds, along with required improvements to its existing boat launch ramp, swimming beach and R.V./campground facilities, and development of a marina with minor improvements to the two existing launch ramps and swimming beach at the privately-owned Elsinore West R.V. Park. In addition, there are other existing and proposed private commercial developments along this section of lakefront.

Proposed water access improvements along Grand Avenue consist of a Nautical Center with a swimming beach and non-power boat beach on an approximate 40-acre parcel of land where the existing old Military Academy encompasses 20 of these acres. It is envisioned that the 40-acre Nautical Center could include rowing club and yacht club facilities, a non-power boat beach for their use, a swimming beach for family use, a yacht brokerage/boat sales center, a marine retail center, and an aquarium/marine museum for visitor use. The remaining Grand Avenue shoreline consists of four existing commercial facilities with boat launch ramps, three homeowner's associations, a parcel of land belonging to the Los Angeles Boat and Ski Club, and individual private lakefront properties all of whom could apply to the City for boat launch and boat dock privileges.

A 17,800-foot-long earthen levee was recently constructed to elevation 1,265 feet to limit the lake's eastern boundary. Recreational levee improvements are proposed to include a



PROPOSED WATER ACCESS IMPROVEMENTS

NOBLE CONSULTANTS

FIGURE IV-2

linear walkway with benches, shade structures and landscaping for the general public's viewing of the lake. Presently, a partial island exists that was constructed off the center portion of the levee during the levee's construction. A major waterfront recreational complex is proposed with the further development of this island. Water access facilities proposed on this island include a marina, boat and marine concessions, a youth and group facility, a swimming beach and lagoon area, parkland areas, a deluxe hotel/restaurant complex, and waterskiing take-off and drop-off beaches.

Proposed water access improvements along the San Jacinto Channel include widening the central portion of the channel, and providing shoreline facilities for the channel to be used as a major swimming beach area along the shoreline and as a waterskiing concession area within the channel. During the scheduling of special boating events, the entire channel and shoreline area would be devoted to the scheduled activity.

Figure IV-3 identifies the location of all existing and proposed public boat access points to the lake. The only other boat access points would be from private property whose owners have applied for and obtained annual launching rights from the City. During days of high boat usage, a vast majority of boats would obtain access to the lake from the identified public access points. If required, the lake's boat capacity could be controlled by either limiting or closing access at these public locations.

Based on the proposed water access plan, Tables IV-11 and IV-12 present the expected boat access for the first full year of operation assumed in 1996 and for the sixth year in 2001. Marina boat slip counts used in Table IV-12 are developed in Table IV-13 from specific marina plans identified in Section V, "Specific Lake Development Plan". A summary of projected annual lake usage passes, including types of passes, for years 1996 and 2001 is presented in Table IV-14. Table IV-15 presents the projected public boat launch ramp counts, while Table IV-16 presents the potential public boat launch facilities and capacities to meet the expected public launch demand.

Proposed private boat dock construction design standards are presented within the special provisions section incorporated in the City's recently developed Private Property Boat Launch program. The proposed private boat dock construction design standards are contained in Appendix B.

TABLE IV-11
BOAT ACCESS TO LAKE (YEAR 1996)

FACILITY	MARINAS				LAKE FRONT				
	General Public	Rentals	Commercial	Y & G Facility	General Public	Rentals	PWC Rentals	Y & G Facility	Clubs
Jacinto Channel Launch Ramp									
Seaport Marina Launch Ramp					*		20		
Seaport Marina									
NPS Concession Beach (a)									
City Marina Park Marina									
City Marina Park Launch Ramp					*				
Kay's Barn Launch Ramp					*				
Elsinore West Marina							20		
Elsinore West Launch Ramps									
Nautical Center									
Crane Lakeside Park					*	10			
Weekend Paradise					*				
Bedrock/Playland					*	10			
Pro Marine					*	6			
Recreation Swim Lagoon									
Recreation Island Marina									
Jackie Nanette (b)									
Special Events (c)									
Private Property					**				
TOTALS						25	40		

Notes:
(a) Non-power boats (NPB), located adjacent to Seaport Marina
(b) Waterskiing concession within San Jacinto Channel
(c) Special Events initially located along lakefront offshore of Lakeshore Drive between Lewis and Spring Streets
* Launch ramps available for general public
** Only for property owner with annual pass on his/her property

4. RULES AND REGULATIONS

Following are rules and regulations recommended for adoption by the City in order to maintain safe and orderly lake operations.

4.1 General

- Every boat owner should have thorough knowledge of boat operation. Coast Guard Auxiliary classes are recommended.
- California boating law (see ABC's of the California Boating Law) as well as Riverside County Boating Ordinances are enforced.

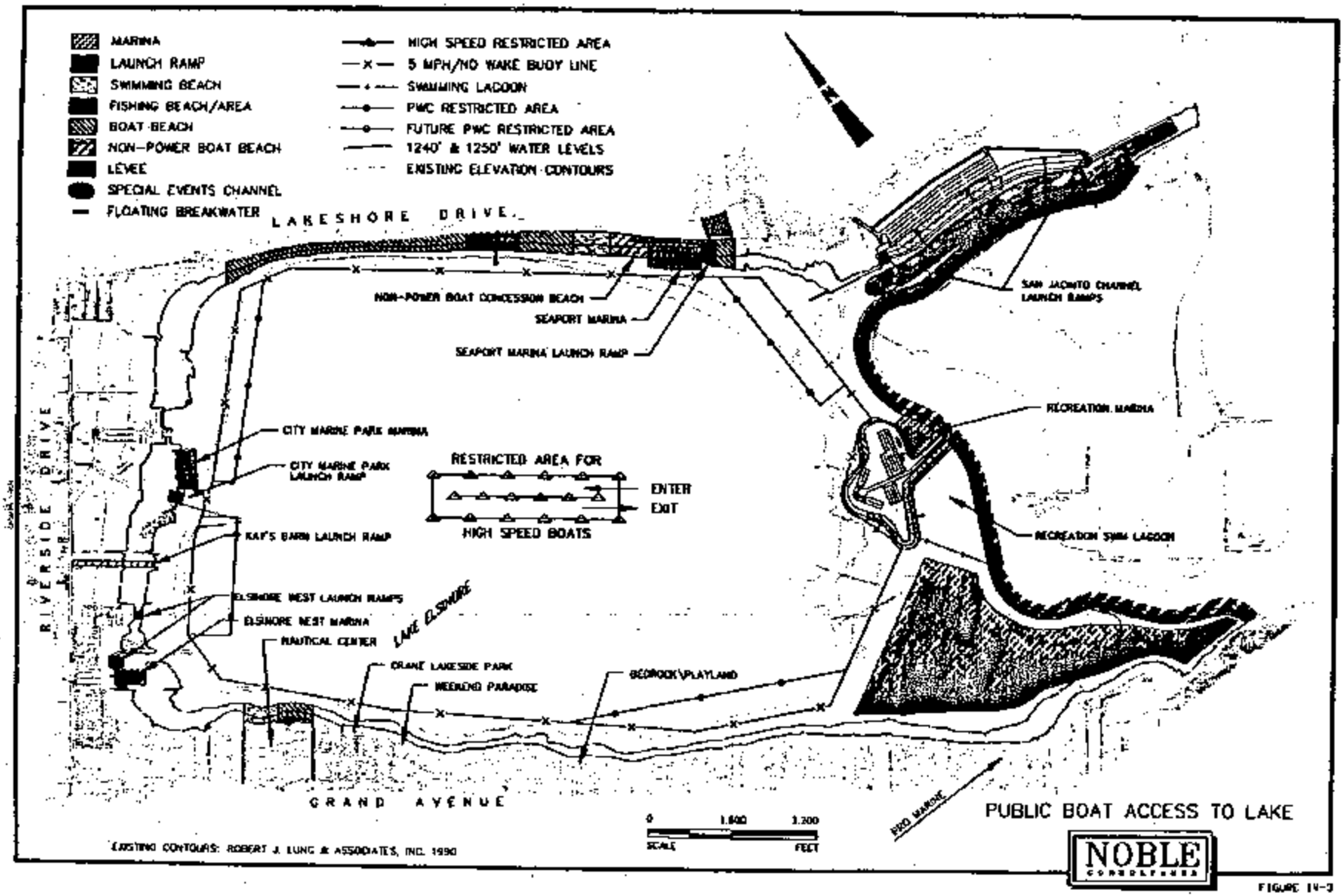

MARINA
LAUNCH RAMP
SWIMMING BEACH
FISHING BEACH/AREA
BOAT BEACH
NON-POWER BOAT BEACH
LEVEE
SPECIAL EVENTS CHANNEL
FLOATING BREAKWATER
HIGH SPEED RESTRICTED AREA
5 MPH/NO WAKE BUOY LINE
SWIMMING LAGOON
PWC RESTRICTED AREA
FUTURE PWC RESTRICTED AREA
1240' & 1250' WATER LEVELS
EXISTING ELEVATION CONTOURS
LAKESHORE DRIVE
NON-POWER BOAT CONCESSION BEACH
SEAPORT MARINA
SEAPORT MARINA LAUNCH RAMP
SAN JACINTO CHANNEL LAUNCH RAMPS
RECREATION MARINA
RECREATION SWIM LAGOON
RIVERSIDE DRIVE
CITY MARINE PARK MARINA
CITY MARINE PARK LAUNCH RAMP
KAY'S BARN LAUNCH RAMP
RESTRICTED AREA FOR
HIGH SPEED BOATS
ENTER
EXIT
ELSINORE WEST LAUNCH RAMPS
ELSINORE WEST MARINA
NAUTICAL CENTER
LAKE ELSINORE
CRANE LAKESIDE PARK
WEEKEND PARADISE
BEDROCK/PLAYLAND
GRAND AVENUE
0
1,600
3,200
SCALE
FEET
EXISTING CONTOURS: ROBERT J. LUNG & ASSOCIATES, INC. 1990
PUBLIC BOAT ACCESS TO LAKE
NOBLE
CONSULTANTS

FIGURE IV-3

TABLE IV-12
BOAT ACCESS TO LAKE (YEAR 2001)

FACILITY	MARINAS				LAKE FRONT				
	General Public	Rentals	Commercial	Y & G Facility	General Public	Rentals	PWC Rentals	Y & G Facility	Clubs
Jacinto Channel Launch Ramp					*				
Seaport Marina Launch Ramp					*				
Seaport Marina	289	20	7		**		20		
NPB Concession Beach (a)									
City Marina Park Marina (b)	(238)	(16)				25			
City Marina Park Launch Ramp					*				
Kay's Barn Launch Ramp					*				
Bayshore West Marina	154	10					20		
Bayshore West Launch Ramps					*				
Nautical Center									
Crane Lakeside Park						15			80 (e)
Weekend Paradise					*	10			
Bedrock/Playland					*				
Pro Marine					*	10			
Recreation Swim Lagoon (c)					*	8			
Recreation Island Marina	155	22	6	42	**	(25)		16	
Jackie Nanette (d)									
Special Events (d)									
Private Property					***				
TOTALS	598	52	13	42		66	40	16	80

Notes:
- (a) Non-power boats (NPB), located adjacent to Seaport Marina
- (b) Future 298 slips - not included in totals
- (c) No access to lake (only lagoon) - not included in totals
- (d) Waterskiing concession & Special Events within San Jacinto Channel
- (e) Rowing and Sailing Clubs
- * Launch ramps available for general public
- ** Boat crane available
- *** Only for property owner with annual pass on his/her property

- All boats must have a current and valid lake permit and C.F. numbers. Any alteration to or trade of a boat permit will void the permit.
- All boats must be subject to inspection at any time.
- Maximum boat length allowed will be 30 feet, unless approval has been obtained from the City for boats longer than 30 feet for specified usage.
- Launching and retrieval of all vessels must remain in designated areas.
- Public docks located at the City's launch facilities are for loading and unloading only.
- Refueling your vessel must be done either out of the water or at the dock.
- Glass containers are prohibited.

TABLE IV-13
MARINA BOAT SLIP COUNT

Location	Slip Size (ft)	Number of Slips	Rentable Lineal Feet
Seaport Marina	20	126	2,520
	24	114	2,736
	28	68	1,904
	32	14	448
	Subtotal	322	7,608
City Marine Park Marina	20	126	2,520
	24	114	2,736
	28	17	476
	Subtotal	257	5,732
Elsinore West Marina	20	68	1,360
	24	80	1,920
	Side Ties	16	400
	Subtotal	164	3,680
Recreation Marina	20	55	1,100
	24	103	2,472
	28	32	896
	32	11	352
	Side Ties	8	200
	Subtotal	209	5,020

- Vehicles are not permitted to drive on the lake sloped bank or levee, and they must obey the posted speed signs and operate in accordance with vehicle codes.
- Fires or barbecues are strictly prohibited except in designated areas.
- No littering. Trash receptacles or trash bags must be used. Secure trash in your boat before proceeding.

TABLE IV-14
ANNUAL PASS AND LAKE USAGE

TYPE OF ANNUAL PASS	1st Year (1996)		6th Year (2001)	
	Total Issued	On Lake*	Total Issued	On Lake*
LAKE FRONT FACILITY				
Private Property Owner	150	60	150	60
Gen. Public @ Launch Ramps	200	100	300	125
Boat/PWC Rentals	66(a)	50(b)	106(c)	80(d)
Youth & Group Facilities	-	-	15	5
Rowing & Sailing Clubs	5	2	30	10
Subtotal	421	202	601	280
MARINA FACILITY				
General Public w/ Slips	-	-	598	90
Commercial	-	-	13	9
Boat Rentals	-	-	52	40
Youth & Group Facility	-	-	42	21
Subtotal	-	-	705	160
Total Annual Pass	421	202	1,306	440
LAKE USAGE CAPACITY	1st Year (1996)		6th Year (2001)	
	Total Issued	On Lake	Total Issued	On Lake
Peak at One Time		565		1,200
Peak Day		734		1,560
Annual		80,000		170,000
% Annual Passes		35.8(e)		36.7(f)

Notes:
- * Total number of boats with annual passes on lake at any one time.
- (a) 26 boats and 40 PWC (PWC launched at public launch ramps)
- (b) 20 boats and 30 PWC
- (c) 66 boats and 40 PWC (PWC launched at public launch ramps)
- (d) 50 boats and 30 PWC
- (e) 202/565 = 0.358
- (f) 440/1200 = 0.367

TABLE IV-15
PUBLIC BOAT LAUNCH RAMP COUNT

BOAT/PWC COUNT	1996	2001
Peak day boat count	734	1,560
Less boats not using public launch ramps + 30% turnover	-94 (a)	-370 (b)
Subtotal Boat Count	640	1,190
Less small boats not requiring launch ramps (c)	-64	-119
Estimated boats/PWC launched at public launch ramps	576	1,071

Notes:
(a) (202-100-30)*1.3 = 94
(b) (440-125-30)*1.3 = 370
(c) Approximately 10 percent of total launched.

TABLE IV-16
AVAILABLE PUBLIC BOAT LAUNCH FACILITIES/CAPACITIES

LAUNCH RAMP FACILITY			CAPACITY (IN/OUT)*	
Location	Number of Lanes	Year Available	1996	2001
Seaport	8	1995/96	(400)	400
City Park	10	1999/2004		(240)
Elsinore West	11	1994	240	240
Elsinore West (PWC)	10	1994	240	240
San Jacinto Channel (a)	8	1996/99		(240)
Kay's Barn	1	1994	12	12
Crane Lakeside	1	1994	12	12
Weekend Paradise	2	1994	24	24
Bedrock/Playland	2	1994	24	24
Pro Marine	1	1994	12	12
TOTALS	54		564 - 964	964 - 1,444

Note: * Assumed capacity based on launch facility improvements/location, toll taking operation, overall traffic circulation and parking capacity for cars/boat trailers.

(a) If used also as public launch ramp

4.2 Boat Operations

- All boats 16 feet or over must have one Type I, II or III (wearable) personal flotation device for each person on board and one Type IV (throwable) in each boat.
- All other vessels less than 16 feet require one Type I, II, III or IV for every person aboard.
- All power vessels must carry a fully charged Type B-1 or equivalent fire extinguisher that is readily available.
- All motorboats or motor vessels except open boats, using gasoline as fuel, shall have at least two ventilator ducts fitted with cowls or their equivalent.
- All boats must be properly muffled at all times to meet State and local noise requirements. No unmuffled or "dry stack" exhaust systems. (NOTE: Noise levels may not exceed 86 decibels as measured at a distance of 50 feet.)
- If a boat operator is faced with a potentially unsafe situation (overcrowded turn with many fallen skiers) shut down operation of the vessel.
- The vessel on the right or the vessel you overtake has the right-of-way.
- A sailing vessel has the right-of-way over a motor craft in all situations.
- Absolutely no bow, gunwale or transom riding. All passengers must sit securely in the boat.
- Operating a vessel while under the influence of alcohol or drugs is strictly prohibited. Violators will be punished to the full extent of the law.
- Consumption of alcohol and open alcohol containers while a boat is operating on the lake is strictly prohibited. Violators will be punished to the full extent of the law.
- Boating accidents must be reported immediately to the proper authority.
- All boats shall maintain a counter-clockwise direction beyond the five mile per hour zone (except boats under sail).
- Maximum speed on the lake is 40 miles per hour, except when operating within the designated high speed area.
- Boats requiring trailers may be launched only from designated launch ramps. All other small boats may be carried and launched at designated recreational or public access points after obtaining a boat permit.
- Mooring to navigational markers is prohibited.
- Overnight mooring is allowed at marinas or for private property owners with

proper (valid) permits.

- Boat operating hours are restricted between sunrise to sunset, except for permitted activities. (Permits must be approved and obtained from the City of Lake Elsinore.)

4.3 Waterskiing

- The number of water-skiers being towed by one boat at the same time is limited to two.
- One observer is required onboard besides the operator, and must be over 12 years old, while a boat is towing a skier.
- A red signal flag must be displayed when a fallen skier or ski rope is in the water.
- Starts and drop-offs must be done in deep water or designated take-off and drop-off areas.
- Skiing in or around marker buoys or within 100 feet of other vessels, skiers or hazards is strictly prohibited.
- When one skier falls during a double tow, the other skier must immediately let go of the tow rope and both skiers should stay together at all times.
- When a skier falls the boat operator shall return in a safe manner as soon as possible in a tight counter-clockwise direction when practical to retrieve the fallen skier.
- The slalom course area is operated only within the City concessioned ski instruction area in San Jacinto Channel.
- Passing a tow line over another boat or skier or towing a skier within 100 feet of another boat, skier or downed skier is prohibited.
- Loose skis must be retrieved immediately.
- It is unlawful for any person to employ a tow line longer than 75 feet in length.
- Ski ropes must be retrieved immediately when skiing is discontinued.

4.4 Personal Watercraft (PWC) and Similar Devices

- Operators must follow the same rules of operation which govern all boats on Lake Elsinore.

- All PWC's must have Coast Guard approved life jackets on board for each person on vessel.
- All operators must carry a fully charged Type B-1 or equivalent fire extinguisher.
- All PWC's must be properly muffled at all times to meet State and local noise requirements.
- All PWC's may carry no more passengers than manufacturer's designation.
- All operators should be cautions when turning or overtaking another vessel and must yield the right-of-way to the vessel on the right or the vehicle being passed.
- Passing too close to other vessels can be dangerous at any speed. Keep a distance of 25 feet minimum from any other vessel.
- The required age for operating a PWC is 14 years or older.
- The PWC program was designed to promote safe, enjoyable operation. Speeding, racing or reckless operation is strictly prohibited.
- In addition, to the open lake area, there are designated PWC areas for PWC operations only.

4.5 Fishing

- A California State fishing license is required for all individuals fishing at all times.
- Fishing is allowed from shore in designated areas only.
- Trolling in the designated ski and PWC area is prohibited.
- All fish and game regulations are strictly enforced.
- Cleaning of fish on the water or shoreline is strictly prohibited.
- Fishing from launch ramps and docks is prohibited.

4.6 Swimming

- Swimming is allowed only in designated areas.
- Scuba diving is prohibited.

5. CONCESSIONS

Currently, the City has two leases with concessionaires for concession operations on the lake. The main lease is a carry-over from the State of California's prior ownership of the lake. This lease is with Lake Elsinore Recreation Area Incorporated (LERA) to operate the City's R.V. Park and Campground facility along Riverside Drive. The facility has an existing boat launch ramp; however, since the top elevation of this ramp is at 1,240 feet, major improvements are required before this launch ramp can return to operation for the planned lake operating elevation in the 1,245 feet plus range. The second lease is with Jackie Nanette for a waterskiing school concession within San Jacinto Channel.

The proposed lakefront improvement plan allows for the full range of waterfront concessions, including leases for activities taking place on the water; marina and dock leases; and landside leases for supporting all marine-related activities. Potential concession activities are listed in Section V, "Specific Lake Development Plan", for the specific proposed improvements around the lake's perimeter.

6. SPECIAL EVENTS

Over the years, Lake Elsinore has been the site for a variety of special events. The potential for numerous special events returning to the lake, under a stabilized and clean lake condition, is wide open. There are already several special interest promoters interested in holding upcoming events on Lake Elsinore. Between the lake and an improved San Jacinto Channel area, the lake can accommodate almost any type of special event the City desires to undertake, including:

- International hot boats
- Thunder boats
- Unlimited hydroplanes
- Personal watercraft competition
- Water ski competition
- Rowing regattas
- Sailboard events
- Sailboat regattas
- Triathlons/biathlons

The ideal location for many of the above events is San Jacinto Channel. However, the channel will require some widening at its mid-point once the water level starts receding below the 1,255 feet elevation. This channel widening is proposed within the recommended lake shoreline improvement plans.

Of the special events listed above, power boats and water ski competition will generate the largest revenue. The powered boats (except for the unlimited hydroplanes), water ski competition and rowing shells are ideally suited for an improved San Jacinto Channel. This channel area can provide excellent landside facilities (as shown on the proposed plan), calm water, good security and safety, and excellent spectator viewing.

The lake's main water body is required for holding certain events, i.e., unlimited hydroplane racing, water ski marathons and sailing regattas. Sailboard events may be held wherever wind conditions are suitable. Promoting an unlimited hydroplane race requires a significant financial commitment in addition to fulfilling numerous landside and waterside requirements. If there is a desire to pursue the holding of an unlimited hydroplane race in Lake Elsinore, a recommended two-mile course layout that fits within the proposed lake improvement plan is shown in Figure IV-4. The Unlimited Racing Commission's Race Site Manual, which documents their unlimited hydroplane racing requirements, is contained in Appendix C. Their 1991 through 1993 race schedule/attendance, tentative 1994 race schedule and a demographic analysis of their race fans are contained in Appendix D.

Until the San Jacinto Channel area is improved to accommodate the discussed special events, these events could be staged directly offshore Lakeshore Drive between Lewis and Spring Streets as shown in Figure IV-5. When the channel is improved it will provide boat racing in a long narrow channel, giving spectators the ideal vantage point to watch the entire race course as illustrated in Figure IV-6.

General event requirements for promoting international hot boats, thunder boats, water ski competition, jet boat competition, and other events are presented below.

6.1 Boat Drags

Boat drags consist of quarter-mile acceleration, side-by-side racing of two boats paired at a time. Boats stage in front of an electronic starting lights system and attempt to complete

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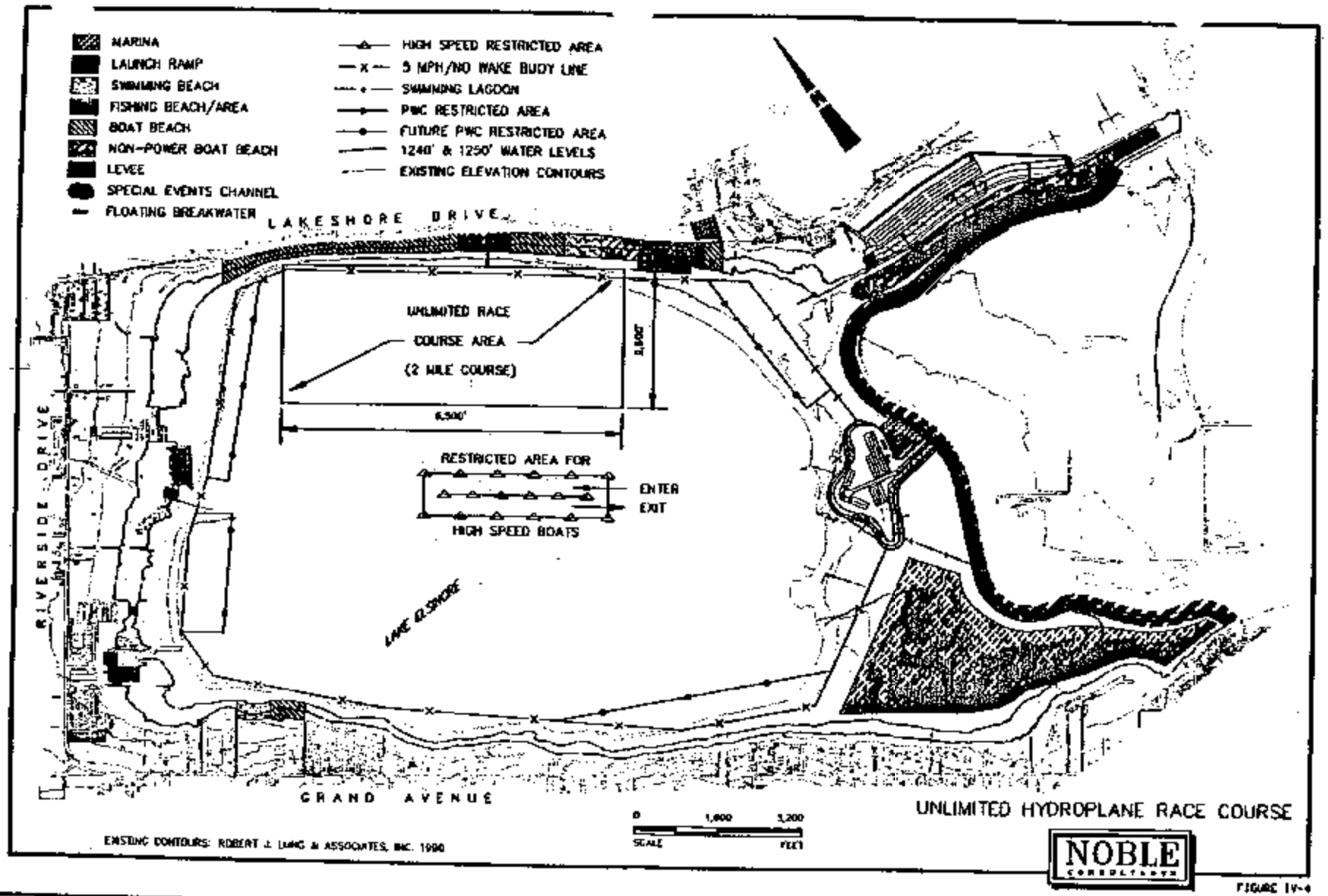
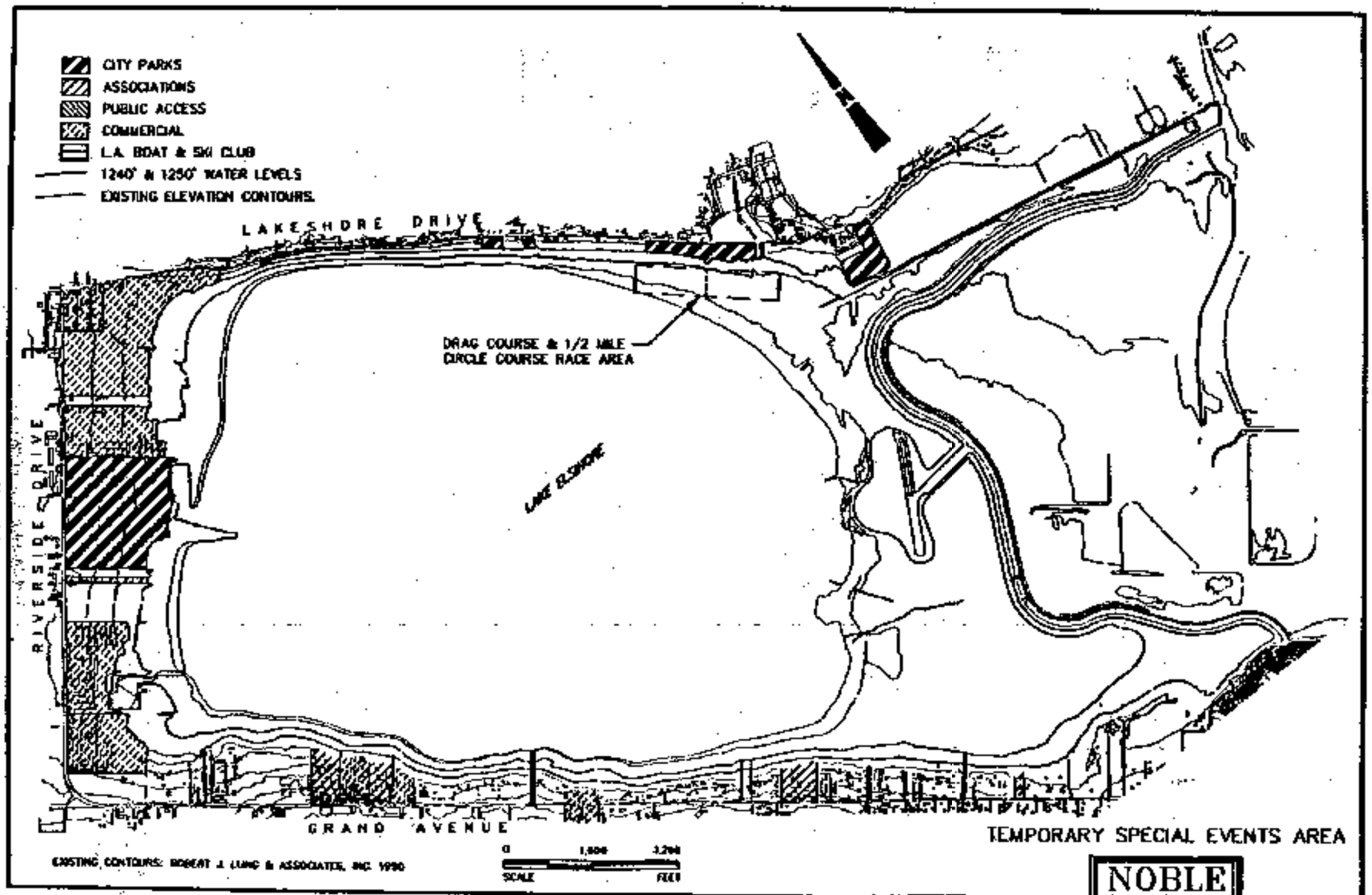


UNLIMITED HYDROPLANE RACE COURSE

NOBLE CONSULTANTS

FIGURE IV-4


CITY PARKS
ASSOCIATIONS
PUBLIC ACCESS
COMMERCIAL
L.A. BOAT & SKI CLUB
1240' & 1250' WATER LEVELS
EXISTING ELEVATION CONTOURS
LAKESHORE DRIVE
DRAG COURSE & 1/2 MILE CIRCLE COURSE RACE AREA
LAKE ELSINORE
RIVERSIDE DRIVE
GRAND AVENUE
EXISTING CONTOURS: ROBERT J. LUND & ASSOCIATES, INC. 1990
0
1,600
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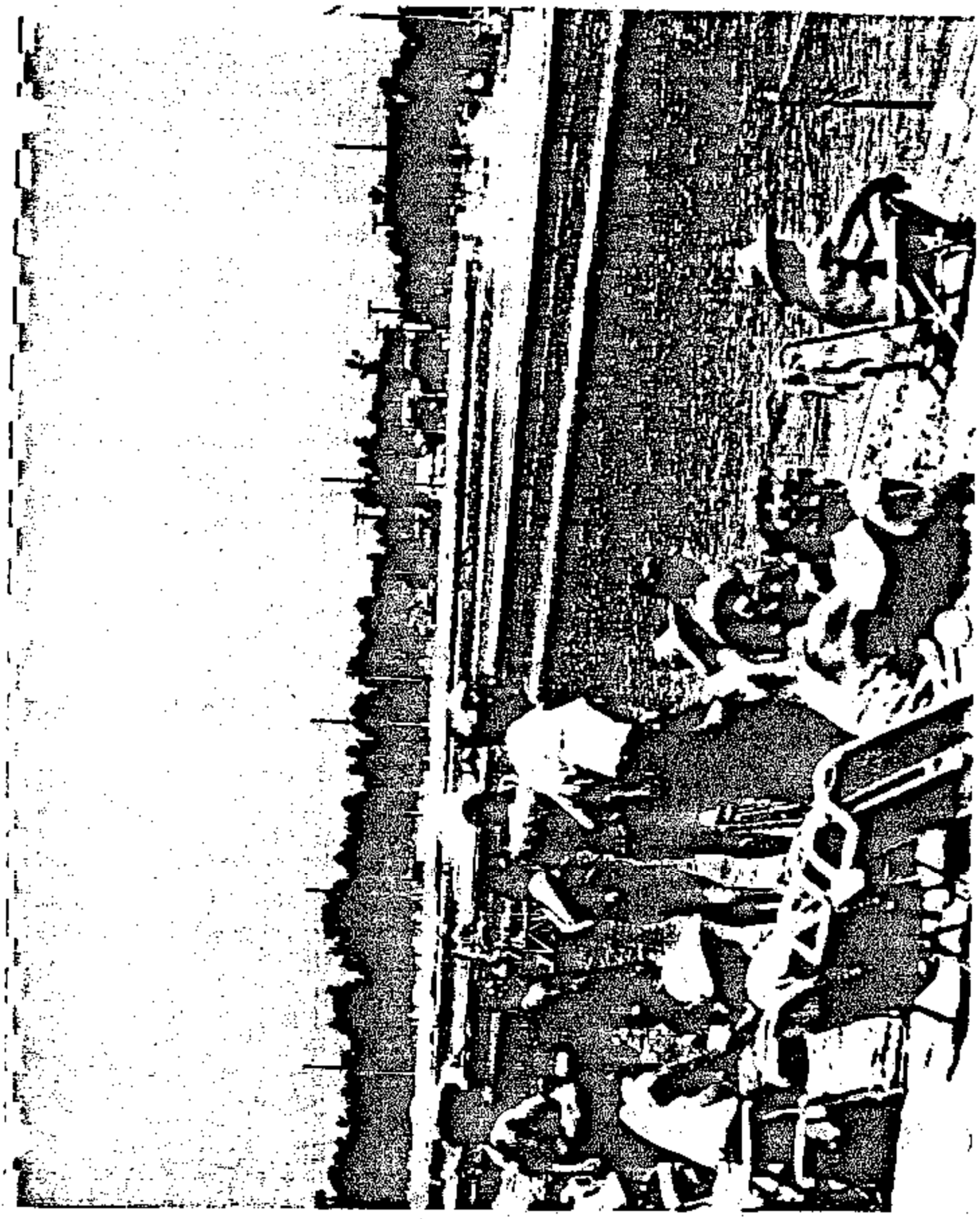
SCALE
FEET
TEMPORARY SPECIAL EVENTS AREA
NOBLE
CONSULTANTS

FIGURE IV-5



BOAT RACE CHANNEL

FIGURE IV-6

the quarter-mile race course in the shortest possible time at the highest possible top speed. Top fuel drag boats are able to reach speeds in excess of 220 miles per hour with estimated times of approximately five seconds. Lower class racing begins in designated speed brackets (e.g., 75 to 80 miles per hour) with additional professional classes divided by hull, engine and fuel type. Top professional events routinely attract 150 to 200 boats in various professional and amateur classes. Figure IV-7 shows drag boats waiting their turn to run the course from the staging area "holding rope".

Following are primary associations in Southern California conducting/sanctioning these events:

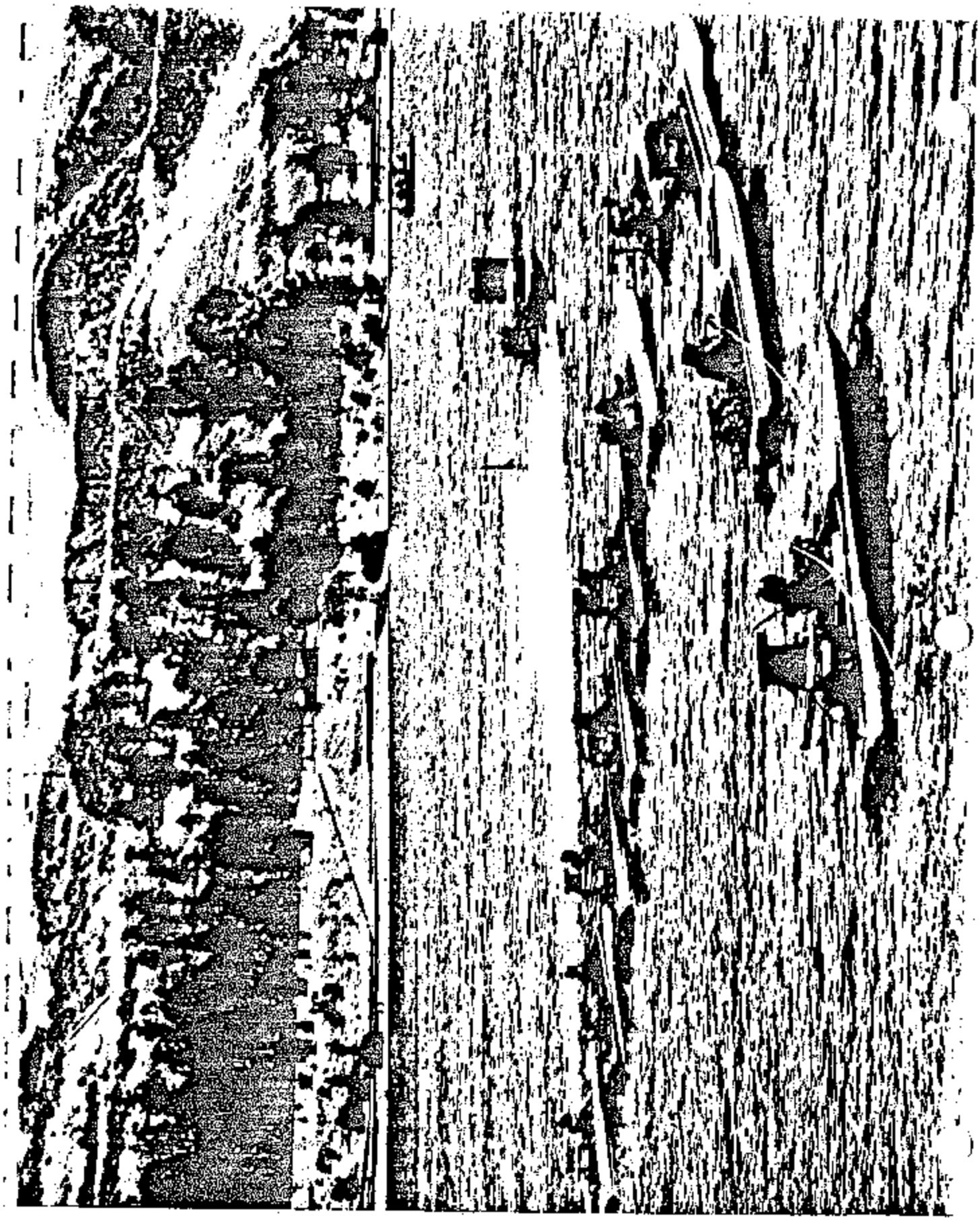
IHBA (International Hot Boat Association) - 100 to 150 participants
Mr. Chuck Coyne
619 N. Poplar Street
Orange, CA 92668
(714) 634-4422

NJBA (National Jet Boat Association) - 125 to 175 participants
Mr. Harold Bruce
13342 Felson Place
Cerritos, CA 90701
(310) 926-7908

6.2 Circle/Sprint Boat Races (Inboard/Outboard)

Circle/sprint boat racing consists of inboard and outboard powered race boats competing on a "closed" course (lap-type) track. Races normally consist of a predetermined number of laps, usually five. Boats compete in classes determined by size, hull type, engine type, etc. The maximum number of entries on the race course at one time is 10 to 12 boats. Top speeds vary according to classification; however, they range from 50 to 135 miles per hour.

Possibly the most exciting and fastest form of closed-course circle boat racing belongs to the outboard tunnel hulls known as champ boats or Mod U's. These 17- to 18-foot twin hulled boats are powered by 250-horsepower V-6 outboards capable of hitting speeds in



BOAT DRAG RACING FIGURE IV-7

excess of 125 miles per hour on the straight-a-ways and taking a one-pin 180-degree turn at better than 90 miles per hour. These boats are equipped with driver safety capsules to minimize the chance of injury to the racer. Figure IV-8 shows tunnel boats in action.

Limited inboard runabout circle racing is always a crowd favorite. These flatbottom ski boat-type hulls are powered by modified automotive V-8 engines and V-drive gear boxes. Depending on the class, some of these boats are powered by supercharged engines generating over 1,500 horsepower, and routinely hit top speeds over 110 miles per hour on the straight-a-ways. Figure IV-9 shows these boats on the race course.

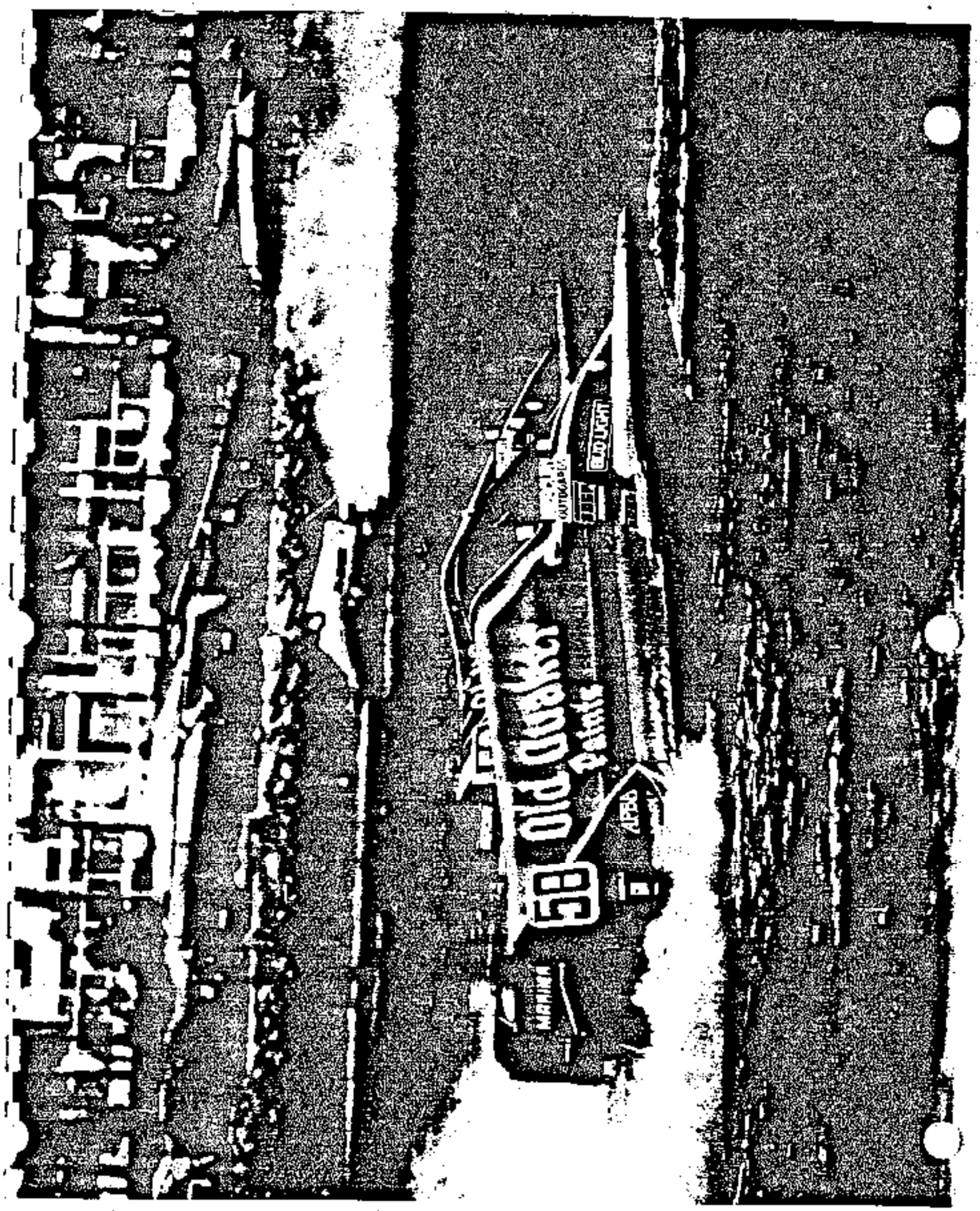
Circle race competition has numerous limited inboard hydroplane classes. These boats are very much like scaled-down unlimited hydroplanes, as shown in Figure IV-10, racing in five-lap sprint events. Top speeds are in excess of 100 miles per hour.

The true "grass roots" of boat racing are the "knee-jockeys", so named because the driver rides on his or her knees for the entire race, as shown in Figure IV-11. Boats are divided into two basic categories, hydro or runabouts. All are powered by vintage or new model outboard motors. Speeds range from a low of 35 miles per hour in novice divisions, up to 90 miles per hour for the experts. Most hulls are less than 13 feet long.

Following are primary associations in Southern California conducting/sanctioning these events:

COBRA (California Outboard Racing Association) - 75 to 100 participants
Mr. Jim Wilkes
3005 Halladay
Santa Ana, CA 92705
(714) 540-8908

APBA (American Power Boat Association)
Mr. Fred Hauenstein, Jr., President
17640 E. Nine Mile Road
East Detroit, MI 48021
(313) 773-8898



TUNNEL BOAT RACING

FIGURE IV-8

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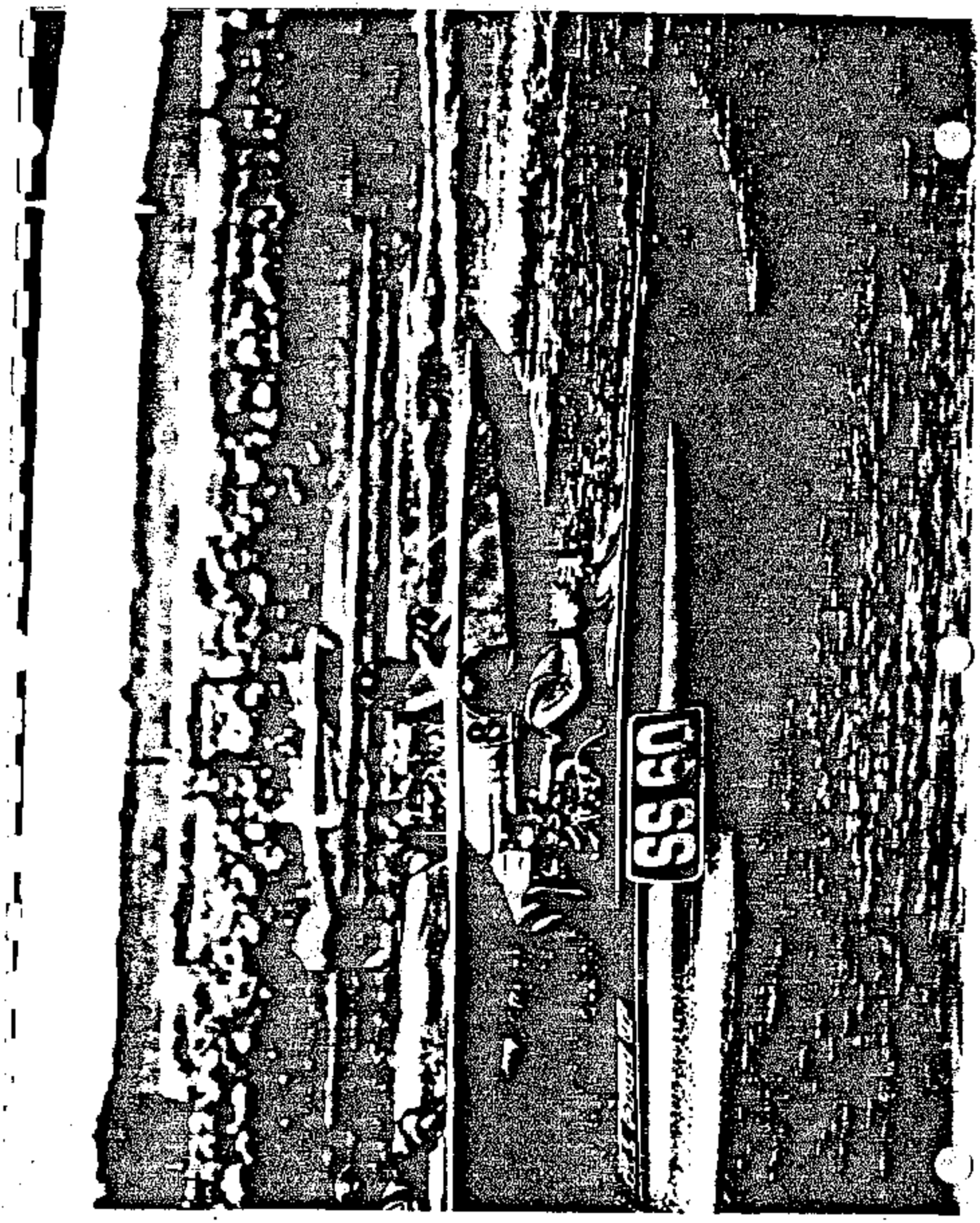

LIMITED INBOARD RUNABOUT RACING

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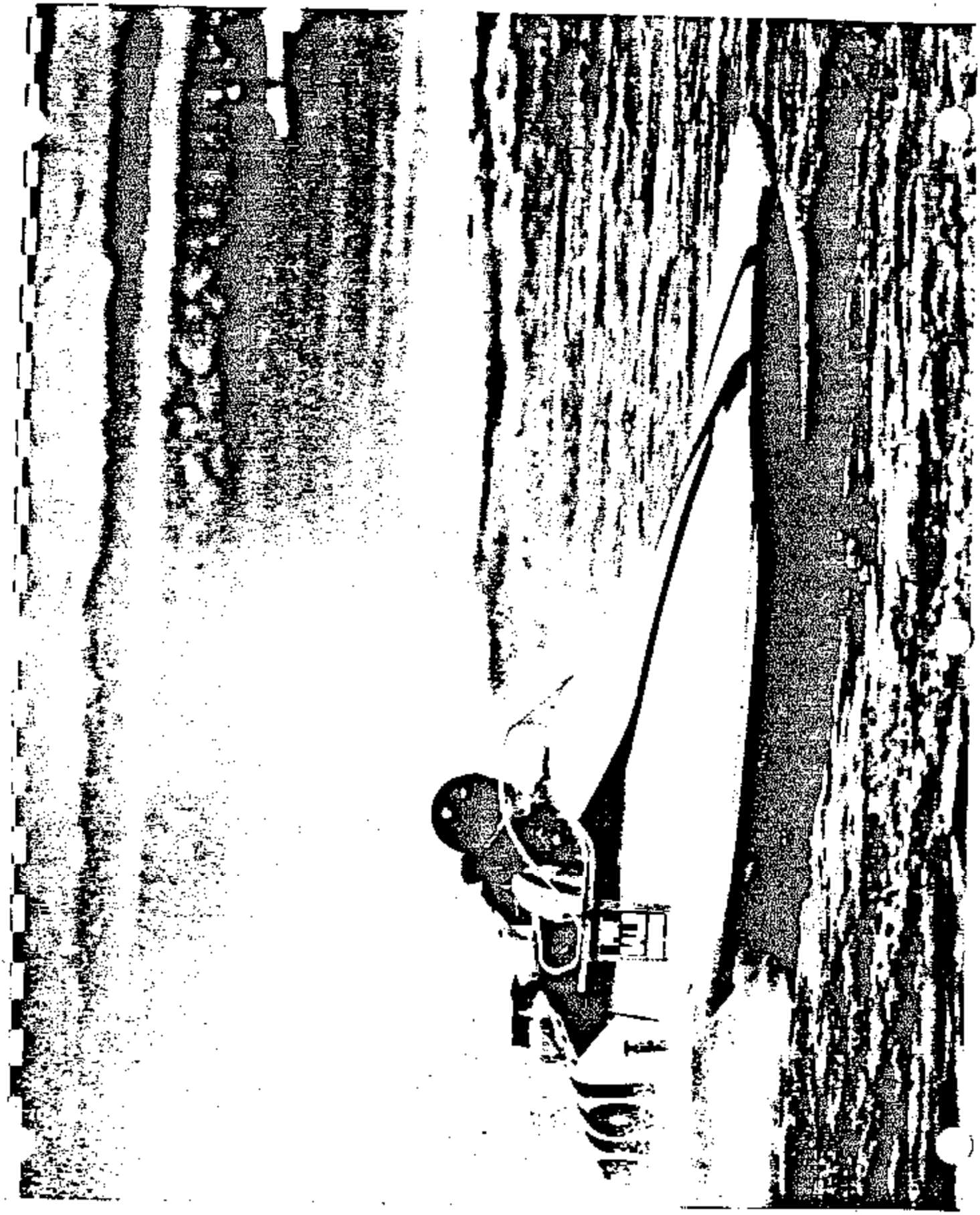

LIMITED INBOARD HYDROPLANE RACING

FIGURE IV-10

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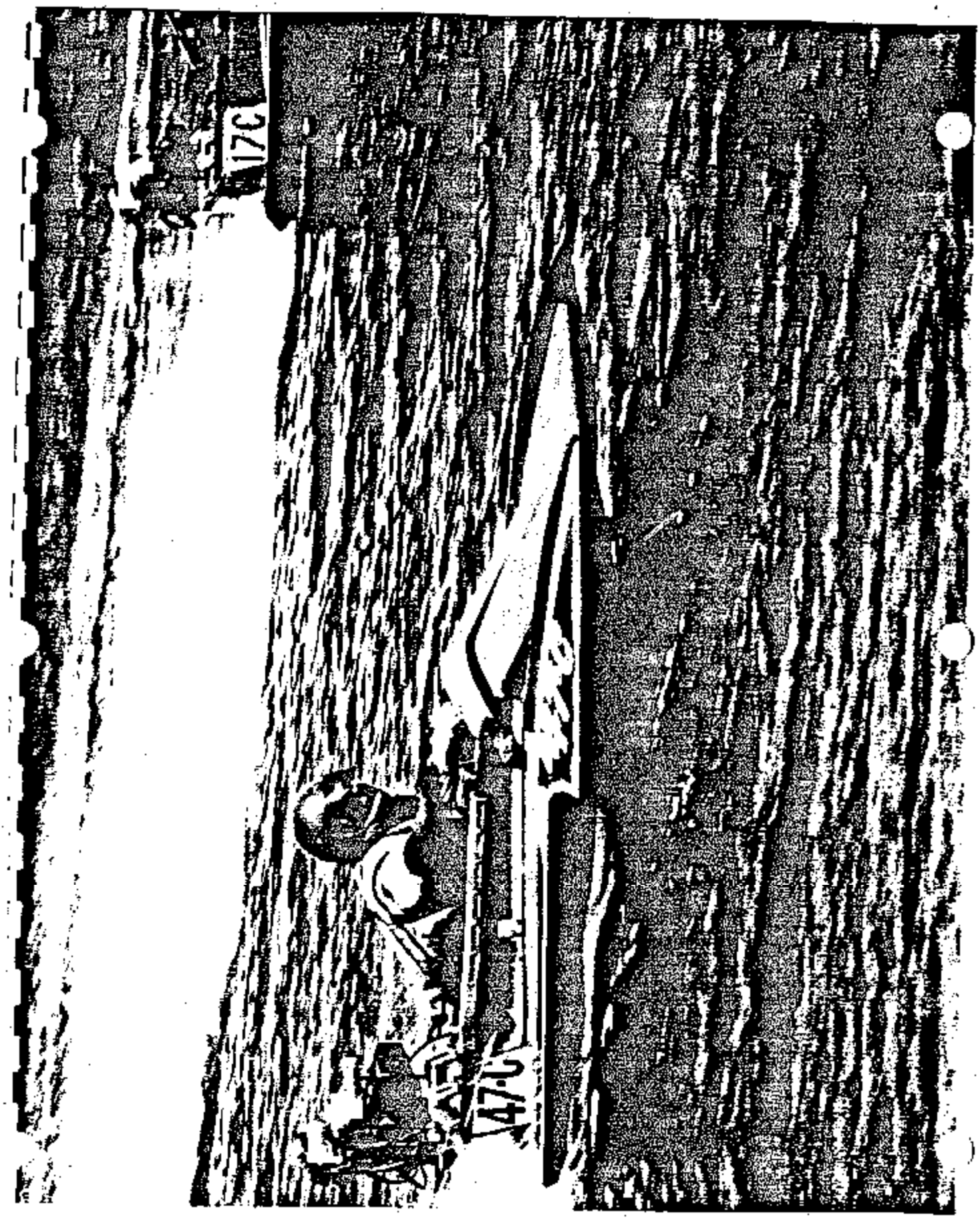

OUTBOARD HYDROPLANE/RUNABOUT RACING

FIGURE IV-11

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6.3 Jet Ski/Personal Watercraft

"Closed" course PWC competition consists of pitting various types of PWC's in motocross style racing, slalom racing and freestyle exhibitions. Competition classes are divided by gender, experience, personal watercraft type and speed. Unlike the early days of personal watercraft competition when only jet skis competed, today's racing format encourages all brands of personal watercrafts to participate. Major events often attract 200 to 300 participants for two- and three-day races. Figures IV-12 and IV-13 show personal watercraft activity during race day.

Following are primary associations in Southern California conducting/sanctioning these events:

NJSA (National Jet Ski Association)
Ms. Jeri Richards
9950 Jeronimo Road
Irvine, CA 92718
(714) 770-0400

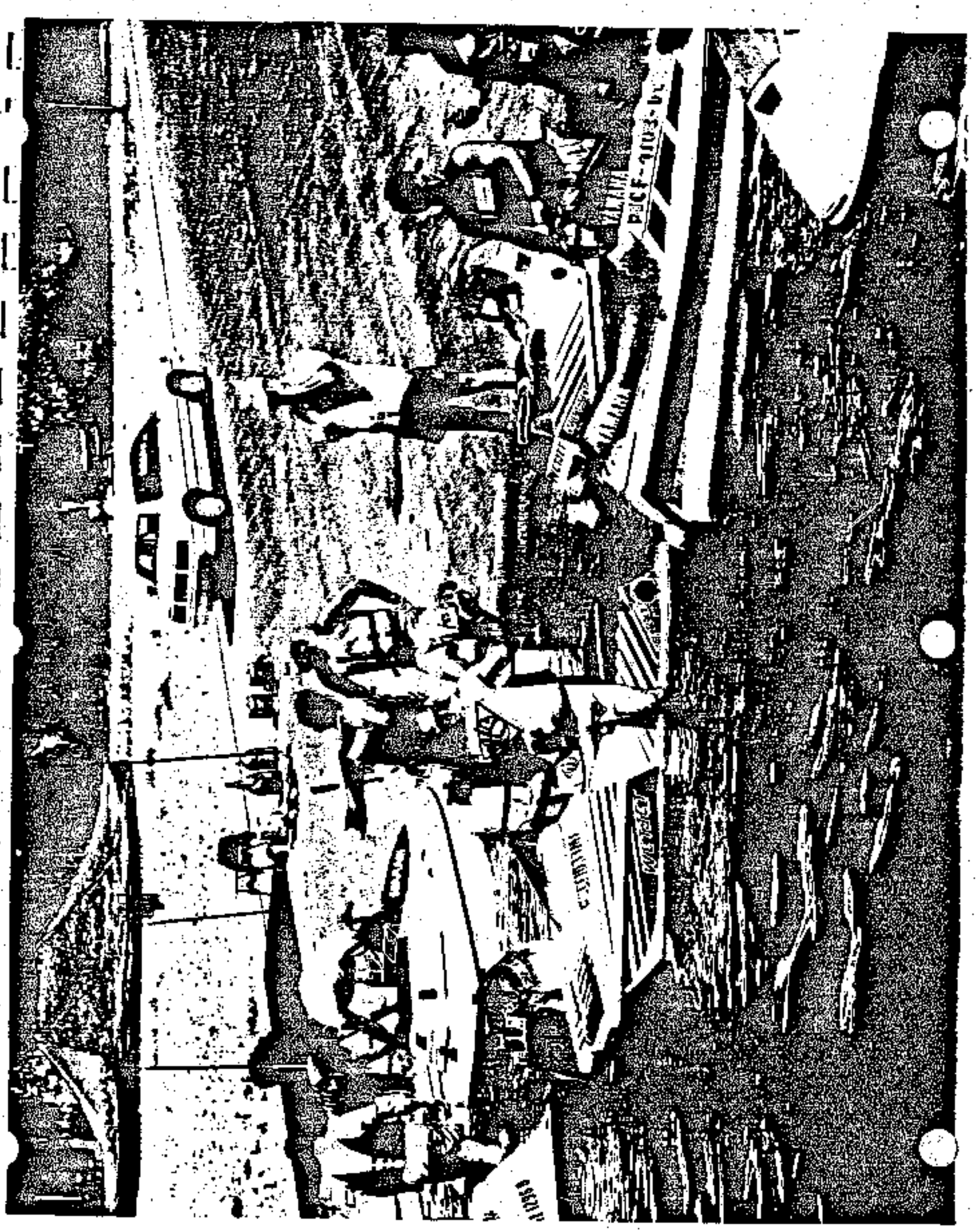
6.4 Professional Water Ski

Tournament water ski competition is a rapidly growing sport. The "Pro Tour" features the world's best men and women water-skiers in slalom, jump and freestyle competition, with large cash purses for the winners. Participants number 40 to 60. Special "wake" and "kneeboard" exhibitions are also conducted. Because water conditions are so important, most tournaments are conducted on narrow, well-sheltered bodies of water as shown in Figure IV-14.

In addition, water ski marathon racing is a popular sport. Such an event was recently held on Lake Elsinore, with another one planned for September 1994. These are timed events held over distances of 50, 100 or more miles, and require a race area within the main lake similar to that shown for unlimited hydroplane racing in Figure IV-4.

Following are primary associations that conduct/sanction these events:

PERSONAL WATERCRAFT COMPETITION FIGURE IV-12



PERSONAL WATERCRAFT PARTICIPANTS FIGURE IV-13

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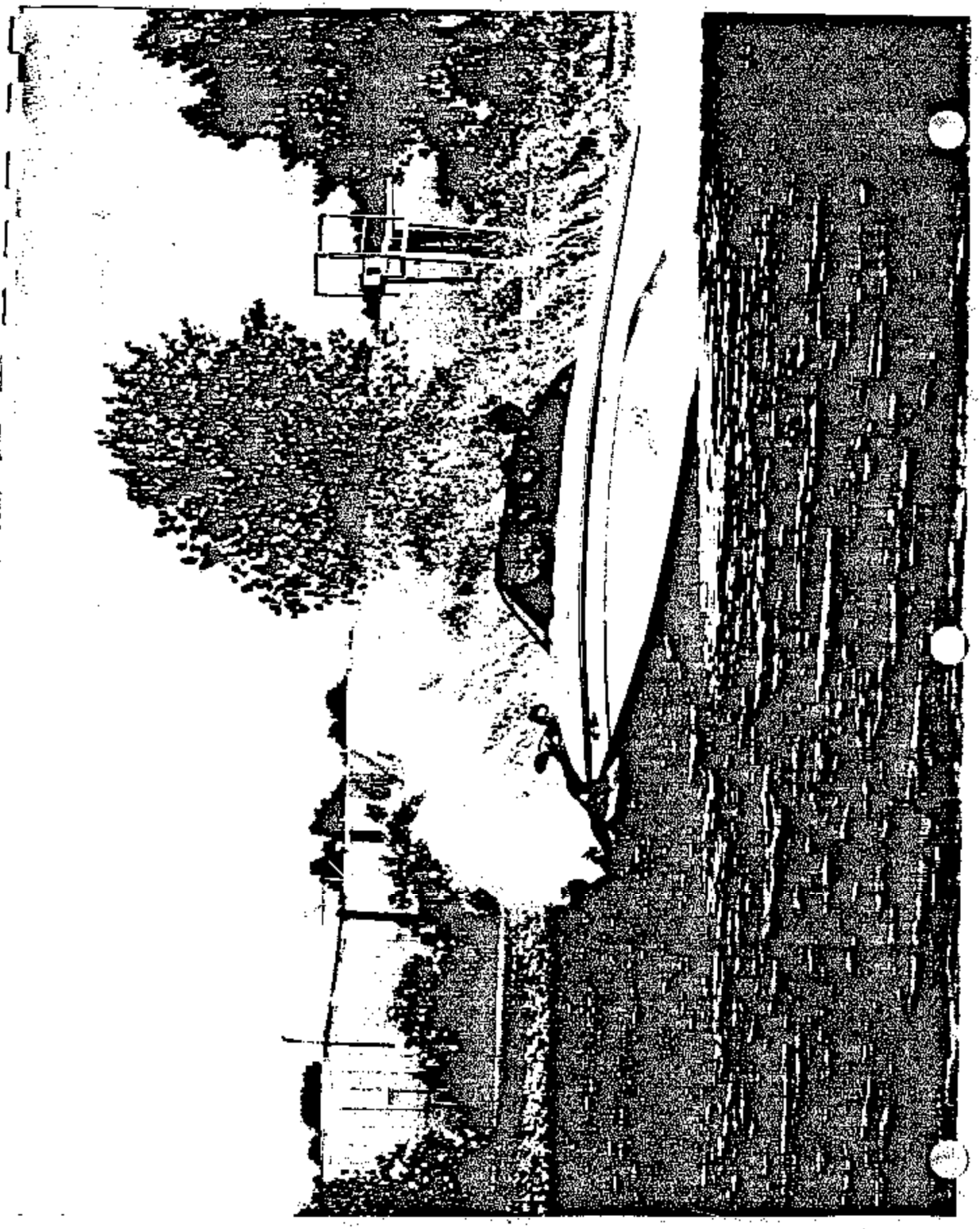

TOURNAMENT WATER SKI COMPETITION

FIGURE IV-14

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Pro Tour
c/o Water Ski Magazine/World Publications
Mr. Terry Snow, Mr. Terry Dorner or Mr. Drew Townes
330 W Canton Avenue
Winter Park, FL 32789
(407) 628-4802

National Speedboat and Water Ski Association
Mr. Wayne Bouchard
5291 Sorrento Circle
La Palma, CA 90623
(714) 528-4989

6.5 Other Events

Additional events such as rowing, outrigger regattas, ski clinics, sailboard regattas/clinics, etc., could be scheduled on an "as available" basis. Since it is unlikely that these types of events would have a significant positive revenue impact on the San Jacinto Channel stadium, they might best be handled on a "flat" rental fee charge. In addition, the San Jacinto Channel and shoreline or the main lake and shoreline could be used to stage triathlon or biathlon events. The main lake could also be utilized for sailing regattas and clinics. These events would be non-revenue generating, only requiring a use permit from the City.

6.6 Operating Guidelines

It is imperative that event "conduct guidelines" be established and adhered to by all users of the San Jacinto Channel stadium and the main lake for the staging of special events. "Guidelines" need to include:

- Decision on alcoholic beverages
  - Onsite sale only
  - "Stadium rules apply" regarding coolers and ice chests
  - Restricted area of alcoholic consumption (beer pavilion)

- Use and purpose of PA system
- Noise regulations pertaining to participants
- Operation hours (when gates open and close)
- Off-site parking and pedestrian flow

6.7 Promoters

There are two basic methods in which boat racing events are normally conducted. The most common method is to contract with individual organizations and/or associations to be responsible for the entire event package (promotion, advertising, insurance, event sanctioning, safety, conducting the event, etc.). These organizations/associations normally have established rules, staffing and procedures for running the event. The advantage of working with individual organizations is that they specialize in their own brand of racing and bring a high level of expertise to the event. They also have close ties and alliances with the racing participants.

A second method of event promotion involves a master lease or contract agreement with an outside company or individual specializing in motor sports productions who also has the capability of promoting rowing, sailing and triathlon/biathlon events if requested. It would be the responsibility of that company or individual to subcontract with independent associations or organize their own staff to conduct various events.

Regardless of which method is used, it is recommended that the City of Lake Elsinore designate to an existing governmental department (e.g., parks and recreation) the responsibility of overseeing the use permits granted for the special events at the San Jacinto Channel stadium and the main lake. If no suitable governmental department presently exists, a separate entity should be created.

Responsibilities of the special event promotor would include the following:

- Event Administration
  Pull appropriate sanctions, solicit participants, process entries/collect fees and memberships, and scoring and tabulation of final results.

- Insurance

  Provide participant and spectator liability coverage, must provide proof of insurance to prescribed limits set by City. Also must provide property damage coverage.

- Promotion/Advertisement

  Must prove capability and willingness to adequately publicize event.

- Security/Medical

  Provide mandatory security and on-site medical as to City requirements.

- Prize Money

  Must put guaranteed purse into escrow 30 days prior to event.

- Event Staff

  Responsible for providing:

  - Designated patrol/rescue boats
  - Launch ramp/pit workers
  - Judges, referees, scorers, announcers, registration personnel, gate workers, safety inspectors and media/publicity coordinator

- Concessions/Special Display Exhibitors

  Depending on City agreement, promotor could be responsible for food/beverage service as well as on-site exhibit area.

- Safety

  Erection of temporary safety barrier/fence to protect spectators.

- Abide by City Ordinances

  Traffic, noise, alcohol, etc.

6.8 Insurance

Normally, the event promotor and/or sanctioning organization/association pays for and

provides the City with proof of liability insurance. Such policies for powered boat events generally include $5,000,000 to $10,000,000 of spectator/participant liability coverage, no participant medical, and a nominal amount ($10,000) of accidental death for participants.

It is incumbent on the City to check with the insurance carrier direct (not an agent) to verify that the policy is in force prior to the event. The City should also carry an additional rider on its primary liability coverage for the City as extra umbrella protection.

6.9 Security

Special event security is normally the primary responsibility of the event promotor. Depending on the anticipated total attendance, security and medical guidelines set forth by the City should be followed.

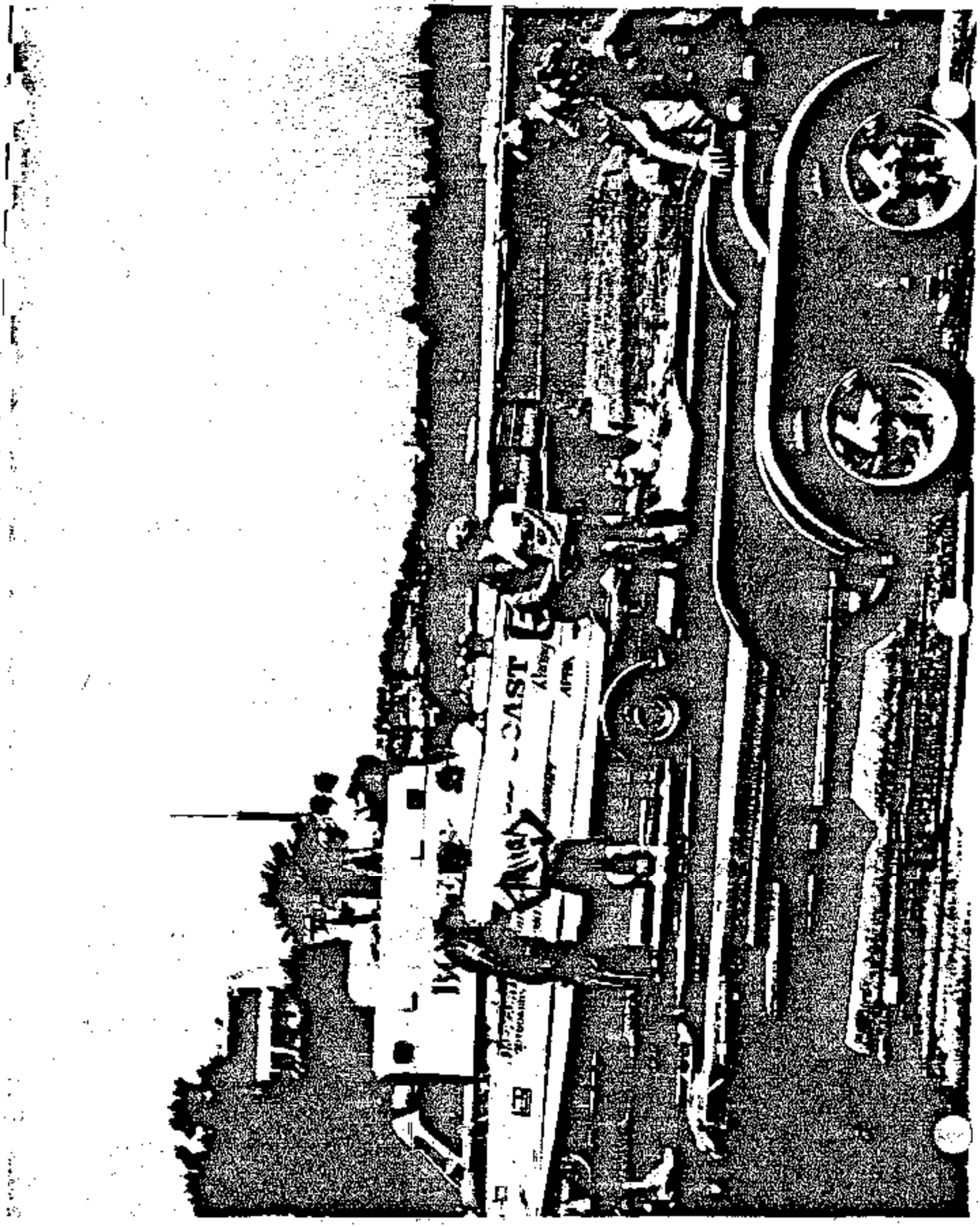
Security generally consists of non-armed private security staff, ticket takers, and parking control personnel. That security staff is augmented for major powered boat events by armed, off-duty police or sheriffs who are also paid outside security by the promoter.

6.10 Physical Lay-Out

Following are typical special event layout requirements for the San Jacinto Channel stadium or for the temporary special events area shown in Figure IV-5.

- Water Dimensions
  500 feet to 600 feet width, by 4,500 feet to 5,000 feet length.

- Launch Ramps
  Minimum of two concrete ramps located at each end of stadium (eight boats wide) within its own recessed harbor area. The launch ramp is a busy place at the start of each race, as seen in Figure IV-15. Boats in the next heat of competition stage on the launch ramp waiting for the signal from the referee to start their warm up laps. Launch ramps connected with paved access road and paved trailer/vehicle parking pad at each end. (75 to 100 vehicle/trailers per pad.)



RACE COMPETITION LAUNCH RAMP

FIGURE IV-15

- Judge's Stand
  Permanent judge's stand structure located mid stadium. Needs to be a two-level structure – lower level available for entry and general administrative functions; upper level for judging, scoring and announcing.

- PA System
  Permanent PA system (covering both sides of stadium) with underground wiring and removable speakers. Optional system: Discrete AM band radio transmitter capable of broadcasting within the stadium facility to spectators bringing their own portable radios. Optional system significantly reduces noise level.

- Electronic Tote Board
  Lighted billboard display activated by race officials to designate boat speeds and identify race leaders/winners by number.

- Perimeter Fencing
  Permanent chain link fencing surrounding entire stadium facility providing efficient method of crowd control and admission charging.

- General Parking
  Open lot parking (not paved) adjacent to stadium to accommodate a minimum of 2,500 to 3,000 vehicles.

- Spectator Seating
  Open amphitheater style seating along both shorelines – sand/beach area. Also, concrete pads with permanent bleachers for up to 2,000 to 2,500 spectators.

- Safety Barriers for Spectators
  A removable, continuous chain link fence line (minimum five feet tall) with a one-inch diameter steel retaining cable approximately 2.5 to 3 feet from top of fence for powered boat events. Fence line must extend along the entire active area of the race course.

6.11 Use Permits, Charges and Fees

Methods by which fees and revenues are collected by the City:

- Straight Fee Rental
  A flat per day rental fee for stadium usage. Fee would include certain minimum City services (i.e., utilities, administration, groundskeeping, etc.)

- Percentage of Gate
  Individual event promoters may be required to pay a percentage of gross revenues (admission, concessions, etc.) directly to the City. Percentages normally range from 13 to 18 percent. That gross revenue percentage includes certain minimum City services.

6.12 Food/Beverage Concessions

- Option 1: Master contract with an outside food service company. Provides all service at all events.

- Option 2: Sublease food/beverage concession rights to individual event promoters for a "flat" fee or a percentage of the gross.

- Option 3: Retain rights to food/beverage concessions and utilize volunteer/service groups within City to staff.

6.13 Example 1994 Special Events Powered Boat Schedule

March 26 - 27	IHBA (International Hot Boat Association) Boat Drags
April 17	COBRA (California Outboard Racing Association) Inboard and Outboard Circle/Sprint Races
May 14 - 15	NJSA (National Jet Ski Association) Jet Ski Races

June 5	NJBA (National Jet Boat Association) Boat Drags
June 25 - 26	Pro Water Ski Tour Slalom, Jump and Freestyle Water Ski Competition
July 23 - 24	IHBA Boat Drags
August 20 - 21	COBRA (California Outboard Racing Association) Inboard and Outboard Circle/Sprint Races
September 24 - 25	NJBA (National Jet Boat Association) Boat Drags
October 1 - 2	NJSA (National Jet Ski Association) Jet Ski Races

V. SPECIFIC LAKE DEVELOPMENT PLAN

This section presents conceptual plans for the proposed lakefront improvements described within Section IV.3, "Water Access", and summarizes potential recreation and retail activities provided by these improvements.

1. LAKESHORE DRIVE AREA

The proposed lakefront improvements between the existing Lakepoint Park and the Four Corners area are identified in Figure V-1. This plan would support the envisioned rerouting of Lakeshore Drive along Limited Avenue between Lowell Street and Main Street, the cul-de-sac street ends for the existing Lakeshore Drive on each side of the new outlet channel with a pedestrian bridge crossing the outlet channel, and a future civic center/park site and Seaport Village mixed-use complex in the area between Limited Avenue and the lakefront, and between the new outlet channel and Line Street. The proposed Seaport Marina/Boat Launch improvements are located at the easterly end of the proposed Lakeshore Drive development where sufficient land area and connecting streets are available to handle the increased traffic and parking requirements for these facilities.

The proposed improvements westerly of Lewis Street will require minimum parking and street access to these facilities. This stretch of shoreline is fairly narrow (average of 200 feet from Lakeshore Drive to the 1,245-foot elevation), with limited area available for parking, and with a current mixture of private and public property. It is recommended that this stretch of shoreline be turned into a public boat beach, with 1,000 lineal feet used for a fishing beach/pier, and that the entire stretch be connected by a linear pedestrian walkway. This proposed usage would provide needed shoreline area for boaters to temporarily come ashore, and for pedestrians to leisurely wander along the lakefront. Some parking would be provided for the fishing beach/pier area; however, parking would not be required along the boat beach stretch.

1.1 Seaport Village (~1,200 LF Shoreline)

Seaport Village is not part of this lakefront master plan, but is envisioned to consist of mixed usage for:

- Retail shops/stores
- Restaurants

1.2 Seaport Marina Complex (3,000 LF Shoreline)

Figure V-2 illustrates the conceptual design of the Seaport Marina complex which consists of a boat launch facility, a transition boat beach, a boat trailer/car parking area, a marina complex, a non-power boat concession beach, and a swimming beach. Figure V-3 presents an enlargement of the conceptual marina complex/boat launch facility layout. The marina basin would be dredged to elevation 1,234 feet and protected by a perimeter vertical sheetpile breakwater system. The landside area would be filled to elevation 1,265 feet and supported by a vertical bulkhead system. Section A-A of Figure V-3 indicates that the dredged cut material could be used to balance the landside fill requirements.

The boat launch facility is sized as an eight-lane facility. The toe of the ramp would extend down to the 1,236 feet elevation and the top of the ramp would extend up to the 1,260 feet elevation, with a staging area extending to 1,265 feet. This boat launch facility could therefore operate under all expected lake water levels. Depending on actual launch ramp capacity requirements, the ramp could initially be constructed with four lanes and later be expanded up to eight lanes.

Figure V-4 presents a full plan view of the entire Seaport Marina complex including supporting facilities and the linear greenbelt shoreline walkway. Figure V-5 presents section elevation views through the marina facility, while Figure V-6 presents section elevation views through the boat launch ramp facility and swimming beach area. The upper two feet of sand for the non-power boat concession beach and swimming beach would be imported beach sands. The natural beach slope is 15:1 (horizontal:vertical) with a nearshore (below elevation 1,240 feet) slope of 18:1. These slopes are ideal for use by families with small children. During a low lake level of 1,240 feet, there would be 310 feet of available beach width, while during a high lake level of 1,249 feet there would be 170 feet of available beach width.

Following is an itemization of proposed improvements and potential retail/recreational facilities for the 3,000 lineal feet of Seaport Marina Complex.

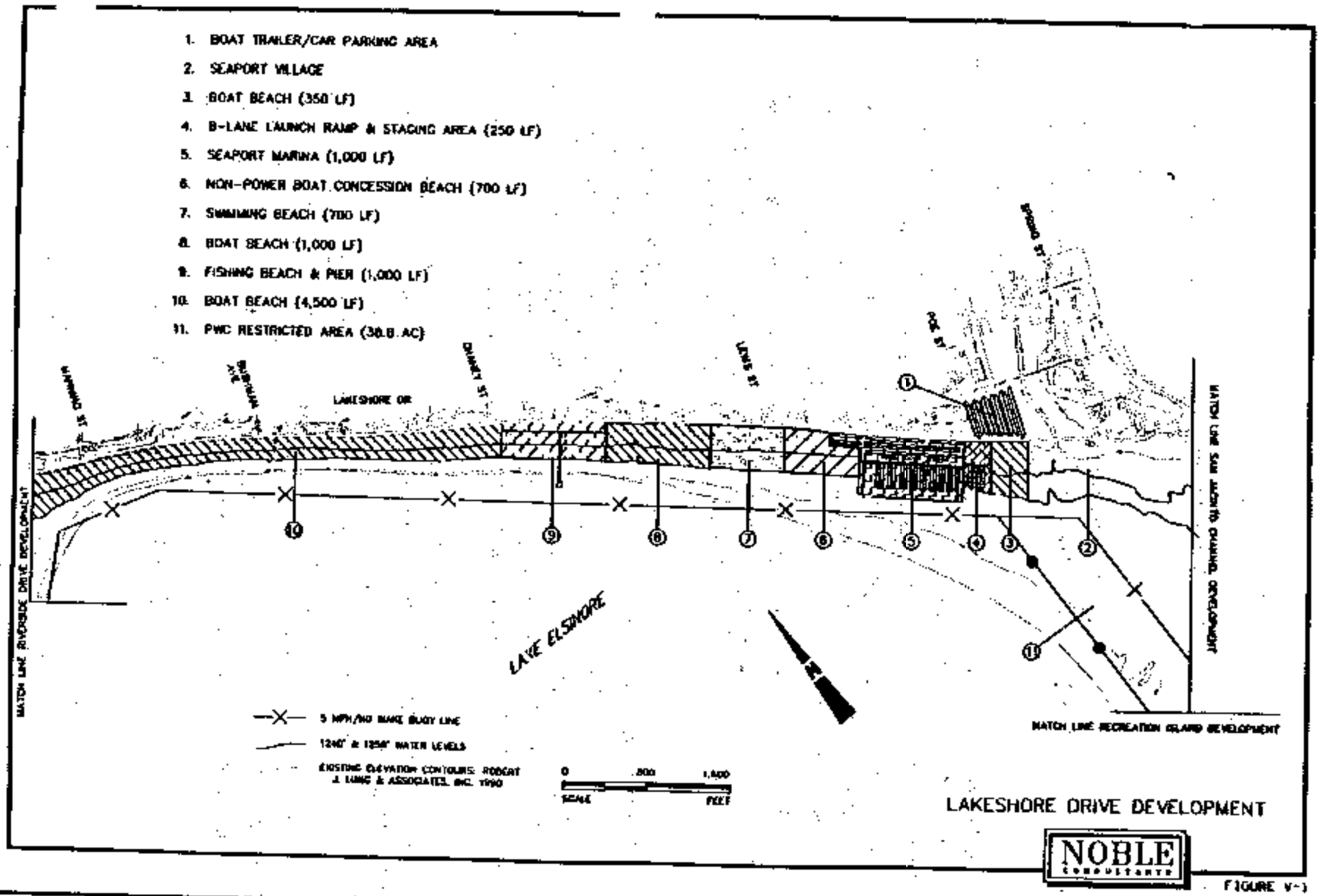
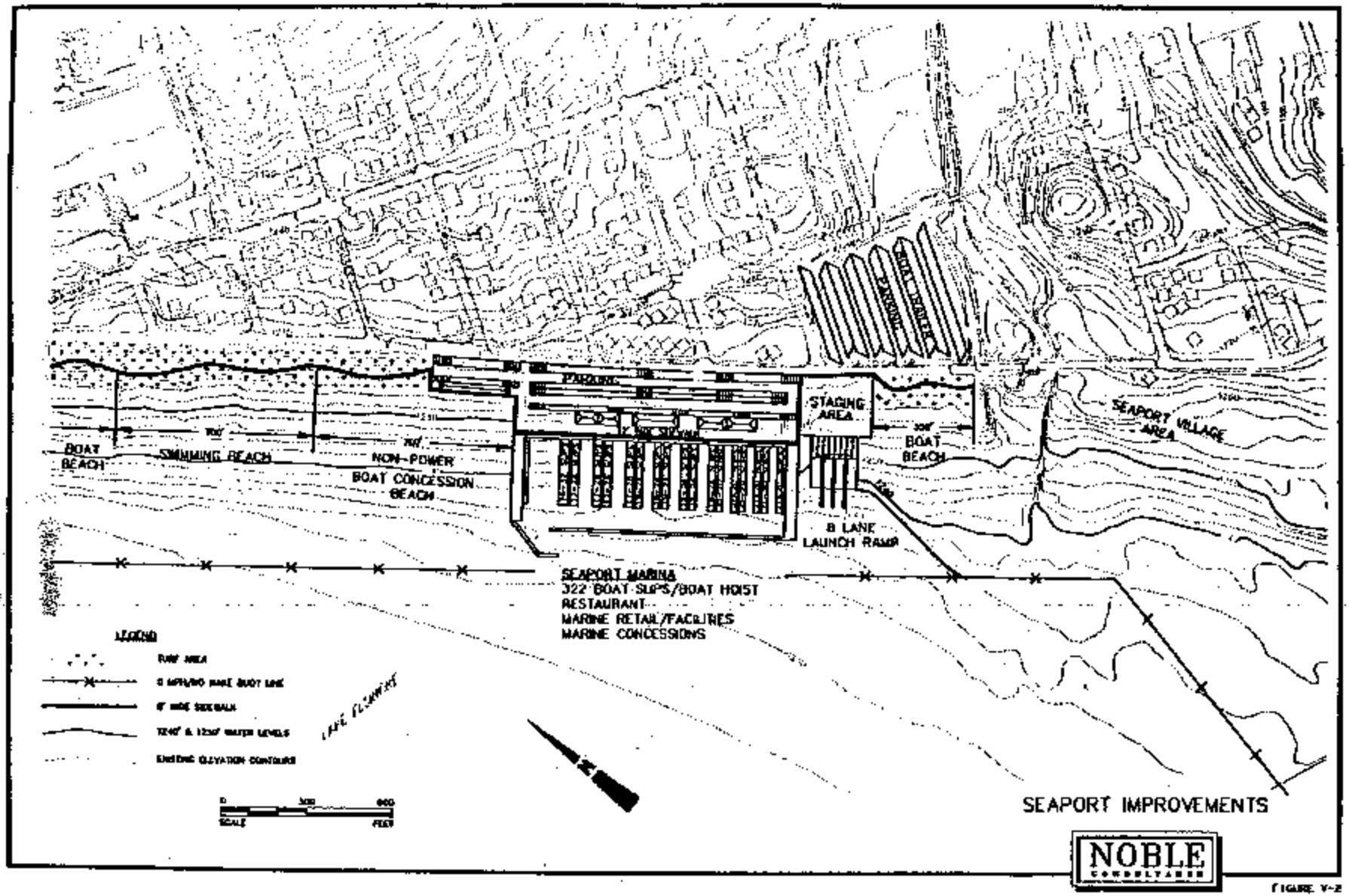

1. BOAT TRAILER/CAR PARKING AREA
2. SEAPORT VILLAGE
3. BOAT BEACH (350 LF)
4. 8-LANE LAUNCH RAMP & STAGING AREA (250 LF)
5. SEAPORT MARINA (1,000 LF)
6. NON-POWER BOAT CONCESSION BEACH (700 LF)
7. SWIMMING BEACH (700 LF)
8. BOAT BEACH (1,000 LF)
9. FISHING BEACH & PIER (1,000 LF)
10. BOAT BEACH (4,500 LF)
11. PWC RESTRICTED AREA (30.8 AC)
MANNING ST
BURNHAM AVE
LAKESHORE DR
CHANEY ST
LANE ST
POE ST
RIVERSIDE ST
MATCH LINE RIVERSIDE DRIVE DEVELOPMENT
MATCH LINE SAM JACINTO CHANNEL DEVELOPMENT
LAKE ELSINORE
5 MPH/NO WAKE BUOY LINE
1240' & 1256' WATER LEVELS
EXISTING ELEVATION CONTOURS: RODGAT J. LING & ASSOCIATES, INC. 1990
0
800
1,600
SCALE
FEET
MATCH LINE RECREATION ISLAND DEVELOPMENT
LAKESHORE DRIVE DEVELOPMENT
NOBLE CONSULTANTS

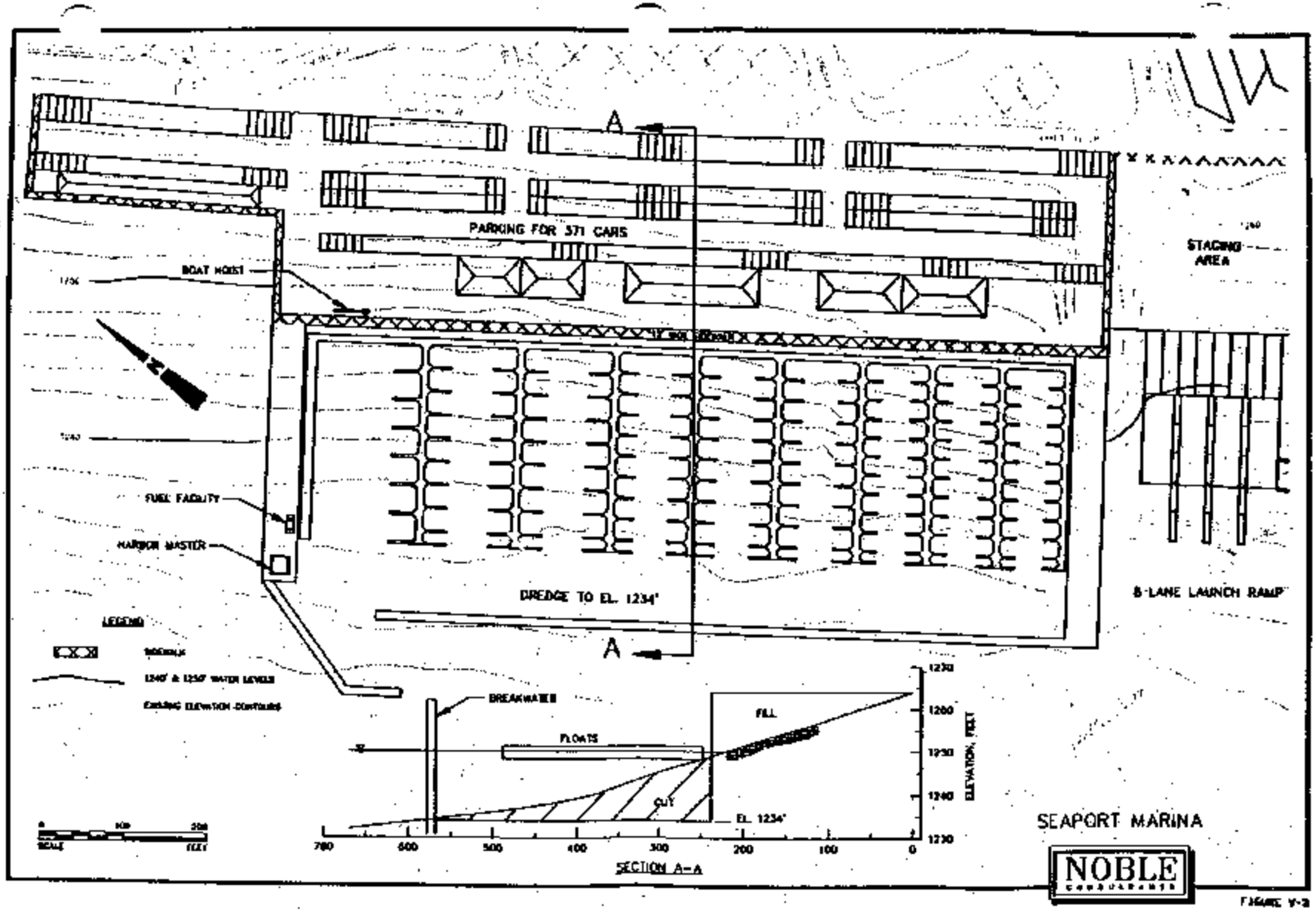
FIGURE V-1



SEAPORT IMPROVEMENTS

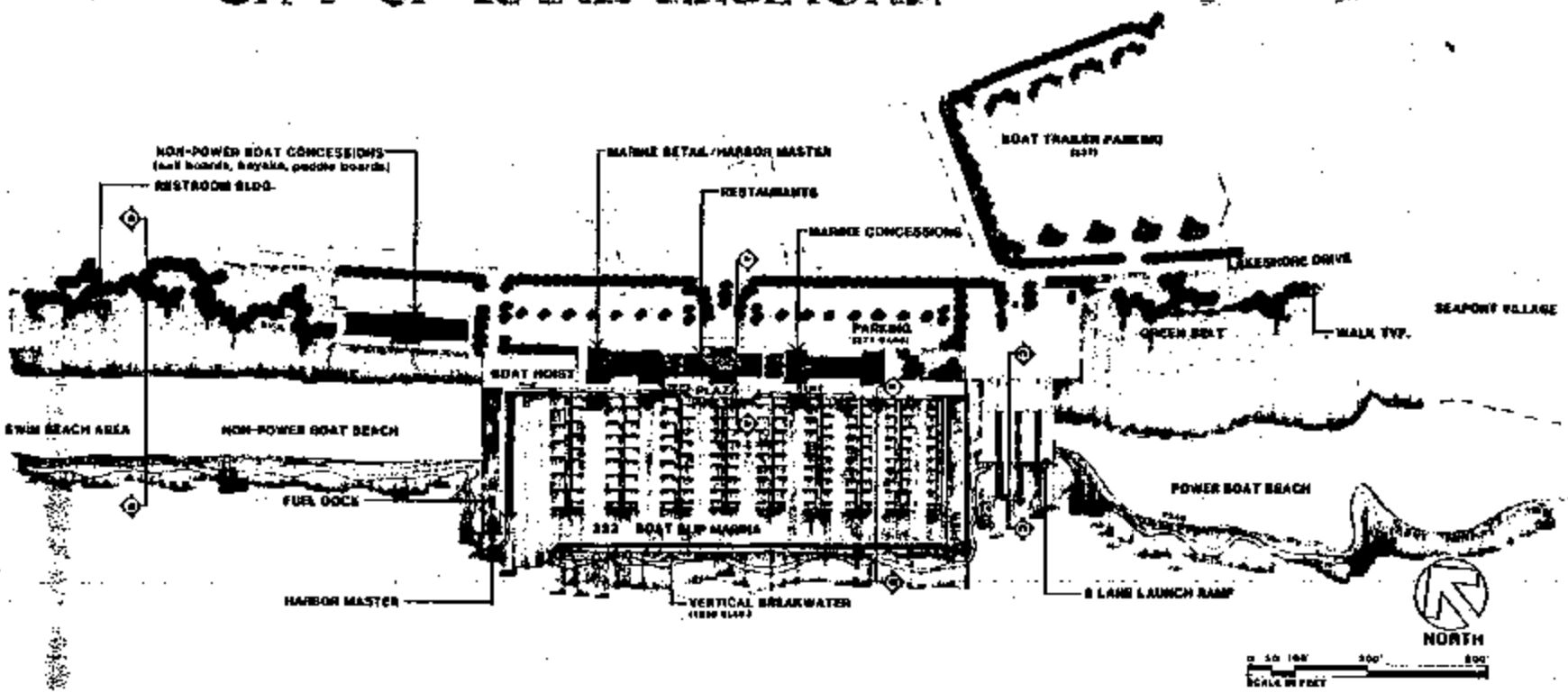
NOBLE CONSULTANTS

FIGURE V-2


PARKING FOR 371 CARS
BOAT HOIST
STAGING AREA
FUEL FACILITY
HARBOR MASTER
DREDGE TO EL. 1234'
8-LANE LAUNCH RAMP
LEGEND
BREAKWATER
FLOATS
FILL
CUT
EL. 1234'
ELEVATION, FEET
SECTION A-A
SEAPORT MARINA
NOBLE

SEAPORT MARINA

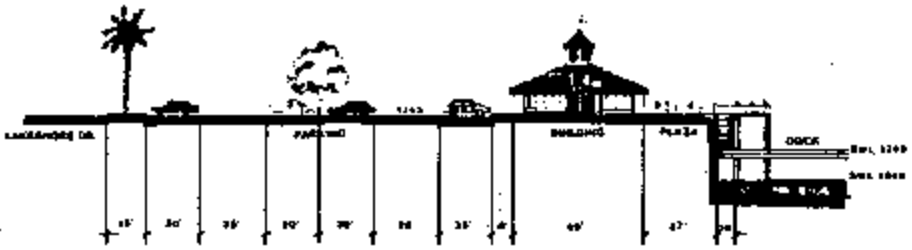
CITY OF LAKE ELSINORE



NOBLE

FIGURE V-4

SEAPORT MARINA



SECTION AA

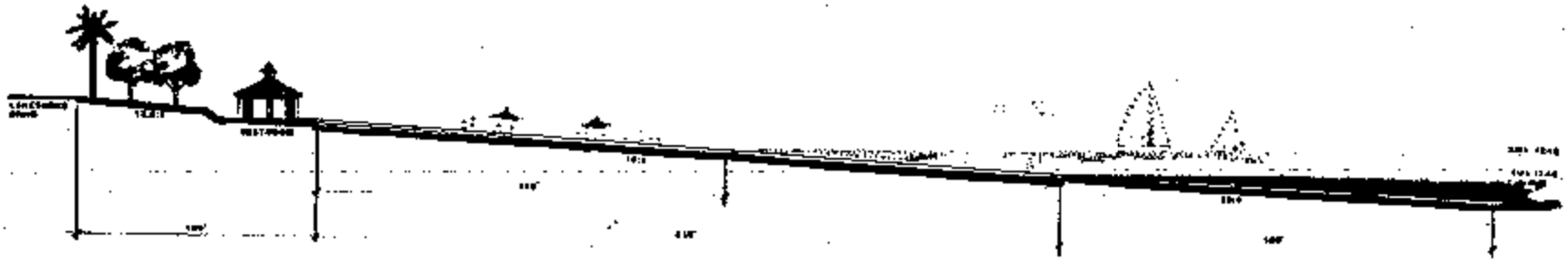
SECTION BB

NOBLE

FIGURE V-6

SEAPORT MARINA

SECTION CC



SECTION DD

NOBLE

FIGURE V-6

- Boat beach (350 LF)
- Six- to eight-lane boat launch facility (250 LF) and boat trailer/car parking for 237 vehicles
- 322 boat slip marina (1,000 LF)
- Marina parking for 371 cars
- Boat hoist/fuel dock
- Restaurant (8,000 SF)
- Marine concessions and retail facilities (17,500 SF)
  - Excursion boats
  - Party fishing boats
  - Para sailing
  - Boat rentals & charters
  - Marine hardware and supplies
  - Bait and tackle shop
  - Snack shop
  - Restroom/shower facilities
  - Storage lockers
  - Marina manager office and maintenance space
  - Harbor master/patrol headquarters
  - Lifeguard headquarters
  - Potential boat repair yard
- Non-power boat beach (700 LF)
  - Non-power boat concessions (6,250 SF) (sailboards, kayaks, paddle boards)
- Swimming beach (700 LF)

1.3 Boat Beach (1,000 LF)

This beach shoreline area, as located in Figure V-1, would remain essentially in its existing condition along the beach face with some minor cleanup/grading, while the backshore area would be improved with the linear greenbelt walkway.

1.4 Fishing Beach and Pier (1,000 LF)

This fishing beach would remain essentially in its existing condition, with the additional

improvements shown in Figure V-7 and itemized below. Additional offsite parking could be provided, if necessary.

- 515-foot-long pier (8,080 SF)
- Parking for 180 cars
- Bait/food kiosk at foot of pier
- Restroom at foot of pier

1.5 Boat Beach (4,500 LF)

The remaining 4,500 lineal feet of shoreline along Lakeshore Drive would be used and improved as a boat beach similar to the boat beach described under 1.3, "Boat Beach (1,000 LF)".

2. RIVERSIDE DRIVE AREA

The lakefront shoreline along Riverside Drive, between Lakeshore Drive and Grand Avenue, has a relatively flat topography and contains primarily recreational vehicle camping, campgrounds and mobile home park uses. This entire stretch of shoreline is privately owned except for the City Park campground area located within the central portion of this shoreline. Over the years, the developed areas along Riverside Drive have been the most extensively utilized shoreline for mobile home living, recreational camping, beach front facilities, and the launching and docking of boats for use on the lake.

The proposed lakefront improvements for this area are identified in Figure V-8. These recommended improvements will enhance the existing waterfront recreation uses at the existing Elsinore West Marina R.V. Park and Campground, and the City Park Campground facilities.

2.1 City Marine R.V Park (~2,000 LF & 84 Acres)

This facility has been operated by a concessionaire since 1964, and when fully operated it included a 340 unit campground, two combination buildings, 18 group camp areas, a ten-lane boat launch ramp, 300 car/boat trailer parking spaces, three day use areas, a trailer sanitation station, entrance station, fencing and landscaping. Since about one-half of this

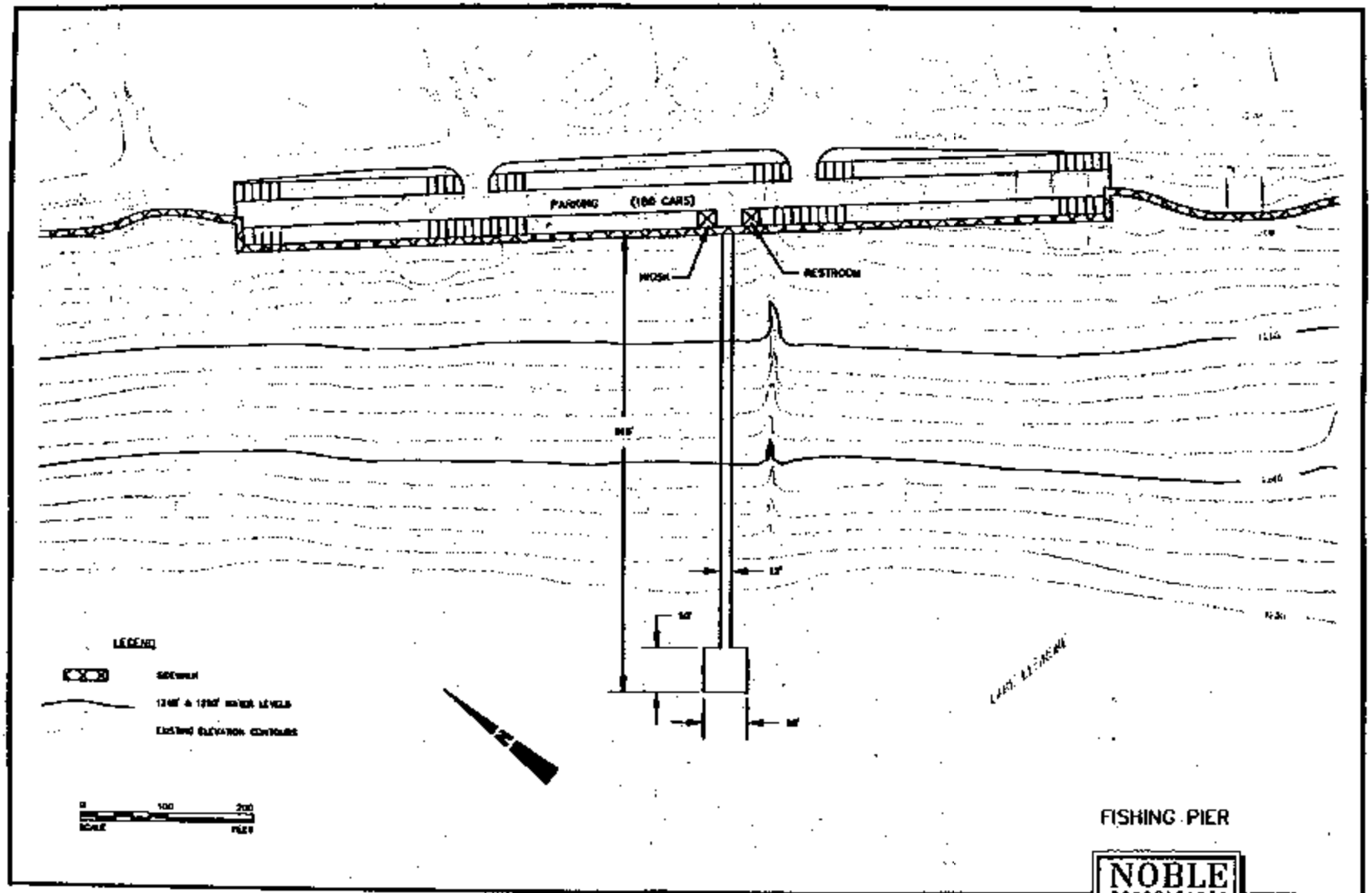

PARKING (100 CARS)
WASH
RESTROOM
LEGEND
SCALE
FEET
FISHING PIER
NOBLE CONSULTANTS

FIGURE V-7

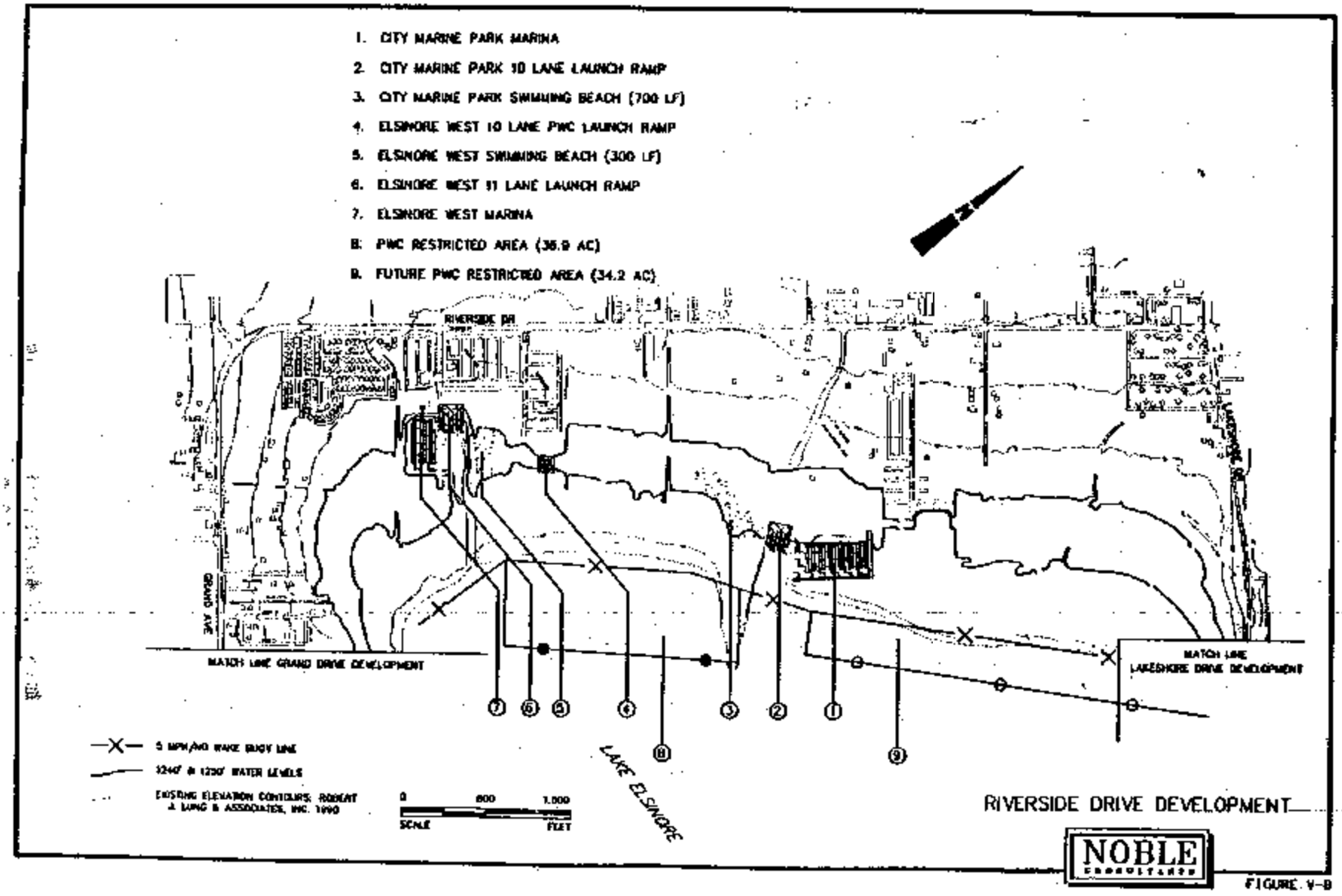

1. CITY MARINE PARK MARINA
2. CITY MARINE PARK 10 LANE LAUNCH RAMP
3. CITY MARINE PARK SWIMMING BEACH (700 LF)
4. ELSINORE WEST 10 LANE PWC LAUNCH RAMP
5. ELSINORE WEST SWIMMING BEACH (300 LF)
6. ELSINORE WEST 11 LANE LAUNCH RAMP
7. ELSINORE WEST MARINA
8. PWC RESTRICTED AREA (36.9 AC)
9. FUTURE PWC RESTRICTED AREA (34.2 AC)
RIVERSIDE DR
GRAND AVE
MATCH LINE GRAND DRIVE DEVELOPMENT
MATCH LINE
LAKESHORE DRIVE DEVELOPMENT
LAKE ELSINORE
5 MPH/NO WAKE BUOY LINE
1240' & 1250' WATER LEVELS
EXISTING ELEVATION CONTOURS: ROBERT A. LONG & ASSOCIATES, INC. 1990
0
800
1,600
SCALE
FEET
RIVERSIDE DRIVE DEVELOPMENT
NOBLE
CONSULTANTS

FIGURE V-8

facility is below elevation 1,256 feet, a significant number of camp sites have been rendered unusable during the past year's high water levels. Most of these sites still remain unusable with the water level currently at approximately the 1,253-foot elevation. In addition, since the top of the existing boat launch ramp is at elevation 1,240 feet and the existing beach berm areas are below 1,240 feet, these facilities will remain unusable during normal operating lake levels of 1,240 to 1,249 feet.

The proposed improvements, as illustrated in Figure V-9, include raising the site's grade to 1,255 feet, raising the top of the existing boat launch ramp to 1,255 feet, and developing a swimming beach area, car parking area and boat trailer/car parking area. Eventually, when justified, a marina basin for 257 boat slips could be developed as illustrated in Figure V-9. The landward side of this marina basin could be constructed using a rock revetted slope, while the lakeward two sides could be constructed using vertical sheet piles similar to the proposed Seaport Marina. Figure V-10 presents a plan view of the City Marine Park with improvements for the following facilities:

- RV park and campground sites
- Future 257 boat slip marina
- Future 10-lane launch ramp
- Future 700 LF swimming beach

2.2 Elsinore West R.V. Park (~1,600 LF & 52 Acres)

The Elsinore West Marina R.V. Park and Campground features two boat launch ramps, restroom/shower facilities, a community building, 300 R.V. sites with full service hook-ups, and fully landscaped grounds. The existing main 11-lane boat launch ramp is operational for lake water levels up to 1,254 feet, while the secondary 10-lane personal watercraft launch ramp is operational for lake water levels up to 1,250 feet. This R.V. Park and Campground facility is fully operational. The present owner has submitted expansion plans to add 200 R.V. sites, 63 boat slips, a fuel dock, a 2,000-square-foot swimming pool and an enlarged recreation area.

However, it is recommended that this site be improved by adding a swimming beach, a 148-boat slip marina, additional parking for 152 cars, a boat trailer/car parking area, and a potential dry boat storage area, as illustrated in Figure V-11, instead of the submitted

expansion plans.

The Elsinore West Park facilities identified below are further illustrated in the plan shown in Figure V-12:

- RV park (temporary and long-term)
- RV living facilities/amenities
- 148 boat slip marina
- 11-lane launch ramp
- 10-lane personal watercraft launch ramp
- Boat trailer parking
- Potential dry boat storage (300 boats)
- Swimming beach (300 LF)

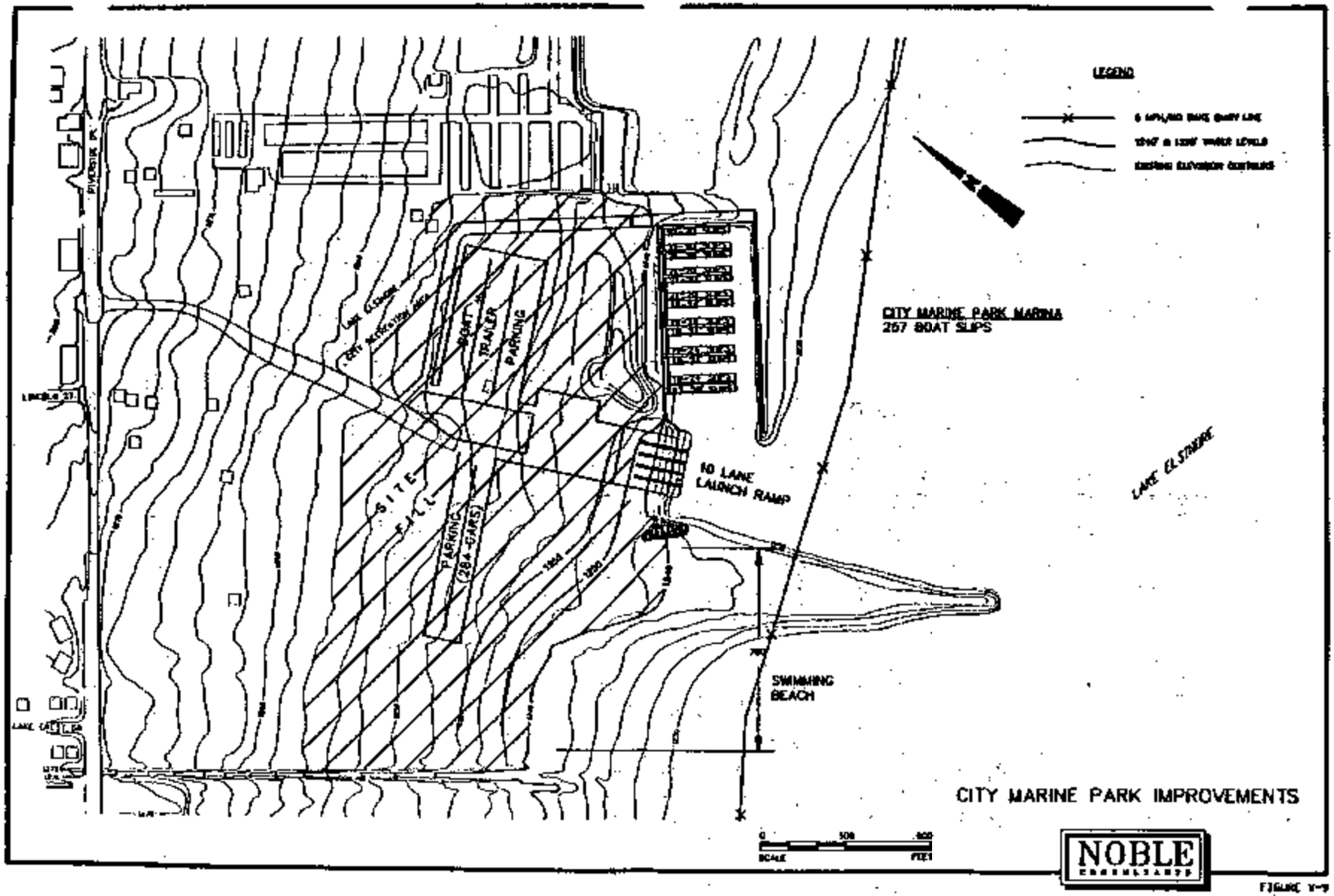
3. GRAND AVENUE AREA

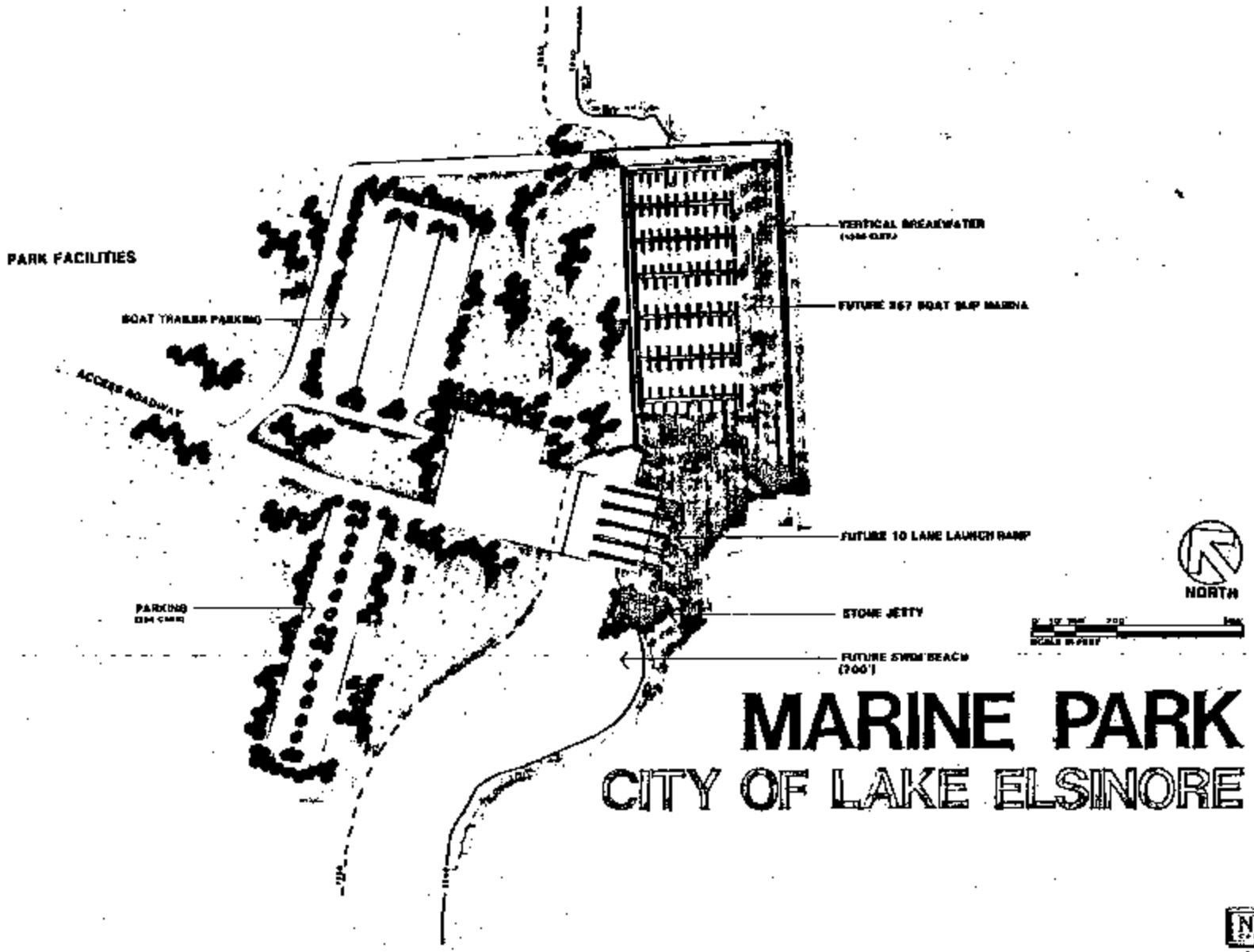
Grand Avenue, on the southwesterly side of the lake, consists primarily of private residential developments. A majority of this shoreline is within the County of Riverside boundaries, which includes three homeowners associations and four commercial developments. Three of the commercial properties are R.V. parks, while the fourth is a boat sales/repair facility. Limited public boat launching is available at these commercial facilities. The old military academy is located between the lakefront and Grand Avenue just within the City limits near the Riverside Drive end of Grand Avenue.

Due mainly to private residential properties and limited public lake access along Grand Avenue, the only proposed lakefront improvement is to the approximately 40-acre parcel of land consisting of the old Military Academy and adjacent vacant land parcel, referred to as the Nautical Center in Figure V-13. In addition, a future personal watercraft restricted area and a lake fishing area are identified within the lake adjacent to the Grand Avenue shoreline.

3.1 Nautical Center (1,300 LF & 41 Acres)

This 40 plus acres of lakefront land and 1,300 lineal feet of shoreline could be developed into a multi-use recreational facility. Primary uses could consist of the following identified


LEGEND
CITY MARINE PARK MARINA
257 BOAT SLIPS
10 LANE
LAUNCH RAMP
BOAT
TRAILER
PARKING
SITE
FILL
PARKING
(284 CARS)
SWIMMING
BEACH
LAKE CLSTHERE
CITY MARINE PARK IMPROVEMENTS
NOBLE

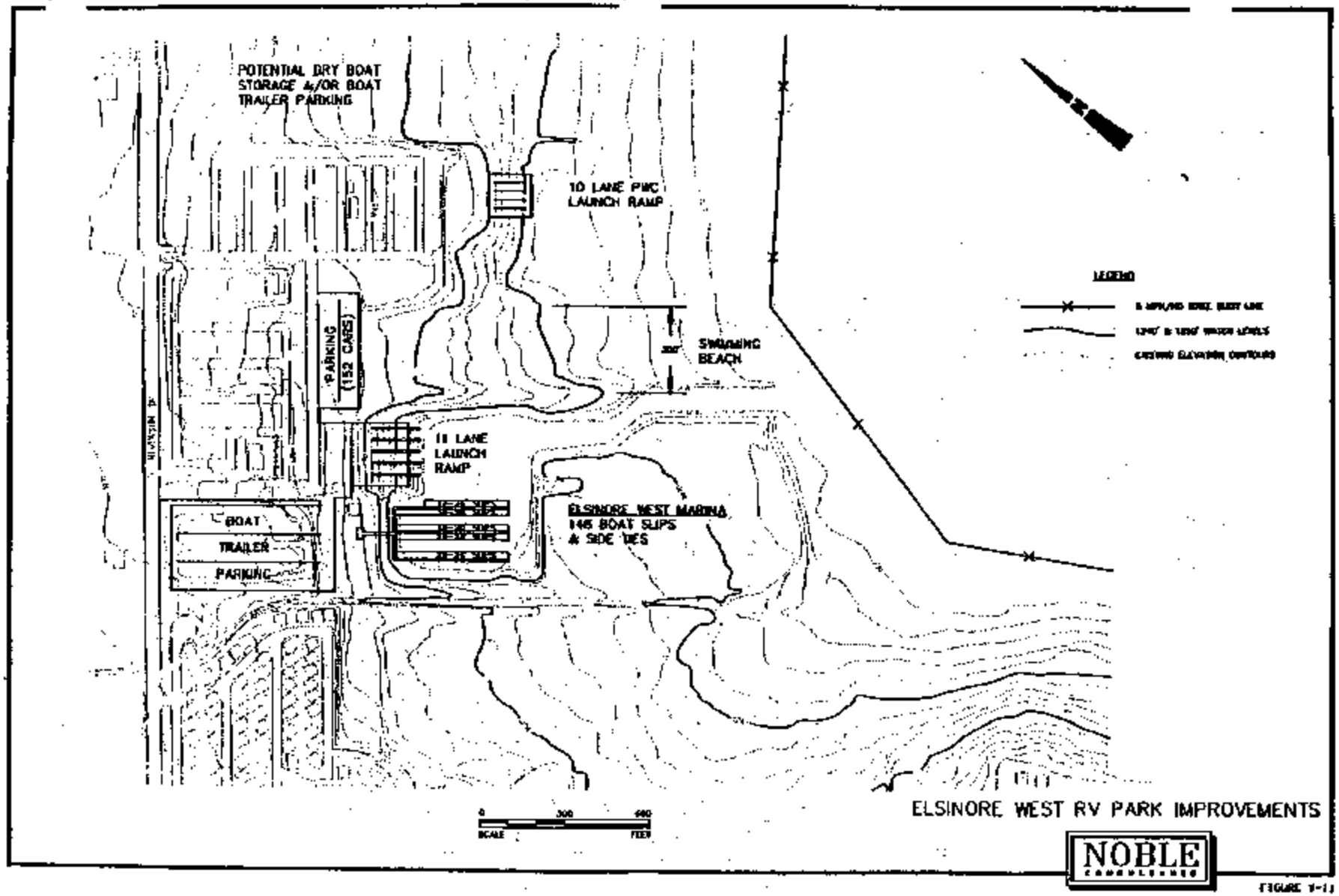


MARINE PARK

CITY OF LAKE ELSINORE

NOBLE

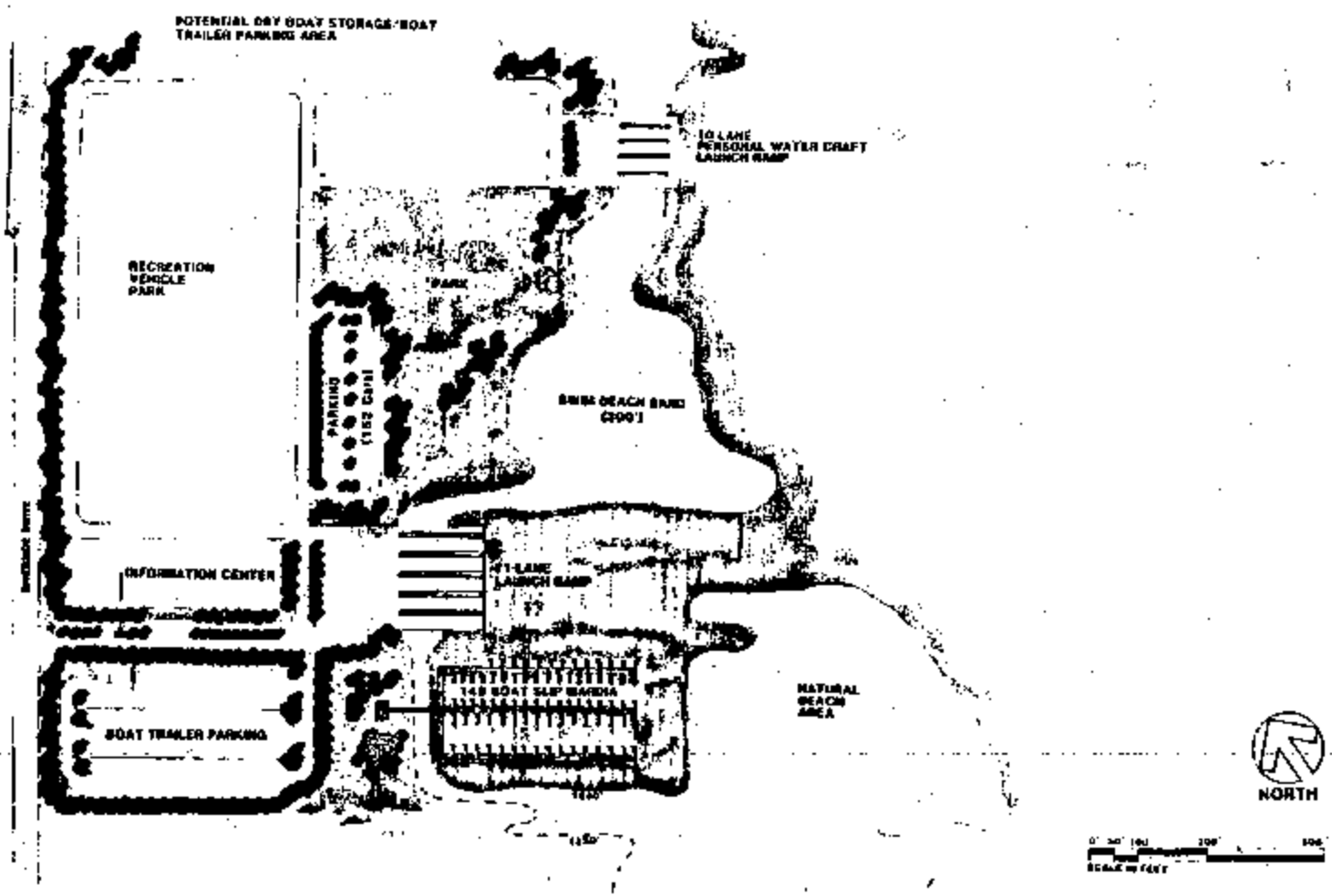
FIGURE V-10



ELSINORE WEST RV PARK IMPROVEMENTS

NOBLE CONSULTANTS

FIGURE V-1



ELSINORE WEST MARINA

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FIGURE V-12

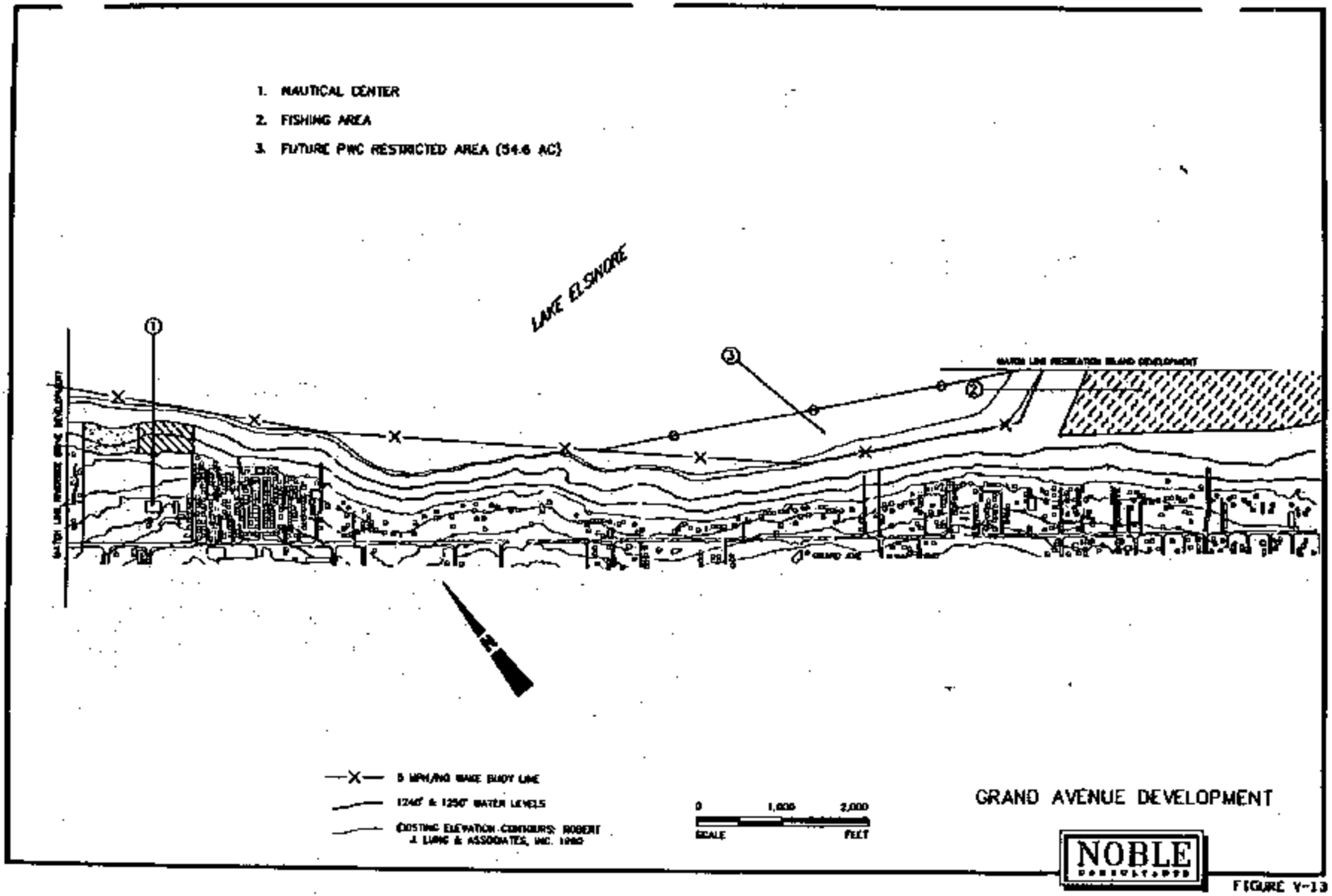

1. NAUTICAL CENTER
2. FISHING AREA
3. FUTURE PWC RESTRICTED AREA (54.6 AC)
LAKE ELSINORE
5 MPH/NO WAKE BUOY LINE
1240' & 1250' WATER LEVELS
EXISTING ELEVATION CONTOURS: ROBERT J. LUNG & ASSOCIATES, INC. 1980
0
1,000
2,000
SCALE
FEET
GRAND AVENUE DEVELOPMENT
NOBLE
CONSULTANTS

FIGURE V-13

facilities which would provide non-power boat lakefront facilities, a public swimming beach along Grand Avenue, a yacht brokerage/marine retail sales center, and a visitor's center for viewing marine related activities:

- Non-power boat beach (650 LF)
- Swimming beach (650 LF)
- Rowing club facilities
- Yacht club facilities
- Yacht brokerage/boat sales center
- Marine retail center
- Aquarium/marine museum

If feasible, the old Military Academy building could be converted into a marine museum/aquarium.

3.2 Fishing Zone (~250-350 Acres)

This area is located within the lake at the southeasterly end of Grand Avenue extending up to the levee and Recreation Island. During a lake water level of 1,240 feet, this area encompasses about 250 acres of water, while during a lake level of 1,250 feet it encompasses about 350 acres of water.

4. RECREATION ISLAND AREA (~50 ACRES)

The lake's southeastern boundary is defined by the earthen levee, which was constructed to elevation 1,265 feet. Towards the middle of this levee an operations island protrudes into the lake and connects to the levee by a causeway. This operations island supports three water wells which, when restored, will be capable of producing approximately 10,320 acre-feet per year of groundwater to help stabilize the lake's water level. A portion of the island was constructed to elevation 1,265 feet to protect the wells and provide access for maintenance.

The East Lake Specific Plan, which is a joint venture between Eastlake Community Builders and the City of Lake Elsinore, has proposed improving Operations Island to include parks, a marina and a world class destination resort. The existing island's perimeter

area above the 1,240 feet elevation contour is approximately 50 acres. The proposed improved island would contain approximately 40 acres constructed to the 1,265 feet elevation.

The proposed island, referred to as Recreation Island in this Master Plan Study, is fairly consistent with the East Lake Specific Plan. Figure V-14 indicates the proposed recreational uses for Recreation Island and the adjacent areas.

4.1 Levee Improvement

An earthen levee of approximately 17,800 lineal feet has been constructed to 1,265 feet extending from Rome Hill in a northerly direction to San Jacinto Channel and then in an easterly direction along the southern shoreline of San Jacinto Channel. Recommended improvements to the existing levee consist of a pedestrian walkway, landscaping, shade structures and benches along the top of the levee. These improvements would enhance the usage of this levee by the general public for strolling, picnicking and scenic viewing of the lake and its water activities.

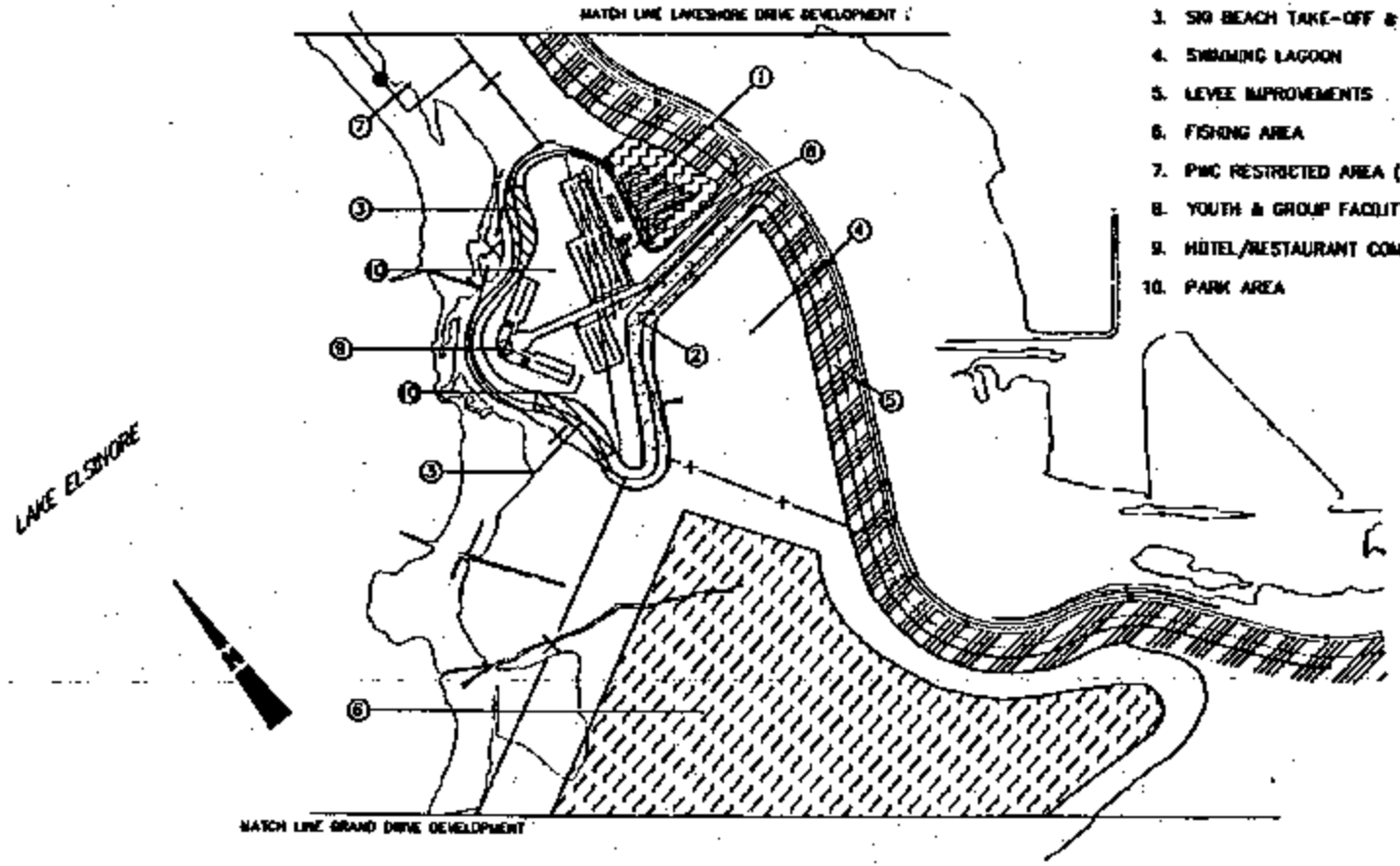
4.2 Fishing Zone (Listed Under Grand Avenue Area)

The fishing area partially shown in Figure V-14, as discussed in 3.2, "Fishing Zone", will encompass approximately 250 acres during a 1,240 feet lake level and 350 acres during a 1,250 feet lake level.

4.3 Marina Complex

Figure V-15 illustrates proposed improvements for Recreation Island, and Figure V-16 presents a conceptual plan of these improvements. A marina complex as located within these figures would consist of the following amenities:

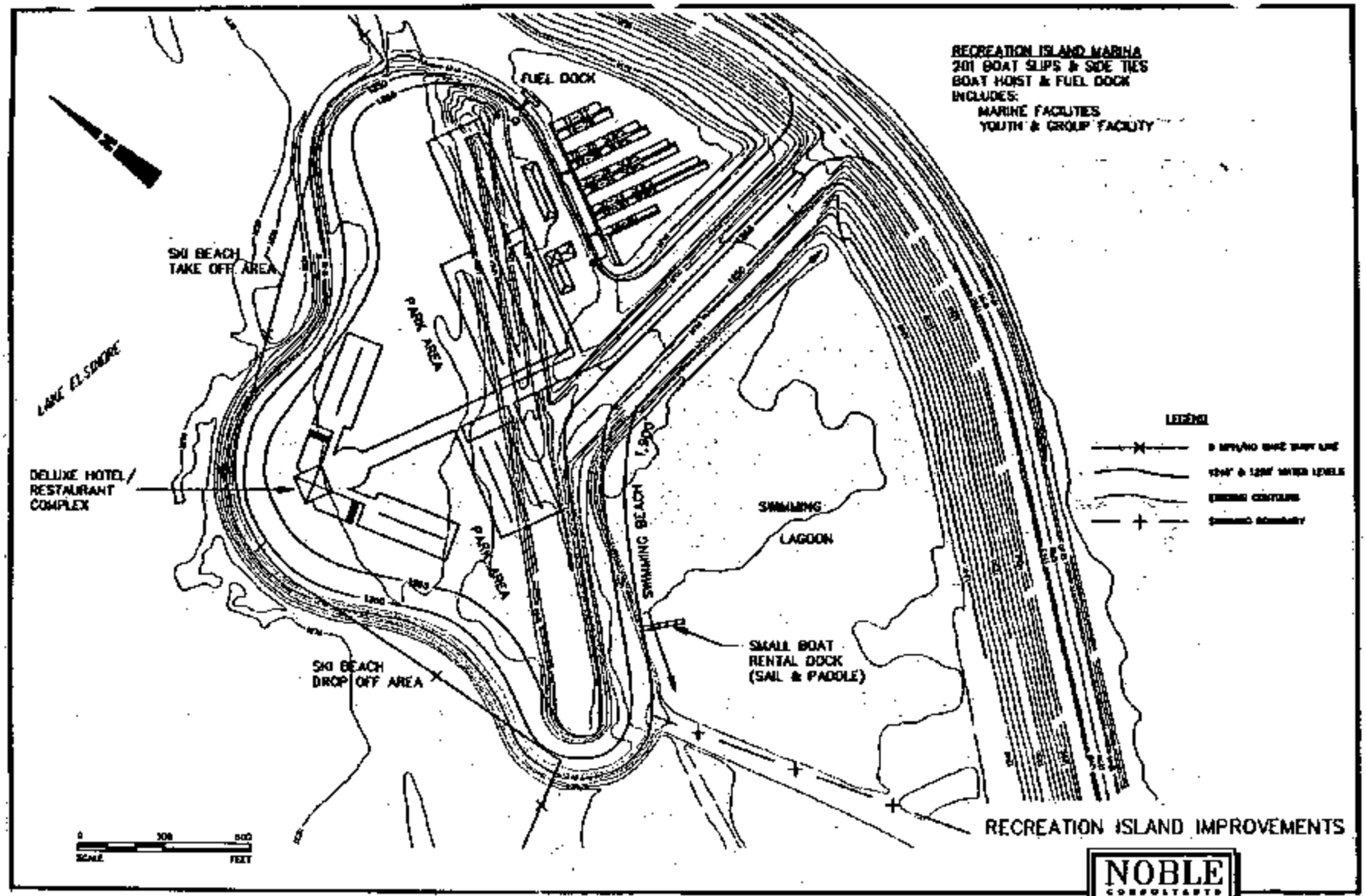
- 201 boat slips
- Boat hoist and fuel dock
- Youth and group facility (~ 1.75 Acres)
  - Building space of 10,000 square feet for administrative offices, maintenance, class rooms, conference room, parties, etc.



RECREATION ISLAND DEVELOPMENT

NOBLE CONSULTANTS

FIGURE V-14


RECREATION ISLAND MARINA
201 BOAT SLIPS & SIDE TIES
BOAT HOIST & FUEL DOCK
INCLUDES:
MARINE FACILITIES
YOUTH & GROUP FACILITY
FUEL DOCK
SKI BEACH TAKE OFF AREA
PARK AREA
LAKE ELSINORE
DELUXE HOTEL/ RESTAURANT COMPLEX
SWIMMING BEACH
SWIMMING LAGOON
SMALL BOAT RENTAL DOCK (SAIL & PADDLE)
SKI BEACH DROP OFF AREA
LEGEND
RECREATION ISLAND IMPROVEMENTS
NOBLE CONSULTANTS

RECREATION ISLAND

CITY OF LAKE ELSINORE

NOBLE

FIGURE V-14

- Building shed of 2,000 square feet for storage of small boats and equipment
- Large outside open area including boat hoist for training classes, etc.
- Facility is for public programs for youth and adults, for sailing lessons and events, basic boating, rowing/canoeing, marine safety education, aqua camps, etc. Also, available for rental by other groups. Such organizations as Boy Scouts, Girl Scouts and Coast Guard Auxiliary would use facility for public instruction, racing and recreation.

- Marine facilities and concessions building (10,000 SF)
  - Restrooms/showers
  - Lockers
  - Snack shop
  - Marine hardware/bait shop
  - Marina manager office/maintenance space
  - Park storage (equipment/maintenance)
  - Para sail concession
  - Boat rentals and charters
  - Excursion boats
  - Party fishing boats

The existing natural basin where the marina is located should require no dredging and no exterior protection. A rock revetted shoreline is proposed along the island side of the marina. Figure V-17 shows an elevation section through the revetted shoreline area. The conceptual marina design illustrated in Figure V-16 will berth 201 boats ranging in length from 20 to 32 feet. The fuel dock facility is located at the marina's entrance while the building for housing marine facilities and concessions is located directly behind the marina.

The youth and group facility is located at the southern end of the marina complex. This facility includes 1.75 acres of land with 10,000 square feet of building space, 2,000 square feet of storage shed, a boat hoist and boat slips available within the marina. It is proposed that this facility be patterned after the highly successful County of Orange youth and group facility located in Dana Point Harbor. This facility is dedicated to the promotion of boating, sailing and safety around the water, with numerous organizations using the facility for public instruction, racing and recreation. Their facility offers public programs for

youths and adults, with activities including basic boating, rowing, canoeing, sailing, surfing, windsurfing, competitive sailing events, marine safety education, aqua camps and tidepool walks. Educational and recreational programs of a broader nature are also offered. In addition, the public buildings are also available to rent for family gatherings or business conferences.

4.4 Swimming Lagoon (~50 Acres)

The swimming lagoon, as identified in Figures V-15 and V-16, would encompass about 50 acres of shallow water and include a 1,900 lineal feet swimming beach, a small boat rental concession with a floating dock for small sail and paddle boats, a food kiosk, restroom/shower facilities and lifeguard towers. The swimming beach would be ideally suited for families to enjoy beach and water activities, and would be capable of handling 2,300 beach-goers during a high lake level of 1,249 feet. There would be about 6.5 acres of beach down to the 1,245 feet elevation. Figure V-17 shows a typical elevation section view of this swimming beach area.

The swimming lagoon area is patterned after the highly successful Newport Dunes swimming lagoon in Newport Beach. Since the lagoon is fairly shallow and self-contained, a mechanical aeration, circulation, and/or oxygenation system could be installed along the lagoon's bottom to enhance overall water quality.

4.5 Park Facilities

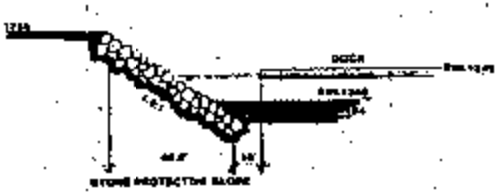
The public park area, shown in Figures V-15 and V-16, represent about 15 acres of space. This area would be fully turfed and landscaped, and include restroom facilities, benches and shade structures.

4.6 Hotel/Restaurant Complex

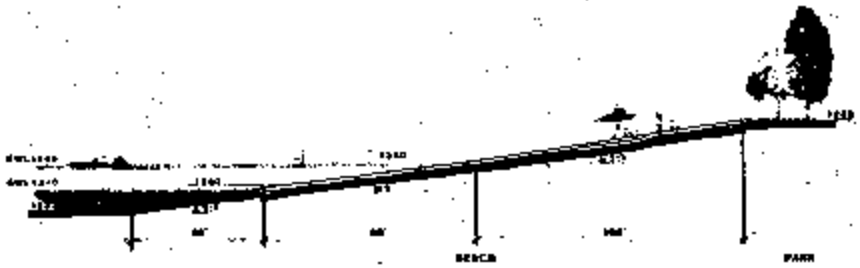
The hotel/restaurant complex shown in Figures V-15 and V-16 is proposed as a world class destination resort. This complex encompasses about 6.6 acres of land, however, hotel visitors would have walking access to all other recreation activities shown on Recreation Island, including the marine concessions located within the marina complex. In addition, hotel conventions could arrange for special boating programs funnelled through the youth

RECREATION ISLAND

SECTION EE



SECTION GG



SECTION FF

NOBLE

FIGURE V-17

and group facility. This hotel complex would also be an ideal facility for accommodating special events participants and spectators, for special events taking place either on the lake or in the channel.

4.7 Water Ski Beaches

To either side of the hotel/restaurant complex, as shown in Figures V-15 and V-16, are two lakeside beaches designated as take-off and drop-off areas for water-skiers. The take-off beach is 600 lineal feet while the drop-off beach is 700 lineal feet in length. Figure V-17 shows a typical elevation section of these beach areas.

5. SAN JACINTO CHANNEL AREA (~150 ACRES)

Improvements proposed for the development of San Jacinto Channel are identified in Figure V-18. These include a public swimming beach, a water ski concession channel, a special events channel and improvements to the existing levee.

5.1 Water Ski Concession Channel

Currently, San Jacinto Channel is utilized by Jackie Nanette's water ski school. Since her water ski school concession started in early May 1993, she has been steadily booked and would like to expand her operations to handle three simultaneous sessions. The San Jacinto Channel can be divided into three segments by installing floating breakwaters across the channel as illustrated in Figure V-18. These breakwaters, if properly designed, will absorb a majority of the wave energy transmitted from the ski boat wakes or from short period wind waves within each segmented area. Therefore, there should be relatively minimum interference from the ski boats in the adjacent segment.

Since these floating breakwaters are anchored in place, they can be moved or relocated rather easily to allow for an open special events channel or to reconfigure the segmented channel areas. Appendix E presents detailed design and cost information for the construction and installation of one recommended type of floating breakwater.

5.2 Special Events Channel

The San Jacinto Channel has the potential to be developed into a first class special events channel for powered boat races (boat drags and circle boat races), rowing shells, water ski competition and personal watercraft competition. This channel provides a long narrow body of water that can easily be made secure from recreational boaters, and can provide excellent spectator viewing. Improvements required are illustrated in Figure V-19. Once the water level drops below the 1,255-foot elevation, the channel will require widening to use it as a special events channel. This channel will also require widening to continue its use as a water ski concession channel once the water level drops below the 1,250-foot elevation. Figure V-19 illustrates where this channel needs widening along its northern shoreline. Recommended new 1,236, 1,240, 1,250 and 1,260 feet contour lines are presented in this figure. Figure V-20 presents two elevation sections through the widened channel to illustrate areas of channel cut and fill along the backshore side. It is expected that the cut and fill requirements would be balanced.

Figure V-19 also shows channel race mark layouts, judge's stand location, temporary pit area and launch ramp locations. An eight-lane launch ramp is preferable for the main ramp while a secondary two-lane ramp would be beneficial for taking out the drag boats at the end of the drag boat run out area. The primary eight-lane launch ramp could be used as a public boat launch facility, except when special events are held. The western most floating breakwater shown in Figure V-18 could be relocated to the east side of the launch ramp to allow for the ramp's use as a public launch facility. The two-lane ramp could then be utilized by the water ski school concessionaire. Figure V-21 presents a conceptual layout of the water ski concession/special events channel and shoreside facilities.

5.3 Swimming Beach Facility (2,300 LF)

The northern shoreline of the San Jacinto Channel also is a suitable location for a 2,300-lineal-foot swimming beach, as shown in Figure V-19. During the widening of this channel, a 12:1 (horizontal:vertical) beach slope could be constructed from elevation 1,236 feet to 1,260 feet, as shown in Figure V-20. Imported beach sand would be used for the upper two feet of this beach face. It is recommended that the backshore area, that presently exists below elevation 1,260 feet, be backfilled and graded to 1,260 feet using cut material from the channel widening operation. This backshore area could then be developed and

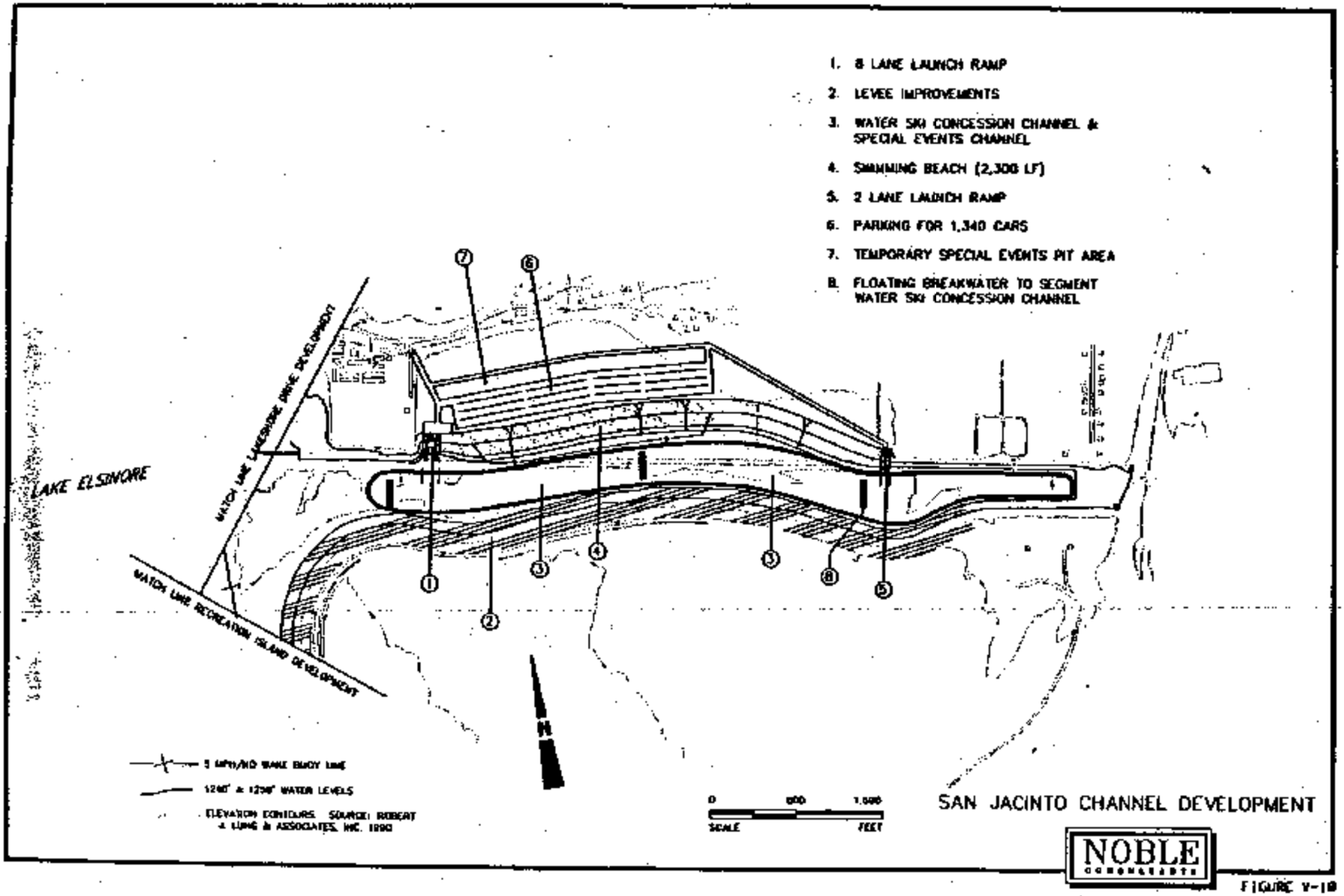
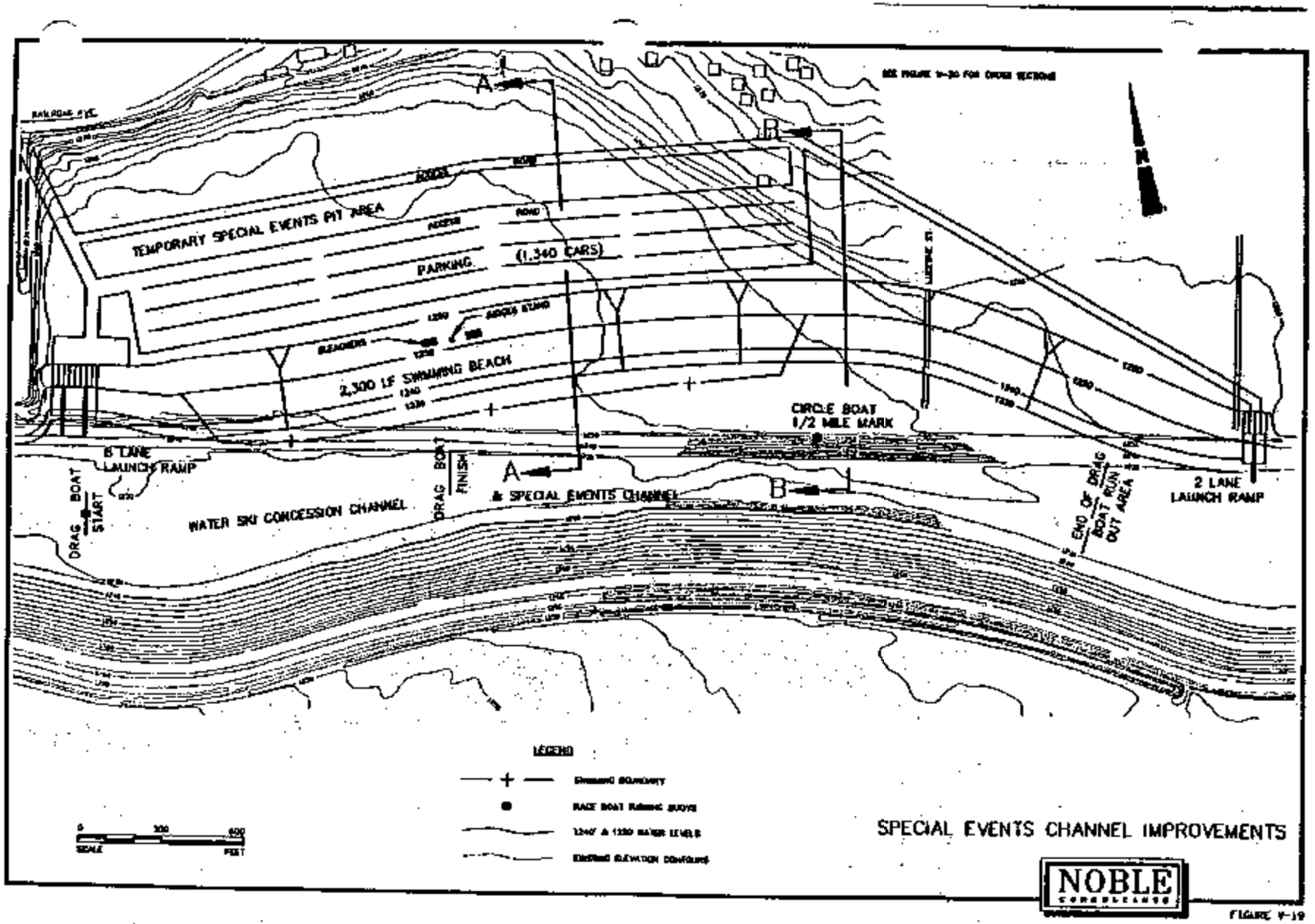

1. 8 LANE LAUNCH RAMP
2. LEVEE IMPROVEMENTS
3. WATER SKI CONCESSION CHANNEL & SPECIAL EVENTS CHANNEL
4. SWIMMING BEACH (2,300 LF)
5. 2 LANE LAUNCH RAMP
6. PARKING FOR 1,340 CARS
7. TEMPORARY SPECIAL EVENTS PIT AREA
8. FLOATING BREAKWATER TO SEGMENT WATER SKI CONCESSION CHANNEL
LAKE ELSINORE
WATER LINE LAKESHORE DRIVE DEVELOPMENT
WATER LINE RECREATION ISLAND DEVELOPMENT
5 MPH/NO WAKE BUOY LINE
1240' & 1236' WATER LEVELS
ELEVATION CONTOURS SOURCE: ROBERT A. LONG & ASSOCIATES, INC. 1990
0
600
1,200
SCALE
FEET
SAN JACINTO CHANNEL DEVELOPMENT
NOBLE CONSULTANTS

FIGURE V-10



SPECIAL EVENTS CHANNEL IMPROVEMENTS

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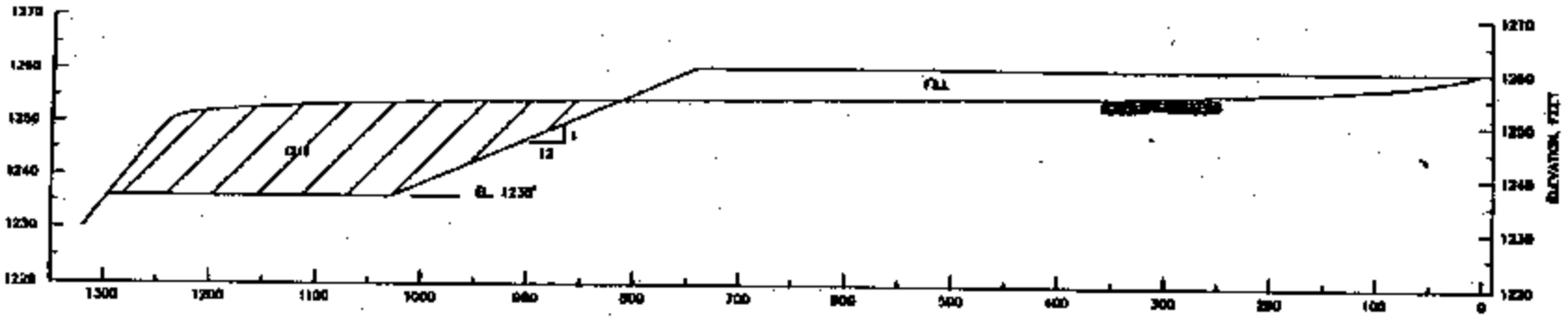
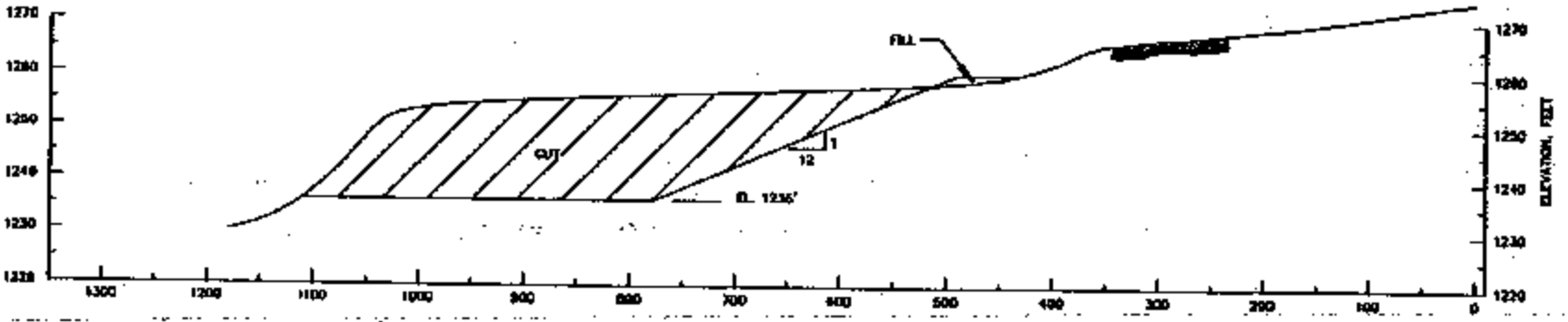
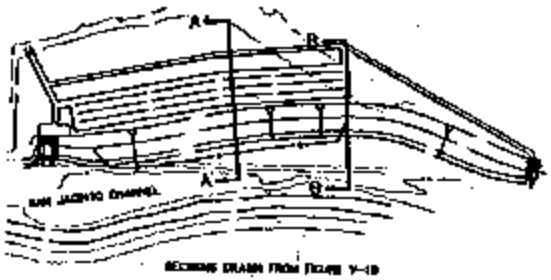
FIGURE V-19



SECTION A-A



SECTION B-B



SPECIAL EVENTS CHANNEL CROSS SECTIONS

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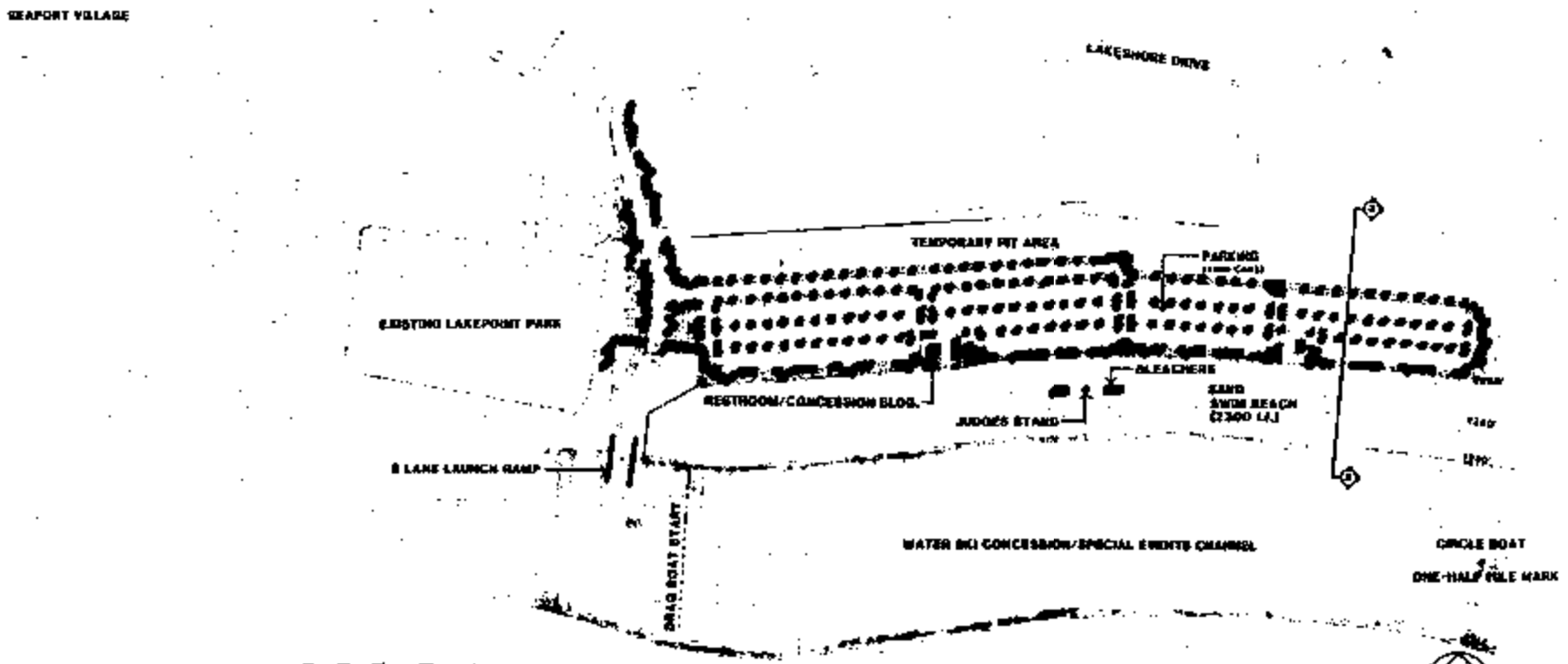
FIGURE V-20



WATER SKI/ RACE EVENT CHANNEL

NOBLE

FIGURE V-21

landscaped, and include restroom/food concession buildings and parking for 1,340 cars, as shown in Figure V-21. If additional parking is eventually required for either the public swimming beach or the special events, either offsite parking or the adjacent land area could be utilized.

During special events the swimming beach area would be utilized as a spectator viewing area; however, during the remainder of the beach season (approximately from May 1 through September 17), this area would be used as a public swimming beach. The swimming/water boundary would be buoyed 100 feet from the shoreline to separate it from the water ski school concession channel. Small waves generated by the water ski boat's wake would propagate towards the shoreline, but these small waves should not interfere with the swimming beach activities. Six lifeguard towers are recommended for the 2,300 lineal feet of beach. Figure V-22 presents a typical elevation section view through the swimming beach, parking and temporary special events pit area. Since the channel area is relatively narrow and shallow, the water quality could be enhanced within the swimming beach channel zone by the installation of oxygenation, circulation and/or aeration systems.

5.4 Levee Improvement (Listed under Recreation Island Area)

Improvements to the existing earthen levee along the channel's southern side would consist of a pedestrian walkway, landscaping, benches and shade structures as previously described under 4.1, "Levee Improvement".

6. LAKE MANAGEMENT

Lake management consist of the operation and maintenance of the entire lake, and of the public areas of the lake's shoreline improvements. This includes the ranger patrol required to maintain safe recreational boating activities throughout the lake. The ranger patrol will oversee the installation and maintenance of all lake buoys designating various speed zones, operating zones and channels. They will also patrol the lake to enforce the established rules and regulations, and to provide assistance to boaters in need. Lake management will also include lifeguard service for the lake and for supervising the lifeguards at public swimming beaches. Other operating and maintenance staff will be provided as required for public facilities.

6.1 Five Miles Per Hour/No Wake Zone

There is a perimeter five miles per hour/no wake buoy line extending around the lake. All boating activity within this shoreline water zone is to be travelling at five miles per hour or less in order to generate no boat wake.

6.2 Designated High Speed Boat Zone

There is a designated restricted area for high speed boats operating above 40 miles per hour in the central portion of the lake. This area measures 800 feet wide by 3,500 feet long and is divided down the center for counter clockwise boat movement.

6.3 Designated Personal Watercraft Zone

There are two designated restricted personal watercraft zones, one of 36.9 acres in the west corner of the lake and the other of 38.8 acres in the east corner of the lake. Both of these locations are close to either existing or proposed boat launch ramp facilities. If required, there are two additional identified restricted personal watercraft zones, one of 34.2 acres in the north corner of the lake, and the other of 54.6 acres in the south corner of the lake.

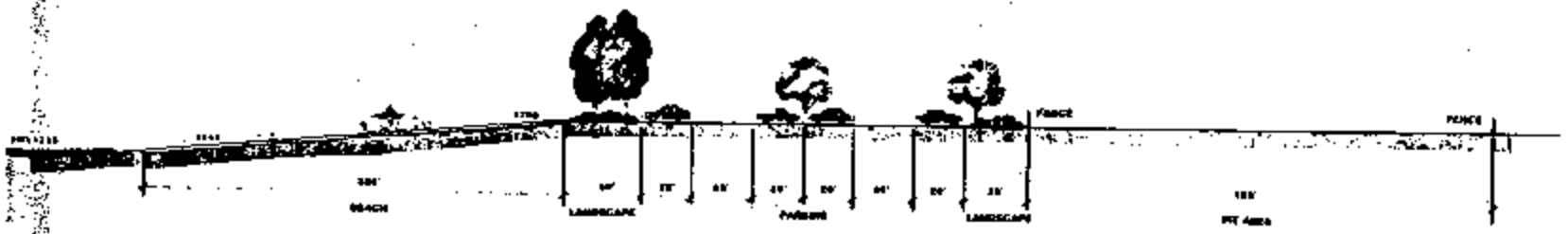
6.4 Designated Fishing Zone

The designated fishing zone is located in the southern corner of the lake, and varies in water area from 250 to 350 acres for respective lake water levels of 1,240 to 1,250 feet. This area is not restricted to fishing only. Other boaters may enter this area as long as they maintain the under five miles per hour/no wake requirements. In addition, 1,000 lineal feet of fishing beach plus an 8,000-square-foot fishing pier are identified along Lakeshore Drive.

6.5 Designated Swimming and Boat Beaches

Several designated swimming beaches have been identified around the lake's perimeter. These areas, if all developed, will total 6,550 lineal feet of beach. In comparison, there is 5,850 lineal feet of boat beach and 1,350 lineal feet of non-power boat beach identified around the lake.

WATER SKI/ RACE EVENT CHANNEL



SECTION HH

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FIGURE V-22

6.6 Designated Special Events/Water Ski Concession Channel

As fully described under 5.1, "Water Ski Concession" and 5.2, "Special Events Channel", the San Jacinto Channel area has been designated a joint special events/water ski concession channel.

VI. ECONOMIC FEASIBILITY

1. IMPACT ON CURRENT CONCESSION

The lakefront development plan to promote the optimization of water sport activities in and around the lake's perimeter, which is recommended in this Master Plan Study, should have no negative impact on the current concession (Lake Elsinore Recreation Area Incorporated) at the City Park. Once the lake level has been stabilized, the water quality addressed, and the recommended lakefront improvements implemented, there should be ample recreational lake and lakefront capacity to accommodate the recommended facilities presented in this plan. Due to the existing lake water levels, the new operating lake water levels (1,240 to 1,249 feet), and the existing City Park ground elevations, the Lake Elsinore Recreation Area Incorporated cannot use its existing boat launch ramp and has reduced its campground facilities available for use by the public.

Implementation of the proposed master plan lake development will accommodate a maximum of 1,560 user boats per day. This plan, which includes upgrade improvements to the City Park, will have a positive impact to the City Park concession. Presently, the City Park concession is based on a maximum of 600 user boats per day. However, with its existing lower ground elevations and top of launch ramp at elevation 1,240 feet, this facility cannot take advantage of the current maximum boat capacity. An improved City Park facility as recommended in this Master Plan, in combination with the proposed increase in boat capacity and lakefront development, would have positive impacts for generating a significant increase in operating revenue.

2. DEVELOPMENTAL COSTS

The construction costs to develop all lakefront facilities presented in this Master Plan have been estimated based on the conceptual plans presented in Section V, "Specific Lake Development Plan". These developmental costs are presented in Table VI-1, and show a detailed breakdown of construction work items, quantity, unit cost and total cost. These costs are in 1994 dollars and are only for construction. They do not include land acquisition, environmental report, archeology evaluation, geotechnical investigation, architectural and landscape design, engineering design, plan and specification preparation, permit application, and construction management and inspection costs. These costs are

TABLE VI-1
DEVELOPMENTAL COSTS

ITEM	QUANTITY	UNIT	UNIT COST	COST	SUBTOTAL
A. LAKESHORE DRIVE DEVELOPMENT					
1. Boat Trailer/Car Parking Area (225,000 SF)					
Earthwork (Grading)	225,000	SF	$0.25	$56,250	
A.C. Paving	225,000	SF	$1.65	$371,250	
Curbs	3,200	LF	$10.00	$32,000	
Site Lighting	225,000	SF	$0.50	$112,500	
Site Landscaping/Irrigation	34,000	SF	$3.50	$119,000	
Fencing	1,650	LF	$10.00	$19,500	
					$710,500
2. Boat Beach (350 LF)					
Earthwork (Cut)	4,570	CY	$5.50	$25,135	
Earthwork (Grading)	122,500	SF	$0.25	$30,625	
Sidewalk (8' wide)	2,800	SF	$2.50	$7,000	
Turf & Irrigation	88,000	SF	$2.50	$220,000	
Site Lighting		LS		$10,000	
Site Utilities		LS		$10,000	
					$302,760
3. Launch Ramp (6 Lanes) & Staging Areas					
Earthwork (Cut)	9,030	CY	$5.50	$53,165	
Earthwork (Cut & Fill, Insitu Soil)	5,060	CY	$7.50	$37,950	
Earthwork (Grading)	99,000	SF	$0.25	$23,750	
Reinforced Concrete Ramps (12' Base)	27,000	SF	$13.50	$381,000	
Floats (3@8'x60')	1,920	SF	$25.00	$48,000	
Float Anchor Systems	8	EA	$600.00	$1,800	
Float Landings	3	EA	$1,000.00	$3,000	
A. C. Paving	61,250	SF	$1.65	$101,063	
Water (Wash Down Area)		LS		$2,000	
Stripping		LS		$1,000	
Pay Booth	1	EA	$2,000.00	$2,000	
Restroom	500	SF	$120.00	$60,000	
Sidewalk (5' Wide)	2,000	SF	$2.50	$5,000	
Site Lighting		LS		$5,000	
Fencing	800	LF	$10.00	$8,000	
					$842,428
4. Seaport Marina (322 Boat Slips)					
Earthwork (Cut & Fill, Insitu Soil)	94,100	CY	$7.50	$460,750	
Earthwork (Fill, Insitu Soil W/ Bor)	3,400	CY	$4.00	$13,600	
Earthwork (Grading)	230,000	SF	$0.25	$57,500	
Bulkheading (50' Steel/Tied)	920	LF	$850.00	$782,000	
Bulkheading (30' Steel/Tied)	250	LF	$375.00	$93,750	
Breakwater (40' Wide with 80' Double Steel Sheets)	550	LF	$1,900.00	$1,040,000	
Breakwater (60' Concrete Sheets W/ Battered)	420	LF	$1,000.00	$320,000	
Breakwater (Entrance Protection)	220	LF	$1,000.00	$220,000	
Floating Docks (Concrete)	42,700	SF	$40.00	$1,708,000	
Guide Piles (Concrete)	51	EA	$1,500.00	$51,500	
Gangway (Handicap)	1	EA	$30,000.00	$30,000	
Gangway (Normal)	3	EA	$10,000.00	$30,000	
Boat Hoist (5 Tons)	1	EA	$20,000.00	$20,000	
Sidewalk/Walkways (12' Wide)	12,000	SF	$2.50	$30,000	
Sidewalk (8' Wide)	19,840	SF	$2.50	$50,600	
Benches etc.		LS		$50,000	
A. C. Paving (Parking Areas)	137,000	SF	$1.65	$226,050	
Curbs	3,100	LF	$10.00	$31,000	
Restroom/Shower Building	1,000	SF	$120.00	$120,000	
Restroom	500	SF	$120.00	$60,000	
Restaurant (s)	5,000	SF	$90.00	$450,000	
Retail Building (s)	7,500	SF	$60.00	$450,000	
Concession Building (s)	7,500	SF	$60.00	$450,000	
Fuel Facility	1	EA	$50,000.00	$50,000	
Harbor Master Building	800	SF	$100.00	$80,000	
Site Landscaping/Irrigation	88,200	SF	$3.50	$231,700	
Site Lighting	180,000	SF	$0.50	$60,000	
Site Utilities		LS		$30,000	
					$7,772,550

TABLE VI-1
DEVELOPMENTAL COSTS
(CONTINUED)

ITEM	QUANTITY	UNIT	UNIT COST		SUBTOTAL
5. Non-Power Boat Concession Beach (700 LF)					
Earthwork (Cut & Fill, Insitu Soil)	8,300	CY	$7.50	$62,250	
Earthwork (Cut)	10,600	CY	$5.50	$58,300	
Imported Beach Sand (2' Thick From El. 1,237 to 1,239)	18,900	CY	$15.00	$283,500	
Earthwork (Grading)	280,000	SF	$0.25	$70,000	
Sidewalk (8' Wide)	9,040	SF	$2.50	$22,600	
Retaining Wall	300	LF	$50.00	$15,000	
A.C. Paving (Parking Area)	59,000	SF	$1.65	$94,350	
Curbs	915	LF	$10.00	$9,150	
Turf & Irrigation	90,000	SF	$2.50	$225,000	
Benches etc.		LS		$15,000	
Restroom	500	SF	$120.00	$60,000	
Concession Building (4)	6,750	SF	$50.00	$344,000	
Site Lighting	39,000	SF	$0.50	$19,500	
Site Utilities		LS		$15,000	
					$1,286,650
6. Swimming Beach (700 LF)					
Earthwork (Cut)	16,700	CY	$5.50	$91,850	
Imported Beach Sand (2' Thick From El. 1,237 to 1,239)	18,700	CY	$15.00	$280,500	
Earthwork (Grading)	310,000	SF	$0.25	$78,750	
Sidewalk (8' Wide)	5,600	SF	$2.50	$14,000	
Walkways (5' Wide)	5,600	SF	$2.50	$14,000	
Turf & Irrigation	105,000	SF	$2.50	$262,500	
Shade Structures/Benches/Picnic Tables		LS		$50,000	
Restroom w/ Dressing Rooms & Outside Shower	1,000	SF	$120.00	$120,000	
Drinking Fountain	2	EA	$2,000.00	$4,000	
Life Guard Towers	2	EA	$10,000.00	$20,000	
Site Lighting		LS		$10,000	
Site Utilities		LS		$15,000	
					$990,500
7. Boat Beach (1,000 LF)					
Earthwork (Grading)	400,000	SF	$0.25	$100,000	
Sidewalk (5' Wide)	8,000	SF	$2.50	$20,000	
Turf & Irrigation	40,000	SF	$2.50	$100,000	
Shade Structures & Benches		LS		$15,000	
Restroom	500	SF	$120.00	$60,000	
Site Lighting		LS		$10,000	
Site Utilities		LS		$15,000	
					$320,000
8. Fishing Beach & Pier (1,000 LF)					
Earthwork (Grading)	400,000	SF	$0.25	$100,000	
Sidewalk (8' Wide)	9,120	SF	$2.50	$22,800	
A.C. Paving (Parking Area)	70,000	SF	$1.65	$115,500	
Curbs	1,750	LF	$10.00	$17,500	
Pier Structure - Timber	9,060	SF	$60.00	$484,800	
Restroom	500	SF	$120.00	$60,000	
Site Lighting	70,000	SF	$0.50	$35,000	
Site Utilities		LS		$15,000	
					$850,600
9. Boat Beach (4,500 LF)					
Earthwork (Grading)	1,035,000	SF	$0.25	$258,750	
Sidewalk (8' Wide)	36,000	SF	$2.50	$90,000	
Turf & Irrigation	180,000	SF	$2.50	$450,000	
Shade Structures & Benches		LS		$40,000	
Restroom (2 @ 500sf)	1,000	SF	$120.00	$120,000	
Site Lighting	180,000	SF	$0.20	$36,000	
Site Utilities		LS		$25,000	
					$1,019,750
B. RIVERSIDE DRIVE DEVELOPMENT					
1. City Marina Park Marina (257 Boat Slips)					
Earthwork (Cut & Fill, Insitu Soil)	4,200	CY	$7.50	$31,500	
Earthwork (Fill, Imported Soil)	182,550	CY	$9.00	$1,642,950	
Earthwork (Grading)	720,000	SF	$0.25	$180,000	
A.C. Paving	568,700	SF	$1.65	$941,355	
Curbs	5,200	LF	$10.00	$52,000	

TABLE VI–1
DEVELOPMENTAL COSTS
(CONTINUED)

ITEM	QUANTITY	UNIT	UNIT COST		SUBTOTAL
Slope Revetment	5,670	TN	$20.00	$113,400	
Breakwater (40' Wide with 60' Double Steel Sheets)	480	LF	$1,500.00	$720,000	
Breakwater (60' Concrete Sheets W/ Battered)	740	LF	$1,000.00	$740,000	
Floating Docks (Concrete)	29,880	SF	$40.00	$1,194,000	
Guide Piles (Concrete)	35	EA	$1,500.00	$56,000	
Gangway (Handicap)	1	EA	$30,000.00	$30,000	
Gangway (Normal)	1	EA	$10,000.00	$10,000	
Sidewalk/Walkways (12' Wide)	700	SF	$2.50	$1,750	
Benches etc.		LS		$20,000	
Restroom/Shower Building	1,000	SF	$120.00	$120,000	
Site Landscaping/Irrigation	600,000	SF	$2.50	$1,500,000	
Site Lighting	388,700	SF	$0.50	$194,350	
Site Utilities		LS		$35,000	
					$7,352,305
2. City Marina Park Launch Ramp (10 Lanes)					
Earthwork (Fill, Imported Soil)	99,850	CY	$9.00	$898,650	
Earthwork (Grading)	250,000	SF	$0.25	$62,500	
Reinforced Concrete Ramps (12' Base)	15,000	SF	$13.00	$195,000	
Floats (4@8'x60')	2,880	SF	$25.00	$64,000	
Float Anchor Systems	4	EA	$500.00	$2,000	
Float Landings	4	EA	$1,000.00	$4,000	
A. C. Paving	4,500	SF	$1.65	$7,425	
Water (Wash Down Area)		LS		$2,000	
Riprap Shore Protection	600	TN	$20.00	$12,000	
					$1,279,775
3. City Marina Park Swimming Beach (700 LF)					
Earthwork (Fill, Imported Soil)	142,000	CY	$9.00	$1,278,000	
Earthwork (Cut & Fill, Insitu Soil)	11,200	CY	$7.50	$84,000	
Imported Beach Sand (2' Thick From El. 1,237 to 1,255)	11,200	CY	$15.00	$168,000	
Earthwork (Grading)	388,000	SF	$0.25	$96,750	
Shade Structures/Benches/Picnic Tables		LS		$40,000	
Drinking Fountain	2	EA	$2,000.00	$4,000	
Life Guard Towers	2	EA	$10,000.00	$20,000	
					$1,690,750
4. City Marina Park Landside Improvement (b)				$9,974,719	
					$9,974,719
5. Elsinore West Marina (148 Boat Slips)					
Earthwork (Grading)	40,000	SF	$0.25	$10,000	
Floating Docks (Concrete)	18,400	SF	$40.00	$736,000	
Access Pier (8'x100')	800	SF	$40.00	$32,000	
Guide Piles (Concrete)	23	EA	$1,500.00	$35,500	
Gangway (Handicap)	1	EA	$30,000.00	$30,000	
Gangway (Normal)	1	EA	$10,000.00	$10,000	
Restroom/Shower Building	1,000	SF	$120.00	$120,000	
Site Lighting	18,400	SF	$0.50	$9,200	
Site Utilities		LS		$20,000	
					$1,004,000
6. Elsinore West Launch Ramps (10 & 11 Lanes) (b)					
Water (Wash Down Area)		LS		$2,000	
					$2,000
7. Elsinore West Swimming Beach (300 LF)					
Earthwork (Cut)	10,500	CY	$5.50	$55,250	
Imported Beach Sand (2' Thick From El. 1,237 to 1,255)	16,500	CY	$15.00	$232,500	
Earthwork (Grading)	210,000	SF	$0.25	$52,500	
Shade Structures/Benches/Picnic Tables		LS		$80,000	
Drinking Fountain	2	EA	$2,000.00	$4,000	
Life Guard Tower	1	EA	$10,000.00	$10,000	
					$444,250
8. Elsinore West Marina Landside Concession Improvement					
A.C. Paving	215,000	SF	$1.65	$354,750	
Curbs	5,100	LF	$10.00	$51,000	
Site Landscaping /Irrigation	540,500	SF	$2.50	$923,750	
Site Lighting	215,000	SF	$0.50	$107,500	
Site Utilities		LS		$20,000	
					$1,457,000

TABLE VI-1
DEVELOPMENTAL COSTS
(CONTINUED)

ITEM	QUANTITY	UNIT	UNIT COST		SUBTOTAL
C. RECREATION ISLAND DEVELOPMENT					
1. Marina Complex (201 Boat Slips)					
Earthwork (Cut & Fill, Insitu Soil)	150	CY	$7.50	$1,125	
Earthwork (Fill, Imported Soil)	26,100	CY	$9.00	$234,900	
Earthwork (Grading)	30,850	SF	$0.25	$7,688	
Slope Revetment	7,800	TN	$20.00	$152,000	
Fuel Facility		LS		$50,000	
Fuel Dock	1,000	SF	$25.00	$25,000	
Fuel Gangway	1	EA	$10,000.00	$10,000	
Floating Docks (Concrete)	55,555	SF	$40.00	$1,092,000	
Guide Piles (Concrete)	31	EA	$1,600.00	$49,600	
Gangway (Handicap)	1	EA	$30,000.00	$30,000	
Gangway (Normal)	2	EA	$10,000.00	$20,000	
Boat Hoist (5 Tons)	1	EA	$20,000.00	$20,000	
Sidewalk (12' Wide)	9,000	SF	$2.50	$22,500	
Benches etc.		LS		$20,000	
Marina Paving	30,850	SF	$5.00	$154,000	
Restroom/Shower Building	1,000	SF	$120.00	$120,000	
Marina Facility and Concession Buildings (a)	10,000	SF	$80.00	$800,000	
Site Lighting	30,850	SF	$0.50	$15,325	
Site Utilities		LS		$20,000	
					$2,554,013
2. Youth and Group Facility					
Earthwork (Fill, Imported Soil)	54,880	CY	$9.00	$493,850	
Earthwork (Grading)	87,120	SF	$0.25	$21,780	
A.C. Paving	87,120	SF	$1.65	$143,748	
Main Building	10,000	SF	$120.00	$1,200,000	
Storage Building	2,000	SF	$50.00	$100,000	
Site Lighting	87,120	SF	$0.50	$43,575	
Site Utilities		LS		$10,000	
					$2,012,810
3. Swimming Beach (1,800 LF)					
Earthwork (Fill, Imported Soil)	88,300	CY	$9.00	$814,700	
Earthwork (Cut & Fill, Insitu Soil)	33,950	CY	$7.50	$254,625	
Imported Beach Sand (2' Thick From El. 1,237 to 1,255)	26,200	CY	$15.00	$393,000	
Earthwork (Grading)	467,400	SF	$0.25	$116,850	
Walkways (5' Wide)	18,200	SF	$2.50	$38,000	
Shade Structures/Benches/Picnic Tables		LS		$50,000	
Restroom w/ Dressing Rooms & Outside Shower	1,000	SF	$120.00	$120,000	
Restroom	500	SF	$120.00	$60,000	
Small Concession Building (a)	500	SF	$60.00	$30,000	
Drinking Fountain	4	EA	$2,000.00	$8,000	
Life Guard Towers	5	EA	$10,000.00	$50,000	
Small Boat Rental Float (10'x50')	500	SF	$25.00	$12,500	
Swimming Lagoon Buoys		LS		$1,000	
Site Lighting		LS		$30,000	
Site Utilities		LS		$10,000	
					$1,756,675
4. Ski Beach Take-off & Drop-off Areas (1,300 LF)					
Earthwork (Fill)	82,350	CY	$9.00	$741,150	
Earthwork (Grading)	234,000	SF	$0.25	$58,500	
					$799,650
5. Island Park Areas / Hotel Complex					
Earthwork (Fill, Imported Soil)	1,098,700	CY	$9.00	$9,818,300	
Earthwork (Grading)	1,803,000	SF	$0.25	$450,750	
A.C. Paving (Parking Areas)	412,000	SF	$1.65	$679,800	
Access Roadway	130,000	SF	$1.65	$214,500	
Curbs	28,575	LF	$10.00	$285,750	
Site Landscaping & Irrigation	227,000	SF	$3.50	$794,500	
Turf & Irrigation	824,000	SF	$2.50	$2,060,000	
Shade Structures/Benches/Picnic Tables		LS		$200,000	
Site Lighting	542,000	SF	$0.50	$271,000	
Site Utilities		LS		$25,000	
Restroom (3@ 800 sf)	2,400	SF	$120.00	$288,000	
Hotel & Restaurant Complex (d)					
					$14,257,515

TABLE VI-1
DEVELOPMENTAL COSTS
(CONTINUED)

ITEM	QUANTITY	UNIT	UNIT COST		SUBTOTAL
D. LEVEE IMPROVEMENT(e)				$1,569,450	
					$1,569,450
E. SAN JACINTO CHANNEL DEVELOPMENT					
1. Boat Launch Ramps (one 8 lanes & one 2 lanes)					
Earthwork (Cut)	15,350	CY	$5.50	$89,925	
Earthwork (Cut & Fill, Insitu Soil)	1,600	CY	$7.50	$12,000	
Earthwork (Grading)	64,000	SF	$0.25	$13,000	
Reinforced Concrete Ramps (12" Base)	33,750	SF	$13.00	$438,750	
Floats (2@8'x100')	1,600	SF	$25.00	$40,000	
Float Anchor Systems	2	EA	$500.00	$1,000	
Float Landings	2	EA	$1,000.00	$2,000	
A. C. Paving	11,250	SF	$1.48	$16,665	
Water (Wash Down Area)		LS		$2,000	
Site Lighting		LS		$9,000	
					$628,738
2. Swimming Beach (2,500 LF)					
Earthwork (Cut & Fill, Insitu Soil)	30,250	CY	$7.50	$151,875	
Earthwork (Cut)	353,750	CY	$5.50	$2,185,625	
Imported Beach Sand (2' Thick From El. 1,250 to 1,256)	58,950	CY	$15.00	$883,750	
Earthwork (Grading)	982,400	SF	$0.25	$165,600	
Shade Structures/Benches/Picnic Tables		LS		$100,000	
Restroom w/ Dressing Rooms & Outside Shower	1,000	SF	$120.00	$120,000	
Restroom	500	SF	$120.00	$60,000	
Drinking Fountain	4	EA	$2,000.00	$8,000	
Life Guard Towers	5	EA	$10,000.00	$50,000	
Site Utilities		LS		$50,000	
					$3,443,850
3. Parking Area					
Earthwork (Fill, Insitu Soil, W/I 500')	276,050	CY	$4.00	$1,116,200	
Earthwork (Grading)	1,060,575	SF	$0.25	$262,644	
Unpaved Fill Area	390,000	SF	$0.25	$97,500	
A.C. Paving	545,825	SF	$1.65	$900,221	
Curbs	13,500	LF	$10.00	$135,000	
Landscape/Irrigation	257,000	SF	$3.50	$1,004,500	
Site Lighting	565,625	SF	$0.50	$282,813	
					$3,870,938
4. Special Events					
Judge's Stand		LS		$15,000	
Bleachers		LS		$60,000	
Communication Speaker System		LS		$48,000	
Electronic Score Board		LS		$10,000	
					$150,000
5. Water Ski Concession					
Floating Breakwater	3	EA	$40,000.00	$120,000	
					$120,000
F. LAKE MANAGEMENT					
Control Buoy Installation	250	EA	$350.00	$87,500	
					$87,500
SUBTOTAL (ROUNDED)					$65,067,000
CONTINGENCY @ 15%					$9,851,050
TOTAL COST (ROUNDED)					$75,549,000

Notes: The development costs do not include land acquisition, environmental study, archeology evaluation, geotechnical investigation, architectural & landscaping design, engineering plans/specs preparation, permit application or project construction & management.
(a) Shell building cost only (Concessionaire provides interior improvements)
(b) Per City Marina Park Landside Renovation Plan
(c) Use existing float system
(d) Construction provided by outside concessionaire (Cost not included)
(e) Per City's levy improvement plan

variable depending on land ownership and site specific conditions.

3. OPERATIONAL COSTS

Operational costs are presented for only those waterfront facilities/activities that either the City of Lake Elsinore would be expected to maintain/operate or that the City might consider owning, maintaining and operating. Facilities that are expected to be developed and operated by a concessionaire are not included in this section. Operational costs as presented in this study consist of maintenance, operating and capital costs. Developmental costs are presented in VI.2, "Developmental Costs". Table VI-2 presents a summary of estimated maintenance, operating and capital costs for facilities/activities the City may directly be involved in maintaining/operating. These costs are in 1994 dollars.

3.1 Maintenance Costs

A summary of expected maintenance costs is presented in Table VI-2. These costs include all labor, materials and equipment required for the performance of routine annual maintenance in order to maintain facilities in a clean, workable and safe operating state. They do not include major repairs that may be required as the useful life of facility components need either significant repair or replacement. These costs would be associated with capital replacement of facilities and are not included within this Study.

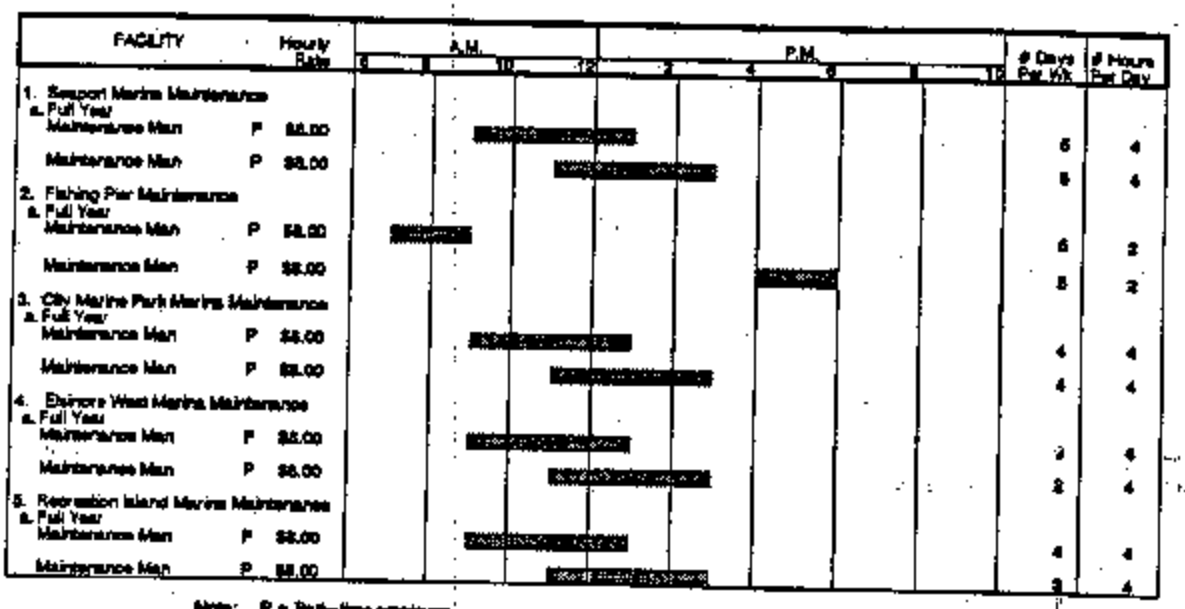
A majority of maintenance costs are presented as an annual cost per acre of the facility being maintained. These unit costs have been derived in consultation with City staff based on past experience in maintaining various types of park facilities. The higher unit costs are for areas with a higher percentage of soft landscape versus hard landscape, where more intensive labor is required. Maintenance costs for the four proposed marinas and the fishing pier have been developed by estimating the individual labor, materials and equipment costs to maintain these facilities. The marina costs are for the waterside facilities, and do not include landside facilities. Table VI-3 shows the expected typical labor work schedule, while Table VI-4 shows the labor costs and Table VI-5 presents a summary of the total maintenance costs for these five marina/pier facilities.

TABLE VI-2
OPERATING, MAINTENANCE AND CAPITAL EQUIPMENT COST SUMMARY

ITEM	Maintenance			Operating			Capital
	Acreage (ac)	Unit Cost ($/ac)	Subtotal ($)	Personnel ($)	Expenses ($)	Subtotal ($)	Equipment ($)
A. LAKESHORE DRIVE DEVELOPMENT							
1. Seaport Boat Trailer/Car Parking Area	6.17	3,000	18,995	25,346	500	25,846	
2. Seaport Boat Beach (350 LF)							
Turf & Landscape Area	1.81	7,000	11,270				
Natural Beach Area	1.81	1,500	2,415				
3. Seaport Launch Ramp & Staging Area (8 Lanes)	1.84	3,500	6,440	79,484	1,500	80,984	5,700
4a. Seaport Marina (322 Boat Slips)*			34,088	133,929	24,720	158,649	6,400
4b. Seaport Marina Fuel Facility				17,747	1,200	18,947	2,700
5. Non-Power Boat Concession Beach (700 LF)**							
Turf & Landscape Area	1.19	7,000	8,330				
Beach Area	2.73	5,000	13,657				
6. Seaport Swimming Beach (700 LF)				31,715	600	32,315	3,400
Turf & Landscape Area	2.09	7,000	14,630				
Beach Area	3.05	5,000	15,250				
7. Boat Beach (1,000 LF)							
Turf & Landscape Area	2.30	7,000	16,100				
Natural Beach Area	3.05	1,500	7,575				
8. Fishing Beach & Pier (1,000 LF)							
Parking Area	2.30	3,500	8,050				
Fishing Beach Area	4.13	5,000	20,650				
Pier Area (5,060 SF)			10,946				
Bait/Food Kiosk				20,515	800	21,315	1,000
9. Boat Beach (4,500 LF)							
Turf & Landscape Area	6.20	7,000	43,400				
Natural Beach Area	11.56	1,500	17,320				
SUBTOTAL:			192,566			334,049	17,200
B. RIVERSIDE DRIVE DEVELOPMENT							
1. City Marina Park Marina (Future 287 Boat Slips)			39,681	102,634	15,000	117,634	3,200
2. City Marina Park Launch Ramp (10 Lanes)	2.75	3,500	9,680	39,195	800	40,005	2,700
3. City Marina Park Swimming Beach (700 LF)	3.21	5,000	16,050	31,719	600	32,319	6,400
4. City Marina Park Landside R.V. Development	45.00	5,000	225,000	345,556	354,598	600,154	
5. Elsinore West Marina (145 Boat Slips)			17,348	87,279	12,860	99,339	3,200
6. Elsinore West Marina Launch Ramps (10 & 11 Lanes)	2.26	3,500	7,980	39,195	800	40,005	2,700
7. Elsinore West Marina Swimming Beach (300 LF)	3.44	5,000	17,200	16,859	300	16,159	2,200
8. Elsinore West Marina Landside R. V. Development	25.00	4,000	100,000	138,000	220,000	360,000	
SUBTOTAL:			419,188			1,306,004	17,400
C. RECREATION ISLAND DEVELOPMENT							
1a. Marina Complex (201 Boat Slips)*			23,043	109,749	15,240	127,989	3,200
1b. Marina Fuel Facility				22,583	5,494	28,177	2,700
2. Youth and Goup Facility (1.75 Acres)	1.47	3,500	5,145				
3. Swimming Beach (1,800 LF)	6.54	6,000	32,700	79,296	1,500	80,796	8,500
4. Ski Beaches (1,300 LF)	3.75	5,000	18,650				
5. Island Park							
Parking & Streets	12.48	3,500	43,680				
Park Areas	16.80	7,000	117,600				
SUBTOTAL:			79,377			234,962	16,400
D. LEVEE IMPROVEMENT							
Levee Improvement (97 Acres)	59.00	4,000	236,000				
SUBTOTAL:			236,000			0	0
E. SAN JACINTO CHANNEL DEVELOPMENT							
1. Boat Launch Ramps	1.22	3,500	4,270	104,840	1,500	106,340	3,700
2. Swimming Beach (2,300 LF)	9.50	8,000	67,500	86,155	1,800	86,955	10,200
3. Parking Area (Cars)	19.28	3,500	67,480				
4. Special Events ***							
5. Water Ski Concession ****							
SUBTOTAL:			119,250			203,296	13,900
F. LAKE MANAGEMENT			24,000	510,325	42,480	552,805	216,800
SUBTOTAL:			24,000			552,805	216,800

Notes: * City operates marina only, landside fully concessioned
** Fully concessioned, City only maintains turf, landscaping and beach areas
*** Operated by promoters
**** Operated by concessionaire

TABLE VI-3
MAINTENANCE STAFF WORK SCHEDULE (TYPICAL)
(FOR MARINA/PIER FACILITIES ONLY)



Note: P = Part-time employee

3.2 Operating Costs

A summary of expected operating costs is presented in Table VI-2. These costs include all labor required for operations of the indicated facility. The expense costs, however, do not include debt service costs, and do not always include costs for such items as insurance, promotion, advertising and training programs.

Operating costs presented for the Riverside Drive Development (City Marina Park and Elsinore West Marina facilities) should be adequate except for the deletion of debt service. The landside R.V. campground operations of these two facilities were based on existing and expected operating cost records, while additional operating costs have been included to operate the expanded requirements shown for the marina, launch ramp and swimming beach facilities at these two existing R.V. park sites.

TABLE VI-4
MAINTENANCE STAFF COSTS
(FOR MARINA/PIER FACILITIES ONLY)

Operating Facility	Staff Position	Work Span (months)	Number of Staff	Annual Total Hours	Unit Cost ($/hr)	Annual Subtotal ($)
1. Seaport Marina	Maintenance Man P	12	1.00	2,086	9.00	19,689
2. Fishing Pier	Maintenance Man P	12	0.50	1,043	9.00	9,845
3. City Marine Marina	Maintenance Man P	12	0.80	1,669	9.00	15,751
4. Elsinore West Marina	Maintenance Man P	12	0.50	1,043	9.00	9,845
5. Recreation Island Marina	Maintenance Man P	12	0.70	1,460	9.00	13,782

Note: P = Part-time employee (18% benefits).

TABLE VI-5
SUMMARY OF MAINTENANCE COSTS
(FOR MARINA/PIER FACILITIES ONLY)

Operating Facility	Staff ($)	Materials ($)	Equipment ($)	Annual Total ($)
1. Seaport Marina	19,689	12,000	2,400	34,089
2. Fishing Pier	9,845	3,500	2,400	15,845
3. City Marine Marina	15,751	8,400	1,800	25,951
4. Elsinore West Marina	9,845	6,000	1,500	17,345
5. Recreation Island Marina	13,782	7,200	2,100	23,082

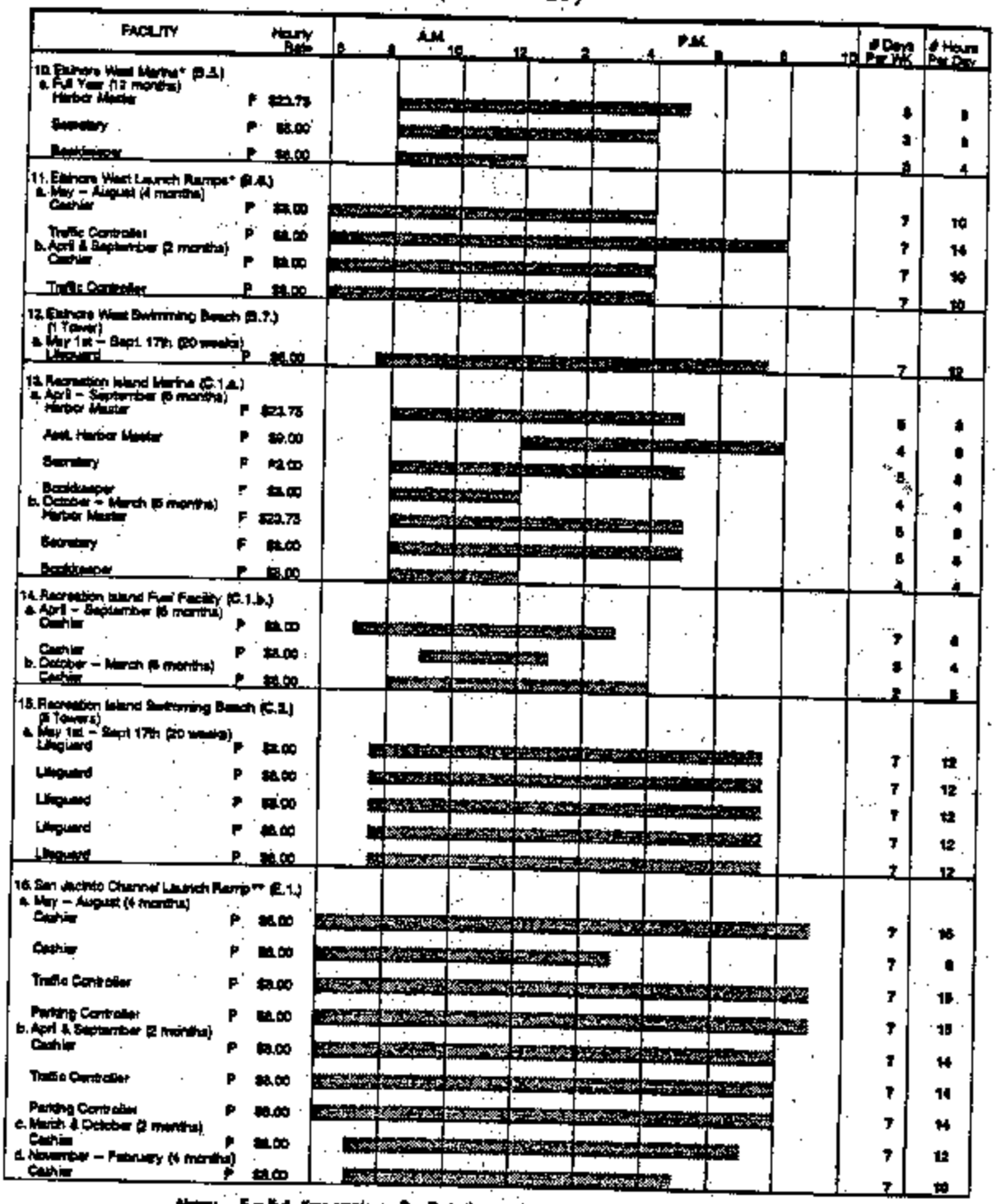
Table VI-6 shows the expected typical operating staff work schedule for the identified facilities, while Table VI-7 shows the operating staff costs. Operating labor costs estimated for the four marina facilities are based on the City only operating one of the marina facilities. If the City were to operate more than one marina facility then there could be some reduction in the combined marina operating labor costs. Table VI-8 shows estimated operating expenses for marina and lake management operating office space along with other expenses.

TABLE VI-6
OPERATING STAFF WORK SCHEDULE (TYPICAL)

FACILITY		Hourly Rate	# Days Per Wk.	# Hours Per Day
1. Seaport Boat Trailer/Car Parking (A.1.)				
a. May – August (4 months)				
Parking Controller	P	$8.00	7	15
b. April & September (2 months)				
Parking Controller	P	$8.00	7	14
2. Seaport Launch Ramp (A.5.)				
a. May – August (4 months)				
Cashier	P	$8.00	7	15
Cashier	P	$8.00	7	9
Traffic Controller	P	$8.00	7	15
b. April & September (2 months)				
Cashier	P	$8.00	7	14
Traffic Controller	P	$8.00	7	14
c. March & October (2 months)				
Cashier	P	$8.00	7	12
d. November – February (4 months)				
Cashier	P	$8.00	7	10
3. Seaport Marina (A.4.a.)				
a. April – September (6 months)				
Harbor Master	F	$23.78	5	8
Asst. Harbor Master	P	$8.00	7	15
Secretary	P	$8.00	5	8
Bookkeeper	P	$8.00	5	4
b. October – March (6 months)				
Harbor Master	F	$23.78	5	8
Secretary	P	$8.00	5	8
Bookkeeper	P	$8.00	5	4
4. Seaport Fuel Facility (A.4.b.)				
a. April – September (6 months)				
Cashier	P	$8.00	7	8
b. October – March (6 months)				
Cashier	P	$8.00	2	5
5. Seaport Swimming Beach (A.6.) (2 Towers)				
a. May 1st – Sept. 17th (20 wks)				
Lifeguard	P	$8.00	7	12
Lifeguard	P	$8.00	7	12
6. Fishing Pier Bait/Food Kiosk (A.8.)				
a. March – October (8 months)				
Cashier	P	$8.00	7	9
7. City Marina Park Marina* (B.1.)				
a. Full Year (12 months)				
Harbor Master	F	$23.78	5	8
Secretary	P	$8.00	5	8
Bookkeeper	P	$8.00	4	4
8. City Marina Park Launch Ramp* (B.2.)				
a. May – August (4 months)				
Cashier	P	$8.00	7	10
Traffic Controller	P	$8.00	7	14
b. April & September (2 months)				
Cashier	P	$8.00	7	10
Traffic Controller	P	$8.00	7	10
9. City Marina Swimming Beach (B.3.) (2 Towers)				
a. May 1st – Sept. 17th (20 weeks)				
Lifeguard	P	$8.00	7	12
Lifeguard	P	$8.00	7	12

Notes: F = Full-time employee, P = Part-time employee.
* Additional operating staff required above the existing staff for operating the shoreside R.V. facilities.

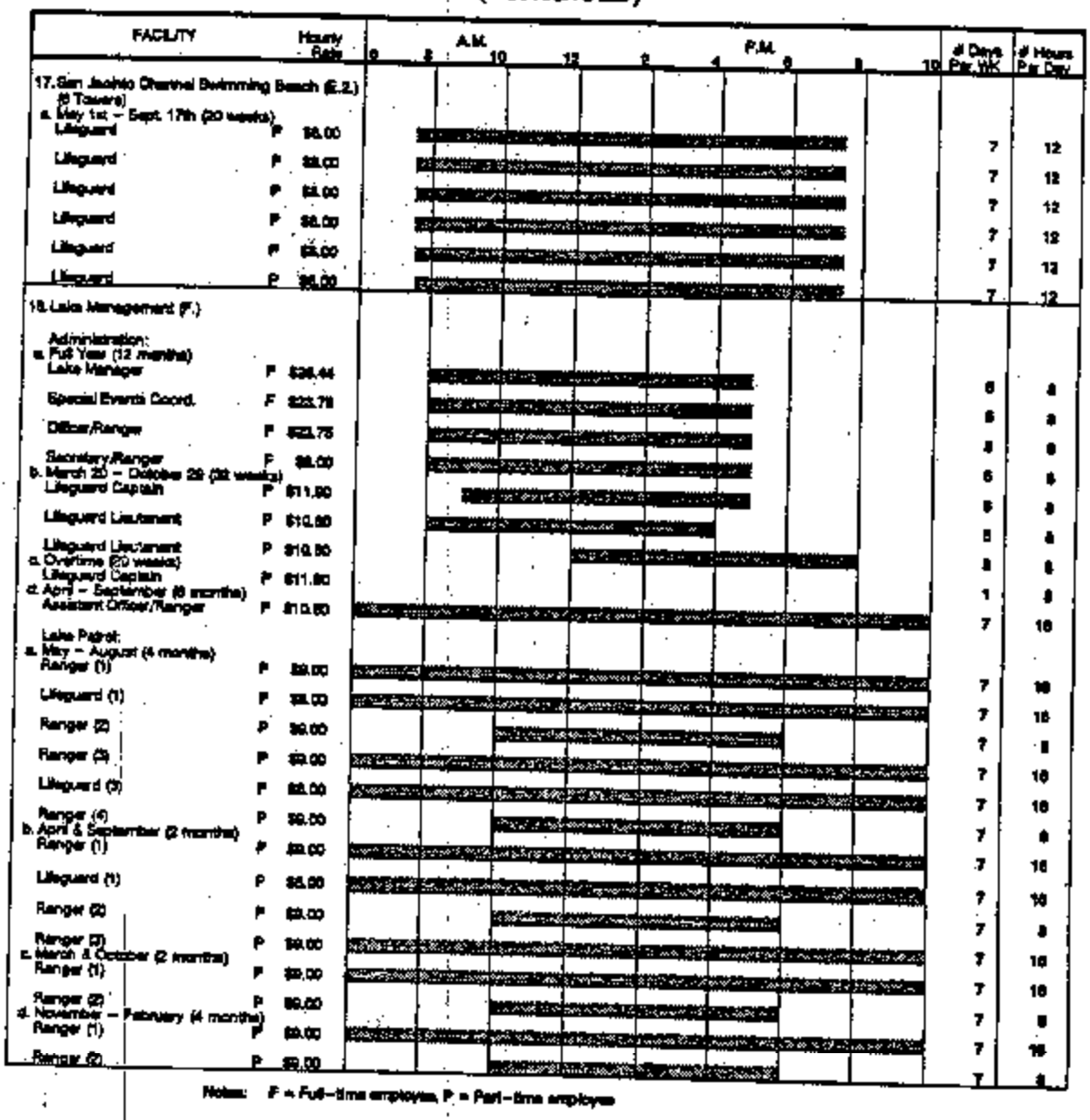
TABLE VI-6
OPERATING STAFF WORK SCHEDULE (TYPICAL)
(CONTINUED)



FACILITY		Hourly Rate	# Days Per Wk.	# Hours Per Day
10. Elkhorn West Marina* (B.5.)				
a. Full Year (12 months)				
Harbor Master	F	$23.75	5	8
Secretary	P	$8.00	3	8
Bookkeeper	P	$8.00	3	4
11. Elkhorn West Launch Ramps* (B.6.)				
a. May – August (4 months)				
Cashier	P	$8.00	7	10
Traffic Controller	P	$8.00	7	14
b. April & September (2 months)				
Cashier	P	$8.00	7	10
Traffic Controller	P	$8.00	7	10
12. Elkhorn West Swimming Beach (B.7.)				
(1 Tower)				
a. May 1st – Sept. 17th (20 weeks)				
Lifeguard	P	$8.00	7	12
13. Recreation Island Marina (C.1.a.)				
a. April – September (6 months)				
Harbor Master	F	$23.75	5	8
Asst. Harbor Master	P	$8.00	4	8
Secretary	P	$8.00	5	8
Bookkeeper	P	$8.00	4	4
b. October – March (6 months)				
Harbor Master	F	$23.75	5	8
Secretary	F	$8.00	5	8
Bookkeeper	P	$8.00	4	4
14. Recreation Island Fuel Facility (C.1.b.)				
a. April – September (6 months)				
Cashier	P	$8.00	7	8
Cashier	P	$8.00	5	4
b. October – March (6 months)				
Cashier	P	$8.00	2	5
15. Recreation Island Swimming Beach (C.2.)				
(5 Towers)				
a. May 1st – Sept 17th (20 weeks)				
Lifeguard	P	$8.00	7	12
Lifeguard	P	$8.00	7	12
Lifeguard	P	$8.00	7	12
Lifeguard	P	$8.00	7	12
Lifeguard	P	$8.00	7	12
16. San Jacinto Channel Launch Ramp** (E.1.)				
a. May – August (4 months)				
Cashier	P	$8.00	7	16
Cashier	P	$8.00	7	8
Traffic Controller	P	$8.00	7	16
Parking Controller	P	$8.00	7	16
b. April & September (2 months)				
Cashier	P	$8.00	7	14
Traffic Controller	P	$8.00	7	14
Parking Controller	P	$8.00	7	14
c. March & October (2 months)				
Cashier	P	$8.00	7	12
d. November – February (4 months)				
Cashier	P	$8.00	7	10

Notes: F = Full-time employee, P = Part-time employee
*Additional operating staff required above the existing staff for operating the shoreside R.V. facilities.
**If 5 lane ramp used for public boat launching

TABLE VI-6
OPERATING STAFF WORK SCHEDULE (TYPICAL)
(CONTINUED)



FACILITY	Hourly Rate	# Days Per Wk	# Hours Per Day
17. San Jacinto Channel Swimming Beach (E.2.) (6 Towers)			
a. May 1st – Sept. 17th (20 weeks)			
Lifeguard	P $6.00	7	12
Lifeguard	P $6.00	7	12
Lifeguard	P $6.00	7	12
Lifeguard	P $6.00	7	12
Lifeguard	P $6.00	7	12
Lifeguard	P $6.00	7	12
18. Lake Management (F.)			
Administration:			
a. Full Year (12 months)			
Lake Manager	F $26.44	5	8
Special Events Coord.	F $23.78	5	8
Office/Ranger	F $23.78	5	8
Secretary/Ranger	F $8.00	5	8
b. March 20 – October 29 (32 weeks)			
Lifeguard Captain	P $11.50	5	8
Lifeguard Lieutenant	P $10.50	5	8
Lifeguard Lieutenant	P $10.50	5	8
c. Overtime (20 weeks)			
Lifeguard Captain	P $11.50	1	8
d. April – September (6 months)			
Assistant Officer/Ranger	F $10.50	7	16
Lake Patrol:			
a. May – August (4 months)			
Ranger (1)	P $9.00	7	16
Lifeguard (1)	P $8.00	7	16
Ranger (2)	P $9.00	7	8
Ranger (3)	P $9.00	7	16
Lifeguard (3)	P $8.00	7	16
Ranger (4)	P $9.00	7	8
b. April & September (2 months)			
Ranger (1)	P $9.00	7	16
Lifeguard (1)	P $8.00	7	16
Ranger (2)	P $9.00	7	8
Ranger (2)	P $9.00	7	16
c. March & October (2 months)			
Ranger (1)	P $9.00	7	16
Ranger (2)	P $9.00	7	8
d. November – February (4 months)			
Ranger (1)	P $9.00	7	16
Ranger (2)	P $9.00	7	8

Notes: F = Full-time employee, P = Part-time employee

TABLE VI-7
OPERATING STAFF COSTS

Operating Facility	Staff Position		Work Span	Number of Staff	Annual Total Hour (hr)	Unit Cost ($/hr)	Annual Subtotal ($)
1. Seaport Boat Trailer/Car Parking (A.1.)	Parking Controller	P	4 months	2.69	1,845	8.00	17,417
	Parking Controller	P	2 months	2.45	840	8.00	7,930
						Subtotal:	25,348
2. Seaport Launch Ramp (A.5.)	Cashier	P	4 months	4.20	2,982	8.00	27,667
	Traffic Controller	P	4 months	2.55	1,845	8.00	17,417
	Cashier	P	2 months	2.45	840	8.00	7,930
	Traffic Controller	P	2 months	2.45	840	8.00	7,930
	Cashier	P	2 months	2.10	744	8.00	7,023
	Cashier	P	4 months	1.75	1,200	8.00	11,328
						Subtotal:	79,494
3. Seaport Marina (A.4a.)	Harbor Master	F	6 months	1.00	1,040	23.75	24,580
	Assist. Harbor Master	P	6 months	2.80	2,928	9.00	31,095
	Secretary	F	6 months	1.00	1,040	8.00	11,845
	Bookkeeper	P	6 months	0.50	523	8.00	4,934
	Harbor Master	F	6 months	1.00	1,040	23.75	24,580
	Secretary	F	6 months	1.00	1,040	8.00	11,848
	Bookkeeper	P	6 months	0.50	520	8.00	4,909
						Subtotal:	185,596
4. Seaport Fuel Facility (A.4b.)	Cashier	P	5 months	1.40	1,464	8.00	13,820
	Cashier	P	6 months	0.40	416	8.00	3,927
						Subtotal:	17,747
5. Seaport Swimming Beach (A.6.)	Lifeguard	P	20 weeks	4.20	3,360	8.00	31,719
						Subtotal:	31,719
6. Fishing Pier Bait/Food Kiosk (A.8.)	Cashier	P	8 months	1.55	2,205	8.00	20,815
						Subtotal:	20,815
7. City Marina Park Marina* (B.1.)	Harbor Master	F	12 months	1.00	2,080	23.75	69,160
	Secretary	F	12 months	1.00	2,080	8.00	23,296
	Bookkeeper	P	12 months	0.50	1,048	8.00	9,845
						Subtotal:	102,301
8. City Marina Park Launch Ramp* (B.2.)	Cashier	P	4 months	1.75	1,230	8.00	11,611
	Traffic Controller	P	4 months	2.45	1,722	8.00	16,256
	Cashier	P	2 months	1.75	600	8.00	5,664
	Traffic Controller	P	2 months	1.75	600	8.00	5,664
						Subtotal:	39,195
9. City Marina Swimming Beach (B.3.)	Lifeguard	P	20 weeks	4.20	3,360	8.00	31,719
						Subtotal:	31,719
10. Elsinore West Marina* (B.5.)	Harbor Master	F	12 months	1.00	2,080	23.75	69,160
	Secretary	P	12 months	0.60	1,251	8.00	11,813
	Bookkeeper	P	12 months	0.30	626	8.00	5,907
						Subtotal:	86,880
11. Elsinore West Launch Ramps* (B.6.)	Cashier	P	4 months	1.75	1,230	8.00	11,611
	Traffic Controller	P	4 months	2.45	1,722	8.00	16,256
	Cashier	P	2 months	1.75	600	8.00	5,664
	Traffic Controller	P	2 months	1.75	600	8.00	5,664
						Subtotal:	39,195
12. Elsinore West Swimming Beach (B.7.)	Lifeguard	P	20 weeks	2.10	1,680	8.00	15,859
						Subtotal:	15,859

Notes: F = Full-time employee (40% benefits), P = Part-time employee (18% benefits)
* Additional operating staff required above the existing staff to operate the shoreside R.V. facilities

TABLE VI-7
OPERATING STAFF COSTS
(CONTINUED)

Operating Facility	Staff Position		Work Span	Number of Staff	Annual Total Hour (hr)	Unit Cost ($/hr)	Annual Subtotal ($)
13. Recreation Island Marina (C.1a.)	Harbor Master	F	6 months	1.00	1,040	23.75	34,580
	Assist. Harbor Master	P	6 months	0.80	857	9.00	8,554
	Secretary	F	6 months	1.00	1,040	8.00	11,648
	Bookkeeper	P	6 months	0.40	416	8.00	3,949
	Harbor Master	F	6 months	1.00	1,040	23.75	34,580
	Secretary	F	6 months	1.00	1,040	8.00	11,648
	Bookkeeper	P	6 months	0.40	416	8.00	3,927
						Subtotal:	108,216
14. Recreation Island Fuel Facility (C.1b)	Cashier	P	6 months	1.80	1,987	8.00	18,756
	Cashier	P	6 months	0.40	416	8.00	3,927
						Subtotal:	22,683
15. Recreation Island Swimming Beach (C.3.)	Lifeguard	P	20 weeks	10.50	5,400	8.00	79,296
						Subtotal:	79,296
16. San Jacinto Channel Launch Ramp (E.1.)	Cashier	P	4 months	4.20	2,952	8.00	27,867
	Traffic Controller	P	4 months	2.63	1,845	8.00	17,417
	Parking Controller	P	4 months	2.63	1,845	8.00	17,417
	Cashier	P	2 months	2.45	840	8.00	7,930
	Traffic Controller	P	2 months	2.45	840	8.00	7,930
	Parking Controller	P	2 months	2.45	840	8.00	7,930
	Cashier	P	2 months	2.10	744	8.00	7,023
	Cashier	P	4 months	1.75	1,200	8.00	11,328
						Subtotal:	104,841
17. San Jacinto Channel Swimming Beach (E.2.)	Lifeguard	P	20 weeks	12.60	10,080	8.00	95,155
						Subtotal:	95,155
18. Lake Management (F)							
Administration:	Lake Manager	F	12 months	1.00	2,080	28.44	78,993
	Special Event Coordinator	F	12 months	1.00	2,080	23.75	59,160
	Officer/Ranger	F	12 months	1.00	2,080	23.75	59,160
	Secretary/Ranger	F	12 months	1.00	2,080	8.00	23,296
	Lifeguard Captain	P	32 weeks	1.00	1,280	11.90	17,874
	Lifeguard Lieutenant	P	32 weeks	2.00	2,560	10.60	32,525
	Lifeguard Captain	P	20 weeks	0.15	100	11.90	1,404
	Assist Officer/Ranger	P	8 months	2.80	2,828	10.60	37,314
						Subtotal:	327,926
Lake Patrol:	Ranger	P	4 months	8.40	5,904	9.00	62,700
	Lifeguard	P	4 months	5.60	3,936	8.00	37,156
	Ranger	P	2 months	7.00	2,400	9.00	25,488
	Lifeguard	P	2 months	2.80	960	8.00	9,062
	Ranger	P	2 months	4.20	1,488	9.00	15,803
	Ranger	P	4 months	4.20	2,880	9.00	30,586
						Subtotal:	180,795

Note: F = Full-time employee (40% benefits), P = Part-time employee (18% benefits)

TABLE VI-8
MARINA/LAKE MANAGEMENT OPERATING EXPENSES

Operating Facility	Item	Unit Cost ($)	Annual Total ($)
1. Seaport Marina	Office – 800 SF	2.20/SF/MO	21,120
	Marina Utilities / Misc.	300/MO	3,600
			24,720
2. City Marine Park Marina	Office – 500 SF	2.20/SF/MO	13,200
	Marina Utilities / Misc.	150/MO	1,800
			15,000
3. Elsinore West Marina	Office – 400 SF	2.20/SF/MO	10,560
	Marina Utilities / Misc.	125/MO	1,500
			12,060
4. Recreation Island Marina	Office – 600 SF	2.20/SF/MO	15,840
	Marina Utilities / Misc.	200/MO	2,400
			18,240
5. Recreation Island Fuel Facility	Office – 96 SF	2.20/SF/MO	2,534
	Dock Utilities / Misc.	80/MO	960
			3,494
6. Lake Management	Office – 1,200 SF	2.20/SF/MO	31,680
	Boat / Car Gas, License, Tax, etc.	800/MO	9,600
	Miscellaneous Supplies	100/MO	1,200
			42,480

3.3 Capital Equipment Costs

A summary of expected capital equipment costs is presented in Table VI-2. A breakdown of these costs is shown in Table VI-9. These costs do not include office furnishings.

4. REVENUE GENERATION

Table VI-10 presents a summary of potential revenue generation in 1994 dollars from the recommended waterfront facilities presented in this study. This table presents potential annual gross revenue for each identified revenue source, and potential annual gross revenue to the City for years 1996 and 2001. Year 2001 assumes that all recommended waterfront facilities have been developed and are in full operation. This likely would not be the case by year 2001, but is presented to illustrate the potential revenue generation from the lake when all recommended waterfront facilities are in operation. The City's revenue is dependent on which facilities the City owns and operates, and from which facilities it collects leasehold rent.

4.1 Lake Use Permits/Boat Launch Ramps

Table VI-11 presents existing fees for lake use, boat launching, marina slip rental, dry boat storage and camping spaces at other comparable waterfront facilities. Based on a review of these fees and on present market conditions, the recommended fees presented in Table VI-12 have been utilized for developing potential revenue in this study. Table VI-13, which shows lake use permit revenue generation for years 1996 and 2001, was developed using information contained in Table IV-14 and the recommended fee structure shown in Table VI-12. This entire revenue goes to the City.

Table VI-14, showing boat launch ramp revenue generation for years 1996 and 2001, was developed using information contained in Tables IV-15 and IV-16 and the recommended fee structure shown in Table VI-12. City revenue from boat launch ramps presented in Table VI-10 assumed that the City owns and operates launch ramps totalling 40 percent of the annual public launches and collects a ten percent rent on gross revenue from the remaining 60 percent of annual public launches in year 1996. In year 2001, it is assumed that these percentages change to 50 percent owned and operated, and 50 percent rent to the City.

TABLE VI-9
CAPITAL EQUIPMENT COSTS

Facility	Item	No.	Unit Cost ($)	Total Cost ($)
1. Seaport Launch Ramp	Radios	1	1,200	1,200
	Cash Registers	2	500	1,000
	Misc. Equipment		LS	1,500
				3,700
2. Seaport Marina	Radios	2	1,200	2,400
	Misc. Equipment		LS	4,000
				6,400
3. Seaport Fuel Facility	Radios	1	1,200	1,200
	Cash Registers	1	500	500
	Misc. Equipment		LS	1,000
				2,700
4. Seaport Swimming Beach	Radios	2	1,200	2,400
	Misc. Equipment		LS	1,000
				3,400
5. Fishing Pier Bait / Food Kiosk	Cash Registers	1	500	500
	Misc. Equipment		LS	500
				1,000
6. City Marina Park Marina	Radios	1	1,200	1,200
	Misc. Equipment		LS	2,000
				3,200
7. City Marina Park Launch Ramp	Radios	1	1,200	1,200
	Misc. Equipment		LS	1,500
				2,700
8. City Marina Park Swimming Beach	Radios	2	1,200	2,400
	Misc. Equipment		LS	1,000
				3,400
9. Elsinore West Marina	Radios	1	1,200	1,200
	Misc. Equipment		LS	2,000
				3,200
10. Elsinore West Launch Ramp	Radios	1	1,200	1,200
	Misc. Equipment		LS	1,500
				2,700
11. Elsinore West Swimming Beach	Radios	2	1,200	1,200
	Misc. Equipment		LS	1,000
				2,200
12. Recreation Island Marina	Radios	1	1,200	1,200
	Misc. Equipment		LS	4,000
				5,200
13. Recreation Island Fuel Facility	Radios	1	1,200	1,200
	Cash Registers	1	500	500
	Misc. Equipment		LS	1,000
				2,700
14. Recreation Island Swimming Beach	Radios	5	1,200	6,000
	Misc. Equipment		LS	2,500
				8,500
15. San Jacinto Launch Ramp	Radios	1	1,200	1,200
	Cash Registers	2	500	1,000
	Misc. Equipment		LS	1,500
				3,700
16. San Jacinto Swimming Beach	Radios	6	1,200	7,200
	Misc. Equipment		LS	3,000
				10,200
17. Lake Management	Command Comm. Ctr	1	6,000	6,000
	Patrol Radios	6	1,200	7,200
	Lifeguard Radios	3	1,200	3,600
	Pickup Trucks*	4	16,000	64,000
	Patrol Boats*	3	40,000	120,000
	12' Zodiacs*	2	8,000	16,000
				216,800

* Fully equipped.

TABLE VI-10
GROSS ANNUAL REVENUE SUMMARY

SOURCE	GROSS REVENUE ($)		CITY REVENUE ($)	
	1996	2001	1996	2001
1. Lake Use Permits (1)	286,975	622,505	286,975	622,505
2. Boat Launch Ramps (2)	376,800	703,740	178,328	385,407
3. Marina Slips (3)	0	1,059,288	0	502,056
4. Dry Boat Storage (4)	0	178,800	0	8,940
5. City Marina Park Campground(5))	1,209,446	1,511,807	60,472	75,590
6. Elsinore West R.V./Campground (5)	1,050,000	1,228,851	0	0
7. Parking - San Jacinto Beach (7)	0	650,250	0	650,250
8. Parking - Recreation Is. Beach/Park (7)	0	455,100	0	45,510
9. Special Events (8)		1,254,600	31,000	194,463
10. Jackie Nanette Ski Concession (9)	126,000	163,000	12,600	15,900
11. Youth & Group Facility (10)	0	375,000	0	375,000
12. Dock Permits (11)	20,000	30,000	20,000	30,000
13. Lake Citations (11)	4,000	6,000	4,000	6,000
14. Other Revenue (12)	0	10,000,000	0	1,000,000
TOTAL:	3,063,221	19,220,021	596,375	3,910,821

Notes:
(1) See Table VI-13
(2) See Table VI-14
(3) See Table VI-15
(4) Based on 300 boats; see Section 4.2
(5) Based on State projections; see Section 4.3
(6) Based on City projections; see Section 4.3
(7) See Section 4.4
(8) See Section 4.5
(9) See Section 4.6
(10) See Section 4.7
(11) See Section 4.8
(12) Section 4.9 and Table VI-16

TABLE VI-11
SUMMARY OF EXISTING LAKE FEES

LOCATION	ENTER	LAKE PERMIT	LAUNCHING		CAMPING	R.V. PARK
			BOAT	PWC		
Lake Perris	$6	Included	$5	$5	$14-$18	$14-$18
Lake Castaic	$6	Included	$6	$6	N/A	N/A
Big Bear Lake	$0	$15 (a)	Included	Included	$0-$20	$15-$22
Newport Dunes (1)	$5	N/A	$7-$10	$7-$10	$25-$50 (b)	$25-$50 (b)
Lake Park Resort (2)	$0	$5	N/A	N/A	$16	$16
Lake Elsinore City Park (2)	$4	$5	$5	$5	$11-$15	
Elsinore West Marina (2)	$0	$5	$4.50	$4.50	$12-$18	$12-$18
Weekend Paradise (2)	$5	$5	$5	$3	$5	$5
Crane Lakeside Park (2)	$0	$5	$7	$7	$18	$306 (c)

Notes: (a) Seasonal pass $60 (Apr.-Dec.); Daily 1st - $15, 2nd - $10, 3rd - $5.
(b) Off season $22 - $45.
(c) Monthly rental only.
(1) Not a lake, located in Upper Newport Bay, Newport Beach.
(2) Located on Lake Elsinore.

LOCATION	MARINA BOAT BERTHS				DRY BOAT STORAGE	
	DAILY	WEEKLY	MONTHLY	YEARLY	MONTHLY	YEARLY
Lake Perris (1)	$9.75-$12.50	$55	$175	$900-$1175	$50	$2/ft/mo.
Newport Dunes (2)	$253-$322 per month				$100	$5/ft/mo.
Big Bear Lake (3)	$500-$600 per six months					

Notes: (1) For boat lengths of 20' to 28'.
(2) Not a lake, located in Upper Newport Bay, Newport Beach; for boat lengths of 22' to 28'.
(3) For boat lengths of 20' to 25'.

TABLE VI-12
RECOMMENDED BOATING FEES

ITEM	FEE
Annual Pass	
Private Property	$150
General Public Launching (a)	$75
Commercial (b)	$150
Rental (Marinas)	$75
Rental (PWC + Other)	$75
Rental (Small Boats)	$25
General Public Berthing (c)	$75
Rowing & Sailing Clubs	$25
Youth & Group Facility	$15
Daily Pass	
Normal (d)	$6
Reduced (e)	$2
Others	
Boat Launch	$6 per launch
Boat Slip	$4.50 per LF per month
Boat Slip Side-Tie	$3.75 per LF per month
Private Dock Permit	$200 per year

Notes:
(a) Boats using public launch ramps.
(b) All commercial boating operations, including excursion boats, party fishing boats, parasailing boats, boat testing by manufacturers/sales/repair shops, etc.
(c) Boats berthed in marina slips.
(d) All power boats and all boats over 8 feet in length (assume 90% of daily boats).
(e) All non-power boats 8 feet and less in length (assume 10% of daily boats).

TABLE VI-13
LAKE USE REVENUE

ITEM		1996		2001	
Yearly Boat User Count		80,000		170,000	
Annual Pass Boat User Count*		28,000		59,500	
Daily Pass Boat User Count**		52,000		110,500	
Type of Pass	Fee ($)	Quantity	Revenue ($)	Quantity	Revenue ($)
Annual Pass					
Private Property	150	150	22,500	150	22,500
General Public Launching (a)	75	200	15,000	300	22,500
Commercial (b)	150	-	-	13	1,950
Rental (Marinas)	75	-	-	52	3,900
Rental (PWC+Other)	75	66	4,950	66	4,950
Rental (Small Boats)	25	-	-	40	1,000
General Public Berthing (c)	75	-	-	598	44,850
Rowing & Sailing Clubs	25	5	125	30	750
Youth & Group Facility	15	-	-	57	855
	Subtotal	421	42,575	1,306	109,255
Daily Pass					
Normal (d)	5	46,800	234,000	99,450	497,250
Reduced (e)	2	5,200	10,400	11,050	22,100
	Subtotal	52,000	244,400	110,500	519,350
TOTAL REVENUE			286,975		622,605

Notes:
* Assume 35% of total boat user count.
** Assume 65% of total boat user count.
(a) Boats using public launch ramps.
(b) All commercial boating operations, including excursion boats, party fishing boats, parasailing boats, boat testing by manufacturers/sales/repair shops, etc.
(c) Boats berthed in marina slips.
(d) All power boats and all boats over 8 feet in length (assume 90% of daily boats).
(e) All non-power boats 8 feet and less in length (assume 10% of daily boats).

4.2 Marina Slips/Dry Boat Storage

Table VI-15, showing potential marina slip users and revenue, was developed using information contained in Tables IV-12 and IV-13 and the recommended fee structure shown in Table VI-12. The marina slip revenue is based on a 90 percent occupancy rate for all four marinas, and assumes the City owns and operates the Seaport Marina and collects 25 percent rent of gross slip revenue from the other three marinas.

TABLE VI-14
LAUNCH RAMP REVENUE

ITEM	1996	2001
Annual Boat Count	80,000	170,000
Peak Day Boat Count	734	1,560
Peak Day Launch Ramp Count	576	1,071
Launch Ramp Count Percentage	0.785	0.687
Annual Launch Ramp Count	62,800	116,790
Annual Revenue @$6 per Launch	$376,800	$700,740
Revenue From City Launch Ramp(s)		
@30% Total Launches	$113,040	
@40% Total Launches	$150,720	$280,296
@50% Total Launches		$350,370
Lease Revenue to City @10%		
@70% Total Launches	$26,376	
@60% Total Launches	$22,608	$42,044
@50% Total Launches		$35,037
Total City Revenue		
@30% - 70%	$139,416	
@40% - 60%	$173,328	$322,340
@50% - 50%		$385,407

Revenue from dry boat storage is based on a non-City operated 300 boat storage facility with an average boat length of 24 feet. The storage fee is $2 per foot of boat length. Gross revenue shown is based on 100 percent of occupancy with a five percent rent of gross revenue going to the City.

4.3 Existing R.V. Park Facilities

Revenue projections developed in 1991 by the State of California, Department of Parks and Recreation, for the City Park Campground facilities stated the camping facilities had the potential to generate $1,511,807 in gross revenue for a lake elevation of 1,240 feet. This figure has been used for year 2001 to allow time for improvements to this facility. Revenue from camping facilities for year 1996 has assumed 80 percent of the year 2001 revenue. The City should receive a minimum of five percent of this gross camping revenue from the concessionaire. However, the City should receive more than five percent if they undertake

TABLE VI–15
POTENTIAL MARINA SLIP USERS AND REVENUE

Location & User	Slip Size (ft)	Number of Slips	Rentable Lineal Feet	Monthly Fee ($/L.F)	Monthly Revenue ($)	Subtotal ($)
Seaport Marina						
Public	20	121	2,420	4.50	10,890	
	24	93	2,232	4.50	10,044	
	28	68	1,904	4.50	8,568	
	32	7	224	4.50	1,008	
	Subtotal	289	6,780		30,510	
Rentals	20	5	100	4.50	450	
	24	15	360	4.50	1,620	
Commercial	32	7	224	4.50	1,008	
Patrol	24	6				
						33,588
City Marine Park Marina						
Public	20	126	2,520	4.50	11,340	
	24	95	2,280	4.50	10,260	
	28	17	476	4.50	2,142	
	Subtotal	238	5,276		23,742	
Rentals	24	19	456	4.50	2,052	
						25,794
Elsinore West Marina						
Public	20	68	1,360	4.50	6,120	
	24	70	1,680	4.50	7,560	
	Side Ties	16	400	3.75	1,500	
	Subtotal	154	3,440		15,180	
Rentals	24	10	240	4.50	1,080	
						16,260
Recreation Marina						
Public	20	37	740	4.50	3,330	
	24	81	1,944	4.50	8,748	
	28	32	896	4.50	4,032	
	32	5	160	4.50	720	
	Subtotal	155	3,740		16,830	
Rentals	24	22	528	4.50	2,376	
Commercial	32	6	192	4.50	864	
Y & G	20	18	360	4.50	1,620	
	Side Ties	8	200	3.75	750	
	On Dock	16				
						22,440

Location	Maximum Monthly Revenue ($)	Occupancy Rate (%)	Monthly Expected Revenue ($)	Yearly Expected Revenue ($)
Seaport Marina	33,588	90	30,229	362,748
City Marina	25,794	90	23,215	278,580
Elsinore West Marina	16,260	90	14,634	175,608
Recreation Marina	22,440	90	20,196	242,352
Total:				1,059,288

the significant expenditure of improving the park facilities instead of a developer/concessionaire doing so.

A gross revenue of $1,060,000 for R.V. site rentals and product sales has been projected for the Elsinore West Marina R.V. Park and Campground facility, based on income projections (by others) of improvements to be completed, and on the City's review of financial records. This figure has been used for year 1996, with a three percent annual growth increase for year 2001. Since this facility is privately owned and the R.V. site rentals occur on this property, the City would receive no revenue from this operation.

4.4 Beach Parking Facilities

Paid parking is recommended for a proposed public swimming beach facility, owned and operated by the City, within San Jacinto Channel. Using a fee of $5 per car, peak weekend parking of 1,300 cars, peak weekday parking of 741 cars (57 percent of weekend), a daily turnover rate of 15 percent, a 20 week season, and deducting five weekends for special events during the 20 week period, a gross parking revenue of $650,250 is generated. During a peak weekend, the proposed San Jacinto swimming beach can accommodate 3,680 people, which represents 2.8 people per car for 1,300 cars.

Paid parking is also recommended for use of swimming beach and park ground facilities on Recreation Island. It is assumed that proposed facilities on Recreation Island will be operated by a concessionaire, except for the youth and group facility. Using $5 per car, 560 of the Recreation Island parking spaces for swimming beach and park usage, and estimating peak season weekend/weekday and off season weekend/weekday beach/park car parking, a gross annual parking revenue of $455,100 is projected. The City should receive a minimum of ten percent of gross revenue from this parking. There are California cities that receive up to 25 percent of gross revenue from parking facilities. The final percentage should depend on the City's involvement towards improving these facilities.

4.5 Special Events

It is expected that a majority of special events revenue will be generated by powered boat events. Using the example 1994 special events schedule presented in IV.6.13, "Example 1994 Special Events Powered Boat Schedule" for year 2001, and assuming that the proposed

San Jacinto Channel improvements are completed and the special events program is fully developed, the following paid attendance is projected:

March 26 - 27	10,000
April 17	4,500
May 14 - 15	2,500
June 5	5,000
June 25 - 26	7,000
July 23 - 24	12,000
August 20 - 21	6,000
September 24 - 25	7,500
October 1 - 2	3,500
Total Annual Attendance	58,000 (PAID)

Based on this nine event paid attendance of 58,000 spectators, the following annual revenue is projected:

Attendance/Gate ($14 per person average)	$ 812,000
Parking ($3 average per car/2.5 people per car)	$ 69,600
Food/Beverage Concessions* ($4 per person)	$ 232,000
Souvenir Concessions ($2 per person)	$ 116,000
Miscellaneous (pit passes, special display areas, etc.)	$ 25,000
Estimated Total Gross Revenues	$1,254,600

* Does not include beer sales -- if alcohol sales are permitted at events, increase gross revenue potential by $250,000.

Based on a 13 to 18 percent of gross revenue to the City from the special events promoter, potential revenue to the City is $163,098 to $225,828. Table VI-10 uses 15.5 percent of gross revenue. For year 1996, a gross annual special events revenue of $200,000 has been estimated, with $31,000 going to the City.

4.6 Jackie Nanette Ski Concession

Based on seven months of operation for one water ski course, Jackie Nanette has averaged

$390 per month in gross revenue. There has been sufficient demand to accommodate three separate water ski courses within San Jacinto Channel. An annual gross revenue of $126,000 is projected for year 1996 when expanding to three courses and assuming 90 percent of the current average monthly revenue per course. For year 2001, an average monthly gross revenue of $425 per course was assumed. The City would receive ten percent of gross revenue for this operation.

4.7 Youth and Group Facility

It is difficult at this time to estimate potential revenue from this source. Details of this facility and its expected programs, along with public interest and a potential fee structure are required to adequately project revenue from this facility. However, the County of Orange's Dana Point Harbor facility generated almost $300,000 of gross revenue during 1992. Since the proposed youth and group facility on Recreation Island would be similar to the Dana Point facility, a projected gross income of $375,000 is estimated for year 2001. It is proposed that the City would develop, own and operate this facility.

4.8 Dock Permits/Lake Citations

Potential revenue from dock permits and lake citations at this point is only a rough estimate. For year 1996 it is assumed that 100 private properties will pay a $200 annual fee in order to have a dock on their property. It is estimated that this number would increase to 150 private properties in year 2001.

Revenue from lake citations is assumed to be $4,000 in year 1996, and $6,000 in year 2001.

4.9 Other Revenue

The recommended specific lake development plan presented in Section V, "Specific Lake Development Plan", lists potential marine concessions and recreational lakefront concession activities. For those activities that either take place on City-owned land, on the City-owned lake, or require permit City approval, the City can either negotiate a lease fee or establish a permit fee. For instance, this Master Plan Study has proposed a world class resort at Recreation Island, which would include a hotel and restaurant, a marina and fuel facility, various marine concessions, a swimming beach and lagoon, and parklands. As owner of

this land, the City could complete the construction of the proposed island configuration, and negotiate a contract with a master lessee to develop and operate all proposed facilities on this island with the master lessee paying the City a percentage rent from the various operations. All or a portion of the operations proposed for the Seaport Marina complex could also be operated through a master lessee. Table VI-16 presents a percentage range for lease charges on concession activities based on gross revenue for the identified concession activities.

Presently, the potential amount of gross revenue from these other sources, not already accounted for in Table VI-10, is unknown. It would be dependant on the range of waterfront facilities eventually developed, on their ownership and lease arrangements, and on the market conditions at that time. However, based on the proposed facilities presented in this Master Plan, the potential gross annual revenue from all other sources not already addressed could range between $4 million to $20 million. Assuming these facilities are operated through either a leasehold agreement or on a permit basis and the average rent is ten percent, the City could generate between $400,000 to $2,000,000 on an annual basis.

A gross revenue figure of $10 million has been used in Table VI-10 at this time. In addition, there are other revenue sources that the lake's development would generate for the City, which have not been accounted for in Table VI-10. These would include revenue from such sources as Transient Occupancy Tax (TOT), sales taxes, business licenses, development fees, etc.

TABLE VI-16
LEASE CHARGE FOR CONCESSION ACTIVITIES

CONCESSION ACTIVITIES	LEASE CHARGE*
Marina Slips	20-25
Transient Boat Slips	20-25
Boat Storage Open /Stacked	5-11
Storage Lockers	20-25
Dinghy Racks	20-25
Party Fishing Boats	15
Excursion Boats	15
Parachute Sailing	10
Boat/PWC Rentals	20
Boat Launch	5-10
Boat Charters	5
Boat Sales (New)	1.5-2
Boat Sales (Used)	1.5
Brokerage Commissions	10
Boat Instructions/Lessons	10
Water Ski/PWC Lessons	10
Equipment Rentals	10
Insurance Brokerage	10
Boat Repairs	3-4
Do-it-Yourself Repairs	3-5
Ships Chandlery	3-4
Repair Parts	1-2
Boat Hoist	10
Sanitary Pump-Out Station	5
Fuel Sales	3
Bait and Tackle Shop	4-6
Parking	10-25
Boat Trailer Parking	10
Day Use	5
Overnight Camping	5-20
R.V. Park	5-20
R.V. Convenience Store	4-5
Snack Stands	4-5
Office Rent	10
Retail Store	3
Hotels/Motels Rooms	6-8
Guest Telephone Service	3-5
Miscellaneous	5
Health Club	6
Gift Shop	4-7
Meeting Rooms	3-5
Restaurants	3-5
Alcohol	5-7
Coffee Shop/Catering - Food	3
Coffee Shop/Catering - Beverage	3-5
Outside Caterers	10
Game Machines	25
Vending Machines	5
Newspaper Racks	5
Pay Phone	50

*Percentage range of gross revenue.

VII. IMPLEMENTATION RECOMMENDATIONS

A substantial commitment will be required from both the public and private sectors in order to realize the full optimization of water sport recreational benefits for Lake Elsinore. This will require the development of waterfront facilities and landside infrastructure either as outlined in this Master Plan Study or as modified to allow for maximizing water sports and recreational activities in and around the lake's perimeter. Since this development will require substantial resources and take many years to reach development goals, priorities need to be identified to initially pursue those facilities which will have a more immediate impact on the lake's usage. In addition, a public/private partnership must be planned in order to optimize public resources on facilities that will spearhead the lake's continued development, provide maximum public recreational uses and be financially sound. Decisions concerning the recommended ownership, development, operations and construction phasing of the proposed improvements must also be addressed.

1. PRIORITIES

It goes without saying that the absolute first priority is to stabilize the lake's water level and to ensure adequate clean water and overall water quality in order to satisfy the general public's perception of water quality prior to their active use of the lake. With this priority satisfied, Lake Elsinore has the potential to become a highly successful all-around lake that will support a full mixture of water sport activities and other shoreside recreational benefits.

It is recommended that the following waterfront facilities be prioritized in the order presented:

1. Public boat launch facility that can accommodate all design lake water levels, and that has sufficient adjacent boat trailer/car parking and other necessary improvements.

2. Special events area that can successfully promote and stage professional level competition boating events.

3. Swimming beach area with sufficient supporting facilities for families to truly enjoy the recreational beachside activities provided by the lake.

4. Marina boat berthing facility with supporting landside marine concessions and a restaurant for the general public's enjoyment of waterfront boating activities.

5. Improvement of either the existing City Park and Campgrounds or the existing Elsinore West Marina R.V. Park and Campgrounds to allow for enhanced waterside camping sites for the general public, and to provide additional boat launching, beach and marina facilities.

6. Development of Recreation Island as a world class destination resort in combination with a marina, swimming beach, parkland and a youth and group facility for the general public's use.

7. Development of public shoreline areas with a pedestrian linear greenbelt walkway, boat beaches, benches, shade structures and restroom facilities.

1.1 Boat Launch Facility

The proposed Seaport boat launch ramp facility presented in V.1.2, "Seaport Marina Complex (3,000 LF Shoreline)", will accommodate boat launching from a low lake level of 1,240 feet to a design flood lake level of 1,263 feet. This facility has all the required improvements including sufficient boat trailer/car parking. An alternative boat launch ramp facility which could be designated for public use, is the proposed San Jacinto Channel facility presented in V.5.2, "Special Events Channel". This launch ramp facility could be used for both public boat launching and for special events. During special events, it would not be available for public boat launching. To make this facility available for the general public, the proposed westerly most floating breakwater discussed in V.5.1, "Water Ski Concession", to define the water ski school concession channel, would need to be relocated to the east side of the launch ramp. Either of these facilities could eventually be constructed to full eight-lane launch ramps, as detailed in this Master Plan Study. However, initially they could be constructed as four-lane facilities. The proposed San Jacinto launch ramp will accommodate boat launching from a low design lake level of 1,240 feet to a maximum lake level of 1,258 feet. The temporary special events pit area would be utilized for boat trailer/car parking if this facility is used for public boat launching.

1.2 Special Events Area

The development of the San Jacinto Channel for the staging of special events, if fully developed as described in V.5, "San Jacinto Channel Area (~150 Acres)", would provide a 2,300-lineal-foot swimming beach facility with parking, in addition to the special events arena, boat launch ramp facilities and water ski school concession area. Presently, the existing channel would be unusable for special events once the lake level drops below the 1,255-foot level, and would be significantly reduced in width for the water ski school concession once the lake level drops below the 1,250-foot level. Therefore, the proposed channel widening is essential in order to operate these events during the expected normal range in lake levels of 1,240 to 1,249 feet.

1.3 Swimming Beach Area

The initial public swimming beach area, with supporting facilities, can be provided either during the development of San Jacinto Channel or during the development of the Seaport Marina complex discussed in V.1.2, "Seaport Marina Complex (3,000 LF Shoreline)".

1.4 Marina Boat Berthing Facility

The Seaport Marina complex as proposed, would provide an excellent marina boat berthing facility with supporting landside marine concessions, and a restaurant for the general public's enjoyment of waterfront boating activities.

1.5 Enhanced Campground Facilities

Either one or both of the existing City Park and Elsinore West Marina campground facilities along Riverside Drive could be improved to provide enhanced waterside camping sites for the general public, in addition to boat launch facilities, a beach and marina facilities. The City Park is owned by the City and operated by an existing concessionaire, while Elsinore West Marina is under current private ownership.

Elsinore West Marina requires a lower dollar investment to improve its facilities, however, all its campsites are for recreational vehicles. Its main boat launch ramp is currently usable. The City Park site is more than double the size of Elsinore West Marina when the

lake water level is 1,240 feet or lower. Therefore, it has the potential to provide more campsite facilities, and waterside recreational access and facilities. However, a substantial dollar investment is required to raise the site's overall ground elevations in order to reach this potential for lake water levels exceeding 1,240 feet. This park facility also provides campground sites in addition to R.V. campsites; however, without increasing the existing ground level, the facility is required to operate at reduced capacity. The campground operating capacity is currently dependent on the height of the lake's water level. Also, without significant site improvements, recreational boating access from this facility is essentially lost since the existing launch ramp is under water.

1.6 Development of Recreation Island

The planning and permitting process for the eventual development of Recreation Island into a world class destination resort should be ongoing at this time. Its full potential as proposed in this Master Plan is discussed in V.4, "Recreation Island Area (~50 Acres)". Besides its potential use as a destination resort, it will provide the general public with a full spectrum of water sport and shoreside recreational activities.

1.7 Development of Public Shoreline Access

To realize the full recreational benefit of Lake Elsinore, it is important to develop as much of the shoreline area as possible with a public greenbelt walkway and with natural boat beaches for boaters to pull up along the shoreline. These areas have mainly been identified along Lakeshore Drive and along the existing earthen levee.

2. PUBLIC/PRIVATE PARTICIPATION

Due to the significant level of effort and substantial investment required to fully develop Lake Elsinore as proposed in this Master Plan Study, it is essential to have the support of both the public and private sectors in a public/private partnership. Other successful water/land recreational developments, such as Mission Bay Park in San Diego, have successful public/private partnerships, with the private sector contributing over one-half the total investment.

3. RECOMMENDATIONS

It is important that investment dollars from the City and other public sources be targeted towards those proposed waterfront facilities which will: (1) help initiate the increased use of the lake in order to attract private investment; (2) most directly benefit public recreational activities; and (3) be sound financial investments. Table VII-1 presents financial information for proposed facilities that the City should initially consider for developing/improving and operating.

3.1 Seaport Launch Ramp/Parking Facility

It is recommended that the City apply for a State of California, Department of Boating and Waterways grant to develop the proposed Seaport boat launch ramp and boat trailer/car parking facility. The State's filing deadline for their 1995/96 fiscal year funding was June 1, 1994. Since this facility qualifies under the Boating and Waterways grant program, no payback is required on these funds. An approved project may obtain a grant to cover 100 percent of the design, construction and construction administration costs. Gross operating revenue shown for this facility is based on it handling 33 percent of the total annual public boat launches shown in Table VI-14. This facility could initially be constructed as a four-lane launch ramp, which would reduce its initial development cost by approximately $200,000. It is recommended that this boat launch facility be developed and operated by the City.

3.2 Seaport Marina

It is also recommended that the City apply for a Boating and Waterways low interest (three percent), 30-year loan, to design and construct the proposed Seaport Marina. The development cost of $6,262,550 shown in Table VII-1, is taken from Item A.4 in Table VI-1, and excludes development costs for the restaurant, retail building, concession building, fuel facility and harbor master building. It is recommended that the City develop the landside infrastructure, the marina basin and the floating dock marina, and that the City operates the floating dock marina. Depending on available financial resources, it is further recommended that the City either construct the proposed landside building shells and lease out all marine-related (except floating dock marina) and landside concessions, or that the City negotiate a master lease agreement with a developer to construct all landside buildings

TABLE VII-1
FINANCIAL DATA FOR POTENTIAL CITY-OPERATED FACILITIES

Facility	Development Cost ($) (1)	Annual ($)		
		O & M (2)	Revenue ($)	Profit (4)
1. Seaport Launch Ramp/Parking	1,392,928	131,375	231,246	99,871
2. Seaport Marina (5)	6,282,550	192,736	362,746	170,010
3. San Jacinto Channel				
Boat Launch Ramps	625,738	110,610	231,246	120,636
Swimming Beach/Parking and Special Events	7,564,788	211,935	860,013	648,078
Subtotals	8,191,526	322,545	1,091,259	768,714
4. City Marine Park				
Landside Campgrounds	6,974,719	825,164	1,511,807	686,643
Marina	7,302,305	149,785	278,960	134,795
Launch Ramp	976,775	49,755	140,148	90,393
Swimming Beach	1,693,750	46,368	–	(46,368)
Subtotals	16,950,549	1,067,072	1,930,535	863,463
5. Elsinore West Marina				
Landside R.V. Sites	1,437,000	460,000	1,226,831	766,831
Marina	1,004,000	116,684	175,608	58,924
Launch Ramps	2,000	48,075	280,296	232,221
Swimming Beach	464,250	93,359	–	(93,359)
Subtotals	2,907,250	858,118	1,684,735	1,026,617
6. Public Beaches, Walkways and Lake Management (6)	5,064,310	504,115	(7)	

NOTES:

(1) From Table VI-1, does not include land acquisition, environmental, permitting, design and construction management costs.
(2) Annual operating and maintenance costs from Table VI-2.
(3) Annual gross operating revenue derived from Table VI-10.
(4) Annual net operating profit exclusive of debt service, depreciation, capital expenditure, insurance and miscellaneous other operating costs.
(5) Profit is for marina only, does not include additional profit from marina landside concessions.
(6) Includes Facilities A.2., A.5. (excluding concession building), A.6., A.7., A.8. (excluding bait/food kiosk), A.9., D and F presented in Table VI-2.
(7) Revenue generated from lake use permits, dock permits, lake citations, and other revenue listed as Source Items 1, 12, 13 and 14 in Table VI-10 could be considered to cover these O & M costs. Annual revenue from these sources for year 2001 totals $1,659,605.

and operate all marine-related (except floating dock marina) and landside concessions.

3.3 San Jacinto Channel

The development cost and annual operating cost and revenue shown in Table VII-1 for the San Jacinto Channel boat launch ramps includes an eight-lane main launch ramp facility, used for public boat launching except during special events. The development cost also includes some funds for the development of a minimum use, two-lane ramp towards the east end of the channel for the removal of special events boats. Even though an eight-lane main launch ramp is preferable for major special events, for the launching of boats at the channel's westward end, a four-lane launch ramp could suffice. If this ramp is utilized for public boat launching, then it could either replace or reduce the required capacity of the proposed Seaport boat launch ramp facility. If the San Jacinto boat launch ramp is constructed as a four-lane ramp, its development cost would be approximately $400,000, including the two-lane ramp at the channel's eastward end, and the annual operating cost and revenue shown in Table VII-1 would be reduced by about 40 percent.

The other proposed improvements to the San Jacinto Channel consist of the swimming beach and parking facility on the shoreside, and the special events/water ski school concession channel on the waterside. A significant portion of the development cost shown in Table VII-1 is for widening the channel and raising the grade elevation on the landside. However, once this development is completed, the swimming beach facility and the special events channel would become very profitable enterprises.

It is recommended that the City either develop the San Jacinto Channel improvements, operate the boat launch ramp and swimming beach facilities, and negotiate land/water leases for special events and the water ski school concession, or that the City through its joint venture with Eastlake Community Builders develop all proposed facilities and operate them through a master land/water lease agreement.

3.4 Campground Facilities

Table VII-1 presents development costs and annual operating costs and revenue for improving the existing City Park Campground and Elsinore West Marina R.V. and Campground facilities along Riverside Drive. A review of these costs and their potential

revenue show that it would be costly to construct the proposed City Marine Park facility improvements, and would be less profitable on an annual basis when compared with the Elsinore West Marina facility. The existing land lease with Lake Elsinore Recreation Area Incorporated is well below current market value. In addition, by implementing capital expenditures of $5 million to $8 million, the entire landside campground and boat launch ramp facilities could be utilized. A reduced investment would also significantly improve its operating potential under a design operating lake level of 1,240 to 1,249 feet.

It is recommended that the City either renegotiate the existing lease with Lake Elsinore Recreation Area Incorporated, or that the City negotiates to buy out this existing lease and negotiate a new land/water lease with a major developer to improve and operate this City Park facility. It is also recommended that the City consider the potential purchase and improvements to the Elsinore West Marina facility after completing a detailed financial analysis of this facility.

3.5 Public Beaches, Walkways and Lake Management

It is essential that the public beaches and walkway facilities, as presented in this Master Plan Study, be developed by the City as funds become available, in order to realize the full leisure and recreational activities proposed in this Master Plan. These facilities consist of the proposed swimming, boating and fishing beaches along Lakeshore Drive; the fishing pier and linear greenbelt walkway along Lakeshore Drive; and the linear greenbelt walkway along the existing levee. These facilities will generate little or no direct revenue to the City, but are vital for the overall recreational development of the lake. There are various sources of State and Federal grants and loans available for these types of recreational improvements that should be looked into and pursued as appropriate.

Additionally, the annual cost to manage the lake is significant. This cost includes management personnel, lake ranger/lifeguard patrol personnel and supervisory lifeguard personnel. There should be sufficient funds generated from such revenue sources as lake use permits, dock permits, lake citations and other revenue listed in Table VI-10 to offset these public beach, walkway and lake management operating and maintenance costs as they are incurred during the lake's development.

3.6 Summary and Phasing

The proposed lake improvements recommended in this Master Plan Study represent a public and private investment of approximately $100 million (1994 dollars), exclusive of any land acquisition costs and development costs associated with the proposed resort hotel/restaurant complex on Recreation Island. To undertake this significant investment in order to ensure the future potential of the lake as a recreation resource, it is essential that a strong public/private partnership be developed. These improvements will generate substantial revenue for the City in the form of lease revenues, Transient Occupancy Tax (TOT), sales taxes, business licenses, development fees, user fees, etc. Since the proposed capital improvements can be phased over a 20-year planning period, this will help to minimize the need for debt financing. However, it is still expected that such funding sources as general obligation bonds, lease revenue bonds, open space and park bonds, certificates of participation, and State or Federal low interest loans will be utilized for funding of public improvements. In addition, State and Federal grants should actively be pursued for improvements associated with shoreline restoration, coastal public access, habitat restoration and public boat launch facilities. The State of California's Department of Boating and Waterways, and Coastal Conservancy, and the Environmental Protection Agency's Wetlands Protection Program and Near Coastal Waters Grant Program are possible sources.

The City should strongly consider designating the lake as an enterprise fund, in order that all revenue generated from the lake be used only for maintenance, operations and capital costs incurred to manage Lake Elsinore. This would create an incentive to enhance revenue and to operate the lake efficiently.

Table VII-2 presents a summary of recommended facility implementation, listing the current land owner, and recommending potential action for the development, operation and construction phasing of all proposed improvements.

TABLE VII-2
RECOMMENDED FACILITY IMPLEMENTATION

FACILITY	CURRENT OWNER	RECOMMENDATION	PHASE *
A. LAKESHORE DRIVE DEVELOPMENT			
1. Seaport Boat Trailer/Car Parking Area	City	City develop with State grant and operate	1
2. Seaport Boat Beach (350 LF)	City	City develop with State grant and maintain	2
3. Seaport Launch Ramp & Staging Area (8 Lanes)	City	City develop with State grant and operate	1
4a. Seaport Marina (322 Boat Slips)	City	City develop with low interest State loan and operate	2
4b. Seaport Marina Fuel Facility	City	City lease for development and operation	2
4c. Seaport Marina Landside Concessions (Restaurant, Marine Retail, Marine Concessions)	City	City either develop building shells and lease for interior improvements and operations, or lease for complete development and operation	2/3
5a. Non-Power Boat Concession Beach	City/Private	City purchase remaining land and either develop site and building shell and lease for interior improvements and operations, or lease for complete development & operation	2/3
5b. Non-Power Boat Beach (700 LF)	City/Private	City purchase remaining land and develop with State grant and maintain	2
6. Seaport Swimming Beach (700 LF)	Private	City purchase land, develop with State grant and operate	2
7. Boat Beach (1,000 LF)	City/Private	City purchase remaining land, develop with State grant and maintain	2/3
8a. Fishing Beach & Pier (1,000 LF)	City/Private	City purchase remaining land, develop beach with State grant and pier with low interest State loan and maintain	2/3
8b. Bait/Food Kiosk	City	City lease for development and operation	2/3
9. Boat Beach (4,500 LF)	City/Private	City purchase remaining land, develop with State grant and maintain	2/3
B. RIVERSIDE DRIVE DEVELOPMENT			
1. City Marina Park Marina (Future 257 Boat Slips)	City	City lease for development and operation	5
2. City Marina Park Launch Ramp (10 Lanes)	City	City lease for improvements and operation	5
3. City Marina Park Swimming Beach (700 LF)	City	City lease for development and operation	3
4. City Marina Park Landside R.V. Development	City	City lease for improvements and operation	4
5. Elsinore West Marina (146 Boat Slips)	Private	City water/dock lease for development and operation by private party	4
6. Elsinore West Marina Launch Ramps (10 & 11 Lanes)	Private	City fee for launching operation by private party	3/4
7. Elsinore West Marina Swimming Beach (300 LF)	Private	Developed and operated privately	1
8. Elsinore West Marina Landside R. V. Development	Private	Developed and operated privately	1/2
			1/2

* Phase 1: 0 – 2 years
Phase 2: 2 – 5 years
Phase 3: 5 – 10 years
Phase 4: 10 – 15 years
Phase 5: 15 – 20 years

TABLE VII–2
RECOMMENDED FACILITY IMPLEMENTATION
(CONTINUED)

FACILITY	CURRENT OWNER	RECOMMENDATION	PHASE *
C. RECREATION ISLAND DEVELOPMENT			
1a. Marina Complex (201 Boat Slips/Landside Buildings)	City	City/Private joint venture development. (City develop island and Private develop facilities/infrastructure.) City master land/water/dock lease for operation of all island facilities except youth and group facility	4/5
1b. Marina Fuel Facility	City	City/Private joint venture development. (City develop island and Private develop facilities/infrastructure.) City master land/water/dock lease for operation of all island facilities except youth and group facility	4/5
2. Youth and Goup Facility (1.75 Acres)	City	City develop with low interest Federal/State loan and operate	3/4
3. Swimming Beach (1,900 LF)	City	City/Private joint venture development. (City develop island and Private develop facilities/infrastructure.) City master land/water/dock lease for operation of all island facilities except youth and group facility	3/4
4. Sid Beaches (1,800 LF)	City	City develop with State grant and maintain	3/4
5. Island Park Area	City	City/Private joint venture development. (City develop island and Private develop facilities/infrastructure.) City master land/water/dock lease for operation of all island facilities except youth and group facility	3/4
6. Hotel/Restaurant Complex	City	City/Private joint venture development. (City develop island and Private develop facilities/infrastructure.) City master land/water/dock lease for operation of all island facilities except youth and group facility	4/5
D. LEVEE IMPROVEMENT			
Levee Improvement (17,600 LF)	City	City develop with State/Federal grant and maintain	2/3
E. SAN JACINTO CHANNEL DEVELOPMENT			
1. Boat Launch Ramps	City/Private	City purchase remaining land, develop with grants, low interest loans or bonds and operate	2
2. Swimming Beach (2,300 LF)	City/Private	City purchase remaining land, develop with grants, low interest loans or bonds and operate	2
3. Parking Area (Cars)	Private	City purchase land, develop with grants, low interest loans or bonds and operate	2
4. Special Events	City	City land/water lease with event promotor	2
5. Water Sid Concession	City	City land/water lease with concessionaire	1
F. GRAND AVENUE DEVELOPMENT			
1. Nautical Center	Private	Developed and operated privately	4

* Phase 1: 0 – 2 years
Phase 2: 2 – 5 years
Phase 3: 5 – 10 years
Phase 4: 10 – 15 years
Phase 5: 15 – 20 years

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APPENDIX A

Lake Perris Boat Counts,
Camping Site Use, and
Vehicle Counts (1988 - 1993)
(Daily, Weekday, Weekend and Monthly
Statistics and Graphs)

BOAT COUNTS AT LAKE PERRIS

MONTHLY BOAT COUNTS

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
1988	2,149	3,897	5,838	7,061	9,983	11,796	15,209	15,161	8,939	6,329	1,677	1,259	90,298
1989	2,172	2,490	5,649	10,280	7,921	11,097	13,171	12,260	8,995	5,862	4,640	2,789	87,546
1990	1,855	3,112	6,732	9,709	11,181	17,311	19,529	16,986	12,779	7,407	4,400	2,026	113,029
1991	2,647	4,827	4,466	8,339	10,845	12,237	15,123	17,249	11,238	6,162	4,196	1,689	101,033
1992	2,462	3,700	3,990	12,414	14,955	16,438	16,257	19,134	12,533	7,542	4,205	2,026	117,656
1993	2,092	2,816	7,712	14,275	16,203	16,331	19,234	19,417	11,519	7,467	3,503	2,206	122,719
Average	2,220	3,474	5,898	10,346	11,848	14,202	16,754	16,701	10,999	7,135	3,804	2,000	

MONTHLY AVERAGE WEEKEND BOAT COUNTS

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1988	137	306	508	398	581	619	675	693	509	399	101	48
1989	158	199	261	535	366	484	484	457	446	352	280	149
1990	117	242	384	536	645	887	890	634	705	448	311	104
1991	217	354	309	563	643	583	762	675	666	518	256	82
1992	148	246	251	781	811	859	847	918	755	461	242	123
1993	111	199	547	758	816	780	881	913	675	426	236	112
Average	147	257	377	594	641	702	761	782	629	434	238	103

MONTHLY AVERAGE WEEKDAY BOAT COUNTS

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1988	37	69	121	166	224	311	403	388	221	111	39	37
1989	38	45	155	247	216	329	392	374	237	123	118	62
1990	40	59	149	233	261	444	524	448	287	167	87	47
1991	40	100	65	174	248	320	386	426	240	175	90	43
1992	56	74	79	280	326	435	499	474	295	154	96	45
1993	44	61	145	375	393	459	514	509	279	159	73	57
Average	42	68	119	246	278	383	453	437	260	147	84	49

Note: Number for August 1988 is an average value, not an actual count.

DAILY BOAT COUNTS AT LAKE PERRIS

Year of 1993

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	147	80	63	164	818	356	493	915	434	411	107	31
2	58	64	57	265	876	300	893	457	375	723	80	35
3	123	61	84	785	269	360	897	446	480	694	74	71
4	36	80	108	604	176	557	687	459	718	254	96	187
5	31	80	173	241	184	274	625	700	814	241	149	172
6	5	322	517	242	231	420	440	642	768	147	407	30
7	3	154	705	413	340	197	421	885	300	232	457	23
8	16	16	145	494	744	247	501	1046	333	227	86	44
9	84	28	127	841	735	361	730	396	320	423	72	42
10	12	67	151	876	334	452	868	446	606	424	72	46
11	40	60	156	546	224	695	961	526	477	120	59	87
12	29	177	279	254	325	837	417	418	798	94	59	232
13	20	318	747	261	311	960	369	793	206	75	144	21
14	24	296	685	344	685	416	439	830	140	53	125	13
15	20	126	103	297	912	359	456	892	168	157	34	27
16	44	86	137	456	910	394	692	428	153	150	40	32
17	30	89	154	684	317	385	887	648	371	245	51	37
18	8	14	206	719	224	826	924	467	587	86	44	72
19	25	28	336	167	311	916	462	397	616	78	61	84
20	36	19	573	682	356	833	379	778	141	137	178	25
21	60	147	589	352	732	730	374	697	134	124	248	29
22	79	26	194	316	1036	428	401	938	108	146	98	48
23	182	19	216	516	606	837	724	359	93	607	20	34
24	217	71	200	720	277	557	661	354	267	425	83	68
25	39	96	104	665	250	642	851	351	720	149	97	34
26	51	33	104	349	358	961	959	441	668	121	201	98
27	82	68	253	282	543	1030	536	802	169	87	208	50
28	61	247	228	282	857	491	410	806	157	105	121	87
29	85		116	952	782	599	361	1004	206	169	51	139
30	222		140	675	741	516	811	384	184	311	42	147
31	133				725		969	324		360		220
Total Monthly Days	31	28	31	30	31	30	31	31	30	31	30	31
Monthly Subtotal	2,032	2,816	7,712	14,275	16,268	16,391	19,234	19,417	11,513	7,467	3,503	2,206
WEEKEND DAY												
1	58	322	517	765	818	274	697	915	718	723	407	187
2	123	154	705	804	876	420	687	885	814	694	457	172
3	84	318	747	876	744	627	868	1046	477	423	144	87
4	12	296	685	546	735	960	961	830	788	424	125	232
5	44	19	573	684	912	918	887	892	587	150	176	72
6	50	147	589	719	910	839	924	697	616	245	248	34
7	182	96	233	720	1036	961	661	835	720	507	208	34
8	217	247	228	665	606	1030	851	606	666	425	121	99
9	222				782		969	1004		311		
10	133				741					360		
Total Weekend Days	10	8	8	8	10	8	8	9	8	10	8	8
Weekend Average	111	199	547	768	815	780	881	913	675	426	236	112
Total Weekdays	21	20	23	22	21	22	22	22	22	21	22	23
Weekday Average	44	61	145	375	389	459	514	509	276	153	79	57

DAILY BOAT COUNTS AT LAKE PERRIS

Year of 1992

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	87	213	195	104	491	318	374	873	272	228	272	57
2	43	238	7	131	938	334	584	929	344	451	90	54
3	5	37	32	269	948	344	878	399	320	700	93	33
4	69	59	58	582	215	356	679	330	464	699	105	6
5	29	60	54	596	201	656	662	399	648	145	94	65
6	22	12	46	137	213	834	476	542	791	166	166	133
7	2	13	217	162	187	763	384	742	577	223	387	16
8	36	162	254	215	429	302	220	763	236	169	334	22
9	46	172	52	200	768	342	336	1037	277	364	82	49
10	180	28	67	339	499	336	685	395	219	808	73	54
11	224	6	126	541	147	268	839	432	449	657	145	35
12	125	5	136	697	211	608	670	506	775	252	85	103
13	31	4	194	225	285	893	417	427	751	106	132	63
14	33	59	400	232	292	846	979	841	231	111	236	28
15	40	19	410	253	459	309	467	917	169	101	269	39
16	35	50	97	319	632	347	534	1012	247	266	53	54
17	46	148	122	795	891	485	654	393	227	428	55	36
18	179	60	117	672	238	494	1032	355	444	435	64	35
19	113	105	126	691	226	770	1052	422	802	111	85	117
20	122	71	56	298	246	978	446	470	834	104	69	103
21	24	118	78	303	310	900	375	793	261	81	121	33
22	64	351	105	221	820	444	487	663	200	75	188	53
23	46	467	25	266	701	409	413	977	227	123	40	66
24	83	76	89	640	735	441	791	341	201	178	39	91
25	248	133	71	944	778	466	926	170	466	285	72	23
26	174	144	70	1133	250	844	897	421	851	99	86	216
27	48	118	49	274	231	853	426	452	685	84	343	181
28	41	233	242	299	237	810	360	769	239	77	250	37
29	67	843	359	265	565	448	474	899	204	45	143	18
30	65		58	221	818	442	345	872	208	39	62	85
31	126		63		827		711	358		148		111
Total Monthly Days	31	29	31	30	31	30	31	31	30	31	30	31
Monthly Subtotal	2,462	5,700	5,890	12,414	14,958	16,436	16,257	19,134	12,535	7,542	4,295	2,026
WEEKEND DAY												
1	89	213	195	582	958	834	697	873	548	700	272	85
2	26	238	217	596	948	763	662	929	791	699	387	133
3	224	162	254	541	788	683	839	763	775	808	334	105
4	125	172	400	697	493	846	670	1037	751	857	236	53
5	179	19	410	672	832	876	1032	917	802	428	269	117
6	113	50	78	861	831	900	1052	1012	834	435	121	103
7	248	351	105	944	701	853	926	883	651	178	188	216
8	174	467	242	1133	735	810	897	877	665	285	250	181
9		543	359		818			899		148	143	
10					927			872				
Total Weekend Days	8	9	8	8	10	8	8	10	8	9	8	9
Weekend Average	148	246	251	781	811	858	847	916	755	481	242	123
Total Weekdays	23	20	22	22	21	22	23	21	22	22	21	22
Weekday Average	58	74	79	280	326	495	499	474	295	154	86	45

DAILY BOAT COUNTS AT LAKE PERRIS

Year of 1991

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	139	55	107	87	171	482	433	389	802	176	83	34
2	39	204	155	94	138	668	403	589	637	237	256	29
3	17	217	253	173	268	282	437	900	263	245	348	8
4	9	58	66	218	670	260	634	872	306	406	92	45
5	99	85	39	312	655	248	617	412	213	727	117	27
6	295	65	54	698	233	255	799	335	327	794	133	44
7	31	112	60	546	295	377	557	404	695	180	122	110
8	9	96	145	154	247	633	351	463	739	208	140	55
9	8	285	505	307	138	717	362	656	225	195	379	15
10	38	546	260	259	373	266	405	802	156	165	359	14
11	22	143	71	188	522	911	424	981	180	337	285	33
12	169	75	3	318	563	302	543	341	186	679	86	17
13	254	81	89	821	250	258	790	429	257	731	96	61
14	42	66	60	674	145	404	899	401	557	337	36	127
15	54	228	49	147	226	598	585	394	684	207	47	160
16	44	306	221	107	282	548	335	562	186	170	246	37
17	60	295	301	139	345	322	321	783	176	159	229	30
18	93	255	54	158	815	297	303	944	220	274	30	27
19	434	85	13	185	663	278	461	424	217	229	54	26
20	261	113	6	518	208	302	674	917	302	614	59	25
21	46	107	42	484	153	420	800	407	593	132	36	89
22	27	158	116	96	168	564	366	372	735	94	73	42
23	36	477	362	45	250	564	279	578	171	84	215	42
24	32	491	204	90	398	629	592	838	177	66	251	51
25	35	65	5	110	575	243	97	959	201	126	62	31
26	66	59	26	246	780	292	497	324	166	202	66	112
27	166	53	25	592	609	250	804	327	347	177	73	146
28	9	6	151	591	187	508	539	424	627	42	62	65
29	37		222	187	197	397	363	377	760	59	147	58
30	30		462	202	171	664	266	452	166	74	48	21
31	50		369		256		193	556		47		106
Total Monthly Days	31	28	31	30	31	30	31	31	30	31	30	31
Monthly Subtotal	2,847	4,827	4,488	8,339	10,845	12,287	15,123	17,249	11,233	6,182	4,196	1,969
WEEKEND DAY												
1	99	204	155	698	670	482	799	900	802	727	256	34
2	295	217	253	546	655	668	657	972	696	794	348	110
3	169	295	505	621	622	633	799	332	739	679	379	55
4	254	546	260	674	563	717	698	961	557	731	359	127
5	434	306	221	318	615	598	674	793	684	229	246	160
6	261	295	301	484	663	546	600	944	593	614	229	89
7	66	477	362	592	678	564	804	838	735	202	215	42
8	166	491	204	591	780	564	839	959	627	177	291	65
9			462			397		556	760		46	58
10			369			664						
Total Weekend Days	8	8	10	8	8	10	8	8	8	8	8	8
Weekend Average	217	354	309	583	643	583	782	875	686	518	256	82
Total Weekdays	23	20	21	22	23	20	23	22	21	23	21	22
Weekday Average	40	100	85	174	248	320	388	426	240	175	90	43

DAILY BOAT COUNTS AT LAKE PERRIS

Year of 1980

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	161	22	42	499	168	313	651	455	527	149	69	152
2	8	52	102	131	206	900	487	415	662	119	89	189
3	25	179	240	197	282	977	472	629	717	146	274	35
4	16	45	233	131	456	395	711	692	250	239	326	48
5	48	45	40	124	893	329	526	822	348	316	73	56
6	159	48	70	196	850	411	715	400	339	456	58	56
7	132	21	88	410	311	368	1022	944	484	434	59	82
8	45	39	75	486	239	819	1020	782	800	179	85	189
9	17	69	111	258	272	729	401	429	848	137	134	52
10	37	257	326	330	224	850	355	602	249	177	299	36
11	44	378	256	426	368	282	482	682	215	155	499	46
12	43	63	53	495	643	350	446	699	306	287	264	36
13	33	37	69	589	640	295	686	392	291	538	75	39
14	12	20	119	638	180	289	830	358	471	587	81	20
15	87	37	225	349	140	522	918	697	829	184	65	73
16	8	73	188	105	269	899	388	446	774	70	74	105
17	28	32	606	108	229	998	470	630	219	100	204	21
18	22	50	588	183	348	358	389	716	202	113	213	35
19	31	86	150	227	530	379	450	903	175	184	43	36
20	95	36	136	311	576	439	753	352	171	457	91	10
21	113	61	204	555	231	517	849	360	371	505	59	16
22	36	127	196	595	255	596	980	433	692	139	120	40
23	45	132	314	82	333	1004	841	426	658	113	335	37
24	40	457	485	105	310	1015	462	539	154	171	415	31
25	47	536	601	200	419	822	476	773	187	210	256	52
26	66	75	161	226	416	411	459	687	152	390	29	88
27	215	89	147	409	417	466	653	418	146	479	35	72
28	178	88	76	740	186	566	902	363	305	117	35	84
29	51		124	550	160	704	861	446	567	109	48	96
30	26		205	74	160	606	467	363	691	113	50	104
31	27		620		242		427	431		98		133
Total Monthly Days	31	28	31	30	31	30	31	31	30	31	30	31
Monthly Subtotal	1,855	3,112	6,732	9,709	11,161	17,911	19,529	16,886	12,779	7,497	4,400	2,029
WEEKEND DAY												
1	159	179	240	499	893	900	651	892	527	456	274	152
2	132	45	233	410	850	977	1022	922	662	434	326	189
3	33	257	326	486	643	729	1020	882	800	536	299	189
4	12	378	256	639	640	850	850	699	848	587	499	52
5	95	32	188	349	630	889	918	718	529	457	204	73
6	113	50	606	555	576	996	849	903	774	505	213	105
7	215	457	485	595	419	1004	980	773	692	473	415	40
8	178	536	601	740	416	1015	902	687	636	117	256	37
9			520	650		606	861		567			96
10									691			104
Total Weekend Days	8	8	8	9	8	9	9	8	10	8	8	10
Weekend Average	117	242	364	536	648	887	899	894	705	446	311	104
Total Weekdays	23	20	22	21	23	21	22	23	20	23	22	21
Weekday Average	49	59	149	239	261	444	524	449	287	167	87	47

DAILY BOAT COUNTS AT LAKE PERRIS

Year of 1989

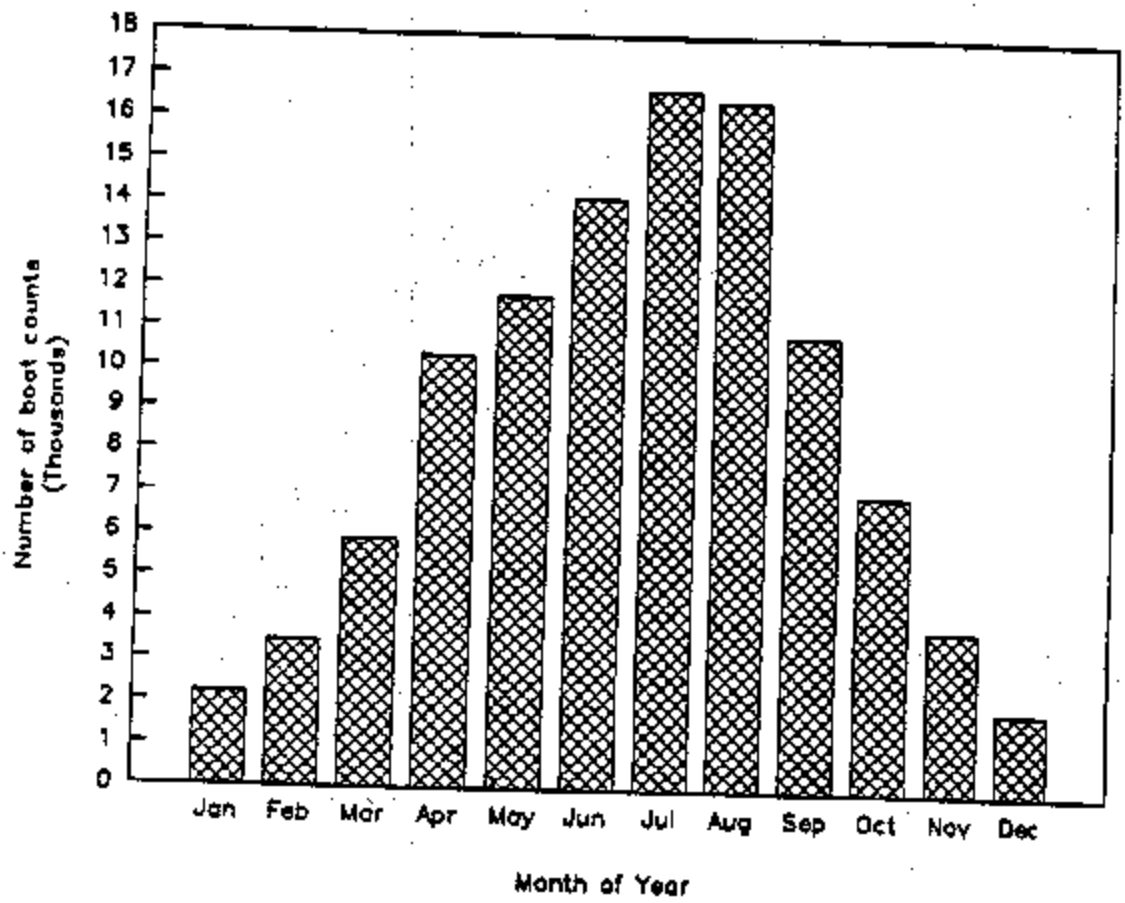
Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	87	38	37	725	190	249	473	503	370	472	57	83
2	159	20	20	816	191	375	297	204	288	109	40	198
3	6	20	26	187	217	494	480	194	306	123	13	191
4	4	19	136	197	354	434	270	556	394	137	460	62
5	8	24	117	282	437	167	329	497	257	170	436	55
6	17	11	33	336	518	187	341	456	265	273	26	65
7	59	4	56	626	513	195	499	307	327	504	72	52
8	85	8	80	770	246	194	551	388	500	581	88	81
9	28	11	53	504	152	304	571	399	474	215	95	187
10	27	37	135	254	82	378	340	420	463	192	366	131
11	4	53	178	209	60	422	353	568	182	194	435	81
12	10	143	155	183	237	257	354	405	188	110	480	41
13	42	33	39	177	352	263	409	500	214	189	68	60
14	133	29	57	183	176	300	509	383	210	400	87	21
15	178	74	148	627	41	275	525	391	311	355	10	39
16	77	48	122	450	82	495	548	408	435	81	117	93
17	20	90	165	145	130	553	337	437	332	85	344	66
18	24	287	587	180	182	404	287	583	100	122	234	45
19	49	165	519	179	352	357	329	550	71	133	72	88
20	45	190	161	228	451	289	380	551	141	221	79	64
21	208	23	262	616	449	405	617	304	208	219	178	27
22	207	64	292	578	220	458	543	340	359	159	143	72
23	29	84	274	523	216	529	453	373	555	71	333	173
24	28	17	471	78	253	489	341	369	523	73	246	84
25	24	385	167	100	239	696	547	438	150	45	81	17
26	24	513	209	256	427	377	353	444	145	81	41	103
27	47	74	145	171	253	298	398	224	190	109	75	126
28	209	29	163	365	229	374	624	340	156	221	62	131
29	216		198	234	243	449	467	290	285	257	63	64
30	53		240	119	189	440	492	316	536	62	63	204
31	74		386		256		342	294		49		143
Total Monthly Days	31	28	31	30	31	30	31	31	30	31	30	31
Monthly Subtotal	2,172	2,490	5,849	10,260	7,921	11,097	13,171	12,260	8,995	5,882	4,840	2,789
WEEKEND DAY												
1	87	19	136	725	516	494	473	497	288	472	460	198
2	53	24	117	816	513	434	297	486	306	504	436	191
3	85	53	178	770	352	378	551	405	474	581	435	187
4	133	143	155	504	176	422	571	500	483	400	480	131
5	178	287	587	627	451	553	525	550	435	355	294	83
6	208	165	519	450	449	404	548	551	332	219	72	88
7	207	385	167	578	253	489	549	444	555	159	81	173
8	208	513	209	523	229	696	453	224	523	221	41	84
9	216			234			467		696	257		204
10				119			492					143
Total Weekend Days	9	8	8	10	8	8	10	9	9	9	8	10
Weekend Average	153	199	261	535	368	494	494	457	446	352	286	149
Total Weekdays	22	20	23	20	23	22	21	22	21	22	22	21
Weekday Average	36	45	155	247	216	329	382	374	257	123	118	82

DAILY BOAT COUNTS AT LAKE PERRIS

Year of 1998

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	74	15	20	487	509	164	505		274	482	35	23
2	136	2	45	606	150	266	581		467	522	28	26
3	100	27	53	238	175	475	562		469	93	41	59
4	13	34	91	183	161	649	368		522	113	89	57
5	7	68	273	158	24	661	242		524	98	175	13
6	58	210	291	213	154	145	251		232	128	171	34
7	19	332	58	232	299	165	401		262	171	20	28
8	35	49	81	425	409	210	564		223	480	24	4
9	113	60	89	549	132	260	654		468	492	53	6
10	177	61	54	613	193	643	639		577	194	52	35
11	31	43	140	204	167	367	335		623	124	47	61
12	22	268	373	199	261	613	285		143	122	105	13
13	22	422	368	131	332	281	345		155	128	88	56
14	63	437	104	79	754	270	420		180	193	19	38
15	41	309	69	160	773	127	558		149	334	22	19
16	125	53	66	261	148	381	649		346	470	28	20
17	9	7	84	200	132	484	636		535	93	37	68
18	56	52	212	40	193	632	332		453	106	40	48
19	12	33	548	65	211	574	324		144	105	49	43
20	20	235	659	6	524	239	389		65	89	71	42
21	35	441	121	20	712	227	496		54	157	31	19
22	23	60	121	112	678	264	549		118	319	34	34
23	181	81	116	221	212	295	699		290	265	60	40
24	232	93	122	437	207	655	734		363	77	40	45
25	16	68	294	122	242	686	360		609	59	42	6
26	44	70	654	144	306	772	373		123	77	101	105
27	42	168	680	147	410	349	375		137	48	71	72
28	58	204	194	98	533	298	363		105	65	26	60
29	107	22	199	251	380	326	525		144	197	63	34
30	182		251	439	499	379	764		268	333	35	94
31	129		187		103		811			96		80
Total Monthly Days	31	28	31	30	31	30	31		30	31	30	31
Monthly Subtotal	2,149	3,897	6,858	7,061	9,065	11,799	15,209		8,939	8,329	1,877	1,259
WEEKEND DAY												
1	136	210	273	606	509	649	661		469	482	175	59
2	100	332	291	238	209	661	562		522	522	171	57
3	113	422	373	549	409	367	654		577	480	105	35
4	177	437	368	613	754	613	639		623	492	68	61
5	125	235	548	261	773	532	649		535	354	49	68
6	9	441	656	200	712	574	638		453	470	71	48
7	161	168	654	221	678	686	699		383	319	101	45
8	232	204	660	437	533	772	734		509	265	71	8
9	182			439	380		764			197		80
10	129						811			333		
Total Weekend Days	10	8	8	9	8	8	10		8	10	8	8
Weekend Average	137	306	506	396	561	619	675		509	399	101	48
Total Weekdays	21	21	23	21	22	22	21		22	21	22	22
Weekday Average	37	69	121	166	224	311	403		221	111	39	37

Note: Data in August is not available

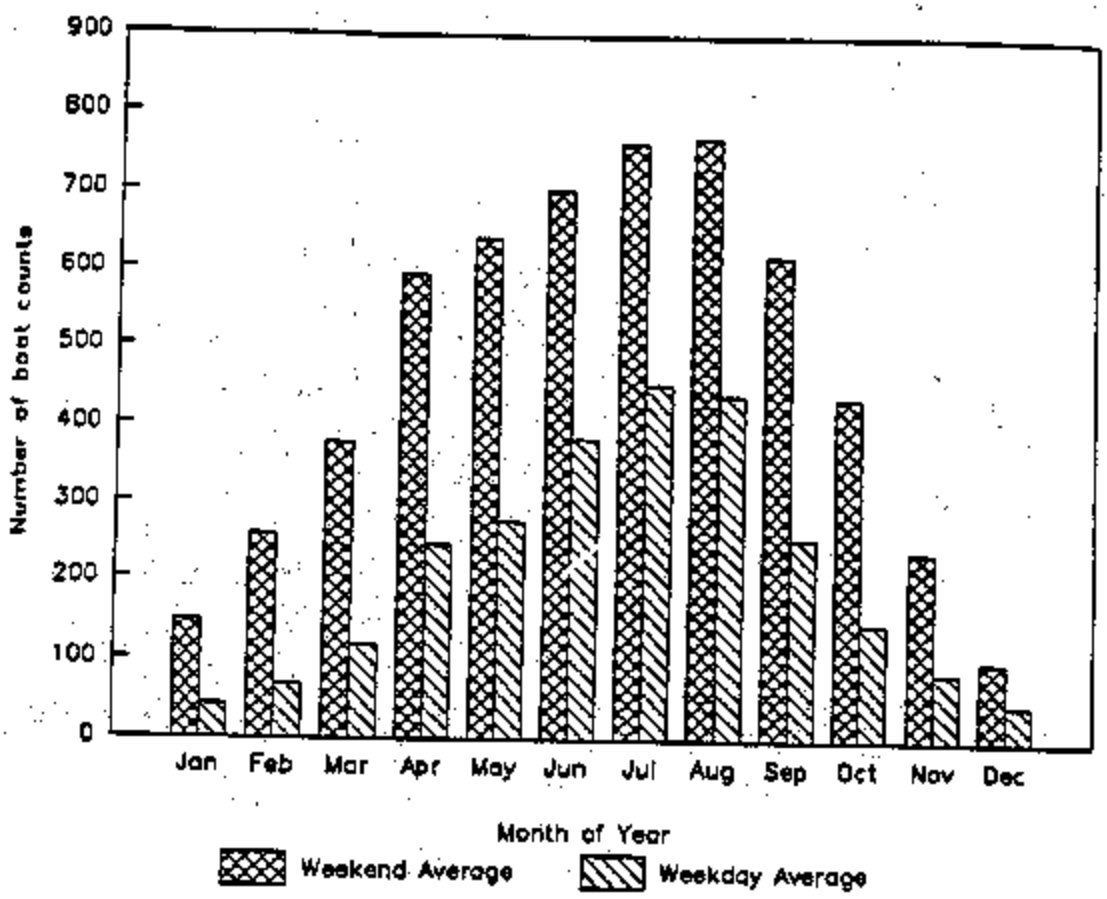


LAKE PERRIS
MONTHLY AVERAGE TOTAL
BOAT COUNTS
(1988 - 1993)

SOURCE: State of California,
Department of Parks and Recreation,
Lake Perris, 1993

NOBLE CONSULTANTS

Figure A-1



LAKE PERRIS
WEEKEND & WEEKDAY
AVERAGE BOAT COUNTS
(1986 - 1993)

SOURCE: State of California,
Department of Parks and Recreation,
Lake Perris, 1993

NOBLE CONSULTANTS

Figure 4.2

CAMPING SITE USE COUNTS AT LAKE PERRIS

MONTHLY CAMPING–SITE USE

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
1988	1,473	3,151	4,070	4,611	5,137	4,751	7,058	6,646	4,999	3,295	2,649	975	49,225
1989	1,354	2,307	4,635	4,781	4,247	5,438	6,595	6,279	5,254	2,942	2,867	1,401	48,100
1990	1,343	2,094	3,246	5,163	5,123	5,890	6,471	6,560	4,592	3,171	2,262	963	47,000
1991	1,197	1,969	2,432	3,731	5,224	4,565	5,030	6,278	3,649	2,519	1,810	758	40,102
1992	1,482	1,916	1,663	4,528	5,046	4,196	5,420	5,420	4,080	3,016	2,154	1,105	40,232
1993	1,130	1,581	2,322	4,915	5,092	4,504	6,139	5,179	3,661	2,590	2,062	1,332	40,627
AVERAGE	1,320	2,172	3,095	4,622	4,979	4,891	6,286	6,097	4,393	2,939	2,334	1,089	

WEEKEND AVERAGE CAMPING–SITE USE (Friday and Saturday)

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1988	72	195	267	330	373	384	431	431	319	234	185	35
1989	66	155	268	363	320	362	429	413	336	218	173	60
1990	61	131	185	353	416	413	411	425	390	238	132	37
1991	63	146	155	320	369	306	427	425	303	220	92	35
1992	77	112	114	316	325	356	385	393	285	199	136	40
1993	51	98	157	317	350	341	366	394	284	159	122	52
AVERAGE	65	139	194	336	359	361	412	413	320	211	140	49

WEEKDAY AVERAGE CAMPING–SITE USE

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1988	36	76	84	86	94	78	191	126	102	54	62	30
1989	35	54	93	83	73	104	124	129	94	52	67	38
1990	37	52	67	106	78	116	138	125	56	58	51	29
1991	27	40	42	53	86	85	114	125	86	39	45	21
1992	38	46	41	91	86	61	89	86	62	49	48	34
1993	29	40	47	98	88	81	108	88	84	58	49	39
AVERAGE	33	51	62	80	84	87	117	113	76	49	54	32

DAILY CAMPING SITE USE COUNTS AT LAKE PERRIS

Year of 1998

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	72	28	31	46	432	58	114	73	100	101	33	36
2	63	30	32	146	57	49	331	64	89	177	46	43
3	29	32	36	332	53	54	432	65	431	53	54	50
4	31	32	39	150	35	233	432	61	431	52	48	63
5	25	75	66	121	42	179	103	103	431	50	66	40
6	24	66	43	129	46	55	64	317	48	43	138	39
7	25	32	46	152	212	35	69	431	47	69	46	40
8	25	32	45	201	279	44	135	79	54	151	43	39
9	32	27	41	382	37	46	320	79	62	266	42	36
10	31	33	44	432	50	72	431	69	144	81	35	46
11	27	46	57	129	49	306	102	95	387	46	45	55
12	27	178	116	139	39	432	96	121	54	60	70	35
13	25	239	254	126	43	55	75	355	41	58	102	38
14	28	164	55	132	331	52	64	431	46	65	40	36
15	30	36	43	144	431	39	65	90	35	148	43	35
16	31	25	46	247	76	67	350	77	42	162	41	32
17	25	30	53	302	37	52	431	100	167	73	43	31
18	20	31	54	66	34	371	69	95	301	57	42	36
19	24	31	159	39	34	405	65	113	47	48	67	32
20	30	46	320	59	46	65	95	365	28	47	61	54
21	32	32	61	60	272	69	66	431	23	56	41	28
22	63	33	53	74	398	60	69	90	20	170	41	37
23	60	35	66	256	432	91	363	76	38	162	47	39
24	35	36	50	400	39	105	431	69	184	46	66	35
25	34	32	69	76	47	370	70	95	224	47	135	38
26	31	50	120	47	59	431	76	100	43	48	166	43
27	36	66	152	67	201	431	65	369	47	44	236	45
28	37	45	51	57	382	69	79	431	50	46	46	49
29	46		36	62	432	60	97	71	62	76	36	54
30	72		46	369	432	65	343	69	54	122	42	54
31	37				63		425	62		40		112
Total Monthly Days	31	28	31	30	31	30	31	31	30	31	30	31
Monthly Subtotal	1,139	1,661	2,822	4,815	5,092	4,504	6,139	5,179	3,881	2,890	2,062	1,332
WEEKEND DAY												
1	72	76	66	146	432	233	331	317	431	101	66	50
2	63	66	46	332	212	179	432	431	431	177	136	53
3	25	178	116	382	279	306	320	355	144	151	79	46
4	32	239	254	432	331	432	431	431	387	266	102	55
5	30	31	159	247	431	371	350	365	167	148	67	31
6	31	46	320	302	272	405	431	431	301	162	61	36
7	63	50	120	256	398	370	363	369	154	170	106	35
8	60	66	152	400	362	431	431	431	224	162	236	36
9	46			359	432		343			75		112
10	72						425			122		
Total Weekend Days	10	8	8	9	9	8	10	8	8	10	8	9
Weekend Average	51	96	157	317	350	341	386	384	284	159	122	52
Total Weekdays	21	20	23	21	22	22	21	23	22	21	22	22
Weekday Average	29	40	47	96	66	91	106	68	84	53	46	39

DAILY CAMPING SITE USE COUNTS AT LAKE PERRIS

Year of 1992

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	26	104	58	48	208	33	97	424	68	24	48	32
2	33	49	34	53	267	35	137	98	372	151	27	28
3	31	40	39	170	352	28	412	75	349	303	26	32
4	39	49	36	274	49	36	431	96	398	39	28	27
5	25	52	41	62	39	215	118	69	431	26	39	44
6	22	41	53	72	36	412	65	81	431	44	105	34
7	15	78	113	78	49	43	62	306	37	53	175	27
8	17	123	60	76	183	33	76	406	31	61	64	25
9	32	46	41	89	341	35	101	64	26	296	35	30
10	89	47	37	150	44	29	325	102	27	358	36	29
11	97	42	41	306	45	39	407	113	110	108	32	38
12	24	36	51	116	60	243	129	110	311	53	33	41
13	31	33	145	131	44	387	78	121	37	53	73	31
14	27	46	218	145	50	58	94	398	33	49	112	30
15	38	61	47	154	336	40	63	422	41	57	41	29
16	34	65	49	192	383	61	101	77	36	241	28	34
17	71	42	51	431	57	76	378	77	41	300	35	29
18	115	40	61	427	43	89	390	83	164	76	42	40
19	79	43	65	114	31	342	63	70	333	58	47	43
20	40	40	89	86	52	431	58	97	33	41	51	37
21	44	91	125	97	101	93	71	365	27	45	100	32
22	44	182	26	89	431	85	55	378	29	48	43	34
23	35	49	24	104	431	86	79	83	27	105	38	33
24	69	38	31	415	431	98	331	61	26	132	47	33
25	90	45	27	352	91	99	386	56	102	42	125	43
26	37	56	27	53	57	399	115	76	340	36	182	43
27	41	60	72	48	40	431	82	89	42	36	258	45
28	46	129	94	61	47	74	91	410	29	42	215	46
29	52	213	42	65	257	61	72	431	31	36	33	39
30	42		37	54	415	101	83	128	28	39	35	40
31	85		37		106		401	44		60		55
Total Monthly Days	31	29	31	30	31	30	31	31	30	31	30	31
Monthly Subtotal	1,482	1,918	1,869	4,529	5,048	4,198	5,420	5,420	4,099	3,018	2,154	1,105
WEEKEND DAY												
1	31	104	53	170	208	215	412	424	398	151	105	27
2	39	76	113	274	267	412	431	306	431	303	175	44
3	89	123	145	150	183	243	325	406	110	296	73	39
4	97	46	218	306	341	387	407	398	311	359	112	41
5	71	61	89	431	336	342	378	422	164	241	51	40
6	115	91	125	427	383	431	390	365	333	300	100	43
7	89	162	72	415	431	399	331	378	192	105	259	43
8	90	129	94	352	431	431	386	410	340	132	215	45
9	95	213			257		401	431		39		
10					415					60		
Total Weekend Days	9	9	8	8	10	8	9	9	8	10	8	8
Weekend Average	77	112	114	316	325	358	385	399	265	199	136	40
Total Weekdays	22	20	23	22	21	22	22	22	22	21	22	23
Weekday Average	36	46	41	91	86	81	89	86	82	48	48	34

DAILY CAMPING SITE USE COUNTS AT LAKE PERRIS

Year of 1991

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	50	53	50	50	42	247	74	72	431	22	50	16
2	32	50	77	57	38	33	76	382	28	28	63	17
3	28	15	48	69	217	39	232	431	45	37	30	20
4	28	23	38	78	401	44	431	86	53	137	22	18
5	47	20	21	328	427	40	431	69	65	275	30	20
6	18	22	25	331	37	72	431	72	265	32	28	36
7	19	31	32	75	43	402	78	61	349	29	31	35
8	18	63	63	74	32	390	69	69	24	40	122	17
9	19	132	156	93	48	39	95	431	37	50	139	12
10	22	33	40	93	391	46	73	431	48	36	101	18
11	35	29	32	95	406	62	89	121	48	326	39	15
12	35	32	36	284	46	61	396	86	41	431	23	17
13	46	30	36	372	37	68	431	109	219	67	22	22
14	23	48	42	60	28	75	65	90	387	43	24	37
15	18	225	34	50	34	31	69	106	58	37	43	22
16	29	407	82	46	65	29	67	431	32	47	89	18
17	18	249	57	39	401	58	86	431	45	53	19	17
18	69	29	15	43	411	68	106	111	46	144	22	15
19	143	24	24	229	81	90	431	120	46	265	23	21
20	87	26	21	354	67	120	431	92	251	42	26	22
21	24	35	24	44	76	420	86	104	275	24	24	24
22	28	89	86	19	84	420	89	102	21	19	34	22
23	20	149	110	37	176	421	73	431	25	19	74	21
24	35	60	68	34	431	61	85	431	26	22	30	24
25	71	34	42	34	431	53	178	126	25	68	30	37
26	82	17	56	334	431	67	431	101	24	114	35	35
27	37	16	63	326	36	110	431	95	278	14	169	60
28	17	30	69	29	24	356	107	92	418	17	178	51
29	20		431	26	29	431	111	111	32	14	233	29
30	15		431	34	47	194	123	431	25	21	72	24
31	20		75		236		127	431		22		32
Total Monthly Days	31	28	31	30	31	30	31	31	30	31	30	31
Monthly Subtotal	1,137	1,969	2,432	3,731	5,224	4,565	6,930	6,278	5,049	2,819	1,819	758
WEEKEND DAY												
1	28	53	50	326	217	247	431	382	265	137	50	36
2	47	50	77	331	401	402	431	431	349	275	63	35
3	35	63	63	284	391	390	396	431	219	326	122	22
4	35	132	156	372	406	76	431	431	387	431	139	37
5	66	225	34	229	401	81	431	431	231	144	49	22
6	143	407	92	354	411	420	431	431	276	268	89	24
7	71	69	66	334	431	420	431	431	278	89	34	50
8	82	149	110	326	431	356	431	431	418	114	74	51
9			431		236	431					233	
10			431								72	
Total Weekend Days	8	8	10	8	9	9	9	8	8	8	10	8
Weekend Average	63	146	155	326	309	308	427	425	303	220	92	35
Total Weekdays	23	20	21	22	22	21	23	23	22	23	20	23
Weekday Average	27	40	42	59	66	65	114	125	56	33	45	21

DAILY CAMPING SITE USE COUNTS AT LAKE PERRY

Year of 1990

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	15	48	43	64	52	401	239	83	431	50	28	43
2	30	72	99	75	28	431	284	115	431	32	34	17
3	26	95	108	38	224	82	352	431	56	40	68	17
4	33	86	39	42	431	59	237	413	44	43	35	16
5	82	53	47	98	431	56	247	109	50	316	28	21
6	89	55	48	202	72	54	376	128	82	403	22	23
7	28	58	49	282	58	61	412	119	431	431	22	23
8	31	42	73	116	49	431	118	111	416	57	23	21
9	38	74	156	176	52	431	74	107	20	68	80	30
10	42	142	176	161	40	52	80	431	14	54	160	18
11	35	59	59	150	342	58	118	421	24	85	57	17
12	53	82	46	238	396	68	123	108	21	224	37	21
13	69	57	43	377	45	47	366	80	48	395	37	20
14	49	43	64	431	49	81	431	135	314	66	33	22
15	47	56	89	72	47	317	98	149	431	84	33	27
16	39	195	150	63	42	431	66	154	36	34	57	15
17	52	214	226	55	41	99	80	420	30	35	108	18
18	35	135	64	56	431	46	169	412	32	36	30	20
19	62	59	49	310	431	83	237	127	36	55	33	20
20	47	36	54	431	81	81	431	125	34	166	42	19
21	32	34	42	407	50	392	431	143	412	43	56	16
22	36	36	56	153	47	431	87	166	337	32	190	22
23	43	84	196	85	102	431	76	187	34	27	352	35
24	36	169	325	56	147	82	99	431	28	23	300	39
25	40	54	351	60	431	85	100	431	37	25	279	42
26	45	39	57	210	431	87	104	122	39	117	36	43
27	86	41	47	296	431	92	391	101	50	184	20	57
28	28	36	34	385	84	111	431	132	378	33	19	61
29	34		44	51	89	431	69	128	360	23	16	59
30	36		117	24	40	431	83	124	65	15	31	83
31	45		296		44		69	431		17		76
Total Monthly Days	31	28	31	30	31	30	31	31	30	31	30	31
Monthly Subtotal	1,545	2,094	3,248	5,169	5,123	8,690	8,479	8,580	4,892	3,171	2,262	963
WEEKEND DAY												
1	82	72	99	202	431	401	376	431	431	316	34	43
2	89	95	108	282	431	431	412	413	431	403	68	21
3	53	74	156	377	342	431	368	431	416	224	80	30
4	69	142	176	431	396	431	431	421	314	395	160	27
5	47	195	150	431	431	317	431	420	431	55	57	15
6	52	214	226	407	431	431	431	412	412	196	108	22
7	86	84	196	296	431	431	391	431	337	177	352	35
8	28	169	325	385	431	431	431	431	378	184	300	59
9			117					431	360		31	83
10			296									
Total Weekend Days	8	8	10	8	8	8	8	9	8	8	9	9
Weekend Average	61	131	185	353	416	413	411	425	390	236	192	37
Total Weekdays	23	20	21	22	23	22	23	22	21	23	21	22
Weekday Average	37	52	67	108	78	118	188	125	58	58	51	29

DAILY CAMPING SITE USE COUNTS AT LAKE PERRY

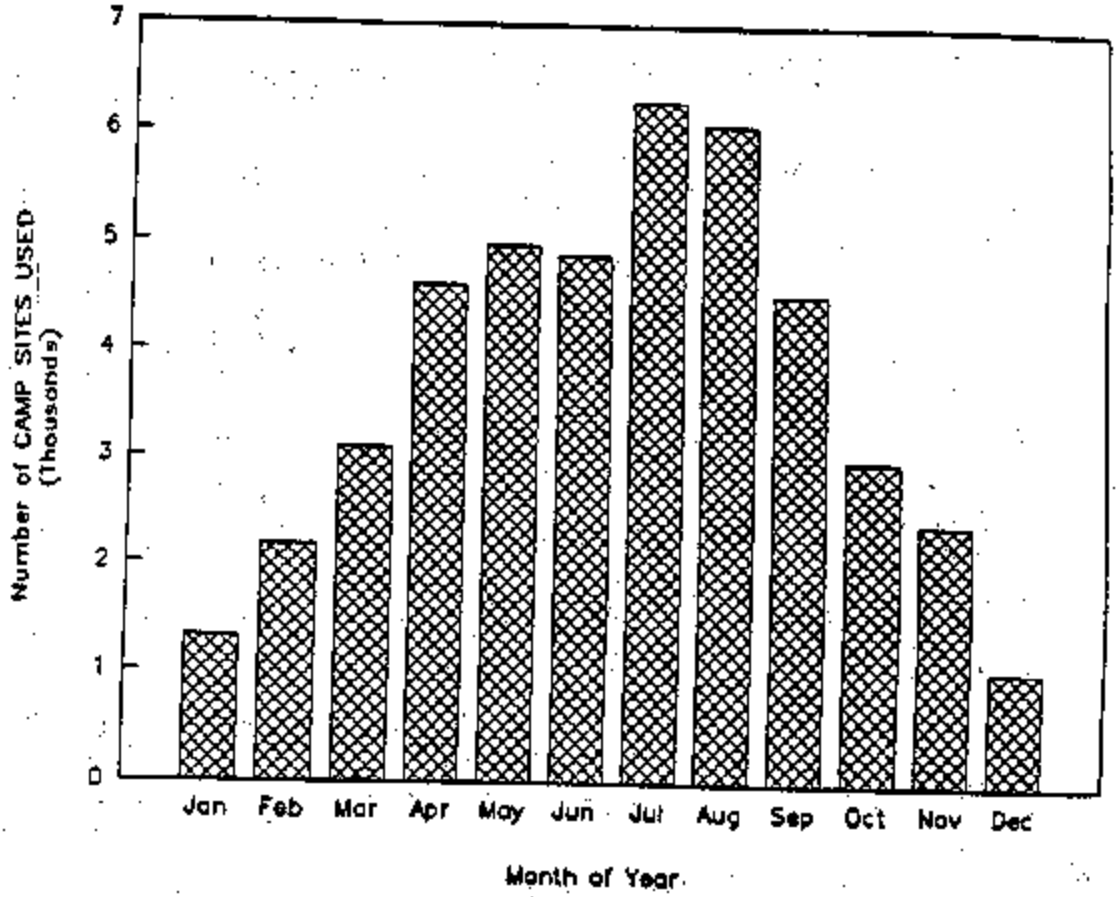
Year of 1989

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	57	37	33	268	52	139	431	88	431	31	35	67
2	21	29	64	76	47	378	431	95	431	25	37	46
3	21	33	73	56	52	425	431	121	431	46	56	35
4	21	31	155	37	102	73	135	389	431	60	108	32
5	21	11	53	53	256	65	90	450	68	77	23	38
6	20	23	47	67	431	70	76	90	74	266	32	35
7	48	27	41	431	76	72	427	89	95	270	43	36
8	25	25	44	431	49	85	431	111	330	110	47	61
9	21	24	39	76	45	345	47	114	420	43	75	77
10	21	39	342	72	48	394	53	150	46	62	207	34
11	31	72	302	114	48	56	101	392	31	69	274	35
12	31	41	43	114	236	42	102	432	32	76	307	30
13	51	33	36	15	285	41	127	144	36	242	51	32
14	80	21	36	248	42	49	431	89	45	321	69	21
15	56	39	60	431	32	52	431	100	211	71	53	31
16	38	52	73	53	43	421	52	132	310	44	39	29
17	43	321	301	45	58	431	62	159	30	46	85	23
18	39	336	403	57	62	116	102	431	22	42	116	24
19	56	236	143	81	341	45	98	431	39	65	64	22
20	73	78	126	85	404	57	132	431	44	201	62	28
21	92	89	148	405	88	44	431	105	281	223	61	28
22	47	43	168	431	85	87	431	127	307	54	81	34
23	39	57	196	43	70	116	119	119	315	37	244	34
24	26	180	431	27	75	431	60	127	32	25	260	33
25	38	228	431	28	77	431	78	371	22	27	286	37
26	38	68	152	60	156	110	86	431	36	60	67	48
27	62	67	147	60	431	150	87	86	45	87	67	64
28	109	51	132	354	414	146	419	116	32	135	32	71
29	46		122	431	62	256	431	116	227	37	15	82
30	55		110	92	61	320	129	116	400	36	39	129
31	34		156		23		154	126		32		105
Total Monthly Days	31	28	31	30	31	30	31	31	30	31	30	31
Monthly Subtotal	1,354	2,307	4,835	4,751	4,247	5,436	8,595	6,279	5,254	2,942	2,857	1,401
WEEKEND DAY												
1	20	33	78	266	266	379	431	389	431	266	68	67
2	48	51	155	431	431	425	427	430	431	270	108	46
3	51	38	342	431	236	345	431	392	330	242	207	61
4	80	72	302	249	285	394	431	432	420	321	274	77
5	79	321	301	431	341	421	431	431	211	201	65	31
6	62	336	403	405	404	431	431	431	310	223	116	29
7	62	180	431	431	156	116	431	371	307	87	250	34
8	109	228	431	354	431	431	419	431	315	135	266	34
9			156	431		320	431		227			92
10									400			129
Total Weekend Days	8	8	9	9	8	8	9	8	10	8	8	10
Weekend Average	68	155	269	383	329	362	429	419	336	218	175	60
Total Weekdays	23	20	22	21	23	21	22	23	20	23	22	21
Weekday Average	85	84	89	69	79	104	124	129	94	62	67	38

DAILY CAMPING SITE USE COUNTS AT LAKE PERRIS

Year of 1988

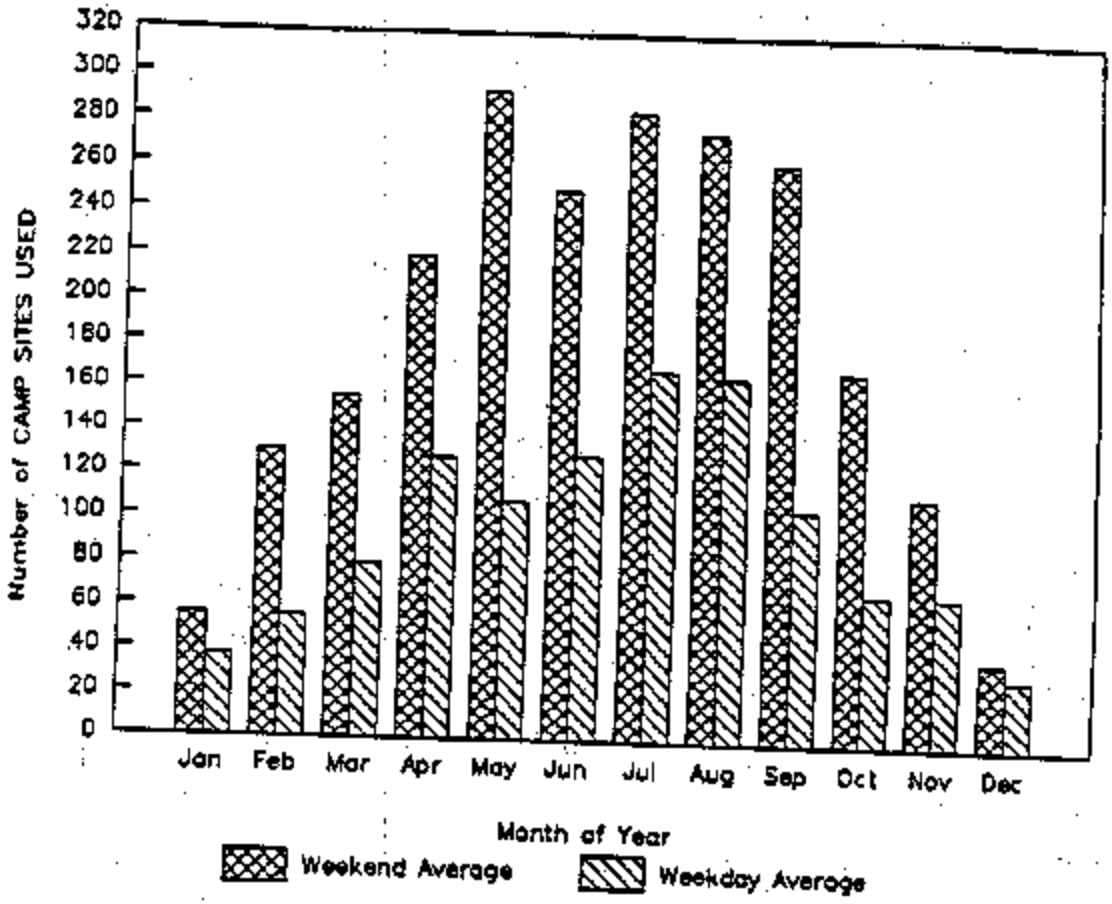
Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	83	38	39	431	64	43	431		120	296	35	45
2	59	56	46	417	41	62	431		378	51	48	51
3	28	35	56	83	60	176	431		431	40	47	64
4	20	42	121	125	60	430	91		431	42	143	29
5	24	80	210	69	47	64	52		431	72	176	32
6	27	126	72	76	196	62	73		65	76	53	26
7	29	48	81	93	262	50	146		45	199	29	26
8	62	47	70	431	60	49	431		60	338	27	26
9	65	56	50	431	45	64	431		360	119	32	29
10	35	50	58	86	43	430	139		402	64	245	35
11	26	94	174	86	49	430	117		76	56	267	33
12	35	348	280	82	54	73	104		41	53	234	24
13	36	431	41	91	388	88	88		36	74	25	23
14	36	298	47	93	429	73	125		33	251	29	24
15	83	50	69	212	431	62	431		33	342	33	26
16	112	59	67	302	67	73	431		297	64	26	26
17	37	50	73	41	51	352	90		343	20	29	29
18	87	48	202	26	58	394	104		44	43	41	23
19	29	96	362	22	62	92	93		40	35	50	21
20	44	173	68	25	396	69	87		34	58	87	22
21	45	190	51	28	431	71	114		28	188	58	21
22	43	63	53	181	52	101	431		37	259	66	21
23	56	54	62	188	49	129	431		296	58	186	20
24	49	61	74	44	46	431	102		125	35	201	24
25	40	82	355	43	54	431	106		402	39	312	21
26	50	108	430	45	228	115	89		73	45	253	29
27	44	185	235	62	431	62	76		54	41	34	27
28	48	199	130	89	431	48	119		28	98	28	37
29	60	41	140	368	431	82	431		43	155	28	41
30	98		158	337	68	153	431		237	49	32	63
31	36		210		39		402			32		60
Total Monthly Days	31	29	31	30	31	30	31	31	30	31	30	31
Monthly Subtotal	1,473	3,161	4,070	4,811	5,157	4,751	7,058	0	4,989	3,295	2,849	975
WEEKEND DAY												
1	83	80	121	431	196	176	431		378	296	143	51
2	59	126	210	417	262	430	431		431	199	176	64
3	62	348	174	431	388	430	431		360	336	267	29
4	65	431	280	431	429	430	431		402	251	234	35
5	83	85	202	212	396	352	431		297	342	41	26
6	112	173	362	302	431	394	431		343	169	50	29
7	48	108	355	181	431	431	431		296	269	312	20
8	55	185	430	188	431	491	431		125	98	253	24
9	60			368			431		237	159		
10	98			337			431					
Total Weekend Days	10	8	8	10	8	8	10	8	9	9	8	8
Weekend Average	72	195	267	330	373	394	431	0	319	234	165	35
Total Weekdays	21	21	23	20	23	22	21	23	21	22	22	23
Weekday Average	36	76	84	66	94	76	131	8	102	54	62	30



LAKE PERRIS
MONTHLY AVERAGE TOTAL
CAMPING SITE USE
(1988 - 1993)

SOURCE: State of California,
Department of Parks and Recreation,
Lake Perris, 1993

NOBLE CONSULTANTS



LAKE PERRIS
WEEKEND & WEEKDAY AVERAGE
CAMPING SITE USE
(1988 - 1993)

SOURCE: State of California,
Department of Parks and Recreation,
Lake Perris, 1993

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Figure A-4

VEHICLE COUNTS AT LAKE PERRIS

MONTHLY VEHICLE COUNTS

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
1988	7,824	16,743	28,881	30,299	40,303	40,906	62,258	56,182	28,461	19,612	10,801	6,489	348,769
1989	7,713	10,435	24,399	30,937	27,580	34,015	45,765	36,834	21,086	13,091	11,805	6,416	269,836
1990	5,748	8,241	17,456	30,290	36,557	49,816	54,746	43,348	34,213	15,556	10,072	6,540	311,585
1991	6,702	12,394	12,539	25,032	32,204	36,698	47,449	45,568	31,895	18,458	8,586	4,052	283,577
1992	5,606	8,647	9,878	32,609	39,559	40,842	48,749	48,813	30,763	15,744	9,727	5,075	294,014
1993	5,395	7,345	16,962	34,578	42,773	42,307	50,768	47,141	29,042	16,950	9,042	5,932	310,235
AVERAGE	6,496	10,634	18,686	30,624	36,496	41,098	51,294	46,281	29,243	16,559	10,006	5,584	

WEEKEND AVERAGE VEHICLE COUNTS

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1988	442	1,241	2,316	1,916	2,657	2,804	3,493	3,215	1,857	1,905	787	329
1989	456	795	1,532	1,876	1,920	1,920	2,593	2,047	1,162	850	783	342
1990	344	633	1,173	1,819	2,698	3,013	3,025	2,467	2,065	1,062	665	313
1991	526	960	872	1,794	2,222	2,320	2,923	2,813	2,158	1,376	506	201
1992	329	573	610	2,147	2,480	2,585	2,940	2,976	2,180	1,030	556	277
1993	279	514	1,407	2,336	2,622	2,697	2,962	2,803	2,017	952	567	272
AVERAGE	397	776	1,318	1,982	2,433	2,523	2,956	2,721	1,906	1,096	648	289

WEEKDAY AVERAGE VEHICLE COUNTS

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1988	182	324	450	622	745	913	1,302	1,131	616	312	205	151
1989	163	228	526	609	591	846	1,041	881	506	244	252	143
1990	130	159	314	663	651	1,081	1,251	1,027	668	307	209	115
1991	108	236	162	485	627	775	1,048	920	595	324	191	102
1992	129	175	199	702	703	917	1,010	906	606	294	224	124
1993	124	162	335	722	766	942	1,096	996	587	354	205	163
AVERAGE	136	214	335	634	674	813	1,124	977	597	306	214	135

Note: Number of August 1988 is an average value, not an actual count

DAILY VEHICLE COUNTS AT LAKE PERRIS

Year of 1993

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	365	157	163	545	2240	576	1116	3596	780	562	270	175
2	93	187	167	459	2953	596	1409	975	694	1492	190	119
3	352	208	165	1811	471	637	3408	1107	660	1896	190	155
4	109	160	266	2251	419	736	3351	1156	2456	1400	249	418
5	89	210	432	432	536	387	3524	1493	3523	461	316	408
6	13	634	1266	567	571	1075	885	925	3353	295	623	91
7	43	348	1948	824	607	443	599	2786	581	232	1391	63
8	59	76	373	823	2122	566	1048	3462	829	570	215	132
9	189	114	317	1503	3050	751	1125	876	581	1021	249	110
10	44	159	341	2607	181	965	2555	923	609	962	174	140
11	126	175	406	3545	532	1102	3526	1179	2065	282	169	200
12	78	326	525	713	725	2712	1021	928	2206	249	195	375
13	73	701	1712	605	673	3680	816	1341	380	244	447	65
14	59	666	1632	952	1018	833	978	2190	318	215	377	76
15	38	396	223	694	1846	806	959	2637	329	284	101	83
16	90	281	335	856	3104	901	1208	657	272	337	109	108
17	57	164	370	1636	579	610	2764	848	346	630	175	122
18	17	48	443	1873	587	1304	3549	997	1035	192	138	226
19	102	20	717	485	687	2941	922	846	1373	252	187	154
20	142	62	1439	682	664	3937	857	1139	278	333	434	121
21	170	448	2025	768	806	1273	868	2517	239	262	470	96
22	100	69	446	663	2352	926	657	3109	261	342	122	148
23	502	84	502	739	2231	1236	1096	663	255	1042	168	130
24	587	153	461	2078	594	1336	2459	863	406	671	155	154
25	146	170	224	2901	640	1507	2732	829	1429	297	305	161
26	166	75	208	757	753	3078	726	661	2045	260	546	229
27	189	334	607	684	681	3763	723	1361	517	171	465	203
28	206	700	623	594	866	1127	759	2171	576	208	392	267
29	209		277	644	2795	1035	781	2734	447	340	124	334
30	494		327	927	3525	1160	1208	785	369	619	127	341
31	377				3561		2516	768		749		488
Total Monthly Days	31	28	31	30	31	30	31	31	30	31	30	31
Monthly Subtotal	6,395	7,345	16,982	34,578	42,778	42,307	50,768	47,141	29,042	16,990	9,042	5,932
WEEKEND DAY												
1	93	634	1266	1811	2240	387	3408	3596	2456	1492	623	418
2	352	348	1948	2251	2953	1075	3351	2786	3523	1896	1331	408
3	189	701	1712	2607	2122	2712	2555	3462	2065	1021	447	200
4	44	666	1632	3545	3050	3680	3526	2190	2206	962	377	375
5	90	82	1439	1636	1846	2941	2754	2637	1035	337	434	226
6	57	448	2025	1873	3104	3937	3549	2517	1373	630	470	154
7	502	334	607	2078	2352	3078	2459	3109	1429	1042	465	161
8	587	700	623	2901	2231	3763	2732	2171	2045	671	392	229
9	494				2795		2516	2734		619		
10	377				3525					749		
Total Weekend Days	10	8	9	8	10	8	9	9	8	10	8	8
Weekend Average	278	514	1,407	2,356	2,682	2,897	2,962	2,803	2,017	952	567	272
Total Weekdays	21	20	23	22	21	22	22	22	22	21	22	23
Weekday Average	124	182	335	722	768	942	1,096	996	587	954	205	169

DAILY VEHICLE COUNTS AT LAKE PERRIS

Year of 1992

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	252	453	579	253	719	588	825	2488	514	371	626	185
2	106	588	27	320	2265	733	1141	3455	675	550	224	124
3	10	105	98	616	2890	799	2671	907	584	1564	181	118
4	205	149	189	1059	470	696	3616	759	669	1566	224	22
5	36	156	151	1160	439	970	3251	961	1785	296	231	151
6	24	22	120	296	399	2026	1144	1049	3844	322	301	289
7	10	34	484	407	451	2235	815	1142	3379	445	755	36
8	96	490	585	532	895	651	500	2433	446	344	710	93
9	104	425	125	419	1647	709	830	3464	528	504	261	126
10	97	59	209	566	2038	580	1175	839	381	1254	150	125
11	477	21	302	1256	366	623	2212	1006	478	1628	312	74
12	323	15	314	2041	417	683	1817	1101	1359	483	196	240
13	70	13	451	516	821	2356	532	855	2723	245	254	177
14	110	174	891	503	592	2576	868	1130	419	240	578	97
15	96	35	1065	559	847	712	985	2719	896	237	695	96
16	101	135	263	734	2189	825	1167	3935	411	371	155	137
17	112	406	220	1283	2686	996	1303	935	434	888	141	104
18	353	179	259	2602	497	1049	2977	680	548	904	164	130
19	287	169	322	4256	490	1316	4064	960	1711	250	178	247
20	381	168	167	724	535	2667	906	975	2034	244	152	247
21	121	303	267	679	610	3552	668	865	434	198	334	101
22	151	813	267	612	814	1067	870	2780	440	165	477	120
23	132	1065	48	1201	2292	1045	811	3586	411	266	144	163
24	124	220	277	2686	3538	1268	1095	691	382	442	152	206
25	545	251	154	4138	3676	1264	2540	727	592	648	148	123
26	408	326	219	658	558	1476	3248	821	1831	244	348	452
27	147	302	162	656	455	2656	997	778	2150	202	706	410
28	132	421	531	673	489	2427	696	962	415	208	526	124
29	168	1150	824	594	761	833	1033	2448	577	151	317	99
30	161		142	511	2097	969	816	2476	401	122	105	237
31	269		167		3161		1175	650		351		287
Total Monthly Days	31	29	31	30	31	30	31	31	30	31	30	31
Monthly Subtotal	5,809	8,647	9,679	32,808	38,859	40,842	48,748	48,615	30,763	15,744	8,727	5,075
WEEKEND DAY												
1	205	453	579	1059	2265	2026	3616	2488	1785	1564	626	151
2	36	588	484	1160	2890	2235	3251	3455	3844	1566	755	289
3	477	490	585	1256	1647	2356	2212	2439	1359	1254	710	240
4	329	425	891	2041	2038	2576	1817	3464	2723	1628	578	177
5	353	35	1065	2602	2189	2667	2977	2719	1711	888	695	247
6	287	135	267	4256	2686	3552	4064	3935	2034	904	394	247
7	545	813	267	4136	2292	2856	2540	2780	1831	442	477	452
8	408	1065	531	658	3538	2427	3248	3586	2150	649	526	410
9		1150	824		2097			2448		351	317	
10					3161			2476				
Total Weekend Days	8	8	8	8	10	8	8	10	8	9	9	8
Weekend Average	329	573	618	2,147	2,480	2,585	2,940	2,876	2,180	1,030	556	277
Total Weekdays	23	20	22	22	21	22	23	21	22	22	21	23
Weekday Average	129	179	189	702	703	917	1,010	906	606	294	224	124

DAILY VEHICLE COUNTS AT LAKE PERRIS

Year of 1991

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	454	116	117	223	345	1423	1091	864	4069	314	188	164
2	121	493	482	300	367	2280	1197	1091	4278	474	474	67
3	34	663	710	493	580	646	1156	2387	654	288	785	58
4	45	121	280	645	1845	692	3215	3082	656	631	185	82
5	280	146	121	675	2750	549	2012	845	348	1563	224	69
6	556	140	191	2018	642	546	3214	768	477	1914	281	64
7	77	228	224	1814	646	617	3140	945	1755	345	206	229
8	45	187	367	688	612	2223	787	1065	2101	356	247	100
9	62	639	1111	929	311	2811	1009	1184	361	367	686	47
10	55	1402	288	824	642	703	1035	2727	325	366	699	19
11	41	397	202	452	1472	569	1005	3221	313	549	607	57
12	251	202	254	963	2147	730	1141	880	344	1618	168	31
13	627	203	135	1944	558	536	2671	896	387	2051	185	89
14	105	236	188	2587	393	779	3449	931	1114	654	74	245
15	92	324	140	378	618	2111	969	835	3103	305	109	305
16	70	692	674	353	696	2928	949	1082	359	348	469	91
17	145	905	864	326	650	880	843	2576	403	320	474	79
18	126	720	189	345	1554	744	648	3166	391	520	56	56
19	609	244	28	444	2295	592	757	920	388	1280	122	47
20	697	320	34	949	475	837	2047	670	447	1589	137	67
21	144	253	120	1375	364	960	2824	994	1280	255	100	168
22	81	323	295	238	346	2334	824	782	2134	173	145	226
23	102	1337	654	212	581	2369	816	1259	394	193	433	125
24	102	1350	630	167	654	1331	988	2662	351	172	456	151
25	123	240	18	239	2384	789	561	3979	390	249	152	132
26	496	187	67	392	3231	611	919	734	347	413	144	284
27	380	116	67	1571	9302	782	2504	802	483	582	126	301
28	91	31	525	2096	442	1229	3536	827	1807	159	227	183
29	96		474	674	365	1630	821	777	2042	129	313	157
30	131		1151	824	318	3069	826	693	388	149	116	61
31	114		2160		418		413	2125		114		257
Total Monthly Days	31	28	31	30	31	30	31	31	30	31	30	31
Monthly Subtotal	6,702	12,394	12,539	25,032	32,204	36,898	47,449	45,568	31,895	18,456	8,986	4,052
WEEKEND DAY												
1	280	493	482	2018	1845	1423	3214	2387	4069	1563	474	164
2	556	663	710	1814	2750	2280	3140	3082	1755	1914	785	229
3	381	639	1111	1944	1472	2223	2671	2727	2101	1618	688	100
4	627	1402	288	2587	2147	2811	3449	3221	1114	2051	699	245
5	609	692	674	949	1554	2111	2047	2576	3103	1280	469	305
6	697	905	864	1375	2295	2928	2824	3166	1280	1589	474	168
7	496	1337	654	1571	2384	2334	2504	2662	2134	413	433	226
8	380	1350	630	2096	3231	2369	3536	3379	1807	582	456	183
9			1151			1630		2125	2042		116	157
10			2160			3069						
Total Weekend Days	8	8	10	8	8	10	8	9	9	8	9	9
Weekend Average	528	980	872	1,704	2,222	2,320	2,923	2,813	2,158	1,378	506	201
Total Weekdays	23	20	21	22	23	20	29	22	21	23	21	22
Weekday Average	108	239	182	485	627	778	1,046	920	695	324	191	102

DAILY VEHICLE COUNTS AT LAKE PERRIS

Year of 1990

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	387	78	141	1279	457	573	3275	1154	2267	267	141	329
2	43	112	204	357	634	2663	1288	978	3385	247	155	438
3	84	488	606	482	599	4453	1254	1329	3801	307	499	91
4	92	160	692	202	1061	1095	2394	2540	606	399	639	89
5	124	147	156	288	3097	891	894	2931	732	822	181	130
6	423	125	187	454	4417	972	1559	1000	615	1222	121	160
7	354	76	193	1112	882	906	3254	1004	618	1103	151	68
8	138	97	202	1336	707	1760	2928	1062	2149	397	190	400
9	80	189	250	797	834	1719	1049	1064	2576	265	252	501
10	141	697	511	1061	482	1992	1028	1215	510	968	698	95
11	135	1120	672	1268	581	656	1353	2379	515	919	1050	102
12	142	247	145	1770	1607	825	1144	2605	494	423	804	105
13	126	93	177	1743	2348	586	1250	927	541	1066	175	78
14	252	66	277	2362	427	835	2761	881	801	1168	190	78
15	270	128	309	3125	351	649	3032	709	2106	241	157	195
16	61	183	576	354	608	2412	889	865	2216	185	177	263
17	62	50	1574	397	603	3579	1201	1269	429	224	471	60
18	48	175	2076	488	856	868	1181	2157	427	226	518	105
19	100	318	473	618	1757	878	1158	2899	358	323	85	80
20	321	107	395	696	2348	1189	1368	969	350	873	75	58
21	319	147	585	1479	609	1195	3111	966	559	967	140	60
22	136	237	532	1907	747	1599	3182	1153	1752	287	415	94
23	112	218	780	271	799	3417	1054	1075	1497	285	863	131
24	145	1050	1033	356	757	3833	1156	1039	356	282	894	127
25	141	1345	2044	534	1011	1350	1251	1999	367	325	515	47
26	196	211	407	726	2454	1352	1152	2233	310	381	84	174
27	508	177	904	869	3360	1413	1454	906	320	840	114	177
28	452	222	167	2171	819	1441	2493	853	445	1214	102	196
29	182		253	1598	345	1775	3171	1138	1393	214	92	393
30	113		367	209	372	2847	1127	884	1582	244	116	361
31	95		1348		450		1112	994		252		316
Total Monthly Days	31	28	31	30	31	30	31	31	30	31	30	31
Monthly Subtotal	5,749	8,241	17,456	30,290	36,657	49,818	54,748	43,348	34,213	15,956	10,072	5,540
WEEKEND DAY												
1	423	488	606	1270	3097	2663	3275	2540	2267	1222	488	329
2	354	160	692	1112	4417	4453	3254	2931	3385	1103	639	438
3	126	697	511	1336	1607	1719	2929	2379	2149	1068	698	400
4	252	1120	672	2362	2348	1992	2761	2605	2576	1168	1050	501
5	321	50	1674	3125	1757	2412	3032	2157	2106	873	471	195
6	319	175	2076	1479	2348	3579	3111	2899	2216	967	518	263
7	508	1050	1033	1907	2454	3417	3182	1999	1752	840	894	94
8	452	1345	2044	2171	3360	3833	2493	2233	1497	1214	515	131
9			1348	1598		2847	3171		1339			383
10									1582			361
Total Weekend Days	8	8	8	8	8	8	8	8	10	8	8	10
Weekend Average	344	695	1,179	1,619	2,896	3,018	3,025	2,467	2,095	1,082	686	319
Total Weekdays	23	20	22	21	23	21	22	23	20	23	22	21
Weekday Average	130	159	314	669	651	1,881	1,251	1,027	668	307	209	115

DAILY VEHICLE COUNTS AT LAKE PERRIS

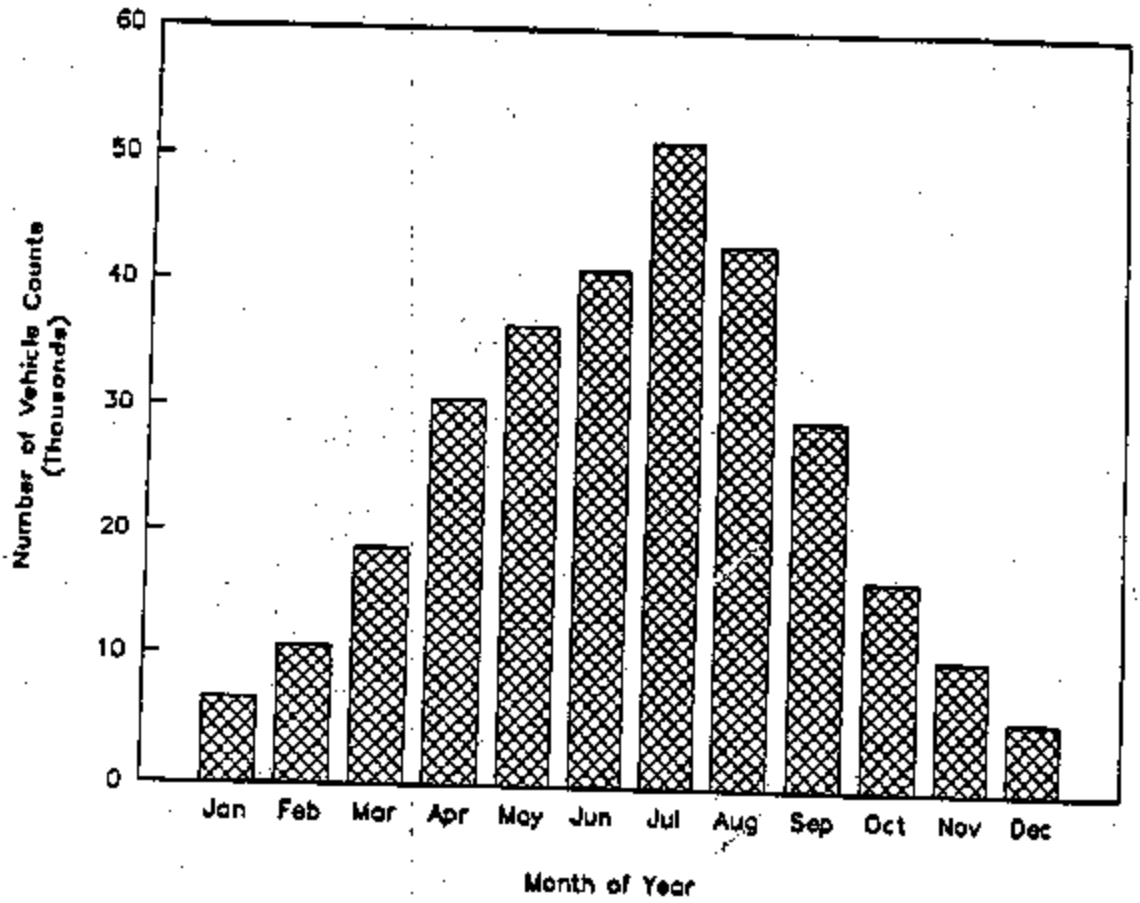
Year of 1988

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	343	199	210	1616	458	625	2067	806	720	1252	197	168
2	478	123	97	2761	500	793	2349	1091	259	208	234	407
3	73	106	205	439	531	1253	2338	940	2691	274	247	402
4	63	104	979	675	648	1433	2249	1121	2619	258	696	130
5	79	215	1602	971	660	469	802	1929	454	286	1093	124
6	72	66	392	874	1862	577	1091	2706	474	392	165	147
7	215	49	404	1243	2719	515	1239	676	851	1120	152	95
8	306	66	389	3159	487	406	2023	916	649	1316	214	176
9	138	35	414	2974	263	529	2644	972	1205	389	260	359
10	132	138	496	832	198	1099	932	894	1385	250	733	286
11	73	427	1545	720	172	1332	931	1081	268	322	942	83
12	67	499	2324	554	406	631	1085	2021	415	269	1002	74
13	168	160	349	700	1069	730	1169	2586	421	387	110	115
14	424	116	348	644	794	835	1202	957	436	774	178	60
15	542	183	414	1479	123	820	2262	931	570	714	179	110
16	448	185	339	1646	249	1068	3090	974	629	169	177	231
17	167	294	420	350	213	2654	699	967	691	218	253	275
18	164	814	1635	437	275	2602	770	1034	228	235	638	118
19	173	616	2187	413	553	861	802	1806	213	257	735	89
20	169	754	476	471	1845	856	863	2049	256	265	157	209
21	490	283	856	728	2738	693	1032	677	309	527	186	78
22	566	364	769	1313	572	962	2068	775	407	503	269	192
23	148	299	762	1733	639	1401	2712	799	1160	135	563	351
24	64	447	1053	148	610	2060	707	791	1268	177	803	198
25	105	1217	411	193	725	2738	753	721	168	179	712	45
26	119	1988	1596	179	962	1031	802	1552	345	187	242	247
27	170	371	496	384	2358	1060	809	1725	422	243	125	302
28	513	312	611	1022	2172	1245	802	537	230	717	100	256
29	725		735	1319	2073	1138	1944	742	358	730	107	186
30	192		779	363	350	1107	2553	734	987	163	134	485
31	269		1124		538		882	714		130		424
Total Monthly Days	31	28	31	30	31	30	31	31	30	31	30	31
Monthly Subtotal	7,713	10,495	24,399	30,837	27,580	34,015	45,765	36,834	21,086	13,031	11,805	8,416
WEEKEND DAY												
1	343	104	979	1616	1862	1253	2067	1929	259	1252	896	407
2	215	215	1602	2761	2719	1433	2349	2706	2691	1120	1093	402
3	306	427	1545	3159	1069	1093	2023	2021	1205	1316	942	359
4	424	499	2324	2974	794	1332	2644	2586	1385	774	1002	286
5	542	814	1635	1479	1845	2854	2262	1806	828	714	638	231
6	490	616	2187	1646	2738	2602	3090	2049	691	527	735	275
7	566	1217	411	1313	2358	2060	2068	1552	1160	503	712	351
8	513	1988	1596	1733	2172	2736	2712	1725	1268	717	242	198
9	725			1319			1944		987	730		485
10				363			2859					424
Total Weekend Days	9	8	8	10	8	8	10	8	9	9	8	10
Weekend Average	456	736	1,532	1,876	1,920	1,929	2,383	2,047	1,162	850	783	342
Total Weekdays	22	20	23	20	23	22	21	23	21	22	22	21
Weekday Average	163	228	526	609	691	946	1,041	861	506	244	252	149

DAILY VEHICLE COUNTS AT LAKE PERRIS

Year of 1988

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	319	132	110	1409	1774	635	1474		602	1396	156	174
2	414	37	193	3104	422	696	3087		949	1740	162	186
3	317	157	224	2537	545	1259	3650		2361	286	201	453
4	90	180	264	811	450	2778	3350		3424	315	239	768
5	45	254	928	1617	50	2602	662		3466	330	983	101
6	114	795	1011	1102	256	370	1297		683	816	1236	200
7	116	1402	255	1029	951	469	1422		690	442	137	154
8	135	325	358	1105	1501	693	1517		596	1644	116	113
9	317	203	344	2597	460	655	2621		768	1816	216	100
10	607	276	216	3682	606	1125	3626		1751	627	170	491
11	117	328	412	985	724	1591	983		2146	400	497	557
12	121	1002	1456	787	615	2568	1054		347	350	760	174
13	178	1625	1701	487	926	752	1196		449	436	776	165
14	208	2106	336	250	3184	817	1166		413	403	984	134
15	204	1645	292	416	3931	481	1265		369	1131	134	68
16	395	246	240	604	424	834	2956		547	1596	202	42
17	22	126	341	619	357	1040	4154		1363	307	168	174
18	240	202	668	138	629	2244	1069		1369	287	169	167
19	98	190	2141	212	642	2427	759		350	300	402	89
20	141	952	3741	22	1217	651	1319		210	261	671	64
21	139	1691	512	53	3446	774	1224		219	264	145	113
22	137	266	441	287	3692	1109	1294		327	1117	211	131
23	540	205	483	729	831	1104	3440		524	1030	234	141
24	696	275	510	1838	589	1423	4059		1047	196	336	157
25	158	267	978	414	713	2623	1132		1373	187	290	33
26	209	239	3162	566	667	3978	1909		309	201	725	399
27	153	572	4364	394	616	1406	1249		372	165	764	251
28	191	786	812	252	2316	1210	1089		320	196	174	248
29	295	158	648	559	3122	1327	1291		378	616	169	159
30	533		954	1940	3683	1946	3024		501	962	172	299
31	381		668		656		3712			268		237
Total Monthly Days	31	28	31	30	31	30	31	31	30	31	30	31
Monthly Subtotal	7,824	16,743	28,661	30,290	40,305	40,806	62,268	0	28,461	18,812	10,801	8,489
WEEKEND DAY												
1	414	795	928	3104	1774	2778	3087		2361	1396	983	453
2	317	1402	1011	2537	951	2602	3650		3424	1740	1236	768
3	317	1625	1456	2597	1501	1591	2621		1751	1644	760	431
4	607	2106	1701	3682	3184	2568	3626		2146	1816	776	557
5	395	952	2141	604	3931	2244	2956		1363	1131	402	174
6	22	1691	3741	619	3446	2427	4154		1363	1596	671	167
7	540	572	3162	729	3692	2623	3440		1047	1117	725	137
8	696	786	4364	1838	2316	3978	4059		1373	1030	764	33
9	533			1940	3122		3024			616		237
10	381						3712			962		
Total Weekend Days	10	8	8	9	9	8	10	0	8	10	8	8
Weekend Average	442	1,241	2,316	1,816	2,637	2,604	3,499	0	1,857	1,305	787	328
Total Weekdays	21	21	23	21	22	22	21	23	22	21	22	22
Weekday Average	182	324	450	622	745	913	1,302	0	618	312	205	161

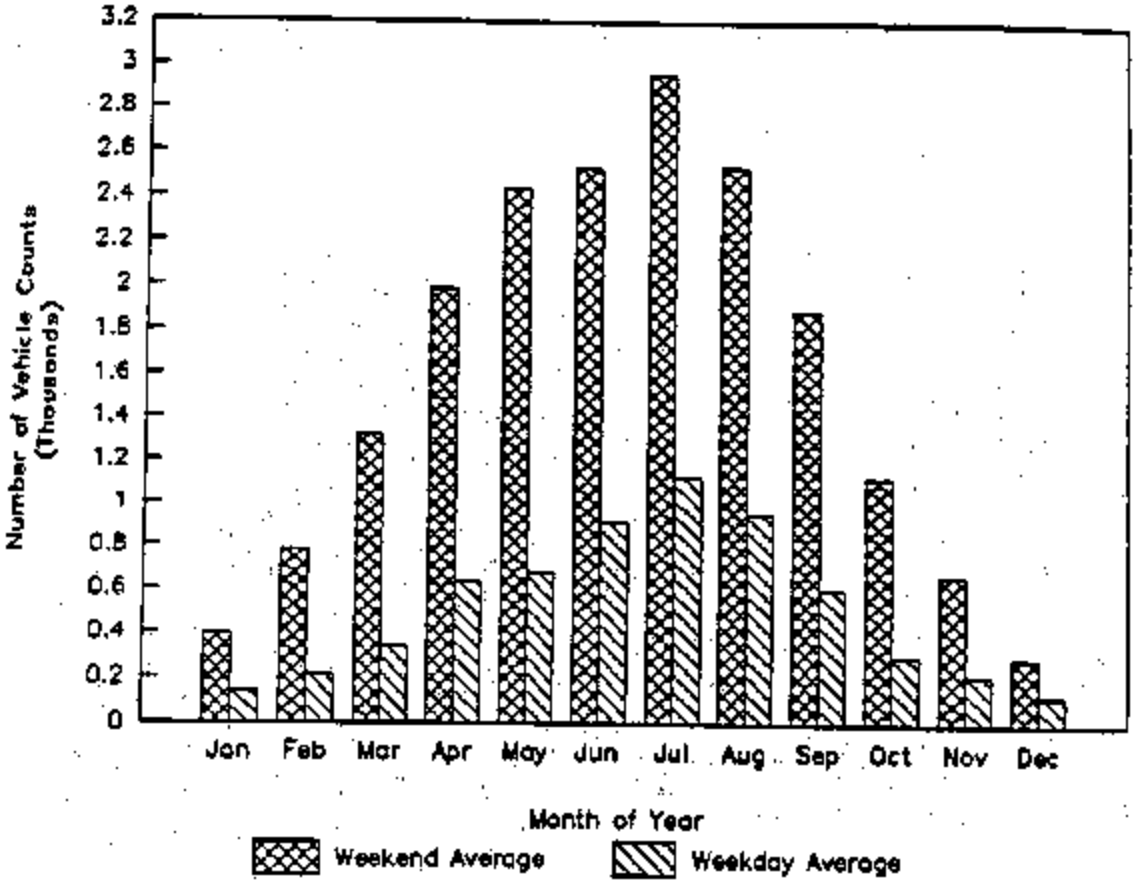


LAKE PERRIS
MONTHLY AVERAGE TOTAL VEHICLE COUNTS
(1988 - 1993)

SOURCE: State of California, Department of Parks and Recreation, Lake Perris, 1993

NOBLE CONSULTANTS

Figure A-5



LAKE PERRIS
WEEKEND & WEEKDAY
AVERAGE VEHICLE COUNTS
(1988 - 1993)

SOURCE: State of California,
Department of Parks and Recreation,
Lake Perris, 1993

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Figure A-6

APPENDIX B

Dock Construction Design Criteria

19. DOCK CONSTRUCTION DESIGN CRITERIA

A. GENERAL

Structural elements of dock floats, piers, dock covers, gangways, ramps, anchor cable systems, piling, and similar features must be adequate to safeguard not only human life but also the integrity of the boats and other material objects kept by boaters. Floats must be designed to assure permanent and level buoyancy. Good utilities will be required to provide for the convenience and safety of boaters, and all construction must conform to the pleasing appearance of the overall lake.

B. DOCK FLOATS

1. Dimensions

Main floats serving finger floats on one side only shall have a minimum width of 6 feet. Main floats serving finger floats on both sides shall have a minimum width of 8 feet.

Finger floats up to 30 feet in length shall have a minimum width of 3 feet. Finger floats over 30 feet in length shall have a minimum width of 4 feet. However, "U" shaped and "W" shaped docks shall have minimum finger float widths of 4 feet and a minimum main float width of 6 feet.

Docks of "L" shape, "T" shape or straight platform shape shall have minimum float widths of 6 feet.

Slips shall not be occupied by boats more than 3 feet longer than the slip. All slips shall be single occupancy unless otherwise approved by the City.

Where finger floats are connected to a main float, a fillet shall be incorporated in the design and shall extend a minimum of 4 feet along both the finger float and the main float.

2. Lateral Loading

Dock floats shall be designed to withstand a wind load imposed by the berthed craft determined by the following formulas:

(1) $P = 15\ (0.10L^2)$ $\quad L$ = 70 feet or less
(2) $P = 15\ (0.15L^2)$ $\quad L$ = greater than 70 feet

Where P = total load in pounds
L = length of dock in feet

3. Materials

Flotation units shall be one of the following: (1) concrete cast around a solid core of expanded cellular plastic; (2) pressure-molded fiberglass reinforced plastic; or (3) an expanded cellular plastic material coated with an approved material to prevent physical damage. Hollow concrete floats will not be permitted.

Deck surfaces may be concrete, plastic or wood. Lumber for decks shall be a minimum of 1.5-inches net thickness, unless otherwise specifically approved by the City. All lumber except decking shall be select structural grade Douglas Fir. Wood decking shall be vertical grain Hemlock. Use of other woods for decking shall be subject to the approval of the City. All deck surfaces shall have a non-slip finish.

All lumber shall be dried to an average moisture content when used of 10 to 18 percent with 90 percent of load less than 12 percent. All lumber shall be treated with fluorochrome arsenate phenol meeting the requirements of the American Wood Preservers' Association. Methods of application and results of treatment shall be as specified by the American Wood Preservers' Association. All lumber cuts and bolt holes shall be given a brush coat of concentrated chrome arsenate phenol solution.

All lumber, except decking, shall be given a primer coat as recommended by the manufacturer, and two finish coats of approved epoxy paint. Hemlock decking shall not be painted, but instead shall be given a finish treatment of pentachlorophenol meeting the requirements of the American Wood Preservers' Association standards for oil-borne preservatives.

4. Flotation

Sufficient flotation shall be provided to support a live load of 20 pounds per square foot of deck area, with a freeboard of not less than 9 inches. With no live load, the freeboard shall be between 15 inches and 18 inches. Flotation units shall be the product of a manufacturer regularly engaged in the production of such units for marine construction. Dock float decks shall not overhang the flotation units except where guide piles are located in the end of the float unit.

C. GANGWAYS/RAMPS

Gangways and/or ramps shall have a minimum clear width of 3 feet and a minimum length so that the gangway/ramp is no steeper than 3:1 (horizontal:vertical) during the dock's position at lowest lake level. Where the gangway/ramp rests on the main float, adequate flotation shall be provided. Gangways/ramps shall be designed for a live load of 40 pounds per square foot.

Protective handrails shall be provided along both sides of each gangway. Handrails shall be designed to withstand a lateral load of 30 pounds per lineal foot, applied to the top rail.

D. GUIDE PILES/ANCHOR SYSTEMS

If guide piles are used, all piles shall be prestressed concrete or concrete-filled steel pipe and the tops of all piles shall be to at least elevation 1,256 feet MSL. An effective cone-shaped bird deflecting device shall be provided at the top of each pile. If anchor systems are used, all anchors, cables, chain, winches and fasteners incorporated in the designed system shall be adequately sized and of non-corroding materials/coatings to hold the dock in-place during design load conditions, and be able to easily accommodate adjustments for repositioning of the dock during changing lake levels.

Sufficient investigation and design shall be carried out to insure that each pile or anchor system with cable or chain is adequate to resist the lateral load imposed. The number of piles or anchors and cables provided shall be sufficient to withstand wind loading on berthed craft with all dock slips occupied. Wind loading normal to the axis of berthed craft shall be determined by the formulas listed in Paragraph 19 B.2. Wind loading parallel to the axis of berthed craft shall be determined by the following formulas:

(1) $P = 15\ (0.10\ WL)$ L = 70 feet or less

(2) $P = 15\ (0.15\ WL)$ L = greater than 70 feet

Where W = Width of slip

Guide piles and anchor systems shall be designed by a licensed engineer and all calculations and other pertinent data shall be submitted for approval. Steel pipe for piling shall have a minimum diameter of 8 inches, a minimum wall thickness of 3/8-inch and shall be hot dipped galvanized.

E. DOCK COVERS

1. General

Dock cover framing to be of steel gage metal construction with corrugated steel roofing and siding panels. Aluminum dock covers may be approved, if their design and submittal is equal to the below specifications for steel construction.

The Applicant shall provide the following submittals:

(1) Calculations for approval demonstrating ability of dock covers to resist design loadings, and showing all column loads applied to float. All calculations to bear the stamp and signature of a Civil or Structural Engineer registered in the State of California.

(2) Complete design drawings and shop fabrication drawings for approval by the City. All drawings to bear the stamp and signature of a Civil or Structural Engineer registered in the State of California.

All fabrication, field connections, and erection to conform to AISI specifications, latest edition.

2. Materials

Roof sheeting to be Curoco or approved equal, 26 gage minimum, conforming to ASTM A 446, Grade A. Provide ASTM A 525, G 90 galvanizing and baked-on factory enamel. Submit color for approval. Slope to drain. Use longest available sheets to minimize lapping.

Wall sheeting to be Curoco or approved equal, 26 gage minimum, conforming to ASTM A 446, Grade A. Provide ASTM A 525, G 90 galvanizing and baked on factory enamel. Submit color samples for approval.

Sheeting shall be attached to framing with "Fabco" (or approved equal) Number 14 by 3/4-inch cadmium-plated screws in valleys of sheet. Space at 4 inches on center at roof edges and 8 inches on center at interior supports. Screws to have colored heads to match sheeting.

Sheeting side laps and flashings shall be attached with "Fabco" (or approved equal) Number 14 by 3/4-inch cadmium-plated screws at 24 inches on center. Screws to have colored heads to match sheeting.

Flashings and gutters to be minimum 24 gage with A 525 (G 90) galvanizing with baked-on factory enamel to match sheeting.

Structural members to be minimum 12 gage ASTM A 446, Grade D with minimum yield of 50,000 psi and G 90 galvanized coating or equal. Columns to be a minimum of 10 gage. No shop or field paint is required on framing members. Clips securing the columns to the pontoons shall be ASTM A 36 hot dip galvanized secured with ASTM A 307 hot dip galvanized bolts.

All framing field connections shall be bolted with 5/8-inch diameter A 325 bolts with 2 hardened washers, except as noted.

3. Loading

Design all framing, sheeting, and connectors for the loads defined below:

(1)	Roof Live Load	15 psf
(2)	Lateral Wind Load	15 psf
(3)	Uplift Wind Load	19 psf (less Dead Load)

Purlins shall be so framed as to be fully continuous over the purlin supports. Bolts in purlin connectors shall be in horizontally slotted holes to accommodate minor variations in dock finger spacing.

All framing members shall be so arranged that they lap at connections to avoid the use of collateral connection clips where possible.

Unless shown, or noted otherwise, columns shall be braced from 10 feet above the deck to the top of column to form portals resisting lateral forces and deflections.

Provide a drainage gutter along the diagonal cut of a low roof extending under a high roof where the lap occurs.

APPENDIX C

Unlimited Racing Commission
(Race Site Manual)

UNLIMITED

RACING

COMMISSION

Race Site Manual

Unlimited Racing Commission
414 Pontius Ave. N.
Suite C
Seattle, Wash. 98109
(206) 467-1368

TABLE OF CONTENTS

INTRODUCTION

Persons or organizations interested in conducting an Unlimited Hydroplane Racing event must meet requirements set forth by the Unlimited Racing Commission (URC).

It is recommended that planning for an Unlimited event begin no less than one year prior to the planned event date. Site requests may be submitted to the URC. Upon a positive review, arrangements may be made for a URC official to inspect the proposed site, with expenses being paid by the promoter of the proposed site.

Once the site passes inspection, the site promoter is required to carefully prepare the details and logistics of the proposed event in the form of a final presentation to the URC. At this time, the promoter must also post at least $50,000 of the $150,000 prize package, which is non-refundable in the event of a cancellation on the promoter's behalf. Upon successfully meeting these requirements, the URC will approve the event and set the date.

The URC reviews final presentations of proposed race event sites for the next race season at the annual APBA meeting, held in November. Arrangements for making a presentation to host an Unlimited event can be made through the URC office.

This manual details the requirements that must be fulfilled to conduct a sanctioned Unlimited event.

While this manual covers many aspects of conducting an Unlimited event, it is not inclusive since each site's conditions will vary. It is highly recommended that persons planning an Unlimited event attend at least one event as a fact-finding mission and to establish contacts with current site promoters.

Donald C. Jones
URC Commissioner
APBA Unlimited Vice President

URC
414 Pontius Ave. North
Suite C
Seattle, WA 98109
(206) 467-1368
FAX: (206) 467-0235

THE UNLIMITED RACING COMMISSION

The Unlimited Class is a division of the American Power Boat Association (APBA), the official sanctioning authority for power boat racing in the United States.

The governing body of the Unlimited Class is the Unlimited Racing Commission (URC) under the direction of a Commissioner and a board of directors, consisting of drivers, owners, crew chiefs, race site promoters, directors at-large and URC officials.

The URC organizes the Unlimited Hydroplane Series, which is annually a series of races held at different race sites across the United States.

Generally 10-15 Unlimited Hydroplanes, also known as Unlimiteds, make up the fleet of the Unlimited Class. The Unlimiteds are the world's fastest racing boats, capable of speeds of over 200 miles per hour.

In addition to the teams and their boats, the URC provisions include the following:

* **URC Mobile Headquarters**
* **URC Timing Clock, Trailer and Official Timers**
* **URC Official Referees**
* **URC Medical-Rescue Boat and Paramedics**
* **Official Television Production Crew**
* **Unlimited Radio Network**

UNLIMITED HISTORY

The sport of Unlimited Class Hydroplane Racing traces its heritage to early European power boat racing.

The first successful power boat race of the 20th century was held at the Paris Universal Exhibition of 1900. In 1903, the British International ("Harmsworth") Trophy was established. Then, in 1904, the initial contest for the American Power Boat Association (APBA) Gold Cup was held on the Hudson River in New York. The Gold Cup is power boat racing's most prestigious award. It continues today as the oldest championship trophy in American motor sports.

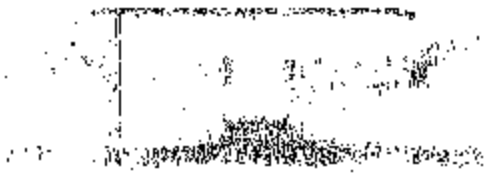
The pioneer race boats resembled the current-day Offshore Class racing boats in appearance, and plowed through the water rather than skim over it. In 1936, the current-day, sleek "three-point" hulls that ride on the railing edges of two pontoon-like running surfaces called sponsons, established themselves as the competitive norm.

With the close of the World War II, the modern era of Unlimited Class Hydroplane Racing began, as the boats became powered by converted military aircraft engines, including the Allison, Rolls Royce Merlin and Rolls Royce Griffin. The automobile engine has also been used by some Unlimiteds.

In 1984, a new powerplant made its competitive presence known - the jet turbine engine. Originally designed to power a military Chinook helicopter, the turbine represents the most competitive and reliable source of power for the Unlimiteds. Turbine-powered Unlimiteds are continually setting new high-speed records.

In 1985, the enclosed cockpit or "safety capsule" was introduced. Now it is required equipment on all Unlimiteds and has been directly attributed to saving the lives of many drivers.

As the speed and technology continue to increase, so does the popularity of America's most unique form of motor racing, the Unlimited Class of Hydroplanes - "The World's Fastest Racing Boats."



UNLIMITEDS - THE BASICS

The Unlimited Hydroplane Race circuit typically consists of events coast to coast, taking place from May through October. Each race event has two days of qualifying and testing and one day of racing. To qualify, a piston-powered boat must run a competitive lap average speed of 120 miles per hour, while a turbine-powered boat must go 130 mph.

The standard course is a two-mile oval, however there are exceptions. Some courses are a mile and two-thirds, others are two and a half miles. The two-mile course allows the boats to be in easy viewing distance of spectators and provides a safe, more controllable course for the drivers than the longer courses. The two-mile course also accelerates the thrill, speed and strategy in the turns, which makes for an even more action-packed event.

Race day begins with three preliminary heats. Each heat has two sections - A and B. To determine the lineup for each heat, the qualifying speeds are used for the first heat and then a drawing will take place for the second and third heats. Boats accumulating the highest point totals during the first three heats are eligible to compete in the final heat. The winner of the final heat is the winner of the overall race event.

Of all the race events, the Gold Cup is the most coveted. It is awarded after a bidding process by the race sites. The Gold Cup is the creme de la creme of Unlimited Hydroplane Racing and parallels auto racing's Indy 500 and Daytona 500 and the NFL's Super Bowl. The prestige surrounding the Gold Cup stems from its distinguished heritage, longer overall race distance and heightened competition.

In addition to competing to win each race, drivers and boats compete for National High Points Championships. Points for all heats are: First = 400 points; Second = 300 points; Third = 225 points; Fourth = 169 points; Fifth = 127 points; Sixth = 95 points.

The Series prize package exceeds $1 million.

Each winter following completion of the race season, the URC holds its annual awards banquet, where owners, drivers, crews, sponsors, media and other important individuals are recognized for their achievements and contributions.

RACE FORMATS

There are two race formats used by the Unlimited Racing Commission, the regular format and the Gold Cup format. The regular format has three preliminary heats, a last chance and a final. The Gold Cup has four regular heats, no last chance and a final. The Gold Cup is racing spread out over two days, the regular format calls for racing only on Sunday.

REGULAR FORMAT

The regular format was started in 1986 in Madison and is now the rule on the circuit. The format is considered by some to be more exciting because there are added heats and the three-lap heats make for close, exciting racing. The regular format calls for a flag start, forcing all boats to be lined up at the start of a race.

1-A and 1-B -- Three laps
2-A and 2-B -- Three laps
3-A and 3-B -- Three laps
Last chance -- Three laps
Final -- Five laps

GOLD CUP FORMAT

This format, used only for the Gold Cup which is held once per season, is considered an endurance test. Two heats are held on Saturday, two more on Sunday along with the final.

1-A and 1-B -- Three laps
2-A and 2-B -- Three laps
3-A and 3-B -- Five laps
4-A and 4-B -- Five laps
Final -- Five laps

FINANCIAL REQUIREMENTS

The following example of estimated APBA and URC financial requirements must be met to conduct an Unlimited event:

Prize Fee Money	**$149,375**
Sanction Fee	**$ 8,000**
APBA Sanction	**$ 3,000**
Race Site Liability Insurance	**$14,000**
APBA Team Medical Insurance	**$ 3,000**
TOTAL FEES	**$177,375**

As mentioned earlier, first-time race sites must post at least $50,000 of the total prize package (non-refundable if race event is cancelled on promoter's behalf) upon acceptance of the site by the URC.

Other costs incurred in hosting an Unlimited event vary greatly from site to site, therefore making it difficult to provide an accurate estimate on approximate costs. Current site promoters speculate it would cost $350,000 to $500,000, including the above mentioned prize money, sanction fee and insurance, depending upon what donated products and services are acquired. It is recommended your organization be set up to receive tax-deductible contributions.

EXPENSE CHECKLIST

ITEM	AMOUNT	ITEM	AMOUNT
Accounting		Novelties	
Advertising		Office Expenses	
Air Show		Office Trailer	
Am bulances		Oil Pick Up	
APBA Region Fee		Oil Sorb	
Attorney		Public Address	
Beach Clean-Up		Parking	
Beer permits		Permits	
Bleachers		Phones	
Bus Rental		Photographer	
Captain's Club		Port-A-Potties	
Cones		Printing	
Contingency		(Credentials, Parking Passes	
Copy Machines		Pit Tour Passes, General	
Corporate Areas		Admission Tickets, Arm Bands,	
Course Materials		Instructions, Flyers, Brochures	
Course Survey		Programs, Pit Passes,	
Cranes		Art Work, Stationary, Tent	
Docks		Holder Cards, Tickets)	
Drinking Water		Purse (Prize Money)	
Dumpsters		Radios	
Electrical		Sales Commissions	
Fencing		Sanction Fees	
Fire Fighting		Scaffolding	
Equipment		Scoreboard	
Flares		Security	
Generator		(Police, Night and Gates)	
Golf Carts		Site Fee	
Ice		(To Owner of Site)	
Insurance		Shirts and Hats	
License and Fees		Signs and Banners	
Medical Equipment		Tent Rental	
Miscellaneous		Trash Bags	
Motor Homes		Trophies	
		Worker's Shirts	

GEOGRAPHICAL REQUIREMENTS

The ideal site for an Unlimited Hydroplane Racing event is a calm, sheltered body of water which has ample viewing areas for spectators and adequate pit facilities for the race teams and their boats.

The largest percent of this viewing ideally is on land, however, with proper safety precautions taken, parts of the course may be viewed from a spectator fleet of boats on the water. The minimum water facility requirements to accommodate a 1 2/3-mile oval course is 2,600 feet in width and 6,000 feet in length with a minimum water depth of five feet.

The two-mile course, which is preferred, requires a body of water 2,600 feet in width, 6,500 feet in length and a minimum water depth of sixth feet.

LAND FACILITY REQUIREMENTS

START-FINISH LINE

The start-finish line tower, also known as the Official Tower, is to be at least 14 feet tall with railing, canopy and must be able to accommodate at least 16 people, including three scorers, three timers, two flag people, a URC computer with two operators, URC chief referee, URC safety inspector, national radio broadcast team, public address announcers and related equipment. The tower may be two or three stories with a minimum width of eight feet.

Also at the start-finish area is to be:

* Area for the press
* Area for course surveyor, high enough to view course
* Telephones
* Electrical power for equipment (110V or 120V for timing)
* Restroom facilities
* Tables and chairs to accommodate 16 people

It is recommended that the area be fenced from the general public. Security must be maintained at all times. Also, flags and flares for the starting boat and turn boats are controlled from this area.

PIT AREA

Working pits: The recommended size for the working pit area is 450 feet long and 125 feet wide. This area will accommodate 16 boats, four cranes, fuel, medical area and pit tower. Paved areas are preferred. This area must be enclosed with six-foot high fencing, with a minimum of three pedestrian gates, four feet wide and a truck-sized gate on each end. Within the pit area, a temporary fence separates the cold pits from the hot pits. The hot pit area is to be secured, allowing entry only to people with proper credentials.

FLOATING DOCKS

A 200 foot by 8 foot dock parallel to the hot pits or a minimum of four finger piers (8 feet wide, extending at least 16 feet and reaching out to a minimum of five feet in water depth) are to be positioned in the water behind each crane. A minimum of three Halon fire extinguishers should be placed on the docks.

ELECTRICAL POWER

A power line should run along the water side of the pits with a minimum of one 120VAC, 20 Amp circuit with three-wire duplex receptacles per entry; a minimum of one 240VAC, 100 Amp circuit in the pit area.

PIT TOWER

The pit tower should be located in the center of the pits with a view of all the boats. The working platform must be 14 feet high with a canopy. The qualifying scoreboard should fasten on the back side of the pit tower for full viewing. The qualifying scoreboard should be large (10 by 15 feet) and list all boats, heats, points, etc. Also, a separate public address system capable of being heard over the entire pit area is controlled by the pit announcer from the pit tower (power outlet required).

WASTE OIL DISPOSAL

Each boat is to have two 55-gallon drums with the tops cut out and screened (to keep debris out) placed in the pits for the disposal of waste oil. These drums are to be emptied throughout the day, as they fill quickly. Also, oil sorbs need to be available for oil spills.

WATER

A 1-inch water line is to run along with the water side of the pits in back of each boat (one hose spigot per entry). If water is not potable, clean drinking water must be provided for the entire pit area.

PIT SANITARY FACILITIES

If permanent restroom facilities are not available, a minimum of 10 port-a-potties must be placed along the land-side fence in the pit area. They must be serviced daily.

GARBAGE RECEPTACLES

Each boat must have two large garbage receptacles and the remainder of the pit should have 50, all of which need to be emptied daily.

CRANES

There is to be a 2 1/2-ton capacity mobile crane available from noon on the day before qualifying until 24 hours after the conclusion of the event for the purpose of engine hoisting.

On the days of the event, a minimum of one crane of 40-ton capacity or greater with a 40-foot boom is to be provided for every three boats. Cranes are to have a minimum four-part line. It is recommended that cranes have power down equipment. In the case of hydraulic cranes with a capacity of 50 tons or more, such cranes may handle four boats each. All cranes shall be available with operators for a minimum of one hour before and one hour after the official testing and qualifying periods, and also for a minimum of one hour after the finish of the final heat. Boat crews shall have direct communication with the cranes operators - no middle man.

FIRE PROTECTION

A fire lane 16 feet wide must run the length of the pit area and must be kept clear at all times. Two CO/2 or Halon fire extinguishers must be stationed at each Unlimited Hydroplane. Fire protection, approved by the local fire department, must be provided during the entire event.

PIT SECURITY

There must be a minimum of two persons on each gate during testing, qualifying and heat racing. Security on the temporary fence separating the cold pits from the hot pits is also required during racing events. Uniformed security personnel are most effective and recommended. Overnight security for boats and pit area must be provided. Pits must be well lit during the night hours.

FUEL

Race sites are responsible for making fuel available for sale. Each boat typically will use 300 to 400 gallons. The most often used fuels are Av-Gas, Jet-A and methanol. Each boat camp is responsible for providing race sites with its fuel requirement well in advance of the event. Boat camps are to arrange for credit or be prepared to pay cash.

FUEL STORAGE AREA

Fuel storage area is to be 20 feet by 300 feet, with one 10-foot gate and is to be surrounded by dirt mounds, three feet high on three sides. Fuel is stored according to class. Proper fire protection is required as prescribed by the local fire marshal.

MEDICAL

A medical trailer or area (with a telephone) capable of providing emergency care and driver examinations is needed. One physician and a registered nurse should be on duty at all times. At least two ambulances are to be available and a private auto with driver to transport family to the hospital, if necessary. One ambulance must be in the pits during the times the pits are open. It is recommended that a minimum of three EMT's be on duty. The following information is to be provided to the URC mobile headquarters: Names of the doctors and their work schedules, name and location of the designated hospital along with its distance and route from the pits.

All medical personnel and ambulance are to remain on site until at least one hour after the final heat. Consult with URC medical coordinator for further information.

OUTER PIT AREA

NEWS MEDIA

A trailer or enclosed area should be designated for the news media. It should have power, basic refreshments, a copy machine, a fax machine and a minimum of two telephones.

PARKING

The outer pit areas (reserved for URC officials, teams and other official vehicles) should be large enough to park 100 cars, 20 mobile homes or trailers and 10 service vehicles. This area should have potable water, sanitary facilities and power for official trailers and RV's (110VAC, 30 Amp outlets at each).

ICE TRUCK

One thousand pounds of ice (per day) in 25-pound bags or less are to be purchased by boat camps, concessionaires, etc.

PIT TOUR AND PIT PASS SALES

Pit tour and pit pass sales should be designated outside one of the pedestrian gates.

CREDENTIALS

A trailer or covered area is to be set up to conduct validation of credentials, which allow people into the pit area. Each credential holder is to sign a waiver and receive a validation decal with the name of the host city. The decals (provided by the URC) are to be placed on the credential pin or pass.

HELIPORT

A heliport, if space is available, is to be located near the pits for emergency medical airlift purposes.

TURN JUDGE HELICOPTERS

Each race site is to arrange for two helicopters to carry two turn judges for race day.

TELEVISION PROVISIONS, REQUIREMENTS

Diamond P Sports makes available to each race site the opportunity to have a one minute to one-and-a-half minute feature on their city and/or surrounding area incorporated into the hour-long television broadcast on cable sports channel ESPN.

This feature will help race sites in obtaining city and state cooperation support and funding via the local Tourist Development Council (TDC). Diamond P Sports is willing to help in any way to make this national television feature beneficial to you and your race site. Scripting and video will need to be supplied 45 days in advance of the airing.

The following is a list of site requirements needed to be supplied by each race site for the nationally televised event:

PRODUCTION TRUCK

Parking location in the pit compound or adjacent to the pit compound with full access to the area. Parking area would have to accommodate a 55-foot tractor trailer with an equal amount of crew work area (55 by 20).

SITE POWER

The production truck requires either single-phase/220 volts/300 amps or three phase 220 volts/300 amps. Power source should be supplied by a disconnect box located within 150 feet of the production truck location.

SECURITY

Security must be supplied overnight at all camera locations and at the production trailer. Sites with crowd problems will also need security during the day of the race at trouble spots.

SCAFFOLDING

Four camera platforms with locations to be specified at a later date. Construction should be two units side-by-side to make a platform approximately 7 feet deep by 10 feet wide. These units need to be elevated three units high to make the working deck 15 feet from the base. The platform deck needs to be fully planked and reinforced with plywood for minimum bounce, or sway.

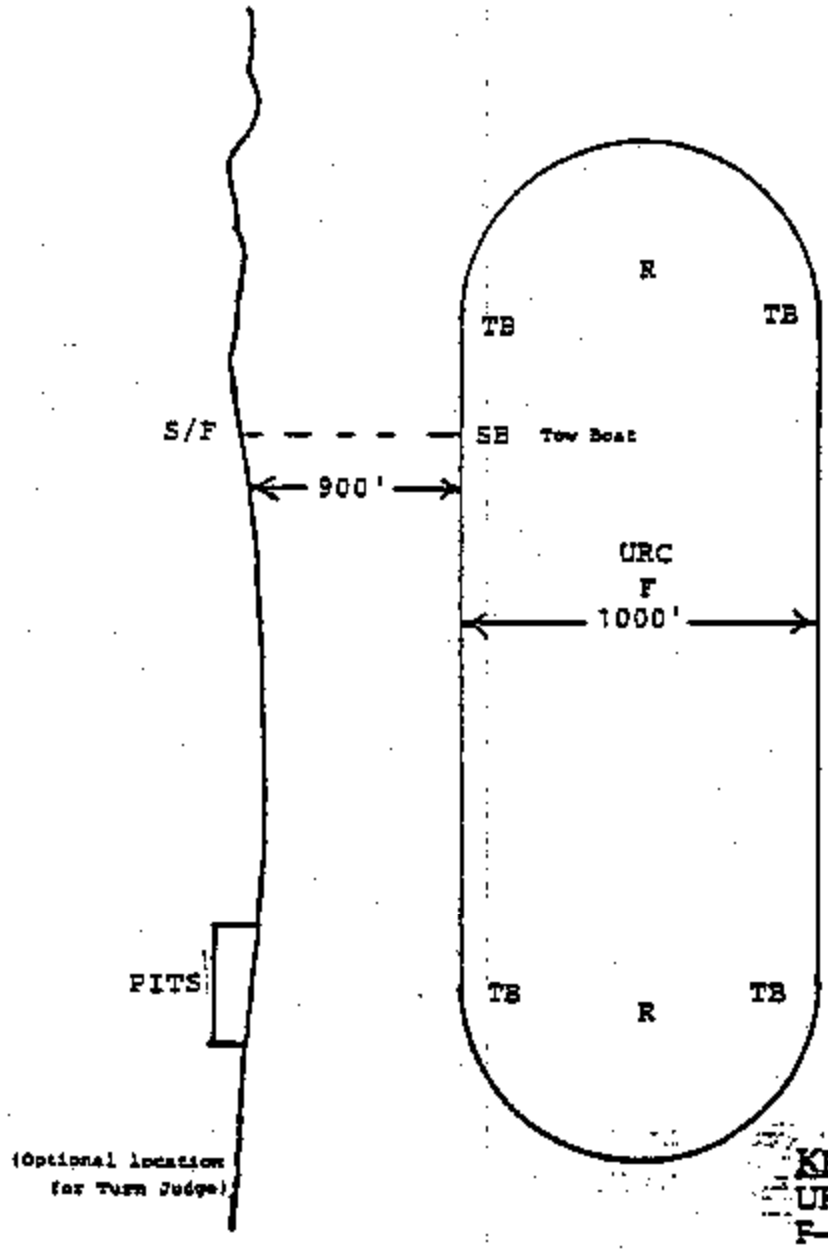
RACE COURSE AND SUPPORT BOAT REQUIREMENTS

Race Course

The race course must be designed and surveyed by a licensed surveyor using current survey maps, taking into consideration land features, water depths, viewing areas, and insurance regulations.

Enclosed is an APBA Unlimited Racing Rules book. Please refer to Rule Three for course specifications.

RACE COURSE LAYOUT EXAMPLE



KEY
URC—URC Rescue Boat
F—Fireboat
SB—Start Boat
TB—Turn Boat with Turn Judge
R—Rescue Boat

SUPPORT BOATS

It takes a small flotilla of boats to run an Unlimited event. The specific boats and their requirements are as follows:

OUTSIDE PERIMETER BOATS

These boats keep pleasure boats at least 1,500 feet from the outside buoy line. All boats must have radio communication with one another. These boats should be 16-20 feet pleasure crafts.

TURN BOATS (2)

One at each turn, anchored turn judges to be provided by the site promoter will be on these boats. (Preferably a 35-40 foot pleasure craft with a covered bridge).

START BOAT (1)

This will be anchored at the starting line and will have start flags that will be supplied by the URC. This boat should be a 35-40 foot pleasure craft.

FIREBOATS (2)

Insurance regulations require long pants. Boats never move except by the direction of the Safety Inspector or Chief Referee. All boats must have fire-fighting equipment and fire-fighting knowledge with the fuels in boats so as to use the proper equipment for each boat. First aid equipment on each boat. Stokes litter with rope sling on each boat. Each boat must have one of the URC radios. Driver and two firefighters on board boat. Must have proper tow lines to tow 9,000-pound boat. Must have rags on board to use for holes in race boats. These fireboats should be 18-20 foot pleasure craft.

RESCUE BOATS (3)

Boats will never move except under the direction of the Safety Inspector or Chief Referee. Must have a pump to pump water out of sinking boats, proper tow lines to tow a 9,000-pound boat, rags for holes in boats and fire extinguishers. The following medical equipment: c-collars, bagmask, airway gear, oxygen, suction unit, floating basket litter with a backboard secured in the bottom fitted with enough straps to immobilize an injured driver and a Kendrick Extrication Device (KED). Other rescue equipment includes a small pry bar, pliers and screw drivers. Crew should consist of two divers and one paramedic. One diver shall have suba equipment on anytime an Unlimited is running on the water. A 10-20 cubic foot tank is preferred for mobility. The other diver should be in snorkeling gear (scuba gear optional).

The URC provides the No. 1 rescue boat for the race. Rescue boats should be 18-20 foot pleasure crafts.

ESCORT BOATS (2)

One for each end of the pits. Three people per boat, all persons must have knowledge of towing boats. Two large fire extinguishers in each boat. Proper tow lines to tow 9,000-pound boats. Rags for holes in race boats. Need to wear long pants. Must have race course radios. Never move except under the direction of the Safety Inspector. These boats should be 18-20 foot pleasure craft.

SALVAGE BOAT (1)

This boat must be equipped to recover any sunken boat from the race site.

All boats must be numbered. Perimeter 1, Turn 2, Rescue 3, etc. This information is vital to the Safety Director and Race Director.

ABSOLUTELY NO FAMILY MEMBERS OR CHILDREN PERMITTED INSIDE THE RACE COURSE

URC SITE PRESENTATION LIST

In preparing a site presentation for the URC, the following checklist should be used:

BACKGROUND

* Persons or organizations promoting the race site
* Objectives of the event, i.e., product promotion, client entertainment, charity, community festival, etc.

SITE FACILITIES

* History of the site, including any past association with Unlimited Racing events.
* Results of URC inspection
* Course map by licensed surveyor
* Demonstrate adequate pit facilities (visual aids recommended)

ORGANIZATION

* Structure, including paid staff, volunteers, committees, etc.
* Association with clubs, charities and other organizations
* Contracted professional advisers/coordinators
* Recommended date of event

DEMOGRAPHICS

* Population of market impact area
* Television and radio market information: ADI ratings

LOCAL APPROVAL, SUPPORT AND CONCERNS

* Documented approval and support from governmental agencies, including, if applicable, City, County, State, Chamber of Commerce, Army Corps of Engineers, U.S. Coast Guard, Police and Fire Departments.
* Present local concerns and respective solutions taken/planned to resolve these local concerns.

FUNDING

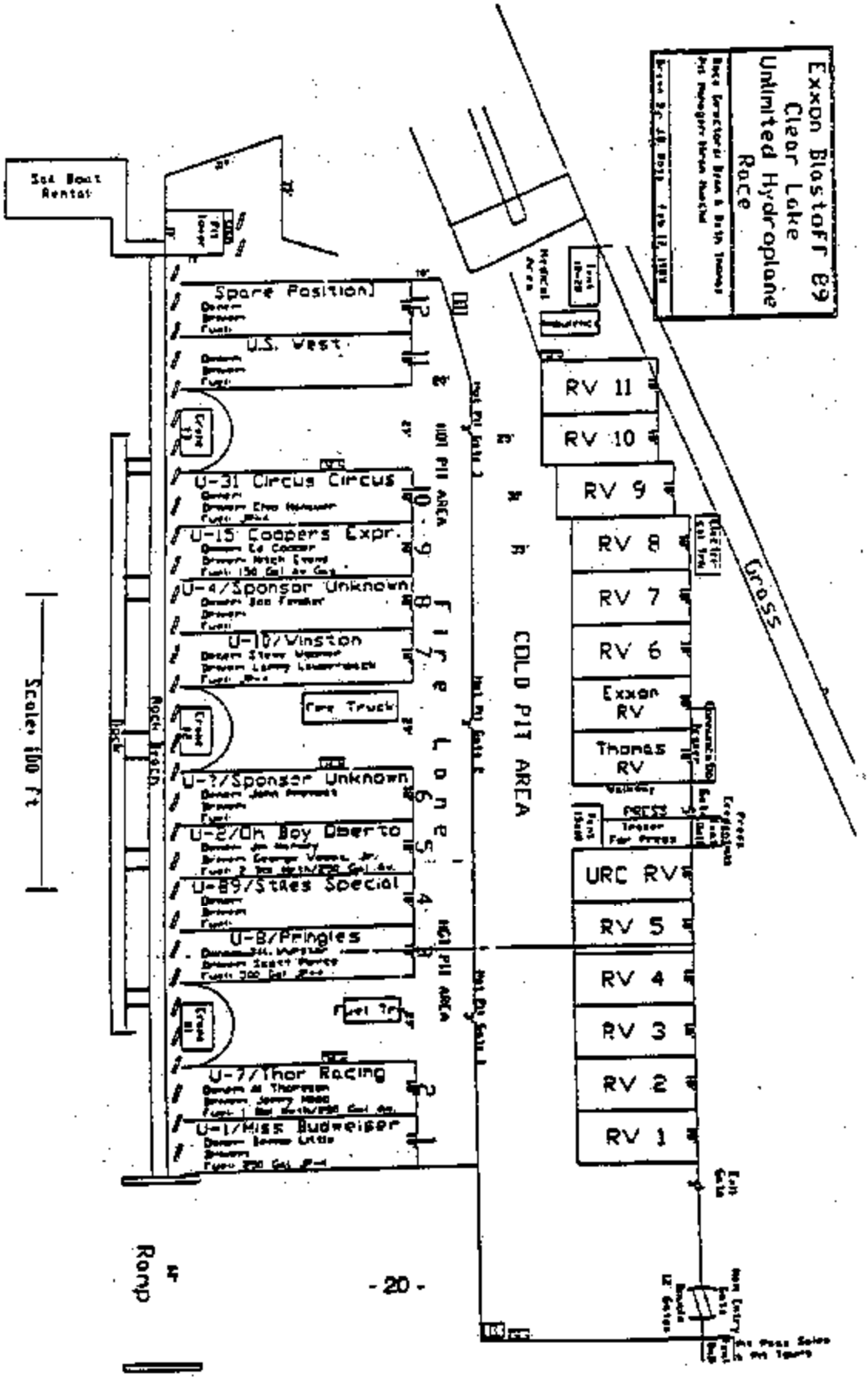
* Proposed budget
* Sponsors
* Check for $50,000 of the $149,375 prize package, non-refundable in the event of a cancellation on the promoter's behalf.

AN INVITATION

For further information on hosting an Unlimited Hydroplane event, contact the:

Unlimited Racing Commission
414 Pontius Ave. North
Suite C
Seattle, WA 98109
(206) 467-1368
FAX: (206) 467-0235

PIT AREA LAYOUT EXAMPLE



RACE COURSE AND SUPPORT BOAT REQUIREMENTS

Race Course

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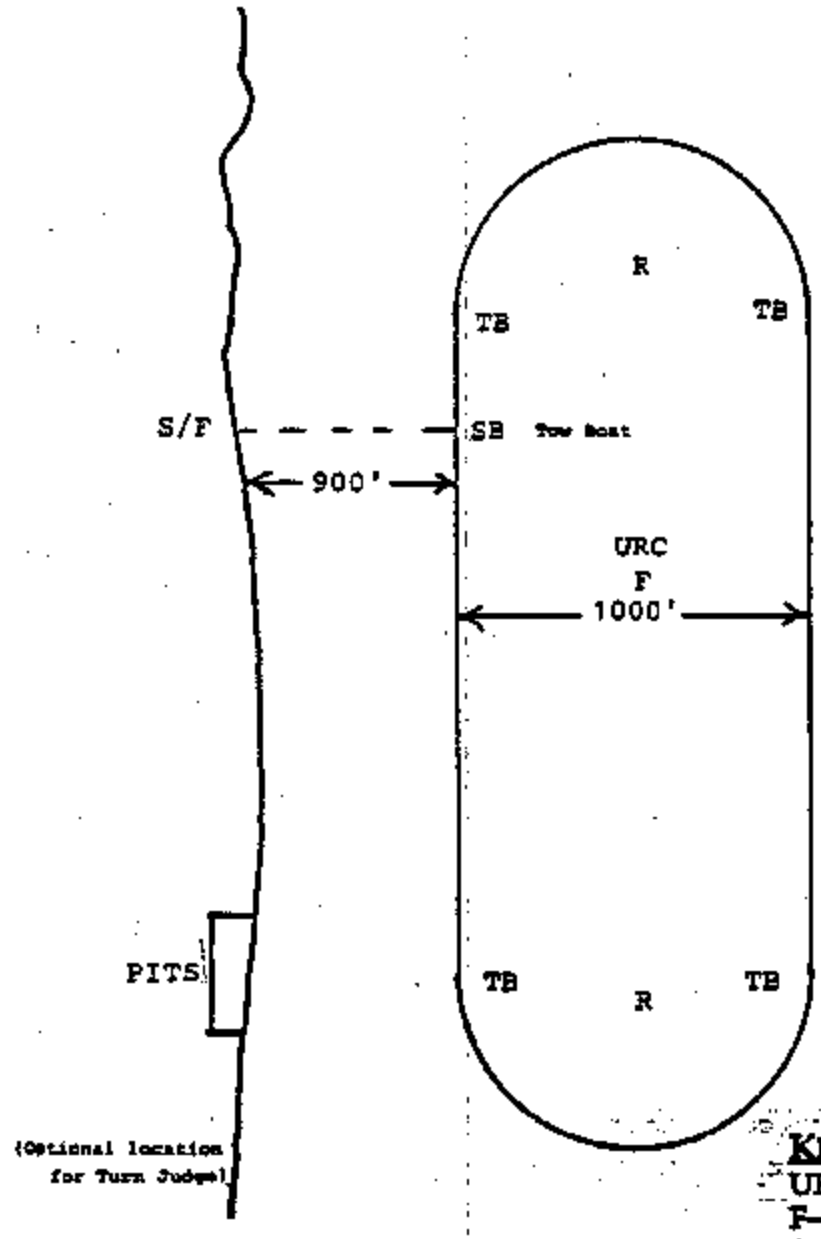

KEY
URC—URC Rescue Boat
F—Fireboat
SB—Start Boat
TB—Turn Boat with Turn Judge
R—Rescue Boat

APPENDIX D

Unlimited Racing Commission
(Hydroplane Series Schedules,
Attendance Figures and
Demographic Analysis)
1991 - 1994

UNLIMITED RACING COMMISSION
APBA

World's Fastest Racing Boats!

Donald C. Jones
Commissioner

1994 RC COLA HYDROPLANE SERIES SCHEDULE
Tentative

DATE	RACE SITE
June 2-3-4-5	Detroit, Mich.
June 10-11-12	Lewisville, Texas
June 24-25-26	Evansville, Ind.
July 1-2-3	Madison, Ind.
July 8-9-10	Syracuse, N.Y.
July 29-30-31	Tri Cities, Wash.
Aug. 5-6-7	Seattle, Wash.
Aug. 19-20-21	Boston, Mass.
Sept. 16-17-18	San Diego, Calif.
Oct. 14-15-16	Honolulu, Hawaii

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UNLIMITED RACING COMMISSION
APBA

World's Fastest Racing Boats!

Donald C. Jones
Commissioner

1993 RC COLA HYDROPLANE SERIES
Attendance Figures

Date	Site	Attendance
May 30, 1993	Lewisville, Texas	45,000
June 6, 1993	Detroit, Mich.	450,000
June 13, 1993	Miami, Fla.	25,000
June 27, 1993	Evansville, Ind.	95,000
July 4, 1993	Madison, Ind.	105,000
July 11, 1993	Kansas City, Mo.	55,000
July 25, 1993	Tri Cities, Wash.	75,000
Aug. 1, 1993	Seattle, Wash.	300,000
Sept. 19, 1993	San Diego, Ca.	115,000
Oct. 24, 1993	Honolulu, Hawaii	110,000 (projected)

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UNLIMITED RACING COMMISSION
APBA

World's Fastest Racing Boats!

1992 RC COLA HYDROPLANE SERIES
Attendance Figures

Donald C. Jones
Commissioner

Date	Site	Attendance
June 7, 1992	Miami, Fla.	22,000
June 13-14, 1992	Detroit, Mich.	350,000
June 28, 1992	Evansville, Ind.	75,000
July 5, 1992	Madison, Ind.	95,000
July 26, 1992	Tri Cites, Wash.	60,000
Aug. 4, 1992	Seattle, Wash.	225,000
Aug. 23, 1992	Kansas City, Mo.	40,000
Sept. 20, 1992	San Diego, Ca.	105,000
Oct. 24, 1992	Honolulu, Hawaii	85,000

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UNLIMITED RACING COMMISSION
APBA

World's Fastest Racing Boats!

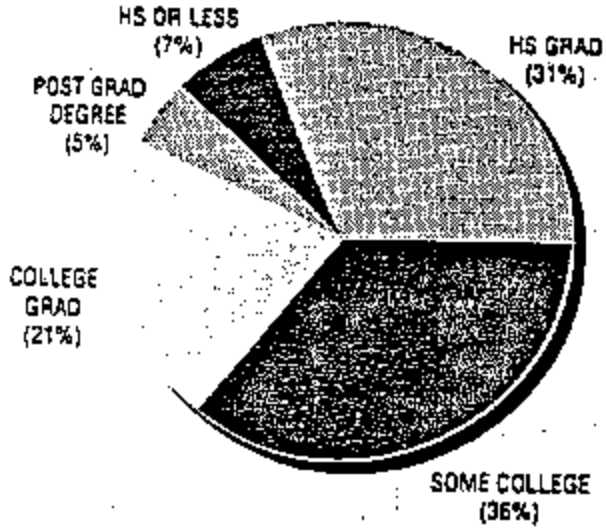
Donald C. Jones
Commissioner

1991 EAGLE SNACKS HYDROPLANE SERIES
Attendance Figures

Date	Site	Attendance
June 9, 1991	Detroit, Mich.	375,000
June 30, 1991	Evansville, Ind.	75,000
July 7, 1991	Madison, Ind.	110,000
July 28, 1991	Tri Cities, Wash.	70,000
Aug. 4, 1991	Seattle, Wash.	250,000
Sept. 15, 1991	San Diego, Ca.	110,000
Oct. 27, 1991	Honolulu, Hawaii	100,000

414 Pontius Avenue N. • Suite C • Seattle, Washington 98109 • (206) 467-1368 • FAX 467-0235

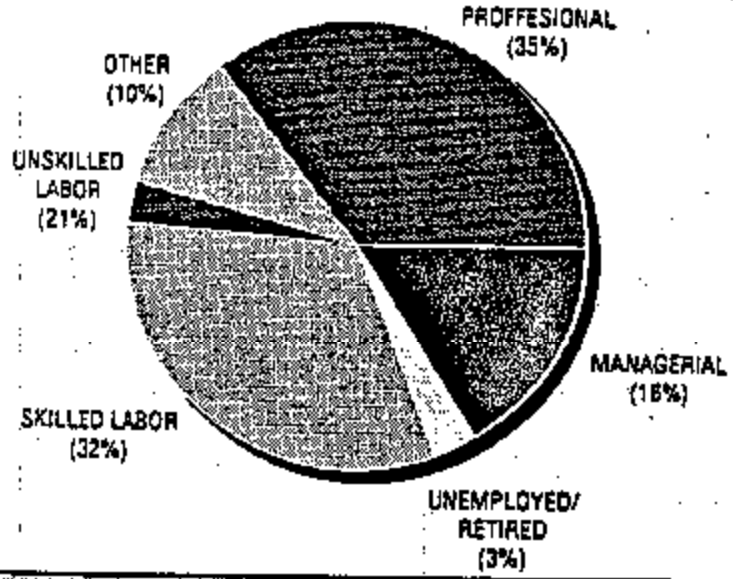
EDUCATION



The average fan is well educated with an above average income. This fact is supported by income, occupation automobile ownership and other related charts.

UNLIMITED RACING COMMISSION
Demographic Analysis

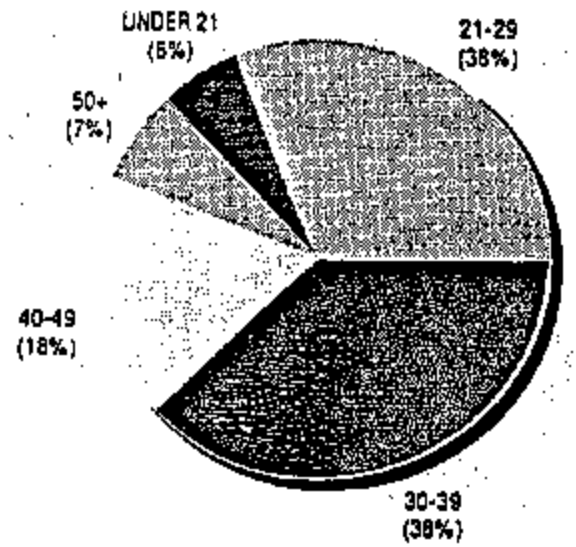
OCCUPATION



This chart supports education and income charts. The high above average income and educational level of the fan reflects the high percentage of fans who are in professional, managerial, or skilled labor sectors of the economy.

UNLIMITED RACING COMMISSION
Demographic Analysis

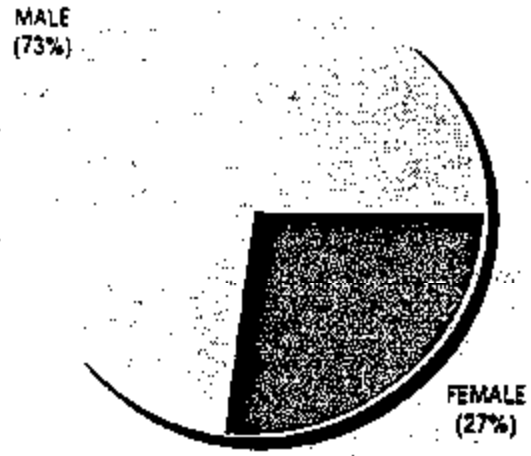
AGE



Only adults 18 years and older were surveyed and thus this chart represents the adult population at the races. A significant percentage of the fans are under 18 years of age. This grouping represents the number of children present with their adult families.

UNLIMITED RACING COMMISSION
Demographic Analysis

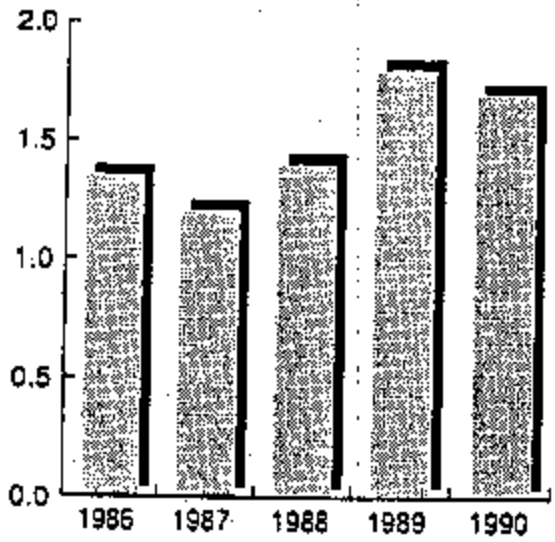
GENDER



The original survey discovered that randomly selected female respondents gave the forms to their husbands to complete, thusly skewing the accuracy of the survey. In reality, a randomly count revealed 65% male and 35% female.

UNLIMITED RACING COMMISSION
Demographic Analysis

SPECTATORS

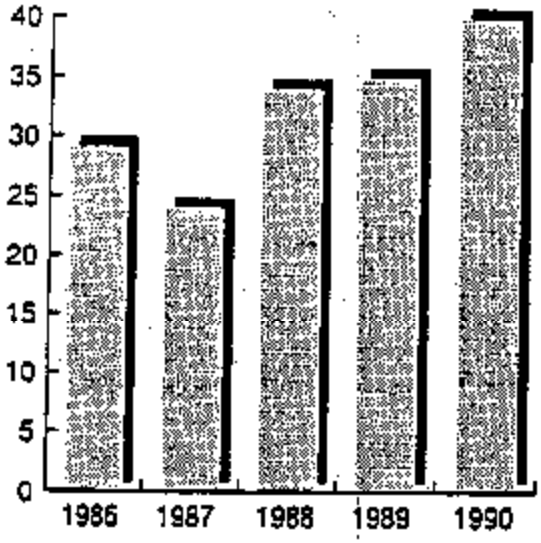


During the years 1986-1990, the URC averaged one million four hundred thirty thousand spectators.

Over 7 million spectators in 7 years

UNLIMITED RACING COMMISSION
Demographic Analysis

TELEVISION VIEWERS



For the past five seasons, 1986–1990, the URC has averaged over 30 million television viewers.

160 million viewers five years

UNLIMITED RACING COMMISSION
Demographic Analysis

APPENDIX E

Engineering Design For a Floating Tire Breakwater

TABLE OF CONTENTS

ENGINEERING DESIGN
FOR A FLOATING TIRE BREAKWATER

1. INTRODUCTION

The master plan for water recreation activities within Lake Elsinore and the San Jacinto Channel includes a wide variety of water sports such as waterskiing, personal watercraft, power and non-power boating, fishing, sailing and swimming. Among the diversified water recreation sports designated within the San Jacinto Channel, the waterskiing is one of the primary recreation activities. Currently, a waterskiing school concession operates within the Channel water area. The master plan will provide three individual waterskiing designated areas for the waterskiing enthusiasts. The Channel will be divided into three separate water areas with each extending about 2,000 feet long, as illustrated in Figure 1.

In order to minimize the water disturbance primarily caused by the boating activities within each designated waterskiing area, an attenuation device needs to be installed between each water area to reduce the propagating waves generated by the motion of the boats. Due to the physical characteristics of boat waves (e.g., short wave period and large wave steepness), a floating structure is better suited to serve as a wave dissipation device because of the following advantages:

- Effective for short period wave attenuation
- Low capital cost
- Stable for various water levels
- Adaptable for various locations (i.e., relatively easy to be relocated)
- Less disruption of water circulation
- Short construction time

In the following sections, a brief description of various types of floating breakwaters is introduced. Subsequently, the selected floating breakwater and its design wave criteria, and the structure design aspects including a cost estimate are presented.

2. FLOATING BREAKWATER

A floating breakwater is a type of structure that floats at the surface, partially submerged, and is anchored to the bottom. Floating breakwaters varying in size, shape and constituent material have been in use for several decades. They are used as combination breakwaters and docks for marinas, for shoreline erosion control, and for temporary protection of waterfront construction and other coastal activities, particularly at sites exposed to short period waves.

Different types of floating breakwaters can be represented by four group classifications, which depend on their configuration of the fundamental features. These types and group classifications are illustrated in Figure 2 and discussed below.

2.1 Box Type

A solid vertical or sloping-face floating breakwater causes waves which strike it to be partially reflected. Such a breakwater requires high structure strength, and large forces are imposed on the mooring system.

2.2 Pontoon Type

This group of prismatic structures offers the best possibilities for multiple use such as walkways, storage, boat moorings and fishing piers. This type of structures partially reflects the incoming waves to reduce the transmitted waves.

2.3 Mat Type

This type of floating structure consists of a number of logs or scrap tires bound together with chain or cable. These structures achieve the wave energy dissipation by partially transforming the incoming wave energy into turbulence within or around the tires or logs. Consequently, the transmitted wave heights are reduced.

2.4 Tethered Type

This type of floating structure consists of a large number of buoyant floats which are independently tethered at or below the water surface. The floats move due to the pressure gradient induced by the incoming waves and the resultant drag generated from the buoyant motion is the dominant mechanism to dissipate the wave energy.

In view of the physical characteristics of the above-described floating breakwaters, a mat type of floating device made from scrap tires is selected to attenuate the generated boat waves. The adaptability of the mat type of floating structure is essential to serve the purpose that the floating device is required to temporarily relocate in a short time-span in order to accommodate the annual special event activities scheduled within the San Jacinto Channel.

3. DESIGN CRITERIA

3.1 Design Waves

There are two types of waves which can be observed within the San Jacinto Channel. The first, boat waves, is due to the motion of the boats operated within the Channel area. The second, wind waves, is generated due to the wind blowing over the water surface of the Lake. Although the floating breakwater is proposed to primarily attenuate the boat waves, the vulnerability and effectiveness of the structure under a severe wind wave condition needs to also be considered, especially since the westward end of the Channel is exposed to wind waves generated on the Lake. Therefore, both wave characteristics are examined to determine the wave design criteria.

Boat Waves

In their simplest description, boat waves are generated when a continuous concentrated impulse of water surface disturbance, caused by a boat motion, spreads outward spatially from the point of disturbance. The physical characteristics of boat waves depend primarily on the speed of the moving boat, its mass and the water depth. In this design, it is assumed that the average speed of a moving boat is 20 miles per hour and the angle of approach to the floating tire breakwater is about 45 to 60 degrees. The bottom elevation of the Channel is at 1,230 feet and the resultant average water depth is 15 feet (i.e., average operating water level is 1,245 feet). The estimated wave height of the generated boat waves ranges between one and two feet with a wave period of three to four seconds.

Wind Waves

The important parameters for the wind generated waves are wind speed, wind duration and fetch, and water depth, respectively. The most significant wind waves occur when the westerly wind blows over the entire lake with a fetch length of approximately 13,600 feet. The average water depth is 15 feet, as described in the above paragraph. The resultant physical characteristics of wind waves for various wind speeds are presented in Table 1.

TABLE 1
PHYSICAL CHARACTERISTICS OF WIND WAVES

WIND SPEED (mph)	WAVE HEIGHT (feet)	WAVE PERIOD (sec)
30	1.4	2.5
40	1.8	2.5
50	2.2	2.7

Based on the above described characteristics for the wind and boat waves, a design wave with a height of two feet and a period of three seconds is chosen. For economic reasons, a floating tire breakwater will not be designed to attenuate all waves to an acceptable height; a low duration when wave heights exceed the design wave, and there is risk of failure under an extreme severe wave condition, must be accepted.

3.2 Design of Floating Tire Breakwater

There are three main types of floating breakwaters, namely Wave-Maze, Goodyear and Wave-Guard. Each type differs in structural design, effectiveness and cost.

Wave-Maze Floating Tire Breakwater

This is the pioneer floating tire breakwater which was designed by Stitt in 1963 (Stitt, 1963). This design consists of a vertically-oriented layer of tires sandwiched between two layers of horizontally-oriented tires, as illustrated in Figure 3.

Goodyear Floating Tire Breakwater

The Goodyear type design originated in 1974 (Candle and Piper, 1974). It consists of modules, each containing 18 tires, interconnected to form a flexible mat, as shown in Figure 3. One of this design's most attractive features is that a Goodyear floating tire breakwater can be assembled by unskilled laborers with virtually no heavy equipment.

Wave-Guard Floating Tire Breakwater

This design originated in 1978 (Harms and Bender, 1978). It consists of tire-encased pipes or poles and tire strings, as shown in Figure 3. This structure is much more rigid and requires the use of heavier equipment then the other two breakwaters during assembly.

There have been a number of model tests and field installations of these three types of floating tire breakwaters. The comparison of wave transmission in relation to the wave length to breakwater width (L/W), indicates that a Wave-Guard floating tire structure is the most effective to attenuate the incoming waves, as illustrated in Figure 4. Also, since equivalent protection using a Wave-Maze costs considerably more than either a Goodyear or a Wave-Guard floating tire breakwater, and since the Wave-Guard breakwater provides higher wave attenuation than the Goodyear and Wave-Maze breakwaters (see Figure 4), it is recommended that the Wave-Guard floating tire breakwater be used as an attenuation device placed within the San Jacinto Channel to reduce the water agitation caused by either boat motions or wind waves.

3.2.1 Dimensions of Wave-Guard Floating Tire Breakwater

Length and Orientation

The main purpose of deploying the floating tire breakwater is to minimize the water surface disturbance within the three designated waterskiing areas. Therefore, the orientation of the structure is perpendicular to the axial direction of the San Jacinto Channel. Also, for economic reasons, the length of the structure is selected to be 100 feet, for which the to-be-sheltered waterskiing area should be adequately protected for the recreation activities. A longer breakwater could be required at the western end in order to provide adequate protection from wind waves generated on the Lake. Additionally, the other two breakwaters could be lengthened, if required.

Width

The width of the breakwater is determined based on an empirical curve derived from a series of model tests, as illustrated in Figure 4. It is estimated that a 30-foot wide structure is required to assure a 50 percent reduction of wave height. The typical layout of the floating tire breakwater is presented in Figure 5.

3.2.2 Mooring and Anchor

The design of the anchor and the mooring chain can be determined, based on the estimated peak mooring force under the design wave condition. A set of empirical curves of the mooring forces for the Wave-Guard floating tire breakwater was developed from the laboratory model tests (Harms and Bender, 1978). Figure 6 presents the correlation between the non-dimensional mooring force ($F/\gamma W^2 \times 10^5$) and wave length to breakwater width (L/W) for various wave steepness (H/L) and draft-to-depth ratio (D/d).

For the selected incoming design waves (two-foot height and three-second period), the wave length is about 45 feet at a water depth of 15-feet. Assuming the average diameter of the available tire supply is about 25 inches, the draft of the structure has generally been found to be approximately 85 percent of the average tire diameter. The ratio between the draft and water depth is 0.118 ($D/d = 0.85 \times 25/(12 \times 15)$). The corresponding peak mooring forces can be obtained from Figure 6. An interpolation is applied to obtain the peak mooring force under the design wave condition. It is estimated that the peak mooring force is about 40 pounds per foot. Furthermore, a three-foot concrete cube is required to anchor the floating tire breakwater. The spacing of the anchor is determined to be approximately 20 feet and the working strength of the anchor chain is about 1,200 pounds. Using a factor of safety of 1.5, a 5/16-inch proof coil chain with a working load of 1,900 pounds is selected. The minimum required scope for a galvanized steel anchor chain is 4:1 (horizontal:vertical). A ratio of 5:1 is selected to count for the fluctuation of the lake water level. A section view is also presented in Figure 5. In summary, the specifications of the Wave-Guard floating tire breakwater is presented in Table 2.

TABLE 2
SPECIFICATIONS OF WAVE-GUARD
FLOATING TIRE BREAKWATER

ITEM	SPECIFICATIONS
Length	100 feet
Width	30 feet
Average Tire Diameter	25 inches*
Peak Mooring Force	40 pounds per foot
Concrete Cube	3 feet x 3 feet x 3 feet
Anchor Spacing	20 feet
Size of Mooring Chain	5/16-inch
Chain Scope	5:1 (horizontal:vertical)

* Depends on availability.

3.2.3 Cost Estimate

The cost for the proposed floating tire breakwater is estimated based on the required specifications. Table 3 presents the itemized and total construction costs. If labor was provided by City forces at no cost, and tires are obtained at a reduced price, than the total cost per breakwater shown in Table 3 could be reduced to about $5,000 to $8,000 before construction contingencies.

TABLE 3
COST ESTIMATE FOR
WAVE–GUARD FLOATING TIRE BREAKWATER

Item	Quantity	Unit	Unit Cost	Subtotal
1. Floating Tire Assembly				
Material:				
Tire (100'x30')	3,000	SF	$1.00	$3,000
Tire String	1,500	LF	$0.50	$750
Pole (every 10')	11	EA	$150.00	$1,650
Labor:	3,000	SF	$10.00	$30,000
2. Mooring System (every 20')				
Material				
Concrete Anchor (12@ 27 cf)	12	EA	$60.00	$720
Steel Chain (12 @ 70')	12	EA	$150.00	$1,800
Labor:	12	EA	$150.00	$1,800
Total				$39,700
Contingency (15%)				$6,000
Grand Total				$45,700

4. REFERENCES

Candle, R.D. and Piper, D.R., 1974. "The Proposed Goodyear Modular Mat Type Scrap Tire Floating Breakwater". Goodyear Tire and Rubber Company, Akron, Ohio.

Giles, M.L. and Sorenson, R.M., 1978. "Prototype Scale Mooring Load and Transmission Tests for a Floating Tire Breakwater". TP 78-3, U.S. Army Coastal Engineering Research Center, CE, Fort Belvoir, Virginia. April 1978.

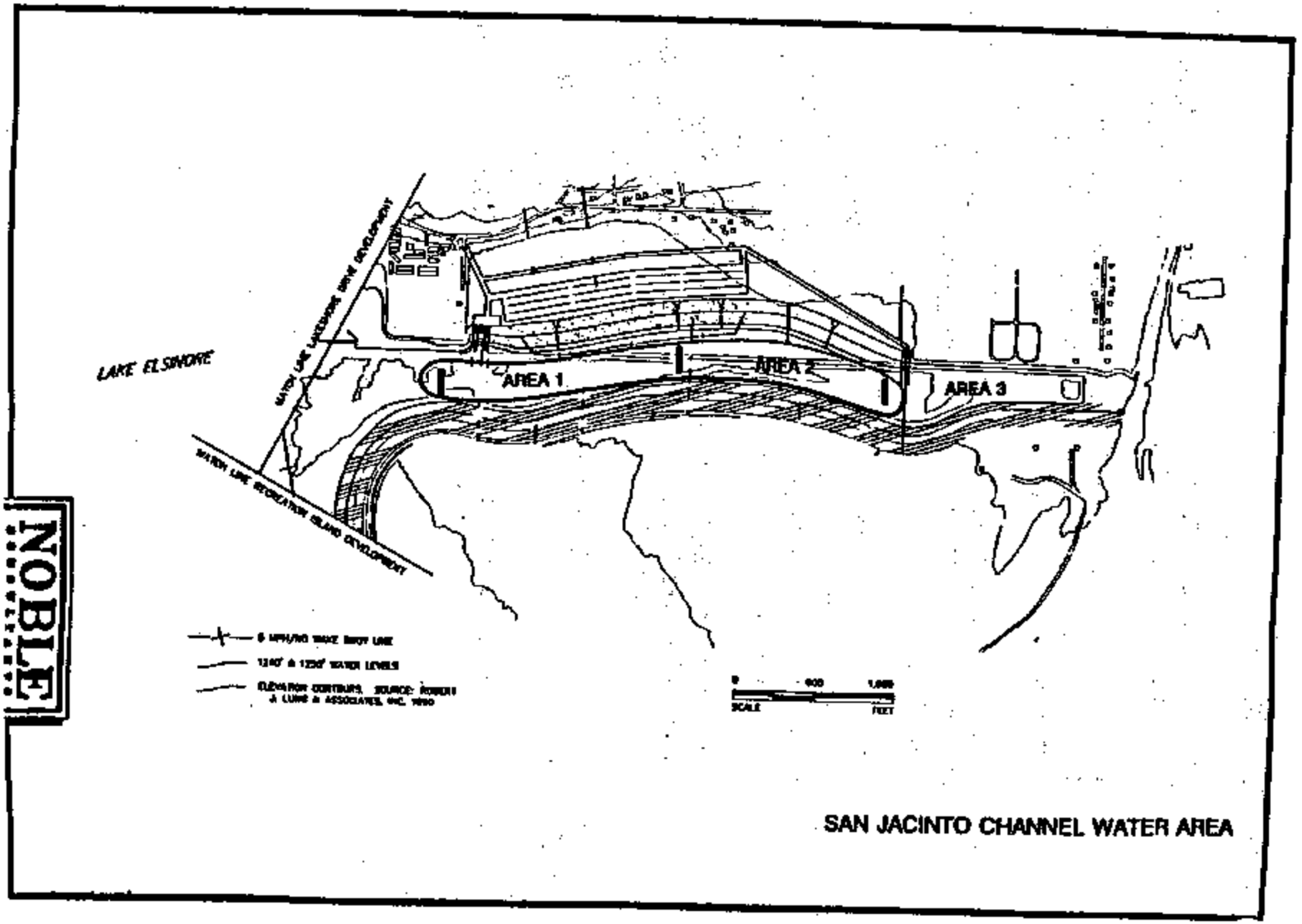
Harms, V.W., et al. "Wave Transmission and Moor Force Characteristics of Pipe-Tire Floating Breakwaters". U.S. Army Coastal Engineering Research Center, CE, Fort Belvoir, Virginia.

Harms, V.W. and Bender, T.J., 1978. "Preliminary Report on the Application of Floating Tire Breakwater Design Data". Water Resources and Environmental Engineering Research Report Number 78-1, Department of Civil Engineering, State University of New York at Buffalo.

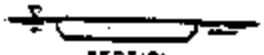
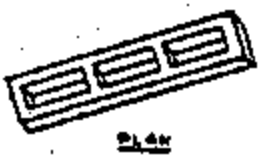
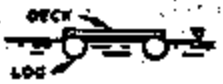
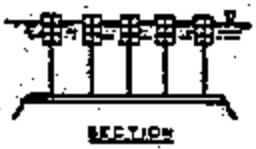
Kamel, A.M., and Davidson, D.D., 1968. "Hydraulic Characteristics of Mobile Breakwaters Composed of Tires or Spheres". Technical Report Number H-68-2, U.S. Army Engineer Waterways Experiment Station, CE, Vicksburg, Mississippi. June 1968.

Stitt, R.L., 1963. "Wave-Maze Floating Breakwater". 10732 E. Freer Street, Temple City, California.

U.S. Army Corps of Engineers, 1982. "Engineering and Design: Floating Breakwater Design". Engineer Technical Letter Number 1110-2-273.



SAN JACINTO CHANNEL WATER AREA

TYPE	VIEW	REMARKS
BOX TYPE		
SOLID RECTANGLE		REINFORCED CONCRETE UNITS ARE THE MOST COMMON TYPE.
BARGE	 SECTION	STANDARD BARGE SIZES ON INLAND WATERWAYS ARE [illegible] INCLINED BARGES (ONE END SUBMERGED) HAVE BEEN TESTED.
PONTOON TYPE		
TWIN PONTOON	 SECTION	CATAMARAN SHAPE
OPEN COMPARTMENT	 PLAN	ALSO CALLED ALASKA TYPE
A FRAME	 SECTION	
TWIN LOG	 SECTION	DECK IS OPEN WOOD FRAME.
MAT TYPE		
TIRE MAT	 SECTION	SCRAP TIRES STRUNG ON POLE FRAMEWORK OR BOUND TOGETHER WITH CHAIN OR BELTING. FOAM FLOTATION IS USUALLY NEEDED.
LOG MAT	 PLAN	LOG RAFT CHAINED OR CABLED TOGETHER.
TETHERED FLOAT TYPE		
SPHERE	 SECTION	FLOATS PLACED IN ROWS.
TIRE	 SECTION	ARRANGEMENT SIMILAR TO SPHERES. STEEL DRUMS WITH BALLAST CAN BE USED IN LIEU OF TIRES

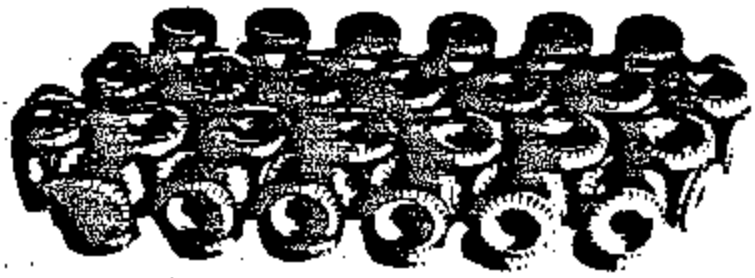
TYPES OF FLOATING BREAKWATER

Source: Corps of Engineers, 1982

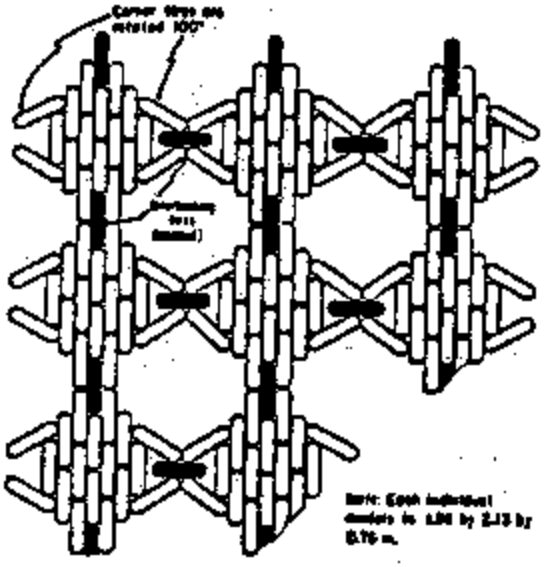
NOBLE DENVERS

Figure 2

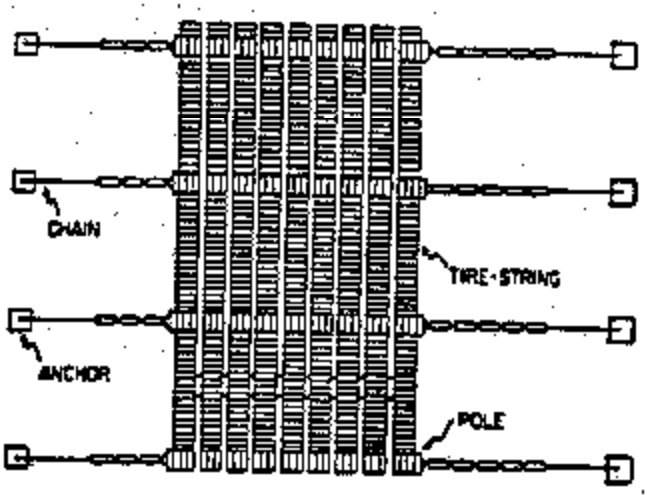
WAVE-MAZE TYPE



GOODYEAR TYPE



WAVE-GUARD TYPE



TYPES OF FLOATING TIRE BREAKWATER

Sources: Kamel & Davidson, 1968
Giles & Sorensen, 1978
Harms & Bender, 1978

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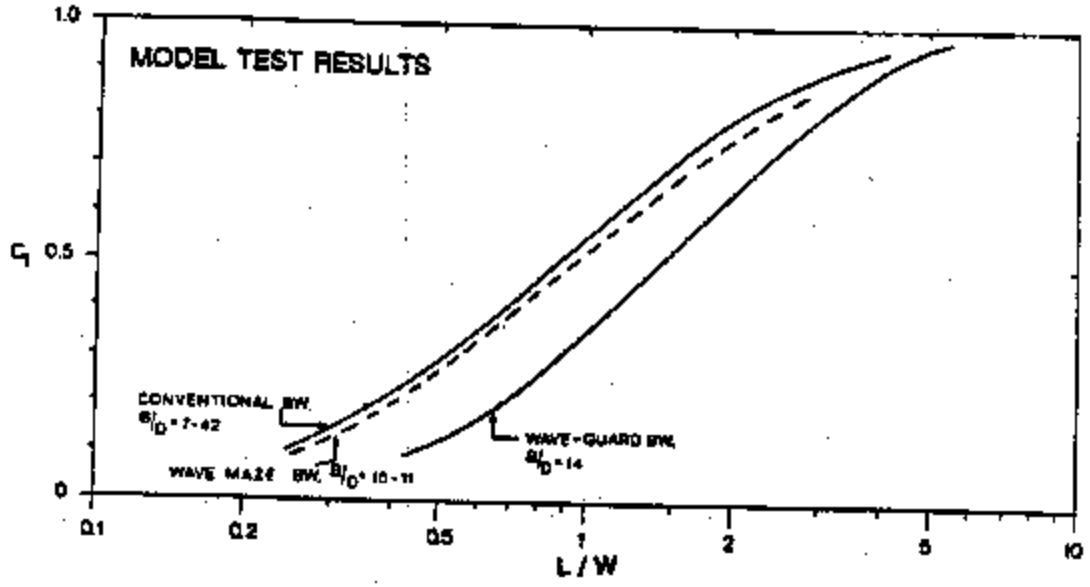
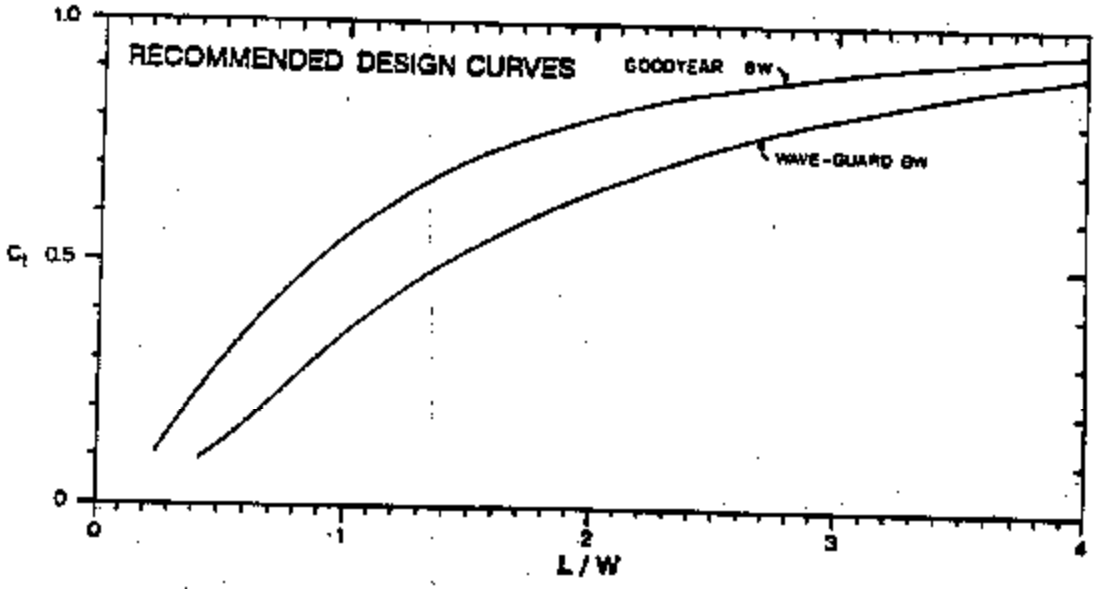


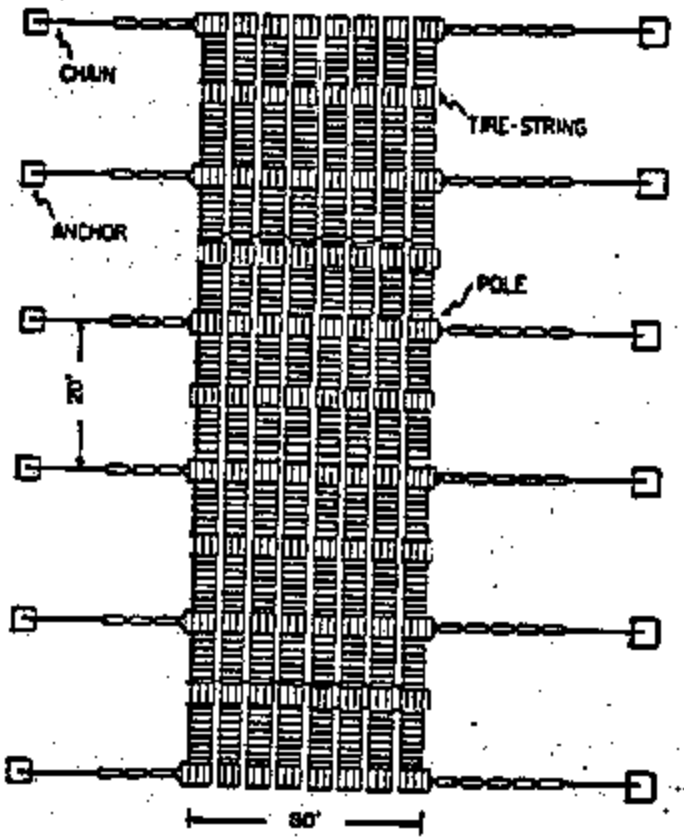


WAVE TRANSMISSION COEFFICIENTS

Source: Harms & Bender, 1978

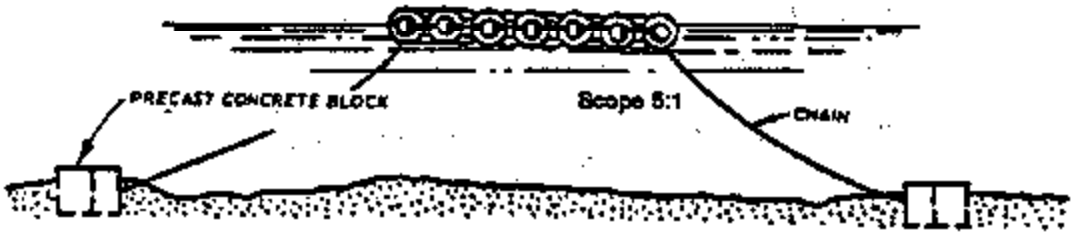
NOBLE CONSULTANTS

Figure 4



PLAN VIEW

N.T.S.



SECTION VIEW

N.T.S.

DESIGN LAYOUT FOR
WAVE-GUARD FLOATING TIRE BREAKWATER

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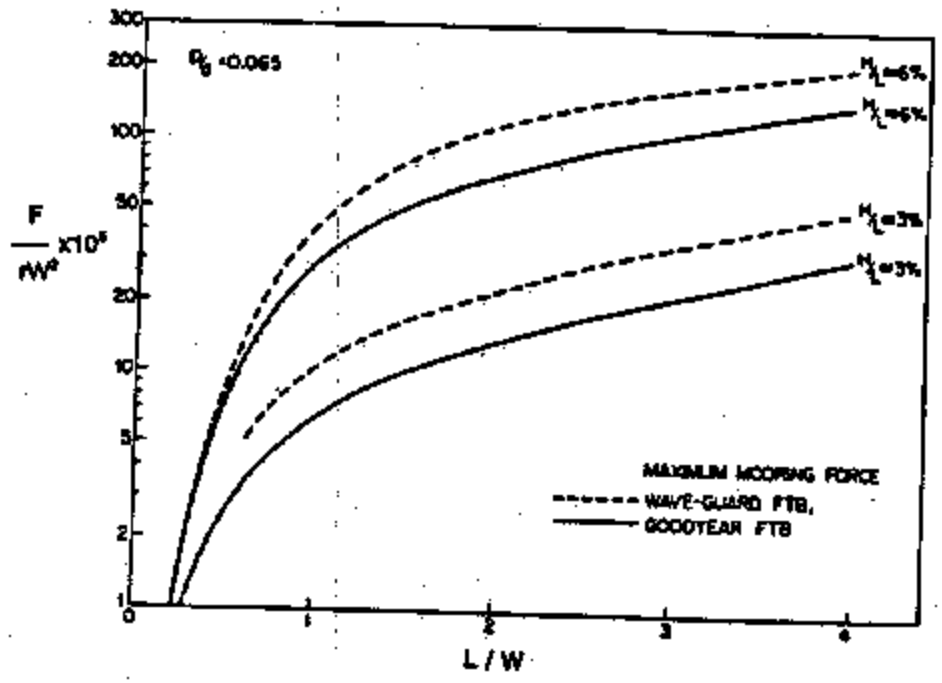
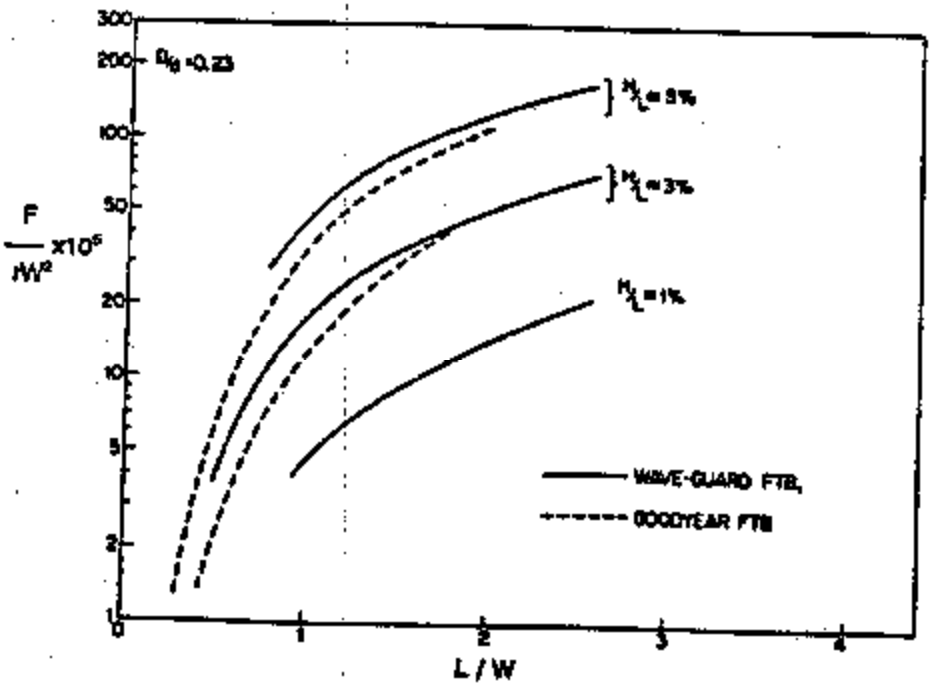
CONSULTANTS





PEAK MOORING FORCE

Source: Harms & Bender, 1978

NOBLE DENTON

Figure 6

Lake Elsinore & San Jacinto Watersheds Authority

City of Lake Elsinore • City of Canyon Lake • County of Riverside
Elsinore Valley Municipal Water District • Santa Ana Watershed Project Authority

2014 Business Plan Update

Prepared by

Mark R. Norton PE, LEED AP
Santa Ana Watershed Project Authority
LESJWA Authority Administrator

Executive Summary

The Lake Elsinore and San Jacinto Watersheds Authority (LESJWA) is a joint powers authority formed as an umbrella agency consisting of five member agencies. The authority was originally formed in 2000 because lakes in these local watersheds overlie or are surrounded by multiple agencies. It is more efficient, cost effective and practical to address water quality improvements at the lake and within the watershed collectively through the joint powers authority than as individual governing bodies.

Over the past decade, significant improvements to water quality have been accomplished by LESJWA at both Lake Elsinore and Canyon Lake. However, more work is needed to meet challenging water quality requirements established by the Regional Board for 2015 (interim) and 2020 (final). At the same time funding to build future capital improvements to meet lake standards and to pay for the improvements' operation and maintenance costs are diminishing. To meet these challenges requires developing a revenue stream that will empower the Joint Power Authority to continue operations on behalf of its member agencies.

The Joint Powers Authority has explored various options that will address the anticipated funding shortfall, improve operational effectiveness and address capital improvements. Many of these activities were proposed in 2010 and have been accomplished. Some additional options to generate revenue are now reflected for this 2014 update are now recommended:

Year 2010 Business Plan		Status
1.	Pursue State and Federal Grant Funding	Accomplished
2.	Decrease annual costs	Accomplished
3.	Establish Lake Quality Improvement Contribution	Not feasible
4.	Establish TMDL Task Force Contribution for LESJWA	Accomplished
5.	Increase Cost Share Among LESJWA Agencies	Partially complete
Year 2014 Business Plan		
6.	Add additional LESJWA JPA agencies with participation fee	Under investigation

With the implementation of increased voluntary funding shares from some of the LESJWA member agencies, decreased annual costs and some sharing of costs by the LE/CL TMDL Task Force as suggested under the original 2010 LESJWA Business Plan, the financial picture has improved with revenue projections indicating that the LESJWA can continue to fulfill its mission through FY 2014-15. Further, if additional funding as offered by the County of Riverside of an additional $10K/yr over the next three years and by the RCFCWD of a new contribution of $20/yr over the next three years occur, the financial stability of LESJWA would remain balanced through FY 2017-2018. However, financial stability concerns remain thereafter particularly if any of these voluntary increased funding contributions do not materialize.

This updated business plan now includes analysis of an additional option of generating new revenue by the involvement or participation of the Western Riverside Council of Governments or its member agencies as possible new JPA members who could help fund the LESJWA administrative costs in exchange for a seat and representation on the JPA Board.

This updated business plan describes the funding and expense reduction opportunities in detail to assist the LESJWA Board in providing the necessary information to ensure the long term sustainability of the organization. The primary beneficiaries of LESJWA existence continue to be the TMDL parties identified by the Regional Board as defined in the Lake Elsinore/Canyon Lake TMDL Task Force, which includes all the LESJWA member agencies except SAWPA.

This updated business plan was developed to help the LESJWA Board of Directors analyze and determine the most effective actions necessary to achieve long-term success.

Background and Overview

The Lake Elsinore and San Jacinto Watersheds Authority (LESJWA) is a joint powers authority (JPA) formed in 2000 as result of State water bond language encouraging the formation of a joint powers agency consisting of the City of Lake Elsinore, the Santa Ana Watershed Project Authority (SAWPA), the Elsinore Valley Municipal Water District, and other agencies. The specific bond language citing the organization formation is defined in Proposition 13 Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Act of 2000 wherein the organization formation was called out under Article 6 Lake Elsinore and San Jacinto Watershed Program, Section 79104.110. The joint powers authority was established initially to administer $15 million dollars in bond funding for the implementation of programs to improve the water quality and habitat of Lake Elsinore and its back basin, consistent with the Lake Elsinore Management Plan. The members of the JPA are the following agencies, along with the current representatives:

City of Lake Elsinore	Bob Magee, Chair
Santa Ana Watershed Project Authority	Tom Evans, Vice Chair
Elsinore Valley Municipal Water District	Phil Williams, Secretary-Treasurer
City of Canyon Lake	Nancy Horton, Vice-Chair
County of Riverside	Kevin Jeffries

The LESJWA Board has authorized SAWPA to serve as the administrator for the organization. Mark Norton, SAWPA's Water Resources and Planning Manager, serves as the Authority Administrator.

Between its formation and 2014, LESJWA fully used and expended the $15 million made available through the Proposition 13 Water Bond, as well as other grant funding applied for by LESJWA to benefit Lake Elsinore, Canyon Lake, and the San Jacinto River Watershed. The core of LESJWA's annual budget now comes from the contributions and expenses associated with Lake Elsinore and Canyon Lake Nutrient TMDL Task Force. Other than project grants, the only source of regular funding is an annual contribution from each member agency.

The primary activity of LESJWA is providing support to the Lake Elsinore and Canyon Lake (LE/CL) Nutrient Total Maximum Daily Load (TMDL) Task Force which shares LESJWA goals of water quality improvement at both Lake Elsinore and Canyon Lake. This Task Force was formed in 2006 to address a Santa Ana Regional Board issued nutrient TMDL for Lake Elsinore and Canyon Lake. Because the focus of the TMDL is on water quality of Lake Elsinore and Canyon Lake, LESJWA is the appropriate organization to serve as the administrative entity for the Task Force. This role is a similar role that SAWPA staff plays in administering the task forces in the Middle SAR Pathogen TMDL Task Force, and the Big Bear Lake Nutrient TMDL Task Force.

The Task Force selected LESJWA as the administrative support because LESJWA has implemented numerous improvement projects at both lakes, as well as extensive modeling and monitoring at the

lakes and watershed in the past. Further, the governing board of the LESJWA JPA has a history of administering lake improvements based on the previous decade of improvement at the lakes. Still, the staff that operates LESJWA is the SAWPA staff, so all activities and resources to operate the LE/CL TMDL Task Force generally are seamless with SAWPA's operations other than the separate fund accounting and the recognition of the LESJWA Board of Directors for all LESJWA-related activities and improvements.

Mission and Goals

JPA Purpose

The purpose of the Authority is to implement projects and programs to rehabilitate and improve the San Jacinto and Lake Elsinore Watersheds and the water quality of Lake Elsinore and Canyon Lake, in order to preserve agricultural land, protect wildlife habitat, protect and enhance recreational resources, and improve surface and subsurface water quality, all for the benefit of the general public.

JPA Goals

- To support planning, design and implementation of projects to improve water quality at both Lake Elsinore, Canyon Lake and the San Jacinto River Watershed
- To work with stakeholders to secure reliable funding to operate and maintain water quality improvement projects at both Lake Elsinore, Canyon Lake and the San Jacinto River Watershed
- To serve as administrator of the Lake Elsinore and Canyon Lake TMDL Task Force
- To seek ongoing reliable revenue to operate LESJWA JPA in fulfillment of its mission

Risks and Challenges

Financial Stability

In evaluating the financial picture of LESJWA, the risks and challenges of securing long term and stable funding is an important consideration. Since its formation, these needs for ongoing funding have been on the forefront of the Board and staff of the organization's agenda. In the early years of LESJWA, multiple studies were conducted to explore various options to address the short term and long term needs.

Historical LESJWA Funding Option Analysis

In 2000, the LESJWA Board authorized staff to hire consultants to develop a long - term financial plan for the agency to cover the anticipated operation and maintenance costs of the projects planned for implementation. The Board hired Harris & Associates to conduct this work. In August 2003, Harris and Associates presented the results of their analysis of long term funding mechanisms to the LESJWA Board. Three options for funding presented to the LESJWA Board included:

- Cost Share Among LESJWA Agencies
- Drainage Basin Utility Fee
- Regulatory Fee

The second option, Drainage Basin Utility Fee, was discussed in a report called the Preliminary Rate Analysis prepared by Harris & Associates. Upon review of this report by LESJWA Board, the Board recommended that the consultant further investigate the alternate funding mechanism of a Regulatory Fee. The regulatory fee was an innovative funding option proposed by Colantuono, Levin and Rozell, APC that utilizes the police powers of cities and the County to create a separate financing authority. This authority then would enact a regulatory fee to address runoff pollution from land use. A potential feature of the regulatory fee, as part of the Proposition 218 compliance, was the bypassing of a 2/3 majority vote of the watershed voters even though a regulatory fee to address the control of non-point source pollution has not been successfully implemented in the State of California.

A draft joint powers agreement was prepared to establish a separate financing organization to collect a regulatory fee to support operation and maintenance costs of LESJWA projects and a draft ordinance was prepared regulating activities that pollute public stormwater systems for the new Lake Elsinore and San Jacinto Watersheds Financing Authority.

Upon review by the LESJWA Board, the Board directed staff to present the regulatory fee concept to the City Councils of Lake Elsinore and Canyon Lake, as well as two of the county supervisors. The County Supervisors indicated that if local cities were behind the regulatory fee, then the regulatory fee concept be brought back to the County of Riverside Board of Supervisors for further consideration. In both city council presentations, the City Councils generally were opposed to any type of fee implementation appearing to bypass a public vote despite the fact that their cities stood to benefit the most from such a fee implementation.

In June 2004, the LESJWA Education and Outreach Committee recommended a polling survey in the watershed prior to proceeding with implementation of any fee and any education and outreach programs associated with a fee. The survey sought to determine how effective the LESJWA education and outreach messages have been in informing the public about LESJWA, to assess what the public knows about the new TMDL regulations, and to gauge public opinion as to the appropriate way to pay for TMDL compliance. The survey results presented to the LESJWA Board in January 2005 indicated that significant public education and outreach, as well as private campaign funding support, would be necessary to implement any type of new fee. Further, the survey results showed strong interest and support for the end goals of watershed and lake cleanup, but a substantial lack of support for any type of new fee to achieve these goals.

Concurrent with these actions, the local agencies agreed to fund the operation and maintenance costs of all the Proposition 13 LESJWA funded projects themselves. Consequently, the original intent of the financial plans to cover the operation and maintenance costs of LESJWA funded projects is no longer a major issue. Although the LESJWA projects reflect substantial improvement measures that will benefit both lakes, additional future water quality projects likely will be needed at Canyon Lake, Lake Elsinore and in the contributing watersheds to meet new long term water quality regulations established by the Santa Ana Regional Water Quality Control Board. The compliance deadline for the new water quality targets for the two lakes is the Year 2015 for some interim targets, and Year 2020 for final targets.

Thereafter, the LESJWA Board directed staff to discontinue further consideration of the regulatory fee for the following reasons: 1) a lack of public acceptance for establishing a drainage utility fee or

regulatory fee to support LESJWA's goals, 2) a lack of private campaign funding necessary to obtain a majority vote of land owners or the public at large, and 3) the reduced need for an additional funding source for operation and maintenance costs. The funding necessary to cover operation and maintenance costs of the implementation projects to date was provided by the local agencies operating the projects, or by joint agreement among the City of Lake Elsinore, EVMWD, and the County of Riverside, as in the case of the Lake Elsinore aeration system.

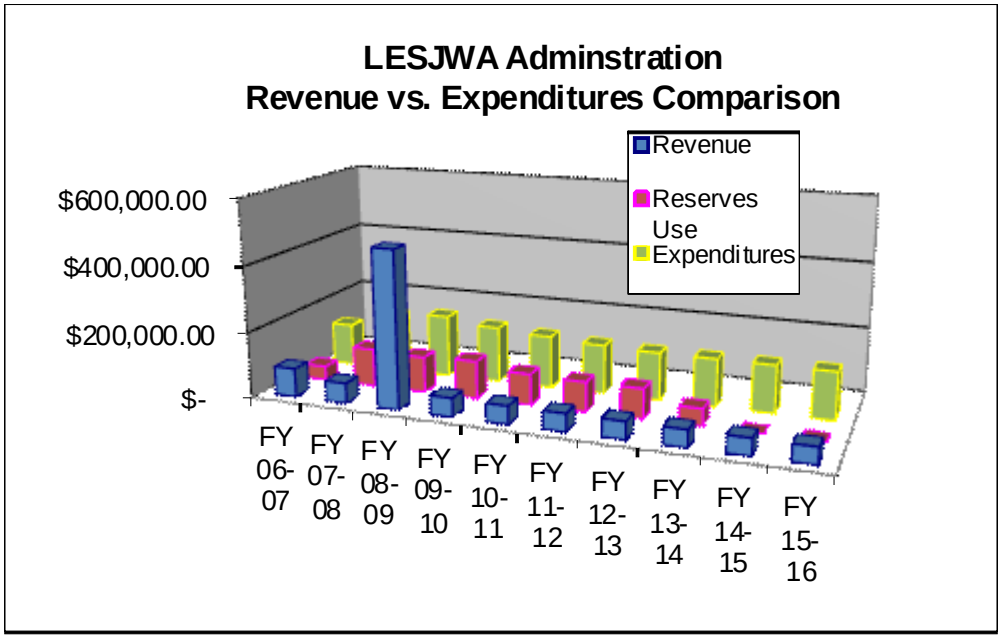
LESJWA Current Finances

LESJWA operated for its first eight years using Proposition 13 Water bond funding covering all project management, administrative, and JPA operation costs. To pay vendors until reimbursed by State grants, the LESJWA member agencies paid annual contributions of $10,000 each to cover the SAWPA-LESJWA loan interest. Much of this funding was not necessary for interest payments and was carried over into the organization's reserves. The annual contribution for FY 14-15 of $10,000 each by the City of Canyon Lake and SAWPA and $20,000 each by EVMWD and the City of Lake Elsinore pays the majority of the JPA operations costs but are still insufficient to cover all costs in the long term. The annual costs to operate the JPA under its current mode of operations are approximately $100,000 per year. LESJWA funds about $17,000/year for annual education and outreach activities.

As there is only $70,000 collected from member agencies annually, the organization is running short each year and no longer can rely on organization reserves to cover the annual funding shortfall. In FY 2009-10, the Canyon Lake POA donated to LESJWA the dredging equipment it owned because the funding to support the Canyon Lake desalting project came from LESJWA. This much-needed funding of $394,000 was placed in reserves and helped in extending the life of LESJWA through FY 14-15.

Based on the FY 2014-15 Budget, the main source of funding coming into LESJWA will continue to be from the TMDL parties that are supporting the TMDL Task Force administration. The source of this funding is from the TMDL stakeholders; some of which are the LESJWA member agencies. Based on feedback from the TMDL task force, the Task Force understands that more of the costs to administer the task force should also pay for LESJWA JPA administration and agenda items that relate to the TMDL task force contracts and activities. In the past all LESJWA organization administration costs came from local contributions of the LESJWA member agencies.

One of the primary concerns with the long-term financial outlook for the organization is continued operation funding. With available reserves used to operate the agency and insufficient funding from member agency contributions, the agency will run out of sufficient funding to operate at its current operation level by 2017. Further LESJWA has no reserves to address emergency situations or needs for the future.



Note: Chart does not reflect LESJWA member agency contribution increases in FY 14-15, potential new increases from RCFCWD and County of Riverside or TMDL Task Force expenditures.

Short Term and Long Range Financial Plan

Operations Funding Alternatives

Based on current projections, LESJWA will need to evaluate alternatives to find additional operational funding, reduce annual costs, or disband. Other options to support additional operational funding may include changes to the LESJWA governance or change in administration. These options are described as follows in priority order:

Pursue State and Federal Grant Opportunities

In order to continue building water quality improvement projects at Lake Elsinore and Canyon Lake, capital funding must be generated. Currently, there is no ongoing revenue defined for capital improvements. The most cost effective way to create capital funding would be to leverage local funding with State and Federal grant funding as it becomes available. At this time, the best opportunity for capital funding that could support improvements at both lakes is through the California Proposition 84 Water bond. The water bond has several chapters designating funding for specific purposes. This funding is now being released through various California departments depending on the chapter purposes.

One chapter of Proposition 84 of special interest is Chapter 2 Integrated Regional Water Management Program administered by the California Department of Water Resources. For Santa Ana funding area, of which the San Jacinto subwatershed and both Lake Elsinore and Canyon Lake fall within, the Chapter 2 funding is being released by DWR through multiple rounds of funding with the first round due on Jan. 7, 2011. The applications for funding under this chapter are first

administered through SAWPA as the designated regional water management group for the Santa Ana funding area. In June 2010, SAWPA administered a competitive call for projects based on defined criteria of Prop 84 Chapter 2 encouraging multi-beneficial multi-agency submittals. Under this first call for projects, LESJWA submitted a grant proposal to support the Canyon Lake oxygenation/aeration system. Unfortunately, the project was not short listed primarily because the project was not in a high state of readiness to implement nor was there any commitment in local funding match. Under the second round of funding from DWR, $16 million was available for the entire Santa Ana region and 19 projects were short listed, one of which was the LESJWA Canyon Lake Alum Application. Round 2 will provide $500,000 to reduce costs of the LE/CL TMDL Task Force for the alum application at Canyon Lake and assist with TMDL compliance. The chances of possible funding under future State grant funds are likely if a new $7.5 billion water bond passed by the State Legislature and Governor on Aug. 13th is supported by the voters on November 4th 2014. .

LESJWA can also pursue federal grant funding which typically requires a 50-50 cost match between federal and local funding sources. At this time, federal funding to support capital projects for lake improvements appear to be somewhat limited. However staff can maintain lines of communication with federal offices of EPA, Reclamation and others to assure that federal grant funding opportunities are considered and applied for as they become available.

Reduce Annual Costs

Eliminate Education and Outreach

One of the most extensive costs for the agency on an annual basis is the education and outreach program. Annually, approximately $17,000 is budgeted and spent for support of the education and outreach program with the consulting firm, O'Reilly Public Relations (OPR). OPR provides important support to LESJWA in providing bi-annual newsletters, op-ed articles, newspaper press releases, updates for website, talking points for emergency lake conditions events, coordination with the LESJWA Education and Outreach Committee, and support in arrangements for community presentations by LESJWA staff. While funding is still available from reserves, LESJWA continues to budget and fund the education and outreach program. However, as reserve funding diminishes, this program may need to be terminated. If $17,000 in annual costs were eliminated, the annual LESJWA projected costs would be less than $100,000. The downside to termination that would have the most impact is the elimination of readily available crisis management, messaging, and talking points with the media such as the occurrence of major fish kill incidents. The assistance of OPR was considered extremely helpful when these events have occurred.

Reduce Board meeting frequency

Another way to reduce costs is to reduce the meeting frequency (currently every other month). Fewer meetings will reduce administration costs associated with meeting agenda packets, minutes, legal support, and board participation. A transition from every other month to a quarterly meeting schedule will save an estimated $15,000/year. The downside of meeting less frequently is the potential loss of cohesion among the member agency representatives, loss of institutional memory, delays in consultant contract approvals, and potential loss of value to the member agencies.

Alternative Administrative Support

Another way to reduce costs to consider, as an alternative to SAWPA's continued support as LESJWA's administrator, is to request outside administrative support services through a RFP

process for possible consultant support, or to have one of the LESJWA member agencies take over the administration. The administration costs to operate LESWA may decrease, but it is difficult to estimate by how much. The most significant downside would be the loss of institutional memory and the steep learning curve that any new administrator would need to address. Depending on the activity level, the administrator support must be adaptable to changing situations. Any administrator chosen should have sufficient support functions such as accounting, finance, administrative, legal and planning support. Oftentimes, the administrator will have to be proactive in grant writing and applications to support LESJWA goals. If State or Federal grants are successful, the full complement of support services to administer these grants is important. SAWPA has indicated that although it is willing to continue to support LESJWA indefinitely, issues of conflicting interest have arisen in competitive Statewide grant preparation, which may hinder LESJWA's efforts to pursue grant funding or exercise its autonomy as much as it may desire.

Generate New Sustainable Revenue

Lake Quality Improvement Funding

One possible funding option to support LESJWA is a funding source described as lake quality improvement funding, also known as a TMDL pollutant or water quality trading option. Under this scenario, upper watershed entities who must comply with nutrient reductions associated with the Lake Elsinore and Canyon Lake Nutrient TMDL may find it more economical to meet nutrient reductions through in-lake improvements and operations. The Regional Board defined a pollutant (water quality improvement) trading plan as a TMDL task deliverable and formerly supported this program as a legitimate approach for water quality improvement. If upstream parties that contribute nutrients to the lake were to pay for operation and maintenance costs for lake improvements that accomplish nutrient reductions at the lakes, a funding stream could be generated that could cover not just the operations of the lake improvement system, but also operation and management services of LESJWA. Currently, EVMWD, the City of Lake Elsinore, and the County of Riverside jointly operate the existing lake improvements originally funded by LESJWA/Proposition 13 Water Bond such as the Lake Elsinore aeration system. Other lake improvements at Lake Elsinore and Canyon Lake are expected due to water quality cleanup needs to meet the nutrient TMDLs at the lake.

The advancement of the lake quality improvement approach is dependent upon institutional agreements that must occur between lake operation entities and the upper watershed entities, 21 organizations in all. At this time, lake operation entities largely are obligated to continue operations to provide benefits to their local residents and to meet the State obligations to operate and maintain capital improvements funded by State grants. The Lake Elsinore aeration operators, the County of Riverside, City of Lake Elsinore, and EVMWD, had hoped that some lake projects would perform better than expected and show increased nutrient control beyond the original design parameters creating water quality credits that then could be sold to upstream parties. However, based on recent evaluation of Lake Elsinore aeration impacts and monitoring, no additional nutrient offset credits are evident by the Lake Elsinore aeration system at this time.

In consideration of a lake quality improvement program, each TMDL responsible party will want to know what specific amount of nutrient control they will be responsible for. This may include not just what comes off their properties, but also suppression of nutrient rerelease from the lake bottoms resulting from past nutrient flows from their properties. Further study of the lake quality improvement and nutrient trading option was evaluated in FY 11-12. Unfortunately the prospects of funding through nutrient trading options other than for the future Lake Elsinore aeration system appear to be less likely due to recent State court interpretations.

To cover just the operations shortfall of LESWA, any nutrient offset or credit at the lakes could include the funding necessary to sustain LESJWA for the long term. The primary beneficiaries for the continuance of LESJWA would be the Lake Elsinore/Canyon Lake TMDL Task Force agencies. If all TMDL task force agencies participated in the lake quality improvement program, the annual funding contribution to just sustain LESJWA is estimated to be approximately $5000 per agency, assuming an equal share among all 20 agencies of $100,000 to operate LESJWA beyond FY 2014-15. If one were to assume that the existing LESJWA member agencies were to continue funding LESJWA at their current annual funding of $20,000 per member agencies for the City of LE and EVMWD and $10,000 for SAWPA, City of Canyon Lake and County of Riverside, the funding contribution from the other TMDL agencies could drop down to approximately $1875 per agency again assuming an equal share among the remaining 16 task force agencies (SAWPA is not a TMDL funding party) for the balance of the funding needed.

In regard to competition to water quality nutrient trading program implementation, the WRCAC has obtained a 319(h) State planning grant to implement a pollutant trading program among the dairy and agricultural operators. LESJWA understands that the WRCAC pollutant trading program is limited to trades among agricultural and dairy operators and not with other TMDL parties. The program may have an impact on future trading options with other TMDL agencies. Until such time that the LE/CL TMDL water quality improvement and nutrient trading program is developed, the projected competition, viability, and potential revenue for LESJWA operations are unknown.

TMDL Task Force Funding for LESJWA

Another revenue generation option proposed by the LESJWA Chair, Phil Williams, was to request annual funding directly from each of the LE/CL TMDL Task Force entities. As reflected in the 2010 LESJWA Business Plan, the Task Force formerly paid for monitoring, studies, administration, and consultant support to comply with TMDL requirements, but not the LESJWA operations. The challenge with this proposal is that many of the LE/CL TMDL parties already are realizing major financial difficulties with paying their existing allocation for the TMDL. Further, the future of the TMDL Task Force is somewhat jeopardized by an anticipated funding deficit from one of the major funding contributors to the TMDL efforts, the agricultural operators. The agricultural operators have indicated that they will not be seeking to collect funds on an annual basis, but triennially. Without sufficient funding to comply with TMDL requirements, the TMDL compliance work will cease and the collaborative approach under the task force agreement is jeopardized.

Similar to the funding contribution described in the lake quality improvement program, the primary beneficiaries for the continuance of LESJWA would be the Lake Elsinore/Canyon Lake TMDL Task Force agencies. If all TMDL task force agencies agreed to fund LESJWA, the annual funding contribution is estimated to be approximately $5000 per agency, assuming an equal share among all 20 agencies of $100,000 to operate LESJWA beyond FY 2014-15. If one were to assume that the existing LESJWA member agencies were to continue funding LESJWA at their current annual funding of $10,000 per member agencies, the funding contribution from the other TMDL agencies could drop down to approximately $1875 per agency again assuming an equal share among the 16 remaining task force agencies (SAWPA is not a TMDL funding party) for the balance of the funding needed.

For this 2014 LESJWA Business Plan, the revenue assumptions for LESJWA assumes that approximately half of all LESJWA Board activities relate to the LE/CL TMDL Task Force so these costs will be passed on to the LE/CL TMDL Task Force under the administration fee associated with their task force work. This should provide a revenue stream of approximately $25,000/year from the Task Force to offset the revenue shortfall to address TMDL activities.

Increase Cost Share Among LESJWA Agencies

The simplest and most direct way to increase revenue long term would be to increase the funding contribution among the five LESJWA member agencies. This approach places an unfair burden upon the agencies surrounding the lakes and particularly on SAWPA since it is supporting the organization without a significant vested interest in the lake quality improvement. Under this scenario, if all five agencies share were increased equally to cover an annual operating cost of $100,000, the equal share would be $20,000. If SAWPA's share was maintained at $10,000 and the other four agencies were to share in the costs equally, then the four LESJWA agencies would have their annual costs increase from $10,000 per year to $22,500.

For the 2014 LESJWA Business Plan, this option was exercised and included in the FY 14-15 Budget as applied to two of the five member agencies. Both the City of Lake Elsinore and EVMWD agreed to budget $20,000 instead of $10,000/year for LESJWA costs. The County of Riverside also indicated that they would look into increasing their annual share by $10,000 but preferred not to include it in the LESJWA budget at this time. Further, the Riverside County Flood Control and Water Conservation District expressed interest in providing $20,000 to supplement the member agencies contributions to support LESJWA. Again this costs was not included in the FY 14-15 budget.

Formation of an Assessment District

Another revenue option of forming an assessment district is also explored as described below but based on past survey work conducted to explore the Drainage Basin Utility Fee and the Regulatory Fee, it does not appear to be a viable option and is not included in the list of recommended actions to the LESJWA Board.

Similar to the Big Bear Municipal Water District, another funding option previously explored to some degree in the early history of LESJWA, is the establishment of an assessment district that could include properties around Lake Elsinore and Canyon Lake, or areas in the contributing watersheds. Special assessment districts are separate units of government that manage specific resources within defined boundaries. Districts vary in size, encompassing single cities or several counties. They can be established by local governments or by voter initiative, depending on State laws and regulations. As self-financing legal entities, they have the ability to raise a predictable stream of money, such as taxes, user fees or bonds, directly from the people who benefit from the services.

Proposition 218 establishes a common formation and ratification procedure for all special assessment districts as defined by Section 4, Article XIII D of the California Constitution. These requirements apply to all special assessments, to the exclusion of any conflicting laws. All assessments must be supported by a detailed engineer's report prepared by a registered professional engineer. The report must contain the total amount of money chargeable to the assessment district, the amount chargeable to each parcel in the district, the duration of the payments, the reason for the assessment, and the basis upon which the proposed assessment was calculated. Although not explicitly mandated by Proposition 218, the report also should include a description of the improvements or services to be financed through the special assessment, the proposed district boundaries, and a description of the special benefit which each parcel receives as a result of the assessment.

Prior to creating an assessment district, the city, county, or special district must hold a public hearing and receive approval from a majority of the affected property owners casting a ballot. All owners of property within the assessment district must be mailed a detailed notice of public hearing and a ballot with which to voice their approval or disapproval of the proposed district at

least 45 days prior to the hearing. The notice must contain the total amount of money chargeable to the assessment district, the amount chargeable to each parcel in the district, the duration of the payments, the reason for the assessment, the basis upon which the proposed assessment was calculated, and a summary of the ballot procedure, as well as the date, time, and location of the public hearing. The notice also must disclose that a majority protest will result in the assessment not being imposed.

At the hearing, the governing body of the agency must consider all protests to the formation of the district. Assessment district proceedings must be abandoned if a majority of the ballots received by the conclusion of the hearing protest creation of the district. Ballots are to be weighted according to the proportional financial obligation of the affected property; the larger the financial obligation, the greater the weight that must be assigned to that property. Unlike previous laws under many of the assessment district acts, the governing body cannot overrule the property owner vote. No other form of election is required. Once an assessment is created, it may be repealed or reduced by popular initiative.

Agencies must clearly identify the special benefit being conferred to the parcels being assessed, excluding any identified general benefit. They must apportion the assessment on an individual basis to parcels within the district. Where an assessment is challenged in court, Proposition 218 specifies that the agency carries the burden of proof to show that the property is receiving a special benefit and that the amount assessed is proportional to, and no greater than, the special benefits conferred. Most important, agencies will have to educate property owners about the advantages of the prospective assessment. The ballot process established by Proposition 218 favors those property owners who oppose the assessment (as they are generally the most motivated to return a ballot).

Based on previous studies, it is unlikely that an assessment district could be established similar to the Big Bear Municipal Water District unless the district was limited to properties adjoining or in the immediate area of the lakes. Seeking an assessment from properties in the upper watershed that contribute to the lakes quality is not likely to obtain the 2/3 majority vote of support necessary for passage. Further, the lack of guarantees to assure good lake quality due to the continued water supply challenges that Lake Elsinore is experiencing, likely would be insufficient to property owners considering an assessment fee. Based on these factors, creating an assessment district does not appear viable for the near future.

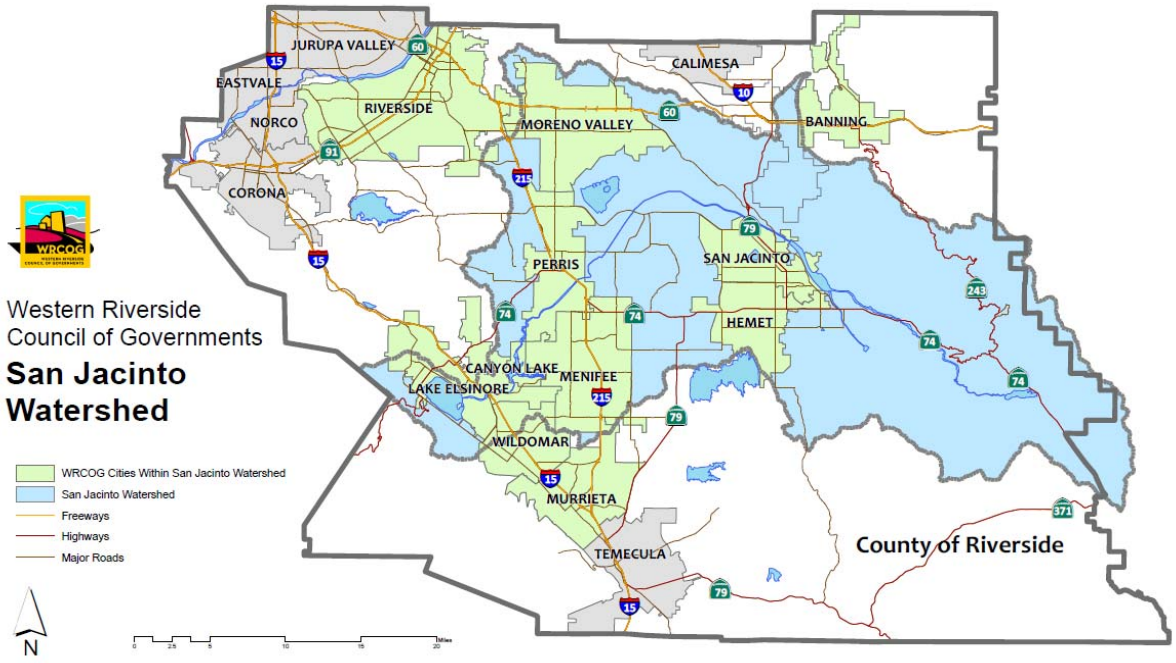
Participation of LE/CL TMDL TF agencies on LESJWA Board

As part of the 2014 LESJWA Business Plan update, another option as proposed by the LESJWA Board would be to increase revenue by adding more paying members to the LESJWA Board. Further since the Western Riverside Council of Governments (WRCOG) has many of the members on the Lake Elsinore/Canyon Lake TMDL Task Force, perhaps there is a role that WRCOG could play in representing the task force agencies in the San Jacinto River Watershed on the LESJWA Board, supporting or reducing administrative costs of LESJWA, or possibly restructuring LESJWA as a committee of WRCOG.

WRCOG's stated purpose is to unify Western Riverside County so that it can speak with a collective voice on important issues that affect its members. Representatives from 17 cities, the Riverside County Board of Supervisors, and the Eastern and Western Municipal Water Districts have seats on the WRCOG Executive Committee, the group that sets policy for the organization. As a joint powers agency, WRCOG takes up regional matters critical to our future, from air quality to solid waste and from transportation to the environment. One area in which they have a focus is on water supply and water conservation. In this regard, there is somewhat of a nexus to water issues

associated with LESJWA and its role in improving the water quality at the two lakes but not significantly.

In review of the membership of WRCOG, there are 11 cities of its 17 city member agencies involved in the LE/CL TMDL Task Force. Their jurisdiction in relation to the San Jacinto River Watershed is shown in the graphic below. Similar to SAWPA, if WRCOG were to take on any administration or representation support role for LESJWA, it would face the challenge of having some of its members who have no direct overlying involvement or proximity to the two lakes having some say in the affairs of the two lakes.



Under the current LESJWA JPA agreement, Section 3.2, “another entity can become a member of the Authority after its formation upon a 2/3 majority vote of the existing directors”. However, it also clear that the existing directors though wanting to remain inclusive of new members still wish to preserve the veto power that they hold as indicated under Section 4.4 Voting of the JPA Agreement, “Except as otherwise provided herein, all actions of the Board shall be passed upon the affirmative vote of a majority of the Board of Directors; provided, however, that no plan or program shall be implemented within any Member's jurisdictional boundaries without that Member's prior approval.”

If WRCOG as an organization were to be added as a new LESJWA JPA member or were to replace SAWPA as a regional entity, concerns could arise from other Task Force members who were not represented on WRCOG such as State and Federal entities, dairy entities and agricultural entities. Even if some of these Task Force members wanted to become new members to the LESWJA Board, they may not be legally eligible under CA State Law to sit on the JPA Board. For example, the Western Riverside County Agricultural Coalition that represents the dairies and agricultural interests, as non-profit 501c3, would be prohibited from serving on a JPA. Further, it is unlikely that

federal entities such as the U.S. March Air Reserve Base or State agencies could become LESJWA JPA Board members either.

In examining the question of representation or merging of LESJWA under WRCOG, the cities and water districts in WRCOG that are also serving in the LE/CL TMDL Task Force may feel that they are already represented in decision making about the lakes through the Task Force and may not see a need to provide additional funding to become a member of the LESWJA JPA. Further, if representation were to come from the cities or water districts in WRCOG, concerns may arise as to what agency or city staff is best suited to serve there. WRCOG currently has several technical advisory committees (TACs) and the Public Works TAC may be best suited to allow communication between City Managers and Public Works Directors who may be more aware of the lake activities. However, early feedback by those who attend WRCOG indicate that the representatives sent by each city to the LE/CL TMDL Task Force are often in water quality compliance departments with little interaction or communication with public works or city upper management and may be far less familiar with lake issues being addressed by LESJWA and the Task Force.

In consideration of whether it would make sense financially to replace LESJWA staff, SAWPA, with WRCOG staff, WRCOG upper management has indicated that they do not have the experience or ability to take on this role and would have to hire outside consultant support to replace SAWPA as the LESJWA administrator. As previously described in considering whether costs could be saved by replacing SAWPA with a consultant to serve as administrator to LESJWA, SAWPA costs remain very competitive and are below comparable consultants costs based on an internal study conducted by the Riverside County Flood Control and Water Conservation District in 2013. Further the institutional memory of SAWPA in lake management as well as the positive relationship it has gained over the years with the Santa Ana Regional Water Quality Control Board remains strong and would be difficult to replace at less cost.

The recommended strategy for this option would be to conduct presentations with WRCOG Public Works TAC as well as key large cities who also participate in the LE/CL TMDL Task Force to determine if there is interest or needs for better representation of their interests on the LESJWA Board. Individual meetings with upper management of the large cities who serve on both WRCOG and the Task Force should continue to determine future interest in serving as a funding member of the LESJWA JPA.

Institutional Stability

In addition to financial considerations, the long-term sustainability of LESJWA must include consideration of institutional factors. Often within for-profit business plans, a section is included discussing competition in the market place. Though as a non-profit, market competition is typically not a direct concern, a non-profit entity should still consider the competitive nature of outside funding and other organizations that often play dual or similar roles to LESJWA. Other institutions may affect how the LESJWA Board may wish to continue in the future under its current JPA organization with current JPA members or consider alternative organization structure.

San Jacinto River Watershed Council (SJRWC)

The SJRWC is a non-profit 501(c) 3 organization formed in 2002.A grant provided by the State of California Dept of Conservation to the Elsinore-Murrieta-Anza Resource Conservation District helped establish the organization with a watershed coordinator and provide a listing of available watershed resources. A nine-member board of directors with representatives from the following categories governs the Council. The current representative and organization affiliation also are as follows:

1. Water/Wastewater
2. County/City
3. Agriculture/Landowner
4. Environmental/Community
5. Federal/State/Regional
6. Indian/Tribal
7. Dairy
8. At Large Board member
9. At Large Board member

The purpose of the organization, as shown in the SJRWC bylaws, is as follows:

- To ensure that the current and potential uses of the San Jacinto River Watershed's resources are sustained, restored, and where possible, enhanced, while promoting the long-term social and economic vitality of the region.

The goals of the organization are to:

- Promote a stewardship approach to collaborative, holistic watershed management.
- Ensure that the interests represented in the development of policies, programs and activities of the San Jacinto River Watershed Program reflect the diversity of interests represented by all stakeholders of the watershed.
- Provide sound information to support decisions and actions of watershed stakeholders, which will promote the long-term social and economic vitality of the region.
- Provide and support an effective process that supports locally led and community-based environmental management that meet State and Federal regulatory requirements in locally appropriate ways.
- Assist in the development, implementation, and monitoring of effective and sustainable processes to improve watershed quality and protect beneficial uses of water to meet the interests of all stakeholders in the San Jacinto Watershed.
- Facilitate the exchange of watershed information to the stakeholders and community through various means.
- Influence water policy.

As evident by the organization goals in comparison to LESJWA goals, there is some duplication of mission and potential areas of conflict. Because the SJRWC functions primarily from minimal annual contributions from its member agencies and by grants, competitive grant applications prepared by LESJWA and SJRWC may be deemed competitive.

Santa Ana Watershed Project Authority (SAWPA)

The Santa Ana Watershed Project Authority is a joint powers authority formed in 1973 to address regional water resource planning and projects in the Santa Ana River Watershed. SAWPA includes five member agencies including Eastern Municipal Water District, Western Municipal Water District, Inland Empire Utilities Agency, San Bernardino Valley Municipal Water District, and Orange County Water District. SAWPA currently has three main areas of focus:

1. **Operation and maintain the Inland Empire Brine Line** delivering non-reclaimable high saline water out of the Santa Ana River Watershed to the ocean.
2. **Administer and support the SAWPA Roundtable or task forces**. These are multi-agency collaborative forums to address water quality regulations and water resource issues wherein multiple agencies sign a task force agreement to hire SAWPA to administer regular meetings, hire consultants, and conduct the contract terms on behalf of the multiple agencies to accomplish their goals. Many of the SAWPA "Roundtable" efforts are addressing TMDLs in the Santa Ana Watershed.
3. **Integrated regional water management planning through SAWPA's One Water One Watershed "OWOW" Plan**. SAWPA has been designated by the Dept. of Water Resources as the established region for funding of Proposition 84 IRWM funding, and is likely to be the administrator for future IRWM funding.

As a watershed entity, SAWPA, like SJRWC, will be pursuing competitive grants made available from State and Federal sources for watershed planning, watershed coordination staffing and other watershed projects. Because SAWPA is pursuing funding that also potentially could be applied for by LESJWA, this presents areas that some may consider a conflict of interest, considering SAWPA serves as the administrator of LESJWA. Historically, SAWPA has served as a catalyst for getting regional projects implemented and then passing the baton of control over to local entities to continue operations and maintenance activities. Thereafter, SAWPA typically will withdraw from the newly formed JPA or operations organization unless strongly recommended to remain. To date, SAWPA has not withdrawn in its administrative role based on the encouragement of the LESJWA Board to remain as administrator.

Big Bear Municipal Water District (BBMWD)

The Big Bear Municipal Water District is an independent special district of the State of California, responsible for the overall management of Big Bear Lake located in the San Bernardino Mountains. The primary goal of the BBMWD is the stabilization of Big Bear Lake at a water level as constant as possible. Lake stabilization is conducted through the implementation of a comprehensive water management plan, which includes controlled lake releases combined with a water purchase contract to provide water to the water rights holder while minimizing demand on the reservoir. In many ways, the BBMWD could be a potential organizational template for how Lake Elsinore could be managed in the future.

The list of similarities between Big Bear Lake and Lake Elsinore are many as indicated below:

1. Both lakes are listed as impaired water bodies for nutrients.
2. Both lakes are actively seeking to address water level stabilization and water quality.
3. Both lakes are primarily recreational water bodies.

4. Both lakes have experienced challenges with low DO levels and algae.
5. Both lakes have a TMDL Task Force seeking to address their challenges.

Still, major differences exist between the lakes that affect lake management as follows:

1. BBMWD owns Big Bear Lake while the City of Lake Elsinore owns Lake Elsinore with agreements with EVMWD to fill and operate the lake.
2. BBMWD uses an assessment district and boating/docking fees to fund lake stabilization and water quality improvements at Big Bear Lake, and to operate the agency. The City of Lake Elsinore and EVMWD provide funding for Lake Elsinore lake level stabilization. LESJWA obtained grant funding for the majority of past improvements at Lake Elsinore and Canyon Lake, but no ongoing capital funding mechanism currently exits. LESJWA member agencies provide minimal funding for operations of LESJWA.
3. Big Bear Lake has much higher recreational use than Lake Elsinore and has a higher per capita income level surrounding the lake to pay assessment district fees.

In addition to SJRWC and SAWPA, BBMWD also may be applying for lake improvement funding from State and Federal sources that may be in competition to grant applications to support Lake Elsinore and Canyon Lake improvements.

Western Riverside Council of Governments (WRCOG)

As previously described, the Western Riverside Council of Governments (WRCOG) is a joint powers authority whose responsibilities are wide-ranging, but in all cases are determined by its member jurisdictions and agencies. Activities common to many COGs include regional review of environmentally significant projects per CEQA; air quality planning; area wide clearinghouse for review of Federal financial assistance; regional housing needs assessment; hazardous and solid waste management; demographic projections; growth management analysis and development of subregional strategies; review of local general plan amendments; area wide water quality planning; transportation planning, modeling and programming; and general planning support and technical assistance. For WRCOG, its focus is unifying the Western Riverside County so that it can speak with a collective voice on important issues that affect its members. Representatives from 17 cities, the Riverside County Board of Supervisors, and the Eastern and Western Municipal Water Districts have seats on the WRCOG Executive Committee, the group that sets policy for the organization. As a joint powers agency, WRCOG takes up regional matters critical to our future, from air quality to solid waste and from transportation to the environment. One area in which they have a focus is on water supply and water conservation. In this regard, there is somewhat of a nexus to water issues associated with LESJWA and its role in improving the water quality at the two lakes but not significantly.

The potential for future merging of roles was discussed previously in the evaluation of generating new revenue.

Future Trends and Forecasts

One of the primary drivers for continued support for lake quality improvement is the EPA-mandated TMDLs that specify certain water quality targets by certain dates. For Lake Elsinore and Canyon Lake, the TMDL water quality targets have been defined for 2015 (interim), and 2020 (final). Failure to achieve the water quality targets may result in regulatory fines to entities that

contribute nutrient that exceed maximum daily loads. Most of the LESJWA member agencies are among the entities listed as responsible for TMDL compliance. With the improvements conducted to date at Lake Elsinore and Canyon Lake, significant progress has occurred to help meet the TMDL targets. Whether or not the improvements made thus far are adequate to assure future lake quality still is under investigation. Based on water quality monitoring data collected to date, further lake capital improvements to improve lake quality at both Lake Elsinore and Canyon Lake appear likely.

With each capital improvement, operation and maintenance commitments to operate the lake improvements also are necessary. Over time, an adaptive management approach must be practiced in which monitoring confirms whether water quality targets are being met. If not, then changes to lake operations or further capital improvements with associated O & M commitments become necessary.

For the future of Lake Elsinore and Canyon Lake, an implementation agency to assist with project implementation is still necessary because more water quality improvements at both lakes and the watershed likely are in order to achieve the water quality targets necessary to comply with the Nutrient TMDL for Lake Elsinore and Canyon Lake. If funding from State or Federal grants becomes available for implementation of further lake improvements, LESJWA, as an established JPA, can apply for these implementation funds. The role of building projects to improve water quality at the lakes cannot be performed as well by other JPAs or nonprofit organizations like SJRWC as presently constituted. According to the SJRWC bylaws, it was not formed to be a project implementation agency, but rather a coordinating, planning body. LESJWA also has a successful record in receiving State implementation grant funds, and anticipates such for the future. Similarly, SAWPA is not designed as an operation entity for lake improvements and likely will steer clear of taking on an expanded role in this area.

Future funding also is somewhat dependent on the institutional support of outside regulatory agencies. LESJWA, SAWPA, BBMWD and SJRWC all have a good relationship with the Regional Board, key to obtaining State grant funding support. As part of the TMDL process for Lake Elsinore and Canyon Lake, LESJWA is in a good position to apply for and obtain future State grants for further lake improvements. Further, it has been the common mode of operation for LESJWA to contract with local agencies, often times with its member agencies, to serve as the lead project manager and implementer of large- scale implementation projects, as these entities usually are the same entities responsible for the continued operation and maintenance of the facilities. This contractual model is similar to the approach taken effectively by SAWPA in the administration of implementing Proposition 13 Water Bond projects. Overall, this arrangement has worked well in reducing the operation and maintenance obligations and costs of improvement projects to local agencies more directly interested in the project's success.

Another activity that will need to continue in the subwatershed is integrated water resource planning. The primary integrated water resources management plan (IRWM) for the Santa Ana region covering the San Jacinto subwatershed and the two lakes is the Santa Ana Watershed is the One Water One Watershed (OWOW) Santa Ana IWRP administered by SAWPA. The OWOW plan was recently updated and adopted by the SAWPA Commission in February 2014. A more focused subwatershed integrated watershed plan for the Santa Ana River Watershed was completed in Dec. 2007. SAWPA is supportive of the more focused and detailed planning conducted at the local level. This planning is important to the region and is valued under the OWOW collaborative planning process. It is envisioned that LESJWA will continue to support more focused subwatershed integrated watershed planning for the San Jacinto subwatershed as the need arises.

Projected Capital Improvements

Lake Elsinore

Based on studies conducted by LESJWA and the LE/CL TMDL Task Force for Lake Elsinore, the existing improvements of biomanipulation that includes in-lake aeration and destratification, carp removal and carnivorous fish stocking, are expected to achieve compliance with the chemical and biological targets specified in the Lake Elsinore TMDL. However, in the event that the proposed program proves inadequate, there may be additional options to further reduce nutrient loads released from in-lake sediments. These include the following capital improvements:

Enhanced Aeration System

The software code used to control the existing aeration system could be revised to operate the aerators more frequently (more months of the year, more days of the month, or more hours in a day). Also, additional pipelines and/or aerators may be installed to provide better coverage. The utility of this option depends on the demonstrated effectiveness of the current aeration system and the related oxygenation efficiency curve of additional aeration. Capital Cost Estimate: $800,000 Operation & Maintenance Cost Estimate: $100,000/yr.

Enhanced Treatment of Reclaimed Water

EVMWD's NPDES permit limits phosphorus concentrations in reclaimed water discharged to Lake Elsinore to less than 0.5 mg/L. Additional alum application at the wastewater treatment plant may plant may reduce nutrient concentrations even further. This may provide any opportunity to offset non-point source loads by engaging in nutrient trading with point sources. Capital Cost Estimate: $5,000,000. Operation & Maintenance Cost Estimate: $500,000/yr.

Direct Application of Metal Salts

Alum and other metal salts are frequently used to reduce phosphorus concentrations in small lakes. In general, Lake Elsinore is poorly suited for the use of alum because the relatively high pH levels inhibit the intended formation of aluminum phosphate. However, under certain conditions, pH levels may be low enough to support the application of metal salts, such as alum, to Lake Elsinore. In very wet years, when the inflows to Lake Elsinore are greatest, pH levels tend to decrease. This is not surprising because the pH of rainwater is naturally low. If large-scale alum applications were timed to coincide with wet winters, much of the new dissolved phosphorus flowing into the lake might be neutralized. The application of alum to Canyon Lake during the 2013-2015 is underway and is anticipated to reduce the phosphorus concentrations before the water overflows into Lake Elsinore. Further, new clay-based alum products such as Phoslock are showing promise that could be used and may warrant further investigation for direct application to Lake Elsinore. Capital Cost Estimate: $1.5 million per application.

Targeted Suction Dredging

Previous studies indicate a disproportionate amount of phosphorus released from in-lake sediments is coming from the organic silt layer in the middle of the lake. Furthermore, preliminary reports suggest that most of the phosphorus is coming from the top 15 cm of sediment. Therefore, limited suction dredging, targeting the top six inches of sediment in the middle of the lake may prove to be an effective mitigation strategy. Cost Estimate: $20 million.

Constructed Wetlands

LESJWA has considered a pilot project to demonstrate the effectiveness of constructed wetlands for reducing nutrient concentrations in Lake Elsinore. Theoretically, stormwater runoff could be diverted through such wetlands for treatment prior to entering the lake. Alternatively, lake water could be pumped up and flow through the wetlands during drier years. When the levee was constructed, and the surface area of Lake Elsinore was cut in half, a large back-basin area was created that may serve as an ideal location to build treatment wetlands. Data from the pilot project will help determine whether such an approach would be practical on a larger scale. Capital Cost Estimate: $600,000. Operation and Maintenance Cost Estimate: $20,000/yr.

Active Aquatic Plant Management

Over time, stabilizing the lake level and reducing the algae infestation will provide an opportunity for native aquatic plants to recolonize the lake. It also may be possible to accelerate the process by initiating a program to actively revegetate the shoreline and the lake bottom. Aquatic plants will serve as a natural sink for nutrients, will provide better habitat for beneficial freshwater species, and reduce the level of sediment resuspension caused by wind and wave action. Capital Cost Estimate: $200,000. Operation and Maintenance Cost Estimate: $10,000/yr.

Enhanced Fishery Management Program

The City of Lake Elsinore has demonstrated the general effectiveness of actively managing the fish populations through netting and stocking programs. Such programs, particularly stocking efforts, could be expanded significantly if there were a way to calculate and credit the nutrient removal credit associated with such an effort. Data collected from the water quality monitoring program may provide the information needed to validate the beneficial use protection value, and thereby create an incentive to augment the City's fishery management program. Estimated Capital Cost: $2,400,000. Operation and Maintenance Cost Estimate: $45,000/yr.

Enhanced Lake Stabilization

Previous studies revealed that 13-15,000 acre-feet of water evaporates each year from Lake Elsinore. On average, only about 1,400 acre-feet flows into Lake Elsinore annually. The island wells provide an additional 3,000 acre-feet of groundwater and reclaimed water adds 5,000 acre-feet of supplemental flow each year. Therefore, more water (up to 5,000 acre feet/year) is needed to fully offset evaporative losses and stabilize the lake level in the ideal range. The most cost-effective and reliable source is high quality reclaimed water from local wastewater plants. However, additional treatment would be necessary to reduce nutrient concentrations to acceptable levels before more reclaimed water could be added to Lake Elsinore. The cost of such treatment also would have to be heavily subsidized by the responsible parties named in the TMDL. Further, the existing recycled water flow of 5000 AFY is subject to a joint agreement and funding by the City of Lake Elsinore and EVMWD. If this funding were to discontinue and recycled flows cease, this annual cost increase and become more urgent. Annual Cost for Supplemental Water: $1,830,000/yr.

Lake Elsinore Improvements	**Capital Costs**	**Annual O & M Costs**
1) Enhanced Aeration System	$800,000	$100,000

2) Enhanced Treatment of Reclaimed Water	$5,000,000	
3) Direct Application of Metal Salts	$1,500,000	
4) Targeted Suction Dredging	$20,000,000	
5) Constructed Wetlands	$600,000	$20,000
6) Active Aquatic Plant Management	$200,000	$10,000
7) Enhanced Fishery Management Program	$2,400,000	$45,000
8) Enhanced Lake Stabilization	$1,830,000	
Total	**$32,730,000**	**$175,000**

Canyon Lake

For the short term capital improvements of LESJWA, the focus will be primarily on improvements at Canyon Lake.

Aeration/Oxygenation System

In August 2010, LESJWA initiated a preliminary engineering investigation for an aeration/ oxygenation system for Canyon Lake to assist with compliance with many of the Canyon Lake TMDL targets. The report was completed in December 2010 and provides refined estimates for capital improvements, as well as operation and maintenance. Capital improvements cost estimate: $1.5 million. Operation and Maintenance Costs Estimate: $500,000/year.

Alum Application

As described under the Lake Elsinore improvement, alum application of Canyon Lake is underway and is hoped to be an effective strategy to control nutrient release from the bottom, particularly the legacy phosphorus on the lake bottom, but also help to collect nutrients in the water column under a storm event and seal them in the bottom sediment to benefit not just to Canyon Lake, but also to downstream Lake Elsinore. Capital Improvement cost estimate: $120,000 per application.

Upstream Constructed Wetlands Treatment

Again similar to the previously described Lake Elsinore improvement, wetlands are an effective means of filtering nutrients before reaching major water bodies like Canyon Lake and Lake Elsinore. If a location could be found upstream of Canyon Lake, either where the San Jacinto River or the Salt Creek enter Canyon Lake, a wetlands could be established to assist. The challenges with this project is assuring adequate water supply, land purchase, and effectiveness in nitrogen removal, but less so with phosphorus. Consequently, similar to the Lake Elsinore project, a pilot project scale wetlands is envisioned before proceeding with major construction. As the land has not been acquired, the pilot project costs will be higher than for Lake Elsinore. Capital Improvement cost estimate: $800,000. Operation and Maintenance Cost Estimate: $20,000/yr.

East Bay Lake Dredging

In 2006, LESJWA supported the City of Canyon Lake and the Canyon Lake Property Owners Association (POA) in a dredging operation in the East Bay of Canyon Lake and removed 20,000 CY

of silt. However, at the request of the Canyon Lake POA the project was prematurely terminated due to increasing operation costs and legal concerns arising from third party lawsuits. The need for additional dredging in the East Bay still exists with an estimated 200,000 CY of silt to be removed in the East Bay of Canyon Lake. Though the water quality benefit of dredging has been deemed to be limited at Canyon Lake main body and the downstream lake, Lake Elsinore, the functionality of the lake and impairment of the recreational beneficial use will continue to occur if dredging is not reinitiated. Capital improvement estimate $3 million. Operation and Maintenance Cost Estimate: $50,000/year.

Canyon Lake Improvements	**Capital Costs**	**Annual O & M Costs**
1) Aeration/Oxygenation System	$1,500,000	$500,000
2) Alum Application	$1,500,000	
3) Upstream Constructed Wetlands Treatment	$800,000	$20,000
4) East Bay Lake Dredging	$3,000,000	$50,000
Total	**$6,800,000**	**$570,000**

Clients and Needs

The need for a business plan for LESJWA is readily apparent as evidenced by the projections of funding shortfall to operate LESJWA within three years. For its member agencies, an increase in member agencies dues will be challenging in light of foreseeable economic conditions. In review of any financial plan, the needs of the member agencies of LESJWA and the other clients that LESJWA supports, such as the LE/CL TMDL Task Force agencies in support of the LESJWA mission, must be considered.

- **Santa Ana Watershed Project Authority**
  Of the LESJWA member agencies, the one agency with the least need to be a party of LESJWA is SAWPA. As a watershed management agency, it is not dependent on an individual lake's quality, but plays a supportive role as a watershed coordinator and in its administrative role. Transfer of the administrative support function to another party such as a local agency or other LESJWA member agency may be encouraged to avoid conflict of interest issue in competitive grant seeking, and encouraging more autonomy by the organization. A representative from the Western Riverside Council of Governments, which includes two of the SAWPA member agencies (WMWD and EMWD) as well as many of the LE/CL TMDL parties, may be a good option.

- **County of Riverside**
  Because half of Lake Elsinore adjoins County property and is used by many County residents, the County of Riverside can and does play a significant role in assuring a stabilized lake level, and funding lake aeration operations and maintenance for Lake Elsinore. The Riverside County Flood Control District, a district governed by the Riverside County Supervisors, plays a major role on the LE/CL TMDL Task Force as one of the primary funding parties due to the

apportionment of TMDLs to Canyon Lake and Lake Elsinore. Continued participation in LESJWA will provide benefits in assuring County resident interests are addressed and that as a responsible TMDL party, its policy guidance to mutually beneficial projects for both lakes will help meet their regulatory obligations.

- **City of Canyon Lake**
  The City of Canyon Lake remains an important part of LESJWA particularly since the goals of the organization were developed to assist not just Lake Elsinore, but also Canyon Lake and the San Jacinto watershed. As a named responsible party under the Canyon Lake TMDLs, the City of Canyon Lake stands to benefit from continued involvement, participation, and support of LESJWA. As an upstream entity to Lake Elsinore on the Board, their involvement assures that any future funding is balanced between Lake Elsinore and Canyon Lake water quality improvement needs.

- **Elsinore Valley Municipal Water District**
  EVMWD, as a water service agency, plays an important role on the LESJWA Board based on a series of legal agreements it has with the City of Lake Elsinore to maintain lake levels, operate lake aeration systems, and maintain a water supply for the back basin wetlands resulting from the Lake Stabilization Levee project. If these agreements were not in place, the incentive for EVMWD to continue to be involved in LESJWA would be somewhat less. Historically, LESJWA has served as an effective funnel for State grant funding to support compliance with water quality regulations and capital improvements. Similar to the County, EVMWD is a listed responsible TMDL party due to their recycled water additions to Lake Elsinore, and pays a significant portion of the TMDL compliance costs. The value of LESJWA for the future is the possible future grant funding for further lake improvements, avenues of funding operation and maintenance costs for the lake aeration systems, and assistance with TMDL compliance.

- **City of Lake Elsinore**
  The City has the most to gain by the continuance of LESJWA. As the City's economy and status is tied to the lake, its name sake, anything that LESJWA has done and can continue to do to support, maintain, and improve water quality and stabilize lake levels is beneficial both financially and organizationally to them. The City serves as a tremendous resource to LESJWA with well-trained staff that is knowledgeable about the lake conditions and assists with funding and operations needs of the lake's aeration system. The City is listed as a responsible party to the Lake Elsinore TMDL and is a party to the LE/CL TMDL Task Force.

- **LE/CL TMDL Task Force**
  The task force is composed of 20 agencies that were identified by the Regional Board as responsible for compliance with nutrient TMDLs to achieve water quality targets for both Lake Elsinore and Canyon Lake. SAWPA administers the task force through LESJWA. If LESJWA were to withdraw as administrator for the task force or change its role, other agencies could take on the administrative role such as SAWPA but an implementation agency like LESJWA will still be needed to continue lake capital improvements necessary to achieve TMDL targets.

Recommended Action Plan

Based on the available revenue and the options for funding, the viability of LESJWA as an effective and operating JPA that fulfills its mission is intact through FY 2013-14. Based on the 2010 LESJWA Business Plan, a shortfall in revenue of $38,000 for FY 13-14 was projected. However, due to cost

cutting efforts, a shortfall did not occur. FY 2015-16, serves as a milestone year in several ways. The TMDL Task Force must meet the interim Lake Elsinore and Canyon Lake TMDL targets. If they are not met, additional capital improvement projects then may be required and funded by the LE/CL TMDL Task Force parties. LESJWA likely would administer the design and construction of new additional projects necessary to assure compliance. To help fund these projects, outside grant funding such as Proposition 84 IRWM funding may become available and remain a strong opportunity as new rounds of funding are anticipated. Since the time of the 2010 LESJWA Business Plan preparation, LESJWA was successful in securing $500,000 in grant funding from Prop 84 IRWM Round 2.

LESJWA will remain a key organization to apply for the grant funding on behalf of the LE/CL TMDL Task Force. However, with insufficient funds to accomplish normal operations, revenue to operate the agency is required. Because the primary benefactors would be the Lake Elsinore/Canyon Lake TMDL Task Force agencies, staff requested additional funding from all TMDL parties to operate LESJWA in FY 2014-15. Based on the 2014 LESJWA Business Plan update, the LE/CL TMDL Task Force will be charged for the portion of the LESJWA administrative costs that directly relate to the LE/CL TMDL Task Force activities. This is anticipated to be approximately $25,000 per year.

If the lake quality improvement program can be set up effectively, the funding from the Task Force needed for LESJWA JPA operations could be lumped into any purchases of nutrient mitigation credits at the lakes. Although the amount of funding and number of TMDL parties willing to participate in the lake quality improvement program is uncertain, it likely will be highest for the most significant nutrient contributors to the lake. A sense of which TMDL parties may benefit the most from the lake quality improvement program and LESJWA JPA operation will be determined as part of future nutrient contribution allocation updates, and the lake quality improvement and nutrient offset trading plan program preparation. Based on recent years activities as part of the 2014 LESJWA Business Plan update, the nutrient offset trading plan will probably only apply to legacy loads of nutrients at Lake Elsinore and will help offset the operation and maintenance costs borne by the three Lake Elsinore aeration operation and maintenance agencies, namely, the City of Lake Elsinore, EVMWD and County Riverside.

Since the completion of the 2010 LESJWA Business Plan, another option to generate revenue for the LESJWA JPA would be to evaluate whether members of the LE/CL TMDL Task Force may have an interest in serving as a funding member of LESJWA in order to have more voice and decision making authority in the affairs of the lakes. Further since many of the LE/CL TMDL Task Force are also WRCOG members, 11 cities and 1 water agency, these investigations may also involve WRCOG in some administrative or interaction role to save costs. LESJWA staff will conduct meetings with WRCOG technical advisory committees and individually with large cities who are members of both WRCOG and the LE/CL TMDL Task Force to evaluate the level of interest.

AGREEMENT FOR SERVICES BY INDEPENDENT CONSULTANT

This Agreement is made this**___ day of _____, 20__** by and between the Lake Elsinore & San Jacinto Watersheds Authority (LESJWA) whose address is 11615 Sterling Avenue, Riverside, CA. 92503, and _____("Consultant") whose address is_____ .

RECITALS

This Agreement is entered into on the basis of the following facts, understandings, and intentions of the parties to this Agreement:

- LESJWA desires to engage the professional services of Consultant to perform such professional consulting services as may be assigned, from time to time, by LESJWA in writing.
- Consultant agrees to provide such services pursuant to, and in accordance with, the terms and conditions of this Agreement and has represented and warrants to LESJWA that Consultant possesses the necessary skills, qualifications, personnel, and equipment to provide such services.
- The services to be performed by Consultant shall be specifically described in one or more written Task Orders issued by LESJWA to Consultant pursuant to this Agreement.

AGREEMENT

Now, Therefore, in consideration of the foregoing Recitals and mutual covenants contained herein, LESJWA and Consultant agree as follows:

ARTICLE I
TERM OF AGREEMENT

1.01 Term of Agreement. This agreement shall become effective on the date first above written and shall continue until **_____, 202_,** unless extended or sooner terminated as provided for herein.

ARTICLE II
SERVICES TO BE PERFORMED

2.01 Consultant agrees to provide such professional consulting services as may be assigned, from time to time, in writing by the Board and the Authority Administrator of LESJWA. Each such assignment shall be made in the form of a written Task Order. Each such Task Order shall include, but shall not be limited to, a description of the nature and scope of the services to be performed by Consultant, the amount of compensation to be paid, and the expected time of completion.

2.02 Consultant may, at Consultant's sole cost and expense, employ such competent and qualified independent professional associates, subcontractors, and consultants as Consultant deems necessary to perform each such assignment; provided, however, that Consultant shall not subcontract any of the work to be performed without the prior written consent of LESJWA.

ARTICLE III
COMPENSATION

3.01 In consideration for the services to be performed by Consultant, LESJWA agrees to pay Consultant as provided for in each Task Order.

3.02 Each Task Order shall specify a total not-to-exceed sum of money and shall be based upon the regular hourly rates customarily charged by Consultant to its clients, as set forth on an exhibit to be attached to each Task Order issued to Consultant.

3.03 Consultant shall not be compensated for any services rendered nor reimbursed for any expenses incurred in excess of those authorized in any Task Order unless approved in advance by the Board of Directors and Authority Administrator of LESJWA, in writing.

3.04 Unless otherwise provided for in any Task Order issued pursuant to this Agreement, payment of compensation earned shall be made in monthly installments after receipt from Consultant of a timely, detailed, corrected, written invoice by LESJWA's Project Manager, describing, without limitation, the services performed, the time spent performing such services, the hourly rate charged therefore, and the identity of individuals performing such services for the benefit of LESJWA. Such invoices shall also include a detailed itemization of expenses incurred. Upon approval by an authorized SAWPA employee, SAWPA will pay within 30 days after receipt of a valid invoice from Consultant.

ARTICLE IV
OBLIGATIONS OF CONSULTANT

4.01 Consultant agrees to perform all assigned services in accordance with the terms and conditions of this Agreement and those specified in each Task Order.

4.02 Except as otherwise provided for in each Task Order, Consultant will supply all personnel and equipment required to perform the assigned services.

4.03 Consultant shall be solely responsible for the health and safety of its employees and agents in performing the services assigned by LESJWA. Consultant hereby covenants and agrees to:

a. Obtain a comprehensive general liability and automobile insurance policy, including contractual coverage, with combined single limits for bodily injury and property damage in an amount of not less than $1,000,000.00. Such policy shall name LESJWA, and any other interested and related party designated by LESJWA, as an additional insured, with any right to subrogation waived as to LESJWA and such designated interested and related party;

b. Obtain a policy of professional liability insurance in a minimum amount of $1,000,000.00 per claim or occurrence to cover any negligent acts or omissions committed by Consultant, its employees and/or agents in the performance of any services for LESJWA;

c. Comply with all local, state and federal laws, rules and regulations;

d. Provide worker's compensation insurance or a California Department of Insurance-approved self-insurance program in an amount and form that meets all applicable Labor Code requirements, covering all persons or entities providing services on behalf of the Consultant's and all risks to such persons or entities.

e. Consultant shall require any subcontractor that Consultant uses for work performed for LESJWA under this Agreement or related Task Order to obtain the insurance coverages specified above.

f. Consultant hereby agrees to waive subrogation which any insurer of Consultant may seek to require from Consultant by virtue of the payment of any loss. Consultant shall obtain an endorsement that may be necessary to give effect to this waiver of subrogation. In addition, the Workers Compensation policy shall be endorsed with a waiver of subrogation in favor of LESJWA for all work performed by Consultant, and its employees, agents and subcontractors.

All such insurance policy or policies shall be issued by a responsible insurance company with a minimum A. M. Best Rating of "A-" Financial Category "X", and authorized and admitted to do business in, and regulated by, the State of California. If the insurance company is not admitted in the State of California, it must be on the List of Eligible Surplus Line Insurers (LESLI), shall have a minimum A.M. Best Rating of "A", Financial Category "X", and shall be domiciled in the United States, unless otherwise approved by LESJWA in writing. Each such policy of insurance shall expressly provide that it shall be primary and noncontributory with any policies carried by LESJWA and, to the extent obtainable, such coverage shall be payable notwithstanding any act of negligence of LESJWA that might otherwise result in forfeiture of coverage. Evidence of all insurance coverage shall be provided to LESJWA prior to issuance of the first Task Order. Such policies shall provide that they shall not be canceled or amended without 30 day prior written notice to LESJWA. Consultant acknowledges and agrees that such insurance is in addition to Consultant's

obligation to fully indemnify and hold LESJWA free and harmless from and against any and all claims arising out of an injury or damage to property or persons caused by the negligence, recklessness, or willful misconduct of Consultant in performing services assigned by LESJWA.

4.04 Consultant hereby covenants and agrees that LESJWA, its officers, employees, and agents shall not be liable for any claims, liabilities, penalties, fines or any damage to property, whether real or personal, nor for any personal injury or death caused by, or resulting from, or claimed to have been caused by or resulting from, any negligent act or omission of Consultant. Further, Consultant hereby covenants and agrees to fully indemnify and save LESJWA, its agents, officers and employees, free and harmless from and against any and all of the foregoing liabilities or claims of any kind, and shall reimburse LESJWA for all costs or expenses that LESJWA incurs (including attorneys' fees) on account of any of the foregoing liabilities, including liabilities or claims made by reason of defects in the performance of consulting services pursuant to this Agreement, unless the liability or claim is proximately caused by LESJWA's negligent act or omission.

4.05 In the event that LESJWA requests that specific employees or agents of Consultant supervise or otherwise perform the services specified in each Task Order, Consultant shall ensure that such individual (or individuals) shall be appointed and assigned the responsibility of performing the services.

4.06 In the event Consultant is required to prepare plans, drawings, specifications and/or estimates, the same shall be furnished with a registered professional engineer's number and shall conform to local, state and federal laws, rules and regulations. Consultant shall obtain all necessary permits and approvals in connection with this Agreement, any Task Order or Change Order. However, in the event LESJWA is required to obtain such an approval or permit from another governmental entity, Consultant shall provide all necessary supporting documents to be filed with such entity, and shall facilitate the acquisition of such approval or permit.

ARTICLE V
OBLIGATIONS OF LESJWA

5.01 LESJWA shall

a. Furnish all existing studies, reports and other available data pertinent to each Task Order that are in LESJWA's possession;

b. Designate a person to act as liaison between Consultant and the Authority Administrator and Board of Directors of LESJWA.

ARTICLE VI
ADDITIONAL SERVICES, CHANGES AND DELETIONS

6.01 During the term of this Agreement, the Board of Directors of LESJWA may, from time to time and without affecting the validity of this Agreement or any Task Order issued pursuant thereto, order changes, deletions, and additional services by the issuance of written Change Orders authorized and approved by the Board of Directors of LESJWA.

6.02 In the event Consultant performs additional or different services than those described in any Task Order or authorized Change Order without the prior written approval of the Board of LESJWA, Consultant shall not be compensated for such services.

6.03 Consultant shall promptly advise LESJWA as soon as reasonably practicable upon gaining knowledge of a condition, event, or accumulation of events, which may affect the scope and/or cost of services to be provided pursuant to this Agreement. All proposed changes, modifications, deletions, and/or requests for additional services shall be reduced to writing for review and approval or rejection by the Board of Directors of LESJWA.

6.04 In the event that LESJWA orders services deleted or reduced, compensation shall be deleted or reduced by a comparable amount as determined by LESJWA and Consultant shall only be compensated

for services actually performed. In the event additional services are properly authorized, payment for the same shall be made as provided in Article III above.

ARTICLE VII
CONSTRUCTION PROJECTS:
CHANGE ORDERS FOR CONSTRUCTION CONSULTANT

7.01 In the event LESJWA authorizes Consultant to perform construction management services for LESJWA, Consultant may determine, in the course of providing such services, that a Change Order should be issued to the construction contractor, or Consultant may receive a request for a Change Order from the construction contractor. Consultant shall, upon receipt of any requested Change Order or upon gaining knowledge of any condition, event, or accumulation of events, which may necessitate issuing a Change Order to the construction contractor, promptly consult with the liaison, Authority Administrator and Board of LESJWA. No Change Order shall be issued or executed without the prior approval of the Board of Directors of LESJWA.

ARTICLE VIII
TERMINATION OF AGREEMENT

8.01 In the event the time specified for completion of an assigned task in a Task Order exceeds the term of this Agreement, the term of this Agreement shall be automatically extended for such additional time as is necessary to complete such Task Order, and thereupon this Agreement shall automatically terminate without further notice.

8.02 Notwithstanding any other provision of this Agreement, LESJWA, at its sole option, may terminate this Agreement at any time by giving 10 day written notice to Consultant, whether or not a Task Order has been issued to Consultant.

8.03 In the event of termination, the payment of monies due Consultant for work performed prior to the effective date of such termination shall be paid after receipt of an invoice as provided in this Agreement.

ARTICLE IX
STATUS OF CONSULTANT

9.01 Consultant shall perform the services assigned by LESJWA in Consultant's own way as an independent contractor, and in pursuit of Consultant's independent calling, and not as an employee of LESJWA. Consultant shall be under the control of LESJWA only as to the result to be accomplished and the personnel assigned to perform services. However, Consultant shall regularly confer with LESJWA's liaison, Authority Administrator, and Board of Directors as provided for in this Agreement.

9.02 Consultant hereby specifically represents and warrants to LESJWA that the services to be rendered pursuant to this Agreement shall be performed in accordance with the standards customarily applicable to an experienced and competent professional consulting organization rendering the same or similar services. Further, Consultant represents and warrants that the individual signing this Agreement on behalf of Consultant has the full authority to bind Consultant to this Agreement.

ARTICLE X
AUDIT; OWNERSHIP OF DOCUMENTS

10.01 All draft and final reports, plans, drawings, specifications, data, notes, and all other documents of any kind or nature prepared or developed by Consultant in connection with the performance of services assigned to it by LESJWA are the sole property of LESJWA, and Consultant shall promptly deliver all such materials to LESJWA. Consultant may retain copies of the original documents, at its option and expense.

10.02 Consultant shall retain and maintain, for a period not less than four years following termination of this Agreement, all time records, accounting records, and vouchers and all other records with respect to all matters concerning services performed, compensation paid and expenses reimbursed. At any time during

normal business hours and as often as LESJWA may deem necessary, Consultant shall make available to LESJWA's agents for examination of all such records and will permit LESJWA's to audit, examine and reproduce such records.

ARTICLE XI
MISCELLANEOUS PROVISIONS

11.01 This Agreement supersedes all previous agreements, either oral or written, between the parties hereto with respect to the rendering of services by Consultant for LESJWA and contains all of the covenants and agreements between the parties with respect to the rendering of such services in any manner whatsoever. Any modification of this Agreement will be effective only if it is in writing signed by both parties.

11.02 Consultant shall not assign or otherwise transfer any rights or interest in this Agreement without the prior written consent of LESJWA. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement.

11.03 In the event Consultant is an individual person, and Consultant dies prior to completion of this Agreement or any Task Order issued hereunder, any monies earned that may be due Consultant from LESJWA as of the date of death will be paid to Consultant's estate.

11.04 Time is of the essence in the performance of services required hereunder. Extensions of time within which to perform services may be granted by LESJWA if requested by Consultant and agreed to in writing by LESJWA. All such requests must be documented and substantiated and will only be granted as the result of unforeseeable and unavoidable delays not caused by the lack of foresight on the part of Consultant.

11.05 Consultant shall comply with all local, state and federal laws, rules and regulations including those regarding nondiscrimination and the payment of prevailing wages.

11.06 LESJWA expects that Consultant will devote its full energies, interest, abilities and productive time to the performance of its duties and obligations under Agreement, and shall not engage in any other consulting activity that would interfere with the performance of Consultant's duties under this Agreement or create any conflicts of interest. If required by law, Consultant shall file Conflict of Interest Statements with LESJWA.

11.07 Any dispute which may arise by and between LESJWA and the Consultant, including the Consultant's associates, subcontractor or other consultants, shall be submitted to binding arbitration. Arbitration shall be conducted by the Judicial Arbitration and Mediation Service, Inc., or its successor, or any other neutral, impartial arbitration service that the parties mutually agree upon, in accordance with its rules in effect at the time of the commencement of the arbitration proceeding, and as set forth in this paragraph. The arbitrator must decide each and every dispute in accordance with the laws of the State of California, and all other applicable laws. The arbitrator's decision and award are subject to judicial review by a Superior Court of competent venue and jurisdiction only for material errors of fact or law in accordance with Section 1296 of the Code of Civil Procedure. Limited discovery may be permitted upon a showing of good cause and approved by the assigned arbitrator. Unless the parties stipulate to the contrary, prior to the appointment of the arbitrator, all disputes shall first be submitted to non-binding mediation, conducted by the Judicial Arbitration and Mediation Services, Inc., or its successor, or any other neutral, impartial mediation service that the parties mutually agree upon, in accordance with their rules and procedures for such mediation.

11.08 During the performance of the Agreement, Consultant, and its subcontractors, shall not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS), mental disability, medical condition (cancer), age (over 40), marital status, and denial of family care leave. Consultant, and its subcontractors, shall insure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment. Consultant, and its

subcontractors, shall comply with the provisions of the Fair Employment and Housing Act (Government Code, Section 12290 et seq.) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, Section 7285 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990 et seq., set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations are incorporated into this Agreement by reference and made a
part hereof as if set forth in full. Consultant, and its subcontractors, shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement. Consultant shall include the non-discrimination and compliance provisions of this clause in all subcontracts to perform work under the Agreement.

11.09 This contract may be executed in any number of counterparts, each of which so executed shall be deemed to be an original, and such counterparts shall together constitute one and the same Contract. The parties shall be entitled to sign and transmit an electronic signature of this Contract (whether by facsimile, PDF or other email transmission), which signature shall be binding on the party whose name is contained therein. Each party providing an electronic signature agrees to promptly execute and deliver to the other party an original signed Contract upon request.

IN WITNESS WHEREOF, the parties hereby have made and executed this *Agreement for Services* as of the day and year first above-written.

LAKE ELSINORE & SAN JACINTO WATERSHEDS AUTHORITY

_____
Jeffrey J. Mosher, General Manager Date

(CONSULTANT NAME)

_____ _____
(Signature) Date Print/Type Name and Title

LAKE ELSINORE & SAN JACINTO WATERSHEDS AUTHORITY
TASK ORDER NO. _____

CONSULTANT: [Name] **VENDOR NO.:** xx
[Address]

COST: **$**

PAYMENT: Upon Receipt of Proper Invoice

REQUESTED BY: XX Date:

FINANCE: _____
Karen Williams, CFO/Deputy GM Date

FINANCING SOURCE: Acct. Coding XX
Acct. Description XX

COMMISSION AUTHORIZATION REQUIRED: YES ( ) NO ( )
Authorization: [Date]; LES#2023.xx

This Task Order is issued upon approval and acceptance by the Lake Elsinore & San Jacinto Watersheds Authority (LESJWA) and _____ (Consultant) pursuant to the Agreement for Services between LESJWA and Consultant, entered into on [date], expiring [date].

I. PROJECT NAME OR DESCRIPTION
xxx

II. SCOPE OF WORK / TASKS TO BE PERFORMED
Consultant shall provide all labor, materials and equipment for the Project to perform the specific task of and as further described in Attachment A.

Please refer to Appendix X for acceptable formats

III. PERFORMANCE TIME FRAME
Consultant shall begin work [date] and shall complete performance of such services by or before**____, 20__ .**

IV. LESJWA LIAISON
_____will serve as liaison between LESJWA and Consultant.

V. COMPENSATION
For all services rendered by Consultant pursuant to this Task Order, Consultant shall receive a total not-to-exceed sum of **$ ____**. Payment for such services shall be made within 30 days upon receipt of proper and timely invoices from Consultant, as required by the above-mentioned Agreement. Each such invoice shall be provided to LESJWA by Consultant within 15 days after the end of the month in which the services were performed.

VI. CONTRACT DOCUMENTS PRECEDENCE

In the event of a conflict in terms between and among the contract documents herein, the document item highest in precedence shall control. The precedence shall be:

a. The Agreement for Services by Independent Consultant/Contractor.
b. The Task Order or Orders issued pursuant to the Agreement, in numerical order.
c. Exhibits attached to each Task Order, which may describe, among other things, the Scope of Work and compensation therefore.
d. Specifications incorporated by reference.
e. Drawings incorporated by reference.

In witness whereof, the parties have executed this Task Order on the date indicated below.

LAKE ELSINORE & SAN JACINTO WATERSHEDS AUTHORITY

_____
Jeffrey J. Mosher, General Manager Date

(CONSULTANT)

_____ _____
(Signature) Date Print/Type Name and Title