



**SPECIAL MEETING JOINT ECONOMIC & COMMUNITY DEVELOPMENT COMMITTEE –  
PLANNING AND ZONING COMMISSION  
AGENDA**

**JUNE 17, 2026, 6:00 PM  
BY ZOOM VIRTUAL MEETING**

To allow public access, anyone may access a meeting by telephone and/or Zoom, or a recording in the City of Norwalk YouTube channel. Specific instructions and links can be found at [norwalkct.gov/meetings](https://norwalkct.gov/meetings).



Members of the public may call in to participate. Callers will not be able to see the meeting participants. All participants will be muted upon entering the meeting. To speak, dial \*9 on the phone and you will be called on by the host of the meeting during the public comment section. All speakers must state their name and address. Comments must be on a topic on the agenda, and are limited to three minutes. Anyone disrupting the orderly conduct of the meeting, including by using threatening, hateful, or sexually-explicit language, will be removed. Please find the information using the link above.



Members of the public who wish to provide "live comments" may also use the Zoom meeting platform. All participants will be muted upon entering the meeting. To speak, click the "raise your hand indicator" and you will be called by the host of the meeting during the public comment section. All speakers must state their name and address. Comments must be on a topic on the agenda. Anyone disrupting the orderly conduct of the meeting, including by using threatening, hateful, or sexually-explicit language, will be removed. Please find the information using the link above.



Members of the public who wish to provide public comment are encouraged to submit those via email in advance of the meeting. For these comments to be included into the record, they must be submitted by 12:00 p.m. the day of the meeting. Please email Steve Kleppin, Director of Planning & Zoning, at [skleppin@norwalkct.gov](mailto:skleppin@norwalkct.gov) with the subject line "Public Comment" to provide written public comment prior to the meeting.

- I. **CALL TO ORDER**
- II. **ROLL CALL**
- III. **PUBLIC PARTICIPATION**
- IV. **NEW BUSINESS**
  - A. **Strategic Harbor Study Presentation**
- V. **ADJOURNMENT**

INDIGO  
RIVER

HR&A

# City of Norwalk Strategic Harbor Study

## Executive Summary

The Norwalk Strategic Harbor Study provides a comprehensive, integrated roadmap for strengthening one of the city’s most valuable public, economic, and ecological assets. Developed through collaboration between Indigo River, HR&A Advisors, the City of Norwalk, a Steering Committee, and the Harbor Management Commission, the Study brings together technical analysis, stakeholder engagement, and strategic recommendations to guide the long-term future of the harbor. The work encompasses baseline economic and environmental conditions, industrial and management analyses, a moorings strategy, a street ends access study, and a funding roadmap that positions Norwalk to invest in a resilient and inclusive waterfront. A brief summary of each section is provided below.

### *Understanding Today’s Harbor*

The Existing Conditions Analysis and Industrial Economic Analysis (**Section 1**) shows a harbor defined by its dual identity as both a working waterfront and a recreational destination. Norwalk benefits from deep-water access, long-standing marine businesses, aquaculture operations, and a strong maritime identity. At the same time, the harbor faces shrinking industrial land, aging infrastructure, workforce shortages, water-quality concerns, and significant vulnerability to sea level rise and storm impacts. Public access remains unevenly distributed, particularly for neighborhoods designated as Environmental Justice communities. These findings informed recommendations related to access, infrastructure, and long-term management.

### *Moorings and Water Access*

The Moorings Study (**Section 2**) identifies opportunities to expand mooring capacity in the inner harbor, outer harbor, and Norwalk Islands, paired with new water taxi operations and improved access points. While physically feasible, expansion requires adequate support services and a sustainable administrative model. The study recommends a modified hybrid management model in which permittees continue to maintain private moorings while the City expands transient moorings, contracts for harbor management services, and establishes a water taxi system. Environmentally sensitive areas around the islands would require low-impact anchoring systems.

### *Street Ends and Public Access*

The Street Ends Study (**Section 3**) evaluated 21 shoreline street ends and identified five potential priority locations—Lowndes Avenue, Knorr Street, 1st Street, 3rd Street, and Cove Avenue—for near-term improvement. These sites offer opportunities to expand equitable public access, particularly in neighborhoods lacking meaningful shoreline connection. Recommendations include ADA-compliant pathways, small-boat access, invasive species removal, living shoreline elements, interpretive signage, and amenities such as seating, bike racks, and wayfinding. Across all street ends, the Study emphasizes safe public access, ecological stewardship, and consistent design standards.

### *Management and Funding Strategies*

The Study provides recommendations for refining management roles across municipal and state entities to improve coordination and decision-making through the Harbor Management Strategy (**Section 4**). The Funding Opportunities Roadmap outlines a strategic path for pursuing federal and state grants to support capital projects, resilience planning, and economic development.

## Summary of Public Engagement

Public engagement played a central role in shaping the Study. Over the course of the project, the team conducted multiple focus groups, stakeholder interviews, meetings with the Steering Committee, and public presentations. Common themes included the need for clearer communication among agencies, strong support for expanded public access, concerns over industrial displacement, and interest in water-based recreation. This feedback directly shaped recommendations for access, mooring expansion, and long-term harbor management. Refer to the Appendix for more detailed summaries of public involvement efforts.

Development of the Norwalk Strategic Harbor Study was guided by a comprehensive, multi-format public engagement process conducted by Indigo River and HR&A Advisors throughout spring, summer, and fall 2025. Engagement activities included stakeholder interviews, virtual focus groups, public presentations, recurring meetings with the Steering Committee, and ongoing informal outreach. Input was gathered from a broad cross-section of harbor users—recreational boaters, marine businesses, environmental groups, institutional partners, residents, and community organizations—that directly shaped the Plan’s recommendations.

### *Stakeholder Interviews and Focus Groups*

In May 2025, Indigo River facilitated two virtual Recreational Harbor User Focus Groups with boaters, rowing advocates, and residents who regularly access the waterfront. Conversation centered on improving equitable access to the water, particularly in South Norwalk; enhancing maintenance and usability of public docks and launch sites; addressing water-quality concerns following rain events; and expanding opportunities for non-motorized recreation, including kayak access and trail connectivity along the Norwalk River.

During the same period, HR&A Advisors led a Business & Working Waterfront Focus Group with representatives from marinas, marine contractors, material suppliers, and waterfront institutions. Participants emphasized the vulnerability of water-dependent businesses as industrial land transitions to other uses, the ongoing importance of dredging and barge access, and the need to support the skilled workforce that underpins the city’s marine economy. These sessions also highlighted rising operational costs and the interdependence between commercial and recreational harbor activity.

For stakeholders unable to participate in scheduled sessions, the project team conducted individual phone interviews and small follow-up discussions to ensure broad representation of perspectives across user groups and neighborhoods.

### *Public Presentations, Community Input, and Steering Committee Engagement*

In addition to targeted focus groups, the project team held several meetings to present draft materials and solicit community and stakeholder feedback. These sessions focused on the Harbor Management Strategy, the Draft Street Ends Study and the Draft Mooring Study, and took place during the summer and fall of 2025. Each meeting included a presentation of findings followed by open discussion and Q&A. Following these events, residents, boaters, businesses, and community organizations contributed additional feedback through emails, phone calls, and informal conversations. This input

informed refinements to site-specific recommendations, adjustments to the draft mooring framework, and updates to maps, access strategies, and implementation guidance.

The project team met with the Steering Committee throughout the planning process. These meetings played a critical role in shaping project direction, contextualizing public and stakeholder feedback, and ensuring alignment with City goals, policy frameworks, and regulatory considerations. The Steering Committee reviewed interim deliverables, discussed emerging issues, and helped guide the evolution of the plan's final recommendations. The Indigo River and HR&A Advisors team greatly appreciate the Steering Committee's time, involvement, and feedback.



# Section 1

## Understanding Today's Harbor

Existing Conditions Analysis  
Industrial Economic Analysis

# Norwalk Harbor Existing Conditions

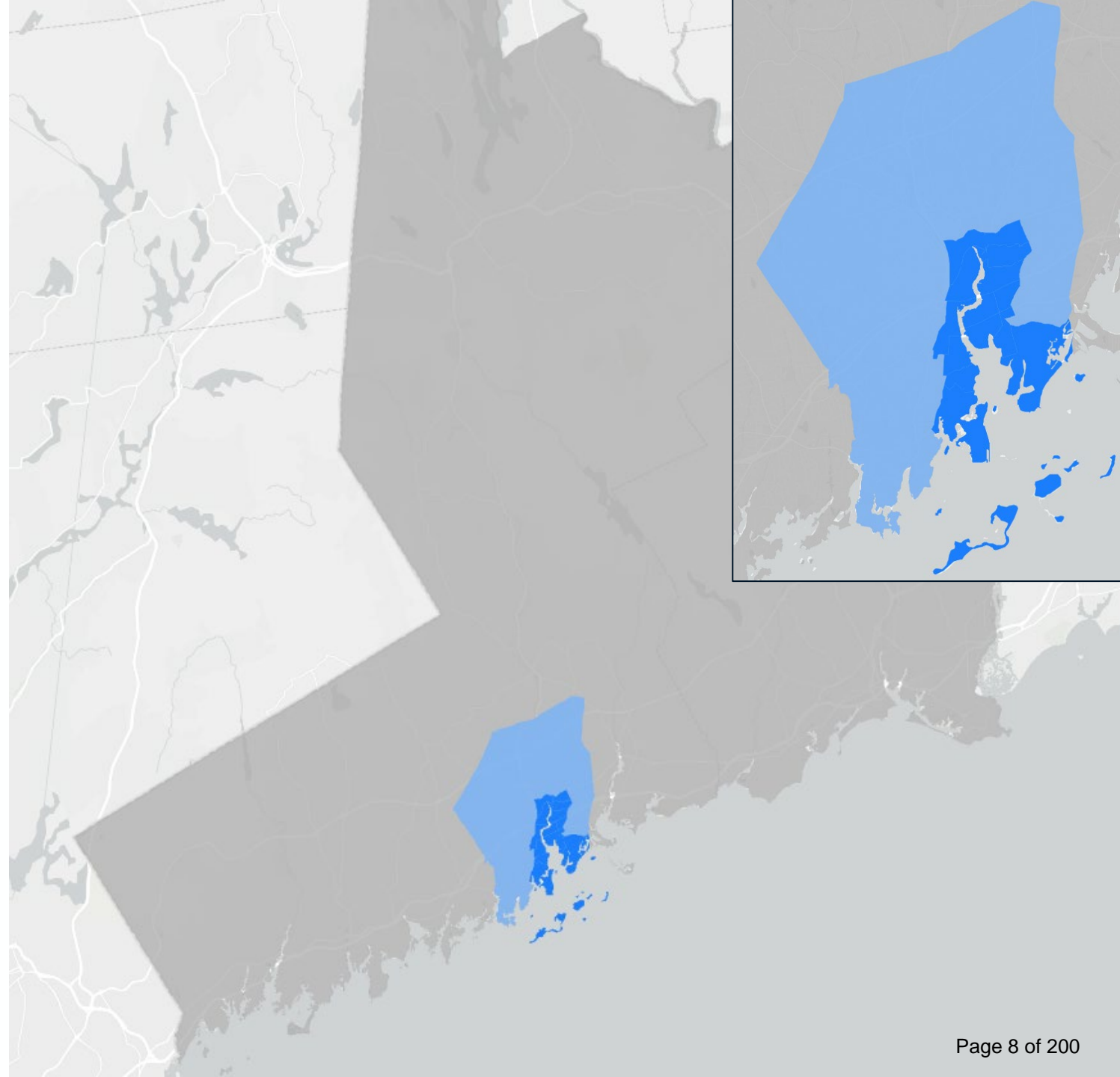
June 2026

## EXISTING CONDITIONS GEOGRAPHIES FOR DEMOGRAPHIC/INDUSTRY ANALYSIS

The **“Harbor Area”** includes 14 Census Block Groups, denoted in dark blue. The boundaries for the Harbor Area are based on previous City studies, including the Industrial Waterfront Land Use Plan, and were confirmed with the City and local stakeholders. Alignment with census designated boundaries ensures compatability with demographic and industry data sources.

For the demographic analysis, this area is compared to the City of Norwalk (**“Norwalk”**) in light blue and the Bridgeport-Stamford-Norwalk-Danbury Metropolitan Statistical Area (**“MSA”**) in grey. The industry analysis compares Norwalk and the Harbor Area.

Harbor Area  
City of Norwalk  
Bridgeport-Stamford-  
Norwalk-Danbury MSA



# HARBOR AREA KEY LOCATIONS

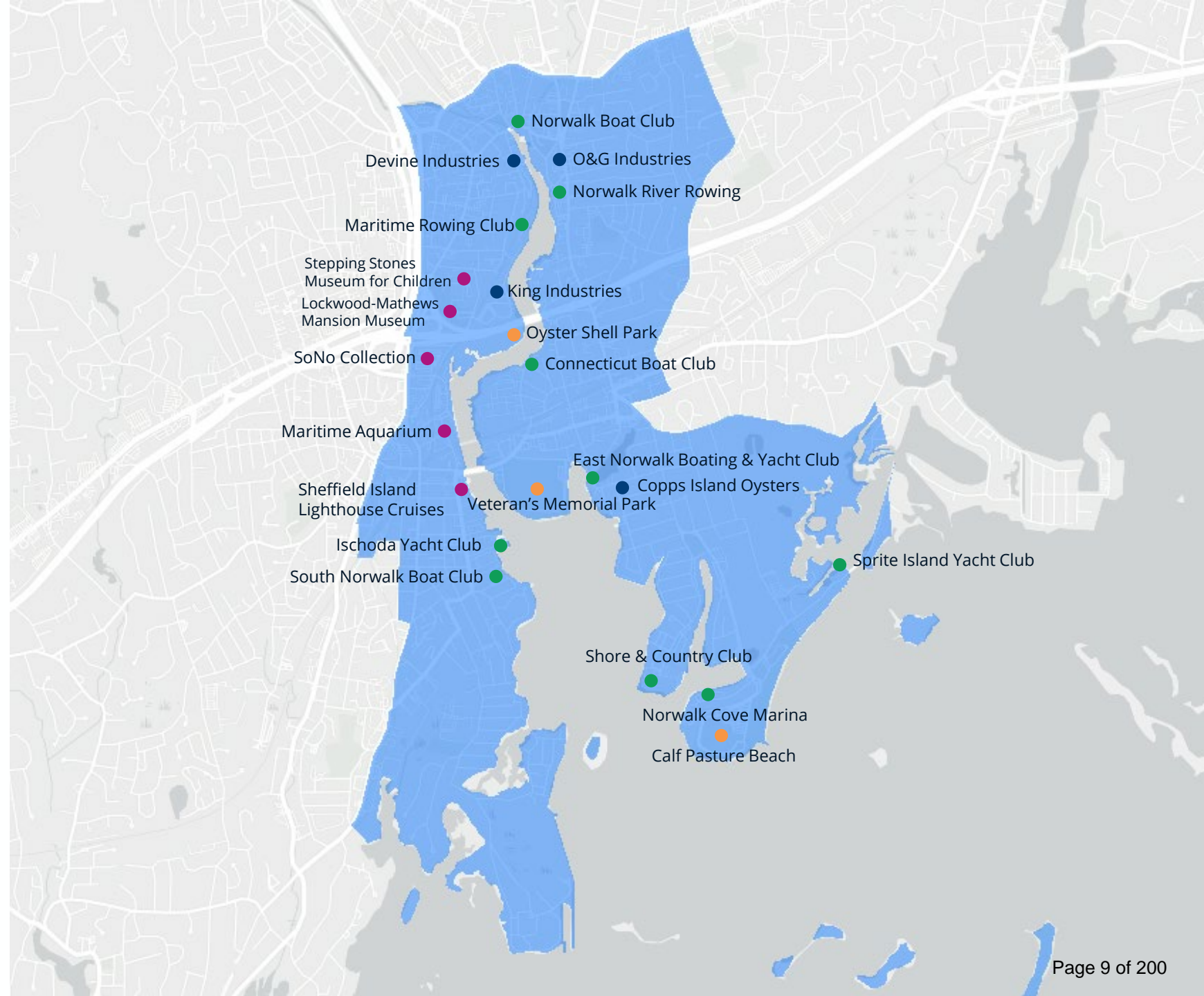
A closer look at the Harbor Area shows the distribution of key locations that define the Harbor's major economic, tourism, and open space assets. This includes waterfront businesses, malls, museums, parks, beaches, marinas, and boat clubs.

Waterfront Businesses

Attractions

Parks and Beaches

Water Recreation





01

# Demography

## DEMOGRAPHY | SUMMARY OF KEY TAKEAWAYS

### **1. Population and households are growing faster in the Harbor Area than both in the City of Norwalk and the region.**

- The population in the Harbor Area grew by almost 20% from 2014 to 2023 across all age groups and household types.
- Nonfamily households make up the largest share of household type in the Harbor Area at 45 percent, a slight increase from 2014. This trend contrasts with the City, in which the number and share of nonfamily households decreased.
- This growth aligns with the new housing developments that have been concentrated at the top of the Harbor Area that may be attracting workforce-aged residents.

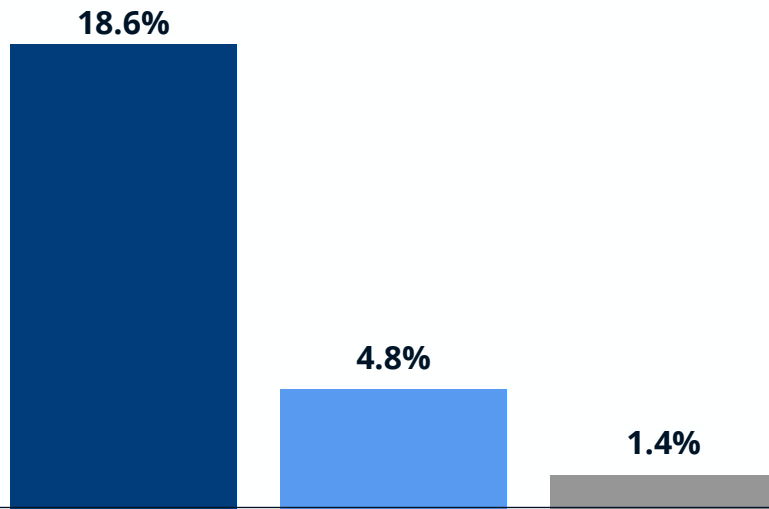
### **2. Harbor Area household incomes are increasing faster than the City and the region but are still notably lower.**

- The median household income in the Harbor Area is about \$10,000 lower than the City and \$15,000 lower than the region.
- Only 43 percent of the households in the Harbor Area has a bachelor's degree, slightly lower than the comparative geographies, which suggests that local industries that do not require a degree would likely benefit the growing population.

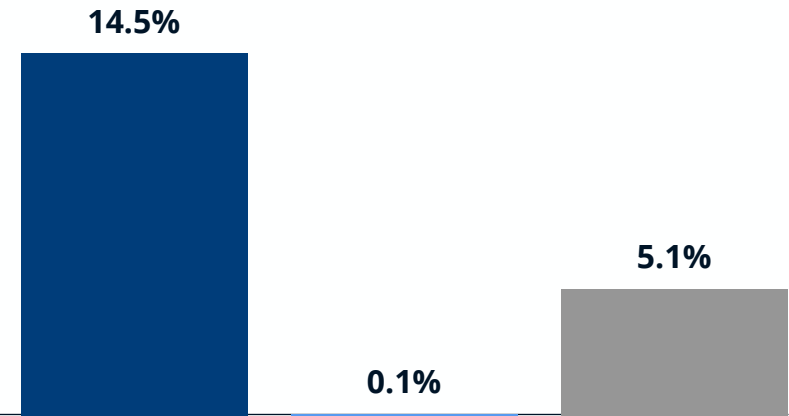
## DEMOGRAPHY | POPULATION AND HOUSEHOLDS

The population of the Harbor Area, 22 percent of the Norwalk's total, is growing much faster than the city. The Harbor Area population size is smaller than both in Norwalk and the MSA.

**Population Growth (2014-2023)**



**Growth in Households (2014-2023)**



	Harbor Area	Norwalk	MSA
<b>Total Population (2023)</b>	20,100	91,400	947,500

	Harbor Area	Norwalk	MSA
<b>Total Households (2023)</b>	8,500	35,500	350,600

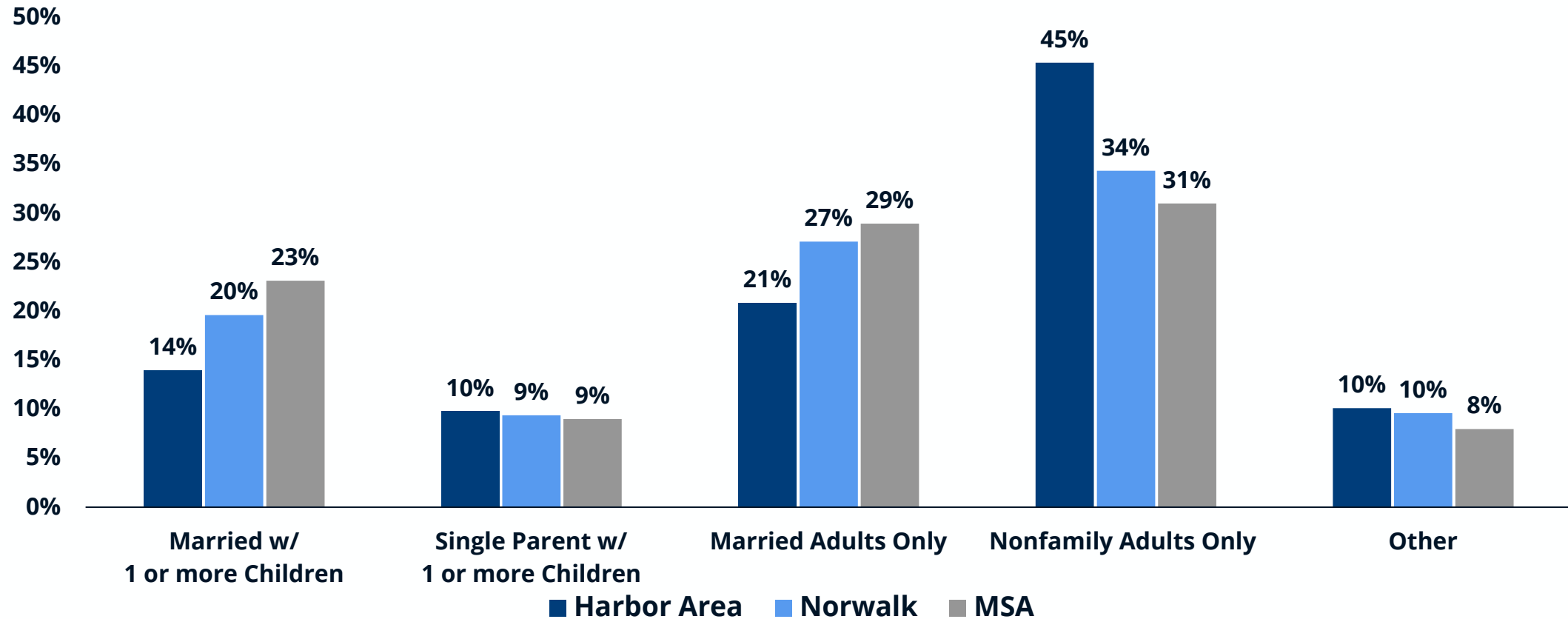
	Harbor Area	Norwalk	MSA
<b>Average Household Size (2023)</b>	2.37	2.58	2.70

Source: US Census ACS 2014, 2023 5-Year

## DEMOGRAPHY | HOUSEHOLD TYPE

A smaller share of Harbor households have children compared with the city overall and almost half are nonfamily households, which suggests this area has less of a concentration of families relative to the city.

Share of Households by Type (2023)



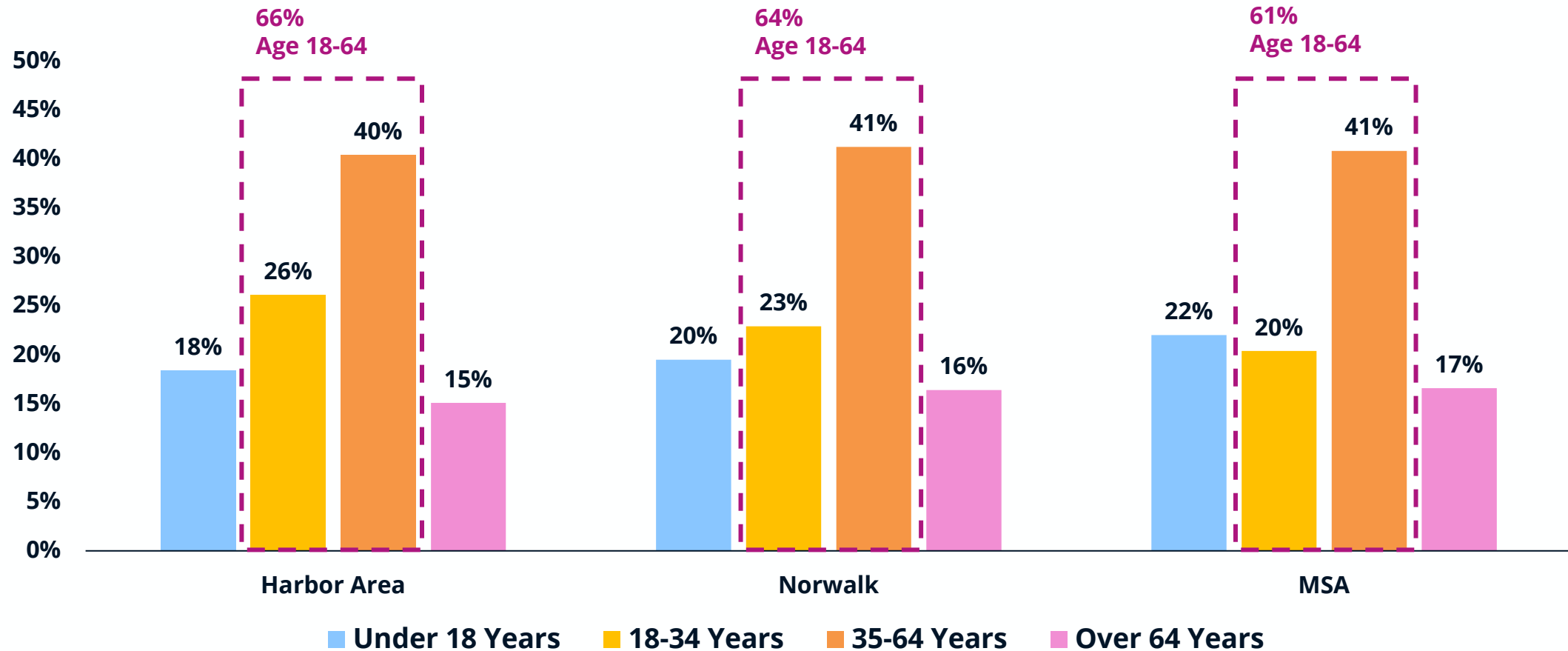
Source: US Census ACS 2023 5-Year

Note: Nonfamily households is a single person or unrelated household members

## DEMOGRAPHY | POPULATION AGE

The share of working area population in the Harbor Area is 66% compared to 64% in the city. In general, the distribution of population by age is similar across geographies.

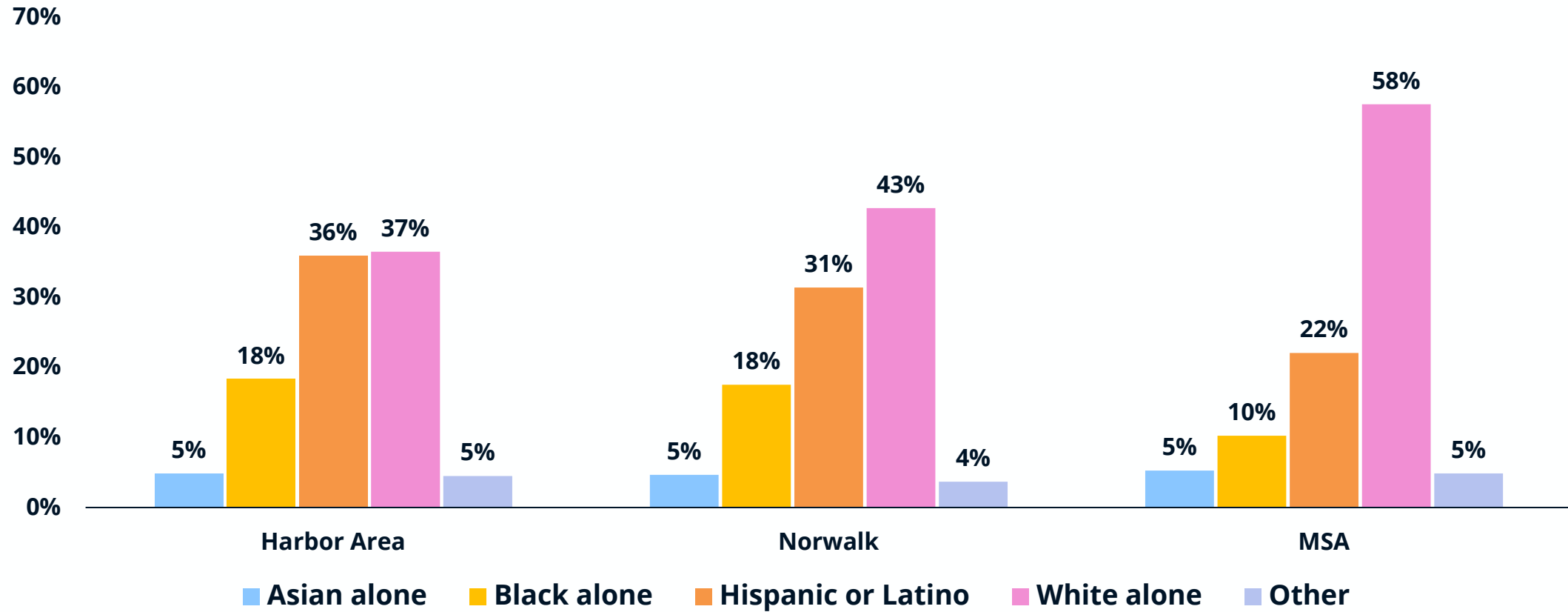
Share of Population by Age (2023)



## DEMOGRAPHY | RACE AND ETHNICITY

The Harbor Area is more diverse than both the city and the MSA. The Black and/or Hispanic population totals over 54% of the area compared to 51% for the city and 32% for the MSA.

Share of Population by Race and Ethnicity (2023)



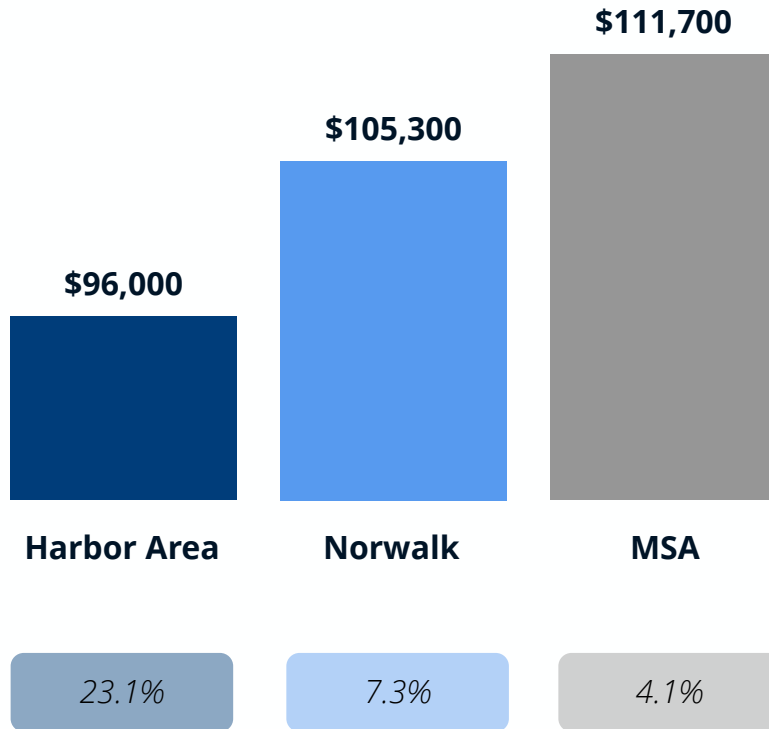
Source: US Census ACS 2023 5-Year

Note: Asian, Black, and white alone indicates non-hispanic or latino population.

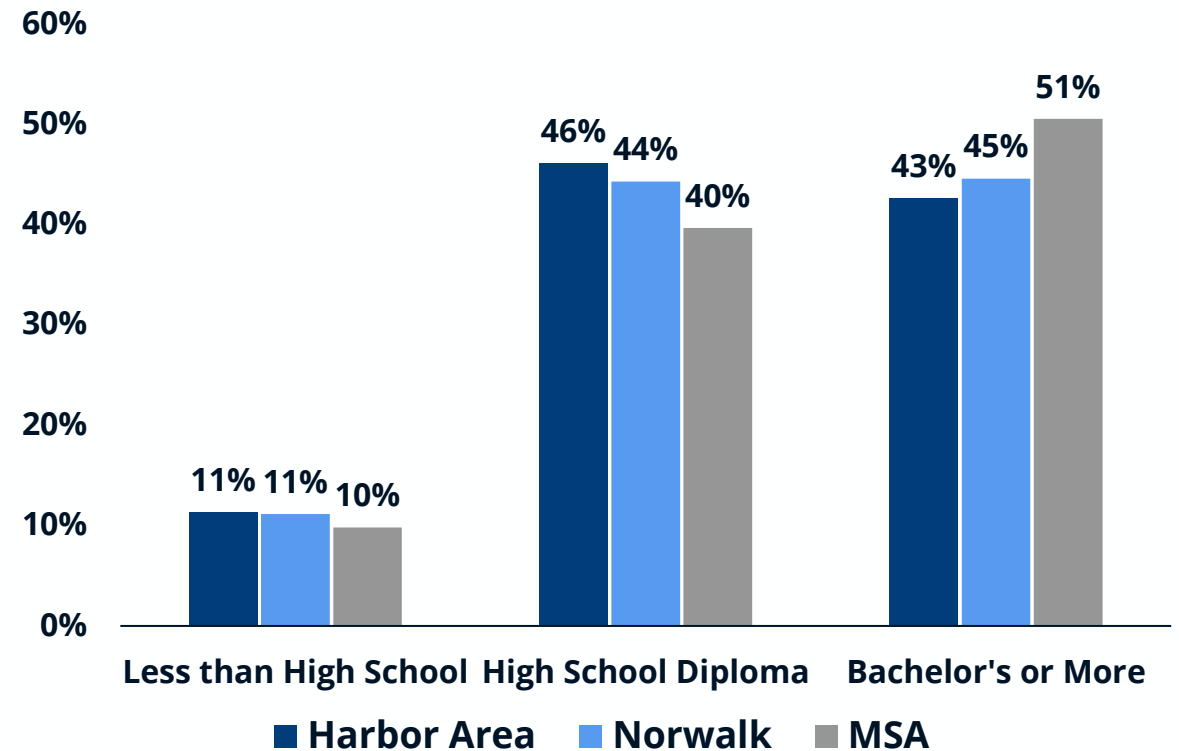
## DEMOGRAPHY | INCOME AND EDUCATION


The Harbor Area's household income is lower than Norwalk and the MSA but had a steeper increase in the last 10 years. Bachelor's attainment is slightly lower, which could be a factor in income difference.

### Median Household Income (2023)



### Educational Attainment Population Over 25 (2023)





02

Industry

## INDUSTRY | SUMMARY OF KEY TAKEAWAYS – CITYWIDE

### **1. Norwalk’s economy is shrinking. The City experienced net job loss across almost all industry categories in the last 10 years.**

- Norwalk lost almost 10% of its total jobs between 2013 and 2022 (compared to the 3.7% shrinkage in total jobs in the MSA), indicating a shrinking economic landscape.
- Only service and construction/real estate related industries have seen net job growth citywide.

### **2. In contrast, jobs in the Harbor area are growing, indicating growing economic activity and the Harbor’s role as a regional employment center.**

- The Harbor area jobs grew by 5.8% between 2013 and 2022, significantly counteracting the citywide shrinkage trend. With a total of almost 17,000 jobs, the Harbor area represents 39% of all jobs in Norwalk.
- The Harbor is a regional employment hub. Over 77% of the Harbor area workers commute from outside of Norwalk. The Harbor area receives a net inflow of jobs, compared to the net daily outflow the City experiences.
- The job growth in the Harbor area has been broad – including service, health, education, construction and real estate, waste management, and manufacturing.

### **3. Roughly 13 percent of all jobs in the City of Norwalk can be defined as “water-dependent jobs”. This ratio increases to 17 percent in the Harbor Area.**

- As common across the East Coast, the largest share of water-dependent jobs in Norwalk are supported by tourism activities, such as restaurants, amusement, and museums.

## INDUSTRY | SUMMARY OF KEY TAKEAWAYS – HARBOR AREA

### **1. The Harbor Area's economy is heavily supported by jobs in healthcare, social assistance, and education.**

- Healthcare, social assistance, and educational jobs comprise about 5,000 of the Harbor Area's job according to the data, driven in particular by social assistance organizations serving individuals and families, dentist offices, home healthcare services, and elementary and secondary schools.
- Education jobs are growing faster than healthcare and social assistance, likely as a result of a growing population in the Harbor Area.

### **2. Blue collar jobs are also an economic driver in the Harbor Area, comprising almost one-third of jobs.**

- Blue collar jobs include construction, utilities, manufacturing, wholesale trade, and transportation and warehousing, overall representing more of the industrial economies near the Harbor.
- Some of these industries have seen a decline in jobs over the last 10 years suggesting the changing character of blue collar jobs and consolidation towards certain industries at the Harbor (Construction and Manufacturing).
- There is fishing and aquaculture activity in the Harbor area, albeit not accounting for a large number of jobs.

### **3. Of the Harbor Area jobs that are in water-dependent industries, a majority are jobs driven by tourism and recreation activity around the Harbor.**

- Over 60 percent of these jobs are in restaurants, travel arrangement services and accommodation, museums, historical sites, and other amusement and recreation, which tend to lower paying jobs.

## INDUSTRY | JOBS AND BUSINESS SNAPSHOT

The Harbor Area represents about 39 percent of all jobs in Norwalk and has seen an increase in total jobs over the last 10 years compared to a decreasing trend for Norwalk and the MSA.

	Harbor Area	Norwalk	MSA
<b>Number of Businesses (2024)</b>	2,347	5,694	52,758
<b>Top 3 Industries by Number of Businesses</b>	<ul style="list-style-type: none"> <li>Healthcare and Social Assistance</li> <li>Other Services*</li> <li>Professional, Scientific and Technical Services</li> </ul>	<ul style="list-style-type: none"> <li>Retail Trade</li> <li>Other Services</li> <li>Construction</li> </ul>	<ul style="list-style-type: none"> <li>Professional, Scientific and Technical Services</li> <li>Other Services</li> <li>Retail Trade</li> </ul>
<b>Number of Jobs (2022)</b>	16,867	43,528	425,657
<b>Top 3 Industries by Number of Jobs</b>	<ul style="list-style-type: none"> <li>Healthcare and Social Assistance</li> <li>Educational Services</li> <li>Retail Trade</li> </ul>	<ul style="list-style-type: none"> <li>Healthcare and Social Assistance</li> <li>Retail Trade</li> <li>Professional, Scientific and Technical Services</li> </ul>	<ul style="list-style-type: none"> <li>Healthcare and Social Assistance</li> <li>Retail Trade</li> <li>Professional, Scientific and Technical Services</li> </ul>
<b>Jobs CAGR** (2013-2022)</b>	0.6%	-1.0%	-0.4%
<b>Jobs Growth Rate (2013-2022)</b>	5.8%	-9.9%	-3.7%

\*Other Services includes automotive repair and maintenance, laundry, and civic organization related jobs and businesses.

\*\*The Compound Annual Growth Rate measures an annualized growth rate over a period of time, in this case 10 years.

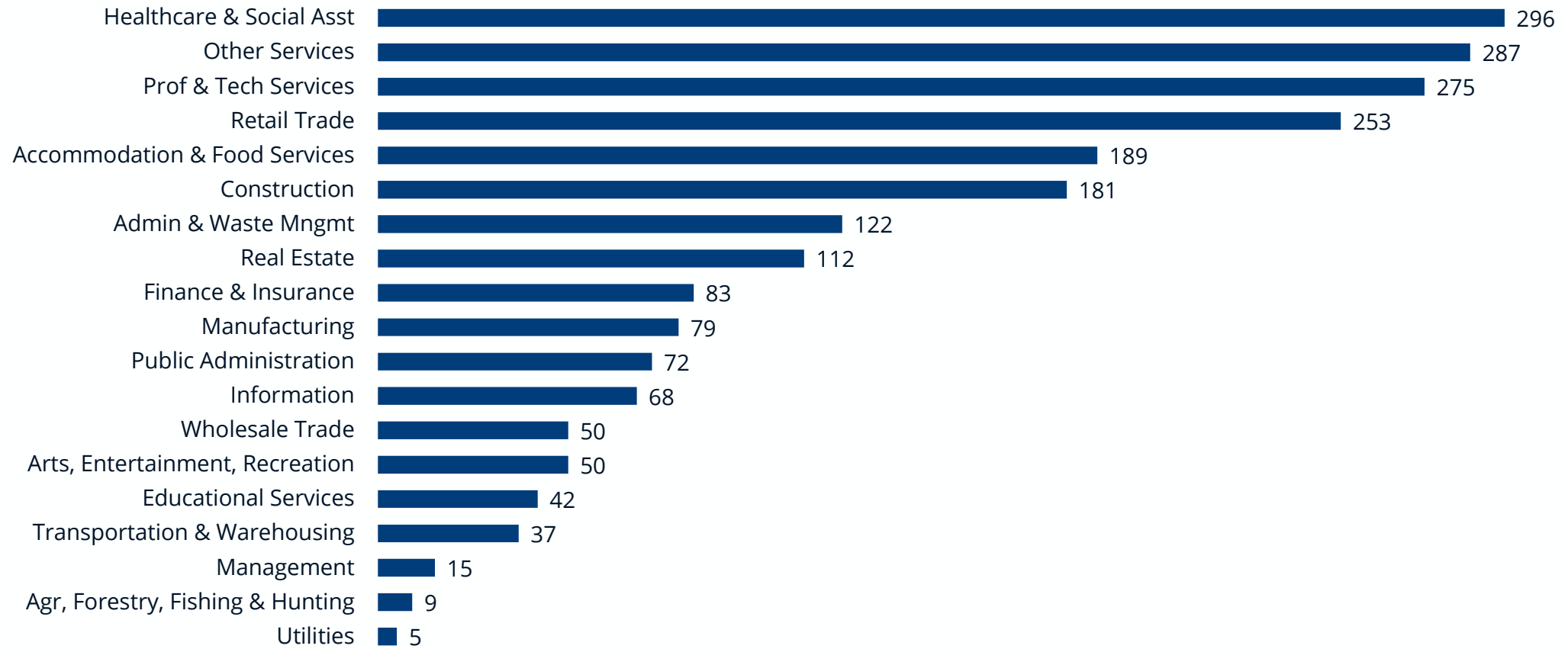
Note: The most recent business data is 2024. The most specific and recent jobs data is 2022, so the 10-year change period shifts to 2013-2022 from 2014-2023.

Source: Census OnTheMap and Lightcast, 2013 and 2022, ArcGIS Business Analyst, 2024

## INDUSTRY | HARBOR AREA CURRENT BUSINESSES

The Harbor Area contains almost half of all healthcare and social assistance businesses in the city, but also has a high number of construction, retail, accommodation, and food service businesses.

### Harbor Area Businesses (2024)

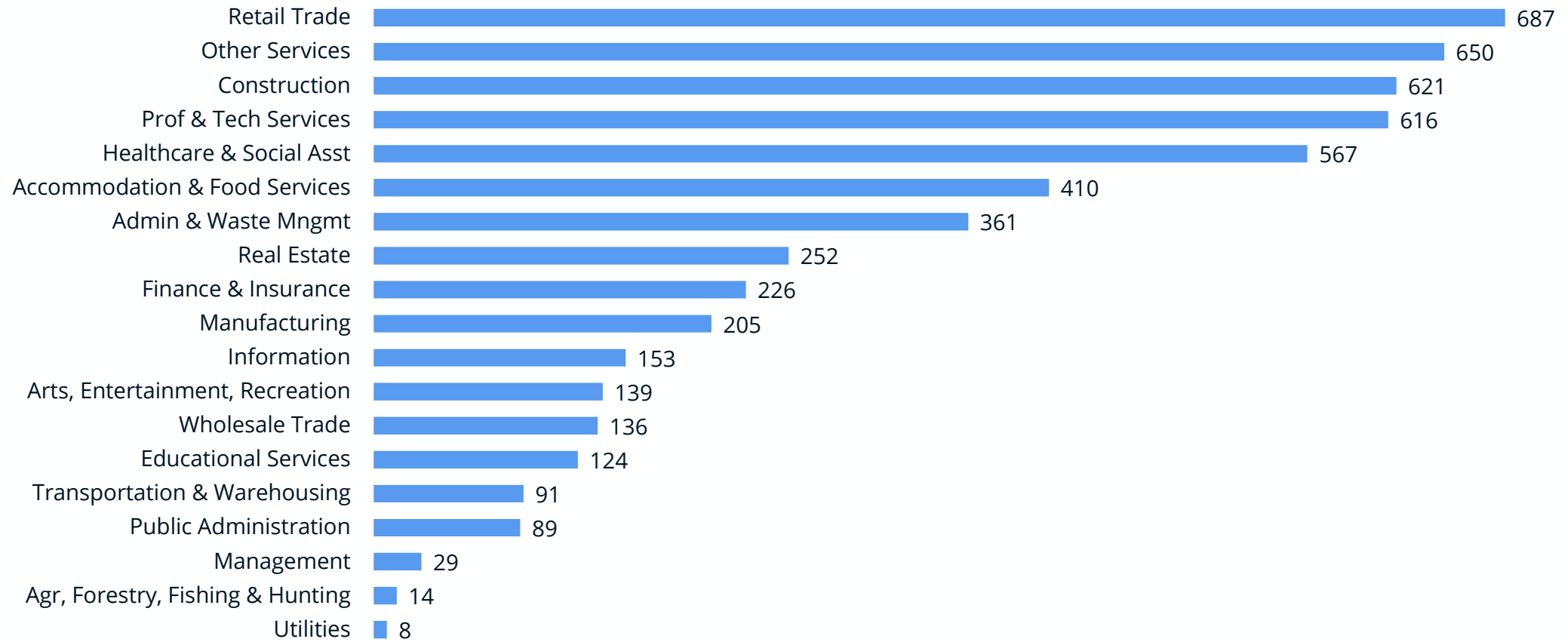


Note: Chart omits the following industries: Mining, Quarrying, and Oil and Gas Extraction; Unclassified.  
Source: ArcGIS Business Analyst, 2024

## INDUSTRY | NORWALK CURRENT BUSINESSES

The City's business composition reflects a diversity of sectors including a high number of retail, construction, professional services, and other services businesses (including automotive repair).

**City of Norwalk Businesses (2024)**

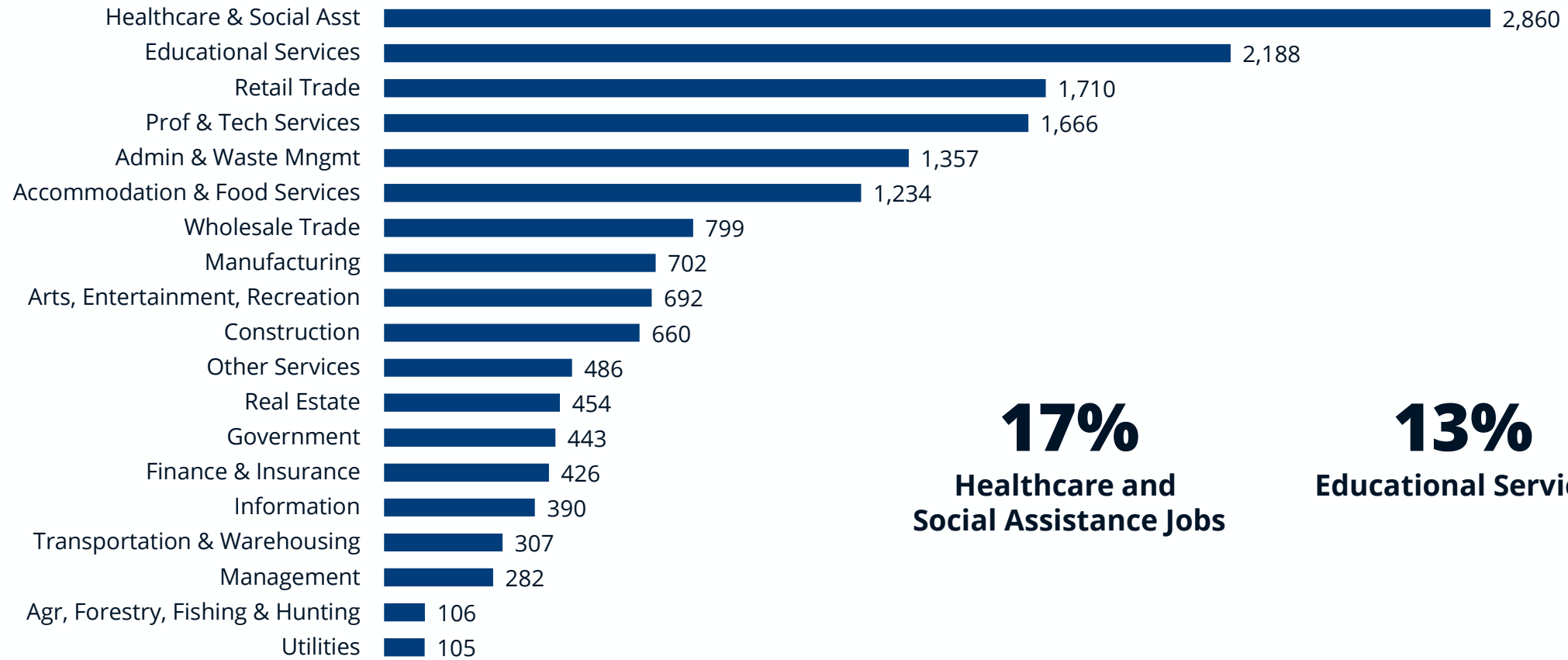


*NOTE: Chart omits the following industries : Mining, Quarrying, and Oil and Gas Extraction; Unclassified.  
Source: ArcGIS Business Analyst, 2024*

## INDUSTRY | HARBOR AREA CURRENT JOBS

Almost one-third of jobs in the Harbor area are related to education or healthcare and social assistance. Blue collar\* jobs, such as construction and manufacturing, comprise 29% of total jobs.

Harbor Area Jobs (2022)



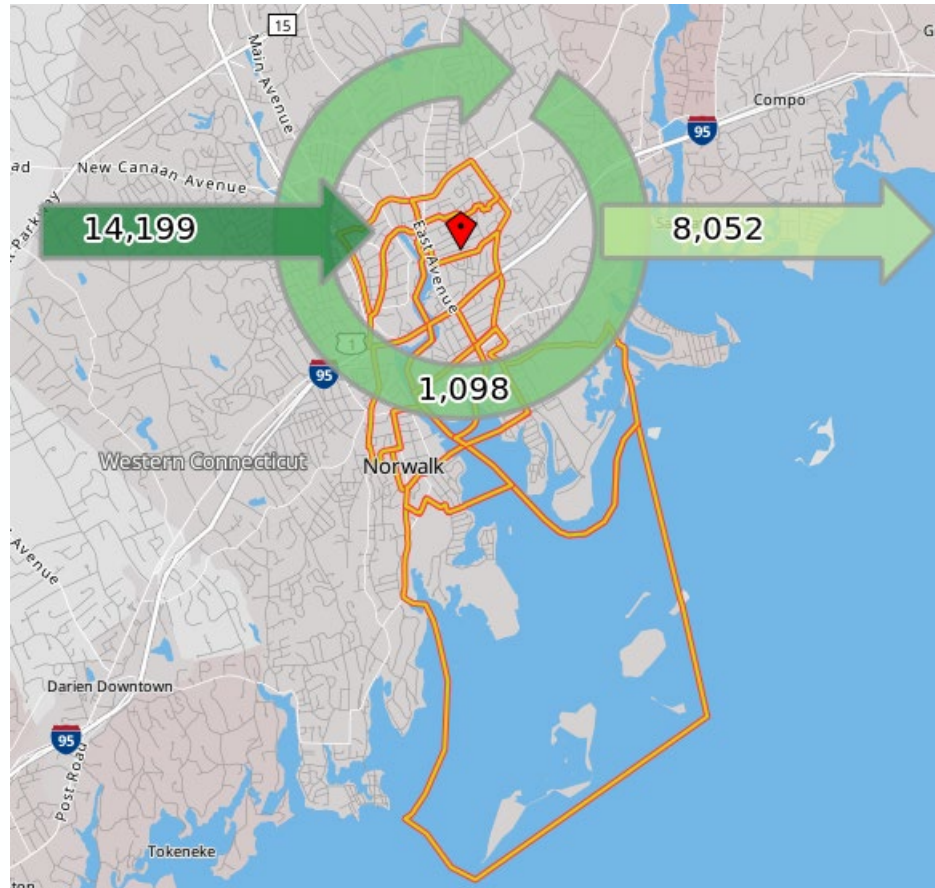
**17%**  
Healthcare and  
Social Assistance Jobs

**13%**  
Educational Services

\*Blue collar jobs include agriculture, forestry, fishing, and hunting, utilities, construction, manufacturing, wholesale trade, and transportation and warehousing  
NOTE: Chart omits the following industries with 10 or fewer jobs: Mining, Quarrying, and Oil and Gas Extraction; Unclassified.  
Source: Census OnTheMap and Lightcast, 2013 and 2022

## INDUSTRY | HARBOR AREA INFLOW OUTFLOW

Over 90 percent of Harbor Area workers commute into the Harbor Area for work. Of these 14,200 workers, 3,200 live in Norwalk, 2,700 live in Stamford or Bridgeport, and 8,300 live elsewhere.



**14,199** – Employed in Harbor Area, Live Outside

- 3,191 live in Norwalk
- 1,410 live in Stamford
- 1,296 live in Bridgeport

**8,052** – Live in Harbor Area, Employed Outside

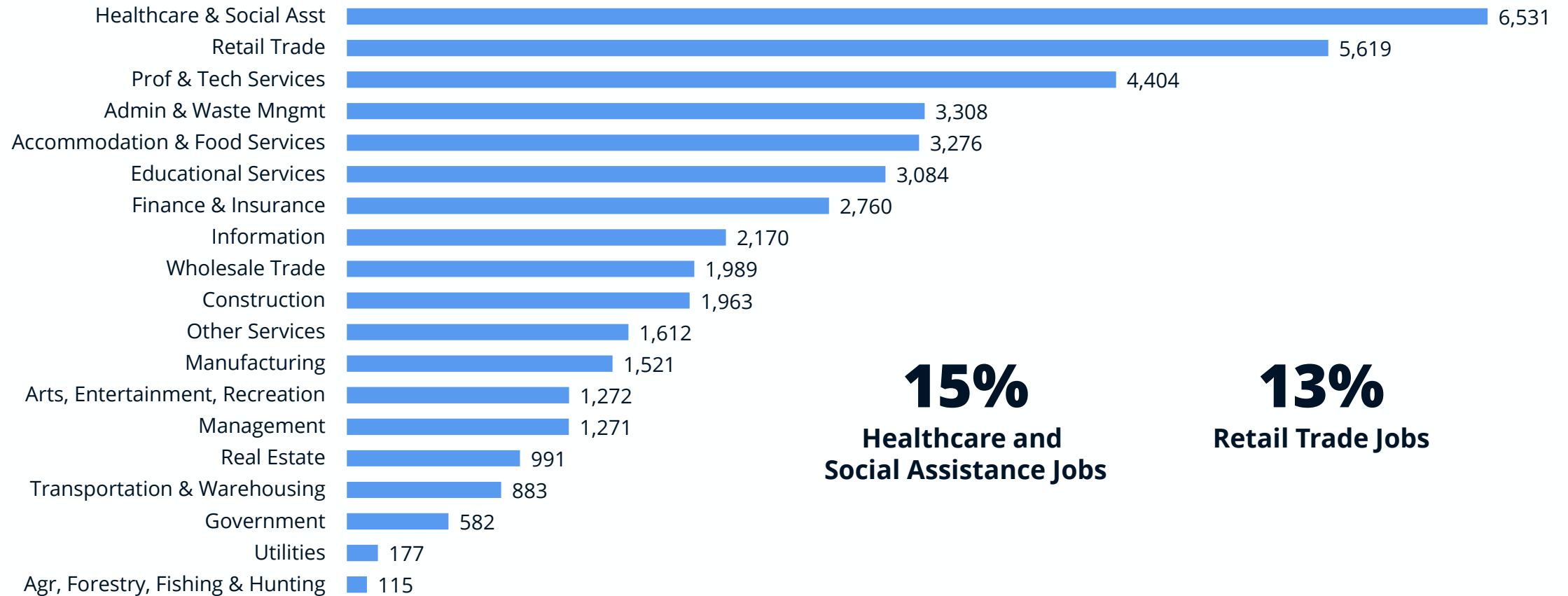
- 1,214 work in New York City
- 1,131 work in Stamford
- 985 work in Norwalk

**1,098** – Employed and Live in Harbor Area

## INDUSTRY | NORWALK CURRENT JOBS

The industry breakdown for the City of Norwalk shows that more jobs in the services sector such as retail trade, accommodation, and food services, while less jobs are in manufacturing and construction.

City of Norwalk Jobs (2022)



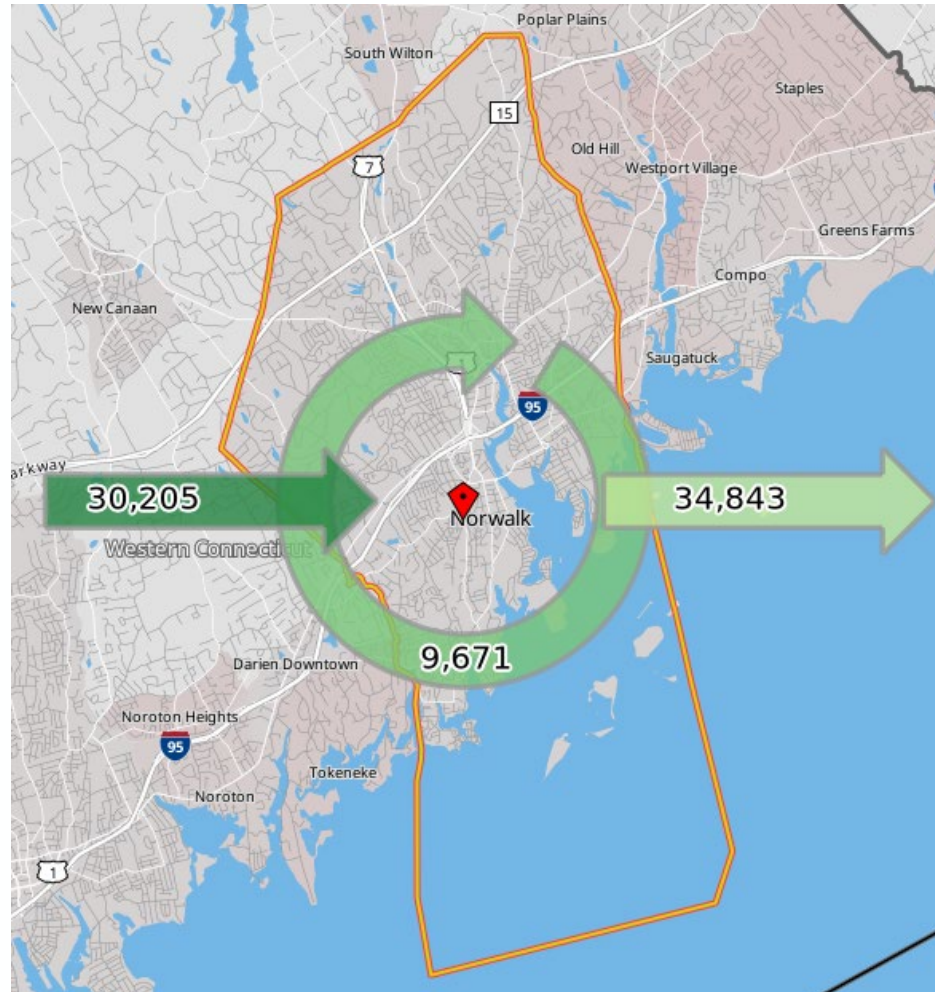
**15%**  
Healthcare and  
Social Assistance Jobs

**13%**  
Retail Trade Jobs

NOTE: Chart omits the following industries with 10 or fewer jobs: Mining, Quarrying, and Oil and Gas Extraction; Unclassified.  
Source: Census OnTheMap and Lightcast, 2013 and 2022

## INDUSTRY | NORWALK INFLOW OUTFLOW

Of the 30,200 workers that commute into Norwalk, 6,800 of them live in Stamford or Bridgeport, 2,600 live in Danbury, New York City, or Shelton, and 20,800 live elsewhere.



**30,205** – Employed in Norwalk, Live Outside

- 3,906 live in Stamford
- 2,896 live in Bridgeport

**34,843** – Live in Norwalk, Employed Outside

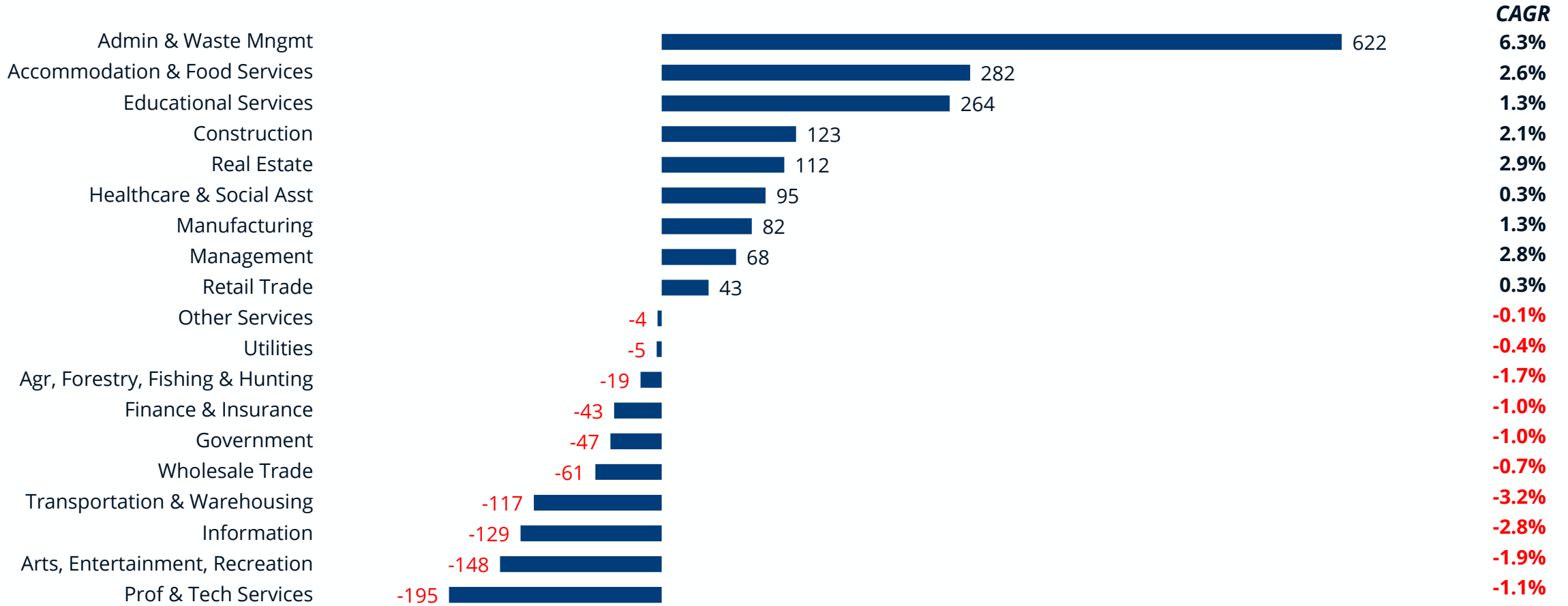
- 6,166 work in Stamford
- 6,070 work in New York City

**9,671** – Employed and Live in Norwalk

## INDUSTRY | HARBOR AREA 10-YEAR JOBS CHANGE

Office administration and cleaning jobs demonstrated the largest growth in jobs followed by tourism-related industries including accommodation and food services, as well as educational services.

Change in Harbor Area Jobs (2013-2022)



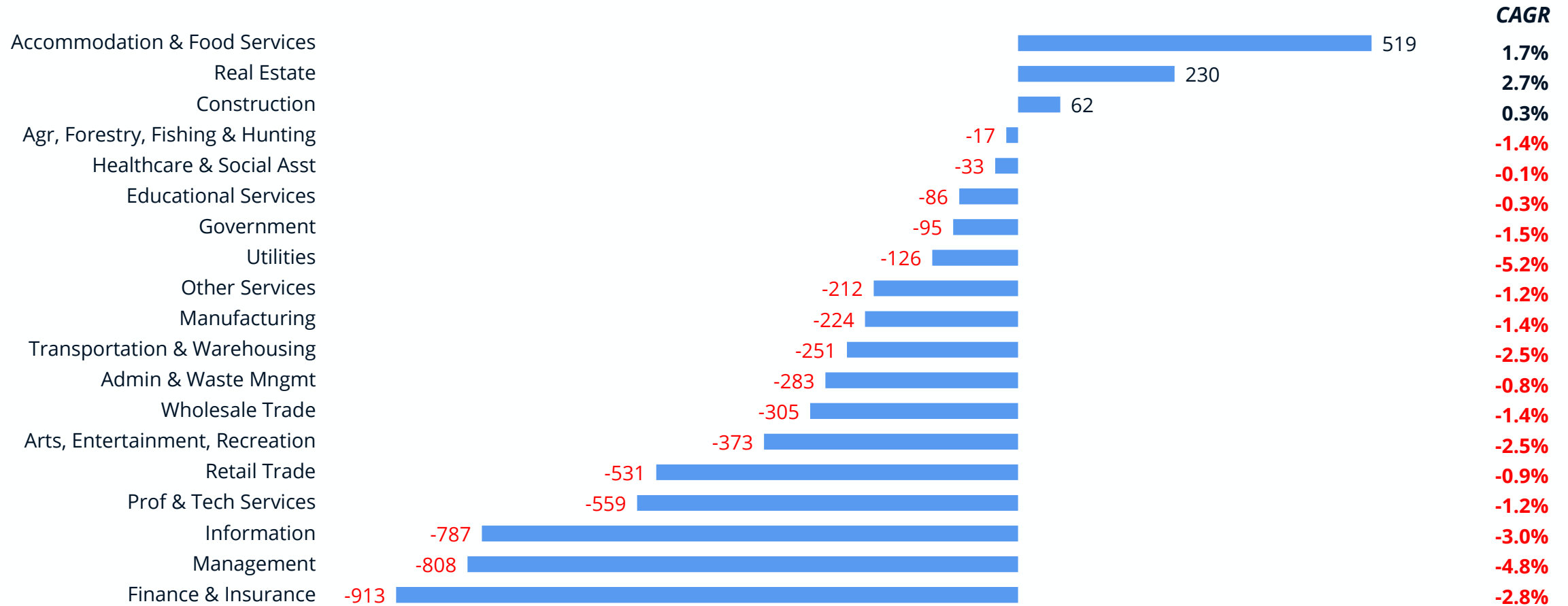
Note: Chart omits the following industries with 10 or fewer jobs: Mining, Quarrying, and Oil and Gas Extraction; Unclassified. Administration & Waste Management includes employment and business support services as well as janitorial and landscape services.

Source: Census OnTheMap and Lightcast, 2013 and 2022

## INDUSTRY | NORWALK 10-YEAR JOBS CHANGE

The City of Norwalk experienced jobs loss across all industry categories in the last 10 years, except for accommodation and food services, real estate, and construction.

Change in Norwalk Jobs (2013-2022)



NOTE: Chart omits the following industries with 10 or fewer jobs: Mining, Quarrying, and Oil and Gas Extraction; Unclassified.  
Source: Census OnTheMap and Lightcast, 2013 and 2022

## INDUSTRY | WATER-DEPENDENT INDUSTRIES IN NORWALK

The below table summarizes the industries that contain jobs dependent on the Harbor in Norwalk.

Industry Category	Industry Activity	NAICS Description
Aquaculture	1. Aquaculture	➤ Animal Production
Fishing and Fisheries	1. Fishing 2. Fish and Seafood Wholesales and Retailers	➤ Fishing ➤ Grocery and Related Product Merchant Wholesalers ➤ Specialty Food Stores
Boating and Marinas	1. Ship and Boat Building and Repair 2. Boat Dealers 3. Marinas	➤ Ship and Boat Building ➤ Other Motor Vehicle Dealers ➤ Personal and Household Goods Repair and Maintenance
Maritime Transportation	1. Port and Harbor Operations 2. Warehousing and Storage	➤ Support Activities for Water Transportation ➤ Warehousing and Storage
Maritime Trade	1. Chemical and Gas Manufacturing 2. Nautical System and Trade Manufacturing 3. Other Manufacturing	➤ Basic Chemical Manufacturing ➤ Other General Purpose Machinery Manufacturing ➤ Navigational, Measuring, Electromedical, and Control Instruments Manufacturing
Energy, Power, and Telecommunications	1. Electric Power Generation, Transmission and Distribution	➤ Electric Power Generation, Transmission and Distribution
Research	1. Scientific Research 2. Environmental Organizations	➤ Scientific Research and Development Services ➤ Social Advocacy Organizations
Tourism and Recreation	1. Water Sightseeing 2. Accommodations and Hotels 3. Restaurants and Other Eating Places 4. Parks, Gardens, and Other Amusement Places 5. Boating Instruction	➤ Scenic and Sightseeing Transportation, Water ➤ Consumer Goods Rental ➤ Travel Arrangement and Reservation Services ➤ Other Schools and Instruction ➤ Museums, Historical Sites, and Similar Institutions ➤ Other Amusement and Recreation Industries ➤ Traveler Accommodation ➤ Restaurants and Other Eating Places

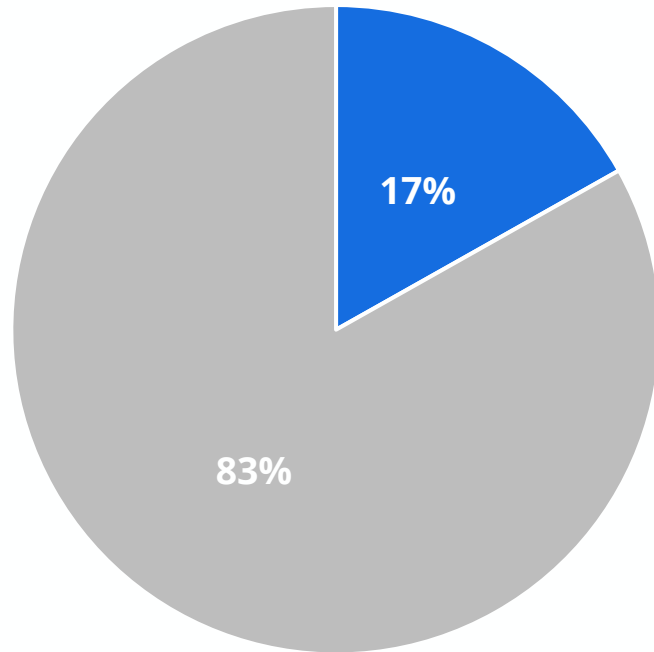
Note: The table reflects the water-dependent industries that are present in Norwalk per the jobs data. Additional industries are reflected in the memo for Task 2.1

Source: The NAICS codes were derived from water-dependent uses as defined by Section 22a 93(16) of the Connecticut Coastal Management Act (CCMA), under the Connecticut General Statutes (CGS) as well as HRBA's previous project experience developing industry-based definitions of water-dependent and/or blue economy uses, in MA, RI, and NY.

## INDUSTRY | SHARE OF POSSIBLE WATER-DEPENDENT JOBS

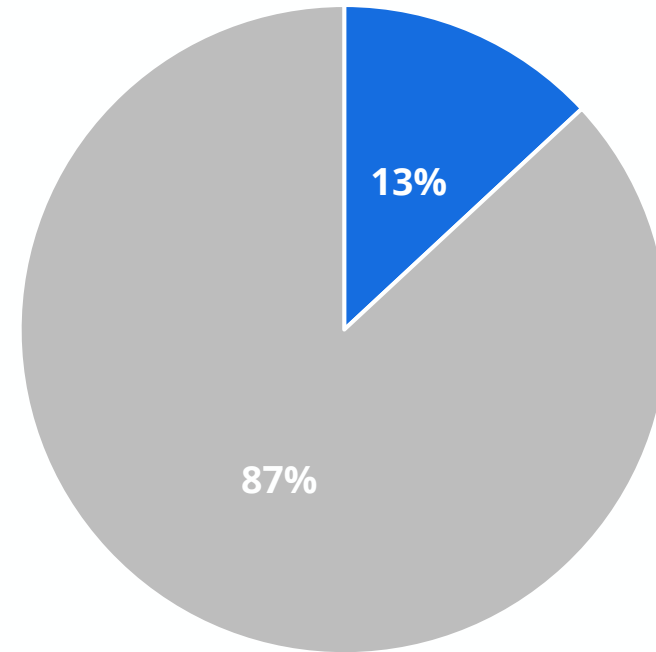
Roughly 13 percent of all jobs in the City of Norwalk can be possible water-dependent jobs. This ratio increases to 17 percent in the Harbor Area. A more detailed analysis of the water-dependent industries is forthcoming in Task 2.

Harbor Area



- Industries with Water-Dependent Jobs
- Industries without Water-Dependent Jobs

City of Norwalk

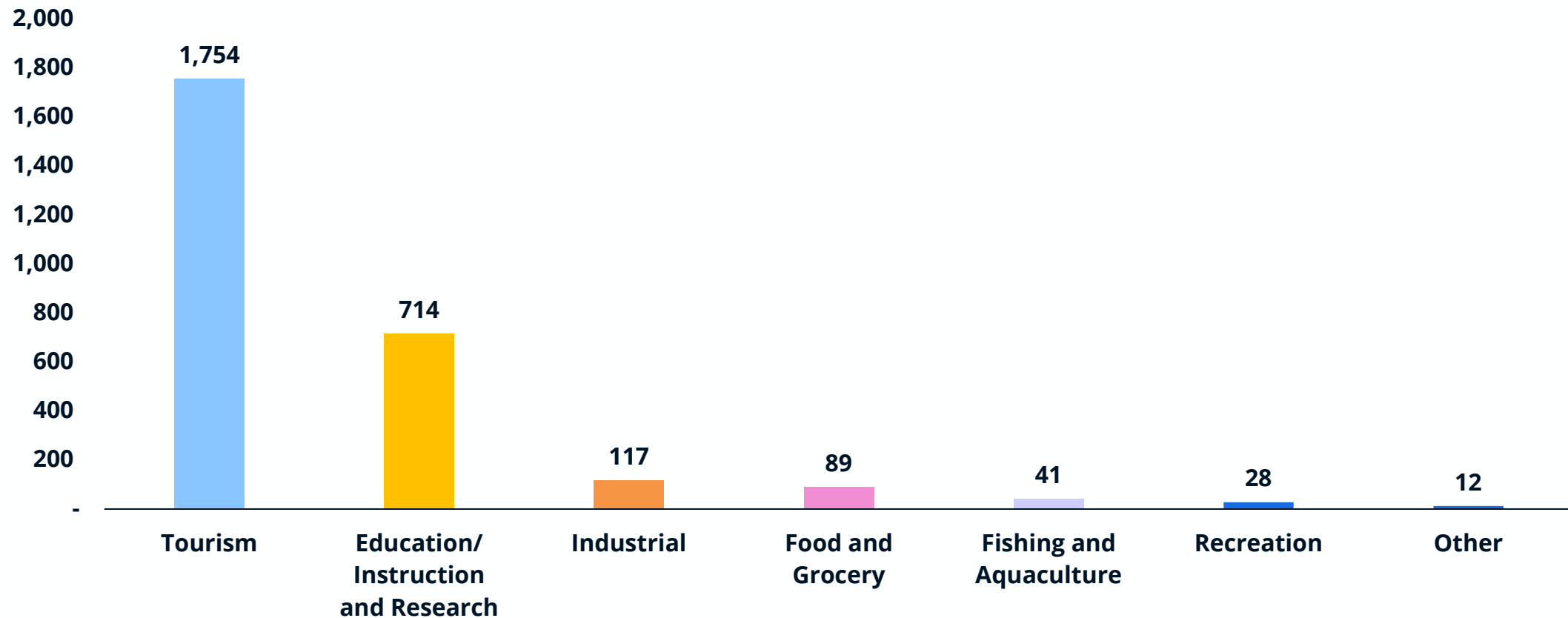


- Industries with Water-Dependent Jobs
- Industries without Water-Dependent Jobs

## INDUSTRY | WATER-DEPENDENT INDUSTRIES IN THE HARBOR

Tourism sector jobs represent the majority of water-dependent jobs in the harbor, followed by education, instruction and research jobs. A more detailed breakdown is in the appendix.

**Breakdown of Water-Dependent Harbor Area Jobs by Sector**

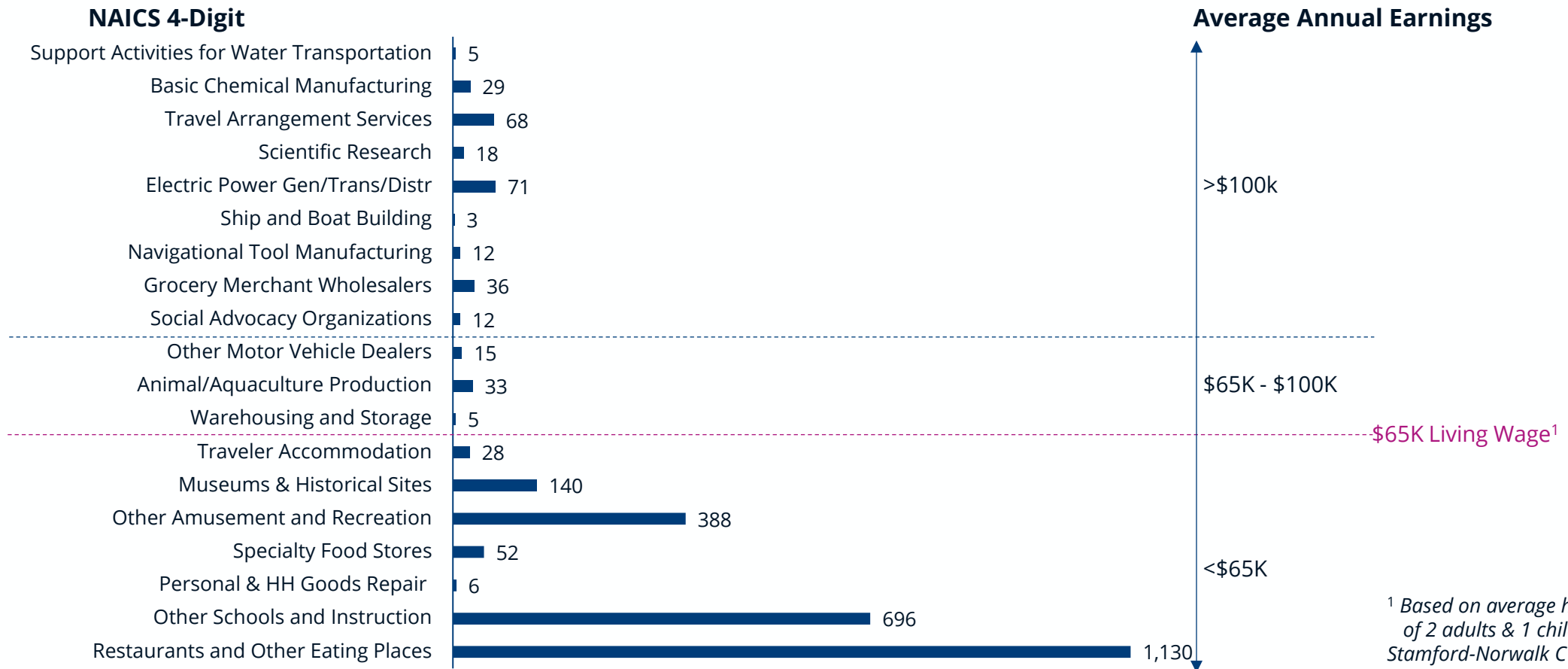


*NOTE: While education jobs include some that are water-dependent, not all are.  
Source: Census OnTheMap and Lightcast, 2022*

## INDUSTRY | HARBOR AREA WATER-DEPENDENT INDUSTRY EARNINGS

Jobs in water-dependent industries in the Harbor Area are concentrated below the living wage particularly restaurants which comprise a large portion of these jobs.

### Harbor Area Jobs and Earnings in Water-Dependent Industries



<sup>1</sup> Based on average household size of 2 adults & 1 child in Bridgeport-Stamford-Norwalk CT MSA  
<sup>2</sup> Earning less than minimum wage



03

# Recreation

## RECREATION | SUMMARY OF KEY TAKEAWAYS

### **1. The demographic trends across the different recreation categories and specific locations are generally more aligned with the MSA demographics than the Harbor Area.**

- Visitors aged 35-64 comprise the largest share across analyzed destinations and the distribution of visitors by age is aligned with the local geographies analyzed in the demographic section.
- The share of white visitors varies from 56-59 percent across the recreation destination types. This trend is out-of-town the MSA population but distinct from that of the Harbor Area and the City of Norwalk, which are more diverse and are not majority white. This discrepancy will be investigated further to better understand the barriers Harbor Area residents face in accessing local recreational assets.

### **2. Regional anchors, such as The SoNo Collection, have the most out-of-town visitors, but the proportion is also high for parks, beaches, and marinas.**

- The SoNo Collection has the highest share of out-of-town visitors, at 89 percent. This fact is expected given that it is a regional anchor drawing shoppers from all over.
- Notably, only one-third of visitors to marinas, parks, and beaches, are from Norwalk. Further analysis will show whether out of town visitors are from nearby towns or are coming from farther away.

### **3. Visitation peaked in Summer 2023, showing growth from 2022, but was not as high in 2024.**

- Visitation has fluctuated over time, seemingly in similar ways across recreation destinations. In general, visitation appeared to peak in Summer 2023, showing growth from 2022. However, 2024 did not continue this positive trend and seemed to be lower than 2023, although still higher than 2022. More analysis is warranted to understand what drove this trend and how that can inform future investments in tourism and recreation.

## RECREATION | OVERVIEW OF LOCATION GROUPS

An analysis of the Harbor Area's recreation destinations, leverages location information to information about visitors including visitation trends, home locations, and demographics. The data reflects a sample size of visitors between 2022-2024.

Five distinct types of places were analyzed, as shown on the map, including the SoNo Collection, the Maritime Aquarium, the Washington Street corridor and Sheffield Island Ferry, marinas, and parks and beaches.

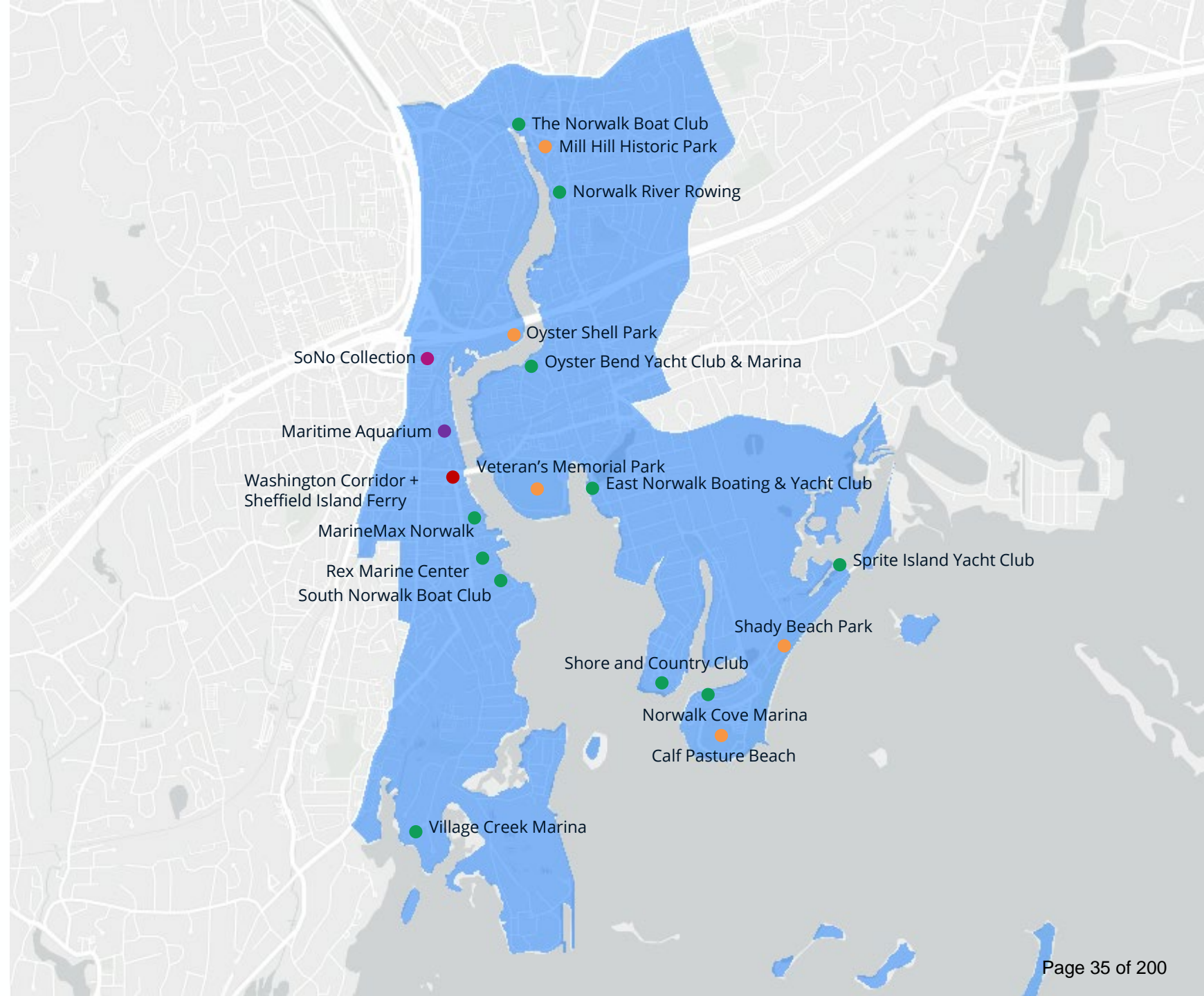
Maritime Aquarium

SoNo Collection

Washington St Corridor + Ferry

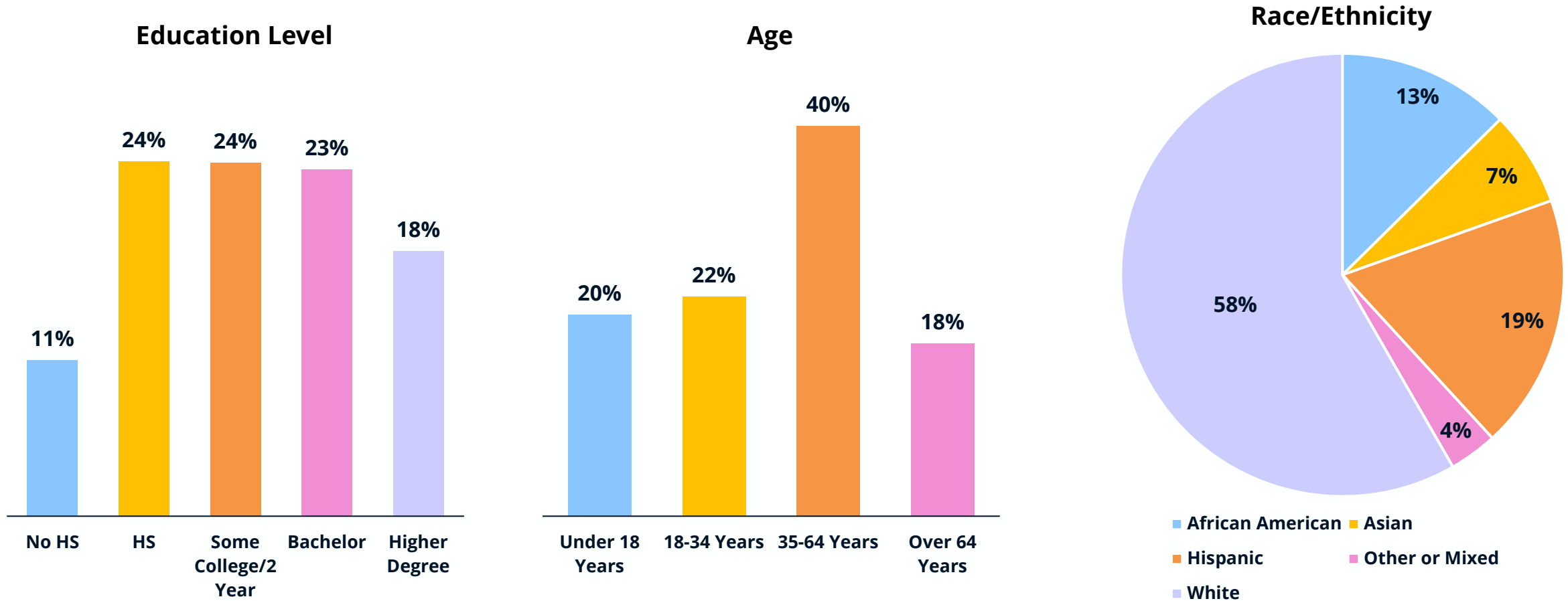
Marinas

Parks and Beaches



## RECREATION | VISITATION DEMOGRAPHICS FOR MARINAS

The age, education, and race/ethnicity demographics for marina visitors are very similar to the MSA demographics. Marina visitors in the Harbor Area are notably less diverse than the Harbor Area itself.



Note: the Marina data is comparable to the other recreation locations.

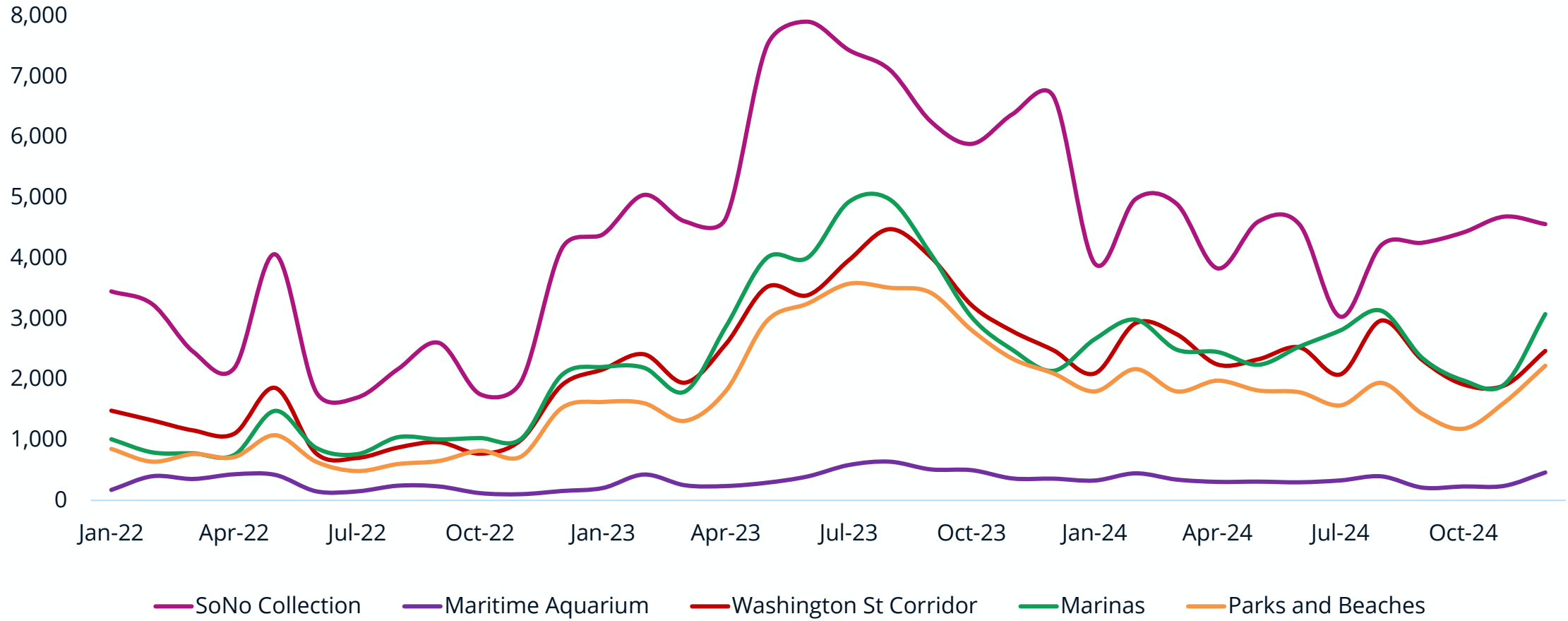
Source: Azira. Azira is a third-party data source, which provides a sample of anonymized user data, leveraging mobile device location information collected from smartphones.

This data shows, on a sampled individual user basis, geographic origins, time spent in given locations, demographic, and spending pattern related information.

## RECREATION | MONTHLY VISITATION TRENDS

Visitation trends are similar across all types of locations, with the SoNo Collection showing the greatest visitation relative to the other categories. Visitation appears to be higher in 2023 than in 2022 and 2024.

Monthly Visitation Trends from Data Sample (2022-2024)

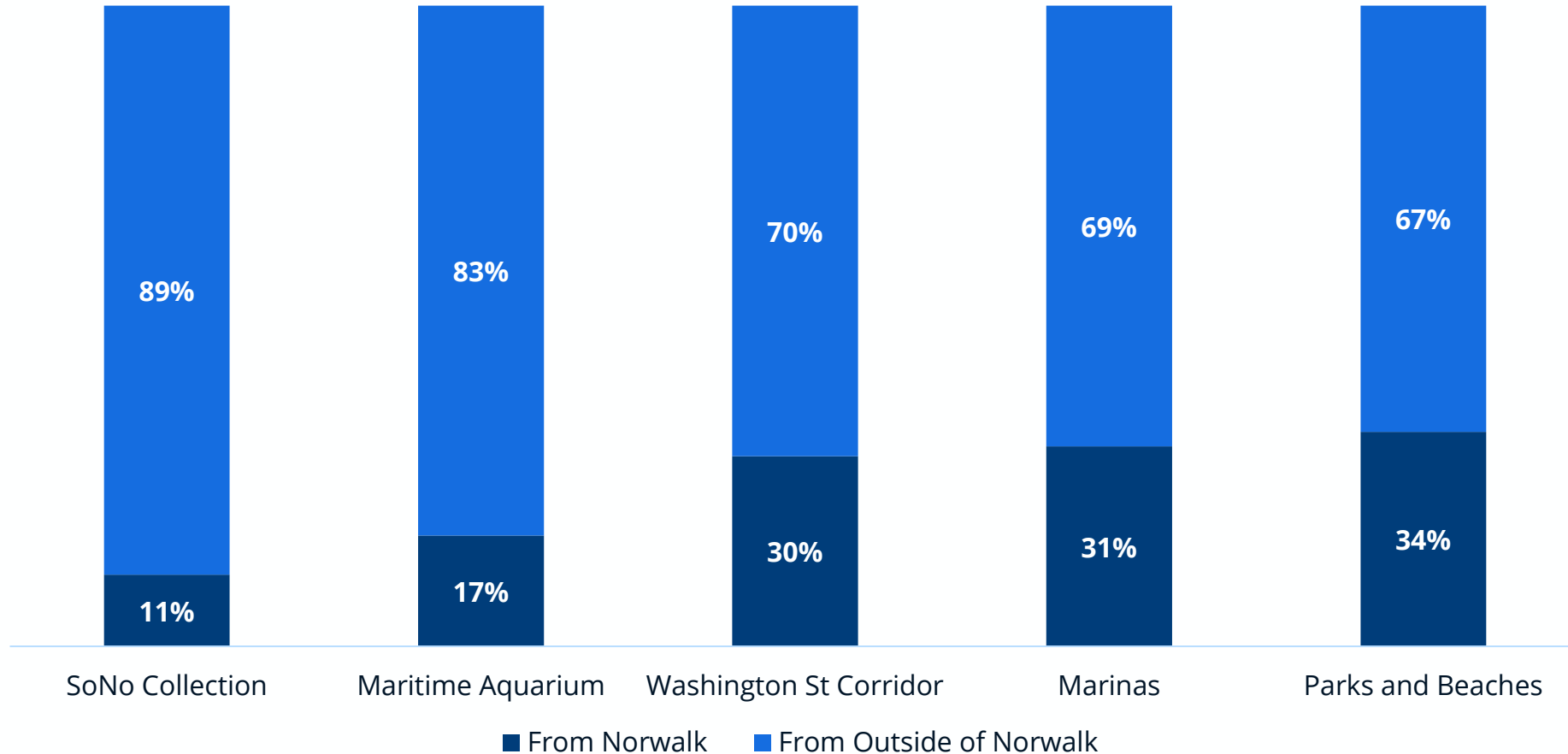


Note: The visitation trends are a sample and do not reflect total visitation counts.  
Source: Azira

## RECREATION | VISITATION ORIGINS

Regional anchors like the SoNo Collection and Maritime Aquarium have the highest shares of non-Norwalk visitors. About one-third of visits to marinas, parks, and beaches are by Norwalk residents.

Visitation Origin Split by Recreation Location





# 04




## Environment and Natural Resources (E & NR)

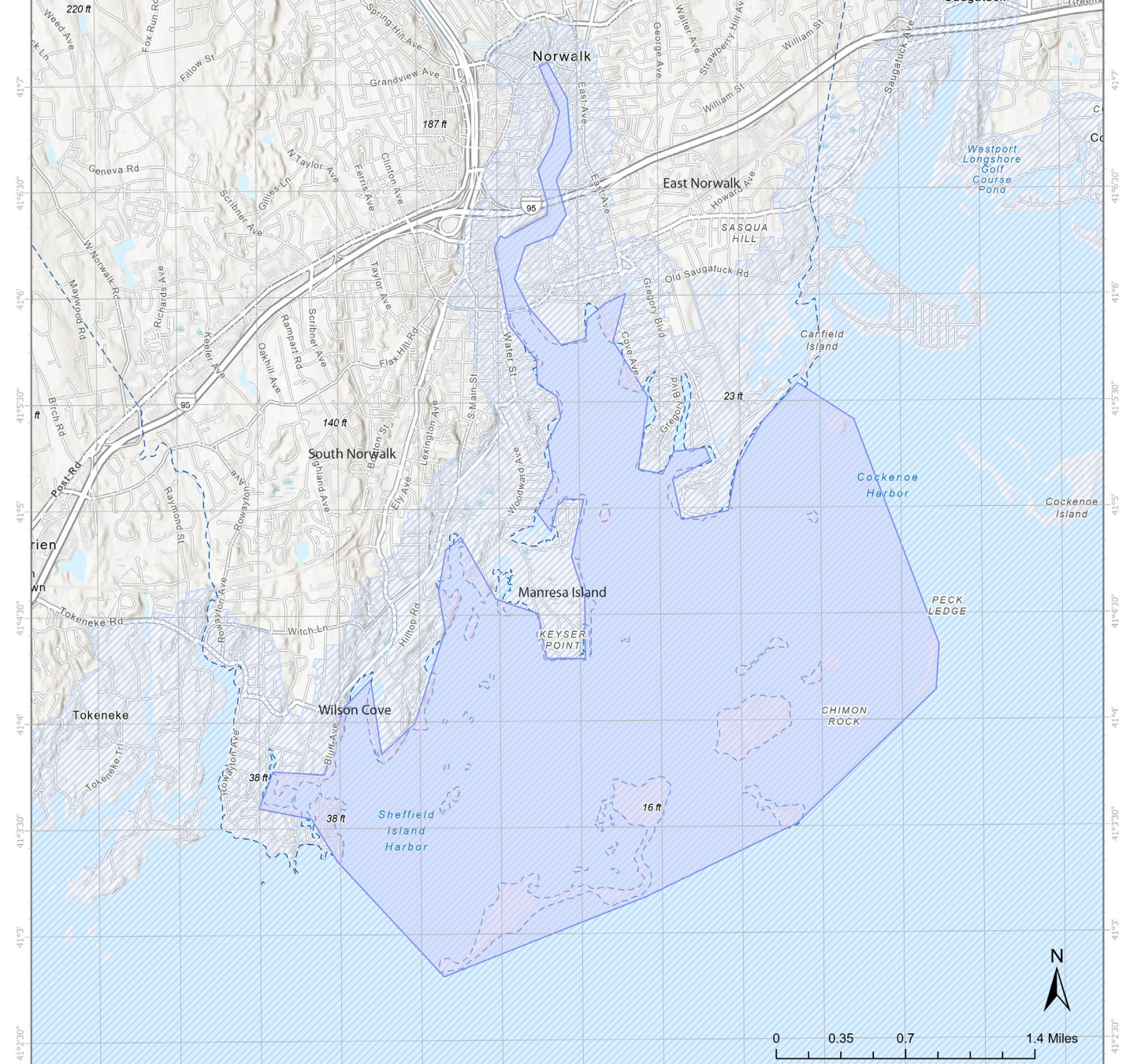
## E & NR | STUDY AREA OVERVIEW

The study area for Environment & Natural Resources is shown at right. The maps in this section look at the below components, detailed in the following slides:

- Navigational Opportunities & Hardships
- Shoreline Topography & Makeup
- Historic and Current Wetlands
- Harbor Wildlife and Critical Habitats
- Harbor Protected Areas
- Shellfish
- Public Access
- Heat Vulnerability
- Flood Hazards
- Sea Level Rise
- Erosion Susceptibility
- Land Use
- Recreational Boat Traffic

### Legend

-  Study Area
-  Norwalk Boundary
-  Coastal Boundary (DEEP)

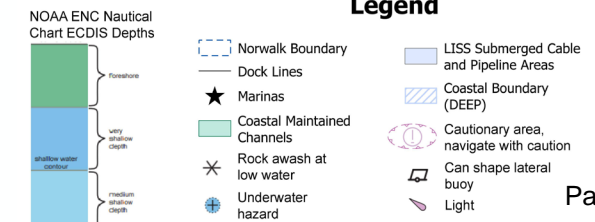
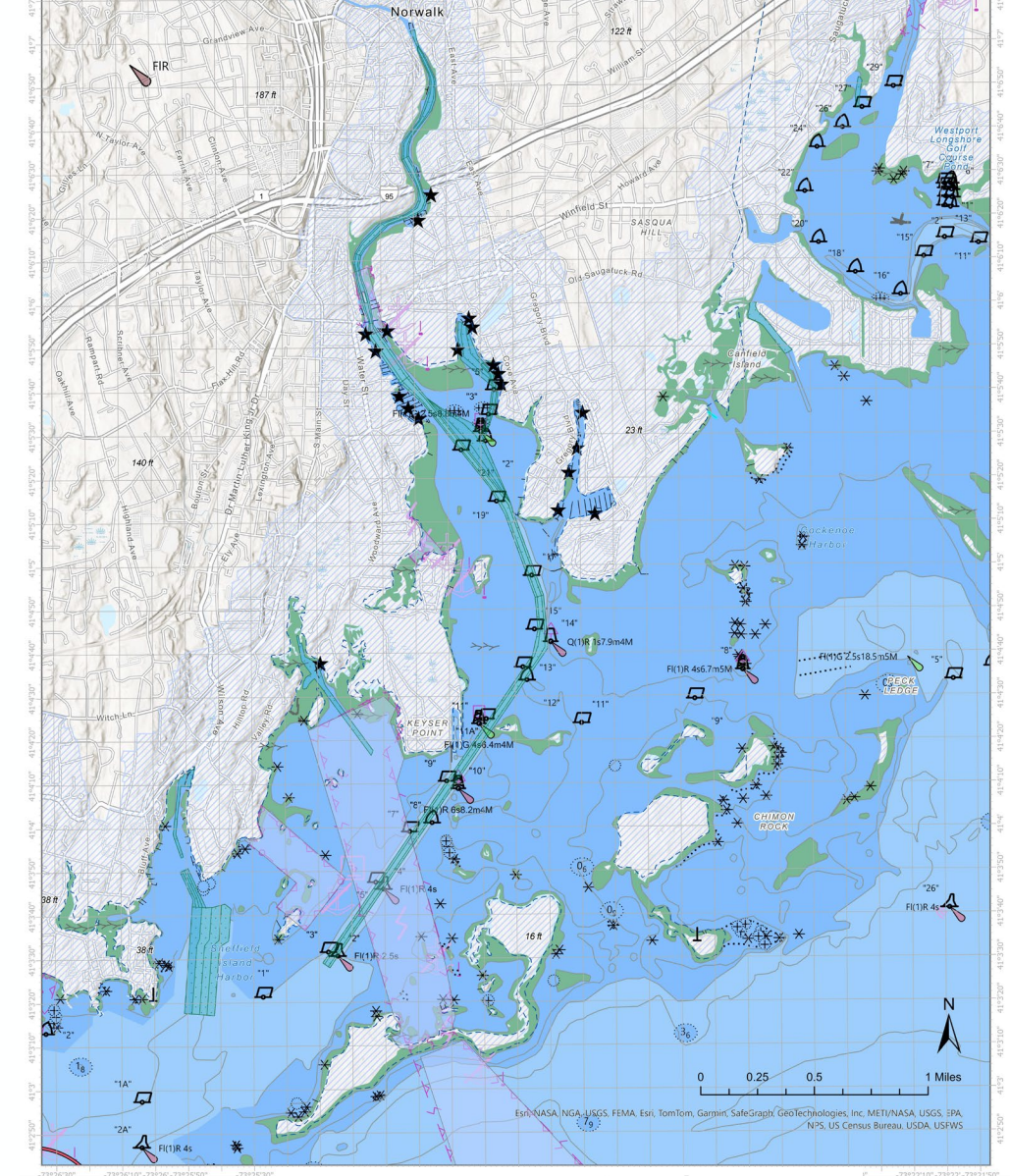


## E & NR | NAVIGATIONAL OPPORTUNITIES & HARDSHIPS

Norwalk Harbor presents both challenges and opportunities for those who navigate its waters.

- The 4.7-mile Norwalk Harbor Channel is between 10-12 feet deep, and its width varies by location, ranging from 100 feet to 250 feet wide. This clearly defined, federally maintained navigation channel runs from the outer harbor to Norwalk Harbor, located at the mouth of the Norwalk River.
- Dredging of the channel is managed and overseen by the U.S. Army Corps of Engineers (USACE) in coordination with several City commissions including the Norwalk Harbor Commission and Shellfish Commission. USACE oversight also includes a 10-foot-deep, 17-acre anchorage near Fitch Point.
- Dredging maintains the critical depth needed for navigability in the Harbor. This occurs every 10-15 years based on sediment accumulation, and dredging last occurred in 2014. Over time, sediment accumulation can negatively affect navigability. Shallow zones and shoaling, particularly near the islands and along harbor edges, require careful navigation and can pose a risk to larger/deep-draft vessels, especially during low tides.
- Other hazards include congestion and visibility. Norwalk Harbor experiences a variety of vessel traffic (including commercial fishing boats, recreational yachts, and crew teams), which can become congested near the Washington Street Bridge connecting South Norwalk to East Norwalk.
- Navigation is further challenged by large tide swings (+/- 7 ft), geomorphic shoaling, outcropping, strong currents and fog.

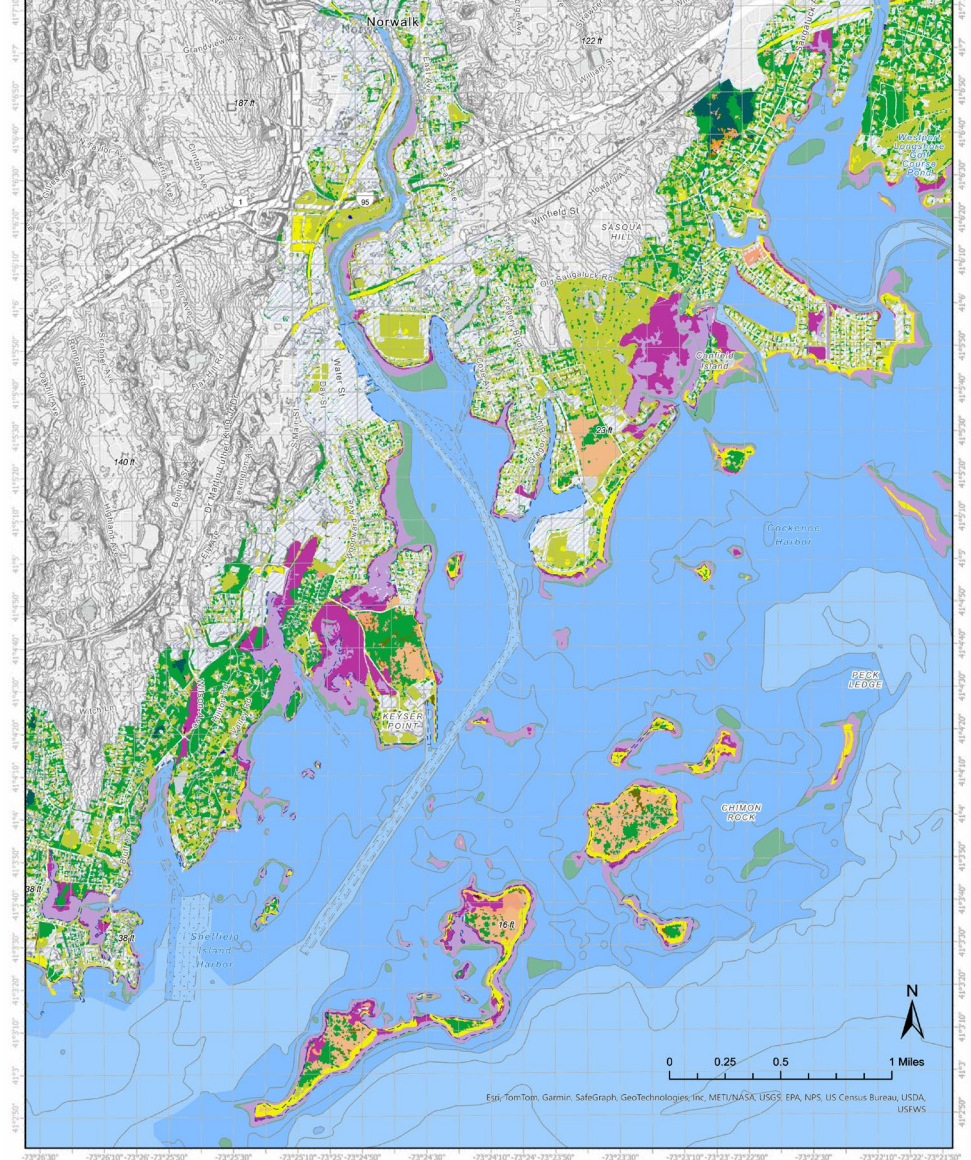
Source: USACE New England District, "Norwalk Harbor Navigation Project."



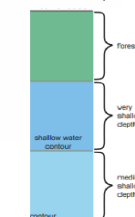
## E & NR | SHORELINE TOPOGRAPHY AND MAKEUP

Norwalk Harbor's shoreline is characterized by a mix of natural and hardened edges.

- The topography features gentle slopes descending towards the water, with elevations ranging from sea level at the shoreline to higher terrains inland (60-70 feet above sea level).
- The shoreline includes a mix of wetlands and forests (typically located closer to the Long Island Sound) with developed, hardened shorelines more commonplace in the upper Harbor where commercial and industrial activity is centered.
- Per NOAA data, shoreline habitat categories present within the study area include Developed Open Space, Mixed Forest, Estuarine Emergent Wetland, Palustrine Emergent Wetland, and Bare Land (areas with minimal vegetation).
- Further into the Harbor, man-made structures such as seawalls and piers provide stability to the waterfront, reinforcing areas prone to erosion. These hardened shorelines and impervious surfaces support industrial and/or commercial use but limit natural absorption. They are not mapped with any specific habitat category.
- Areas in the southern area of the study area (such as at Calf Pasture, Canfield, and Sheffield), are critical for water filtration and serve as vital habitats for marine life. The wetlands absorb excess water during storms, reducing flood risks and helping to maintain the delicate balance between land and sea.
- The Harbor's topography influences not only the environmental conditions but also the opportunities and challenges for those navigating its waters. The interplay of these shoreline features shapes Norwalk Harbor's identity, blending natural resources with practical maritime function.



NOAA ENC Nautical Chart ECDIS Depths



Landcover NOAA

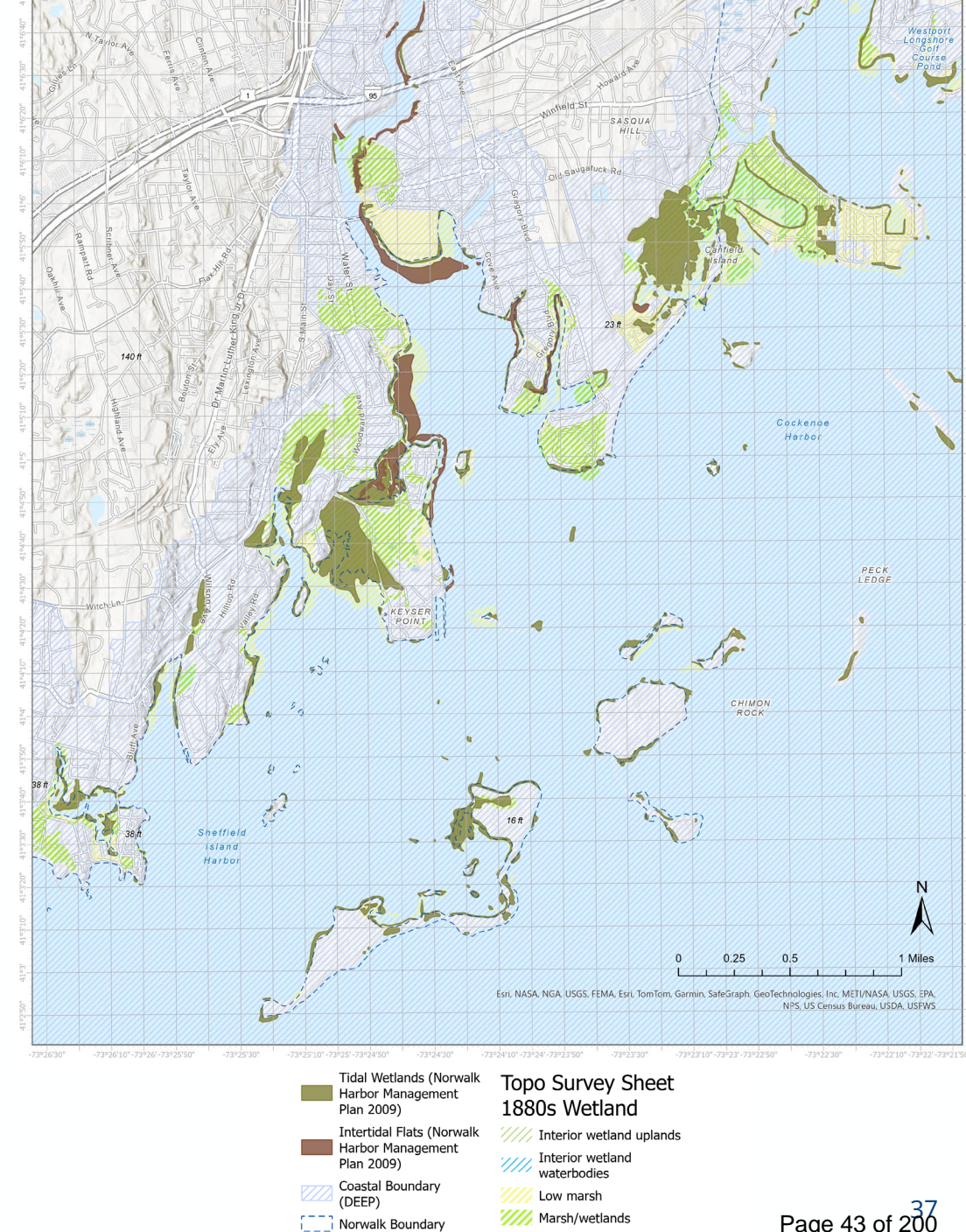


## E & NR | HISTORIC AND CURRENT TIDAL WETLANDS

During the 20<sup>th</sup> century, significant wetland loss occurred along the Harbor from increasing shoreline development. Today, existing wetlands still serve an important purpose for fish and other marine organisms.

- The map at right shows historic wetlands (circa the 1880s) in lighter green and yellow cross hatch, with existing wetlands shown in darker green and brown.
- Significant wetland loss has occurred at inland areas near Calf Pasture Beach and Veterans Park, where historic low marsh and interior wetlands have been replaced by urban development or filled land.
- Wetlands around Keyser Point and Manresa Island have notably shrunk, with much of the historic marshland now absent along the eastern and southern shorelines.
- Offshore islands like Chimon, Shea, and surrounding isles retain much of their historic wetland extent, showing strong persistence likely due to minimal development pressure.
- The Harbor's tidal wetlands and intertidal zones serve as valuable habitat for a variety of species, as detailed on the following slide.
- Protection of wetlands in Norwalk was codified in 1974 through the establishment of the Inland Wetland Agency and the Inland Wetland and Watercourses Act.

Source: City of Norwalk, Connecticut Inland Wetlands & Watercourses Regulations. Adopted February 12, 1974.

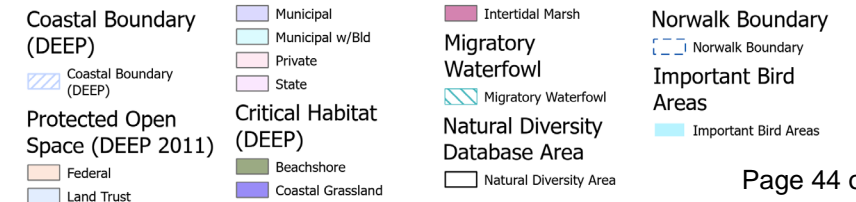
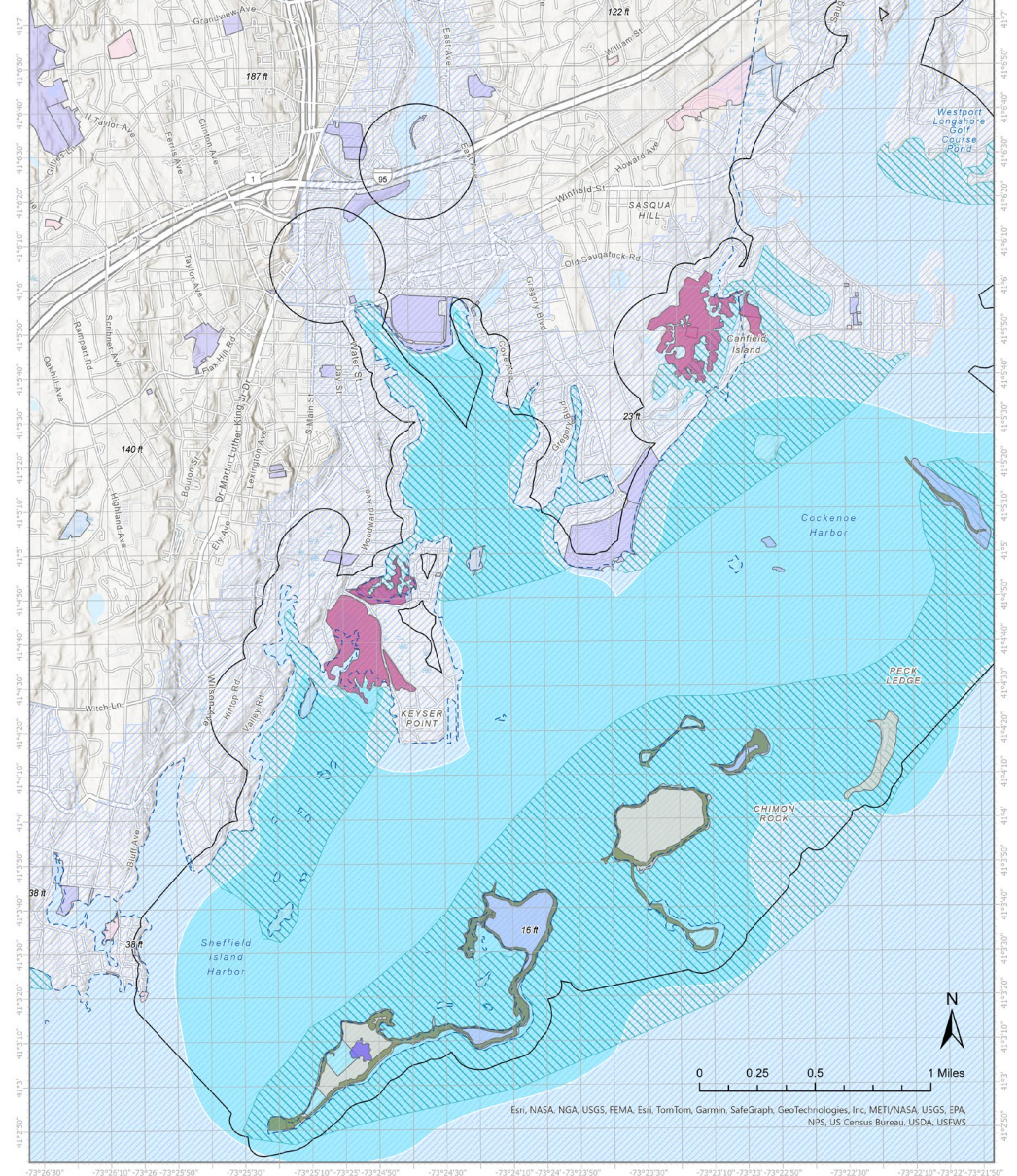


## E & NR | HARBOR WILDLIFE & CRITICAL HABITATS

Norwalk Harbor hosts a vibrant ecosystem that supports a diverse array of wildlife, thanks to its varied habitats and protected open space areas. Beachshore and coastal grassland environments provide critical habitat for species both above ground and in-water.

- Birds:** The Harbor and its surrounding areas, including the Norwalk Islands, are significant habitats for migratory waterfowl and colonial waterbird species such as herons, egrets, and ibises. These species are especially prevalent in the Stewart B. McKinney National Wildlife Refuge on the Norwalk Islands. The islands provide essential nesting and foraging grounds for these birds.
- Marine Life:** The waters of Norwalk Harbor are home to various fish species, supporting both commercial and recreational fishing activities. The Harbor's tidal wetlands and intertidal zones serve as nurseries for juvenile fish and other marine organisms, contributing to the area's biodiversity. According to the 2018 Harbor Health Study, 148 individual fish representing 14 different species were documented in the harbor. The most abundant species observed include Cunner, Northern Searobin, and Northern Pipefish.
- Mammals and Other Wildlife:** Coastal areas in Connecticut, including those around Norwalk Harbor, are known to support species such as white-tailed deer, red foxes, and various small mammals. The diverse habitats also support reptiles and amphibians, contributing to the ecological richness of the area. The prevalence of these coastal species underscores the ecological importance of Norwalk Harbor and its surrounding environments.

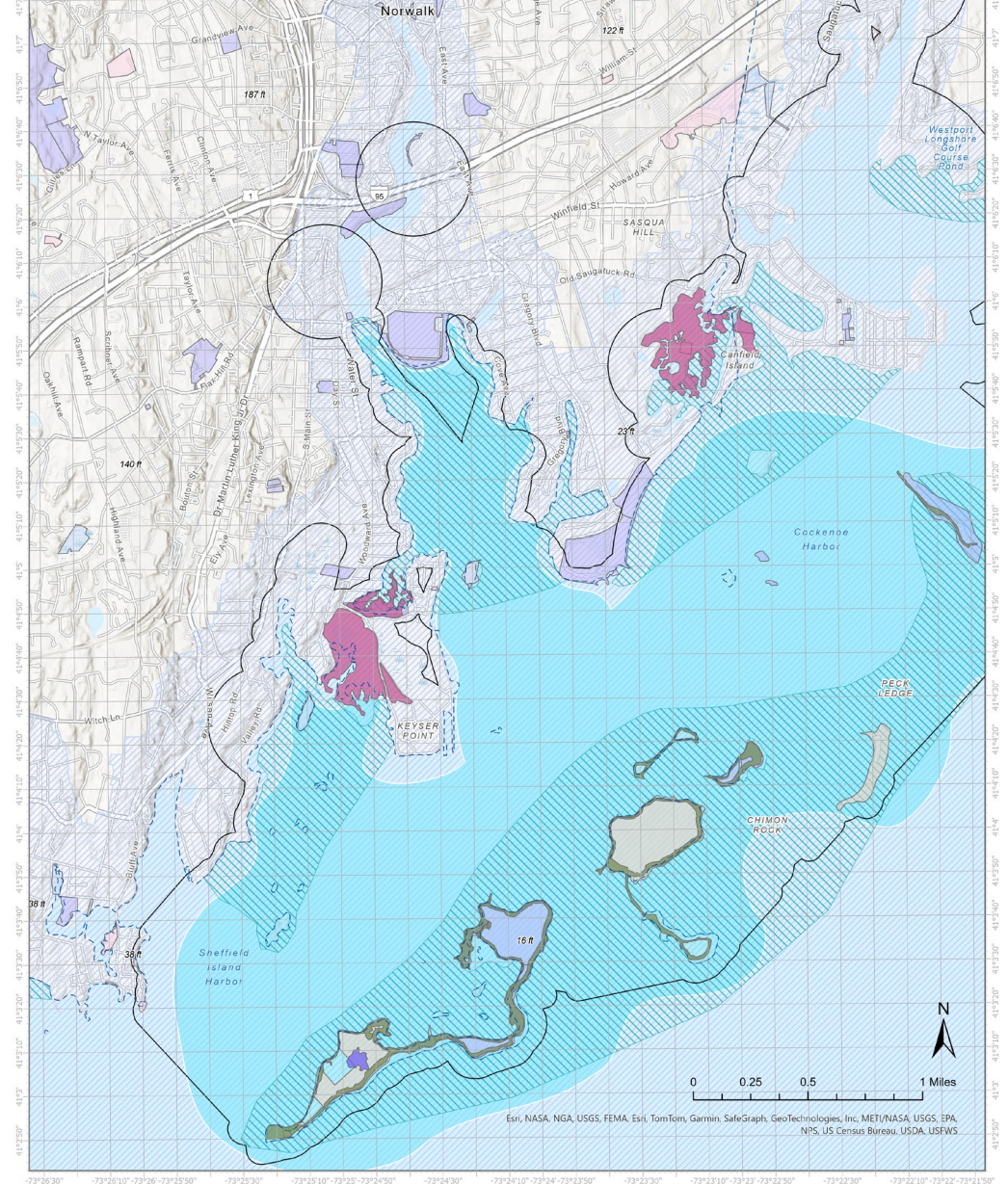
Source: Harbor Watch. Harbor Health Study, 2018.



## E & NR | HARBOR PROTECTED AREAS

The Norwalk Harbor hosts a variety of protected open space under federal, state, and municipal jurisdiction, as well as under private ownership.

- The majority of this protected space exists on the lower end of the Harbor, closer to the Long Island Sound, as the northern component of the Harbor is largely developed. Municipal protected properties, through the Norwalk Recreation and Parks office, include Calf Pasture Beach, Veterans Park, Oyster Shell Park, Shea Island, and portions of Peach Island. This municipally protected land is intended and utilized for recreation purposes.
- Portions of the Norwalk Harbor Islands have been identified by the State as protected species areas. Sheffield Island and Chimon Island are also recognized by the federal government as portions of the Stewart B. McKinney National Wildlife Refuge.
- The forest, shrublands and beaches of the Norwalk Islands are recognized as regionally significant habitat for colonial nesting birds like herons and egrets, vital nesting and migratory habitat for neotropical birds, and high-quality wintering grounds for waterfowl. In addition, The Chimon Island Unit has historically supported as many as 1,200 breeding pairs of herons, egrets and ibises. To protect habitat, the West Beach is the only portion of the island open to the public. Passive public uses like wildlife observation and photography are encouraged there. The nearest public motorboat launch is at Veterans Park.
- Most recently, Manresa Island, on the southwestern portion of the lower Harbor, was recently purchased by a private donor, with plans to develop the island into a protected public park through the newly formed non-profit, Manresa Island Corp.

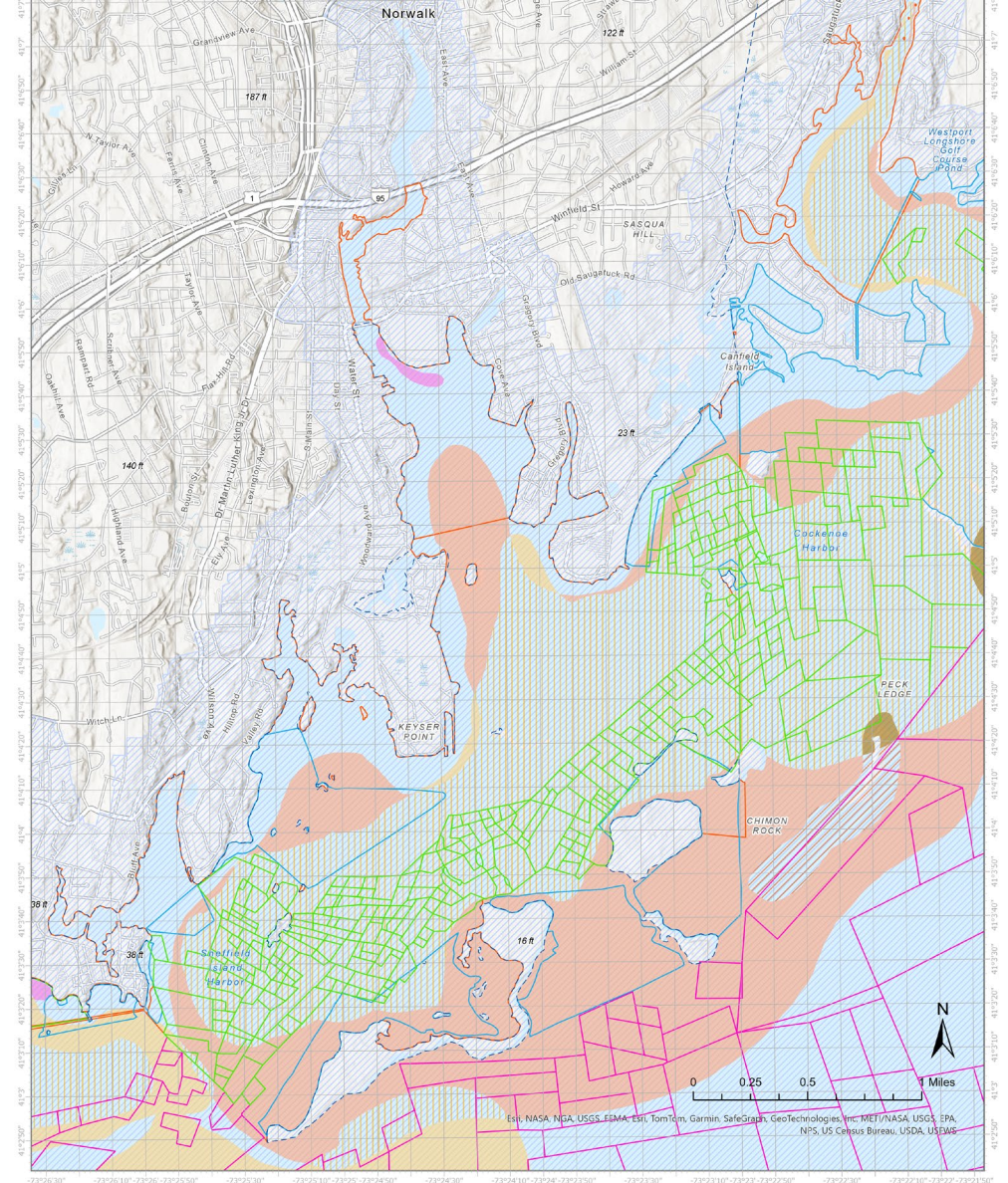


<b>Coastal Boundary (DEEP)</b>	Municipal	Intertidal Marsh	<b>Norwalk Boundary</b>
Coastal Boundary (DEEP)	Municipal w/Bld	<b>Migratory Waterfowl</b>	Norwalk Boundary
<b>Protected Open Space (DEEP 2011)</b>	Private	Migratory Waterfowl	<b>Important Bird Areas</b>
Federal	State	<b>Natural Diversity Database Area</b>	Important Bird Areas
Land Trust	<b>Critical Habitat (DEEP)</b>	Natural Diversity Area	
	Beachshore		
	Coastal Grassland		

## E & NR | SHELLFISH

The Norwalk Harbor is well known for its role in the shell fishing industry. The Harbor supports various shellfish species, including Eastern Oysters, Hard Clams (Quahogs), and Soft-Shell Clams.

- Norwalk Harbor is home to significant aquaculture and shellfish operations. While natural shellfish beds exist throughout the Harbor, there are also shellfish beds managed by the government. These include State and Town managed beds for commercial shell fishing and recreational beds available to recreational fishermen.
- Recreational shellfishing areas are located near the central Harbor and along the shoreline south of Calf Pasture Beach. These areas are open to residents and visitors for personal use and are regulated to ensure sustainability.
- The Town beds are managed by the Norwalk Shellfish Commission, while the State managed beds are managed by Department of Agriculture's Bureau of Aquaculture. This Bureau is responsible for issuing commercial licenses for use of these beds along with regulating shellfishing in these areas and conducting water quality analysis.
- Designated recreational shellfishing areas are managed by the Norwalk Shellfish Commission, which establishes permits, seasonal restrictions, harvest limits, and other requirements to ensure sustainable use.



### Legend









Coastal Boundary (DEEP)	Oyster / Hard Clam / Soft Clam	CT State and Town Managed Shellfish Beds
Coastal Boundary (DEEP)	Oyster / Hard Clam	
Shellfish	Oyster / Soft Clam	Natural Bed
Oyster	Hard Clam / Soft Clam	Recreational Bed
Hard Clam		State Managed Bed
Soft Clam		Town Managed Bed
		Norwalk Boundary

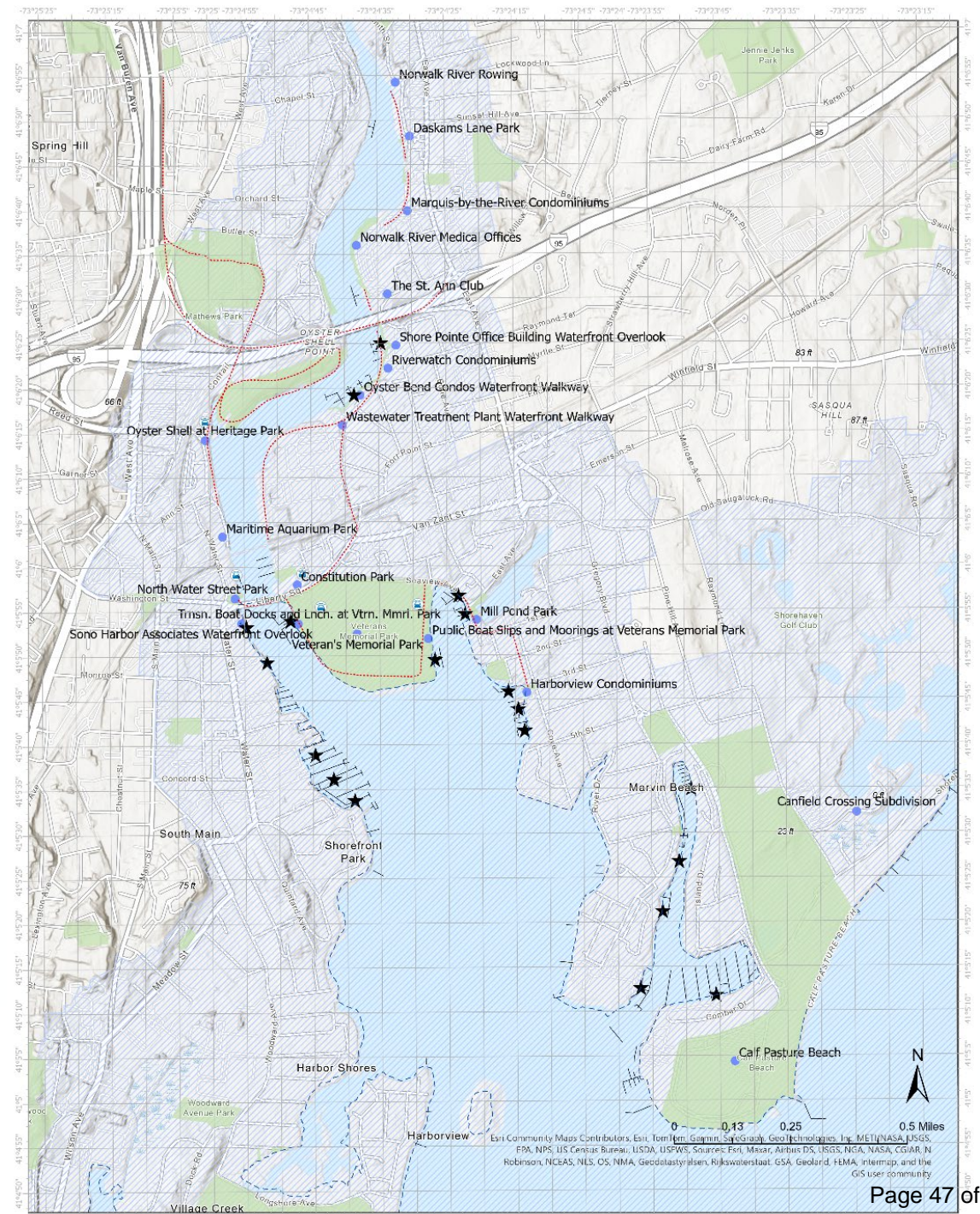
## E & NR | PUBLIC ACCESS

The Harbor hosts multiple public access options for residents and visitors to engage with the water.

- Parks and Trails:** Notable public access park areas include the 35-acre Veterans Memorial Park, Calf Pasture Beach, Norwalk Heritage Park, Oyster Shell Park, and the Norwalk Harbor Loop Trail/Norwalk River Valley Trail.
  - The Norwalk Harbor Loop Trail connects several waterfront parks, including Oyster Shell, Mill Pond, and Constitution Park, though it remains incomplete in areas near the Maritime Aquarium and East Avenue.
- Public Boating Facilities:** The harbor boasts 15 marinas and 13 private clubs equipped with boating amenities, providing ample opportunities for boating enthusiasts.
- Street Ends:** There are numerous street ends around the Harbor that act as official and unofficial public access points. Some are well utilized or maintained by neighborhood associations, and some are blocked off by adjacent owners and/or unknown to the neighboring community. These street ends were evaluated in greater detail through the Street Ends & Public Access Study (Section 3).

### Legend

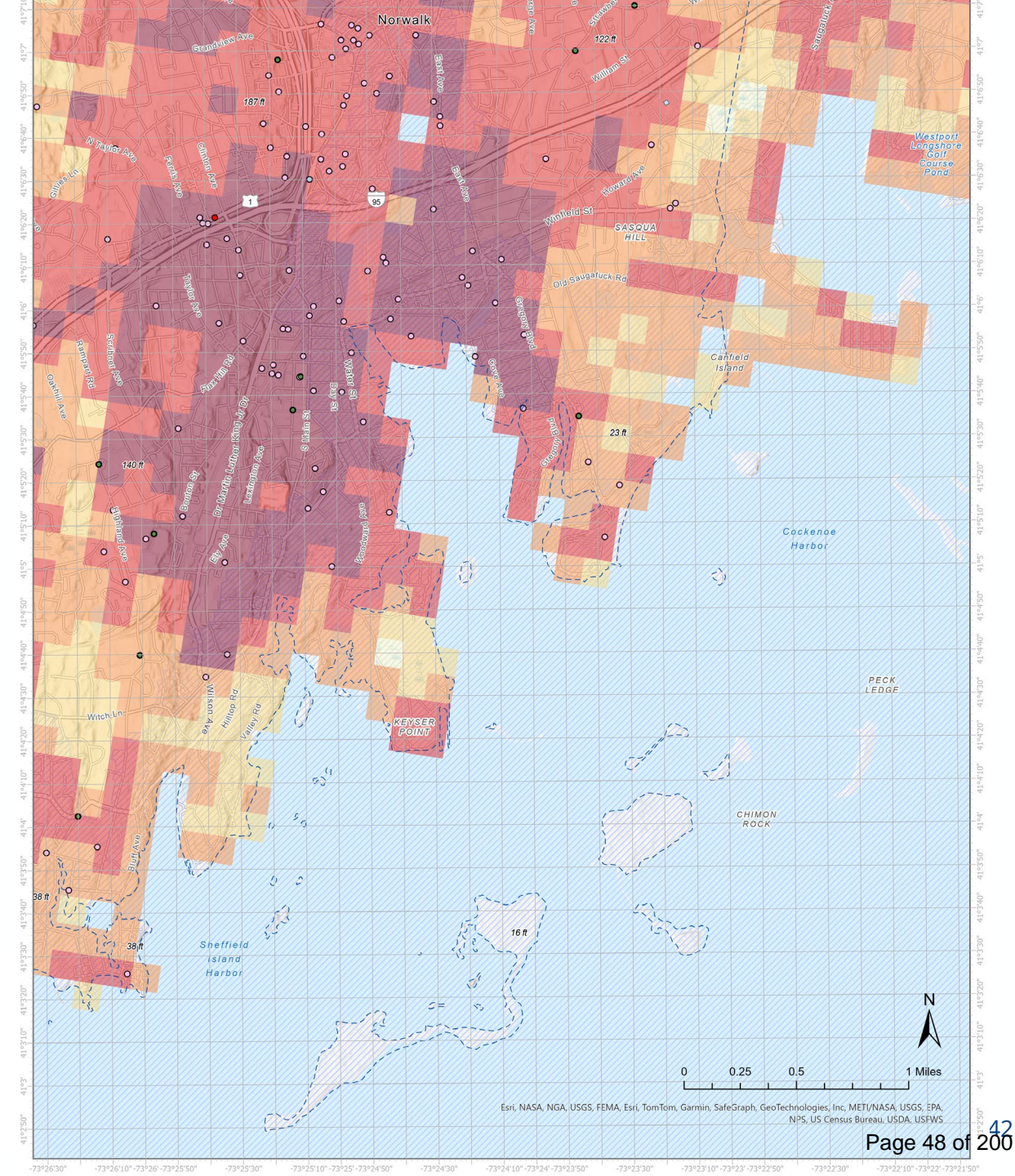
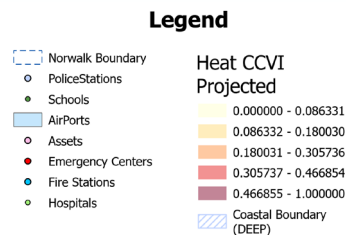
- |   |  |
|---|--|
|  Coastal Boundary (DEEP)     |  Dock Lines     |
|  Coastal Public Access Sites |  Marinas        |
|  Norwalk Boundary            |  Public Parking |
|  Harbor Loop Trail           |  Open Space     |



## E & NR | HEAT VULNERABILITY

Heat vulnerability is one of several climate-related challenges posing a risk to Norwalk, in addition to flooding and sea level rise.

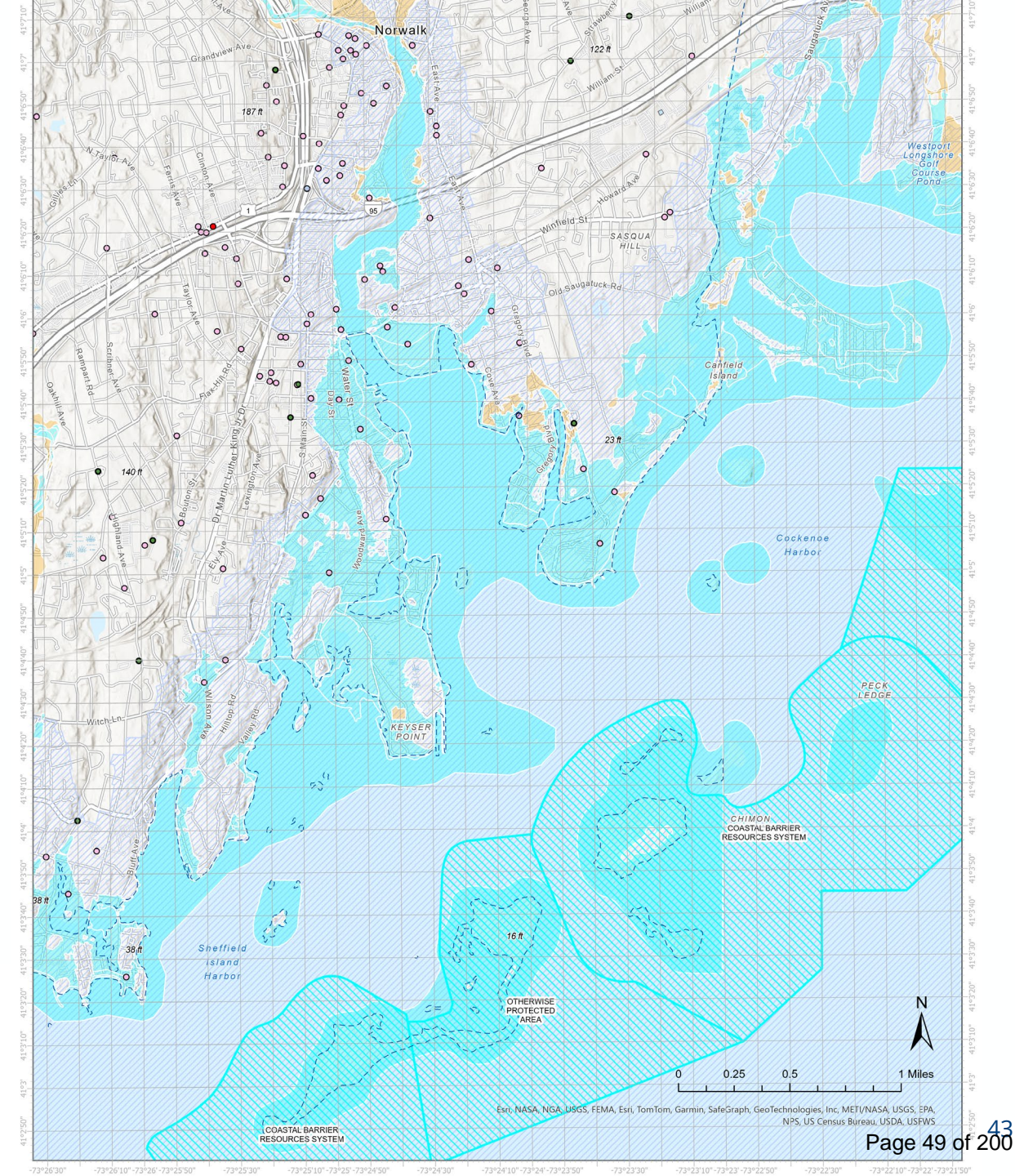
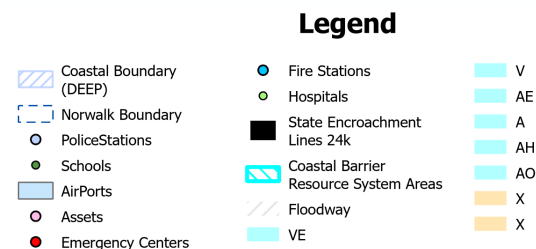
- The highest levels of heat vulnerability (shown in deep red and purple) are concentrated in the central and western parts of Norwalk, particularly along major road corridors and denser residential neighborhoods south of I-95.
- The eastern and coastal portions of Norwalk, including areas around Calf Pasture Beach and the Norwalk Islands, show significantly lower projected heat vulnerability, likely due to greater vegetation, open space, and proximity to Long Island Sound's cooling influence.



## E & NR | FLOOD HAZARDS

Much of the Norwalk Harbor study area is within the FEMA flood hazard zone, posing a potential threat to the city's assets during flood events.

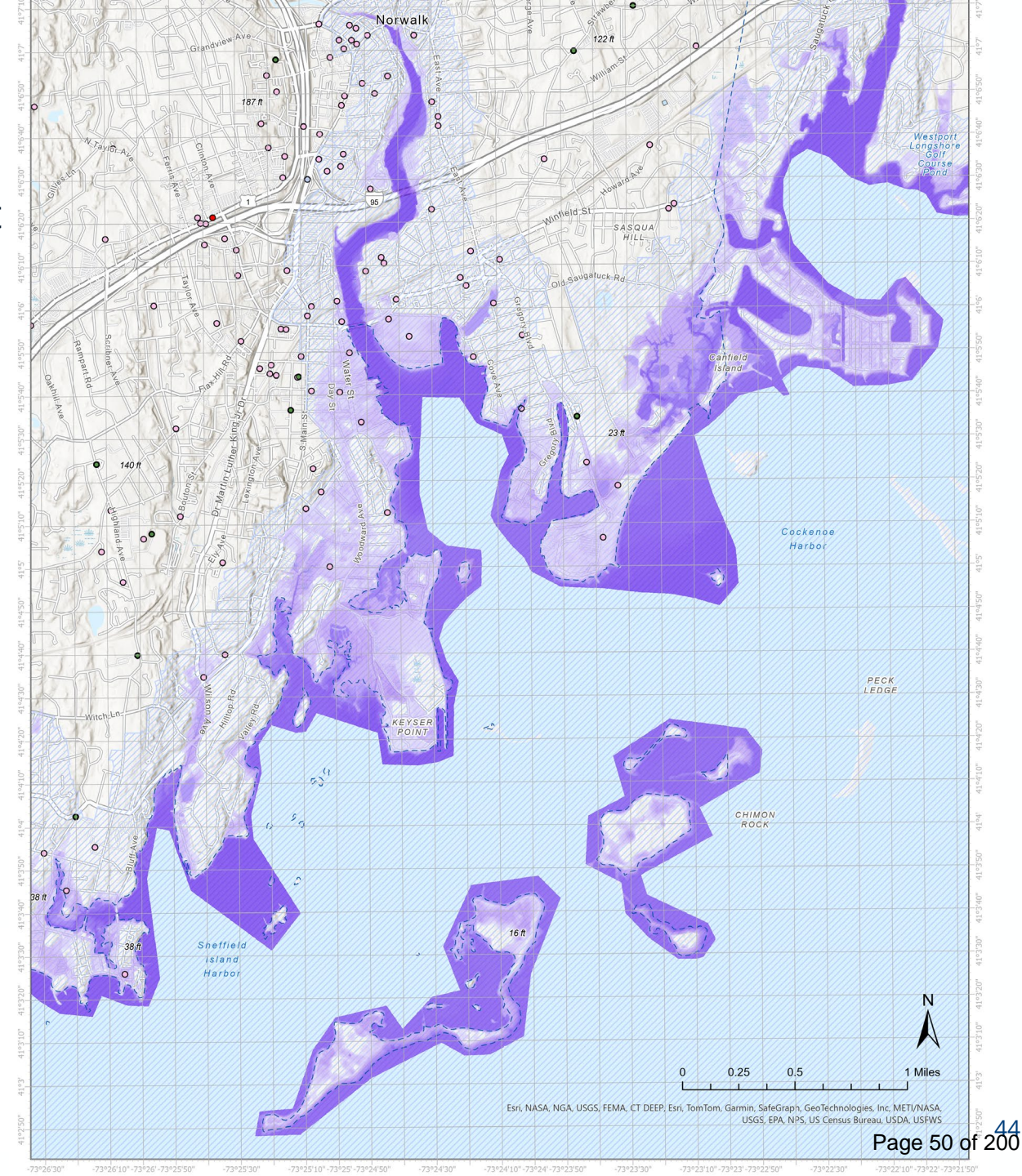
- As shown at right, significant portions of the Norwalk shoreline—particularly along the Norwalk River, Calf Pasture Beach, and the islands—fall within FEMA flood hazard zones (VE, AE, AO, and X), indicating high exposure to coastal and storm-related flooding. This includes areas with public assets and infrastructure.
- Chimon Island, Sheffield Island, and surrounding areas are designated as part of the Coastal Barrier Resources System (CBRS), meaning they are recognized as environmentally sensitive areas with restrictions on federal flood insurance and development, further emphasizing their flood exposure and ecological importance.



## E & NR | SEA LEVEL RISE

Sea level rise is another hazard posing significant risks to Norwalk Harbor.
















- Substantial portions of Norwalk's shoreline—especially areas around Veterans Memorial Park, Calf Pasture Beach, Keyser Point, and the Norwalk Islands—are projected to experience mean high water inundation with a 79-inch sea level rise. This includes several developed waterfront areas and open spaces.
- Low-lying coastal infrastructure and critical facilities are at risk, with multiple schools, emergency centers, and community assets located adjacent to or within the projected inundation zones, particularly in South Norwalk and along Water Street.

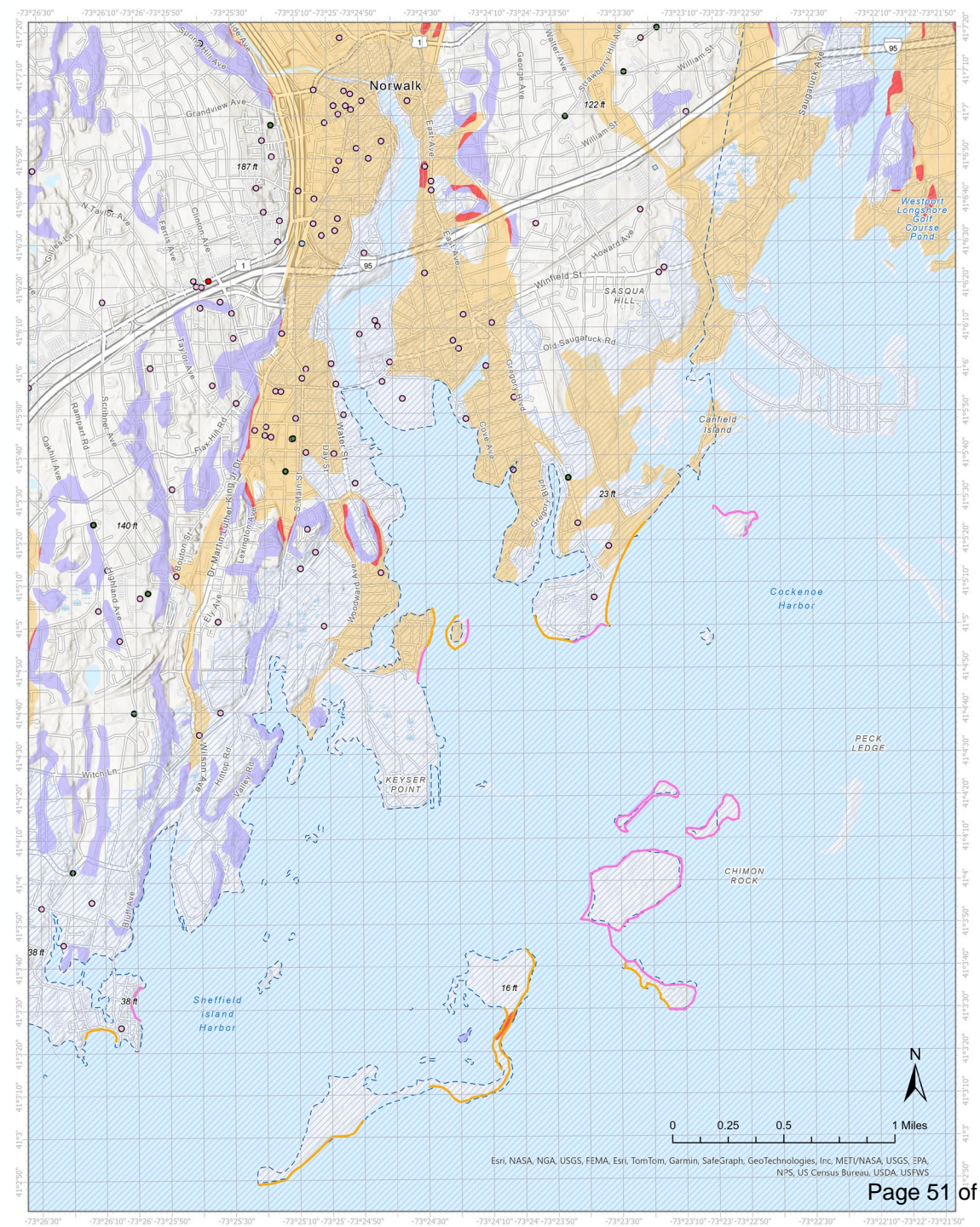


# E & NR | EROSION SUSCEPTIBILITY

- Shorelines along the central and southern harbor, particularly near the Norwalk River mouth and south of Veterans Memorial Park, contain areas highly or most susceptible to erosion, marked in red and orange. These areas coincide with developed waterfronts and public infrastructure, highlighting potential risk to access points and community assets.
- Additional erosion hotspots are located on the Harbor-facing side of Ram Island and along narrow, exposed stretches of the western shore, where surficial materials are mapped as erosion-prone.

## Legend

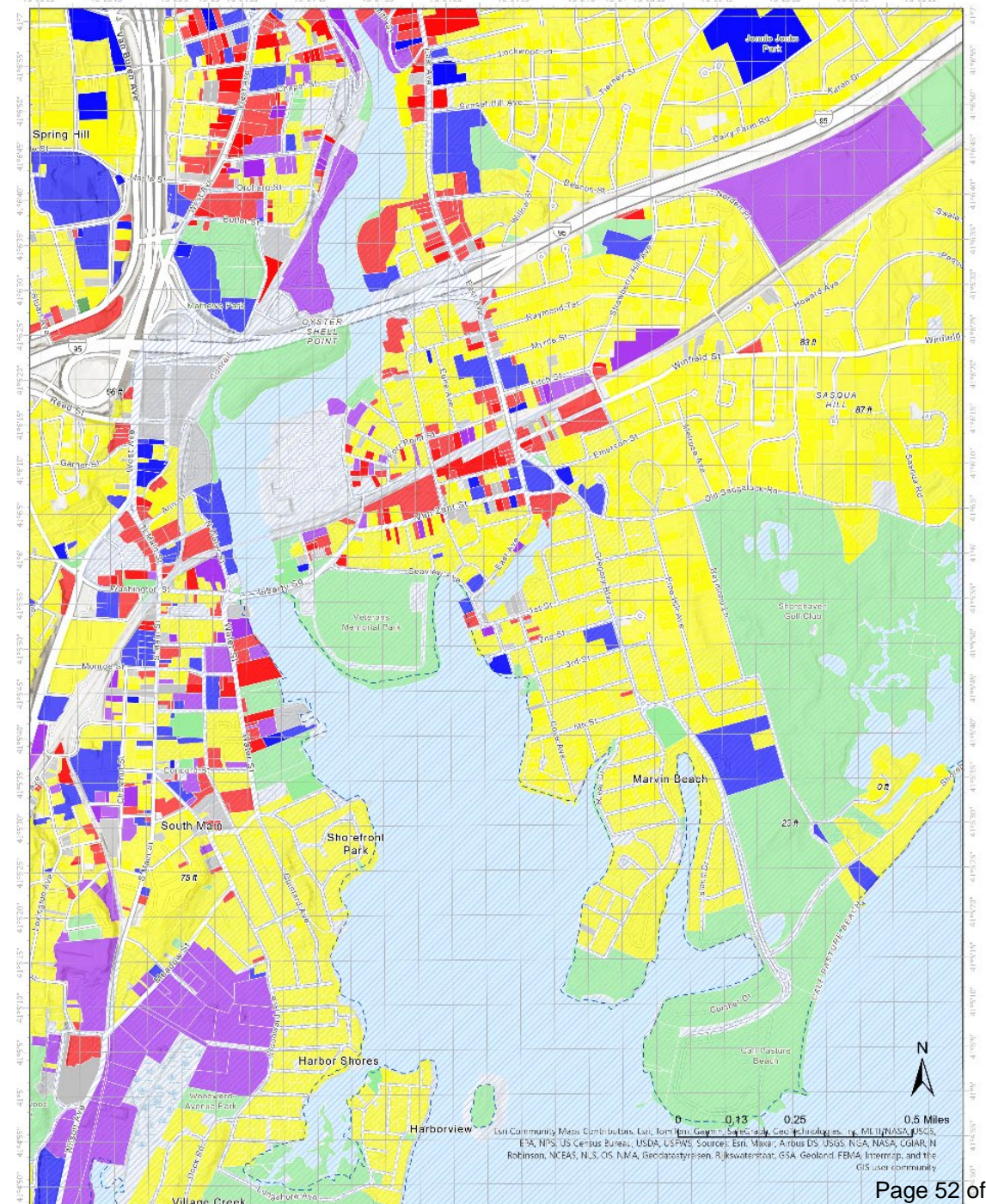
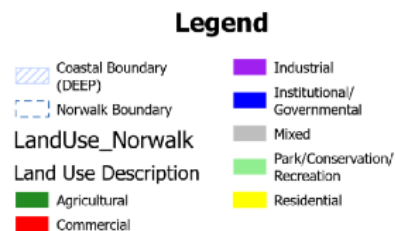
 ScouredBeaches	<b>Erosion Susceptibility</b>
 SandyBeaches2	 Most Susceptible to Erosion
 Norwalk Boundary	 Highly Susceptible to Erosion
 PoliceStations	 Surficial Materials Susceptible to Erosion
 Schools	 Soils Susceptible to Erosion
 AirPorts	 Coastal Boundary (DEEP)
 Assets	
 Emergency Centers	
 Fire Stations	
 Hospitals	



## E & NR | LAND USE

Land adjacent to the Harbor is characterized by a mix of natural and developed landscapes, including residential uses, commercial facilities, conservation areas and recreational parks.

- Land use along the Harbor is highly varied, with a mix of industrial, commercial, institutional, and residential uses concentrated near Water Street in South Norwalk and East Avenue in East Norwalk. This reflects the Harbor's role as both a working waterfront and a civic waterfront.
- Residential areas dominate the upland portions surrounding the southern Harbor, including around Calf Pasture Beach and Shorefront Park, where low-density single-family housing transitions into public recreational land.
- The Norwalk Islands and much of the immediate shoreline around Keyser Point, Calf Pasture and southern Sasqua Hills are designed for park, conservation, or recreation use. This land use pattern supports ecological protection and public access near the Harbor.
- Pockets of industrial use remain on the western shore near I-95 and the Norwalk River mouth, consistent with the city's history of maritime and manufacturing activity.



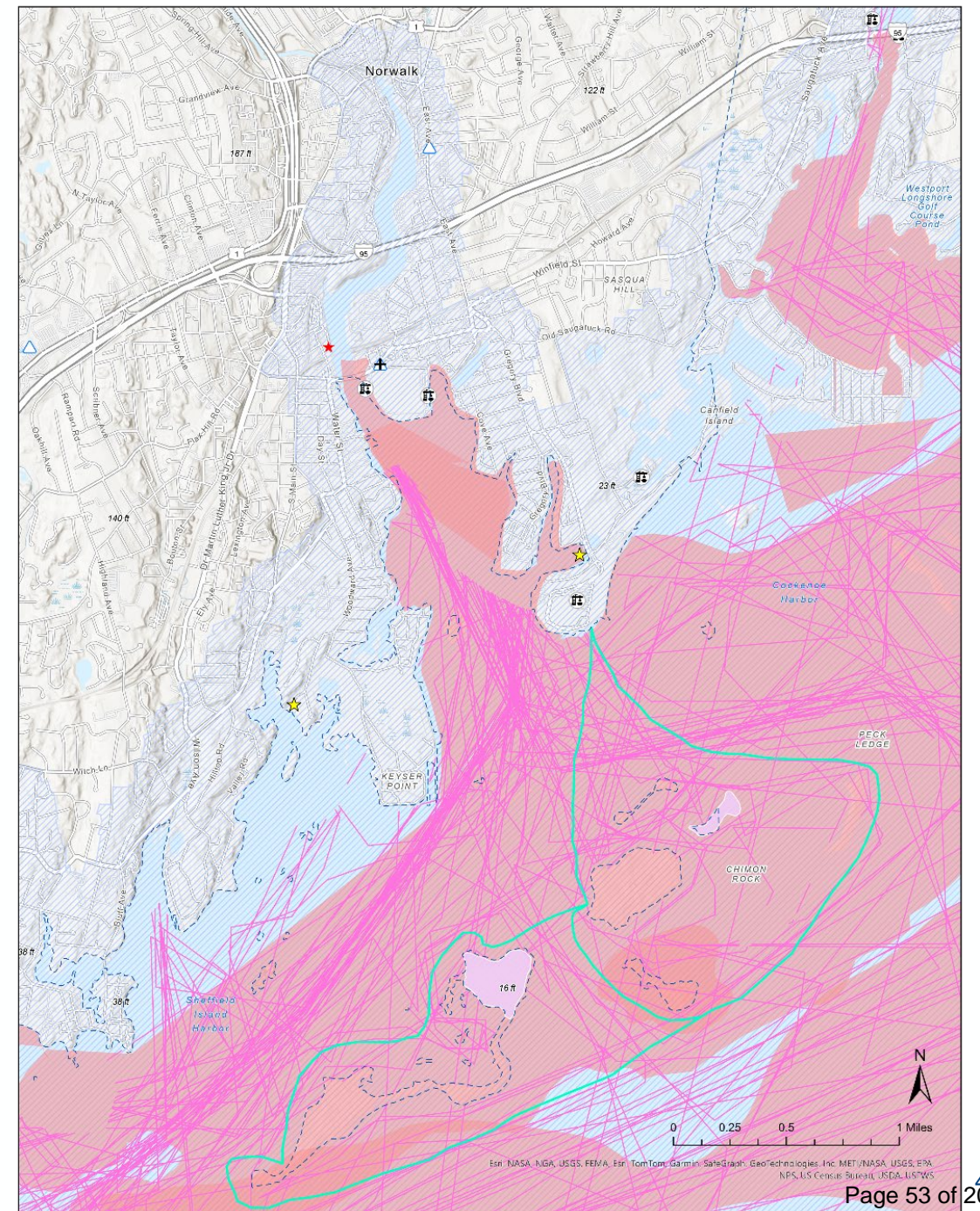
## E & NR | RECREATIONAL BOAT TRAFFIC

Norwalk Harbor supports a wide range of water-dependent recreation, including numerous marinas, harbor infrastructure, and water trails visible on the map. The dense web of vessel traffic lines underscores the harbor's use for boating, kayaking, and marine transport.

- Calf Pasture Beach and Shady Beach Park, shown near the southern harbor, are major public waterfront recreation areas with access to swimming, fishing, and boating facilities. These parks anchor recreational use along the Sound.
- Sheffield Island and the Sheffield Island Lighthouse, noted in the map's southwestern extent, are accessible by ferry and serve as key historical and recreational destinations within the Norwalk Islands complex.
- Recreational shellfishing areas overlap with active use zones around the harbor and islands, supporting community access to natural resources, managed by the Norwalk Shellfish Commission.

### Legend

 Norwalk Boundary	 Bait and Tackle Shops
 Campsites	 Sportsmen Licensing Agents
 Boat Launches	 Party and Charter Boats
 Water Trails	 Recreational Fishing Activity
 Recreational Boater Routes	 Coastal Boundary (DEEP)
 Enhanced Fishing	





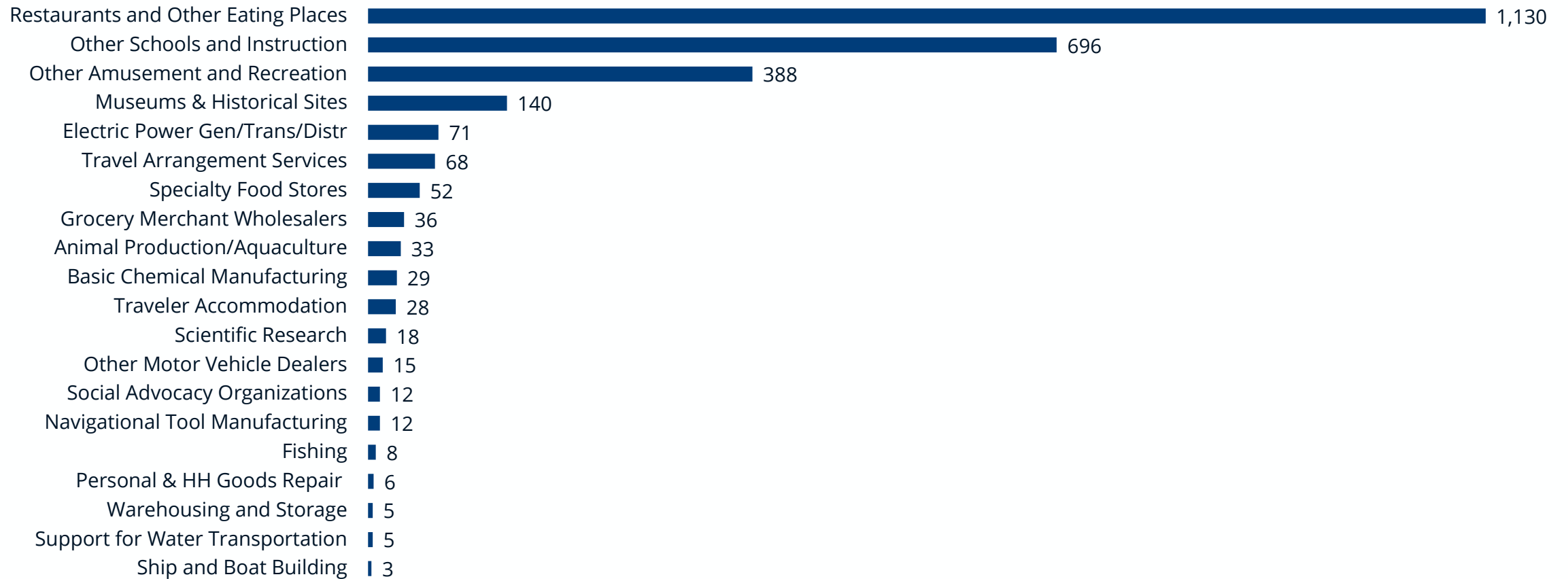
05

# Appendix

## INDUSTRY | HARBOR AREA WATER-DEPENDENT JOBS

Tourism industries such as restaurants, amusement, and museums have the most jobs that could be water-dependent. Out of all jobs related to schools and instruction only some are related to the Harbor.

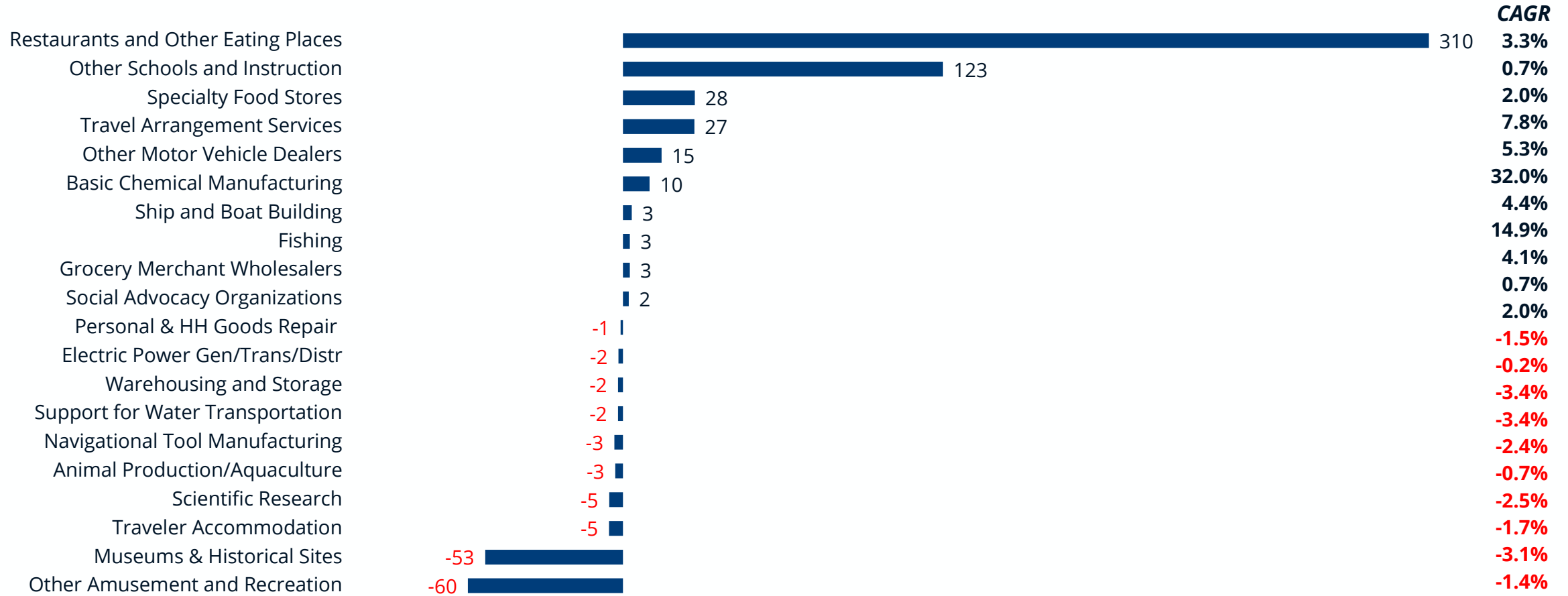
### Harbor Area Jobs (2022)



## INDUSTRY | HARBOR AREA WATER-DEPENDENT JOBS OVER TIME

Ship and boat building and fishing industries have been stagnant over the last 10 years. Growth is primarily driven by tourism-related restaurant and travel services jobs, as well as education-related jobs.

Change in Harbor Area Jobs (2013-2022)



NOTE: The industry categories represent those jobs that could be water-dependent.  
Source: Census OnTheMap and Lightcast, 2013 and 2022

# Norwalk Strategic Harbor Study

## **Task 2.2 Industrial Economic Analysis**

July 2025

## OVERVIEW | GOALS AND METHODOLOGY

Building on the Baseline Conditions Analysis, this Industrial Economic Analysis digs deeper into the water-dependent industrial landscape, including industry trends, challenges, and opportunities.

### Goals

- 1 Demonstrate a comprehensive overview of water-dependent economy in Norwalk.
- 2 Position industry trends over time within the context of current industrial economic needs and challenges around the Harbor.
- 3 Provide recommendations to support the Harbor's industrial economic needs, which will inform other Management Strategy- and Funding-related recommendations as part of the Strategic Harbor Study.

### Methodology

- 1 Data analysis of jobs, businesses, and gross regional product
- 2 Benchmarking with peer cities and regions
- 3 Industrial business focus group and city stakeholder engagement

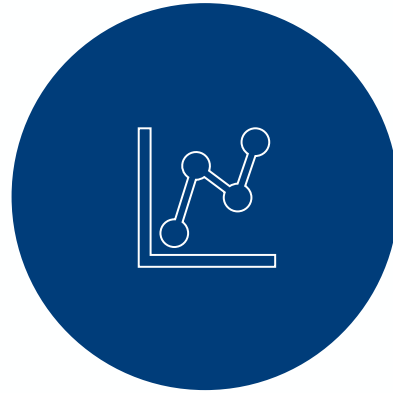
## OVERVIEW | COMPONENTS

This analysis is broken down into three sections covering qualitative and quantitative analyses and a fourth section with a SWOT analysis and recommendations.



### **STAKEHOLDER ENGAGEMENT**

Key takeaways from the interviews with city stakeholders and focus groups with harbor-dependent business owners.



### **INDUSTRIAL ANALYSIS**

Data-driven analysis of jobs and businesses over time, including a deep-dive into those that are water-dependent, with comparisons to peer regions.



### **WORKFORCE AND INFRASTRUCTURE NEEDS**

Infrastructure and workforce needs as highlighted by stakeholders, as well as profiles of types of harbor jobs.



### **SWOT AND RECOMMENDATIONS**

Analysis outcomes represented as strengths, weaknesses, opportunities and threats matrix, in addition to recommendations.

# Stakeholder Engagement

## STAKEHOLDER ENGAGEMENT | CITY STAFF

### **1. Different uses and interests coexist and compete over the Norwalk Harbor.**

- There are three main drivers of demand over the limited available space in the Norwalk Harbor: 1) real estate development for new housing and other uses (commercial, schools, hospitals, etc.), 2) waterfront industrial, 3) tourism and recreation including boating.

### **2. Zoning and land use decisions in Norwalk inform the future viability of industrial businesses.**

- The city's current zoning approach tries to balance industrial uses with new residential and recreational ones.
- Past efforts such as the 2022 Industrial Waterfront Land Use Plan provide neighborhood-specific suggestions, although no clear priorities are defined for the Harbor across the competing uses, which have organically been shaping the Harbor.

### **3. Governance fragmentation and infrastructure limitations pose barriers to use Harbor potential for economic growth across these uses.**

- There are certain infrastructure needs that have been highlighted by the industrial- and boating/tourism-related stakeholders, such as moorings, dredging, bulkheads, docks, and waterfront resilience. The Harbor Management Commission rarely uses its capital budget.

### **4. Many valuable parcels within the Harbor's remain underutilized, often used for parking or boat storage, despite their potential for commercial, industrial, or mixed-use development.**

- Specific actions as part of this Strategic Harbor Study, including the Moorings and Street Ends Studies, the Management and Funding Strategies, complemented by leveraging zoning, permitting, and capital planning, can help identify strategies to unlock the Harbor's potential as a driver of economic development and tourism.

### **1. The Harbor's water-dependent industry is essential and vulnerable.**

- Tourism and recreation depend on a healthy, functional waterfront—boats, marinas, and access to the islands. These uses are interdependent with industrial services that maintain infrastructure and ensure safety.
- Industrial businesses feel that decision making about the waterfront does not recognize how essential these services are to all uses of the Harbor.

### **2. Industrial space is threatened by new development and other uses of the Harbor.**

- Condos, rowing clubs, and recreational development threaten the space used by industrial businesses, who provide services such as dock maintenance, barge deliveries, marine repairs, that support these activities. If these businesses are forced to close, services will have to come from outside Norwalk, increasing costs.

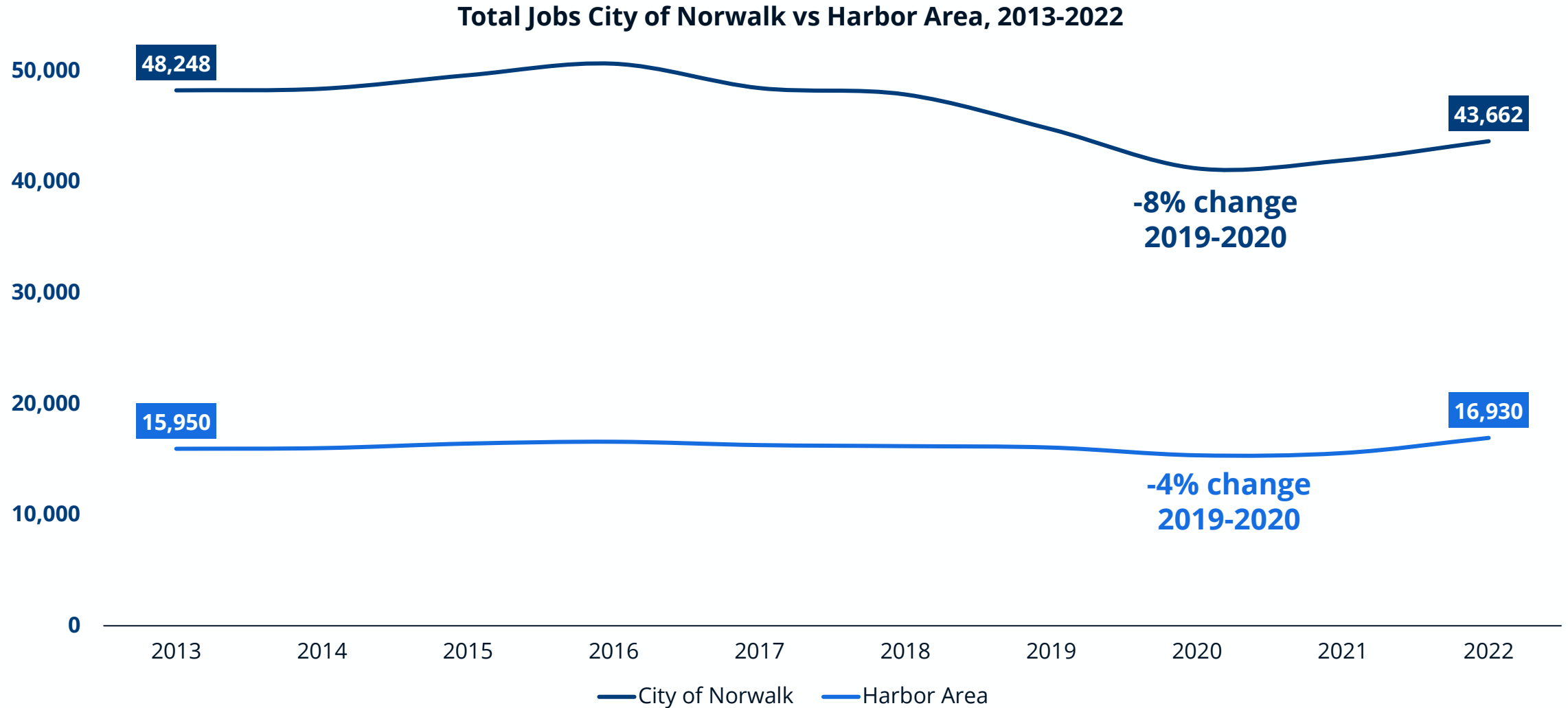
### **3. There is a lack of workforce development pipeline for marine economy businesses and a disconnect between organizations that invest in workforce development programs and the businesses that could benefit from skilled workers.**

- There is a shortage of skilled tradespeople (carpenters, electricians, marine techs), and businesses are struggling to find and retain qualified workers in or near Norwalk. Many workers come from outside the City.
- There are some career exposure programs, such as the Maritime Pathways program at Maritime Aquarium, but connections between these programs and the businesses does not exist.

# Industrial Analysis

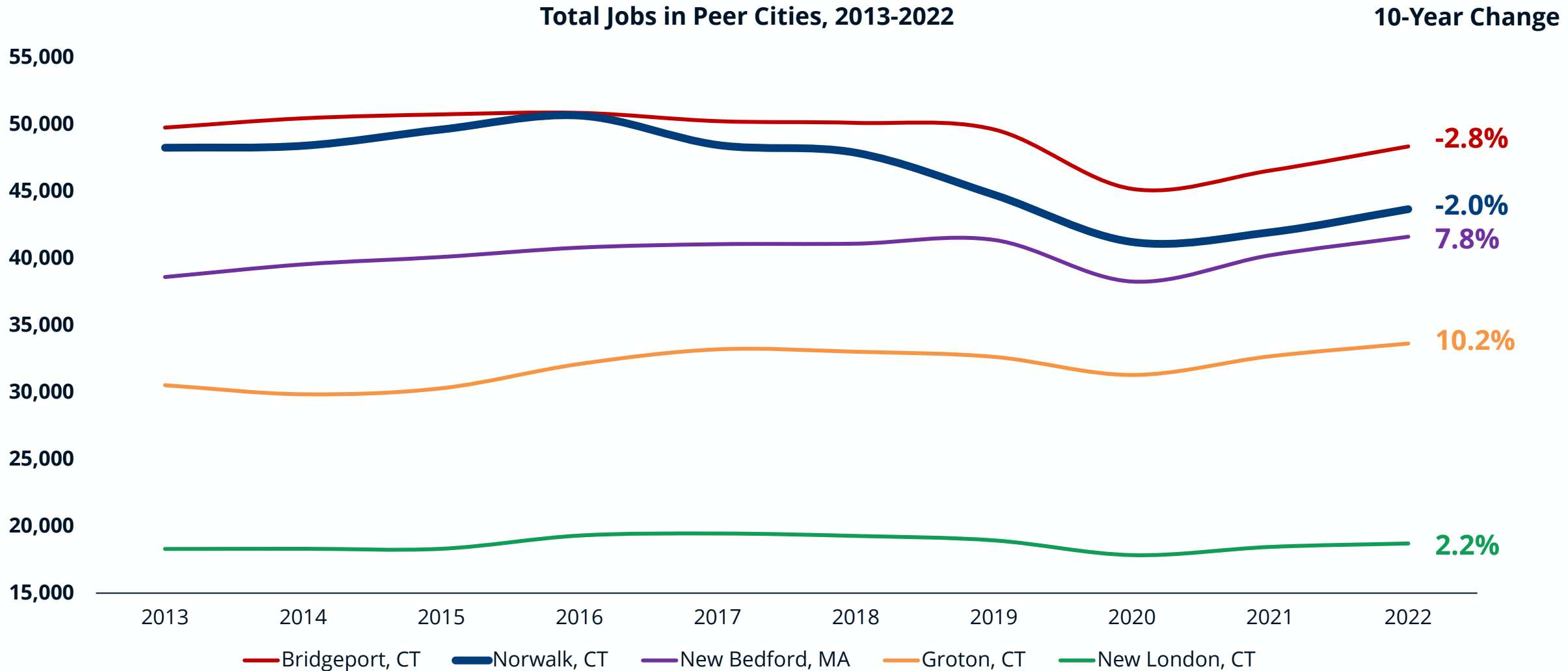
## INDUSTRY ANALYSIS | TOTAL JOBS

While total jobs in Norwalk started decreasing before the pandemic, jobs in the Harbor Area have stayed relatively consistent and have recovered from a slight COVID-induced dip.



## INDUSTRY ANALYSIS | TOTAL JOBS COMPARISON TO PEER CITIES

Bridgeport and Norwalk both saw a decrease in jobs over a 10 year period, while smaller Connecticut cities like Groton and New London increased over this period, as did New Bedford, MA.



## INDUSTRY ANALYSIS | WATER-DEPENDENT INDUSTRIES

Water-dependent industries fall into four overarching buckets aligned with business owners' perspective of the economic landscape.

### **Aquaculture**

- Oyster and shellfish farming
- Commercial fishing

### **Boating/Marine Services**

- Ship and boat building
- Boat dealer
- Marinas
- Boat repair and maintenance
- Sailing instruction
- Boat clubs

### **Tourism**

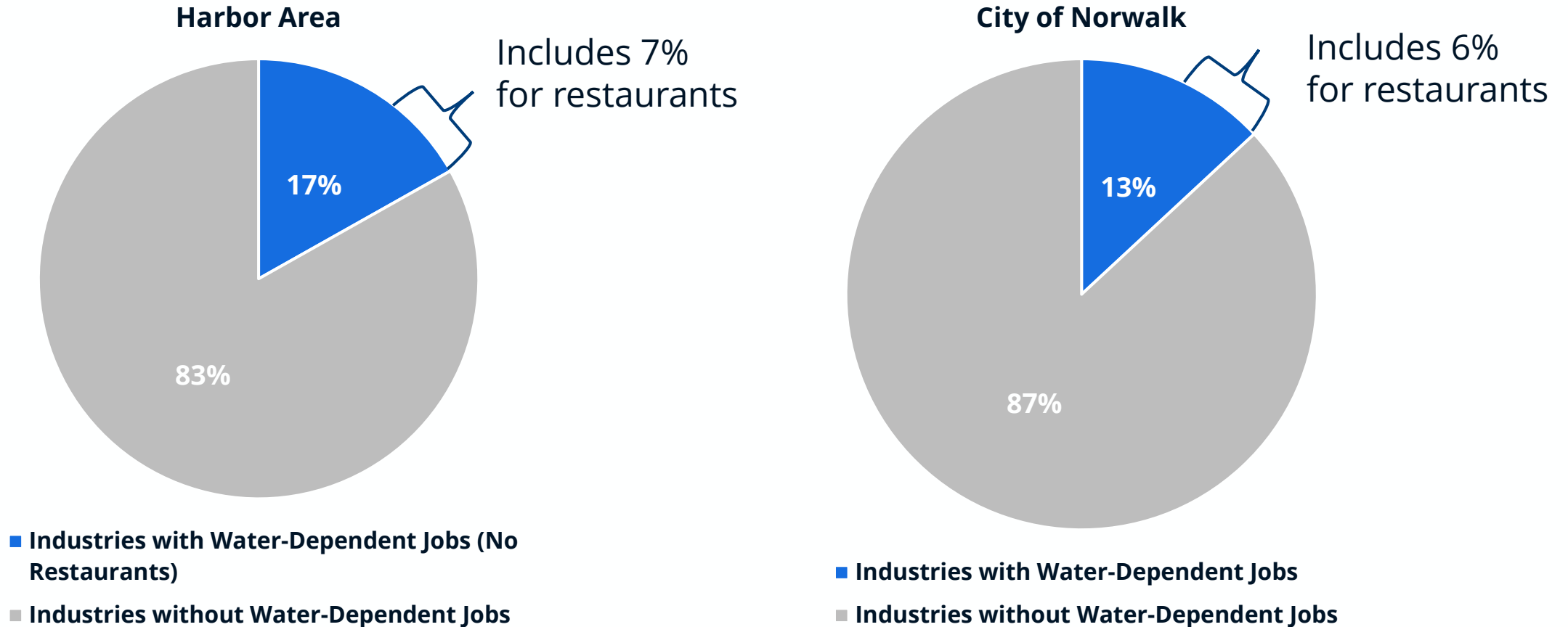
- Harbor restaurants and cafes
- Recreational fishing charters
- Seaport association
- Fish and seafood markets
- Maritime Aquarium

### **Waterfront Industrial**

- Marine construction
- Harborside industrial businesses

## INDUSTRY ANALYSIS | SHARE OF POSSIBLE WATER-DEPENDENT JOBS

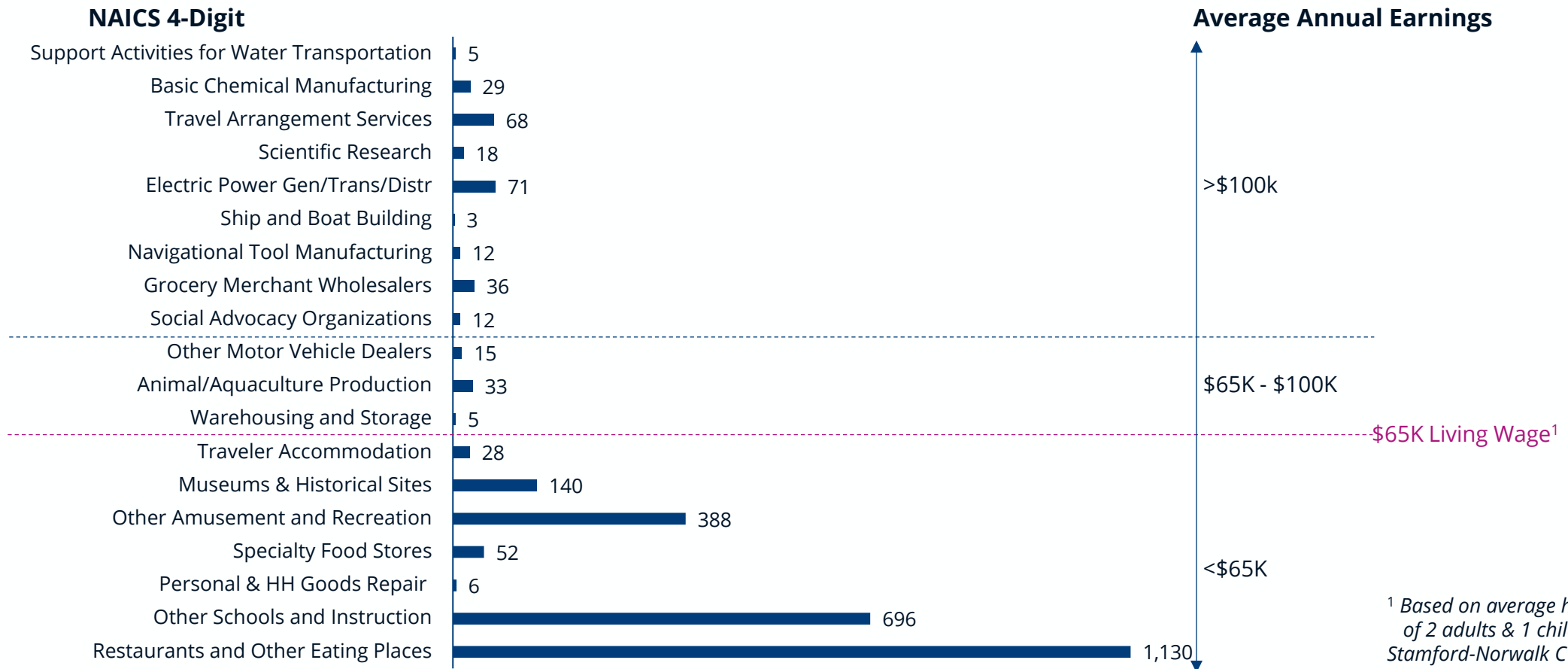
Roughly 13 percent of all jobs in the City of Norwalk can be possible water-dependent jobs. This ratio increases to 17 percent in the Harbor Area, but remains lower than what is expected.



## INDUSTRY ANALYSIS | HARBOR AREA WATER-DEPENDENT JOBS EARNINGS

Jobs in water-dependent industries in the Harbor Area are concentrated below the living wage particularly restaurants which comprise a large portion of these jobs.

### Harbor Area Jobs and Earnings in Water-Dependent Industries



<sup>1</sup> Based on average household size of 2 adults & 1 child in Bridgeport-Stamford-Norwalk CT MSA  
<sup>2</sup> Earning less than minimum wage

## INDUSTRY ANALYSIS | WATER-DEPENDENT ECONOMIC ACTIVITY COMPARISON ACROSS PLANNING REGIONS

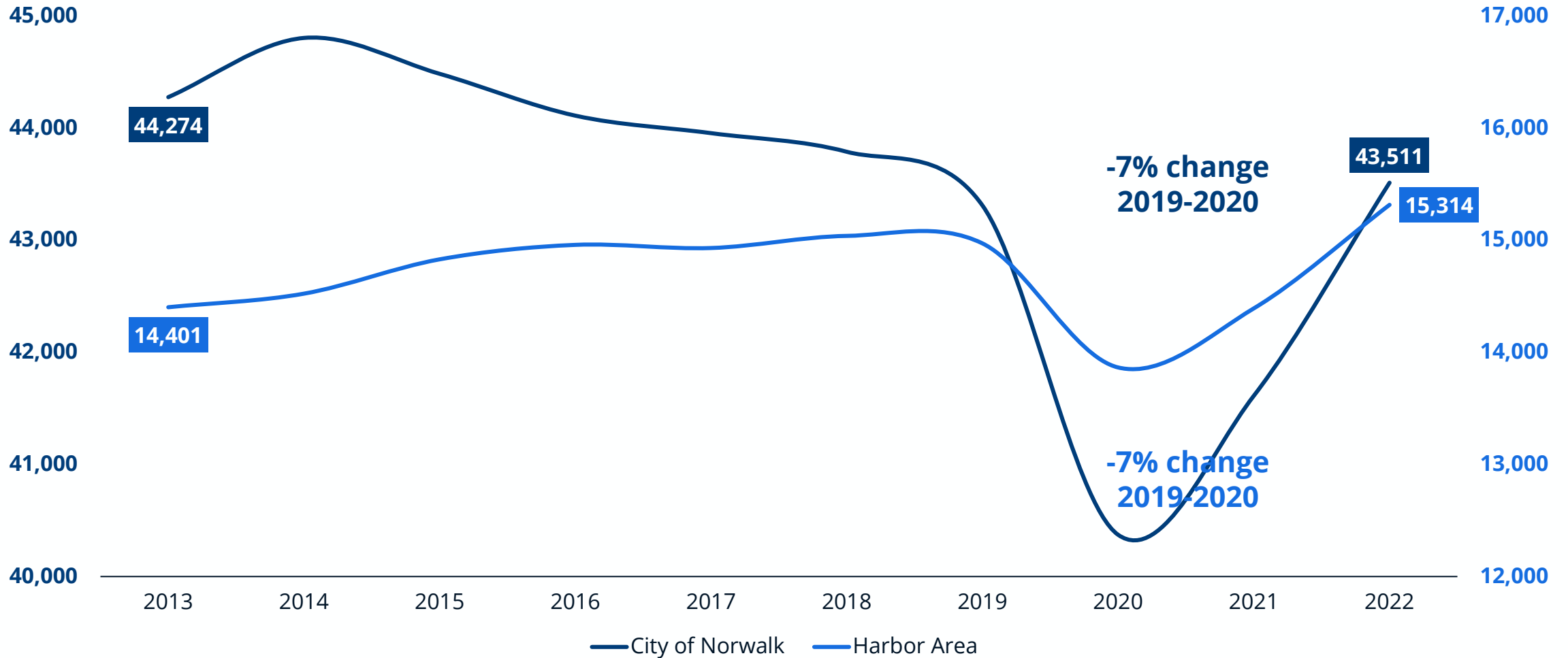
The water-dependent economy makes up just over 5% of the Western Planning Region's total economy, which is significantly less than Southeastern, but is the second fastest growing across the coastal regions.

CT Planning Regions	Total Economy GRP 2022	Water-Dependent Economy GRP 2022	% of Total Economy	Total Economy GRP Growth since 2013 (%)	Water-Dependent GRP Growth since 2013 (%)	Difference (%)
Western	\$70.9B	\$3.8B	5.4%	36.5%	69.4%	32.8%
Southeastern	\$19.4B	\$3.2B	16.5%	34.1%	57.8%	23.7%
South Central	\$46.3B	\$3.3B	7.0%	38.0%	75.3%	37.3%
Greater Bridgeport	\$22.6B	\$955M	4.2%	27.1%	59.3%	32.1%

## INDUSTRY ANALYSIS | WATER DEPENDENT JOBS

Industries with water-dependent jobs in the Harbor Area experienced more volatility in 2020, but still recovered, driven by restaurant and recreation jobs.

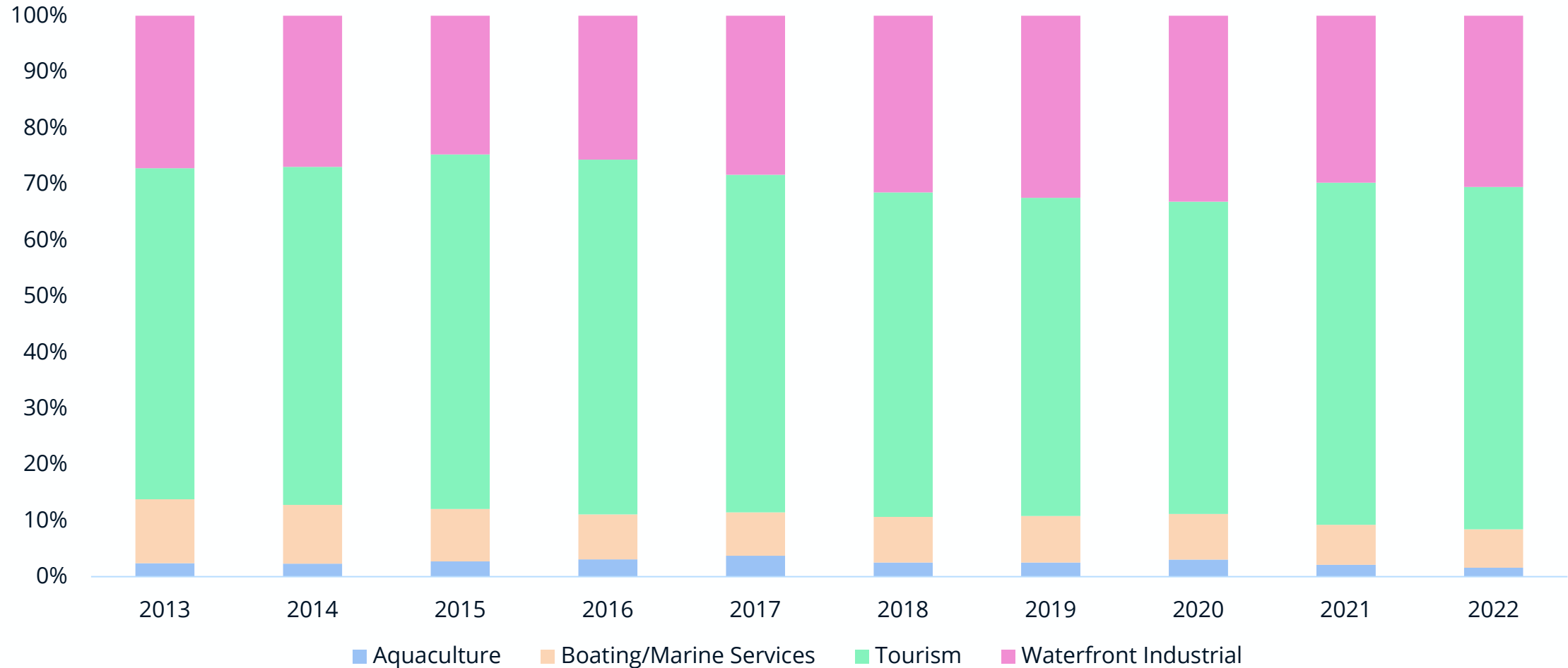
Total Water-Dependent Jobs City of Norwalk vs Harbor Area, 2013-2022



## INDUSTRY ANALYSIS | WATER DEPENDENT JOBS BY CATEGORY

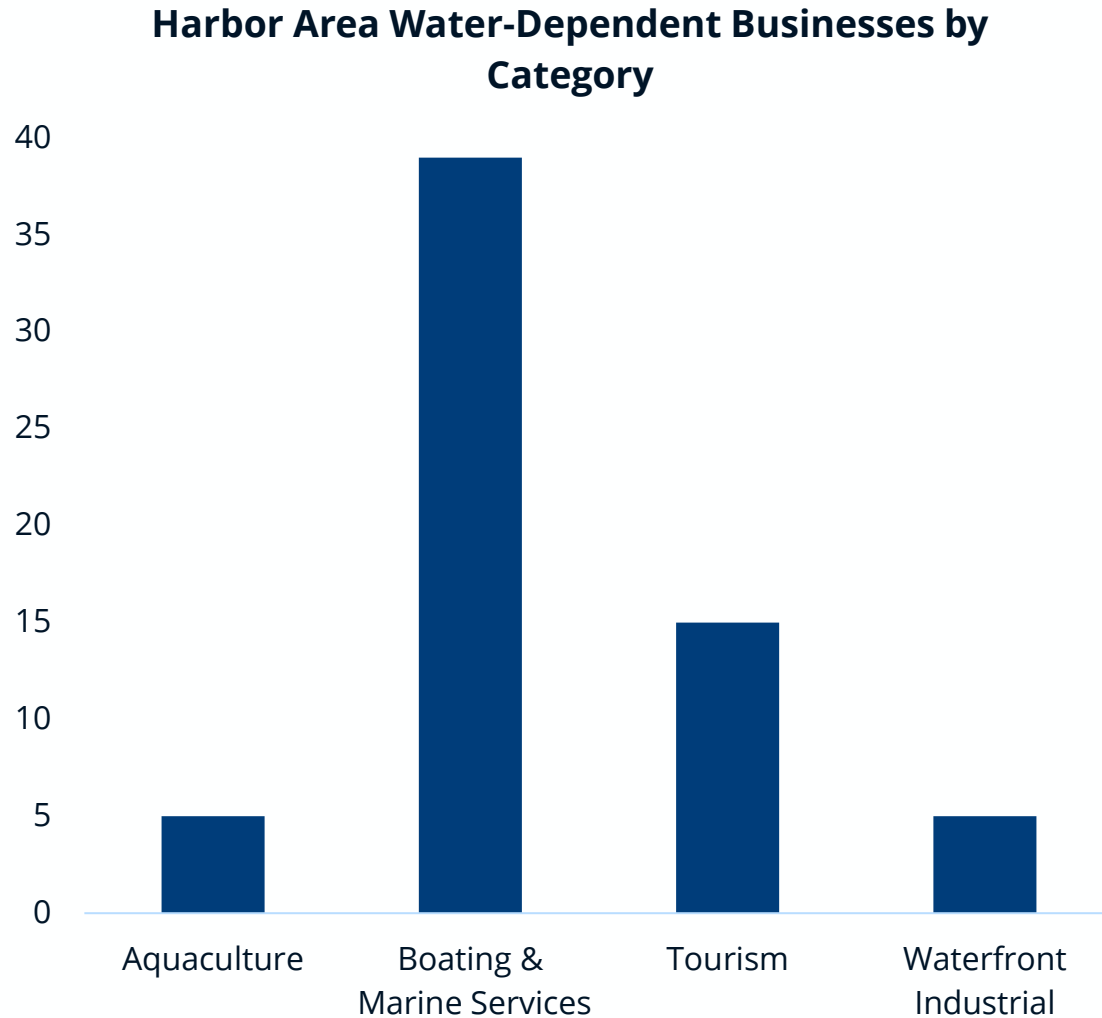
The share of jobs related to aquaculture, boating, and marine services has decreased over time while those related to tourism and waterfront industrial have increased.

Harbor Area Water Dependent Jobs by Category



## INDUSTRY ANALYSIS | WATER-DEPENDENT BUSINESSES

A majority of water-dependent businesses in the Harbor Area are related to boating and marine services, speaking to the recreational use of the harbor and commercial industries that support it.



**Aquaculture**

- Cops Island Oysters (60 FTE)

**Boating & Marine Services**

- Norwalk Cove Marina/Rex Marine (70 FTE)

**Tourism**

- Maritime Aquarium (80 FTE)
- Harbor Lights Restaurant (20 FTE)

**Waterfront Industrial**

- King Industries (260 FTE)
- G&C Services (9 FTE)

# Workforce and Infrastructure Needs

## WORKFORCE EXAMPLES

For each industry category, there are a range of job types that fall within them. The ones that are sampled below have a range of salaries, but generally do not require college degrees.

### **Oyster Farmer (~\$35k-\$45k)**

Responsible for cultivating, maintaining, and harvesting oysters. Includes physically demanding work on boat and land.

### **Harbor Restaurant Owner (~\$65k-\$100k)**

Responsible for overseeing all aspects of waterfront dining operations—from staffing and service to vendor management and customer experience.

### **Boat Mechanical Foreman (~\$75k-\$90k)**

Oversees the maintenance and repair of vessels, ensuring all mechanical systems, such as engines, hydraulics, and mooring equipment operate safely and efficiently.

### **Marine Construction Worker (~50k-75k)**

This worker carries out projects including pile driving, masonry, maintenance and repair, dock building, and dock carpentry.

## INFRASTRUCTURE AND WORKFORCE NEEDS

### **1. Industrial space is critical not only for industrial businesses but for the recreational and development activities that rely on them.**

- Industrial businesses are losing operational land to residential development, undermining their ability to support development and recreational uses of the harbor through services like barge delivery, dock construction, and harbor maintenance.

### **2. There is a need for investment in infrastructure upgrades to support the commercial activity of the harbor.**

- Upgrades are needed for dredging, bulkheads, docks, and waterfront resilience to support the sustainability of the commercial economy of the Harbor.

### **3. There is a shortage of skilled tradespeople that provide the necessary services to support all Harbor uses.**

- The harbor economy depends on marine techs, electricians, and carpenters, but there's a growing gap due to aging workers and limited training pipelines.

### **4. There is a lack of affordable housing in the Harbor Area to attract new workers.**

- High local rents force workers to live farther away, making it harder to attract and retain staff across all levels—from marine construction to marine education to waterfront industrial.

# SWOT and Recommendations

## SWOT MATRIX

The Harbor is Norwalk's premier asset, and the strengths, weaknesses, opportunities, and threats of that asset inform the recommendations that can create the future the city wants for it.

### Strengths

- Set of long-standing legacy businesses that represent the working waterfront including marine construction, aquaculture, and other industrial businesses.
- Deep water access through dredging that supports harbor-wide functionality for industrial uses, marinas, and resilience initiatives.

### Weaknesses

- Shrinking availability of land to support the complete Harbor economy.
- Lack of skilled workforce for necessary marine construction activities.
- Limited housing affordability along the Harbor for local employees.
- Aging infrastructure for marine facilities including bulkheads and docks.

### Opportunities

- Position Norwalk as a regional center for waterfront access.
- Expand workforce development and training opportunities through connections between local education groups and employers.
- Manresa Island offers an opportunity to increase public access to the Harbor.
- Ensure zoning aligns with city's goals for the harbor and coexistence of different uses that support one another.

### Threats

- Loss of remaining industrial businesses that support the recreational uses of the Harbor.
- Climate change impacts (sea level rise, flooding) that threaten all uses of the Harbor.
- Dredging as an activity that both supports recreational and commercial boating but also disrupts local harbor ecosystems and water quality.



02

# Appendix

## APPENDIX | WATER-DEPENDENT INDUSTRIES DEFINITION

The below table summarizes the industries that contain jobs dependent on the Harbor in Norwalk.

Industry Category	Industry Activity	NAICS Description
Aquaculture	1. Aquaculture	➤ Animal Production
Fishing and Fisheries	1. Fishing 2. Fish and Seafood Wholesales and Retailers	➤ Fishing ➤ Grocery and Related Product Merchant Wholesalers ➤ Specialty Food Stores
Boating and Marinas	1. Ship and Boat Building and Repair 2. Boat Dealers 3. Marinas	➤ Ship and Boat Building ➤ Other Motor Vehicle Dealers ➤ Personal and Household Goods Repair and Maintenance
Maritime Transportation	1. Port and Harbor Operations 2. Warehousing and Storage	➤ Support Activities for Water Transportation ➤ Warehousing and Storage
Maritime Trade	1. Chemical and Gas Manufacturing 2. Nautical System and Trade Manufacturing 3. Other Manufacturing	➤ Basic Chemical Manufacturing ➤ Other General Purpose Machinery Manufacturing ➤ Navigational, Measuring, Electromedical, and Control Instruments Manufacturing
Energy, Power, and Telecommunications	1. Electric Power Generation, Transmission and Distribution	➤ Electric Power Generation, Transmission and Distribution
Research	1. Scientific Research 2. Environmental Organizations	➤ Scientific Research and Development Services ➤ Social Advocacy Organizations
Tourism and Recreation	1. Water Sightseeing 2. Accommodations and Hotels 3. Restaurants and Other Eating Places 4. Parks, Gardens, and Other Amusement Places 5. Boating Instruction	➤ Scenic and Sightseeing Transportation, Water ➤ Consumer Goods Rental ➤ Travel Arrangement and Reservation Services ➤ Other Schools and Instruction ➤ Museums, Historical Sites, and Similar Institutions ➤ Other Amusement and Recreation Industries ➤ Traveler Accommodation ➤ Restaurants and Other Eating Places

Note: The table reflects the water-dependent industries that are present in Norwalk per the jobs data. Additional industries are reflected in the memo for Task 2.1

Source: The NAICS codes were derived from water-dependent uses as defined by Section 22a 93(16) of the Connecticut Coastal Management Act (CCMA), under the Connecticut General Statutes (CGS) as well as HRBA's previous project experience developing industry-based definitions of water-dependent and/or blue economy uses, in MA, RI, and NY.



# Section 2

## Moorings & Water Access

Mooring Study



# Mooring Study

Norwalk Harbor and Geographic Area

City of Norwalk, CT



Prepared by Indigo River Architecture and Engineering,  
D.P.C. Revision 02 – June 08, 2026



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## I. Introduction

Norwalk, Connecticut is a major boating destination on Long Island Sound, with a vibrant recreational boating economy supported by extensive infrastructure, a strong marina network, and access to the scenic Norwalk Islands. The city’s waterfront offers opportunities for seasonal boaters, transient cruisers, and charter operators alike. Specifically, it offers the following valuable resources:

- Natural deepwater harbor with protected access to Long Island Sound;
- A mix of tidal river, estuary, and coastal harbor environments with approximately 3.5 miles of navigable shoreline; and
- Extensive recreational opportunities, including parks, private marinas and yacht/boat clubs, with access to the Norwalk Islands that are popular for anchoring, beach access, kayaking, and fishing.

There are limitations, however, as a substantial portion of the inner harbor is shallow, with extensive shoaling, mudflats, and tidal wetlands. Moreover, the harbor is busy in the summer months with substantial traffic. That, combined with the environmentally significant and shallow waters, substantially impacts the location and types of moorings that can be utilized.

The City of Norwalk, as part of the Strategic Harbor Study effort, is interested in expanding access to the waterfront through public mooring fields that serve a larger geographic area than currently utilized, and that potentially provide access to the Manresa and Norwalk Islands. To that end, Indigo River Architecture and Engineering, D.P.C. (“Indigo River”) along with our maritime specialist TMS Waterfront (“TMS”) performed a detailed analysis of the harbor, community research, and limited field work to provide a feasibility and alternatives analysis for the moorings and water taxi access. Please note that additional public access considerations are covered in other deliverables included in the Strategic Harbor Study, including the Street Ends Study.

## II. Harbor Data

### A. Facilities and Mooring Providers

The harbor includes over 2,000 berthing and mooring spots, which include transient moorings, dinghy docks, marinas, commercial uses, and private dockage. This number includes over 500 mooring locations, with approximately 150 to 200 designated for recreational use—often managed by boating clubs or private individuals. There are two permitted (and chartered) mooring anchorages, the north field at Veteran’s Memorial Park and the south field along the east side of the navigational channel.

Recreational boats typically moor via swing moorings (Single Point Moorings or “SPM”) or Double Point moorings (“DPM”) and may tie near docks or in club fields depending on membership or slip availability. Furthermore, there are fifteen (15) marinas and thirteen (13) private boating clubs serving the harbor, offering both annual and transient mooring options. Notable existing facilities include the following:

- **Norwalk Transient Moorings:** This anchorage, located centrally in the harbor, offers both seasonal and transient moorings with dinghy access to the town docks at Veteran’s Memorial Park and Marina, typically through platforms like Dockwa.



- Veteran’s Memorial Park and Marina: Offers up to 20-ft boat slips and dinghy slips, linked to harbor mooring holders. This facility is widely used by recreational users and city residents.

B. Mooring Permits and Regulations

Mooring regulations in Norwalk are governed by the NHMC’s “Rules and Regulations for Mooring and Anchoring Vessels in Norwalk Harbor.”<sup>1</sup> Pursuant to Section 2 of the Regulations (“Mooring Permits Required”):

(i) The Harbor Master must approve all mooring locations in Norwalk Harbor, including locations used for “individual-private” mooring purposes and locations used for “commercial” mooring purposes as defined by the U.S. Army Corps of Engineers (USACE) and the Connecticut Department of Energy and Environmental Protection (DEEP). A mooring permit issued by the Harbor Master shall be required for the use of each approved mooring location.

(ii) It is a violation of the Norwalk Code for any person to moor any vessel in Norwalk Harbor without a permit from the Harbor Master approved by the Mooring and Harbor Safety Committee and issued through the online mooring system established by the NHMC.

(iii) Placement of mooring tackle to secure any floating dock unattached to land and greater than 100 square feet to which a vessel may be attached for any period of time is subject to these Rules and Regulations and state and federal regulatory requirements administered by the Connecticut DEEP and USACE, and must be reviewed by the NHMC for consistency with the Norwalk Harbor Management Plan.

C. Wind, Wave, and Environmental Conditions

- Wind: The harbor is characterized by the prevailing wind directions of South-Southwest (SSW) and South-Southeast (SSE) in the warmer months, with winter experiencing higher occurrences of East-Northeast (ENE) winds. Average wind speeds are typically around 8 to 9 miles per hour (mph), with occasional gusts up to 30 to 40 mph during active weather conditions. The summer doldrums are typical of the Long Island Sound, and generally during the boating season from May to October, winds are lighter, more varied in direction, and overall less gusty. Data for the harbor is available from SailFlow and is provided below.<sup>2</sup>

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<sup>1</sup> Rules and Regulations for Mooring and Anchoring Vessels in Norwalk Harbor. The City of Norwalk Harbor Management Commission. Last updated 2016 March 22. Accessed via <https://www.norwalkct.gov/DocumentCenter/View/9478/MooringRulesAdopted41916-2>

<sup>2</sup> Norwalk Light: Complete Wind Report & Forecast. SailFlow.

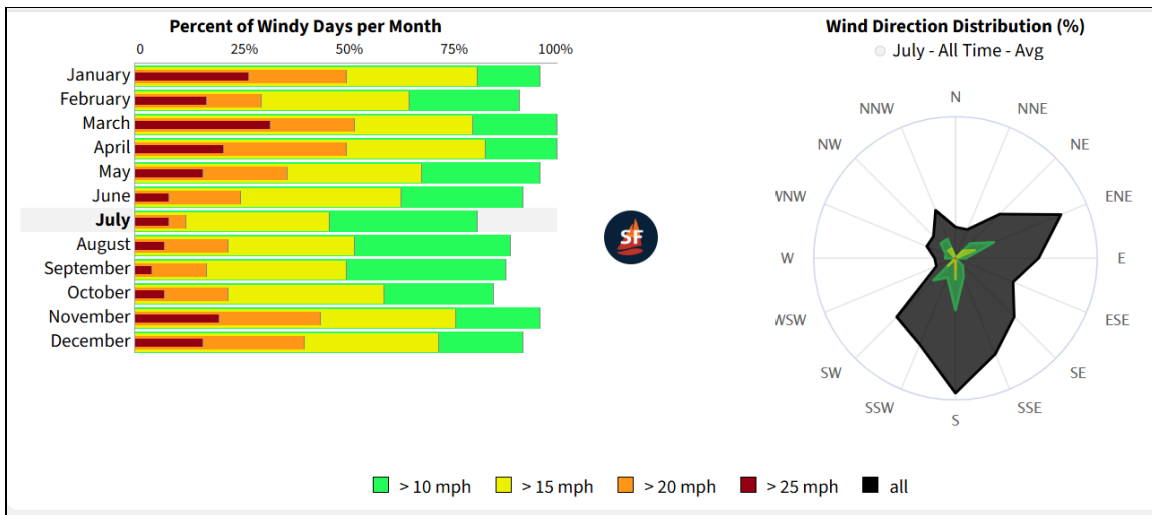


Figure 1: Wind Rose: Norwalk Harbor, Average. *Source: SailFlow*

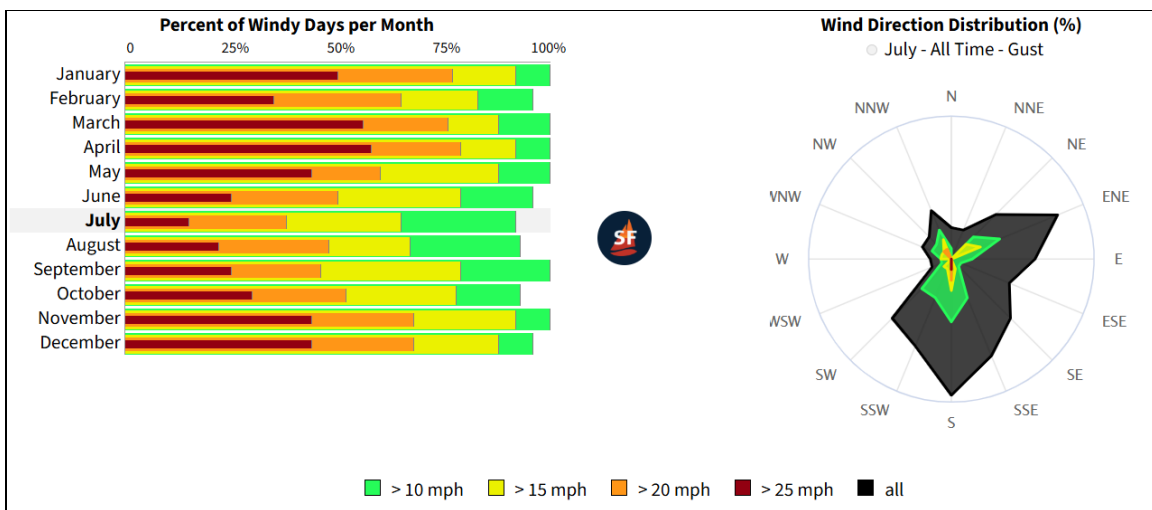


Figure 2: Wind Rose: Norwalk Harbor, Gusts. *Source: SailFlow*

- **Waves:** Wind driven waves in the Norwalk greater geographic area are a function of the direction of the wind, tidal conditions, and geographic locations. Inside the inner harbor, prevailing southerly winds create waves of 1.5 ft to 4.5 ft (wind speed and shallow water dependent) perpendicular to the channel. Southwest and easterly winds create the same heights of waves everywhere south of Plum Island and Calf Pasture Beach. As such, a large portion of the geographic areas are significantly exposed to large waves. At the Norwalk Islands, each is unique – different directions of wind create lee-effects, most notably at Shea Island where Ram Bay is protected from large waves in from all directions, except from West and West northwest, which have low probabilities of occurrence.
- **Wake:** No wake studies are available publicly for Norwalk Harbor, so Indigo River has utilized several studies performed in the New York Harbor which has similar constraints – notably, restricted area tidal estuary characteristics in the East River, Hudson River, and the Upper



Bay.<sup>3</sup> Vessel wakes outside of the navigation channel is consistent throughout the harbor with periods of 4 to 7 seconds and wave heights of 1.5 to 2.6 ft based upon observed small boat data. Closer to the navigation channel, wake from recreational boats is very steep (high wave height with short period). In general, where water depths are adequate and tidal shoals are present (such as in the navigational channel in the inner harbor), the governing waves on site are wakes from vessel traffic, especially during high-volume summer months. These waves are steep with long periods and result in “whitecaps” due to the prevalent shoaling. Furthermore, the inner harbor is geographically constrained, and therefore wakes can reflect, superimpose, and stack, causing a “confused” sea state; in the outer islands, open stretches of water allow the wake waves to dissipate.

Short period “choppy” waves can be stopped easily by surface attenuators and deflection at shoals. Longer swells carry a lot more energy and are a deeper wave, i.e. their profile extends down into the water much deeper than the surface. Typically, these long waves pass under pile-supported structures and floats, and they can only be attenuated with deep wave fences or rubble mound/island structures (e.g., groins, breakwaters).

#### D. Tides

Due to the shoaling throughout the geographic area, tidal swings are critically important to any mooring. Under normal conditions, the tidal swing (diurnal) is approximately 7.67 ft; highest astronomical (HAT) to lowest astronomical (LAT) tides are 9.48 ft and -1.76 ft respectively, for a swing of 11.24 ft. Many locations of the geographic area are accessible at high tide; with the swing as much as 11 ft, low tide presents a significant hazard to navigation and access. The tidal datums are available via the National Oceanic Atmospheric Administration.<sup>4</sup>

#### E. Currents

Data for currents is not publicly available, however, typical Long Island Sound currents at the mouth of river-fed harbors typically do not exceed 1 to 1.5 knots.

#### F. Bottom Composition, Habitat, and Aquaculture

- Norwalk Inner Harbor.
  - Dominant bottom: Fine mud/silt with high organic content; this is typical of low-energy, dredged estuarine channels and berths in western LIS harbors.
  - Hard/rocky substrate: Very limited; most edges are bulkheaded or rip-rap with scattered gravel/cobble pockets.

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<sup>3</sup> The comparison of Norwalk Harbor and NY Harbor is justified by the use of AIS data confirming that the volume and type of traffic in the NYC East River area is similar to that for Norwalk; specifically, the volume of smaller recreational boats (under 100 ft), which are the governing criteria for mooring field comfort and placidity.

<sup>4</sup> Datums for 8468448, South Norwalk CT. Tides & Currents. NOAA. Accessed via <https://tidesandcurrents.noaa.gov/datums.html?id=8468448Current>



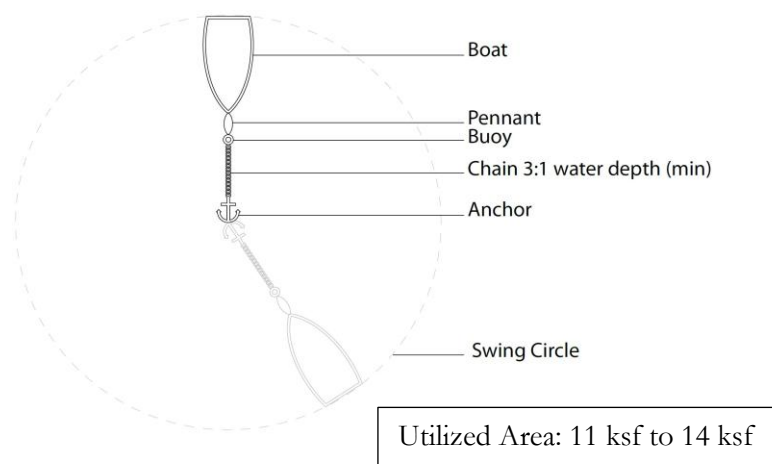
- Shellfish resources: Inner-harbor waters are not the core of Norwalk's recreational or natural seed beds; those are seaward.
- Aquaculture: No active aquaculture plots mapped in the inner harbor; leases and natural beds lie offshore of the harbor mouth.
- Submerged Aquatic Vegetation (SAV, or eelgrass): No mapped eelgrass within inner-harbor Norwalk (according to 2012/2017 CT DEEP datasets); eelgrass in western LIS is sparse and not recorded in CT DEEP datasets.
- Norwalk Outer Harbor
  - Dominant bottom: Mixed sand and muddy sand on shoals and channel flanks; mud persists in deeper, lower-energy pockets. Regional sidescan/backscatter mapping shows increasing grain size (harder returns) approaching the island ledges.
  - Hard features: Scattered gravel/cobble patches and anthropogenic hard edges; most substantial rock occurs nearer the islands/reefs just outside the mouth.
  - Shellfish use/classification: Portions adjacent to the mouth are conditionally approved or otherwise classified for shellfish harvesting; status varies with rainfall.
  - Aquaculture: No lease blocks mapped inside the dredged approach; leases are offshore toward the island chain (see below).
  - SAV: No mapped eelgrass polygons in the outer-harbor polygon for 2012/2017.
- Manresa Island (shoreline & nearshore within Norwalk)
  - Dominant bottom: Intertidal mudflats/sandy mud and salt-marsh fringe on the landward side; sand to muddy sand around exposed beaches and the causeway margins; increasing coarse/rocky elements toward the island-chain side.
  - Hard features: Rip-rap revetments and man-made shore structures from the former power station; localized rocky patches. (Site has ongoing remediation/reuse planning, but in-water jurisdiction remains the City of Norwalk.)
  - Shellfish/Aquaculture: Immediately adjacent waters connect to classified beds and nearby leases offshore; Manresa's immediate nearshore is not itself a core lease area.
  - SAV: No eelgrass mapped adjacent to Manresa in 2012/2017 CT DEEP datasets.
- Norwalk Islands (within Norwalk's jurisdiction)
  - Dominant bottom: Rock outcrops, boulder and cobble fields (hard, high-backscatter substrate) around island ledges/reefs. Sand to sandy gravel, shell hash common on shoals and bars. Muddy sand to mud in lee/depressions.
  - Shellfish beds: This area contains Norwalk's historic natural beds (designated by Superior Court in 1882) and is the focus of recreational beds used today (status conditional). These lie in waters around/among the islands.
  - Aquaculture: Extensive commercial oyster leases seaward and among the islands within Norwalk (e.g., Copps Island grounds).
  - Rock outcrops/reefs: Numerous named/unnamed ledges and reefs are charted (hard bottom hazards/structure) around Sheffield–Chimon–Copps complexes.
  - SAV: No eelgrass mapped (according to 2012/2017 CT DEEP datasets) within Norwalk's island complex; historic eelgrass layers do not show contemporary presence here.

- Shellfish status/areas: State classifications (Approved, Conditionally Approved, Restricted, etc.) are maintained by the Connecticut Department of Agriculture (CT DoAg). It is important to always check the latest classification layer. Recreational shellfish zones and closures are mapped and hotline-controlled by Norwalk; beds are largely around the islands within city limits. Natural oyster seed beds established by court decree (1882) include tracts in Norwalk waters.
- SAV: CT DEEP datasets for 2012 and 2017 show no eelgrass mapped in Norwalk’s waters for those years (this is the most recent statewide data available.)

### III. The Nuts and Bolts of Moorings

#### A. Types of Moorings

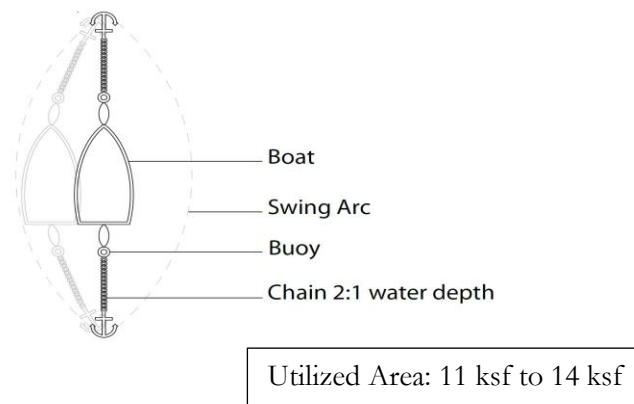
- Swing Mooring (Single-Point Mooring or “SPM”): A boat is secured to a single anchor point, and it swings in a circle around the anchor depending on wind, wave, wake, tide and currents. This mooring arrangement is best for large, open areas where space is not a constraint, and it is generally the most common and economical mooring practice. Furthermore, the swing allows the vessels to align with prevailing forces to minimize wind, wave, and current from being perpendicular to the beam of the vessel (generally they take most of the force parallel to the main axis). The spacing of the moorings is critical to avoid vessels overlapping as they swing, and therefore the space efficiency is very low, typically 11,000 sf to 14,000 sf. Due to that extra space, waterfront view interferences are reduced to a minimum. In Norwalk, due to the shoaling and tight quarters adjacent to the navigational channels, this type of mooring is generally reserved for yacht clubs, such as at Wilson Point, and is common throughout the remainder of the Long Island Sound such as in Larchmont and Oyster Bay.



**Figure 3: Single Point Mooring**

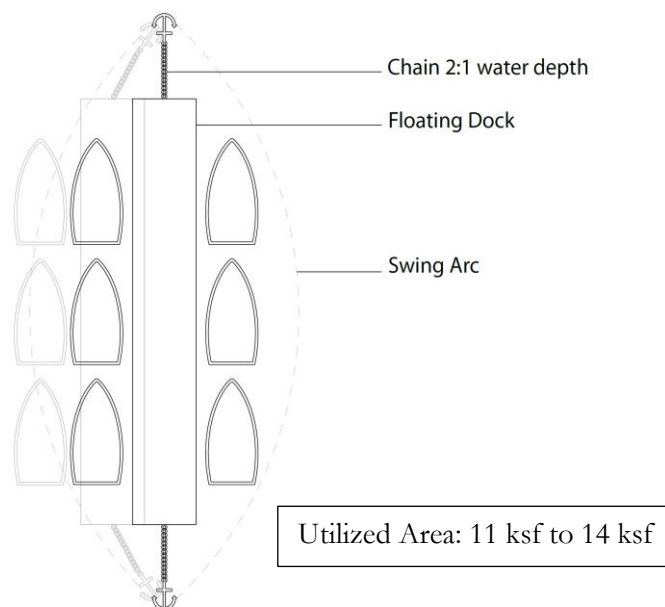
- Fore and Aft Mooring (Double Point Mooring or “DPM”): The boat is held in place by two mooring lines — one at the bow and one at the stern — usually tied to separate anchors or pilings. Primarily, this arrangement reduces space requirements but is harder to maneuver to. As such, this mooring arrangement is best for narrow and congested harbors, mooring fields adjacent to navigation channels, and where large swings are not feasible (such as where rock outcrops or other obstructions are present). The two-anchor system provides additional holding capacity in most conditions if they are aligned with prevailing wind, wave and current. However, when the forces are perpendicular to the orientation, waves and wind can batter vessels during extreme conditions. While this configuration should be reserved for protected harbors, it is common in the Long Island Sound to have these fields in open water – such as in Byram, Shippan Point, and Larchmont Harbor.

In Norwalk, due to the shoaling and tight quarters adjacent to the navigational channels, this type of mooring is common in both the North and South Anchorages. Other locations where this can be found include Mamaroneck, NY and Southport, CT.



**Figure 4: Two Point Mooring**

- Mooring Docks (Double Point Mooring Dock or “DPMD”): A fairly unique configuration that can be found on the Long Island Sound (such as at Glen Island) is where floating docks are moored to the Double Point Moorings and vessels tie up to the floating docks like they would on land. This arrangement is a further reduction in required space, as multiple boats can be tied up on a single DPM, and is the safest way to access. However, it does have the same constraints as DPM, with the added cost of infrastructure and maintenance, and is therefore reserved for very well protected harbors or rivers and lakes. One distinct advantage to this system is that the docks would attenuate waves and wake waves.



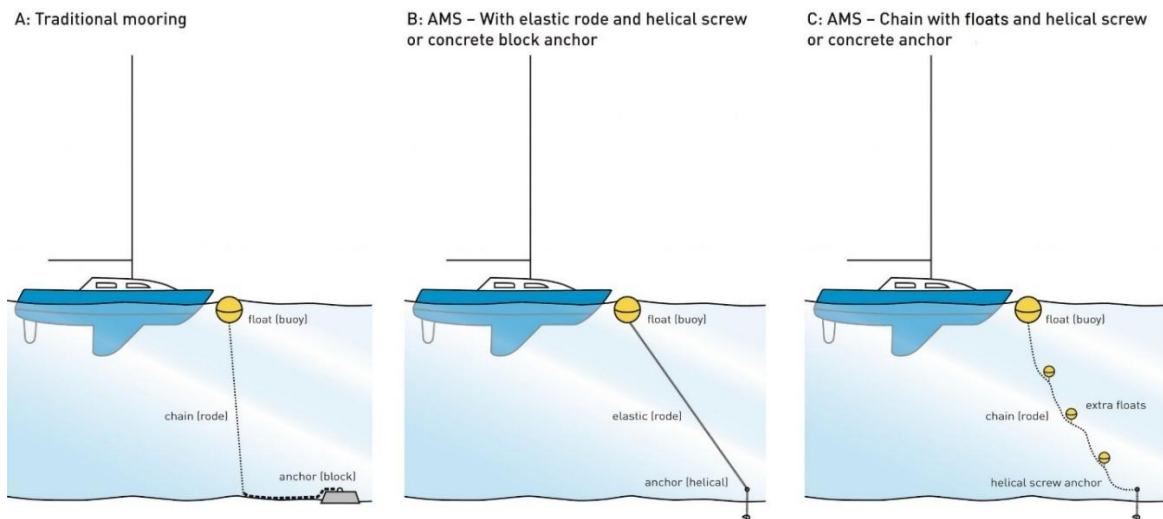
**Figure 5: Dock Mooring**

B. Anchor and Rode Types Commonly Used

- Anchors:
  - Mushroom Anchor: Often used for permanent moorings in soft bottoms. Holding power is proportional to the length of chain, weight of the mushroom, and whether or not it is buried. Typically, these moorings hold well when left in place; annual disturbance prevents deeper embedment. Additionally, due to the length of stem, wrapped chain and pennants are more common.
  - Pyramid Anchor: Similar to a mushroom anchor, pyramid anchors are used for soft bottoms, but are designed to penetrate and immediately bury themselves, resulting in a much higher holding power. Due to their embedment, chain and pennant wraps are less likely.
  - Helix Anchor (Screw Anchor): Installed by rotating into the seabed to a set tonnage through torque and depth; just the stem is visible above the seabed.
  - Deadweight (Block or Concrete): Heavy objects placed on the seabed. This is generally not recommended nor used in the Long Island Sound due to the buoyant weight of and reduction of holding power in the concrete blocks, and the leaching of chemicals from the concrete.
- Anchor Rodes:
  - Chain Moorings: Typical arrangement is a weighted, heavy chain at a general scope of 3:1 (chain: water depth) or more, a buoy, pennants and a pickup mechanism.
  - Advanced Mooring Systems (“AMS”): Elastic rodes such as SeaFlex, MarineFlex, or Hazlett Marine can be utilized effectively and eliminate the need for chain dragging across the bottom. These are held off the bottom by the buoy or intermediate floats.

**Table 1: Chain Moorings vs. Elastic Moorings**

Aspect	Chain (block + chain "swing" mooring)	AMS: Elastic (Seaflex, HarborFlex/Hazelett-style)
Environmental impacts	Chains drag on the seabed within the swing circle, creating seagrass "halos" (bare patches) and edge effects; loss of habitat and stored carbon documented.	Keeps riser off the bottom (elastic rode and/or floats; often with helix anchors), greatly reducing or eliminating scouring; widely recommended for seagrass protection.
Typical lifespan	Chain life varies widely with corrosion/abrasion; typical ~5-15 year-service life for chain in normal conditions.	40+ years in service with an industry 20-year warranty.
Cost (CAPEX vs. lifecycle)	Lower upfront hardware cost, but higher lifecycle cost from periodic chain/hardware replacement, diving, and bottom damage.	Higher upfront than chain, but lower O&M and inspection burden; manufacturers and harbor-authority AMS packs note potentially lower total cost of ownership.
Maintenance requirements	Routine inspections (often annual topside and 3-year full inspections); chain wear limits (e.g., 20-33% loss) trigger replacement; swivels/shackles frequently replaced.	Reduced dive work because the rode doesn't scour, but still requires periodic checks of elastomer elements, shackles, and buoy hardware per manufacturer guidance.
Storm behavior / footprint	Catenary needs scope (often 3:1+), larger swing radius and seabed footprint; shock loads transmitted during extreme events.	Elastic rode absorbs energy, allows shorter scope (some vendors cite ~1:1 at high water), improving density in mooring fields and reducing loads.



**Figure 6: AMS and Chain Mooring Comparison Diagram<sup>5</sup>**

<sup>5</sup> Save Our Seabed. Recreational Boating: Mooring. Accessed via <https://saveourseabed.co.uk/protecting-our-seabed/recreational-boating/mooring/>.



#### IV. Existing Mooring Zones in the Harbor (Historic and Actual)

Based on navigational charts, the Norwalk Harbor Management Plan, and historic aerials, the following areas are being utilized for moorings (refer to **Figure 6** and **Table 2**). Access to the public moorings is by dingy; no public launch is available to boaters. However, a pump-out boat is available to all boaters. **Figure 7** shows historically popular destination points within the harbor (moorings and anchorages) where boaters are either mooring or anchoring.

- Inner Harbor Basin. Concentrated mooring areas near Veteran’s Memorial Park, central Norwalk Island shoreline, and along the river where swing moorings are allocated. This field is significantly constrained by the navigation channel to the west and shoals to the south-southeast. As noted above, there are no legal shellfishing or aquaculture areas in the inner harbor.
- Outer Harbor Area. Mooring zones in deeper water (around 10 ft in depth), including visitor mooring cluster near Norwalk Cove Marina and transient mooring facilities. Again, this area is constrained by the navigation channel and shoaling; moreover, it is central to the harbor along the busy channel.
- Norwalk Yacht Club Field. This field holds about 150 permanent swing moorings, as documented in the Norwalk Harbor Management Plan. A private launch is available.
- Transient/Dinghy Moorings. City-managed guest moorings for visitors near the municipal visitor docks and Veteran’s Memorial Park area.
- Norwalk Islands: Unofficial Mooring Area. Unofficial mooring areas at Norwalk Islands, which include Shea, Sheffield, Chimon, Grassy, Betts Island, and Ram Bay. There are extensive leased and recreational shellfishing areas throughout the islands.

**Table 2: Mooring Zones**

Zone	Type	Moorings	Description
Inner Harbor Basin	DPM; SPM	~150–200	Near Veteran’s Memorial Park and along riverbanks
Outer Harbor / Cove	DPM	~20 guest	Visitor moorings near Norwalk Cove Marina entrance
Norwalk Yacht Club	SPM	~150	Licensed under CT DEEP, maintained seasonally
City-Managed Zones	SPM	Varies	Access for city boaters and transient use
Unofficial Areas including Shea, Sheffield, Chimon, Grassy, Betts Islands and Ram Bay	Anchor	Varies	Clusters of anchor moorings for access to the Norwalk Islands.

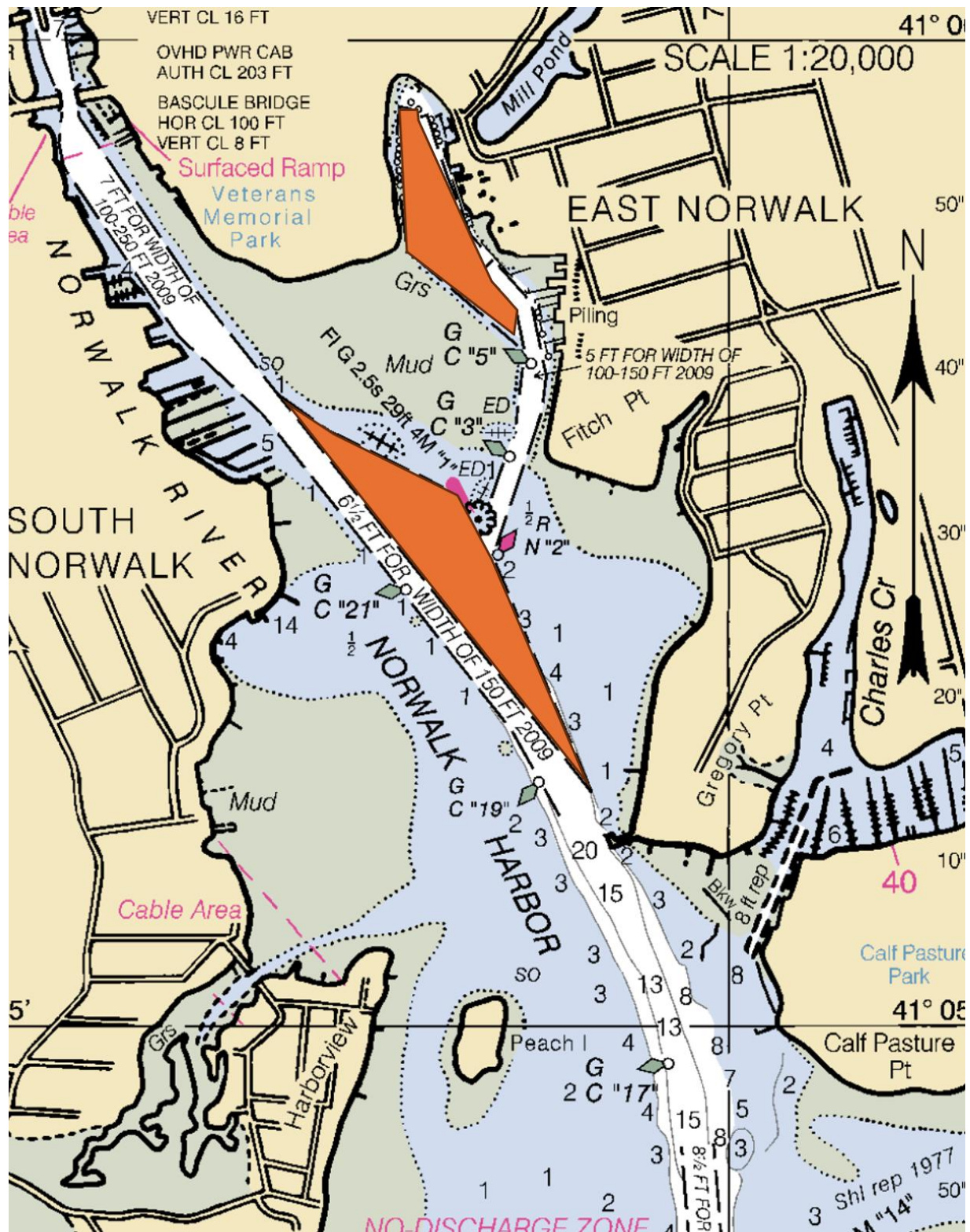
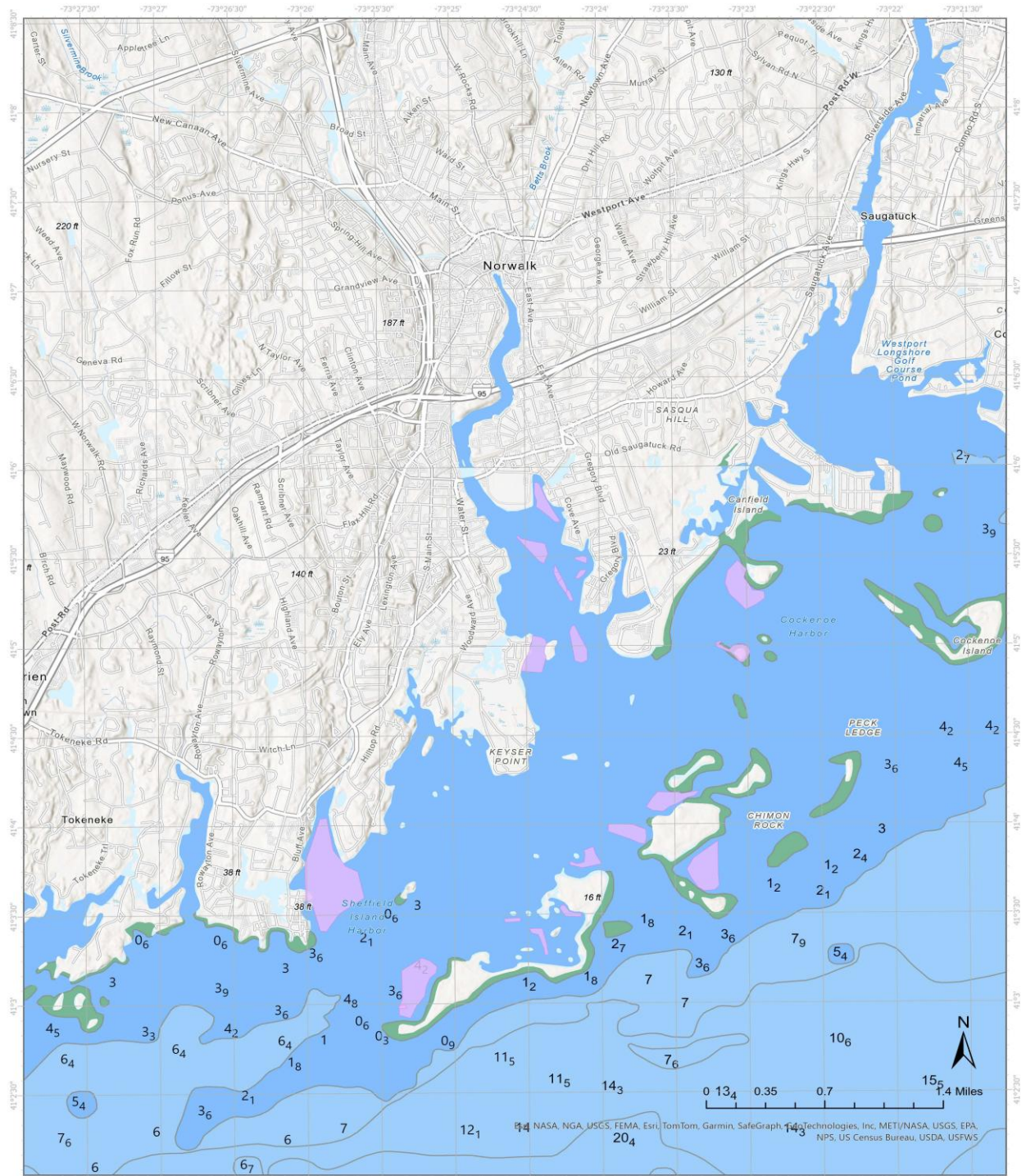


Figure 6: Officially Permitted Existing Moorings (Anchorage): Inner Harbor (depicted in orange)



**Legend**

Historic Mooring Areas

**Figure 7: Historically Used Recreational Moorings and Anchorages** *(Combination of moorings and/or boats anchoring)*



## V. Mooring Upgrades and Expansion

As noted previously, the City of Norwalk is looking to further activate its geographic area with water access and boating. Part of the activation includes the identification of potential mooring fields and street ends where access may be developed for a water taxi or dinghies. Another is the question of whether the equipment should be owned and installed by the lessee or the City of Norwalk (or a mix). The other part is to determine if any proposed expansion a) is environmentally feasible and b) is economically feasible.

### A. Challenges

Indigo River started with defining the challenges and opportunities in the harbor.

- Congestion in peak season, especially around Veteran’s Memorial Park and the Norwalk Islands.
- Environmental: The presence of extensive shellfish beds, bedrock outcrops, terminal moraines, tidal wetlands, intertidal flats and other ecological systems can be drastically affected by vessels.
- Avoidance of shellfishing lease areas.
- Restrictive environmental permits.
- A restricted fee structure for moorings promulgated by the State of Connecticut.
- Dredging backlogs: Significant parts of the harbor face sedimentation and depth issues; dredge costs and disposal location availability are critical issues currently on Long Island Sound.
- Access: How to get people to and from their boats conveniently without relying upon dinghies; access from the water to “destination” points in Norwalk. Additionally, access to amenities (water, shopping, sanitary discharge, fuel, etc.).
- Pollution and environmental damage caused by moorings and boats when in sensitive areas.

### B. Opportunities

Opportunities included the following:

- Expansion of mooring fields to include the Norwalk Islands, eliminating shellfish bed unfriendly anchoring. Further, this could provide direct beach access.
- Growing interest in eco-tourism, paddle sports, and transient cruising.
- Increased demand for floating docks, electric boat infrastructure, and modernized harbormaster systems.
- Programming of Manresa Island and the basin offshore for increased capacity outside of the inner harbor where more parking is potentially available.
- Creating a water-taxi system for increased access to the waterfront around the entire extent of the harbor, which also creates an opportunity for non-boat owners to access the Norwalk Islands.

### C. Selection Criteria

Indigo River considered the following factors and criteria in selecting the potential alternatives for new mooring fields:

- Water depth: Due to the extreme tidal swings, it is not recommended that any mooring be installed or swing through less than 5 ft of water at Mean Low Water (MLW). This minimum depth



accounts for lowest astronomical tide of approximately -2 ft (MLW), waves, avoidance of tidal wetland vegetation and of vessels bottoming out. Smaller vessels may be able to moor in two (2) to three (3) ft of water, however, prop wash at that depth has deleterious effects on both bottom habitat and wetlands.

**Table 3: Boat Types and Water Depths**

Boat Type	Draft (Approx.)	Recommended Min. Depth
Small Dinghies	6–12 inches	2–3 feet
Sailboats (20–30 ft)	3–5 feet	6–8 feet
Sailboats (30–40 ft)	5–7 feet	8–10 feet
Powerboats (under 25 ft)	2–3 feet	4–6 feet
Larger Yachts (40+ ft)	6–8 feet or more	10–12 feet or more

- Seabed type: Preferred bottom condition is silt and sand wherein a pyramid or mushroom anchor can bury itself to establish maximum holding power. Helical anchors can be utilized on any type of bottom except rock. Weathered rock, till (rocks and stones), and shallow bedrock should be avoided as moorings will drag due to lack of embedment and lower friction coefficients.
- Wind, wave, and current exposure
  - Inner Harbor: The primary consideration for protection is to place the moorings in the lee of geographic features that block prevailing winds – specifically South-southwest to East-southeast. That means locations should be north of the line drawn between Plum Island and Calf Pasture Beach.
  - Outer Harbor: The same prevailing directions apply, meaning that moorings should be in the lee of the Norwalk Islands to the maximum extent practicable.
- Density of boats in the area: This criterion was given loose consideration in this round of analysis, as density already clashes with exposure. In general, fields should be located away from the navigation channels and yacht clubs as well as sailboat racing and regatta course areas.
- Environmental regulations (e.g., wetland protection): The moorings will have to adhere to all CT DEEP requirements for permitted mooring areas.
- Budget and Maintenance Capacity: See below for a Cost Benefit Analysis.
- Access: Currently, access to and from public mooring fields is by the boat owner’s dinghy. There is an opportunity to provide City-run access through the activation of a water taxi or launch operator system, which can increase safety, reduce the need for dinghy storage, and generate revenue. Indigo River analyzed standard launch and water taxi services and recommends that the criteria be determined by distance and speed. Within the inner harbor, distances are short, but speed is restricted; in the outer harbor, it’s exactly the opposite. Rides should be comfortable and under 15 minutes if possible. As such, the criteria used for selection should be as follows:



- Inner Harbor – 6-8 knots (kts) for a maximum of 1 nautical mile (nm) for a trip time of 15 minutes.
- Outer harbor and Norwalk Islands – 12-15 kts for a maximum of 3 nm, for a trip time of 15 mins.
- Inner harbor launches can be open vessel; due to prevailing conditions, outer harbor and the islands should be accessed by a covered vessel.
- Launch docks should be strategically placed to meet the criteria above.
- Amenities:
  - Pump-out boat. If expansion of the mooring fields is planned, an additional pump-out boat should be mandated. There is an opportunity to have a specific pump-out facility on the DPMD-type floating moorings, which would relieve some of the burden on the existing pump-out boat.
  - Access to parking and/or biking and walking paths, including activating underutilized street ends.
  - Safe access to human-powered boating areas (paddleboarding, kayaking, windsurfing, etc.)
- Requirements for Expansion:
  - Launches / water taxi, as detailed above.
  - Optional: Installation, removal, inspection and maintenance crews. With significant potential to add moorings, a capabilities inventory of the City’s marine and waterfront staff would have to be completed to determine if the fields can be serviced on an annual basis for installation and removals. Alternatively, a public Request for Proposal (RFP) process could be commissioned for the selection of a marine contractor to do the installations, removals, and inspections (including divers).
  - Optional: Mooring installation work boat (under the City-owned and supplied model).
  - Mandatory: Inspection Program. The inspection of the moorings, for those that may be owned by the City, should have a standard pull and inspection program that rotates on a 3-year basis. Pulling moorings annually actually works against their need to embed themselves into the mud.
  - Mandatory: Additional pump-out boats.
  - Recommended: Standard engineering and installation manual for moorings, to meet minimum criteria for public safety and environmental excellence.
  - Recommended: Conversion from a mushroom system to a helical and APM system for higher reliability, less environmental damage, and tighter density.

## VI. Potential New Mooring Field Areas

Indigo River started by eliminating any areas that are shallower than 4 ft. using the current 2025 Navionics Charts (ENC) and the Connecticut Environmental Conditions Online (CT ECO) Geodatabase.<sup>6</sup> These criteria eliminated most of the inner harbor and a large portion of the outer harbor. Cross referencing the available locations with historic anchorage areas, unused space, and access points yielded the following

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<sup>6</sup> Connecticut Environmental Conditions Online (CT ECO). Accessed via <https://maps.cteco.uconn.edu/>.



potential new areas. Note that for the purposes of this study, the inner harbor average boat size was set to be 25 ft, and the outer harbor average boat size was 30 ft, in calculating the number of potential moorings. Please refer to Figures 8 through 11 for the locations discussed below.

A. Inner and Outer Harbors

- Area 1: Veterans Park – Western Shore. South of the boat ramps and transient launch docks, there is a length of shoreline that can accommodate non-swinging moorings outside of the navigation channel, but in enough water for smaller boats (Figure 8). Water depths range from 3 ft to 8 ft at MLW. Using the DPMD system, approximately 16 to 32 boats could be moored along this shoreline with direct access from the boat launch. A water taxi stop could be placed at this location, along with an additional pump-out dock; connections could be provided at the Aquarium and Washington streets on the west side of the Norwalk River.
- Area 2: Gregory Point. This would be an expansion of the moorings between the navigation channel and Peach Island – an area also extensively used by Norwalk Cove Marina (Figure 9). Water depths range from 5 ft to 10 ft at MLW allowing for a range of large and small vessels, including sailboats. Bathymetry and wetland surveys need to be completed, but based upon the potential area deeper than 5 ft at MLW, approximately 25 SPM or 44 DPM moorings could be installed. The advantage to this location is the vicinity to the largest marina in the harbor that has significant dry storage capacity – the moorings would provide temporary wet slips that could be licensed to the marinas. This location could be serviced by both the marina and a water taxi stop at The Point, Calf Pasture Beach or even the proposed improved street end at Lowndes Street.
- Area 3: Calf Pasture Beach. Immediately outside of the breakwater for Norwalk Cove, this smaller area would be available, potentially, for additional transient moorings (Figure 9). Water depths range from 5 ft to 8 ft at MLW allowing for a range of medium to smaller power boats and shallow draft sailboats. However, this area is a bit more exposed than the other identified areas in the outer harbor, so it most likely is a “fair weather” temporary mooring location. Bathymetry and aquatic surveys need to be completed but based upon the potential area deeper than 5 ft at MLW, approximately 10 SPM or 18 DPM moorings could be installed. Again, the advantage to this location is the vicinity to the largest marina in the harbor that has significant dry storage capacity – the moorings would provide temporary wet slips that could be licensed to the marinas. This mooring location could be serviced by a water taxi stop at Calf Pasture Beach.
- Area 9: Veteran’s Park Mooring Area (North Anchorage). This existing mooring field could be reconfigured to a DMPD dock mooring for an increase in the number of boats. Existing SPM or DPM moorings would be replaced with helical anchors and elastic rodes. A water taxi stop could be placed at this location, along with an additional pump-out dock; connections could be provided at the Aquarium and Washington streets on the west side of the Norwalk River.



- Area 10: Inner Harbor Mooring Area (South Anchorage.) Due to this location's density and adjacency to the navigation channel, no additional moorings are recommended here.

B. Manresa Island

- Area 4: Manresa Island West Mooring Field. West of Manresa, there is adequate water depth and access to the once-private navigation channel into the Basin (**Figure 10**). Moreover, this location is more sheltered than Area 5 and is in a restricted recreational shellfishing area. Water depths range from 3 ft to 8 ft at MLW allowing for a range of smaller vessels and outboards. Bathymetry would need to be completed to verify depths; based upon the potential area deeper than 3 ft at MLW, approximately 20 SPM or 60 DPM moorings could be installed. Bottom composition would need to be surveyed to determine optimal placement of moorings and confirm that no SAV is present. The field could be serviced by water taxi from Lowndes Street, Manresa Basin, or even the Point.

Advantages: Protected from wind, wave, wakes  
Setback from Navigation Channel

Disadvantages: Distance from downtown and Veteran's Park  
Adjacent to the navigation channel (wakes)  
In a chartered recreational shellfishing area  
Intermittent shoaling

- Area 5: Manresa Island Basin. While Manresa Basin offers advantages in terms of access, water depth, and protection against environmental forces, it will be further studied as part of the ongoing Master Plan for the Island. Indigo River considers the basin as feasible for shallow and deep draft (keeled sailboats) and encourages development of the same, but the site makes more sense as a marina with floating docks. Moreover, this is the natural staging point for the Norwalk Islands through a water taxi, ferry, or launch. Finally, from Veteran's Memorial Park or potential street end activation, a water taxi or ferry can connect the inner/outer harbor to the future park planned at Manresa Island, in addition to launching to the beaches. The basin itself is not a shellfishing area, nor is any SAV present. Bottom composition would need to be surveyed to determine optimal placement of moorings. This would be an ideal location for a water taxi stop and homeport.

Advantages: Deep water basin  
Highly protected from wind, wave, and wakes  
Adjacent to navigation channel  
Manresa Island could act as a parking and staging point

Disadvantages: Distance from downtown and Veteran's Park



Under private ownership and development  
More suitable for a marina

- Area 6: Manresa Island South Mooring Field. South of the Basin, there is adequate water depth and access to the once-private navigation channel into the Basin (**Figure 8**). Moreover, it is adjacent to the primary navigation channel. Water depths range from 5 ft to 13 ft at MLW allowing for a range of large and small vessels, including deep keel sailboats. Bathymetry would need to be completed to verify depths; based upon the potential area deeper than 5 ft at MLW, approximately 60 to 100 SPM or 100 to 140 DPM moorings could be installed. The identified areas are recognized as recreational shellfishing areas (water-quality dependent) and are not leased shellfishing areas. Bottom composition would need to be surveyed to determine optimal placement of moorings and confirm that no SAV is present. The field could be serviced by water taxi from Lowndes Street, Manresa Basin, or the Point.

Advantages:	Adjacent to navigation channel Outside of leased shellfishing areas
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Disadvantages:	Exposed from SW prevailing wind/waves Distance from downtown and Veteran’s Park Adjacent to the navigation channel Wake affected In a chartered recreational shellfishing area Not suitable for DPMD due to wave climate
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C. Norwalk Islands

The true destination offshore at Norwalk are the islands – sandy beaches, clean waters, and copious lengths of shoreline (**Figure 10**). However, access to the islands via boat involves passing through significant ecosystems that are easily damaged by vessels. Currently, many boats simply anchor at the islands, many within shellfishing leases and sensitive habitat (refer to the historic areas in blue in Figure 10). Instituting a mooring program in the recommended areas (refer to red areas in Figure 10) with elastic rodes would reduce boating impacts.

These proposed moorings are farther out in the Long Island Sound, so exposure to environmental forces and storms require that fields be located in the lee of the islands to the maximum extent possible. There are also deepwater channels running into the areas from the south (between Chimon and Shea Island) and from the east (off Navigation Buoy #2) where boat traffic is commonly present. Each of the islands could be serviced by water taxi from Manresa, or the landings on the eastern shore.



- Area 7: Sheffield Island. The western shore of Sheffield Island has an area with adequate water depth for moorings and access to the island, while staying out of the leased shellfish areas. This area is well protected from all directions except west-southwest to southwest where a large fetch can generate significant waves. Proposed moorings at this location would be transient only.

Advantages:                      Outside of leased shellfishing areas  
    Access to Shea Island camp sites

Disadvantages:                  Exposed from SW prevailing wind/waves  
    Distance from downtown and Veteran’s Park  
    Adjacent to the navigation channel  
    In a chartered recreational shellfishing area  
    Not suitable for DPMD due to wave climate

- Area 8: Chimon Island. Between Chimon and Shea Islands, there is a naturally deep area of water that could support well protected moorings away from the shellfishing areas. Proposed moorings at this location would be transient only.

Advantages:                      Outside of leased shellfishing areas  
    Access to both Shea and Chimon Island  
    Well-protected cove

Disadvantages:                  Distance from downtown and Veteran’s Park  
    Restricted geographic / navigable area  
    In a chartered recreational shellfishing area

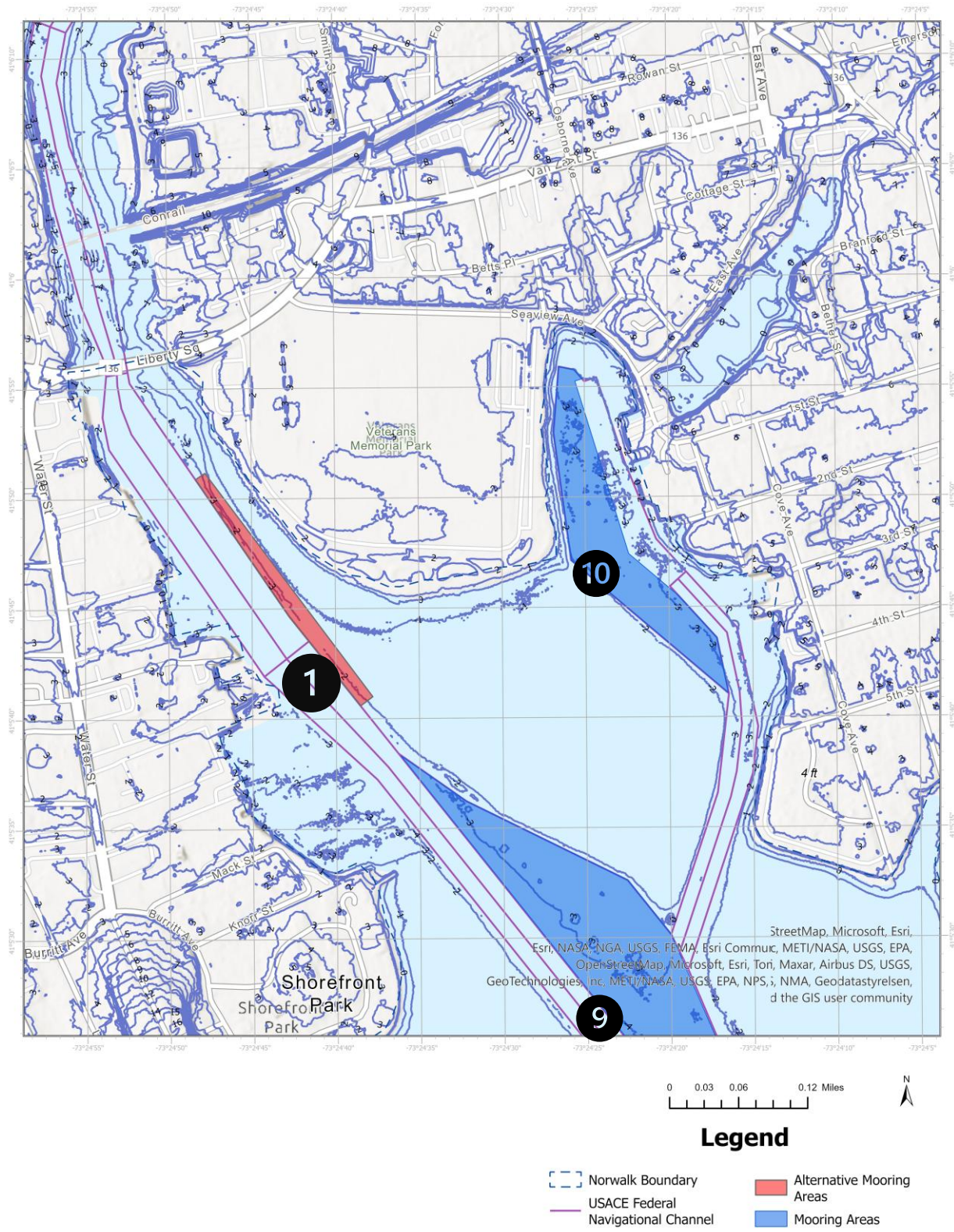


Figure 8: Veterans Park

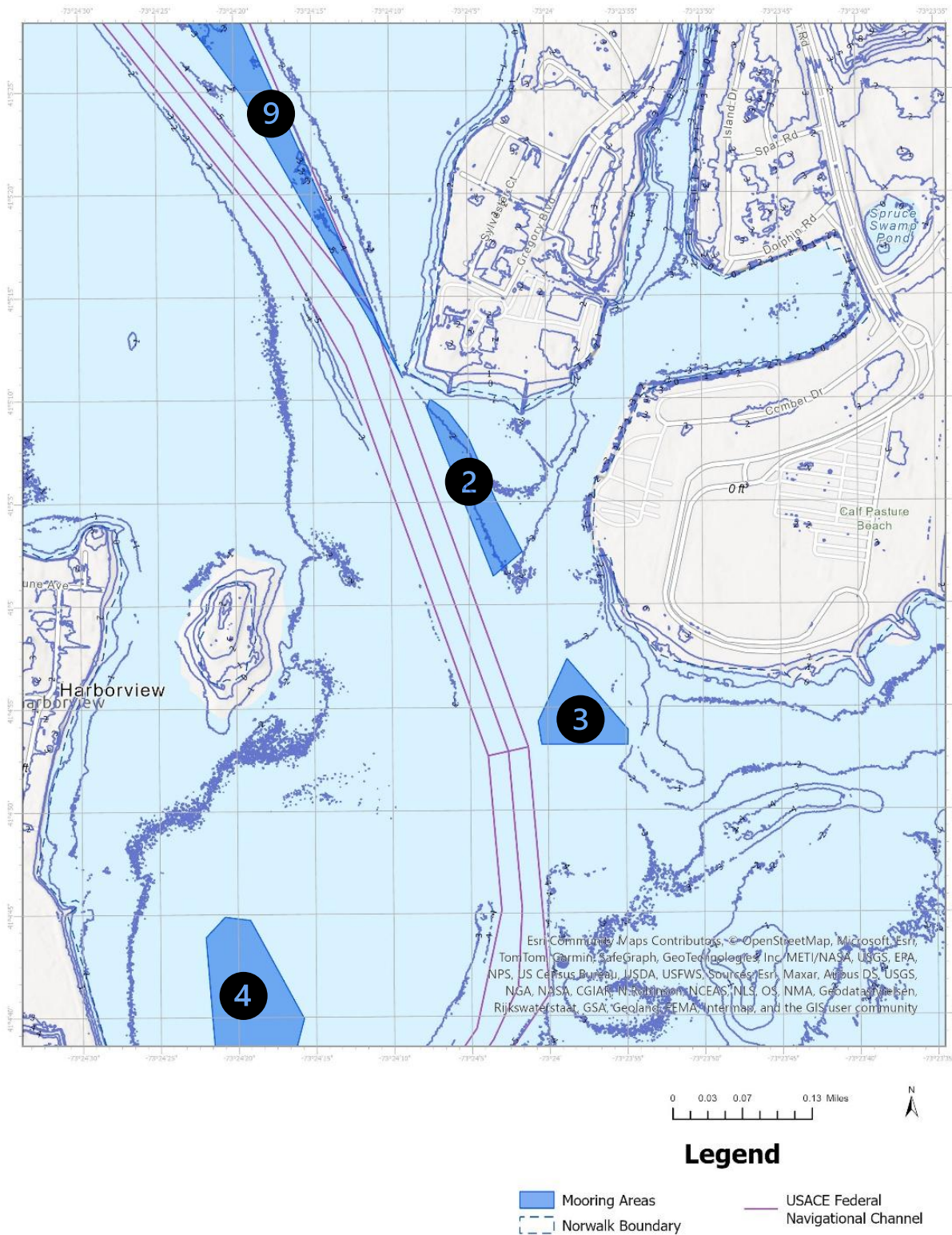
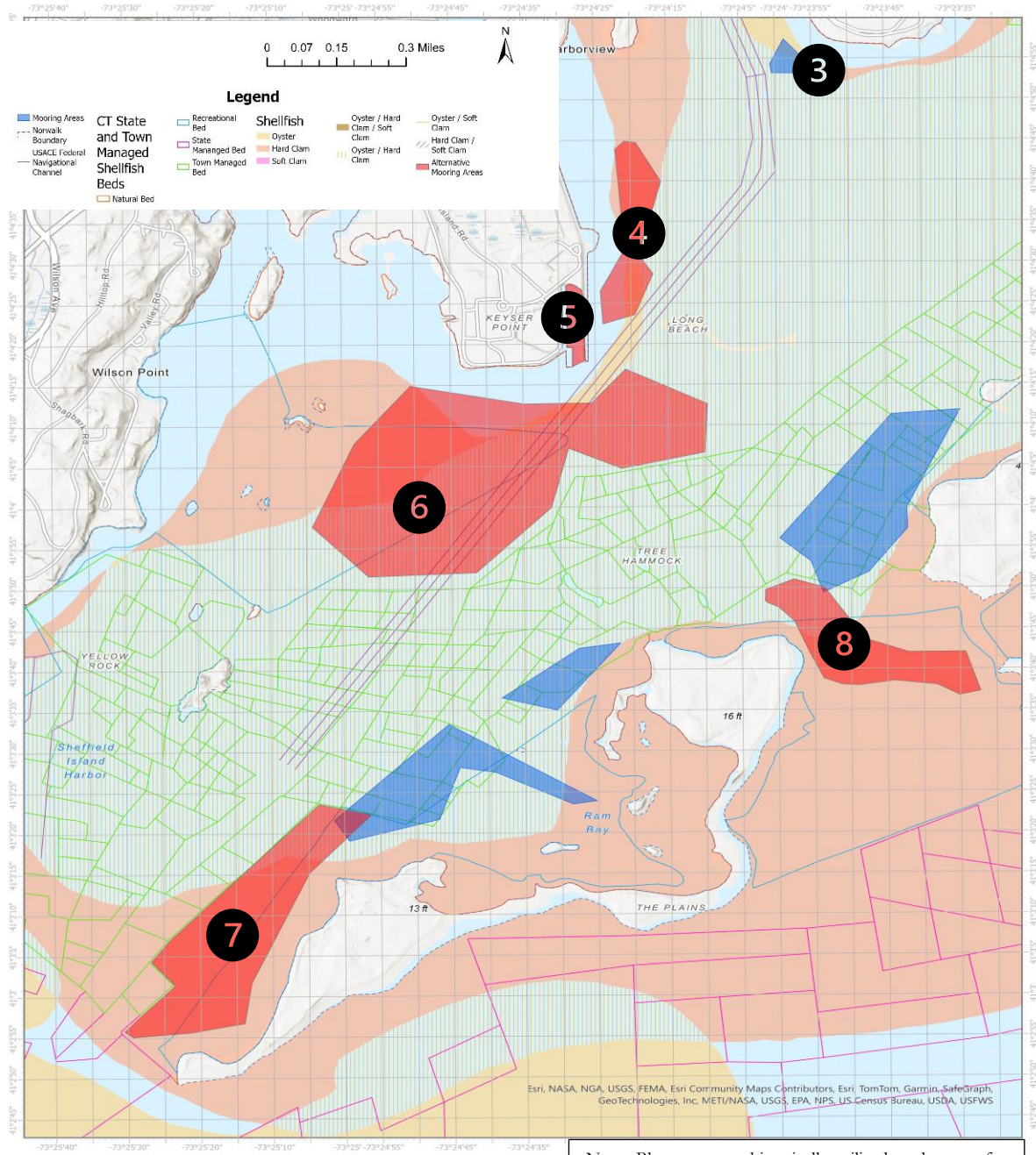


Figure 9: Calf Pasture Beach and Gregory Point



## Mooring Areas and Critical Habitat



Figure 10: Manresa and Norwalk Islands



**Table 3: Potential New Mooring Options**

Area	Option 1 - SPM	Option 2 - DPM	Option 3 - DPMD	Option 4 - Hybrid
1 - Veterans Park	0	16	32	32
2 - Gregory Point	25	44	102	44
3 - Calf Pasture Park	10	18	41	18
4 - Manresa West	20	60	180	60
5 - Manresa Basin	0	0	0	0
6 - Manresa South	80	120	0	80
7. Shea Island	40	0	0	40
8. Chimon Island	40	0	0	40
9 - North Anchorage	59	59	59	59
10 - South Anchorage	110	110	0	110
Total Number of Moorings	384	427	354	483
# of Transient Slips	50	34	73	90



## VII. Financial and Cost-Benefit Analysis

### A. Current Fee Structure and Regulations.

Per Connecticut General Statute § 22a-113k, municipal mooring permit fees are limited to a maximum of \$200 per year. This fee is intended to cover administrative and regulatory oversight, mooring field planning, recordkeeping, and permit processing. It does not cover installation, inspections, launches, pump-out boats and everything else to run a municipal program.

As such, in general, the Norwalk program is a permit-only service wherein installations, removals, and inspections are the responsibility of the permittee. Approximately only 20 moorings are installed and maintained by the City, a number that could be expanded some, but not without significant financial and management considerations.

Currently, Norwalk charges \$200 (the maximum) for a permit, yielding a maximum revenue of between \$30,000 and \$40,000; transient moorings are charged at \$45/night. Combined revenue is on the order of \$46,000 per year. For the purposes of this study, and in the financial model below, Indigo River assumed that the transient moorings are occupied 25 percent of the time from May to October (~150 days).

The regulations do not restrict charging fees for mooring installations, maintenance or removal, inspections, launch services, parking, or concession, which could generate additional revenue and waterfront jobs for the City. Therefore, what develops are three (3) distinct models for mooring field expansion:

- 1) Continue the current model as a permit-based system.
- 2) Convert the system into a City-Managed harbor-wide mooring field to generate revenue and jobs
- 3) Implement a modified model with limited City owned and maintained moorings for transient vessels which provide the greatest possibility of revenue generation.

### B. Analysis

As with any model, there are some data gaps, including what the current revenues are, utilization percentages for the transient moorings, number of seasonal days, maintenance costs, and amortization periods of capital costs. Indigo River's assumptions were as follows:

- The boating season runs from May 15 to October 15, and includes 150 days.
- Transient moorings are utilized 50 percent (50%) of the time.
- The launches can make any ride less than 15 minutes.
- The launches are utilized on 50% of the moorings 1 time per week, with 50% service daily for transient moorings.
- Parking is available at the launch locations, or, biking and walking is feasible.
- Amortization period for capital costs is 20 years.
- Administrative costs for the hiring, purchasing and other items needed to stand up the potential new division are excluded.



1. Model 1

Keeping the status-quo of the system, this would be a permit-based mooring field only, and the City would not provide a launch/water taxi, added pump-out boat, nor maintenance and inspection. Each of those costs would be privatized through an RFP process wherein the permittee pays for the services privately to a mooring field management company (such as Norwalk Cove Marina). Financially, this is the easiest plan to implement, apart from the RFP and how that is administered. This also assumes that transient moorings would be managed by the mooring field management company who would also receive the profits.

2. Model 2

Based upon the tabulated estimates in **Table 4**, the annualized cost to the City to run its own mooring program is approximately between \$884,000 and \$1.2 million, equivalent to a cost of approximately \$5,900 to \$8,000 per day or between \$2,500 and \$3,000 per mooring. This is against a projected maximum of approximately \$341,000 in revenue; therefore, the model is unsustainable by a substantial amount without legislated funds, grants, or private capital influx (which could include sponsorships).

3. Model 3

Based upon the tabulated estimates in **Tables 7 and 8**, the annualized cost to the City to run a partially managed mooring field, wherein the City would establish more transient moorings and a single water taxi/launch without adding an additional pump-out boat, would be around \$377,000 a year. This is against a projected maximum of \$314,000 in revenue; therefore, the model is close to workable with minor subsidies.



**Table 4: Capital Costs**

Capital Costs (w/ 21% Overhead & Profit)					
Mooring Type	Per Mooring	Option 1 Costs	Option 2 Costs	Option 3 Costs	Option 4 Costs
SPM	\$3,000	\$1,032,000	\$0	\$0	\$0
SPM - ER	\$6,500	\$0	\$0	\$0	\$300,000
DPM	\$5,000	\$0	\$1,690,000	\$0	\$300,000
DPMD	\$9,500	\$0	\$0	\$4,284,500	\$560,500
DPMD - ER	\$14,500	\$0	\$0	\$0	\$0
New Launch	N/A	\$60,000	\$60,000	\$60,000	\$60,000
New Pump-out Boat	N/A	\$60,000	\$60,000	\$60,000	\$60,000
New Water Taxi	N/A	\$90,000	\$90,000	\$90,000	\$90,000
	<b>Totals</b>	\$1,242,000	\$1,900,000	\$4,494,500	\$1,370,500
	<b>Annualized Capital Cost</b>	\$124,200	\$190,000	\$449,450	\$137,050
	<b>COGS - Annual</b>	\$760,370	\$760,370	\$760,370	\$760,370
	<b>Expected Annual Cost</b>	\$884,570	\$950,370	\$1,209,820	\$897,420
	<b>Per Added Mooring</b>	\$2,571	\$2,812	\$2,683	\$2,914
	<b>Per Seasonal Day</b>	\$5,897	\$6,336	\$8,066	\$5,983



**Table 5: Costs of Goods and Services**

<b>Costs of Goods and Services (COGS)</b>		
<b>Launch</b>		
Fuel	50 hp outboard at 6 knots, or 2 gph	\$19,200
Labor	Launch captain, 16-hr service, \$35/hr	\$84,000
Maintenance	Materials, layup, consumables, insurance	\$5,500
<b>Water Taxi</b>		
Fuel	150 hp outboard at 10 gph	\$96,000
Labor	Captain, 16-hr service, \$35/hr	\$84,000
Maintenance	Materials, layup, consumables, insurance	\$6,500
<b>Maintenance Boat / PO</b>		
Fuel	150 hp outboard at 10 gph	\$48,000
Labor	Captain and Crew, 8-hr service, Avg \$45/hr, year- round	\$50,00
Maintenance	Materials, layup, consumables, insurance	\$6,500
<b>Subtotal</b>		\$399,900
	10% Admin and Overhead Costs	\$39,990
	<b>Total COGS</b>	<b>\$439,890</b>
	COGS per Seasonal Day	\$2,933
	Break Even Trips at Average \$15/ trip	\$29,326
	Trips per Day	195.51
	Trips per Hour	12.22
	Per Boat/ Hour	6.11



**Table 6: Revenue Projections**

Area	Revenue By Mooring Options			
	Option 1 - SPM	Option 2 - DPM	Option 3 - DPMD	Option 4 - Hybrid
1 - Veterans Park	0	16	32	32
2 - Gregory Point	25	44	102	44
3 - Calf Pasture Park	10	18	41	18
4 - Manresa West	20	60	180	60
5 - Manresa Basin	0	0	0	0
6 - Manresa South	80	120	0	80
7. Shea Island	40	0	0	40
8. Chimon Island	40	0	0	40
9 - North Anchorage	59	59	59	59
10 - South Anchorage	110	110	0	110
Total Number of Moorings	384	427	354	483
# of Transient Slips	50	34	73	90
<b>Revenue</b>				
Existing Moorings	\$46,000	\$46,000	\$46,000	\$46,000
New Permanent Moorings	\$29,250	\$29,250	\$29,250	\$29,250
New Transient Moorings	\$84,375	\$57,375	\$123,188	\$151,875
Launch Revenue - Transients	\$56,250	\$38,250	\$82,125	\$101,250
Launch Revenue - Permanent Moorings	\$107,357	\$126,321	\$90,321	\$126,321
<b>Total Projected Revenue</b>	<b>\$323,232</b>	<b>\$221,946</b>	<b>\$295,634</b>	<b>\$379,446</b>



**Table 7: Capital Costs**

<b>Mooring Type</b>	<b>Per Mooring</b>	<b>Option 4 Costs</b>
SPM - ER	\$6,500	\$260,000
DPM	\$5,000	\$95,000
DPMD	\$9,500	\$60,000
New Pump-out Boat	\$60,000	\$60,000
New Water Taxi	N/A	\$60,000
Totals		\$565,000
	Annualized Capital Cost	\$56,500
	COGS - Annual	\$439,890
	<b>Expected Annual Cost</b>	<b>\$496,390</b>
	Per Added Mooring	\$1,028



## VIII. Conclusions and Recommendations

After review, there is a viable plan that could be implemented to expand mooring capacity in both the inner and outer harbors while also activating the street ends, Manresa Island, and the Norwalk Islands. However, further study is needed regarding how this would align with the City's administrative model.

New mooring fields could be developed at the identified locations if they are supported by adequate launch and water taxi service, as well as pump-out boats. Without these services, adding additional moorings may not generate the activity or revenue needed for the City of Norwalk to sustain operations.

The financial analysis conducted indicates that it is not cost-effective for the City to create a dedicated mooring division or hire a contractor for installations, removals, and inspections. These responsibilities should remain with the permit holders. Indigo River recommends implementation of a modified hybrid model (Model #3) in which permittees continue to maintain private moorings while the City expands transient moorings, contracts for harbor management services, and establishes a water taxi.

Based upon preliminary financial analysis, under a permittee-paid cost of the mooring infrastructure, the added costs of the launch/water taxi, installation and maintenance of transient moorings, pump-out boat and working expenses (Model #2) are not balanced by the revenue generated through a) charging for the launch and b) focusing on more available and accessible transient moorings at \$45/night. The realized shortfall of approximately \$170,000 is not unreasonable for what effectively is a municipal public service. This gap can be closed through the elimination of the launch as redundant (water taxi would service), the receipt of subsidies for pump-outs, sponsorship for the water taxi, or even lobbying to the State to increase the private mooring fee cost.

Water taxi and launch landings are most opportunistic at the Manresa Island Basin, Veteran's Memorial Park and at the existing harbor launch as shown in **Figure 11**. Within a maximum of 1.5 nautical miles and trips of under 15 minutes, the system would connect the inner harbor, outer harbor, the Norwalk Islands, and the east and west shores. Additionally, adding boat launches or water taxi landings at the street ends of 3<sup>rd</sup> Street, Lowndes Street, and Cove Street along with landings at Calf Pasture Beach, the Point, and potentially at Norwalk Yacht Club would help complete public access to inner harbor and the surrounding geographic area (refer to the Street Ends Study for additional information). To fund operations, a per-trip fee of \$10 for the inner harbor, \$15 for the outer harbor, and \$20 for the Norwalk Islands would be required.

Of the proposed mooring installation options, only options 1 and 2 are financially feasible for new installations, apart from upgrading the inner harbor where Indigo River calculates that an additional nineteen (19) vessels could be moored. The initial capital expense of floating docks and mooring hardware, maintenance costs, and seasonal removals cannot be justified under a public program unless significant grants or private funding are received. For the inner and outer harbor, due to space constraints, moorings should be DPM with a standard chain system.

At the Norwalk Islands, Indigo River recommends the installation of forty (40) moorings strategically placed at both Shea and Chimon Islands. Additional mooring areas could be established for permittees to install their own moorings. Based upon the sensitive ecology of this area, these moorings should be pyramid anchors with elastic rodes to prevent chains sweeping the bottom.

In summary, Indigo River recommends implementing Model #3, wherein a water taxi is established in the harbor to service all moorings. Increased transient moorings would largely offset the cost of amenities and installations. While modest subsidies may be required, the model is substantially more feasible than a fully City-managed system.



**Figure 11: Water Taxi – Potential Landing Points**



# Section 3

## Street Ends & Public Access

Street Ends Study

# Norwalk Strategic Harbor Study

## **Task 2.4 Study of City Owned Street Ends**

June 2026



01

# Introduction

## BACKGROUND

As a component of Norwalk's broader Harbor Strategic Study, the Street Ends Study is a focused initiative aimed at improving public access to Norwalk Harbor while advancing the city's long-term goals related to environmental sustainability, equitable urban development, and climate resilience. The harbor remains a defining asset for Norwalk—historically, ecologically, and recreationally—and enhancing public engagement with this waterfront is essential to fostering a more connected and resilient city.

This study builds directly upon the foundational work of the Norwalk Harbor Management Commission, and in particular, the contributions of Chris MacDonnell, who played a key role in developing the initial street end matrix and grant materials. That early effort identified numerous street ends with potential for public access and served as a catalyst for this more detailed, implementation-focused evaluation. Our team has expanded on this foundation to assess conditions across the harbor and propose strategic, site-specific recommendations.

Despite Norwalk's proximity to the water, opportunities for public shoreline access are limited, inconsistent, or inadequately maintained. Many of the city's street ends—public rights-of-way terminating at the water's edge—remain underutilized or constrained by unclear jurisdiction, lack of visibility, or environmental degradation. This study views these locations as underrecognized public assets that, if thoughtfully improved, could serve as vital points of access for recreation, ecological education, and community engagement.



## PURPOSE & OBJECTIVES

The urgency of this effort is underscored by increasing pressures on Norwalk's shoreline—from sea level rise and storm impacts to growing public demand for access and recreation. Improving the city's street ends is an opportunity to deliver multi-benefit public infrastructure that advances resilience, accessibility, and environmental stewardship. By investing in the transformation of these overlooked public spaces, Norwalk can create a more inclusive and resilient waterfront for current and future generations. This study is motivated by the following key objectives:

- 1 Feasibility and Environmental Suitability:** Sites have been analyzed for right-of-way clarity, visibility, vulnerability to flooding, and potential for environmental enhancement. This includes the integration of nature-based solutions such as living shorelines, removal of invasive vegetation and planting of native vegetation, and stormwater management features.
- 2 Geographic and Social Equity:** An essential consideration is the equitable distribution of access. The study evaluates whether the selected sites serve neighborhoods that have historically lacked meaningful access to the waterfront, applying both spatial and demographic criteria to help define and address underserved areas.
- 3 Design and Policy Alignment:** Where appropriate, the study references best-practice frameworks such as the Waterfront Edge Design Guidelines (WEDG) and incorporates standards for ADA accessibility, coastal resiliency, and low-impact development. Recommendations aim to ensure that proposed improvements are not only feasible but aligned with regional and national standards for sustainable waterfront design.

Ultimately, the Street Ends Study reflects Norwalk's continued commitment to expanding equitable, sustainable, and culturally meaningful access to its waterfront. By investing in the thoughtful transformation of these overlooked public spaces, the city has the opportunity to create a more inclusive and resilient waterfront for current and future generations.



## ALL IDENTIFIED STREET ENDS

A total of 21 public street ends terminating at the water were evaluated as part of this study. These sites were included in a preliminary assessment matrix that considered physical conditions, environmental context, and potential for public access improvements.

While all 21 were reviewed in the early phases of the analysis, the study ultimately focused on the 19 sites concentrated around Norwalk Harbor, where shoreline access demand, equity considerations, and implementation feasibility are most aligned with the project goals.

Two sites—Sammis Street and Yarmouth Road, located near Wilson Cove and the Rowayton area—were excluded from mapping and final capital project selection due to their geographic distance from the harbor and differing local conditions. The remaining 19 sites formed the core of the mapping analysis and informed the selection of five priority sites for potential improvements.

**Figure 1. Norwalk Identified Street Ends**

-  Norwalk Boundary
-  Site Street-End Activation



## SELECTION CRITERIA FOR PRIORITY STREET ENDS

The following criteria, informed by the goals of the Harbor Management Plan, field assessments, stakeholder input, and data provided by the Harbor Management Commission, were used to select five street end sites to advance for detailed study and potential capital improvement.

### Equity & Community Benefit

- **Geographic distribution:** Preference was given to sites that expand access across different parts of the harbor, particularly in areas with limited public shoreline amenities.
- **Environmental justice indicators:** Sites located within Environmental Justice Block Groups\* were prioritized to help address historical disparities in access to open space and water-dependent recreation.

### Feasibility & Legal Clarity

- **Public right-of-way (ROW) status:** Sites with confirmed or presumed public ROW access were favored. If ROW issues exist, feasibility of resolving them through coordination or clarification was considered.
- **Site visibility and physical access:** Priority was given to sites that are visible from nearby streets and accessible by foot, bicycle, public transportation, or vehicle.
- **Partnership potential:** Locations where collaboration with adjacent landowners or stakeholders (e.g., boat clubs, neighborhood groups) is feasible were viewed favorably.

### Environmental Opportunity

- **Ecological restoration potential:** Sites presenting opportunities for habitat restoration, invasive species removal, or the implementation of nature-based infrastructure were prioritized.
- **Flood risk and climate resilience:** Sites were assessed for their location within flood zones and their potential to integrate adaptive design features such as living shorelines or bioswales.

### Infrastructure Potential

- **Availability of supporting features:** Sites with existing infrastructure (e.g., parking, utilities) or capacity to accommodate amenities like seating, ADA-compliant paths, signage, or kayak launches were deemed more implementable in the near term.
- **Compatibility with adjacent uses:** Sites that could complement or enhance existing community assets—such as trails, public parks, or water-dependent businesses—were seen as strong candidates.



02

# Existing Conditions

## EXISTING CONDITIONS OVERVIEW

The City of Norwalk is home to a variety of waterfront street ends that represent a diverse range of physical, environmental, and jurisdictional conditions. These sites—termini of public rights-of-way abutting the harbor or its tributaries—vary significantly in their current state, visibility, ecological value, and accessibility. As part of this initial analysis, a comprehensive review of site conditions was conducted to understand both the opportunities and constraints that these locations present. The comprehensive assessment matrix for all street ends is in the Appendix.



**Physical Access & Visibility**



**Environmental Context**



**Shoreline Conditions & Remediation Needs**



**Zoning & Legal Status**



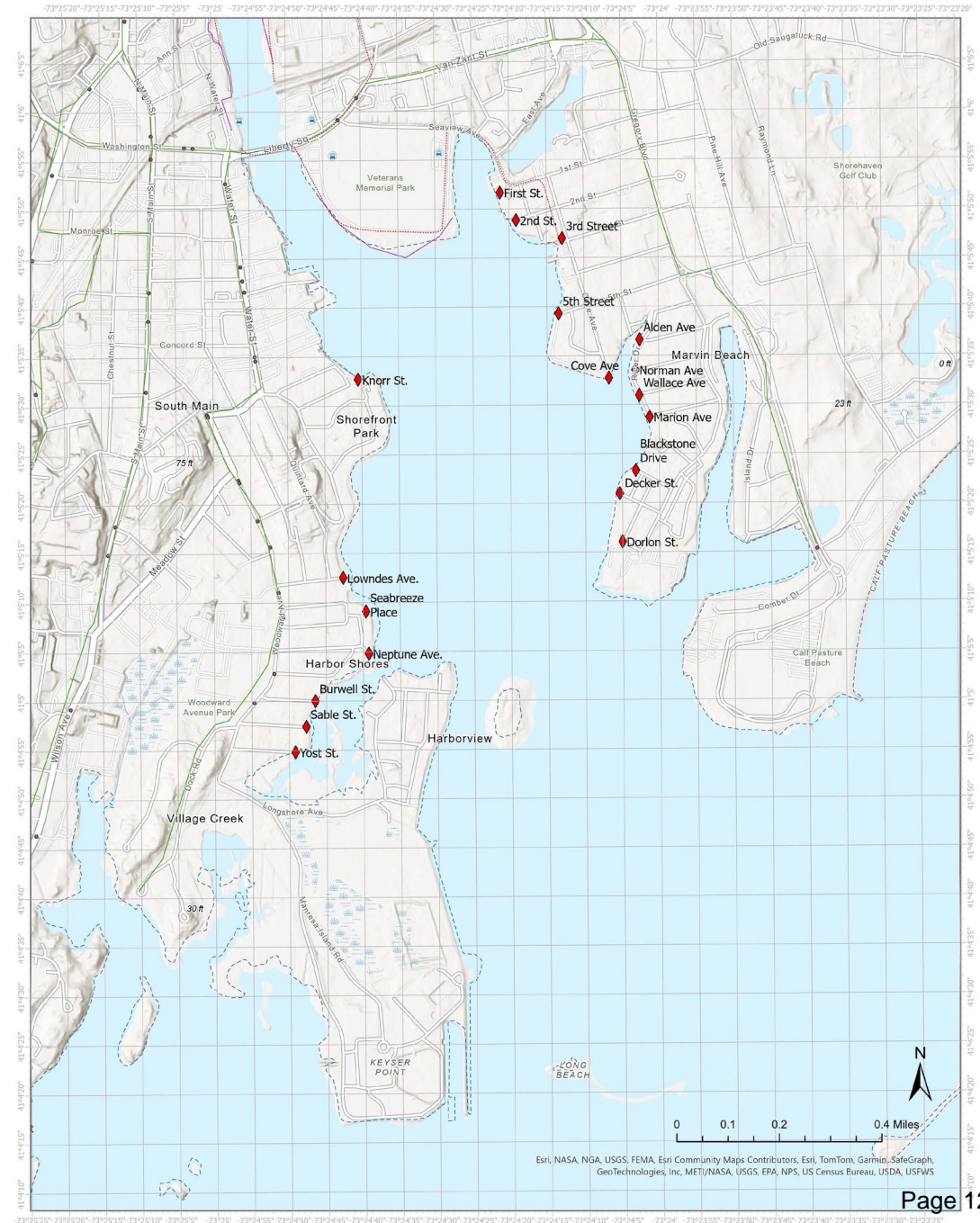
**Community Context & Equity Considerations**

## PHYSICAL ACCESS & VISIBILITY

Many street ends are physically accessible, though several lack clear public pathways, signage, or visual cues that would indicate their public status. A number of sites are adjacent to existing pedestrian, bicycle or public transit infrastructure—such as McKinley Street or Route 10—which could support improved connectivity in the future. However, others remain poorly connected, either due to lack of sidewalks, private encroachments, or inadequate visibility from the surrounding street network.

**Figure 2. Transit and Access**

-  Norwalk Boundary
-  Harbor Loop Train
-  Public Parking
-  Bus NTD Routes 2012 Norwalk
-  Bus NTD Stops 2010 Norwalk
-  Bus Routes Stamford 2018 Norwalk
-  Bus Routes Stamford Norwalk
-  Bus Stops Stamford 2018 Norwalk
-  Cross State Bike Routes
-  Multi Use Trails
-  Site Street-End Activation



## ENVIRONMENTAL CONTEXT

Many sites intersect with critical ecological areas, including tidal wetlands and intertidal flats, underscoring the importance of environmental sensitivity and the potential for restoration or low-impact access strategies.

**Figure 3. Tidal Wetlands**

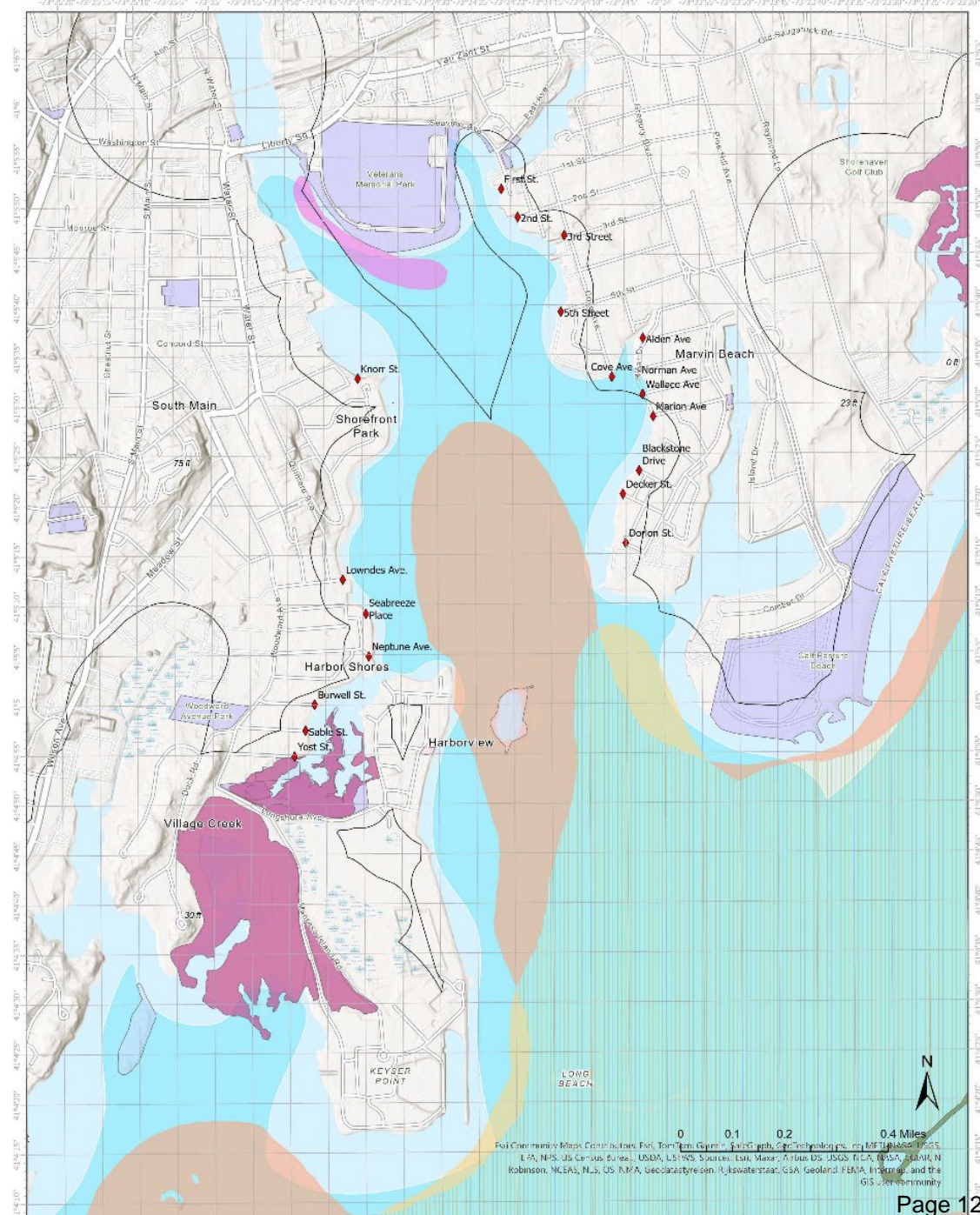
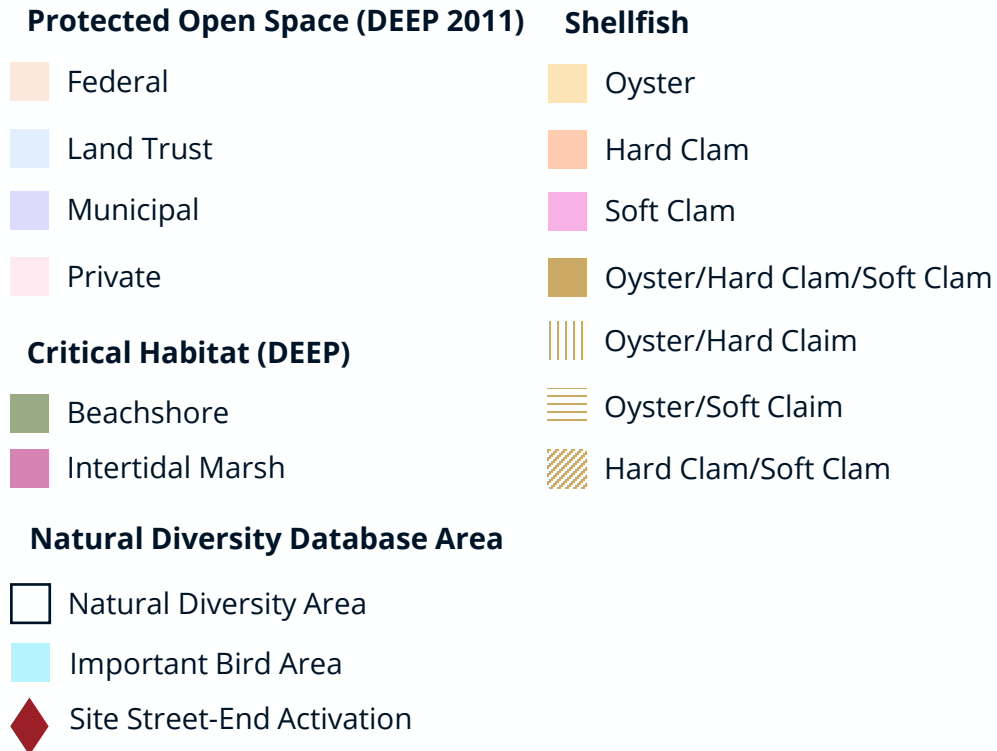
- Tidal Wetlands (Norwalk HMP 2009)
- Intertidal Flats (Norwalk HMP 2009)
- Norwalk Boundary
- Site Street-End Activation



# ENVIRONMENTAL CONTEXT

Many also intersect with intertidal marshes and designated migratory waterfowl habitats. Several sites are adjacent to or within Municipal Protected Open Space and areas flagged for Natural Diversity.

**Figure 4. Critical Habitat**

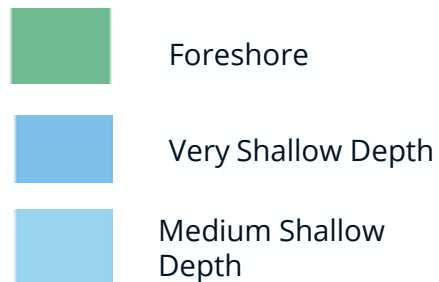


## STABILITY CONDITIONS & NEEDS

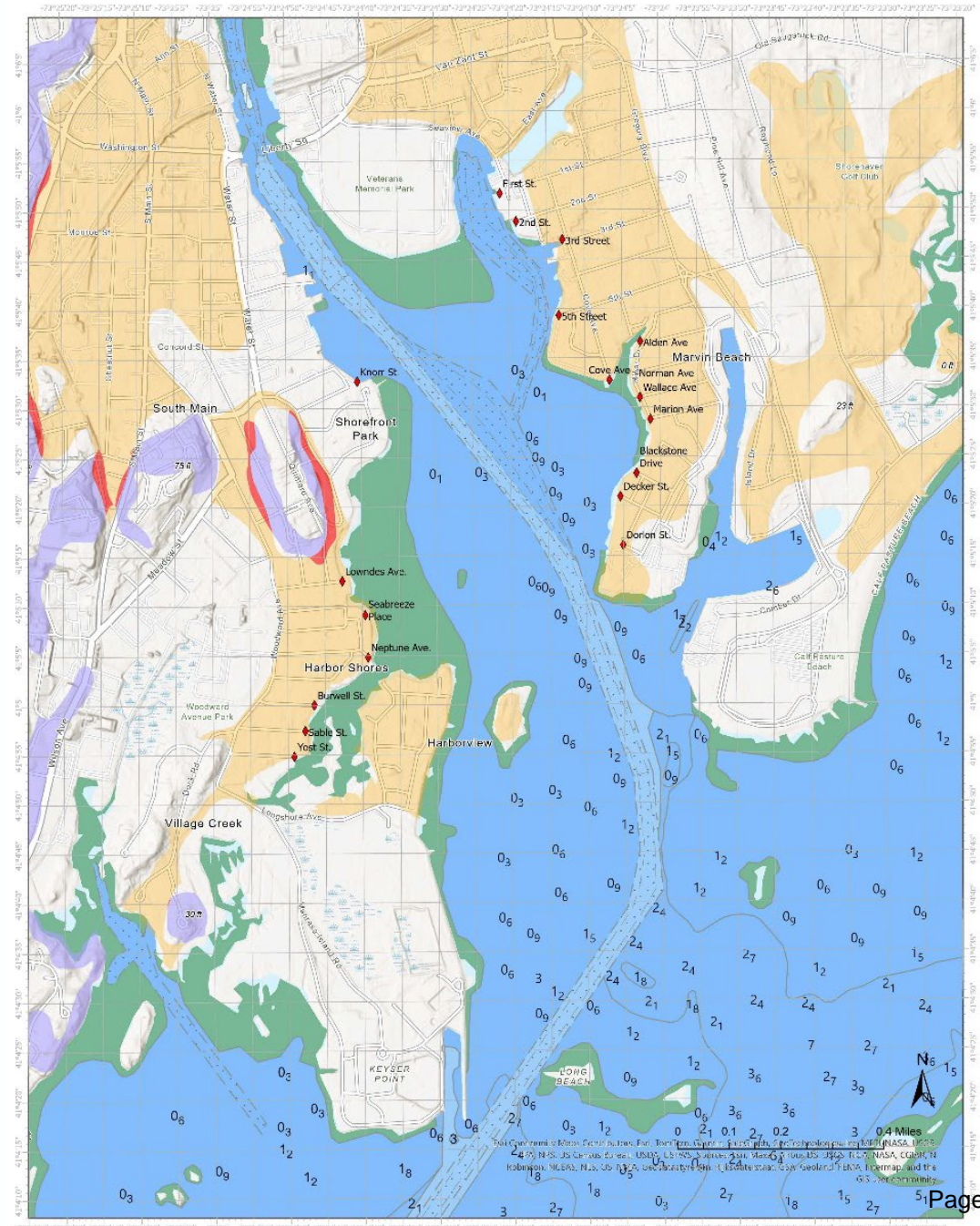
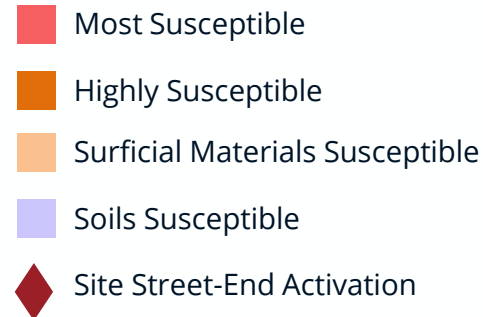
A subset of locations exhibits signs of erosion risk, either due to surficial instability or exposure to tidal action. Some street ends contain accumulated debris or evidence of past neglect, pointing to the need for basic remediation and cleanup. While a few sites appear relatively stable and ecologically intact, others would benefit from invasive species removal, shoreline stabilization, or targeted habitat enhancement. The sites also presented a range of shoreline topography—some with steep drop-offs to -3m, others with shallower waters.

**Figure 5. Water Depths and Erosion Risk**

### NOAA ENC Nautical Chart ECDIS Depths

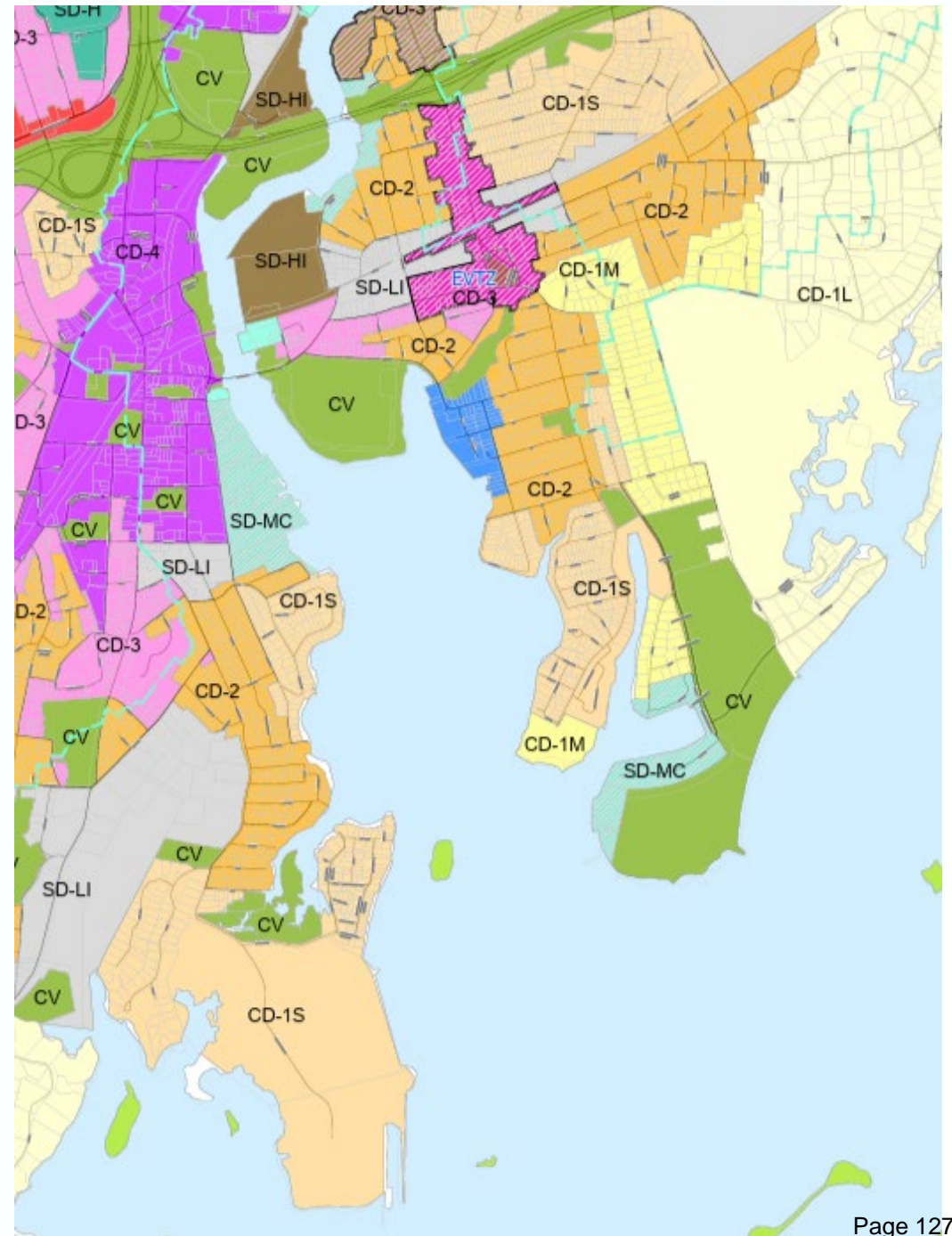


### Erosion Susceptibility



## ZONING & LEGAL STATUS

Zoning designations across the street ends vary, with many falling under coastal village (CV) or residential (CD) classifications. Preliminary assessments have flagged right-of-way (ROW) uncertainties at several locations, though further investigation will be required to confirm specific public access rights and clarify any legal encumbrances.



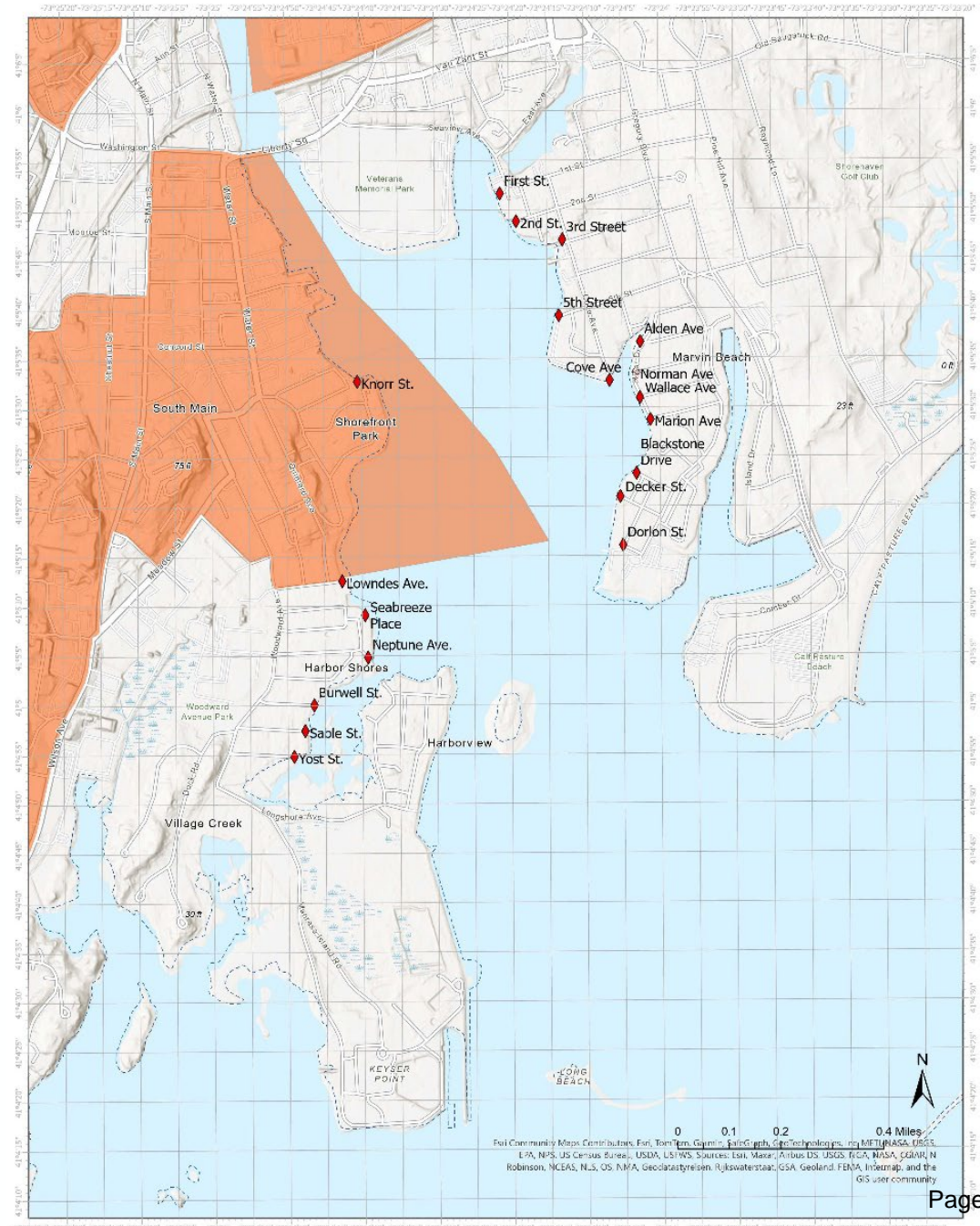
**Figure 6. Norwalk Zoning Map**

## COMMUNITY CONTEXT & EQUITY CONSIDERATIONS

Understanding the social context of each site is essential to ensuring that future public access improvements serve a broad and inclusive cross-section of Norwalk residents. Several street ends are located within or adjacent to neighborhoods identified as Environmental Justice (EJ) Block Groups, based on the 2023 American Community Survey and mapped by CT DEEP. These areas meet one or more state-defined thresholds related to poverty, minority population, or limited English proficiency, as outlined in Connecticut General Statute §22a-20a.

Lowndes Avenue and Knorr Street fall within EJ-designated areas. Prioritizing these sites for capital project recommendations will help address disparities in shoreline access and ensures that improvements are directed toward communities that have historically had fewer opportunities for meaningful engagement with the harbor. In addition to EJ status, the study considered related equity factors such as the geographic distribution of sites along the harbor and proximity to existing transportation infrastructure.

**Figure 7. Social Vulnerability**





03

# Priority Street Ends



## PRIORITY STREET ENDS

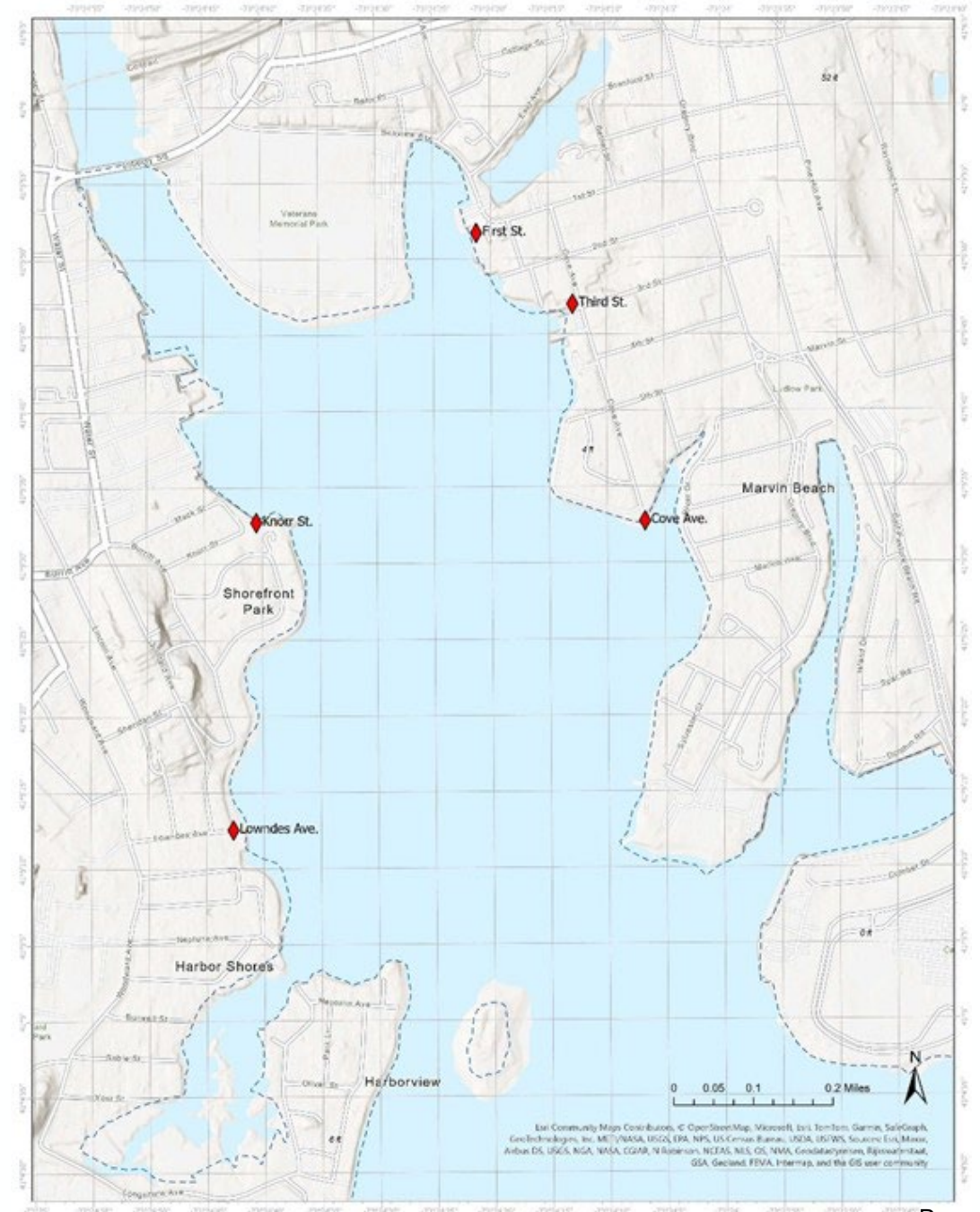
This study identifies five street ends as priority sites for potential capital improvement projects. These locations were selected through a process that balanced geographic representation, feasibility, public benefit, and ecological opportunity. The recommendations that follow are intended to support future implementation efforts, inform funding strategies, and foster community partnerships.

Five priority sites:

1. Lowndes Avenue
2. Knorr Street
3. 1<sup>st</sup> Street
4. 3<sup>rd</sup> Street
5. Cove Avenue

**Figure 8. Selected Street Ends**

-  Norwalk Boundary
-  Selected Street Ends



## LOWNDES AVENUE

- Lowndes Avenue represents a strong opportunity to enhance public waterfront access in a neighborhood at the edge of Norwalk's 2023-designated Environmental Justice Block Groups.
- The street end is within the Natural Diversity Database (NDDDB) area and directly overlays tidal wetlands, with intertidal flats nearby, indicating high ecological value and sensitivity. The site also intersects with FEMA AE flood zones and has been flagged for invasive species, most notably Phragmites, reinforcing the need for environmentally thoughtful design.
- Despite these constraints, the location is currently underutilized and physically accessible, offering immediate potential for meaningful public benefit.



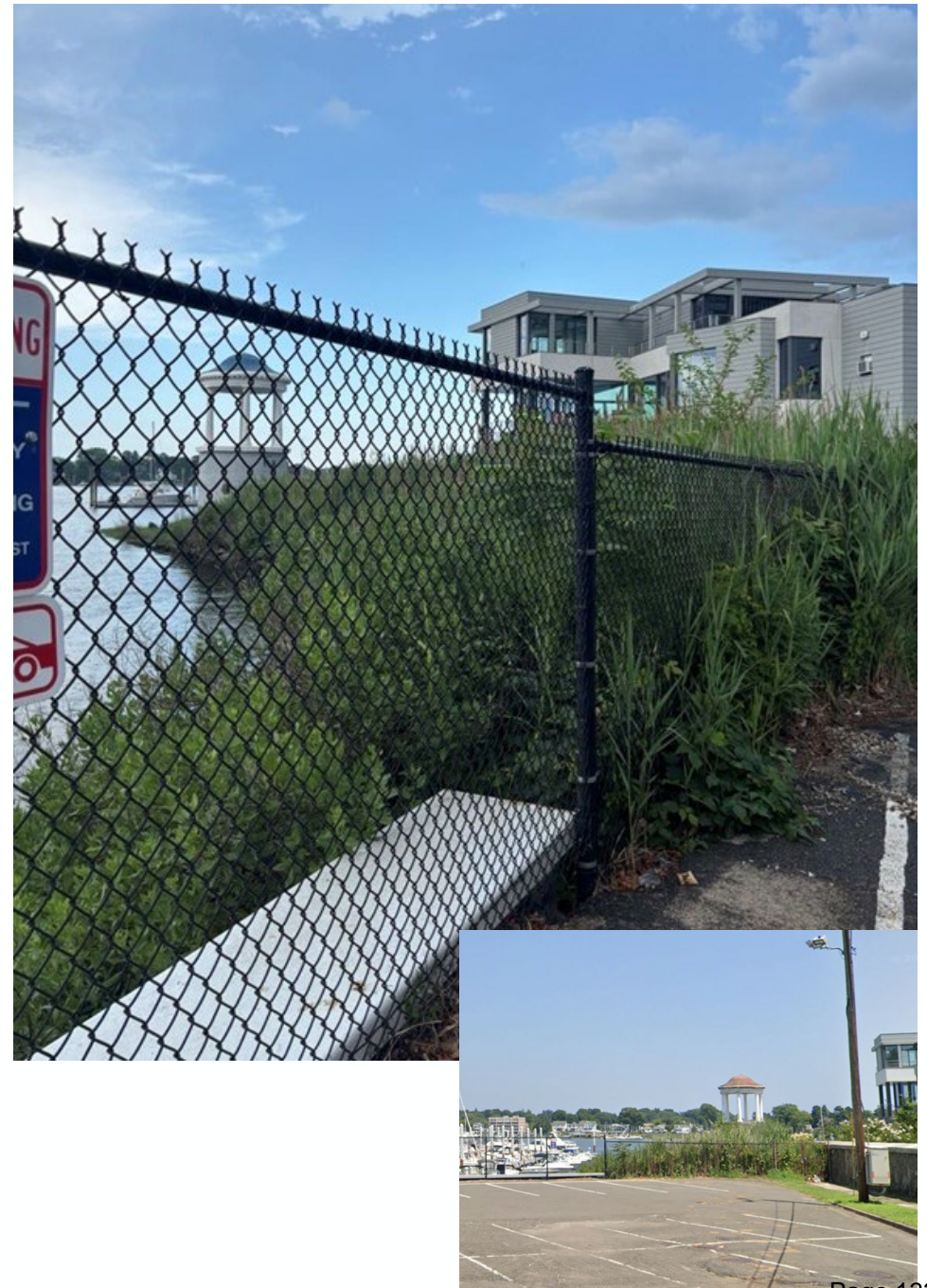
### Recommended Improvements

- **Shoreline Restoration:** Continue maintaining the site to prevent Phragmites regrowth and implement a native planting plan to support pollinator habitat and marsh function. Stabilize the shoreline using low-profile living shoreline techniques that work with existing wetland contours.
- **Public Access:** Construct ADA-compliant pathways, with low seating or overlooks that offer safe views without compromising habitat. Due to ecological sensitivity, limit direct water contact or recreational launch facilities.  
**Interpretive Elements:** Install signage explaining the role of tidal wetlands, the significance of the NDDDB designation, and the harbor's bird habitat. Include climate context and information about invasive species management.
- **Community Integration:** Given proximity to underserved areas, ensure inclusive design, with input from neighborhood stakeholders during later planning phases.



## KNORR STREET

- Knorr Street is one of the most strategically located sites in terms of access equity, sitting squarely within a 2023-designated Environmental Justice Block Group. The site is also located within the Natural Diversity Database (NDDDB) area and falls within the FEMA AE flood zone.
- The shoreline and bathymetry at this site, with a steep incline sloping down to -2 meters, provides adequate water depth for a potential boat launch structure. It features a large, existing paved area with relatively low ecological sensitivity, making it well-suited for light recreation and public access improvements with minimal disturbance.
- The surrounding context, however, introduces key coordination needs: the South Norwalk Boat Club lies directly to the north and shares adjacent water access, while a private residential parcel directly abuts the site to the south, with views over the proposed area. These relationships will need to be thoughtfully navigated as part of any design or implementation process.



### Recommended Improvements

- **Flexible Access Infrastructure:** Repurpose the paved area with ADA-compliant paths, seating, and defined circulation zones, paired with permeable surfaces and stormwater features like bioswales to improve drainage and ecological performance
- **Public Amenities:** Install bike racks, trash receptacles, and possibly a shade kiosk or canopy for passive use. Lighting should remain low-impact and directional, to preserve nighttime views and minimize disruption to neighboring properties.
- **Waterfront Coordination:** This street end provides adequate water depth for a potential boat or kayak launch. Coordinate with the South Norwalk Boat Club to determine feasible access and shared use of the adjacent waterfront zone, including ROW rights, vessel maneuvering space, or dock infrastructure. Consult with the adjacent landowner to ensure buffering, privacy, and sightline considerations are integrated into any public-facing improvements.
- **Community Activation & Stewardship:** As one of the only large, publicly owned waterfront parcels in a vulnerable area, Knorr presents an opportunity to pilot community-driven programming, including public art, interpretive signage, or educational partnerships with local schools or organizations.
- **Wayfinding & Inclusion:** Ensure the site's public character is clearly communicated with entry signage, harbor trail integration, and multilingual access elements where feasible.



## 1<sup>st</sup> STREET

- 1st Street offers direct tidal access via a grassy street end and a gravel shoreline with a steep drop to navigable water. It is within the NDDB area, contains invasive Phragmites, and is flagged for erosion risk, suggesting both the need and opportunity for targeted shoreline rehabilitation.
- It is situated along the Harbor Loop Trail, making it a logical node within the city's existing waterfront access network. Though not in an Environmental Justice Block Group, it is easily accessible by foot or bike and sits within a diverse, residential neighborhood. Ecologically, the site contains invasive vegetation but otherwise appears relatively stable.



### Recommended Improvements

- **Invasive Species Removal:** Launch an initial project to remove Phragmites and assess shoreline stability. Follow with native, salt-tolerant plantings for both erosion control and habitat restoration.
- **Public Access Infrastructure:** Add ADA-compliant crushed gravel or boardwalk paths leading to a small overlook. Avoid hardened surfaces and ramps unless shoreline stability improves.
- **Education & Ecology:** Feature signage focused on habitat restoration, the role of marsh plants in filtering runoff, and shoreline resilience. This could serve as a case study in ecological recovery for the broader community.
- **Low-Impact Infrastructure:** Due to the site's small footprint and habitat adjacency, limit new development to minimal infrastructure: one or two benches, interpretive panels, and a possible kayak pull-out zone for viewing or rest (if shoreline grade allows).



### 3<sup>rd</sup> STREET

- 3rd Street is a paved street end with an existing parking area that terminates at the water's edge. Although partially obstructed by adjacent private uses—most notably a dock associated with Copps Island Oysters—the site is publicly owned and offers a steep drop-off to approximately -2 meters, making it one of the few locations along Norwalk Harbor with natural conditions suitable for non-motorized boat launching.
- Located within the NDDDB boundary and near a small patch of intertidal flats, the site is ecologically adjacent but not directly sensitive, making it a candidate for controlled, water-dependent recreation. Its proximity to the Norwalk Harbor Loop Trail and its zoning within a residential waterfront district further supports its potential as a public water access point. While currently underutilized and somewhat visually ambiguous in terms of public access, 3rd Street is physically well-positioned for meaningful activation. Additional coordination is necessary with stakeholders, including Copps Island Oysters.



### Recommended Improvements

- **Public Access Infrastructure:** Develop a formalized launch area for kayaks or other hand-carried watercraft, potentially using reinforced gravel or a modular ramp system to negotiate the steep grade. Include a clearly marked ADA-accessible path where feasible, and establish low-profile signage to reinforce the site's public status. Install benches or a shaded seating area near the water's edge, and consider bike racks to encourage multimodal access.
- **Ecological Restoration:** Stabilize the slope with a mix of native vegetation and, if appropriate, a living shoreline edge treatment to soften the transition into the harbor and mitigate erosion. If there is stormwater runoff from the adjacent parking area, incorporate a bioswale or vegetated filter strip to manage water quality.
- **Interpretive & Cultural Elements:** Add signage describing the role of Norwalk's working waterfront and shellfishing industry, particularly in the context of Copps Island Oysters and the broader harbor economy. Include QR codes connecting users to trail maps, harbor history, and stewardship resources. The site could also serve as a community engagement location, through interpretive art or youth-led coastal programming—there may be an opportunity to collaborate with Copps Island Oysters for education and public awareness.



## COVE AVENUE

- Cove Avenue is a paved street end in a residential neighborhood in East Norwalk. Because Cove Avenue is a collector street that feeds neighborhood traffic to adjacent streets, it has adequate width (approximately 30 feet) to enable public access to the waterfront without negatively impacting the adjacent residential properties. Currently, the street end hosts two-hour street parking.
- The site is mapped with tidal wetlands and adjacent to mapped intertidal flats, so minimization of ecological impacts will be an important consideration for any planned programming.



### Recommended Improvements

- **Recreational Use for the Neighborhood:** Development of a small boat or car-top launch (launching of small boats such as a canoe or kayak which is then then transported on the roof of a vehicle).
- Establish low-profile signage to reinforce the site's public status. Install benches near the water's edge.
- Avoid hardened surfaces and ramps to minimize ecological impacts.





# 04

# General Recommendations

## GENERAL RECOMMENDATIONS FOR ALL STREET ENDS

Future street-end improvements along Norwalk Harbor should support safe, equitable public access while enhancing ecological health and shoreline resilience. The following recommendations, across the below categories, are intended to serve as a planning framework for future capital projects beyond the initial five priority sites. They reflect observed patterns across the 21 identified street ends, as well as best practices from national and regional sources such as the Waterfront Alliance's WEDG guidelines, FEMA coastal flood zone standards, and Norwalk's own Strategic Plan for Parks and Public Spaces and Harbor Management Plan.

**Public Access  
Infrastructure**

**Ecological  
Restoration &  
Shoreline Resilience**

**Interpretive,  
Educational, &  
Cultural Elements**

## PUBLIC ACCESS INFRASTRUCTURE

- **Confirm ROW and Ownership:** All future projects should begin with a verification of public right-of-way status. Public access should be clearly delineated through permanent signage, pavement markings, or landscape design elements.
- **ADA-Compliant Design:** Access points should incorporate sloped walkways, handrails, and firm, stable surfaces that comply with ADA guidelines. Where full compliance is not feasible due to grade or site constraints, provide the highest level of accessibility achievable.
- **Seating and Gathering:** Include durable benches, overlooks, or modest shade structures that encourage passive use without overcrowding small or ecologically sensitive sites.
- **Signage and Wayfinding:** Install consistent, weather-resistant signage identifying the street end as a public access point. Incorporate interpretive elements or QR codes linking to the Norwalk Harbor Loop Trail, public access maps, and harbor ecology information.
- **Support for Active Transportation:** Provide bike racks and pedestrian connections where possible, particularly near existing greenways or transit stops.
- **Lighting and Security:** Consider solar-powered, low-glare lighting in higher-use locations to improve safety, particularly near residential areas or school routes. Ensure lighting is dark-sky compliant to minimize ecological disturbance.
- **Small-Scale Recreation Amenities:** Where shoreline conditions permit, provide low-impact infrastructure for kayaking, paddleboarding, or shoreline fishing. Avoid hardened edges unless necessary for safety or erosion control.

## ECOLOGICAL RESTORATION & SHORELINE RESILIENCE

- **Living Shorelines & Natural Stabilization:** Prioritize living shoreline approaches using coir logs, native vegetation, shell beds, and small-scale rock sills in accordance with WEDG and CT DEEP guidelines. These techniques help buffer storm surge, reduce erosion, and support biodiversity.
- **Invasive Species Management:** Identify street ends with infestations of Phragmites, knotweed, or other non-native plants. Plan phased removal and replacement with native grasses, shrubs, and pollinator species to improve ecological integrity and aesthetics.
- **Stormwater Treatment:** Incorporate bioswales, rain gardens, and permeable pavements to intercept and filter runoff before it enters the harbor. Design these features to withstand coastal flood events (e.g., using salt-tolerant plantings and elevated overflow outlets).
- **Flood Zone Considerations:** Many sites fall within FEMA AE flood zones. Future improvements should use flood-resilient materials (e.g., recycled plastic decking, weather-resistant signage) and minimize the use of impervious surfaces.
- **Habitat Connectivity:** Where sites are adjacent to tidal wetlands, existing open space, or Natural Diversity Database (NDDB) areas, prioritize habitat continuity and avoid excessive lighting or human disturbance.

## INTERPRETIVE, EDUCATIONAL & CULTURAL ELEMENTS

- **Educational Signage:** Install high-quality panels covering topics such as:
  - Norwalk’s maritime and oyster industry history
  - Native and migratory species common to the estuary
  - Sea-level rise in Long Island Sound
  - Harbor stewardship and restoration efforts
- **Community Engagement Opportunities:**
  - Explore “adopt-a-site” programs for schools or civic groups to maintain and monitor street ends.
  - Encourage youth-led art installations, story maps, or environmental monitoring efforts.
- **Digital Integration:** Use QR codes, web maps, or augmented reality content to link physical spaces with digital resources. This could include the Norwalk Harbor Trail map, historic photos, or educational materials.
- **Harbor Identity and Wayfinding:** Design signage and materials to reinforce a cohesive visual identity for Norwalk’s waterfront access network. Reference the Norwalk Harbor Management Commission’s goals and city branding where applicable.
- **Cultural Representation:** Include public art or design elements that reflect the cultural and historical diversity of Norwalk, particularly in neighborhoods with strong community identities or Environmental Justice designations.



05

# Appendix

# STREET ENDS EVALUTATION MATRIX

Name of Site	Site Description/ Existing Conditions	HMC Priorit y Site	Vulnerability Assessment					Social Vulnerability	Water Depth	Zoning	ROW Issues (from Preliminary Assessment document)	Existing Access & Connectivity	Potential Use	Other Notes
			FEMA flood zone	Erosion Risk	Critical Habitat	Wetlands & Tidal Flats	Remediatio n Needs							
Sammis Street	Off walkpath ROW. Tidal flats of Farm Creek		AE		Municipal Protected Open Space			Slow drop off, too shallow for boat launch	CV and CD-1S		Near McKinley St - bicycle route and bus route 12	Could be access to non-yacht club moorings in Wilson Cove		
Yarmouth Road	Good access to Wilson Cove, limited parking. Neighborhood Street (very narrow width)		AE				Remove debris	Slow drop off to -1m	CV and CD-1S	Next to private dock	bus route 12	Tidal kayak and small boat launching		
Yost Street	Access to tidal creek, no open water at low tide. Neighborhood Street.		AE	Erodible surficial materials	Municipal Protected Open Space, Migratory Waterfowl, Natural Diversity Area	Intertidal Marsh		Slow drop off, too shallow for boat launch	CD-1S	Road barrier	Near Route 10, 166 Woodward Ave	Tidal kayak and small boat launching		
Sable Street	Access to tidal creek, no open water at low tide (bog at low tide). Wider Street than Yost, Yarmouth Streets.		AE	Erodible surficial materials	Migratory Waterfowl, Natural Diversity Area	Intertidal Marsh		Slow drop off, too shallow for boat launch	CD-2		Near Route 10, 166 Woodward Ave	Tidal kayak and small boat launching		
Burwell Street	Access to tidal creek, no open water at low tide		AE	Erodible surficial materials	Migratory Waterfowl, Natural Diversity Area	Intertidal Marsh		Slow drop off, too shallow for boat launch	CD-2		Near Route 10, 166 Woodward Ave			
Neptune Avenue	Narrow ROW between two houses which are using the space		AE	Erodible surficial materials	Migratory Waterfowl, Natural Diversity Area, Important Bird Areas, CT State and Town Managed Shellfish Natural Bed			Slow drop off, too shallow for boat launch	CD-2		Near Route 12, 151 Woodward Ave			
Seabreeze Avenue	Gated and contains signage of Harbor Shores Association, though it appears to be a publicly owned street end.		AE	Erodible surficial materials	Migratory Waterfowl, Important Bird Areas, CT State and Town Managed Shellfish Natural Bed			Slow drop off to -1m	CD-2	Gated by Neighborhood Association	Near Route 12, 151 Woodward Ave		Investigate using property maps	

# STREET ENDS EVALUTATION MATRIX

Name of Site	Site Description/ Existing Conditions	HMC Priorit y Site	Vulnerability Assessment					Social Vulnerability	Water Depth	Zoning	ROW Issues (from Preliminary Assessment document)	Existing Access & Connectivity	Potential Use	Other Notes
			FEMA flood zone	Erosion Risk	Critical Habitat	Wetlands & Tidal Flats	Remediatio n Needs							
Lowndes Avenue	Small wall at street end, parking overgrown, mud flats, close to South Anchorage	Yes	AE	Erodible surficial materials	Migratory Waterfowl, Important Bird Areas, CT State and Town Managed Shellfish Natural Bed	Within Tidal Wetland Area; adjacent to Tidal Flats	Stormwater Outflow, Remove phragmites, Collapsed wall	Falls within Environmental Justice Block Group 2023	Slow drop off to -1m	CD-2	Neighboring property very close	Near Bus route 9 and 136 Woodward Ave stop	Potential mid to high tide access to the harbor/moorings from South Norwalk. Potential for beached boat storage	
Knorr Street	Lots of parking on street, fences off and overgrown. Overgrown lot so space on top of sea wall, deep water close to anchorages. 50-foot street ROW. Close to South Norwalk Boat Club, far from neighbors.	Yes	AE	Erodible surficial materials	Migratory Waterfowl, Important Bird Areas, CT State and Town Managed Shellfish Natural Bed			Falls within Environmental Justice Block Group 2024	Steep drop off to -2m, identified as appropriate for boat launch	CD-1S	Verify Property lines of SNBC and owner to south of wall	Near Bus route 9 and 165 Water Street	Use of land along wall for boat racks. Improve slope wall for boat ramp launch.	50' ROW. Will need to coordinate fairway with nearby boating club. No immediate neighbors.
1st Street	grass above water line, gravel intertidal, Overtons dock encroaches. Potential for programming due to proximity to commerical uses. Wide and slopes down.	Yes	AE		Natural Diversity Database Area, Migratory Waterfowl, Important Bird Areas, CT State and Town Managed Shellfish Natural Bed		Remove phragmites		Steep drop off to -3m from street end	CD-3W	Overtons Dock	Near Harbor Loop Trail	Space for small boat rack, easy launching into East Basin	
2nd Street	Parking on street, gravel intertidal area, 3rd taxing abutter which includes Edgewater park		AE		Natural Diversity Database Area, Migratory Waterfowl, Important Bird Areas, CT State and Town Managed Shellfish Natural Bed				Drop off to - 1m	CD-3W		Near Harbor Loop Trail	Kayak small boat launching	

# STREET ENDS EVALUTATION MATRIX

Name of Site	Site Description/ Existing Conditions	HMC Priorit y Site	Vulnerability Assessment					Social Vulnerability	Water Depth	Zoning	ROW Issues (from Preliminary Assessment document)	Existing Access & Connectivity	Potential Use	Other Notes
			FEMA flood zone	Erosion Risk	Critical Habitat	Wetlands & Tidal Flats	Remediatio n Needs							
3rd Street	Parking area at street end, Blooms dock blocks open water access		AE	Erodible surficial materials	Migratory Waterfowl, Important Bird Areas, CT State and Town Managed Shellfish Natural Bed			Steep drop off to -2m, identified as appropriate for boat launch	CD-3W	Use by Copps Island	Near Harbor Loop Trail	Further investigation necessary on access potential		
5th Street	Sea wall with steps to intertidal area. Grass and hedge maintained by neighbor.		AE	Erodible surficial materials	Migratory Waterfowl, Important Bird Areas, CT State and Town Managed Shellfish Natural Bed			Steep drop off to -2m	CD-1S	Appears to be maintained by someone	Near Route 8	Facilitate fishing		
Cove Avenue	Gravel intertidal slopes to tidal wetland vegetation. Worn path from use to waters edge. Mud flats at spring tide. Access to south anchorage.	Yes	VE	Erodible surficial materials	Migratory Waterfowl, Important Bird Areas, CT State and Town Managed Shellfish Natural Bed	Within Tidal Wetland Area		Slow drop off to -1m	CD-1S		Near Route 8	Room for boat tie off use, car top launch	Wide street	
Alden Avenue	Further up the inlet and therefore less desirable usage than the adjacent streets.		AE	Erodible surficial materials	Migratory Waterfowl, CT State and Town Managed Shellfish Natural Bed			Slow drop off, too shallow for boat launch	CD-1S		Near Route 8	Kayak small boat launching		
Norman Avenue	Improved by Marvin Beach Association, existing benches and trash collection, gravel intertidal.		AE	Erodible surficial materials	Migratory Waterfowl, CT State and Town Managed Shellfish Natural Bed, Natural Diversity Area			Slow drop off, too shallow for boat launch	CD-1S	Maintained by Neighborhood Association	Near Route 9	Kayak small boat launching		
Wallace Avenue	Improved by Marvin Beach Association, benches, gravel intertidal.		AE	Erodible surficial materials	Migratory Waterfowl, CT State and Town Managed Shellfish Natural Bed, Natural Diversity Area			Slow drop off to -1m	CD-1S	Maintained by Neighborhood Association	Near Route 10	Kayak small boat launching		

# STREET ENDS EVALUTATION MATRIX

Name of Site	Site Description/ Existing Conditions	HMC Priorit y Site	Vulnerability Assessment					Social Vulnerability	Water Depth	Zoning	ROW Issues (from Preliminary Assessment document)	Existing Access & Connectivity	Potential Use	Other Notes
			FEMA flood zone	Erosion Risk	Critical Habitat	Wetlands & Tidal Flats	Remediatio n Needs							
Marion Avenue	Improved by Marvin Beach Association, benches, gravel intertidal. Well maintained, very clean.		AE	Erodible surficial materials	Migratory Waterfowl, CT State and Town Managed Shellfish Natural Bed, Natural Diversity Area				Slow drop off to -1m	CD-1S	Maintained by Neighborhood Association	Near Route 11	Kayak small boat launching	
Blackstone Drive	Large grass area between houses with seawall and steps to inter tidal gravel area		AE	Erodible surficial materials	Migratory Waterfowl, CT State and Town Managed Shellfish Natural Bed, Natural Diversity Area				Slow drop off to -1m	CD-1S	Maintained by someone.	Near Route 12	Close to south anchorage, space for boat storage	
Decker Street	Large grass area between houses with seawall and steps to inter tidal gravel area. Maintained, very clean.	Yes	AE	Erodible surficial materials	Migratory Waterfowl, CT State and Town Managed Shellfish Natural Bed, Natural Diversity Area				Steep drop off to -1m	CD-1S	Maintained by someone.	Near Route 12	Close to south anchorage, space for boat storage	
Dorlon Street	Hedge planted across ROW and grass maintained by neighbor, seawall with gravel and seagrass intertidal		VE	Erodible surficial materials	Migratory Waterfowl, CT State and Town Managed Shellfish Natural Bed, Hard Clam & Oyster, Natural Diversity Area				Slow drop off to -1m	CD-1S and CD-1M	Appears to be part of neighbor's property, though publicly owned.	Near Route 12		



# Section 4

## Management & Funding Strategies

Harbor Management Strategy  
Funding Opportunities Road Map

# Norwalk Strategic Harbor Study

## **Task 2.3 Management Strategy Overview and Recommendations**

June 2026

## MANAGEMENT STRATEGY | GOALS AND METHODOLOGY

This Management Strategy Overview outlines current roles, identifies critical seams, and presents governance options to strengthen Norwalk Harbor's future."

### Goals

- 1 Clarify today's landscape:** Document existing roles and responsibilities across local, state, and federal actors to establish a common baseline.
- 2 Diagnose challenges and seams:** Highlight potential gaps, overlaps, and coordination breakdowns across key operational categories (e.g., dredging, enforcement, permitting, programming, revenue reinvestment, etc.).
- 3 Present future pathways:** Provide a spectrum of governance options and role allocations, drawing from best practices and peer examples, to guide informed decisions for the Norwalk Harbor.

### Methodology

- 1** Reviewed 2009 Harbor Management Plan and 2021 Industrial Waterfront stakeholder notes.
- 2** Mapped current roles vs. statutory limits; identified key management functions.
- 3** Benchmarked peer models and best practices (New England focus).

## MANAGEMENT STRATEGY | KEY STAKEHOLDERS

Public, private, and civic stakeholders play key roles in the management of the Norwalk Harbor.\*

Stakeholder	Role Summary
<b>Harbor Management Commission (HMC)</b>	Provides local policy leadership and consistency review, coordinating City, State, and Federal actions to align projects with the Harbor Management Plan.
<b>State-appointed Harbor Master</b>	Administers moorings and anchorage (permits, placement, inspections) and supports on-water safety and traffic management in coordination with Police and DEEP.
<b>Mayor &amp; Common Council</b>	Appoint HMC members, adopt and amend the Harbor Management Plan, approve harbor-related budgets and ordinances, and authorize agreements with State and Federal agencies for projects and funding.
<b>Planning &amp; Zoning / Zoning Commission</b>	Leads coastal site plan and zoning decisions on the landside and consults the HMC to ensure approvals are consistent with harbor policies.
<b>Economic &amp; Community Development / Redevelopment</b>	Steers waterfront economic strategy and shepherds public-private projects, working within coastal permitting and zoning constraints.
<b>Public Works &amp; WPCA</b>	Plans, funds, and operates wastewater and stormwater systems and delivers resilience projects that directly affect harbor water quality and reliability.
<b>Parks &amp; Recreation</b>	Operates City boating facilities (e.g., ramps and the visitor dock), waterfront parks, and manages public access amenities and activation along the waterfront.

\* Compiled from the 2009 Harbor Management Plan and 2021 Industrial Waterfront stakeholder notes.

## MANAGEMENT STRATEGY | KEY STAKEHOLDERS *(continued)*

Public, private, and civic stakeholders play key roles in the management of the Norwalk Harbor.\*

Stakeholder	Role Summary
<b>Police Marine Unit &amp; Fire</b>	Provide on-water enforcement, emergency response, and spill coordination in partnership with the Harbor Master and state/federal agencies.
<b>Shellfish Commission</b>	Manages shellfish resources, seasons, and closures and coordinates with DEEP and operators to protect beds near active marine uses.
<b>CT DEEP &amp; USACE</b>	Permit in-water work and dredging and review coastal consistency, with USACE responsible for maintaining federal navigation channels.
<b>CT Port Authority</b>	Provides small-harbor grants and technical support for local improvements but does not operate day-to-day harbor functions.
<b>Private marinas, clubs, and boatyards</b>	Operate berthing and marine services for members and visitors and often self-fund maintenance dredging along their bulkheads.
<b>Industrial operators</b> (oyster, materials, energy, marine contractors)	Depend on reliable depths, predictable bridge operations, and compatible land use to sustain marine commerce and staging activities.
<b>Environmental/education NGOs</b> (Harbor Watch, Maritime Aquarium)	Monitor water quality, educate the public, and partner on stewardship, habitat, and visitor programming across the harbor.
<b>Utility owners</b> (e.g., Eversource/Yankee Gas)	Hold critical waterfront parcels and infrastructure that can constrain or enable access, safety, construction staging, and redevelopment.

\* Compiled from the 2009 Harbor Management Plan and 2021 Industrial Waterfront stakeholder notes.

## MANAGEMENT STRATEGY | KEY OPERATIONAL CATEGORIES OVERVIEW

We have identified the following 10 key operational categories to evaluate how roles and responsibilities are shared across the key stakeholders for the management of the Norwalk Harbor.

**1. Policy & Governance**

**2. Operations / Maintenance / Security**

**3. Enforcement / On-Water Operations**

**4. Dredging & Sediment Management**

**5. Water Quality & Resilience**

**6. Land Ownership & Acquisition**

**7. Real Estate Development**

**8. Revenue Mgmt, Funding & Financing**

**9. Recreation & Public Access**

**10. Marketing & Visitor Services**

## MANAGEMENT STRATEGY | MATRIX A – CURRENT STATE OF ROLES & RESPONSIBILITIES

Matrix A below shows who leads each harbor function today and key notes on constraints, handoffs, and how it works in practice.

Function	Who Leads Today	Notes
<b>1. Policy &amp; Governance</b>	<b>HMC</b> leads Harbor Plan consistency; <b>P&amp;Z/ZC</b> lead zoning; <b>Council</b> adopts ordinances; <b>Harbor Master</b> ex-officio; <b>CT DEEP/USACE</b> hold in-water permitting authority.	35-day referral and 2/3 override for consistency; HMC is advisory (not operational); sensitivity about residential in floodplain and preserving marine-commercial intent.
<b>2. Operations / Maintenance / Security</b>	<b>Parks &amp; Rec</b> (City facilities: ramps/visitor dock); <b>DPW</b> (City waterfront structures); <b>private marinas/operators</b> (their assets); <b>Police/Fire</b> for security; <b>Harbor Master</b> runs moorings.	City operates Veterans Park/visitor dock; private liability concerns about through-dock public access; SOPs for events/operations are informal.
<b>3. Enforcement / On-Water Operations</b>	<b>Police Marine Unit + Harbor Master</b> ; <b>DEEP EnCon/USCG</b> share roles; <b>Fire</b> for incidents/spills.	Fragmented accountability; speed/no-wake and rowing traffic managed largely by voluntary coordination; event-day protocols vary.
<b>4. Dredging &amp; Sediment Management</b>	<b>USACE</b> (federal channel); <b>DEEP/USACE</b> (permits); <b>HMC</b> coordinates priorities; <b>DPW</b> (City sites); <b>private operators</b> (like O&G) self-dredge along bulkheads.	Sediment deposition limits boat slips and rowing; silt buildup due to CSO; concern for shellfish beds; some private ad-hoc dredging assistance; no formal local program to bundle priorities/funding or schedule windows.
<b>5. Water Quality &amp; Resilience</b>	<b>DPW/WPCA</b> (WWTP, stormwater, outfalls); <b>Health</b> (testing/closures); <b>Shellfish Commission</b> (resources); <b>HMC</b> convenes; <b>NGOs</b> monitor/educate.	Hypoxia in upper river; leaking/legacy pipes; large CSO outflow; WWTP berm/outfall elevation concerns; need an integrated, multi-dept capital list and cadence.

\* Compiled from the 2009 Harbor Management Plan and 2021 Industrial Waterfront stakeholder notes.

## MANAGEMENT STRATEGY | MATRIX A – CURRENT STATE OF ROLES & RESPONSIBILITIES *(continued)*

Matrix A below shows who leads each harbor function today and key notes on constraints, handoffs, and how it works in practice.

Function	Who Leads Today	Notes
<b>6. Land Ownership &amp; Acquisition</b>	<b>City</b> (where owns); <b>E&amp;CD/Redev</b> (strategy/negotiation); <b>private owners/utilities</b> control key parcels; <b>State</b> may hold some ROWs.	Utility parcels/staging constrain options; acquisitions are opportunistic; easements/right-of-way design can unlock access/safety.
<b>7. Real Estate Development</b>	<b>P&amp;Z/ZC</b> approvals; <b>E&amp;CD/Redev</b> shepherd projects; <b>HMC</b> consistency review; <b>DEEP</b> for structures below HTL; private developers build.	Tension between residential and marine uses on Water St.; boardwalk interest; parking/flood rules bind; bridge staging limits near-term sites.
<b>8. Revenue Mgmt, Funding &amp; Financing</b>	<b>Council</b> approves fee schedules; <b>HMC</b> recommends/oversees Harbor fund; <b>Comptroller</b> accounts; <b>City depts</b> and <b>CT Port Authority</b> pursue grants; private assets self-fund.	HMC collects mooring fees but does not deploy; mooring fee caps limit upside; transient/visitor revenue exists but modest; grants episodic; no true harbor enterprise approach; no Norwalk capital budget allocation to harbor works in FY26 (ex. Calf Pasture Beach).
<b>9. Recreation &amp; Public Access</b>	<b>Parks &amp; Rec</b> operates public launches/visitor dock; <b>HMC</b> sets policy; NGOs/community partners support.	Demand rising for kayak/SUP; liability limits public-through-dock routes; street-ends study underway by Indigo River.
<b>10. Marketing &amp; Visitor Services</b>	<b>E&amp;CD/Tourism + Parks</b> ; <b>private marinas</b> and <b>NGOs</b> contribute.	No unified harbor brand/wayfinding; transient docking/services limited; event programming opportunistic (e.g., rowing/regattas potential).

\* Compiled from the 2009 Harbor Management Plan and 2021 Industrial Waterfront stakeholder notes.

## MANAGEMENT STRATEGY | EXISTING CHALLENGES / SEAMS IN ROLES AND RESPONSIBILITIES

The review of existing roles highlights potential challenges and seams across harbor functions, suggesting areas where coordination and clarity could be improved.

Function	Challenges / Seams
<b>1. Policy &amp; Governance</b>	<p><b>Permitting handoffs:</b> Applicants have to navigate HMC, P&amp;Z, DEEP, and USACE, according to current framework. Timelines and expectations may not always be transparent or sequenced.</p> <p><b>Data &amp; KPIs:</b> Fragmented tracking of permits, incidents, dredging status, and water quality metrics may limit performance management, public reporting, and goal setting.</p>
<b>2. Operations / Maintenance / Security</b>	<p><b>Standard operating procedures for public waterfront facilities:</b> Public facility operations (e.g., visitor dock, ramps, and event operations) are handled without formalized playbooks or checklists.</p> <p><b>Private-public interfaces:</b> Liability and security concerns limit through-dock public circulation and coordination with private marinas/boatyards.</p>
<b>3. Enforcement / On-Water Operations</b>	<p><b>Enforcement &amp; on-water operations:</b> Speed/no-wake and traffic patterns vary by season and user group. Multiple agencies may dilute accountability, and no unified patrol/event incident command seem to exist.</p>
<b>4. Dredging &amp; Sediment Management</b>	<p><b>Coordination &amp; funding:</b> Federal channel cycles vs. private berth shoaling; no local mechanism to bundle priorities and pursue funding (potentially federal USACE or state DEEP, with local matching).</p> <p><b>Permitting cadence:</b> Case-by-case permits lack a shared schedule and dredge windows (e.g., shellfish conflicts).</p>
<b>5. Resilience &amp; Water Quality</b>	<p><b>Integrated capital needs:</b> WWTP berm/outfalls, tide-backflow, and street flooding fixes span multiple departments, and a unified capital program view could be beneficial.</p> <p><b>Illicit discharge/hypoxia:</b> Legacy/broken pipes persist. Monitoring data may not be linked to enforcement or capital timing.</p>

## MANAGEMENT STRATEGY | EXISTING CHALLENGES / SEAMS IN ROLES AND RESPONSIBILITIES

The review of existing roles highlights potential challenges and seams across harbor functions, suggesting areas where coordination and clarity could be improved.

Function	Challenges / Seams
<b>6. Land Ownership &amp; Acquisition</b>	<p><b>Key parcel constraints:</b> Utility and industrial holdings (e.g., Eversource, King Industries, Water St. private owners) and rail geometry limit access, staging, and safety buffers.</p> <p><b>Street-end ROWs:</b> State- and city-owned rights-of-way often underdeveloped, encroached, or lacking signage/maintenance.</p>
<b>7. Real Estate Development</b>	<p><b>Use compatibility:</b> Liability and operational conflicts between working waterfront and adjacent residential/recreational projects. Clear design/performance standards and buffers could be beneficial (as also referred to in the Task 4.2 City-Owned Street Ends Study).</p> <p><b>Bridge operations &amp; staging:</b> Ongoing construction and bridge openings affect commercial and recreation users.</p>
<b>8. Revenue Management, Funding &amp; Financing</b>	<p><b>Limited revenue:</b> Mooring fees capped by statute; visitor revenues modest.</p> <p><b>Potential for an enterprise approach:</b> Harbor revenues aren't ring-fenced, limiting proactive maintenance, match funding, and reinvestment.</p>
<b>9. Recreation &amp; Public Access</b>	<p><b>Access routing &amp; liability:</b> Lack of standardized through-routes and indemnification tools at private docks to enable public access. Pressure from growing kayak/SUP demand without protocols.</p> <p><b>Wayfinding/amenities:</b> Signage, trash/pump-out info, and multimodal access (bike/parking) are inconsistent.</p>
<b>10. Marketing &amp; Visitor Services</b>	<p><b>Fragmented brand:</b> No unified harbor identity/branding or visitor information. Marinas and City communicate separately.</p> <p><b>Visitor services gaps:</b> Limited transient docking information and support reduce visitation and dwell time. Event logistics do not seem to be standardized.</p>

## MANAGEMENT STRATEGY | POTENTIAL GOVERNANCE MODEL OPTIONS

There are several different governance models, rooted in best practices from peer harbors, that could inform improvements to processes, roles, and responsibilities and help address identified challenges.

	A. Tighten the Status Quo	B. City-Run Harbor Program	C. Strengthened HMC + Operating Agreements	D. Harbor/Port Authority	E. Nonprofit Conservancy + BID
What is it?	Keep current structure but codify through <b>MOUs</b> , shared permits/dredge tracker, annual Harbor Workplan + KPIs, standard event SOPs.	Staffed <b>municipal harbor office</b> (in a City dept.) for water-side ops, boater services, dredge/grant coordination, data.	<b>HMC</b> stays policy lead; <b>Council-approved OAs</b> assign tasks, SOPs, timelines, metrics to depts/Harbor Master.	<b>Quasi-public entity</b> runs harbor assets, leases/fees, dredging & on-water ops; retains/reinvests revenue; can hold easements.	<b>501(c)(3) + BID/SSD</b> ; City <b>MOU</b> sets roles/standards.
What could it solve?	Permitting handoffs (clear sequence/owners); data/KPIs (single dashboard); event-day coordination; bridge comms/calendar.	Enforcement presence; dredging schedule & grant pipeline; resilience/WQ interface; visitor services/marketing; continuous metrics.	Permitting handoffs (who signs/inspects/notifies); access vs. working (standards + indemnity templates); bridge staging roles & handback; KPIs with owners.	Dredging + funding (bundle priorities, local match); enterprise revenue; unified ops/enforcement; bridge staging site control; land tools.	Public access & activation (Clean/safe, O&M, programming, through-routes, wayfinding); liability management (easements/indemnification); steady land-side funding; consistent branding/visitors.
Potential barriers	No new capacity/funding; relies on voluntary follow-through; fee/authority tools unchanged.	Needs FTEs/equipment/budget; align with state Harbor Master (MOU); avoid duplication with Police Marine.	Still advisory for some levers; effectiveness depends on disciplined renewal/monitoring.	Requires enabling + durable revenues; prevent overlap with HMC/P&Z; governance/transparency design matters.	Not a fix for dredging/enforcement; needs BID/SSD owner buy-in; strong MOUs, metrics, audits.

## MANAGEMENT STRATEGY | MATRIX B – POTENTIAL ROLES AND RESPONSIBILITIES

Matrix B aims to provide a comparative overview of how different governance models may distribute roles and responsibilities across key stakeholders and help improve existing challenges/seams.

Function	A. Tighten Status Quo	B. City-Run Harbor Program	C. Strengthened HMC + OAs	D. Harbor/Port Authority	E. Nonprofit Conservancy + BID
<b>1. Policy &amp; Governance</b>	HMC continues advisory; MOUs clarify handoffs. Annual workplan + KPI dashboard.	Staff lead within City Harbor Program (execution); HMC still advisory (policy).	HMC; Council-approved Operating Agreements (OAs) assign tasks/timelines to depts.	Authority board (Mayor/appointments) unifies policy + ops.	Conservancy board for land-side input; policy via City/HMC.
<b>2. Ops / Maintenance / Security</b>	Parks/DPW keep roles; better facility SOPs + event playbooks.	Harbor Program staff run visitor dock, ramps, water-side ops.	Assigned by OA (Parks vs. DPW).	Authority operates harbor assets end-to-end.	Conservancy/BID maintain promenades/land-side amenities.
<b>3. Enforcement / On-Water Ops</b>	Police + Harbor Master continue; codified patrol hours/zones.	Harbor Program staff supplement (boater services, traffic mgmt) + Police; MOU with state Harbor Master.	OA assigns lead on who patrols, who issues notices (Police vs. Harbor Master).	Authority harbor unified patrol/contracted unit; single incident command.	Limited role: Coordinates event crowd mgmt/ambassadors.
<b>4. Dredging &amp; Sediment</b>	HMC/DPW coordinate case-by-case with DEEP/USACE; shared dredge calendar.	Harbor Program owns studies, permit schedule, state/federal grant/match pipeline.	OA designates dredge lead (DPW) + timelines/windows + match.	Authority bundles dredging priorities + financing; manages channel/berth windows.	No role; supports comms only.
<b>5. Resilience &amp; Water Quality</b>	DPW/WPCA continue; single published capital list + milestones.	Harbor Program is shoreline/interface owner, in coordination with DPW/WPCA.	OA assigns single owner for capital list; KPI tracking across projects.	Authority + City deliver shoreline/harbor projects jointly.	Implements small green infrastructure/land-side stewardship.

## MANAGEMENT STRATEGY | MATRIX B – POTENTIAL ROLES AND RESPONSIBILITIES

Matrix B aims to provide a comparative overview of how different governance models may distribute roles and responsibilities across key stakeholders and help improve existing challenges/seams.

Function	A. Tighten Status Quo	B. City-Run Harbor Program	C. Strengthened HMC + OAs	D. Harbor/Port Authority	E. Nonprofit Conservancy + BID
<b>6. Land Ownership &amp; Acquisition</b>	City (E&CD/Redev) case-by-case negotiates easements/ROWs.	E&CD/Redev + Harbor Program coordinate with agencies/owners on access/staging.	OAs set template easements/ROWs and indemnity terms.	Authority can directly hold/lease parcels and easements.	May hold public-realm easements or manage land-side access; BID funds upkeep.
<b>7. Real Estate Development</b>	P&Z/ZC + Redev continue. HMC continue consistency review.	Same + Harbor Program shepherd economic projects at waterfront.	OAs embed compatibility/through-route public access standards.	Authority master-leases/PPPs on City waterfront assets.	Conservancy animates land-side projects/amenities; supports design/wayfinding.
<b>8. Revenue Mgmt, Funding &amp; Financing</b>	Council/HMC/Comptroller ; status-quo with fees, episodic grants continue and remain limited.	Harbor pursue grants and match funds, and track mooring/visitor fees.	OAs clarify uses of revenues from fees. Statutory fee caps remain.	Authority retains leases/dockage/moorings /events; builds reserve for match.	BID assessments + philanthropy/sponsorships for land-side O&M/programming.
<b>9. Recreation &amp; Public Access</b>	Parks manage ramps, docks; basic access; uneven street-end/ROW delivery.	Harbor Program expands boater services, transient docking.	OAs standardize access routes and ROW use, indemnification templates.	Authority develops and maintains public docks/launches.	Conservancy/BID maintain promenades/through-routes, program public realm.
<b>10. Marketing &amp; Visitor Services</b>	City (E&CD/Parks) leads; fragmented messaging improved via comms plan.	Harbor Program centralizes brand, boater info, wayfinding, events.	OA assigns owner (City) for brand/visitor comms.	Authority runs harbor marketing and customer services.	Conservancy/BID run unified brand, wayfinding, events, ambassadors, calendars, sponsorships.

- Option A: Minimal cost; uses MOUs, SOPs, and shared trackers to improve coordination and transparency; but adds little new capacity or revenue.
- Option B: Clear day-to-day accountability and better boater/visitor experience via dedicated staff; requires FTEs, equipment, budget.
- Option C: Keeps HMC as policy lead while binding roles, timelines, and metrics across departments; needs rigorous management.
- Option D: Most integrated and businesslike (under one roof). Heavier lift to establish and sustain, needing enabling authority and durable revenues.
- Option E: Professionalizes land-side activation, maintenance, and branding with predictable BID/philanthropy funds. Needs strong MOUs and owner buy-in.

## NEXT STEPS | HARBOR ENHANCEMENT & DEVELOPMENT RECOMMENDATIONS

Building upon the Management Strategy, we will develop a summary report of harbor enhancement and development recommendations, drawing upon our baseline conditions analysis and the focus groups and interviews conducted with harbor users and stakeholders.

### Summary of Stakeholder Feedback & Key Areas of Recommendation

- 1 Unified Vision for Land Use & Development:** Everyone interviewed acknowledged the harbor's history, importance, and potential. However, harbor users noted a lack of unified vision for the harbor, and called for a cohesive strategy that unites industrial, recreational, environmental, and tourism interests. This vision statement will incorporate both traditional marine businesses, key to the functionality of the harbor, and more recent residential and recreational development trends.
- 2 Transparency & Increased Coordination:** Stakeholders observed a lack of coordination among city departments, commissions, and harbor users, as well as a perceived lack of transparency in decision making. Drawing upon the management strategy findings, we will provide implementable recommendations for the city's marketing, public engagement, and agency coordination.
- 3 Improving Resiliency, Access & Equity:** We heard a desire to democratize waterfront access and balance industry with environmental concerns. Utilizing the Mooring Plan and Street-Ends Study, we will provide clear next steps to increase access to the waterfront for all types of users. We will include recommendations tied to climate resiliency and adaptation, necessary for long-term harbor planning.

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## 2.4 Funding Opportunities Roadmap

This memorandum is prepared by HR&A Advisors as a component of the **Strategic Harbor Study** and fulfills the brief for a **Funding Opportunities Roadmap** (Task 2.4). In alignment with the scope, it assembles a practical pathway for the City of Norwalk to pursue and sequence funding for the Plan’s near-term capital priorities—namely, the **Street-Ends Access** improvements (Lowndes, Knorr, 1st, 3rd, Cove) and the **Mooring System** investments (Inner Harbor reconfiguration, Manresa Basin/outer field, Gregory Point extension, Calf Pasture transient field, and eco-moorings at Shea & Chimon).

The roadmap (i) summarizes potential projects to be funded, building on Indigo River’s Study of Street Ends and Moorings Study, and summarizing the capital and operational gaps that need to be filled, (ii) surveys federal and state programs that may help close the gaps identified under Section 1; and (iii) presents a funding roadmap and timelines, with an illustrative approach to prioritizing programs and identifying steps necessary steps over a 12 month period.

A central organizing concept is to present Street-Ends and Moorings together as a unified **Land + Water Accessibility Plan**. Bundling these projects could help strengthen competitiveness (especially for programs like CT Community Investment Fund 2030) by tying equity, access, recreation, resilience, and local economic benefits into one coherent package; it also improves delivery by aligning design standards, permitting, and match across multiple sites.

**As an important note on program dynamics**, funding programs referenced here are current **as of October 2025**. There are uncertainties regarding the future of many programs. Federal and state programs regularly update eligibility, scoring criteria, funding levels, and application windows; some sources publish conflicting details across webpages during transitions. Accordingly, the City should (a) verify requirements with administering agencies prior to application, (b) treat dates and amounts as indicative, and (c) monitor updated deadlines, matches, and contacts as guidance and appropriations evolve. This roadmap should be revisited periodically and adjusted to reflect new legislation, appropriations, agency guidance, and City priorities.

### 1. Potential Project Portfolio to be Funded

As part of the Strategic Harbor Study, the Street Ends Study and Mooring Study together outline a cohesive capital program to expand equitable public access to Norwalk Harbor while advancing ecological restoration and long-term harbor resilience. The combined portfolio consists of **five priority street-end access projects** and **five prospective mooring-field investments**, each of which can be pursued individually or phased as part of a multi-year implementation program.

#### A. Street-End Access Projects

The Street Ends Study evaluated 21 public street ends and identified five priority locations for near-term capital investment based on equity, feasibility, ecological opportunity, and community benefit. All five sites are publicly owned, within coastal flood zones, and offer opportunities for low-impact waterfront access paired with habitat enhancement.

Site	Primary Investment Needs	Indicative Funding Themes
<b>Lowndes Avenue</b>	Shoreline restoration (living shoreline, native planting); ADA path and small overlook; interpretive signage	Coastal resilience, environmental justice, habitat restoration
<b>Knorr Street</b>	Flexible paved plaza and ADA paths; bioswales; seating and shade; potential small-craft launch coordinated with South Norwalk Boat Club	Public-access infrastructure, climate adaptation, community stewardship
<b>1st Street</b>	Invasive species removal; native plantings; accessible gravel/boardwalk path; small overlook and interpretive signage	Habitat restoration, trail connectivity, low-impact recreation
<b>3rd Street</b>	Modular kayak/hand-carry launch; seating and bike racks; signage on harbor history; slope stabilization and bioswale	Recreational boating access, working-waterfront heritage, non-motorized infrastructure
<b>Cove Avenue</b>	Small car-top/kayak launch; benches; signage; roadway safety measures	Neighborhood recreation, coastal access, nature-based shoreline design

Together, these projects form an accessible waterfront network that connects residential areas in South Norwalk and East Norwalk to the harbor and Harbor Loop Trail. Each requires moderate capital investment for design, permitting, and construction (primarily landscape, access, and signage improvements) and could be advanced as separate design packages or bundled into a single “Waterfront Access Initiative.”

## B. Mooring Field Investments

The Mooring Study identifies a system of **five geographic investment areas** where Norwalk can expand mooring capacity, improve public access to the water, and support a long-term harbor operations model. Together, these locations could add up to **175–390 new moorings**, depending on configuration, and anchor a sustainable, revenue-generating boating economy linked to the City’s street-end access network.

### 1. Location-Specific Investment Areas

Location / Project Area	Depth Range (MLW)	Potential New Moorings	Primary Infrastructure Needs
<b>Inner Harbor – North Anchorage (Reconfiguration)</b>	3–6 ft	~19 DPM	Replace and re-align existing moorings with updated Double-Point Mooring (DPM) hardware; add pump-out capacity
<b>Manresa Island Basin + Outer Field</b>	5–13 ft	60 SPM – 107 DPM	New field adjacent to Manresa Basin; mooring hardware, water-taxi landing, pump-out boat
<b>Gregory Point Extension</b>	5–10 ft	25 SPM – 44 DPM	Mooring extensions between navigation channel and Peach Island; hardware and markers
<b>Calf Pasture Beach Transient Field</b>	5–12 ft	10 SPM – 18 DPM	Seasonal transient moorings, small floating dock, water-taxi link
<b>Norwalk Islands – Shea &amp; Chimon Islands</b>	5–14 ft	40 SPM each	Mooring arrays with elastic rodes and pyramid anchors to protect seabed habitat

## 2. Capital Investment Options

The Mooring Study modeled **four capital cost options** representing different configurations of mooring types and supporting equipment. These total capital costs are then annualized across a 20-year timeframe, to enable high-level assessment of return-on-investment (ROI) later on.

\*SPM = Single Point Mooring; DPM = Double Point Mooring; DPMD = Double Point Dock Mooring.

Option	Configuration Summary	Approx. New Moorings	Capital Components	Total Capital Cost (w/ 21 % OH&P)	Annualized (20-yr)
<b>Option 1 – SPM* Field</b>	Conventional chain + buoy moorings (no docks)	~215	SPM hardware + pump-out boat + launch + water taxi	<b>\$ 1.24 M</b>	\$ 124 k / yr
<b>Option 2 – DPM* Field</b>	Double-Point moorings (more compact spacing)	~169	DPM hardware + pump-out boat + launch + water taxi	<b>\$ 1.90 M</b>	\$ 190 k / yr
<b>Option 3 – DPMD* Floating Dock Field</b>	Moorings with floating docks for tie-up	~392	DPMD hardware + pump-out boat + launch + water taxi	<b>\$ 4.49 M</b>	\$ 449 k / yr
<b>Option 4 – Hybrid Field</b>	Mix of SPM, DPM, and DPMD; water-taxi-focused	~249	Mixed hardware + pump-out boat + launch + water taxi	<b>\$ 1.37 M</b>	\$ 137 k / yr

## 3. Operating Models and Financial Outcomes

Indigo River analyzed **three operational models** for managing and funding mooring expansion.

All estimates include fuel, labor, vessel maintenance, and program overhead (21 %), and assume 150-day boating seasons.

Model	Description	Annual Operating Cost (COGS + Overhead)	Projected Revenue	Annual Gap (Needs External Funding)	Feasibility Notes
<b>Model 1 – Permit-Only System (Status Quo)</b>	City issues permits; private operators handle installation, maintenance, and transient management.	Minimal City costs (~ \$ 0.76 M COGS shared privately)	≈ \$ 320 k in permit and transient fees	No direct City gap; limited public benefit; no capital expansion without grants	Easiest to maintain administratively; low visibility gain
<b>Model 2 – City-Managed Full Program</b>	City owns and operates all moorings,	\$ 0.88 – 1.20 M / yr	≈ \$ 341 k	\$ 540 k – \$ 860 k annual deficit	Unsustainable without major grant subsidies

Model	Description	Annual Operating Cost (COGS + Overhead)	Projected Revenue	Annual Gap (Needs External Funding)	Feasibility Notes
	launches, and pump-out boats.				or revenue diversification
<b>Model 3 – Hybrid Managed Program (Preferred)</b>	City manages transient moorings and a single water taxi; private permittees maintain others.	\$ 0.38 M / yr	≈ \$ 314 k	≈ \$ 63 k annual gap	Financially near-break-even; scalable with modest grant support and user fees

#### 4. Funding Gap Summary

Below we summarize the funding gap for which external funding and financing sources may be considered. These costs can be summarized as the one-time capital costs of the mooring hardware & water taxi fleet and the operational expenses associated with the different models.

Category	Capital Cost Range	Annual Operating Gap	Funding Need / Opportunity
<b>Mooring Hardware &amp; Water Taxi Fleet (Options 1-4)</b>	\$ 1.2 – 4.5 M (one-time)	–	Federal or state capital grants (NOAA Coastal Resilience, FTA Ferry Program, Boating Infrastructure Grant Program)
<b>Hybrid Operations (Model 3)</b>	—	≈ \$ 60 k / yr	Operating subsidy from City Waterfront Fund, state tourism programs, or public-private sponsorships
<b>Full City Program (Model 2)</b>	—	\$ 540 – 860 k / yr	Would require sustained grant or bond financing; not recommended without dedicated funding stream

In summary:

- **Capital Need:** For capital costs, Indigo River points out options 1 and 2 are financially feasible for new installations. Depending on configuration, total one-time costs range from **\$ 1.2 M to \$ 4.5 M**.
- **Operating Gap:** For operational expenses, Indigo River recommends **Model 3 (Hybrid Operations)** in their Mooring Study, due to its smaller feasibility gap. Under Model 3, the annual shortfall (**~ \$ 60 k**) could be closed through federal/state operating grants or modest fee adjustments.
- **Funding Target:** Pair City funding and private contributions with external grants to cover initial capital (**\$ 1.2 M to \$ 4.5 M**) and a **three-year operational bridge (~ \$ 180 k total)**.

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## 2. Funding Landscape

### A. Street-End Access Projects

The five priority street ends, namely **Lowndes, Knorr, 1st, 3rd, and Cove Ave**, share a common investment profile: **small-mid-scale public access** improvements (ADA paths, overlooks, seating, shade, signage, small craft/hand-carry launches), **nature-based shoreline** treatments (living shorelines, native plantings, invasive removal), **stormwater and erosion** fixes (bioswales, stabilization), and **trail/wayfinding** connections to the Harbor Loop. The programs below collectively cover **planning, design, construction, and selective O&M** needs.

#### List of Potentially Relevant Programs

##### 1) CT DEEP – Recreational Trails Program ([LINK](#))

- **What it is:** State grants for **planning, design, and construction** of trail and water-trail facilities, including wayfinding and trailheads. 2025–26 round is **open**; applications due **Dec 18, 2025**.
- **Gap type:** Capital (design + construction).
- **Eligible Interventions:** Harbor Loop connections; accessible paths/boardwalks; wayfinding; trailhead amenities (bike racks, benches) at **3rd, Knorr, Cove**; interpretive signage at **Lowndes, 1st**.
- **\$ / Match / Notes:** Up to **\$1M**; **20% match**; design is explicitly eligible (great for closing pre-dev gaps). Deadline **12/18/2025**.

##### 2) Land and Water Conservation Fund (LWCF) – State Side (via CT DEEP) ([LINK](#))

- **What it is:** Federal LWCF dollars administered by CT DEEP for **recreation planning, land/water acquisition, and facility development**.
- **Gap type:** Capital (land/facility development), planning.
- **Eligible interventions:** ADA paths, overlooks, small waterfront recreation features, park-adjacent improvements at all five street ends (must be outdoor recreation and remain perpetually protected).
- **\$ / Match / Notes:** Typically **50% match**; aligns well with equity/access framing at **Lowndes/Knorr**.

##### 3) LWCF – Outdoor Recreation Legacy Partnership (ORLP) ([LINK](#))

- **What it is:** **Nationally competitive** LWCF for larger urban recreation projects serving disadvantaged areas; **paused** for the next cycle as of Sept 22, 2025 ([see here](#), monitor for restart).
- **Gap type:** Capital (major park/recreation investments).
- **Eligible interventions:** If reopened, could bundle multiple street-ends into a single urban access package (e.g., **Knorr + 3rd + Lowndes** improvements).
- **\$ / Match / Notes:** 50% match; urban, EJ emphasis. State portal info remains posted while paused.

##### 4) National Fish and Wildlife Foundation (NFWF) – National Coastal Resilience Fund (NCRF) ([LINK](#))

- **What it is:** Funds **planning, design, and implementation** of **nature-based solutions** that reduce coastal storm/flood risk and improve habitat; 2025 RFP framework posted (2025 RFP closed, track next round).

- **Gap type:** Capital (design + build) for **living shorelines, marsh edges, plantings**.
- **Eligible interventions:** **Lowndes & 1st** (living shoreline, invasive removal, native plantings), slope stabilization at **3rd**, shoreline treatments at **Cove Ave**.
- **\$ / Match / Notes:** Large awards possible; emphasize risk reduction + habitat. Land acquisition is **not** funded in 2025 RFP (must be secured elsewhere).

#### 5) NFWF – Long Island Sound Futures Fund (LISFF) ([LINK](#))

- **What it is:** Grants for projects that **restore the health of Long Island Sound**, habitat, water quality, community resilience; managed by NFWF with EPA/LISS. 2025 RFP posted **May 29, 2025** (closed); next round expected spring 2026. FY2025 grants ranged **\$50k-\$1.5M**.
- **Gap type:** **Planning/design** and **capital** for LIS-connected habitat/water-quality and community access tied to mooring sites.
- **Eligible interventions:** Habitat restoration, green infrastructure and **stormwater** practices at **Lowndes/1st**, education/signage at all sites.
- **\$ / Match / Notes:** Competitive; strong LIS nexus helps Norwalk. Pair with Trails/LWCF for access elements.

#### 6) CT Clean Water Fund / CWSRF (Stormwater & Green Infrastructure) ([LINK](#))

- **What it is:** **Low-interest loans** (with possible **principal forgiveness**) for water quality, including **green stormwater infrastructure**; state program details (grant + 2% loan mix) in CT's priority list; EPA CWSRF "Green Project Reserve" guidance supports GI eligibility.
- **Gap type:** Capital **financing** for bioswales, permeable surfaces, erosion control tied to water quality at **Knorr, 3rd, Lowndes, 1st, Cove**.
- **Eligible interventions:** Bioswales, floodable landscapes, infiltration at parking/approaches to the street-ends, shoreline stabilization with water-quality benefit.
- **\$ / Match / Notes:** CT Clean Water Fund typically **20% grant + 80% 2% loan** (per FY24–25 draft); confirm current terms with DEEP each cycle.

#### 7) CT Port Authority – SHIPP (Small Harbor Improvement Projects Program) ([LINK](#))

- **What it is:** State grants for **municipal harbor/marina** improvements (small ports/harbors). SHIPP re-established/active in 2025; statute and program pages updated. Norwalk has applied and won this award this year with \$3.5M grant to upgrade the marina ([LINK](#)).
- **Gap type:** Capital for **water access** facilities at/near street-ends (small craft landings, dinghy tie-ups, signage, minor shoreline protections where navigational/access benefits).
- **Eligible interventions:** **3rd & Knorr** small launches; wayfinding/harbor access furnishings; minor public floats where appropriate.
- **\$ / Match / Notes:** Municipal program; coordinate with Harbor Management Commission for alignment.

#### 8) CT Office of Policy and Management (OPM) – LoCIP (Local Capital Improvement Program) ([LINK](#))

- **What it is:** Formula **state aid** to municipalities for eligible **capital projects** (roads, **sidewalks**, public buildings, **parks**, flood control, etc.).
- **Gap type:** **Local match** and fill-in capital for basic access (sidewalks to street-ends, lighting, small park amenities).
- **Eligible interventions:** ADA paths/sidewalk tie-ins; small park-like site work at all five locations.
- **\$ / Match / Notes:** Annual entitlement; project must be **authorized** by OPM and City legislative body; LoCIP is flexible and ideal as **match**. Norwalk’s FY2025 is \$859K. ([LINK](#))

#### 9) CT DECD – Urban Act Grant Program ([LINK](#))

- **What it is:** State **bond-funded** capital grants for **urban** community development and public realm improvements; open to **distressed municipalities/PICs/urban centers**, with pathways for others via Bond Commission/TOD.
- **Gap type:** Capital “big push” (bundling multiple street-ends as an **Urban Waterfront Access Initiative**).
- **Eligible interventions:** Comprehensive access improvements (ADA, lighting, plazas), water’s-edge public space, supportive restrooms/shelters if included in scope.
- **\$ / Match / Notes:** Rolling/bond-commission timing; coordinate with DECD/OPM delegation. Useful as a **local share** or primary capital source.

#### 10) USDOT – Safe Streets and Roads for All (SS4A) ([LINK](#))

- **What it is:** Federal competitive grants for **roadway safety—Implementation** grants can fund pedestrian safety improvements near street-ends (crossings to the water, lighting). FY2025 NOFO closed **June 26, 2025**; next round expected 2026.
- **Gap type:** Capital for **approach-side** safety—crosswalks, lighting, speed management to reach street-ends safely.
- **Eligible interventions:** High-visibility crossings, RRFBs, lighting, traffic calming around **Knorr/3rd/Cove/Lowndes/1st** approaches (with Action Plan compliance).
- **\$ / Match / Notes:** ~\$982M nationally in FY25; counties/municipalities eligible; must align to an **Action Plan**. Use for upland approach safety, not in-water work.

#### 11) CTDOT – LOTCIP (via WestCOG/COG) ([LINK](#))

- **What it is:** **State-funded** municipal transportation capital for **sidewalks, multi-use trails, intersections** on eligible facilities; administered via Councils of Governments with CTDOT.
- **Gap type:** Capital for **approach connections** to street-ends; multimodal safety/ADA to reach access points.
- **Eligible interventions:** Sidewalk infill to **Cove Ave/Knorr/3rd**, intersection treatments, spur multi-use trail links to Harbor Loop.
- **\$ / Match / Notes:** Coordinate with **WestCOG**; projects must meet functional class/eligibility standards.

#### 12) FEMA Hazard Mitigation (BRIC / HMGP) – Nature-Based & Flood Mitigation ([LINK](#))

- **What it is:** **Pre-disaster (BRIC)** and **post-disaster (HMGP)** grants for hazard mitigation; **nature-based solutions** are emphasized (living shorelines, floodplain restoration). FY2024 BRIC had ~\$750M–\$1.35B; next cycles expected annually.
- **Gap type:** Capital for **flood risk reduction** components (living shoreline segments, erosion control) that can be packaged with access.
- **Eligible interventions:** **Lowndes/1st** shoreline stabilization; flood-resilient paths/materials; drainage retrofits where tied to risk reduction.
- **\$ / Match / Notes:** Requires **FEMA-approved Hazard Mitigation Plan**; competitive BCA; coordinate with **CT DEMHS** for HMGP/BRIC pipeline. Program **currently halted**; monitoring needed.

## B. Mooring Field Investments

The interventions & cost types identified in the Mooring Study can be grouped as follows, which will guide the identification of relevant funding sources:

- **Mooring infrastructure:** SPM/DPM hardware; selective floating/transient docks & utilities.
- **Support vessels/services:** pump-out boat(s); water taxi (capital only; ops gap remains).
- **Access landings & aids:** small landings, dinghy docks, wayfinding, nav aids.
- **Navigation/dredging tweaks:** targeted anchorage/channel adjustments where justified.
- **Eco-moorings & habitat:** elastic rodes + pyramid anchors at Shea/Chimon with habitat protection.

Below, programs that may help support one or more of the intervention/cost categories as listed, with a brief description of the program, eligible intervention the program may support, and how the program may or may not help cover Norwalk's gaps.

### List of Potentially Relevant Programs

#### 1) U.S. Fish & Wildlife Service (USFWS) – Boating Infrastructure Grant (BIG) ([LINK](#))

- **What it is:** Federal grants for **transient recreational boats ≥ 26 ft**, funding **tie-up facilities** and many shoreside amenities; Tier I (state-run) and Tier II (national).
- **Gap type: Capital** (transient docks, moorings, utilities, amenities).
- **Eligible interventions (fit to Norwalk):** Transient moorings/docks at Calf Pasture and Gregory Point; dockside utilities (water/electric), restrooms/showers, nav aids, dinghy docks; (state page lists eligible items explicitly, incl. mooring buoys, floating docks/piers, breakwaters, utilities).
- **\$ / Match / Notes:** Tier I-State (CT DEEP) up to ~\$290k annually statewide; Tier II competitive nationally (multi-million pool). Competitive apps need strong match and transient-use justification (≤15 days). Coordinate early with **CT DEEP Boating**.

#### 2) CT DEEP / USFWS – Clean Vessel Act (CVA) ([LINK](#))

- **What it is:** Grants for **pump-out stations and boats** to reduce sewage discharges; **CT DEEP** administers in CT.
- **Gap type: Capital** (pump-out boat purchase/equipment) and limited **O&M offset** (via capitalized spares).
- **Eligible interventions:** New/expanded **pump-out boat** capacity to support expanded fields (Inner Harbor + Manresa/Islands).
- **\$ / Match / Notes:** Up to **75%** grant; CT typically has **~\$1M/yr** available. Great to pair with BIG-funded transient docks.

### 3) Federal Transit Administration (FTA) – Passenger Ferry Grant Program (Section 5307(h)) ([LINK](#))

- **What it is:** Competitive **transit capital** for **ferry vessels, terminals, and related facilities** in **urbanized areas**. Capital only (no operating).
- **Gap type: Capital** for **water-taxi vessel** and **minimal landings** if the service is structured as public transit (with MPO/TIP/STIP alignment).
- **Eligible interventions:** A small **water-taxi** vessel and **basic terminal/landing** improvements at **Veteran’s Memorial Park/Manresa** if framed as transit access.
- **\$ / Match / Notes:** Applicants must be eligible **FTA recipients** (or work through one). Prep a transit use case (ridership, integration). **Operating costs are not eligible.**

### 4) U.S. Army Corps of Engineers (USACE) – Section 107 Small Navigation Projects ([LINK](#))

- **What it is:** Corps authority to improve **navigation** (dredging channels/anchorages, breakwaters, jetties/groins) with a **non-federal sponsor**; projects must be **economically justified, environmentally sound, technically feasible**. Capped **federal share** at **\$15M** per project (incl. feasibility/design/construction).
- **Gap type: Capital** for **navigation tweaks** that enable Inner Harbor reconfiguration (e.g., anchorage layout/dredge adjustments).
- **Eligible interventions:** Targeted **anchorage/channel** improvements near **North Anchorage** to unlock spacing/clearances.
- **\$ / Match / Notes:** Cost-share varies by phase; start with a **USACE feasibility determination**. Earlier district pages still reference **\$10M**, but an April 2025 fact sheet confirms **\$15M** current cap. ([LINK](#))

### 5) National Fish and Wildlife Foundation (NFWF) – National Coastal Resilience Fund (NCRF) ([LINK](#))

- **What it is:** Funds **planning, design, and implementation** of **nature-based solutions** that reduce coastal storm/flood risk and improve habitat; 2025 RFP framework posted (2025 RFP closed, track next round).
- **Gap type: Capital** (and pre-dev) for **eco-moorings** and **shoreline/habitat** elements tied to risk reduction.
- **Eligible interventions:** **Elastic-rode/pyramid-anchor eco-moorings** at **Shea/Chimon**; living shoreline/stabilization that protects access and moorings.

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- **\$ / Match / Notes:** Large awards possible; emphasize **risk reduction + habitat**; coordinate with CZMA consistency.

#### 6) NFWF / EPA – Long Island Sound Futures Fund (LISFF) ([LINK](#))

- **What it is:** Grants for projects that **restore the health of Long Island Sound**, habitat, water quality, community resilience; managed by NFWF with EPA/LISS. 2025 RFP posted **May 29, 2025** (closed); next round expected spring 2026. FY2025 grants ranged **\$50k–\$1.5M**.
- **Gap type: Planning/design** and **capital** for LIS-connected habitat/water-quality and community access tied to mooring sites.
- **Eligible interventions: Island access** stewardship, **green infrastructure** at landings, and **community engagement** for new eco-mooring zones.
- **\$ / Match / Notes:** Strong LIS nexus and partnerships score well; stack with NCRF/CVA/BIG.

#### 7) CT Port Authority – SHIPP (Small Harbor Improvement Projects Program) ([LINK](#))

- **What it is:** State grants for **municipal harbor/marina** improvements (small ports/harbors). SHIPP re-established/active in 2025; statute and program pages updated. Norwalk has applied and won this award this year with \$3.5M grant to upgrade the marina ([LINK](#)).
- **Gap type: Capital** for municipal harbor improvements (small landings, dinghy docks, ramps) at **Manresa/Gregory/Calf Pasture**.
- **Eligible interventions: Harbor access hardware**, modest **public floats**, **ADA ramps**, and small **dredging** tied to access.
- **\$ / Match / Notes:** Coordinate with Harbor Management Commission; good state companion to BIG/CVA.

#### 8) MARAD – Port Infrastructure Development Program (PIDP) (*aspirational, if terminal assets qualify*) ([LINK](#))

- **What it is:** Large federal capital for **port/terminal infrastructure**; FY2025 NOFO extended to **Sep 10, 2025** with resilience priorities.
- **Gap type: Capital** for terminal/landing infrastructure **if** framed as port access (public terminals, resilience).
- **Eligible interventions:** Only if landings/terminals meet **port** definitions and regional goods movement/tourism resilience benefits can be shown.
- **\$ / Match / Notes:** Very competitive; keep as a **future/aspirational** if terminal assets are scaled up.

#### 9) NOAA – Marine Debris Program (Removal & Interception) ([LINK](#))

- **What it is:** Competitive funding for **large marine debris removal** and **interception technologies** (FY2025 up to **\$54M** across two competitions; individual awards often **\$250k–\$1M**).
- **Gap type: Capital** for **debris removal** around landings/anchorages and **debris capture** at high-use mooring corridors.
- **Eligible interventions:** If needed, pre-installation cleanup at **Manresa/Gregory/Calf Pasture/Islands**; debris interception at harbor pinch-points.

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- **\$ / Match / Notes:** Relevant only if needed/useful. Align with resilience/ecosystem benefits and community volunteers/education. Recent FY2025 awards announced. ([LINK](#))

#### 10) EDA – Public Works & Economic Adjustment Assistance (PWEAA) ([LINK](#))

- **What it is:** Rolling federal capital for **public works and infrastructure** that spur jobs/tourism; also flexible **EAA** funding for resilience/economic change.
- **Gap type:** **Capital** for **waterfront access facilities** and **tourism-supporting infrastructure** tied to mooring expansion (job/visitor spend nexus).
- **Eligible interventions:** **Landings**, public realm connections to mooring fields, utility upgrades where they support local economic activity.
- **\$ / Match / Notes:** No deadline (rolling); must align with **WestCOG CEDS** and show quantifiable **jobs/visitation** impacts.

#### 11) CT Community Investment Fund 2030 (CIF 2030) ([LINK](#))

- **What:** State program funding **capital improvement programs** (infrastructure, public facilities, placemaking) and **planning for capital projects**; **Round 8** application window **Oct 27 – Dec 5, 2025**
- **Gap:** **Capital** (and **planning** tied to capital) for municipal waterfront access/amenities; **not** an operating subsidy.
- **Interventions (mooring-relevant):**
  - **Public access landings** and small **terminal-like improvements** (e.g., Manresa/VMP landings) supporting water-taxi and transient access;
  - **Dinghy docks, wayfinding**, site lighting, circulation, and ADA access at harbor edges;
  - **Placemaking** and public-realm upgrades at waterfront nodes that serve the mooring system.
- **\$ / Match / Notes:**
  - CIF encourages **leveraged stacks**; we can bundle **mooring landings + transient amenities** with street-end links as an “Urban Waterfront Access Initiative.” Guidance indicates capital/public-facility/infrastructure eligibility; Round 8 timetable confirmed on state portal and board packet.
  - Norwalk benefits from this program regularly, as a designated “Public Investment Community and Alliance District”. In the recent past rounds, Norwalk stakeholders have won grants for various projects. ([LINK](#), check Funded Projects)

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### 3. Funding Roadmap & Timelines

#### Opportunity to Develop a Bundled Narrative on Street Ends- and Moorings-Related Projects

As a potential guiding narrative for the Funding Roadmap, there could be an opportunity to bundle the investments identified so far as part of the Strategic Harbor Study on **street-end access** (ADA paths, overlooks, launches, signage, stormwater fixes) and **mooring system upgrades** (transient tie-ups, pump-out, water-taxi landings, eco-moorings) into a single, multi-site **Urban Waterfront Access Initiative**. Such a unified vision could help these investments be more competitive in funding search and easier to deliver, because it:

- **Ties outcomes to multiple policy goals at once** (equity access + recreation + resilience + economic vitality), which **CIF 2030** and several federal programs explicitly reward.
- **Packages readiness**: land-side elements (design/permitting is faster) can be shovel-ready while water-side items advance permitting—this “two-track” shows near-term impact and credible phasing.
- **Creates leverage and helps with matching funds**: one CIF 2030 request can underwrite the **land-side** public-realm/landing components and matching funds for **water-side** programs (BIG, CVA, NCRF/LISFF, USACE 107).
- **Simplifies O&M**: coordinated design standards, wayfinding, and launch/water-taxi interfaces reduce future operating friction under **Model 3 (Hybrid)**.

#### Funding Roadmap and Timelines

The Funding Roadmap and Timelines below present a suggested pathway around this vision, for illustrative purposes. The prioritization of programs and investments may change based on City of Norwalk and other relevant stakeholders’ preferences. While the Funding Roadmap and Timelines below assume a Q4 2025 start, that may be unrealistic/impractical, and this plan may need to start next year in 2026.

The information presented in this roadmap and timelines relies on publicly available information as of October 2025. Federal and state funding landscape changes dynamically, which may impact program and funding availability and eligibility criteria. There are also some mismatches between information across different pages on the same program, due to lack of updates or maintenance, or unclarity about the future of programs. The information below notes such discrepancies when possible. This roadmap may need to be adapted as new decisions on programs are made by federal and state authorities.

For the sake of simplicity of following along the roadmap below, we propose to categorize projects into packages as follows:

- **Package A — Street-Ends Access (Bundle 1 & 2)**  
Lowndes, Knorr, 1st, 3rd, Cove Ave: ADA access, overlooks/amenities, hand-carry launches, wayfinding, living shorelines, bioswales.
- **Package B — Mooring Access & Services**  
Calf Pasture & Gregory Point transient docks/utilities, pump-out boat, water-taxi vessel + minimal landings at Veteran’s Memorial Park/Manresa (if framed as transit), Inner Harbor reconfiguration start (North Anchorage).

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- **Package C — Eco-Moorings & Habitat**

Shea & Chimon Islands eco-moorings (elastic rodes/pyramid anchors), stewardship access, debris removal (if needed).

**Phase 1 (0-6 months: Q4-2025 → Q1-2026) — Launch & early submissions**

**Goal:** CIF 2030 can serve as the “capital anchor” and help lock in the land-side funding. It could also help serve as matching funds for other programs and facilitate applying for other quick-turn programs, while initiating long-lead navigation work.

- **CIF 2030 application – “Urban Waterfront Access Initiative” (Packages A+B land-side)**
  - *Why now:* Capital + planning tied to capital; bundles street-ends + land-side mooring landings/amenities; good fit for equity, placemaking, small-business/tourism impacts.
  - *Owner:* Economic Development (lead) + Harbor/Parks; Technical support may be needed.
  - *Prep checklist:* scope sheets & costings by site, concept plans, equity & small business narrative, tourism visitation logic, match stack (LoCIP, Trails, SHIPP), letters of support, 3-year operating bridge plan for Model 3 (non-grant O&M sources).
  - **Oct 27-Dec 5, 2025** window (Round 8)
- **CT Recreational Trails (Package A)** – Harbor Loop connections & water-trail touchpoints at 3rd/Knorr/Cove; interpretive signage at Lowndes/1st.
  - *Owner:* Parks/DPW; Technical support may be needed.
  - *Prep:* 30% concepts, quantity takeoffs, maintenance plan, partner letters.
  - **Apps due Dec 18, 2025**
- **USACE Section 107 initiation (Package B)** – North Anchorage reconfiguration feasibility.
  - *Owner:* DPW/Harbor; *Prep:* problem statement, bathymetry, mooring layout constraints, benefits (safety/capacity), environmental pre-screen, CZMA/SHPO coordination path.
  - Feasibility request (**rolling**)
- **BIG (Tier I pre-app) & CVA (Package B)** – Calf Pasture/Gregory transient + pump-out capacity.
  - *Owner:* Harbor + Parks; *Prep:* transient demand & berthing plan, utilities plan, O&M responsibility matrix, pump-out service plan.
  - BIG – Tier 1 (state) rolling; Tier 2 annual (monitor 2026 NOFO); CVA – CT program rolling / annual
- **LoCIP set-asides + design kick-off (Package A)** – lock local match; start 30% design on Bundle 1 street-ends.
  - *Owner:* DPW/Finance; *Prep:* council authorization, internal project IDs, procurement schedule.
  - Annual entitlement. Flexible, ideal as match.

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## Phase 2 (6–12 months: Q2-2026 → Q3-2026) — Federal stacks & permitting

**Goal:** Building on Phase 1, layer federal/state sources and de-risk permitting to hold construction schedules.

- **NCRF (Package A/C)** – living shorelines at Lowndes/1st, eco-moorings at Shea/Chimon.
  - *Owner:* Parks/Harbor. Technical support may be needed; *Prep:* risk-reduction metrics, habitat lift, design basis memo, monitoring plan, CZM consistency.
- **LISFF (Package A/C)** – LIS habitat/water quality + island access stewardship & education.
  - *Owner:* Parks. Technical support may be needed; *Prep:* LIS benefits, community partners, youth/education programming.
- **SHIPP (Package B)** – municipal harbor hardware (dinghy docks/ADA ramps, minor dredge for access).
  - *Owner:* Harbor/DPW; *Prep:* detailed layouts, costs, match commitments (CIF/LoCIP).
- **FTA Passenger Ferry (Package B, if transit-eligible)** – small vessel + minimal landings.
  - *Owner:* Transit/Harbor with MPO. Technical support may be needed; *Prep:* FTA eligibility path (apply through eligible sponsor), TIP/STIP inclusion, ridership/ops plan (capital-only), Title VI/ADA.
- **CWSRF/Clean Water Fund financing (Package A)** – bioswales/shoreline stabilization/green stormwater.
  - *Owner:* DPW/Finance; *Prep:* readiness documentation, benefits, integration with Trails/LWCF contracts.
- **Permitting & compliance (cross-cutting)** — DEEP, USACE, CZMA, SHPO, floodplain; align specs across street-ends & landings to standardize details and shorten review cycles.
  - *Owner:* DPW/Harbor/Parks; *Prep:* one consolidated permit matrix & submittal calendar.

## Summary of funding gap closure

As a summary of the above Funding Roadmap, capital and operational costs identified under Section 1. Potential Project Portfolio to be Funded can be closed in the following way. There will be other sources needed, especially on the operational side, since operational expenses are not eligible to be covered by many of the programs.

- **Capital:** Use **CIF 2030** to anchor land-side costs and matching shares; stack **BIG** (transient), **CVA** (pump-out), **NCRF/LISFF** (eco/living shoreline), **SHIPP/LoCIP/CWSRF** (state + financing) and, where justified, **USACE 107** for navigation components.
- **Operating (Model 3 ≈ \$63k/yr, first 3 years):** cover via **sponsorships/PPPs**, fare policy tuning, and small City set-aside; the roadmap targets **utilization growth** and **lower unit costs** by standardizing equipment and concentrating demand at improved landings.



# Appendix

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# Norwalk Strategic Harbor Study | Stakeholder Engagement Plan -

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# Introduction

This Stakeholder Engagement Plan details Indigo River and HR&A Advisors' ("the Team") proposed efforts to engage stakeholders in support of the Norwalk Harbor Strategic Study ("the Study"). Indigo River will be responsible for implementing the Stakeholder Engagement Plan alongside the City of Norwalk Planning and Zoning Office.

The stakeholder engagement will span the following categories of engagement throughout the project:

- **Five Focus Groups** with community members living near and working in and around the Harbor will inform an understanding of the status of and potential opportunities for the recreational and commercial uses of the Harbor and current public access, including possibilities to increase public access.
- **Three rounds of interviews** will be held with relevant stakeholders, including industry representatives, agencies, committees, and commissions who have jurisdiction over the operation of the Harbor. The purpose of these interviews will be to inform initial Existing Conditions Analysis, vet findings from the Focus Groups and initial analysis, and discuss preliminary recommendations with respect to the feasibility of regulatory alternatives and non-regulatory pathways for realizing City and stakeholder goals for the Plan.
- A **Steering Committee** of local experts will oversee development of the Study, ensuring it meets the stated goals of the RFP, and will regularly engage with the Team to oversee progress, provide feedback, and approve materials before they are made public.
- A **project website**, developed and managed by the City, where the public can go to get updates on the project, see deliverables, and submit comments.

Please note that final agendas and discussion guides for the Focus Groups will be delivered to the City one week in advance of when they will occur, currently projected to take place in April. We will leverage our Existing Conditions Analysis and Industrial Analysis and the first round of interviews, to take place in February and March, to draft the finalized agendas and discussion guides for the Focus Group discussions. The Appendix in this Stakeholder Engagement Plan includes a Focus Group Working Questions bank, which is meant to provide a sample of the topics and questions we intend to cover in the Focus Groups, but these questions should not be considered as final agendas or discussion guides. Following the completion of the Focus Groups, the Team will compile the findings into a "Synthesis Memo," to be presented to the City in June.

## Engagement Objectives

- Ground-truth emerging findings from baseline conditions analysis against the lived experience and expertise of local stakeholders and decision-makers.
- Confirm and socialize the primary goals of the Study.
- Identify priorities of different stakeholder groups and understand the reasons for and possible solutions to any disagreements.

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# Engagement Strategy

## Key Stakeholder Groups

- **Local community members**, including both those living near the Harbor, who access it for recreation and leisure activities, and those living and working in and around the Harbor, such as marina and boat club operators, shellfish business owners, rowing club representatives, and additional for profit and non-profit entities with interests in the Harbor.
- Employees and owners of both **recreational businesses and nonprofits** including boat clubs, rowing clubs, the Maritime Aquarium, and the Seaport Association, and **business enterprises** related to the oyster industry, marine construction, marinas, as well as other waterfront industrial and commercial businesses.
- **Public agencies, departments, commissions, and committees** including the Connecticut Department of Energy & Environmental Protection (CTDEEP), U.S. Army Corps of Engineers (USACE), Norwalk Harbor Management Commission, Mayor's Water Quality Committee, Norwalk Shellfish Commission, Norwalk Marine Police Unit, Norwalk Marine Fire Unit, Norwalk Recreation and Parks, and the Norwalk Water Pollution Control Authority, Norwalk Department of Health, Norwalk Department of Public Works, and the Five Mile River Commission.

## Summary of Key Engagement Strategies

### Focus Groups

- **Who is engaged:** Norwalk residents, avid Harbor users, Harbor employees, and local business owners.
- **Engagement process:** The Focus Group conversations will pertain to strengths and weaknesses of recreational and commercial uses of the harbor as well as public access to the Harbor and Norwalk waterways.
- **Number of touchpoints:** There will be five total Focus Groups.
- **Goal & Outcomes:** The Focus Groups will help inform takeaways from both the Existing Conditions Analysis as well as the Industrial Economic Analysis, including for water-dependent uses, and preliminary recommendations.

### Stakeholder Interviews

- **Who is engaged:** State and local stakeholders, including agencies, committees, commissions, and industry representatives.
- **Engagement process:** There will be three rounds of interviews. To the extent possible, each round will consist of one group interview. The first round will focus on orienting stakeholders to the Study and addressing questions related to the Harbor baseline conditions and opportunities analysis. The second round will inform stakeholders of the findings of the initial analyses as well as the Focus Groups. The third round will focus on sharing and discussing preliminary recommendations.
- **Number of touchpoints:** There will be at one group interview per round, with an emphasis on bringing together as many stakeholders as possible to maximize cross-sector discussion.
- **Goal & Outcomes:** The interviews will orient agency stakeholders on the project, vet findings, and assess recommendations with respect to the feasibility of regulatory alternatives and non-regulatory pathways for realizing City and stakeholder goals for the Study.

### Steering Committee

- **Who is engaged:** A committee comprised of local experts including representatives from the Harbor Management commission and waterfront businesses.

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- **Engagement process:** The Steering Committee will meet monthly with the Team to discuss progress, and review deliverables.
  - **Number of touchpoints:** There will be approximately eight Steering Committee meetings.
  - **Goal & Outcomes:** The Steering Committee will provide feedback, be a voice for the public, and ensure the Study aligns with the goals laid out in the RFP.

### Project Website

- **Who is engaged:** The public.
- **Engagement process:** The public page is currently active on the Norwalk Tomorrow website and will be updated accordingly. The public will be able to review published materials and submit input.
- **Number of touchpoints:** Ongoing.
- **Goal & Outcomes:** Keep the public informed of the progress and outcomes of the Study as well as opportunities to provide input.

## Engagement Timeline

	FEBRUARY				MARCH				APRIL				MAY				JUNE				JULY				AUGUST				SEPTEMBER																																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32																																				
<b>Project Tasks and Deliverables</b>																																																																				
<i>Harbor Baseline Conditions</i>	█				█																																																															
<i>Industrial Analysis</i>					█				█												█																																															
<i>Harbor Management Strategy</i>																	█																█																																			
<i>Harbor Funding Opportunities</i>																	█																█																																			
<i>Final Deliverable</i>																													█																																							
<b>Engagement Components</b>																																																																				
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<i>Steering Committee</i>	█				█				█				█				█				█				█				█				█				█																															
<i>Project Website</i>	█																																																																			

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# Appendix

## Focus Group Details

Indigo River will facilitate five Focus Group interviews with support from the City of Norwalk Planning and Zoning Office. In particular, the Planning and Zoning Office will help identify Focus Group participants. The Focus Groups will consist of:

- Two in person or remote Focus Groups with Norwalk residents and avid harbor users.
- One in person or remote Focus Group with workers employed in water-dependent industries at or associated with the Harbor.
- Two in person Focus Groups with property owners and water-dependent business owners, both industrial and recreational, like marina and rowing club operators.

### Proposed Focus Groups

Focus Group	Discussion Topics
Norwalk residents and avid harbor users	Recreational harbor uses, public access
Harbor workers	Commercial and recreational harbor uses, economic conditions and opportunities
Harbor business owners	Commercial and recreational harbor uses, economic conditions and opportunities, public access, water quality

### Representativeness Thresholds

The Team used 2023 American Community Survey 5-year estimates for the Census Tracts that border the Harbor to determine reasonable representativeness thresholds. This baseline will serve as a reference point against which the Team will assess the demographic makeup of our Focus Groups, ensuring that they authentically capture the richness and diversity of the Harbor community:

- 5% Asian American and Pacific Islander,
- 20% Black, and
- 30% Latino/Hispanic

In addition, the Team will ensure that for the harbor employees and business owner conversations there is adequate representation across all kinds of business including those that are representative of the blue economy, as that is of particular focus.

The Team will work with the City of Norwalk as well as local community-based organizations to identify those interested in participating in the Focus Groups.

### Location

In-person Focus Groups will be held in the Planning and Zoning conference room at Norwalk City Hall.

### Focus Group Run of Show

Indigo River will facilitate the Focus Groups, with both a facilitator and notetaker, with support from Norwalk Planning and Zoning office. Focus Groups will take place via Zoom or in-person and should not exceed 2 hours. At

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least 48 hours prior to each Focus Group, Indigo River will email participants a Focus Group discussion guide with discussion questions and suggested ground rules.

- **Introductions and Ground Rules (5 min)**
- **Project Overview (10 min)**
- **Questions & Discussion (60-90 min)**
  - Preliminary list of questions outlined on page 10 of this document
- **Conclusion (5 min)**

#### **Sample Ground Rules for Focus Group Discussion**

1. Treat everyone in a dialogue as an equal: leave role, status, and stereotypes at the door.
2. Search for assumptions and biases (especially your own).
3. Be open and listen to others, even when you disagree, and suspend judgment. (Try not to rush to judgment).
4. Listen with empathy to the views of others: acknowledge you have heard the other, especially when you disagree.
5. Look for common ground.
6. Express disagreement in terms of ideas, not personality or motives.
7. Keep dialogue and decision-making as separate activities. (Dialogue should always come before decision-making.)
8. All points of view deserve respect.

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## Stakeholder Interview Details

The Team will conduct stakeholder interviews in three rounds. For each round the Team's intent is to hold one virtual group interview. We believe that this format will facilitate important cross-sector discussion. The first round will focus on orienting stakeholders to goals and process of the Study as well as addressing any uncertainties resulting from the baseline conditions analysis. In the second round the Team will present on findings from the initial analysis as well as the Focus Groups. In the third round, the Team will present on preliminary recommendations and discuss feedback with stakeholders.

### List of Stakeholders and Connection to the Harbor

Stakeholder(s)	Relevance to Harbor
Harbor Management Commission	Overall implementation
City of Norwalk	Overall implementation
City of Norwalk Director of Sustainability and Resilience	Harbor resilience
Connecticut Department of Energy & Environmental Protection (CT DEEP)	Harbor management, harbor development
U.S. Army Corps of Engineers (USACE)	Harbor management, harbor development
Norwalk Harbor Management Commission	Harbor management, harbor development
Mayor's Water Quality Committee & Norwalk Shellfish Commission	Water quality, commercial uses
Norwalk Marine Police Unit & Norwalk Marine Fire Unit	Recreational uses, public access
Norwalk Department of Recreation & Parks, Water Pollution Control Authority, Department of Health & Department of Public Works	Water quality
Environmental Non-Profits	Water quality, public access
Devine Brothers, Crystal Ice, King Industries, etc.	Water-dependent industrial uses
Oyster industry (e.g., Copps Island Oysters)	Aquaculture industry
Boat Club (e.g., Sprite Island Yacht Club) or Rowing Club (e.g., Maritime Rowing Club)	Boating industry

### Round One (February/March) Interview Agenda

The Team expects to facilitate interviews with at minimum two team members—a facilitator and a notetaker—and the interview stakeholder. Interviews will take place via Zoom or in-person and should not exceed 1 hour. At least 24 hours prior to each interview, Indigo River will email participants an agenda.

- **Introductions (10 min)**
- **Project Overview (15 min)**
- **Q+A on baseline Harbor conditions and opportunities (30 min)**

- 
- **Conclusion (5 min)**

#### **Round Two (May) Interview Agenda**

- **Introductions (5 min)**
- **Overview of Findings from Work to Date (25 min)**
  - **Baseline conditions analysis**
  - **Industrial analysis**
  - **Focus Groups**
- **Group Discussion on Findings (25 min)**
- **Conclusion (5 min)**

#### **Round Three (August/September) Interview Agenda**

- **Introductions (5 min)**
- **Overview of Preliminary Recommendations (25 min)**
  - **Industrial analysis**
  - **Management strategy**
  - **Funding opportunities**
  - **Harbor enhancement and development**
- **Group Discussion and Feedback on Preliminary Recommendations (25 min)**
- **Conclusion (5 min)**

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## Steering Committee Details

The Strategic Harbor Study Steering Committee consists of local representatives, including the City of Norwalk, Harbor Management Commission, and recreational, commercial, and industrial businesses. The Team will meet with the Committee on a monthly basis to share work and receive feedback. The Committee will hold the Team accountable to producing a Study that aligns with the stated goals of the RFP. Below is the list of Steering Committee members.

### Steering Committee Members

Member Name	Member Association
Steve Kleppin	City of Norwalk
Amelia Williams	City of Norwalk
Robert Stowers	City of Norwalk
Alan Kibbe	Harbor Management Commission
Chris MacDonnell	Harbor Management Commission
Jeff Mangels	Harbor Management Commission
Matt Gifford	Harbor Management Commission + Sprite Yacht Club
Steve Bartush	Shellfish Commission
Roman Vengerovskiy and Sharon Kriz	Maritime Rowing Club
Jason Paltis	Maritime Aquarium
Jerry Toni	Seaport Association
Norm Bloom	Copps Island Oysters
Kelly Bloom	Copps Island Oysters
Gary Wetmore	Marine Services
Dick Harris	Water Quality

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## Focus Group Working Questions

### Norwalk Residents and Avid Harbor Users

- How do you think the area around the Harbor has changed in recent years demographically and economically? What are the factors driving that change?
- What recreational uses of the Harbor are thriving? What is struggling?
- What is your experience with public access of the harbor? What are the barriers to increasing access?
- What are the community's biggest unknowns and concerns regarding planning efforts for the Harbor?

### Harbor Workers

- How do you think the area around the Harbor has changed in recent years in terms of economic opportunity? What are the factors driving that change?
- Are there particular industries that are thriving or struggling from the perspective of attracting workers? Are there specific skills and/or educational barriers preventing workers from accessing the jobs available?
- What are other big, up-and-coming economic opportunities on your radar? Are there gaps that local workers need to overcome to access these opportunities?
- What recreational, commercial, and/or industrial businesses of the Harbor are thriving? What is struggling?

### Harbor Business Owners

- How do you think the area around the Harbor has changed in recent years in terms of recreational, commercial and industrial uses? What are the factors driving that change?
- What are the specific challenges and needs for recreational and transient boating, aquaculture and fisheries, and industrial water-dependent businesses?
- Are there any challenges your business faces in terms of attracting skilled workers?
- How is water quality affecting current Harbor uses?
- How is the current state of public access affecting business health?

## Strategic Harbor Study Steering Committee – Introductory

Meeting Monday, February 24, 2025 6:00 PM

### Attendees:

#### Indigo River Team:

- Shea Thorvaldsen, Laura Kenny, Alix Pauchet

#### HR&A:

- Anna Messer

#### Steering Committee Members:

- Steve Kleppin – City of Norwalk
- Amelia Williams – City of Norwalk
- Robert Stowers – City of Norwalk
- Alan Kibbe – Chair, Norwalk Harbor Management Commission
- Chris MacDonnell – Harbor Management Commission
- Jeff Mangels – Vice Chair, Norwalk Harbor Management Commission
- Matt Gifford – Norwalk Harbor Management Commission + Sprite Yacht Club
- Jerry Toni – Executive Director, Norwalk Seaport Association
- Norman Bloom – Copps Island Oysters
- Gary Wetmore – Marine Services
- Jason Patlis – Maritime Aquarium

### Meeting Summary

#### 1. Project Overview – Indigo River

- The Waterfront Industrial Study focuses on in-water activity.
- IR will review existing studies and conduct an audit on current harbor uses and share findings by the end of March. This audit will include physical and economic analyses

#### 2. Defining Water-Dependent Uses

- The Steering Committee is needed to help define water-dependent uses to guide HR&A's study.
- A memo on water-dependent uses was shared; feedback is requested within a week.
- Zoning & NAICS Code Considerations
  - Chris MacDonnell emphasized the importance of Marine Commercial Zoning in the updated code.
  - NAICS Codes will be used to classify harbor-related businesses at a six-digit specificity for accurate data analysis.
  - Jerry Toni asked about zoning implications—IR confirmed this study may recommend additional harborside use opportunities which could be incorporated into future zoning re-writes but this study is not a zoning re-write.
  - Jason Patlis noted missing environmental and educational jobs in NAICS classifications—these will be included in future iterations. Examples include conservation biologists and environmental educators, specifically in coastal policy.

- Alan Kibbe highlighted the historical shift in Norwalk's harbor and the opportunity to repurpose underutilized infrastructure like Manresa Island.

#### **4. Stakeholder Interviews & Public Comments**

- Steering Committee members will assist with community outreach by providing feedback on existing materials based on their own expertise and sitting in on interviews in relevant scenarios.

#### **5. Open Discussion**

- Chris MacDonnell will share past Port Authority grant materials on Street Ends Study to avoid duplicating efforts.
- No additional public comments.

#### **Next Steps**

- Indigo River to send a poll for recurring Steering Committee meetings.
- Committee members to review the memo shared by HR&A and submit feedback within a week.
- Chris MacDonnell to share relevant materials through Amelia.

## Meeting Notes: Norwalk Strategic Harbor Study - Stakeholder Committee

Meeting Date: March 18, 2025

Time: 1:00 PM

### Attendees:

- Indigo River: Annie Boggs, Alix Pauchet, Athena Unroe
- HR&A Advisors: Anna Messer, Erman Eruz
- City of Norwalk: Steven Kleppin (Amelia Williams absent due to jury duty)
- Stakeholders: Representatives from Norwalk Police Marine Unit, Harbor Management Commission, Sustainability Office, Oyster Industry, King Industries, Harbor Master, Army Corps of Engineers, Save the Sound, Harbor Watch, and Norwalk Parks Dept.

### 1. Purpose of Meeting

- First stakeholder meeting for the Norwalk Strategic Harbor Study, led by Indigo River in collaboration with HR&A Advisors and the City of Norwalk.
- Establish baseline conditions, gather input on harbor use, and identify key challenges and opportunities.
- Engage key stakeholders to ensure the Study reflects both commercial and recreational needs of the harbor.

### 2. Project Overview & Timeline

- Goals: Improve harbor functionality, enhance economic impact, optimize public access, expand tourism, and activate underutilized spaces.
- Phases of Work:
  - Task 1 (Ongoing): Audit of current harbor uses, including employment and industry trends, infrastructure conditions, and economic activity.
  - Task 2: Develop recommendations based on stakeholder input and best practices.
  - Task 3: Stakeholder engagement through committee meetings, focus groups, and public forums.
  - Task 4 & 5: Studies on city-owned sites and mooring infrastructure to support harbor use and management.
- Engagement Plan:
  - April: Focus groups with harbor users, residents, and businesses.
  - May: Stakeholder follow-up meeting to review findings and preliminary recommendations.
  - August/September: Final review of recommendations and Study completion.

### 3. Key Discussion Points

#### Employment & Industry Trends

- Healthcare & Education: Comprise approximately 1/3 of jobs in the harbor area, likely due to Maritime Aquarium, a new elementary school, and expanded medical offices.
- Administration & Waste Management: Notable increase in employment, potential connections to harbor-related operations, but requires further analysis.

- Fishing & Aquaculture: Shellfishing industry is significant, with year-round operations, but commercial fishing presence is minimal. Employment data may underrepresent the sector.
- Dredging & Mooring: Shallow waters hinder mooring capacity and economic activity. Federal dredging data is limited, though a local survey identified needs for additional dredging outside the federal channel.

#### **Public Access & Infrastructure**

- Gaps in Public Access:
  - Street-end access in East Norwalk (1st, 2nd, 5th St.), Harbor View, and Village Creek missing from public records.
  - Oyster Shell Park: Planned kayak access not implemented.
  - Woodward Ave. Park: Wetland access limited due to overgrowth of phragmites.
  - Fitch Point (Seaside Place): Previously public, now gated off, raising concerns about lost community access.
  - Norwalk Islands: City-owned campsites exist but need significant repairs and maintenance.
- Waterfront Businesses: Many marinas, oyster farms, and waterfront restaurants offer informal public access and contribute to harbor activity.
- Obsolete Infrastructure: Some docks, piers, and access points require rehabilitation or better signage to ensure usability.

#### **Challenges & Opportunities**

- Limited kayak and small boat launch sites, despite strong community demand.
- Coastal erosion & extreme weather impacts require long-term resilience planning and infrastructure adaptation.
- Declining commercial waterfront activity presents an opportunity for expanded recreational boating, tourism, and public waterfront spaces.
- Mooring field underutilization due to shallow depths. Limited anchorage for mid-to-large-sized vessels.
- Eco-tourism potential (e.g., Sheffield Island Lighthouse tours, Maritime Aquarium programs, and expanded harbor tours).
- Manresa Island redevelopment represents a major opportunity for public waterfront access and green space.
- Comparison with best practices from other waterfront communities (e.g., Northport, NY) to identify successful models of waterfront activation.

#### **4. Additional Stakeholder Feedback**

- Harbor Tour Opportunity: Deputy Harbormaster Owen Lee offered to take the project team on a Norwalk Marine Police vessel tour of the harbor to provide a firsthand understanding of site conditions.
- Refinement of Harbor Use Maps: Stakeholders noted that marinas in Norwalk are commercial businesses but primarily serve recreational vessels. Future mapping efforts should distinguish between commercial marina operations and the number of recreational vessels supported, including those in slip versus rack storage.
- Marina & Marine Business Engagement: Stakeholders suggested incorporating insights from:
  - Cove Marina (largest marine in Norwalk)

## Norwalk Harbor Strategic Study

### Recreational Harbor Users Focus Group – Compiled Notes:

Focus Group 1: May 20, 2025, 1:00PM-2:00PM

In Attendance: Matt Gifford, Jim Cooper, Sue Powers

Focus Group 2: May 28, 2025, 5:00PM-6:00PM

In Attendance: Sue Powers, Brad Craighead, Tracy Craighead

### Takeaways

#### 1. Access & Equity

- There is a strong desire for equitable, safe, and affordable access to the harbor for all residents, including those who don't own boats.
- Public access points are limited, especially for residents living in neighborhoods like South Norwalk.
- Several participants emphasized a lack of ADA-compliant infrastructure and poor sidewalk and bike access to the water.
- Participants expressed that water-based recreation is often perceived as elite; there is a desire to democratize access for a wider range of residents.

#### 2. Infrastructure & Maintenance

- Multiple docks, piers, and access points are in disrepair or underutilized, with specific concern for long-standing neglect at rowing and public launch facilities.
- Suggestions included better signage, lighting, maintenance, and restroom access at key sites.
- The need for a harbor-wide maintenance strategy was raised, including dredging coordination and bulkhead repair.

#### 3. Recreation & Programming

- Participants advocated for expanded programming (kayak rentals, environmental education, boat tours) to draw broader community engagement.
- There was support for the idea of a water taxi service that would help connect harbor users and residents. Some community members also expressed interest in paddle share or rental programs similar to bike share models.
- Highlighted the importance of youth programming, swimming instruction, and field trip opportunities to increase familiarity and comfort with the water.
- Importance of closing gaps in the Norwalk River Valley Trail, so there is a connecting walkway all the way along the river.

#### 4. Environmental Concerns

- Strong concern for water quality, particularly after rainstorms due to combined sewer overflows and stormwater runoff, particularly along the river.
- Participants mentioned the presence of trash and oil slicks, and expressed frustration with limited enforcement around polluting boats.
- Advocated for ongoing monitoring, education, and stewardship, especially through partnerships with local environmental organizations.

#### 5. Coordination & Communication

- There was a repeated call for greater transparency and coordination among harbor stakeholders—e.g., NHMC, city departments, private marina operators.

- Suggested the creation of a “Harbor User Group” or shared calendar to align events, maintenance schedules, and dredging efforts.
- Some confusion remains over which city departments are responsible for specific harbor functions.

## **Business Owner Focus Group One Summary**

### **Attendees:**

- Norwalk Cove Marina – Mike Garvey, Jon Wilkins, Rob Gardella
- G&C Marine Servies – Gary Wetmore
- O&G Industries – TJ Oneglia, Richard Warren
- Maritime Aquarium – Jason Patlis
- King industries – Robert King

### **Takeaways**

- 1. The Harbor's Water-Dependent Industry is Essential and Vulnerable**
  - a. O&G, Gary Wetmore, and Norwalk Cove emphasized that water-dependent businesses are vital to Norwalk's economy and infrastructure.
  - b. These businesses rely on barge access, contractor yards, and marine infrastructure to deliver services that support both commercial and recreational waterfront uses.
  - c. Gary's marine construction company is at risk of closure due to the loss of leased yard space to condo development.
- 2. Loss of Industrial Space = Loss of Services**
  - a. Condos, rowing clubs, and recreational development are replacing industrial uses, often without consideration for the services that support them (e.g., dock maintenance, barge deliveries, marine repairs).
  - b. If local businesses like Gary's close, prices for marine construction and maintenance will rise, and services will have to come from outside the region (e.g., New York), increasing costs and emissions.
  - c. Maintaining dredging and harbor access is critical for all users (O&G does this at the top of the Harbor and the marinas benefit).
  - d. Tourism and recreation depend on a healthy, functional waterfront—boats, marinas, and access to the islands. These uses are interdependent with industrial services that maintain infrastructure and ensure safety.
- 3. Infrastructure & Material Supply Chain**
  - a. Barge transport is the most efficient, cost-effective, and environmentally friendly way to bring in construction materials like sand, stone, and asphalt.
  - b. Loss of the local asphalt plant and lack of local quarries mean materials must come from farther away, increasing truck traffic on I-95, emissions, and costs.
- 4. Workforce Development & Retention**
  - a. There is a shortage of skilled tradespeople (carpenters, electricians, marine techs), and businesses are struggling to find and retain qualified workers.
  - b. A barrier to attracting qualified workers is housing affordability and cost of living.
  - c. There are some career exposure programs, such as the maritime pathways program at the aquarium, but connections between these programs and the businesses does not exist.
- 5. Business Ecosystem and Policy Disconnect**
  - a. Stakeholders feel that zoning and planning decisions celebrate Norwalk's industrial past but fail to protect its industrial future.
  - b. There's a disconnect between recreational development and the services that support it—without marine contractors, dredging, and barge access, the waterfront cannot function.

- G&C Marine (Marine Construction company)
- Additional local marinas, business owners, and other harbor users to further refine the Strategic Harbor Study.
- Expanding Comparative Research: Stakeholders recommended visiting other harbors with similar characteristics to Norwalk's but with different development approaches. Northport, NY, was suggested as a useful case study.

## **5. Next Steps**

- Refining public access maps based on stakeholder feedback.
- Engagement with additional stakeholders (Cove Marina, G&C Marine) for further insights.
- April: Conduct focus groups with residents, businesses, and recreational harbor users.
- May: Stakeholder committee follow-up meeting to review findings and preliminary recommendations.
- Ongoing: Collaboration with CT DEEP, Harbor Watch, Norwalk River Watershed Association, and other key organizations to align harbor planning efforts.
- Exploring models from other Long Island Sound communities to inform final recommendations.
- Coordination of Harbor Tour: the project team will reach out to Owen Lee to schedule the harbor tour.



## Comments on the Strategic Harbor Study

October 10, 2025

Comments prepared by Jason Patlis, Sarah Crosby, Nicole Rosenfeld

### DRAFT MOORING STUDY (August 5, 2025 Version) Comments

#### Specific Comments:

- Page 1: With regards to the framing and description of the intent here: The City is “*interested in expanding access to the waterfront through public mooring fields...*” Mooring fields do not necessarily expand access to the waterfront. To own a boat that would make use of these mooring fields presumably requires existing waterfront access elsewhere.
- Page 3: Is New York Harbor a reasonable proxy for Norwalk Harbor in terms of boat wake? Some areas of the proposed mooring fields will experience significant boat wakes regularly.
- Page 13: This is critical: “Access to parking and/or biking and walking paths, including activating underutilized street ends.” There is an opportunity here to serve more residents, not only those with the means to own a boat.
- Page 13: Agree with “mandatory” designation of requirement for addition of more pump out boats (Norwalk Harbor water quality remains impaired and sewage pollution prevention should be a priority)
- Page 25: Additional water taxi locations to serve neighborhoods, Washington Street business, the Aquarium, Oyster Shell Park, Wall Street, etc. should be considered, which would serve the dual purpose of providing mooring access *and* expanding waterfront access to all residents (not just those who already have access to the Sound by virtue of owning a boat)

#### General Comments:

- The Aquarium partnered with the City on a feasibility study for shoreline restoration at Veterans Memorial Park, and a broader analysis of potential changes to the park is under way; we request that the City prioritize the ecological and community benefits planned through that restoration planning (already underway) should a water taxi station at Vets Park be included in service of the mooring fields.
- The Study should consider the recent trend toward converting working waterfront to residential, which may serve to erode the network of businesses and infrastructure that allow for a thriving boating community and vessel-based industry/blue economy.
- Potential impact on commercial shellfishing industry and recreational shellfishing are not adequately addressed by this report and must be considered due to their economic, social, and historical importance in Norwalk.
- What is the current use of the proposed sites for additional moorings? What are the ecological, social, and economic considerations?
- Protection of the unique ecology of the Norwalk Islands should be given far more consideration in this decision-making process than is reflected in this report. Would this reduce damage from anchors OR increase visitation overall, thus promoting a net increase in habitat destruction? The Norwalk Islands have been found to be critical bird habitat by our partners at Audubon; how will increased boat traffic



and increased human presence impact the ecological function of the islands near the mooring fields? The islands are also known resting areas for Harbor Seals and other fauna, which are disrupted by boats even at distance; how will negative impacts on these species be prevented? We express particular concern about Chimon and Shea.

- How will these mooring areas impact vessel traffic overall and the flow of vessel traffic; the Harbor is already dangerous to navigate due to the abundance of rowers (rowing clubs are not addressed in this report). How will potentially dangerous conflicts be prevented or mitigated?
- Expanding the mooring fields and encouraging more boaters and traffic is in potential conflict with a goal identified in the strategic documents of supporting more kayak and SUP usage due to increasing demand. When these are launched, due to the shape of the harbor and its two primary channels, if kayakers and SUPers are headed toward the islands they will inevitably need to cross a main channel. Higher volume of boat use can pose safety challenges, with increased risk of collisions. Perhaps having a kayak/SUP “trail” could encourage use of those personal watercraft in particular areas that could be identified to boaters.
- The Study should consider currents, particularly after our now-regular storms where we can experience multiple inches of rain in a few hours.
- The Study should consider the potential opportunity for a mooring field for transient visitors at Manresa Island.

#### City Owned Street Ends Comments (Task 2.4, August 2025 Version)

- This is a commendable effort well aligned with TMA’s strategic plan. I am pleased to see the care taken to consider both ecological and social factors. There is a great opportunity here for shoreline restoration and multi-use living shorelines; we would welcome the opportunity to partner with the City on these efforts. There may be an opportunity for partnership on the interpretive signage proposed for the priority sites as well as habitat restoration.
- The City’s goals and prospective plans as described are well aligned with the goals of the Long Island Sound Partnership, which oversees multiple federal funding programs that would seem a likely good fit for this work.

#### Strategic Harbor Study (Task 2.3, September 2025 Version)

- No comments on this