Port of Gloucester, MA
Groundfish Port Recovery and Revitalization Plan

by the
City of Gloucester

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Prepared by the

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University of Massachusetts Boston

in collaboration with the

City of Gloucester

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The Gloucester Groundfish Port Recovery and Revitalization Plan: A Response to the New England Groundfisheries Crisis

April 2014

Vision – Mission

Vision

The historic Port of Gloucester will continue to be a steward of sustainable fishing practices while promoting global innovation and sound management of the ecosystem to ensure a strong, vibrant diversified fishing industry for the next 400 years and beyond.

The Port of Gloucester aims to stabilize and rebuild the harvesting, processing, and marketing sectors of the fishing industry and shoreside services, to achieve the goals of: a diversified, high value-added, and equitable economy; ecologically sustainable harvesting and an environmentally clean port and ocean; and provision of healthy local fish to the region.

Mission

Key stakeholders in the historic Port of Gloucester, including fishermen, fish handlers, shoreside servicers, researchers, and community leaders will continue to lead during a period of transition that has emerged in the wake of the federal government's significant reduction in the amount of allowable groundfish landings as of May 1, 2013, including a 77 percent cut in Cod landings from the Gulf of Maine.

Gloucester's leadership during the transition will include identifying and delivering immediate relief to the fishermen, families, shoreside support businesses, and others throughout the Northeast Fishery that are directly impacted; protecting and preserving the working waterfront in Gloucester (and other ports across the region), all which are essential to the continued vitality of the New England and U.S. economy; and securing investments in maritime innovation that will create new opportunities for fishermen to use their boats and equipment in the furtherance of ocean research.

Above all, Gloucester will continue to protect its heritage and build its own destiny as a supplier of safe, fresh, sustainable food to reduce reliance on foreign sources for an essential element of the United States' food supply chain.

Narrative

The Port of Gloucester has been known as a global leader of innovation in the fishing industry since being settled nearly 400 years ago. By embracing new ideas and change, Gloucester has remained one of America's most productive seaports while serving as the leading steward for precious ocean resources that sustain the community and other ports in New England and Canada.

Every sector of the Gloucester port community, along with every other port community in New England, are unified in their resolve to use this time of transition brought on by federal government policies to promote best practices, preserve natural resources, develop and sustain business certainty for the fishing industry, and modernize the fishery management systems.

In the face of significant cuts to the commercial groundfish industry in the Gulf of Maine and the Northeast Fishery, the City of Gloucester is proud to put forth a wide range of interim, short-term , and long-term proposed solutions. These measures will provide relief to the fishermen and shoreside servicers directly impacted by these measures, preserve the historic fishing industry by providing a 'bridge' until restrictions are eased, and deliver increased levels of investment into port communities for future innovation in areas such as diversified and sustainable fishing along with marine science, marine technology, and marine research.

The availability of technology and intellectual property in the twenty-first century demands a progressive vision for the fishing industry, which is not only the historic foundation of industry and culture in New England, but has consistently supplied the American people with a fresh, plentiful supply of healthy and delicious food.

Gloucester has proudly led the efforts to promote sustainable, environmentally responsible fishing practices for the past five decades. The fishing industry boldly promoted enactment and reauthorization of the Magnuson-Stevenson Fisheries Conservation and Management Act, advocated for laws to end the practice of ocean dumping, and successfully fought oil drilling on Georges Bank in the United States and Canada. Working collaboratively with other port communities, local fishermen, and organizations like the Gloucester Fishermen's Wives Association, fought for fair regulations by the New England Fishery Management Council and for establishment of the Stellwagen Bank Marine Sanctuary. The community also launched Cape Ann Fresh Catch, a Community Supported Fishery that is dedicated to sustainable seafood.

The need for high quality, fresh, reliable American seafood resources has never been more prominent. While seafood is considered an essential element of the national diet in the United States, the country risks becoming wholly reliant on foreign supply to provide for the needs of the population. Recent reports state that imported seafood accounts for more than 90 percent of American consumption, including seafood exported by U.S. fishermen and later re-imported after processing.

In fact, a progressive vision is essential for American fishermen, primarily small- and mid-sized businesses, to compete in a global economy where, according to the United Nations Food and Agriculture Organization, more than 1 billion people across the world rely on seafood as a primary source of protein and more than 500 million people rely on fishing for their livelihood.

The economic and cultural impact of the New England fishing industry extends far beyond the shoreline, with restaurants, fish handlers, fish processors, maritime suppliers, and marine ocean technology business tied to the historic fishing industry. In terms of direct impact, Massachusetts fishermen reported $65.6 million in groundfish landings during 2011, including $20.4 million in New Bedford, $17.4 million in Boston, and $17.1 million in Gloucester. Other New England States reported $22.7 million in landings.

History of Transition Plan

The collapse of the Canadian Grand Banks cod fishery in the 1990s provides useful lessons that can be applied in 2014. From creating expanded opportunities for deployment of local fishing

fleets to a vastly expanded focus on “Blue Economy” opportunities such as robotics, pelagic research, ‘green’ marine transportation, and sustainable fishing, the Canadian and various regional governments’ approach has yielded exciting new opportunities while ensuring the long-term viability of the fishing industry.

Innovation in the Gloucester fishery since 1990 focused on differentiating the catch and the health of local seafood. The Gloucester 2020 Plan was developed, leading to investments and approaches that benefited the industry. The City built the Gloucester Seafood Display Auction to provide higher prices for a quality product and to bring fresh seafood more directly to market. The Fishermen’s Wives embarked on marketing campaigns, sharing recipes for alternative fish, hosting creative public events like Seafood Throwdowns, and ultimately establishing Cape Ann Fresh Catch, the largest Community Supported Fishery in the nation with over 600 families buying into a seasonal delivery of fresh products.

In more recent years, the City has explored and developed relationships with the marine science and technology markets. Two maritime summits hosted in the city, the first in collaboration with the Metropolitan Area Planning Commission, and the second by the subsequently developed Mayor’s Maritime Partnership, showed a $4.6 billion market in New England, with investment in patents and venture capital north of Boston second only to Boston itself.

As the City explored these markets, the connection with the fishery was unmistakable. The sophisticated ocean observing and prediction market is echoed and replicated in fishery management. Acoustic sensing equipment, most often commissioned for navy research, now can identify when schools of fish are breeding. Sensors are put on nets, buoys, and underwater automated vehicles. Computer modelling and identification of ocean currents, temperatures, and salinity, now guide fishermen in ways to avoid restricted species.

It has also become clear that the challenges of continuing global climate change require a more sophisticated understanding of what is happening in the ocean. The challenges with the current history-based approaches to fishery management have led to expanded research into the ecosystem knowledge that is required for more comprehensive system health.

Most recently the City partnered with the Gulf of Maine Research Institute (GMRI) to convene partners who would benefit from a central location on the Gloucester waterfront of an Ocean Development Center that could provide the foundation for the clear potential collaboration of the fishery with the most advanced ocean research needed for the twenty-first century. In the development of the Concept Plan, concrete interest has been expressed by the experimental deployment sector of the marine technology and research industry, and from the various fishery organizations in the city which require critical mass for a clear and consistent community voice for the future of the fishery.

Inclusive Planning Process for the Port Recovery and Revitalization Plan

On September 13, 2012, based on the severity of the projected impacts on the groundfish industry (harvesters and shoreside businesses) of the federal groundfish catch reductions scheduled to take effect on May 1, 2013, the U.S. Department of Commerce declared the Northeast Multispecies Fishery a disaster. Throughout the winter of 2012-2013, fishermen and

their representatives sought relief from the proposed regulatory limits. These efforts were unsuccessful.

Multiple stakeholders in Gloucester came together in April 2013, under the leadership of Mayor Carolyn Kirk, to formulate a comprehensive transition or “bridge” plan to navigate through a looming catastrophe in the port. On May 1, 2013 the federal government’s drastic reductions in allowable catch for several key groundfish stocks took effect, including a 77 percent cut in high value Cod landings from the Gulf of Maine and a 55 percent cut in the U.S. share of cod landings from Georges Bank. These cuts threaten the economic viability and survival of not only the fishing fleets, but also of the processors, shoreside services, and fresh fish markets of the region.

At the April 2013 workshop, thought leaders across the disciplines of industry, science, regulation, and governance forged a framework to confront the challenge. The multi-disciplinary collaboration created the Bridge Plan, a template for a return to prosperity for the port.

An immediate effect of the Bridge Plan was the recognition that significant federal funding for the American seafood industry - the Saltonstall-Kennedy (S-K) fund, derived from a tax on imported seafood - had entirely been diverted from investment in industry innovation to research supporting regulation of the industry. In August 2013, the U.S. Department of Commerce, through NOAA, made available between $5 and $10 million for the S-K grant program, with grant applications due September 2013.

With a groundswell of support, processors and fishermen from the City of Gloucester found partners and were able to submit six separate grant applications for industry innovations. As the crisis continued, the Commonwealth of Massachusetts made available grant funding for the Groundfish Port Recovery and Revitalization Program in October 2013. The City obtained a $75,000 grant to develop the Groundfish Port Recovery and Revitalization Plan to define the programs and sources of funding necessary to lead the port through this transition to the adaptive and profitable fishery of the future.

Now assisted by the Urban Harbors Institute of the University of Massachusetts Boston, the City of Gloucester hosted a second workshop of diverse and invested stakeholders on November 22, 2013, followed by interviews and several focus sessions in early January 2014. The Groundfish Port Recovery and Revitalization Plan lays out a complete strategy for the port, produced by and involving an unusually diverse and complex collaboration of partners for recovery.

The group reconvened in early April 2014 to face the challenges of capacity and ownership of the necessary commitment for the return to prosperity. Investment is critical for this capacity to take hold and leverage the strengths of the port into an engine for maritime development.

Status and Outcomes as of April 2014

In August 2013, the U.S. Department of Commerce, through NOAA, made available $5 to $10 million for the Saltonstall-Kennedy (S-K) grant program, with grant applications due September 2013.

Despite a short six week window in which to prepare proposals, six multidisciplinary teams based in the Gloucester community applied for a total of $2.25 million in Saltonstall-Kennedy grants.

- The Gulf of Maine Research Institute and the Massachusetts Division of Marine Fisheries partnered with fishermen who are harvesting whiting. The fishermen, GMRI, and DMF proposed research to support expanding opportunities to harvest whiting, as well as marketing efforts to increase regional demand of the fish.

- Cape Ann Seafood Exchange sought funding for new processing equipment, marketing, and branding for redfish, partnering with Endicott College.
- Cape Ann Fresh Catch sought funding to train chefs in four culinary schools on methods to prepare and use alternative species of fish.
- A city-led proposal partnered with Salem State University's Northeast Aquaculture Center and Maritime Gloucester to team up with displaced groundfishermen to experiment with growing a new shellfish product in state waters.
- UMass Boston, in collaboration with Mortillaro's Lobster Co. and Ocean Alliance, proposed to test the new environmentally sound "green concrete" and floating island technologies to improve water quality and fish habitats in this industrial harbor, and help sustain working fishing waterfront
- Ocean Crest Seafoods, parent company of Neptune's Harvest Fertilizer, teamed up with scientists to develop ways to extract the valuable chitin from lobster and crab shells that are now a waste product in the harbor, as well as to develop a new and longer lasting lobster and fish bait from liquid fish.

- Northeastern University sought to partner with community leaders to bring additional support to fishing families in crisis.

On March 27, 2014, NOAA announced awards of $5.6 million to the Greater Atlantic Region, 54 percent of the $10.5 million that was made available nationally. Cape Ann Seafood Exchange and Northeastern University were the two awards to Gloucester partnerships, totaling $628,455.

On February 10, 2014, the Northeast Regional Office (NERO) of NOAA, headquartered in Gloucester, formally announced the change of its name to the Greater Atlantic Regional Fisheries Office (GARFO). NERO was directed by Congress to make this change to more accurately convey the broad extent of their region, which extends from Maine to North Carolina, and includes the Great Lakes.

NOAA states that this name change is in line with its previously announced efforts to expand its presence in the Mid-Atlantic. Just a few weeks ago, GARFO announced the appointment of Dr. Kevin Chu as Assistant Regional Administrator for Stakeholder Engagement and realigned some of its communication and fishing industry outreach teams under the newly formed Stakeholder Engagement Division.

In January 2014 President Obama signed the Consolidated Appropriations Act of 2014 (H.R.3547), which provides FY 2014 appropriations for federal government projects and activities. The law included $115,000,000 transfer from the Department of Agriculture fund ''Promote and Develop Fishery Products and Research Pertaining to American Fisheries'', for exclusive use in fishery activities related to the Saltonstall-Kennedy Grant Program, Cooperative Research, Annual Stock Assessments, Survey and Monitoring Projects, Interjurisdictional Fisheries Grants, and Fish Information Networks.

Recommendations and Implementation

This plan represents another step forward by the City of Gloucester to confront the challenge of declining groundfish stocks and subsequent management measures which have had a profound effect on the fishing industry, the community, and its economy. The plan's strategies include both short-term recommendations to address the immediate direct impacts on harvesters, fresh fish processors, and associated support businesses, as well as longer-term proposals to bolster and support the industry as it recovers, and proposals to create new economic opportunities built upon Gloucester's maritime assets, skills, and intellectual capital, and old and new partnerships. The Plan lays out the investments, collaborations, and required resources that will lead the port into a modern, diverse, and profitable future. Although the number of recommendations varies across topics, this does not reflect the relative importance of any particular topic area over another.

The Plan recommendations are organized in the following way:

(I) Transition Assistance
  A. Fishermen and crew
  B. Shoreside business and infrastructure
(II) Investments for System Health and Prosperity
  A. Fishing directed research and management
  B. Sustainable harvesting, marketing, and marine product development
  C. Diversified port maritime industries

I. Transition Assistance

A. Fishermen and Crew

Fishermen and crew need transitional assistance to meet immediate financial demands while their boats are idled at the docks, including unemployment insurance, mortgage protection, SBA programs to restructure debt, dockage and fuel relief, and other measures available to declared disaster areas.

1. Provide Disaster Relief Funds .

In response to six "commercial fishery failures" and "fishery resource disasters" that occurred around the nation in 2012 and 2013 – including the declaration of the New England groundfish fishery a federal disaster area in the fall of 2012 – the FY 2014 Omnibus Appropriations Bill approved in mid-January included a total of $75 million in disaster mitigation funding. Gloucester's portion of these funds (TBD) will be essential to maintaining the core industry and assets of Gloucester's groundfish industry. It is imperative that this disaster assistance be distributed immediately to the affected industry stakeholders to assure the recovery, so there will be an industry to rebuild.

In a January 30, 2014 joint letter to members of the Senate Appropriations Committee and Northeast delegation, Northeast groundfish organizations related their preliminary position that use of the federal disaster mitigation funds should be for two categories of assistance: (1) immediate direct assistance to affected fishing businesses, and (2) longer term initiatives that

contribute to the future viability of the fishery.

On February 4, 2014 Governor Patrick sent a letter in support of the fishing disaster funds to the Secretary of Commerce. The Governor recommended that several strategies be considered to receive disaster aid, including the following: direct subsidy programs to fishermen and fishing businesses; crew and family service programs; assistance programs including a long-term revolving loan fund; short-side infrastructure support; and development and implementation of industry and community plans to rationalize aspects of the groundfish industry and ensure future sustainability of the industry and fishing communities.

2. Provide loan funds for vessel repairs, gear upgrades, and refinancing of debt.

Currently $500,000 is available to Gloucester from the Commonwealth's Commercial Fisheries Revolving Loan Fund. The fund was targeted initially for the purchase of commercial fishing permits, but eligible uses of the fund have been expanded to include vessel repairs, gear upgrades, and refinancing of existing fisheries-related debt.

To establish the loan process, a local financial group must apply to the Massachusetts Division of Marine Fisheries (DMF) to administer the loan. Funds then can be distributed to qualified applicants. The Cape Ann Commercial Fishermen's Revolving Loan Fund has applied to administer these funds.

Further, supplement available funds in the Cape Ann Commercial Fishermen's Loan Fund with funds from the U.S. Department of Agriculture (USDA) Rural Development Program (Gloucester eligible) if demand warrants. The Intermediate Relending Program (IRP) offers funds of up to $1 to $2 million to revolving loan programs at a rate of 1 percent for ten years.

Funding sources: NOAA/MA DMF, USDA IRP Loan Fund

3. Provide grant assistance to Gloucester Fishing Community Preservation Fund .

The Preservation Fund was formed in 2007 and received an LNG mitigation payment for $10 million to purchase permits and quotas. Currently, quota is so low that no one can afford to catch fish and no one can afford to rent the quota or permit. Additional funds would be used to assist fishermen to assemble quota for less than market value. Bringing additional fish into the port would assist processors and shoreside service businesses.

4. Seek additional funding to expand support services for fishing industry families.

Fishing Partnership Support Services has been providing essential services to fishing families as one of the keys to maintaining Gloucester's fishing industry. These services include assistance with health insurance, safety as sea training, drill conductor training, health screenings and vaccines, counseling, employment alternatives, and others. There is a need both to expand the existing services and to increase the scope of services, but funding for existing services is limited and not stable.

Potential funding sources: legislation and grant programs

B. Shoreside Business and Infrastructure

Fishing fleets rely on the support services of the region's ports, including marine railways, engine repair, ice production, and marine supplies. Transition assistance for shoreside businesses is support for infrastructure, relief on fixed costs, assistance with regulatory compliance, and zoning relief to allow new uses in addition to (and often in combination with) fishing support services.

Shoreside businesses require these investments to survive during the transition and recovery of the fishery. These strategies also give the businesses the ability to retool and adapt to the new fishery and maritime uses.

5. Establish a Small Fishery Shoreside Support Facility grant program .

Similar to the U.S. Small Shipyards Grant Program offered under MARAD, a Small Fishery Shoreside Support Facility Grant Program would allow shoreside businesses to reinvest in the waterfront services that serve the nation's fishery. Business representatives estimated that investments in the amount of $750,000 to $1 million per property are needed to retool and restructure outdated facilities in order to become more versatile and efficient, to support environmental compliance, and to serve new maritime markets.

6. Attract private investment to the Designated Port Area.

The Gloucester Designated Port Area is located in an eligible target area for New Market Tax Credits.

The New Markets Tax Credit Program (NMTC Program) was established by Congress in 2000 to spur new or increased investments into operating businesses and real estate projects located in low-income communities. The NMTC Program attracts investment capital to low-income communities by permitting individual and corporate investors to receive a tax credit against their Federal income tax return in exchange for making equity investments in specialized financial institutions called Community Development Entities (CDEs). The credit totals 39 percent of the original investment amount and is claimed over a period of seven years (five percent for each of the first three years, and six percent for each of the remaining four years). The investment in the CDE cannot be redeemed before the end of the seven year period.

A group of citizens has formed the Gloucester Harbor Community Development Corporation (GHCDC), incorporated as a 501c3 not-for-profit on April 15, 2013. The mission of the organization is to improve the economic development capacity of our working waterfront. The GHCDC looks to further the objectives of the shoreside industries as expressed in the Port Recovery Plan and in the 2014 Harbor Plan and Designated Port Area Master Plan. The GHCDC meets the eligibility criteria to be a CDE as required for new market tax credits.

Support collaboration between the GHCDC, local financial institutions, and elected officials to bring an allocation of New Market Tax Credits to development in the Designated Port Area.

7. Establish a shoreside business loan fund.

With the current financial forecast of low profits in marine industrial businesses, conventional banking products are not being approved. A mechanism is needed to guarantee loans and

grants for innovations in processing equipment, integrated with the regulatory predictability necessary to support capital investment.

8. Establish a technical assistance fund for small business use.

The fund could be used for seafood and marine industrial businesses to hire legal or engineering

assistance to assess regulatory compliance and adapt to regulatory changes.

Fish processing and handling is subject to a myriad of regulations. Fish are processed according to U.S. Food and Drug Administration (FDA) Hazard Analysis and Critical Control Point (HACCP) regulations. Processors may also follow Best Aquaculture Practices (BAP) protocols and must meet guidelines called Current Good Manufacturing Practices (cGMP). Voluntary standards to ensure safe seafood processing are offered through the U.S. Department of Commerce Seafood Inspection Program (DOC/SIP).

Operations on the waterfront are subject to increasingly stringent U.S. Environmental Protection Agency (EPA) requirements to prevent pollutants from entering the ocean. Long established port operations must comply with new, changing, and often complex regulations.

The current moratorium on a requirement for commercial fishing vessels to have a National Pollutant Discharge Elimination System (NPDES) permit for any discharges incidental to normal operation (except for ballast water discharges), is due to expire on December 18, 2014 (barring a Congressional extension). In anticipation of the end of the moratorium, EPA published a draft small Vessel General Permit (sVGP) in 2013 to provide for permit coverage for these incidental discharges. The final sVGP is forthcoming.

Consider incorporating staffing for regulatory assistance into the Ocean Development Center plans.

9. Work with the regulatory agencies at the state and local level to create clear guidelines for local property owners who wish to make repairs or perform maintenance with no change of use or change of footprint.

Currently the Massachusetts Chapter 91 regulations require licensees to maintain and repair all licensed structures in good working order for the uses authorized in the license. Further, the regulations state that during the term of a license no application for license or license amendment shall be required for maintenance and repair activities. These activities include replacement of old pilings, decking, or rip-rap (all with material of the same dimensions and quality and in the same locations and elevations as that authorized in the license); repaving of road surfaces, installation of road curbs and lighting, reconstruction of culverts and catch basins; restoration to the original license specifications of licensed fill or structures that have been damaged by catastrophic events, provided that no change in use occurs; and demolition and removal of unused structures that are obsolete or otherwise no longer suitable for the uses authorized in the license, provided that written approval by the Department is obtained prior to work. See 310 CMR 9.22(1).

In addition to MassDEP Waterways, federal and municipal agencies and boards exercise overlapping regulatory authorities on the waterfront. In practice, the implementation of these

regulations may not be as straightforward, coordinated, or as comprehensible to the regulated community as intended. A structured conversation between the City, regulatory agencies, Gloucester Harbor CDC, and property owners would help to establish well-defined requirements by different agencies in a variety of circumstances. This conversation would improve understanding and help to more effectively manage expectations of all parties involved. Depending on the outcomes of such a conversation, the next steps would be to document in plain language the various requirements in a guidance document for property owners and work towards implementation of mutually agreed upon solutions.

10. Establish a water rate funding subsidy for processors and other fishing related industrial users.

The high volume of water utilized for production coupled with the City's water rate creates a considerable business expense for industrial users. This expense is a barrier to the expansion of existing businesses or introduction of new businesses. Federal and state funding may provide potential sources for subsidies.

The Public Utilities Division of the Gloucester Department of Public Works is responsible for water supply and the sewer system and treatment plant. The water and sewer rates (as of July 19, 2013) are:

Water: $9.17 per thousand gallons

Sewer: $12.21 per thousand gallons

Some water suppliers use a declining block rate in which cost per unit of water decreases with increased water usage, which provides an advantage for industrial and commercial customers who use larger amounts of water.

The FDA has jurisdiction for regulation of water used in the processing of food. The FDA's current good manufacturing practice (cGMP) regulations require use of safe and sanitary water for seafood processing: safe, potable water is required for rinsing seafood and for washing seafood handling equipment and surfaces. Any water that contacts food or food-contact surfaces shall be safe and of adequate sanitary quality (21 CFR 110.37(a)). The U.S. EPA sets standards for potable water. Seawater from near shore areas may be contaminated with pathogenic organisms, chemicals, and elements, so is not suitable for product or equipment washing (University of Maryland).

Potential funding source: Gloucester Water Enterprise Fund

11. Invest in fish processing wastewater pretreatment and explore surface water disposal. Determine the pretreatment standard requirements of the Gloucester Wastewater Treatment Plant and explore alternative technologies and sources of technical and financial assistance.

Pretreatment is essential to continue processing at current levels and to encourage expansion and diversification of processing to include other seasonally available species.

Industrial facilities such as fish processors must have a National Pollutant Discharge Elimination System (NPDES) permit from the Massachusetts Department of Environmental Protection (MassDEP) to discharge industrial wastewater to surface waters.

That NPDES permit will ensure adequate water pollution control practices are employed. Industrial discharges to a publicly-owned treatment works (POTW) must adhere to the facility's permit criteria similar to NPDES permits, i.e., maximum pH, TSS (Total Suspended Solids), BOD (Biological Oxygen Demand), and others.

The City of Gloucester Wastewater Pretreatment Center Facility (WPCF) operates with an Industrial Pretreatment Program (IPP), a federally authorized program that works to control commercial discharges by requiring industries targeted by federal and local pretreatment regulations to remove specific toxins from their wastewater before it is released into the City's sewer system.

The limits under the IPP are based on Maximum Allowable Headworks Loading (MAHL), which is the maximum amount of pollutants the City can receive at the Wastewater Pretreatment Center Facility from Industry. The MAHL is established for the following pollutants:

- **Biochemical oxygen demand** (BOD) in lbs./day
- **Total Suspended Solids** (TSS) in lbs./day
- **Oil and Grease** in mg/l
- **pH** in standard units
- **Flow** in gallons/day

The last review of local limits and MAHL was in 2002. The following current local limits/MAHL were developed by Almer Huntley Jr. & Associates Inc. in 1992 and revised and approved by U.S. EPA in 1995.

- Current maximum allowable industrial loading for BOD is 1,903 lbs. per day
- Current maximum allowable industrial loading for TSS is 770 lbs. per day
- Current maximum allowable uniform concentration for Oil & Grease is 100 mg/L **per industrial user**
- pH range is 5.0 to 9.5 s.u. **per industrial user**

The 1,903 lbs. per day of BOD and the 770 lbs. per day of TSS are distributed among industrial users based on their process/discharge flow. So if Gorton's has a discharge that is approximately 15 percent of the allowable industrial flow to the plant, then the city establishes limits for Gorton's at about 15 percent of each MAHL pollutant. There is flexibility to establish higher or lower limits based on a specific industry or process. For example, beer battering might require a higher BOD limit than some industry with cooling water discharge.

Below is a list of the 2012 permitees and their allocated limits and their actual average loadings. The City still has **815 lbs. per day of BOD and 318 lbs. per day of TSS available to allocate to industry**, i.e., 3 to 4 more industries the size of Gorton's.

Company Name	2012 Allocations	Average 2012 Loadings

	BOD **TSS**		BOD	TSS
Good Harbor Fillet	253	98	83	20
Gorton's	271	90	150	20
National Fish and Seafood	231	116	55	10
Cape Seafood	110	31	59	14
Steve Connelly Seafood	38	19	17	7
Intershell International	31	15	--	--
New England Marine Resources	36	18	10	1
Channel Fish	41	21	9	6
Pigeon Cove Whole Foods	77	44	30	8
Total	1,088	452	431	86
Approved MAHL	1,903	770		
Uncommitted Loadings	815	318		

Convene businesses, the Public Utilities Division of the Gloucester Department of Public Works, and Inspectional Services to clarify capacity concerns and treatment requirements.

Potential funding sources: Massachusetts Water Pollution Abatement Trust, Environmental Bond Bill

12. Expand commercial berthing at the unused wharves on commercial property.

The unused wharves at Americold, Gorton's, and possibly, Mass Electric properties, represent ideal opportunities for expansion of commercial berthing, especially for larger vessels because of the long straight bulkheads and ready access to navigable water. These features were designed and permitted for such use, which is not needed by the current use of the upland businesses.

- Work with the property owners in an effort to overcome concerns with security of the site locations.
- Ensure commercial vessel berthing is part of any permitting for new development or improvements on the property.

13. Support MassDevelopment 's proposal to increase dockage at the Jodrey State Fish Pier.

14. Develop dredge management plans for the inner harbor and Annisquam River.

To continue to serve the fishing industry and additional maritime prospects, regular dredging is essential, yet has always been referred to the Army Corps of Engineers (ACOE). The ACOE recognizes the need, but reserves its capital to support the much larger container shipping needs of the nation. The nation's access to fresh fish and new marine products remains critically important, however. A program must be developed for expected maintenance of the port and access through the river.

II. Investment for System Health and Prosperity

The investments that will propel the port forward are intertwined and mutually reinforcing. Given the critical need to build capacity in the face of years of shrinking resources, investments that coordinate resources and build together will produce the best results. The targeted investment areas are:

- **Fishing directed research and management**
- **Sustainable harvesting, marketing, and marine product development**
- **Diversified port maritime industries**

A. Fishing Directed Research and Management

The small boat fishing fleet in Gloucester has traditionally, and by the nature of the work, been highly decentralized. Despite a lack of integration, as a group this industry holds extensive ground-truthed knowledge of fish and ocean habitat, gained from the unique perspective of frequent and in-depth working experience on the water.

The Magnuson-Stevens Act requires federal regulators to act on the best available science; however, at times these scientific predictions have proven to be inaccurate due to a variety of factors. In these instances, the ability of the science to provide accurate management guidance is limited. Given the inherent variation of natural systems, effective management of fishing effort requires flexibility rather than the current prescriptive, rigid, and precautionary approach.

The 2013 National Academy of Science report on the effectiveness of current fish rebuilding plans states, “The present approach may not be flexible or adaptive enough in the face of complex ecosystem and fishery dynamics when data and knowledge are limiting.” The report suggests multiple ways of increasing efficiency of the fishery without weakening the rebuilding mandates.

15. Redeploy fishing boats as research vessels and fishermen as scientists ’ partners.

An infusion of effort into collaborative redeployment of fishing boats as research vessels, directed by the industry in close coordination with fishery scientists and fisheries managers, has the potential to chart the way forward from single stock assessment models to ecosystem-based models and management.

Chartering of fishing vessels for comprehensive groundfish surveys off the New England coast will accomplish three goals: (1) a dramatic enhancement in the quality and amount of data available to study fish stocks from an ecosystem perspective; (2) a redeployment source of income for fishermen (and landside support businesses) during the recovery period; and (3) the opportunity to enhance geographically-dispersed data collection for numerous other ocean research programs.

The extensive data that could be collected by fishing boats on the abundance, distribution, biological characteristics, and other data on groundfish stocks in the Northwest Atlantic would not only contribute to reduced uncertainties and increased reliability of stock assessments – with potential to increase quotas and/or open closed areas to commercial fishing – but also would support ecosystem-based science and new management directions.

The industry, scientists, and managers will collaborate on survey design and protocols and on the type of information to be gathered. This process and project will rebuild a shared understanding and cooperative working relationship among the industry, managers, and scientists. The resulting data sets should be made broadly available, perhaps through the proposed Ocean Development Center with a visual, real time display of the data.

The Massachusetts Fishermen's Partnership together with the School for Marine Science and Technology at the University of Massachusetts Dartmouth submitted a funding proposal in September 2013 in response to a FY2012-2013 NOAA Broad Agency Announcement for a one-year project titled "Industry-based Surveys for Northeast Multi-species Stock Assessments". The project proposes to:

- Design and implement surveys using chartered inshore and offshore fishing boats for approximately 1,100 vessel days;
- Employ a comprehensive multi-species approach to maximize data collection for fishery and other ocean research needs, achieve cost effectiveness, and support possible future ecosystem-based management. The objective of the sample design will be to increase spatial resolution and seasonal coverage of survey data available for groundfish stock assessments.
- If determined to be a worthwhile element, data collected by participating vessels while fishing their days at sea could be included as part of the study.

It is expected that employment of fishermen and vessels for such research will bring revenue and transitional assistance to the shore side businesses as well. An expanded collaborative research program is a critical component to new and successful management of the ecosystem, and to effective transitional assistance to vessels and shore side businesses.

An initial $50,000 scoping study would organize a working group of fishermen, academic scientists, and NOAA scientists and managers. Research agendas would be assembled from the New England Fisheries Management Council and Science Committee, the Marine Fisheries Institute, and other collaborative research projects in the region, for the purposes of identifying priority research topics and assessing the potential for data collection efforts by chartered fishing vessels. A plan will be developed to optimize the value of data collection for short-term stock assessment studies, as well as long-term ecosystem-based studies and ocean research.

It is crucial that the planning of the cooperative research for the designated cooperative research sea days be specifically divided into two streams - one that directly addresses priorities identified by the NEFMC and its committees, and one that *is independent of NEFMC mandates,* dedicated to:

- Progressive objectives that, while clearly identified as important under the Magnuson-Stevens Act, have seen little or no progress by the Council, e.g., EBM, adaptive management, and harmonization of NMFS, NMS, NOS, DMF, and NROC research objectives as pertinent to the future well-being of the Gloucester/Mass Bay watershed-coastal ocean ecosystem; and

- Even more progressive ideas that represent "outside-the-box" thinking and may not be well-established yet. Managers should play a role in helping to determine research priorities, but there is a need to think beyond information explicitly identified for

management. Independent researchers are developing alternative research priorities that could prove significant to stock assessments and overall ecosystem knowledge and are important to pursue.

Potential funding sources: NOAA Broad Agency Announcement Grant, state budget

16. Establish the Northeast Center for Fishery Management Innovation .

The successful shift into a diverse and adaptive fishery will require stakeholders, who are deeply invested in the preservation of the fishery ecosystem, to align their strengths.

Gloucester is home to specialized fishery organizations, such as the MA Fishermen's Partnership, the Northeast Seafood Coalition, the Fishermen's Wives Association, Northeast Fishing Sectors 2 and 3, and the Northeast Sector Service, that carry credibility with fishermen. These agencies are willing to centralize, and to provide a permanent venue in which the fishermen, the scientists, and the regulators cross paths in non-confrontational ways. Gloucester also is home to over 50 individuals at the MA Division of Marine Fisheries, and another 200 individuals in what is now called the Greater Atlantic Regional Fisheries Organization, NOAA.

The northeast fishery is a dynamic, multi-species environment. The Center therefore will focus on bringing the science of species interactions and expanding knowledge of ecosystem connections into the management decisions.

The Center must be on the waterfront and bring together the dispersed and sophisticated fishing industry organizations. Designed in the proper way, locating the independent agencies along with some proportionate representation from the state and federal agencies would provide critica mass and a forum to incubate new approaches to management.

Consider incorporating the Center into the Ocean Development Center plans.

17. Tell the story of the northeast fishery and seafood .

Produce information and a variety of mechanisms about the northeast fishery, seafood, and the Gulf of Maine ecosystem to both the public and schools. Maritime Gloucester has begun to serve in this capacity - with adult programs, educational outreach in the schools and a new fisheries exhibit. They can play a critical role in the community and the region, and can work with other non-profit organizations and educational institutions to provide information to a variety of student and adult audiences about such themes as the global origin of seafood species, the sustainability of local product, and local fishing economies.

Potential funding sources: NOAA, U.S. EDA

18. Promote education and access to assist the next generation of fishermen to enter the industry.

Develop Apprenti-Fish, the fishing apprenticeship program. An apprenticeship program will create jobs, bring generational continuity into an aging workforce, and provide professional development for the industry.

Such a program should substantially support the cost of an additional crew member, and provide training for that person in current fishery management and safety standards. Funding will be necessary for training sessions, per trip stipends, and protection and indemnity (P&I) insurance paid to vessel owners for their crew member enrolled in the apprenticeship program.

Potential funding sources: federal and state Departments of Labor

19. Develop a Stability Plan for the groundfish fleet.

The purpose of a Stability Plan is to establish systems for economic stability in an industry based in a physical and biological environment that is often unpredictable. Stability will be accomplished through (1) more flexible and adaptive implementation of fisheries management under a reauthorized Magnuson-Stevens Act; and (2) improvements to the harvesting, processing, and marketing "value chain". These improvements to the "value chain" will enable fluctuating supplies of high-value groundfish, a currently under-utilized species, and value-added products to be marketed at stable prices that reflect the true costs and a fair return to the industry.

Establish a collaborative working group and hire dedicated consultants to produce the components of the Stability Plan. The working group should include representatives from Gloucester's harvesting, processing, and marketing/distribution sectors, NOAA Greater Atlantic Fisheries Regional Office (GARFO), including the Sustainable Fisheries Divison and the Social Sciences branch, key fishing industry organizations including the Northeast Seafood Coalition (NSC), New England Fishery Management Council (NEFMC), Sector managers, the Gloucester Fisheries Commission, and experts and advocates in local port economies and local food hubs. This group brings substantial expertise in economic systems, the regulatory system, interactions of fish stocks in the wild, and seafood markets.

The Plan will include integrated recommendations for priority industry-based surveys, modifications in fisheries management to achieve flexibility and stability, investments in processing and product development, branding and marketing to new markets, institutions, food distribution markets, and innovative financing vehicles, such as forward contracts that guarantee a fair price for harvesters.

NOAA is expected to conduct a forecast of economic return from the groundfishery for the purpose of industry consideration of buyback or buyout options. This forecast can provide a baseline for the working group.

The working group should identify the relevant economic indicators with which to monitor the forecast, what abilities the regulatory and industry systems have to smooth economic disruptions, and how quickly the system will need to respond for economic corrections to be effective within a given current fishing season.

Potential funding sources: U.S. EDA Planning Grant, Saltonstall-Kennedy grant

20. Enable real time flows of catch and market data from dock to industry.

Realtime landings data feeding into economic models will be essential tools for this effort. A pilot program from the New Hampshire sector should be expanded to all northeast landing sites, with priority given to tracking landings of groundfish.

Potential funding source: NOAA grant

B. Sustainable Harvesting and Marketing

New England fleets and ports, with a long history of adaptation and innovation, have the opportunity to invest in a shift from high-volume, low-value fisheries to high-value, low-volume fisheries with a smaller ecosystem footprint. Examples of current proposals include retrofitting of fishing boats for high-quality, flexible, multiple-species harvesting and fuel-efficiency; partnerships of fishermen and processors in live-fish markets, and freeze-dried and other value-added products; expansion of local fresh catch programs to include institutional customers; processing of chitin and other products from lobster, crab, and clamshell waste and invasive green crabs; poly-culture of shellfish, kelp, seaweed, and fish habitat restoration; hatchery stock enhancements; green chemistry solutions from the ocean biomass; and others.

A diverse and adaptive fishery will consist of flexibility throughout the system. The following investments will support a diverse fishery and fish handling and market system.

21. Establish a test kitchen to expand commercial use of under-utilized species, develop value-added product, and conduct research, product testing, and product branding.

A Test Kitchen would return multi-layered benefit to the Gloucester fishing community: to educate about fresh fish, to market product by training in the use of alternative species, and to produce value-added offerings such as chowders to supplement the fresh fish delivered through the Cape Ann Fresh Catch. The Gloucester Fishermen's Wives Association trains culinary school chefs, institutional chefs, and visiting domestic and international delegations. Their work expands markets for fresh alternative products from the Gloucester port. The Test Kitchen would expand and enhance existing capacity and allow further collaborations, such as with Endicott College, School of Hospitality Management, and with industry businesses such as Turner's Seafood, and local restaurants.

Potential funding source: USDA Rural Development Grant

22. Invest in cooperative ocean product development.

Assist the development of applications for Saltonstall-Kennedy funding for new product development.

The Saltonstall-Kennedy (S-K) Grant Program is a competitive funding program administered by the National Marine Fisheries Service (NMFS) within the National Oceanic and Atmospheric Administration (NOAA). The program provides financial assistance, in the form of grants or cooperative agreements, for research and development projects to benefit the U.S. fishing industry, including aspects such as harvesting, processing, and marketing. The program aims to assist fisheries and fishing communities to optimize economic productivity while rebuilding and maintaining sustainable fisheries, and also to deal with impacts from conservation and management regulations.

In Fall 2013 Gloucester applied for a total of $2.25 million in Saltonstall-Kennedy grants for use in various projects. In the 2014 grant announcement, there will be the opportunity for Gloucester to apply for community-based "bridge plan"-related investments as well, including funding for such topics as development of a stability plan.

Consider incorporating product development capacity into the Ocean Development Center plans.

Potential funding source: NOAA Saltonstall-Kennedy Grants

23. Develop a Task Force of Processors.

A Task Force of processors would explore and implement ways to increase capacity as demand for local seafood expands. One strategy to explore is to connect and coordinate existing capacity.

24. Expand the UMass System presence in Gloucester.

University of Massachusetts (UMass) System presence, and alignment of UMass resources and expertise with industry priorities in Gloucester, could serve as a catalyst for the Marine Fisheries Institute, Gloucester. A model for this is the Large Pelagics Research Center (LPRC) of UMass Amherst's Department of Environmental Conservation and the Graduate School of Marine Science, located at the UMass Marine Station at Hodgkins Cove. The LPRC works closely with fishermen and, using state-of-the-art technologies, conducts biological and ecological research on pelagic species including tunas, sharks, billfish, and sea turtles. Its goal is to develop scientific understanding that supports effective ecosystem-based management strategies for highly migratory Atlantic marine species.

25. Establish an extension agent position in the northeast regional office of the Cooperative Extension program of UMass to support commercial fishing.

UMass Extension is part of the national Cooperative Extension System, established in 1914. It is a partnership among the U.S. Department of Agriculture, land grant universities, and county government. In Massachusetts, the latter two are UMass Amherst and regional offices (except in the cases of Barnstable and Plymouth counties) funded by the state and UMass. The northeast region includes Gloucester.

Work with selected processors on an application for funding from USDA's Value-Added Producer Grant Program ($10.5 million available).

26. Seek assistance from one of the Commonwealth 's Sea Grant College programs to work with shoreside processors.

The National Sea Grant Program was founded in 1966 to promote conservation and sustainable development of our marine resources through research, education, and outreach. Sea Grant is funded by the National Oceanic and Atmospheric Administration (NOAA), within the U.S. Department of Commerce. The MIT and Woods Hole Sea Grant programs have experience with the commercial fishing industry and offer collaboration with marine science and technology applications.

27. Expand existing partnerships with interested higher educational institutions such as Salem State (Northeastern Massachusetts Aquaculture Center and Enterprise Center), Endicott College, and others.

28. Promote marketing initiatives to encourage consumers to adapt their seafood preferences to changing species.

In 2010 the Massachusetts Legislature established a special commission to investigate the development of a "coordinated, generic marketing program for seafood caught in the Commonwealth and [to determine] whether such program will enhance and stabilize the economic environment for the commercial fishing industry and fishing communities" (2010 Resolves, Chapter 4). The Special Commission on Seafood Marketing was comprised of 15 members, including representatives from the state legislature, MA Division of Marine Fisheries, MA Department of Agricultural Resources, commercial fishermen and dealers, and fishing industry advocacy groups. The Commission held periodic meetings in 2012 and 2013 and issued a final report, *Recommendation for a Massachusetts Seafood Marketing Program*, in July 2013.

The report recognizes current problems in the seafood industry, including the following: inadequate or incorrect information among consumers; minimal or nonexistent name recognition for Massachusetts seafood; competition from international wild-caught and farmed seafood; fluctuating market prices; mislabeling of seafood; and a disconnected seafood industry lacking a central forum for resolving challenges. The report recommends the development of a marketing program for wild-caught seafood landed in Massachusetts, administered by an industry-based steering committee, housed within the Massachusetts Executive Office of Energy and Environmental Affairs, and supported financially by a directed fund, which would include monies from the sale of state commercial harvester and dealer permits, as well as outside funding sources.

In December 2013, state Senator Bruce Tarr introduced legislation (S.1979), which reflects the recommendations made by the Commission. The bill, supported by 23 co-sponsors in the House of Representatives and the Senate, calls for the establishment of a Massachusetts Seafood Marketing Program with the MA Division of Marine Fisheries, assisted by an industry-based steering committee, and financed in part through a dedicated Massachusetts Seafood Marketing Program Fund.

Potential funding source: MA Seafood Marketing Program Fund

29. Work to secure language and funding for seafood in the MA Food Policy Council.

Work with the sponsors of H.3504, An Act to expand access to healthy foods and create the Massachusetts Food Trust. This bill proposes to amend Chapter 20 of the Massachusetts General Laws, to include new language that more explicitly includes seafood as among the healthy, locally-produced foods promoted by the Massachusetts Food Policy Council and eligible for the programs identified as advancing the food system goals of the Commonwealth, such as targeted state subsidies, increased state purchasing for school and adult care programs, and increased institutional purchases. Specifically, sections 6C (a) and (b) of Chapter 20 should be amended to include seafood representatives on the Council and Advisory

Committee.

30. Explore innovative marketing opportunities linked to financial incentives.

Examples of such incentives include carbon credits or sales tax relief for the purchase of locally caught seafood. Request that the MA Clean Energy Commission investigate the feasibility of translating the low carbon footprint of local, wild-caught seafood into carbon trading credits.

31. Establish infrastructure so that local, fresh seafood product can be processed in larger quantities and sold directly to a wide array of purchasers, such as schools and health institutions.

This is a long term approach, but should begin to be explored.

32. Develop and implement industry-wide guidelines for seafood labeling.

Several well-publicized investigations into seafood labeling have found significant mislabeling. A study by Oceana from 2010 to 2012 conducted DNA testing on more than 1,200 seafood samples from 674 retail outlets in 21 states and found that one-third of the samples were mislabeled. In 2011, the Boston Globe conducted a similar investigation that found mislabeling at nearly half of the 134 Massachusetts restaurants and supermarkets tested. A follow-up investigation one year later found that mislabeling continued at most restaurants.

In 2013, State Representative Robert Fennell introduced legislation (H.1946) to strengthen the consumer protections and ensure the proper labeling of fish sold in Massachusetts. The bill requires all sellers of seafood to label clearly and correctly the species of fish for sale. In particular, the bill requires accurate labeling in the sale of Atlantic Cod, Atlantic Halibut, Grey Sole, and Red Snapper. In addition, the bill prohibits the sale of escolar or oilfish or associated products. The bill authorizes the Department of Fish and Game and the Department of Public Health to make all necessary inspections to ensure compliance. The bill establishes fines of $400 or license suspension for a first violation, $800 or license suspension for a second violation, and $800 and/or license suspension or revocation for any third and subsequent violations.

Farm-raised seafood needs chemicals (pharmaceuticals) to maintain health in pens. In addition, chemicals are added to seafood for freshness during transport. The U.S. currently imports approximately 90 percent of its seafood and nearly half of that is farm-raised. It is worthy of note that 33 percent of the world's wild fish is used as feed for farmed fish.

Guidelines for seafood labeling should explore the feasibility of listing all pharmaceuticals used to grow seafood if it is farm-raised, and should list any chemicals added to seafood for preservation during transport.

Potential funding source: MA Department of Fish and Game

33. Support the establishment of an Interagency Task Force on seafood labeling and traceability, as recommended by Senators Markey and Wicker in a January 2014 letter to President Obama

In the January 2014 letter the Senators ask President Obama to direct federal agencies to improve coordination and communication in their work against seafood fraud. In addition, they

ask for stronger border inspections to detect mislabeled seafood, and for the establishment of a standard for national traceability of seafood products.

Previously in 2013 then-U.S. Representative Edward Markey introduced the Safety and Fraud Enforcement (SAFE) for Seafood Act (H.R.1012), while U.S. Senator Mark Begich introduced the companion legislation (S.520) in the Senate. Among other elements, the bill requires data already collected by U.S. fishermen on species, gear type, geographic catch area, and other information to stay with the seafood through processing, distribution and sale. Comparable information also is required of imported seafood. The bill also requires better interagency coordination on seafood safety and inspection between NOAA and FDA, and gives these agencies the right to refuse entry of unsafe or fraudulent seafood shipments. NOAA is given the authority to levy civil and criminal penalties for violations under the Magnuson-Stevens Fishery Conservation and Management Act.

34. Explore opportunities to market traceable local seafood.

It can be difficult for consumers to find traceable local seafood. Gloucester should continue efforts to expand distribution, marketing, and education about this traceable local product.

Red's Best is a seafood distributor that delivers fish from a network of small-scale fishermen to consumers and wholesale markets across the U.S. The Red's Best Traceability System maintains physical control over the seafood chain of custody and electronically tracks catches directly from the fishermen, through transportation, processing, and distribution. A web-based software system collects traceability data for all catches and generates a unique web address accessible through the QR (quick response) Code on each delivery. A customer can scan this barcode using a free QR Code Reader App to access information about their seafood, including fisherman, species, vessel, gear type, and port of origin. This electronic system creates greater traceability, accountability, and efficiency in delivering locally harvested, correctly labeled, trustworthy seafood to the consumer.

Cape Ann Fresh Catch (CAFC) is a Community Support Fishery (CSF) that creates a direct to consumer distribution model for fresh, local, sustainably caught seafood. CAFC is managed by the Gloucester Fishermen's Wives Association, with services from Ocean Crest Seafoods, Turner's Seafood, and the Northwest Atlantic Marine Alliance (NAMA). All catch comes from Georges Bank and the Gulf of Maine and varies seasonally but is comprised primarily of groundfish, such as cod, hake, haddock, pollock, whiting, and flatfishes, such as yellowtail flounder and grey sole, as well as monkfish and redfish. The idea of product traceability and the guarantee that consumers can trust the product they receive is an important marketing tool. Each delivery day, CAFC publishes on its website the species that customers in a specific delivery area will receive, and the name of the vessel that caught the product.

35. Build upon the capability developed by the CAFC to continue to educate the public about seafood traceability, as well as explore the potential of creating a combined physical custody and electronic traceability system similar to Red's Best.

Potential funding source: USDA cooperative grant program

36. Explore the establishment of a Food Hub.

The nature and objectives of food hubs vary widely and reflect the needs and conditions of the community and industries for which it is established. The National Food Collaboration offers the following comprehensive definition of the broad range of regional food hub initiatives in the U.S., many of which are farm-based:

"a business or organization that actively manages the aggregation, distribution, and marketing of source-identified food products primarily from local and regional producers to strengthen their ability to satisfy wholesale, retail, and institutional demand."

A broader definition that may be more applicable to Gloucester comes from the island nation of Mauritius, which defines their Seafood Hub as:

"[a]n efficient and attractive environment for the supply of value added processes and services related to the sourcing and marketing of sea food products."

A local food hub aims to increase market access for producers, while working with and adding value to the existing food distribution system. In Gloucester, the processing industry, the fishing vessels, and the marketing organizations have developed high quality, locally caught and processed seafood product, with a respected reputation that continues to expand across the region. Improvements are needed, however, in various areas such as marketing, product development, and outreach and education of consumers. The establishment of a formal seafood hub in Gloucester could support further coordination among seafood industry entities and enhance their success.

A seafood hub in Gloucester could be the center of a wide range of activities and businesses that work in support of local seafood. Services could be implemented and coordinated by hub staff and other representatives from waterfront businesses. Potential hub services include the following:

- Increase market access for producers by offering a combination of production, distribution, and marketing services directed at gaining entry for Gloucester seafood into new and additional markets
- Devise product differentiation strategies to ensure producers earn a competitive price
- Develop economic forecasting for industry coordination to achieve optimal pricing
- Provide fishermen and processors with technical assistance on regulatory issues, marketing, or gear changes
- Offer grant writing assistance for product development
- Continue to work with existing processors that have endured many changes over the decades in Gloucester and that continue to make sacrifices to stay in the industry

To explore the feasibility of establishing a local seafood hub in Gloucester, the following actions are recommended:

- Hold a local forum with speakers from food hubs to educate the community on the concept and determine the appropriate role, functions and structure.
- Secure funding ($75,000) to prepare a business plan for the seafood hub.
- Consider incorporating the seafood hub into the Ocean Development Center plans.

Potential funding source: Commonwealth of Massachusetts, Agency TBD

37. Consider hatcheries for key species combined with modern research methods to track movements and impact of released hatchery fish on the stock biomass and fishing effort.

Potential funding source: MA Division of Marine Fisheries

38. Designate a pre-permitted area for bi-valve aquaculture.

A pre-permitted area would allow immediate private market investment, innovation, and growth of the off-shore potential for bi-valve aquaculture.

Invest in on-shore testing infrastructure to allow growth of this market with established safety precautions.

Potential funding source: NOAA Saltonstall-Kennedy Grant

C. Diversified Port Maritime Industries

39. Explore opportunities for new marine biotechnology on the waterfront.

Several opportunities exist for new biotechnology advancements on the Gloucester waterfront.

Ocean Alliance is a proof of concept for this on the Gloucester waterfront and is a leader in marine mammal toxicology with a number of initiatives underway including developing the genome for 3 species of whales and growing cell lines to look at the effects of ocean contaminants (contaminants that could also affect fish stocks). To this end they have plans to install a metals analysis laboratory at their facility in 2014/2015.

The FY 2014 budget includes funds for cod genome sequencing and Sonar research of groundfish biomass. Through the work of State Senator Bruce Tarr, State Representative Ann-Margaret Ferrante, and several legislative colleagues, the final Massachusetts FY 2014 budget includes $425,000 for a program of collaborative research by the MA Division of Marine Fisheries through the Marine Fisheries Institute, together with the School of Marine Science and Technology (SMAST) at the University of Massachusetts Dartmouth. The research program will apply innovative technology to assess the biomass of groundfish, including cod and Yellowtail Flounder in the region managed by the New England Fishery Management Council. Of that total, at least $200,000 is for the development and implementation of a cod species genome sequencing study, which will be conducted by the Gloucester marine genome initiative through nonprofit organizations in Massachusetts. The Gloucester marine genome initiative will report on the status of the project to the house and senate committees on ways and means by June 20, 2014. This genomic sequencing aims to advance scientific understanding of different cod stocks, such as Gulf of Maine Cod and Georges Bank cod, which in turn will improve fisheries management.

Potential funding source: Commonwealth of MA

40. Provide a platform for marine science and technology

Ocean Alliance is building out a robotics laboratory at its facility that would be a draw to others in related fields looking to develop the fields of ocean monitoring and exploration in both fisheries and beyond.

As plans develop for the reuse of a central parcel on the waterfront, the city has discovered an opportunity to design and build the infrastructure that would make the site attractive to multiple tenants in the marine science and technology field, specifically the niche of prototyping marine innovations and collaborating on new offshore installations and applications.

41. Support emerging maritime businesses.

Capacity and Framework for Continued Development and Implementation

Local Framework: A framework for ensuring the capacity to advance the recommendations of this plan was a key topic at the final workshop held on April 2, 2014.

Implementation Committee: To ensure the plan's recommendations are pursued in a prioritized and coordinated manner, an implementation committee will be formed of representatives from the sectors of the community who were involved in developing the plan. The committee will identify the steps and participation needed to accomplish the plan's recommendations.

Ocean Development Center at I4C2: Consideration should be given to incorporating into the I4C2 space each center or collaborative effort recommended in this plan, separately or in combination, including: technical assistance for regulatory compliance, product development, marketing, and financing services to processors and a related Task Force of processors; a collaborative project for industry-based surveys; a Northeast Center for Fishery Management Innovation; implementation of a fishery management-value chain stability plan; test kitchen; and food hub.

Potential funding sources: U.S. EDA, state budget

Development of local collaborative institutions and networks : Potential models for organizing multiple fishing industry and Port stakeholders and the City of Gloucester to implement this Plan and to develop capacity in the key interrelated projects, such as a fishery innovation management center and related stability planning, test kitchen, seafood hub, and industry-based research project, should be reviewed, including gathering insights from the successful community collaboration involved in local food hubs, value-chain roundtables, and other partnerships around the country and in Canada.

Alignment of federal and state agencies, universities, foundations, and private financing : This plan should be shared with the multiple public and private sector agencies and institutions and discussions should be held to establish the potential "alignment" of their missions and funding resources with Gloucester's vision of a revitalized fishing industry and investments needed. A reconvening of the 2011 U.S. EDA-sponsored summit of federal and state agencies should be considered to accelerate this alignment. A mapping of missions and resources will accelerate the ability of the Port to apply for and be awarded the necessary grants and loans,

and policy changes needed.

Statewide Policy & Governance Structure : The Commonwealth of MA Ports Strategic Plan, developed under the auspices of MA Department of Transportation, October 2013, recognizes the need for active, integrated management and support for the maritime assets of the Commonwealth. The Plan recommends:

> A permanent cabinet level, maritime specific council to focus statewide policy, with the following features: (1) Chaired by Secretary of MassDOT, with Secretaries of Energy & Environmental Affairs and Housing & Economic Development as members; (2) Massport and local port representation; (3) consolidates Ports Compact, Seaport Advisory Council, and Ferry Compact.

Areas of recommended focus for the council support the needs of the Gloucester port and are the following:

- Groundfishery recovery. In addition to supporting fair and reasonable regulatory outcomes, develop specific strategies including: (1) research on economic value of the northeast groundfishery; (2) research, communications, and economic tools; (3) marketing strategy for under utilized species.
- Development of new funding sources and cost savings.
- Cruise marketing strategy.
- Commercial excursion & passenger transport sector strategy.

Conclusion

Gloucester has been a steward of the Gulf of Maine resource for 400 years. Gloucester fishermen are the eyes of the nation on the water, and the bellwether of the nation's healthy ecosystem. The City stands ready to serve this nation for the most sustainable ecosystems, the highest understanding of the complex changes occurring due to climate change, and the most collaborative engagement of disciplines, technology, and hands-on practicality for the nation's leadership in ocean resource management. We survive to lead, and we invite others to join us.

Appendix A: Stakeholders in the development of The Gloucester Groundfish Port Recovery and Revitalization Plan

City of Gloucester, Mayor Carolyn Kirk

United States Senator Elizabeth Warren
United States Senator Edward J. Markey
United States Representative John Tierney
Commonwealth of MA, Senator Bruce Tarr
Commonwealth of MA, Representative Ann-Margaret Ferrante
Fishermen, Sector II
Fishermen, Sector III
Fishermen, lobster and other fisheries
Gloucester Fishing Community Preservation Fund
Gloucester Fishermen's Wives Association
Northeast Fishery Sector II
Northeast Fishery Sector III
MA Fishermen's Partnership
Maritime Gloucester
Northeast Seafood Coalition
NOAA, GARFO, Sustainable Fisheries Division
NOAA, GARFO, Administration
Large Pelagics Research Center, University of MA, Amherst
Citizens of Gloucester
City of New Bedford
Commonwealth of MA, Division of Marine Fisheries
Commonwealth of MA, Division of Fisheries and Wildlife
Gloucester Marine Railways
Northwest Atlantic Maritime Alliance
City of Gloucester, Fisheries Commission
City of Gloucester, Waterways Board
City of Gloucester, Community Development
City of Gloucester, Harbor Planning
Fishermen's Wharf, BASE auction
Cape Ann Seafood Exchange
Cape Pond Ice Company
Gulf of Maine Research Institute
Boston University
Fishermen, NH
LaRosa Seafood
Cape Ann Fresh Catch
Neptune's Harvest
The Gloucester Harbor Community Development Corporation
Mortillaro Lobster, LLC
Cape Seafoods
Gloucester Fishermen's Revolving Loan Fund
Rose's Marine LLC
Oceanic Innovations, LLC
Turner's Seafood

Appendix B: Telling the Story

Telling the Story
Gloucester Workshop for Port Recovery
November 22, 2013

The purpose of the workshop and plan is stabilizing and strengthening the Gloucester fishery: prevent further losses (shoreside business and the fleet), bring stability, and then "imagine" - what would it take to become prosperous again?

Carolyn Kirk, Mayor of Gloucester

We all need to work together. We're not going to leave anybody behind. We won't let anyone fall through the cracks. We need to look out for everyone with a united message to preserve the fishing industry in Massachusetts.

Ann Margaret Ferrante, State Representative

It is critical to realize the situation we are in - boats for sale, domestic capacity is at risk, loss of shoreside industry that once it is gone it won't be replaced. If that happens, then we won't have the industry that we've known for hundreds of years. And shame on us as stewards of this legacy.

Bruce Tarr, State Senator

The fishing industry is a business ecosystem that is broken. The federal fishery management system is accountable to fish, but is not accountable to livelihoods.

Sarah Garcia, Harbor Plan Director

Sophisticated and focused knowledge exists in the fishery. There is a strength in the organizations and businesses that are in Gloucester. Solutions are out there and each of us has a piece of that. Sophisticated knowledge will create elegant new solutions.

Sarah Garcia, Harbor Plan Director

The strength of the community will come from the private sector. We need value added back into the community. The fishing industry is dependent on the shoreside facilities. If you want to expand the economic base you need to get into processing, need to subsidize water rates because they are too high, need to combine with wastewater pretreatment, and financing of infrastructure repairs and maintenance.

Lenny Linquata, Gloucester CDC

Ocean product development, marine laboratories, and test kitchens had a strong federal and University of Massachusetts presence in Gloucester into the 1990's. It is necessary to re-establish this capacity for developing new value-added seafood products, use of all fish parts, waste recovery, and processing of seaweed, algae, and nutraceuticals.

Valerie Nelson, Voice of the Port

We need to provide fresh, healthy, and local seafood, a benefit for the nation that has been underemphasized in the implementation of Magnuson-Stevens. Lessons and ideas are available outside the fishing industry. We need to be shifting from high-volume/low-value to low-volume/high-value food production and a better price for the harvester fishermen. Success will depend on diversity of fleets and of landed fish. Food hubs are promising innovations.

Niaz Dorry, NAMA

We need to bring more fish into our ports. Fishermen aren't even bringing in the allowable catch that NOAA and the Councils have authorized, because of breakdowns in leasing of quota and collapsing prices of local fish.

Angela Sanfilippo, Massachusetts Fishermen's Partnership

I couldn't afford to fish anymore or lease fish. Boats are deteriorating. Lack of stability is a major problem. I expected the price of cod to be $6/lb. and it fell to $1.50/lb. because of the unreliability in local supply and the shift of the market to cheaper frozen imports.

Joe Orlando, Fisherman

The quota system and the leases are a slow death. Fishermen either need to stop fishing or find a way to get more quota cheaply. The fish are there though. Can't buy fish to catch fish and make it. Can we do something to the food chain system to get fishermen to receive more of the value when fish are sold?

David Leveille, Manger, Northeast Fishery Sector II

Fishermen currently get charged to discard other species when they offload their dogfish. We need to change that. Whiting and redfish have similar issues.

BG Brown, Fisherman

Get the fisherman closer to the end user and get the middle-men out of the picture. This would increase the margin. Also, customers want to know where fish come from, how it was processed. This information helps to increase trust in the product.

Leo LeRosa, LaRosa Seafoods

What happened to the dog fish market? Are PCBs an issue? Was it a marketing issue? Fishermen could get as much as 20 cents/pound if we could identify and address why the market crashed.

Mark Ring, Chair, Fisheries Commission

Fishermen and vessels are getting older and funds are not available to maintain or insure boats.

Rodney Avila, Fisherman

We need to fish to go fish. We need the cash flow to fix and insure our boats to go fish.

Michael Buscierino, Fisherman

Magnuson-Stevens doesn't allow for dynamic change and adjustments. Boom-bust in the industry has always occurred. One thing that is constant is change. We depend on a highly dynamic ecosystem. There was more resilience in the industry when there was less regulation. We need more flexible management of the fisheries.

Vito Giacalone, Northeast Seafood Coalition

We should consider bringing all fish landed into the Port.

Tom Brancaleone, Fisherman

A pilot project to develop a "total catch model" could assess the likely catches based on NOAA models, develop safeguard against abuse by fishermen, and study the economics of how all stocks could be processed and marketed to generate value and a fair compensation to fishermen.

Bruce Tarr, State Senator

Shaky population models and sparse data lead to conservative management decisions. Chartering fishing vessels for research can provide improved data, better mathematical stock assessment models, better management decisions, income for boats and shoreside businesses, and improved partnerships between fishermen, scientists, and NOAA.

Damon Cummings, Retired Naval Architect

Managers should play a role in helping to determine research priorities, but we need to think beyond just what managers need. What new data can we bring to the table? Independent researchers are finding out things that could drastically change the assessment and are important in pushing the envelope, but managers aren't asking for it.

Emily Chandler, Large Pelagics Research Center

Cooperative research must be ecosystem based, and look at large amounts of data on each vessel. Research needs to document what species are here, when, conditions and changes. The research process needs to be robust, look at the entire picture, and we need to think outside the box.

Ellen Goethal, New Hampshire fishing sectors

Fishermen need to be involved in defining the research questions.

Bruce Tarr, State Senator

We need to spend time understanding NOAA's management and science objectives and aligning our proposals with these objectives. Partnership with NOAA is key.

Molly Lutcavage, Large Pelagics Research Center

Processors would be helped in expanding product and investing in their properties by efforts to lower water rates, provide wastewater pretreatment, access in financing, provide technical assistance in regulatory compliance, and develop collaborative marketing and public relations campaigns, a test kitchen and other elements of a local seafood hub.

Patti Page, Mortillaro Lobster

The plan needs to include the complete strategy: what's the message, Gloucester's values, the path to success, the priorities, inclusiveness of all interests and avenues, reflecting the needs and opportunities of the fishermen, shoreside businesses, processors, researchers and others.

Leslie Sarofeen, Cape Ann Business Incubator