

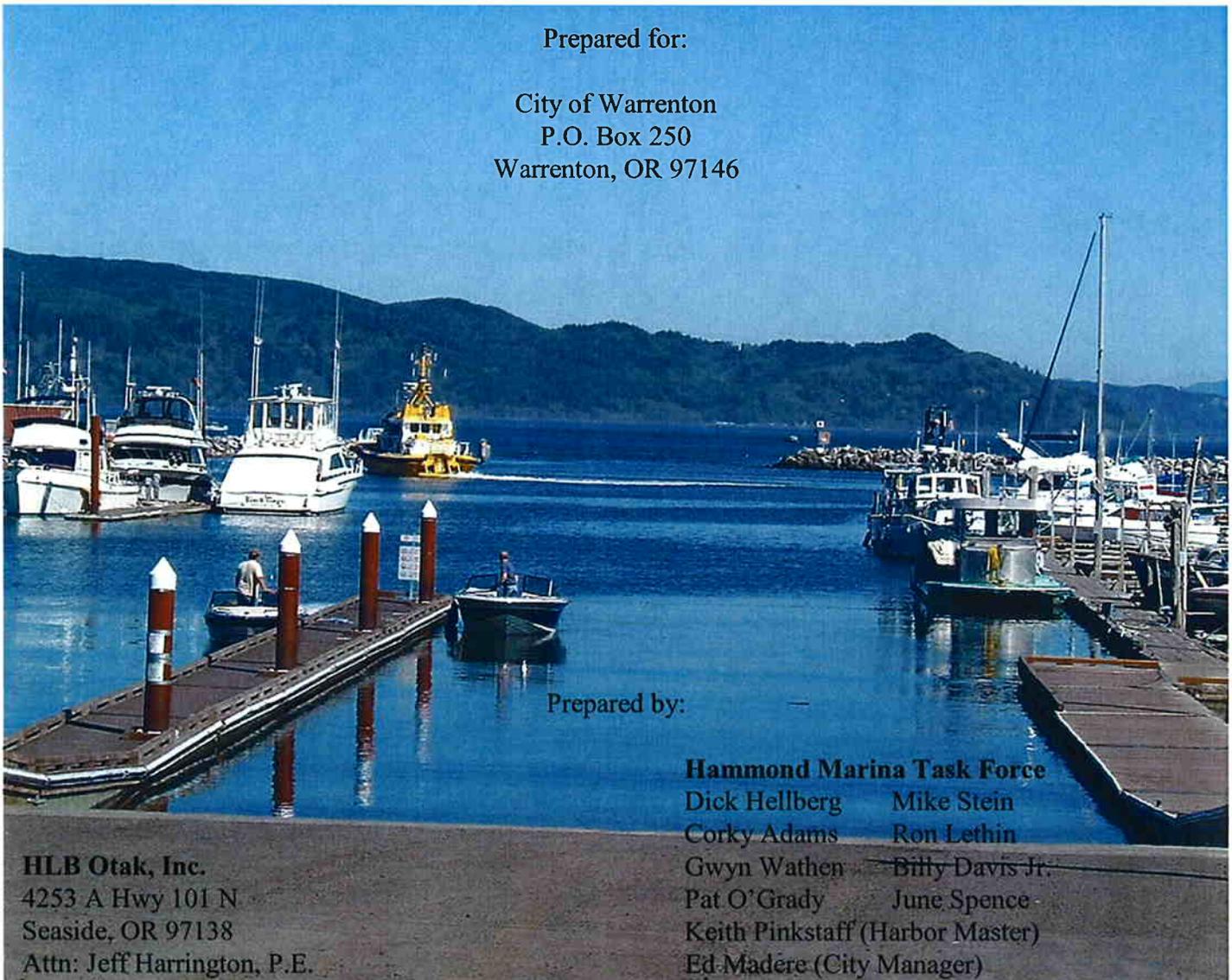


# HAMMOND MARINA MASTER PLAN UPDATE

SEPTEMBER 2005

Prepared for:

City of Warrenton  
P.O. Box 250  
Warrenton, OR 97146



Prepared by:

**Hammond Marina Task Force**

Dick Hellberg	Mike Stein
Corky Adams	Ron Lethin
Gwyn Wathen	Billy Davis Jr.
Pat O'Grady	June Spence
Keith Pinkstaff (Harbor Master)	
Ed Madere (City Manager)	

**HLB Otak, Inc.**  
4253 A Hwy 101 N  
Seaside, OR 97138  
Attn: Jeff Harrington, P.E.

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*Title Page*

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# **HAMMOND MARINA**

## **Master Plan Update**

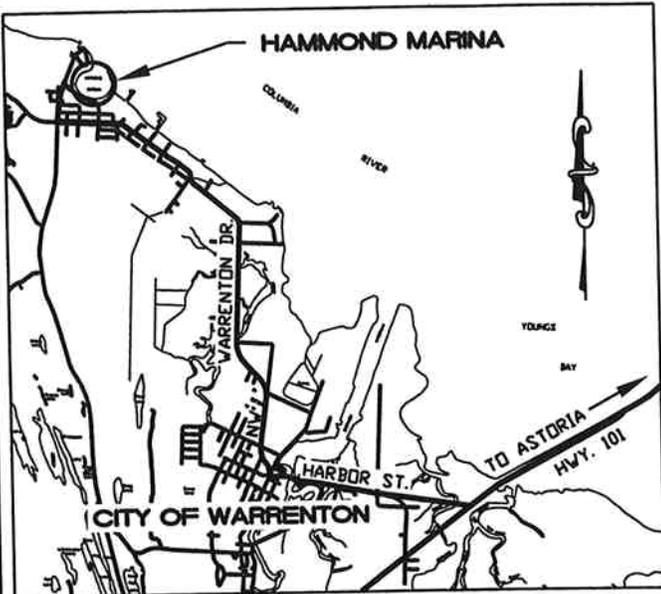
### **INTRODUCTION**

The Hammond Marina (basin) is located at the northwest corner of the City of Warrenton in what was once the Town of Hammond (now within the City of Warrenton), with a total City population of approximately 4,400. The basin is within Clatsop County on the south shore of the Columbia River in the northwest corner of Oregon (see Figure 1). The small embayment and adjacent lands are leased for recreational and commercial development to the City by the US Army Corp. of Engineers. The marina improvements are owned and operated by the City of Warrenton.

The primary purpose of this master plan update is to provide a current plan for improvement of the marina based on the most current information available. An original plan dated June 1991 was prepared by Leslie Simons and Handforth, Larson & Barrett, Inc. This updated plan has been prepared with the input of the Hammond Marina Task Force, made up of community members and City staff. It is the intention of the Task Force to use this document for the purpose of 1) pursuing funding for marina improvements, 2) compiling a plan that summarized the current community vision of the future of the marina, and 3) identifies the priorities for improvements that will revitalize the marina property to its full potential for the economic and recreational benefit of both the community and all of its visitors.

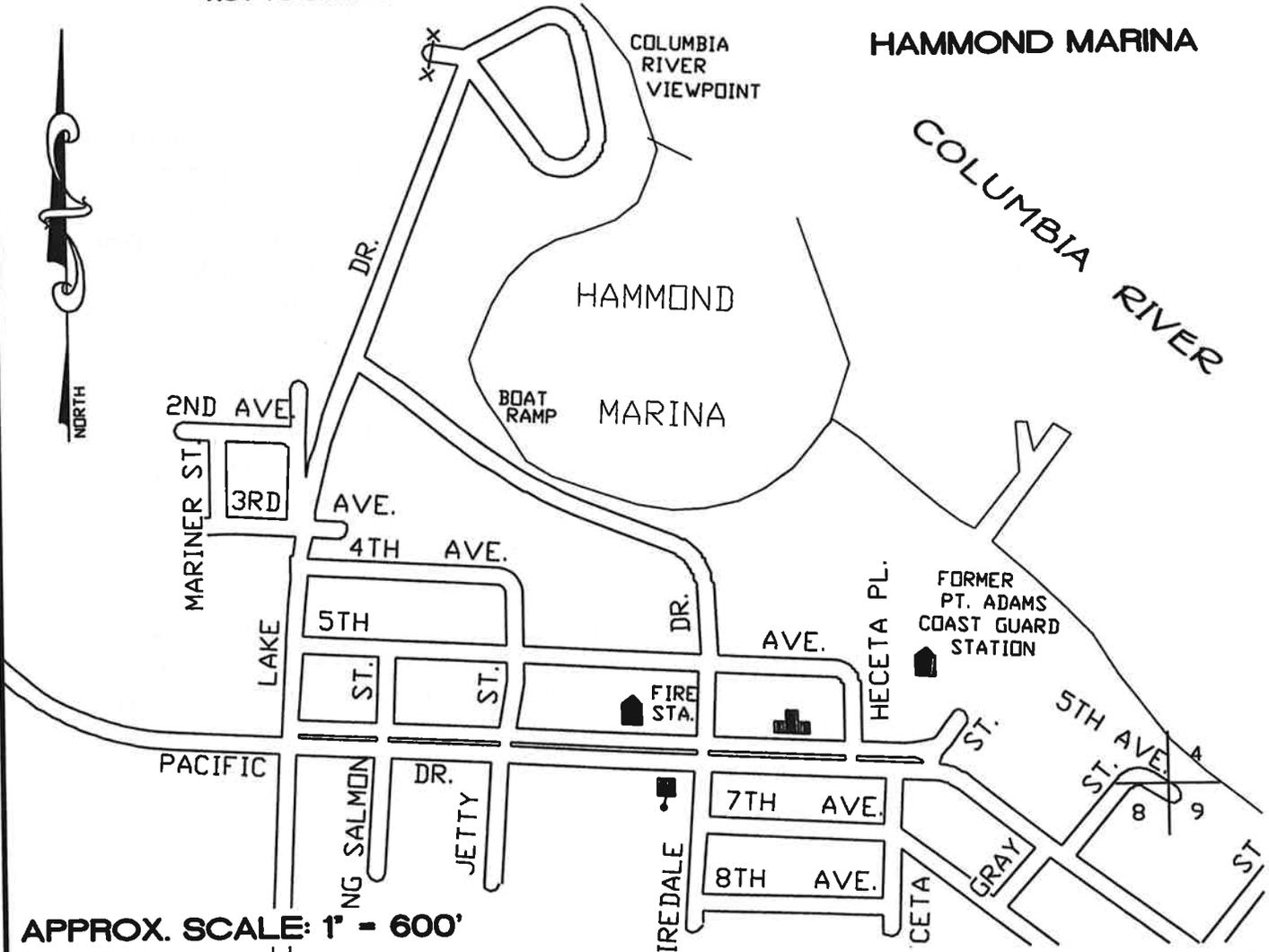
The plan is not intended to be the final specific facility design. It is based on existing data generated from aerial photography, as-built information and local knowledge. The information in this report is conceptual in nature and should not be used for final layout purposes. This plan is intended to show the direction of development and is not intended to be a construction document.

Special thanks are to be extended to all members of the task force and City staff including but not limited to Dick Hellberg, Corky Adams, Gwyn Wathen, Mike Stein, Ron Lethin, Billy Davis Jr., Pat O'Grady, June Spence, Keith Pinkstaff (Harbor Master) and Ed Madere (City Manager) for their assistance in completing this report and master plan.



NOT TO SCALE

**PROJECT LOCATION INFORMATION**  
 CITY OF WARRENTON, CLATSOP COUNTY  
 COLUMBIA RIVER MILE 8.7  
 LATITUDE/LONGITUDE: N46.203° W123.949°  
 LEGAL DESCRIPTION: T8N, R10W W.M. SEC. 5  
 TAX MAP # 8 10 5 WARRENTON  
 TAX LOT # 200



APPROX. SCALE: 1" = 600'

SHEET 1 OF 1

FIG 1 VICINITY MAP

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## **SITE ANALYSIS**

### **Site Location**

The Hammond Marina is located on the south shore of the Columbia River 8.6 river miles from the Pacific Ocean and northwest of downtown Warrenton. The marina is accessible to both Highway 101 and Highway 26 by Oregon State Highway 104. The basin is currently zoned A1 (Aquatic Development) and the adjacent leased land is zoned RC (Recreational/Commercial) (see Figure 2). The basin is enclosed with rock breakwaters breached by an entrance channel.

Seafarers Park is to the north with Fort Stevens State Park adjoining to the west. The parks were once a part of the Fort Stevens Military Reservation and are listed on the National Register of Historic Places (1971). Directly west of the basin, across Lake Drive, are two dredging spoils ponds that are currently full of dredge spoil material.

The commercial and residential areas of the city are located to the south and east. A large development parcel directly to the south of the basin, zoned C-1 (General Commercial), is owned by the City. East of the development parcel is former Point Adams Lifesaving Station. It is zoned OSI (Open Space Institutional). The station is also historically important and the character of the buildings give the town a focal point on which future development could be based.

### **Ownership and Permits**

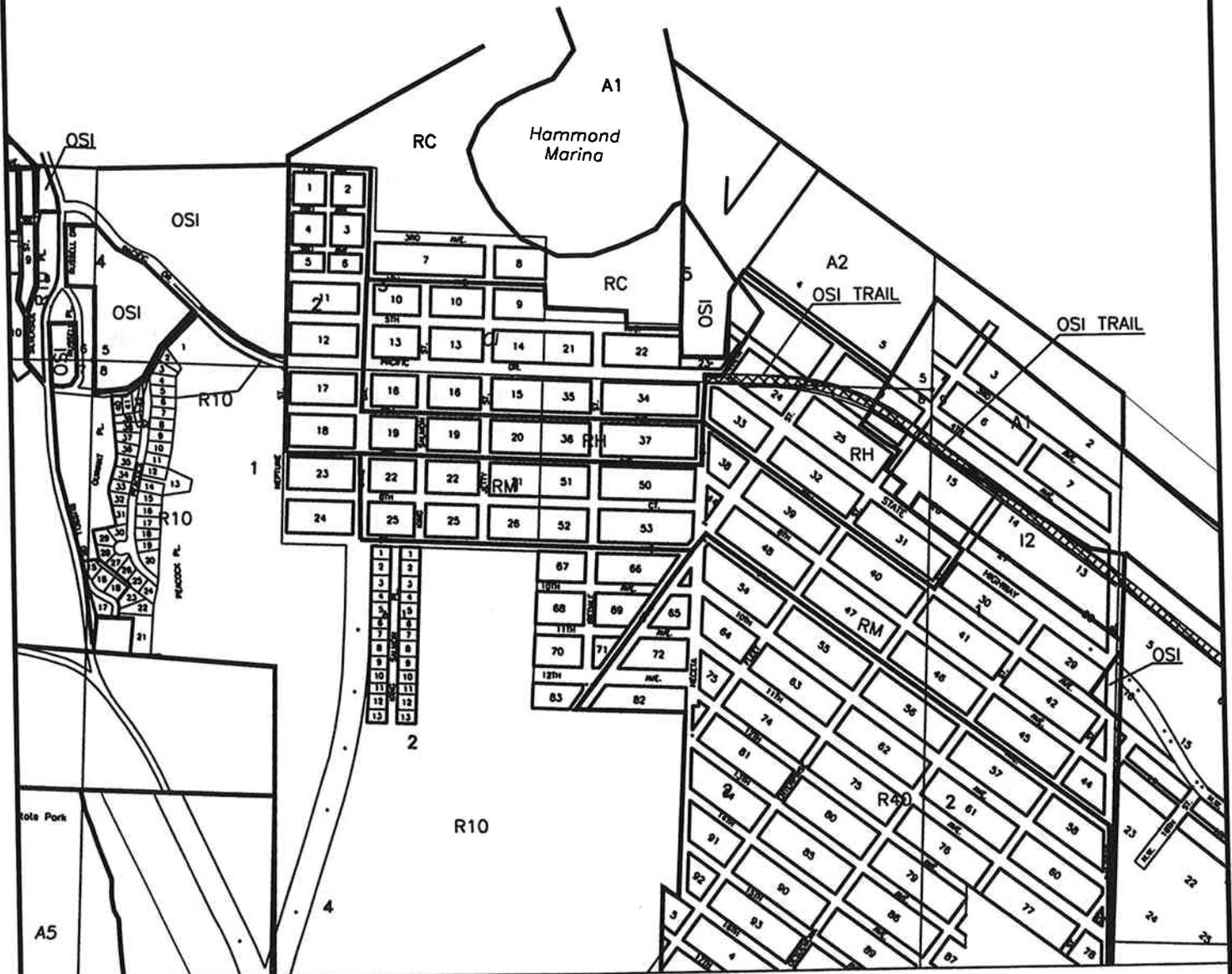
The Hammond basin is under the ownership of the Army Corp of Engineers. It consists of about 36 acres of dry land and 25 acres of water area and includes Seafarers Park. The Federal Government began leasing the basin to the Town of Hammond (now within the City of Warrenton) in 1967 (DA lease No. DACW57-1-68-4, see Figure 3) which is continued on a 25 year renewable basis. The present lease will run well into the next decade (2013).

The Army Corp of Engineers must be informed of any changes or alterations to the leasehold. Selection of concessionaires/vendors shall be in accordance with Corps policies. At this time all income generated by the harbor must be spent within the harbor.

The City would desire to have either a long term lease or ownership of the basin prior to making substantial financial investment into the basin. A clear title of the property may be needed to qualify for certain funding for improvements. In order to obtain a clear title to the property, the property would have to be either sold or given to the City by the government.

**ZONE DESIGNATIONS**

- A1 AQUATIC DEVELOPMENT
- A2 AQUATIC CONSERVATION
- A3 AQUATIC NATURAL
- C1 GENERAL COMMERCIAL
- C2 MARINE COMMERCIAL
- C3 TOURIST COMMERCIAL
- I1 GENERAL INDUSTRIAL
- I2 WATER DEPENDENT DEVELOPMENT
- RH HIGH DENSITY RESIDENTIAL
- RM MEDIUM DENSITY RESIDENTIAL
- R10 INTERMEDIATE DENSITY RESIDENTIAL
- R10 (GM) INTERMEDIATE DENSITY, GROWTH MANAGEMENT
- R40 LOW DENSITY RESIDENTIAL
- RC RECREATIONAL COMMERCIAL
- OSI OPEN SPACE INSTITUTIONAL
- OSI (TRAIL) OPEN SPACE INSTITUTIONAL TRAIL



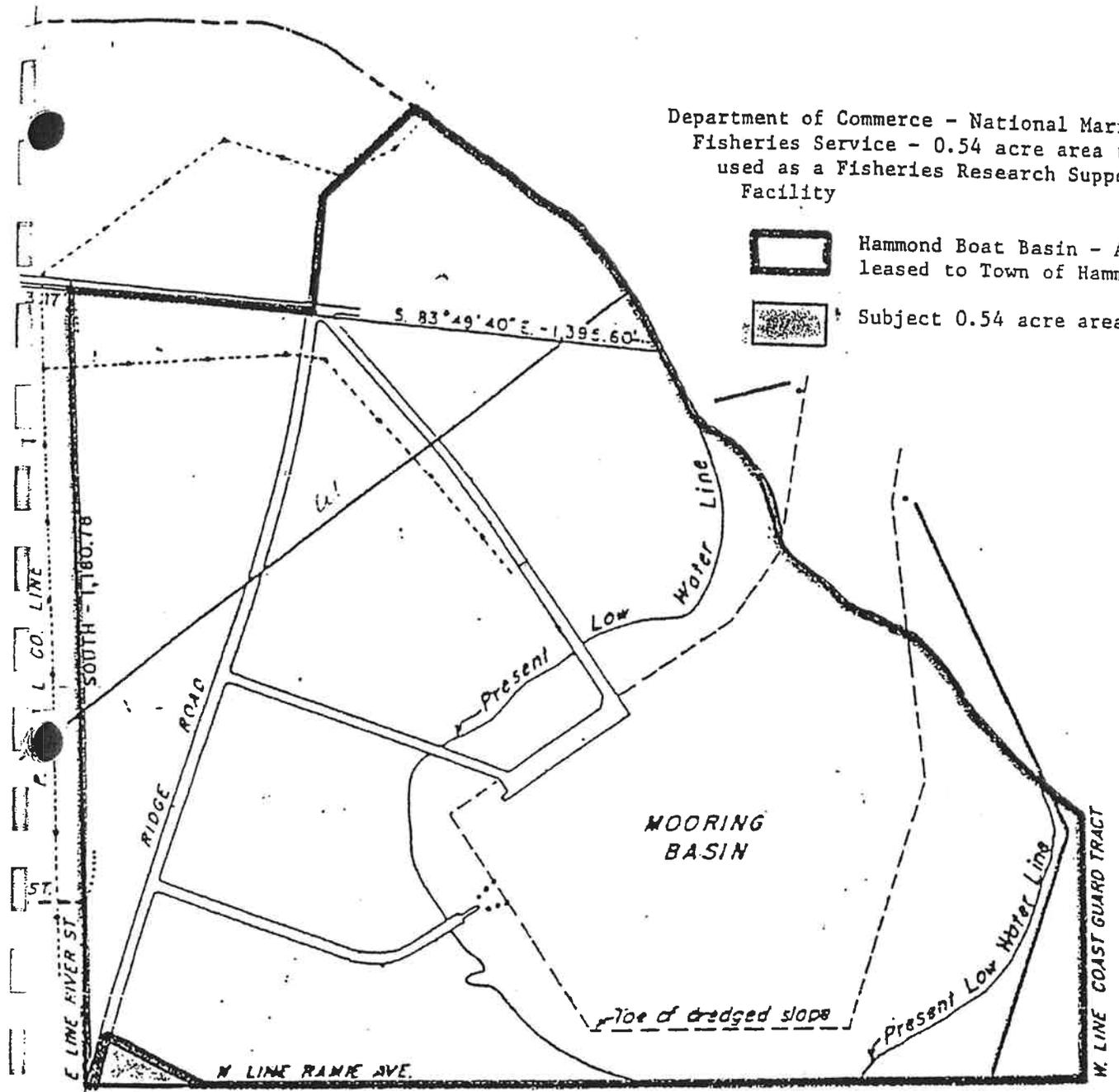
APPROX. SCALE: 1" = 1000'

FIG 2 ZONING MAP

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Department of Commerce - National Marine Fisheries Service - 0.54 acre area to be used as a Fisheries Research Support Facility

-  Hammond Boat Basin - Area leased to Town of Hammond
-  Subject 0.54 acre area



H A M M O N D

Figure 3  
HAMMOND BASIN LEASE AREA

## Existing Land Use

1. Landside facilities are randomly placed around a mostly unpaved site. Existing features include:

- a. The Hammond Moorage Association, a segment of the Portland Yacht Club, and charter craft share a parking area serving Docks A & B. Sited part way between the shore and Lake Drive it is paved and functional for the existing marina, however, it is in the middle of the area best suited for efficient boat trailer parking.
- b. The Harbor Master trailer is just north of the launch ramp, in the path of trailer circulation. It is recommended for replacement south of the launch ramp.
- c. Boat trailer access and parking presently occurs on both sides of the launch ramp and is completely unpaved. This issue is very important as boat traffic backs up into the main intersection of town blocking private driveways and street access for emergency vehicles.
- d. The old restroom building, located approximately 200 feet from the boat ramp, was required to be upgraded to accommodate all users including the handicapped. Its remote placement created a dangerous situation forcing pedestrians to cross congested ramp and street traffic. The expense involved in remodeling exceeded the cost of building a new structure closer to the ramp.

Construction on a new restroom took place in 1991. It is sited adjacent to the launch ramp with additional accommodations and showers and is accessible to the disabled. A fish cleaning station is attached on the southeast side.

- e. Southwest of the old restroom is a fenced boat storage yard. It may be relocated.
- f. The National Marine Fisheries Service building is adjacent to the Third Avenue right-of-way. These facilities are herein considered permanent as it is an official leasehold.
- g. The breakwaters (shown in Figure 4) are in good condition although ongoing maintenance work will be required for their preservation. It is unknown at this time if the Corps will continue breakwater maintenance. The original breakwater was constructed during World War II.
- h. The launch ramp was replaced during the summer of 2002. The project was funded by a grant from the Oregon State Marine Board and the Oregon Department of Fish and Wildlife.



2. Existing elements in the basin, starting from the west breakwater, include:
- a. The Bar Pilot's barge just west of the breakwater near the river entrance. This is the best location as they need immediate access to the river with as little conflict with the other uses as possible.
  - b. A small floating fuel barge and on-shore fuel tanks. This is the only fueling station located downriver of Astoria on the Oregon side of the Columbia River and is therefore very important to the area.
  - c. Docks A & B are presently leased by the Hammond Moorage Association and area shared with charter craft.
  - d. A small boat hoist is located between Docks B & C. It is proposed to be relocated to the fuel dock service area.
  - e. Dock C, a temporary holding dock for launch ramp use.
  - f. Docks D & E south of ramp area are private berths leased by the City of Warrenton.
  - g. The Corp of Engineers maintains an access channel, originally a ferry channel, which deadends south of Dock E (referenced in the "Hammond Small-Boat Basin Detailed Project Report) (see Figure 4). Recent minor maintenance dredging activities occurred in 1983 and 1987. The last major maintenance dredging was in 1990 but the Corps stopped 50 feet northeast of Dock E. The Corps has discontinued maintenance of the channel.
  - h. The basin edge is unimproved and the basin's southeast half is shallow with exposed mud during low tides. The cause of this sedimentation is the confluence of the Columbia River with the Pacific Ocean; the river tends to deposit suspended sediments during high tides in quieter embayments. In the Hammond basin this accumulation is estimated to be about one foot a year. The National Wetlands Inventory (NWI) characterizes the eastern edge of the basin (approximately ten acres of the mud flats) as an estuarine intertidal wetland (E2USN). This area will most likely require estuarine wetland mitigation in order to be permitted for dredging. Mitigation would probably be at a 2:1 ratio requiring approximately 20 acres of offsite mitigation. This may prove to be cost prohibitive.

### **Existing Utilities**

The Hammond Boat Basin is serviced with water, sewer, electricity, cable, telephone and high speed internet (DSL). Natural gas service exists to Jetty Street and Fourth Avenue. A high pressure water main for fire protection extends to Third Avenue on Lake Drive, but this service does not adequately serve fire flow to the basin. Dockside services include water and except for Dock C, electricity. Cable is available on Dock A.

## **PROBLEM SUMMARY**

The existing marina configuration and improvements have occurred over time without a comprehensive plan. There are problems with the placement of many of the existing features. Issues are related to **Existing Land Use (ELU #)** item numbers:

### **The Multiple Use of Docks A & B and Related Parking**

(ELU #1.a & 2.c) This condition is adequate while the marina remains small; however, the various types of uses such as charter boat rentals, trailered craft and privately berthed boats function best if separated as the basin develops.

It is understood that the Hammond Moorage Association was responsible for the construction of Docks A & B and the related parking lot. The existence of a lifelong lease between the City of Warrenton and the Association is recognized. This agreement can be continued but, for continuity and function, it is necessary to relocate the club to the new private berths south of the launch channel. The 48 berths may be dedicated to the club as per the previous agreement. There is adequate space landside for a clubhouse. This location is better oriented to private boat ownership.

### **Boat Trailer Parking**

(ELU # 1.c) The marina's present emphasis is on transient boaters. Heavy congestion problems currently occur periodically, between 3 and 10 days a year within a three week period ending with Labor Day. Traffic caused by the influx of great numbers of boat trailers is a major concern. During this peak period use can exceed 500 launches per day (LPD) on weekends and 300 LPD on weekdays. A weekend average of 40 LPD is typical the rest of the year with a slight increase seen in December's crabbing season and the winter gill net season.

The existing multi-directional access to the ramp allows the boat trailers to line up on Lake Drive while waiting to launch. Parking and access from both sides severely hampers the ramp's efficiency often extending the duration of each launch. This situation produces a gridlock condition which creates problems for local traffic and makes access to private property difficult on the affected streets.

### **Existing Fueling Dock**

(ELU # 2.b)The barge is inadequate for the proposed marina. It is able to handle only one or two vessels at a time and is not suited to bundling (spillage control) for marina safety. The existing fuel tanks are in compliance and the facility should be staffed full time to optimize service.

## **Access Channel**

(ELU # 2.g) This 100' wide channel may need to be realigned as it impedes on the optimum layout of the marina docks. Applications must be made to the responsible federal official for such alterations.

## **RECOMMENDED FULL DEVELOPMENT PLAN**

The full development master plan (see Figure 6) proposes complete separation of uses. The layout was influenced by the location of the launch ramp which divides the basin into logical use areas. It is important to note that the proposed layout is contingent on mitigation that may be needed to dredge the east portion of the basin. Whether this is cost effective will depend on the proposed improvements and the potential revenue that could be generated from the improvements. The major components of the plan are:

### **Charter Craft/Rental Basin**

The configuration of Hammond Basin and location of the launching ramp dictates that Docks A & B function best as the charter basin separated from the private berths by the existing launch channel. Although charter craft docks need controlled access, a second gangway could remain for use by crew members. The public entrance directs the guests past the rental office and supplies, and upon returning, past the charter boat fish cleaning station. Most charter boat guests do not clean their own catch.

The existing parking at Docks A & B will be reconfigured. A parking lot accommodating 160 cars has been provided in the plan to accommodate the expected maximum of 50 charter boats. This is based on the present average use of 6 guests per vessel or a maximum of 300 people, assuming two guests per vehicle. This capacity can be increased to 200 vehicles in the future.

### **Boat Trailer Circulation & Parking**

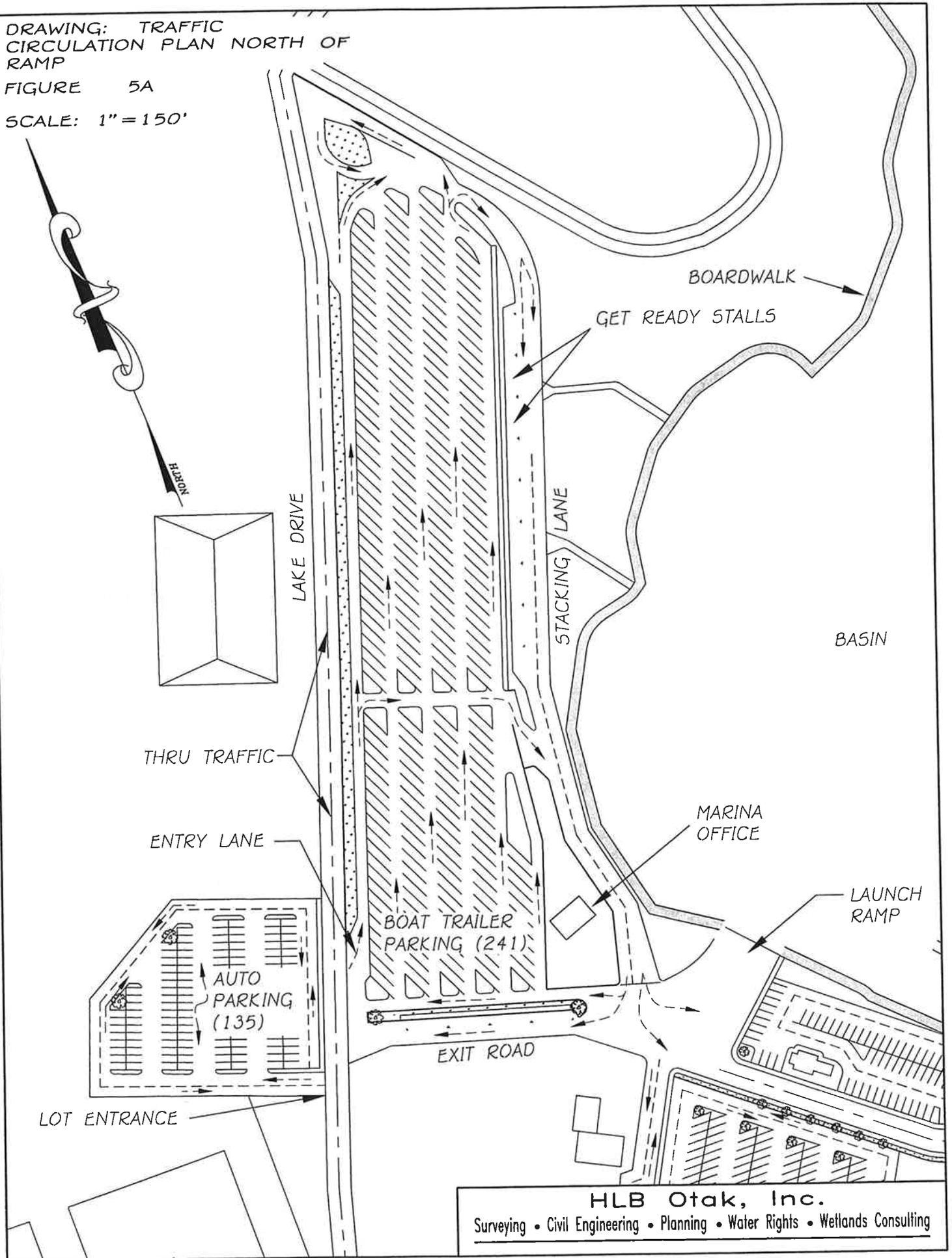
Realignment of the boat trailer access to the launch ramp will generate greater holding/waiting (stacking) space and reduce congestion in town. Launch ramp access would be allowed from Lake Drive only. (See Figure 5A and 5B, Traffic Circulation Plan)

This approach moves the boat trailers past the one way launch ramp exit road and routes them into the entry road to the stacking lanes. Ample space is available on the 80' wide Lake Drive right-of-way to provide a bermed, planted barrier between the through traffic lane and the stacking lane which would prevent cut-ins which now tie up through traffic. A total holding capacity of 60 vehicles is generated for normal days and by using the first parking lane adjacent to the entry lane this capacity is increased by 40 vehicles for peak days. The first parking lane would then be filled with trailers after the major arrival time is over.

DRAWING: TRAFFIC  
CIRCULATION PLAN NORTH OF  
RAMP

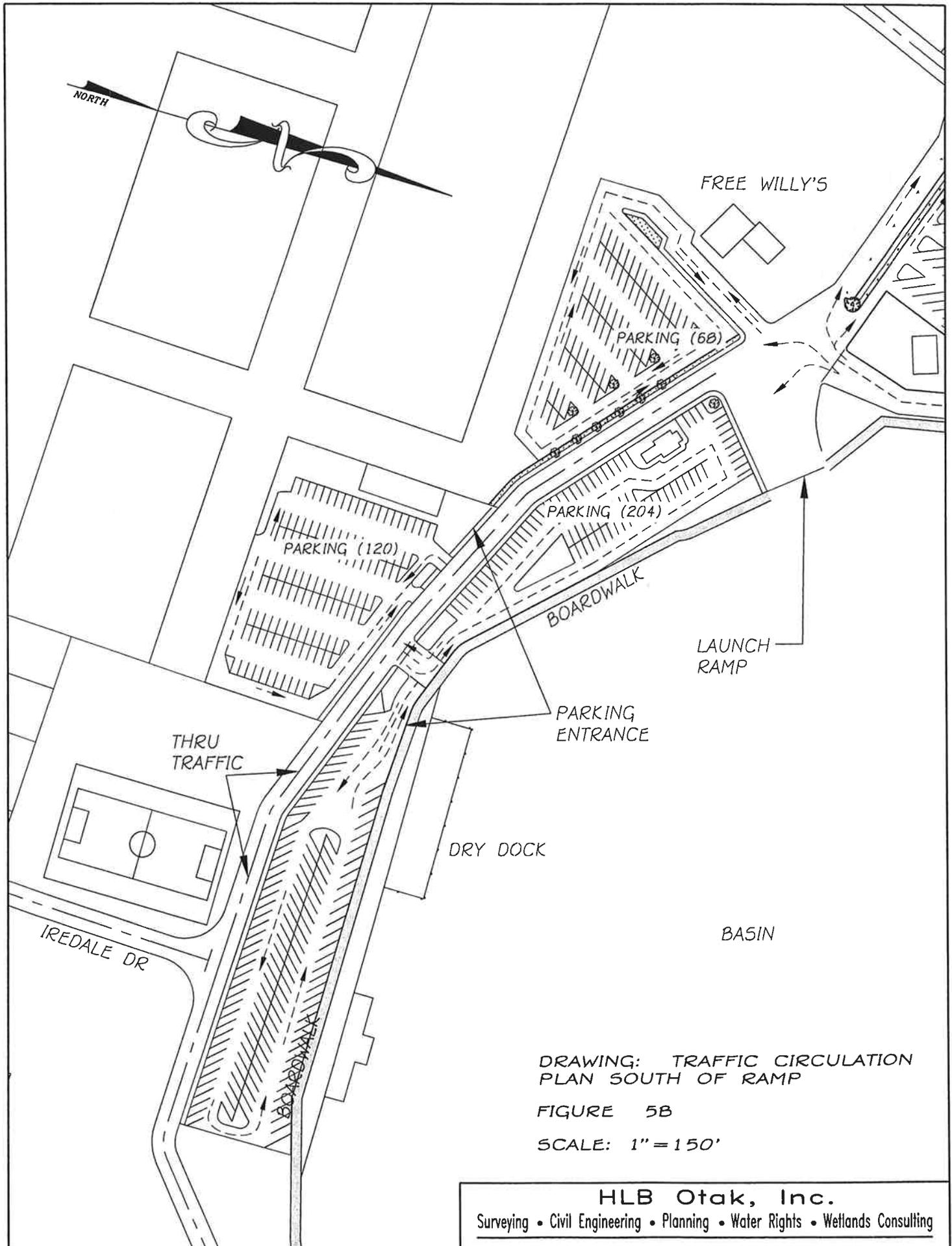
FIGURE 5A

SCALE: 1" = 150'



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DRAWING: TRAFFIC CIRCULATION  
PLAN SOUTH OF RAMP

FIGURE 5B

SCALE: 1" = 150'

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After launch, the trailers are routed into the parking area to the west of the ramp. The trailer parking area will accommodate over 200 car/trailers. Initially hard surface pavement is recommended for only 90 spaces while the remaining parking area will be gravel where natural grass can grow. The grass will be mowed occasionally and parking spaces temporarily chalk-lined for peak days.

Once this lot is full the overflow will be routed to the inner circle at Seafarers Park. The traffic pattern allows the overflow circulation to move out of the main parking lot with minor conflict with new arrivals. Overflow traffic would proceed down the through lane on Lake Drive and turn in at Seafarers Park.

Internal circulation is indicated with a return lane provided for normal use days to backtrack into the one-way traffic flow pattern should a first pass be successful. For peak use days an escape lane is shown at the north end of the lot routing traffic immediately to the overflow lot after passing a full parking lane. When heavy ramp traffic occurs a return to the start in the parking lot would create congestion problems at the ramp.

Returning to the ramp is similar to the original arrival pattern. Trailers return to the entry/stacking lanes to return to the launch ramp. Overflow parking returns to Lake Drive and accesses the entry lane at the northeast corner of the lot. Once the boats are reloaded the vehicles move straight out to Lake Drive. A merging lane is provided for south bound traffic to converge after the left turn is completed.

### **Holding Docks**

Dock C can be enlarged and improved in its present location which works well with the proposed layout. Dock D is also presently used for holding although this use needs to be separated from the private mooring dock for security. The plan proposes to provide a wider deck surface with security fencing down the centerline of the dock to separate the transient boaters from the private berths.

### **Private Mooring**

Moorage layout is a result of existing elements within the basin. The placement of the launch ramp and related launch channel sets the north boundary. The government regulated access channel influences the configuration of the docks which surround it without impeding into its space. The standard in American marina design can be very impersonal with uninterrupted main docks and identical finger piers. The shape and constraints in the Hammond basin allows for a more varied layout giving each area an individual feeling.

The space provided for private berth parking can accommodate over 300 cars adjacent to the main pierhead at the marina village complex. Accessible from Jetty and Lake Drive the parking includes the Third Avenue right-of-way. At a study ratio of .6 cars to a berth this would indicate a long term potential marina capacity of 500 boats based upon parking requirements.

The majority of boats using the Hammond basin presently are in the 20 to 30 foot range. The master plan contemplates moorage geared to a mix which includes larger vessels. The final combination of boats and total number of vessels eventually moored here is contingent on a detailed market analysis of the best mix suited to the basin. Smaller boats are taken out of the harbor when not in use but the larger vessels could be expected to remain year around reducing the fluctuation of income for the marina. Adequate accommodations should be provided for guest mooring where a boat could tie up for a week or so to enjoy the close ocean access.

### **Access Channel Adjustment**

The plan calls for realignment of the federally authorized and maintained channel. The City may petition the Corps to adjust the channel (approximately 40 feet to the north) for optimum use of the basin. Should the Corps abandon their ownership, the channel could be reduced to an appropriate vessel fairway width.

### **Dry Storage Yard**

The existing storage yard is in the berth parking area.

### **Basin Configuration and Edging**

It is recommended that rip-rap be placed around the basin shoreline to maximize the landside uses, provide control erosion and to set an optimum dredge line. It would join the existing breakwaters. Interim partial bank stabilization has been proposed to accommodate maintenance dredging of the existing west portion of the basin. Preliminary drawings for bank stabilization including the incorporation of large woody debris can be found in Appendix A. These drawing were prepared for inclusion in a dredging permit submitted for agency approval earlier this year. At the time this document was prepared, the permit to dredge approximately 50,000 CY was awaiting approval. The City plans to dredge during the upcoming in-water work period (November 1 – February 28). The project permit includes approximately 2,090 lineal feet of bank stabilization.

### **Wetlands**

The report titled “Mitigation & Restoration Plan for the Columbia River Estuary” addresses this issue. The area, 10-15 acres in size, is designated “brackish intertidal sand flats”. It is a “priority 2” site and the report concludes that “In Kind/Off Site” mitigation with an available area of 50 acres (at site # 1 near Swash Lake) is possible (see Appendix A of 1991 Master Plan)

A suggested partial mitigation site (zoned conservation shoreland) of 4 acres is located near Swash Lake on state parks lands (see Appendix B of 1991 Master Plan). Due to the zoning it is recommended that approvals be sought as early as possible from the appropriate agencies to select this site, and additional mitigation land available at the Swash Lake. This will free the basin for its zoned use. This is very important for the full development of the basin.

Full development of the site will require extensive dredging to construct marina docks and accommodate deeper hulled vessels should they berth in the area. Historically, dredging spoils have been placed across Lake Drive in a designated disposal area. Partial removal of the previously placed spoils took place in 1992 when approximately 250,000 cubic yards of the spoils were used for the Fort Stevens Earthworks Project for maintenance work on the historic site. In-water disposal is preferred over use of this site. This site is considered a backup disposal area with most of its capacity still occupied by material from previous dredging.

### **Fuel Dock and Bunkering Facilities**

The plan suggests a fixed pier with floating fueling dock, and operator's kiosk, supply storage, vending machines and relocation of the hoist for emergency repairs of small craft. It is important to determine the types of fuel to be supplied in the harbor as a part of a market study. A boom is needed to bund the fueling area to minimize danger of fire in the marina basin. This boom must allow a 100 foot clearance to the Bar Pilots barge. Fire protection should be extended to the fuel dock.

Tractor trailer maneuvering space is required for fuel delivery and sewage disposal. Waste disposal from marine closets is proposed to be accommodated by a holding tank on a trailer which would be replaced and have marina overlooks and activity areas around the peninsula leading to Seafarers Park.

South of the ramp the wharf "village" complex begins the boardwalk which then continues around the south edge of the basin leading to the weather watch, fishing pier and beach.

### **Marina Signage**

A comprehensive signage plan should be generated to create attractive and useful directions around the basin. An entry sign is needed to direct visitors to the harbor. The plan suggests an entry sign on the triangle between River and Lake Drive. This prominent location would direct incoming visitors to the basin coming from both the Seaside and Warrenton directions as it is easily visible from the corner of Pacific and Lake Drives.

### **Multi Purpose Building**

There has been interest expressed by various civic groups to include local youth soccer groups and the Chamber of Commerce for a multipurpose building, the latter preferring a Hammond Marina location. Envisioned is a large open building that could accommodate soccer during the winter months along with other sporting and recreation events. The Chamber's interest would be the availability of a "weather proof" facility for events promoting the City of Warrenton generally and the Hammond Marina specifically.

Considerable study would be needed to determine the exact requirements and size of the multipurpose building. For planning purposes, a 30,000 square foot building (300 feet by 100 feet) could be considered. It would cost, at \$25 per square foot, approximately \$1,200,000 or \$60,000 a year for 20 years. The total size of the building would be limited by current building regulations. Parking for use of the facility could be accommodated by the proposed parking included in this plan.

### **Utilities**

To support full development of the marina, various utility upgrades would be required. The most significant utility improvement would be upgrades to the water system to accommodate the required fire flows necessary prior to any substantial improvements to the basin. Past plans for upgrades have included an 8 inch water main and multiple fire hydrants to the basin. Modeling of the City water system would be necessary to determine if additional existing water mains to the area would need to be upgraded to supply the requires fire flows. This would require additional studies.

## **SUGGESTED ENHANCEMENTS FOR MARINA AND VICINITY**

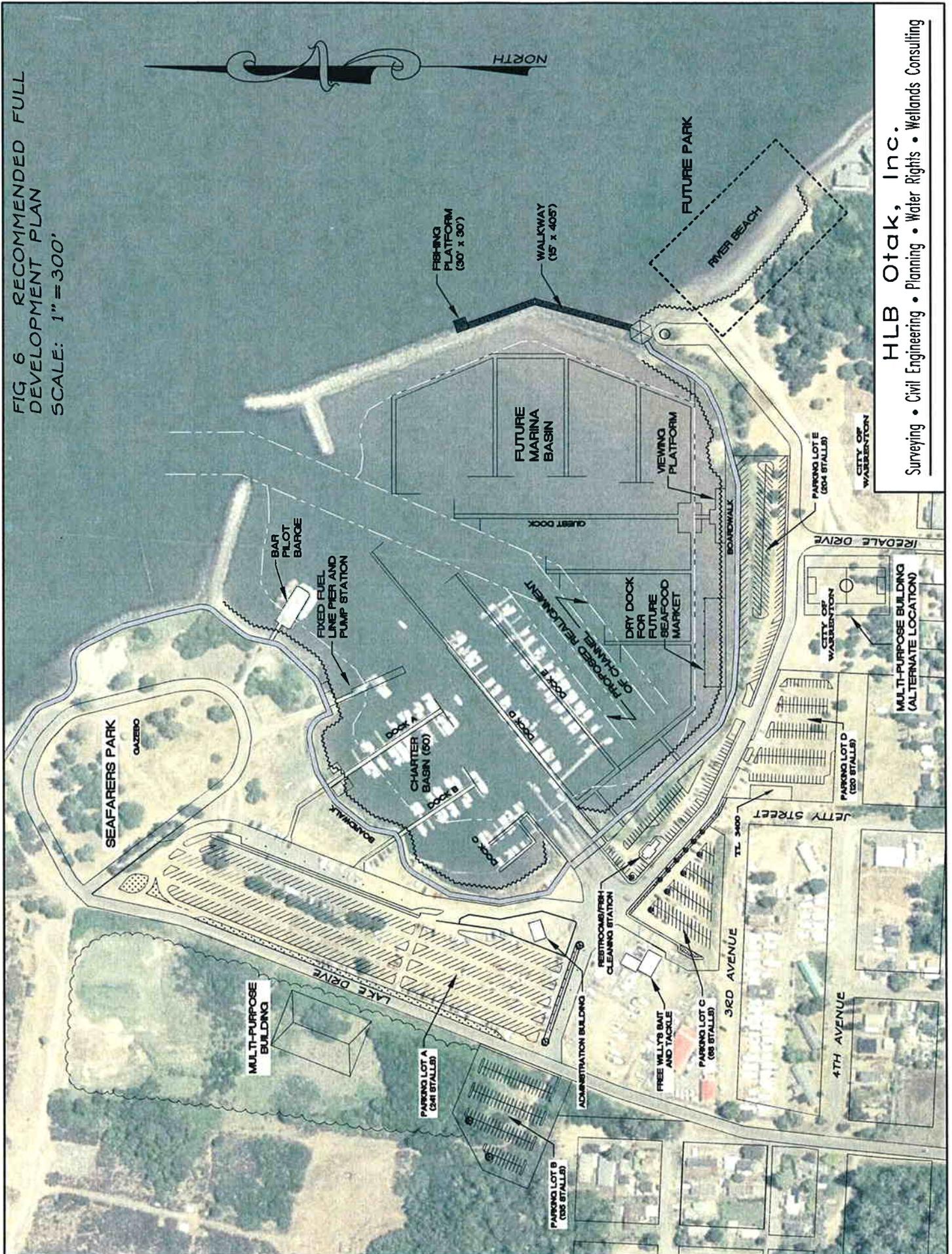
The needed enhancements consist of both immediate needs and long term improvements as identified in the Proposed Enhancements List in Appendix A. The enhancements range from minor improvements that are currently taking place to full build-out enhancements as identified in this master plan. The list includes enhancements identified by the task force and as identified in the 1991 Master Plan document. The table lists the proposed enhancement, the anticipated schedule and the estimated cost when known. All estimated costs are approximated for planning purposes and will need to be refined or developed at the time the particular project is considered for funding. Some enhancements will require additional studies to confirm scope and cost. The enhancements will occur as funding becomes available.

### **Sources of Funding**

The City will consider several funding sources for the development of the marina as noted in this report. Opportunities should be sought whenever they prove to be advantageous to the development of the marina. Examples include:

- Federal and State grants and loans,
- Services in lieu of funding such as through the National Guard or Reserve,
- Private foundation grants,
- Private development funds (public - private partnership), and
- Long term debt.

FIG 6 RECOMMENDED FULL DEVELOPMENT PLAN SCALE: 1" = 300'



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## **ADDITIONAL STUDY REQUIREMENTS**

To complete the final design further research must be generated to produce accurate documents. This includes:

- A. Study of the HYDROGRAPHIC CONDITIONS in the basin to document the tidal conditions, wave surge and sedimentation issues to facilitate flotation system design and determine the optimum dredge line and ultimate capacity of the basin.
- B. Generate an accurate SITE SURVEY showing the existing conditions and boundary of the lease area and its surrounds. The site configuration used in this study was generated from available information gathered from many different sources.
- C. A MARKET ANALYSIS STUDY is imperative to determine what sizes and types of vessels would likely berth at Hammond Marina. A successful harbor is not accidental; it is thoroughly planned and carefully constructed to accommodate a specific market. A study would determine the best uses for this specific marina and what can be accommodated without over extending the planned facilities.
- D. An ENGINEERING STUDY FOR UTILITY EXTENSIONS to serve the proposed improvements would be necessary to accurately define the needed utility upgrades and their most practical routes. These studies could either be prepared in a comprehensive report or on a project by project basis as the area is developed. It is recommended that the utility improvements be studied on a comprehensive basis assuming the details of the proposed ultimate improvements are known at the time that the study commences.

## CONCLUSION

An active, healthy, alive marina is one that caters to a variety of users. Studios for craftsmen and artists would compliment the harbor and make a lively attractive waterside environment. The need to attract other users to succeed the seasonal influx of transient trailered boaters is necessary to maintain the marina operations evenly throughout the year.

Generating variety in the targeted market groups allows the harbor to accommodate a greater mixture of users and therefore more stable economic base. The harbor would benefit from moorage of larger vessels and adequate accommodations for guest slips. Overnight accommodations are a major asset to a marina enterprise allowing non-boating users to enjoy the harbor with access to and involvement with the water. Hotels create a strong bond between the various facilities in the harbor adding interest and variety.

It is very important to alleviate the pressure of the launch ramp. Maximum capacity should be set and a determination made on how best to handle overload. It may be necessary to create a launching reservation system. Parking fees are not advised for the trailer parking lot. Many ramp users would instead go into the downtown area to avoid paying the fee further disrupting the neighborhood.

Hammond basin is zoned for recreational use and is too small to accommodate major facilities such as major dry storage or multi-store buildings. Small boat repair, haul-out facilities and commercial fishing would be appropriate uses for the marina.

The master plan is flexible, generated with the intent to create discussion and ideas on the various suggested elements. This document manifests the optimum use as perceived by the design team who prepared the original master plan with updated modifications and input from the community based task force. The future direction of the development of the Hammond basin will depend upon positive interaction of all interested parties.

The enhancements consist of both immediate needs and long term improvements as identified in the Proposed Enhancements List in Appendix A. The list includes input from the current community based task force and the ideas presented in the original 1991 Master Plan. The list is intended to be flexible and should be updated and revised as warranted to meet the needs of the City. As additional information becomes available, it should be incorporated into the list.

# **APPENDIX A**

## **PROPOSED ENHANCEMENTS LIST**

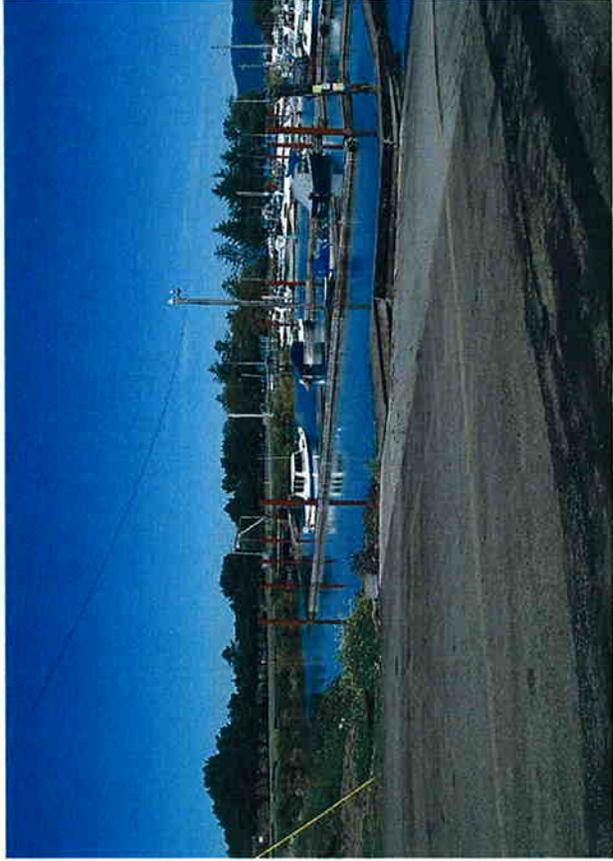
**City of Warrenton  
Hammond Marina Master Plan  
Proposed Enhancements List**

Proposed Enhancement	Anticipated Schedule	Estimated Cost
<i>General</i>		
Minor Marina Upgrades	Underway	\$26,300
Dredging at Existing Slips	Fall 2005/Winter 2006	\$100,000
Bank Stabilization and Additional Dredging	Fall 2006/Winter 2007	\$460,000
Marina In-water Reconstruction (same layout)	Future	\$3,000,000 (1)
<i>Full Marina Master Plan Build Out</i>		
Boardwalk (including Fishing Platform)	Future	N/A (Not Available)
Landscaping	Future	N/A
Main Circulation Road	Future	\$175,000 (4)
Lake Drive Improvements	Future	\$75,200 (2)
Jetty Street Improvements	Future	\$160,000 (4)
		<i>Gravel Road (3)</i>
Parking Lot A (5)	Future	\$269,000
Parking Lot B	Future	\$85,700
Parking Lot C (5)	Future	\$57,900
Parking Lot D	Future	\$89,200
Parking Lot E	Future	\$137,000
New Fueling Dock and Bunkering Facilities	Future	N/A
Marina Signage	Future	N/A
Multi Purpose Building	Future	N/A
Utilities – Water System	Future	N/A
Utilities – Sanitary Sewer	Future	N/A
Utilities – Natural Gas	Future	N/A
River Beach Park	Future	N/A
Remove Dredge Spoils at Disposal Site	Future	N/A

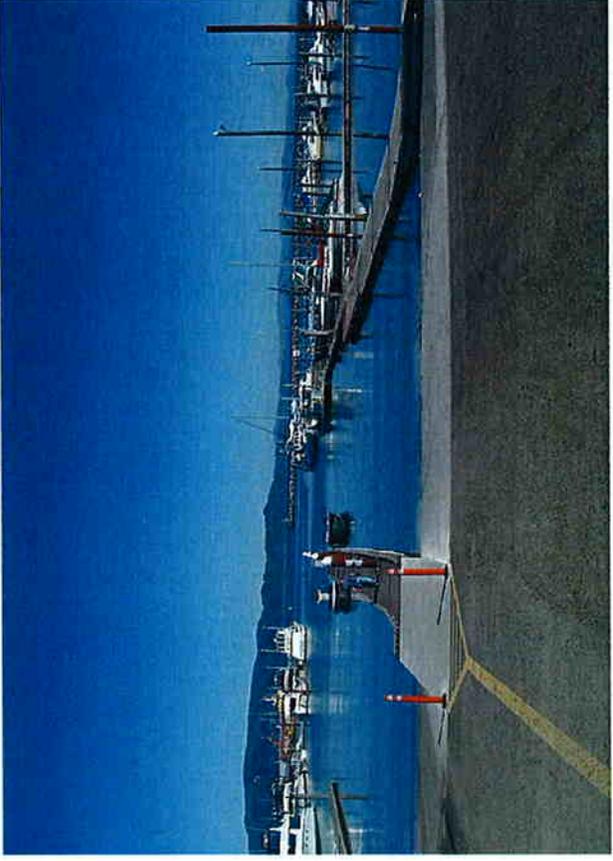
- (1) Includes demolition, concrete floats, steel float piles, pile installation, electricity and mechanical.
- (2) Includes 2 inches of aggregate and 3 inches of asphalt pavement over existing gravel road.
- (3) Includes sod stripping and 12 inches of aggregate
- (4) Includes sod stripping, 12 inches of aggregate and 3 inches of asphalt pavement
- (5) Assumes new roadway structural section. Investigation may indicate that use of existing rock section reduces cost.

# **APPENDIX B**

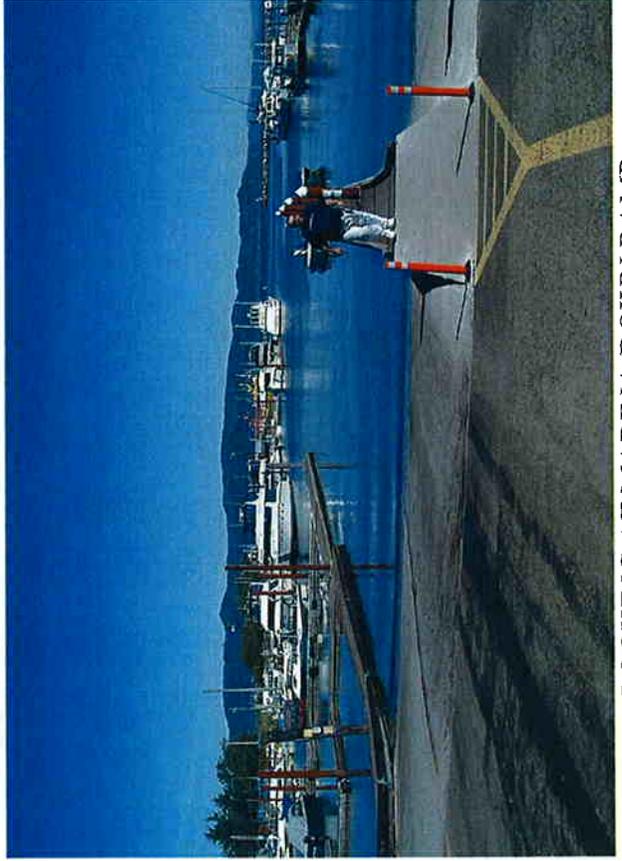
## **EXISTING SITE PHOTOGRAPHS**



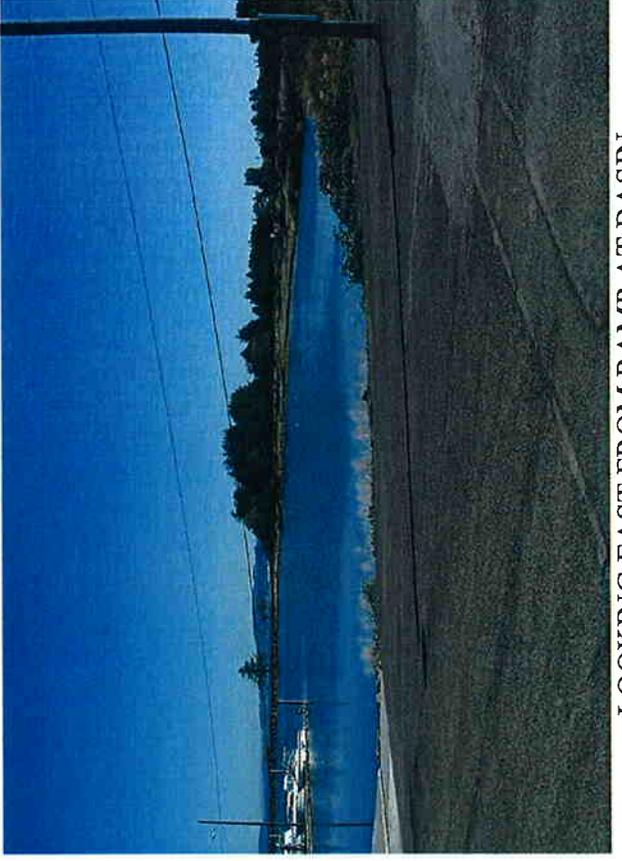
LOOKING NORTH FROM RAMP



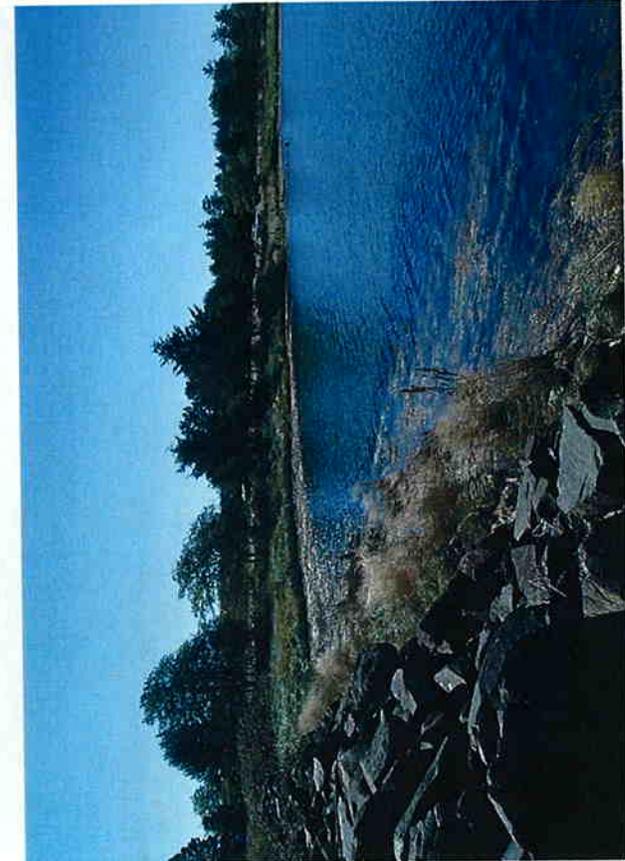
LOOKING NE FROM RAMP



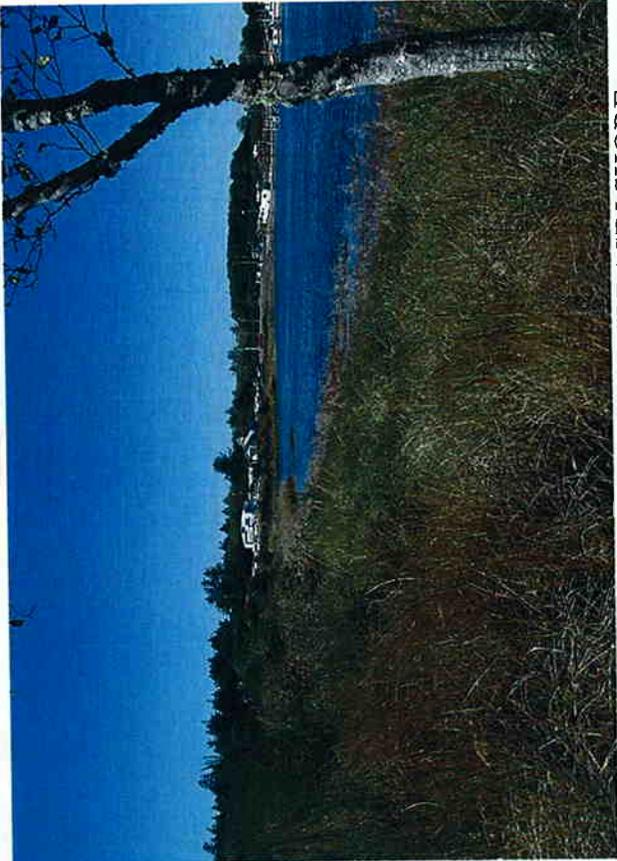
LOOKING AT MARINA DOWN RAMP



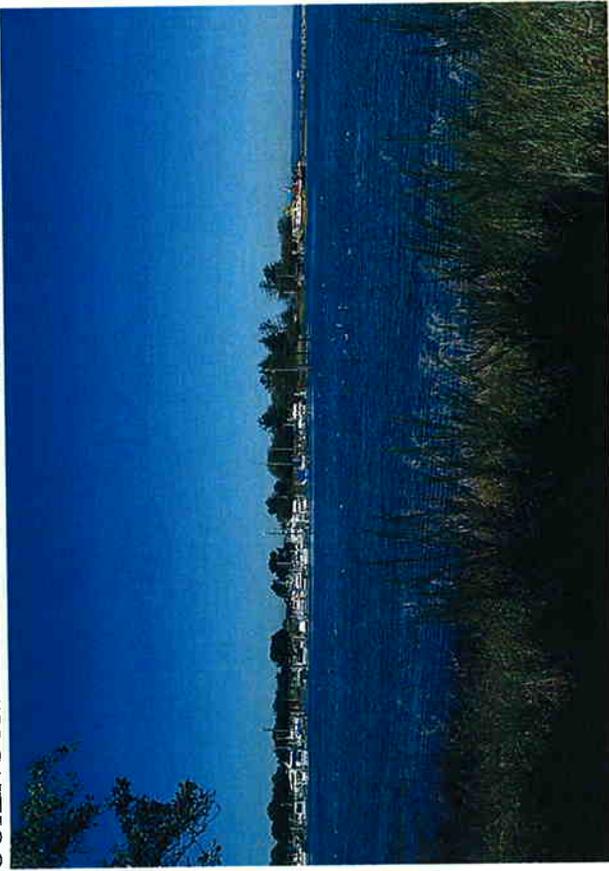
LOOKING EAST FROM RAMP AT BASIN



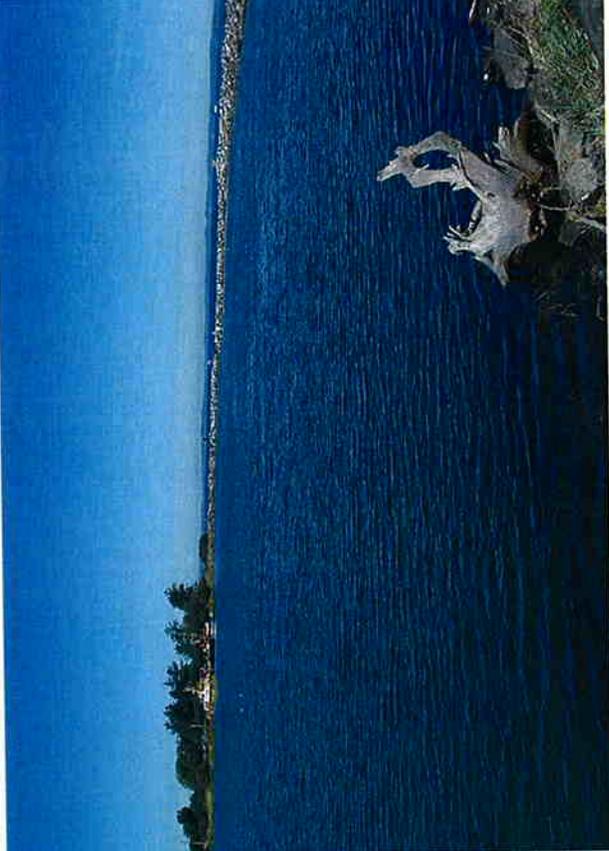
LOOKING AT SOUTH SHORE OF BASIN FROM BREAKWATER



LOOKING WEST DOWN SOUTH BASIN SHORE



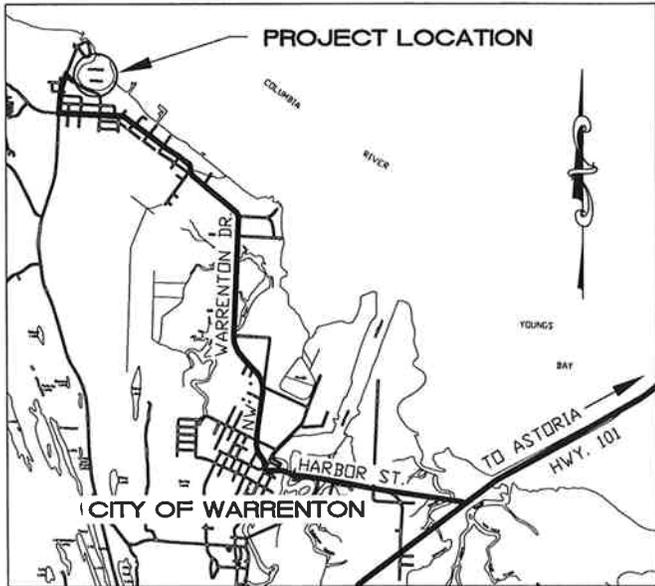
LOOKING WEST AT MARINA FROM EAST BASIN SHORE



LOOKING AT BREAKWATER AND BASIN ENTRANCE

# **APPENDIX C**

## **DREDGING PERMIT DRAWINGS**

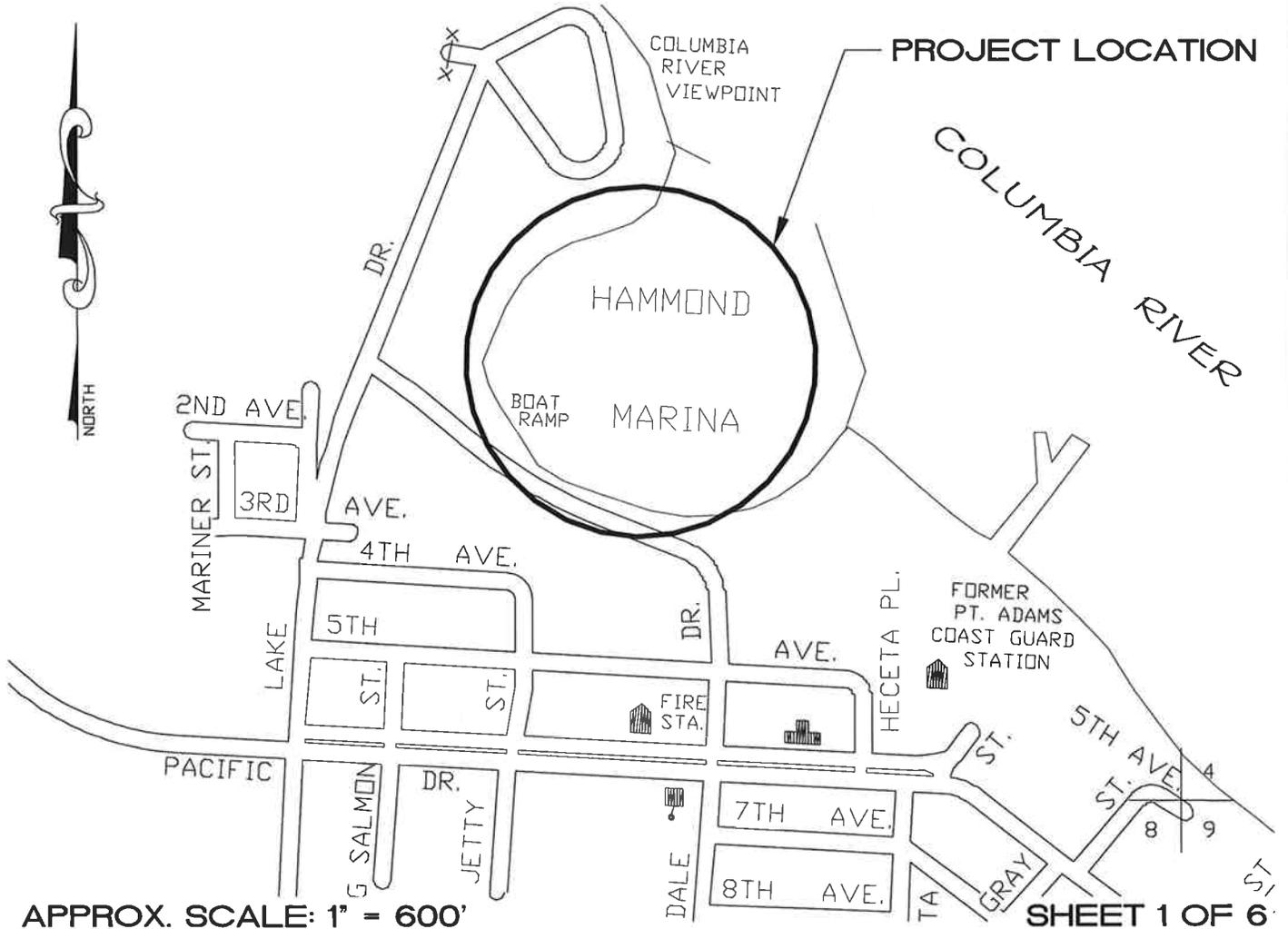


**PROJECT LOCATION**

NOT TO SCALE

**PROJECT LOCATION INFORMATION**

CITY OF WARRENTON, CLATSOP COUNTY  
 COLUMBIA RIVER MILE 8.7  
 LATITUDE/LONGITUDE: N46.203° W123.949°  
 LEGAL DESCRIPTION: T8N, R10W W.M, SEC. 5  
 TAX MAP # 8 10 5 WARRENTON  
 TAX LOT # 200



APPROX. SCALE: 1" = 600'

SHEET 1 OF 6

**HAMMOND MARINA**  
 IMPROVEMENT PROJECT  
 VICINITY MAP  
 WARRENTON, OREGON

**HLB Otak, Inc.**

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**HAMMOND MARINA**  
IMPROVEMENT PROJECT  
DREDGE LIMITS  
WARRENTON, OREGON

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--	---	--

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SHEET 3 OF 6

**HAMMOND MARINA**  
 IMPROVEMENT PROJECT  
 BANK STABILIZATION PLAN VIEW  
 WARRENTON, OREGON

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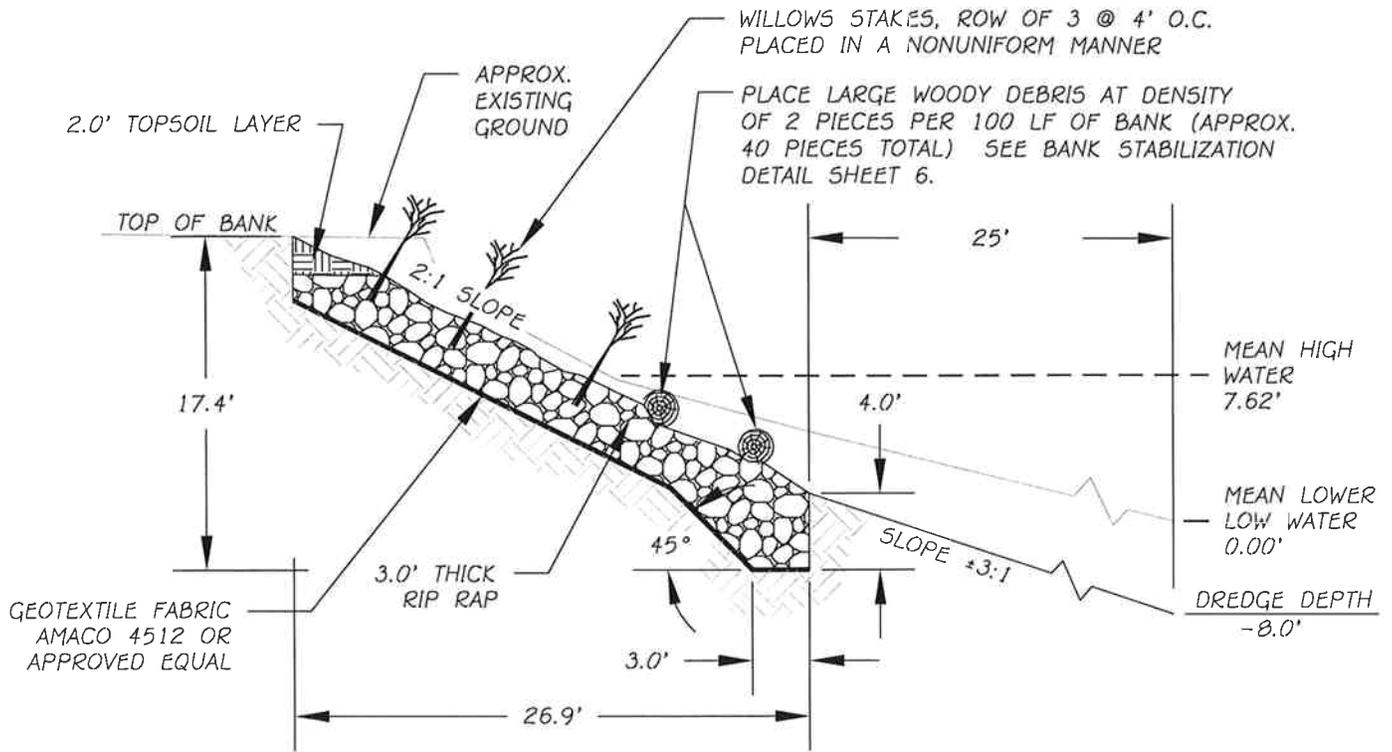
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 LONG BEACH, WA 98631  
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 FAX: (360) 642-4054

**TILLAMOOK COUNTY**

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 (503) 368-3394  
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## CROSS SECTION A-A

NOT TO SCALE

### ELEVATION DATUM

ELEVATION DATUM IS BASED ON 3" BRASS CAP FOUND IN UPPER RIGHT CORNER OF CONCRETE ABUTMENT AT THE HAMMOND MARINA LAUNCH MARINA, STAMPED OSMB 0402-02 1997 WITH AN ELEVATION OF 12.13 FT (M.L.L.W.)

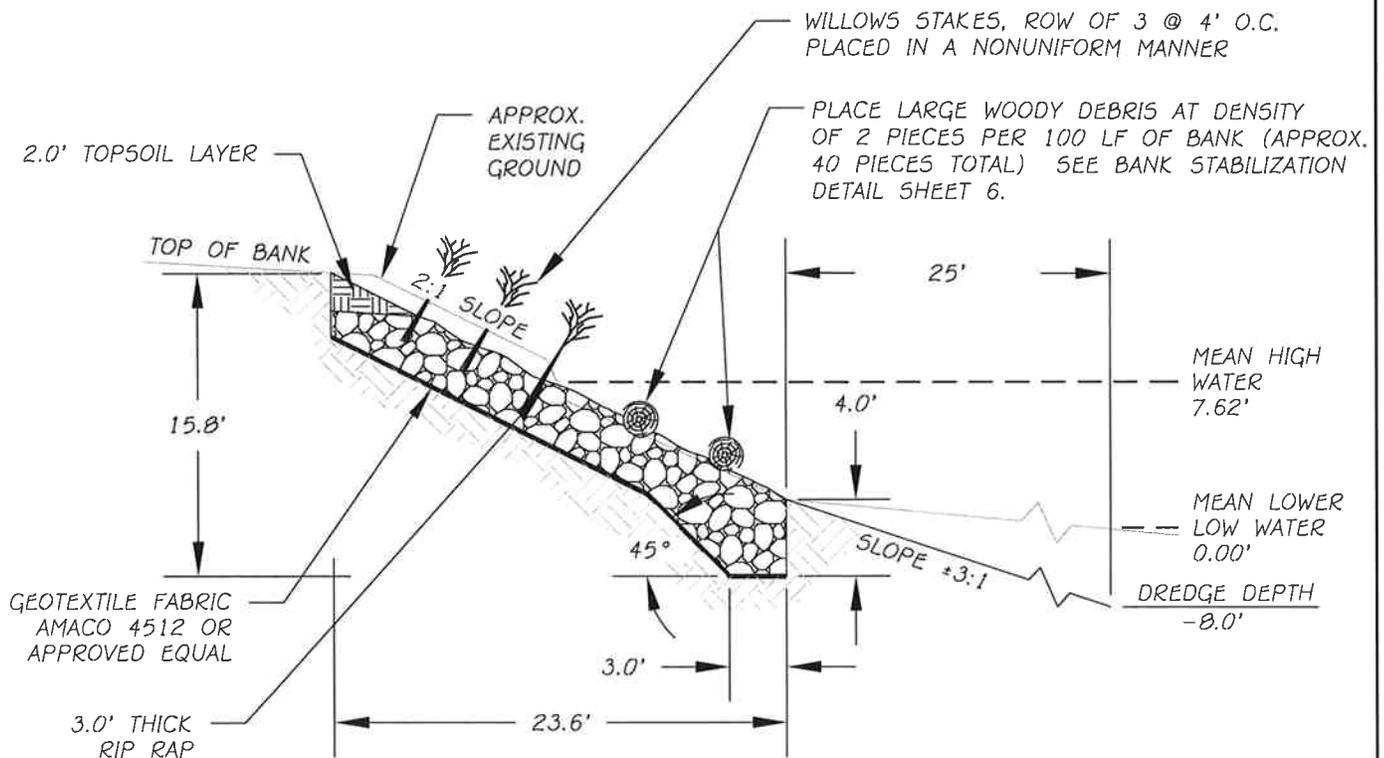
SHEET 4 OF 6

**HAMMOND MARINA**  
IMPROVEMENT PROJECT  
CROSS SECTION A-A  
WARRENTON, OREGON

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<a href="http://WWW.HLBINC.COM">WWW.HLBINC.COM</a>		



## CROSS SECTION B-B

NOT TO SCALE

### ELEVATION DATUM

ELEVATION DATUM IS BASED ON 3" BRASS CAP FOUND IN UPPER RIGHT CORNER OF CONCRETE ABUTMENT AT THE HAMMOND MARINA LAUNCH MARINA, STAMPED OSMB 0402-02 1997 WITH AN ELEVATION OF 12.13 FT (M.L.L.W.)

SHEET 5 OF 6

HAMMOND MARINA  
IMPROVEMENT PROJECT  
CROSS SECTION B-B  
WARRENTON, OREGON

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4253A HWY 101 N.  
GEARHART, OR 97138  
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FAX: (503) 738-7455

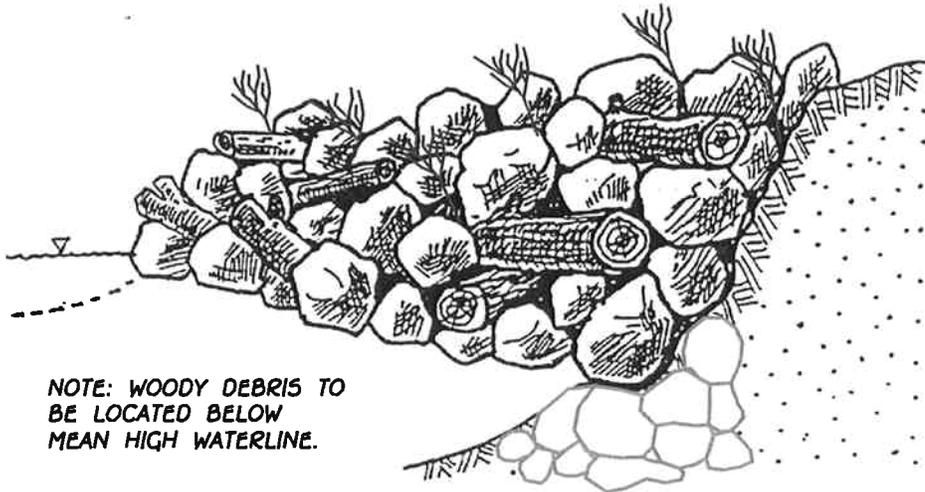
PACIFIC COUNTY

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LONG BEACH, WA 98631  
(360) 642-4454  
FAX: (360) 642-4054

TILLAMOOK COUNTY

160 LANEDA AVE  
MANZANITA, OR 97130  
(503) 368-5394  
FAX: (503) 368-5847

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NOTE: WOODY DEBRIS TO  
BE LOCATED BELOW  
MEAN HIGH WATERLINE.

**BANK STABILIZATION DETAIL**  
NOT TO SCALE

**GENERAL NOTES**

1. ATTENTION CONTRACTORS: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503) 232-1897 OR 1-800-332-2344). AT LEAST TWO (2) BUSINESS DAYS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE OREGON UTILITY NOTIFICATION CENTER OF THE DATE AND LOCATION OF THE PROPOSED CONSTRUCTION, AND THE TYPE OF WORK TO BE PERFORMED.

2. ALL EXISTING FACILITIES TO BE MAINTAINED IN-PLACE BY THE CONTRACTOR UNLESS OTHERWISE SHOWN OR DIRECTED. CONTRACTOR TO LEAVE EXISTING FACILITIES IN AN EQUAL OR BETTER THAN ORIGINAL CONDITION AND TO THE SATISFACTION OF THE ENGINEER.

3. EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE ONLY. CONTACT UTILITY COMPANIES FOR PREMARKING. POTHOLE ALL UTILITY CROSSINGS BEFORE CONSTRUCTION TO PREVENT GRADE AND ALIGNMENT CONFLICTS.

4. TECHNICAL SPECIFICATIONS FOR CONSTRUCTION ARE TO FOLLOW THE MOST CURRENT EDITION OF THE AMERICAN PUBLIC WORKS ASSOCIATION (APWA) SPECIFICATIONS. SEE SPEC'S FOR CONSTRUCTION METHODS AND OTHER NOTES PERTINENT TO THIS PROJECT.

5. ALL FINAL DESIGNS AND SPECIFICATIONS TO BE APPROVED BY DSL, DEQ, LOCAL AGENCY AND OTHER ASSOCIATED UTILITIES PRIOR TO ANY CONSTRUCTION.

6. UPON COMPLETION OF CONSTRUCTION OF THE PROJECT, CONTRACTOR TO SUBMIT RECORD DRAWINGS TO THE ENGINEER OR CITY.

**SITWORK**

8. CONTRACTOR SHALL RESTORE ALL SURFACES TO MATCH EXISTING AND ADJACENT GRADES.

**SIGNAGE**

9. CONTRACTOR SHALL ERECT AND MAINTAIN BARRICADES, WARNING SIGNS, TRAFFIC CONES PER ODOT REQUIREMENTS. ACCESS TO EXISTING DRIVEWAYS AND BUSINESSES TO BE MAINTAINED AT ALL TIMES.

**SHEET 6 OF 6**

**HAMMOND MARINA**  
IMPROVEMENT PROJECT  
DETAILS & GENERAL NOTES  
WARRENTON, OREGON

**HLB Otak, Inc.**

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**PACIFIC COUNTY**

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LONG BEACH, WA 98631  
(360) 642-4454  
FAX: (360) 642-4054

**TILLAMOOK COUNTY**

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# **APPENDIX D**

**JUNE 1991 HAMMOND MARINA MASTER PLAN**

HAMMOND MARINA  
Master Plan

June 1991

Prepared for:

TOWN OF HAMMOND  
Box 161  
Hammond, Oregon  
861-2712

Funded by:

OREGON STATE MARINE BOARD  
Market Street NE, #505  
Salem, Oregon 97310-0650  
373-1466

Prepared by:

LESLIE SIMONS  
23 Scenic Avenue  
San Rafael, California 94901  
(415) 454-2168

Consultant to:

HANDFORTH, LARSON & BARRETT, INC.  
P.O. Box 219  
Manzanita, Oregon 97130  
(503) 368-5394

# HAMMOND MARINA MASTER PLAN

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HAMMOND MARINA MASTER PLAN

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3	Hammond Basin Lease Area Plan Lease # DAW 57-1-68-4 Army Engineer District, Portland	6
4	Breakwater Construction Plan "Hammond Small-Boat Basin Detailed Project Report", Section 107 Study, dated July 1975 and written by the Army Engineer District, Portland	9
5	Traffic Circulation	18
6	Hammond Marina Master Plan, 1991	24
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B	Proposed Swash Lake Mitigation Site from letter dated March 13, 1991 and written by Mark Barnes	2
C	Hammond Marina Tributary User Area "Hammond Small-Boat Basin" et al	1
D	Columbia River Entrance Diagram, "Boating in Oregon Coastal Waters", written by Oregon State University Extension for Sea Grant Program of the Oregon State Marine Board, Revised 1991	1
E	Wave Diffraction Diagrams "Hammond Small-Boat Basin" et al	2

Final Report  
HAMMOND MARINA  
Master Plan

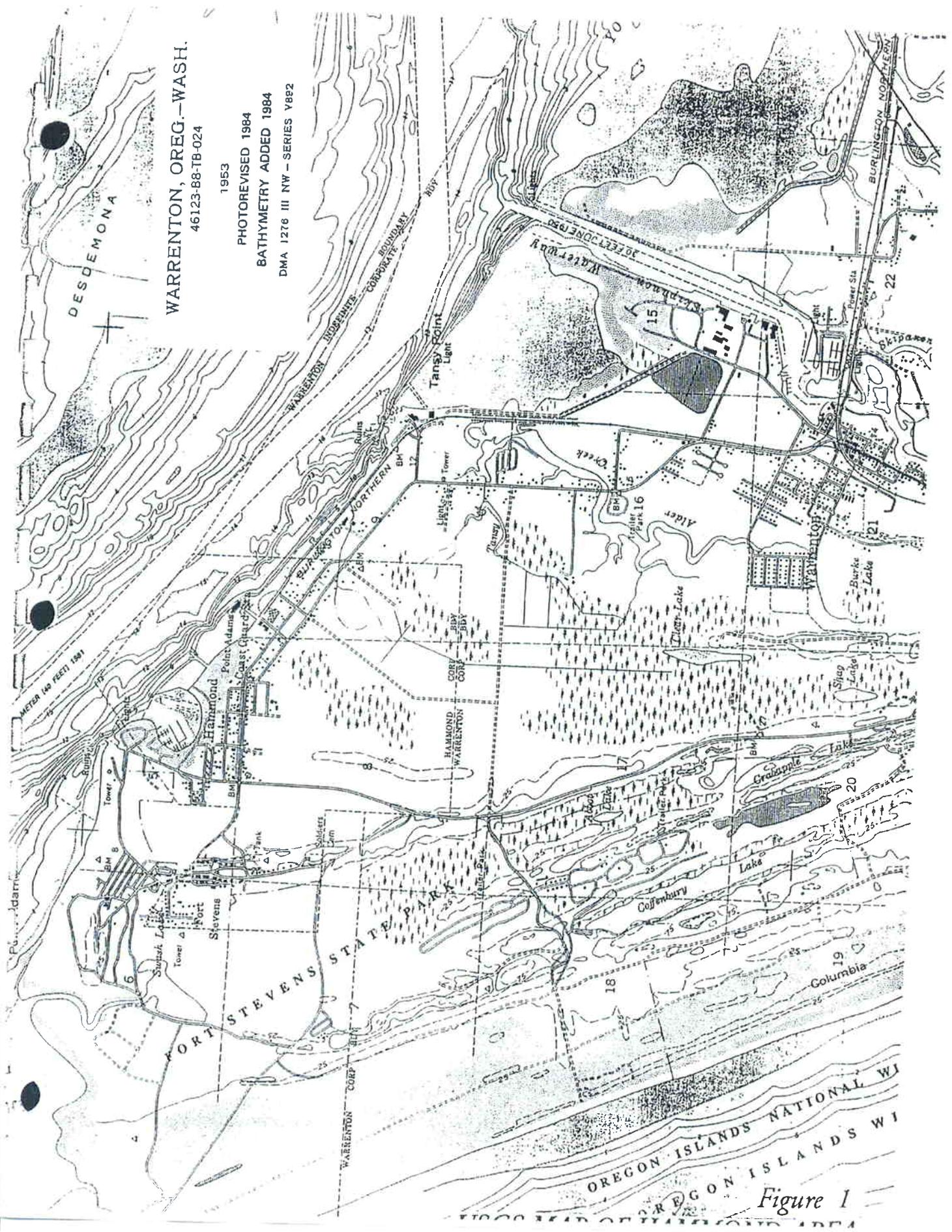
INTRODUCTION

The Town of Hammond, with a 1990 population of 600, is located in Clatsop County on the south shore of the Columbia River in the northwest corner of Oregon (*see Figure 1*). The small embayment and adjacent lands are leased for recreational development to the Town of Hammond by the Army Corp of Engineers.

The purpose of this master plan is to provide a direction for development of the Hammond basin. The plan is not intended to be the final specific facility design. It is based on existing data generated from aerial photography which is given to distortion and is unreliable for final layout purposes.

Meetings were held before the town council and the public for input into this master plan. Public input will continue to be heard in the future. This plan is intended to show the direction of development and is not a construction document.

Special thanks are to be extended to Leslie Shepard, former Town Recorder, Ken Smith, Harbor Master, and John Vlastelicia of Ogden Beeman for their assistance in completing this report and master plan.



WARRENTON, OREG.—WASH.  
46123-88-TB-024

1953  
PHOTOREVISED 1984  
BATHYMETRY ADDED 1984  
DMA 1276 III NW—SERIES V882

Figure 1

## SITE ANALYSIS

### A. SITE LOCATION:

Hammond is located on the south shore of the Columbia River 8.6 river miles from the Pacific Ocean and northwest of the City of Warrenton. Hammond is accessible to both Highway 101 and Highway 26 by Oregon State Highway 104. A branch of the Burlington Northern Railroad connects Hammond to Astoria, Oregon. The basin is zoned AD (Aquatic Development) and the adjacent leased land is zoned C-2 (Recreational/ Commercial) (*see Figure 2*). The basin is enclosed with rock breakwaters breached by an entrance channel.

Seafarers Park is to the north with Fort Stevens State Park adjoining to the west. The parks were once a part of the Fort Stevens Military Reservation and are listed on the National Register of Historic Places (1971). Directly west of the basin, across Lake Drive, are two dredging spoils ponds.

The commercial and residential areas of the town are located to the south. A large development parcel directly to the south of the basin, zoned C-1 (General Commercial), is owned by the Town of Hammond. East of the development parcel is former Point Adams Lifesaving

TOWN OF HAMMOND LAND AND WATER USE CLASSIFICATIONS

- L LOW DENSITY RESIDENTIAL
- I INTERMEDIATE DENSITY RESIDENTIAL
- M MEDIUM DENSITY RESIDENTIAL
- H HIGH DENSITY RESIDENTIAL
- GC GENERAL COMMERCIAL
- RC RECREATIONAL COMMERCIAL
- MI MARINE INDUSTRIAL
- LI LIGHT INDUSTRIAL
- RO RECREATION - OPEN SPACE
- SC SHORELANDS CONSERVATION
- AC AQUATIC CONSERVATION
- AD AQUATIC DEVELOPMENT
- R10
- R6
- R3
- RH
- C1
- C2
- I1
- I2
- AO
- SC
- AC
- AO
- GOS
- FW
- DMD

- GENERAL DEVEL. SHORELAND
- FRESHWATER WETLAND
- JOMD PRIORITY 1

Base Map by Chittacop Tillamook  
 InterGovernmental Council R. Hoeg August 1979  
 Notes: Shading is based on aerial photos from above  
 on September 27, 1979 REVISED OCTOBER 1981

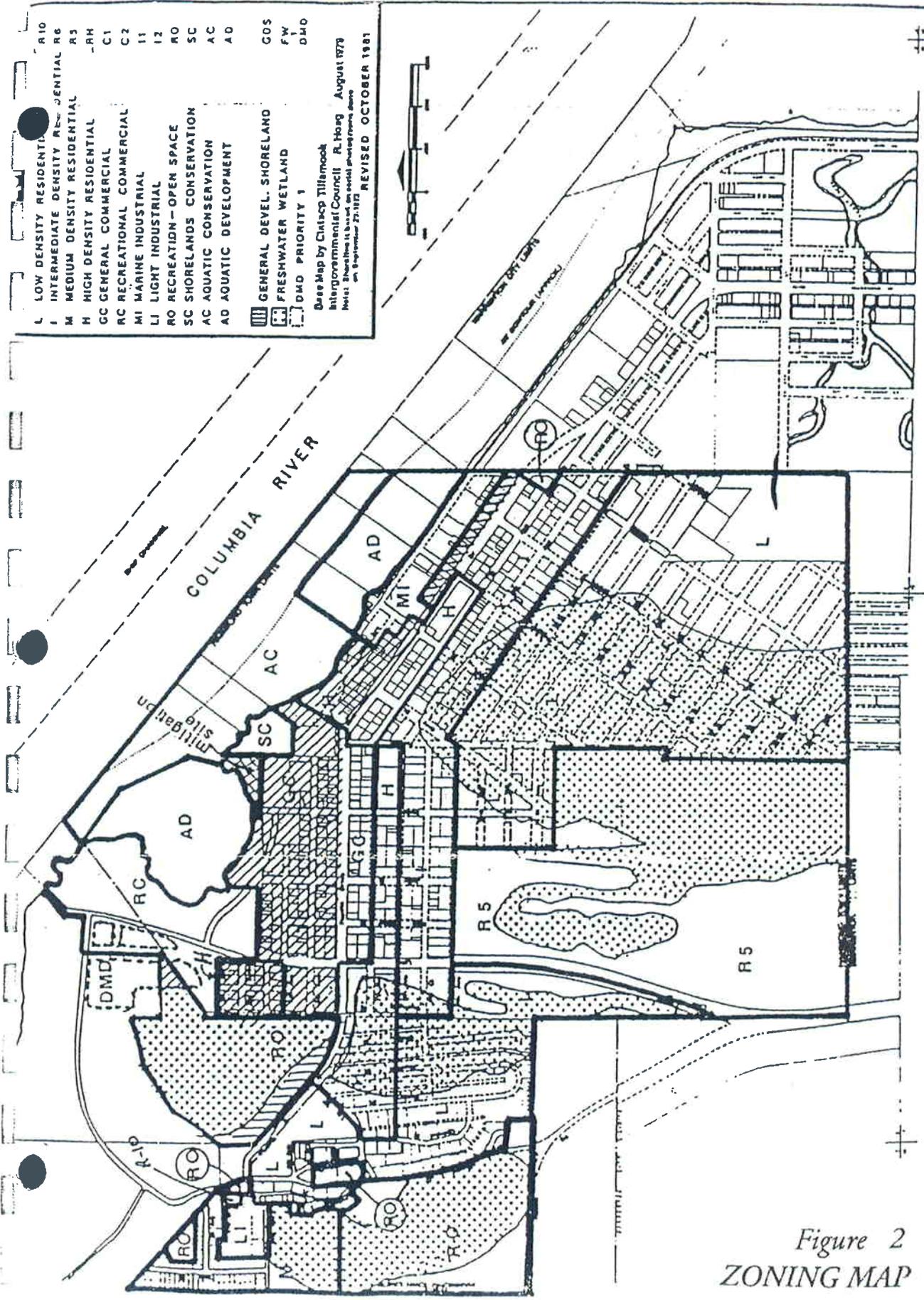


Figure 2  
 ZONING MAP

Station. It is zoned SC (Shoreline Conservation) to the north and C-1 (General Commercial) south of the Fourth Avenue right-of-way (ROW). The station is also historically important and the character of the buildings give the town a focal point on which future development could be based.

B. OWNERSHIP AND PERMITS:

The Hammond basin is under the ownership of the Army Corp of Engineers. It consists of about 36 acres of dry land and 25 acres of water area and includes Seafarers Park. The Federal Government began leasing the basin to the Town of Hammond in 1967 (DA lease No. DACW57-1-68-4, *see Figure 3*) which is continued on a 25 year renewable basis. The present lease will run well into the next century.

The Army Corp of Engineers must be informed of any changes or alterations to the leasehold. Selection of concessionaires/ vendors shall be in accordance with Corps policies. At this time all income generated by the harbor must be spent within the harbor. Should the Corps consider the basin surplus property in the future ownership may revert to the Town of Hammond and these same funds would be usable for other town improvements.

Department of Commerce - National Marine Fisheries Service - 0.54 acre area to be used as a Fisheries Research Support Facility

-  Hammond Boat Basin - Area leased to Town of Hammond
-  Subject 0.54 acre area

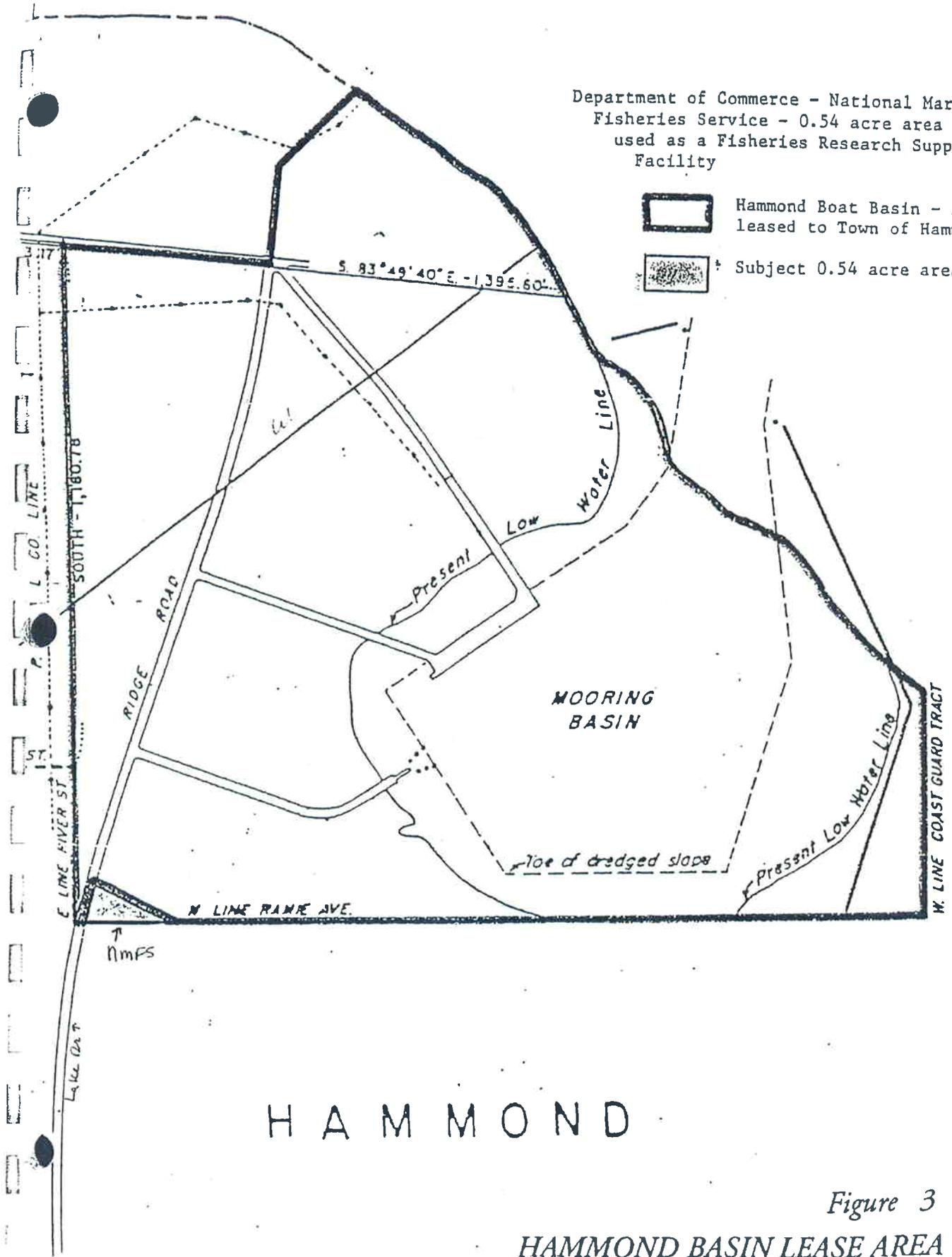


Figure 3  
HAMMOND BASIN LEASE AREA

C. EXISTING LAND USE:

1. Landside facilities are randomly placed around a mostly unpaved site.

Existing features include:

- a. The Hammond Moorage Association, a segment of the Portland Yacht Club, and charter craft share a parking area serving Docks A & B. Sited part way between the shore and Lake Drive it is paved and functional for the existing marina, however, it is in the middle of the area best suited for efficient boat trailer parking.
- b. The Harbor Master building is just north of the launch ramp, in the path of trailer circulation. It will be relocated south of the launch ramp.
- c. Boat trailer access and parking presently occurs on both sides of the launch ramp and is completely unpaved. This issue is very important as boat traffic backs up into the main intersection of town blocking private driveways and street access for emergency vehicles.

- d. The old restroom building, located approximately 200 feet from the boat ramp, was required to be upgraded to accommodate all users including the handicapped. Its remote placement created a dangerous situation forcing pedestrians to cross congested ramp and street traffic. The expense involved in remodeling exceeded the cost of building a new structure closer to the ramp.

Construction on a new restroom began in June 1991. It is sited adjacent to the launch ramp with additional accommodations and showers and is accessible to the disabled. A fish cleaning station is attached on the southeast side.

- e. Southwest of the old restroom is a fenced boat storage yard. It may be relocated.
- f. The National Marine Fisheries Service building is adjacent to the Third Avenue ROW. These facilities are herein considered permanent as it is an official leasehold.
- g. The breakwaters (shown in *Figure 4*) are in good condition although ongoing maintenance work will be required for their preservation. It is unknown at this time if the Corps will

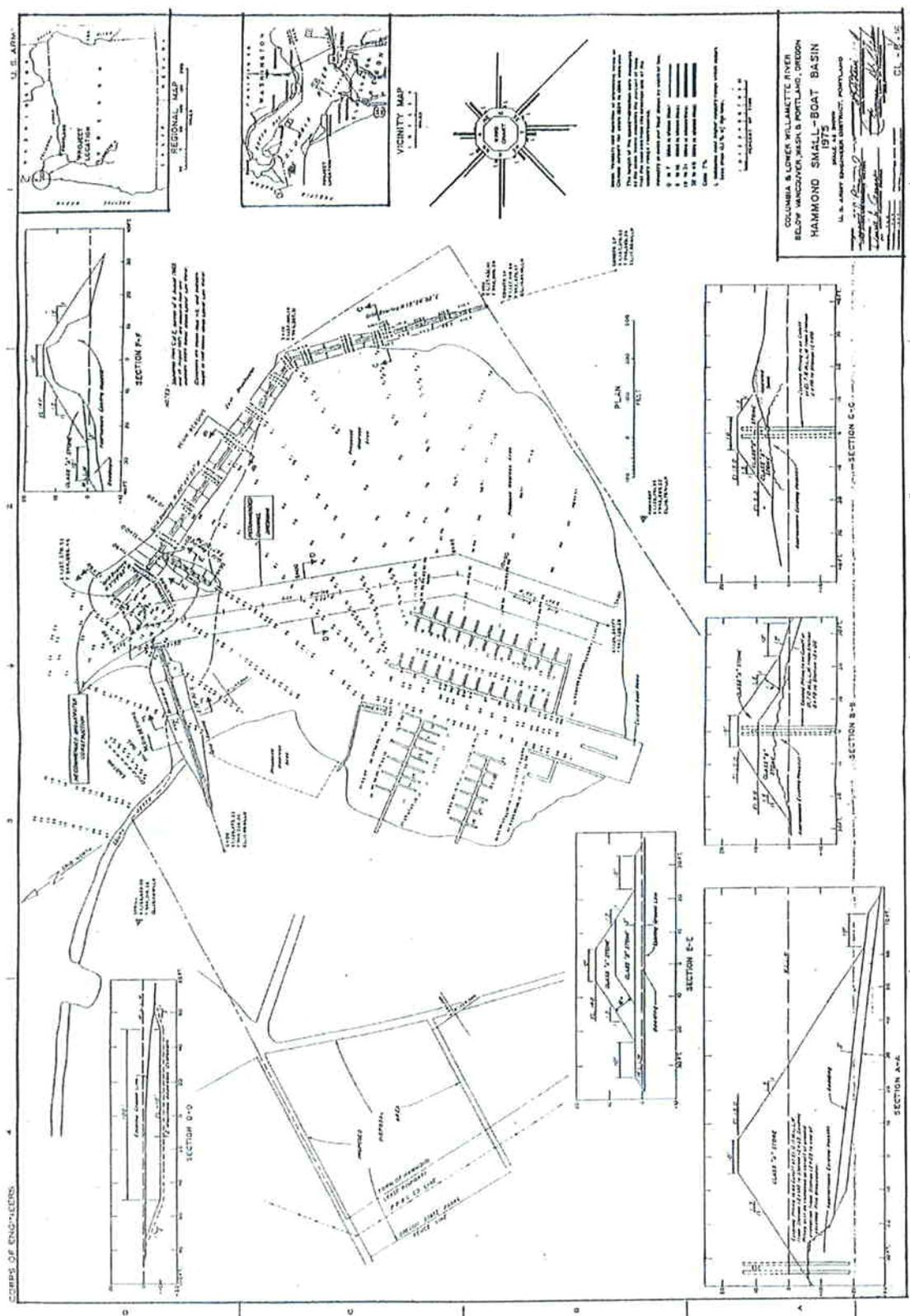


Figure 4  
 BREAKWATER CONSTRUCTION PLAN

continue breakwater maintenance. The original breakwater was constructed during World War II.

2. Existing elements in the basin, starting from the west breakwater, include:
  - a. The Bar Pilot's barge just west of the breakwater near the river entrance. This is the best location as they need immediate access to the river with as little conflict with the other uses as possible.
  - b. A small floating fuel barge and on-shore buried fuel tanks.
  - c. Docks A & B are presently leased by the Hammond Moorage Association and are shared with charter craft. The charter boats have joined the association to keep berths in this area.
  - d. A small boat hoist is located between Docks B & C . It is proposed to be relocated to the fuel dock service area.
  - e. Dock C, a temporary holding dock for launch ramp use.

- f. Docks D & E south of the ramp area are private berths leased by the Town of Hammond.
  
- g. The Corp of Engineers maintains an access channel, originally a ferry channel, which deadends south of Dock E (referenced in the "Hammond Small-Boat Basin Detailed Project Report) (*see Figure 4*). Recent minor maintenance dredging activities occurred in 1983 and 1987. The last major maintenance dredging was in 1990 but the Corps stopped 50 feet northeast of Dock E. The Corps may consider abandoning the channel in the future.
  
- h. The basin edge is unimproved and the basin's southeast half is shallow with exposed mud during low tides. The cause of this sedimentation is the confluence of the Columbia River with the Pacific Ocean; the river tends to deposit suspended sediments during high tides in quieter embayments. In the Hammond basin this accumulation is estimated to be about one foot a year. 10 to 15 acres of the mud flats are designated a brackish intertidal sand flat wetland.

D. EXISTING UTILITIES:

The Hammond Boat Basin is serviced with water, sewer, electricity and telephone. Natural gas service exists to Jetty Street and Fourth Avenue. A high pressure water main for fire protection extends to Third Avenue on Lake Drive. Dockside services include water and, except for Dock C, electricity.

PROBLEM SUMMARY

The existing marina configuration and improvements have occurred over time without a comprehensive plan. There are problems with the placement of many of the existing features. Issues are related to EXISTING LAND USE (ELU #) item numbers:

A. THE MULTIPLE USE OF DOCKS A & B AND RELATED PARKING:

(ELU # 1.a & 2.c) This condition is adequate while the marina remains small, however, the various types of uses such as charter boat rentals, trailered craft and privately berthed boats, function best if separated as the basin develops.

It is understood that the Hammond Moorage Association was responsible for the construction of Docks A & B and the related parking lot. The existence of a lifelong lease between the Town of

Hammond and the Association is recognized. This agreement can be continued but, for continuity and function, it is necessary to relocate the club to the new private berths south of the launch channel. The 48 berths may again be dedicated to the club as per the previous agreement. There is adequate space landside for a clubhouse. This location is better oriented to private boat ownership.

- B. BOAT TRAILER PARKING: (ELU # 1.c) The marina's present emphasis is on transient boaters. Heavy congestion problems occur periodically, between 3 and 10 days a year within a three week period ending with Labor Day. Traffic caused by the influx of great numbers of boat trailers is a major concern. During this peak period use can exceed 500 launches per day (LPD) on weekends and 300 LPD on weekdays. A weekend average of 40 LPD is typical the rest of the year with slight increases seen in December's crabbing season and the February gill net season.

The existing multi-directional access to the ramp allows the boat trailers to line up on Lake Drive while waiting to launch. Parking and access from both sides severely hampers the ramp's efficiency often extending the duration of each launch. This situation produces a

gridlock condition which creates problems for local traffic and makes access to private property difficult on the affected streets.

- C. EXISTING FUELING DOCK: (ELU # 2.b) The barge is inadequate for the proposed marina. It is able to handle only one or two vessels at a time and is not suited to bunding (spillage control) for marina safety.
  
- D. ACCESS CHANNEL: (ELU # 2.g) This 100' wide channel may need to be realigned as it impedes on the optimum layout of the marina docks. Applications must be made to the responsible federal legislator for such alterations.

#### RECOMMENDED DEVELOPMENT PLAN

The master plan (*see Figure 6*) proposes complete separation of uses. The layout was influenced by the location of the launch ramp which divides the basin into logical use areas. The major components of the plan are:

##### A. CHARTER CRAFT/RENTAL BASIN:

The configuration of Hammond Basin and location of the launching ramp dictates that Docks A & B function best as the charter basin separated from the private berths by the existing launch channel.

Although charter craft docks need controlled access a second gangway

could remain for use by crew members. The public entrance directs the guests past the rental office & supplies and, upon returning, past the charter boat fish cleaning station. Most charter boat guests do not clean their own catch.

The existing parking at Docks A & B will be reconfigured. A parking lot accommodating 160 cars has been provided in the plan to accommodate the expected maximum of 50 charter boats. This is based on the present average use of 6 guests per vessel or a maximum of 300 people, assuming two guests per vehicle. This capacity can be increased to 200 vehicles in the future.

**B. BOAT TRAILER CIRCULATION & PARKING:**

Realignment of the boat trailer access to the launch ramp will generate greater holding/waiting (stacking) space and reduce congestion in town. Launch ramp access would be allowed from Lake Drive only. (see Figure 5, Traffic Circulation Plan).

This approach moves the boat trailers past the one way launch ramp exit road and routes them into the entry road to the stacking lanes. Ample space is available on the 80' wide Lake Drive ROW to provide a bermed, planted barrier between the through traffic lane and the

stacking lane which would prevent cut-ins which now tie up through traffic. A total holding capacity of 60 vehicles is generated for normal days and by using the first parking lane adjacent to the entry lane this capacity is increased by 40 vehicles for peak days. The first parking lane would then be filled with trailers after the major arrival time is over.

After launch, the trailers are routed into the parking area to the west of the ramp. The trailer parking area will accommodate over 200 car/trailers. Initially hard surface pavement is recommended for only 90 spaces while the remaining parking area will be gravel where natural grass can grow. The grass will be mowed occasionally and parking spaces temporarily chalk-lined for peak days.

Once this lot is full the overflow will be routed to the inner circle at Seafarers Park. The traffic pattern allows the overflow circulation to move out of the main parking lot with minor conflict with new arrivals. Overflow traffic would proceed down the through lane on Lake Drive and turn in at Seafarers Park.

Internal circulation is indicated with a return lane provided for normal use days to backtrack into the one-way traffic flow pattern should a first

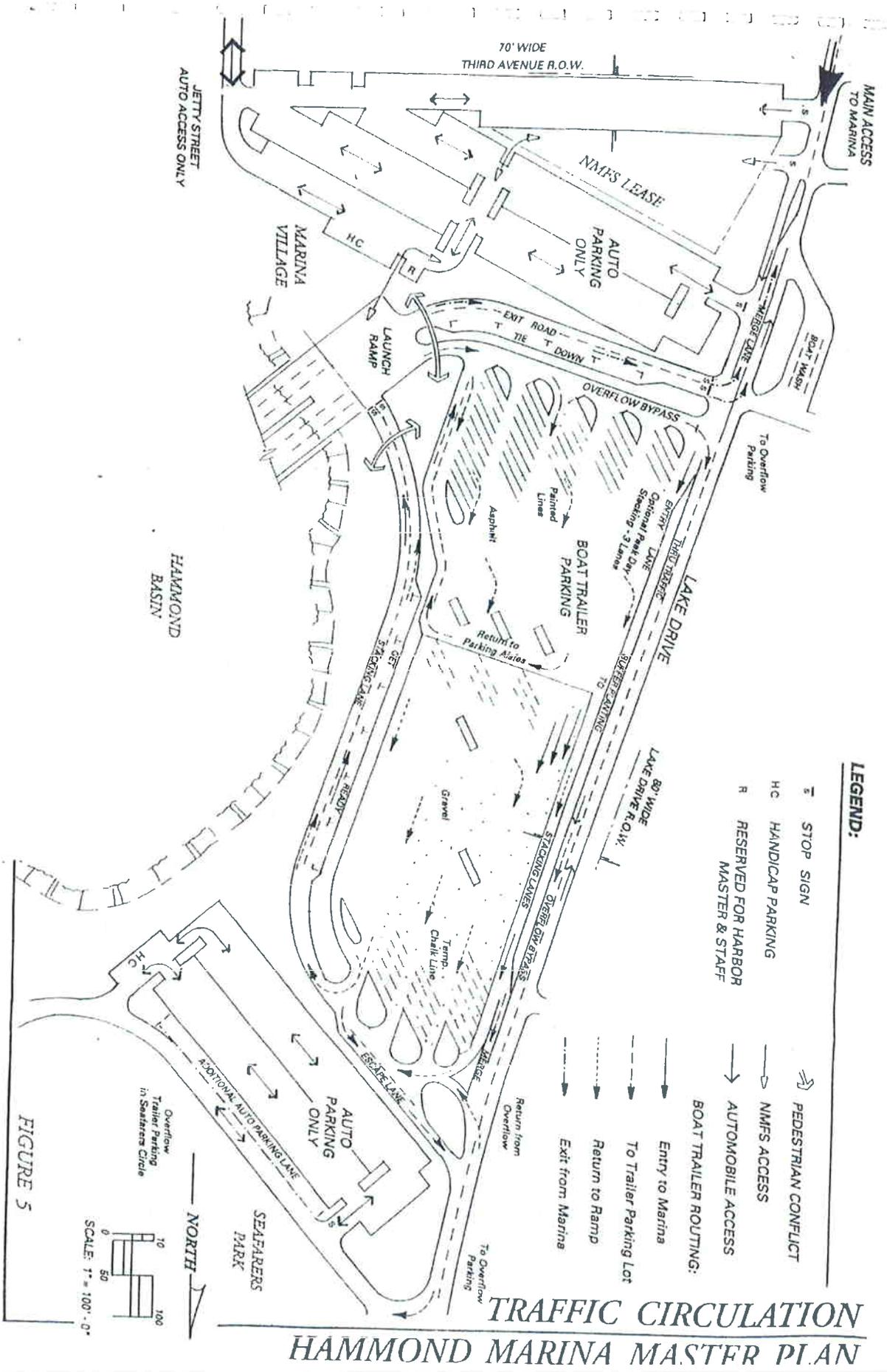
pass be unsuccessful. For peak use days an escape lane is shown at the north end of the lot routing traffic immediately to the overflow lot after passing a full parking lane. When heavy ramp traffic occurs a return to the start in the parking lot would create congestion problems at the ramp.

Returning to the ramp is similar to the original arrival pattern.

Trailers return to the entry/stacking lanes to return to the launch ramp. Overflow parking returns to Lake Drive and accesses the entry lane at the northeast corner of the lot. Once the boats are reloaded the vehicles move straight out to Lake Drive. A merging lane is provided for south bound traffic to converge after the left turn is completed.

C. HOLDING DOCKS:

Dock C can be enlarged and improved in its present location which works well with the proposed layout. Dock D is also presently used for holding although this use needs to be separated from the private mooring dock for security. The plan proposes to provide a wider deck surface with security fencing down the centerline of the dock to separate the transient boaters from the private berths.



**LEGEND:**

- T STOP SIGN
- HC HANDICAP PARKING
- R RESERVED FOR HARBOR MASTER & STAFF
- PEDESTRIAN CONFLICT
- NMFS ACCESS
- AUTOMOBILE ACCESS
- BOAT TRAILER ROUTING:
- Entry to Marina
- To Trailer Parking Lot
- Return to Ramp
- Exit from Marina
- Return from Overflow
- To Overflow

D. PRIVATE MOORING:

Moorage layout is a result of existing elements within the basin. The placement of the launch ramp and related launch channel sets the north boundary. The government regulated access channel influences the configuration of the docks which surround it without impeding into its space. The standard in american marina design can be very impersonal with uninterrupted main docks and identical finger piers. The shape and constraints in the Hammond basin allows for a more varied layout giving each area an individual feeling.

The space provided for private berth parking can accommodate over 300 cars adjacent to the main pierhead at the marina village complex. Accessible from Jetty and Lake Drive the parking includes the Third Avenue ROW. At a study ratio of .6 cars to a berth this would indicate a long term potential marina capacity of 500 boats based upon parking requirements.

The majority of boats using Hammond basin presently are in the 20 to 30 foot range. The master plan contemplates moorage geared to a mix which includes larger vessels. The final combination of boats and total number of vessels eventually moored here is contingent on a

detailed market analysis of the best mix suited to the basin. Smaller boats are taken out of the harbor when not in use but the larger vessels could be expected to remain year around reducing the fluctuation of income for the harbor. Adequate accommodations should be provided for guest mooring where a boat could tie up for a week or so to enjoy the close ocean access.

E. ACCESS CHANNEL ADJUSTMENT:

The plan calls for realignment of the federally authorized and maintained channel. The Town may petition the Corps to adjust the channel (approximately 40 feet to the north) for optimum use of the basin. Should the Corps abandon their ownership, the channel could be reduced to an appropriate vessel fairway width.

F. BOAT WASH & STORAGE YARD:

A boat wash is proposed across Lake Drive from the exit road. The existing storage yard needs relocation as it is in the berth parking area. If approved by the Corp of Engineers the yard can be accommodated south of the dredging spoils site.

G. BASIN CONFIGURATION & EDGING:

It is recommended that rip-rap be placed around the basin shoreline to maximize the landside uses, control erosion and to set an optimum dredge line. It would join the existing breakwaters. Because of the need for on-going dredging and breakwater maintenance consistent marina income is necessary.

H. WETLANDS:

The report titled "Mitigation & Restoration Plan for the Columbia River Estuary" addresses this issue. The area, 10 to 15 acres in size, is designated "brackish intertidal sand flats". It is a "priority 2" site and the report concludes that "In Kind/ Off Site" mitigation with an available area of 50 acres (at site #1 near Swash Lake) is possible (see *Appendix A*).

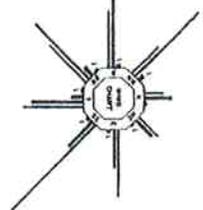
A suggested partial mitigation site of 4 acres is located near Swash Lake on state park lands (see *Appendix B*). Zoned Conservation Shorelands it is recommended that approvals be sought as early as possible from the appropriate agencies to select this site, and additional mitigation land available at the Swash Lake, to free the basin for its zoned use. This is very important for the full development of the basin.

Development of the site will require extensive dredging to construct marina docks and accommodate deeper hulled vessels should they berth in the area. The dredging spoils presently located across Lake Drive will be removed. The removal is scheduled for June 1992 when the spoils will be moved to the Fort Stevens Earthworks Project for maintenance work on the historic site. This will allow for new dredged material to be deposited in the same location. Land use of the zone within the ordinary high water line must be water dependent.

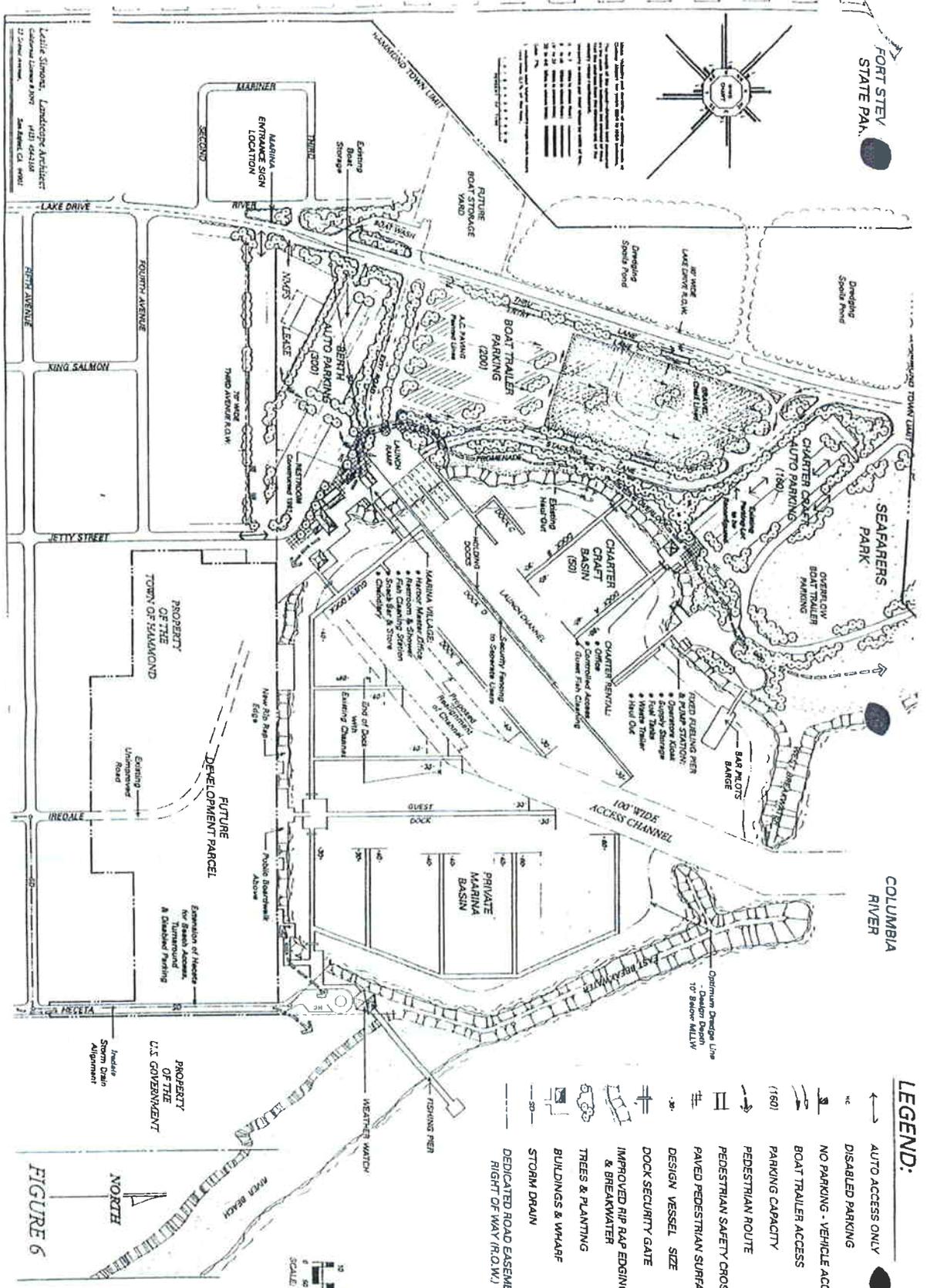
I. FUEL DOCK & BUNKERING FACILITIES:

The plan suggests a fixed pier with floating fueling dock, an operator's kiosk, supply storage, vending machines and relocation of the hoist for emergency repairs of small craft. It is important to determine the types of fuel to be supplied in the harbor as a part of a market study. A boom is needed to bund the fueling area to minimize danger of fire in the marina basin. This boom must allow a 100 foot clearance to the Bar Pilots barge. Fire protection should be extended to the fuel dock.

Tractor trailer maneuvering space is required for fuel delivery and sewage disposal. Waste disposal from marine closets is proposed to be accommodated by a holding tank on a trailer which would be replaced



- 1. 1/2" = 100'
- 2. 1/4" = 50'
- 3. 1/8" = 25'
- 4. 1/16" = 12.5'
- 5. 1/32" = 6.25'
- 6. 1/64" = 3.125'
- 7. 1/128" = 1.5625'
- 8. 1/256" = 0.78125'
- 9. 1/512" = 0.390625'
- 10. 1/1024" = 0.1953125'
- 11. 1/2048" = 0.09765625'
- 12. 1/4096" = 0.048828125'
- 13. 1/8192" = 0.0244140625'
- 14. 1/16384" = 0.01220703125'
- 15. 1/32768" = 0.006103515625'
- 16. 1/65536" = 0.0030517578125'
- 17. 1/131072" = 0.00152587890625'
- 18. 1/262144" = 0.000762939453125'
- 19. 1/524288" = 0.0003814697265625'
- 20. 1/1048576" = 0.00019073486328125'



**LEGEND:**

- ← AUTO ACCESS ONLY
- ⊞ DISABLED PARKING
- ↔ NO PARKING - VEHICLE ACCESS
- ↔ BOAT TRAILER ACCESS
- ↔ PARKING CAPACITY (160)
- ↔ PEDESTRIAN ROUTE
- ↔ PEDESTRIAN SAFETY CROSSING
- ↔ PAVED PEDESTRIAN SURFACE
- ↔ DESIGN VESSEL SIZE
- ↔ DOCK SECURITY GATE
- ↔ IMPROVED RIP RAP EDGING & BREAKWATER
- ↔ TREES & PLANTING
- ↔ BUILDINGS & WHARF
- ↔ STORM DRAIN
- ↔ DEDICATED ROAD EASEMENT RIGHT OF WAY (R.O.W.)

**HANDFORTH  
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BARRETT, INC.**

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Manzanita, OH 97130

**HAMMOND MARINA MASTER PLAN**

FIGURE 6

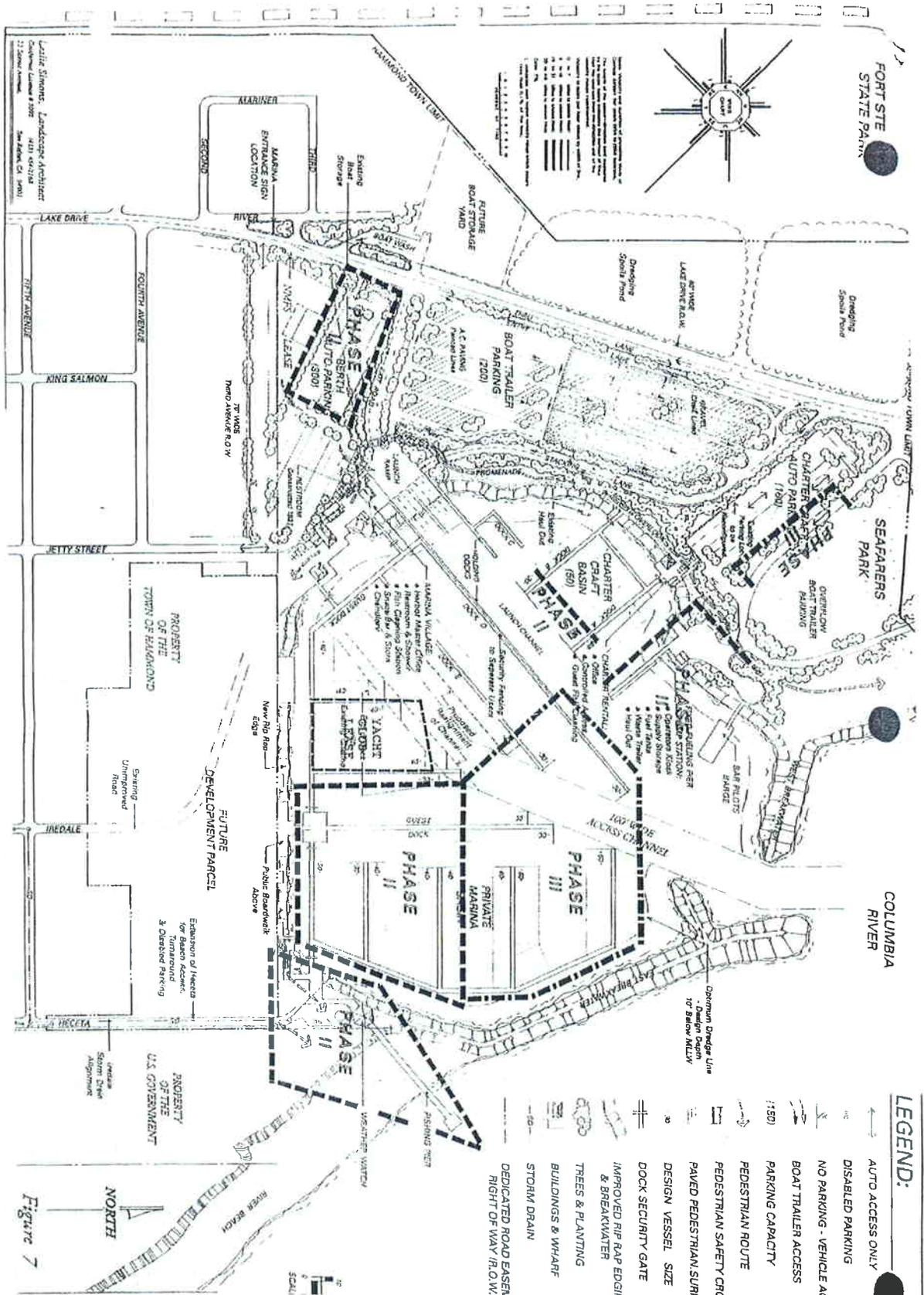


Letelle Simons, Landscape Architect  
California License # 1007  
4411 64th Ave  
San Diego, CA 92121

when full. Sewage disposal would occur at the City of Warrenton treatment plant.

J. AMENITIES:

1. Marina Village Complex: The public restroom (under construction) and harbor master's office will be located within the village complex. A wide variety of other services & facilities could also be accommodated, constructed as the need arises and funds become available. A specific site plan should be generated with comprehensive architectural guidelines to create a village like complex. Possible facilities include a provisions store, vending machines, bait & tackle, chandlery, sail making, laundry, yacht club facility, boathouse, recreation center, studios & crafts shops as well as storage and minor repair facilities for recreational boats. The fish cleaning station presently attached to the restroom may be relocated to the edge of the wharf when the restroom needs more capacity as the marina grows. Fire protection service to the village and around the basin is needed.
  
2. Pedestrian Promenade & Boardwalk: The master plan proposes the separation of pedestrian traffic by use of barrier plantings and cross walks where conflict occurs. The north promenade, a soft green pedestrian zone, would be furnished with benches and picnic tables



FORT STE STATE PARK

COLUMBIA RIVER

**LEGEND:**

- ← AUTO ACCESS ONLY
- ⊘ DISABLED PARKING
- NO PARKING - VEHICLE ACCESS
- BOAT TRAILER ACCESS
- PARKING CAPACITY
- PEDESTRIAN ROUTE
- PEDESTRIAN SAFETY CROSSING
- PAVED PEDESTRIAN SURFACE
- DESIGN VESSEL SIZE
- DOCK SECURITY GATE
- IMPROVED RIP RAP EDGING & BREAKWATER
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- BUILDINGS & WHARF
- STORM DRAIN
- DEDICATED ROAD EASEMENT RIGHT OF WAY (R.O.W.)

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P.O. Box 219 (160 Laneda Avenue)  
Manzanilla, OR 97130

**SUGGESTED PHASING  
HAMMOND MARINA MASTER PLAN**

Figure 7

and have marina overlooks and activity areas around the peninsula leading to Seafarers Park.

South of the ramp the wharf "village" complex begins the boardwalk which then continues around the south edge of the basin leading to the weather watch, fishing pier and beach.

K. MARINA SIGNAGE:

A comprehensive signage plan should be generated to create attractive and useful directions around the basin. An entry sign is needed to direct visitors to the harbor. The plan suggests an entry sign on the triangle between River and Lake Drive. This prominent location would direct incoming visitors to the basin coming from both the Seaside and Warrenton directions as it is easily visible from the corner of Pacific and Lake Drives.

SUGGESTED PHASING OF DEVELOPMENT:

Construction of new docks and facilities will occur as funding becomes available from harbor income. The phasing plan shows the intended direction of development around the basin. (see *Figure 7*)

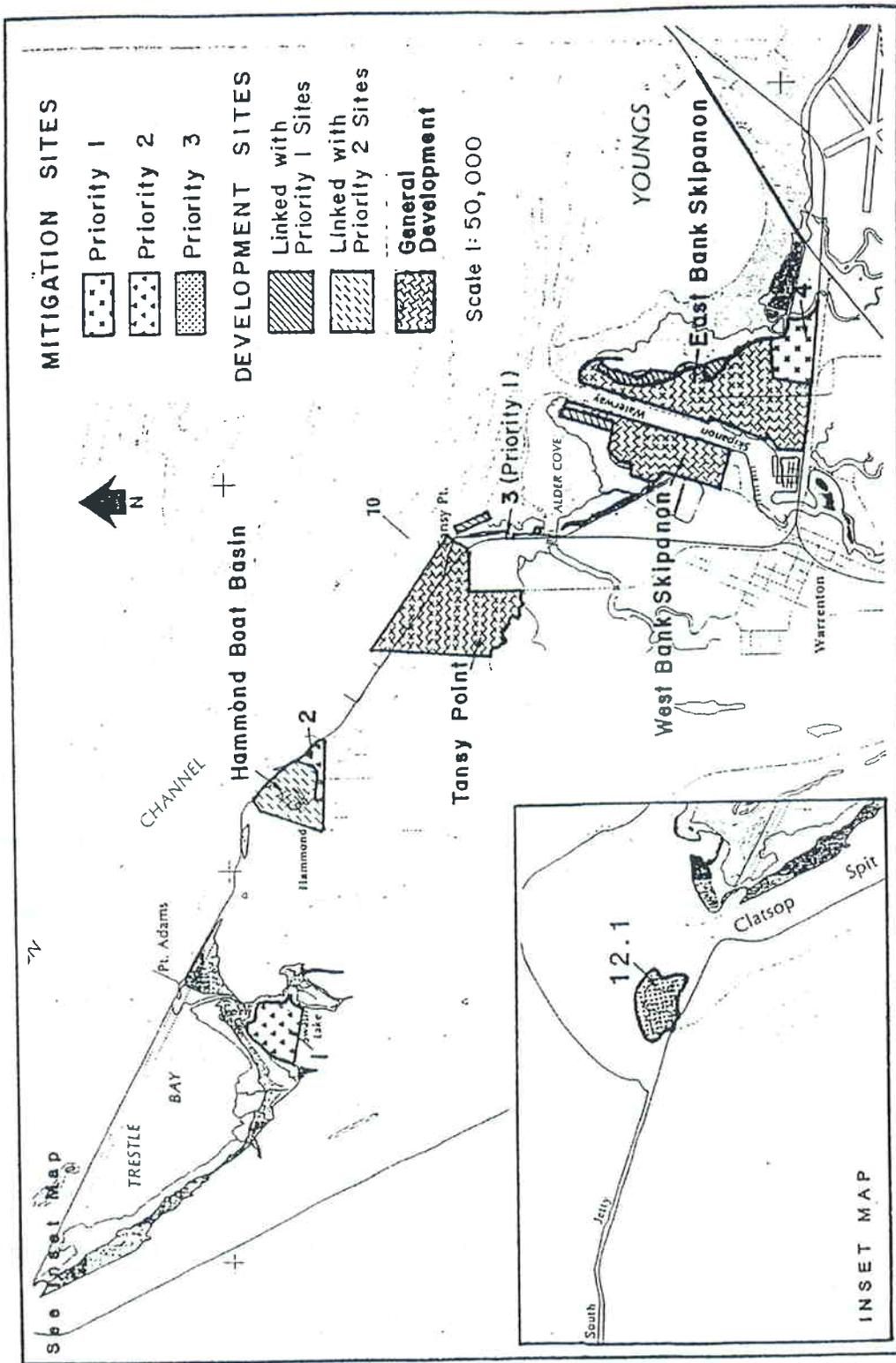


Figure 20. Mitigation and development sites in the Warrenton/Hammond area.

## ADDITIONAL STUDY REQUIREMENTS

To complete the final design further research must be generated to produce accurate documents. This includes:

- A. Study of the HYDROGRAPHIC CONDITIONS in the basin to document the tidal conditions, wave surge and sedimentation issues to facilitate flotation system design and determine the optimum dredge line and ultimate capacity of the basin.
- B. Generate an accurate SITE SURVEY showing the existing conditions and boundary of the lease area and its surrounds. The site configuration used in this study was generated from available information gathered from many different sources.
- C. A MARKET ANALYSIS STUDY is imperative to determine what sizes and types of vessels would likely berth at Hammond Marina. A successful harbor is not accidental, it is thoroughly planned and carefully constructed to accommodate a specific market. A study would determine the best uses for this specific marina and what can be accommodated without over extending the planned facilities.

## CONCLUSION

An active, healthy, alive marina is one that caters to a variety of users. Studios for craftsmen & artists would compliment the harbor and make a lively attractive waterside environment. The need to attract other users to succeed the seasonal influx of transient trailered boaters is necessary to maintain the marina operations evenly throughout the year.

Generating variety in the targeted market groups allows the harbor to accommodate a greater mixture of users and therefore more stable economic base. The harbor would benefit from moorage of larger vessels and adequate accommodations for guest slips. Overnight accommodations are a major asset to a marina enterprise allowing non-boating users to enjoy the harbor with access to and involvement with the water. Hotels create a strong bond between the various facilities in the harbor adding interest and variety.

It is very important to alleviate the pressure on the launch ramp. Maximum capacity should be set and a determination made on how best to handle overload. It may be necessary to create a launching reservation system. Parking fees are not advised for the trailer parking lot. Many ramp users would instead go into the downtown area to avoid paying the fee further disrupting the neighborhood.

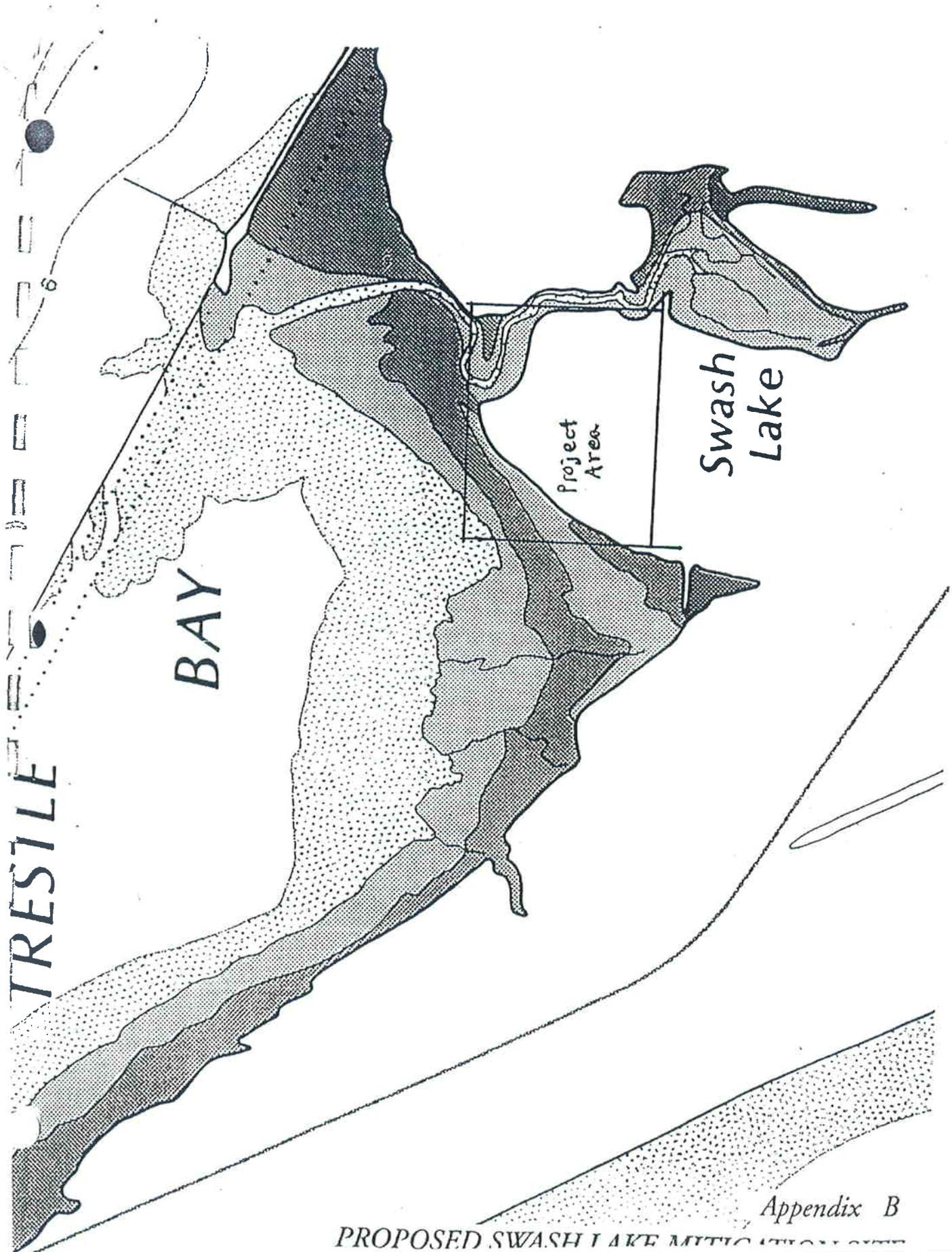
Hammond basin is zoned for recreational use and is too small to accommodate major facilities such as major dry storage or multi-store buildings. Major boat repair, haul-out facilities and commercial fishing are inappropriate for a recreational marina.

The master plan is flexible, generated with the intent to create discussion and ideas on the various suggested elements. This document manifests the optimum use as perceived by the design team. The future direction of the development of the Hammond basin will depend upon positive interaction of all interested parties

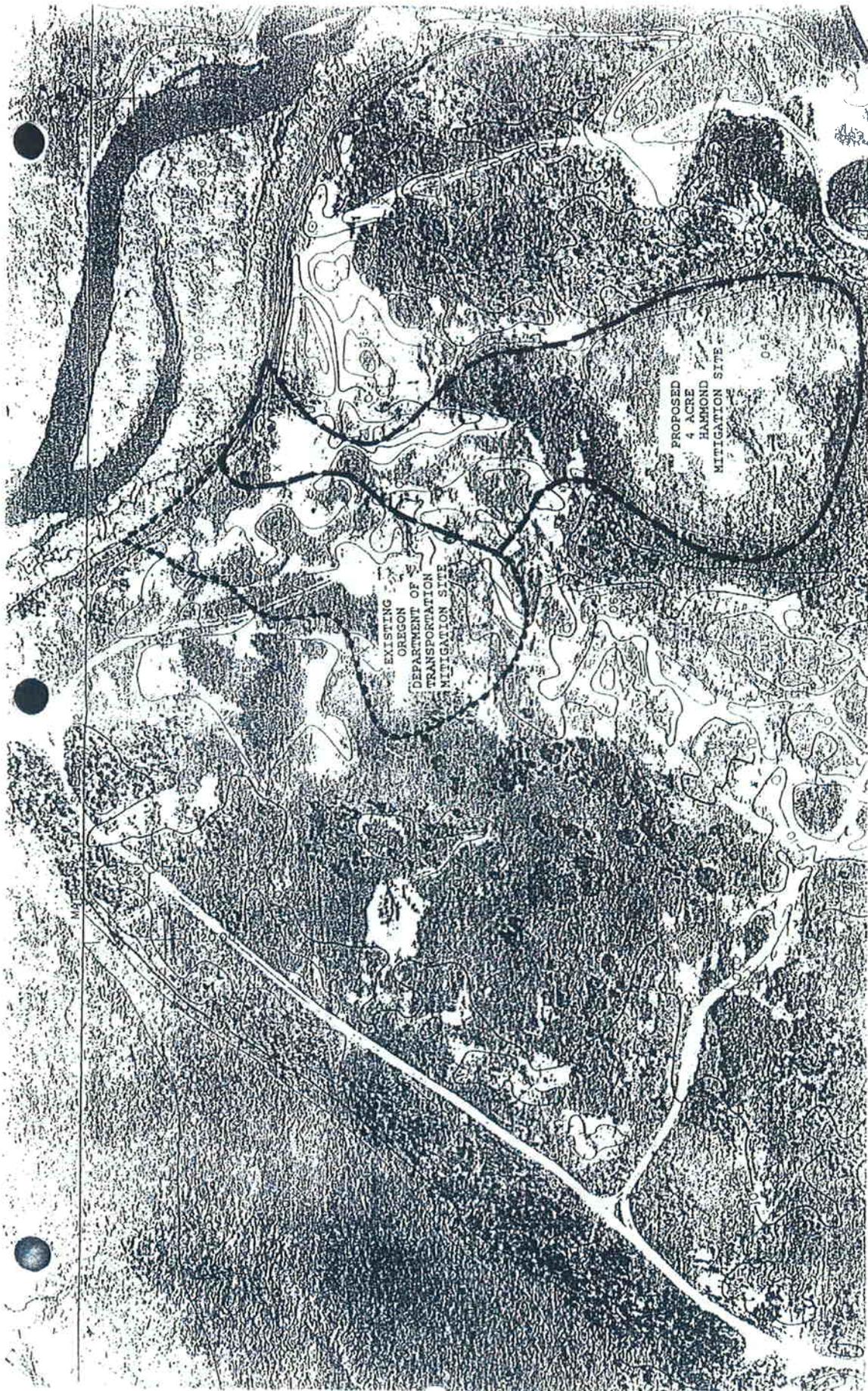
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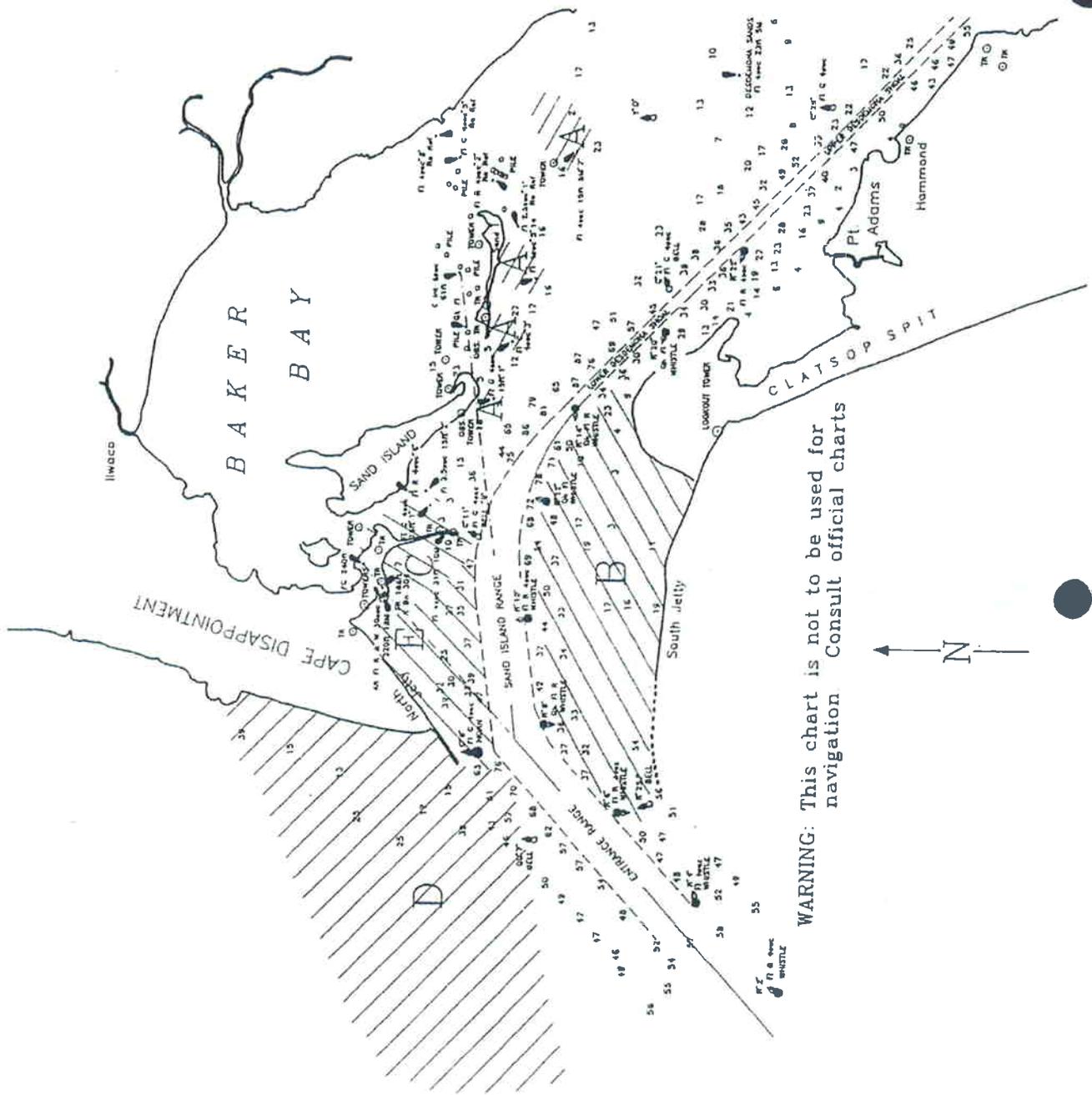
## APPENDIX



Appendix B  
PROPOSED SWASH LAKE MITIGATION SYSTEM



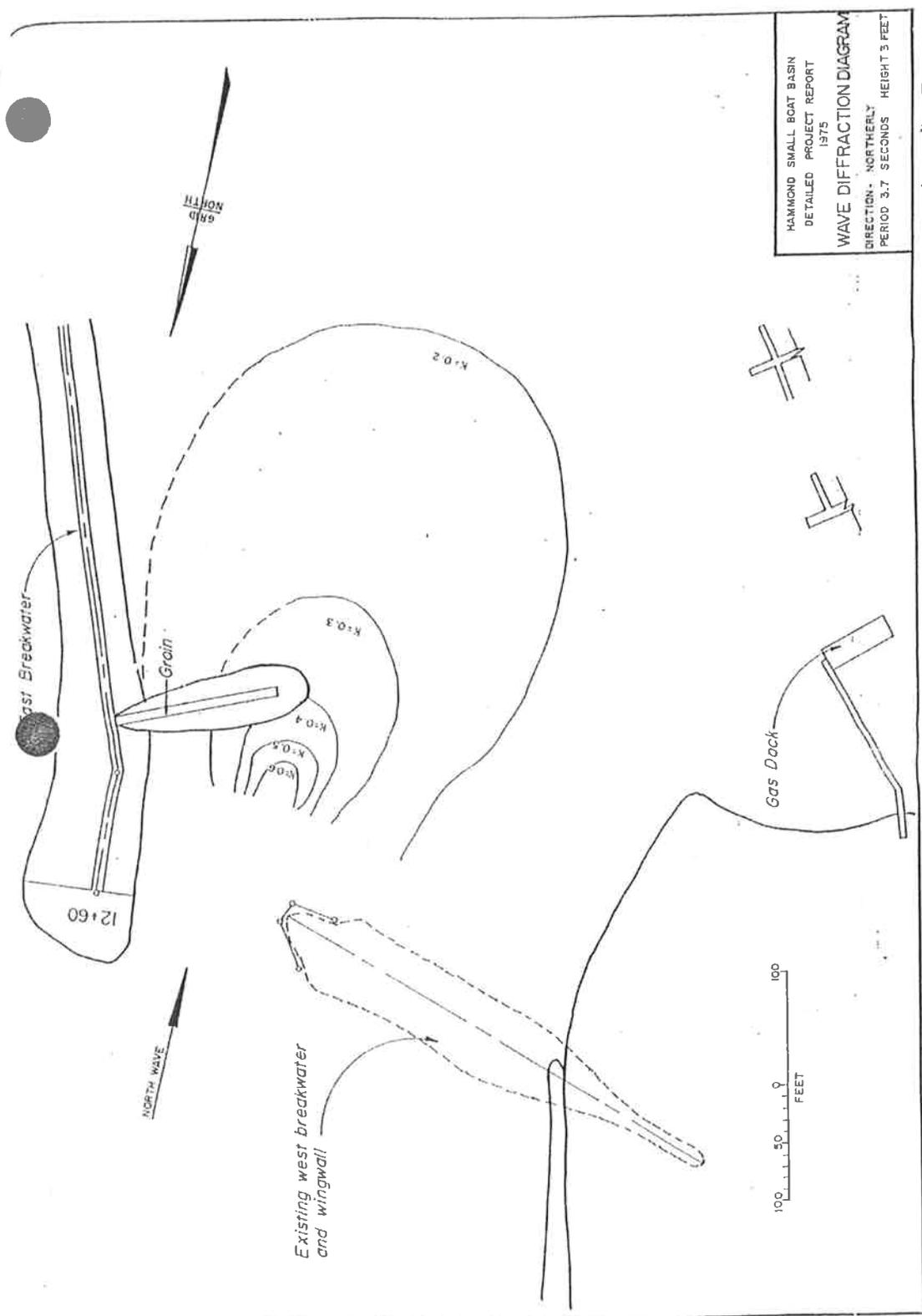




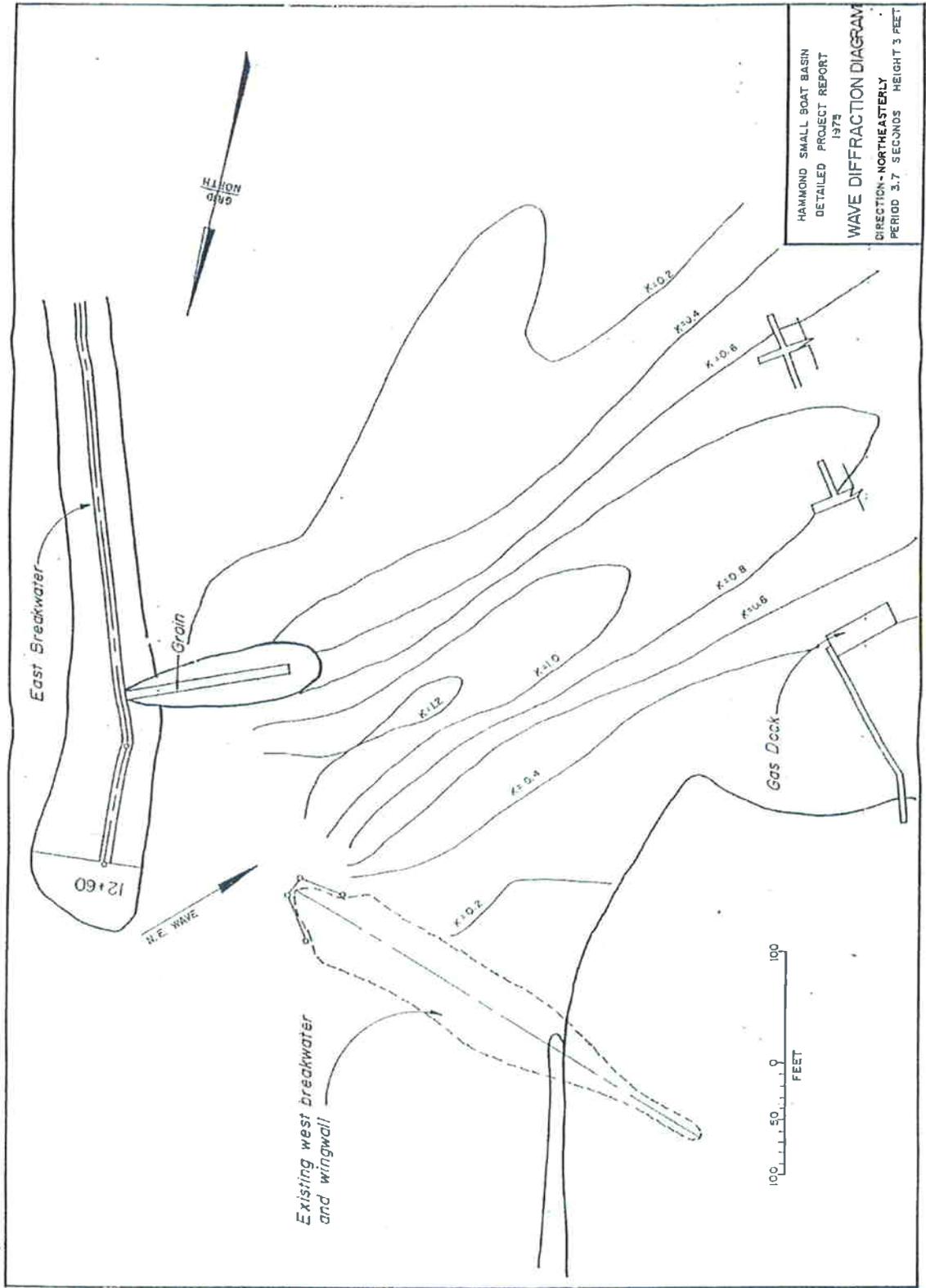
WARNING: This chart is not to be used for navigation Consult official charts



Appendix D  
COLUMBIA RIVER ENTRANCE



Appendix E  
 WAVE DIFFRACTION DIAGRAMS



10 20 30 40 50 60 70 80 90 100