Gloucester Municipal Harbor Plan Update
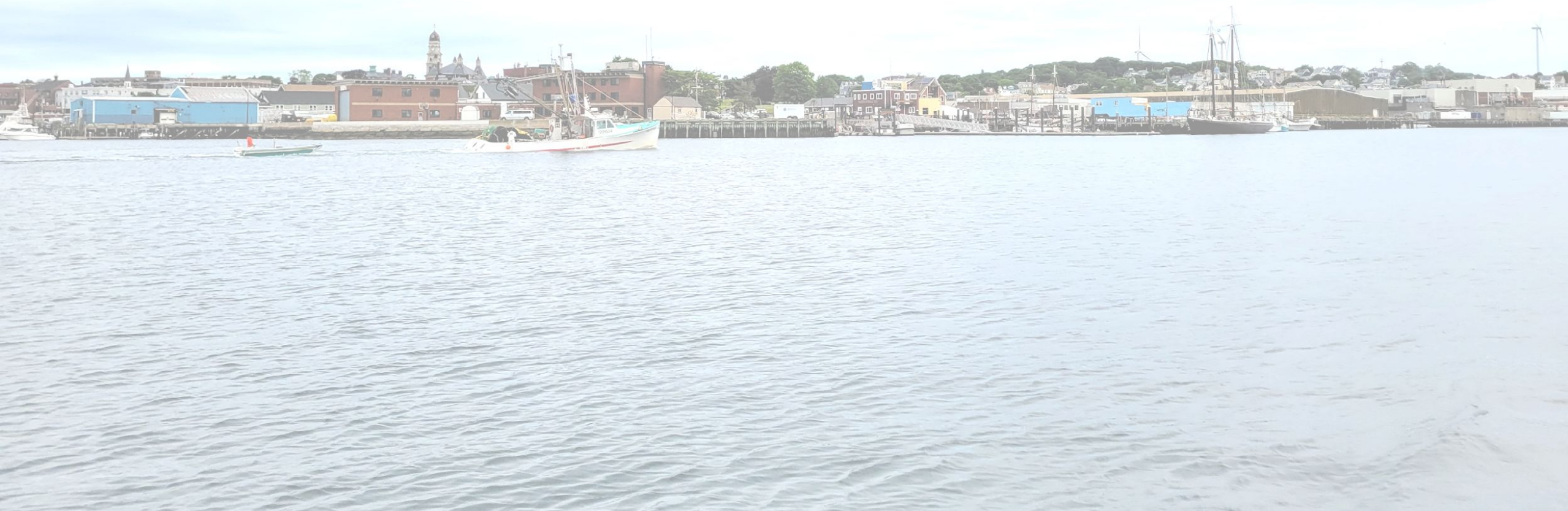## Economic Strategy Baseline Detail
September 1, 2021

Table of Contents

1. Engagement Summary

2. Blue Economy Basics

3. Gloucester's Economic Baseline

    a. FISHING & SEAFOOD

    b. TOURISM & RECREATIONAL BOAT USE

    c. MARINE SCIENCE & BLUE TECH (WAITING FOR NSBE REPORT RELEASE)

4. Gloucester's Resilience & Infrastructure Baseline

    a. INFRASTRUCTURE CONDITION

    b. FLOOD RISK

5. Initial Economic Strategy Sub-Areas

Initial Outreach Takeaways

COMMERCIAL FISHING/PROCESSING
How can we position Gloucester to thrive in a shifting market?

- Market is shifting from large-boat to smaller-boat operations and catch type is evolving from cod/groundfishing towards lobstering.

- Future of a thriving economy may not be about volume but rather how you put together ocean resources and processing ability.

- How can Gloucester protect affordable docking while making properties productive with healthy revenue? What is the balance of recreational vs commercial and transient vessel dockage?

- Meeting seafood processing wastewater regulations can be expensive - it is worth exploring collective solutions.

ECONOMIC DEVELOPMENT
Where is Gloucester going as a 21st century fishing port?

- How do we cultivate a harbor ecosystem, an "ocean cluster"?

- How to cultivate a balance of fishing and compatible uses? Open to tourism & blue tech if they support more traditional industries.

- Desire to make Gloucester more attractive to developers.

- Marine research seen as positive development.

- Desire for the harbor's economic strategy to connect beyond the harbor

REGULATIONS & MHP PROCESS
How can we use the DPA to support a broader economic strategy?

- General public feels DPA complicates and hinders development while Fishing industry feels the DPA is the only thing that keeps area from being flipped.

- A lot of complexity of regulation interaction (Federal, DPA, Ch91): property and business owners need guidance/examples of successful outcomes.

- Small properties have a hard time with Water Dependent Use Zone.

- How to adapt definitions to welcome in 21st Century uses that support a thriving/competitive harbor economic ecosystem while retaining protection?

- How can we provide more predictability: you can get all the way to the altar and get turned away for Water Dependent Industrial uses.
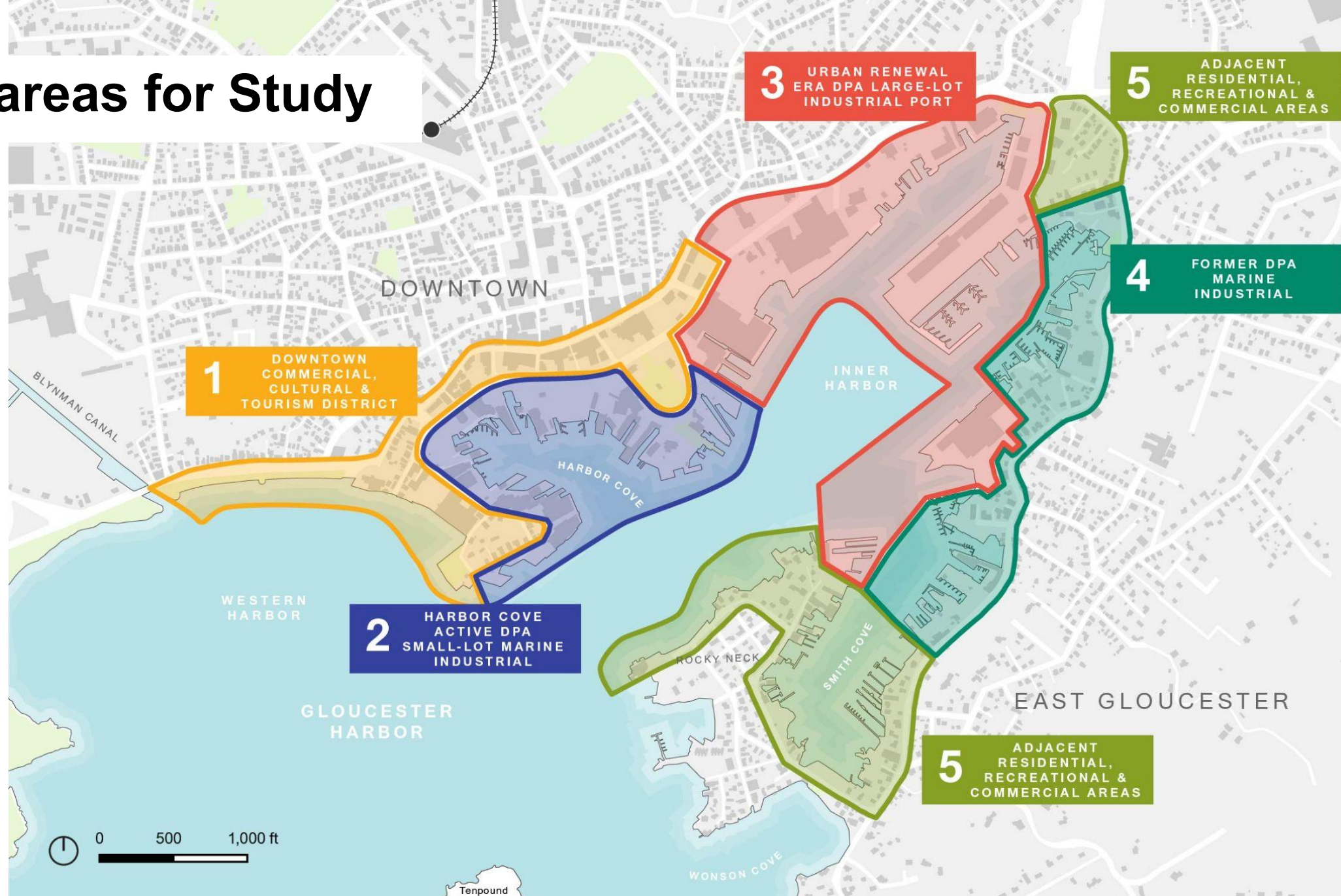
OVERALL ISSUES & OPPORTUNITIES
How to promote reinvestment when harbor is mostly private land?

- Desire to retain fishing heritage and identity - fishing is in blood of residents!

- Manage industrial interactions with residential, recreational & tourism uses.

- How to activate and revive underutilized and derelict areas?

- Issues of parking, truck route and public ROW space management.

- Flood damage and increasing risks to infrastructure & business operations.

- Future of I4C2 (65 Rogers Street)

Initial Sub-areas for Study

Many of the comments and concerns we heard from you were place-specific and highlighted priorities for different areas along the harbor.

We propose thinking about the harbor in terms of different sub-areas with different assets, issues and opportunities.

3 URBAN RENEWAL ERA DPA LARGE-LOT INDUSTRIAL PORT

5 ADJACENT RESIDENTIAL, RECREATIONAL & COMMERCIAL AREAS

4 FORMER DPA MARINE INDUSTRIAL

1 DOWNTOWN COMMERCIAL, CULTURAL & TOURISM DISTRICT

2 HARBOR COVE ACTIVE DPA SMALL-LOT MARINE INDUSTRIAL

5 ADJACENT RESIDENTIAL, RECREATIONAL & COMMERCIAL AREAS

DOWNTOWN

INNER HARBOR

BLYNMAN CANAL

HARBOR COVE

WESTERN HARBOR

ROCKY NECK

SMITH COVE

EAST GLOUCESTER

GLOUCESTER HARBOR

WONSON COVE

Tenpound
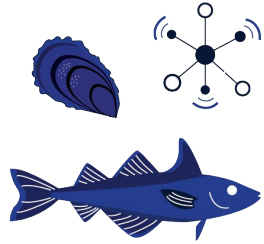
0   500   1,000 ft

Blue Economy Basics

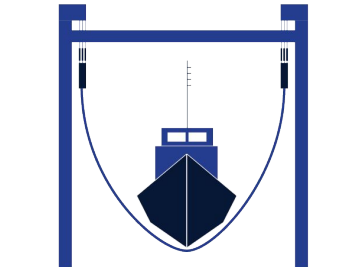Understanding the framework of the forthcoming North Shore Blue Economy Report.

Blue Economy Sectors

Source: 2017 Navigating the Global Economy: A Comprehensive Analysis of the Massachusetts Maritime Economy

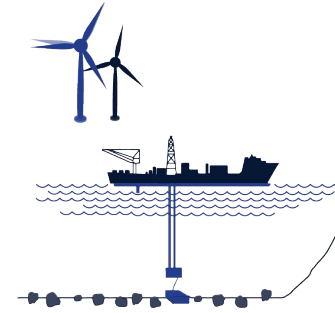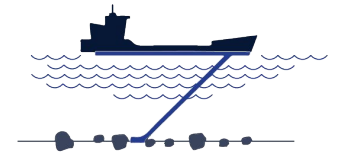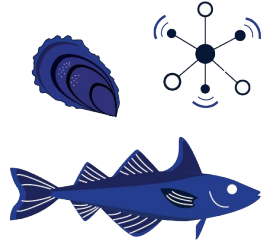| LIVING RESOURCES	SHIP & BOAT BUILDING	COASTAL TOURISM & RECREATION	TRANSPORTATION	MARINE CONSTRUCTION	OFFSHORE MINERALS
Fish Hatcheries & Aquaculture; Fishing; Seafood Markets; Seafood Processing	Boat Building & Repair; Ship Building & Repair	Amusement & Recreation Services; Boat Dealers; Eating & Drinking Places; Hotels & Lodging Places; Marinas; RV Parks/Campgrounds; Scenic Water Tours; Sporting Goods; Zoos & Aquaria	Deep Sea Freight; Marine Passenger Transportation; Marine Transportation Services; Search & Navigation Equipment; Warehousing	Marine Related Construction (including offshore wind, dredging and environmental engineering)	Oil & Gas Exploration & Production; Sand & Gravel Mining
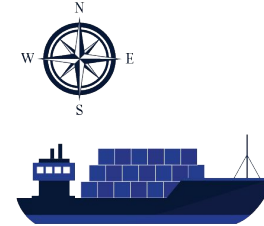
Blue Tech / R&D Cluster is Cross-Cutting

Source: 2017 Navigating the Global Economy: A Comprehensive Analysis of the Massachusetts Maritime Economy

LIVING RESOURCES	SHIP & BOAT BUILDING	COASTAL TOURISM & RECREATION	TRANSPORTATION	MARINE CONSTRUCTION	OFFSHORE MINERALS
Oceanography Marine Life Sciences	Materials research, prototyping and testing	Conservation, Zoos & Aquaria	Search & Navigation Equipment	Offshore Wind Environmental Engineering	Resource Extraction R&D
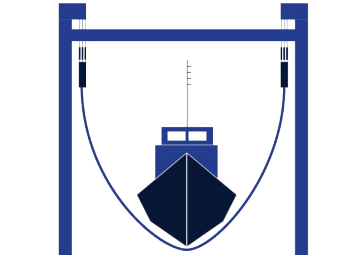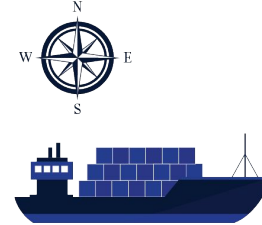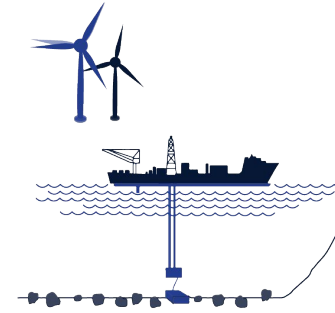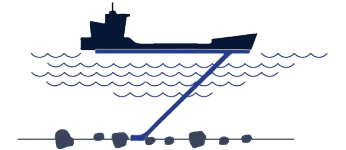
Gloucester's Economic Baseline

Gloucester Harbor

Overview of Key Findings

- Gloucester's economy has performed well over last several years with job and wage growth across several sectors

- Gloucester core maritime economy represents over 2,100 jobs, and over $100m in wages - as a percentage, approximately the same as in 2013

- Gloucester's fisheries activity levels have performed better than other New England ports and the US fishing industry as a whole

- Gloucester is one of the top 10 to 15 locations in the US for seafood processing - a growing but consolidating industry

- Gloucester's tourism sector appears to be more seasonal than Essex County overall

Overview of Gloucester's Economy

Jobs: Percent Manufacturing

Liesure/Hospitality
16.0%

Manufacturing
18.7%

Other
65.3%

Wages: Percent Manufacturing

Manufacturing
32.0%

Other
68.0%
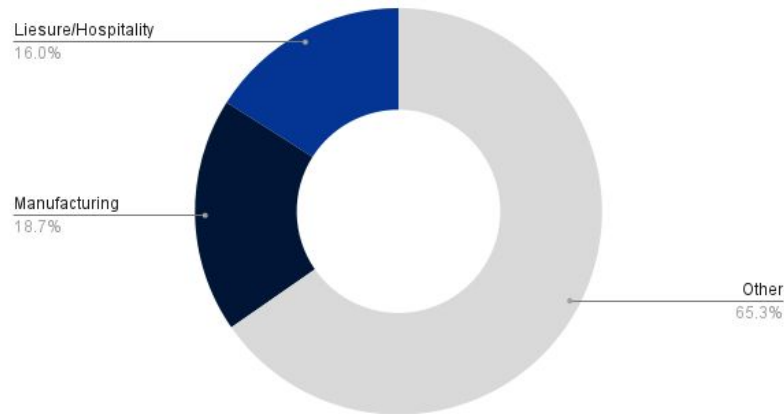
Job Mix (2019)

- Approx. 11,000 total jobs
- 2,100 manufacturing jobs more concentrated in manufacturing than the US or MA (LQ of 1.75 compared to US), but it's declined by 175 jobs since 2013
- 1,800 leisure/hospitality jobs with an increase of 327 jobs since 2013
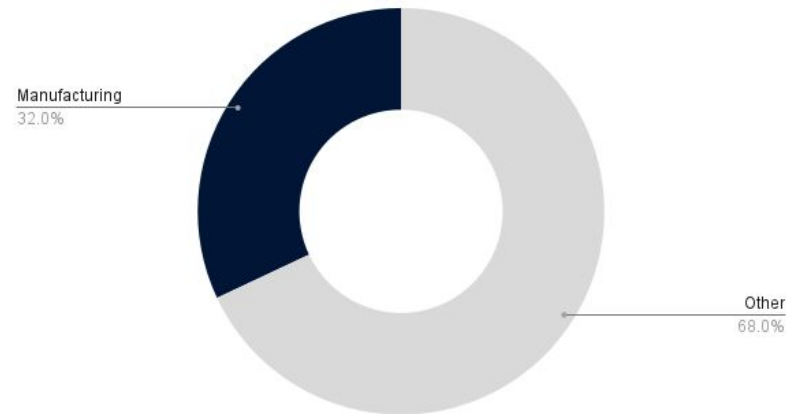
Wage Base (2019)

- $641m wage base
- 32% of city wage base is in manufacturing.
- Average manufacturing wage is $101k, which is 13% higher than the average MA manufacturing wage – this higher wage reflects the more skilled manufacturing job mix in Gloucester

Data Source: NP calculations based on MASSLMI city town annual statistics

Data Source: NP calculations based on MASSLMI city town annual statistics

Employment

- Gloucester has approximately 10,500 payroll jobs.

- Payroll jobs are wage and salary jobs covered by unemployment insurance – does not include self employed or 1099 employees.

- Employment growth was steady through 2017 and has fallen

- The impact of COVID isn't clear because of the reporting lag from the state Labor Market Datasets

Payroll Employment Trends Gloucester
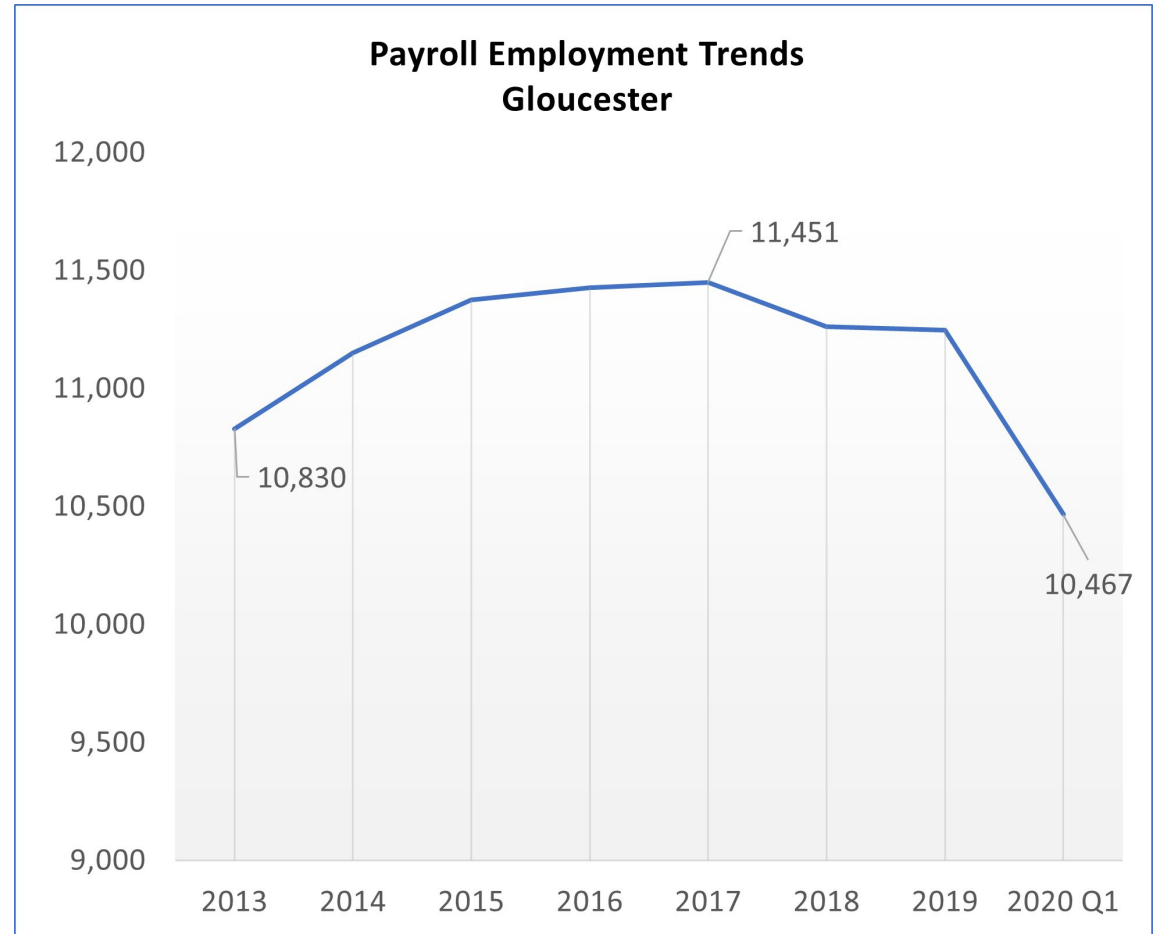
Source: NP analysis based on MASSLMI city town annual statistics, 2013 - 2020

Employment Base

- Manufacturing, Health Care and Social Assistance, and Retail Trade are key industries in Gloucester, representing 55% of all the jobs in the city.

- Gloucester is more dependent on manufacturing as a source of employment than the nation as a whole. Manufacturing represents almost 18% of Gloucester's job base but is only 10% of the US job base. This translates to a concentration level or location quotient (LQ) of 1.75.

- Leisure and hospitality sector which includes accommodations, food services plus arts, entertainment recreation has over 1800 jobs – the second largest sector when combined.

Employment Levels by Industry 2019

Industry	Employment
Manufacturing	2,001
Health Care and Social Assistance	1,710
Retail Trade	1,627
Accommodation and Food Services	1,519
Other Services, Except Public Administration	557
Professional and Technical Services	532
Construction	466
Public Administration	368
Wholesale Trade	338
Arts, Entertainment, and Recreation	316
Administrative and Waste Services	282
Finance and Insurance	269
Transportation and Warehousing	209
Information	137
Agriculture, Forestry, Fishing and Hunting	136
Real Estate and Rental and Leasing	93

Source: NP calculations based on MASSLMI city town annual statistics, 2019

Employment Base Changes

MANUFACTURING

Manufacturing and business services have shrunk since 2013.

For the manufacturing sector in 2019, only four sub-sectors are large enough to not have their data subject to privacy limitations: food manufacturing, printing, chemical manufacturing, and fabricated metals. These represent 717 or 36% of all manufacturing jobs. Food manufacturing, which includes seafood processing, has not declined – it increased by 43 jobs since 2013. Declines have occurred in other sectors of the manufacturing economy.

FISHING

The Agriculture, Forestry, Fishing & Hunting sector, which includes fishing, has added jobs since 2013.

HEALTHCARE

Healthcare and social assistance employment has grown dramatically, adding 220 jobs since 2013.

TOURISM

Sectors driven by disposable income - accommodation and food services, retail trade, and art entertainment represent three of the four highest-growth sectors of the Gloucester economy.

Change in Employment 2013 to 2019

Sector	Net Change
Manufacturing	-175
Administrative and Waste Services	-149
Other Services, Except Public...	-21
Wholesale Trade	-15
Transportation and Warehousing	-13
Information	-9

shrinking

Sector	Net Change
Public Administration	8
Real Estate and Rental and Leasing	24
Agriculture, Forestry, Fishing and Hunting	31
Finance and Insurance	52
Construction	63
Professional and Technical Services	75
Arts, Entertainment, and Recreation	83
Retail Trade	105
Health Care and Social Assistance	220
Accommodation and Food Services	244

growing

-200 -150 -100 -50 0 50 100 150 200 250 300

Net Change in Jobs, 2013-2019

Source: NP calculations based on MASSLMI city town annual statistics, 2013-2019

Wages

MANUFACTURING

Manufacturing pays well - it makes up 32% of Gloucester's wages despite making up only 18% of the job base. Gloucester has a total wage base of approximately $641 million. Over $200m, or 32%, of those wages are in manufacturing, even though manufacturing is only 18% of the job base.
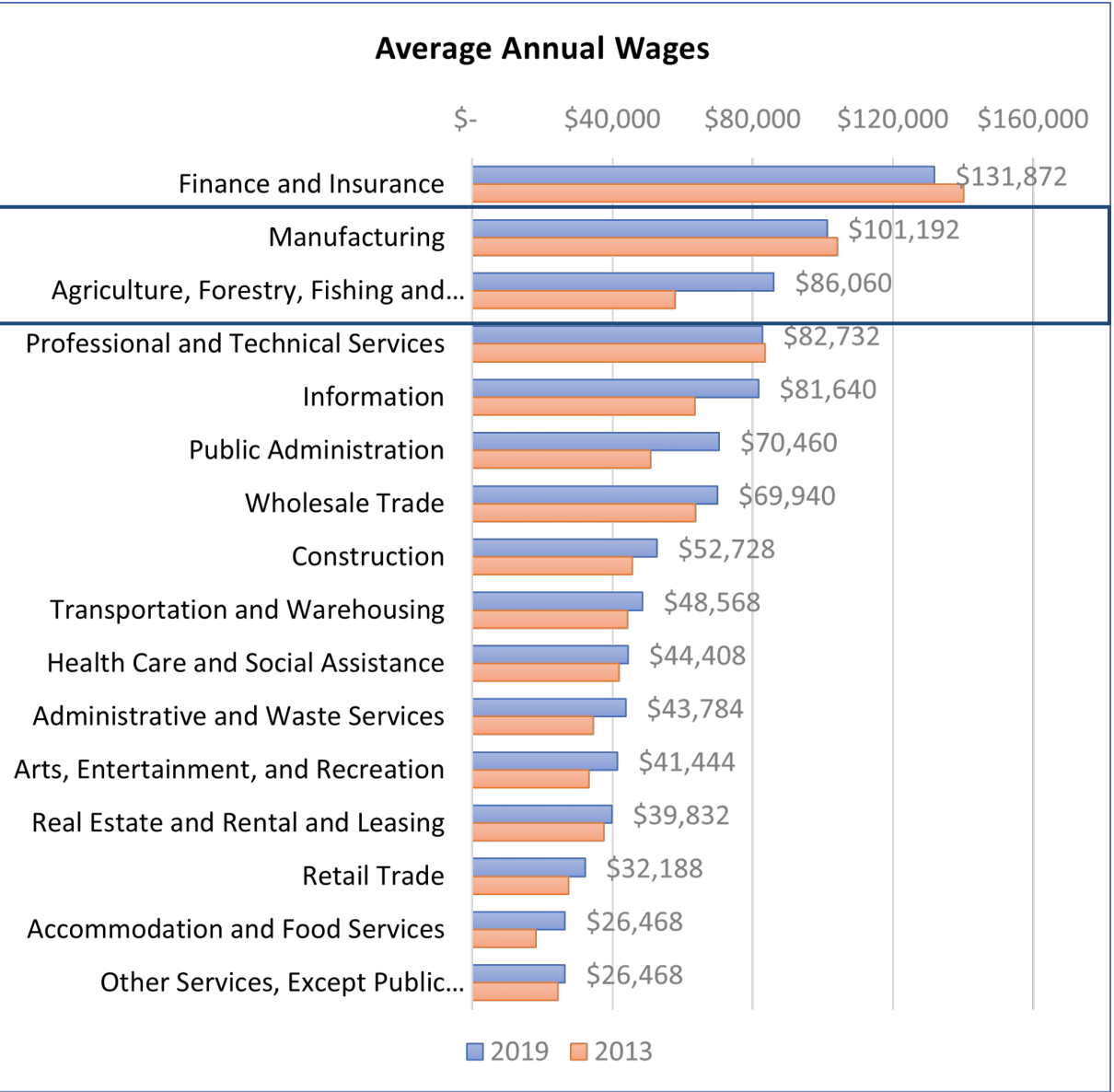
Gloucester's manufacturing jobs pay better than the statewide average, but wages have declined recently. Average manufacturing wage in Gloucester is over $101k compared to a statewide average of $89,698. However, Gloucester's average manufacturing wages have gone down since 2013. This implies that the job losses in the manufacturing sector since 2019 have been concentrated in higher paying jobs. In total manufacturing wages are down by over $26m.

FISHING

Fishing appears to have seen increased wages and job growth from 2013-2019. The Agriculture, Forestry, Fishing & Hunting sector, which in Gloucester primarily consists of the fishing industry, saw wages increase by 49% while also adding payroll jobs. Like in manufacturing, the job mix associated with the fishing industry is clearly changing.

TOURISM

Gloucester's rapidly growing leisure and hospitality sector has wages similar to statewide averages.

Average Annual Wages

Sector	2019
Finance and Insurance	$131,872
Manufacturing	$101,192
Agriculture, Forestry, Fishing and…	$86,060
Professional and Technical Services	$82,732
Information	$81,640
Public Administration	$70,460
Wholesale Trade	$69,940
Construction	$52,728
Transportation and Warehousing	$48,568
Health Care and Social Assistance	$44,408
Administrative and Waste Services	$43,784
Arts, Entertainment, and Recreation	$41,444
Real Estate and Rental and Leasing	$39,832
Retail Trade	$32,188
Accommodation and Food Services	$26,468
Other Services, Except Public…	$26,468

2019 ■ 2013 ■

Source: NP calculations based on MASSLMI city town annual statistics, 2013 and 2019

Workforce Inflow/Outflow

- Approximately 1/3 of Gloucester's private, primary jobs (excluding part time employment) are filled by Gloucester's residents
- In the goods producing sector which includes the ag/fishing sector, manufacturing and construction – 40% of that workforce or ~980, consists of Gloucester residents
- Approximately 1200 Gloucester residents leave the community for goods producing jobs

~4800 work in Gloucester & live outside the city

~3500 live & work in Gloucester (private primary jobs)

~8600 live in Gloucester & work outside the city

Source: NP analysis of U.S.Census Bureau, Center for Economic Studies, https://onthemap.ces.census.gov, 2018

Gloucester's "Blue Economy" is at least 20% of the city's job base [1]

Gloucester's "Blue" economy (preliminary estimate) is:
- **20%** of the city's employment base
- **16%** of the wage base

This is roughly equivalent to 2013 percentages

	2019 Jobs	2019 Wages $M
Marine Education, Advocacy, Research & Innovation	220-230	$16-17
Seafood (processing & wholesale)	583	$46.0
Fishing / Fleet Services	130*	$11.2*
Tourism	1200	$31
Maritime Total	2133 - 2143	at least $104.2

Data Source: NP estimates, mixed sources. See slides 24, 32, 34, 41, and 47 for detail. Fleet servcices excludes recreational marinas and includes ship repair facilities.. Employment was estimated using D&B, BBB, Manta and other sources where employment was reported. Wages were based on state average for ship repair.
* Excludes 1099 employees
(1) note initial estimates may change as new information becomes available to offset data suppression and privacy rules regarding company data
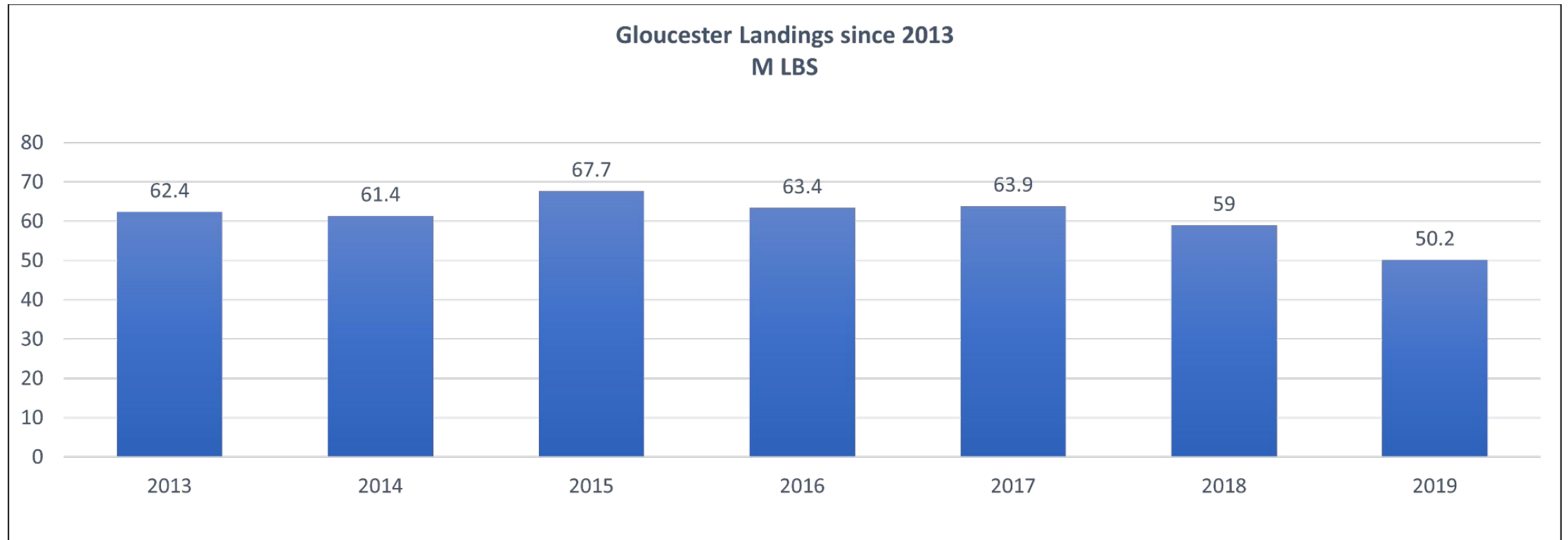
Fishing and Seafood Industry

Key Findings

Fishing

- Gloucester's fishing industry is in the midst of a transition, this isn't all good or all bad.

- Decline in landing weight but increase in landing value from 2013-2019 indicates that there has been a shift from large-scale groundfishing to lobstering and small-scale operations with a higher per-pound value.

- When measured by fleet, dealer activity, and daily trips, Gloucester's fishing capacity and activity is competitive with, or leading regional peers (New Bedford and Boston)

Decreasing Landings Weight (lbs)

- Based on National Marine Fisheries Service (NMFS) data, Gloucester landings went from **122mlbs** in 2009, fluctuated in the **mid-60mlbs** range until 2017, then dropped to approximately **50mlbs** in 2019.

Gloucester Landings since 2013
M LBS

Year	M LBS
2013	62.4
2014	61.4
2015	67.7
2016	63.4
2017	63.9
2018	59
2019	50.2

Source: NP analysis of National Marine Fisheries Service (NMFS) Landings data, various years

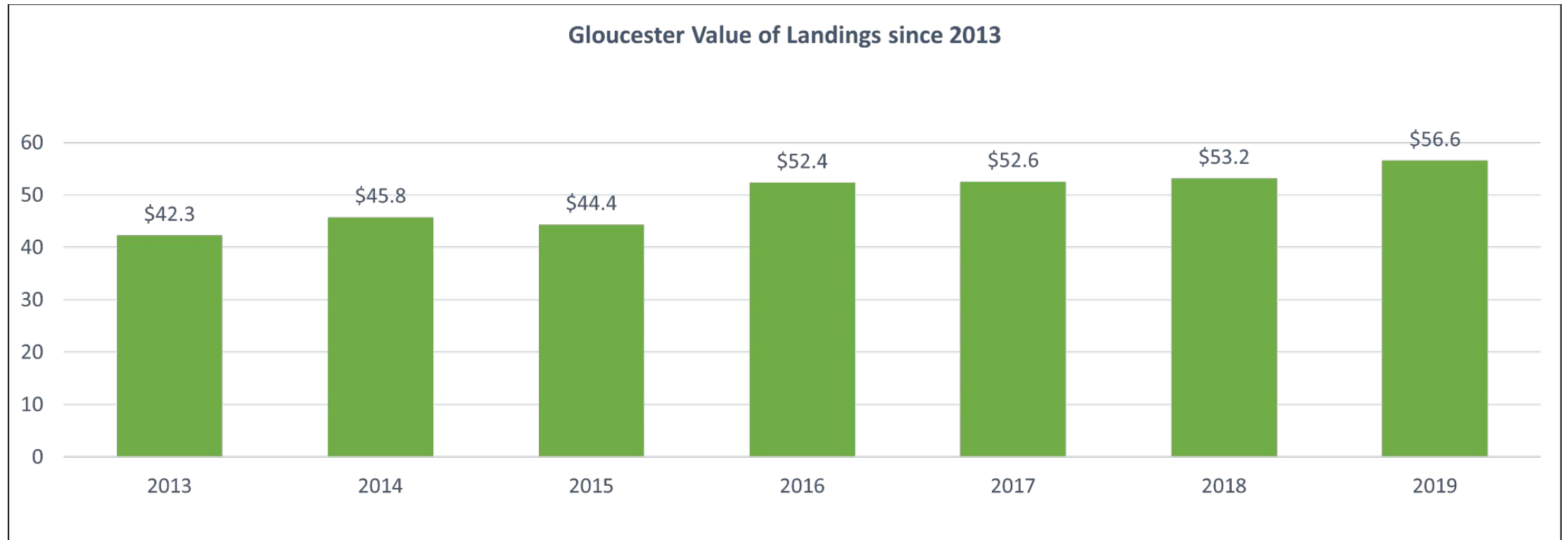# Decreasing Landings Weight (lbs) - Comparative Analysis

- Since 2013 Gloucester has performed better than the US overall and the other large fishing ports in New England with the exception of 2019
- New Bedford declined after 2014 and is essentially flat
- Portland ME equaled Gloucester's landing totals in 2013 but has fallen substantially since then

Index Landings Since 2013
100 = 2013 lbs
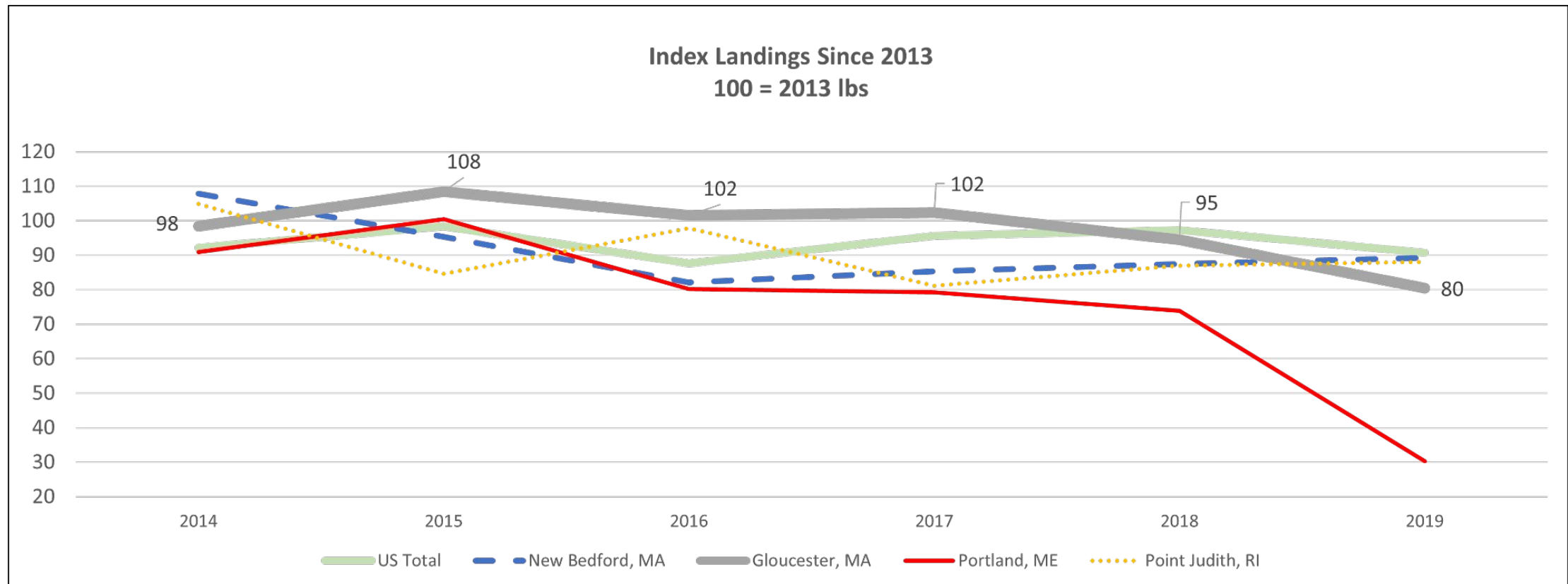
Source: NP analysis NMFS Landings data, various years
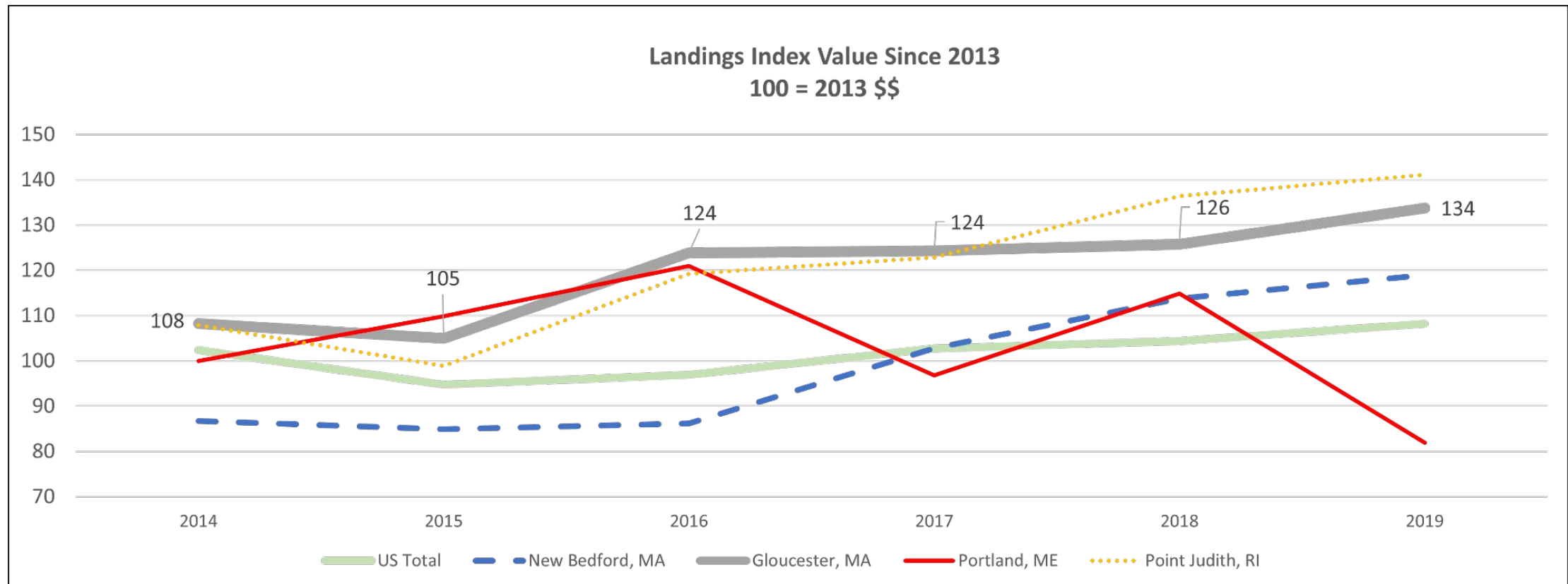
Increasing Landings Value ($)

- Based on NMFS data Gloucester's catch value in 2019 was $56.6m – the highest catch value since 2011 and $6 million higher than 2009 when the total pounds caught was 143% higher
- This obviously reflects a change in species mix, which is also exemplified in the price per pound, which went from $.41 in 2009 to $1.13.

Gloucester Value of Landings since 2013

Year	Value
2013	$42.3
2014	$45.8
2015	$44.4
2016	$52.4
2017	$52.6
2018	$53.2
2019	$56.6

Source: NP analysis NMFS Landings data, various years

Increasing Landings Value ($) - Comparative Analysis

- Since 2013 Gloucester's catch value has increased in value 24% faster than the US
- Among the major New England ports only Pt Judith (squid & lobster) has since a higher increase in landing value
- Portland ME has seen unequal performance over this time period

Landings Index Value Since 2013
100 = 2013 $$

Source: NP analysis NMFS Landings data, various years

Landings Changes Reflect Ecosystem Change

- Landing weight is going down as value is going up, reflecting increased shift toward lobster
- The changing fishery implies having a harbor with the ability to handle a diverse fishery, including providing the shoreside infrastructure and equipment to support different harvesting processes
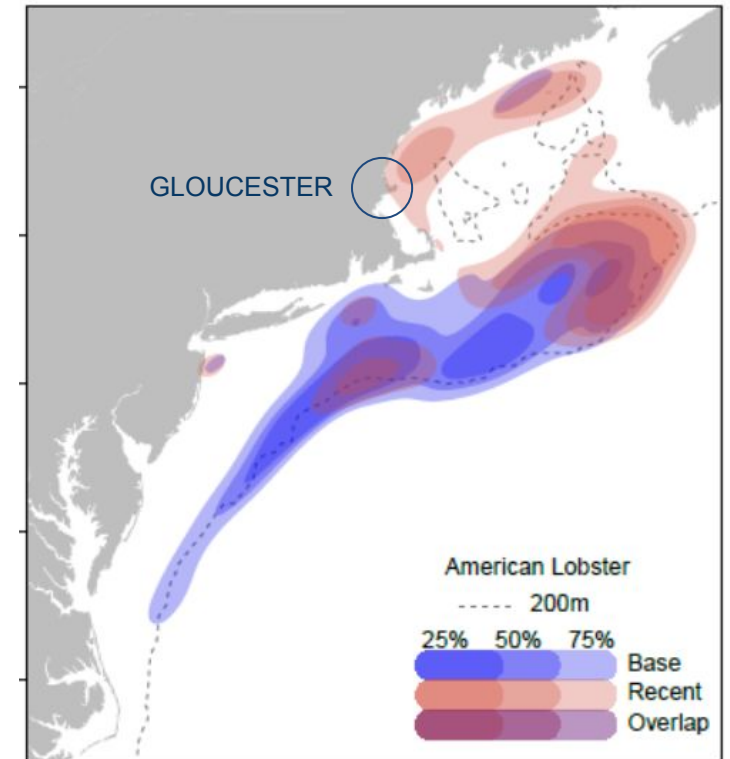
Atlantic Cod Density
habitat range has and is projected to continue shrinking, but is diversifying
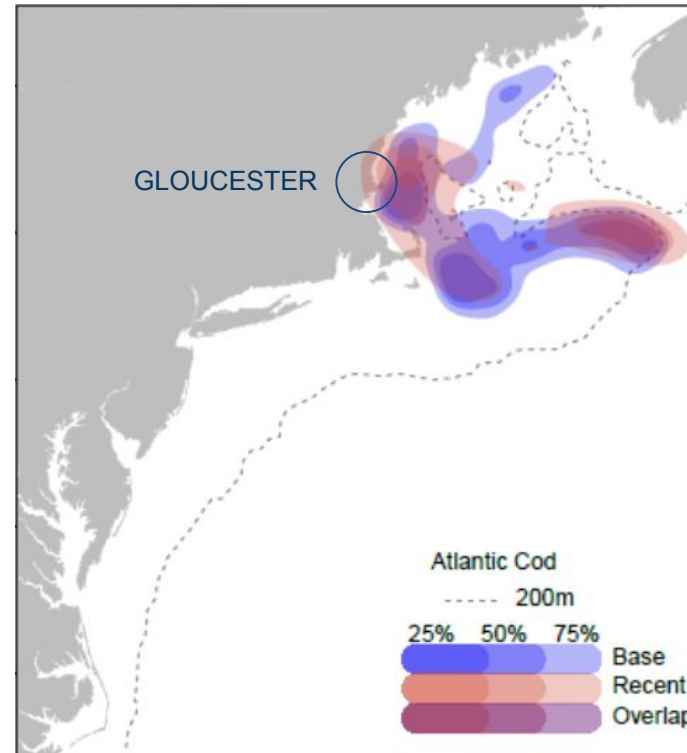
American Lobster Density
habitat has already and is projected to continue shifting north

Source: NOAA The Northeast Shelf: A Changing Ecosystem, Base = 1970, Recent = 2017-2019;
https://storymaps.arcgis.com/stories/b3321ee343c9424eb6557332f81509c6

Fishing Employment, Establishments, and Wages

- Annual wage and employment data only covers payroll reported wages
- Based on the 2019 OCEW payroll data Gloucester fishing employs at a minimum 109 people in 57 businesses.
- Total payrolls equal $9.5m with an average annual wage of $87,724. This likely reflects full-time crew and captains as well as professional managers
- To fully capture total employment tied to the fishing fleet such as occurred for the 2013 MHP, requires access to settlement offices to understand 1099 payouts to crews.

FISHING (NAICS Code 1114)	2013	2014	2015	2016	2017	2018	2019
Employment	100	108	107	114	117	109	109
Establishments	61	63	60	62	63	59	57

Data Source: OCEW payroll data for fishing, defined as NAICS code 1114, 2013 - 2019

Gloucester 2018 Catch & Value

- Lobster is by far the most valuable product and has landings comparable to leading finfish
- Gloucester is arguably the state's most active lobster port

Top 10 Ports By Ex-vessel Value For American Lobster & Jonah Crab In 2018

RANK	PORT	EX-VESSEL VALUE	# ACTIVE DEALERS	# ACTIVE HARVESTERS
1	NEW BEDFORD	$21,704,482	19	78
2	GLOUCESTER	$21,328,830	26	190
3	ROCKPORT[1]	$6,559,212	8	51
4	SANDWICH	$4,877,676	10	29
5	PLYMOUTH	$4,691,102	13	63
6	PROVINCETOWN[1]	$4,663,832	9	67
7	MARSHFIELD[1]	$3,855,770	15	51
8	CHATHAM	$3,726,182	13	59
9	BEVERLY[1]	$3,621,568	11	38
10	MARBLEHEAD[1]	$3,201,335	4	53

SOURCE: SAFIS Dealer Database & ACCSP Data Warehouse, 2020 TH

2018 GLOUCESTER LANDINGS (LIVE POUNDS) AND EX-VESSEL VALUE FOR TOP 20 SPECIES

COMMON NAME	LANDINGS	VALUE	# ACTIVE HARVESTERS
LOBSTER, AMERICAN	4,148,482	$21,147,773	189
HADDOCK	6,363,829	$5,741,284	81
HERRING, SEA, ATLANTIC	20,319,196	$3,922,262	11
REDFISH, ACADIAN	5,579,416	$2,750,124	53
GOOSEFISH	4,400,059	$2,488,838	52
FLOUNDER, AMERICAN PLAICE	924,463	$1,907,481	46
POLLOCK	2,869,001	$1,888,359	56
TUNA, BLUEFIN	336,086	$1,859,284	164
HAKE, WHITE	2,012,313	$1,769,569	39
COD, ATLANTIC	699,887	$1,623,259	80
SCALLOP, SEA	1,215,922	$1,458,653	28
HAKE, SILVER	1,400,443	$1,331,507	47
FLOUNDER, WITCH	603,675	$1,140,152	44
CLAM, SOFT	491,198	$829,135	94
CLAM, SURF, ATLANTIC	*	*	13
MACKEREL, ATLANTIC	3,784,887	$646,599	19
MENHADENS	3,461,550	$540,720	6
FLOUNDER, WINTER	155,207	$406,664	42
FLOUNDER, YELLOWTAIL	273,204	$287,044	41
CRAB, JONAH	183,800	$181,057	57

SOURCE: SAFIS Dealer Database, 05/26/2020 & ACCSP Data Warehouse, 03/17/2020 TH

* = Confidential

Gloucester Key Fisheries Rank

GLOUCESTER 5-YEAR OVERALL TOP RANKED SPECIES, 2014-2018		
SPECIES	RANK (lb)	RANK ($)
AMERICAN LOBSTER	5	**1**
ATLANTIC SEA HERRING	**1**	2
HADDOCK	3	3
MONKFISH	6	4
ACADIAN REDFISH	2	5
ATLANTIC MACKEREL	4	14
SOURCE: SAFIS Dealer Database, 05/30/2020 & ACCSP Data Warehouse, 03/17/2020 TH		

While many know Gloucester as a groundfishing port renowned for its harvest of the Atlantic Cod, the data from 2014-2018 tells a different story.

By landing weight, Gloucester is primarily a Herring port, followed by Acadian Redfish and Haddock.

By landing value, Gloucester is primarily a Lobster port, followed by Herring and Haddock.

Gloucester's fishing capacity and activity appears to be roughly equivalent to New Bedford.

- Capacity is measured by harvesters and vessels.
- Activity is measured by trips, harvesters and dealers.
- This data implies about Gloucester:
  - The largest fishing fleet
  - Most dealer activity
  - And a fleet that makes frequent trips (dayboat driven)
- In 2018 446 Vessels were homeported in Gloucester, compared to 425 in 2014.
  - However, according to the most recent Ports Compact Study in 2013, only 279 vessels were actually active in Gloucester.
  - More recent data related to active versus home ported vessels is currently unavailable.

2018	Gloucester	New Bedford	Boston
Permitted Harvesters	436	416	166
Homeported Vessels	446	329	123
Trips Landing	19,638	10,551	2,165
Active Permitted Harvesters Landing	607	720	146
Active Dealers Purchasing	87	81	21

Data Source: Mass Marine Commercial Fisheries Port Profile reports various ports; MA Permitting Database, SAFIS Dealer Database, 06/02/2020 & ACCSP Data Warehouse, 03/17/2020 TH

Comparing Gloucester Fishing Capacity and Activity

Permit, Vessel, And Effort Counts For Top Three Massachusetts Ports						
PORT	CATEGORY	2014	2015	2016	2017	2018
GLOUCESTER	# **Harvesters** with Gloucester **Address**	427	420	432	440	435
	# **Vessels** with Gloucester **Homeport**	425	429	431	429	447
	# **Landings** in Gloucester	21,518	17,433	21,745	20,652	19,621
	# **Active Harvesters** Landing in Gloucester	507	460	574	609	614
	# **Active Dealers** Purchasing in Gloucester	92	74	85	88	87
BOSTON	# **Harvesters** with Boston **Address**	158	161	166	158	166
	# **Vessels** with Boston **Homeport**	132	130	126	124	123
	# **Landings** in Boston	1,993	2,098	2,309	2,383	2,165
	# **Active Harvesters** Landing in Boston	117	113	148	130	146
	# **Active Dealers** Purchasing in Boston	26	21	18	24	21
NEW BEDFORD	# **Harvesters** with New Bedford **Address**	420	409	405	407	416
	# **Vessels** with New Bedford **Homeport**	335	317	321	331	329
	# **Landings** in New Bedford	11,292	11,197	11,417	11,360	10,551
	# **Active Harvesters** Landing in New Bedford	815	774	785	783	720
	# **Active Dealers** Purchasing in New Bedford	105	90	95	81	81

SOURCE: MA Permitting Database, SAFIS Dealer Database, 06/02/2020 & ACCSP Data Warehouse, 03/17/2020 TH

Fishing

Key Questions

How much activity is required to maintain the viability of harbor infrastructure as fishing capacity market shifts to smaller operations and different species?

- What is the minimum level of active fishing needed to justify the investment in infrastructure and supporting services?

- Will shifting species require changes to the shoreside infrastructure to support it?

- What mix of land uses can complement and support the fishing market?

Seafood Industry

Key Findings:

- Seafood processing is a mature, global, growing, industry throughout the state and continues to have a strong presence nationally, but the industry is consolidating and employment is shrinking nationally while the wholesale market is expanding

- Gloucester is one of the top 10-15 seafood processing locations in the country in terms of number of employees with one of the highest wage bases in the country thanks to its mix of jobs

Seafood and Fish Products Imports Exports

- In terms of New England exports Boston is 50% of the volume and 40% of the dollar value compared to Portland ME
- Top products exported through Boston are:
  - Lobster
  - Squid
  - Scallops
  - Dogfish
  - Monkfish
  - Herring
  - Tuna

Seafood Import Export Activity Boston Customs District
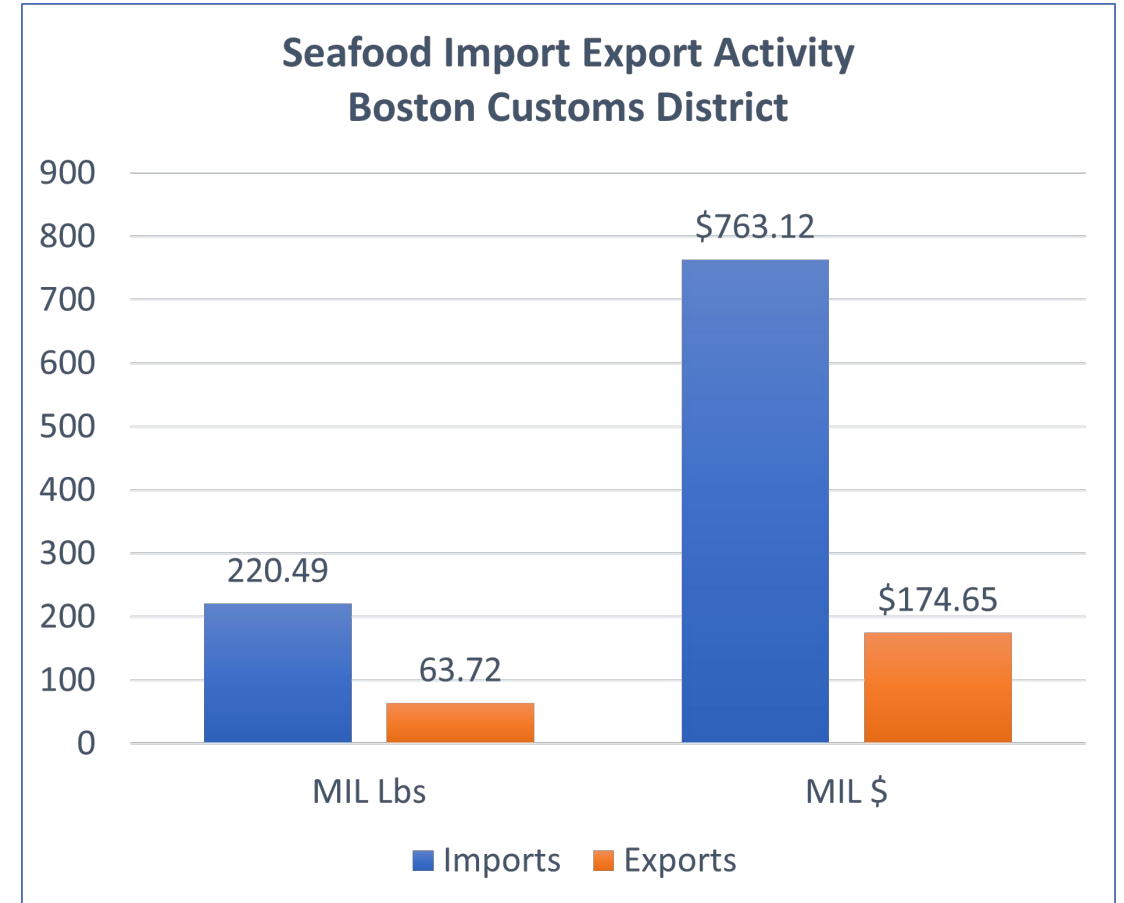
Source: NP analysis of 2019 NOAA Foreign Fisheries Trade Data by Port,

Gloucester is one of the top 10-15 seafood processing communities in the US

National Industry Performance

Since 2013, nationally, the industry is consolidating, and overall employment has fallen with limited growth in demand and increased imported product.

Massachusetts vs. US

- In 2019 there were an estimated 816 seafood processing establishments across the US employing approximately 35,000, for an average size of 43 employees per site with average wage of $49,847.
- Massachusetts has 46 establishments employing 2,780 people - 3rd highest number of employees in the country. MA seafood firms have more employees on average (60 vs 43 for the US) and the 2nd highest wages ($61,626 vs Washington's $73,983).

County-Level Analysis

Using the same datasets as the County level analysis: Gloucester represents, within Essex County, 50% of the firms, 90% of the employees, and 93% of the wages. Gloucester is one of the top 10-15 seafood processing locations in the country in terms of number of employees with one of the highest wage bases in the country thanks to its mix of jobs.

Comparing Massachusetts Counties (2019)

	Bristol	Essex	Suffolk	Plymouth
Establishments	19	8	8	4
Employees	1628	554	366	116
Avg Size	85.7	69	45.8	29
Employee LQ	29.8	7.1	2.2	2.7
Total Wages	$92m	$44m	$22m	$5.9m
Avg Annual Wage	$56,650	$79,912	$60,422	$51,128
National County Rank Firms	3	12	12	
National County Rank Employees	3	9	16	35
National County Rank Annual Avg Wages	8th	3rd	6th	13th

Data Source: NP analysis of BLS OCEW payroll employment data, 2019

Seafood Processing Industry Trends

- Even with growing consumer demand the industry is consolidating and shrinking employment
- It is possible that this shift in employment levels could be due to increased substitution of temporary employment (which is not reflected in this data). Any shift from full-time to temporary employment has wage and benefit issues.
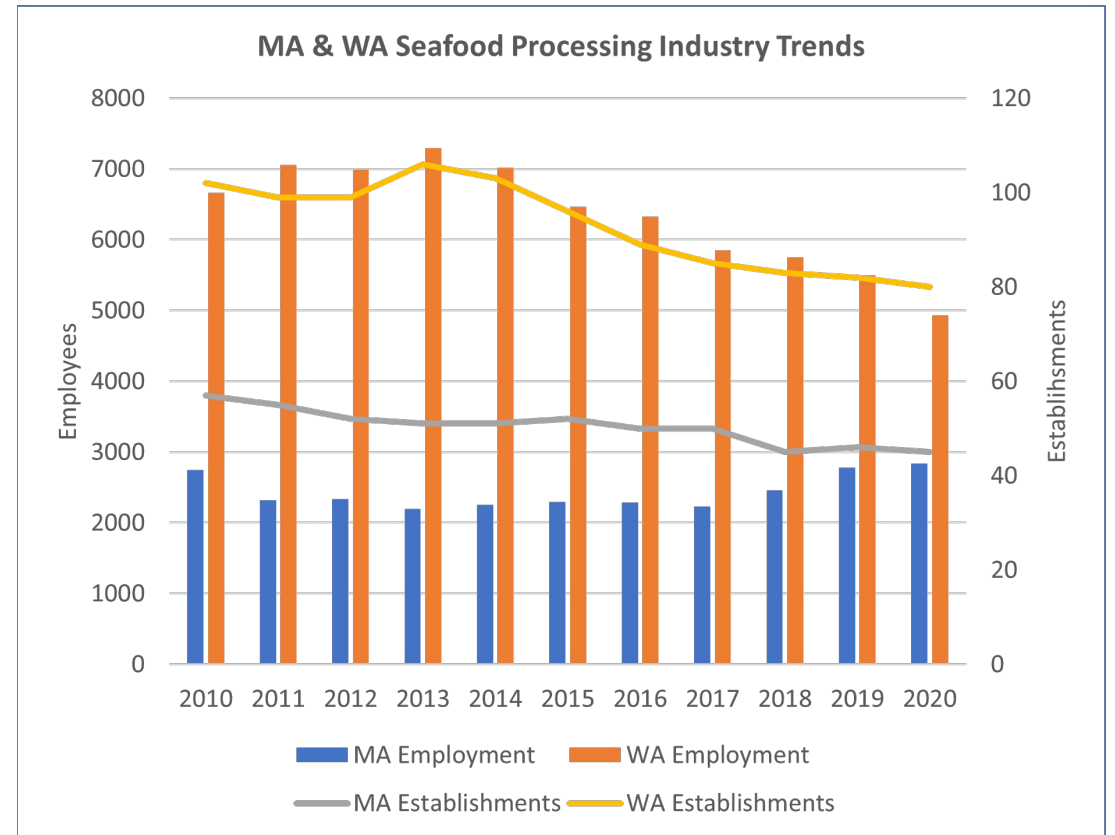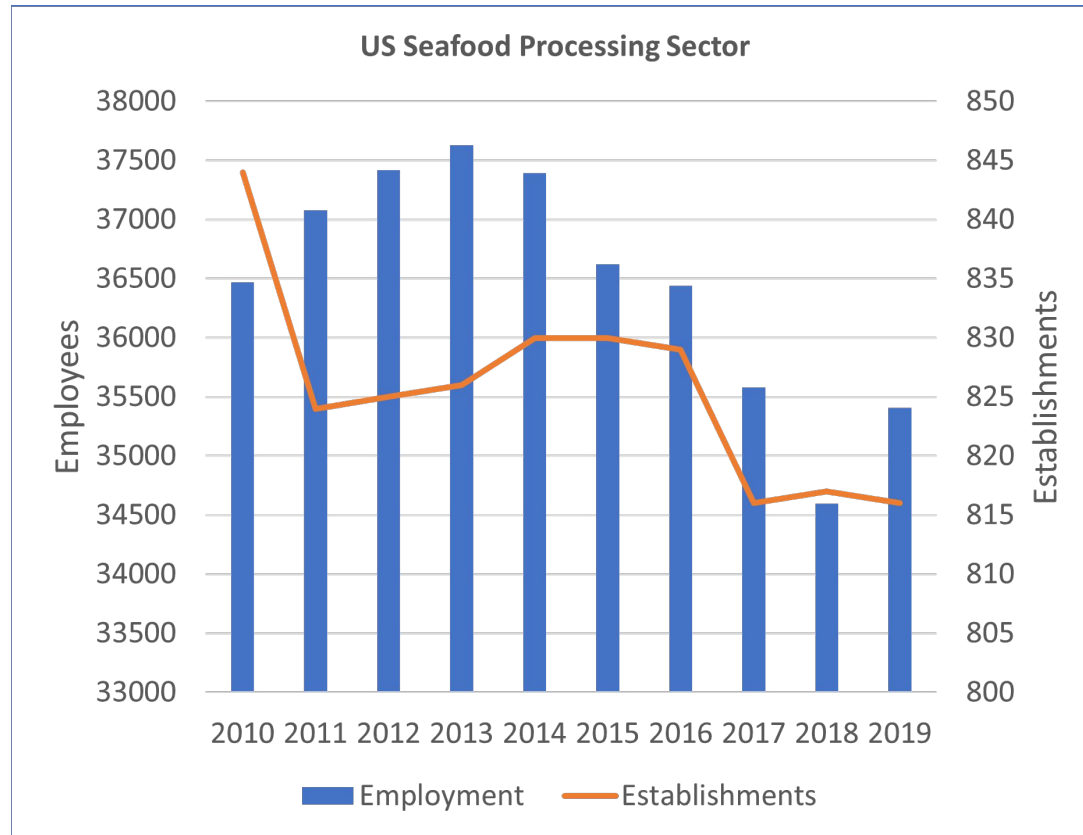
Source: NP analysis of BLS OCEW payroll employment data, 2010 - 2020

Seafood wholesale is a growing sector

National Industry Performance

Since 2013, nationally, seafood wholesale business has steadily added jobs (nearly 5,000) and businesses (400+).

Massachusetts vs. US

- In 2019 there were an estimated 2,700 seafood wholesalers across the US employing approximately 28,000, for an average size of 10 employees per site.
- Massachusetts has 159 establishments employing 2,359 people. MA seafood wholesalers have more employees on average (15 vs 10 for the US) and average wage ($67,267 vs $53,834) is 25% higher than the national average.

County Level Analysis

Gloucester represents at least 45% of the Essex total establishments.

Comparing Massachusetts Counties (2019)

	Suffolk	Essex	Bristol	Barnstable
Establishments	49	36	22	9
Employees	1348	431	268	107
Avg Size	28	12	12	12
Employee LQ	10.1	6.9	6.2	5.8
Total Wages	$91m	$31m	$17m	$5.3m
Avg Annual Wage	$67,507	$71,802	$62,985	$50,091
National County Rank Firms	6	12	22	
National County Rank Employees	2	9	22	
National County Rank Annual Avg Wages	7	4	9	

Data Source: NP analysis of BLS OCEW payroll employment data, 2019

Seafood Wholesale Industry Trends

In contrast to the seafood processing industry, the seafood wholesale industry continues to expand nationally.
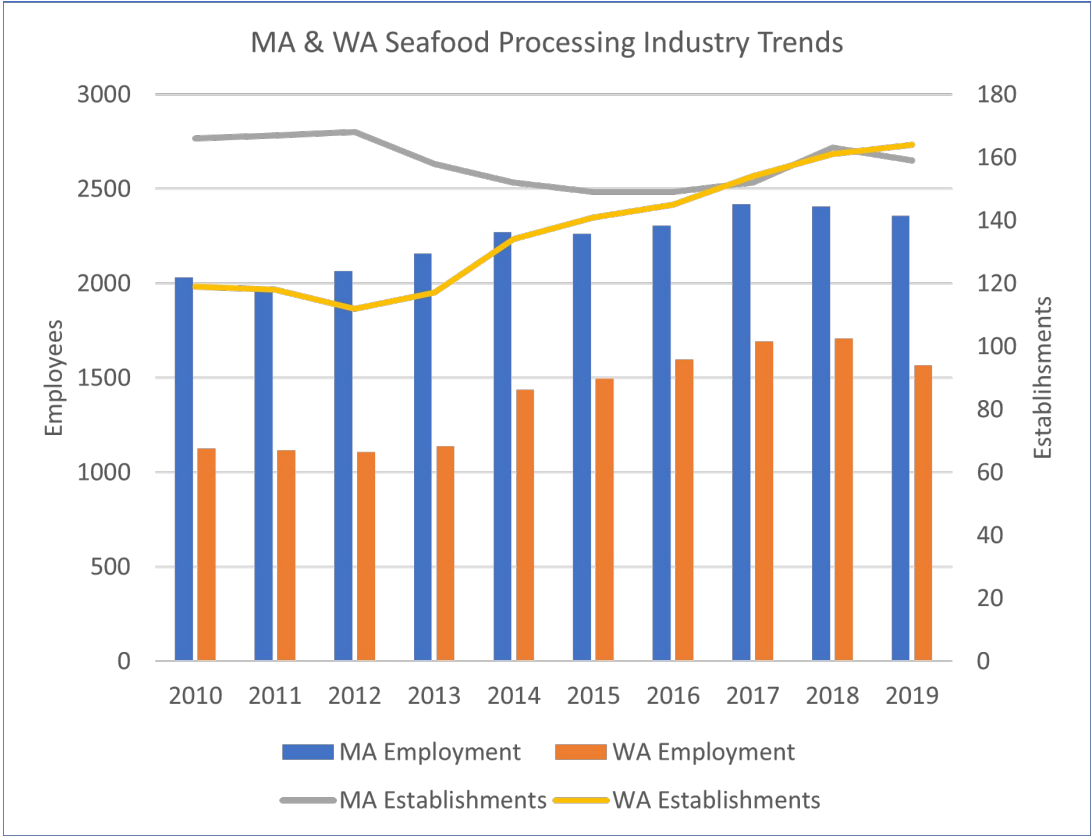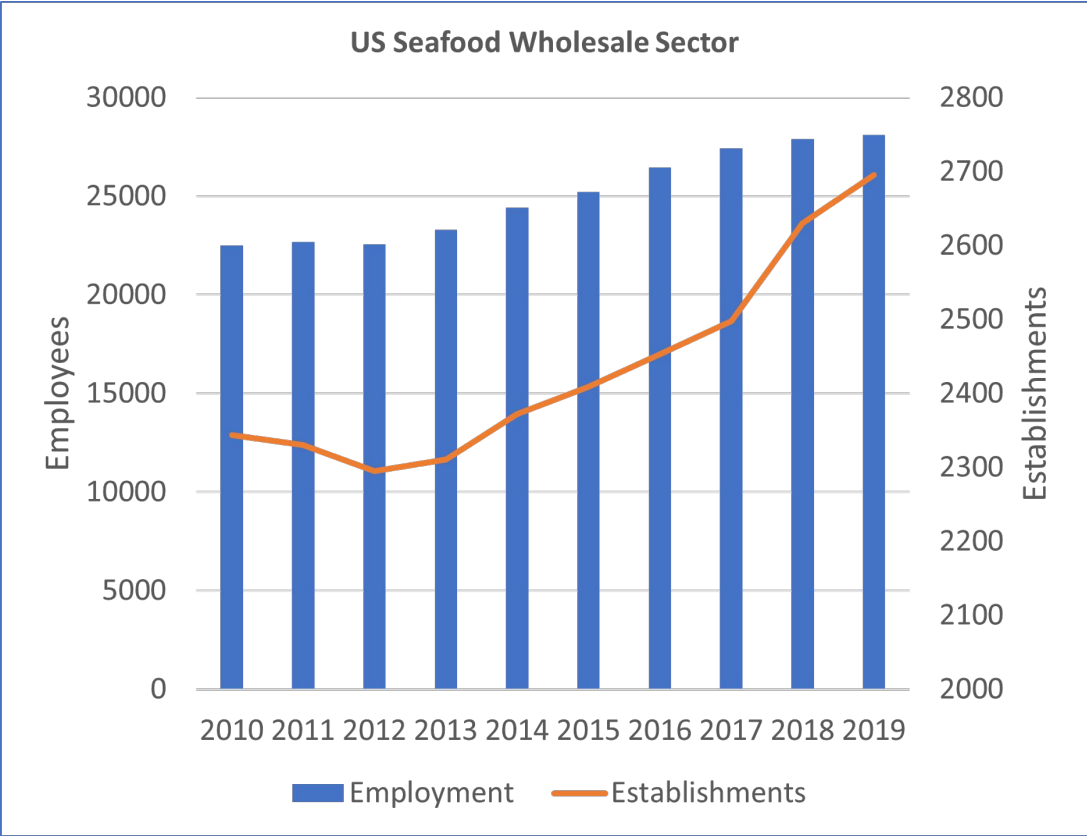
Source: NP analysis of BLS OCEW payroll employment data, 2010 - 2019

Seafood Industry

Key Questions

How can the Harbor Plan support continued utilization and investment in Gloucester's seafood industry?

- How much overlap is there between seafood processing and the seafood wholesale business in Gloucester? Are they effectively the same business in Gloucester? What are the implications for the waterside and landside infrastructure?

- Are their emerging processing technologies that will require different scale of facilities ?

- What shared harbor infrastructure is needed to allow efficient transfer to inland seafood processing facilities?
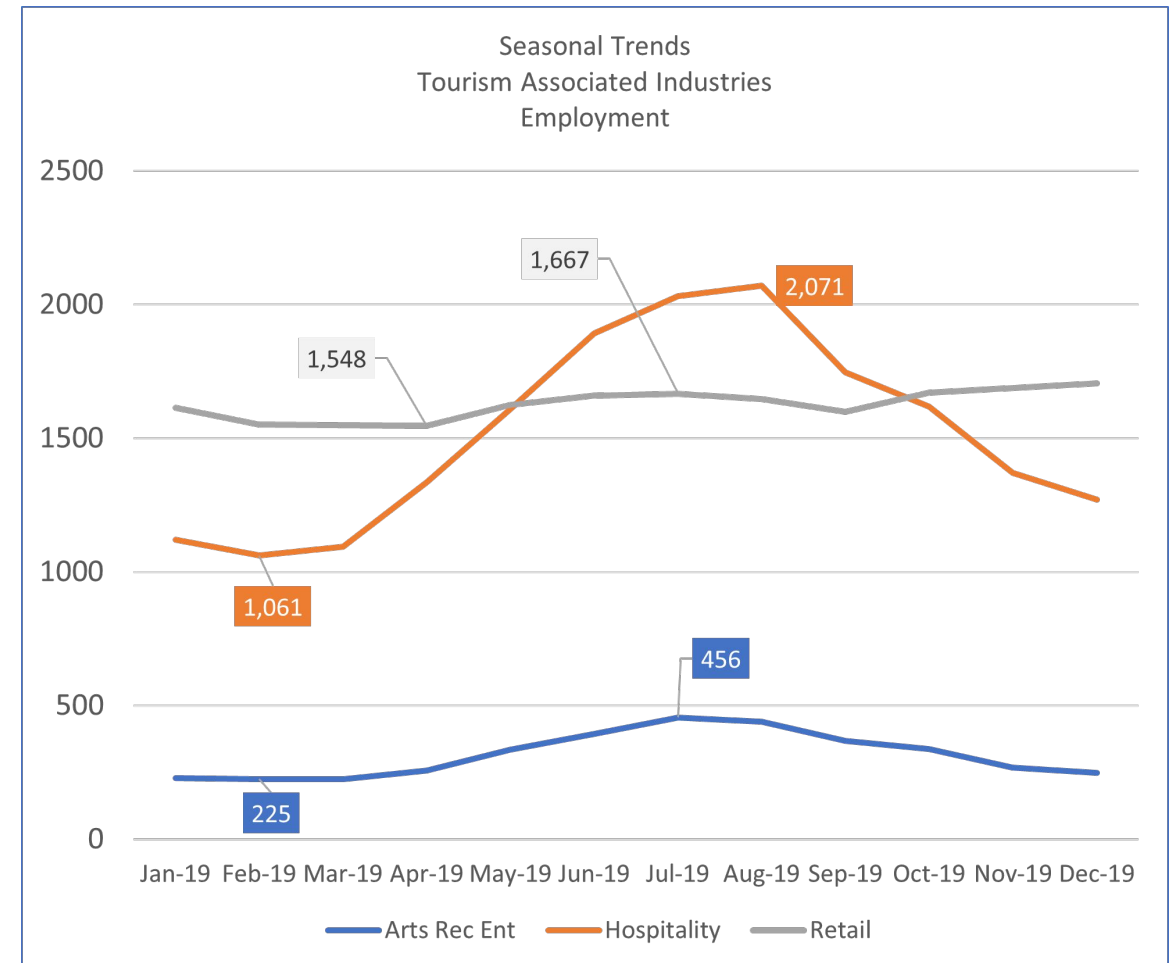
Tourism

Tourism

Key Findings

- Tourism in Gloucester is highly seasonal.

- Gloucester is a regional destination for visitors predominantly from areas north of the Mass Pike, and is the destination for 70% of visitors within the North Shore region (which includes Salem, Beverley, and Manchester-by-the-Sea)

- The harbor is very much a part of the visitor experience.

Estimating Tourism

- Estimating the impact of tourism from local data can be difficult if there are limited sources of information available such as sales tax or room tax data. In the absence of direct data sources, tourism can be estimated based on seasonality.

- For Gloucester the best option to estimate tourism employment and wages is to look at swings in employment and tax revenue in tourism associated industries such as leisure and hospitality. By taking the seasonal swing in employment it provides an approximation of how much economic activity swings.

- The seasonal swing caused by the summer shows a seasonal peak to trough of 1,260 additional jobs, which can be assumed to be jobs that cater to the largely seasonal tourism economy.
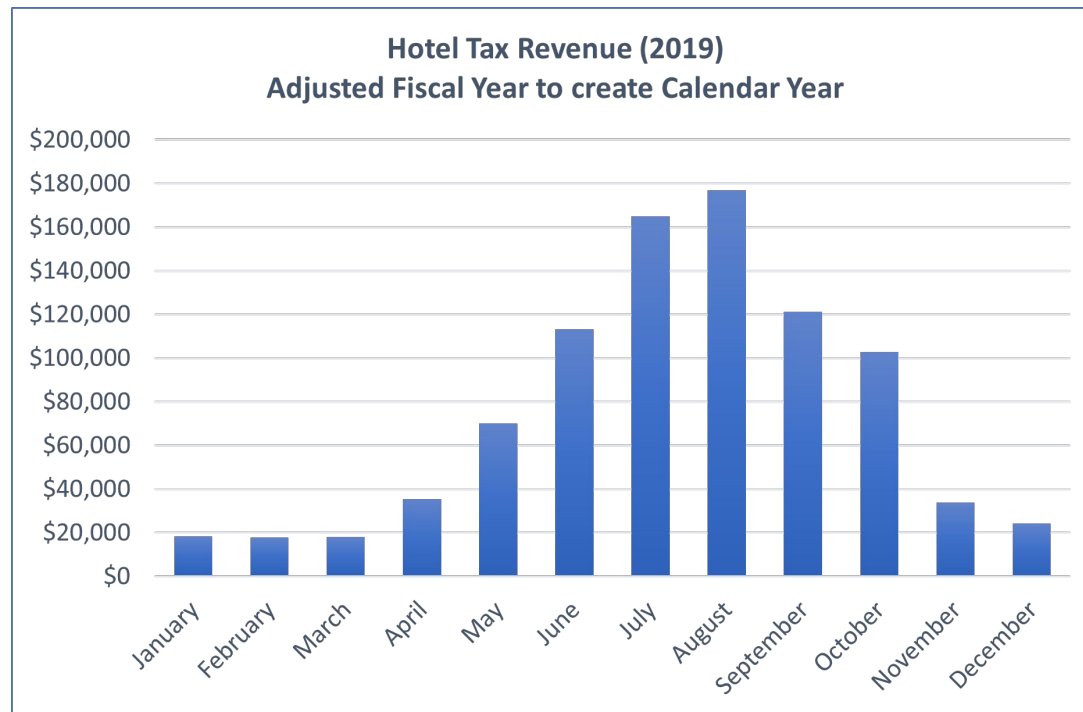
Seasonal Trends
Tourism Associated Industries
Employment

source: NP analysis of MASS LMI City and Town Employment data

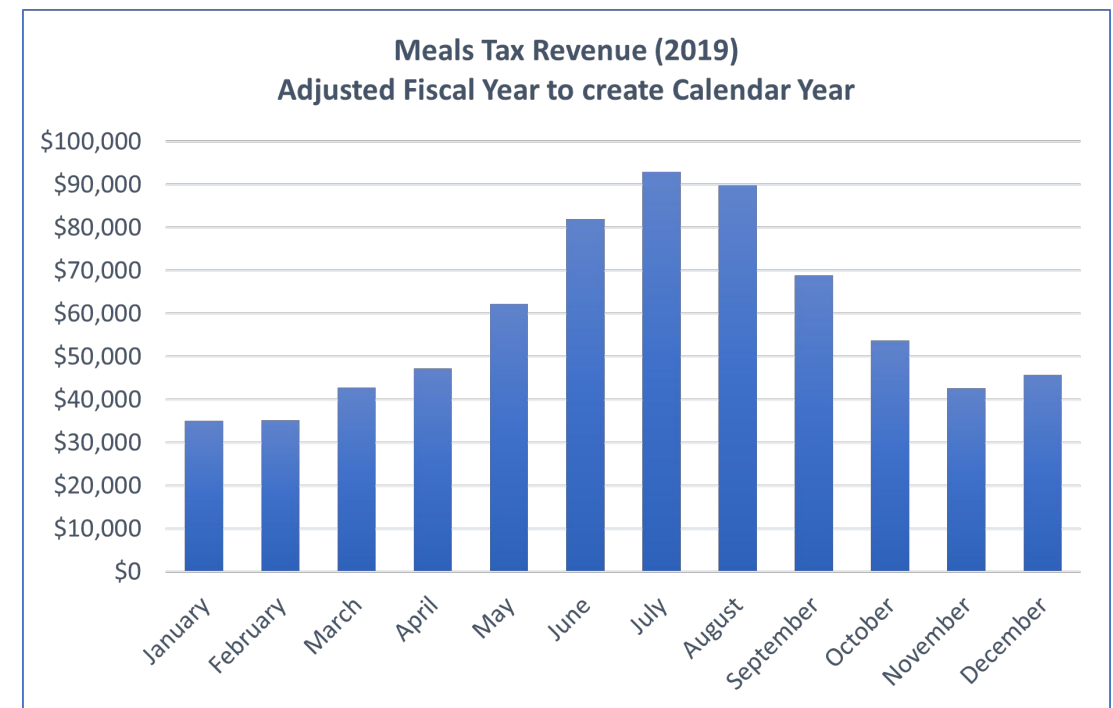# Gloucester's tourism sector appears to be highly seasonal

Hotel / Lodging Tax
- 75% of Gloucester's hotel activity takes place during the summer and early fall
- Pre Beauport Hotel, accommodation revenues equaled $14m

Meals Tax
- 55% of Gloucester's meals tax is generated during the summer and early fall
- "Meals" in 2019 equaled $93m in revenue

Hotel Tax Revenue (2019)
Adjusted Fiscal Year to create Calendar Year

Meals Tax Revenue (2019)
Adjusted Fiscal Year to create Calendar Year

Data Source: NP calculations based on MA DOR Data and Analytics Research Bureau Rooms and Meals Tax Liabilities by Month, 2019

Estimating Tourism

- The most recent state of Massachusetts economic impact study estimates tourism in Essex County at approximately $1b in visitor expenditures.

- Gloucester is approximately 6% of the establishments and wage base of the leisure and hospitality industry in Essex County. On a fair share basis tourism could have as much as a $62m impact.

- Gloucester also represents 17% of the swing in summer seasonal employment in these industries in Essex County implying that summer tourism may have an outsized impact on Gloucester relative to the rest of the county.

**The following employment statistics result from this data aggregation and analysis:**

JOBS

~1200 (including seasonal peak)

WAGES

~$31m (including seasonal peak)

Data Source: 2020 Massachusetts Office of Travel and Tourism Annual Report, data reported is for calendar year 2019

70% of visitors to Gloucester come from this region.

5 mi

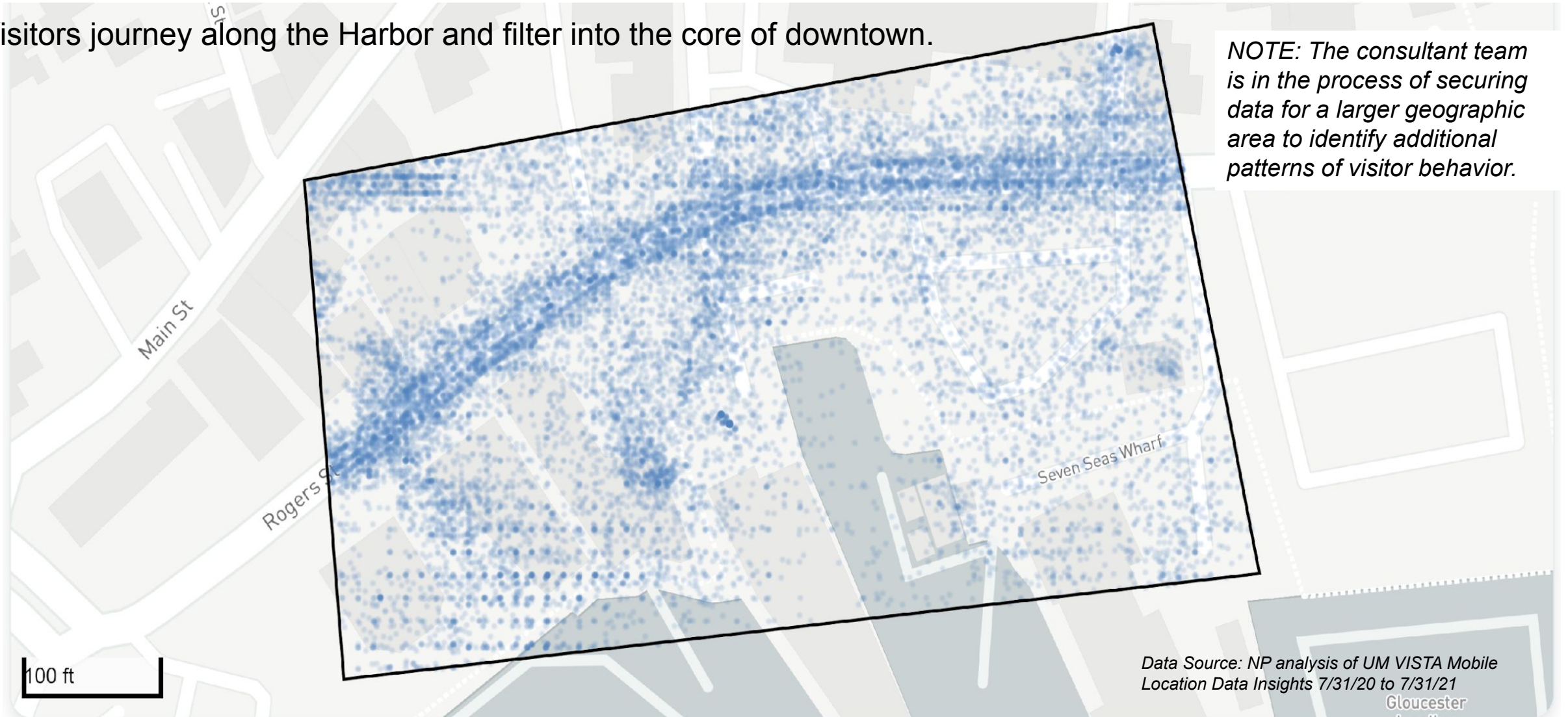*Data Source: NP analysis of UM VISTA Mobile Location Data Insights 7/31/20 to 7/31/21*
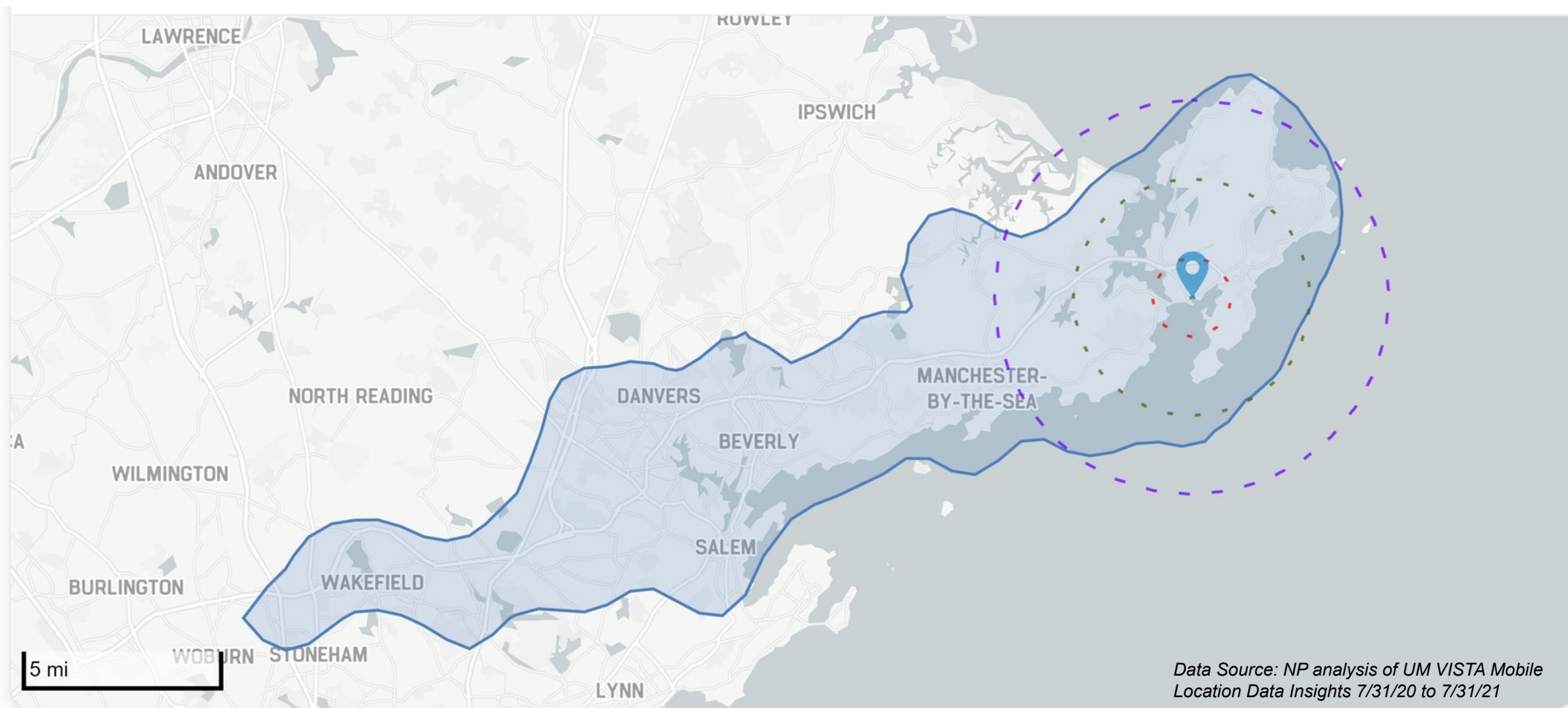
This visitor point map suggests that the Mass Pike is a natural southern boundary for Gloucester visitors

Data Source: NP analysis of UM VISTA Mobile Location Data Insights 7/31/20 to 7/31/21
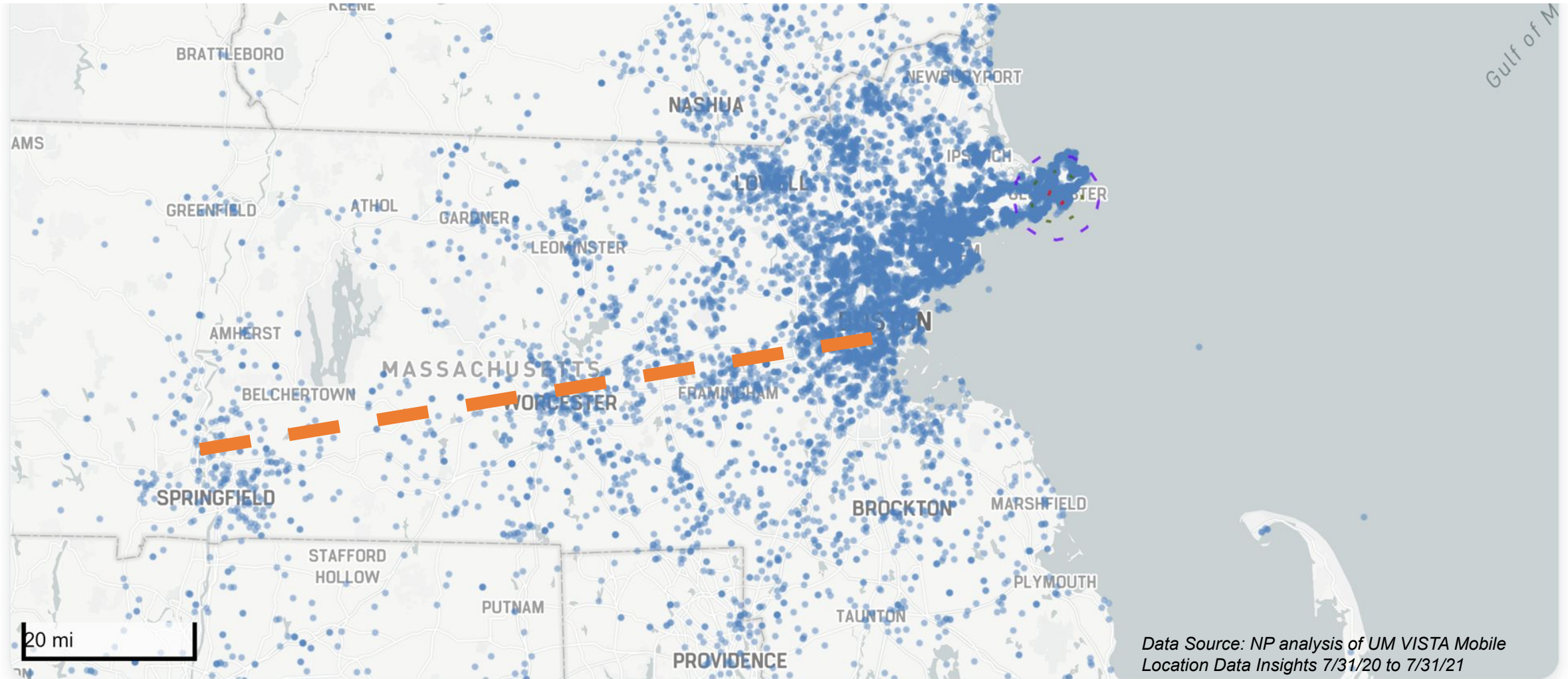
This visitor heat map suggests that the harbor is very much a part of the visitor experience.

Visitors journey along the Harbor and filter into the core of downtown.

NOTE: The consultant team is in the process of securing data for a larger geographic area to identify additional patterns of visitor behavior.

Data Source: NP analysis of UM VISTA Mobile Location Data Insights 7/31/20 to 7/31/21

Tourism

Key Questions

How can we leverage tourism and recreation as economic engines for the harbor without undermining marine industrial uses?

- What are the specific areas of tourism and recreational boating that are growing in the Gloucester market, and where are they supporting vs. competing with WDI?

- What current sites anchor the tourism and recreational boating markets in Gloucester, and where are they supporting vs. competing with WDI?

- What are some creative ways we can leverage tourism and recreation to finance WDI infrastructure investment?

Marine Education, Advocacy, Research & Innovation
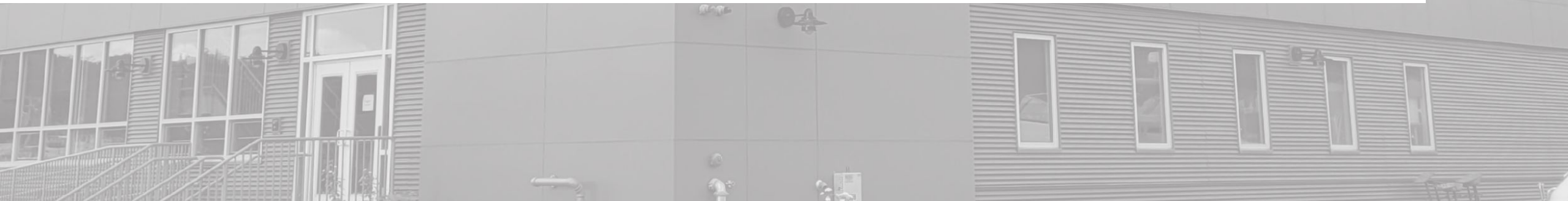
Marine Education, Advocacy, Research, Innovation

- Marine Education, Advocacy, Research, and Innovation do not fit neatly into any single standard industry definition

- To generate these estimates published news reports, IRS Form 990s, D&B business data, and industry employment data were combined to create a profile of this sector
  - Gloucester NOAA
  - Mass state agencies
  - Ocean Alliance
  - Gloucester Fishermen's Wives
  - CGMI
  - UMASS Amherst Gloucester Station
  - Gloucester innovation
  - Maritime Gloucester

The following employment statistics result from this data aggregation and analysis:

JOBS

220-230

WAGES

$16-$17m (payroll)

Data Source: published news reports, IRS Form 990s, D&B business data, and industry employment data covering 2018-2019

Gloucester's Resilience & Infrastructure Baseline

Infrastructure Condition

- Within the inner harbor and DPA, there are not any significant utility deficiencies, including, water and sewer, beyond typical aging infrastructure requiring routine maintenance and rehabilitation.

- Electric power is owned and operated by National Grid where reliability has been a concern. National Grid is currently taking some measures to improve reliability to the system, specifically at a substation in the inner harbor.

Next steps:

- high-level analysis of waterside infrastructure (piers, sea walls, berthing) to align with economic strategy

- Gathering available data to assess Harbor activity and berthing congestion in terms of dockage supply and demand to shape infrastructure reinvestment agenda (data sources: NOAA VMS, Coast Guard AIS Tracking, MA Fish & Wildlife)

Federal Navigable Channels

Economic Impact

These are maintained by the Army Corps of Engineers, who is obligated to dredge to maintain a specified depth.

Channel depths (measured in 2017) dictate what types of ships can access each part of the harbor.

A maintenance offset from these areas allows the Corps to protect the slope and access the channels for dredging etc.
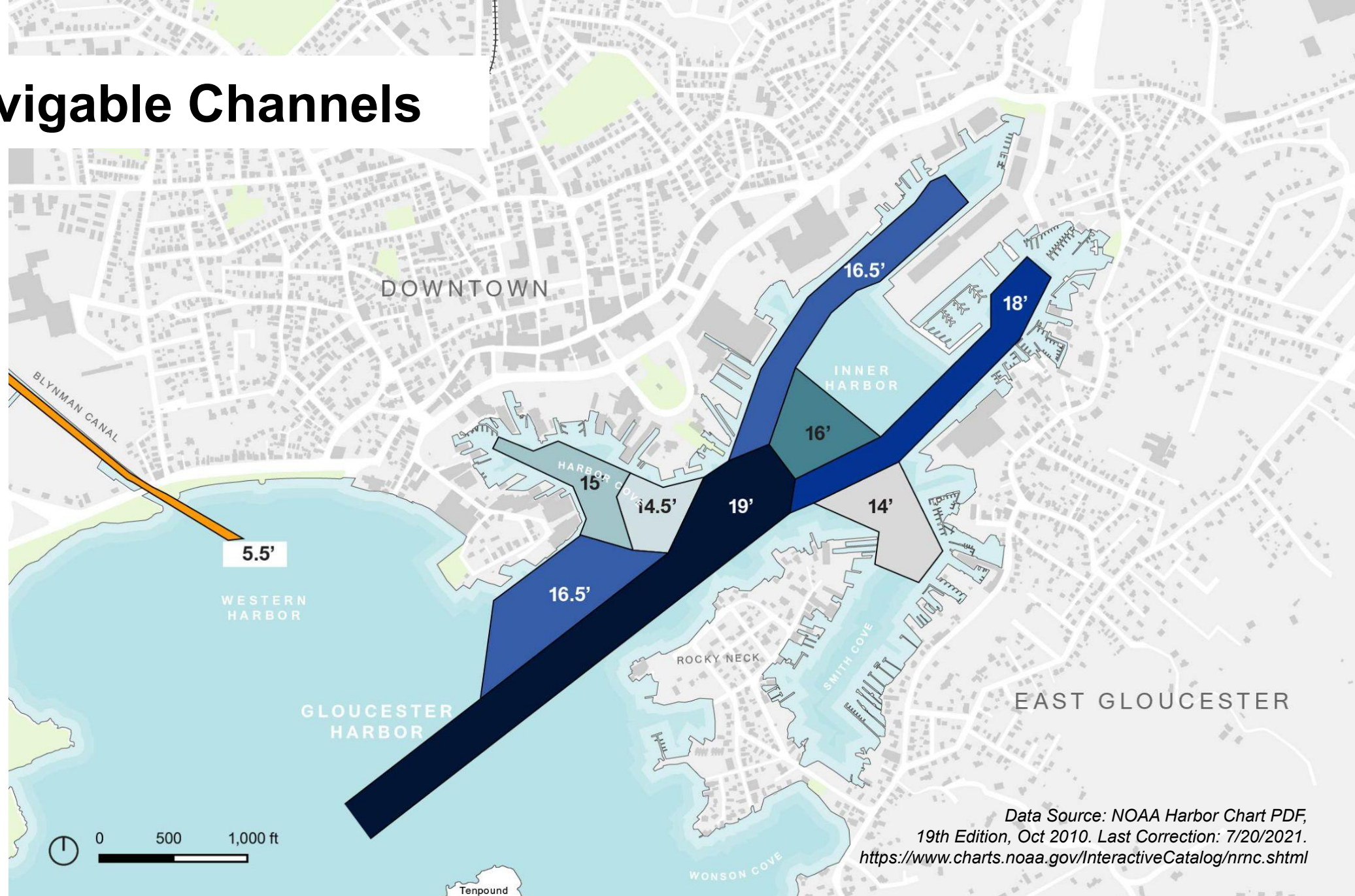
Data Source: NOAA Harbor Chart PDF, 19th Edition, Oct 2010. Last Correction: 7/20/2021. https://www.charts.noaa.gov/InteractiveCatalog/nrnc.shtml
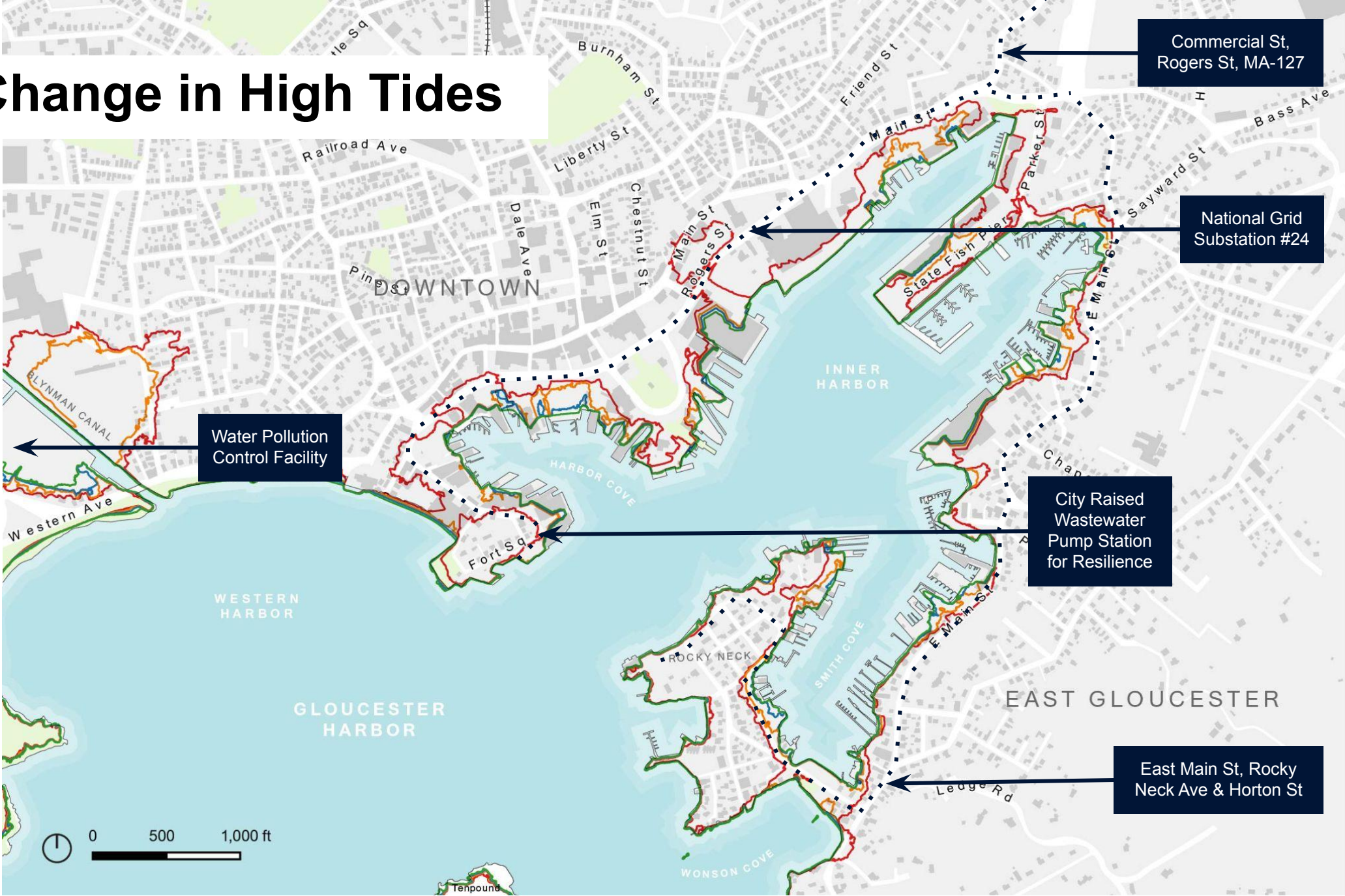
Projected Change in High Tides

Map shows projected change in Mean Higher High Water (MHHW) through 2070. Elevations provided in table for MHHW & Mean High Water (MHW).

Data Source: Massachusetts Coast Flood Risk Model (MC-FRM). Projection is based on LiDAR, which can be imprecise for pier-type shore conditions, leading to an under-estimation of surface elevations.

Tidal Datums (ft, NAVD88)

	MHW	MHHW
Present	4.4	4.8
2030	5.8	6.2
2050	7	7.4
2070	8.9	9.3

Commercial St, Rogers St, MA-127

National Grid Substation #24

Water Pollution Control Facility

City Raised Wastewater Pump Station for Resilience

East Main St, Rocky Neck Ave & Horton St

0   500   1,000 ft

Current Flood Risk Areas

2015 CCVA & 2021 CZM Resiliency report (forthcoming) provide guidance on strategies to protect the Harbor from flooding.

Data Source: FEMA DFIRM

REGULATORY

Current DPA Boundary

TRANSPORTATION

Railroad

ENVIRONMENTAL

100yr Flood Zone

Impervious Surfaces

Impervious Surface

National Wetland Inventory

Estuarine and Marine Deepwater

Freshwater Pond

Riverine

Estuarine and Marine Wetland

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland
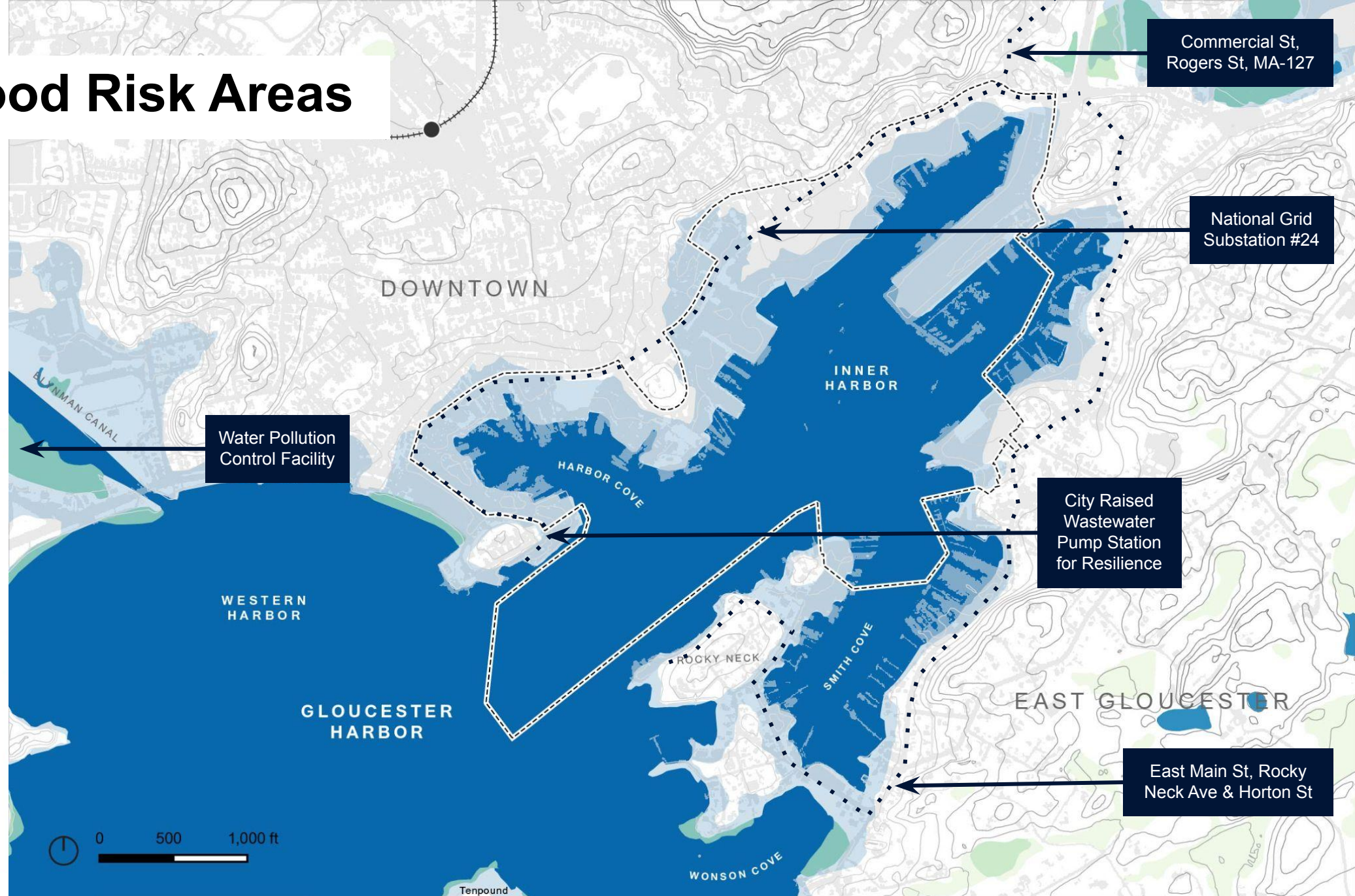
Commercial St, Rogers St, MA-127

National Grid Substation #24

Water Pollution Control Facility

City Raised Wastewater Pump Station for Resilience

East Main St, Rocky Neck Ave & Horton St

DOWNTOWN

INNER HARBOR

HARBOR COVE

WESTERN HARBOR

GLOUCESTER HARBOR

ROCKY NECK

SMITH COVE

EAST GLOUCESTER

WONSON COVE

Tenpound

0   500   1,000 ft

Projected 2050 Flood Risk Areas

100-year (1%) flood extent and depth for 2050. Assumes 2.5 ft of sea level rise.

Data Source: Massachusetts Coast Flood Risk Model (MC-FRM) & NOAA CUSP Shoreline

Legend:
- 0.5 ft or less
- 1 ft
- 1.5 ft
- 2 ft
- 2.5 ft
- 3 ft
- 3.5 ft
- 4 ft
- 4.5 ft
- 5 ft
- 10 ft
- more than 10 ft
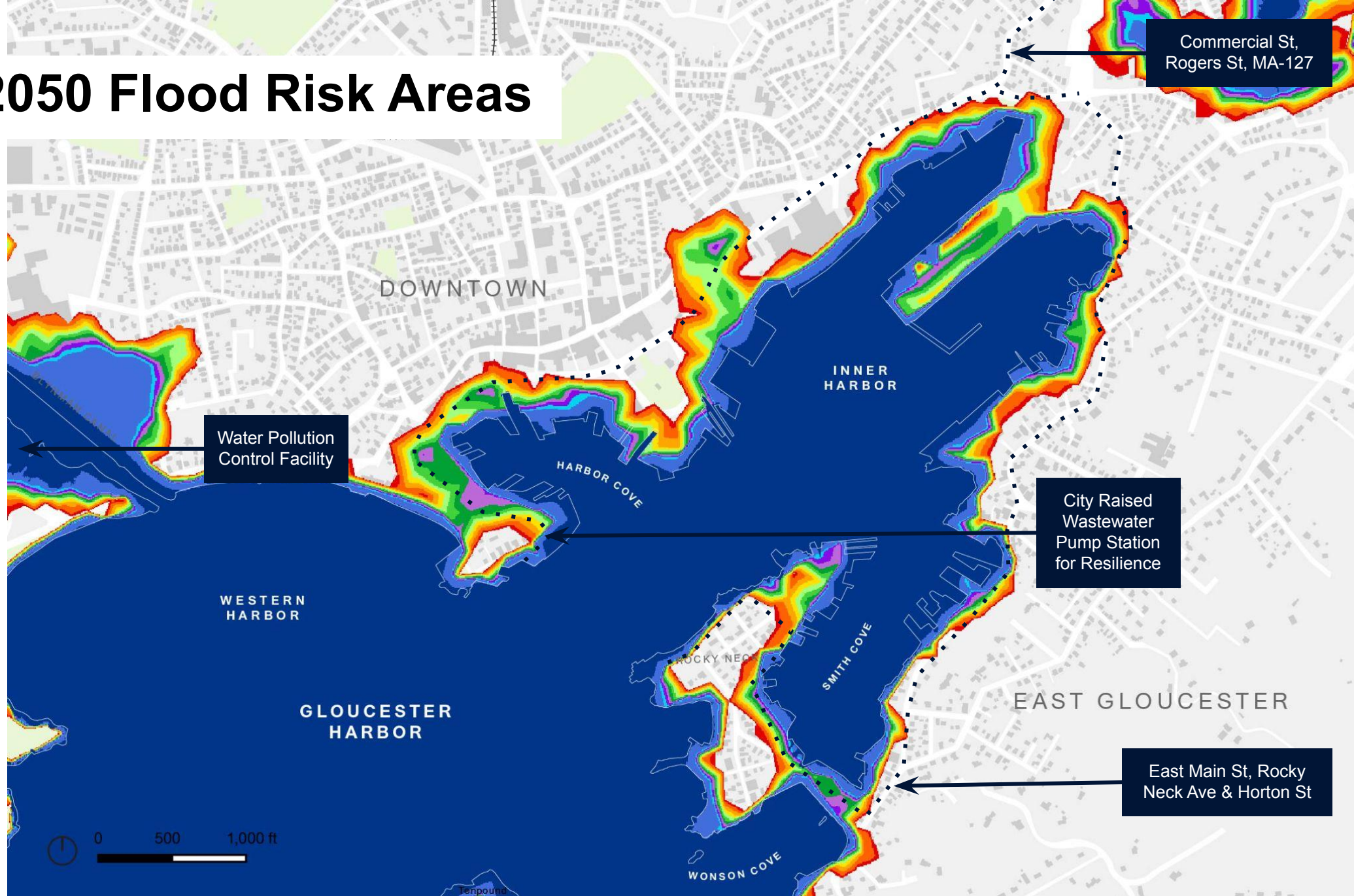
Commercial St, Rogers St, MA-127

Water Pollution Control Facility

City Raised Wastewater Pump Station for Resilience

East Main St, Rocky Neck Ave & Horton St

DOWNTOWN

INNER HARBOR

HARBOR COVE

WESTERN HARBOR

GLOUCESTER HARBOR

SMITH COVE

ROCKY NECK

EAST GLOUCESTER

WONSON COVE

Tenpound

0   500   1,000 ft

Projected 2070 Flood Risk Areas

100-year (1%) flood extent and depth for 2070. Assumes 4.3 ft of sea level rise.

Data Source: Massachusetts Coast Flood Risk Model (MC-FRM) & NOAA CUSP Shoreline

Legend:
- 0.5 ft or less
- 1 ft
- 1.5 ft
- 2 ft
- 2.5 ft
- 3 ft
- 3.5 ft
- 4 ft
- 4.5 ft
- 5 ft
- 10 ft
- more than 10 ft

Map labels:
- Commercial St, Rogers St, MA-127
- National Grid Substation #24
- Water Pollution Control Facility
- City Raised Wastewater Pump Station for Resilience
- East Main St, Rocky Neck Ave & Horton St
- DOWNTOWN
- INNER HARBOR
- HARBOR COVE
- WESTERN HARBOR
- ROCKY NECK
- SMITH COVE
- GLOUCESTER HARBOR
- EAST GLOUCESTER
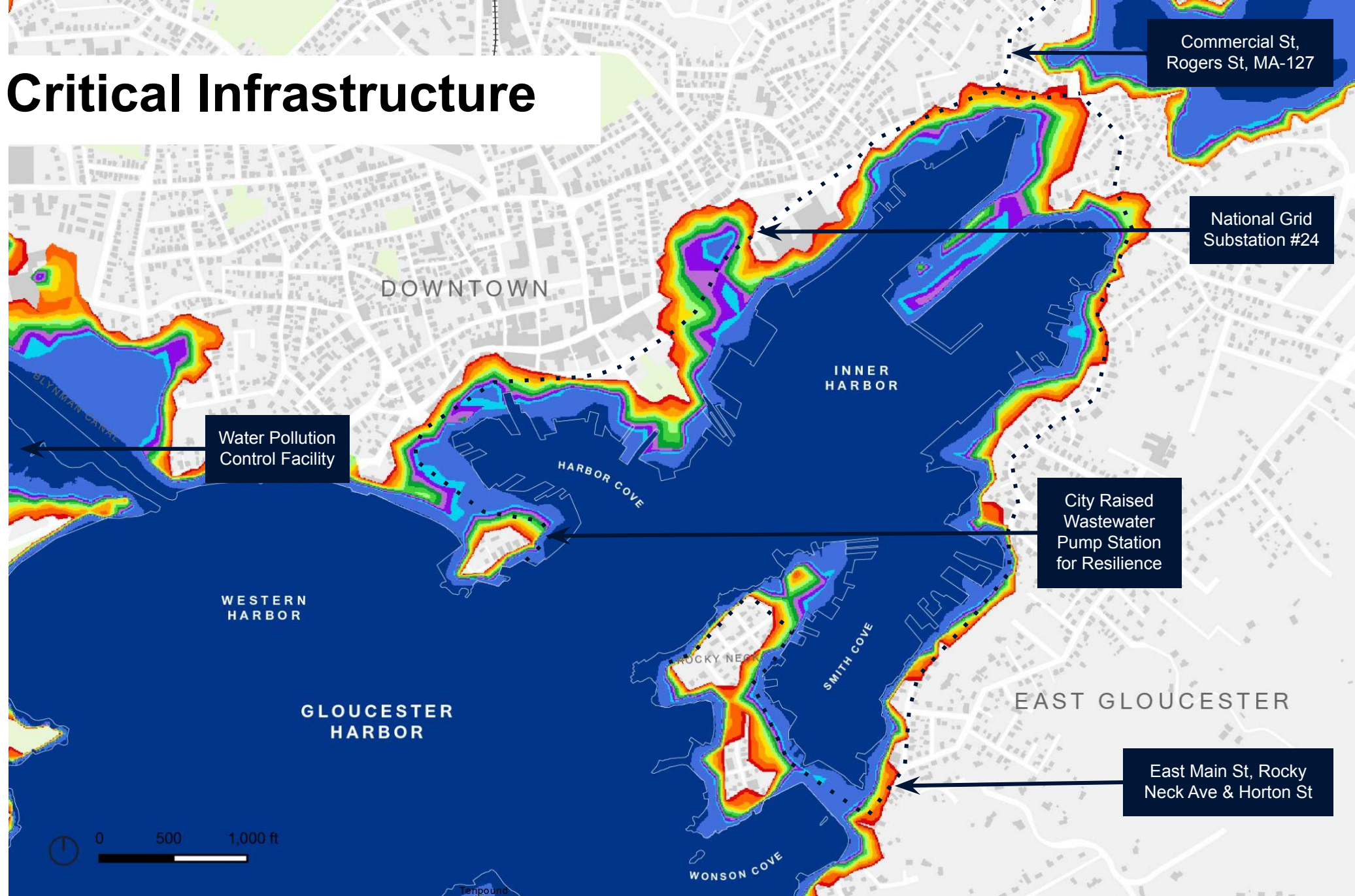- WONSON COVE
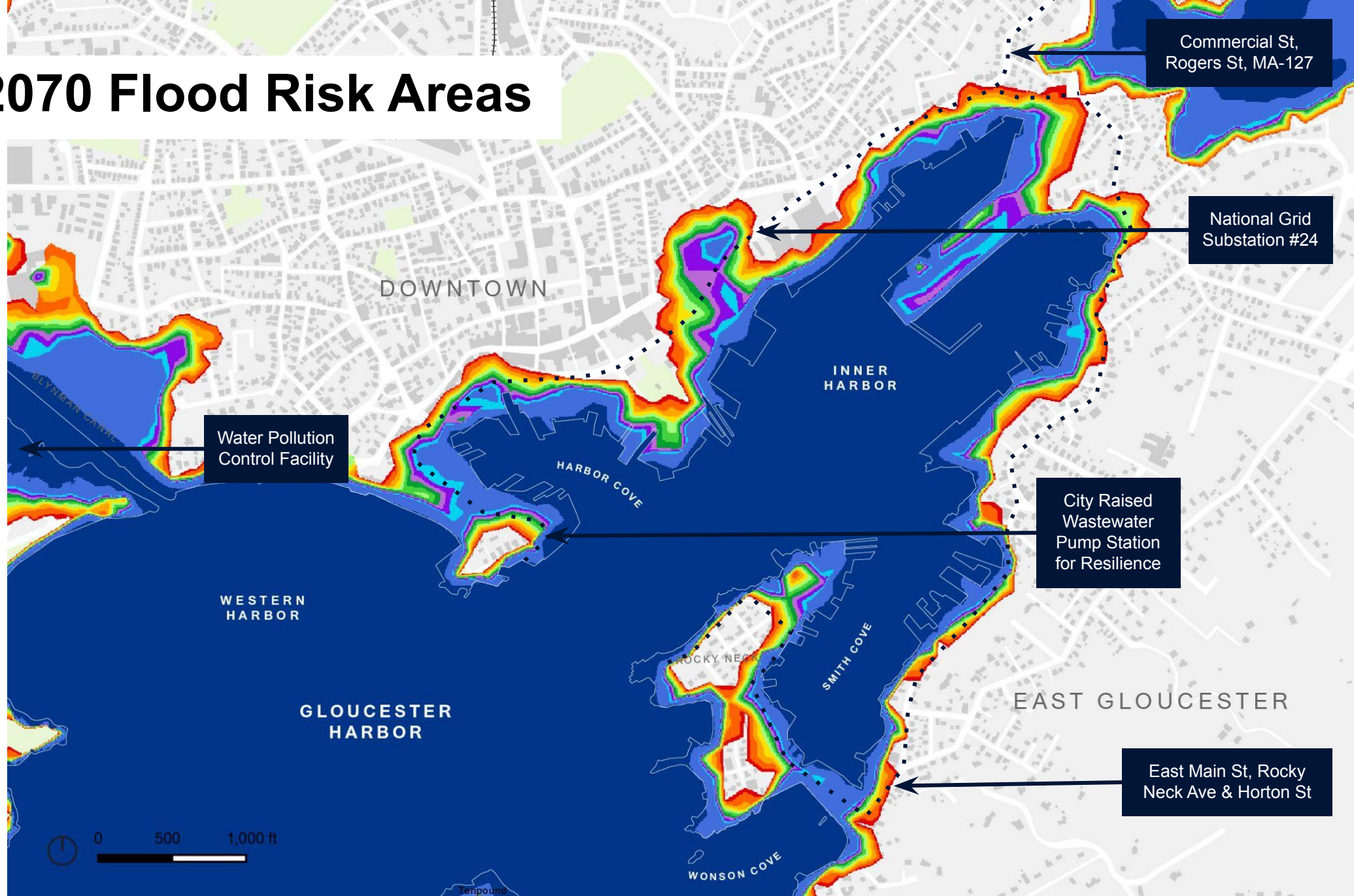
Vulnerable Critical Infrastructure

2070 1% Flood Risk

Water Pollution Control Facility (50 Essex Avenue) is already within a flood zone, but additional flood protection is required to meet the 2030 flood elevations, and grant recently received to start initial improvements.

Harbor Access Roads multiple DPA access roads are subject to current flooding which worsens with future sea-level rise, including Commercial Street, Rogers Street, and MA-127 as well as East Main Street, Rocky Neck Avenue and Horton Street.

Commercial St, Rogers St, MA-127

National Grid Substation #24

Water Pollution Control Facility

City Raised Wastewater Pump Station for Resilience

East Main St, Rocky Neck Ave & Horton St

DOWNTOWN

INNER HARBOR

HARBOR COVE

WESTERN HARBOR

GLOUCESTER HARBOR

SMITH COVE

EAST GLOUCESTER

WONSON COVE
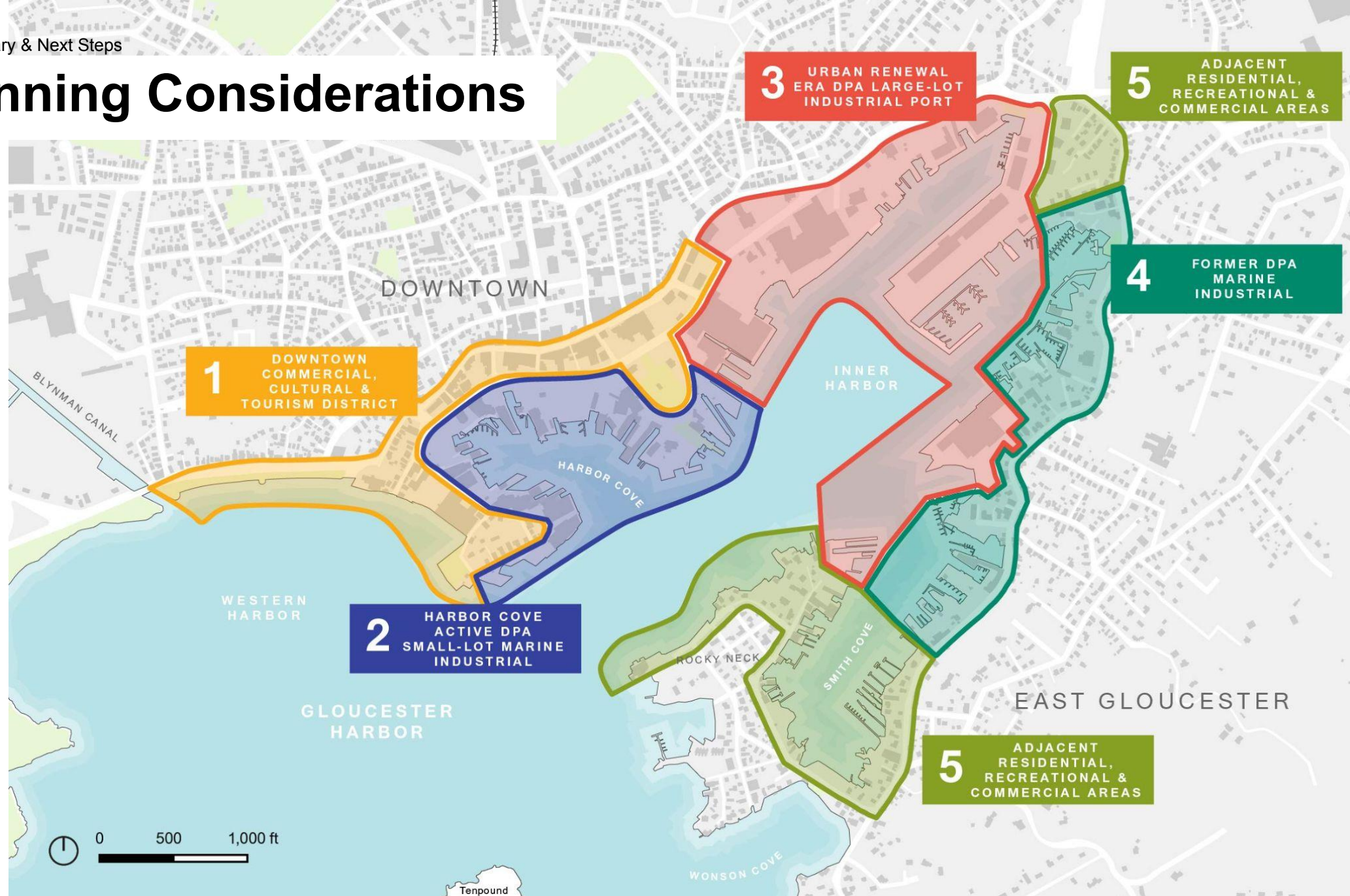
0   500   1,000 ft

Initial Economic Strategy Sub-Areas

Initial takeaways by sub-area for further exploration in development of economic strategy

Harbor Planning Considerations

We propose thinking about the harbor in terms of different sub-areas with different assets, issues and opportunities:

- Infrastructure condition
- Resiliency, flood risk and climate change
- Parcel size, ownership & status
- Regulatory environment
- Economic activity types (tourism, fishing, etc.)
- Circulation (truck routes, parking)
- Public access

3 URBAN RENEWAL ERA DPA LARGE-LOT INDUSTRIAL PORT

5 ADJACENT RESIDENTIAL, RECREATIONAL & COMMERCIAL AREAS

4 FORMER DPA MARINE INDUSTRIAL

1 DOWNTOWN COMMERCIAL, CULTURAL & TOURISM DISTRICT

2 HARBOR COVE ACTIVE DPA SMALL-LOT MARINE INDUSTRIAL

5 ADJACENT RESIDENTIAL, RECREATIONAL & COMMERCIAL AREAS

DOWNTOWN

INNER HARBOR

BLYNMAN CANAL

HARBOR COVE

WESTERN HARBOR

ROCKY NECK

SMITH COVE

EAST GLOUCESTER

GLOUCESTER HARBOR

WONSON COVE

Tenpound

0   500   1,000 ft

Going forward there is a fork in the road

Economic Strategy vs. Regulatory Plan

Harbor doesn't exist in isolation - upland activity (downtown, inland industrial parks) matters.

within DPA + within Chapter 91
184 acres

within DPA + outside Chapter 91
31 acres

outside DPA + within Chapter 91
108 acres

outside DPA + outside Chapter 91
101 acres