

CRESCENT CITY HARBOR DISTRICT OPPORTUNITIES AND CONSTRAINTS





Produced by



moffatt & nichol

600 University Street, Suite 610

Seattle, WA 98101

Telephone +1 206-622-0222

moffattnichol.com



CONTENTS

GLOSSARY	4
INTRODUCTION	5
LAND OWNERSHIP	6
OFFSHORE WIND (OSW).....	7
TYPES OF OSW PORT TERMINALS	8
O&M DESIGN VESSELS	9
OSW O&M PORT	10
NAVIGATION.....	11
MARINA MASTER PLAN	12
GATEWAY TO REVITALIZED WATERFRONT	17
CREATING A DESTINATION	18
AQUACULTURE.....	19
SUMMARY OF OPPORTUNITIES AND CONSTRAINTS	20

GLOSSARY

Terminology

Terminology	Definition		
CCHD	Crescent City Harbor District	OSV	Offshore Wind Vessels
CTV	Crew Transfer Vessel	OSW	Offshore Wind
FEMA	Federal Emergency Management Agency	S&I	Staging and Integration
FSV	Feeder Support Vessel	SATV	Service Accommodation Transfer Vessel
MF	Manufacturing/Fabrication	SOV	Service Operations Vessel
MLLW	Mean Lower Low Water		
O&M	Operation and Maintenance		



INTRODUCTION

HISTORY

Crescent City Harbor settlement began to grow in the middle 1800s during the California Gold Rush. It was soon an important entry port for miners and supplies in Oregon and nearby California settlements.

TODAY

The Crescent City Harbor economy is based on timber, fishing, and tourism. Recreational and commercial fisheries are mainstays of the economy, and tourism is very important. Serving the fishing and tourism industries, Crescent City Harbor contains a boatyard, a marine supply store, a yacht club, a dive shop, fish and crab processing areas, a fresh fish market, and an ice house among many other establishments.

ECONOMIC DEVELOPMENT

The Harbor District Commissioners are committed to encouraging regional economy, sustaining and creating family-wage jobs by supporting small businesses, workforce development, tourism and leveraging real estate development to create jobs. There are state and federal grant funding opportunities for increasing resilience against coastal hazards and community betterment. In addition, there are going to be economic development opportunities associated with the recent OSW leases in northern California.

PURPOSE AND NEED FOR THE PLAN

An 'Opportunities and Constraints' plan, similar to an economic development plan, supports the realization of your community's economic vision and take control of your economic future. It can help bring together community residents with private and public sectors. Together you can choose economic development goals and outline how to accomplish those goals. It can also serve as an introduction to outside agencies and developers that might be interested in investing in the Harbor.



LAND OWNERSHIP

BACKGROUND

The Crescent City Harbor District (Harbor District) currently owns the eastern half of the harbor in addition to areas within a state land grant.

OPPORTUNITIES

There is a chance to include all of the water areas up to High Tide line.

CONSTRAINTS

Long-term planning may take extra coordination given variations with property ownership.

RECOMMENDED ACTIONS

Harbor District to initiate discussions with the City/State Land Grant to explore controlling entire body of water



OFFSHORE WIND (OSW)

INTRODUCTION

On July 22, 2022, Governor Gavin Newsom urged the California Energy Commission (CEC) to establish an offshore wind planning goal of at least 20 GW by 2045 (Newsom 2022). On August 1, 2022, the CEC established a preliminary offshore wind planning goal of 2 to 5 GW by 2030 and 25 GW by 2045 for California (Flint et al. 2022).

WHAT IS NEEDED FOR OFFSHORE WIND?

- Wind resource
- Electrical grid
- Ports and port terminals

CURRENT CAPACITY

There are no existing port terminals on the US West Coast that can currently support OSW.

THE REQUIREMENTS

- Port sites need to be close to lease areas to reduce transportation risk and cost.
- Requires significant investment and development.
- Requires a multi-port strategy.
- Requires the addition of a new maritime industry without displacing or replacing existing maritime uses.



TYPES OF OSW PORT TERMINALS



STAGING AND INTEGRATION (S&I) SITE

A port site to receive, stage, and store OSW components and to assemble the floating turbine system for towing to the OSW area.

MANUFACTURING/FABRICATION (MF) SITE

A port site that receives raw materials via road, rail, or waterborne transport and creates larger components in the offshore wind supply chain.



OPERATION AND MAINTENANCE (O&M) SITE

A base of wind farm operations with warehouses/offices, spare part storage, and a marine facility to support O&M vessels for crew transfer.

CRESCENT CITY HARBOR DISTRICT IS A GOOD MATCH FOR THE O&M SITE

Design Requirement	O&M
Acreage, minimum	2 – 10 psf
Wharf Length	300 ft
Minimum Draft at Berth	20 – 30 ft
Draft at Sinking Basin	Not Required
Wharf Loading	100 – 500 psf
Uplands / Yard Loading (for WTG components)	Not Required

O&M DESIGN VESSELS

CTV



CREW TRANSFER VESSEL (CTV)

Length Overall	65 – 90 ft
Beam	22 – 30 ft
Draft	5 – 10 ft

SATV



SERVICE ACCOMMODATION TRANSFER VESSEL (SATV)

Length Overall	100 – 130 ft
Beam	30 – 50 ft
Draft	10 – 16 ft

SOV



SERVICE OPERATING VESSEL (SOV)

Length Overall	200 – 400 ft
Beam	50 – 80 ft
Draft	16 – 25 ft

OSW O&M PORT

Crew Transfer Vessels

Service Operation Vessel

BACKGROUND

The Harbor District is a good match for becoming an O&M Port.

OPPORTUNITIES

Incorporate offshore wind vessels (OSV) into the Citizen's Wharf replacement effort to create O&M port capabilities.

CONSTRAINTS

Dredging of the entrance channel to 30 ft, MLLW required to accommodate OSVs.

RECOMMENDED ACTIONS

Incorporate OSW O&M design vessels into re-design of Citizen's Wharf and seawall.



NAVIGATION

BACKGROUND

There will be a demand for medium-water (20 to 30 ft) ports in northern California to support various vessels.

OPPORTUNITIES

Authorized channel depth can support medium-draft vessels. Dredged material can be used to raise roadway/port and increase resiliency against climate change.

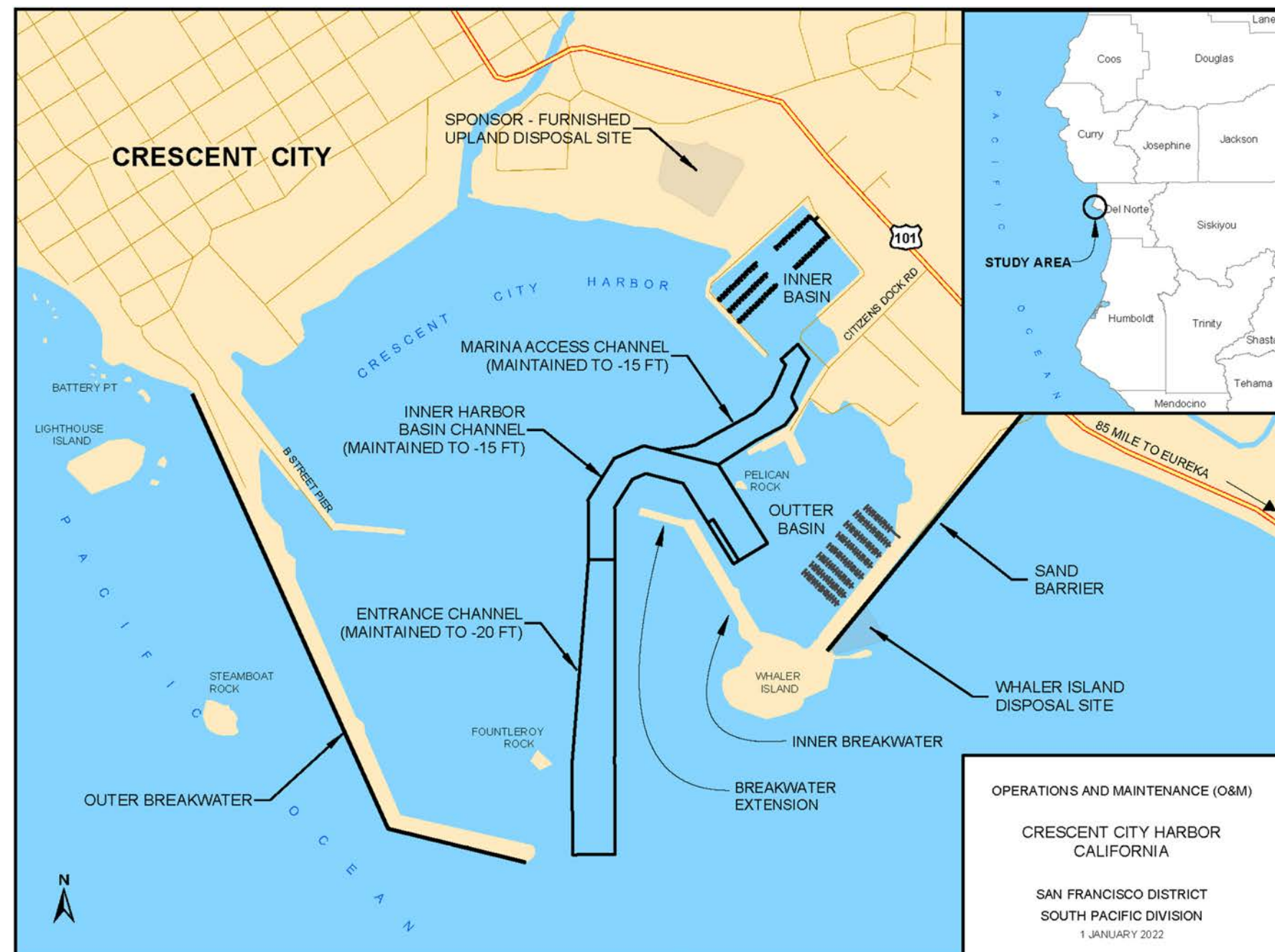
Consider non-structural use of dredged material for creating various view angles/more enjoyable experiences for park users.

CONSTRAINTS

Finding an **economically feasible disposal site** has been a challenge for the Harbor District.

RECOMMENDED ACTIONS

Detailed geophysical mapping showing extent of rocks/inform navigation (if not available already).



MARINA MASTER PLAN

BACKGROUND

There is an industry-wide trend towards higher demands for larger boats/larger slips.

OPPORTUNITIES

Re-configuration of the marina/addition of slips could accommodate a higher number of larger boats.

CONSTRAINTS

Creating slips in the outer basin will increase the demand for maintenance dredge activities.

RECOMMENDED ACTIONS

Develop a master plan for the marina.



OPTION 1



Dry stack

Re-configure Citizen's Wharf



OPTION 2



Convert small slips to larger ones

Crew Transfer Vessels

Dry stack

Re-configure Citizen's Wharf

Service Operation Vessel

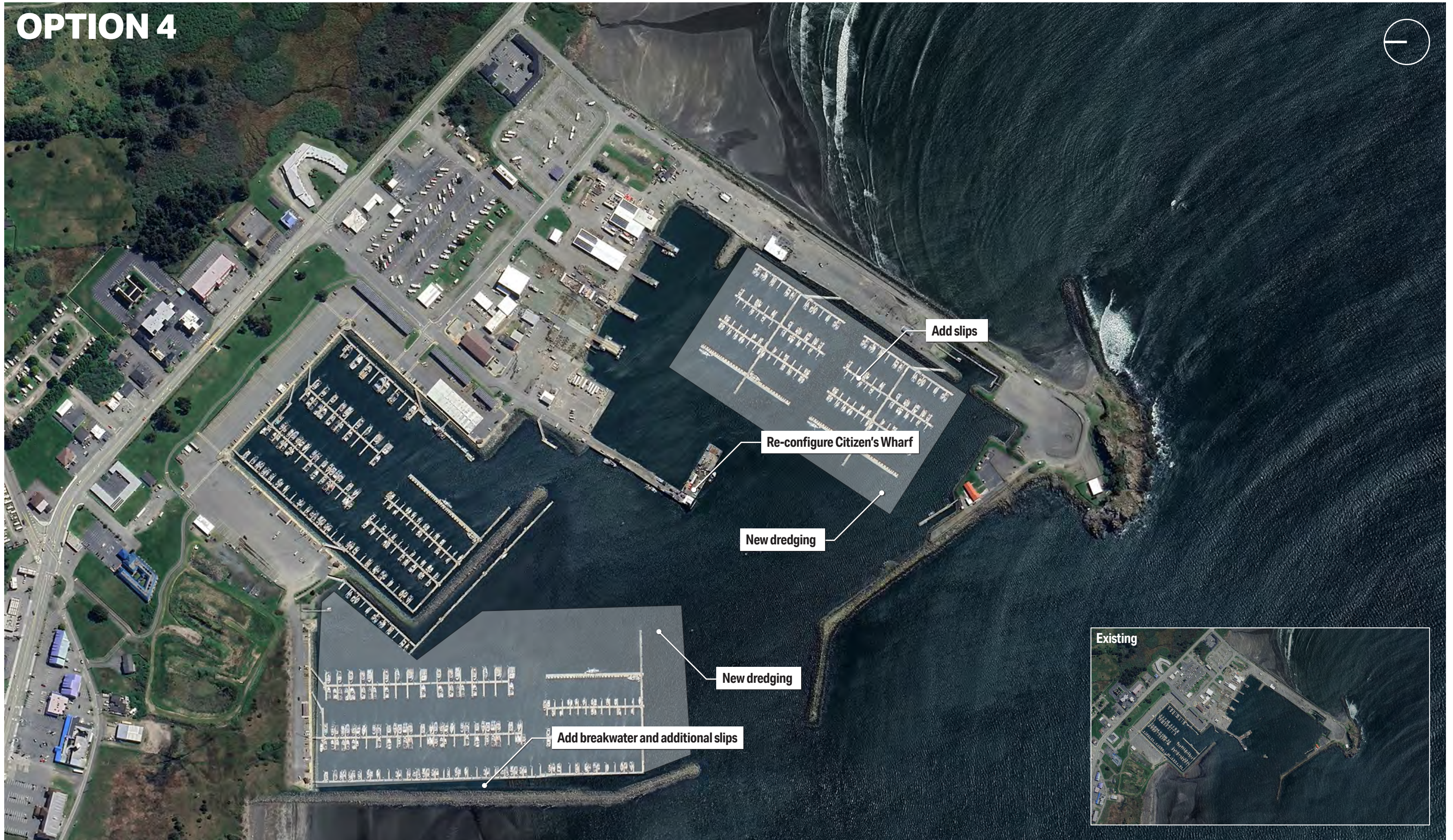
Deepening may be required



OPTION 3



OPTION 4



Add slips

Re-configure Citizen's Wharf

New dredging

New dredging

Add breakwater and additional slips



GATEWAY TO REVITALIZED WATERFRONT

BACKGROUND

Crescent City is revitalizing the waterfront park.

OPPORTUNITIES

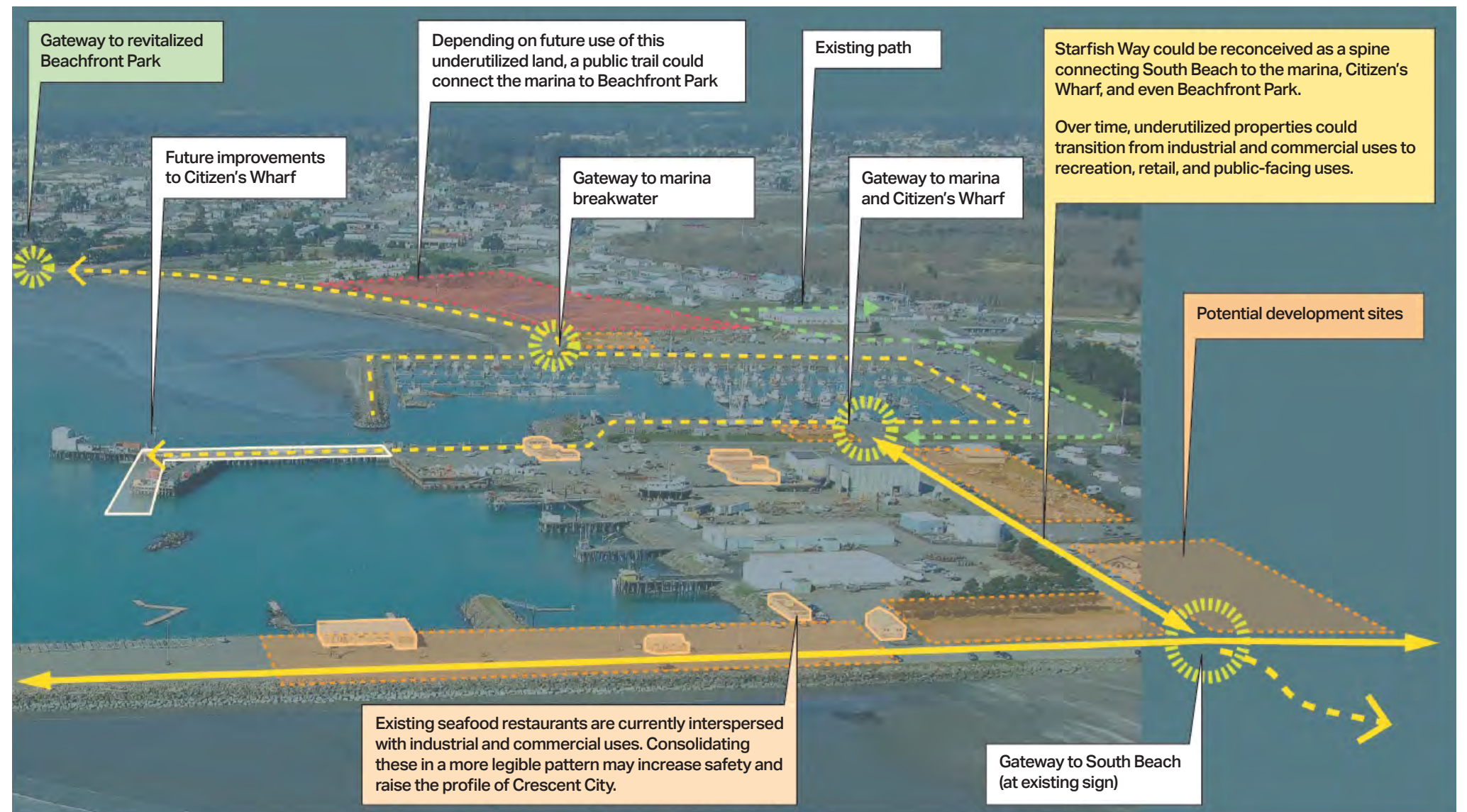
There is an opportunity to create a pedestrian corridor and connect South Beach with the revitalized waterfront.

CONSTRAINTS

Recreational pathway crosses through industrial areas. Minimal disruption to commercial activities should be incorporated in redevelopment plans.

RECOMMENDED ACTIONS

Conduct a master plan for the Harbor District areas.



CREATING A DESTINATION

BACKGROUND

Revenue follows destination.

OPPORTUNITIES

Re-design of Citizen's Wharf and reimagining Anchor Way can provide an opportunity for creating a destination.

Starfish Way could be reconceived as a spine connecting South Beach to the marina, Citizens Dock, and even Beachfront Park.

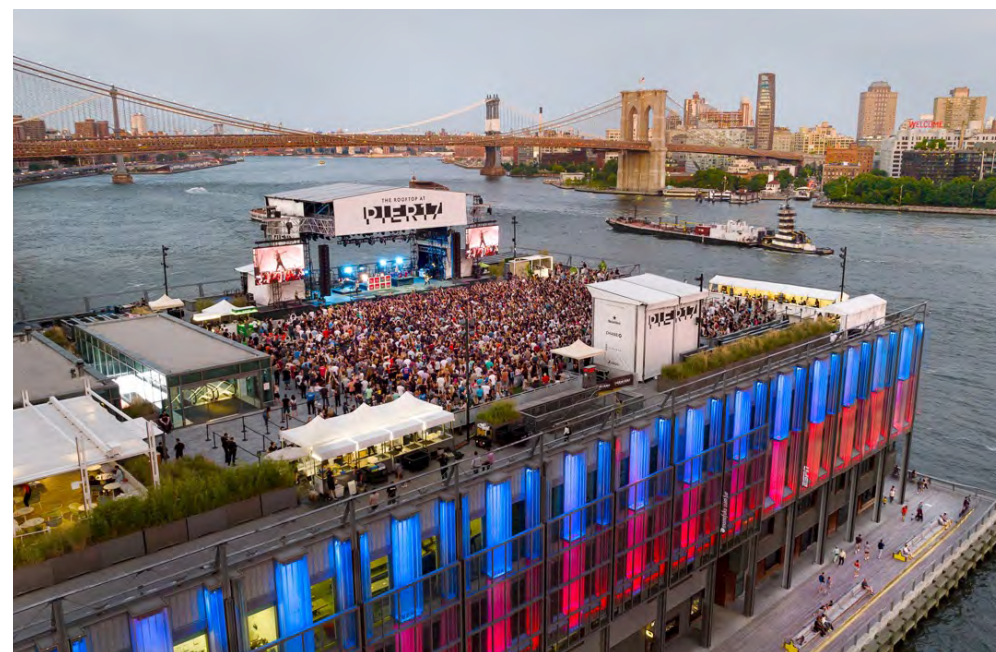
Over time, underutilized properties could transition from industrial and commercial uses to recreation, retail, and public-facing uses.

CONSTRAINTS

Harbor District supports an active commercial boating industry. There has to be a balance between recreational opportunities while not disrupting the commercial activities.

RECOMMENDED ACTIONS

Identify options for creating a destination, conduct a market study, and incorporate them in re-design of Citizen's Wharf and Anchor Way Road.



AQUACULTURE

BACKGROUND

There is a high demand for shellfish nurseries that produce shellfish seed which is then shipped to other locations to be grown to market size. The nurseries typically consist of rafts which may include paddle wheels or other mechanisms to actively move water through trays that hold the shellfish. It is also possible that shellfish could be grown to market size at the site.

OPPORTUNITIES

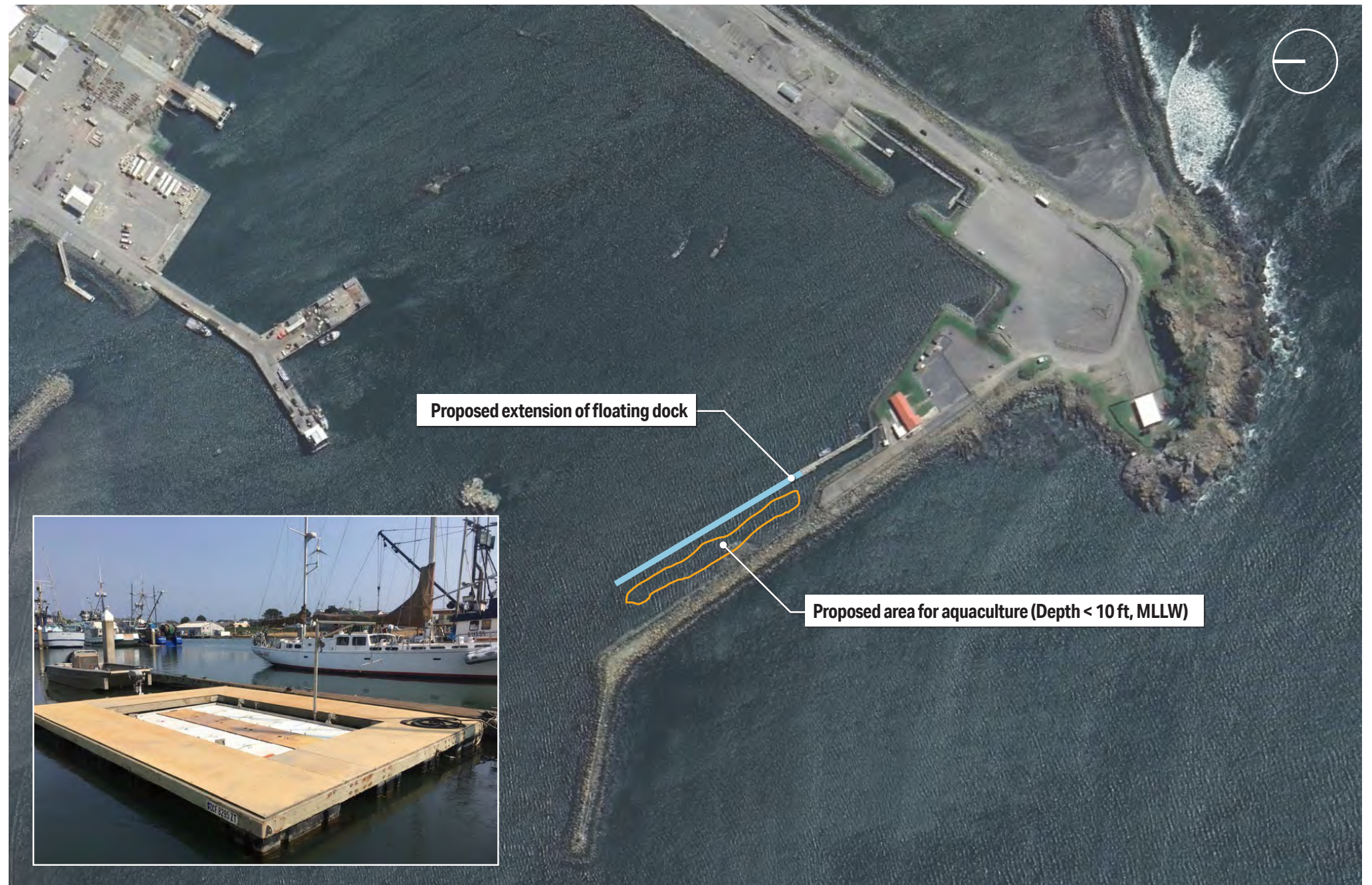
The proposed aquaculture area may be suitable for culture of species such as Manila clams, Kumamoto oysters and Pacific oysters. Moffatt & Nichol's staff permitted similar sites for the Humboldt Bay Harbor District and the sites are currently leased to private and non-profit organizations for shellfish and seaweed culture.

CONSTRAINTS

Water quality testing and further site evaluation would be required to determine specific aquaculture opportunities. Permits would be required from the State Department of Health, CA Department of Fish and Wildlife, California Coastal Commission, US Army Corps of Engineers and Regional Water Quality Control Board.

RECOMMENDED ACTIONS

Develop a brief feasibility study for aquaculture operations within the proposed aquaculture area. This would involve correspondence with existing shellfish farmers to assess culture potential, further review of site conditions and assessment of any existing water quality data for the site.



SUMMARY OF OPPORTUNITIES AND CONSTRAINTS

Topic	Background	Opportunities	Constraints	Recommended Actions
Land Ownership	The Crescent City Harbor District (Harbor District) currently owns the eastern half of the harbor in addition to areas within a state land grant.	There is a chance to include all of the water areas up to High Tide line.	Long-term planning may take extra coordination given variations with property ownership.	Harbor District to initiate discussions with the City/State Land Grant to explore controlling entire body of water
OSW O&M Port	The Harbor District is a good match for becoming an O&M Port.	Incorporate offshore wind vessels (OSV) into the Citizen's Wharf replacement effort to create O&M port capabilities.	Dredging of the entrance channel to 30 ft, MLLW required to accommodate OSVs.	Incorporate OSW O&M design vessels into re-design of Citizen's Wharf and seawall.
Navigation	There will be a demand for medium-water (20 to 30 ft) ports in northern California to support various vessels.	Authorized channel depth can support medium-draft vessels. Dredged material can be used to raise roadway/port and increase resiliency against climate change. Consider non-structural use of dredged material for creating various view angles/ more enjoyable experiences for park users.	Finding an economically feasible disposal site has been a challenge for the Harbor District.	Detailed geophysical mapping showing extent of rocks/inform navigation (if not available already).
Marina Master Plan	There is an industry-wide trend towards higher demands for larger boats/larger slips.	Re-configuration of the marina/addition of slips could accommodate a higher number of larger boats.	Creating slips in the outer basin will increase the demand for maintenance dredge activities.	Develop a master plan for the marina.
Gateway to Revitalized Waterfront	Crescent City is revitalizing the waterfront park.	There is an opportunity to create a pedestrian corridor and connect South Beach with the revitalized waterfront.	Recreational pathway crosses through industrial areas. Minimal disruption to commercial activities should be incorporated in redevelopment plans.	Conduct a master plan for the Harbor District areas.

Topic	Background	Opportunities	Constraints	Recommended Actions
Creating a Destination	Revenue follows destination.	<p>Re-design of Citizen’s Wharf and reimagining Anchor Way can provide an opportunity for creating a destination.</p> <p>Starfish Way could be reconceived as a spine connecting South Beach to the marina, Citizens Dock, and even Beachfront Park.</p> <p>Over time, underutilized properties could transition from industrial and commercial uses to recreation, retail, and public-facing uses.</p>	Harbor District supports an active commercial boating industry. There has to be a balance between recreational opportunities while not disrupting the commercial activities.	Identify options for creating a destination, conduct a market study, and incorporate them in re-design of Citizen’s Wharf and Anchor Way Road.
Aquaculture	There is a high demand for shellfish nurseries that produce shellfish seed which is then shipped to other locations to be grown to market size. The nurseries typically consist of rafts which may include paddle wheels or other mechanisms to actively move water through trays that hold the shellfish. It is also possible that shellfish could be grown to market size at the site.	The proposed aquaculture area may be suitable for culture of species such as Manila clams, Kumamoto oysters and Pacific oysters. Moffatt & Nichol’s staff permitted similar sites for the Humboldt Bay Harbor District and the sites are currently leased to private and non-profit organizations for shellfish and seaweed culture.	Water quality testing and further site evaluation would be required to determine specific aquaculture opportunities. Permits would be required from the State Department of Health, CA Department of Fish and Wildlife, California Coastal Commission, US Army Corps of Engineers and Regional Water Quality Control Board.	Develop a brief feasibility study for aquaculture operations within the proposed aquaculture area. This would involve correspondence with existing shellfish farmers to assess culture potential, further review of site conditions and assessment of any existing water quality data for the site.



moffatt & nichol

600 University Street, Suite 610
Seattle, WA 98101
Telephone +1 206-622-0222

moffattnichol.com