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Gloucester Marine Station: Future Development Feasibility Study

Jack F. Ahern  
*University of Massachusetts - Amherst*, jfa@larp.umass.edu

Ben Eli Webb  
*University of Massachusetts - Amherst*, bwebb@larp.umass.edu

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UMass Amherst - Gloucester Marine Station
Hodgkins Cove, Gloucester, MA

Future Development Feasibility Study
July 2010

Project Sponsor:
University of Massachusetts: Center for Economic Development
John R. Mullin, Director
Project Leader: Jack Ahern, Professor
Dept. of Landscape Architecture and Regional Planning
UMass Amherst, 01003

jfa@larp.umass.edu
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Center for Economic Development
Department of Landscape Architecture and Regional Planning
University of Massachusetts Amherst
John R. Mullin, Ph.D., Director
Jack Ahern, Ph.D., Project Leader

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Executive Summary

The UMass Amherst Gloucester Marine Station (GMS) is a valuable property with direct ocean access and a well-respected research history in food microbiology. With the passing of UMass research professor Herbert Hultin in 2007, the station fell into disuse and decline. In recent years, the University facility has been closed – pending decisions concerning future use. Recently, Massachusetts State Senator Bruce Tarr, Gloucester officials and others have urged the University to actively assess the property including the feasibility of appropriate future uses and potential collaborators to generate a renewed and productive future use of the property.

This feasibility study (July 2009-June 2010) was funded by the University of Massachusetts Amherst’s Center for Economic Development, directed by John R. Mullin. The study aimed to assess the feasibility of alternative research-oriented future uses to actively use this UMass Amherst property and to stimulate local employment and economic activity in Gloucester and Essex County. The study involved field visits, meetings with numerous officials and public hearings to solicit information and to identify potential interest in future use, and potential users of the Gloucester Marine Station.

The study found some uncertainty regarding the property title, to be resolved through future legal research, or possibly in land court. Approximately half of the property is unbuildable (the seaward end), under conditions of a U.S. Army Corps of Engineers (ACE) license. A recent coastal flood map by the U.S. Federal Office of Emergency Management (FEMA) shows most of the property is located above the “velocity zone”, allowing for conventional construction. Approximately half of the site is buildable, with no significant limitations for anticipated research-focused uses. The City of Gloucester is supportive of re-activating research use(s) at the station.
Through public and UMass-system workshops and meetings, a number of potential collaborators have been identified, including: University of Massachusetts Amherst and Boston, Salem State College, Massachusetts Institute of Technology, Massachusetts Division of Marine Fisheries, and New England Biolabs. The University of Massachusetts Amherst is planning to renovate the Station for a Large Pelagics Research Center (LPRC). The LPRC is expected to be supported with Federal Congressional Funding, formerly allocated to University of New Hampshire (currently in negotiation) as well as funding from the National Science Foundation (NSF) and the National Atmospheric and Oceanic Administration (NOAA). The LPRC is expected to be relocated to the UMass Marine Station in 2011 - administered by the College of Natural Sciences at UMass Amherst.

In addition to an alternative plan featuring the Pelagic Center, two additional alternative plans were prepared to explore the potential for the site to support the LPRC plus a larger marine research and governmental collaboration, possibly involving the Massachusetts Division of Marine Fisheries and the Massachusetts Marine Fisheries Institute. These alternative plans demonstrate that the site is suitable for an additional 15,000 sf of building space with associated parking and support facilities with a modest lot coverage while remaining in keeping with the residential character of the Washington Street neighborhood.

This report provides a compilation of historical and current conditions at the Gloucester Marine Station, including the respective agencies that have jurisdiction over future development at the Station. The alternative plans are intended to illustrate and explore alternative levels of future development to reduce uncertainty and possibly to stimulate collaborative use at the Gloucester Marine Station to the benefit of UMass, its partners, and the City of Gloucester.
1. Introduction

A. Purpose
The University of Massachusetts Amherst owns approximately six acres of land in Hodgkins Cove on the Ipswich Bay Shore of Gloucester Massachusetts. The land is currently valued at approximately two million dollars (Boston Globe, July 21, 2008) and is presently not used by the University. This parcel was bought in 1970 for $67,500 and used by the University as a Marine Research Station. From 1979 to 2007, the Marine Station was under the direction of Professor Herbert O. Hultin, prominent food microbiology researcher. Professor Hultin passed away in December 2007 leaving the research station without direction or specific purpose. The station has been vacant since 2007.

There is much interest in this unique facility but no clear direction for what should, or could, happen here in the future. The purpose of this report is to identify and clarify existing conditions regarding development potential, to identify potential partners and collaborators, and to develop and assess possible alternative plans for the future use of this parcel that will benefit the University of Massachusetts, the City of Gloucester, and other potential Massachusetts public and private partners.

B. Sponsor and Participants
This project was sponsored by the Center for Economic Development at the University of Massachusetts, directed by John R. Mullin. At the request of UMass Amherst Chancellor Robert Holub and Vice Chancellor Joyce Hatch, John Mullin contracted Professor Jack Ahern and graduate student Benjamin Webb from the Department of Landscape Architecture and Regional Planning to conduct this study.

This study benefited from the help and participation of many individuals and organizations, including: Dean Steve Goodwin of the College of Natural Sciences at UMass Amherst; Juanita Holler, Associate Vice Chancellor for Facilities and Campus Services; Gregg Cademartori, Director of The City of
Gloucester Planning Department and Sarah Buck Garcia, Gloucester Community Development Director. State Senator Bruce Tarr and State Representative Ann-Margaret Ferrante have been instrumental in helping this project to gain important public visibility and support. The University of Massachusetts Boston, Salem State College, North Shore Community College, Massachusetts Institute of Technology and the Massachusetts Office of Marine Fisheries have expressed interest in a collaborative venture, and possible shared use of the Gloucester Marine Station with the University of Massachusetts Amherst.

C. Study Organization
The study commenced in July 2009 with historical research about the site and its context, site analysis, including the existing conditions and development regulations. This analysis included: topography, soils, vegetation, structures, utilities, easements, property deed, and city, state, and federal regulations.

From this analysis an assessment of future development potentials was made based on the existing data/documents from UMass files, public records, MassGIS data, site visits, and interviews with Gloucester, Commonwealth of Massachusetts, and other officials and stakeholders.

From the assessment we identified potential future uses, building locations, and feasible alternative layouts of the site. These alternatives were summarily analyzed to support continuing discussions among committed and potential partners regarding shared space and facilities, development costs and timing of future needs.

D. Study Schedule
June - August 2009 – Initial research, site visits, interviews with Gloucester officials.
August 2009 – Meeting with Dean Steve Goodwin, College of Natural Sciences, UMass Amherst.
September 2009 – Meeting with Juanita Holler, Associate Vice Chancellor for Facilities and Campus Services, UMass Amherst.
October 13, 2009 – Workshop at Massachusetts State House, organized by Senator Bruce Tarr, with representatives from: UMass Amherst, City of
Gloucester, Salem State College, University of New Hampshire, North Shore Community College, and the Massachusetts Division of Marine Fisheries.

October 27, 2009 - Meeting with Dean Steve Goodwin, College of Natural Sciences, UMass Amherst.

November, 2009 – Compilation of site survey and inventory data.

December 1, 2009 – Public Hearing on the study, Gloucester City Council.

December 14, 2009 – Debriefing to UMass Amherst Officials: Dean Goodwin, Associate V.C. Holler; Thomas Milligan, Executive Vice Chancellor for University Relations; and Cheryl Dukes and Richard Conner, UMass Office of Government Relations.

January-April, 2010 – Solicitations of research/partner interest and development of alternative site plans.

May 26, 2010 – Meeting with Paul Fissette, Head, Department of Natural Resources Conservation, UMass Amherst.

2. The UMass Amherst Gloucester Marine Station

A. Location and Context
The Gloucester Marine Station is located at the northern edge of the Boston Metropolitan Area, which includes: Suffolk County and parts of Essex, Middlesex, Norfolk, and Plymouth counties. The Boston Metropolitan Area is a fast growing region bounded by Interstate 95 (State Route 128) and the Atlantic Ocean. The Gloucester Marine Station is located in Essex County, on the North Shore of the Boston Metropolitan Region (Map 1). Map 2 shows the City of Gloucester and parts of the surrounding communities. The Gloucester Marine Station is located in Hodgkins Cove on Washington Street on the border between the Annisquam and Bay View Neighborhoods in north Gloucester (Map 3).
B. City of Gloucester Designated Port Area Planning

While the Gloucester Marine Station is not located in the inner harbor and therefore not regulated by the Designated Port Area regulations, it is shorefront property in Gloucester with access to a deep-water dock. With redevelopment, the Gloucester Marine Station can contribute to the unique character of the City of Gloucester and can lend prestige and provide essential research and supporting services for a viable maritime industry in general and for the marine industry in Gloucester, Massachusetts in particular.

The City of Gloucester has been working for many years to create a plan for its main harbor and harbor uses in the city center. A Harbor Plan is “a waterfront land use plan intended to establish the community’s objectives, standards, and policies for guiding public and private utilization of land and of water within the Commonwealth’s jurisdiction” (Draft City of Gloucester Harbor Plan & Designated Port Area Master Plan, 2006, p. 1). Starting in 1999 and continuing through today, many plans have been created and some have been implemented.

A Designated Port Area is an area of contiguous land and water in the coastal zone where the pursuit of maritime industry can favorably occur due to the presence of appropriate port infrastructure. Beginning in 1999, the Gloucester Harbor Plan has gone through many updates and changes. The 1999 Harbor Plan primarily focused on “infrastructure improvements for both maritime and visitor-oriented industries along the waterfront as a central means of recharging the harbor’s economic engine” (Draft City of Gloucester Harbor Plan & Designated Port Area Master Plan, 2009, p. 1). According to the 2009 draft Harbor Plan, many of these infrastructural improvements were completed following the 1999 Harbor Plan; however, these improvements failed to revitalize the waterfront.

The “Draft City of Gloucester Harbor Plan & Designated Port Area Master Plan 2006” addressed the community concerns of over-regulation and limited economic flexibility (Draft City of Gloucester Harbor Plan & Designated Port Area Master Plan, 2006, p. 2). The proposal called for
subdividing the Marine Industrial district into three distinct Marine Industrial subdistricts, which would allow specifically different “supporting non-water-dependent commercial uses” for each subdistrict. The proposal also called for the state to allow a greater amount of supporting commercial uses then would be allowed without a Harbor Plan and for the City of Gloucester to “consolidate port, industry, and economic development expertise within the Department of Community Development to encourage and coordinate investment in, and revitalization of the waterfront infrastructure and business and help expedite the permitting process.” (Draft City of Gloucester Harbor Plan & Designated Port Area Master Plan, 2006, p. 2)
3. Gloucester Marine Station: Existing Conditions and Development Potential

A. Property Title
The Washington Street Property (The Gloucester Marine Station) was conveyed to UMass Foundation by the Hodgkins Cove Corporation in 1964. In 1976 the UMass trustees conveyed the property to the Commonwealth of Massachusetts for use by the University of Massachusetts. University records indicate there has been no title changes or conveyances of the property since 1976. (See Appendices: Gloucester Marine Station History).

There are deed restrictions and easements associated with the subject property. However, the original property was subdivided into six smaller lots each with differing restrictions and/or easements (described below). UMass only owns Lot3 (Figure 1. Annotated Plan, Lots 1-6).

Lots 1 and 2 are narrow strips of land on the eastern edge of the Hodgkins Cove peninsula bordering a small inlet that passes under Washington Street. Lots 1 and 2 were deeded to the City of Gloucester in 1963 and remain open to the public for boat moorings. Additionally, Lot 1 is subject to a utility easement with New England Telephone and Massachusetts Electric Company, which allows for the poles to be maintained, repaired, and replaced.

Lot 3 is the UMass owned property (approx. 3.13 acres – not including the Army Corps License area of 3.05 acres). There are three restrictions associated with the 1970’s deed that are set to expire in 2020. The first limits the use of this parcel to educational, research, and related or similar purposes and is specifically not to be used for public recreational or commercial purposes, and shall not be used for any obnoxious or objectionable purpose, nor to create any public nuisance. The second restriction requires the proper disposal of sewage and refuse. And the third restriction limits buildings to certain heights and densities within three specified zones (A, B, & C) on the subject property (Figure 1. Annotated Plan, Lots 1-6). (Note the boundaries between the Zones are not indicated on recorded plans).
Lot 3: Zone A (approx. 0.47 acres) – The northernmost zone (except for the ACE License area), is restricted so that no buildings or structures can be erected and no vehicles are permitted; however, research instrument structures are permitted. The existing building is partially located in this zone, however.

Lot 3: Zone B (approx. 0.92 acres) – The middle zone restricts buildings and structures to not greater than 2.5 stories in height and not more than 20% of the zone.

Lot 3: Zone C (approx. 1.74 acres) – The southernmost zone, bordering Washington Street, allows buildings and structures not greater than 5 stories in height and not covering more than 25% of the zone. The height limitations above do not apply to antenna, radio, or instrument towers of any height in Zones B or C.

Lots 4 & 5 were sold to private landholders and developed for single-family residential use.

Lot 6 begins on the border between parcels 4 and 5 and continues along the western edge of the peninsula. This parcel is now a right of way allowing the public the perpetual right to pass over on foot and in vehicles granting access to Hodgkin’s Cove.

The property description excludes land seaward of 1861 Mean High Water line (About half the property, or 3.05Acres). This land is licensed to the University for use by the US Army Corps of Engineers, and may require a Massachusetts Ch. 91 license for any change in use (building or demolition).

A legal memo on the UMass property deed restrictions issued by Lawson & Weitzen to Brian Burke, Associate Counsel UMA, notes that legal boundaries of the property zones have not been recorded, and that a survey would be required to determine their exact locations. These restrictions are set to expire in 2016, but may not be presently enforceable since Hodgkins Cove Corp did not file a notice of continuation (Appendix: Lawson & Weitzen, 8/1/2008 memo).
Figure 1. Annotated Plan Lots 1-6 (with annotations by Lawson & Weitzen). The UMass property is only Lot 3 (Zones A,B,and C).
B. Existing Site Conditions
The Gloucester Marine Station parcel at Hodgkins cove is largely a human-made peninsula, originally built in the early 1900's as a shipping pier for the Rockport Granite Company. The peninsula was constructed to support heavy loads of granite. From this history and surface appearance and structure, the subsurface material is assumed to consist of a stable granite rubble fill. In a century since the pier was constructed, no structural failures for the fill have been identified. The Essex County Soil survey shows the entire site as “Smoothed Udorthents” indicating a fill site, with variable and/or unknown soil properties. Detailed subsurface investigations will be needed to design structural supports for any significant new construction. There are no wetlands on the property.

The northern edge of the site has a more-or-less continuous raised berm made from large granite blocks (rip-rap). This berm extends well above sea level, and provides a barrier, shielding the site from storm surges and coastal winds. The remainder of the site is quite level with no significant topography.

Figure 2. The seaward end of the Marine Station is built from granite rip-rap and provides a significant and important storm barrier for the Marine Station.
The seaward end of the station has sparse herbaceous vegetation only, including: Poison Ivy, Mugwort, St. Johnswort, Yarrow, Queen Anne's Lace, Fleabane, Goldenrod, and Pussytoes. These species are tolerant of the severe growing conditions related to minimal soil, exposure to the ocean, and extreme droughty conditions.

At the Washington Street entrance to the Marine Station are small groves of unmanaged successional tree species (Ailanthus, Black Locust, Eastern Red Cedar, Poplar, and Sumac). These groves provide some screening from Washington Street and, as volunteer species, are intrinsically suited to the harsh conditions at the Station.

Figure 3. The Washington Street entrance is bordered by a fence on the property line and groves of successional tree species.

The Washington Street Entrance is controlled by a gate, which has been vandalized and in poor repair. When the site returns to active use, this access gate will need renovation for security and to present an appropriate public image for the Marine Research Station.
Figure 4. The Gloucester Marine Station is located on a prominent peninsula, built of granite rubble and rip-rap in an established residential neighborhood (Source: Pictometry).

Figure 5. The Gloucester Marine Station (right) is protected by a large berm of granite rip-rap that extends for much of the northern boundary.
Figure 6. View of the Marine Station from Washington Street, Gloucester

Figure 7. A large deteriorating service/paved area extends eastward from the building.
C. Building and Infrastructure Conditions

The one-story main building at the Station contains approximately 3200 sf of interior laboratory and office space (40’ x 80’) (Figure 5.) The interior space is used for: office (25%), labs (70%), and Utilities/mechanical (5%). The building has been moth-balled (windows boarded, doors secured, water disconnected – fire alarm remains active) since early 2008 and is in need of renovations. A recent (March 2010) estimate prepared by the UMass Amherst Facilities Planning Dept. recommends the following repairs:

- Repair Driveway
- Repair and secure entrance fence
- New roofing on building
- Repair exterior and repaint building
- Replace exterior doors, entry decks and 2nd floor fire escape
- Reinstate electrical service
- Clean and repaint interior
- Repair floor framing, replace parts of flooring and lab casings and
- Replace fume hood
These repairs are estimated to cost between approximately $100,000 and $250,000 depending on the amount of work performed by UMass staff and how much is performed by outside contractors.

Figure 9. The research station building (July 2009)

The site has water and sewer service via underground pipes from Washington Street. In past winters the water lines have frozen. These lines may need to be replaced with weather-resistant new lines. The site has electric service provided via overhead lines from Washington Street.

D. Gloucester Zoning
The Gloucester Marine Station is zoned for ‘Marine Industrial’ (Figure 10. Gloucester Zoning). The Marine Industrial zoning designation is given to areas where “utilities and access roads can support high-intensity industrial and commercial activities that are primarily marine related” – primarily at Gloucester’s Inner Harbor (Gloucester Zoning Ordinance, 2008). As a public institution of the Commonwealth of Massachusetts, UMass is not legally bound by local zoning. Importantly, the Marine Industrial Zoning allows for all uses and levels of use currently being considered for the Station.

E. Coastal Flooding
The UMass Gloucester Marine Station enjoys direct frontage on Ipswich Bay, and therefore also has an inherent risk of coastal flooding. A preliminary 100 year flooding map by the U.S. Federal Emergency Management Agency (FEMA 2009) shows virtually the entire UMass property to be in a “C” zone – above the 11’ elevation of the “Velocity Zone” (Figure 11. Preliminary FEMA Velocity Zones). A final FEMA map is expected later in 2010. The velocity map indicates elevations subject to storm and wave action, and consequently requires a higher standard of construction. If the final FEMA map is unchanged (later in 2010) the property benefits by not having to comply with more substantial and expensive Velocity Zone construction.

F. Hazardous Waste
Massachusetts Department of Environmental Protection (MDEP) keeps track of all hazardous waste sites in the Commonwealth. Hazardous waste data are publicly available and as of February, 2010 the Gloucester Marine Station was not shown to be an open or closed site nor was it shown to have an activity use limitation.  (http://www.mass.gov/dep/cleanup/index.htm)

The U.S. Environmental Protection Agency (US EPA) also keeps track of all places of environmental concern (data are available via the US EPA website).

On February 24, 2010 we contacted James Field, Hazardous Materials Control Manager for UMass Amherst Environmental Health & Safety. We learned that the Gloucester Marine Station produced small amounts of hazardous waste as a byproduct of laboratory experiments. The University was obligated to report this to the US EPA and to responsibly dispose of the hazardous waste. After the facility was closed in 2008, UMA removed all the remaining lab chemicals, lab waste, all batteries, fluorescent light tubes and light ballasts and hired an outside consultant to decontaminate the lab and fume hoods.

While it was an active site, the EPA used the ID: MAD000844621 to track the facility as it produced small amounts of hazardous waste. From a March 2010 telephone conversation with Sharon Leitch (Boston Office US EPA, (617) 918 1647, Leitch.Sharon@epamail.epa.gov), we learned that the US EPA has classified the UMass Gloucester Marine Station as inactive.
Figure 10. Gloucester Zoning
The area inside the blue line is designated a C-zone (above the 100-year floodplain).

The site is bordered by a V-zone (Velocity Zone) with a flood elevation of 11-12 feet above mean sea level. Because most of the site is above this velocity zone, normal building codes apply for potential future development.

(Gloucester Planning Dept. Staff)

Site Detail - Ortho Photo with Preliminary FEMA Velocity Zones
Gloucester Marine Research Station Feasibility Study
Produced by: The University of Massachusetts
Department of Landscape Architecture and Regional Planning
City of Gloucester, Planning Dept, 2009

Source: MassGIS, 2009

Figure 11. Preliminary FEMA Velocity Zones (2009)
From this research we conclude that the Gloucester Marine Station is likely not contaminated with hazardous waste or materials. While the Marine Research Station produced small amounts of hazardous waste as the byproduct of laboratory research all of this material has been properly removed and the site has been decontaminated.

G. U.S. Army Corps of Engineers Regulations and Permits

There are two U.S. Army Corps of Engineers (ACE) regulatory processes pertaining to the Gloucester Marine Station: a regulatory process and a real estate process. The regulatory process, handled by Karen Adams, Section Chief for Massachusetts (karen.k.adams@usace.army.mil, (978) 811x828) is for work done seaward of the mean high water mark (dredging, filling, structures, etc.), for work done to the wharf itself (repair, expand, remove, etc.) or for work done that affects the deep-water port (navigation, dredge, fill, etc.). The real estate process, handled by Joseph Redlinger, Chief of ACE Real Estate Division (joseph.m.redlinger@usace.army.mil) is for any work done to the existing building that is built on the edge of the wharf, or for activities that occur within the license area landward of the current mean high water mark.

A permit is needed for any activities that fall within the jurisdiction of Sec 10 of the Rivers and Harbors act of 1899 and Sec 404 of the Clean Waters Act. In general, any work done (dredging or filling, building new, repairing, or removing existing structures) in tidal waters or wetlands requires a permit from the Army Corps of Engineers. In regard to the UMass site, a USACE permit is needed for the repair, maintenance, or removal of anything seaward of the mean high water mark (including the building, the wharf, or filling or dredging of the channel).

Any work that was completed prior to 1968 is grandfathered, as long as UMass can show that a permit was issued by another agency prior to 1968 and the wharf hasn't been changed since. If the wharf has changed in configuration since 1964 then there may be a requirement to file an after-the-fact permit. It may be possible to use historical images (aerial photos or the
USGS Landsat photos) to show that the wharf has not changed since 1964 if the permits cannot be found. If we can show that the wharf has not changed in configuration since the 1964 permit, then the USACE is likely not interested in regulating the land shown on the deed as the license area (the area between the current mean high water mark and the 1861 historical mean high water mark).

USACE has two permit types: a general and an individual permit. The individual permit is longer and more complicated and is required for non-standard projects. Most likely any work done in the regulated area would require the general permit. The general permit has two categories:
Category 1: no application is required, just notification. State that the wharf was built prior to 1968 and that it is grandfathered.
Category 2: an application is required; the permit works with MGL Ch. 91 license and is a bit longer and more complicated.

Seaward of the mean high water mark, nothing can be done without a permit from the USACE including:
* Repair of the bulkhead and/or existing building built on bulkhead wall. The concrete section of the bulkhead (retaining wall of wharf) is showing visible cracking and will likely need to be repaired. The crack was also observed on the exterior (structural?) wall of the existing building. Any repair to the bulkhead or building will likely only require a USACE Category 1 General Permit.
* Demolishing the existing building built on the bulkhead wall. If the building is demolished, it is likely to only require a USACE Category 1 General Permit
* Dredging. The deep-water port for the Marine Station may not have been maintained regularly and the channel may need to be dredged for larger research boats to dock. Any dredging in the port or channel will likely require a USACE Category 2 General Permit
* Filling. If the wharf needs to be expanded the type of permit required by the USACE will vary depending on the size of the expansion.

Landward of the mean high water mark, there is no jurisdictional regulation on the site by the USACE (unless work was done without a permit in the past
that changed the configuration of the wharf). If configuration of the wharf has changed since the 1964 permit by Mass DPW, an “after-the-fact” permit for the change is required. No permit is required for a new building on the landward side of the current mean high water mark. Note: the current mean high tide water mark has not been officially mapped.

The following licenses have been issued for granite shipping activities at the UMass property according to the 1976 Annotated Certificate of Title (Appendix)

1904, February 24 – Permit No. 2819 – issued by the Massachusetts Harbor and Land Commissioners to Rockport Granite Company – Book 1741, P. 405
1904, April 23 - permit issued by the United States of America to the Rockport Granite Company (J.A.G.O. 16203) - Book 1741, Page 403
1916, February 2 – Permit No. 4027 - issued by the Massachusetts Harbor and Land Commissioners to Rockport Granite Company –Book 2341, P. 60
1931, June 30 – Permit No. 1312 – Issued by the Massachusetts Department of Public Works to the Consolidated Lobster Co. Inc. –Book 2900, P. 47
1945, March 6 – Permit No. 2738 – Issued by the Massachusetts Department of Public Works to the Consolidated Lobster Co. Inc. – Book 3398, P. 486
1964, February 4 – Permit No. 4772 – Issued by the Massachusetts Department of Public Works to the Consolidated Land Company, Inc. – Book 5154, P. 137

H. Massachusetts Waterways Regulation Program – Chapter 91

Chapter 91 of the Massachusetts General Laws apply to any activity located in, under, or over flowed tidelands, filled tidelands, Great Ponds and certain non-tidal rivers and streams located throughout the Commonwealth. These projects and activities include but are not limited to: construction of docks, piers, wharves, floats, retaining walls, revetments, fill, dredging, beach nourishment, pilings, culverts, bridges, dams and some waterfront buildings, if on filled lands or over the water. The state
Massachusetts Department of Conservation and Recreation (DCR) maintains harbors and Massachusetts Department of Environmental Protection (DEP) grants licenses and permits for construction and extension of wharfs, piers, seawalls, filling of land, among others. Mass DEP Ch 91 permits and licenses are initiated by application to the local (Gloucester) Planning Board. The Planning Board may hold a public meeting and has 45 days to submit a recommendation to the DEP stating whether the Planning Board believes the development would serve a proper public purpose and would not be detrimental to the public's rights in these tidal lands.

The Gloucester Harbormaster is responsible for authorizing moorings, and dockings of vessels at existing docks, piers, wharfs, etc.

I. Summary of Site and Building Conditions and Development Potential

The UMass Amherst Marine Research Station has extraordinary access to Ipswich Bay for ocean, and estuary-based research, and enjoys a sheltered deep-water dock and mooring area. The property title is complicated and may require further legal research, or action in Massachusetts land Court to resolve. The onsite building (3200 sf) is in poor condition and will require modest renovations to support research.

The City of Gloucester, and state officials, are firmly in support of renewed use of the station. Although not applicable to the University of Massachusetts, the city's zoning of Marine Industrial allows for a wide range of uses including the anticipated research and office uses.

As a coastal property, the site is subject to flooding, but appears to be safely above the FEMA Velocity Zone, thus allowing for conventional construction. The US Army Corps of Engineers and the Massachusetts Waterways (Chapter 91) regulations apply to the site, but appear not to present major limitations for anticipated uses.
4. Alternative Future Development Options

A. Potential Uses and Users of the Research Station

A major component of this study was to identify potential research and governmental partners to share use, and contribute to the construction and operating costs of the UMass Gloucester Marine Station. This effort included meetings and/or communication with: City of Gloucester officials; UMass Amherst officials; The Center for Economic Development at UMass; State Senator Bruce Tarr and Representative Ann-Margaret Ferrante; representatives from Salem State College, Massachusetts Institute of Technology, Massachusetts Division of Marine Fisheries; The Large Pelagics Center; and New England Biolabs.

A letter was sent from Michael Malone, Vice Chancellor for Research and Engagement, UMA to all other UMass campuses (Worcester, Boston, Dartmouth and Lowell) - requesting replies of interest to collaborate in use of the Gloucester station.

The survey of collaborative use of the Gloucester Station resulted in the following specific interests:

Large Pelagics Research Center: The NSF-funded Center, formerly located at the University of New Hampshire, is relocating to the Gloucester Station, joining the College of Natural Sciences of UMass Amherst.

UMass Boston: Interests in collaborating in use of the Station include the Departments of: Biology, Environmental, Earth and Ocean Sciences and the Urban Harbors Institute. These departments’ research include: marine biology and coastal ecology, environmental science, rocky intertidal and subtidal research, and the sustainability of urban harbors and coastal living environments. No specifics regarding space or equipment requirements are identified at this time. Contact: Zong-Guo Xia, Vice Chancellor for Research (Zong.Guo.Xia@umb.edu).
Massachusetts Division of Marine Fisheries (DMF): The UMass Gloucester property appears ideally suited to support seasonal research for Massachusetts Marine Fisheries Institute (MFI) - a cooperative venture between the Massachusetts Executive Office of Energy and Environmental Affairs and the University of Massachusetts to promote sustainable fisheries through education and research. DMF also sees potential to rely on the Marine Station property to stage and provide infrastructure support for other MFI and DMF program activities. DMF’s recommendations include using the existing building for either storage use or for a single large meeting room. They recommend construction of a new building to house the Large Pelagics Research Center (LPRC), wet-labs & dry labs, walk-in freezers, and additional MFI-DMF research accommodations (office space for faculty researchers and students). New construction should be situated at the property entrance where the most accessible and useful land for building and parking exists. The size of the building should range from 5,000 (if primary use is for LPRC & DMF) to 10,000 square feet; costs would range from $1 million to $2 million. DMF is constructing an 18,000 sq. ft. steel-masonry building in New Bedford and recommends a similar project for Gloucester.

Although primarily involved with fisheries science, DMF is compatible with other similar researchers, as well as education programs. They are very much interested in partnerships and helped create the MFI to share the expertise of the University and Division of Marine Fisheries. In the area of fisheries science they specialize in survey/monitoring and developing fish life history information to help estimate fish stock status for numerous New England fish species. To complete this work they conduct at-sea trawl surveys, satellite and acoustic fish tagging, and scientific dive programs. Additionally, they are involved in bacteriology and biotoxin work to help classify and manage the state’s shellfish harvest areas, developing anadromous fish passage facilities, and marine habitat restoration.

The Division has committed a sizeable amount to help fund the MFI-LPRC (up to $250,000 for program support), but they would consider additional
funding support to help construct a shared building (MFI) at the University's Gloucester Marine Station. Contact: Paul Diodati, Director of Division of Marine Fisheries, 251 Causeway Street, Boston, MA 02114 (617) 626 1530 paul.diodati@state.ma.us

Salem State College: For the past 15 years Salem State has used Hodgkins Cove at the Gloucester Marine Station and, until the death of Professor Herb Hultin, the laboratory building. Salem State would like to continue to access the cove and use the existing building or a new building to support multiple lab and field studies. The marine Station’s primary advantage is its direct access to various marine habitats. The addition of a small dock with some mooring sites would allow Salem State and other researchers to effectively sample and monitor the marine environment. They would like to continue and expand Field projects, which include monitoring of local shellfish populations, especially mussels. Remote sensing buoys could be deployed to monitor local environmental conditions, linking with buoys on the South Shore and the NOAA system. This environmental information would be vital in assessing the spawning and recruitment activities of local species. The marine station would provide Salem State Biology faculty a base for extension services to local fishers and the general public. The lab would also support Salem State’s existing outreach efforts at schools throughout Cape Ann, introducing students to topics in marine science and resource management. Existing or new lab space would support shellfish culturing activities and basic studies on fish physiology and reproduction. The lab would also allow for analysis of sediment and water samples.

Salem State envisions a field station with an analytical lab of 300 sq. ft. that would allow for processing of samples. Additional space, approximately 1000 sq. ft., for seawater tanks and a flow through seawater table would be needed for shellfish and fish maintenance. The lab would need commercial electrical service, compressed air and gas connections. A central fume hood would also
be useful. The lab would need a filtered seawater system equipped with a chiller. Additional space for educational support should consist of a conference room with some office space for visiting researchers. The building would need internet service with several computer stations. Finally, bathroom facilities should include showers for cleanup of personnel and equipment, specifically SCUBA activities.

Salem State would welcome collaborative interactions with other agencies and institutions with an interest in monitoring local marine habitats and the culture of commercial marine species. Division of Marine Fisheries and others could likely use a dock facility. SS could also collaborate on environmental sampling. Additional lab space would be needed for partners undertaking any experimental work. Contact: Dr. Kristin Esterberg – Provost; Dr. Mark Frageau – Professor; Director Cat Cove; Beth Anne Bower – Special Assistant to the President.

**Massachusetts Institute of Technology:** Autonomous Underwater Vehicles Laboratory (AUV). The MIT AUV lab designs, builds, and operates autonomous underwater vehicles for research in robotics and marine ecology. The largest vehicle AUV currently uses is the Odyssey IV (length 6 feet, draft 4 feet, 1000 pounds). The vehicle has onboard computers, sensors, and cameras and it is used to inspect manmade underwater structures and survey the ocean floor in order to monitor the spread of invasive species. They are interested in establishing a field office in Gloucester that will provide access to the water, space for vehicle construction/repairs, and storage of the necessary support equipment. The Gloucester Marine Station may be an excellent location to conduct our marine research activities. They own a 20-foot steel shipping container that has been insulated and converted into a field office/laboratory. A gantry crane has been installed that can be extended from the container up to 10 feet for hoisting and deploying our vehicles. This container would provide adequate space if it could be semi-permanently parked in a space with good access to the water. Access to the water from a dock or boat ramp is very important. They would also make extensive use of a jib crane to deploy and recover the vehicle from the water
if it were available. It would be very beneficial if the electrical system in the container (lights, outlets, baseboard heat, air conditioning) could be connected to the power grid. A generator is another option. They also own a 12-foot motorboat that we use to support operations of the AUV. This boat could be stored on its trailer on land when not in use.

MIT’s needs are generally compatible with other users. Most other uses of the waterfront would not interfere with our activities as long as they do not prevent water access or place many obstacles in the surrounding water such as nets or moorings.

MIT's research is funded by various organizations including federal and local agencies and corporate sponsors. MIT has concern for security of valuable research equipment. Contact: Justin Eskesen, Senior Software Engineer, Autonomous Underwater Vehicles Laboratory, Massachusetts Institute of Technology, Sea Grant College Program, 292 Main Street, Building E38-370, Cambridge, MA 02139 (617) 253 3438, jge@mit.edu

North Shore Community College: It is an essential part of NSCC’s mission to prepare its students for the workforce. With a regional economy increasingly more reliant on science and technology sectors, NSCC is uniquely positioned to work with the City of Gloucester to provide relevant technical education to area residents to ensure both their future as well as the economic growth of the region. This is particularly important in fields such as marine technology, designated as a developing cluster with great potential.

NSCC’s Gloucester Initiative is based in the development of a Marine Technology program to be sited in Gloucester. No urban center along Massachusetts’ north shore demonstrates more need for such a project: revitalizing the fishing industry while promoting new marine-related training and increasing opportunities for residents to earn a family-supporting wage.

Because the initiative will act as an economic lightning rod for the region, it will draw on extensive collaborative resources in the area - small marine businesses, the North Shore Workforce Investment Board (WIB),
community-based organizations that serve Gloucester residents, and public schools. Planning will address the need for alternative career training (and re-training) for adult learners, provide specialized programs to regional industry and link to middle school/high school science and technology coursework.

Goals:

Provide a regional Marine Technology Center partnering with government, business & industry, higher education, public schools and community leaders.

Provide resources for area small marine-related businesses to start, grow, and thrive in the regional north shore area.

Expand North Shore Community College academic programming (credit and non-credit) in Marine Technology, including Marine Systems, Electrical Machinery, Communication-Navigation, Marine Trades (outboard/inboard motors), and Marine Safety.

Partner NSCC faculty and teachers in public schools to develop middle school and high school curriculum in marine science and technical training that will prepare students for local careers.

Collaborate with regional community-based GED, ESL, and literacy programs to design and offer short-term workforce training programs.

It is anticipated that potential funding sources would include: the Federal Economic Stimulus Bill (ARRA); the Workforce Competitiveness Trust Fund; federal DOL Community-Based Job Training grants; and collaboration with the North Shore Workforce Investment Board.

Contact:  Dr. Wayne M. Burton, President, North Shore Community College  wburton@northshore.edu

Ken Riaf and Steve Parks, Gloucester residents expressed interest in the site’s viability as a staging, dockage and storage area for persons conducting commercial shellfish aquaculture in Ipswich Bay. Contact: Ken Riaf, 18 Pleasant Street, Gloucester, Massachusetts 01930 (kriaf@comcast.net).

With these potential partners, and familiarity with the site’s physical and regulatory characteristics in mind, we developed 3 alternative development
options. These options individually and collectively show how the site can be sensitively developed to meet various levels of collaborative interest, respecting the residential character of the neighborhood, and working within the regulatory constraints.

B. Alternative Development Options

Three alternative development options have been prepared to illustrate site plans for varying levels of use based on the survey of interest to potential partners. It is reasonable to assume that any of these options may occur given the significant interest in partnering with UMass Amherst at the Marine Station identified through this study and from others’ efforts. These options are developed and presented here for discussion and comparison only. These are NOT specific proposals or plans. The three options represent a range of intensity of use at the site, starting with a modest plan to adapt the existing building in Option A, to larger new construction capable of supporting a level of use that is higher than identified through this study. The option with the largest building area is not a maximum build out – it shows a development of over 15,000 gsf, significantly larger than needs identified in the study. Future plans will need to be developed further, discussed and vetted for cost, specific space configurations, environmental permitting and partner and other needs.

To support the intended research and administrative uses in all options, the Hodgkins Cove site will be improved for security, access, storage and to improve the landscape character. The fence and gate will be replaced along Washington Street, the stone wall repaired and new plantings of native salt-tolerant seacoast trees and shrubs will be installed – to present a more favorable public image and screen the buildings and storage from Washington Street. At the other end of the property, in the Army Corps of Engineers license area, the deteriorating concrete will be removed and landscape will be restored with native, salt water-tolerant plantings and a trail and observation area will be created for recreation and environmental education. In addition to the building and driveway work, all options, as developed here for discussion, will include a boat ramp for launching trailerable research vessels, a dock along the building bulkhead for efficient loading/unloading, and a secure outdoor storage area(s) for equipment and
supplies – consistent with, and in support of, the primary uses(s) related to marine research support.

**Option A** is the most modest and most likely first phase of reuse of the Station. This option involves a restoration of the existing building as described earlier at a cost between $108,000 and $242,000 – depending on how much of the work is done by UMass Amherst staff and how much is contracted. The restored building will have a new parking lot and 3,000 sf storage area (Figure 12. Option A- Future Development, UMass Amherst Gloucester Marine Station). This option could support all the potential research partners identified to date, and takes advantage of the facility's dockage and access to salt water for laboratory use.

**Option B** retains all of the improvements and new facilities of Option A and adds a new 1 story research/office building of 5,000 sf with additional parking and an additional 3,000 sf secure outdoor storage area. The building is sited on the eastern end of the site, behind the native plantings to screen the building from the road, and close to the required parking area. (Figure 13. Option B - Future Development, UMass Amherst Gloucester Marine Station). This option would support additional users/uses in a new building, while retaining the restored existing building. Access to deep-water dockage and salt water for laboratory use would also be provided.

**Option C** retains all of the improvements and new facilities of Option A and adds a new 2 story research/office building of 15,000 sf with additional parking and an additional 6,000 sf secure outdoor storage area. As with Option B, the building is sited on the eastern end of the site, behind the native plantings to screen the building from the road, and to be near the required parking area (Figure 14. Option C – Future Development, UMass Amherst Gloucester Marine Station). This option shows that a significantly larger new building can fit easily on the eastern end of the site without imposing or intruding on the character of the residential neighborhood.
Figure 12. Option A – Future Development, UMass Amherst Gloucester Marine Station
Figure 13. Option B – Future Development, UMass Amherst Gloucester Marine Station
Figure 14. Option C – Future Development, UMass Amherst, Gloucester Marine Station
C. Summary

This study was done in response to a unique challenge and opportunity presented to the University of Massachusetts Amherst. A once-thriving research station fell into disuse with the passing of its academic leader. With the research station located over 100 miles from the Amherst campus, there were no immediate users seeking access to the station for research. Meanwhile, leaders and officials from the City of Gloucester became actively involved in promoting renewed use(s) of the station. The UMass Amherst Center for Economic Development sponsored this study as an important step in revitalizing the facility for research and economic benefits to Gloucester and the northern sector of the Boston Metropolitan Area. The study found and organized documents and data to answer many of the questions that will need answers as the station reactivates and expands. The study also identified and organized potential users of the station, based on common research interests, who may join as partners in the future. This study is expected to play a small but important role in this larger ambition – to revitalize the UMass Amherst Gloucester Marine Station to conduct research to support healthy, productive and sustainable use of marine resources in Massachusetts and beyond.
5. Appendices

A. Gloucester Marine Station History

- Granite Shipping
  - 1856, December 10 – Land transfer, Beniah Colburn et al, Lorenzo Berry - Book 580, p 76
  - 1904, April 23 - permit issued by the United States of America to the Rockport Granite Company (J.A.G.O. 16203) - Book 1741, Page 403
  - 1904, February 24 – Permit No. 2819 – issued by the Massachusetts Harbor and Land Commissioners to Rockport Granite Company – Book 1741, P. 405
  - 1916, February 2 – Permit No. 4027 - issued by the Massachusetts Harbor and Land Commissioners to Rockport Granite Company –Book 2341, P. 60
  - 1927, June 14 – Deed changes between Benjamin A. Berry et al and the Rockport Granite Company - Book 2728, Page 84

- Lobster Harvesting
  - 1931, June 30 – Permit No. 1312 – Issued by the Massachusetts Department of Public Works to the Consolidated Lobster Co. Inc. –Book 2900, P. 47
  - 1945, March 6 – Permit No. 2738 – Issued by the Massachusetts Department of Public Works to the Consolidated Lobster Co. Inc. – Book 3398, P. 486

- Chicken Farming at Hodgkins Cove
  - 1963, June & July – Deed of lots 1 & 2 to the City of Gloucester from the Consolidated Land Company, Inc. - Book 5084, p. 543
  - 1964, February 4 – Permit No. 4772 – Issued by the Massachusetts Department of Public Works to the Consolidated Land Company, Inc. – Book 5154, P. 137
  - 1966, November – Lots 4 & 5 deeded to private citizens from the Hodgkins Cove Corporation.
  - 1970, June 4 – Lot 6 conveyed to the City of Gloucester from the Consolidated Land Company, Inc. – Land Court Plan 31277C
  - 1970, June 18 – Land (Lot 3) deeded to the University of Massachusetts foundation Inc, from the Hodgkins Cove Corporation for $67,500 – Essex South Registry District Certificates No. 34761
  - 1970, June 18 - Lot 6 conveyed to the Trustees of Beach Realty Trust
  - 1976, June 8 – Land conveyed to the Commonwealth of Massachusetts for the use of the University of Massachusetts from the University of Massachusetts Foundation, Inc.
- UMass Research Station – under the direction of Herbert O. Hultin
  - Proteus Industries - spawned from UMass research [www.proteusindustries.com](http://www.proteusindustries.com)

Founded in 2001 by Stephen Kelleher, Ph.D., Proteus Industries is the company behind NutriLean. A renowned food chemist, Dr. Kelleher spent years doing protein and lipid research with Advance Protein Technologies, and as a researcher at UMass-Amherst Marine Station in Gloucester, MA.
August 1, 2008

Brian W. Burke, Esq.
Associate Counsel
University of Massachusetts Amherst
300 Whitmore Administration Building
Amherst, MA 01003

Re: Title Research – 926 Washington Street, Gloucester, MA

Dear Brian:

I have reviewed the title on the property known as the Gloucester Marine Station, currently owned by The Commonwealth of Massachusetts, for use of the Trustees of the University of Massachusetts, at 926 Washington Street in Gloucester, and have reached the following preliminary conclusions:

1. Boundaries of Property: I am attaching a copy of Land Court Plan Nos. 31277A-C. This property consists of Lot 3 on Plan A, less the lots conveyed out as Lots 4, 5 and 6 on the B and C Plans; in addition, the boundary of the fee ownership of the property ends at the mean high water mark of 1861. There is no recorded plan showing the current configuration of the property, which is the remaining portion of Lot 3; I have sketched its approximate location on Plan A. Prior to any conveyance of the property, a new plan may be required; see the Land Court’s note on the last page of the 1976 deed from the University of Massachusetts Foundation to The Commonwealth of Massachusetts (copy as recorded enclosed) that “no further certificate to issue until new subdivision approval and order of court.”

2. Title Exceptions: I am attaching a copy of the current Certificate of Title, with annotations describing all of the various exceptions. The Licenses and Restrictions are discussed further below. With respect to other exceptions: Due to the conveyance of Lots 4, 5 and 6, the way now located on Lot 4 and the rights in Mechanic Place and the adjoining way are no longer on the subject property. The 1963 easement to New England Telephone and Massachusetts Electric for utility poles and lines permits such lines to be maintained, repaired and replaced in
their then locations; these are not identified, but the deeds out of Lots 4 and 5 make it clear that they are only on the remaining land. A 1963 deed of certain land to the City of Gloucester (copy enclosed, this land appears to be in the area of Lots 1 and 2 on Land Court Plan 31277A, but its exact location is unclear) includes requirements as to maintaining a fence, widening the roadway, and permitting the relocation of electric and telephone poles. Finally there was a Betterment Assessment in 1996 for $16,719.00.

3. Licenses: There are various federal and state licenses, most recently in 1965, under the Rivers and Harbors Act of 1899 (now the Army Corps of Engineers) and MGL c. 91, granting licenses to maintain, extend, and use stone walls, fill behind those walls, piers, and timber breakwaters, wharfs and walkways, all seaward of the 1861 mean high water mark shown on Land Court Plan 31277A. These licenses and approvals explicitly do not convey ownership, and are subject to a requirement that they be altered or removed in the future if the Army Corps or the State determine that they interfere with navigation. Any change in use within these areas will likely require new Army Corps and Chapter 91 Licenses; further research on this question may be appropriate.

4. Restrictions: There are various restrictions, both on the subject property and on Lots 4 and 5 (including a restriction that Lots 4 and 5 may only be used for a single residence, for 50 years, expiring in 2016; see below as to rights to enforce.) The restrictions on the subject property appear in the 1970 deed from Hodgkins Cove Corporation to the University of Massachusetts Foundation (copy enclosed), including limitation to "educational, research and related or similar purposes and not for public recreational or commercial purposes" (except for occasional recreational uses ancillary to such permitted uses), a requirement as to proper disposal of sewerage and refuse, and height and density limitations, within three zones (as to which there is no recorded plan; I have annotated their approximate locations on Plan 31277A, but a survey would be needed to determine their exact locations.) These restrictions, as well as the restrictions on Lots 4 and 5, may only be enforced (or waived) by the successors to Hodgkins Cove Corporation as owner of Lot 6; while we have not done a complete title of Lot 6, this Lot was conveyed on June 18, 1970, to the Trustees of Beach Realty Trust. However, under the restrictions statute, MGL c. 184, Sec. 27 et seq., all of these restrictions are unlikely to be enforceable, since no notice of continuation was recorded prior to their 30th anniversary. Further research on this question may be appropriate.

Please call me if you have any questions or to discuss our next steps with this project.

Sincerely,

Kenneth B. Gould

KBG

Encs.
C. City of Gloucester Marine Industrial Zoning

City of Gloucester Zoning

The City of Gloucester has zoned the Gloucester Marine Station parcel ‘Marine Industrial’. The Marine Industrial zoning designation is given to areas where “utilities and access roads can support high-intensity industrial and commercial activities that are primarily marine related” – primarily at Gloucester’s Inner Harbor (Gloucester Zoning Ordinance, 2008). As a public institution of the Commonwealth of Massachusetts, UMass is not legally bound by local zoning. The Marine Industrial Zoning allows for all uses currently being considered for the Station.

Typically the Marine Industrial Zoning designation does not require a minimum lot area; however, as the Gloucester Marine Station borders a residential district, the minimum lot area is “the same as the abutting residential district with the smallest required minimum lot area.” (Gloucester Zoning Ordinance, 2008).

The dimensional requirements for all allowed uses other than dwelling units and shopping centers for the Marine Industrial district:

- Minimum lot area: 0'
- Minimum lot width: 0'
- Minimum frontage: 0'
- Minimum front yard: 10'
- Minimum side yard: 0’ unless the property abuts a residential district then 10’
- Minimum rear yard: 0’ unless the property abuts a residential district then 10’
- Maximum building height: 40'
- Minimum distance from principal building for accessory use: 10’
- Maximum building height for accessory use: 12’
- Maximum lot coverage: 100%

A building built on a lot that adjoins the harbor shall be set back from one side lot line by a distance equal to one third of the building height but not less than 10’
In the Marine Industrial area, “no use of the water’s edge, or an area at ground level 20’ back from the water’s edge, shall be permitted unless such use requires access to water-borne vessels.” (Gloucester Zoning Ordinance, 2008)

Depending on the intended use parking requirements vary. (See Gloucester Zoning Ordinance – Sec. 4.1)

Off street loading may be required if the delivery of goods is a substantial part of the operations of the facility. (Gloucester Zoning Ordinance - Sec. 4.2)

Marine Industrial does not typically allow for residential uses. However, a special permit issued by the Board of Appeals may allow a boarding house, rooming house, lodging house or hostel. Temporary residential use of mobile homes is allowed following fire or other natural disasters.

Marine Industrial zoned land may be used for the following:

Community service uses:
- Public, religious, or other non-profit school, building or use
- Municipal use
- Public utility facility exclusively servicing a broad area (5 square miles or more)
- Nursery School, day care center
- Trade School, industrial training center

Open Uses:
- Agriculture, horticulture, floriculture, including farms, greenhouse and gardens, on lots larger than five acres
- Sales of the products grown above, provided that all such items are produced on site.
- Outdoor recreation, other than those prohibited below, operated by a governmental agency or authority
- Other commercial outdoor recreation activities
- Seasonal sales of Christmas trees, wreaths

Business Uses:
- Office building containing more than 2500 sq. ft. of floor area
- Marine related sales or rental, limited primarily in the MI District to commercial fishing vessels
- Contractor’s yard
- Fuel or ice establishment, other than gas stations
- Feed or building materials establishment
Industrial Uses:
Manufacturing, processing, or research
Processing or cooling not conforming to the performance criteria of Gloucester Zoning Ordinance sec 4.4
Bulk storage, warehousing

Other Principle Uses:
Parking of motor vehicles to service a use located and permitted in the Neighborhood Business District
Arts, crafts, and sales of arts, or crafts if made on the premises
Noncommercial radio transmission, with wire antenna or roof-mounted tower extending no higher than 10’ above the roofline.

Accessory Uses:
Garage or storage shed, accessory to allowed or permitted use
Parking or storage of agriculture machinery used on the premises
Signs
Manufacturing accessory to retailing, employing more than ten persons, with major portion of products sold on the premises
Employee dwelling accessory to industry
Office for one professional in his or her residence
Home office excluding the employment of others, exterior signs, and visits by customers, clients, or other persons in conjunction with the business
Monitoring tower for commercial land-based wind energy conversion facility
Yard sales lasting no more than two days, including set-up and take-down time, conducted no more than two times in a calendar year.

Under Special Permit by the City Council or the Board of appeals, the following uses may be allowed:
Community Service Uses:
Personal wireless service facility
Public utility facility exclusively servicing the immediate neighborhood (5 square miles or less)
Club or lodge, registered as a nonprofit organization
Philanthropic institution
Airport, heliport

Open Uses:
Boat launching, docking, or docking structures
Docking and operation of casino ships

Business Uses:
Bank, automatic teller machines
Restaurant with or without outdoor seating and/or takeout
Motor vehicle sales or rental
Motor vehicle service, fueling, storage, or repair
Marine related service, storage, or repair, limited primarily in the MI District to commercial fishing vessels
Protein recovery plant
Building tradesman or contractor, without outdoor storage of materials or heavy equipment other than one truck with a GVW of not more than 12,000 pounds
Stonemason’s yard
Shopping Center
Drive-through facility

Industrial Uses:
Trailer truck park, freight or transportation terminal facilities
Storage of toxic or hazardous materials or wastes incidental to industrial operations conducted on-site, as authorized by the Mass DEP pursuant to MGL ch. 21c

Other Principle Uses:
Parking of motor vehicles to service a use permitted in the same district
Temporary structures or temporary uses not conforming
Commercial radio transmission
Noncommercial radio transmission, with wire antenna or roof-mounted tower extending higher than 10’ above the roofline.

Accessory Uses:
Home occupation
Commercial land-based wind energy conversion facilities
Commercial land-based wind energy conversion facilities on city-owned land
The following uses are specifically not allowed in Marine Industrial areas:

Community Service Uses:
- Nursing homes, convalescence or rest homes, hospitals
- Cemetery
- Animal hospital or animal shelter
- Business or commercial school other than the previously allowed uses

Open Uses:
- Agriculture, horticulture, floriculture, including farms, greenhouse and gardens, on lots smaller than five acres
- Wildlife area, reservation, or similar use
- Riding School, stable
- Golf driving range, drive in theater, amusement park, race track, or similar commercial outdoor recreation
- Miniature golf, and baseball or softball batting cages
- Golf course, standard or par-three
- Commercial picnic or outing area
- Supervised Camping

Business Uses:
- Office building containing less than 2500 sq. ft. of floor area
- Funeral home
- Animal daycare, animal grooming, animal boarding, animal kennel, Laundry, Laundromat, or dry cleaning establishment

Industrial Uses:
- Junkyard, Fill or removal of soil, stone, or other earth products

Accessory Uses:
- In dwellings, regardless of size, the renting of not more than three rooms as lodging, without separate cooking facilities, to not more than three lodgers
- Dinning halls, or shops, wholly within a motel or hotel
- Automatic amusement devices
- Recreational use accessory to a dwelling for use of residents and nonpaying guests
- Residential land-based wind energy conversion facilities

Accessory in-law apartments
D. Large Pelagics Research Center Fact Sheet

MISSION
To improve the science and management of large pelagic species by obtaining crucial new insights needed to support sustainable fisheries, ecosystem health, and restoration of endangered species.

REGIONAL Activities
• Cooperative research with New England fisherman on bluefin tuna, sharks, sea turtles, and ocean sunfish, using state-of-the-art technologies, including electronic tags, multi-beam sonar, and aerial surveys.
• Cooperative sea turtle research to identify and protect critical habitats.
• Large Pelagics Seminar Series brings together top fisheries and oceanographic scientists, students, and the general public.

NATIONAL Impact
• Funding cutting-edge extramural fisheries research at top marine labs.
• Leadership in ecosystem studies of highly migratory species.
• The Atlantic counterpart of the Pacific Fisheries Research Program (University of Hawaii) supporting peer-reviewed fisheries science.
• Graduate and undergraduate training in fisheries science and technology.
• Strategic NOAA partner in the study of highly migratory fishes.

INTERNATIONAL Influence
• UNH-led team developed innovative bluefin fisheries stock assessment methods and influential tagging results used by ICCAT policy makers.
• Member of the international steering committee for the new scientific initiative, Climate Change Impacts on Top Predators (CLIOTOP).

The Center is meeting its mandate through its UNH Large Pelagics Research Lab, an Extramural Competitive Grants Program and Education Initiatives. Partnering with NOAA-NMFS, the Center is addressing key scientific gaps in knowledge and developing new technologies to advance fisheries science.