

VOLUME II: INVENTORY AND ASSESSMENT OF EXISTING CONDITIONS



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Friends of the CPUC

Kittery residents who supported the planning effort with varying degrees of time commitment.

Cover Photographs

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....and the concerned residents, business owners, Town officials and staff who devoted their time, energy and imagination to the making of this plan.

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INTRODUCTION

The following is an inventory and assessment of the existing conditions of Kittery's resources. These are presented in the chapters written for each of the Topic Areas listed below.

The Comprehensive Plan is presented in the three (3) volumes. This document is Volume II of the Plan.

Volume I: Presents the Plan, its foundations and recommendations.

Volume II: Represents an Inventory and Assessment of Existing Conditions.

Volume III: Includes a Summary of Public Input as well as the materials used at public forums to both educate and inspire participants.

This report, VOLUME II is a compilation of the **INVENTORY OF EXISTING CONDITIONS** of Kittery's resources. It is a "snapshot" in time and represents the conditions and plans for the future that were able to be determined at the time of writing. This document is an appendix to the Comprehensive Plan. It contains:

- A series of **Summary Sheets**, they are a summary of the key points of each of the topic area chapters.
- the complete **inventory of the town's resources** and an **assessment of the existing conditions**

COMPREHENSIVE PLAN TOPIC AREAS

- 1 - History, Historic/Archaeological Resources
- 2 – Natural Resources, Water, Agricultural and Open Space and Recreation
- 3 – Population and Demographics
- 4 – Housing
- 5 – Economy
- 6 – Transportation and Circulation
- 7 – Public Facilities and Services
- 8 – Marine Resources
- 9 – Fiscal Capacity
- 10 – Land Use

INTRODUCTION

The inventory is based on a review of existing documents, relevant plans, and data, as well as on a significant number of leadership interviews. In some cases what is reported is the opinion of Department Heads and may not necessarily be Town policy. See next page for a partial list.

PARTIAL LIST OF INTERVIEWS CONDUCTED FOR INVENTORY OF EXISTING RESOURCES

- Fire Chief
- Police Chief
- Chair, Port Authority
- Kittery Harbormaster
- Town Planner
- Town Manager
- Commissioner of Public Works
- Stormwater Coordinator
- Shoreland Resource Officer
- Superintendent of Sewer
- Superintendent of Water District
- Wood's Island Project Manager
- Recreation Director and General Manager, Kittery Community Center
- Director of Rice Public Library
- Superintendent of Kittery Schools
- Director of School Curriculum

Sample Interview Questions

- What are their priorities?
 - What future opportunities and challenges do they see?
 - What are their plans for the immediate and long term future?
 - How can we best integrate their plans into the Comprehensive Plan?
-
- Board of Appeals
 - Conservation Commission Chair
 - Kittery Historical & Naval Museum
 - Kittery Art Association
 - Kittery Land Trust
 - Mt. Agamenticus to the Sea
 - Fort McClary
 - Kittery Open Space Advisory Committee
 - Staff at Portsmouth Naval Shipyard

Kittery's Historic, Cultural & Archaeological Resources

CENTURIES-LONG HISTORY & MANY EXTANT HISTORIC RESOURCES

- Humans have inhabited the Kittery area for centuries, beginning with Native peoples, the Abenakis, who sought shellfish along the coast, and Europeans who came in the early 1600s, establishing the Town of Kittery in 1647 making it the oldest incorporated town in the State of Maine. Many of Kittery's natural features and circulation routes retain Abenaki or early European settlers' names.
- Three major activities have dominated Kittery's economy over its 300+-year history and shaped its landscape -- military fortifications, fishing, shipbuilding and tourism. Forts have stood in Kittery near the mouth of the Piscataqua River since the early 1700s, established first to protect from British invasion, and later domestic and foreign wars. Shipbuilding came to dominate the Kittery economy beginning in the mid-1600s, and continues today in the form of submarine repair and retrofitting at the Portsmouth Naval Shipyard, established in 1800. Beginning in the mid-1800s, Kittery became a tourist destination, with several large hotels built along the coast and one at Appledore Island in the Isles of Shoals. In the late-20th century Kittery became a regional shopping destination, with the addition of the Kittery Outlets along Route 1.
- Kittery retains many historic buildings and landscapes, some dating to the earliest European settlement. The town has listed three districts (First Congregational Church, Isles of Shoals and Portsmouth Naval Shipyard) on the National Register of Historic Places, as well as thirteen individual properties and one monument.
- One of the individually-listed properties -- the Lady Pepperrell House -- also has been designated a National Historic Landmark, one of 44 statewide and one of 5 in York County.
- Two local repositories contain a majority of artifacts documenting Kittery's history, the Kittery Historical and Naval Museum and the Portsmouth Naval Shipyard Museum. The former (a private organization) is open seasonally, and the latter (operated by the U. S. Government) is accessible by pre-arranged tour only. Additional historical materials (primarily documents) are held by the Town Clerk and in the Maine Room of the Rice Public Library.
- Much of Kittery's history lies within historic landscapes scattered throughout the town, including the two forts, Wood Island Life Saving Station, Celia Thaxter's Garden (Isles of Shoals), remains of train and trolley systems, and over 130 cemeteries and burying grounds.

SUPPORT FOR LOCAL ARTS AND CULTURAL ACTIVITIES

- Kittery is home to many working artists and several public and private organizations provide venues for showcasing artists' work.
- The Kittery Community Center, a facility owned and operated by the town, contains the 171-seat STAR Theatre as well as the Morgen Gallery, an exhibit space located in the heart of the center.
- The former Wentworth Dennett Elementary School, located on Government Street, has been successfully renovated to provide artists' studio spaces.

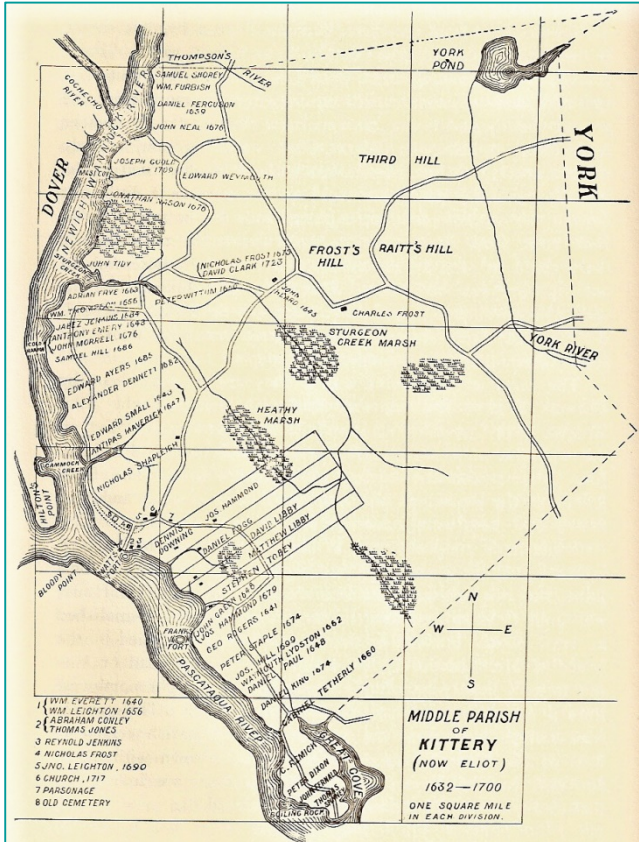


The Lady Pepperrell House, built in 1760, is a National Historic Landmark and one of the most treasured historic properties in the Town of Kittery.

WHAT DOES IT MEAN?

- Kittery's historic and cultural resources possess local, regional and national significance, and therefore merit protection.
- The town lacks an historical commission or other entity to serve as a steward for historic resources and help ensure their protection.
- The town lacks a comprehensive inventory of historic resources and a strategy to preserve and protect them.
- The existing Shoreline Overlay Zone has provided a mechanism for protecting the town's coastline from the impact of new development. Similar approaches to historic resource protection are needed in other parts of town.
- The energized local arts community contributes significantly to the quality of life in Kittery.

Kittery Comprehensive Plan: Inventory and Assessment of Existing Conditions



Images of Kittery provide highlights of its past:

- A map depicting Kittery in the 17th century (far left) illustrates the early settlement's close association with the Piscataqua River
- The Isles of Shoals (center top), an early fishing center, later became home to a large hotel
- The Portsmouth Naval Shipyard (center middle), established in 1800, continues as a major industry today
- The Champernowne Hotel (far right), built in 1890, was one of several late 19th and early 20th century resorts dotting Kittery's coastline
- Government Street, ca. 1900 (bottom), served pedestrians, horse-drawn vehicles, and trolleys





Kittery's Natural Resources, Open Space & Recreation Resources

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MANY DISTINCTIVE NATURAL RESOURCES

- Geology, topography and soils in Kittery reflect its geographic location along the Atlantic coast. Bedrock closely underlies much of the town, interspersed with pockets of marine soils and glacial outwash.
- Five watersheds cover most of Kittery, with the largest extending along the Piscataqua River and Spruce Creek. Many smaller tributaries feed these waterways.
- Kittery has relatively few fresh water sources.
- Kittery contains very little farmland and supports just three active farms.
- Kittery supports five rare natural community and one ecosystem types as defined by the Maine Natural Areas Program, including Salt-hay Saltmarsh, Coastal Dune-marsh Ecosystem, Dune Grassland, Low Sedge Fen, Oak-Hickory Forest, and White Oak-Red Oak Forest.
- Kittery supports thirteen rare plants including Allegheny Vine, American Sea-blite, Bitternut Hickory, Bottlebursh Grass, Mountain-laurel, Northern Wild Comfrey, Red-root Flatsedge, Saltmarsh False-foxtail, Spicebush, Spotted Wintergreen, Scarlet Oak, Wild Coffee, and Wild Garlic.
- There are two *Beginning with Habitat Focus Areas* located in Kittery: Brave Boat Harbor-Gerrish Island Focus Area and York River Headwaters Focus Area. These are landscape scale areas because they exist in large blocks of undeveloped lands and contain rich concentrations of at-risk species, natural communities, and significant wildlife habitats.
- The town's location at the confluence of the Piscataqua River with the Atlantic Ocean, combined with the many historic buildings and landscape features, give Kittery tremendous scenic quality.



Seapoint Beach, located at the far eastern end of Kittery, is a popular recreation spot, but also a feeding area for several species of migratory birds.

SIGNIFICANT OPEN SPACE RESOURCES

- Of Kittery's 12,000 acres and 30 miles of coastline, approximately 14% of the acreage and 10% of the coastline have been protected through a variety of conservation methods.
- While the State of Maine and Town of Kittery own some of this protected land, the majority has been conserved through the efforts of the Kittery Land Trust (840 acres) and Maine Coast Heritage Trust (408 acres).
- Kittery is also the southern "anchor" of the Rachel Carson National Wildlife Refuge, with its Brave Boat Harbor division, located in northeast Kittery, covering 400 acres.
- Kittery's scenic roads, including Route 103, are some of the town's most treasured assets. Visitors come from far and wide to drive the winding routes and take in historic and sea-facing views.

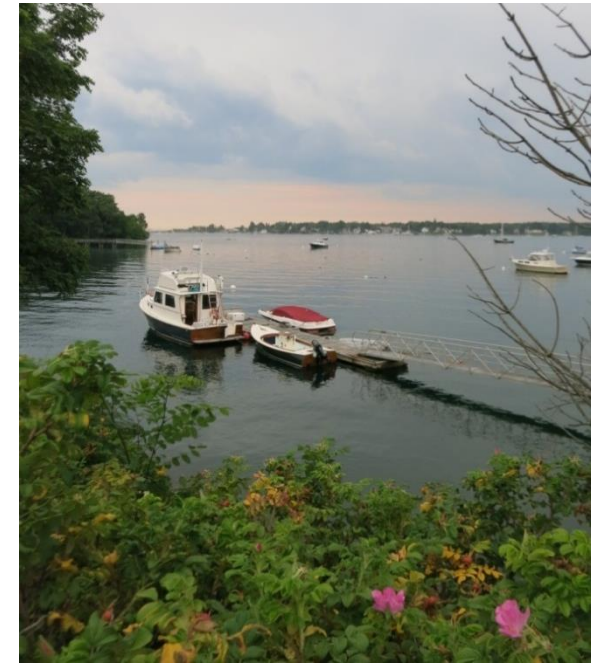
WHAT DOES IT MEAN?

- Kittery's location at the mouth of the Piscataqua and along the Atlantic coast is its most defining natural feature.
- The presence of bedrock underlying most of the town, combined with the many surface waters and associated floodplain areas, limits the extent of new development.
- Kittery Water District supplies 70% of Kittery Residential drinking water, which is sourced from surface waters in York.
- While 10% of Kittery's 30-mile coastline has been protected through efforts of several public and private entities, much of this area remains unprotected.
- The scenic quality of Route 103 is partially protected by the town's Shoreline Overlay Zone regulation. Additional work is needed to protect scenic views and viewsheds.

- The town's Conservation Commission is charged with reviewing protecting the natural resources located within the territorial limits of the town.
- The Kittery Open Space Advisory (KOSAC) is tasked with maintaining an inventory of public open space and making recommendations to the Town Manager about acquiring and/or selling/gifting/transferring this space.

RECREATION RESOURCES IN MANY FORMS

- Kittery contains 28 acres of federal and state-owned recreation facilities, including both active and passive recreation sites. Two of these sites are open to all.
- The town maintains several historic sites (Fort Foster, Wood Island) which provide recreational opportunities, as well as many athletic fields and playgrounds.
- The Kittery Community Center, opened in 2011 at the former Frisbee Elementary School on Rogers Road, provides active recreation facilities (gymnasium, fitness center) and offers recreation-oriented programs to users of all ages.
- A master plan for Kittery's athletic fields, completed in 2014, outlined the need for greater access to facilities, and need to eliminate overlap of facilities, and the need to rest fields on an ongoing basis.
- Access to the water (Piscataqua River and Spruce Creek) is limited by the small number of launches, slips, moorings and parking spaces near these sites.
- Kittery contains an extensive network of trails, both at formal recreation facilities, and on conservation lands. While used by many, the trails do not currently connect to one another, and are not widely publicized.
- Sportsmen and women hunt throughout the year, in approximately three-quarters of the town, including some residential areas. Hunting is not permitted in the area to the west of Haley Road and south of Interstate 95.



The Piscataqua River provides access to the Atlantic and associated maritime-related recreational activities.



The historic Rustlewood Farm, operated by the Johnson Family, covers 300 acres straddling the Kittery-Eliot line and is protected by a conservation easement.

WHAT DOES IT MEAN?

- The popularity of Fort Foster and Fort McClary as active and passive recreation sites places demands on limited staffing.
- The one regulation size soccer field in Kittery is in very high demand and in general, the town's fields are over utilized (in part because the town does not maintain separate practice fields), complicating maintenance tasks.
- Opportunity exists to better promote the town's system of trails and to create better connections between trail segments.
- Opportunity exists to provide more access to Kittery's waterways.

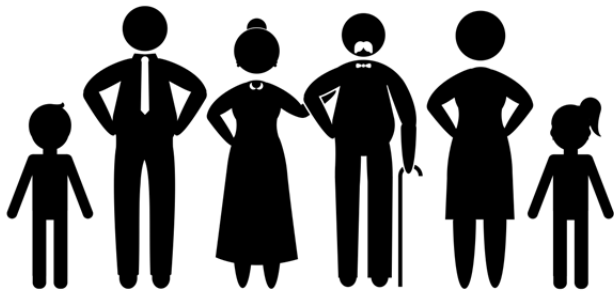
Kittery's Demographics

POPULATION AND DEMOGRAPHICS

- Total population for Kittery has remained relatively stable since 1970, and that trend is projected to continue through the year 2032 (US Census, State of Maine Projections)
- Kittery is an aging community; between 2000 and 2014, residents ages 55 to 64 increased by 65 percent (US Census)
- The number of family households in Kittery with children under the age of eighteen has declined since 2000 (US Census)
- School enrollment in Kittery has remained stable with the exception of fluctuations due to military families moving to Kittery for short term assignments at the Naval Shipyard. During the 2014/15 school year, approximately 18 percent of children enrolled in the Kittery school system were from military families (Kittery School District)
- The current population in Kittery is very stable, with over 86 percent of residents living in the same home they did a year ago (US Census)
- The median age of those coming from another country to live in Kittery was seventy-two (US Census)
- Since 2000, the median household income in Kittery has grown from \$45,067 to \$60,205 in 2014 (US Census)

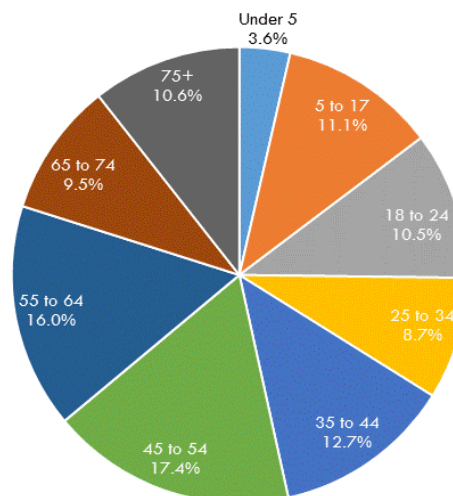


**Kittery's estimated population
in 2014 was 9,649** (US Census)



**Total population is projected to
decline by 6 percent through
the year 2032** (State of Maine)

Kittery's Population by Age



WHAT DOES IT MEAN?

- Kittery's population has not grown in over 45 years, which does not stimulate new housing demand for families
- The senior population is growing as existing residents are getting older, which may require more targeted housing for seniors
- The Town should consider ways to attract and retain a younger population to help fill jobs, support local businesses, and support the town's tax base



Kittery's Housing Resources

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HOUSING RESOURCES

- For 2014, the American Community Survey estimates the total number of housing units in Kittery to be 5,144 (2010-2014 ACS)
- Sixty-five percent of Kittery's housing stock is owner-occupied which is lower than many surrounding towns with the exception of Portsmouth (2010-2014 ACS)
- Kittery has a relatively young housing stock, with 74 percent of residential structures built after 1940 (2010-2014 ACS)
- The American Community Survey estimates median owner-occupied housing value at \$292,200 and median monthly rent of \$1,232 (2010-2014 ACS)
- The Town does have several age-restricted housing options for residents over fifty-five



Kittery has a diversified housing stock in a desirable location

Household size is shrinking, and the number of residents over 65 is growing in Kittery.



What implications does this have for future housing needs?

4%

Percentage Kittery's median home values have increased since 2010

7%

Percentage Kittery's median rent values have increased since 2010

WHAT DOES IT MEAN?

- Kittery's housing prices are increasing, making it harder for residents to afford to live in Kittery
- Housing that is affordable for younger single-person and family households is an important component of maintaining the Town's workforce and stimulating economic development
- With a growing senior population, the Town should consider ways to create housing that is affordable, accessible, and located in places with access to amenities

Kittery's Economy

LABOR FORCE

- Total labor force is comprised of 5,624 people, which equals a 68 percent participation rate
- The majority of Kittery residents are employed in educational services, healthcare, and social assistance
- The Naval Shipyard contributes to the professional, scientific, management and administrative services sectors
- Six primary employment sectors are: manufacturing, professional services, public administration, retail trade, food services, educational services, and healthcare
- The average weekly wage in Kittery is \$1,404 per week



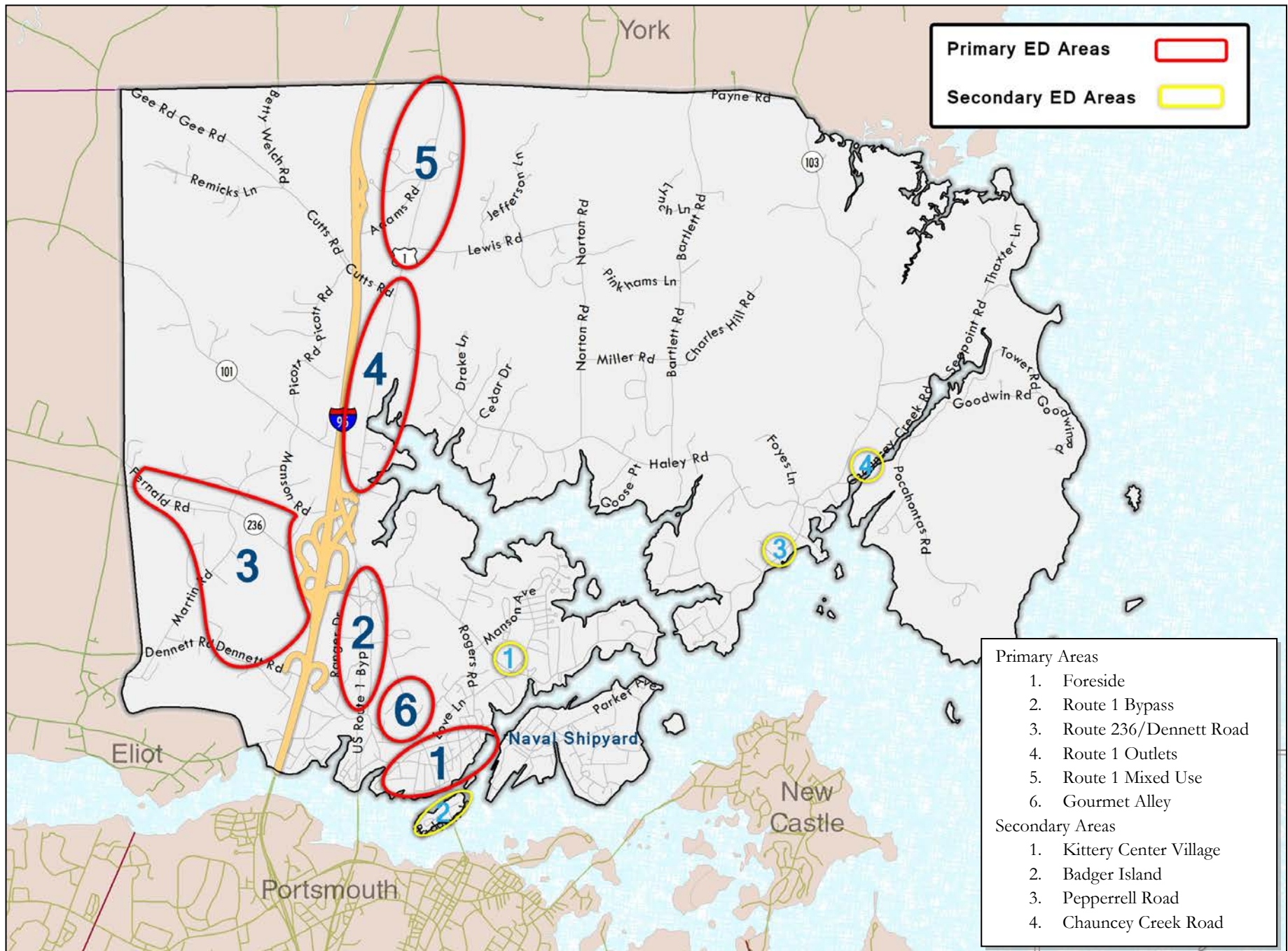
Kittery has an eclectic mix of restaurants, retail, and housing.

PRIMARY ECONOMIC DEVELOPMENT AREAS

- Downtown/Foreside:
 - One of Kittery's more unique and interesting commercial areas with a mix of retail, restaurants, and daily service needs
 - Accessible by car, walking, or biking
- Route 1 Bypass Area:
 - Areas is zone Commercial 3 (C-3) and allows for the provision of general retail sales, services, and business space
 - Current businesses include a hardware store, motels, a fitness center, automotive repair shop, brewery, and sewage disposal plant
- Route 236/Dennett Road Area:
 - Currently mostly undeveloped, the business park area does have sanitary sewer line infrastructure already installed
 - Existing uses along Route 236 are small-scale commercial developments such as machine shops, office buildings, and a seafood wholesaler
- Route 1 Outlet Area:
 - Aside from the Foreside, this is one of Kittery's oldest and most successful economic development areas; the outlets generate property tax revenue and draw customers locally and regionally
- Route 1 Mixed Use Area:
 - The area is zoned Mixed Use with the primary purpose of providing office, service, and residential uses
- Gourmet Alley:
 - An interesting mix of

WHAT DOES IT MEAN?

- Kittery's employment base includes a large number of lower-wage retail, restaurant, hospitality, service, and entertainment workers which are impacted by cost of living increases
- The Town should begin to think about business diversification along the Route 1 corridor as regional competition in outlets grows
- The success of the Foreside and Route 1 Outlet Corridor shows the Town should continue investing in economic development areas
- The Town has many commercial zoning districts. Is this necessary? Should some be consolidated or changed?



Kittery's Transportation Resources

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TRAVEL CHARACTERISTICS

- Kittery is the largest work destination for Kittery and KACTS community residents.
- 85% of Kittery households have 1 or 2 vehicles compared with state average of 74%. 6% of households in Kittery have no vehicle.
- 71% of Kittery commuters drive alone and 22% use other modes. The number of carpoolers, bicycle trips and walk trips has increased since 2000. Use of bicycle increased from 0.5% in 2000 to 2.4 percent in 2014, which represents 100 additional commuters who biked.
- Average commute time = 21 minutes, shorter than state average. The number of commuters traveling less than 10 minutes has decreased since 2000.



Unsignalized intersection of Shapleigh Road/Whipple Road/Woodlawn Avenue

OPERATING CONDITIONS

- The main source of congestion on local roadway is during shift changes at the Portsmouth Naval Station.
- The unsignalized intersection of Shapleigh Road/Whipple Road/Woodlawn Avenue operates with congestion and long vehicle delays during peak periods.
- I-95: 37,500 vehicles per day (vpd); US Route 1: 17,000 vpd; and SR Route 236: 18,700 vpd; US Rt. 1 Bypass: 15,700 vpd (Year 2011) have the highest daily traffic volumes.
- Most of the roadway segments experienced decrease in daily traffic volume between 2010 and 2013. Shapleigh Road increased up to 22% during this period.
- The Department of Public Works (DPW) has a policy for local roadway maintenance called the Road Surface Management System. Typically, the roadways with ratings of less than 50 would be on the priority list for maintenance in a given year.
- Kittery has approximately 73 miles of roadways including I-95. Kittery has several scenic roads classified into three categories.
- Most of the bridges in Kittery received a Federal Sufficiency Rating (FSR) above 50. Viaduct and Sarah Mildred Long Bridge have the lowest ratings of 16.4 and 21, respectively. Memorial Bridge replacement was completed in 2013.

WHAT DOES IT MEAN?

- Kittery is served well by I-95, Route 1 and Route 1 Bypass.
- More commuters are biking and walking to their work. New sidewalks, pedestrian safety improvements, and expanded bicycling accommodations could be beneficial.
- When I-95 experiences congestion, particularly during summer months, local roadways experience congestion and are used as cut-throughs.
- Route 103 is a narrow, winding roadway shared by vehicles, motorcycles, and bicyclists, particularly on warm weather weekends.

SAFETY

- According to the annual Town report for 2013, Kittery experienced a reduction in accidents by 10% compared to 2012.

- There were six high crash locations in Kittery between 2011 and 2013, which are:
 - Intersection of Mason Road, Picott Road and Wilson Road;
 - Intersection of Haley Road/US Route 1 and Trafton Lane;
 - Intersection of New State Road & Rogers Road State Road;
 - Intersection of Ramp off to Rogers Road Extension Road South Bound;
 - End of US 1 Bypass/Intersection of US 1 Bypass & US 1 Bypass South Bound; and
 - Intersection of Entrance to Maine Outlet/Entrance to Shop Center, US SHOP CTR, US 1: Non Int US 1.

PEDESTRIANS & BICYCLES

- Most of the sidewalks in Kittery are along US Route 1 and in the urban downtown area. The DPW maintains a Sidewalk Condition Report.
- Approximately 2.5-miles of the Eastern Trail runs through Kittery from the Maine State Line on the Memorial Bridge to Dennett Road.
- The Route 236 bike route runs through Kittery.
- The KACTS is working with the Town of Kittery on upgrading the Route 1 Bypass to make it more pedestrian friendly.
- Route 103 is included in Tour 8 of MaineDOT's "Explore Maine by Bike" book. Tour 8 provides 3 tour loops that are 12, 17 & 22 miles long.

TRANSIT

- In Kittery, the COAST provides year round fixed-route limited transit services at Portsmouth Naval Shipyard. Out of five COAST routes, four are express commuter routes.
- Paratransit service, ridesharing program and van services are available to Kittery residents through various organizations, including YCCAC, York Hospital, GoMaine, vRide, Enterprise Rideshare, and Kittery Community Center.
 - YCCAC provides "Local Rides" service in Kittery on Fridays, with destinations in Kittery, Portsmouth and Newington.
- A shuttle bus service use to operate on Route 103 in Kittery, but it has not been provided for several years.
- Currently, there is no passenger rail service into Kittery. The nearest stations from Kittery are Dover, New Hampshire and Wells, Maine. There is a freight service to the Portsmouth Naval Shipyard.

PARKING

- There is a shortage of parking spaces in the Foreside area during peak periods.
- Parking at access points to the water during summer months is difficult for both residents and visitors.



Intersection of State Road and Rogers Road, one of the high crash locations.

WHAT DOES IT MEAN?

- Fixed-route bus services in Kittery are only available at Portsmouth Naval Shipyard.
- There is a desire for shuttle service but the demand is not high enough for applying for grant.
- Parking shortages at Foreside area and limited parking at access points to the water during the summer.

Kittery's Public Facilities & Services

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WELL MAINTAINED FACILITIES

- The **Municipal Complex/Town Hall** building is in very good condition and has room for expansion if needed in the future.
- **Public meeting space** is available at the Town Hall, the schools, the Library, and Community Center and is adequate.
- Kittery has a variety of indoor and outdoor **recreational resources**
 - The **Kittery Community Center**, run by the Recreation Department provides a wide range of facilities and programs to Kittery residents of all ages (including a gymnasium, fitness room, theater, and classrooms).
 - The **Port Authority** manages 575 moorings (the majority of which are at Pepperrell Cove), four piers and additional moorings in various other locations along the Town's shoreline.
 - There are also a number of **parks, beaches and conservation lands** for Kittery residents to enjoy.
 - Additional **Athletic fields** are needed to meet the needs of the Town's youth.
- **Sustainability.** The Energy Efficiency Committee works with the Town Manager and Council to adopt energy programs, projects and policies to develop more sustainable energy practices.
- Kittery's three **public schools** are adequate in terms of size and condition to meet current needs as well as those in the foreseeable future. Approximately 90% of school-aged children in Kittery attend public schools. There are some fluctuations in enrollment due to military families with short-term assignments at the Shipyard. There is capacity at all three schools for a small increase in enrollment; no significant increase is expected.
- The **Library** is currently operating out of two facilities that do not meet overall space needs and having two buildings is inefficient and causes inconvenience to both patrons and staff.
- The **Police Department**, located next to Town Hall in the Municipal Complex, is more than adequate to meet current and future needs (the second floor shell space could be used for expansion if needed in the future).
- The **Fire Department** operates from two fire stations, both in good condition, with the exception of the fact that neither station has sleeping quarters. The Fire Department is having a harder time recruiting volunteers than in the past.
- **Emergency Medical Service** is provided by American Ambulance New England. They operate out of the former Walker Street Fire Station which is leased to AANE for free; in exchange they provide free Ambulance service to all Town employees. They also serve the Town of Eliot from this location.
- Kittery does not have a Council on Aging. The Community Center provides activities and York County Community Action Corporation partners with Southern Maine Agency on Aging to provide **services to Kittery's seniors**. Between 2000 and 2014, residents age 55 to 64 increased by 65 percent, and the number of elderly residents is expected to continue to increase.



The Municipal Complex houses the majority of the Town's administrative offices.

WHAT DOES IT MEAN?

- The **Library** needs to decide whether to construct an addition to the existing Rice building or to create a new facility on the site of KCC.
- The **Kittery Community Center** may need to increasingly orient future programming to the growing senior population.
- More substantial measures need to be taken to **prepare for climate change** and related rise in sea level.
- Implementing the recommendations of the recently completed **Athletics Field Study** will address the needs for additional fields.
- New **school enrollment projections** are needed in order to monitor potential future changes in student enrollment.
- The **Port Authority** needs to develop a Strategic Plan to help explore ways to increase access and enjoyment of the water.

(continued on reverse side)

PROVISION OF QUALITY UTILITIES AND SERVICES

- **Department of Public Works** operates out of several facilities; the garage and administrative offices are in a facility located behind the Municipal Complex which is in good condition and adequately sized, with space for expansion if needed. DPW is responsible for maintenance of the Town's roads, stormwater infrastructure, parks, recreation fields, cemeteries and solid waste and recycling.
 - **Solid Waste and Recycling** is processed at the Town's Resource Recovery Facility which includes a transfer station for material solid wastes, a recycling center and a licensed demolition debris disposal site. Solid waste is transported from this site to EcoMaine in Portland, ME. South Berwick currently brings their paper for recycling to Kittery's Resource Recovery Facility, generating income for the Town. The facilities are adequate for current needs and there is room for future expansion.
 - **Stormwater Management.** DPW recently completed an inventory of the Town's Stormwater infrastructure and determined that it is generally in "very good" condition.
 - **Monitoring of contaminated areas.** Bacterial sources of pollution have been identified in Admiralty Village and other areas in the Spruce Creek Watershed. Clam flats have been close since 2005. Some parts of the Creek have seen improvement.
 - **Parks.** DPW maintains and staffs the Town-owned parks. Fort Foster, a 94-acre town-owned park commands much of the Department's attention, is highly used by both residents and visitors during the summer, and generates income for the Town.
- **Water.** Kittery's water is supplied by the Kittery Water District (KWD), a quasi-municipal corporation. The District also supplies water to parts of York and Eliot.
 - The largest water consumer in Kittery is the Portsmouth Naval Shipyard.
 - KWD currently serves approximately 70% of the Town's residents and 95% of the businesses who pay user fees according to their actual usage.
 - The KWD relies on surface water sources that must be protected from contamination.
 - Of the approximately 96 miles of water mains, most are adequately sized.
 - The District is planning to construct a new Treatment Facility and to continue to upgrade pipes.
 - The District has adequate treatment and pumping capacity to meet additional demand, however there are no planned extensions to the system, in fact, KWD is not able to pay for expansion of mains.
 - Additional regional cooperation with surrounding towns may result in increased cost effectiveness.
- **Sewer.** Wastewater is treated at the Municipal Sewage Treatment Plant.
 - Sewage treatment is provided to 30% of Kittery residents and most of the Town's businesses.
 - The Plant and related infrastructure are all in good condition as they have been upgraded over the last few years.
 - The municipal system, which has additional capacity for expansion, is funded through an enterprise fund; user fees pay for the service.
 - The Town also has a "betterment fee" procedure to help charge property owners that benefit from a sewer extension.

WHAT DOES IT MEAN?

- Regional joint dispatch for **Police** calls (pending grant) is expected to result in efficiencies.
- There may be a need to increase the number of sworn officers to **police** a reflect the actual daytime population taking into account tourists, shoppers and Shipyard employees.
- The **Fire Department** may need to transition to a full-time professional fire fighting staff in the near future.
- It may be more efficient to merge Kittery's **Resource Recovery Facility** with that of Eliot's.
- The Portsmouth Pierce Island Wastewater facility must be updated before the **clam flats** can be re-opened.
- DPW would like to explore becoming a "**Stormwater Utility**" in order to fund future improvements." The first step is to conduct a feasibility study.
- Both the **Kittery Water District** and the **Town sewer system** derive a significant portion of their usage and revenues from the Shipyard. Changes to the status of the Shipyard could affect costs to other users.
- Lack of funding for **expansion of water service** makes it difficult to guide growth through the provision of water.
- If the **Kittery Water District administrative offices** chooses to relocate in the future, the existing site will be available for reuse.
- The recent expansion of the **sewer system** to the Business Park is expected to result in encouraging economic development.
- New technologies will make it feasible to provide **alternative methods of sewage treatment** to Kittery Point and rural areas of Town in the future.



Kittery's Marine Resources

KEY WATERWAYS

Kittery's harbor and waterfront areas include approximately 34 miles of shoreline, including rock outcrops, salt marshes, sandy beaches, mud flats, waterfront recreational areas, coves and mooring, commercial marina facilities, and a major federal installation at the Portsmouth Naval Shipyard. The waterfront and marine resources have played an important role in the history and development of Kittery, and the waterways are home to a wide range of commercial and recreational boat traffic. Much of the shoreline is in private ownership, with several large public parks such as Fort Foster and Fort McClary. All moorings, docks, and regulatory enforcement fall under the jurisdiction of the Kittery Port Authority (KPA). Key waterways include:

- **Piscataqua River:** Leading out to Portsmouth Harbor along the Kittery shoreline, the Piscataqua is an authorized navigation channel over 6.2 miles of its 13 length. The Piscataqua has multiple users, including freighters and cargo vessels, US military and Coast Guard, commercial fisherman, and recreational boaters.
- **Spinney Creek:** located just north of the Interstate 95 Bridge, this subtidal creek features a commercial aquaculture facility, several private float landings, and a private marina (in Eliot, ME) at the confluence of the creek with the Piscataqua River.
- **Back Channel:** This waterbody, an offshoot of the main Piscataqua River, runs from the western end of Badger's Island easterly to Spruce Creek between the mainland and Seavey Island, the location of the Portsmouth Naval Shipyard. The Back Channel is important for recreational boaters, particularly those docking on the northern side of Badger's Island. The channel is the waterbody closest to the revitalized commercial area in the Kittery Foreside.
- **Chauncey Creek:** The creek runs from the eastern end of Pepperrell Cove to Seapoint Beach, and due to its shallow depth, is used primarily by small water craft. Several private docks and a popular waterfront restaurant are located on the creek. Recent work has replaced overboard discharge (OBD) systems with septic systems, improving water quality.
- **Spruce Creek:** this three-square mile tidal saltwater estuary is fed by five freshwater streams that run roughly up the middle of Kittery. At low tide, approximately 2.5 miles of clam flats are exposed. Water quality is affected by non-point source pollution and "first flush" (initial surface runoff) during rainfall events.
- **Pepperrell Cove:** Adjacent to Kittery Point and Fort McClary State Park, this is the primary mooring area in the town.
- **Brave Boat Harbor:** Used primarily by small craft due to shallow depths, with limited private landings and no public facilities. It is located within the Brave Boat Harbor Division of the Rachel Carson National Wildlife Refuge.
- **Key waterfront natural areas** include Seapoint Beach, Rachel Carson National Wildlife Refuge, Fort Foster, Fort McClary, the nearshore islands (including the future Wood Island Life-Saving Museum), and the Isles of Shoals.

OPERATING CONDITIONS AND ACCESS

- Demand for access to the waterfront and for boating access is consistently high, and at key times of the season, is greater than the ability of existing landside facilities and moorings to meet.
- A significant portion of the available parking at Frisbee Pier (a primary parking area for Pepperrell Cove) is in a lot across Pepperrell Road. This lot is in private ownership.



View across Back Channel of the Piscataqua River towards Portsmouth Naval Shipyard

WHAT DOES IT MEAN?

- Kittery has a complex waterfront, with large-scale commercial and military craft, marina and docking facilities, commercial fishing, and recreational boating
- Limitations exist on access to the waterfront from crowded shorefront parking and launching facilities, and long waiting lists for moorings
- Contamination from wastewater treatment outfalls and other sources has affected shellfishing and overall water quality
- Opportunities exist to increase public access to waterfront, and to increase visitation to Kittery by waterborne passengers

OPERATING CONDITIONS AND ACCESS, CONTINUED

- In summer, the parking facilities at Pepperrell Cove can be extremely busy, and can become full. There can be extensive waits for pier/launch space to put dinghies in the water to reach moored vessels.
- Parking shortages also occur at the Traip Academy launching area, during the school year.
- Other locations for parking and water access along the shoreline are limited, due to extensive private ownership of the shoreline.
- Major anchorages such as Pepperrell Cove have not been dredged in decades, leading to limitations on vessels that can safely moor and transit the area. The Pepperrell Cove anchorage was last dredged in 1916, to a depth of twelve feet. The navigation chart for the area shows depth of 11 to 7 feet at Mean Low Water (MLW), with local sources stating water depths are six to ten feet in half of the anchorage area.
- Storm winds and waves limit opportunities for additional moorings in exposed areas such as Fort Foster. Locations and plans for storage of floating docks during coastal storms should be evaluated, such as setting moorings in Chauncey Creek for temporary storage of the Pepperrell Cove floats.
- The currents occurring in the Kittery area can pose a hazard to small craft, particularly to human-powered craft such as kayaks.



Government Street Pier in the Kittery Foreside

WATER QUALITY

- Run-off and direct source pollution have led to contamination of area waters and led to shellfishing restrictions and prohibitions in certain areas.
- Major sources affecting the Piscataqua River are wastewater treatment plant (WWTP) outfalls from South Berwick and Kittery in Maine, and from Portsmouth and Newington in New Hampshire. The Portsmouth Naval Shipyard is also a major pollution source.
- Development pressure in Spruce Creek watershed further threatens water quality. The watershed is identified by Maine Department of Environmental Protection as a “nonpoint source pollution priority watershed” due to bacterial contamination, low dissolved oxygen, toxic contamination, and a compromised ability to support commercial marine fisheries”.

MUNICIPAL MANAGEMENT OF MARINE RESOURCES

The Kittery Port Authority (KPA) manages the town’s marine facilities including piers, docks, and over 500 moorings. Funding is derived primarily from collection of mooring and docking fees, and the Kittery Town Council approves the Port Authority’s budget. The KPA employs the Kittery Harbor Master, who oversees operations at the facilities, and provides marine law enforcement, rescue and education services to boaters within the tidal waters of the community. On the 2015 mooring registry, there are a total of 513 registered moorings, with approximately 20% assigned to commercial vessels and the remainder to recreational vessels. There is a twelve to fifteen-year waiting list for mooring spaces in Kittery. Major facilities under the jurisdiction of KPA include Pepperrell Cove and Frisbee Pier, Traip Academy boat launch, Government Street Pier, and the Back Channel.

FLOODPLAIN

- In November 2013, FEMA issued a Preliminary Digital FIRM (DFIRM) for York County, using updated flooding frequency and elevation data and modeling analysis. The mapping shows a larger floodplain area than previously mapped, with approximately 75 structures newly included in the floodplain (65 in the coastal area and the remainder in the interior).
- Due to challenges from Kittery and other coastal communities, FEMA withdrew the Preliminary DFIRM in December 2014. It is anticipated that FEMA will issue a revised Preliminary DFIRM for York County in 2016.

Kittery's Fiscal Capacity and Capital Investment

FISCAL POSITION

- Kittery's local valuation increased by 4 percent between 2010 and 2015, in contrast to the state as whole which saw a decrease of 21 percent over the same time period
- Between 2010 and 2015, the local tax rate increased by 10 percent
- Between 2010 and 2015, individual property tax bills increased by an average of \$495. For 2015, the average single family property tax bill was \$4,929
- Approximately 78 percent of Kittery's valuation is derived from residential properties, with 22 percent coming from commercial, industrial, and personal property
- Federal and state aid to Kittery has been shrinking which increases the reliance on locally-generated taxes



The local government depends on the residential property base to generate revenues for services

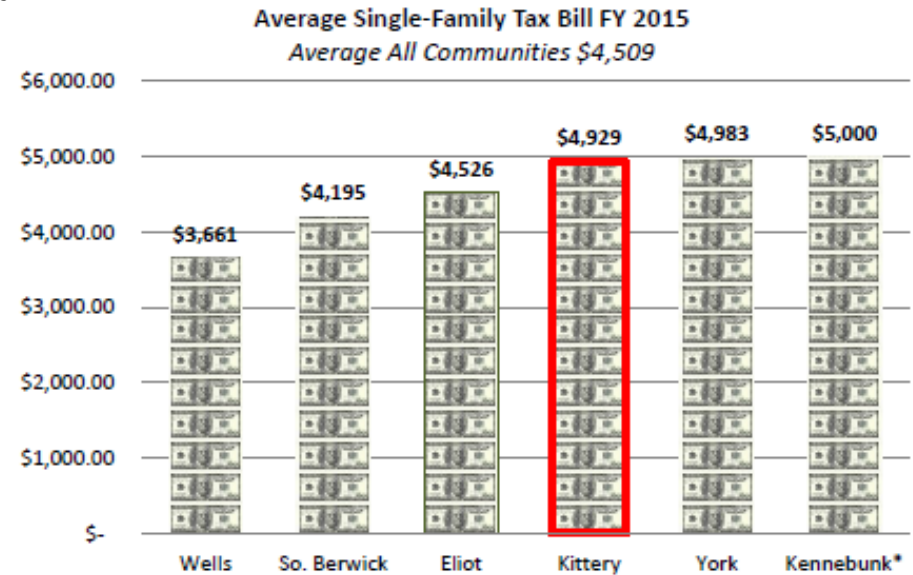
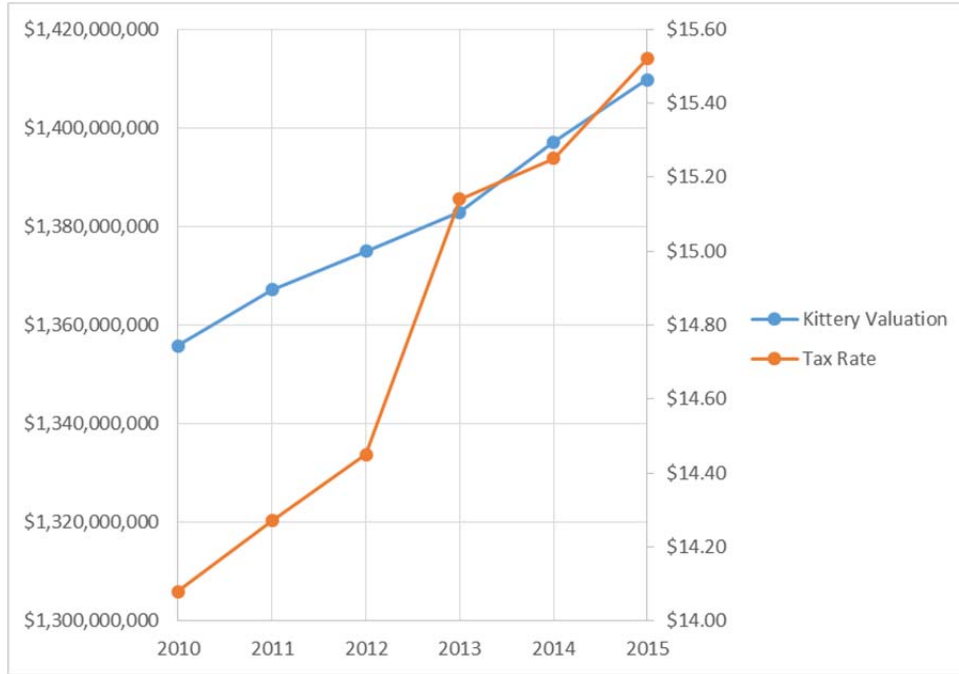
BUDGET

- Revenue:
 - Total revenue in Fiscal Year 2015 budget was \$27,124,366; property tax accounted for 80 percent of total
 - The State of Maine has a revenue sharing program which helps supplement the budget
- Expenses:
 - In Fiscal Year 2015, the Town spent \$27,141,118 on town functions, services and schools; school costs accounted for nearly 55 percent of the budget. Only 9 percent of the budget was spent on governmental administrative expenses
- Debt:
 - The Town has long-term debt obligations of \$32,545,880 or 2.17 percent of the State Valuation
- Investments:
 - At the end of Fiscal Year 2014, the Town had an unassigned fund budget totaling \$4,345,203, which was an increase of \$187,965 over the Fiscal Year 2013
- Capital Improvement Program:
 - A majority of capital improvement funding goes toward standard expenses such as equipment and maintenance, sidewalks, school upgrades, and parks and recreation facilities

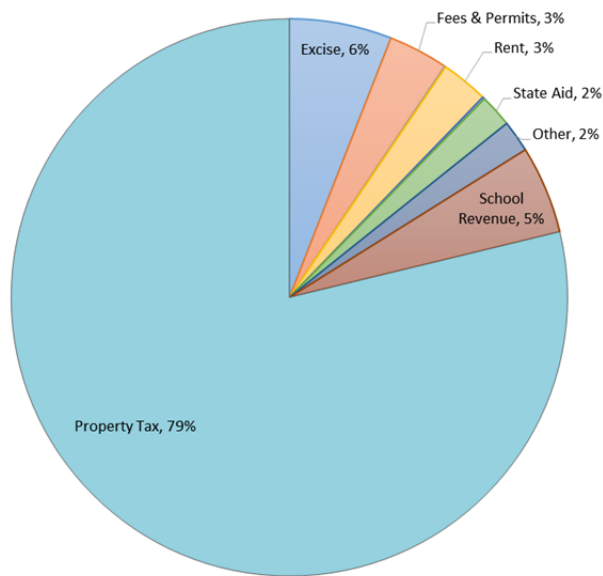
WHAT DOES IT MEAN?

- Stewardship of Town budgetary resources is essential toward leveraging greater economic development
- The Town has undertaken debt obligations to finance development, particularly in the Tax Increment Finance Districts; it is imperative that increment on development is generated in order to pay the bonds
- Kittery is highly dependent on residential property taxes and may need to create opportunities to diversify revenues through economic development

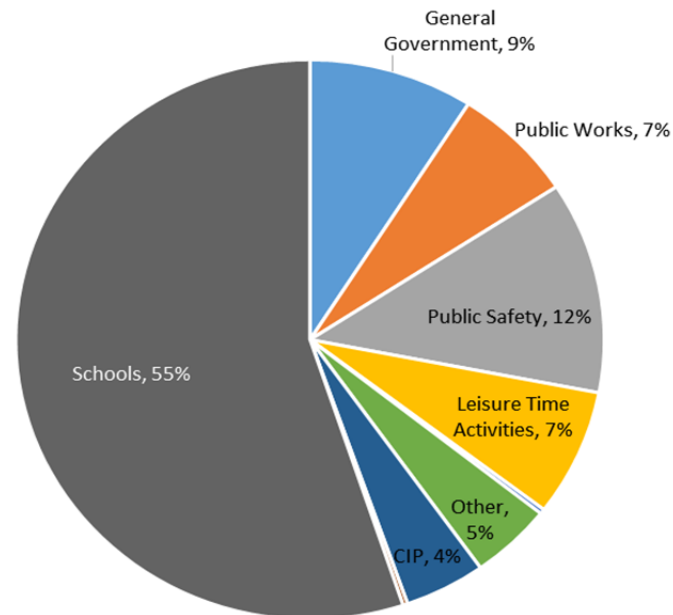
Kittery's valuation and tax rate have been increasing since 2010



A comparison of revenue sources to expenditure items from the Fiscal Year 2015



Revenue Sources



Expenditures



Kittery's Land Use

10

EXISTING LAND USE PATTERNS

- Over 57 percent of the land in Kittery is classified as a residential land use (both single-family, and multi-family); commercial, industrial, and institutional uses make up a combined 8 percent; open space makes up 21 percent; and vacant land is about 10 percent
- The current Land Use and Development code divides Kittery into eighteen base zoning districts with four overlay districts
- Approximately 78 percent of the land in Kittery falls within residential zoning districts, primarily the Residential-Rural (R-RL) district
- Kittery has three business districts, three commercial districts, and three mixed-use districts all allowing different types of commercial uses
- The overlay districts are in place to help the Town protect natural resources and water bodies from the impacts of development, and as a way to promote fishing and maritime uses



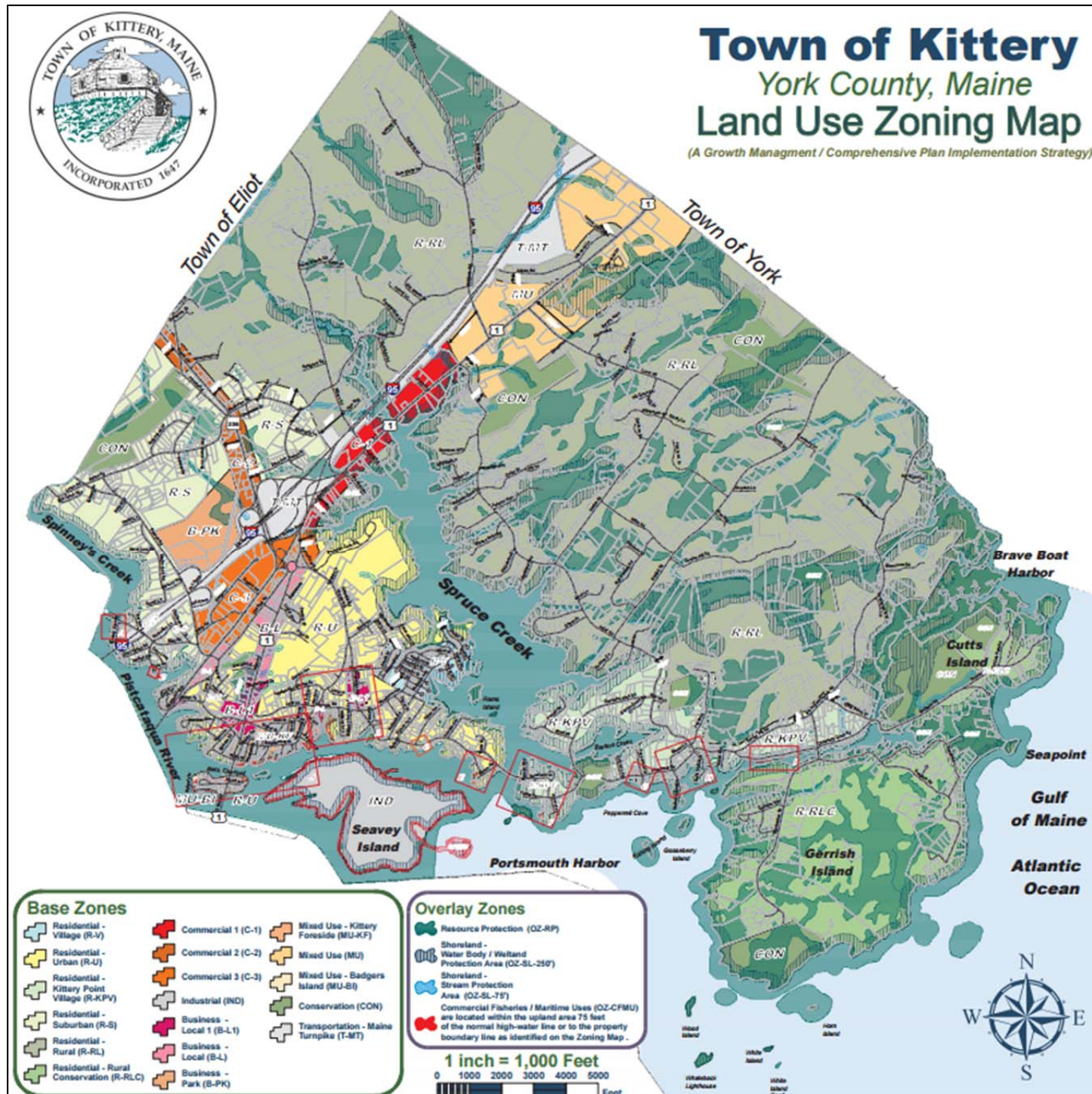
Within the Town, there are many different zoning districts each creating opportunities and challenges for the Town.

ISSUES AND CHALLENGES

- Redundancy:
 - Some of the zoning districts that regulate the same type of use (residential, commercial, and mixed-use) have different purpose statements, but very similar uses and dimensional requirements
- Inconsistency:
 - Many commercial districts have same dimensional requirements but differ when it comes to design elements for each
 - Industrial zoning district does not include any dimensional standards or requirements
- Minimum Lot Size Requirements:
 - In some districts where the purpose is to achieve a compact development pattern, minimum lot sizes are very large and challenge the purpose statement for the district
 - Small, single-use structures on large lots in mixed-use zones have less of an economic return when compared to areas that incorporate a compact development design
- Land Area per Dwelling Unit
 - The minimum land area per dwelling unit regulations in some districts limit the ability to create a more compact development pattern

WHAT DOES IT MEAN?

- The comprehensive planning process offers an excellent opportunity to hold community-wide discussions on development goals
- The purpose of the zoning district should reflect what is on the ground today, as well as what the community hopes to achieve in the future
- It is very important to match the desired development goals and aspirations with the zoning that is in place, or could be in place throughout the Town



HISTORIC, CULTURAL AND ARCHAEOLOGICAL RESOURCES

1

This chapter identifies and describes Kittery's historic and cultural resources and past efforts to preserve, promote and enhance them. Historic and cultural features include both physical resources [buildings, landscape features, landscapes, and archaeological sites (both historic and pre-historic)], as well as non-physical resources (organizations, clubs, programs and events), both of which contribute to the quality of life in the town. The chapter includes:

- A brief history of Kittery and an overview of the town's extant historic resources;
- A synopsis of past efforts to preserve historic and cultural resources; and
- A description of the historical and cultural organizations based in Kittery.

The chapter concludes with a compilation of issues, challenges and opportunities surrounding Kittery's historic and cultural resources to be considered by the town in shaping the Comprehensive Plan.

KITTERY'S HISTORY AND SURVIVING HISTORIC RESOURCES

CONTACT AND FIRST PERIODS (BEFORE 1675)

The Piscataqua Region of southern Maine and the seacoast of New Hampshire have attracted humans for centuries. Native peoples of the Abenaki tribe came to the area to collect shellfish



The Lady Pepperrell House, built in 1760, is a National Historic Landmark and one of the most treasured historic properties in the Town of Kittery.

and hunt game. While physical evidence of the Abenakis is not visible in Kittery, the town retains several place names stemming from this time of Native American settlement.¹ Piscataqua, for

¹ In 2014, the Maine Historic Preservation Commission (MHPC) released inventory data about prehistoric archaeological sites in Kittery. The report recorded eight known archaeological sites in the Kittery, six on the Shipyard property, one on tidal water, and an eighth on well-drained soils in the interior northeastern part of town. State historic preservation offices typically do not publish precise locations of prehistoric archaeological sites, as a means of securing their protection from vandalism and looting. However, maps showing general locations are available from the MHPC.

SUMMARY OF KEY POINTS

- Humans have inhabited the Kittery area for centuries, beginning with Native peoples, the Abenakis, who sought shellfish along the coast, and Europeans who came in the early 1600s, establishing the Town of Kittery in 1647 making it the oldest incorporated town in the State of Maine.
- Shipbuilding dominated the Kittery economy beginning in the mid-1600s, and continues today in the form of submarine repair and retrofitting at the Portsmouth Naval Shipyard, established in 1800.
- Forts have stood in Kittery near the mouth of the Piscataqua River since the early 1700s, established first to protect from British invasion, and later domestic and foreign wars. Both remaining forts, McClary and Foster, are now prominent historic and recreation sites.
- Beginning in the mid-1800s, Kittery became a tourist destination, with several large hotels built along the coast and one at Appledore Island in the Isles of Shoals.
- In the late-20th century Kittery became a regional shopping destination, with the addition of the Kittery Outlets along Route 1.
- While Kittery retains many historic buildings and landscapes, others have been severely compromised or altogether lost.

example is believed to be derived from Abenaki words for branch (peske) and strong-current-ed river (tegwe).²

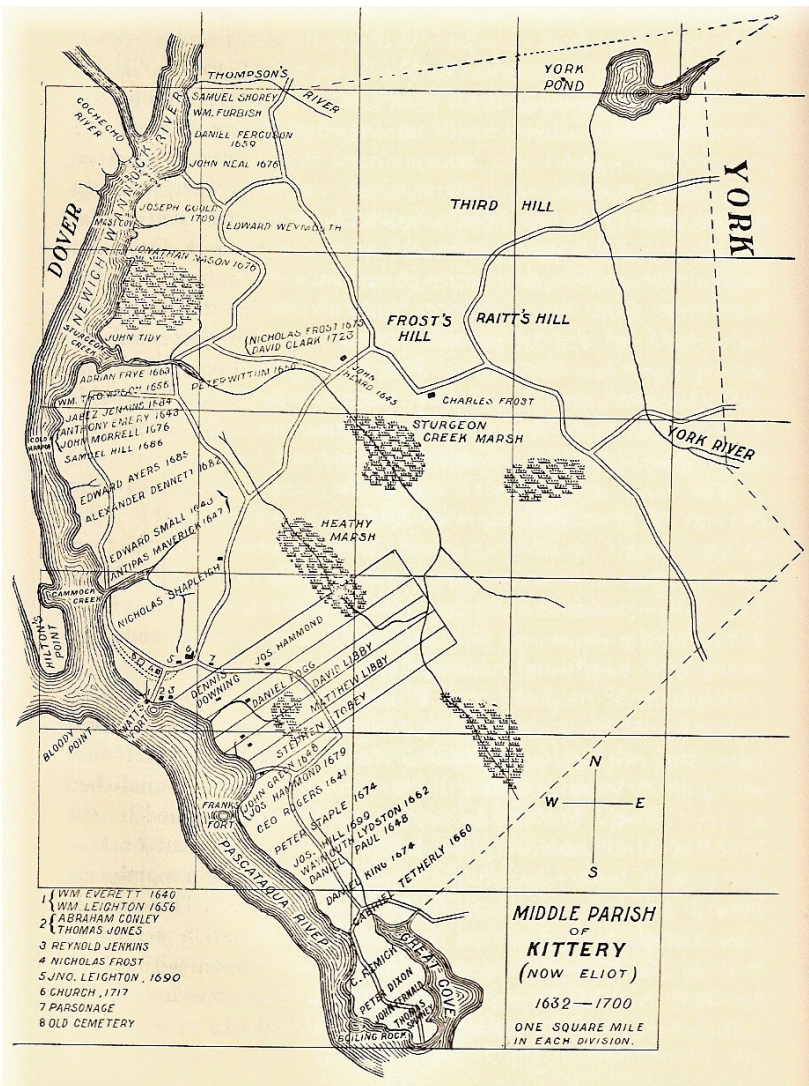
The first known Europeans to explore the area were from Devon, England. Martin Pring sailed up the Piscataqua in 1603, describing the river as “a notable sheet of water, and of great depth, with beautiful islands and heavy forests along its banks.”³ Captain John Smith, discovered the Isles of Shoals in 1614, also remarked about the river’s attributes. The first settlement did not form until 1623, with incorporation following in 1647, making Kittery the oldest incorporated town in Maine.⁴ Originally, the town extended from the Atlantic Ocean inland including the towns of Eliot, South Berwick, Berwick and North Berwick. Early settlers engaged in the fishing and timber industries, as well as hunting and trapping, and as early as 1650, the British government selected the area as a spot to build ships for the Royal Navy, hoping to capitalize on its river and oceanfront location, as well as the abundant supply of native timber.

The names of early settlers appear on natural features and streets throughout Kittery. Shapleigh Road, for example, is named for Alexander Shapleigh, who came to the area in 1635. Pepperrell Road honors the Pepperrell family, who came to Kittery around

² <http://www.seacoastnh.com/Places-&-Events/NH-History/The-Meaning-of-Piscataqua>)

³ Bardwell, John D., *Old Kittery*, 7

⁴ Kittery was so named for one of the early settlers, Alexander Shapleigh, who came from the manor of Kittery Court, Kingswear, Devon, England. Captain Francis Champenowne, another pioneer, also came from the same region of Devon. (Bardwell, 7)



This map of Kittery in the 17th century shows settlement along the Piscataqua River (referred to as Pascataqua at the time). (Stackpole, *Old Kittery and Her Families*)



The Piscataqua River was first explored in 1603 by an Englishman, Martin Pring, who described it as "a notable sheet of water, and of great depth, with beautiful islands and heavy forests along its banks." (Library of Congress)

the same time, establishing fisheries off the Isles of Shoals. Two notable extant structures date to the Pre-Contact Period. The Bray House was constructed in 1662 on Kittery Point by John Bray, a shipwright.⁵ Many early houses in Kittery reflected the garrison style with an overhanging second story to provide a clear view of the surrounding area. The Whipple Garrison, constructed in 1665

⁵ The Bray House is believed to be the oldest extant house in the State of Maine.



Fortifications stood at Kittery near the mouth of the Piscataqua River beginning in the early 1700s. Fort McClary (originally named for William) protected the coastline through several wars.

on Whipple Road, exemplifies this type of structure. The First Congregational Church of Kittery, located on Pepperrell Road in Kittery Point, was organized in 1653, however the original church structure no longer stands (replaced four times). Kittery also retains 288 historic architectural sites, documented by the Maine Historic Preservation Commission. Of these, three date to the First Period, including several shipwrecks and a fishing station.

COLONIAL PERIOD (1675-1775)

Fishing and shipbuilding continued to fuel the Kittery economy into the Colonial Period. Kittery's location at the mouth of the Piscataqua made it vulnerable to maritime invasions, and as early as 1715, the area that would become Fort McClary (originally named Fort William after William Pepperrell) was fortified, in order to protect the coast from attacks by the British. The shipbuilding industry burgeoned, eventually forming the base for American naval shipbuilding.

Several structures from the Colonial Period remain in Kittery. Significant among them are the William Pepperrell House (built in 1682, Pepperrell Cove), the Dodovah Curtis House (built before 1700), and the Lady Pepperrell House, built in 1760 (Kittery Point) and now a National Historic Landmark. The First Congregational Church of Kittery was constructed in 1730, and across Pepperrell Road is the parish's burial ground, holding the graves of many early settlers. In addition to these visible resources, the Maine Historic Preservation Commission has identified historic archaeological sites dating to the Colonial period, including shipwrecks, a farmstead, and domestic properties.

FEDERAL PERIOD (1775-1830)

The naval shipbuilding industry was officially established in the Federal period, making an imprint on Kittery that remains to this day. The United States Navy developed its first yard in 1800 on Seavey Island at the mouth of the Piscataqua, and the "Portsmouth Naval Shipyard" began producing warships in 1815. Early buildings on the Shipyard included Greek Revival style



The Portsmouth Naval Shipyard was established in 1800 and continues to serve the US Navy's maritime needs to this day. (Library of Congress)

officers' quarters (built in 1828), a marine barracks (built in 1822), a Shipyard Commander's quarters (1814), all sited along the main Charles Morris and Burrows Avenues. The Shipyard would continue to expand throughout the 19th century and into the 20th century, annexing and merging Seavey's Island with four others -- Pumpkin, Fernald, Jamaica and Clark's, and eventually growing to 288 acres with dozens of buildings.

EARLY AND LATE INDUSTRIAL PERIODS (1830-1915)

In 1842, the Portland, Saco and Portsmouth Railroad came to Kittery linking the town to points north and south, and fostering a



The Champernowne Hotel, constructed in 1890, was one of several resorts along Kittery's coast in the late 19th and early 20th centuries. (www.digitalmaine.com)

resort community. Following the Civil War, Kittery's economy shifted towards the tourism industry. Businessmen constructed large hotels and resorts on the Isles of Shoals and along the coast on Kittery Point, among these the Appledore House Hotel (1847)⁶, the Pepperrell Hotel (1873) the Pocahontas Hotel (1885)⁷, and the Hotel Champernowne (1890). Writers, poets, musicians, including Childe Hassam, William Morris Hunt, John Greenleaf Whittier,

⁶ The Appledore House Hotel was one of the first resort hotels built on the New England coast, constructed in 1847 by Celia Loughton Thaxter's father. (<http://www.shoalsmarinelaboratory.org/celia-thaxters-garden>)

⁷ "Welcome to Fort Foster, Kittery Point, Maine." (Town of Kittery brochure)



The Isles of Shoals was an early site of fisheries, operated by some of Kittery's first settlers. Two centuries later, it would become the site of a thriving summer tourist industry. (Library of Congress)

Nathaniel Hawthorne, Henry David Thoreau, came to the area, bemused by its natural beauty. The 1887 opening of the York Harbor Beach Railway, with its expanded passenger service stretching from Kittery Junction to York Beach, bolstered this local tourism economy.⁸

The resort hotels have disappeared, but many Greek Revival and Victorian style buildings still remain in Kittery, providing a snapshot of how the town appeared in the 19th century. Among these are the Robert and Louisa Traip house (ca. 1839), built in

⁸ Friends of the Rice Public Library, *Kittery, Gateway to Maine*, 31



The Rice Public Library, constructed in the Romanesque Revival style and located in the Foreside, is considered to be the most outstanding library structure in the State of Maine (www.digitalmaine.com)

Kittery Foreside in the Greek Revival style;⁹ The Mark and Eliza Wentworth House, located on Wentworth Road and built ca. 1830 in the Greek Revival style with Italianate details; and the William Dean Howells house (ca. 1870) built at Kittery Point in the Second Empire style. The Safford School, a one-room Gothic style vernacular structure still standing on Brave Boat Road, was constructed in 1871. Perhaps the most striking of Kittery's

⁹ Early images of the Traip house show the front door facing Wallingford Square, indicating that the house was turned. (Bardwell, 66)

buildings from the Industrial Periods is the Rice Public Library, constructed in 1889 in the Romanesque Revival style with Queen Anne influences. This imposing two-story structure, designed by Boston architect Shepherd S. Woodcock, is known as the most outstanding library building in the State of Maine. Finally, the Whaleback Light Station, located in the Piscataqua River at the entrance to Portsmouth Harbor, was constructed in 1872 to replace an early lighthouse (built in 1829). It consists of an ashlar granite tower, standing 59 feet above the mean high tide level, with an octagonal lantern.¹⁰

Historic archaeological resources documented by the Maine Historic Preservation Commission from the Industrial Periods include several domestic structures, storehouses, and workshops, as well several additional shipwrecks.

EARLY MODERN & MODERN PERIODS (1915-TODAY)

In 1917, the US government authorized the Shipyard to build a submarine, and since that year, the facility has devoted itself to the construction, retrofit and repair of submarines. In 1958, nuclear energy was introduced as a means of powering the vessels, and the Shipyard pivoted to adopt the new technology. In 1969, the facility shifted its focus again to be responsible for overhauling the US Navy's submarine fleet.

¹⁰ <http://focus.nps.gov> (Whaleback Light Station National Register Nomination)



The original Kittery Trading Post was established in the 1930s and operated out of a one-room store on Route 1.

With the advent of the automobile in the early 20th century, bridging of the Piscataqua in the early 1920s, and development of US Route 1, travelers' services emerged, including filling stations, cabins, and snack bars. In the 1930s, the Kittery Trading Post opened along Route 1, originally operating out of a one-room store, and growing to become a full service recreation equipment and apparel store.¹¹ Warren's Lobster House, located at Memorial Bridge, opened in 1940 as a shack with six stools, constructed on pilings in the Piscataqua River.¹² Bob's Clam Hut, a popular Route

¹¹ Waters, Erika J., *Kittery to Bar Harbor, Touring Coastal Maine*, 13.

¹² Waters, 12.

Kittery
Comprehensive
Plan Update
2016

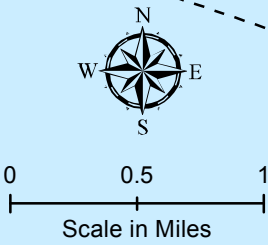
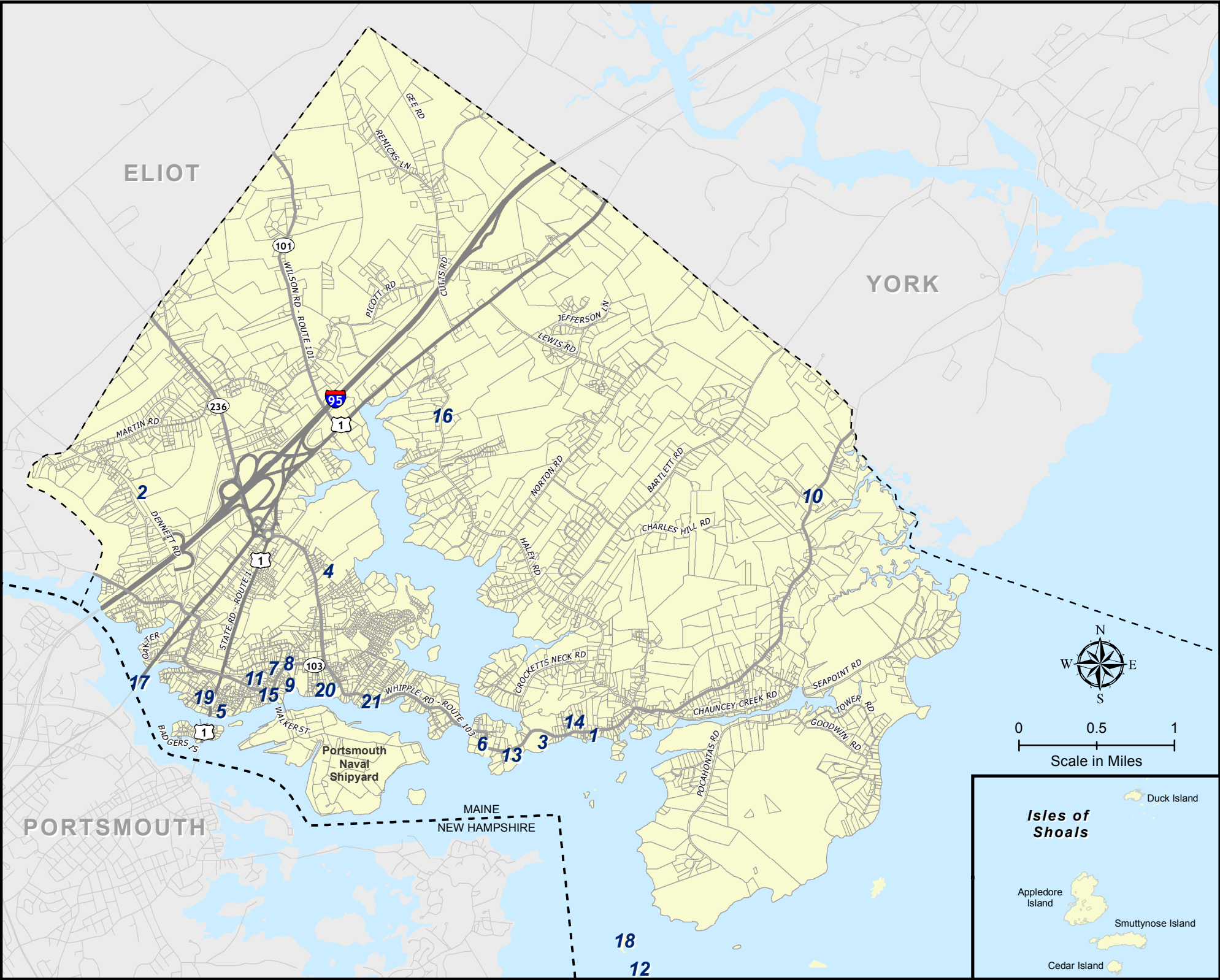


Map 1.1

HISTORICAL RESOURCES

Kittery, Maine National Register Listings

- 15. Kittery Fraternal Hall
- 16. Kittery Town Pound
- 17. US Route 1 Bypass
- 18. Wood Island Life Saving Station
- 19. 14 Stimson Street
- 20. 16 Trefethen Avenue
- 21. 124 Whipple Road
- 1. Bray House
- 2. Dennett Garrison
- 3. Fort McClary
- 4. Frank C. Frisbee Elementary School
- 5. John Paul Jones Memorial Park
- 6. Lady Pepperrell House
- 7. Mark and Eliza Wentworth House
- 8. Rice Public Library
- 9. Robert and Louisa Traip House
- 10. Rock Rest
- 11. Samuel Badger Monument,
- 12. Whaleback Light Station
- 13. William Dean Howells House
- 14. William Pepperrell House



AECOM

This map is for general planning purposes only. The data used to create the map are not adequate for making legal or zoning boundary determinations or delineating natural resource areas. Exercise caution when interpreting the information on this map.



Bob's Clam Hut, established in 1956, has stood at the same site along Route 1 and is a regional dining destination.

eatery, opened in 1956. Construction of Interstate 95 later in the 20th century allowed residents to commute out of town for work, and Kittery became somewhat of a bedroom community for Portsmouth, Durham, and later, Boston. In the 1970s, work began on development of a retail center along Route 1 close to the York line. The Kittery Outlets gave the town a national reputation as a shopping destination.

Many homes were constructed in Kittery in the 20th century, including the large housing development known as Admiralty Village, built to accommodate military personnel. In 1946, Hazel

and Clayton Sinclair constructed Rock Rest, a small cottage on Brave Boat Harbor Road, and operated a guest house for African-American tourists to the Kittery area for nearly 31 years.¹³

The Maine Historic Preservation Commission's list of historic archaeological sites contains additional resources from the 20th century, including wrecked vessels as well as some structures at the Portsmouth Naval Shipyard.

PAST EFFORTS TO PRESERVE HISTORIC AND CULTURAL RESOURCES

National Register of Historic Places. According to the Maine State Preservation Commission's inventory data, the Town of Kittery has listed three districts (First Congregational Church, Isles of Shoals and Portsmouth Naval Shipyard) on the National Register of Historic Places, as well as the following individual properties¹⁴:

- Lady Pepperrell House, Route 103
- William Pepperrell House, Route 103
- Dennett Garrison, 100 Dennett Road
- Rice Public Library, 8 Wentworth Street

¹³ <http://focus.nps.gov>. (Rock Rest National Register Nomination)

¹⁴ The 1999/2002 Comprehensive Plan provides a description of each of the National Register properties, and also suggests other locally-significant properties to be considered for listing on the register. The Maine Historic Preservation Commission's 2014 list of properties on the register, as well as those that are or may be considered eligible, appears in this section.

SUMMARY OF KEY POINTS

- While Kittery has listed several properties and districts to the National Register of Historic Places, many more historic buildings and landscapes have not been recognized as such. The town also lacks a comprehensive inventory of historic resources, or a plan for preserving them.

- Bray House, Pepperrell Road
- William Dean Howells House, Pepperrell Road
- Whaleback Light Station, Piscataqua River
- Fort McClary, Route 103
- Samuel Badger Monument, behind 16 Otis Avenue
- John Paul Jones Memorial Park, Newmarch Street and Hunter Avenue
- Robert and Louisa Traip House, 2 Wentworth Street
- Mark and Eliza Wentworth House, 9 Wentworth Street
- Rock Rest, Brave Boat Harbor Road
- Frank C. Frisbee Elementary School, Rogers Road

The bulk of the designations occurred from the 1960s through the 1990s, with only two listings secured after 2000. In addition, the Maine State Historic Preservation Commission has designated several other properties and features have been or may be determined eligible for listing:

- Kittery Town Pound, Haley Road
- 16 Trefethen Avenue
- 14 Stimson Street

- US Route 1 Bypass
- 124 Whipple Road
- Kittery Fraternal Hall, Wallingford Square
- Wood Island Life Saving Station

While inclusion on the National Register is largely honorary, listed properties are potentially protected from negative impacts of federally-funded projects (such as proposed highway expansions that infringe on the National Register property).

Lady Pepperrell House, National Historic Landmark. Listed as a landmark in 1966, this High-Georgian style home in the heart of Kittery Point was built in 1759 by Lady Mary Hirst Pepperrell, following the death of her husband, Sir William Pepperrell. The home is privately owned. National Historic Landmark status is a more stringent form of historic resource protection.

Kittery Comprehensive Plan, 1999 (adopted in 2002). The 1999/2002 Comprehensive Plan noted that the town provided “very weak protection for historic and archaeological resources beyond that provided by state and federal requirements”. Local protection was limited to a requirement in the town’s land use regulations that the planning board review subdivisions and other development proposals to ensure that they do not have an undue adverse impact on historic sites before the project is approved. Furthermore, regulations did not assure protection of the town’s archaeological resources. The plan identified several policies that would advance these goals, including organizing volunteers to document historic properties, educating owners of historic

properties about the importance of maintenance, and establishing an historic commission.

Shoreline Overlay Zone (Section 16.3.2.17 of the Kittery Town Code). Kittery has incorporated this code into the development review process for the purposes of protecting archaeological and historic resources, as well as scenic beauty (among many other resources) along the town’s coastline from the impact of development.

Kittery Foreside Restoration. The Kittery Foreside, a small mixed commercial, civic, and residential district, evolved in the 19th century around Gate 1 of the Portsmouth Naval Shipyard. Wallingford Square, an open space named for a local World War I soldier, stands at the heart of the Foreside. Over the past decade, this area has seen a rebirth, with several restaurants, galleries and shops opening along its main streets and making it a vibrant place to visit, work, and live. In 2014, the town held the *Foreside Forums*, a series of listening sessions designed to gather public opinion about the restoration, and guide future development in the area. Participants articulated the need to support “organic” growth and protect against “overgrowth. They expressed desire to keep the area walkable and affordable, and to retain its authentic character, while enhancing gateways, park spaces, and connections to the waterfront.¹⁵

Safford School Redevelopment. Constructed in 1871-1872 at the corner of Brave Boat Harbor Road and Cutts Island Lane, this one-story wood-frame structure was the last remaining one-room

neighborhood school in the town, operating until the 1940s. As of the writing of this inventory chapter, town officials were deliberating over its future use.

EXISTING HISTORICAL AND CULTURAL ORGANIZATIONS

HISTORICAL ORGANIZATIONS

SUMMARY OF KEY POINTS

- Two historical institutions -- the Portsmouth Naval Shipyard Museum and the Kittery Historical and Naval Museum/Society -- serve as the main repository for artifacts pertaining to the history of the town. The Maine Room at the Rice Public Library holds additional historic books, maps, and genealogical information.
- Several of Kittery’s historical organizations are outdoor sites, including two historic forts (McClary and Foster), the Portsmouth Naval Shipyard, John Paul Jones Memorial Park, Celia Thaxter’s garden, and over 130 cemeteries and burial sites.
- Kittery’s historical organizations and sites help fuel its economy, as they draw tourists interested in military and naval history from across the country.

¹⁵ “The Foreside Forums, Listening Sessions on the Future of Kittery Foreside, 2014”

Portsmouth Naval Shipyard and Shipyard Museum (public-federal). The Shipyard, listed on the National Register of Historic Places, was established in 1800 as a ship-building facility for the US Navy. During World War I, it began constructing submarines, and continued to do so through the 1960s. Today, visitors (with clearance from the US government) can take a walking historical tour of the facility, passing barracks, the US Naval Cemetery, the Thresher Memorial Chapel, the Portsmouth Naval Prison, and several other historic sites (20 in total). The **Shipyard Museum** is located near Gate 1 and housed in a former gunpowder magazine-turned-commissary built in 1859. The museum retains artifacts pertaining to Seacoast maritime heritage, as well as the Shipyard itself, dating back to the early 1800s. The institution lends to other museums, but is only open to the public by appointment, and visitors must be accompanied by the curator (or docent).

Town of Kittery Archives. Kittery's Town Clerk maintains an archive historic town documents, including town reports, financial statements, birth, death and marriage records, within the Town Hall building. Older documents are stored in a locked safe, located in the Town Hall basement, while more recent information is available in the Town Clerk's office. The existing storage facilities adequately accommodate existing documents, with extra space for additional materials.

Fort McClary (public-state). Owned, operated and maintained by the State of Maine through its State Park system¹⁶, Fort McClary is both an historic site and a recreation facility located at the mouth of the Piscataqua River. Fortification existed in this area as early

¹⁶ The Town of Kittery Department of Public Works maintains a portion of Fort McClary.

as 1715, to protect the merchants of Massachusetts from duties placed on them by the colony of New Hampshire (Maine was part of Massachusetts at the time). The early fort, known as Fort William (named for William Pepperrell), also served to protect Kittery and Portsmouth from the attacking British during the Revolutionary War. The U. S. government built Fort McClary upon acquiring the site in 1803 before the War of 1812, and expanded it prior to the Civil War. No longer an active fort, the property retains several of its 19th century structures, including a blockhouse, rifleman's house, powder magazine, and many granite walls.

Restoration efforts at the fort have been fueled, in part, by the **Friends of Fort McClary**, a non-profit, volunteer organization that hosts musical events, encampments and reenactments, as well as raising restoration funds. Admission to the fort is voluntary, and about 30,000 to 35,000 visitors come each year, largely to experience history, but also to take in the "million dollar view" of Pepperrell Cove and Portsmouth Harbor, flanked by Whaleback Light in Kittery and Fort Point Light in Newcastle, New Hampshire.

John Paul Jones Memorial Park/World War I Memorial (public-state).¹⁷ An open space located on U. S. Route 1 at the approach to Memorial Bridge, John Paul Jones Park was developed by the State of Maine and dedicated in 1924 as the principal gateway to

¹⁷ In 2014, a bill was passed by the Maine Legislature to transfer ownership of the park to the Town of Kittery, but the bill was not signed by the Governor. The town has managed the property through a maintenance agreement with the State of Maine, however as of the writing of this inventory, the agreement has lapsed.

Maine. It serves as both a passive recreation space and the repository for “Sacrifices of War,” a bronze bas relief sculpture commissioned by the State of Maine following World War I.¹⁸ Created by female sculptor Bashka Paeff, the 13’ by 18’ panel depicts a woman protecting her child and two deceased youths.

Fort Foster (public-town). This town-owned property located along the Piscataqua River in Kittery Point dates to the early 1900s.¹⁹ It was named for Major-General John G. Foster, a New Hampshire native who served in the Civil War. Designed to house a full company of officers and enlisted personnel, it was never occupied as such. In the 1940s, the US government updated the fort in preparation for WWII, adding new bunkers, observation towers and guns, but shortly after the war, the fort closed. Originally a recreation area for the Portsmouth Naval Shipyard, it is now a popular Town of Kittery recreation site. (For more information about Fort Foster’s recreation facilities, see the *Recreation and Public Services & Facilities* chapters of the plan’s inventory.)

Wood Island Life-Saving Station (public-town and private non-profit). Owned by the Town of Kittery, the Wood Island Life Saving Station was built in 1908 to accommodate men of the US Life Saving Service (forerunner of the US Coast Guard) who performed rescue missions, via small rowing boats, to mariners in distress. It stands near the entrance to the Piscataqua River and consists of an old structure, two sea walls, and marine railway. A private, non-profit organization, the **Wood Island Life Saving**

¹⁸ The memorial is also known as the Maine Sailors’ and Soldiers’ Memorial.

¹⁹ In the 19th century, it was site of the Pocahontas Hotel.

Station Association (WILSSA) has spearheaded efforts to restore the building, seawalls and railway and to build a new pier, with the goal of creating a maritime museum, accessible via tour boats leaving from Portsmouth. Over \$750,000 in federal and state funds has been raised to support this effort, and the site is now part of an EPA Brownfield and MDEP/EDC grant to fund a remediation cleanup project in coordination with WILSSA’s historic restoration project. It was recently determined eligible for listing on the National Register of Historic Places.

Kittery Historical and Naval Museum/Society (private). This non-profit repository of historic Kittery artifacts is located in a former Department of Public Works garage within the Town Municipal Complex (the organization holds a 99-year lease on the property). The museum was established in 1970 when the Kittery Historical Society (incorporated in 1935) merged with the Kittery Naval Museum. The goal of the museum is to collect and exhibit both naval and Kittery history. Open from April through Thanksgiving (seasonal and off season hours), the museum attracts visitors largely interested in naval history who come to see ship models, a diver’s suit, and a model of the “Boon Island Lens,” an historic 6’ - 1” tall Second-Order Fresnel Lens once fueled by whale oil. The organization also exhibits material pertaining to the 300+ year history of the town, including images and artifacts from the grand hotels. The ca. 1700 Andrews Mitchell Garrison, was gifted to the museum by its owners, Captain Sidney and Beatrice Helliwell, and is housed within the rear of the building. The museum also maintains a small garden on the grounds, dedicated to Celia Thaxter, as well as cemetery records for many of Kittery’s 132 burial sites.



Kittery contains over 130 burial sites and cemeteries, scattered throughout the town. Many contain just a few graves.

USS Thresher Memorial Project Group (private). Established in 2011, this non-profit organization aims to raise and maintain public awareness of the personnel lost with the USS Thresher (SSN 593). Comprised of local civic leaders, Thresher family and crew members, submarine veterans, and other individuals, the group worked with the Kittery Maine Improvement Foundation to develop the memorial (focal point) to the vessel and events surrounding its demise. The memorial includes a 129' flagpole, located within the Kittery traffic circle (renamed "Memorial Circle"). Each foot of flagpole commemorates a soldier lost in the disaster.

Kittery Cemeteries (public and private). One hundred and thirty-two burial sites have been located within the Town of Kittery, ranging in size from a few graves to many acres. The Orchard Grove/Highland Cemeteries, located at the junction of Rogers and Shapleigh Roads, is the town's largest and features a Civil War monument atop its highest point. Many of the sites bear the names of the families interred within and/or the individuals who originally owned the surrounding properties. A Town Farm cemetery, located in the woods to the east of Haley Road, contains paupers' burials. The First Congregational Church Cemetery, located across Route 103 from the church, was included in the First Congregational Church and Parsonage National Register Historic District in 1997. A complete listing of the cemeteries, with the sites keyed to a map, appears in a finding aid, *Kittery Cemeteries*, compiled by the Kittery Historical and Naval Museum.

ARTS & CULTURAL ORGANIZATIONS

Kittery Community Center: STAR Theatre and Morgan Gallery (public). Located in the Kittery Community Center²⁰, the STAR Theatre is a 171-seat venue that hosts live theatre, performance events, lectures, trainings, workshops, and movies. It features state-of-the-art sound and lighting systems and a 20' x 30' movie screen with HD projector. Patrick Dorow Productions, Inc., an in-

²⁰ The Kittery Community Center is located in the former Frank C. Frisbee Elementary School, which, as noted earlier in this inventory chapter, has been determined eligible for listing on the National Register of Historic Places.

residence company, produces many theatre events at the STAR, including a youth series. The **Morgan Gallery** is an exhibit space located adjacent to the STAR, and host to curated shows featuring work of local and regional painters, sculptors, print-makers and mixed media artists. (For more information about the Kittery Community Center, refer to the *Public Facilities and Services* and *Natural Resources, Open Space and Recreation* chapters of this inventory.)

Rice Public Library (private). Founded by Arabella Rice through a bequest, the Rice Public Library is a private organization overseen by a board of trustees. Its two-story Romanesque Revival style main building, regarded as the most outstanding library structure in Maine, was designed by Boston architect Shepherd S. Woodcock. In 1988, the library purchased the former Southern York County District Courthouse, located diagonally across the street and renovated the building to house the expanding collections. It is known as the Taylor Building annex. Today, the complex retains over 50,000 items, including books, magazines newspapers, audio books, and a “Maine Room” collection of local and state genealogy and history resources. The library offers public programs to both children and adults, including family movie nights, musical performances, book discussions, and computer help programs. (For more information about the library facilities and plans the future, refer to the *Public Facilities and Services* chapter of the plan inventory.)

Celia Thaxter’s Garden, Shoals Marine Laboratory (private). Located on Appledore Island, this historic garden commemorates Celia Loughton Thaxter, a 19th century poet a native of Appledore Island. Her father built and operated the Appledore Hotel where many 19th century poets, writers and artists visited and drew



The Morgan Gallery, located outside the STAR Theatre in the Kittery Community Center showcases the work of local artists.

inspiration for their work. Celia established and maintained a cutting garden, providing flowers to the hotel. She also published

“An Island Garden,” chronicling her work. Visitors may see the garden in the summer months, when Appledore is accessible via tour boats, leaving from Portsmouth. Staff of the Shoals Marine Laboratory, a station co-managed by the University of New Hampshire and Cornell Universities, maintains the garden.

Kittery Art Association (private). This non-profit, volunteer-run organization was established in 1958 to “promote knowledge of the arts, stimulate interest in the work of local artists, and



Inspiration Park, located at the corner of State Road and Government Street was restored in 2014 by garden club members.

express appreciation for the abundant creativity in the seacoast area.” The organization operates an exhibition space on Coleman

Avenue in Kittery Point where non-juried shows are held throughout the year, and offers classes for adults and children. The KAA also administers the *Marsha Abigail Ryder Scholarship Fund*, established in the early 2000s to support students from Traip Academy wishing to pursue studies and careers in the arts.

The Dance Hall Kittery (private). Located on Walker Street (Kittery Foreside) in the former Kittery Grange building, the

Dance Hall hosts music and dance performances from artists around the world. In addition to live events, the non-profit organization offers cross-generational classes and artist residencies and engages in community-based projects.

Harbourside Garden Club (private). Established in 1930, the volunteer-run, membership-driven Harbourside Garden Club is a member of the Garden Club Federation of Maine, Piscataqua District. The club members meet regularly to exchange information about techniques and plant materials, visit gardens, hold and attend workshops, and work in the community to help beautify the town. In the 1950s, the club restored the gardens at the Lady Pepperrell house, and in the 1960s, members planted many flowering crabapple trees throughout the town. In 2014, the club restored a derelict garden located at the corner of State Road and Government, known as “Inspiration Park.”

Wentworth Dennett Studios (private). Located at 78 Government Street in the former Wentworth Dennett Elementary School provides studio space to musicians, painters, potters, print-makers, and jewelry artists. It also houses a yoga studio. In 2015, the studios hosted “Art on the Hill,” a holiday season-long open studio event, exhibiting the work of artists on three floors of the building.

Private Galleries. Several privately owned and operated galleries provide additional exhibition space for visual artists. **Buoy Gallery**, located on Government Street in the Foreside, offers visual and performance art space. **Just Us Chickens Gallery** is an artists’ cooperative located on Shapleigh Road offering space for members to market their work. Other private galleries include the **Red Door Pottery Studio** (Government Street) and **Folk** (Wallingford Square).

Other Civic Organizations and Clubs. Kittery is home several organizations and clubs that sponsor and carry out community-based activities. Included in this group are **Cub Scouts** (Pack 316), **Boy Scouts** (Troop 307), **Girl Scouts**, the **Rotary Club** of Kittery, the Kittery **Lions Club**, and the **Knights of Columbus** of Kittery, Maine.

IDENTIFICATION OF PRELIMINARY ISSUES, CHALLENGES AND OPPORTUNITIES

The following is a preliminary list of issues, challenges and opportunities posed by the findings of the inventory of existing conditions of Kittery's historic and cultural resources. Please note that these are subject to change with the preparation of goals and objectives, not yet drafted (at the time the inventory was prepared)

- The town has no official single repository for historical materials. Currently, this responsibility is split between the Kittery Historical and Naval Museum and the Portsmouth Naval Shipyard Museum, with town documents held by the Kittery Town Clerk.
- The town has no comprehensive inventory of historic and cultural resources. Such an inventory would help educate residents and newcomers to the town about the significance of the historic buildings and landscapes, and encourage property owners to protect and preserve them.
- The town's ordinances do not include provisions for preventing loss of historic buildings (such as demolition delay). The oldest house in Maine, the Bray House, has recently lost much of its historic fabric through a house renovation project. An exception to this is the Shoreline Overlay Zone Code which protects archaeological and historic resources and scenic beauty along the coastline from the negative impacts of development within shoreline areas.
- The town has not taken advantages of state-sponsored programs (such as the Certified Local Government Program) that promote and fund preservation of historic and cultural resource.
- The town currently has no historical commission or entity to serve as steward of Kittery's historic properties (buildings, landscapes and other historic features). Such an entity would oversee completion of an inventory of historic and cultural resources, and advocate for protection of these resources through National Register designations and amendments to the existing development bylaws.
- The town's ordinances do not regulate fence height and placement. Of particular concern is the placement of fences along sections of roadway rimming the water, where passersby can take in picturesque views.
- The town's military history, a significant part of its past, is not being utilized to its full potential to attract tourists.

- The town's youth are largely uninvolved in efforts to preserve Kittery's historic and cultural resources.
- The Friends of Fort McClary have expressed concern about looting of granite pieces from Fort McClary and would like to see the town become more of a watchdog over this type of illegal activity.
- Large traffic volumes at the entrances to Fort McClary and Fort Foster in summer negatively impact travel along Route 103.

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INTERVIEWS

Kim Sanborn, Kittery History & Naval Museum
Dean Gallant, president, Board of Trustees, Kittery Art Association
Gary Hildreth, Portsmouth Naval Shipyard
Joe Gluckert, Portsmouth Naval Shipyard Museum
Gary Best, Maine State Parks and Historic Sites
Glenn Dochtermann, Fort McClary
Dane Parker, Friends of Fort McClary

NATURAL, OPEN SPACE, AND RECREATION RESOURCES

2

“If there is anything lovelier than the scenery of this gentle river I do not know it; and I doubt if the sky is purer and bluer in paradise.”

-William Dean Howells, 1902

The rambling, windswept coast of Kittery, and robust waters of the Piscataqua River have attracted humans for over 400 years. The area’s first known European discoverer, Martin Pring, described the landscape in 1603, with “a notable sheet of water, and of great depth, with beautiful islands and heavy forests along its banks.”¹ Nearly 300 years later, poets, writers and artists regarded the area as their muse, inspired by its extraordinary natural beauty. Today, residents and visitors alike covet the rocky beaches, coastal swamps, and evergreen covered uplands.

This chapter identifies and describes Kittery’s natural resources, open space, and recreation resources, and summarizes past efforts to protect, promote and expand them.² It also identifies issues, opportunities and challenges surrounding them to be addressed in the recommendations of the Comprehensive Plan.

¹ Bardwell, John D., *Old Kittery*.

² Much information for the Natural Resources section of this inventory chapter was derived from the 1999/2002 Comprehensive Plan document, updated as required.



The headwaters of Spruce Creek lie at the north end of Kittery, at the Eliot town line. As the creek flows southward, it widens and becomes a large, navigable waterway. Clam flats edge the banks, but are not harvestable because of water quality levels.

NATURAL RESOURCES

GEOLOGY, TOPOGRAPHY AND SOILS

Geology. Kittery’s geology includes bedrock outcropping, marine silts and clays, and glacial till and outwash. The bedrock dates to 375-450 million years ago, with most concentrated south and east of Interstate 95. Within depressed areas of the bedrock lie the

hydric marine soils, combined with pockets of glacial outwash. In the northwest end of Kittery lie several drumlins with deep soils.

Topography. Slopes across the town consist largely of upland, gently undulating or flat terrain, varying in elevation between 20 and 80 feet above sea level. In three areas of town, Cutts Ridge, Bartlett Hill, and land to the north of Barter's Creek, the land rises more steeply, with the highest point in Kittery, 140 feet, on Cutts Ridge.

Soils. The United States Soil Conservation Service has established the dominant soils in Kittery to be Lyman (shallow and underlain by bedrock, moderately-rapidly drained), Scantic and Sebago (both deep, level, poorly drained). The most prevalent soils are a combination of Lyman and Scantic, combined with rock outcroppings, extending from Brave Boat Harbor southwestward to encompass all of Kittery Foreside and Seavey Island. The area west of 95 and downslope of Cutts Ridge has areas of prime farmland soils and soils of statewide significance for farming interspersed within the prevailing Scantic and Lyman soils.

WATERSHEDS & SURFACE WATERS

Kittery contains five riverine watersheds, described below.

Piscataqua River Watershed. The Piscataqua runs along the southwest boundary of Kittery, separating the town from Portsmouth, New Hampshire, and dividing New Hampshire and Maine. This watershed includes all of the land in Kittery draining into the Piscataqua River and its estuary. **Spinney Creek**, a sub-

SUMMARY OF KEY POINTS

- Geology, topography and soils in Kittery reflect its geographic location along the Atlantic coast. Bedrock closely underlies much of the town, interspersed with pockets of marine soils and glacial outwash.
- Five riverine watersheds cover most of Kittery, with the largest extending along the Piscataqua River and Spruce Creek. Many smaller tributaries feed these waterways.
- The town has relatively few fresh water resources.
- Kittery contains very little farmland and supports just three active farms.
- Kittery supports five rare community and ecosystem types as defined by the Maine Natural Areas Program, including Salt-hay Saltmarsh, Coastal Dune-marsh Ecosystem, Dune Grassland, Low Sedge Fen, Oak-Hickory Forest and White Oak-Red Oak Forest. Kittery also supports thirteen rare plant species.
- Two Beginning with Habitat Focus Areas are located in Kittery: Brave Boat Harbor-Gerrish Island Focus Area and York River Headwaters Focus Area. These are landscape scale areas that contain rich concentrations of at-risk species and natural communities.
- The town's location at the confluence of the Piscataqua River with the Atlantic Ocean, combined with the many extant historic buildings and landscape features, give Kittery tremendous scenic quality.

watershed, lies along the western edge of the Piscataqua River Watershed. The area known as Gerrish Island forms the eastern edge of the Piscataqua River Watershed (with one-third of Gerrish Island draining into the Atlantic).

Spruce Creek Watershed. Spruce Creek runs diagonally from northwest to southeast through the heart of Kittery. Its watershed originates in Eliot and drains the geographic core of the town. Draining the uplands surrounding Spruce Creek and its estuary are seven smaller creeks and brooks – **Wilson, Chickering, Fuller, Hill, Hutchins, Crocketts and Barters.**

York River Watershed. The area north of the Spruce Creek watershed drains from Cutts Ridge towards the York River. Cutts Ridge Stream, Libby Brook and Johnson Brook all contribute to this watershed.

Brave Boat Harbor Watershed. Land in this watershed lies at the eastern corner of Kittery and drains into Brave Boat Harbor and then out to sea.

Gerrish Island Watershed. This small watershed includes land southeast and seaward of the highest point on Gerrish Island (1/3 of the area) towards the sea.

Chauncey Creek, another significant estuarine surface water body, separates Gerrish Island from the mainland, draining northeastward parallel to the coastline and outflowing into Brave Boat Harbor and the Atlantic Ocean.



Chauncey Creek separates Gerrish Island from the mainland, draining towards the Brave Boat Harbor (and the Atlantic Ocean) to the north. The area depicted above once held a tidal mill.

WATER SUPPLY AND AQUIFERS

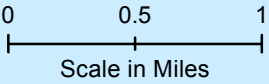
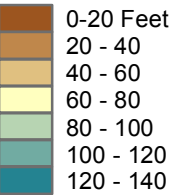
Despite the estuaries formed by rivers, the town has comparatively few fresh water resources, and none reach the state's standards for water quality. The public drinking water is sourced from surface water resources in York (the Bell Marsh Reservoir, Middle Pond, Folly Pond, and Boulter Pond) by the Kittery Water District and is augmented by private residential wells for those residents unable to connect to public water. Two sand and gravel aquifers underlie the town, both located near Cutts Ridge within the York River watershed.

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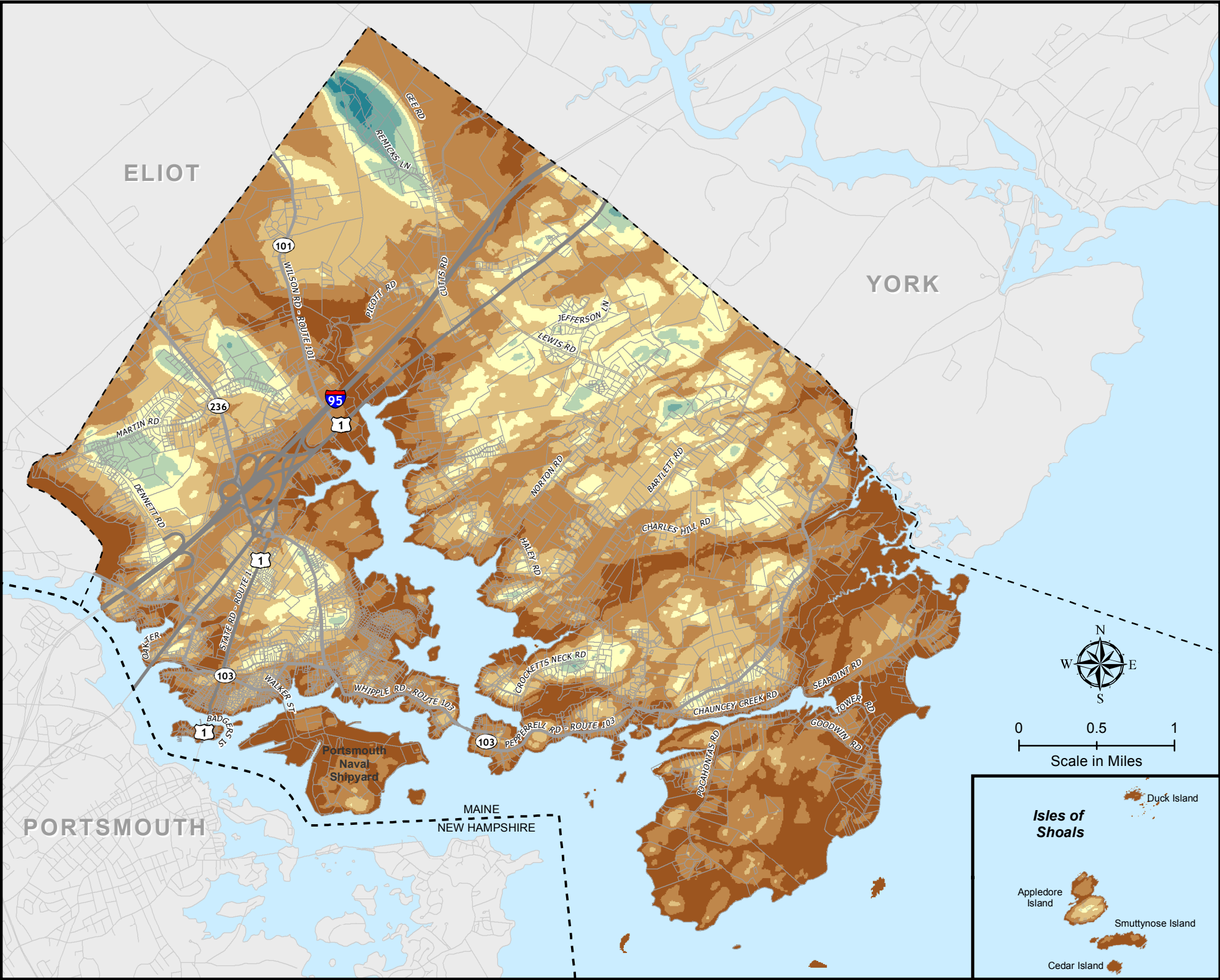
Figure 2.1
TOPOGRAPHY

Elevation in Feet



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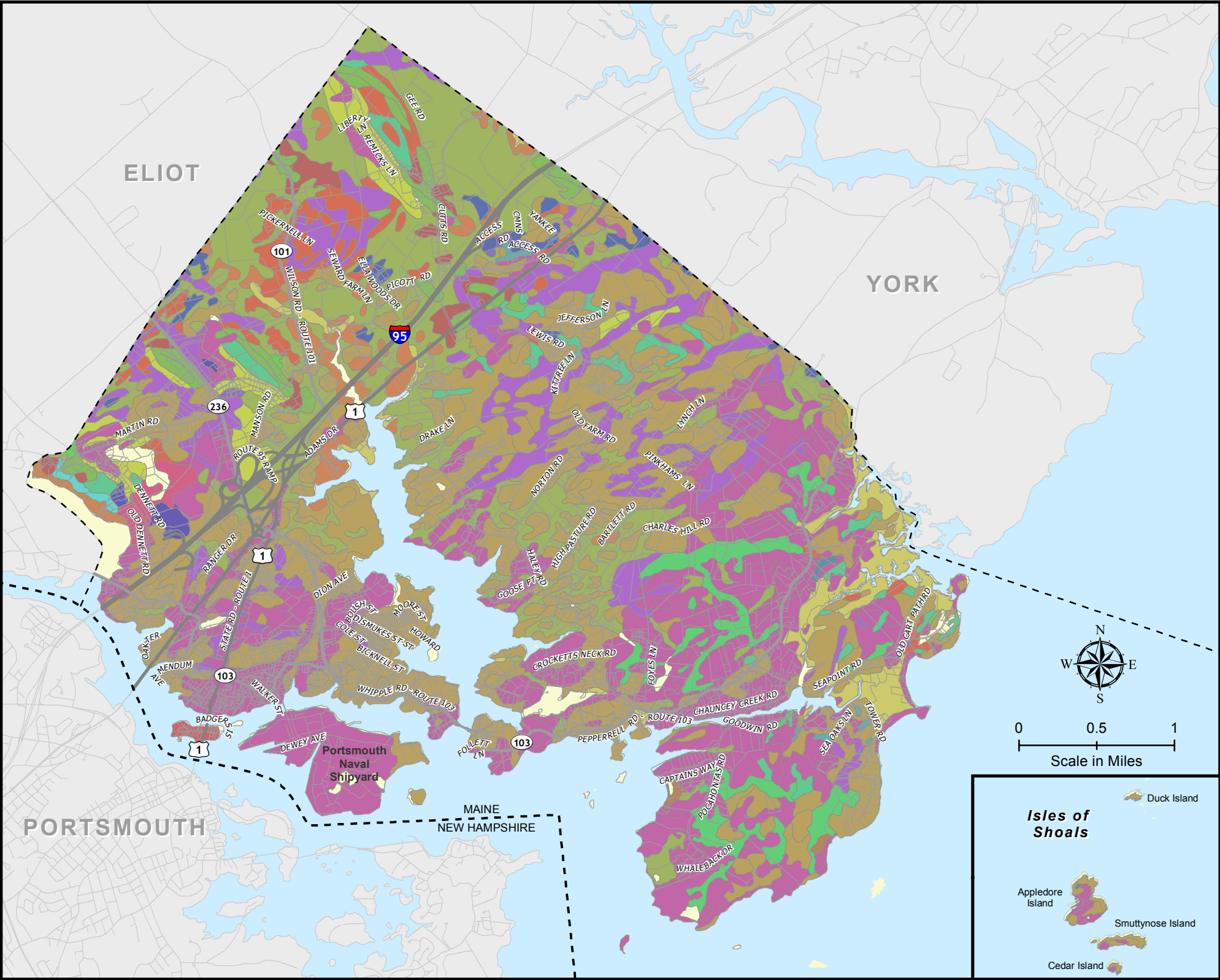


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Figure 2.2
SOILS

- | | |
|-----------|--------------|
| Biddeford | Naumburg |
| Brayton | Other |
| Buxton | Peru |
| Chocorua | Raynham |
| Colton | Scantic |
| Croghan | Scio |
| Elmwood | Sebago |
| Hermon | Skerry |
| Lyman | Sulphemists |
| Madawaska | Udipsamments |
| Marlow | Vassalboro |



Soils data was retrieved from Gridded Soil Survey Geographic (gSSURGO) by state, January 19, 2016.

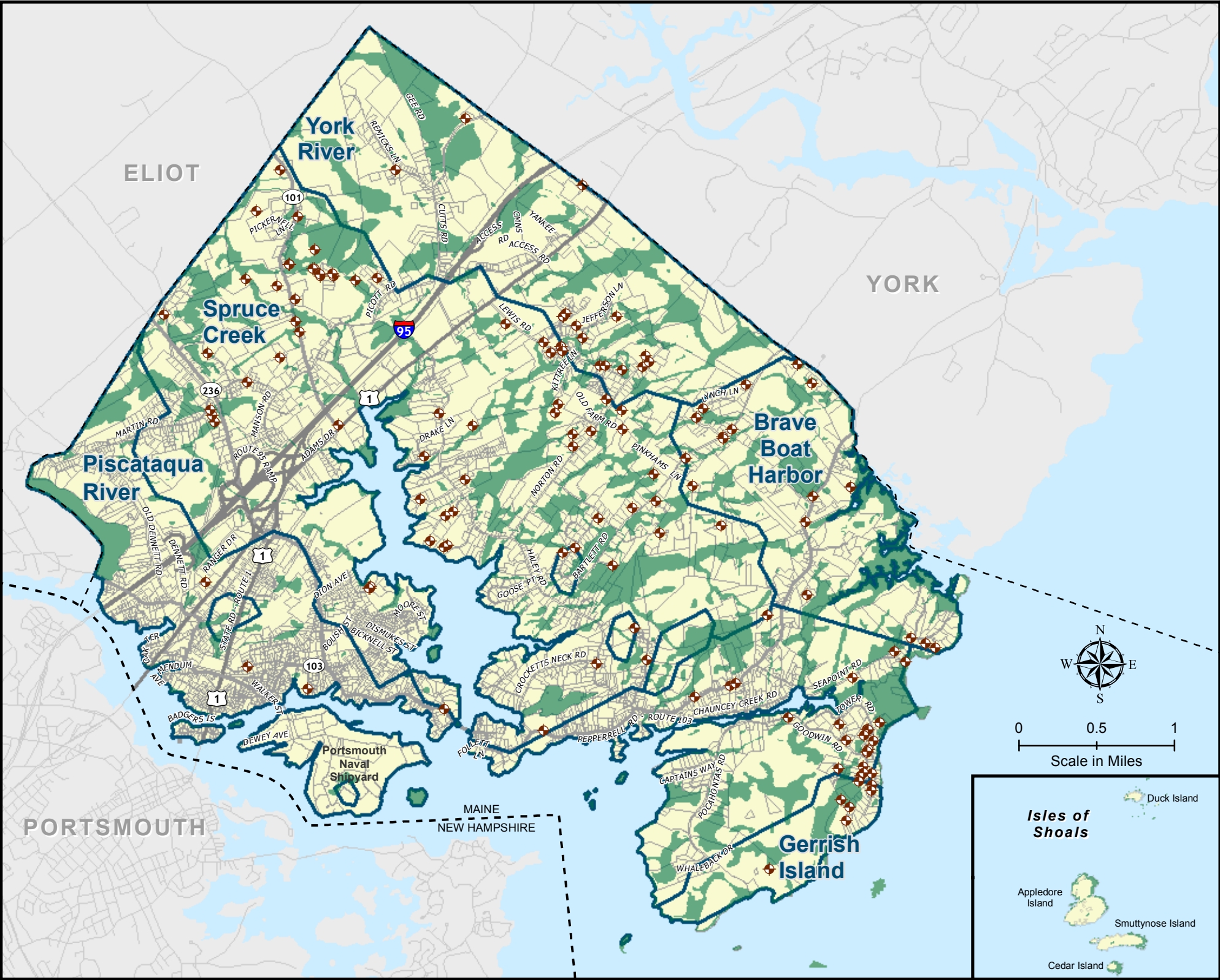
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This map is for general planning purposes only. The data used to create the map are not adequate for making legal or zoning boundary determinations or delineating natural resource areas. Exercise caution when interpreting the information on this map.



Figure 2.3
WATER RESOURCES

- NWI Wetlands
- Major Watersheds
- Private Wells



NWI (National Wetlands Inventory) wetlands version 2 was retrieved from the U.S. Fish and Wildlife Service and published in May 2016.

AECOM

This map is for general planning purposes only. The data used to create the map are not adequate for making legal or zoning boundary determinations or delineating natural resource areas. Exercise caution when interpreting the information on this map.

Kittery also likely has bedrock aquifers into which residents tap for private wells. For additional information on water quality, refer to the *Public Facilities and Services* chapter of this inventory.

FLOOD HAZARD AREAS & INCREASING SEA LEVELS

The Federal Emergency Management Agency (FEMA) has mapped the 100-year floodplain and flood hazard areas in the upland areas of Kittery's watersheds. In general, the floodplain and flood hazard boundaries follow the contours of the waterbodies themselves. These areas have a 1% chance of being flooded in any given year. However, at the time of the writing of this inventory chapter, FEMA was in the process of updating its flood hazard risk information, and had prepared new Flood Insurance Rate Maps (FIRMs) which included inland riverine areas. The town was encouraging Kittery residents to review the maps to understand potential impacts on private property. Also, because Kittery is a coastal community and the land is subject to the impact of velocity from the tides, much of the town is or will be affected by impending sea level rise.³

³ The Maine Department of Agriculture, Conservation & Forestry predicts that sea level rise will likely occur two times faster in the coming century than it did in the last century ("Maine Coastal Erosion and Hazards," Stephen M. Dickson, Ph.D., State Marine Geologist, Maine Geological Survey, Maine Department of Agriculture, Conservation & Forestry, Augusta, Maine, 2004)



The Rustlewood Farm, located at the northern end of town and straddling the Kittery-Eliot border, is one of the last remaining large dairy farms in Maine.

WETLANDS

Kittery contains many types of wetlands, scattered throughout the town, with the most common in the form of emergent, forested, scrub shrub wetlands, and vernal pools. Forested wetlands are the most prevalent, with significant representation in the vicinity of Martin Road/Dennett Road, on the interior of Gerrish Island, and east of Wilson Road (south of Cutts Ridge). Scrub shrub wetlands exist along the southwest branch and middle reach of Spruce Creek. Kittery's largest marshland area

lies along Johnson Brook, and large forested/scrub shrub wetland stands in the northwest corner of town between Gee and Betty Welch Roads.

Vernal Pools are subject to the same regulations as wetlands and protected as such per the Town's land use code *Title 16.9.3 Conservation of Wetlands and Vernal Pools*. Vernal Pools, however, though not specifically defined in the Code are referenced in Table 9, Town Code 16.9.4 for required wetland setbacks, that states all vernal pools are regulated by MDEP 06-096 Chapter 335.9. The Town may want to consider elaborating on how vernal pools are identified and defined and if Significant Vernal Pools are regulated differently.

FOREST LAND

Kittery contains several forested areas in the form of both wetland forests (noted above) and uplands forests. Some of the upland forests are white oak-red oak natural communities (defined below). The town maintains the 72-acre Town Forest, located off Haley Road, and upland deciduous forest. In addition, 301.28 acres of privately-owned forested land in Kittery receives special assessment through the state's Current Use Protection Program (see *Open Space Resources*, below).

Forest land that has been harvested for timber in Kittery totals just less than 700 acres within a 24-year period (1991-2015)⁴ Of

that, 66 acres was associated with a change of land use and a total of 17 acres were clear cut. The Town opted to repeal the **timber harvesting regulations** at the local level and currently follow statewide standards for timber harvesting in the shoreland zone. The Maine Forest Service (MFS) administers and enforces these standards that primarily require:

- Timber harvesting activities ensure shoreline areas within the shoreland zone are protected and not expose mineral soil that can be washed into water bodies, including nonforested freshwater and coastal wetlands and tidal waters
- Timber harvesting and related activities in shoreland areas below the 300 acre drainage point must leave windfirm stands of trees that provide adequate shade
- If located in shoreland areas, roads used primarily for timber harvesting and related activities must be constructed and maintained to standards designed to minimize the chance of exposed soil washing into water bodies, including wetlands.
- Stream crossings must not disrupt the natural flow of water and must not allow sediment into water bodies.

For more information visit the MFS website:

http://www.maine.gov/dacf/mfs/policy_management/water_resources/ws/sws.html

⁴ Information provided by the MFS, see table on timber harvesting in Kittery on the following page.

KITTERY COMPREHENSIVE PLAN EXISTING CONDITIONS INVENTORY AND ASSESSMENT

Summary of Timber Harvest Information for the town of:

Kittery

YEAR	Selection harvest, acres	Shelterwood harvest, acres	Clearcut harvest, acres	Total Harvest, acres	Change of land use, acres	Number of active Notifications
1991-1995	150	0	0	150	0	6
1996-1997	72	5	1	78	1	7
1998-1999	29	0	0	29	2	5
2000	4	0	0	4	12	3
2001	52	0	0	52	0	3
2002-2003	0	0	16	0	12	5
2004-2008	171	0	0	171	28	7
2010	57	0	0	57	9	3
2011	11	0	0	11	0	4
2012	147.4	0	0	147.4	0	11
2013	0	0	0	0	0	4
2014-2015	0	0	0	0	2	4
Total	693.4	5	17	699.4	66	62
Average	58	0	1	58	6	5

Data compiled from Confidential Year End Landowner Reports to Maine Forest Service.

Department of Agriculture, Conservation and Forestry - Maine Forest Service
We help you make informed decisions about Maine's forests

** To protect confidential landowner information, data is reported only where three or more landowner reports reported harvesting in the town.*

AGRICULTURAL LAND

The large amount of bedrock, combined with shallow, poorly drained soils limits the amount of land in Kittery suitable for farming. Where suitable soils exist, they stand in small pockets, complicating the ability to farm on a large scale. The town does have prime farmland soils (typically comprised of sandy loams) in the following locations:

- North shore of Spinney Creek
- Wilson and Fernald Roads

- Northeast of Lewis Road
- Off McEacherns Way
- Between Bartlett and Norton Roads
- On Gerrish Island near Sisters Point
- North of Adams Road and south of I-95.

Kittery has just a few remaining farms. The 300-acre **Rustlewood Farm**, located in the northeast corner and straddling the Kittery-Eliot line, raises milk cows. The next generation has begun a mixed vegetable operation under the name of **Greenlaw Gardens**. This occupies 5 acres of Rustlewood Farm fields and supplies vegetables to local restaurants, specialty food shops and a seasonal farm stand.

There are a few small personal farm operations in town - a beef cattle and small CSA at **Sawyer Farm** on Bartlett Road and a **Christmas Tree Farm** adjacent to Deering Pond. The **Touching Earth Farm**, located on Stevenson Road, is a CSA farm cultivating produce crops and raising bedding and vegetable plants in the farm's greenhouses.

RARE, THREATENED & ENDANGERED SPECIES

The Maine Department of Agriculture, Conservation and Forestry's Maine Natural Areas Program (MNAP) inventories lands that support rare and endangered plants, rare natural communities and ecosystems, and outstanding examples of more common natural communities and ecosystems.

Kittery is home to 13 out of 347 **rare plant species**⁵, listed in the following table.

Common Name	Scientific Name	State Status	State Rank	Global Rank
Allegheny Vine	<i>Adlumia fungosa</i>	E	S1	G4
American Sea-blite	<i>Suaeda calceoliformis</i>	T	S2	G5
Bitternut Hickory	<i>Carya cordiformis</i>	E	S1	G5
Bottlebrush Grass	<i>Elymus hystrix</i>	SC	S3	G5
Mountain-laurel	<i>Kalmia latifolia</i>	SC	S2	G5
Northern Wild Comfrey	<i>Cynoglossum virginianum</i> var. <i>boreale</i>	E	S1	G5, T4, T5
Red-root Flatsedge	<i>Cyperus erythrorhizos</i>	E	S1	G5
Saltmarsh False-foxtail	<i>Agalinis maritima</i>	SC	S3	G5
Scarlet Oak	<i>Quercus coccinea</i>	E	S1	G5
Spicebush	<i>Lindera benzoin</i>	SC	S3	G5
Spotted Wintergreen	<i>Chimaphila maculata</i>	E	S2	G5
Wild Coffee	<i>Triosteum aurantiacum</i>	E	S1	G5
Wild Garlic	<i>Allium canadense</i>	SC	S2	G5

For more information visit MNAP website <https://www1.maine.gov/dacf/mnap/>
See also <https://www1.maine.gov/dacf/mnap/features/ranks.pdf> for status and rank information.

Rare animal species. The Maine Department of Inland Fisheries and Wildlife (MDIFW) manages inland fish and wildlife listed

⁵ The Maine Natural Areas Program's "Elements of Diversity: Rare, Threatened and Endangered Plants," published in September 2015 provides a list of all the 347 species.

under the Maine Endangered Species Act. The U.S. Fish and Wildlife Service manages inland fish and wildlife listed under the U. S. Endangered Species Act (ESA).⁶

Currently, 22 inland fish and wildlife species are listed as "Endangered" and 23 are listed as "Threatened" under MESA, some of which are also listed under ESA. The list "Endangered" list includes birds, fish, beetles, butterflies, skippers, dragonflies, damselflies snails, mammals, snakes, and turtles. The "Threatened" list includes birds, fish, butterflies, skippers, dragonflies, damselflies, freshwater mussels, mayflies, moths, mammals and reptiles. In the Kittery area, accounts of the Spotted Turtle have been recorded, as well as the Endangered New England Cottontail Rabbit. The region west of 95 and north of 236 is within a new proposed Refuge area for USFWS known as the "Great Thicket".

MDIFW has mapped the following State Endangered, Threatened or Special Concern species in Kittery: New England cottontail (State Endangered), peregrine falcon (State Endangered), ribbon snake (Special Concern), saltmarsh sparrow (Special Concern), and harlequin duck (State Threatened).

In addition to the list of mapped Endangered, Threatened and rare species in Kittery, multiple bat species have recently been listed. Of the eight species of bats that occur in Maine, the three Myotis species are protected under Maine's Endangered Species Act. The three Myotis species include little brown bat (M. lucifugus, State Endangered); northern long-eared bat (M.

⁶ Species listed under MESA receive state protection; species listed under ESA receive federal protection; species listed under both receive state and federal protection.

septentrionalis, State Endangered); and eastern small-footed bat (*M. leibii*, State Threatened). Four of the remaining bat species are listed as Special Concern: red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), and tri-colored bat (*Perimyotis subflavus*). While a comprehensive statewide inventory for bats has not been completed, it is likely that several of these species occur within the Town during migration and/or the breeding season.

INVASIVE PLANT SPECIES

Maine's Department of Agricultural, Conservation and Forestry's Maine Natural Areas Program (MNAP) serves as a resource for biological information about invasive plant species in the state. An invasive plant is defined as a plant that is not native to a particular ecosystem, whose introduction does or is likely to cause economic or environmental harm or harm to human health. Of the 2,100 plant species recorded in Maine, approximately one-third are non-native, but only a small fraction is considered invasive. However, these have the potential to cause great harm to the landscape, some of which may grow in Kittery. For information about the biology, identification, and control of invasive plant species, visit the MNAP website⁷. For information about terrestrial invasive plant species covered by the state's new rule prohibiting their sale, visit the Horticulture website⁸. In addition, Maine's Department of Environmental Protection

⁷ The Maine Natural Areas Program maintains this list of invasive species on its website:

http://www.maine.gov/dacf/mnap/features/invasive_plants/invasives.htm

⁸ Maine Department of Agriculture, Conservation and Forestry, Horticulture Program, <http://www.maine.gov/dacf/php/horticulture/invasiveplants.shtml>

maintains an inventory of invasive aquatic species. In the Kittery area, European Naiad and Curly Leaf Pond Weed have been found⁹.

UNIQUE NATURAL AREAS: NATURAL COMMUNITIES AND ECOSYSTEMS, HABITAT FOCUS AREAS, AND SIGNIFICANT WILDLIFE HABITATS

Natural Communities and Ecosystems. The Maine Natural Areas Program has identified many ecosystems throughout the state. Ecosystems are defined as a group of communities and their environment, occurring together over a particular portion of the landscape, and held together by some common physical or biotic feature. In Kittery, *Coastal Dune-Marsh Ecosystem* has been identified -- low-lying coastal areas with sand beaches, dunes and saltmarshes behind the dunes -- along the 30 mile coastline. Included in this ecosystem are beach strands, dune grasslands, Pitch Pine dune woodlands, Rose-Bayberry maritime shrublands, and *Spartina* saltmarshes.

The Maine Natural Areas Program (MNAP) has also classified and distinguished 104 natural community types in the state, five of which lie in Kittery and are identified in the following table:

⁹ "Maine's Invasive Aquatic Plants: Confirmed Infestations," Maine Department of Environmental Protection, March 2011.

Rare Natural Communities	State Status	State Rank	Global Rank
Coastal Dune-marsh Ecosystem , Low-lying coastal areas with sand beaches, dunes, and saltmarshes behind the dunes. This ecosystem is bounded landward by terrestrial ecosystems, either forests or cultural ecosystems, and oceanward by the high tide line of the open shore	E	S1	G4
Dune Grassland , sand dunes dominated by beach grass, with patches of beach-pea, red raspberry, bristly gooseberry and/or poison ivy	T	S2	G5
Low Sedge Fen , peatlands dominated by low mats of sedges, sometimes with sparse low heaths over a very wet peat moss substrate	E	S1	G5
Oak-Hickory Forest , dry forest type characteristic of more southerly forests and dominated by shagbark hickory and oaks	SC	S3	G5
Salt-hay Saltmarsh , tidal marshes consisting of expanses of <i>Spartina Saltmarsh</i> ; saltmeadow cordgrass, smooth cordgrass, and/or black-grass.	SC	S2	G5
White Oak - Red Oak Forest , deciduous forest dominated by red oak, <i>Quercus rubra</i> , with a mix of white oak, <i>Quercus alba</i> .	E	S1	G5, T4, T5

For more information visit MNAP website <https://www1.maine.gov/dacf/mnap/>

Beginning with Habitat Focus Areas. Beginning with Habitat (BwH), a collaborative program of federal, state and local agencies and non-governmental organizations, is a habitat-based approach to conserving wildlife and plant habitat on a landscape scale.¹⁰ The goal of the program is to maintain sufficient habitat to support all native plant and animal species currently breeding

¹⁰ www.beginningwithhabitat.org

in Maine. The organization compiles habitat information from multiple sources, including biologists from several federal and state agencies and organizations, to identify areas of statewide ecological significance that contain unusually rich concentrations of at-risk species and habitats. BwH data is accessible to towns, land trusts, conservation organizations.

The “focus areas” identified by BwH support rare plants, rare animals, rare and high quality common natural communities and ecosystems; significant wildlife habitats; and their intersections with large blocks of undeveloped habitat. Of the 140 focus areas statewide, Kittery contains two:

- **Brave Boat-Gerrish Island.** This area located in both Kittery and York along much of Kittery’s Atlantic coast, includes many associated natural communities and provides the habitat needed to support most of the plants and animals native to Southern Maine.¹¹
- **York River Headwaters.** This area covers 1,000 acres of uplands and wetlands in York, Eliot and Kittery. It includes a tidal marsh estuary ecosystem with intertidal bays, and is one of the largest unprotected *Spartina* saltmarshes in the state. The York River is currently being studied for possible “Wild and Scenic” designation from the US Park Service.¹²

In addition, the *Mount Agamenticus* focus area, while only bordering Kittery, is one of the largest remaining expanses of undeveloped forests in coastal New England. It abuts Kittery’s Brave Boat Harbor focus area and watershed.

¹¹ www.maine.gov/dacf/mnap/focusarea/brave_boat_gerrish_island.pdf

¹² www.maine.gov/dacf/mnap/focusarea/york_river_headwaters_focus_area.pdf

Significant Wildlife Habitats include Seabird Nesting Islands, Inland Waterfowl and Wading Bird Habitat, Significant Vernal Pools, Tidal Waterfowl and Wading Bird Habitat, and Shorebird Feeding and Roosting Areas. These Significant Wildlife Habitats¹³ are protected under Maine's Natural Resources Protection Act. Significant Wildlife Habitats exist in Kittery including Deer Wintering Areas, although they are not currently included as a regulated Significant Wildlife Habitat under *Natural Resources Protection Act Significant Wildlife Habitat Rules*.

SIGNIFICANT WILDLIFE HABITATS

Seabird Nesting Islands (SNI): worldwide, seabirds live most of their lives over the open ocean and commonly nest on islands. Maine's assemblage of seabirds utilize a wide range of habitat for nesting. For instance, some seabirds will nest on small, unforested islands vegetated sparsely with various grasses, forbs, and shrubs. Other seabirds require soil conditions suitable for burrowing. Some seabirds nest in rock crevices or on cliff ledges. In order to be suitable for nesting birds, these nesting islands must be disturbance-free, particularly from mammalian predators such as foxes, coyotes, and raccoons.

Inland Waterfowl / Wading bird Habitat (IWWH): wetland complexes and a 250-foot-wide upland zone surrounding them. The quality of a wetland complex is determined by the dominant wetland type, the diversity of wetland types in the complex, the size of the wetland(s), the interspersions of the different types, and the relative amount of open water.

Significant vernal pools (SVP) – also referred to as a seasonal forest pools, are natural, temporary to semi-permanent bodies of water occurring in shallow depressions that typically fill during the spring or fall and may dry during the summer. Vernal pools have no permanent inlet or outlet and no viable populations of predatory fish. A vernal pool may provide the primary breeding habitat for wood frogs (*Rana sylvatica*), spotted salamanders (*Ambystoma maculatum*), blue-spotted salamanders (*A. laterale*), and fairy shrimp (*Eubranchipus* sp.), as well as valuable habitat for other plants and wildlife, including several rare, threatened, and endangered species

Tidal Waterfowl / Wading bird Habitat (TWWH): includes Eelgrass (*Zostera marina*) beds currently mapped by Maine Department of Marine Resources that are at least 2.5 acres in size; Mussel bars/beds; Emergent wetlands at least 2.5 acres in size; and Mudflats at least 12.5 acres in size or adjacent to one of the above habitats such that the resulting complex is at least 2.5 acres in size

Shorebird areas – feeding and staging areas provide migrating shorebirds with the food resources they need to acquire the large fat reserves necessary to fuel their transoceanic migration to wintering areas. Shorebird areas can be feeding areas, roosting sites, or both. MDIFW surveys shorebird areas every year; this data is used to add, delete, or modify the mapped habitats.

Deer Wintering Areas (DWA): forested areas used by deer when snow gets more than 12 inches deep in the open and in hardwood stands, when the depth that deer sink into the snow exceeds 8 inches in the open and in hardwood stands, and when mean daily temperature is below 32 degrees.

¹³For more information visit Maine Department of Inland Fish and Wildlife website <http://www.maine.gov/ifw/wildlife/environmental/mdifw/significant.html>

Riparian Corridors and the Protection and Enhancement of Fisheries and Fisheries Habitat. Although not all the streams in Kittery have been inventoried by MDIFW, many support fish populations. Additional protections should be considered to protect these natural resources when reviewing proposed “development” projects. Fish habitat is vulnerable to a host of land-based activities, which often leads to **a loss of riparian habitat**. MDIFW recommends a 100 foot undisturbed buffers along both sides of any stream or stream-associated wetlands (measured from the upland edge), and if the natural vegetation has been previously altered then restoration may be warranted¹. Protection of riparian areas diminishes erosion/sedimentation problems; reduces thermal impacts; maintains water quality; and supplies leaf litter/woody debris (energy & habitat) for the system. Protection of these important riparian functions insures that the overall health of the stream habitat is maintained. In addition, smaller headwater and lower order streams are often effected the greatest by development and these systems benefit the most from adequately sized, vegetated buffers.

Stream crossings, terrestrial passage

Based on MDIFW surveys around the region, many municipal road maintenance and construction projects often inadvertently impede passage at stream crossings, or become impassable over time due to incorrect culvert sizing. The Town should consider strategies for enhancing passage and habitat connectivity for both terrestrial and aquatic



organisms during transportation planning. Up to 80% of Maine's terrestrial vertebrate wildlife species use riparian areas sometime during their life cycle, so these areas can be vitally important connections between habitats for many terrestrial species in

addition to fish. Many stream culverts and other crossing structures present barriers to fish and wildlife movement due to factors including undersized structures, and perched or hanging culverts. The Town should consider the importance of both aquatic and terrestrial wildlife passage using properly designed stream crossing structures.¹⁴

In 2011, Maine Audubon and partners launched *Stream Smart*, a program that trains contractors, landowners and other professionals responsible for road-stream crossings, how to construct crossings that maintain fish and wildlife habitat while protecting roads and public safety. *Stream Smart* can help when considering stream crossing structures associated with development.¹⁵

¹⁴ An introduction to the importance of riparian habitat and connections can be found at: http://maineaudubon.org/wp-content/uploads/2012/08/MaineAudubonConnectors_singlepages.pdf
http://www.maine.gov/dep/land/publications/stream_crossing_poster.pdf
<http://stayingconnectedinitiative.org/assets/Terrestrial-Exec-Summary.pdf>

¹⁵ <http://maineaudubon.org/streamsmart/>

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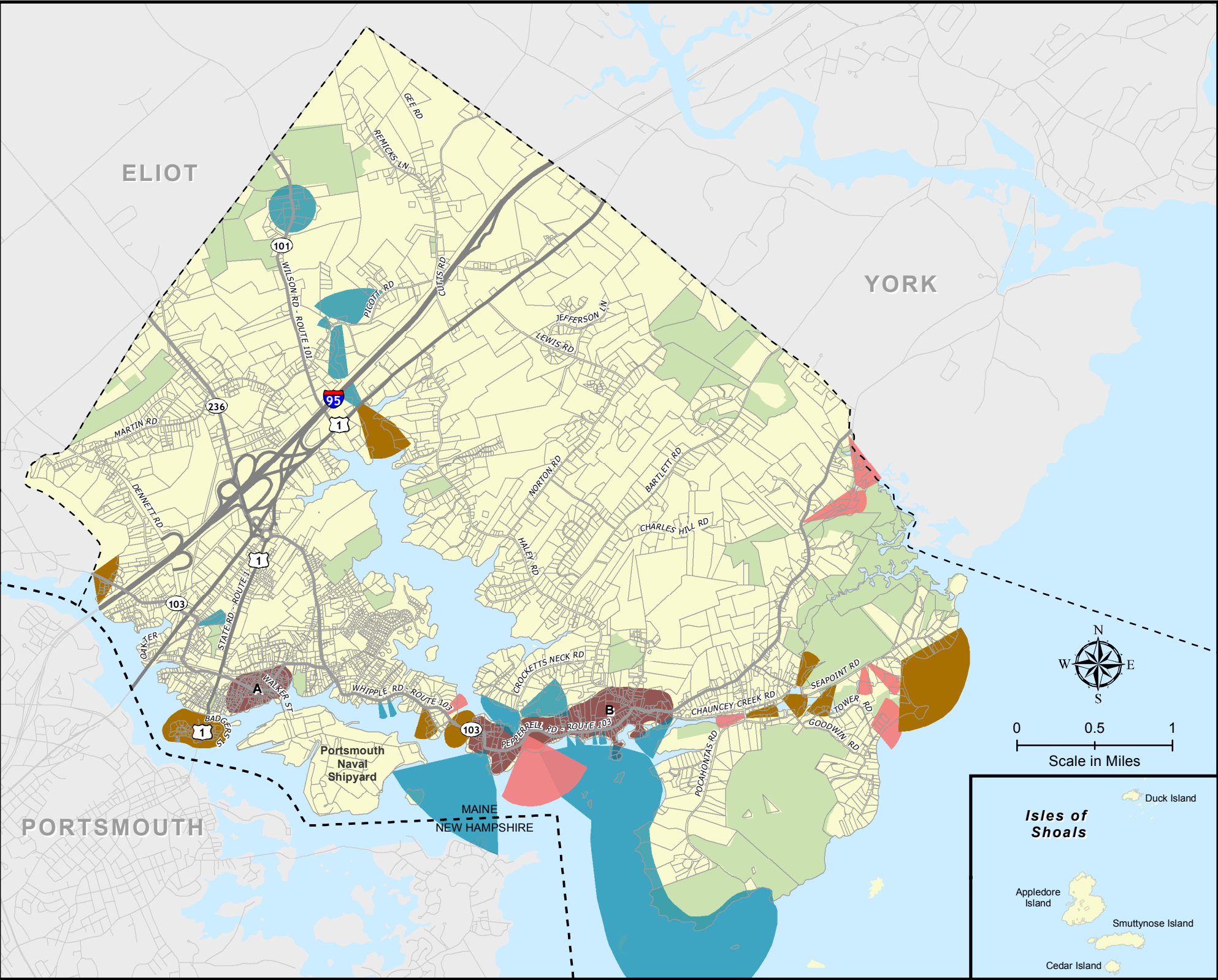
Figure 2.4
SCENIC RESOURCES

Scenic Views and Vistas:

- Category One
- Category Two
- Category Three

Scenic Areas:

- A Wallingford Square
- B Kittery Point Village
- Conserved Land



Scenic areas, views were compiled by Planning
Decision, Inc.
and were digitized by GRANIT at UNH, October, 1999.

AECOM

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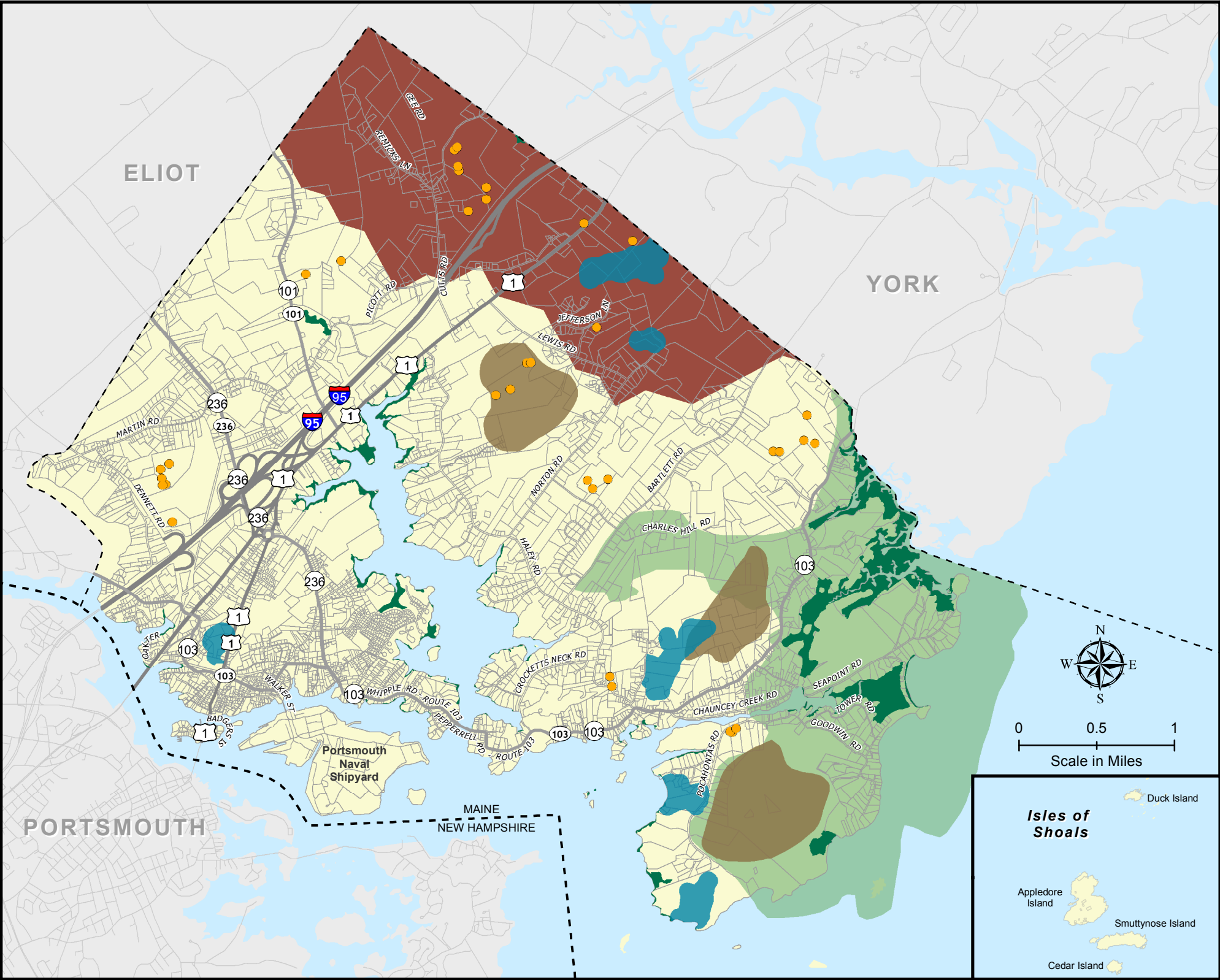


Figure 2.5

HABITAT FOCUS AREAS

Critical Natural Areas: Habitat Focus Areas

- Deer Wintering Area
- Brave Boat Harbor/Gerrish Island Habitat Focus Area
- Inland Waterfowl and Wader Bird Habitat
- Tidal Waterfowl and Wading Bird Habitat
- York River Watershed
- Vernal Pool Locations



Watershed data was retrieved from the 'Gulf of Maine Land-Based Pollution Sources Inventory'. http://www-orca.nos.noaa.gov/projects/gomaine/gis_data.html

Deer Wintering Area (8/1/2011), Inland Waterfowl and Wader Bird Habitat (6/14/2016), Tidal Waterfowl and Wading Bird Habitat (5/6/2016), Vernal Pool Locations (8/24/2016) derived from maine.gov.

York River Watershed were provided by Beginning with Habitat and digitized.

AECOM

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SCENIC RESOURCES

Located on the Atlantic coast and bordered on the south by the Piscataqua River, Kittery possesses tremendous visual and scenic quality. Views include both those seen from the land, looking outward across the water, as well as views of Kittery, from the water. Several inland views of historic building clusters, including Kittery Point and Kittery Foreside, are possible from the roads that wind throughout. Views may be classified as follows:

- Unobstructed by natural or manmade features, over land toward the ocean or tidal inlet or bay; or uncluttered over land or water toward a hill, open land or other natural feature
- Over land or water that include manmade features associated with settled areas
- Over land or water that include traditional maritime features

Kittery residents have rated views according to scenic value to the community, and have divided the views into three categories: 1 (highest value), 2 (very high value), and 3 (high value).¹⁶ A total of ten views were rated 1, thirteen views received 2, and eight were rated 3. Scenic roads (discussed later in this inventory chapter) were also rated on a highest (1), very high(2) and high (3) scale and residents identified a total of 23 such scenic roads.

¹⁶ The 1999/2002 Comprehensive Plan provided a complete listing of these views.



Scenic views in Kittery include both those of natural areas, as well as historic features, such as the First Congregational Church Cemetery (and Piscataqua River/Gulf of Maine).

KITTERY'S STREET AND PUBLICLY-OWNED TREES

The Town of Kittery Department of Public Works conducted a street tree and publicly-owned shade tree inventory in 1994, locating species, documenting condition, and noting any maintenance needs and/or site conflicts. The inventory also highlighted “hazard trees,” or trees to be removed. Each tree received a number and the number was associated with the location (street address). In summary, the inventory found that Kittery contained many substantially-sized street trees representing a range of species, and noted that of the 1,300 publicly-owned trees, many were in decline because of age, damage, poor growing conditions. Ninety-seven trees were found to be “hazardous,” and in need of immediate removal. The inventory recommended that Kittery devote the resources of its tree program to maintenance, and also to implement an ordinance that would promote good tree care. It also recommended new plantings of trees at targeted areas, such as schools, and encouraged “memorial” tree plantings.

PAST AND CURRENT NATURAL RESOURCE PROTECTION EFFORTS

Spruce Creek Association. Established in 2002 by a group of Kittery and Kittery Point residents, this non-profit membership organization devotes itself to the monitoring and protection of the 9.8 square mile Spruce Creek Watershed, located in both Kittery and Eliot. Many members live along the Spruce Creek waterfront and are concerned about the long term beauty and health of the waterbody and its watershed. Goals of the association include providing stewardship of the creek; standardizing watershed-related ordinances; offering educational programs; and establishing a method of reporting and remediating violations. In March of 2008, the association completed a **Spruce Creek Watershed-Based Management Plan**. Updated in 2014, the goals of the plan included:



Spruce Creek as seen from Route 1, looking southward. Concern about the water quality in the creek, as well as its scenic beauty, fostered the activism of the Spruce Creek Association

- Re-opening shellfish beds in Spruce Creek
- Ensuring that Spruce Creek meets minimum Class B and SB water quality standards
- Ensuring that Spruce Creek is useful and healthy for drinking, recreation, fish, birds, and other wildlife now and in the future.

The plan included many implementation measures to meet these goals, some of which can be taken on by watershed stakeholders.

Kittery Shellfish Conservation Committee. This seven-member committee, appointed by the Kittery Town Council, is tasked with surveying Kittery's clam flats once every three years to establish size, distribution and density of the clam population. It also recommends conservation closures and opening of flats in conjunction with area biologists of the Maine Department of Marine Resources.

Kittery Comprehensive Plan, 1999 (adopted in 2002). The 1999/2002 Comprehensive Plan identified many goals aimed at protecting and managing the quality of the town's water, critical natural and scenic resources, including:

- Protecting the quality and supply of surface waters
- Protecting the quality and supply of groundwater
- Protecting wetlands
- Managing the use of flood prone areas
- Protecting significant wildlife
- Maintaining the town's scenic quality while respecting property rights
- Preserving scenic quality of the shoreline

- Maintaining and enhancing high value scenic views from public viewing sites
- Maintaining and enhancing the visual character of Kittery's scenic roads.

IDENTIFICATION OF PRELIMINARY NATURAL RESOURCE ISSUES, CHALLENGES AND OPPORTUNITIES

The following is a preliminary list of issues, challenges and opportunities posed by the findings of the inventory of existing conditions of Kittery's natural and scenic resources.

- The town's topography, soils and associated wetlands place limits on the extent of development possible. Shallow depths to bedrock further complicate this constraint.
- Much of the private residential drinking water is supplied by wells, making preservation of groundwater and aquifer quality critical to the health of the community.
- Rising sea levels pose a long term threat to development near flood hazard areas. These areas include the edges of Kittery's major surface waters as well as portions of the watersheds.
- The largest of Kittery's remaining active farms, the Rustlewood Farm, has been conserved; the other smaller scale farm operations are not protected from future development.
- Opportunity exists to protect Kittery's many unique natural resources, including landscape scale focus areas, rare and exemplary natural communities, significant wildlife habitats, and rare, threatened, and endangered plant and animal species, while at the same time preserving individual property-owners' rights, through negotiation of easements and restrictions on wetlands and farmlands; purchase of unprotected open spaces; and creation of buffers between developed lands and preserved open spaces.
- Kittery possesses tremendous visual and scenic qualities, making it a highly desirable place to live and providing attractions for visitors. Opportunity exists to protect these qualities, while at the same time preserving individual property-owner's rights.
- Opportunity exists to adopt regulations limiting the amount of farming soils that can be removed from a property, as a means of preserving existing agricultural lands town-wide.

OPEN SPACE RESOURCES

As noted earlier in the introduction to this inventory chapter, residents of Kittery place high value on open space for its contribution to the town's physical character, as well as its natural beauty. The role open space plays in guarding natural resources and providing recreation opportunities furthers residents' level of appreciation. Of Kittery's 12,000 acres and 30 miles of coastline, approximately 14% has been protected in perpetuity from development through one of the following means¹⁷:

1. Ownership by the United States government
2. Ownership by the State of Maine and protection through current state tax benefit programs
3. Town ownership of recreation and forest lands
4. Ownership by a non-profit conservation organization or land trust

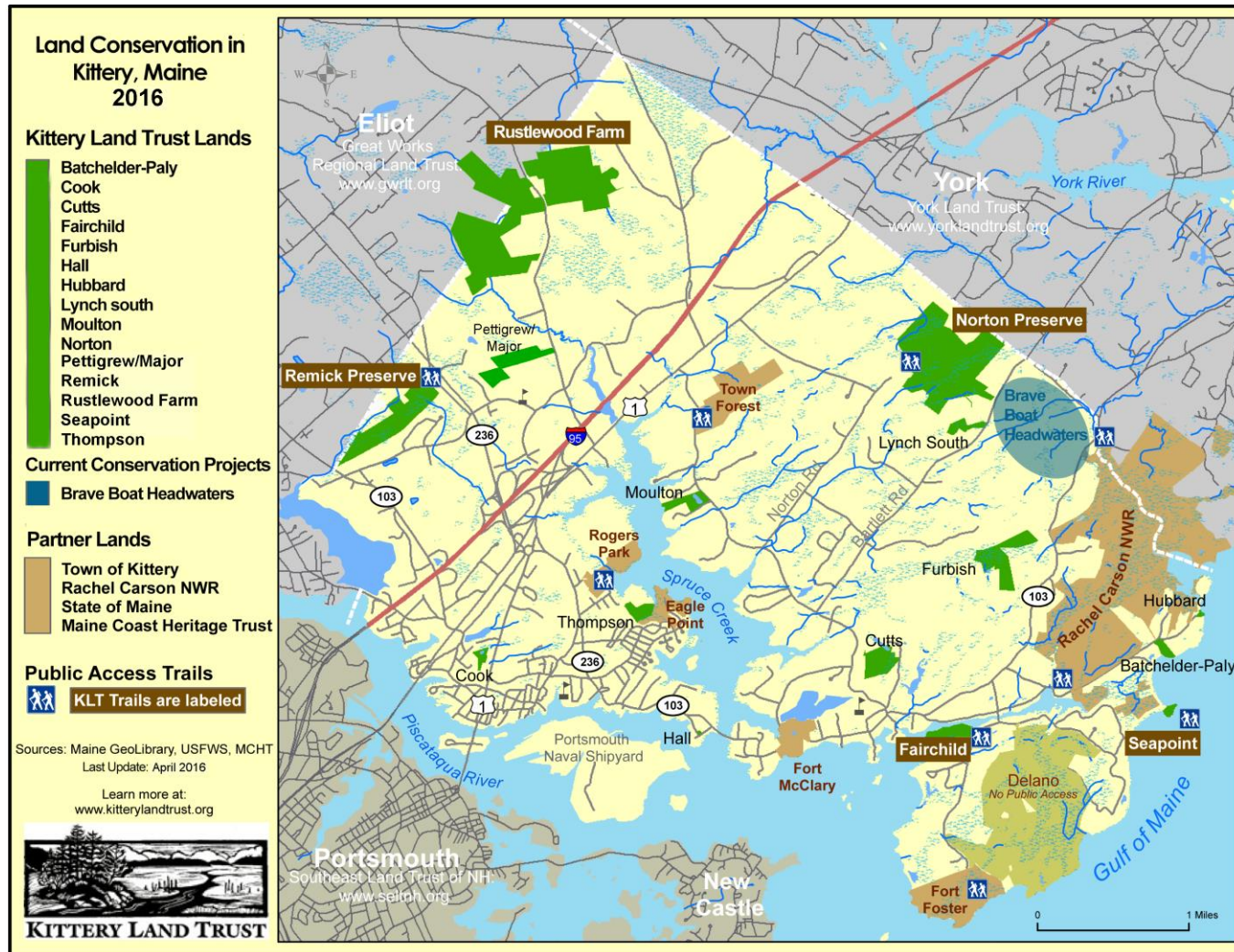
FEDERALLY-OWNED PROTECTED OPEN SPACE

Rachel Carson National Wildlife Refuge. This large expanse of salt marshes and estuaries rimming 50 miles of coastline, extends from Cape Elizabeth (at its northern end) to Kittery, providing protected land for migratory birds. Land acquisition is in process, with the goal of obtaining a total of 14,600 acres. The Brave Boat

¹⁷ www.kitterylandtrust.org. The Kittery Land Trust has protected 810 acres, and other entities steward 850 acres, including 3 miles of coastline. The KLT website lists a total acreage for the town as 12,000, whereas other sources list 48,000.

SUMMARY OF KEY POINTS

- Of Kittery's 12,000 acres and 30 miles of coastline, approximately 14% of the acreage and 10% of the coastline have been protected through a variety of conservation methods.
- While the State of Maine and Town of Kittery own some of this protected land, the majority has been conserved through the efforts of the Kittery Land Trust (840 acres) and Maine Coast Heritage Trust (408 acres).
- Kittery is also the southern "anchor" of the Rachel Carson National Wildlife Refuge, with its Brave Boat Harbor division, located in northeast Kittery, covering 400 acres.
- Kittery's scenic roads, including Route 103 (Pepperrell Road and Whipple Street), are some of the town's most treasured assets. Visitors come from far and wide to drive the winding routes and take in historic and sea-facing views.
- Kittery's Conservation Commission is charged with protecting the natural resources located within the territorial limits of the town.
- The Kittery Open Space Advisory Committee is tasked with maintaining an inventory of public open space and making recommendations to the Town Manager about acquiring and/or deaccessioning this space.



Conservation lands in Kittery include Federally-owned, State-owned, town-owned lands, as well as those owned by the Kittery Land Trust and Maine Coastal Heritage Trust, both nonprofit land trusts. (Kittery Land Trust)

Harbor division of the refuge consists of more than 800 acres, with 400 of the acres along Kittery's coastline. In addition to spectacular bird-watching, visitors to the refuge can take advantage of 1.8 miles of walking trails (known as the Cutts Island Trail) through scenic uplands in the vicinity of Brave Boat Harbor. The area is home to several species of rare and/or endangered birds and animals, including the Piping Plover, New England Cottontail, and Saltmarsh Sparrows.

STATE-OWNED PROTECTED OPEN SPACE

Fort McClary State Historic Site. Located at the mouth of the Piscataqua River with an entrance off Pepperrell Road in Kittery Point, this 37-acre property is owned and managed by the State of Maine as an historic and recreation site. It also provides habitat to a variety of upland and coastal flora and fauna habitats.

State Current Use Protection Program. This initiative, provided through Maine's Department of Revenue Services, offers property owners reductions in the assessed value through one of four programs: Farmland Tax Law, Open Space, Tree Growth, and Working Waterfront. In 1999/2002, 335 acres in Kittery was enrolled in the Tree Growth Program, and 8.5 acres was part of the Farmland Tax Law Program. As of April 1, 2017 the amount of acreage in the Tree Growth Program reduced to 301.28 acres, while the amount of acreage as part of the Farmland Tax Law Program increased to 126 acres.

CURRENT STATE OF MAINE LAND USE PROGRAMS

The State of Maine has four "current use" programs which offer the property owner a reduction in their assessed value: **Farmland Tax Law, Open Space, Tree Growth and Working Waterfront.** All four programs are available to the property owner through an application process with the local municipality's Tax Assessor. Applications must be filed on or before April 1st. Certain criteria must be met to be eligible for each program and any future change in the use of the land will cause disqualification resulting in a penalty. Visit the Maine Revenue Services website for more information (http://www.maine.gov/revenue/propertytax/propertytaxbenefits/current_use.htm)

FARMLAND TAX LAW

In the Farmland Tax Law program, the property owner is required to have at least five contiguous acres in their tract of land. The land must be used for farming, agriculture or horticulture and can include woodland and wasteland. For more information see Bulletin 20 (Farmland Tax Law), 36 M.R.S. §§ 1101 - 1121 (Farm and Open Space Tax Law), and 7 M.R.S. chapter 2-B (Registration of Farmland).

OPEN SPACE

There is no minimum acreage requirement with this program. However, minimum areas and setbacks must be excluded from classification. The tract must be preserved or restricted in use to provide a public benefit. Benefits recognized include public recreation, scenic resources, game management and wildlife habitat. For more information including the specific categories see Bulletin 21 and 36 M.R.S. §§ 1101 - 1121.

TREE GROWTH

This program provides a benefit for owners of at least 10 acres of forested land used for commercial harvesting. A forest management and harvest plan must be prepared and a sworn statement to that effect submitted with the application. Each year, the State Tax Assessor determines the 100% valuation per acre for each forest type by county. For a list of current Tree Growth rates, see Rule 202 and for additional information see Bulletin 19 and 36 M.R.S. §§ 571 - 584.

WORKING WATERFRONT

"Working waterfront land" means a parcel or portion of a parcel of land abutting tidal waters or is located in the intertidal zone (located between the high and low water mark) the use of which is more than 50% related to providing access to or in support of the conduct of commercial fishing (including commercial aquaculture) activities. The reduction from just value of the property depends on the degree it is used as *working waterfront land*. For more information see Working Waterfront Q & A and 36 M.R.S. §§ 1131 -1140.

TOWN-OWNED PROTECTED OPEN SPACE

Fort Foster. Located on Kittery Point and jutting into the Gulf of Maine (Atlantic Ocean), Fort Foster covers 89 acres of upland and coastal wetland area.

Seapoint and Crescent Beaches. Located between Fort Foster and Brave Boat Harbor, these beaches extend across approximately 4.5 acres.

Kittery Town Forest. Managed by the Kittery Conservation Commission and Kittery Department of Public Works, this 72 acre parcel stands between Haley and Lewis Roads.

Rogers Park. Also managed by the Kittery Conservation Commission and Kittery Department of Public Works, this 27-acre parcel is located along Spruce Creek and behind the Kittery Community Center.

Wood Island. Wood Island is a 1.25-acre parcel, located in the Piscataqua River, that once served as a lifesaving station. Now in disrepair, the town is deliberating over its future. The site is part of an EPA Brownfield and MDEP/EDC grant to fund a remediation cleanup project in coordination with restoration efforts at the site. At present, public access is limited to persons with private boats.

Eagle Point. This 25-acre parcel, located along the backs of Spruce Creek, provides access to the water and a spot for viewing wildlife.

Kittery Cemeteries. Kittery contains over 130 cemeteries, burial grounds and burial sites, scattered throughout the town. They

range size from hundreds of graves, to single burials.¹⁸ Many are on private land and some are overseen by the Kittery Cemetery Committee. Maine's Cemetery Law prohibits the desecration of historic burial sites.¹⁹

LANDS PROTECTED BY NON-PROFIT ORGANIZATIONS

Kittery Land Trust. Established in 1987 with a mission to conserve coastal, upland, agricultural and forested lands in the Town of Kittery, the trust has protected 840 acres of open space, with 450 acres conserved in the last five years. Recently, the trust secured a conservation easement, using Federal ranch and farmland protection funds, for the Rustlewood Farm. Located at the northern edge of town and crossing into Eliot, the farm covers 300 acres and continues as an active dairy and produce farm, and is the last remaining large dairy farm in Maine. The trust currently protects the following lands:

Public Access Lands

- Norton Preserve, 177 acres on Norton Road, including a 98 acre parcel owned by the town, protected by a conservation easement held by KLT
- Remick Preserve, 80 acres of forested upland off Fernald Road
- Within Brave Boat Headwaters, a 150-acre public preserve in progress. Located off Brave Boat Harbor Road, the area contains three headwater streams for Brave Boat Harbor, four vernal pools, the historic location of the

¹⁸ At least two of Kittery's cemeteries, the Orchard Grove/Highland Cemeteries, are owned and operated by a private corporation.

¹⁹ <http://mainecemetery.org/law>.

Mitchell-Grant Garrison. The area currently offers public access on 57 acres.

- One acre of upland between Seapoint and Crescent beaches that allows public access.

Limited Access Lands

- Clayton Lane, 8.5 acres of woodland abutting Rustlewood Farm, consisting of brushy, young forest
- Cook Preserve, a 5-acre wetland and a mature beech stand, off State Road
- Cutts, 22 acres off Tower Road, consisting of upland forest, wetlands and an old mill pond
- Fairchild, a 17-acre shorefront property adjacent to Chauncey Creek (public access on 3 of the 17 acres)
- Furbish, 30 acres of oak and hemlock forests in heart of the Brave Boat Harbor watershed
- Hubbard, 2.7 acres of ocean front oak-beech forest on Cutts Island
- Lynch South, 10 acres of wetland habitat in the Lynch Lane neighborhood
- Rustlewood Farm, a 300 acre dairy and produce farm in Kittery and Eliot protected by a conservation easement
- Thompson, a 18-acre woodland property on Mill Pond Road, adjacent to Spruce Creek.

Easement Lands (Access by Permission of Owner, Only)

- Batchelder-Paly, a 4-acre easement on Cutts Island
- Hall, located at the corner of Bowen Road and Old Ferry Lane, a one-acre grassy area
- Moulton, approximately 12 acres of field with a duck pond, on Haley Road

In the process of developing its strategic plan, the trust targeted seven focus areas for land conservation. Included in this were the

Rustlewood Farm (described above), and the **Brave Boat Harbor Headwaters**. Through the Brave Boat project, the trust is collaborating with the regional **Mount Agamenticus to the Sea Conservation Project**, a ten-partner effort to conserve lands, waterways and working landscapes in the six-town area between



Brave Boat Harbor, located at the northeast edge of Kittery, is part of the Rachel Carson National Wildlife Refuge. Protection of its watershed is an ongoing effort of the Kittery Land Trust.

Town of Wells and Gerrish Island in Kittery Point. The focus area involves 48,000 acres of land. 150 acres of open space in Kittery, when secured, will connect Mount Agamenticus to the Atlantic, through Brave Boat Harbor.

Maine Coast Heritage Trust. This non-profit land trust is involved in land protection along the entire coast of Maine. In 2008, the trust secured a conservation easement on 408 acres in Kittery Point. This private land of the Delano family, with nearly one mile of ocean frontage, represents 40 percent of Gerrish Island and affords valuable habitat for amphibians and migratory birds.

OTHER EFFORTS TO PROTECT OPEN SPACE

Kittery Conservation Commission. This eight-member commission appointed by the Town Council is charged with protecting natural resources located in Kittery. As part of this charge, the commission is tasked with keeping an index of all open areas within the town, and recommending to the Town Council, measures for protection of these areas. In addition to reviewing development proposals and assessing impact on wetlands, the commission oversees maintenance of Rogers Park, located along Spruce Creek and the Town Forest Farm.

Kittery Open Space Advisory Committee (KOSAC). This 12-person committee of the town was established in 2007 to work in cooperation with other boards and committees to develop and open space plan for Kittery. The plan was to include an inventory of publicly-owned lands and properties held under conservation easements; develop a list of critical wildlife habitats, recreational opportunities, and landscapes important to Kittery's history; inventory undeveloped municipal properties; develop a maintenance and signage program for town-owned lands; and a plan for implementation. To date, the committee has:

- completed a windshield survey/inventory of properties
- assessed the inventory of town properties for their recreation/open space potential

- worked with the planning board on the cluster subdivision ordinance
- discussed the permanent protection of Fort Foster and its management

Future efforts include:

- Updating the open space plan
- Updating maps
- Advocating for the use of town funds for stewardship of public open space
- Recommending the disposition of town lands suitable for conservation.

Kittery Comprehensive Plan, 1999 (adopted in 2002). Open space was addressed as part of the Recreation chapter of this plan (see recommendations in the *Recreation Resources* section of this inventory chapter. Significant measures have been taken since 2002 to secure protection of open space in Kittery, including recent efforts at the Rustlewood Farm and Brave Boat Harbor.

2014 Quality Improvement Plan for Kittery's Shore and Harbors²⁰. This draft plan was completed in response to a recommendation in the 1999/2002 Comprehensive Plan to identify and set priorities for improvements and to guide implementation. Specific recommendations and implementation strategies were made for Kittery Point, Kittery Foreside, the Traip Boat Launch, the Rice Avenue neighborhood (near Badger's Island), Eagle Point, Fort McClary, Fort Foster, Seapoint Beach, Crescent Beach, the Rachel Carson Refuge, Brave Boat Harbor, Isles of Shoals, Wood Island,

²⁰ The plan was not adopted by Town Council.

Spinney Creek, and Spruce Creek. Policies shared throughout included:

- Enhanced public access
- Improved navigational safety
- Improved cleanliness of the beaches
- Enhanced productivity of the clam flats, particularly along Spruce Creek
- Funding for waterfront improvements
- Coordination between the town, Naval Shipyard, and Port Authority
- Mitigation of shoreline erosion
- Mitigation of water pollution
- Planning for long term sea level rise and climate change
- Adopting a Scenic Road Overlay Zone.
- Requiring the use of existing curb cuts and/or sharing of curb cuts and minimize their size, screening them with vegetation where possible
- Requiring subdivision proposals to identify all scenic resources and outline plans to preserve them
- Requiring that new fences and walls have minimal impact on scenic views
- Obtaining State Scenic Highway designations
- Educating property owners about programs available to assist with viewshed protection
- Limiting the placement of conventional communication towers

Maine Shoreline Protection/Shoreline Overlay Zone. (Section 16.3.2.17 of the Kittery Town Code.) Kittery has incorporated this code into the development review process for the purposes of protecting natural resources (among other resources) along the town’s coastline from the impact of development.

CRITICAL UNPROTECTED PUBLICLY-OWNED LANDS

Scenic Roads. Many public roads in Kittery stand unprotected from incompatible development – new buildings and structures that detract from their scenic beauty. Route 103, rambling along Kittery’s coast through Kittery Point and to York passing Brave Boat Harbor, has been regarded by residents and visitors alike as a drive through New England’s natural and cultural history. Both the 1999/2002 Comprehensive Plan and draft Update (2015) noted its significance as well as that of many others, outlining dozens of scenic views possible along the routes. Provisions in the plans for preserving the quality of these scenic roads included:

IDENTIFICATION OF PRELIMINARY OPEN SPACE ISSUES, OPPORTUNITIES, AND CHALLENGES

The following is a preliminary list of issues, challenges and opportunities posed by the finding of the inventory of existing conditions of Kittery’s open space resources:

- Kittery is being rapidly developed, but the population is remaining level. New development is adhering largely to one-acre zoning (40,000 SF per dwelling unit).
- The current cluster development ordinance, as written, may have unintended consequences, and the town has not studied the cost of uncontrolled residential development to the community.

- The Kittery Outlets, built to last approximately 30 years, are reaching the end of their useful life and will need replacing. The impact of this development on the Kittery environment has been substantial, including Spruce Creek, and needs to be evaluated and mitigated in plans for redevelopment.
- Kittery's many miles of scenic roads are threatened by lack of provisions for preserving picturesque character. Opportunity exists to amend the Town Code so that these roads and views are protected, through revised development standards and subdivision regulations.

RECREATION RESOURCES

Kittery's many passive and active recreation sites contribute further to residents' quality of life. The town is fortunate to have several public beaches and two publicly-owned historic forts that provide access to the coast. In addition to these, Kittery maintains athletic fields and courts, playgrounds, walking trails, and boat docking/launching sites that complement the beach areas.

FEDERALLY-OWNED AND STATE-OWNED RECREATION FACILITIES

Fort McClary (37 acres). Located on Pepperrell Road (Route 103) in Kittery Point, Fort McClary dates to the 18th century when a fortification was constructed to protect the mouth of the Piscataqua River from maritime intrusions. Today, Fort McClary is a regionally-known recreation site and national tourist destination. In addition to its many extant historic features, the park contains 0.6 miles of hiking trails, picnic areas, a skating

SUMMARY OF KEY POINTS

- Kittery contains 28 acres of federal and state-owned recreation facilities, including both active and passive recreation sites. Two of these sites are open to all.
- The town maintains several historic sites (Fort Foster, Wood Island) which provide recreational opportunities, as well as many athletic fields and playgrounds.
- The Kittery Community Center, opened in 2011 at the former Frank Frisbee Elementary School on Rogers Road, provides active recreation facilities (gymnasium, fitness center) and offers recreation-oriented programs to users of all ages.
- A master plan for Kittery's athletic fields, completed in 2014, outlined the need for greater access to facilities, and need to eliminate overlap of facilities, and the need to rest fields on an ongoing basis.
- Access to the water (Piscataqua River) is limited by the small number of launches, slips, and moorings, and parking spaces near these sites.
- Kittery contains an extensive network of trails, both at formal recreation facilities, and on conservation lands. While used extensively, the trails do not currently connect to one another, and are not widely publicized.
- Sportspeople are permitted to hunt throughout the year in approximately 2/3 of the town. Some of the hunting ground lies in residential areas.

pond, and a playground. The site is known for its "million dollar

view.”²¹

John Paul Jones Memorial Park (2 acres). This trapezoidal-shaped park was created between Hunter Avenue and Newmarch Street, adjacent to Memorial Bridge. Owned by the State of Maine, it contains a bronze bas relief Soldiers and Sailors Memorial created by sculptor Bashka Paeff to commemorate World War I veterans, as well as three other memorial markers.

Portsmouth Naval Shipyard Recreational Facilities. Located at the eastern end of the Shipyard, these extensive facilities include playing fields with lights, tennis courts, a running track, three parks, two children’s playgrounds and a basketball court. The Shipyard also maintains indoor facilities including a gymnasium, fitness center, tennis courts, racquet ball courts, a 10-pin bowling center. Due to increased security operations at the Shipyard, access to these facilities is restricted to employees.

TOWN-OWNED RECREATION FACILITIES

Kittery Community Center. Located on Rogers Road in the former Frisbee Elementary School, The Kittery Community Center opened in 2010, providing programs and services to residents of all ages. Indoors, the center contains a gymnasium, indoor track, fitness room, as well as the STAR Theatre, a 171-seat performance space. Outside, the center maintains a playground and athletic fields. Programs include classes for users of all ages, trips to arts and cultural organizations, an “Eyes of the World Discovery Center,” a forest-based pre-school program for 2 to 5 year olds,

²¹ For more information about the historic features at Fort McClary and the State of Maine/Friends of Fort McClary efforts to preserve and restore these, refer to the *Historic and Cultural Resources* chapter of this inventory.

and a S.A.F.E. after school program for youth K through 7th grade. For more information about the Kittery Community Center, refer to the *Public Facilities and Services* chapter of this inventory.



Seapoint Beach, located on Kittery's far eastern end, is a popular town-owned recreation site for swimming, fishing, dog-walking, bird-watching, and other outdoor recreation activities.

Fort Foster (89 acres). Located off Pocahontas Road in Kittery Point, this rocky site was home to the 200-guest Pocahontas Hotel, constructed in 1885. The hotel closed in 1904 (but remained standing until 1920), and the federal government claimed the land and constructed the fort. Briefly occupied by the 124th Coast Artillery Corps in 1905, it was never fully occupied again and in the late 1940s it served as a recreation site for the nearby Portsmouth Naval Shipyard. In the 1950s, the federal government offered the land to the Town of Kittery, and the deed transfer took place in 1961. Today, Fort Foster is one of the most popular recreation sites in Kittery, featuring a 569 foot pier (built in 1942), ballfield, playground, pavilions, picnic and barbecue areas, and designated swimming, scuba diving, windsurfing and kayaking areas, as well as public restrooms. Visitors must pay a small admission fee, and both residents and non-residents can obtain season passes. The fort is open seasonally (Memorial Day to Labor Day), from 10:00 a.m. until 8:00 or dusk.

Seapoint & Crescent Beaches (approximately 4.5 acres). Located at the far eastern end of Kittery, these beaches provide users access to the Atlantic for swimming, jogging, fishing, dog walking, and enjoying nature. Surfing takes place at Crescent Beach at low and middle tides.

Wood Island (1.25 acres). This small island located in the Piscataqua River was the site of a lifesaving station in the early 20th century. It retains a seawall and building, all of which are in a state of disrepair. The privately-formed Wood Island Lifesaving Station Association is in the process of raising funds to restore



Frisbee Common, located in front of the Kittery Community Center, contains facilities for baseball, soccer and softball, and is heavily used.

the facility, but at the present time, the site is inaccessible to the public.²²

Rogers Park (23 acres). Located at the end of Dion Avenue, adjacent to the Kittery Community Center and bordering Spruce Creek, Rogers Park provides walking trails for hikers and dog walkers. It is maintained by the Kittery Conservation Commission.

Recreation Fields. The town maintains six recreation field areas, covering 19.15 acres, providing opportunities for residents of all ages to engage in many different sports. The fields are located throughout the town and include:

- **Emery Field (5.75 acres/3.1 acres of fields).** This multi-use property located on Cole Street adjacent to the former Kittery Community Center includes a basketball court and a multi-use field. The town recently received a grant to refurbish the perimeter walking path at this field.

²² For more information about the history of this site, refer to the *Historic and Cultural Resources* chapter of this inventory.

- **Kittery Community Center at Frisbee Common (1.5 acres of fields).** Located on Rogers Road, Frisbee Common contains facilities for baseball, soccer and softball, and is heavily used by schools for intermural programs.
- **Haley Field (3.2 acres of fields).** Located on Litchfield Road less than one mile from the Shapleigh School, Haley Field contains soccer fields and a small parking area.
- **Memorial, Tobey and Dewolf Field Complex (5.25 acres/4.7 acres of fields).** This active recreation site is located on the Old Post Road, and provides space for football, baseball and youth baseball (on a small separate field), and contains the Tobey Memorial Field House. It is used by the High School, Little League and Babe Ruth Baseball League.
- **Shapleigh Middle School Fields (5.9 acres of fields).** Located on Stephenson Road in the western part of Kittery, Shapleigh Field is used by the Shapleigh School, Kittery Recreation Department, Traip Academy, Little League, and Kittery residents for high school athletics (track and field, soccer, field hockey, women's softball), t-ball and Little League practices. The track and field facilities were recently reconstructed.
- **Mitchell Field (5.9 acres/.75 acre fields).** Located on School Lane adjacent to the former First Baptist Church and cemetery, the field is part of the Horace Mitchell Primary School.

Recreational Areas. In addition to the recreational fields, the Town of Kittery maintains three recreational areas containing playgrounds and other non-field amenities:

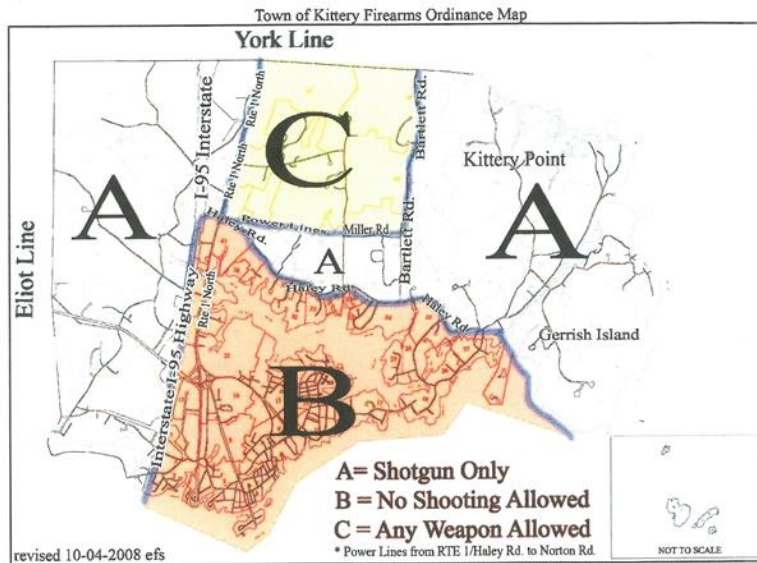
- **Frisbee School (Kittery Community Center) Recreational Area (.50 acre).** This recreational area is located adjacent to the Kittery Community Center. Amenities include a playground with swings, a jungle-gym, and merry-go-rounds.
- **Shapleigh School Recreational Area (.25 acre).** Located adjacent to the Shapleigh School on Manson Road, this area contains two outdoor basketball courts, used primarily by students of the Shapleigh School.
- **Mitchell School Recreational Area (1 acre).** Located adjacent to the Mitchell School in Kittery Point, this area contains swings, a climber, a slide and a basketball court, as well as a small multi-purpose field, used primarily by students at the Mitchell School.

Passive Recreation Sites (Parks). Kittery's passive recreation sites provide quiet spots for visitors to stroll, rest on benches, and relax on the lawns. They do not contain recreational equipment, and most were built in memory of a person or persons.

- **Howells Park (.25 acre).** This small green space lies adjacent to the home owned by William Dean Howells, on Pepperrell Road in Kittery Point. The park features a broad lawn surrounded by shade trees and moveable seating.
- **Rudolf Park (.25 acre).** Located off Rogers Road and Lutts Avenue, this small passive park is maintained by the Conservation Commission.
- **Williams Avenue Park (.25 acre).** Also maintained by the Conservation Commission, this passive recreation site is located off Williams Avenue.

Water Access Areas.²³

- **Town Wharf (Frisbee's Wharf), Pepperrell Cove.** Located on 0.4 acres in Kittery Point, this town-owned facility consists of



The Town of Kittery Firearms Ordinance Map shows the area where hunting is not permitted.

two piers and floats, a one-ton hoist, gas, diesel and water, as well as 32 parking spaces. The Kittery Port Authority maintains the facility.

- **Town Wharf, Government Street.** Also maintained by the Kittery Port Authority, this 0.1 acre site located in Kittery Foreside contains a pier and hoist.

- **Traip Academy Boat Launch, Williams Avenue.** This boat launch located adjacent to Traip Academy in Kittery Foreside provides four parking spaces, maintained by the Kittery Port Authority.
- **Old Ferry Landing.** This small town-owned property is located at the end of Old Ferry Lane on Bowen Road, and contains a small park, two parking spaces and ADA-compliant steps leading to the water.

Trails. Many miles of walking trails thread throughout the town on publicly-owned lands (both Federal and State):

- Town Farm
- Rogers Park
- Fort Foster
- Braveboat Headwaters/Mount Agimenticus
- Gerrish Island
- Abandoned trolley tracks
- Fort McClary (federally-owned)
- Rachel Carson National Wildlife Refuge (federally-owned)

Hunting. Hunting is permitted throughout all months of the year in approximately 2/3 of the town. Sportsmen and women cannot hunt in area to the south of Interstate 95 and west of Haley Road (area “B” on the graphic below), and the town ordinance governing firearms states the persons found in the “no shooting” area carrying a loaded firearm (loaded with either blank or live ammunition) will be punished by fine.²⁴

²³ For more information about marine resources in Kittery, including moorings, refer to the *Marine Resources* chapter of this inventory.

²⁴ Section 9.04.020 of the Kittery Town Ordinance, Kittery Firearms-Unlawful Discharge.

PRIVATE RECREATION FACILITIES

Badger's Island Marina/Badger's Island Marina East. Located on the Piscataqua between Kittery and Portsmouth, this private marina offers deep water power and sailboat slips (25 to 125 feet), electrical hook-ups, cable, water, pump out, bathroom and shower facilities, as well as parking. The marina also services and stores boats. Other private recreation facilities include the **Kittery Point Yacht Yard** and **Take Flight Adventures**, a ropes course located on Route 1.

EFFORTS TO PLAN FOR RECREATION NEEDS

Kittery Comprehensive Plan, 1999 (adopted in 2002). The 1999/2002 Comprehensive Plan noted that town facilities for active recreation use were below benchmark standards for tennis, baseball and soccer fields. The greatest need seen by the community was for more soccer fields. The plan also pointed out the need to provide better information about Kittery's trail system, and to improve the community center (an effort completed in 2011).

Town of Kittery Fort Foster Park 5-year Management Plan 2004-2008. In 2004, the Kittery Parks Commission completed this plan to steer management of the fort over a five-year period. The commission updated the plan multiple times between 2004 and 2008. Goals of the plan included upgrading public amenities, but also monitoring uses and evaluating user fees, and engaging in historic preservation of the fortifications. Capital improvements, identified through the planning process, included:

- Building an ADA-compliant restroom and a changing room

- Replacing pier decking and railing
- Replacing the leach field of accessed by the Town Pavilion bathroom
- Upgrading playground equipment
- Installing dog-waste collection bag dispensers
- Installing interpretive signs
- Installing a water level control structure for the marsh
- Raising the Tower Pavilion Road; replacing the culvert
- Relocating memorial benches
- Controlling erosion along the shoreline.

Town of Kittery Seapoint and Crescent Beaches 5-Year

Management Plan 2007-2011. In 2007, the Kittery Parks Commission produced this plan to anticipate improvements and guide future management of the beaches. Recommendations included:

- Maintaining roads and culverts leading to the beaches in a manner that does not disrupt the area's natural resources.
- Upgrading the parking area with a landscape plan
- Instituting continuous police monitoring to discourage in-season use by non-permit holders and prohibiting parking of buses and large vans
- Streamlining the number of signs at the parking areas and on roads near the beach to reduce visual clutter

Town of Kittery Master for Athletic Fields Plan (2015). In 2015, the town completed a comprehensive plan that analyzed existing field conditions and made recommendations for improving the athletic fields system. Recommendations were shaped, in part, through a series of informational meetings with user groups and key stakeholders. Needs identified through the planning process were:

- More playing venues to accommodate the type of uses
- Fewer overlapping/multi-use fields
- Opportunities to rest fields (periodically take them off-line)
- Greater access to facilities
- Improved ancillary facilities (irrigation, lighting, etc.)
- Lighting to expand hours of use
- Greater funding for field maintenance and improvements
- Increased staff to maintain fields
- New capital funding for improvements

The plan's recommendations included:

- Adopting a "Field Use Policy" that places controls over the use of the fields
- Looking for opportunities to create new playing venues
- Setting aside funds to renovate existing facilities as new venues come on-line
- Aggressively pursuing traditional state and federal funding sources, in order to reduce the financial burden on residents to fully support field upkeep and improvement

Maine State Comprehensive Outdoor Recreation Plan (SCORP) (2014-2019). Every five years, the Maine Bureau of Parks and Lands updates its comprehensive outdoor recreation plan. For many years, this plan listed adequacy benchmarks standards for recreation facilities. The last two iterations of this plan did not include these standards. The 1999/2002 Comprehensive Plan noted that while Kittery exceeded the state-recommended standard for total municipally-own recreation acres, it was lacking in the area of numbers of baseball fields, soccer fields, tennis courts and boat ramps. The 2014 *Kittery Athletic Facilities Master Plan* proposed measures to improve the number of fields.

Another means of measuring the adequacy of recreation facilities in Kittery are the national averages published by the National Recreation and Parks Association (NRPA). The 2016 Field Report listed an average of one park for every 2,277 residents and 9.5 acres of parkland for every thousand residents. Kittery's recreation offerings for its 4,562 residents (2010 census) Exceeds both of these national averages.

IDENTIFICATION OF PRELIMINARY RECREATION ISSUES, OPPORTUNITIES, AND CHALLENGES

The following is a preliminary list of issues, challenges and opportunities posed by the finding of the inventory of existing conditions of Kittery's recreation resources:

- Limited staffing at Fort Foster make maintenance a challenge. Maintenance tasks range from housekeeping (including bathroom cleaning), lawn mowing and controlling youths who congregate after hours.
- Dog walkers do not always pick up waste, even though disposal bags are supplied throughout many of the parks and recreation sites. At Rogers Park, horseback riders leave horse waste.
- Geese congregate on the athletic fields and leave waste, creating a potential public health problem. Continual treatment with organic deterrents will be needed into the future.
- The one soccer field in Kittery is in very high demand.

- Overall, the fields in Kittery are over utilized, and the town does not maintain practice fields. Maintenance (including mowing, aerating, and fertilizing) is complicated by the over use.
- Due to increased security at the Shipyard since 9/11, the general public is not permitted to utilize the athletic facilities on the base. This reduces the number of overall recreation offerings in the town.
- The existing network of trails in Kittery is not well-publicized, and many of the trails do not connect. Opportunity exists to create a well-documented trail system that runs continuously throughout the town. Conversion of the old trolley bed to a recreational trail could be included in this effort.
- The existing firearms ordinance permits hunting in some residential neighborhoods.

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Karen Young, Mount Agamenticus to the Sea Conservation Initiative
Kittery Open Space Advisory Committee
Norman Albert, Department of Public Works
Janice Grady, Kittery Community Center
Rex Turner, Main Bureau of Parks and Lands
Gary Best, Main State Parks and Historic Sites
Glenn Dochtermann, Maine State Parks and Historic Sites

POPULATION AND DEMOGRAPHICS

3

POPULATION AND DEMOGRAPHICS

This chapter includes a snapshot of Kittery's current population and demographic profile, as well as comparisons with York County and the State of Maine. Population and demographic data summarized in this chapter include population change, population by age, race and ethnicity, education attainment, geographic mobility, and information about households.

Summary of Key Points

- Total population for Kittery has been declining since 1970, and that trend is projected to continue through the year 2032.
- Kittery is an aging community. Between 2000 and 2014, residents age 55 to 64 increased by 65 percent.
- The racial and ethnic composition of Kittery closely resembles that of York County, with a majority of residents identifying as White, non-Hispanic.
- The educational attainment of Kittery residents is slightly higher than that of York County.
- The number of family households in Kittery with children under the age of eighteen has declined since 2000.
- Between 2000 and 2014, average household size shrank from 2.29 persons per household to 2.16 persons per household.



Whaleback Lighthouse. Source: <http://www.flickrriver.com/photos/nelights/3925199200/>



Kittery Coast. Source: www.theatlantic.com

POPULATION CHANGE

Kittery was settled in the early 1600s, and since then its population has had several waves of in- and out-migration. Most notably, between 1900 and 1970 the Town's population increased four-fold from 2,872 to 11,028. The population of Kittery peaked at 11,028 in 1970 and has decreased 14 percent to 9,490 as of the 2010 Censusⁱ. This differs quite a bit from the population change for York County and Maine as a whole, which grew by 77 percent and 34 percent, respectively.

According to the State of Maine Data Center, Kittery's population is projected to continue to decrease by about 6 percent between 2014 and the 2032ⁱⁱ. These projections are consistent with what is anticipated to occur at the county and state level as well. York County's population is expected to decline by 0.4 percent, while the State's population is expected to decline by 2 percent over the same time period. Table 3.1 shows population change over time and compares Kittery to the county and state.

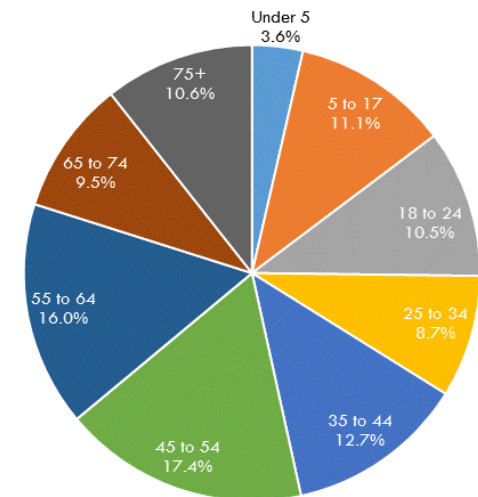
POPULATION BY AGE

Kittery's population is growing older. Between 2000 and 2014, Kittery residents in the 55 to 64 age cohort increased by 65 percentⁱⁱⁱ. During that same time period, residents over the age of 75 increased by 45 percent. The Baby Boomer phenomenon seen in Kittery is similar to what is occurring in many New England communities. As younger residents exit the higher education system, it is becoming increasingly difficult to find affordable housing options as well as jobs in parts of Maine.

Table 3.1: Total Population

US Decennial Census 1970-2010, 2010-2014 ACS, State of Maine Projections	Kittery	York County	Maine
TOTAL POPULATION			
1970	11,028	111,576	992,048
1980	9,314	139,666	1,124,660
1990	9,372	164,587	1,227,928
2000	9,543	186,742	1,274,923
2010	9,490	197,131	1,328,361
Percent Change (1970-2010)	-14%	77%	34%
2014 Estimate	9,649	200,710	1,330,089
2022 Projected	9,393	201,229	1,324,705
2032 Projected	9,069	199,933	1,300,166
Projected Percent Change (2014-2032)	-6%	-0.4%	-2%

Figure 3.1: Kittery's Population by Age
Source: ACS 2010-2014 Estimate



Younger workers are leaving the area to pursue jobs in other locations around the country. To that point, Kittery has seen the number of residents age 25 to 34 and 35 to 44 decline by 37 percent and 25 percent, respectively. The number of young children has also declined with the population of residents under the age of 5 declining by 40 percent. Interestingly, this has not had a major impact on school enrollment. Fluctuations in enrollment are driven primarily by military families living in Kittery who work at the Shipyard.

One interesting notation in the data is the 42 percent increase from 2000 to 2014 in the age cohort of residents 18 to 24. This could be the results of a large cohort of young families with children who were living in Kittery in 2000 and have aged in place since, resulting in a large bump in the 18 to 24 year olds fourteen years later. It could also be the result of places like Portsmouth becoming too expensive and forcing younger workers and college age students to seek a slightly more affordable housing option.

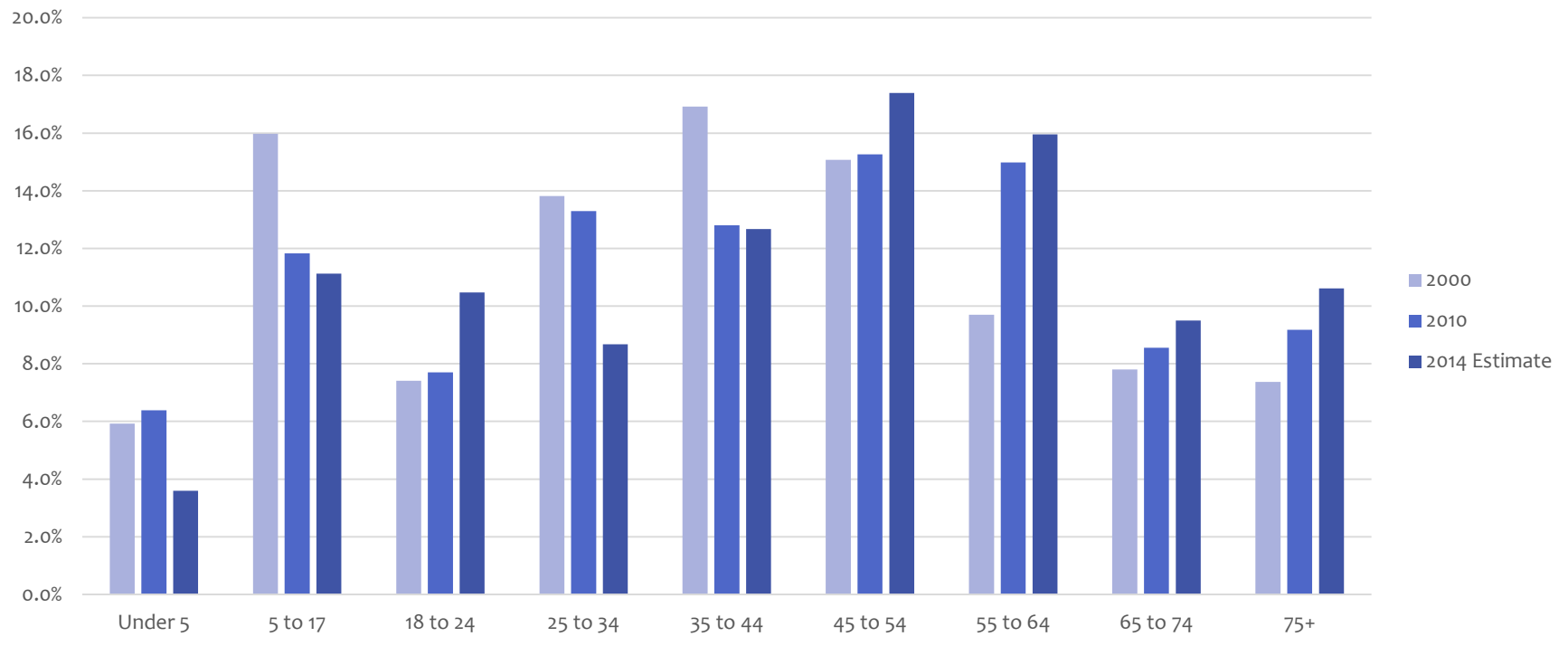
Table 3.2: School Enrollment by Year

Year	Enrollment	% Change
2000-01	1244	
2001-02	1240	-0.32
2002-03	1193	-3.79
2003-04	1167	-2.18
2004-05	1120	-4.03
2005-06	1082	-3.39
2006-07	1077	-0.046
2007-08	1048	-2.69
2008-09	1001	-4.48
2009-10	971	-3
2010-2011	1014	4.43
2011-12	1013	-0.1
2012-13	1082	6.81
2013-14	1082	0
2014-15	1084	0.18
2015-16	1063	-1.94

Source: Kittery School District

Figure 3.2:
Population by Age

Population By Age 2000-2014
Source: U.S. Census, ACS 2010-2014 Estimates



RACE AND ETHNICITY

Kittery has limited racial and ethnic diversity, which is consistent with the population composition of York County as a whole. According to the U.S. Census Bureau, Kittery's population in 2014 was 96.6 percent White. The Asian population in Kittery was the second largest group comprising 2.2 percent of the total population. Black or African American and American Indian and Alaska Native made up the other 1.2 percent of the population. Table 3.2 shows the change in racial and ethnic composition of Kittery and York County between 2000 and 2014^{iv}.

EDUCATIONAL ATTAINMENT

Since 2000, the educational attainment of Kittery residents increased for those with an Associate degree or higher. Over the fourteen-year period between Census responses, the number of residents over the age of 25 with a Bachelor's degree increased by about 21.5 percent. The percent of residents with an Associate degree also increased by 38.7 percent^v. The percentage of residents with a high school degree or less declined over the fourteen-year period. Kittery performed better than York County as a whole for educational attainment, earning more Bachelor's degrees and have fewer residents earn less than a high school diploma.

Table 3.3: Race and Ethnicity

US Decennial Census 2000-2010, 2010-2014 ACS	Kittery			York County		
	2000	2010	2014 Est.	2000	2010	2014 Est.
RACE						
White alone	96.0%	95.8%	96.6%	97.6%	96.5%	96.2%
Black or African American alone	1.8%	0.9%	0.9%	0.4%	0.6%	0.7%
American Indian and Alaska Native alone	0.2%	0.1%	0.3%	0.2%	0.3%	0.3%
Asian alone	0.6%	1.1%	2.2%	0.7%	1.1%	1.1%
Native Hawaiian and Other Pacific Islander alone	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Some other race alone	0.5%	0.5%	0.0%	0.2%	0.2%	0.2%
Two or more races:	0.9%	1.5%	0.0%	0.8%	1.4%	1.5%
TOTAL	100%	100%	100%	100%	100%	100%

GEOGRAPHIC MOBILITY

The current population in Kittery is very stable, with over 86 percent of residents living in the same home they did a year ago^{vi}. This is fairly typical for a smaller size town without a college or university. High rates of transiency are more frequent in larger cities and municipalities with colleges and universities. About 10 percent of residents in Kittery moved from another state within the last year, and those residents had a median age of 31. This is unexpected given that the age cohort 25 to 34 has been consistently shrinking in Kittery over the last 14 years. Another interesting data point is the median age of those who moved to Kittery from abroad in the past year. Between 2010-2014, an estimated thirty-eight people moved to Kittery from abroad. The median age of those coming from another country to live in Kittery was 72. This shows the popularity of the Maine coast as a location for retirees, and speaks to the future demand for housing and services to meet the needs of an aging resident population.

Kittery also appears to have an increasing market of seasonal housing supporting short-term residents and tourists. Between 2000 and 2014, the number of seasonal homes grew by 188 percent (150 to an estimated 432)^{vii}. Not only are people coming to Kittery from other places to live, the Town also supports a growing tourism draw and possibly a market for vacation homes as well.

HOUSEHOLDS AND FAMILIES

A household is defined as one or more people living in the same housing unit. The U.S. Census divides households into two groups: families and non-family households. A family household is where two or more people living together are related by blood, marriage, or adoption. A non-family household includes all other types of households, including single people living alone. It is

worth noting that the Census Bureau report all same-sex couples as non-family households regardless of their marital status under state law.

According to Census data, the number of family households in Kittery has slowly declined between 2000 and 2014. The Town has seen about a 4 percent decline over the fourteen-year period^{viii}. In 2000, nearly two-thirds of all households were family households. That number has now declined to 58 percent as of the 2014 estimates. This pattern matches what is occurring at the county-level as well, with about a 3 percent decline in family households over the same time period.

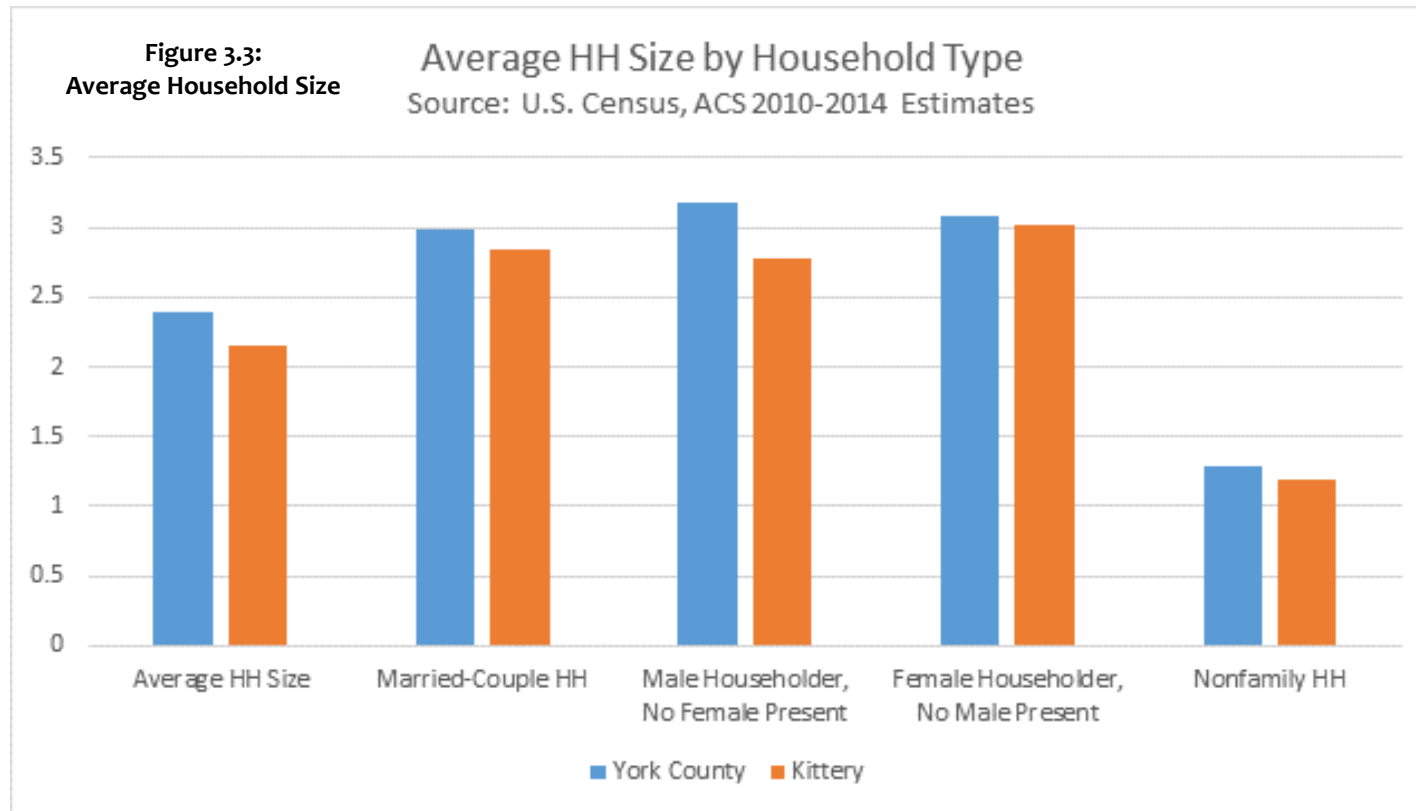
Within the family household category, married couple households are still dominant making up 75 percent of family households in Kittery. That number is slightly higher, 78 percent, for York County. Kittery has a higher percentage of female (no male present) households compared to male (no female present) households. In 2014, the Census estimated only 16 percent of households in Kittery had a child under the age of eighteen. This is

down from 28.6 percent in 2000. At the county level, households with children are down about 8 percent over that same time period.

The average size of households in Kittery has also declined between 2000 and 2014, shrinking from 2.29 persons per household to an estimated 2.16 persons per household^{ix}. This is common across many parts of New England as people are having

fewer children, younger people are waiting longer to marry, and older residents are living longer as a single- or two-person household. This is also consistent with the growing age cohorts of residents ages fifty-five and older.

The large older single household population that faces many communities now and in the coming decade will be a significant challenge for housing, healthcare, and social services.



HOUSEHOLD INCOME AND POVERTY

Since 2000, the median household income in Kittery has grown from \$45,067 to \$60,205 in 2014^x. This represents a 34 percent increase in the median. By comparison, the median household income of York County increased by 31 percent over the same time period. In Kittery, the largest number of households fall within the income range of \$50,000 to \$74,999, at 22 percent. That is followed closely by households earning between \$35,000 and \$49,999 (19 percent).

Kittery's poverty rates are much lower than York County, which actually increased between 2010 and 2014 according to Census estimates. The percentage of individuals in poverty in Kittery dropped from 8.5 percent in 2010 to 5.7 percent in 2014. In York County, the poverty rate increased by 2 percent (8.5 to 10.6) over the same time period. Kittery has one of the lowest poverty rates of any municipality in the county.

IDENTIFICATION OF PRELIMINARY ISSUES, CHALLENGES AND OPPORTUNITIES

The following is a preliminary list of issues, challenges and opportunities posed by the findings of the inventory of existing conditions of Kittery's population and demographics. Please note that these are subject to change with the preparation of goals and objectives, not yet drafted (at the time the inventory was prepared).

ISSUES AND CHALLENGES

The population in Kittery is getting older and household size is shrinking. This has an impact on the types of housing needed in the community, and the types of services that are sought by older residents. The aging population in Kittery could create some issues for the Town, which may include:

- The need for smaller and more accessible housing units.
- The need for transportation options that do not rely on a personal vehicle.
- The need for expanded senior services.
- The ability to attract younger workers to Kittery to backfill jobs vacated by retirees.
- The continued aging of the population could impact school enrollment, which in turn will shape the curriculum opportunities Kittery can offer its children.

While Kittery's median household income has increased since 2000, the aging demographic could mean more residents on a fixed income as older workers retire. This may have an impact on local spending and local business if younger residents and families

are not attracted to Kittery. This could also have an impact on housing due to the rising housing costs for both renters and owners in Kittery. If younger workers are looking for more affordable housing options in Kittery in support living and working in the same community, the Town must consider a diversity of housing options across Kittery. The same can be said for senior households on a fixed income. This group will also need more affordable housing options, particularly ones that integrate universal accessibility.

The percentage of families in Kittery with children under the age of 18 has declined since 2000. School enrollment has also declined based on records back as far as 1985. As the number of school age children continues to decline, the Town may need to evaluate school programming, staffing, and space.

As the population of Kittery continues to age, there will be a growing need for more services oriented toward seniors. This includes programming, social services, and transportation. Currently, the Town does not have a Council on Aging program which typically acts as the programming and social service center for seniors in a community. In the future, there may be a need for dedicated Town staff to work directly with the aging population.

OPPORTUNITIES

While Kittery's overall population is both shrinking and changing demographically, household median income is on the rise. This bodes well for housing stability and additional expendable income for supporting local businesses. The mobility of Kittery's population is relatively stable, with more than 86 percent of households residing in the same place they lived a year ago. This helps with neighborhood development, homeowner investment, and social cohesion across the community. Finally, household size is shrinking in Kittery which can certainly be a challenge in some regards but an opportunity for others. The Town should consider ways in which it can promote services and housing options that are attractive to both younger and older single householders.

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ⁱ NH GIS, Table 0005

ⁱⁱ Maine Data Center Projections

<http://www.maine.gov/economist/projections/index.shtml>

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^{iv} U.S. Bureau of the Census, 2000 Census, Summary File 1, Table QTP3. U.S. Bureau of the Census, 2010, Summary File 1, Table QTP3. U.S. Bureau of the Census, American Community Survey, 2010-2014, Table B03002.

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ECONOMY

4

ECONOMY

The economic chapter provides an overview of economic and labor conditions in Kittery. This chapter will help give definition to what makes Kittery an attractive location for economic investment, characterize the labor force and job market, and discuss the areas designated as economic development centers within town.

Summary of Key Points

- Kittery has a unique mix of business types and economic development areas that support a relatively large labor force for the size of the town.
- Manufacturing and retail industries are primary employers in Kittery, but the majority of Kittery residents are employed by businesses in the healthcare, professional services, and retail sectors.
- The healthcare sector is increasing both the number of employers and employees in Kittery.
- The Naval Shipyard brings in over 5,000 workers per day to Kittery.
- The unemployment rate in Kittery, York County, and Maine has been decreasing over the last five years to a low of 3 percent at the state and county level.
- The Town has five primary economic development areas where commercial and industrial development is encouraged and supported.
- The Town has designated three Tax Increment Financing Districts, primarily along the Route 1 Corridor.



OVERVIEW

A city or town's economy is often guided by its location within a region, the types of industries and commercial entities it is able to attract, the education and skill sets of its working-age population, and by the land use decisions guided by the community. The role of the economic region is tremendous. The region is defined by its employers, employees, trade area, and transportation characteristics. The boundaries of the economic region are typically defined by the population, land use patterns, utilities, and transportation systems that help to move goods and people. For statistical purposes, Kittery is part of the Portsmouth, NH New England City and Town (NECTA) Division. This area is centered on Portsmouth, NH with close employment ties to the city and the development along Route 1 and Interstate 95.

Kittery is an interesting mix of a bedroom community on one hand and an economic center for southern Maine on the other. Economic development is associated with the benefits of job creation, expanding a community's tax base, improving public services and daily shopping needs for residents, strengthening the jobs base, and enhancing the value of commercial property. In Kittery, the development of commercial land will mean added tax base without the same public service demands that come with residential development and additional job opportunities for local residents. Kittery has several locations in town where commercial land is awaiting development. Utilities have been extended, zoning is in place, and the transportation network is easily accessible, all that is needed is the right fit for the space. The Town has already set up several tax increment financing districts to help with the betterments needed to improve the

areas in order to ready them for private investment. The Town's location along Route 1 and Interstate 95, its proximity to the Portsmouth market, and the navy Shipyard are all attractive elements for economic development activity.

EXISTING CONDITIONS

This section discusses the characteristics of Kittery's labor force and that of the region. This section will cover labor force characteristics, occupations, industries, and employment statistics.

LABOR FORCE

Kittery's labor force includes all residents over the age of 16, employed or actively seeking employment. Kittery's labor force is comprised of 5,624 people, which equals a 68 percent labor force participation rateⁱ. This is higher than the State and County's labor force participation rate of 64 and 67 percent, respectively. Not surprisingly, Kittery has a high percentage of the labor force employed through the armed forces, at 3 percent of the total. As a point of comparison, the state and county totals are both 0.2 percent. The presence of the Naval Shipyard plays a significant role in not only Kittery's employment, but the employment of the region. Table 4.1 summarizes Kittery's labor force for the year 2014.

OCCUPATIONS

The Kittery labor force is well distributed across a number of industry sectors and occupations. The largest occupation sector is educational services, healthcare and social assistance. This is not surprising given the educational facilities and healthcare centers within and around Kittery. Another large occupational sector is the professional, scientific, management, and administrative services sector, which is likely driven by the presence of the Naval Shipyard and surrounding industries. Finally, 14 percent of the labor force falls within the retail trade occupational sector. The Route 1 outlets and other satellite retail shops drive a large number of hourly wage jobs in Kittery. These retail centers provide regional shopping opportunities for many communities across Maine looking for one-stop shopping. Table 4.2 provides information on the occupations Kittery residents are employed in.

Table 4.1: Labor Force
American Community Survey 2010-2014

LABOR FORCE COMPOSITION	Estimate	Percent of Total Population
TOTAL POPULATION	9,649	100.0%
Population over 16	8,245	85.4%
In Labor Force	5,624	58.3%
Civilian Labor Force	5,374	55.7%
Employed	5,064	52.5%
Unemployed	310	3.2%
Armed Forces	250	2.6%
Not in Labor Force	2,621	27.2%

Table 4.2: Employed Civilian Labor Force by Occupation

American Community Survey 2010-2014

LABOR FORCE OCCUPATIONS	Estimate	Percent of
		Total
Agriculture, forestry, fishing and hunting, and mining:	22	0.4%
Construction	341	6.7%
Manufacturing	482	9.5%
Wholesale trade	199	3.9%
Retail trade	709	14.0%
Transportation and warehousing, and utilities:	185	3.7%
Information	66	1.3%
Finance and insurance, and real estate and rental and leasing:	185	3.7%
Professional, scientific, and management, and administrative and waste management services:	860	17.0%
Education Services	377	7.4%
Health care and social services	735	14.5%
Arts, entertainment, and recreation, and accommodation and food services:	469	9.3%
Other services, except public administration	111	2.2%
Public administration	323	6.4%
TOTAL	5,064	100.0%

UNEMPLOYMENT RATE

Unemployment is down significantly across the State of Maine from a high of 8.3 percent in July 2009. The latest figures from the Center for Workforce Research and Information has the State's unemployment rate at 4 percent as of December 2015. York County had an unemployment rate of just 3.5 percent in December 2015. The most recent unemployment figures for

Kittery (2014 estimates) from the Census showed an unemployment rate of 5.8 percent. Given the declining numbers at the state and county level, it is likely that Kittery's unemployment has also declined below 5 percent.

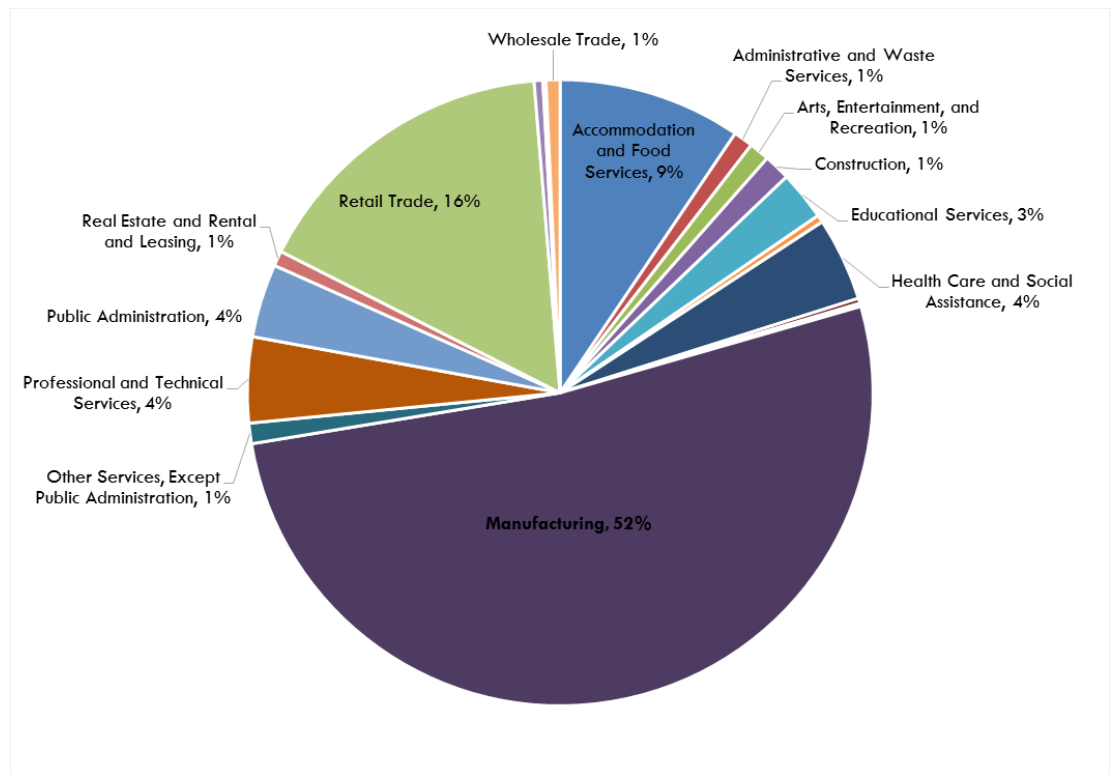
EMPLOYMENT BASE

The employment base across industry sectors in Kittery is centered on six primary sectors: manufacturing, professional services, public administration, retail trade, food services, educational services, and health care. The manufacturing sector, not surprisingly, comprises 52 percent of Kittery's employment base in town. The Naval Shipyard makes up the largest component with just over five thousand employees as of the third quarter of 2015ⁱⁱ. The retail trade sector is the next largest, at 16 percent of the total, which is comprised of much of the Route 1 retail outlets and shops. Employment in the businesses that make up Kittery's retail trade sector has fluctuated quite a bit since mid-2012. Total employment within the sector was 1,752 in 2012 and has slowly declined to 1,657 by mid-2015. Some of the fluctuation may be the result of outlets shops and stores going in and out of business from quarter to quarter over the three-year period.

Two sectors in Kittery that have seen significant growth over the last five years are the manufacturing and health care industries. The resurgence of the Shipyard has helped bring in high-skilled manufacturing jobs to Kittery, growing by 34 percent from 2001-2015. The health care sector has grown by 136 percent over the same period of

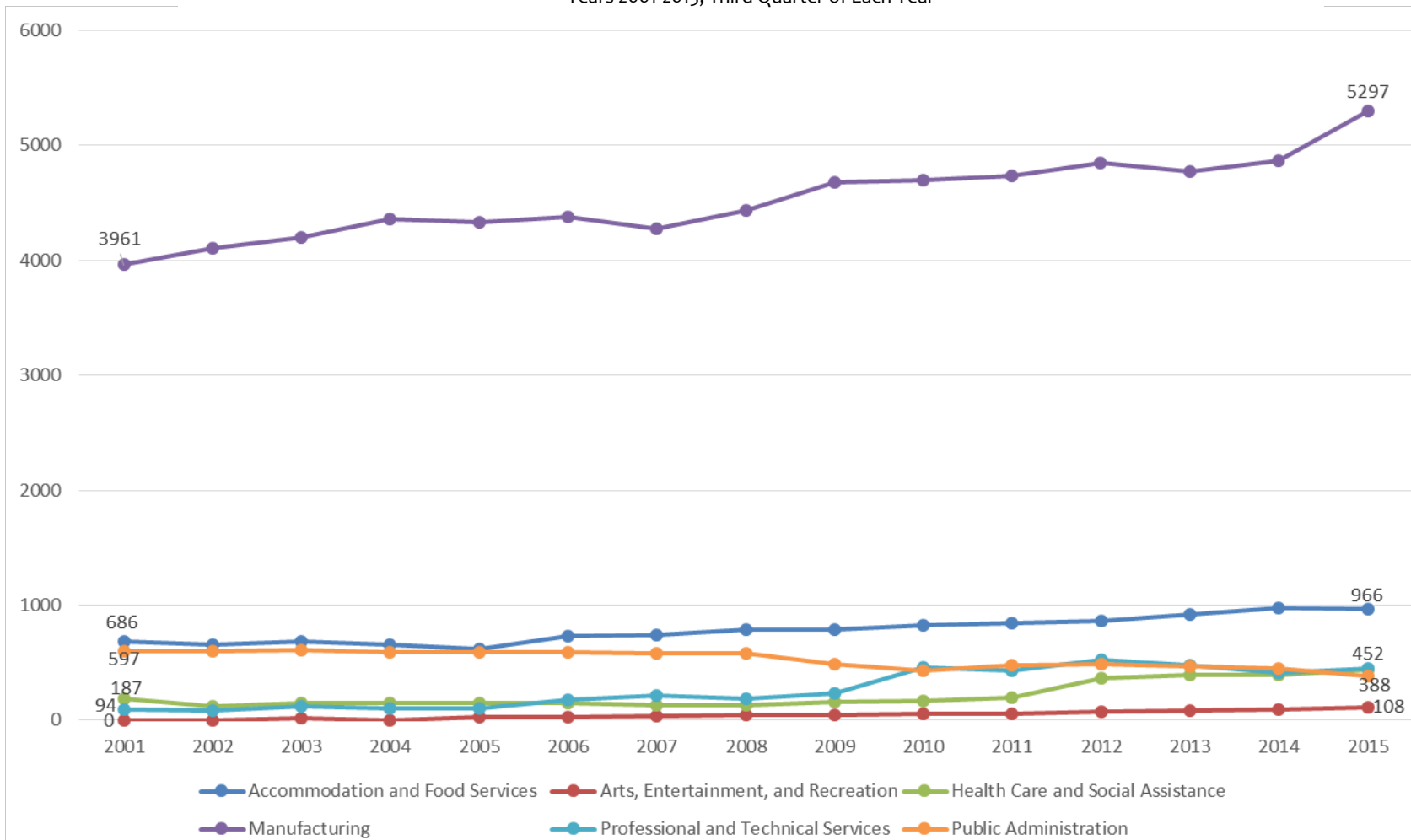
time, adding 254 jobs in Kittery. The presence of five hospitals within a twenty-mile radius puts Kittery in a unique position to take advantage of its location for supportive industries and employers. Additional information on employment growth by industry sector can be seen in Figure 4.2.

Figure 4.1: Percentage of Employees by Industry Sector
Third Quarter, 2015



KITTERY COMPREHENSIVE PLAN EXISTING CONDITIONS INVENTORY

Figure 4.2: Number of Employees by Industry Sector Working in Kittery
Years 2001-2015, Third Quarter of Each Year



AVERAGE WAGES

The average weekly wage for an employee working in Kittery was \$920 as of the third quarter in 2015ⁱⁱⁱ. The 5,500 jobs under federal jurisdiction in Kittery have a significant impact on that weekly average as their employees are paid at a higher rate than those in private sector jobs within the same industry sector. For example, jobs in the federal healthcare industry sector located in Kittery were paid an average of \$1,558 per week while private sector healthcare workers were paid an average of \$784 a week. The same can be seen with federal manufacturing jobs in Kittery which paid an average of \$1,609 per week, with private sector manufacturing jobs earning an average of \$860 per week.

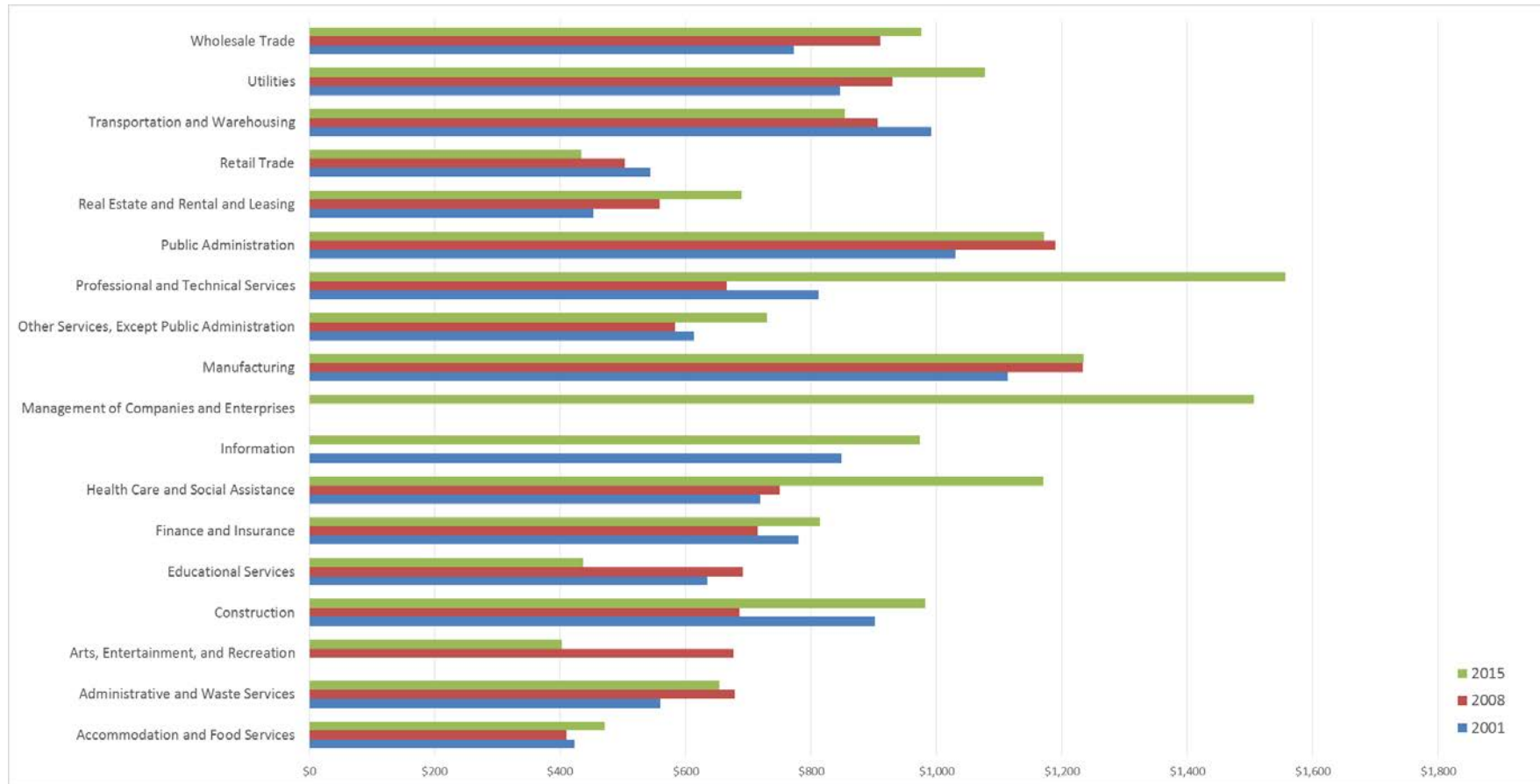
Having the Shipyard as an employment center in Kittery provides higher paying civilian manufacturing jobs to the entire region. Although not all jobs are filled by Kittery workers, the Shipyard does have spin-off effects of supporting local retail and service sector businesses, supporting the local real estate market, and the payment of taxes. Nevertheless, the employees working in the retail, food accommodations, and entertainment industries in Kittery are making far less on a weekly basis. The 2015 weekly wage data suggests that retail workers earn \$390 per week, food service workers earn \$471 per week, and those employed in the arts, entertainment, and recreation sector earn \$403 per week. After accounting for weekly deductions like income tax, social security, and insurance, a service sector worker may find it hard to pay for basic needs such as housing and transportation costs.

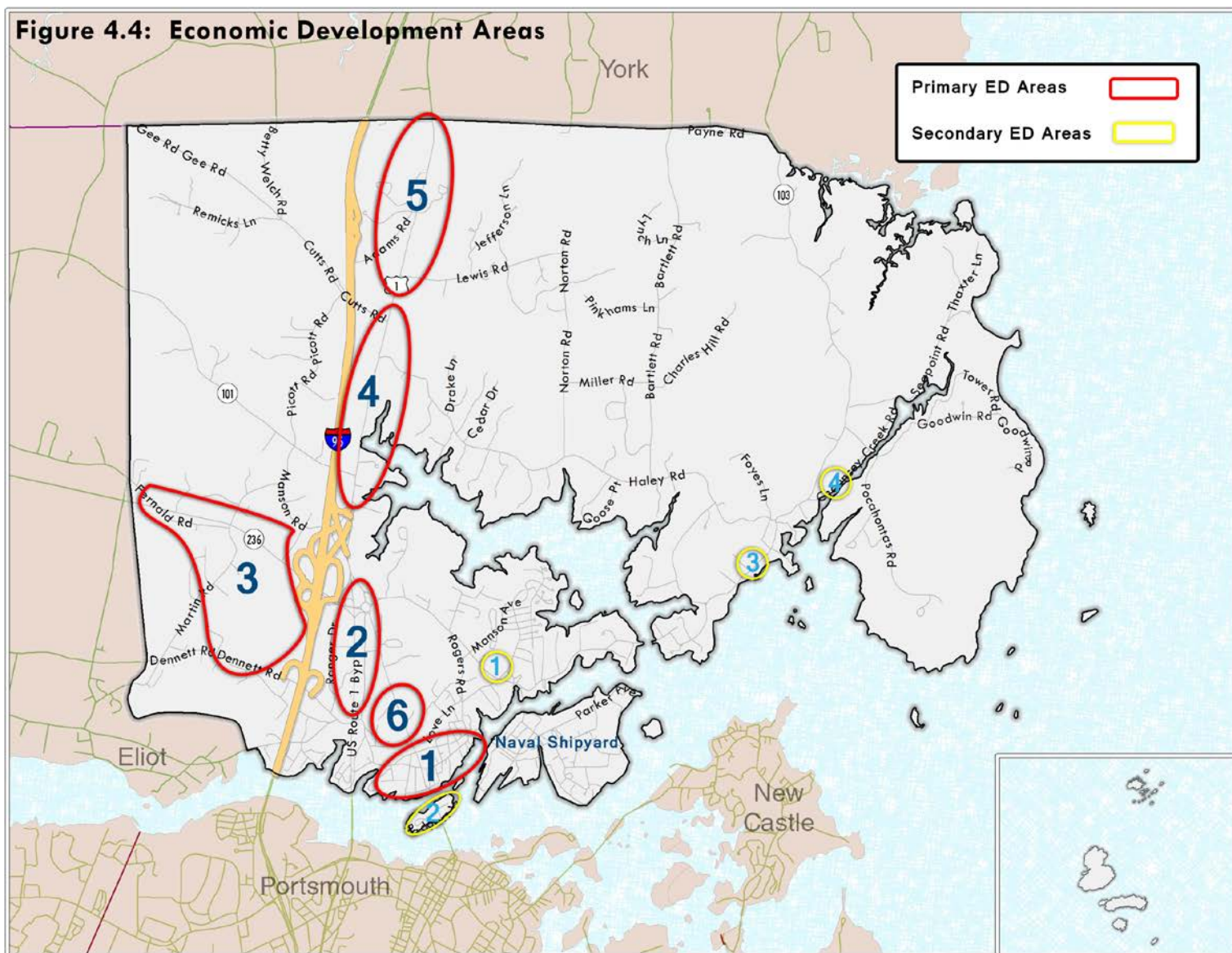
Looking at historical wage trends and adjusting for inflation, several employment sectors have actually had a decrease in wages between 2001 and 2015. Among them were workers in the retail sector, educational services, and transportation and warehousing. . Figure 4.3 compares the average weekly wage by industry sector in 2001, 2008, and 2015.

TAX BASE

The residential and commercial tax rate in Kittery was listed as \$15.52 for Fiscal Year 2015. Compared to other communities across the State, Kittery has one of the lower tax rates. As is discussed later in the Fiscal Capacity Chapter, Kittery's tax rate has been increasing year over year and will likely continue to do so because state aid has decreased and demand on local services has remained steady. The residential tax burden could be relieved to some degree by an increase in commercial development, which does not create the same level of demand on municipal services as residential development. Typically, single-family residential development contributes at a higher rate to school costs compared to commercial development, while multifamily development can demand a higher level of service from police and fire. It would likely take a number of new large commercial developments to impact the tax base in a meaningful way.

Figure 4.3: Average Weekly Wages by Industry Sector
Years 2001, 2008, and 2015, Third Quarter of Each Year



[illegible]

ECONOMIC DEVELOPMENT AREAS

Kittery has been very deliberate with trying to stimulate economic development in town by designating, through local zoning, several areas where commercial development is encouraged. The Town has six well-identified primary economic development areas where larger-scale concentrations of commercial and industrial uses are desired. The Town also has several secondary, smaller-scale, neighborhood commercial areas that serve local residents within walking distance to residential neighborhoods. The mix and scale of commercial and industrial users changes across each primary and secondary area. Some, like the Foreside area, contain a dense cluster of mixed-use and commercial development set within a walkable district. Others, like the Route 1 area, are auto-oriented with the intention of drawing patrons from a much wider geography than Kittery. To date, some areas have been more successful than others. This section will describe these areas and some of the opportunities and challenges they offer. Each of the six primary economic development areas and the four secondary areas are shown on the previous page in Figure 4.4.

AREA 1: DOWNTOWN/FORESIDE AREA

The Foreside is one of Kittery's more unique and interesting commercial areas with an eclectic mix of retail, restaurants, and daily service needs. The Foreside seamlessly integrates commercial space with residential buildings in a traditional development pattern reminiscent of pre-World War II compact

Figure 4.5: Primary Economic Development Area 1
Downtown/Foreside Area



land use planning. The area is easily accessible by car, walking, or biking on the narrow streets that naturally act as speed barriers and slow vehicles down as they navigate the Foreside. Proximity to the Shipyard is also an attractive quality of the Foreside, especially for locally-owned businesses that can rely on the daily influx of workers as patrons. Even though the Foreside is a relatively small geography compared to some of the other economic development areas, it is far more productive from a

taxes-per-acre standpoint than almost all of the other areas. This is discussed further in the Valuation vs. Tax Productivity Section later in this chapter.

In 2014, the Town conducted a process called “Foreside Forums” which brought together stakeholders to discuss the future of Foreside and key opportunities and concerns. Participants felt it was important to maintain the “organic growth” that had been occurring in Foreside, while protecting its character from the encroachment of Portsmouth. The group was concerned that pedestrian safety and inadequate parking need to be addressed, as well as the aesthetics of some of the buildings. It was also noted that the differences in business zoning districts in and around Foreside should be better aligned to allow commercial spillover into adjacent districts. Zoning regulations in adjacent business districts that are more restrictive than what is found in the Foreside Mixed-Use Zone can cannibalize opportunities in those adjacent districts. For example, in the adjacent B-L1 zone the minimum lot size is 20,000 square feet with a minimum lot area per dwelling unit of 8,000 square feet. In the Foreside Mixed Use zone, the minimum lot size is 5,000 square feet and only requires 5,000 square feet of lot area per dwelling unit.

Overall, the Foreside is a very successful example of a downtown economic development area that has created a local and regional draw. Focusing on the outcomes of the Foreside Forums will help the Town address several physical and regulatory barriers that could help open up even more opportunity for this area.

AREA 2: ROUTE 1 BYPASS AREA

The Route 1 Bypass area generally spans from Dennett Road to the south up, Rogers Road to the north, I-95 to the west, and Old Post Road to the east. The area is zoned Commercial 3 (C-3) and allows for the provision of general retail sales, services and business space to serve the community-wide and regional markets primarily oriented toward the automobile. The C-3

Figure 4.6: Primary Economic Development Area 2
Route 1 Bypass Area



District allows most of the typical retail establishments and professional offices, as well as hotels, conference centers, and restaurants. The District would also allow more industrial-type uses like a junk yard, boat yard, lumber yard, car and boat repair, etc.

Currently, this economic area has a mixture of businesses which includes a hardware store, several motels, a fitness center, automotive repair shop, a glass company, and the Kittery sewer disposal plant. This economic area is also supporting non-traditional business platforms like Blue Current Brewery, a business focused on the production of small batch Japanese sake.

Most of the buildings are single-use buildings located on their own large lot, which is stipulated in the zoning by requiring a 40,000 square foot lot minimum. The buildings are set back from the road with parking in the front. There are no sidewalks along the Route 1 Bypass roadway, so accessing the businesses by means other than an automobile is difficult and unsafe.

This area have been in flux with businesses that have come and gone over time. A few years ago, the Town decided to relocate the fire department to Gorge's Road right off the Route 1 Bypass. From a tax productivity view, the hotels and the sewer treatment plant are some of the higher assessed value properties in this economic area. It should be noted though that the treatment plant is tax exempt.

AREA 3: ROUTE 236/DENNETT ROAD AREA

The Route 236/Dennett Road economic area is a mixture of the commercially zoned land on either side of Route 236 (C-2 zone) and the area between Dennett Road and Route 236 that has been zoned Business Park (B-PK).

Figure 4.7: Primary Economic Development Area 3
Route 236/Dennett Road



Currently, a large majority of the land in this economic area is undeveloped, but recently had sanitary sewer lines extended through the Tax Increment Finance (TIF) District 3 initiative the

Town approved in 2010. Land along Route 236 has seen some small-scale commercial development with mostly single-use light industrial and commercial buildings. There are several machine shops and equipment repairs shops, a boat yard, a seafood wholesaler, small office buildings, and small residential enclaves located along Route 236.

The C-2 commercial zoning district that fronts either side of Route 236 is almost identical to the C-3 District discussed in the Route 1 Bypass area section. The allowable uses are nearly identical, as are the district standards and dimensional requirements. The district was established as an auto-oriented commercial area supportive of smaller single-use structures.

The B-PK zoning district was established to encourage a mix of uses on large tracts of land. Allowable uses include offices, retail sales, services, lodging, open space, light manufacturing, and housing. The intent of the district is to create an area where multiple uses can be mixed together and clustered to provide a more efficient use of land than might be obtained through traditional segregated zoning districts. While the intent of the district to encourage multiple uses is good, the zoning dimensions require very large lots (120,000 square foot minimum) and wide front, side, and rear setbacks. This would likely create a planned area with large lots, uses that are spread out and separated by parking, and buildings set far back from the roadway. Under the cluster development/land use code, the dimensional standards could be varied but allowable uses are more restricted.

AREA 4: ROUTE 1 OUTLET AREA

In addition to the Foreside, the Route 1 Outlet area is one of Kittery's oldest and most successful economic development areas. This economic area spans the length of Route 1 from Rogers Road north to Haley Road.

Figure 4.8: Primary Economic Development Area 4
Route 1 Outlet Area



The presence of the Outlets and supporting services has tremendous tax value and draws customers both locally and regionally to the shopping center. This creates the potential for spin-off benefits for other local business areas around Kittery by drawing people in from a regional catchment area.

This area is zoned Commercial 1 (C-1) and allows primarily a mix of retail, restaurants, offices, and hotels. Similar to the other commercially-zoned districts discussed earlier, the C-1 District has similar large lot single-use zoning standards supporting an auto-oriented development pattern. The current mix of uses along Route 1 today include the large retail outlet stores, several stand-alone restaurants, the Kittery Trading Post, and motels. Several parcels in the area have been designated as a TIF District (TIF 2).

Although this area continues to be successful and is a major tax producer for the Town, there is concern among residents and Town officials that regional competitors in Massachusetts are beginning to reduce the demand on the outlets in Kittery. In Massachusetts alone, several outlets have been developed which include Wrentham, Dedham, Somerville, and Lynnfield, all further cutting into the market draw in Kittery.

AREA 5: ROUTE 1 MIXED USE AREA

The final economic development area is the Route 1 Mixed Use area primarily defined as the land along Route 1 north of Haley Road to the York town line.

Figure 4.9: Primary Economic Development Area 5
Route 1 Mixed Use Area



This area is currently zoned Mixed-Use (MU) with a primary purpose of providing opportunities for a mix of office, service, and limited residential and retail development at a smaller scale than what is allowed in the traditional commercial zones. This zone is also intended to maintain the rural character of the area, but has manifested in the creation of low-density suburban-style residential subdivisions, single-use commercial buildings, and clusters of multifamily and elderly housing.

Although the purpose of the district is to encourage mixed use development along Route 1, the dimensional requirements are such that a small building would have to be constructed on a very large lot (200,000 square foot minimum). The minimum setbacks are also very large at 60 feet from the roadway. Height in the district is limited to forty feet, which for a mixed use building would only accommodate a maximum of three stories.

The intent of the district may be to create a rural feel while allowing for a mix of uses along this section of Route 1, but the zoning may be overly limiting what can financially be supported. With such large parcel requirements and minimum building footprint, a developer or property owner may not be able to make new economic development opportunities work financially. Even with the assistance of a TIF District along this stretch of Route 1, public assistance may not be enough to make development attractive.

AREA 6: GOURMET ALLEY

The “Gourmet Alley” economic development area is located along Route 1 between Walker Street and Village Green Drive.

Figure 4.10: Primary Economic Development Area 6
Gourmet Alley



This area has developed organically over time into a collection of eateries and food-related businesses. These include the Beach Pea, Golden Harvest, The Farm Bar & Grill, Carl's Meat Market, Terra Cotta Pasta, Byrne and Carlson Chocolatier, and Loco Coco's

Tacos. Other businesses in this area include Fair Tide, the Marshall Rental Center, an automotive service shop, and a bank.

York Hospital constructed a 10,000 square foot medical office building and walk-in care center at the southeast corner of Route 1 and Walker Street. This was a formally vacant site which now provides a showcase anchor for that corner of this economic development area. There is another substantial parcel of land along Route 1 behind the Fair Tide store that could also serve as a major catalytic development site in the future.

SECONDARY COMMERCIAL AREAS

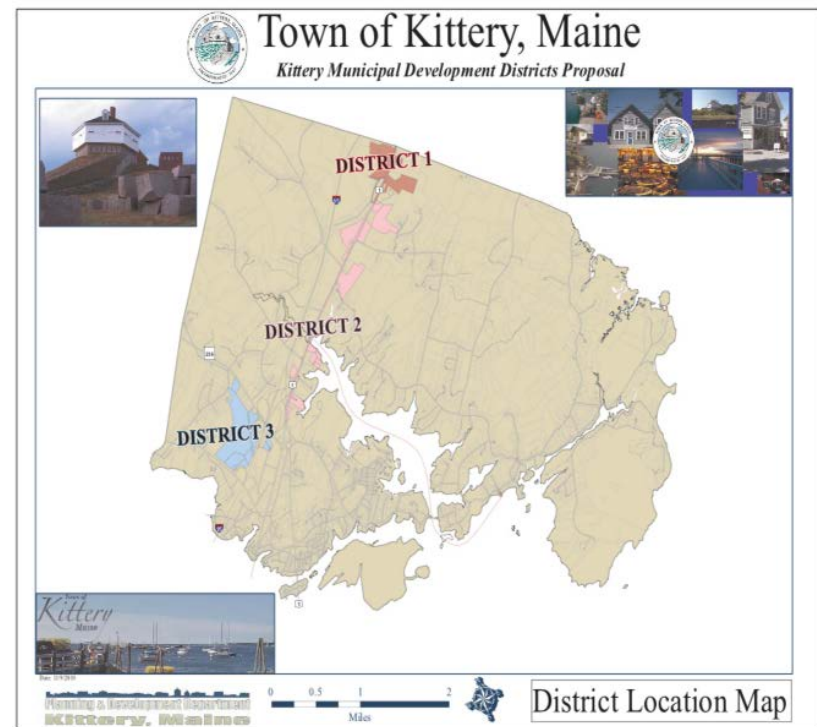
In addition to the six primary economic development areas in Kittery, there are several secondary “neighborhood serving” commercial areas as well. These smaller areas tend to be located close to or among residential neighborhoods providing localized services and civic uses. These include Badger’s Island, the commercial area along Pepperrell Road and the Horace Mitchell School, a small area along Chauncey Creek Road, and along Shapleigh Road between Mason Avenue and Whipple Road.

Of the four secondary areas, the Badger’s Island and Shapleigh Road areas are larger in size than the other two. These areas contain a mix of different uses including gas stations, banks, restaurants, marine and boat sales, and the Tributary Brewery. These areas are highlighted in yellow in Figure 4.4.

TAX INCREMENT FINANCING (TIF) DISTRICTS

As noted earlier, the Town has enacted three different TIF districts which are all generally along the Route 1 Corridor and in three of the six primary economic development areas.

Figure 4.11: Kittery TIF District Map



To date, it appears very little new development or increment has been generated in TIF Districts 1 and 3. District 2, the primary section of the Route 1 Outlets area, has seen some new development take place on a few of the parcels designated in the

District. One major issue upcoming for the Town is the debt repayment on the sewer line extension for TIF District 3. Beginning in 2017, the Town is responsible for beginning to pay back debt on those public improvements, with a share of the funding coming from new tax increments starting in the year 2022. If new development does not occur in District 3 before 2022, the Town will be responsible for paying back the debt that was incurred as a result of the sewer extension project. Based on the sewer betterment assessment, the Town will share the cost of the sewer extension 50/50 with the property owners whose land benefits from the new sewers. Figure 4.10 is a map provided by the Town showing the location of the three TIF Districts.

PROPERTY VALUATION VS. TAX PRODUCTIVITY

One way to look at the productivity of economic development areas in a community is to look at the assessed valuation of parcels and compare that to tax revenue on a per acre basis. Typically, the higher the assessed value the higher you would expect the tax generation to be on a particular parcel. While this holds true for smaller parcels, large parcels that have not maximized development potential may not generate as much property tax on a per acre basis as a smaller commercial property. Compact development patterns typically produce more tax revenue on a per acre basis than a more suburban or rural development pattern where parcels are larger and buildings are spread out.

¹ Although the PSNY is shown as a high tax producing property in Figure 4.13, it does not pay property taxes. A payment in lieu of taxes is paid by the PSNY each year to the Town to help offset service and infrastructure costs.

Figures 4.12 and 4.13 compare the assessed values of parcels in Kittery to the amount of tax revenue they generate. For example, the assessed values of properties in the Foreside are much lower than those on Gerrish Island. The homes on the Island are much larger, newer, and worth more money than many homes in the Foreside. However, Figure 4.13 shows that properties in the Foreside produce far more tax revenue per acre than the properties on Gerrish Island. This is the result of a more compact development pattern in Foreside where more homes and businesses have been located in close proximity to one another.

This comparison can speak volumes to the productivity of land in a community and ways to maximize revenue within designated economic development areas. Concentrating development where municipal services and transportation facilities are already in place can save on costs and maximize revenue.¹

TRANSPORTATION ASSETS

From a transportation and economic development perspective, Kittery is fortunate to have excellent access to several major roadways. Both Interstate 95 and Route 1 bisect Kittery's eastern edge, providing a direct connection to three of the five economic development areas. Clearly the outlets have been direct benefactors of the easy access to these major regional roadways bringing customers in from all directions. Route 236 provides east-west access in and out of Kittery as well.

Kittery is also within an hour's drive of four airports: Logan International, Manchester Regional, Portland Jetport, and Portsmouth International. Kittery is also a short drive to Dover or Durham, New Hampshire to access the Downeaster Amtrak train that runs from Boston to a number of key destinations in Maine.

UTILITIES

The Town has been able to extend sanitary sewer lines to many of the key economic development areas, including all three TIF Districts. Water lines have been extended across much of Kittery with the exception of most of the land zoned Residential – Rural, north and east of Haley Road, and west of the northerly end of I-95. This is helpful for new development, especially those that rely on a higher water intake and a higher volume of sewage outflow.

Figure 4.12: Assessed Value for Parcels in Kittery

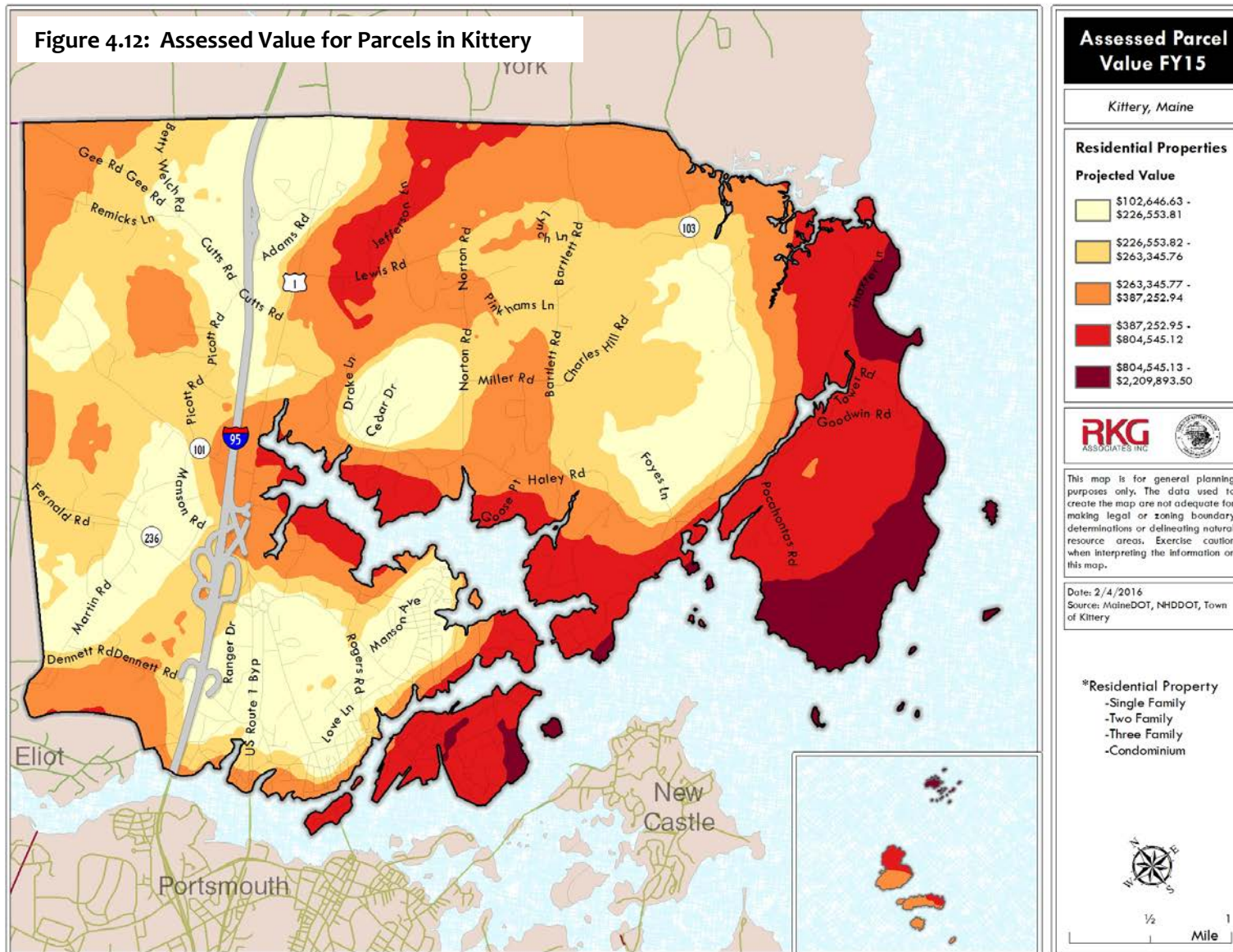
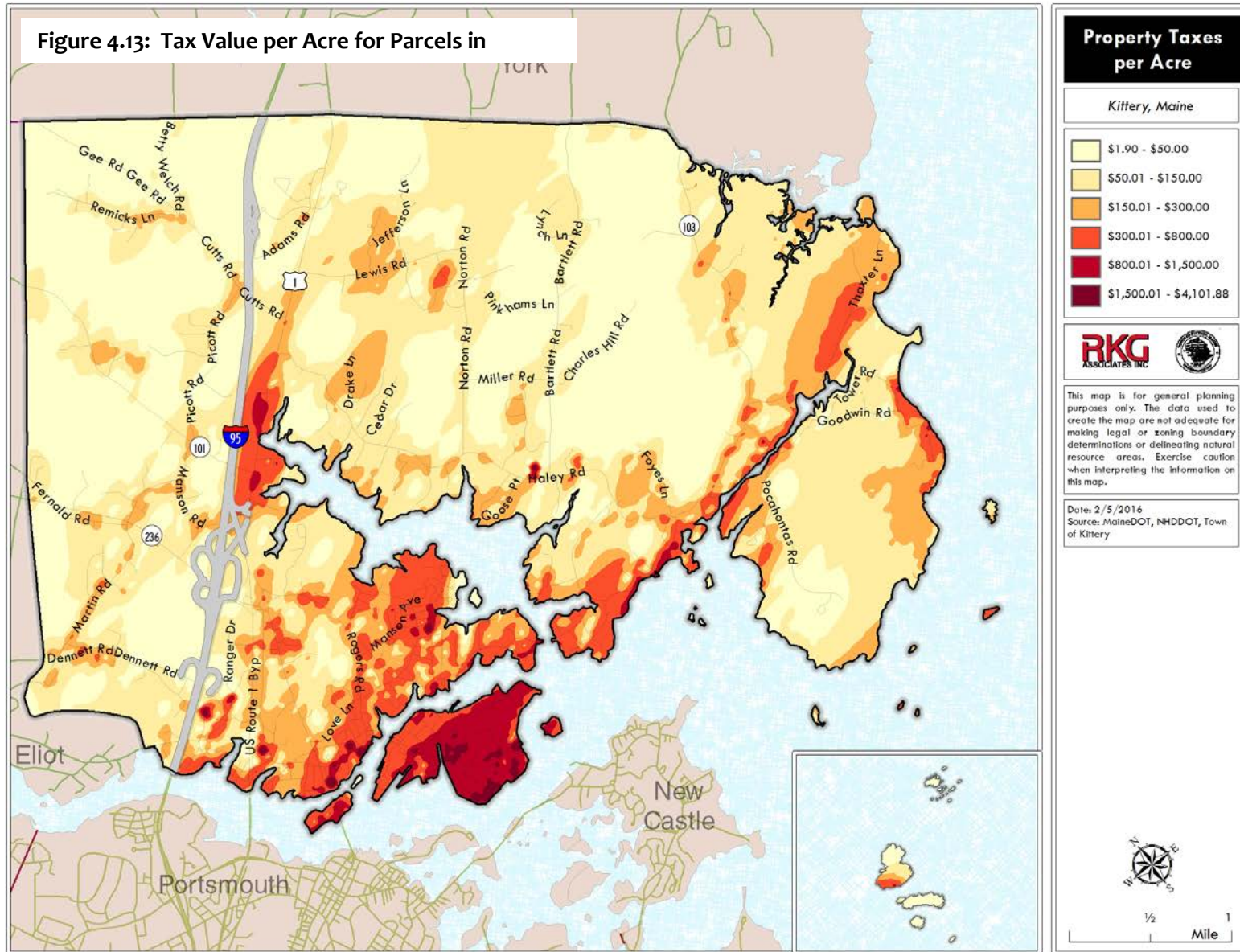


Figure 4.13: Tax Value per Acre for Parcels in



IDENTIFICATION OF PRELIMINARY ISSUES, CHALLENGES AND OPPORTUNITIES

The following is a preliminary list of issues, challenges and opportunities posed by the findings of the inventory of existing conditions of Kittery's economy. Please note that these are subject to change with the preparation of goals and objectives, not yet drafted (at the time the inventory was prepared).

ISSUES AND CHALLENGES

Kittery's employment base includes a high number of retail, restaurant, hospitality, service, and entertainment workers whose weekly income may not be able to keep pace with the increased cost of living. As housing and transportation costs continue to rise, the need for more affordable housing options in Town will be critical. Housing is not only a personal necessity, it is also an economic development strategy.

The Town should begin to think about ways to diversify the business base along Route 1 as a safety net if outlets begin to move or close down as a result of greater regional competition. With increased development of outlet stores in other states and the popularity of online shopping, brick and mortar stores may become less popular over time. If this occurs, the Town should consider how the Route 1 Corridor could shift and continue playing a role supporting the economic base in Kittery.

The Town is investing significant public funds in TIF Districts where economic development opportunities have yet to materialize. The Town will be responsible for paying off any debt incurred as a result of public infrastructure improvements. Some

of the debt payments are coming due in the near-term and tax increments have yet to increase. The Town should consider all future public investments in TIF Districts carefully and determine if public funding should be invested there or elsewhere. In addition, the Town should look at ways of stimulating development in the business park where utilities have already been extended by the Town.

Kittery's commercial and mixed use zoning districts appear to be quite restrictive and have dimensional standards that may render smaller-scale developments financially infeasible. The Town should revisit these zoning districts and have conversations with property owners and local developers to better understand the implications of restrictive zoning while still trying to attract additional economic development to these areas. One may not be able to occur without the other.

OPPORTUNITIES

The success of the Foreside and the Route 1 Outlet Corridor speaks volumes to the opportunities the Town has to continue to add to and invest in the success of these economic development areas. The existing physical infrastructure and built form provide a baseline which could easily be added to over time. The Town should consider the recommendations of reports such as the Foreside Forums for ways to make small investments that could pay dividends in future tax revenue.

In addition to small infrastructure improvements, the Town could also consider integrating residential development as a component of commercial areas. Additional rooftops within close

proximity to commercial areas would provide local businesses with additional consumer spending and a steady client base. Higher density housing options could be integrated with commercial in mixed use buildings, or as part of a larger planned development in commercial areas where larger parcels are more readily accessible.

The Naval Shipyard offers an opportunity for the Town to try and capture more of the spending from Shipyard employees and Naval Officers who are working in Kittery. The Foreside and other economic development areas are within very close proximity to over 5,000 workers. The Town may want to conduct a process or a survey to better understand their needs and what might attract them to live, shop and play in Kittery if they are not already doing so.

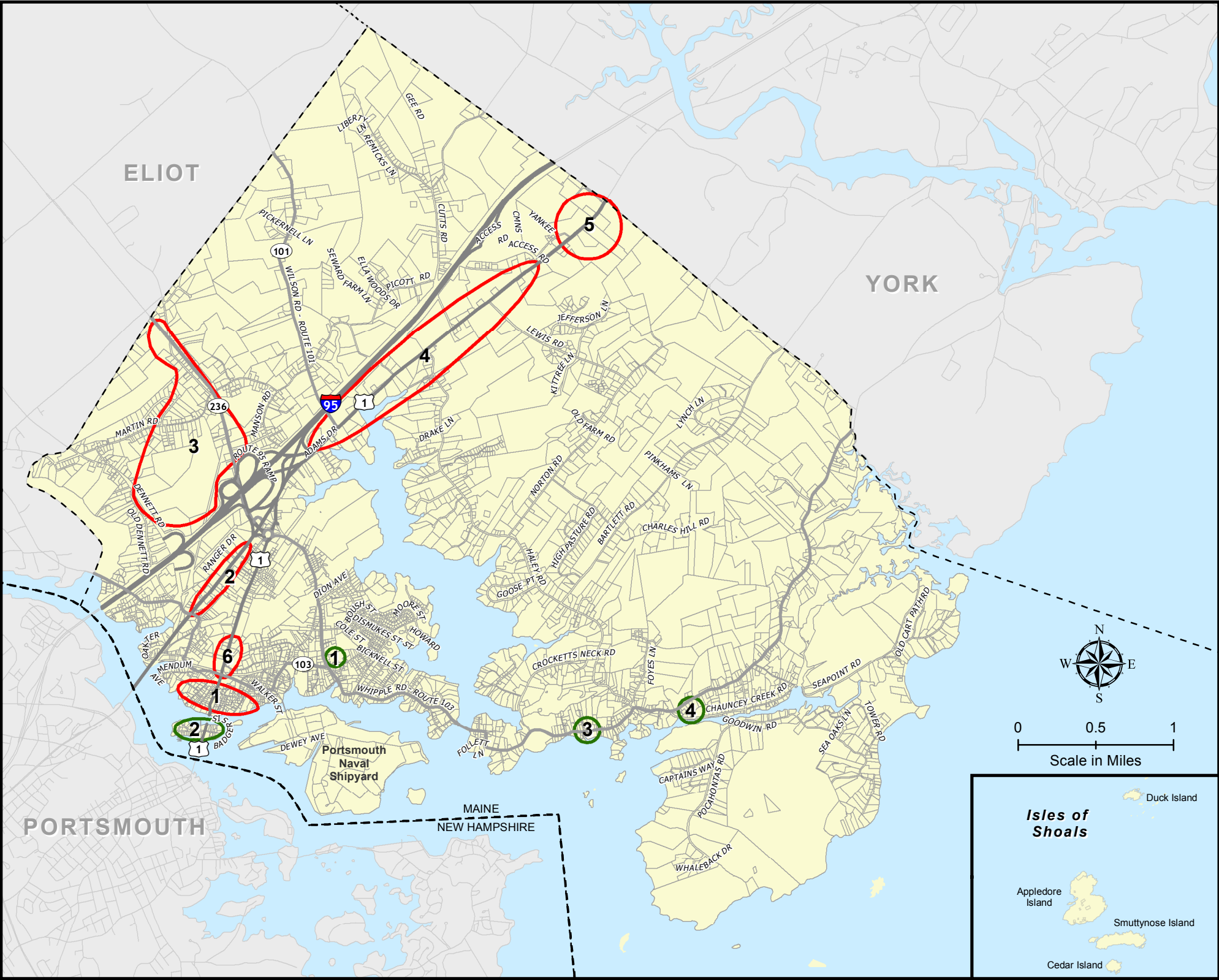
The Comprehensive Plan provides the Town with an opportunity to consider future economic development challenges and determine a course for possible alternatives should the future hold something different for these areas. This is an opportunity for residents, employees, and business owners to look at how current economic development areas are functioning today and what the needs may be in the future. How can the public and private sector come together to shape these areas to meet future needs? What should these areas look like and who should they serve? Are regulations in place today that are flexible enough to respond to changes in the economic environment?



Map 4.1

ECONOMIC DEVELOPMENT
AREAS

- Primary Economic Development Areas
- Secondary Economic Development Areas



0 0.5 1
Scale in Miles

Isles of
Shoals



AECOM

This map is for general planning purposes only. The data used to create the map are not adequate for making legal or zoning boundary determinations or delineating natural resource areas. Exercise caution when interpreting the information on this map.

Kittery
Comprehensive
Plan Update
2016

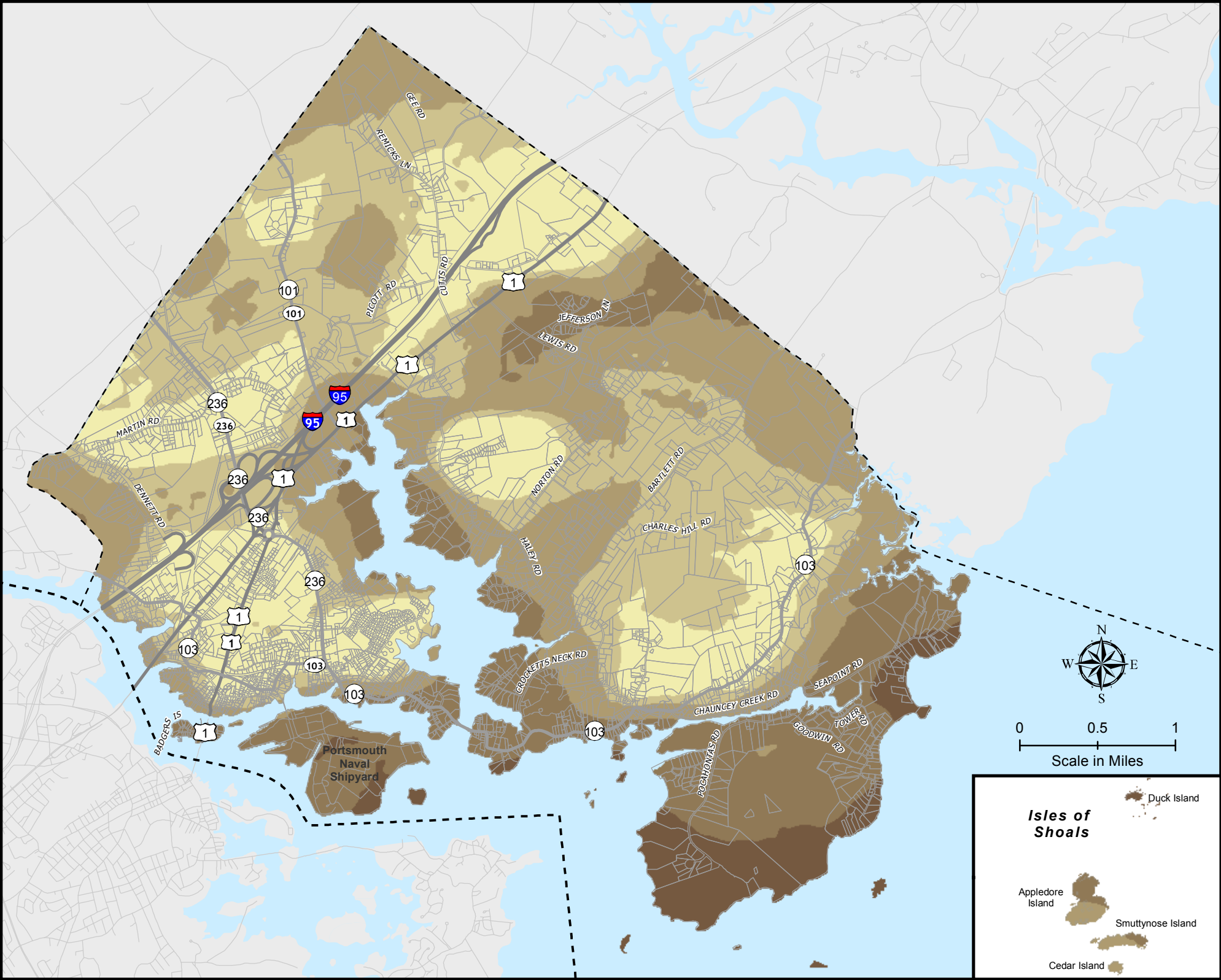


Map 4.2

ASSESSED VALUE FOR
PARCELS FOR KITTERY

Residential Property Values FY 2015

	\$102,647 - \$226,550
	\$226,551 - \$263,300
	\$263,301 - \$387,250
	\$387,251 - \$804,540
	\$804,541 - \$2,209,893



AECOM

This map is for general planning purposes only. The data used to create the map are not adequate for making legal or zoning boundary determinations or delineating natural resource areas. Exercise caution when interpreting the information on this map.

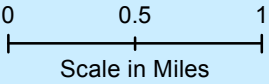
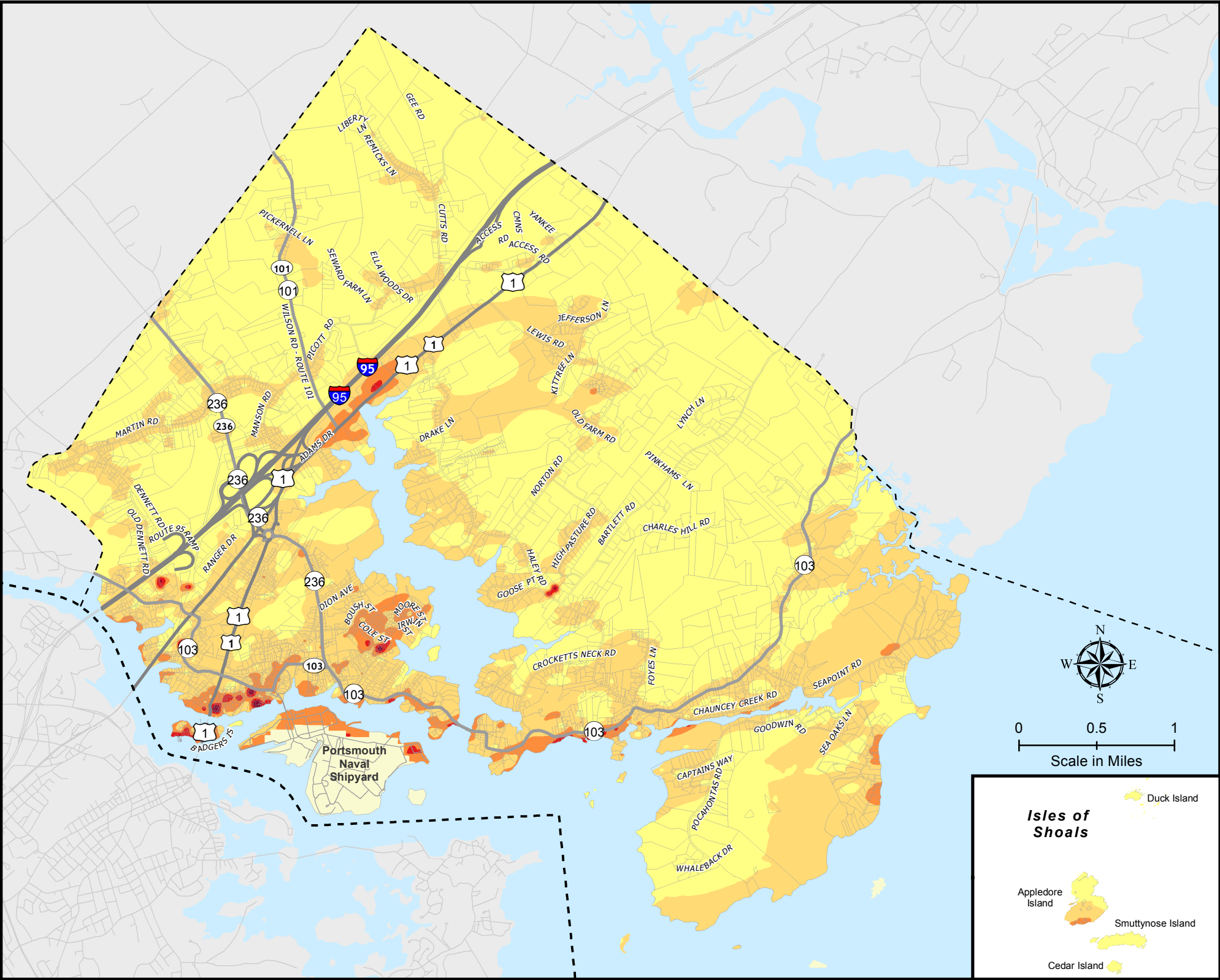
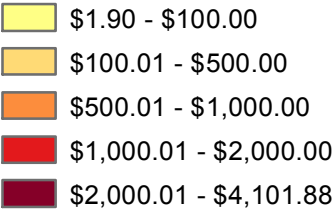
Kittery
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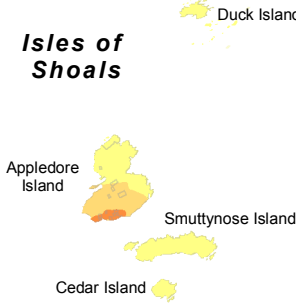
Map 4.3

TAX VALUE PER ACRE
FOR PACELS

Property Tax Per Acre



Isles of
Shoals



AECOM

This map is for general planning purposes only. The data used to create the map are not adequate for making legal or zoning boundary determinations or delineating natural resource areas. Exercise caution when interpreting the information on this map.

REFERENCES

DOCUMENTS

Foreside Forums Report, 2014.
District #3 – Business Park TIF Report. December, 2010.
Kittery Economic Development website. <http://kitterymaine.biz/>

ⁱ U.S. Bureau of the Census, American Community Survey, 2010-2014, Table DP03.

ⁱⁱ Maine Center for Workforce Research and Information, Quarterly and Annual Industry Employment and Wages. Quarter 2 of 2015.

INTERVIEWS

Terry Gagner, Comprehensive Plan Subcommittee Member,
February 11, 2016.

ⁱⁱⁱ Maine Center for Workforce Research and Information, Quarterly and Annual Industry Employment and Wages. Quarter 3 of 2015.

HOUSING

5

HOUSING

The housing chapter provides an overview of housing conditions in Kittery which includes owner-occupied and rental units. This chapter also provides points of comparison to nearby municipalities including York, Eliot, Newington, and Portsmouth to help give context to data points around housing. Included below is information on housing type, tenure, vacancy, age, development trends, and affordability.

Summary of Key Points

- Kittery has a number of different housing options that are spread across town. The variety of options provides housing for people at different income levels.
- Sixty-five percent of Kittery's housing stock is owner-occupied. This is lower than many surrounding towns with the exception of Portsmouth.
- The residential vacancy rate for both owner-occupied and renter-occupied housing increased from 2010 to 2014, but is still very low.
- Kittery has a relatively young housing stock, with 74 percent of residential structures built after 1940.
- Kittery has averaged around twenty single-family home building permits per year. The number per year has gone down slightly from 2012 to 2015.
- Median owner-occupied home values in Kittery are lower than the surrounding communities, making Kittery a bit more affordable. On the other hand, Kittery has higher rental prices than the surrounding communities.

OVERVIEW

Kittery has a number of distinct housing types, but a majority of the housing in town – about 66 percent - consists of detached single-family homes.¹ They are spread across Kittery and are located in neighborhoods that vary greatly in terms of layout, density, and character.

One can travel across Kittery and come across very large stately homes in locations like Gerrish Island or along the coast on Kittery Point. Homes on Gerrish Island are set within the natural geography of the land on large lots, where some of Kittery's largest single-family homes are found. Along the coast line in Kittery Point, older more historical homes are set on smaller lots much closer together, overlooking the water.

In contrast, Foreside has a much different residential character, with more modest homes set very close together within a close walking distance to the nearby commercial center. A majority of the homes in this section of Town were constructed prior to 1940, and most of them prior to 1900.

To the west of Route 1 the landscape and housing stock begin to change again. Here, single family homes are set back from the

Kittery's Housing Type Examples



roadways and located on cul-de-sacs, dead end streets, or circular loops bringing you back to the main road you entered on. The homes are set on larger lots, and the area is reminiscent of a more rural suburb. Homes in this area are newer, with many having been constructed after 1970. One exception are the homes along Manson Road, where many were constructed prior to 1940.

Lastly, in the north and north central part of Kittery, many homes were constructed as part of traditional subdivisions set among the open lands and farms. Here, dead end roads and cul-de-sacs branch off main arterials like Haley Road and Bartlett Road to create small subdivisions of large homes on large lots. In this area, most homes were built after 1970, and represent the highest concentration of newer homes in Kittery. This is particularly true along roads such as Cedar Drive, Drake Lane, and Jefferson Lane. Figure 5.1 shows the age of Kittery's existing housing based on when they were constructed.

OTHER TYPES OF HOUSING

While two-thirds of the housing stock in Kittery is comprised of single-family homes, there are many other options available in Town. Twenty-four percent of the housing stock in Kittery is located in multifamily structures. Ninety-one percent of multifamily units are housed within buildings that contain nine units or lessⁱⁱ. There are several examples of traditional multifamily housing in garden style apartment and townhome developments. One example of this style of housing is Woodland Commons off Route 1. This development offers two and three

bedroom units for rent. Kittery also has multifamily housing options for military personnel and their families at Admiralty Village. These are attached two, three, and four bedroom homes within close distance to the Shipyard.

Table 5.1: Units in Structure

Census 2000, ACS 2006-2010		Town of Kittery	
HOUSING UNITS IN STRUCTURE	2000	2010 Est.	% Change 00-10
Total HHs	4,078	4,209	3.2%
1 unit - detached	2,605	2,795	7.3%
1 unit - attached	167	140	-16.2%
2 units	419	294	-29.8%
3 or 4 units	289	255	-11.8%
5 to 9 units	205	380	85.4%
10 to 19 units	35	49	40.0%
20 to 49 units	61	28	-54.1%
50 or more units	8	16	100.0%
Mobile Homes	289	252	-12.8%

In addition, Kittery offers several age-restricted housing options for residents fifty-five and over. Developments like Meetinghouse Village, Shepard's Cove, and Kittery Estates offer rental apartments, for-sale condominiums, and single-family homes. All three are located very close to Route 1 and the Kittery Community Center. The Town also has assisted living and nursing care facilities for seniors. Developments like Durgin Pines offers rehabilitation and full long-term care with a choice of private and semi-private rooms.

There are also several mobile home parks in Kittery, which offer an affordable option for both short- and long-term housing. The two Yankee Mobile Home Communities off Idlewood Lane and Cutts Road on the western side of Route 1 are two such examples.

HOUSING CHARACTERISTICS

The type of housing being built in Kittery has certainly changed over time. Prior to 1900, single-family homes were constructed along the coast east of what today is the I-95 corridor. Between 1900 and 1970, housing continued to be built in the Foreside and began expanding over the Route 1 corridor to the southwestern edge of town. Between 1970 and 2015, single-family and multifamily housing expanded north into the farms and forests. Clusters of subdivisions now dot the landscape of Kittery with housing built primarily after 1990. Small clusters of multifamily housing were also built post-1990, which has been the most significant change to housing types in Kittery. Prior to 1990, there were not many rental or ownership opportunities in the larger-scale multifamily buildings.

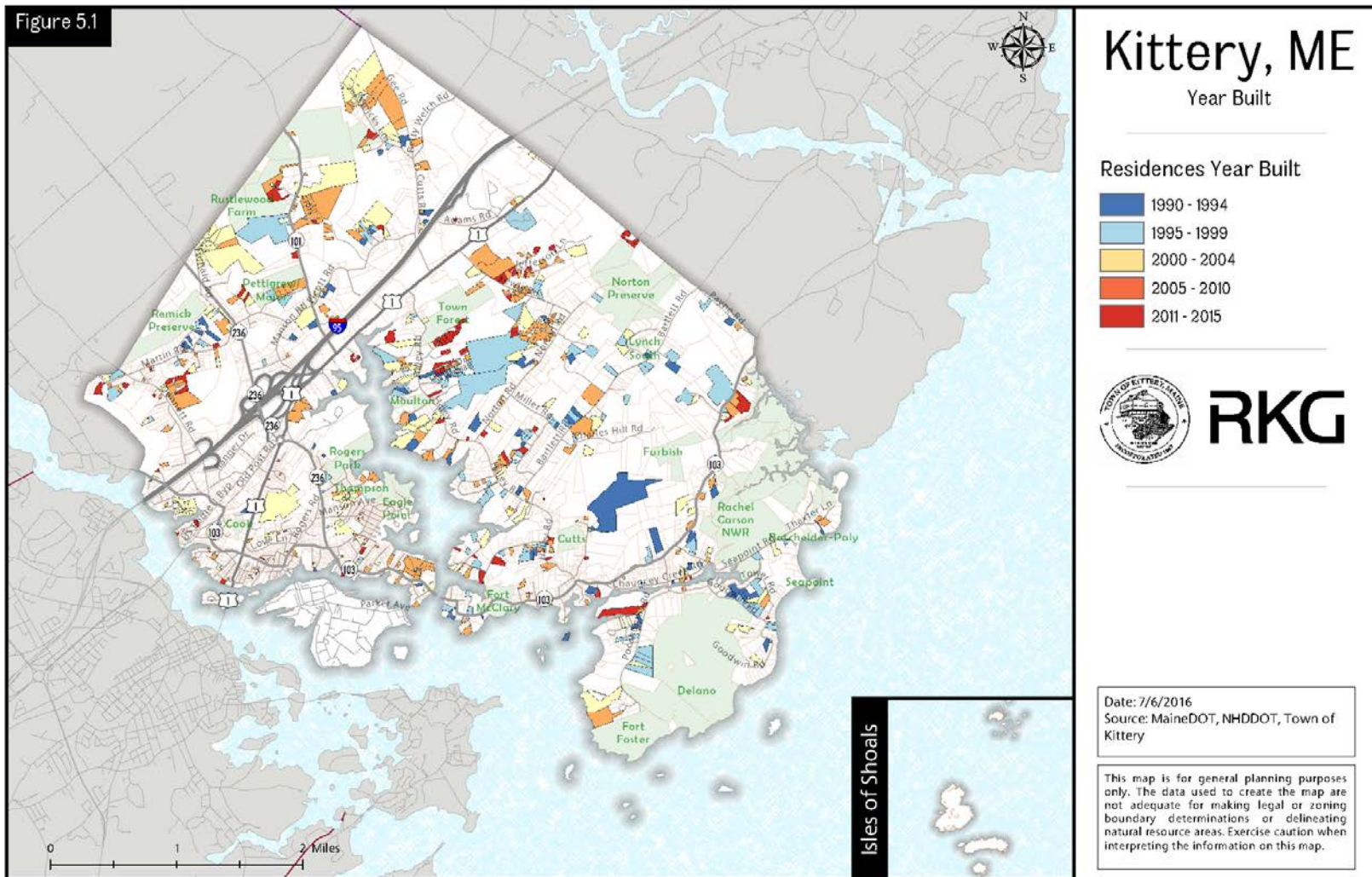
According to data from the 2014 American Community Survey (ACS) estimates, 25 percent of Kittery's housing stock was constructed prior to 1940ⁱⁱⁱ. Another 48 percent of the housing stock was constructed between 1940 and 1989, followed by 26 percent built after 1990. Southern Maine experienced a housing boom after 1980, which resulted in a substantial increase in the number of units in Kittery. By 1989, the housing boom was generally over and Kittery went back to seeing modest housing development up until 2000.

Table 5.2: Year Housing Structure was Built

ACS 2010-2014	Town of Kittery	
AGE OF STRUCTURE	2014 Est.	% of Total
Total housing units	5,144	100.0%
Built 2005 or later	92	1.8%
Built 2000 to 2004	970	18.9%
Built 1990 to 1999	315	6.1%
Built 1980 to 1989	498	9.7%
Built 1970 to 1979	464	9.0%
Built 1960 to 1969	358	7.0%
Built 1950 to 1959	586	11.4%
Built 1940 to 1949	571	11.1%
Built 1939 or earlier	1,290	25.1%

After the year 2000, housing development (primarily in the form of single-family subdivisions) took place in many of the no/limited growth areas north of Spruce Creek and west of Interstate 95 which were identified as no/limited growth areas in the 1999 Comprehensive Plan. Housing by year built is shown in Table 5.2.

Building condition is typically closely tied to the age of the structure. Kittery's housing stock as a whole is not very old, with only 26 percent of structures constructed before 1940. The Census compiles information on building condition by reporting on the number of housing units without complete plumbing facilities, kitchen facilities, or lack of telephone service. According to ACS estimates for 2014, less than one percent of structures lacked complete plumbing, 3.6 percent lacked a complete kitchen, and 1.6 percent did not have phone service available.



HOUSING TENURE

Kittery's homeownership rate (65 percent) is lower than that of many of the surrounding communities. York, Eliot, and Newington, NH have homeownership rates between 76 and 88 percent. Only Portsmouth, not surprisingly, has a lower homeownership rate than Kittery at 53 percent. To Kittery's advantage, having a mixture of housing types at a variety of price points and sizes will attract a more diverse resident population. This provides both a customer base and an employment base for local businesses, and provides Kittery with a more varied set of constituents.

As was mentioned earlier, the owner-occupied single-family homes in Kittery are spread across the town with a higher concentration in the Foreside area and along the eastern coast line. This is contrary to multifamily housing, which tends to be clustered in the areas along Route 1 and along Philbrick Avenue where Admiralty Village is located. Table 5.3 shows the breakdown of housing units by tenure, as well as the estimated change from 2010 to 2014.



Table 5.3: Housing Tenure

ACS 2006-2010, ACS 2010-2014		Kittery	
TENURE		2010 Est.	2014 Est.
	Owner-Occupied Units	65.2%	65.1%
	Renter-Occupied Units	34.8%	34.9%

VACANCY

Between 2010 and 2014, Kittery's owner-occupied and renter-occupied vacancy rates have increased slightly. As shown in Table 5.3, the overall number of vacant owner-occupied units in Kittery increased by 1 percent, and vacant rental-occupied units increased by 0.9 percent^{iv}. Compared to surrounding towns, Kittery's vacancy rates are very similar, if not lower, than most of those towns. For 2014, Kittery's vacancy estimate for owner-occupied units is 0.2% higher than York, 1.6 percent higher than Eliot, and 2.4 percent higher than Portsmouth. York's rental vacancy percentage is nearly three times higher than Kittery. Portsmouth and Eliot both had fewer rental unit vacancies than Kittery.

Table 5.3: Residential Vacancy

ACS 2006-2010, ACS 2010-2014	Town of Kittery		
	2010	2014	% Change 10-14
HOUSING UNITS IN STRUCTURE			
Total HHs	4,700	5,144	9.4%
Owner-occupied vacancy	2.2%	3.3%	50.0%
Renter-occupied vacancy	5.8%	6.7%	15.5%

HOUSING MARKET AND TRENDS

The ACS estimates Kittery's median 2014 owner-occupied housing value at \$292,200^v. This includes both single-family homes and condominiums. Kittery's median value was higher than that of both York County and the State's median, which were \$226,700

and \$173,600, respectively. When compared to York, Eliot, Newington, and Portsmouth, Kittery's median housing sale price is a lower, making it a more affordable option for those looking to purchase a home. Kittery does have a higher percentage of homes above \$1,000,000 than both Portsmouth and Eliot, at 3.4 percent (96 homes).

Looking at rental-occupied housing, median monthly rent in Kittery is higher than all the surrounding communities which is the opposite of the median owner-occupied figure. The median monthly rental cost in Kittery was estimated to be \$1,232 in 2014^{vi}. Kittery's median rent was also significantly higher than that of the county and state which were \$772 and \$883 per month, respectively. Since 2010, median owner-occupied sales values have increased by an estimated 4 percent, while monthly rental prices have increased by 7 percent in Kittery.

NEW HOME STARTS

According to the Town's building permit data^{vii}, there were 13 building permits pulled for the construction of new single-family homes in Kittery in 2015^{viii}. This is lower than the previous three years, which averaged about 21 permits for single-family homes per year. Between 2012 and 2015, the Town saw an average of \$4.3 Million in new single-family home construction value. Last year (2015) had the highest single-family home construction value with a total of \$5.285 Million. Even though single-family construction permits were down in 2015 from previous years, construction value remains high.

HOUSING AFFORDABILITY

Kittery has worked over the years to provide some income restricted affordable housing options to residents who qualify as low- and moderate-income. The term “affordable housing” means a monthly housing cost that does not exceed 30 percent of a lower-income household’s monthly gross income. For homeowners, that cost includes mortgage, taxes, and insurance. For renters, that cost includes the monthly rent and basic utilities. In circumstances where a household is spending more than 30 percent of their gross income on these housing-related costs, that household is considered housing cost burdened. Table 5.4 shows the 80 percent of area median income thresholds deemed affordable by household size for the York-Kittery-South Berwick HMFA.

Table 5.4: AMI thresholds for Kittery

1 person	2 person	3 person	4 person
\$46,100	\$52,650	\$59,250	\$65,800

According to U.S. Census estimates for 2014, 46 percent of Kittery households are spending more than 30 percent of their household income on housing costs^{ix}. Not all of these households meet the definition of cost burdened because many are middle- and upper-income households that are generally considered to have more choices in the marketplace. Of Kittery’s 2,800 homeowners, approximately 24 percent are low- or moderate-income and paying more than 30 percent of their monthly income toward housing costs. Moreover, 15 percent of those households are considered severely cost burdened, spending more than 50 percent of their monthly income on housing costs^x.

On the rental side, 50 percent of Kittery’s 1,600 rental households who are low- or moderate-income pay more than 30 percent of their monthly income toward housing costs. Approximately 29 percent of those households are considered severely cost burdened. A more telling data point about the issue of housing cost burden in Kittery is that 92 percent of renter households earning less than \$35,000 per year are spending more than 30 percent of their income on housing costs^{xi}. The same can be said for homeowner households, i.e., 74 percent of households earning less than \$35,000 per year are spending more than 30 percent on housing costs.

AFFORDABILITY MISMATCH

Affordability mismatch further complicates the issue of housing affordability, which is a condition where households who can afford to live in more expensive housing are living in units priced below what they can realistically afford. This often leaves a gap in the number of units available to households who truly need housing units that are affordable at their income level. In Kittery, there are approximately 724 modest ownership units that would be considered affordable to low- and moderate-income buyers, but 39 percent are occupied by households with middle or higher incomes. Almost 83 percent of Kittery’s rental units have monthly rents that qualify as affordable under the U.S. Department of Housing and Urban Development’s (HUD) rent limits, but only 52 percent are occupied by low- to moderate-income renters. One of the biggest issues is that very low income households are living in housing affordable to moderate-income renters. This is an indicator that the community’s affordable housing units are not

necessarily affordable to the owners or the renters who currently live there. Kittery's resident population is not terribly mismatched with the housing they can afford. In fact, most of the housing units seem to align well with the incomes of residents. On the rental side, there are some issues with the number of residents making more than 80 percent of area median income but reside in units priced for households at 50 to 80 percent of the median income. This could be resulting from the supportable rent prices in Kittery being relatively low compared to the median rental price thresholds set by HUD.

SUBSIDIZED HOUSING IN KITTERY

Kittery currently has three developments in town that house deed restricted affordable units. The Foxwell, Foxwell II, and Woodland Commons developments provide affordable rental units to those who are income eligible. Woodland Commons offers sixty-five two bedroom apartments and three-bedroom townhouse units with full appliance kitchens. The units are available to any household that is income eligible.

The Foxwell development offers forty-one bedroom units and ten two bedroom units, all of which are restricted to households earning less than 50 percent of the area median income. These units are assisted living units and house residents who are over the age of 62 and have a disability. The Foxwell II development is located in the same area as Foxwell, but is comprised of twelve one bedroom units and are assisted living units as well. These units are available to residents over the age of 62 with a disability and who do not earn more than 50 percent of the area median income.

IDENTIFICATION OF PRELIMINARY ISSUES, CHALLENGES AND OPPORTUNITIES

The following is a preliminary list of issues, challenges and opportunities posed by the findings of the inventory of existing conditions of Kittery's housing. Please note that these are subject to change with the preparation of goals and objectives, not yet drafted (at the time the inventory was prepared).

ISSUES AND CHALLENGES

The housing development that has occurred in Kittery over the last five to ten years has primarily been of two types: single-family subdivisions and multi-family townhomes and apartments restricted to residents over the age of fifty-five. The zoning in place across much of Kittery is rural residential and rural conservation and characterized as limited to no growth. However, these areas happen to be where a majority of the town's residential subdivision growth is happening. The zoning for these areas is more akin to suburban development with lot sizes of 40,000 to 80,000 square feet (for the Rural Conservation district). This zoning is considered by property owners as fundamentally necessary in order to ensure a reasonable return on their investment if they either build on or sell their land.

This creates a tension in Kittery between those who would like to see the land preserved or kept truly rural, and those who would like their property rights to remain in place. In these locations, the continued development of large tract subdivisions is not likely to help with the affordability issues that are present in Kittery. The homes being constructed in these zoning districts are typically

larger and more expensive than households making at or below 80 percent of area median income could afford.

There appears to be a tension in town about the development of housing in locations where large tracts of land are currently open. Some residents would rather see new housing development take place in locations that are easier to be served by utilities, transportation and town services while others believe property rights of individual land owners should take precedence.

Housing costs are increasing in Kittery year over year. This not only includes the sale cost of a unit or the monthly rent, but it also includes taxes on owner-occupied units. Increasing costs can burden those on a fixed income, lower wage earning households, and younger workers looking for an affordable housing option as they begin working. Diversifying the housing stock and maintaining levels of affordability at different income ranges will be important as the demographics in Kittery change over time.

OPPORTUNITIES

The Comprehensive Plan process is a unique opportunity for the Town to discuss its housing goals and approaches to meeting the housing needs of future residents. With an aging population, there may be a need for smaller units that are physically and financially accessible to that segment of the population. The Town may also wish to consider ways to attract and retain a younger population to help fill jobs, support local businesses, and support the town's tax base. This discussion should go hand in hand with the conversation about future land use and

development opportunity areas in town, how those should look, and how they should support the town's goals.

With the resurgence of the Foreside, Kittery has built a small economic development engine in its Downtown that is producing tax revenue per acre at a rate equal to or higher than many of the Town's more traditional "economic development centers". The Foreside is a unique example of a densely populated center where local business can be supported *in part* by the households that surround it. This is much different than the Route 1 corridor which requires a much larger local and regional draw for spending. Housing plays a factor in the economic development of the Foreside and any future commercial or mixed-use hub the Town wishes to pursue. As more regional competition emerges for commercial and retail dollars, Kittery must figure out how to best support the commercial it has today as well as what it wants to become in the future.

REFERENCES

ⁱ U.S. Bureau of the Census, American Community Survey, 2006-2010, Table B25032.

ⁱⁱ U.S. Bureau of the Census, American Community Survey, 2010-2014, Table DP04.

ⁱⁱⁱ U.S. Bureau of the Census, American Community Survey, 2006-2010, Table B25032.

^{iv} U.S. Bureau of the Census, American Community Survey, 2006-2010, Table B25004. U.S. Bureau of the Census, American Community Survey, 2010-2014, Table B25004.

^v U.S. Bureau of the Census, American Community Survey, 2010-2014, Table DP04.

^{vi} U.S. Bureau of the Census, American Community Survey, 2010-2014, Table DP04.

^{vii} Data provided by Kittery's Code Enforcement Officer on February 11, 2016.

^{viii} Data was missing for November and December 2015.

^{ix} U.S. Bureau of the Census, American Community Survey, 2010-2014, Table B25106.

^x U.S. Department of Housing and Urban Development (HUD), Comprehensive Housing Affordability Strategy (CHAS) Data, 2008-2012.

^{xi} U.S. Bureau of the Census, American Community Survey, 2010-2014, Table B25106.

Kittery
Comprehensive
Plan Update
2016



Map 5.1

YEAR OF RESIDENTIAL
STRUCTURE

Residences Year Built

- Before 1900
- 1901 - 1940
- 1941 - 1970
- 1971 - 1990
- 1991 - 2015



0 0.5 1
Scale in Miles

Isles of
Shoals



AECOM

This map is for general planning purposes only. The data used to create the map are not adequate for making legal or zoning boundary determinations or delineating natural resource areas. Exercise caution when interpreting the information on this map.

TRANSPORTATION AND CIRCULATION

6

This chapter identifies and describes the existing transportation system in Kittery and how it connects with the regional transportation system. It also identifies issues, opportunities and challenges surrounding them to be addressed in the recommendations of the Comprehensive Plan. The chapter begins with the introduction and background, followed by the inventory of the existing transportation conditions. The following elements are summarized in this Chapter:

- Travel Characteristics
- Roadway Functional Classification
- Scenic Roads
- Traffic Volumes
- Maintaining the Transportation Infrastructure
- Safety
- Pedestrian and Bicycle Facilities
- Transit
- Parking

INTRODUCTION AND BACKGROUND

The local transportation system should provide efficient and safe mobility for all transportation modes and connections to regional facilities. The availability and quality of the transportation system is important to residents, businesses, students, visitors, and emergency services. The maintenance and enhancement of the transportation system can be used to attract development and expand the tax base. In addition, the transportation system has impacts on resources, community character, and the quality of life.

Located approximately 51 miles from downtown Portland, Kittery is located within the York County and is the southernmost community of the Southern Maine Planning and Development Commission (SMPDC) region. The SMPDC region is referred to as the "Gateway to Maine" and contains both urbanized areas (such as Biddeford/Saco and Sanford), rural villages/towns, summer resorts and a coastline of approximately 300 miles. SMPDC is connected to a number of cities through I-95 and modes of public transportation, including the "Downeaster" Amtrak service.

Kittery Area Comprehensive Transportation System (KACTS) is the Metropolitan Planning Organization (MPO) for the Maine portion of the Portsmouth and Dover-Rochester, and New Hampshire urbanized areas. The KACTS MPO includes York, Kittery, Eliot, South Berwick, Berwick, and Lebanon.

Kittery is also part of the KEYS (Kittery, Eliot, York and South Berwick) Region, which serves four southernmost towns in Maine: Kittery, Eliot, York and South Berwick. These towns provide strong connections to New Hampshire. KEYS Coordinating Council conducted a planning process called Our Future By Design (OFBD) from 2004 to 2006, which looked at many topics, including transportation.¹

¹ KEYS Our Future by Design.
http://www.keysregion.org/keys_ofbd/intro.htm

INVENTORY OF EXISTING TRANSPORTATION CONDITIONS

The inventory of the existing transportation system in Kittery is used to identify deficiencies and needs and as the basis from which to evaluate future conditions and potential improvement measures. Figure 6.1 shows the roadway system in Kittery.

Key points of the existing transportation conditions in and around Kittery are summarized below followed by the detailed description of each element.

TRAVEL CHARACTERISTICS

Demographics and travel characteristics such as journey to work data, vehicles available per household, commute time, and mode share trends are discussed in this section.

DEMOGRAPHICS

Maine's population reached approximately 1,328,361 in 2010, an increase of approximately 4.2 percent since 2000 (1,274,923 total population), or about 0.4% annually. A similar trend was seen in the York County. The region's population increased from 186,742 in 2000 to 197,131 in 2010, a 5.6 percent increase in 10 years. Unlike statewide and region-wide population, Kittery experienced a decrease in population during that time period. The population in Kittery was 9,543 in 2000 and 9,490 in 2010 based on US Census

Bureau data, indicating growth rate of -0.06 percent per year (approximately one percent decrease in 10 years).²

SUMMARY OF KEY POINTS

Travel Characteristics

- Unlike statewide and region-wide population, Kittery experienced a decrease of 1% in population between 2000 and 2010.
- Kittery is the largest work destination for Kittery residents and for residents in the KACTS communities.
- Nearly 52% of Kittery workers work in Kittery and 28% in Portsmouth.
- 85% of Kittery households have one or two vehicles compared with the state average of 74%. Approximately 6% of households in Kittery have no vehicles.
- Approximately 71% of Kittery workers drive alone and 22% used other modes. The number of trips for all the modes has increased since 2000 except for the drive alone trips.
- Average commute time = 21 minutes, shorter than the national and state averages. Number of commuters travelling less than ten minutes has decreased since 2000.

JOURNEY TO WORK DATA

Kittery is the largest work destination for Kittery residents. It is also the largest work destination for residents in the KACTS

² U.S. Census Bureau 2000 and 2010.

KITTERY COMPREHENSIVE PLAN EXISTING CONDITIONS INVENTORY

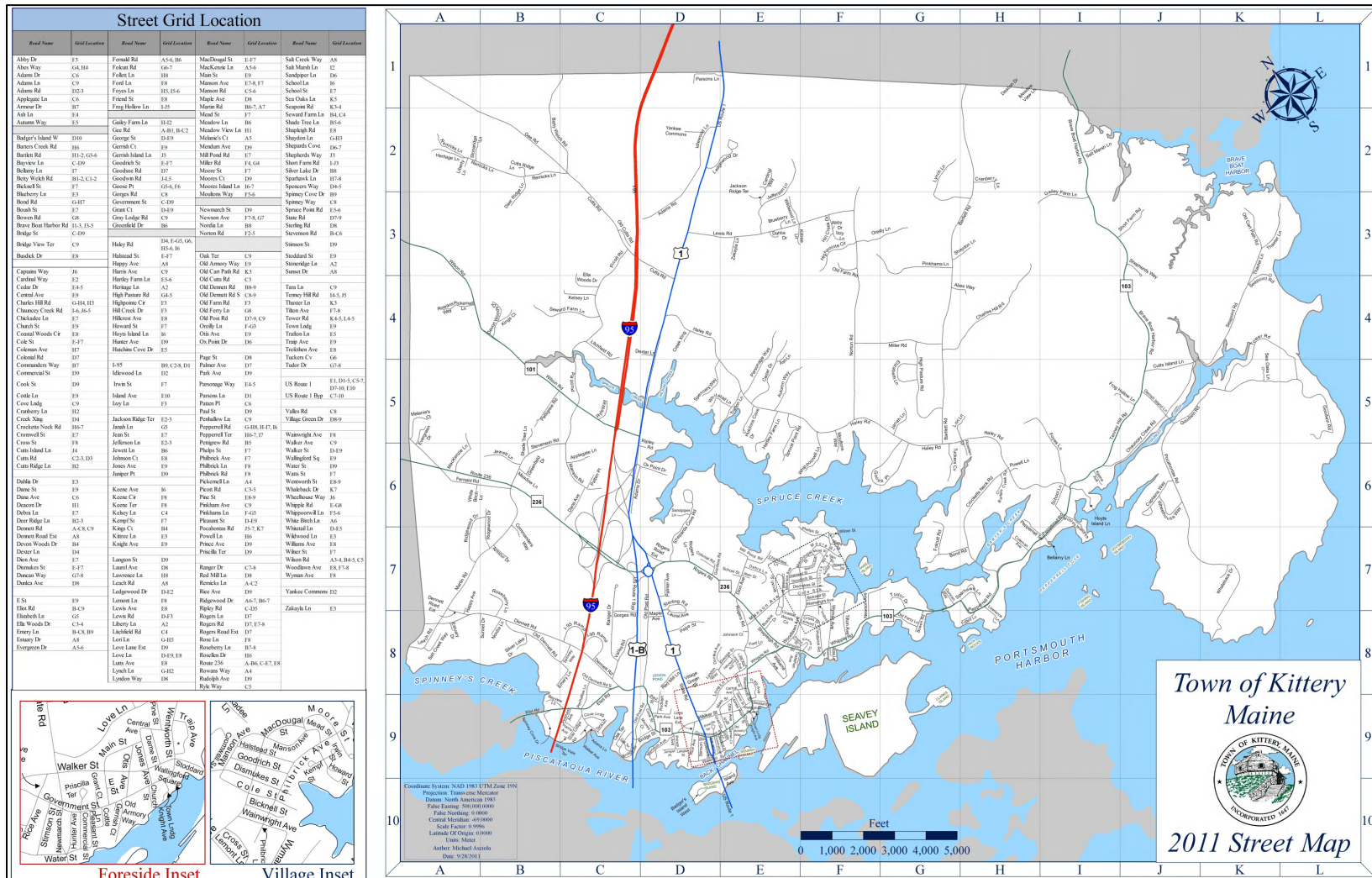


Figure 6.1: Roadway System in Kittery

Source: Town Maps. 2011 Street Map. Town of Kittery, Maine

communities. This is mainly because of the Portsmouth Naval Shipyard in Kittery. Approximately 25% of the Shipyard's total workforce is composed of residents living in the five KACTS communities. Although the Shipyard cutback its workforce in the 1990s, the worker population increased since 1999. Besides the Shipyard, Kittery also hosts a number of other large employers, and is the dominant employment center in the KACTS area.

Figure 6.2 shows major work destinations for Kittery residents based on U.S. Census Bureau, American Community Survey Five Year Estimates 2006-2010.³ As shown in the figure, 1,130 Kittery residents (approximately 52 percent of a total of 2,153 workers) work in Kittery. Approximately 28 percent of Kittery residents work in Portsmouth, New Hampshire (610 employees). York Harbor, Maine is the third largest work destination for Kittery residents, employing approximately 110 workers. All the other communities employed less than 5% of Kittery residents.

Figure 6.3 shows the major residence locations for people working in Kittery based on U.S. Census American Community Survey Five year Estimates 2006-2010. As shown in the figure, approximately 1,285 of a total of 5,214 people working in Kittery live in Kittery. Other communities with a large number of residents working in Kittery include Portsmouth, New Hampshire (500), South Eliot, Maine (415) and Dover, New Hampshire (350).

³ U.S. Census Bureau, American Community Survey 2006-2010 Five-year estimates. Special Tabulation: Census Transportation Planning.

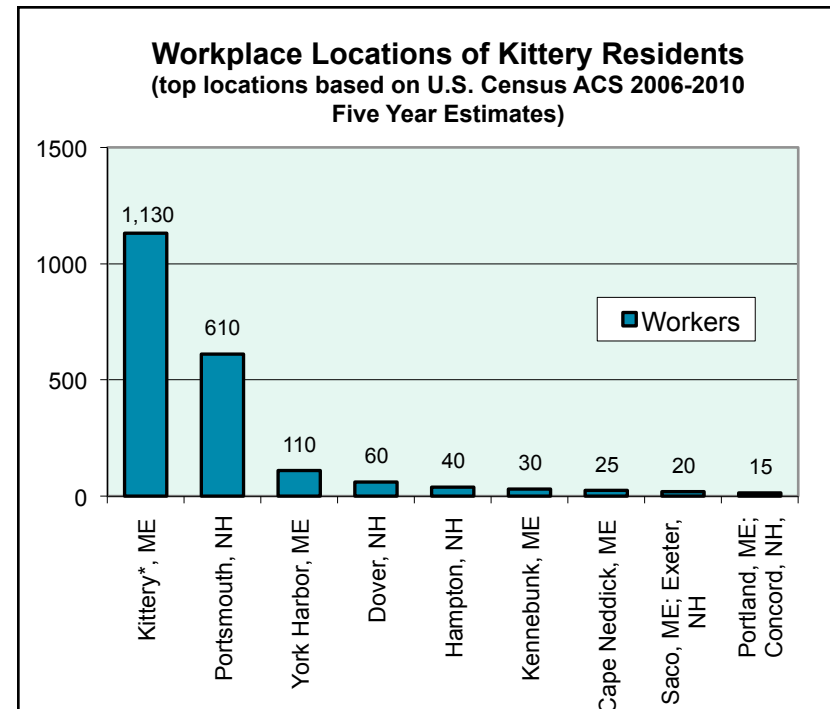


Figure 6.2: Workplace Locations of Kittery Residents Roadway System in Kittery

Note:

* Kittery also includes residents who work in Kittery Point, Maine.

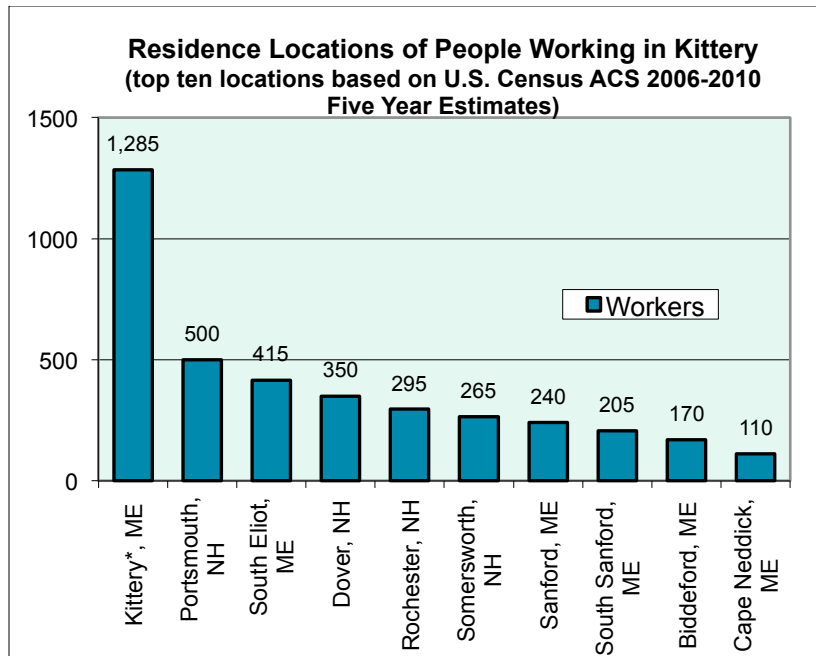


Figure 6.3: Residence Locations of People Working in Kittery

Note:

* Kittery also includes people with residence locations in Kittery Point, Maine.

VEHICLES AVAILABLE

Figure 6.4 shows vehicles available for households in Maine and Kittery for 2010-2014 based on American Community Survey (ACS) five-year estimates. It shows 74% of the households in Maine and 85% in Kittery had one or two vehicles. Kittery had fewer

households with over 3 vehicles per household (9%) compared with the State (18%).

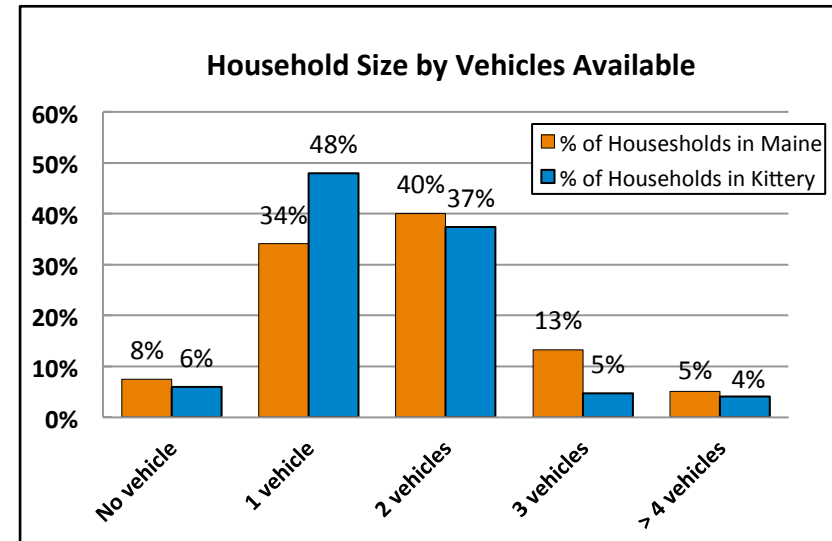


Figure 6.4: Household Size by Vehicles Available

Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates. Table: Household size by vehicles available.

MODE SHARE

Table 6.1 summarizes mode share trends for the state of Maine and the Town of Kittery. Overall, it shows that the state experienced a decrease in the percent of people who drove alone, carpoolled and walked to work and increase in percent of

people who used bicycle and other means. For Kittery, all the mode shares experienced an increase in 2010-2014 compared to 2000 except for the percent of people who drove alone, which decreased.

Table 6.1: Work Mode Share Comparison

Mode to Work	Maine Workers				Kittery Workers			
	2000		2010 – 2014		2000		2010 - 2014	
	No.	%	No.	%	No.	%	No.	%
Drove Alone	483,317	78.6%	494,250	78.1%	3,869	78.7%	3,636	70.7%
Carpooled	69,208	11.3%	65,134	10.3%	538	10.9%	591	11.5%
Public Transportation ¹	3967	0.6%	4,061	0.6%	16	0.3%	28	0.5%
Walked	24,700	4.0%	24,784	3.9%	235	4.8%	313	6.1%
Bicycle	1,402	0.2%	3,164	0.5%	23	0.5%	123	2.4%
Other Means ²	5,588	0.9%	7,493	1.2%	35	0.7%	53	1.0%
Worked at home	26,962	4.4%	33,871	5.4%	202	4.1%	402	7.8%
Total	615,144	100%	632,757	100%	4,918	100%	5,146	100%

Source: U.S. Census Bureau 2000 and 2010-2014 American Community Survey 5-Year Estimates.

1. Excludes taxicab
2. Includes taxicab, motorcycle and other means

Compared to the state, Kittery observed a significant decrease (8 percent) in the percent of workers who drove alone to work in 2010-2014 (70.7 percent) compared to 2000 (78.7 percent). The percent of workers who drove alone decreased by only approximately 0.5 percent in the state over the same period. The percentage of workers that carpooled in Kittery increased from

10.9 percent in 2000 to 11.5 percent in 2010-2014, while carpoolers in the state declined by one percent over the same period. In Kittery, use of bicycle increased significantly from 0.5 percent in 2000 to 2.4 percent in 2010-2014, which represents 100 additional commuters who biked. Both the state and Kittery observed an increase in the percent of workers who worked at home in 2010-2014 compared to 2000. In Kittery, the number almost doubled from 202 to 402.

COMMUTE TIME

The nationwide commute time increased very slightly in 2010-2014 compared to 2000 (25.5 minutes in 2000 to 25.7 minutes in 2010-2014). The statewide commute time increased by 3.5% from 22.7 minutes in 2000 to 23.5 minutes in 2010-2014. Similar to the statewide commuting trend, mean commuting time for Kittery residents increased by approximately 4%. The commute time for Kittery residents was 21 minutes in the 2010-2014 five-year estimate period compared to 20.2 minutes in 2000.⁴ Figure 6.5 shows mean commute time for United States, Maine and Kittery for 2000 and 2010-2014.

⁴ U.S. Census 2000 and American Community Survey 2007-2011 Five-Year Estimates.

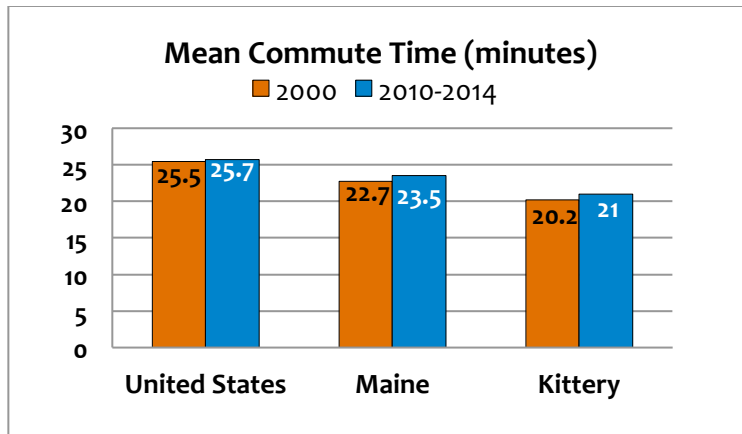


Figure 6.5: Mean Commute Time (minutes)

Source: U.S. Census Bureau 2000 and 2010-2014 American Community Survey 5-Year Estimates.

Figure 6.6 presents the commute time for Kittery workers. In 2000 and 2010-2014, a total of 4,716 and 4,744 workers travelled to work, respectively. The figure shows that a significant number of Kittery workers have short commute times (under 20 minutes) to work. During both time periods, approximately 65% of the workers travelled under 20 minutes. The number of workers who traveled between 35-44 minutes experienced a significant decrease (57%) since 2000. Similarly, the number of commuters traveling less than ten minutes decreased by 25%. There was a significant increase in the number of commuters who travelled between 45-59 minutes and over 60 minutes in 2010-2014 compared to 2000.

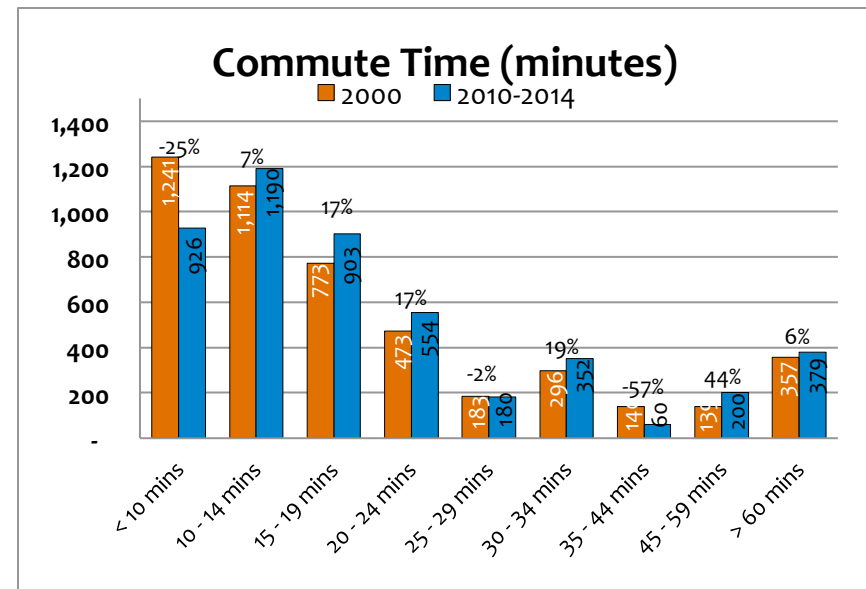


Figure 6.6: Commute Time (minutes) for Kittery Workers

Source: U.S. Census Bureau 2000 and 2010-2014 American Community Survey 5-Year Estimates.

ROADWAY FUNCTIONAL CLASSIFICATION AND DESIGN STANDARDS

Vehicular travel involves movement through a network of roads. Functional classification is the process of grouping streets and highways according to the character of service they are intended to provide. This classification determines how travel can be guided within a road network in a logical and efficient manner and is used to determine the long-term management and

development of the Town's roadway network. The Maine Department of Transportation (MaineDOT) has classified roadways in Kittery as state and federal aid roadways for the purpose of roadway planning and maintenance. The Town of Kittery has modified this system of classification to suit its own roadway planning and maintenance programs. These two systems are for the most part consistent with each other.

The following sections summarize MaineDOT's and Kittery's roadway functional classification systems.

SUMMARY OF KEY POINTS

Functional Classifications

- The MaineDOT classifies roadways in Kittery as state and federal aid roadways. The Town of Kittery has modified this system of classification to suit its own roadway planning and maintenance programs.
- Kittery has 73.42 miles of roadways, including Interstate 95.
- Approximately 44 miles are designated as townway/seasonal roadways. State Aid Highway and State Highway in Kittery account for 13.47 and 11.32 miles, respectively. Interstate I-95 is approximately 4.22 miles long in Kittery.
- Highway interchanges account for approximately 1.5% of the total town land area.

MAINEDOT FUNCTIONAL CLASSIFICATIONS

MaineDOT classifies roadways as follows: arterials, collectors, and local roads as illustrated in Figure 6.7. In total Kittery has 73.42 miles of roadways, including Interstate 95.

ARTERIALS

Arterials, as designated by MaineDOT, are intended to provide a high degree of mobility, handle large volumes of traffic, and serve longer trips. Arterials are major roadways that connect with collector roadways to provide access to activity centers, such as downtown Kittery and the Kittery Mall Outlets on Route 1 corridor. They include Interstate 95, US Route 1 and US Route 1 Bypass. Arterials are capable of handling between 10,000 and 30,000 vehicles per day. Kittery has 18.95 miles of state designated arterial roadways.

Kittery's current roadway network consists of the following state and/or federal designated principal and minor arterials based on MaineDOT functional classification system:

Principal Arterials:

- Interstate 95 (Maine Turnpike)
- US Route 1
- US Route 1 Bypass
- Route 103 - East of I-95 (US Route 1 to Wyman Avenue)

Minor Arterials:

- Route 236

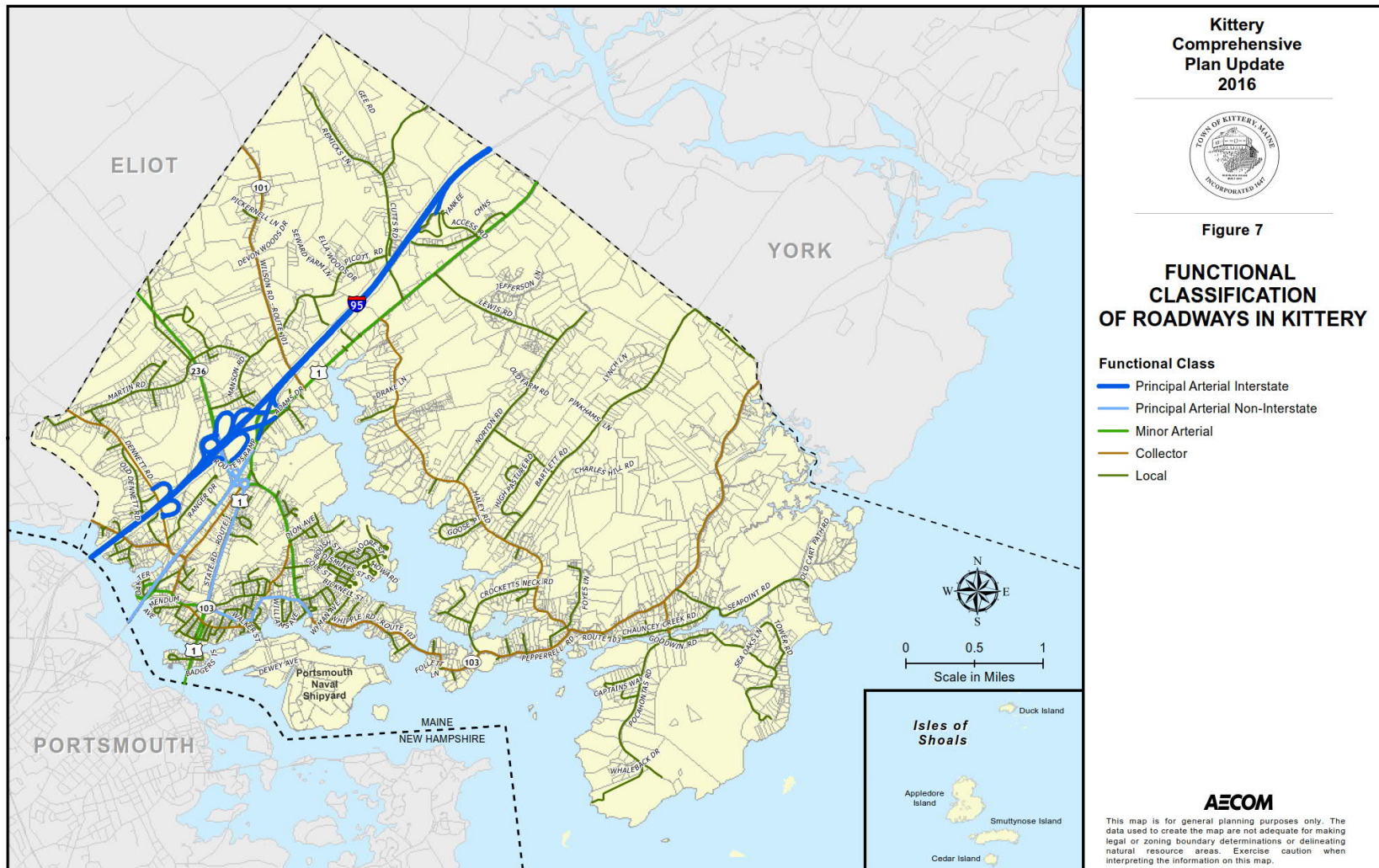


Figure 6.7: MaineDOT Functional Classification of Roadways in Kittery

- US Route 1 - North of Traffic Circle
- US Route 1 - South of Walker Street
- Oak Terrace
- Bridge Street
- Walker Street – West of Us Route 1
- Government Street – West of Walker Street

COLLECTORS

Collectors link the arterial roadways with residential neighborhoods. Ideally, collectors are spaced conveniently to manage local road traffic and typically have two travel lanes; two parking lanes or six-to-eight foot shoulders and have a capacity to carry 8,000 to 10,000 vehicles per day. There are 8.74 miles of state designated collector roadways in Kittery.

Most collectors are under local jurisdiction. Kittery's current roadway network consists of the following state and/or federal designated collectors based on MaineDOT functional classification system:

Collectors:

- Dennett Road
- Government Street (Walker Street to Wallingford Square)
- South Eliot Road (Route 103)
- Rogers Road
- Route 103 – East of Wyman Avenue
- Haley Road (From US Route 1 to Route 103)
- Gerrish Island Lane
- Wilson Road (Route 101)
- Old Post Road

- Cook Street

LOCAL ROADS

Local roads are designed to have direct access to abutting properties, usually residential. They are relatively short and discontinuous to limit the amount of traffic volume that can be carried. Local roads usually have two travel lanes and parking. Traffic volumes are minimal, usually under 1,000 trips per day. Kittery has 45.74 miles of local roads. It is typical for local roadways to comprise a majority of the roadways in a community.

KITTERY'S FUNCTIONAL CLASSIFICATION SYSTEM AND ROAD STANDARDS

The Kittery Public Works Department has developed a street classification system that defines the type of roadway by the level of traffic it can be expected to accommodate. This functional classification system is codified in the Land Use and Development Code of the Town of Kittery with design and construction standards for each class.⁵ The town classifies roadways as arterial highways, secondary arterials, primary collectors, secondary collectors, minor streets and private streets as described below. Although the town has accepted this approach to roadway

⁵ Town of Kittery. Title 16 Land Use and Development Code. Recodified on July 26, 2010 and latest amendment made on October 26, 2015.

http://www.kitteryme.gov/Pages/KitteryME_TownCode/Title%2016%20thru%2010-26-2015.pdf

classification, it is important to note that many of the older roads that have been assigned to a specific class may not meet the current standard(s). This system is seen as a starting point for a systematic roadway classification program and should be applied to all new roads in Kittery.

ARTERIALS

Arterials include both arterial highways and secondary arterials.

Arterial highways are major traffic ways that provide connections with other thoroughfare or interstate roads. The average daily traffic (ADT) volume would be 9,001 or more trip ends. Primary arterials designated by the Town include Interstate-95, Route 1, Route 1 Bypass, Route 236 (including Rogers and Shapleigh Roads), Walker Street, and Bridge Street.

Secondary arterials carry relatively high volumes of traffic to and from arterial highways, adjacent communities, and through local residential areas, activity centers and minor commercial establishments. The ADT would be 3,001 to 9,000 trip ends. Designated secondary arterials include New Dennett Road, Route 103 from the Eliot town line through Kittery to the York town line, Haley Road, Government Street, and Wilson Road.

The Land Use and Development Code of the Town of Kittery states that street construction for roadways will generally be affected by the type of development and these types of roadways may require design and construction standards based upon special studies for required roadway improvements and/or construction.

Following is a brief description of primary arterials (Interstate 95, Route 1 and Route 236) in Kittery. These major roadways provide the greatest amount of mobility into, out of and through the Town.

- Interstate 95 (I-95) is a six lane, principal arterial with toll facility. It passes through southern Maine, including the Towns of Kittery and York, and crosses into New Hampshire. I-95 is a major commercial route within and between Maine and the rest of New England and is a major commuting corridor within the KACTS region. I-95 carries the largest volume of traffic in Kittery, approximately 37,500 vehicles per day (vpd) in 2014, though traffic volumes can vary depending on the time of year. In 2012, the average daily traffic volume at exit 7 was 46,965 vpd. During the month of August 2013, the average daily traffic volume peaked to a high of 66,438 vpd.⁶
- Route 1 is a four lane principal arterial in Kittery. It becomes a two lane arterial in parts of York, Ogunquit and Wells. In Kittery, Route 1 is mainly used by commuters and shoppers who utilize the outlet malls in Town and is used by seasonal travelers from New Hampshire through York County and on up to the northern part of the State. A short bypass segment that loops around the downtowns of Portsmouth and Kittery connects Route 1

⁶ KACTS. Long Range Transportation Plan Update 2014-2040. Approved: September 08, 2014.

to I-95. Average daily traffic volumes on Route 1 in Kittery ranged from 3,570 vpd to 16,930 vpd in 2013.

- Route 236 is a two lane arterial that connects Kittery, Eliot, South Berwick and Berwick. It is a major commuter corridor and carried average daily volumes ranging from 4,650 to 18,660 in 2013.

PRIMARY COLLECTORS

Primary collectors may be residential or business or both, and serve both as collectors to lesser residential streets and as connections to or between arterials. The ADT would be from 801 to 3,000 trip ends and in the interests of traffic and public safety must be owned and maintained by the Town. Designated primary collectors include Martin Road, Manson-Picott Roads, Dana Avenue, Cutts-Betty Welch and Chauncey Creek Road. Primary collectors in the urban area of Kittery include Old Post Road, Love Lane, Rogers Road, Woodlawn Avenue, Rogers Road Extension, Maple Avenue and Cook Street.

The Town's design and construction standards provide for 60 feet for right-of-way, 22 feet for travel pavement, 6 feet for sidewalk, paved shoulder (2 feet for walk side, 8 feet for opposite side), 2 feet for gravel shoulder on opposite side, and one side of street for parking.

SECONDARY COLLECTORS

Secondary collectors may be residential or business or both and connect to or between streets of a higher classification and/or

may collect traffic from minor streets or private ways. The ADT would be 201 to 800 trip ends. Secondary collectors in Kittery include Stevenson Road, School Lane, Seapoint Road, Leach Road, Gerrish Island Lane, Cutts Island Lane, Fernald Road, Remicks Lane, Old Dennett Road (upper), and Spinney Way.

The Town's design and construction standards provide for 60 feet for right-of-way, 22 feet for travel pavement, 6 feet for sidewalk, paved shoulder (2 feet for walk side, 8 feet for opposite side), 2 feet for gravel shoulder on opposite side, and emergency parking.

MINOR STREETS

Minor streets are predominantly single-family residential short or dead end streets which may have branching minor streets, private lanes, or private ways and connect traffic to streets of higher classification. This is the lowest of the public street in the hierarchy and must serve at least four dwelling units. The ADT would be 35 to 200 trip ends. Minor streets include Sunset Drive, Emery Lane, Bayview Lane, Harris Avenue, Folcutt Road, Armour Drive, and Meadow Lane. In the urban area such roads include Colonial Drive, Boush Street, Phelps Street, Paul Street, Pleasant Street, Otis Avenue, Palmer Avenue, and Rogers Lane.

The Town standards provide for 50-foot right-of-way, 22-feet travel pavement, 5 feet for sidewalk, paved shoulder (2 feet for walk side, 8 feet for opposite side), 2 feet for gravel shoulder on opposite side, and emergency parking.

PRIVATE STREETS

Private streets function exclusively as residential streets serving high density housing developments including clustered housing, apartments, elderly housing, and mobile home parks and may not be dedicated for public acceptance. Maintenance and improvements must be controlled by proprietorship, corporation, association, or deed covenants. The Land Use and Development Code of the Town of Kittery states that the ADT for private streets would be 72 to 800 trip ends for Class III, 35 to 71 trip ends for Class II, and 12 to 35 trip ends for Class I private streets.

The Land Use and Development Code of the Town of Kittery states that design and construction of Class III private streets is to be in accordance with the applicable standards and specifications for public streets (Primary collectors, secondary collectors, and minor streets).

For Class II private streets, the Town's design and construction standards provide for 40 feet for right-of-way, 20 feet for travel pavement, 5 feet for sidewalk, gravel shoulder on both sides, and emergency parking.

For Class I private streets, the Town's design and construction standards provide for 40 feet for right-of-way, 18 feet for travel pavement (gravel), 5 feet for sidewalk, and no parking.

PUBLIC ROADWAY CENTERLINE MILEAGE

York County provides public roadway centerline mileage by municipality. Table 6.2 shows the public roadway centerline mileage for York County and Kittery. Kittery has 74.06 miles of roadway. Most of these (approximately 44 miles) are designated

as townway/seasonal roadways. State Aid Highway and State Highway in Kittery account for 13.47 and 11.32 miles, respectively. Interstate I-95 is approximately 4.22 miles long in Kittery.

The highway interchanges in Kittery comprise of approximately 1.5% of the total town land area. The interchanges have a significant impact on existing and future land use and development.

Table 6.2: Public Roadway Centerline¹ Mileage

	Interstate	State Highway	State Aid Highway	Townway/Seasonal	Other ²	Total
York County	40.43	258.68	341.8	1607.16	16.42	2264.49
Percent	2%	11%	15%	71%	1%	100%
Kittery	4.22	11.32	13.47	44.07	0.98	74.06
Percent	6%	15%	18%	60%	1%	100%

Source: York County. Public Road Centerline Mileage by Municipality as of 1/9/09.

Note:

- 1 A centerline mile is measured along the center of the road regardless of the number of lanes.
- 2 Other includes reservation and seasonal parkways. Reservation mileage is the sum of "National Military and Naval, Other National, State Forest, State Park and other State mileage."

The Land Use and Development Code of the Town of Kittery provides street and pedestrian ways/sidewalks site design

standards.⁷ The standards require the design of streets to provide for proper continuation of streets from adjacent development and for proper projection into adjacent undeveloped and open land. The local road design standard does not include bicycle accommodations. The Land Use and Development Code includes:

- Street classification,
- Access control and traffic impacts regulations for vehicular access to a development and circulation in the lot,
- Dead-end streets regulations, and
- Street construction standards.

Recently built residential developments on the northern side of Kittery (for example, off of Haley Road) are characterized with longer dead-end streets (cul-de-sacs), which limit access and prevent connectivity to the roadway network.

SCENIC ROADS

The Town of Kittery has a number of roads that contribute to the community's scenic character and visual environment. These roads typically wind and change in elevation, may have mature trees, stonewalls or other visually defining characteristics, and provide a scenic experience to a person traveling along the road. Roads that have been rated as having the greatest scenic value for the community are designated as scenic roads.

⁷ Town of Kittery. Title 16 Land Use and Development Code. Recodified on July 26, 2010 and latest amendment made on October 26, 2015. Pages 171-195.

Scenic roads as identified in the 1999 Comprehensive Plan are classified into three groups: Category One (those of the highest value), Category Two (those of very high value), and Category Three (those of high value).

SUMMARY OF KEY POINTS Scenic Roads

Scenic roads as identified in the 1999 Comprehensive Plan are classified into three groups: Category One (those of the highest value), Category Two (those of very high value), and Category Three (those of high value).

Category One Scenic Roads include:

- Route 103 including Whipple Road, Pepperrell Road, Tenney Hill Road, and Brave Boat Harbor Road
- Seapoint Road
- Chauncey Creek Road
- Hunter and Newmarch Streets
- Government Street
- Crockett Neck Road from Route 103 to Bond Road
- Old Ferry Lane
- Picott Road
- Wilson Road from Picott Road to the Eliot Line
- Haley Road from Route 1 to Hartley Farm Road

Category Two Scenic Roads include:

- Tower Road
- Love Lane
- Cutts Road from Picott Road to Betty Welch Road

- Goodwin Road
- Old Dennett Road west of I-95
- The half-mile of Bartlett Road near the York line
- Lawrence Lane
- Adams Road

Category Three Scenic Roads include:

- Miller Road
- The upper end of Norton Road
- Pocahontas Road Extension
- Litchfield Road
- Betty Welch Road

TRAFFIC VOLUMES

Traffic volume counts are one method used to evaluate traffic. Weekday daily roadway traffic volumes collected in 2010 and 2013 on select arterials, collectors and local roadways in Kittery are shown in Table 6.3 and in Figure 6.8. Table 6.3 also summarizes weekday daily traffic volume growth on the roadways. The following summarizes traffic volumes in Kittery:

- Interstate 95 (I-95), principal arterial with toll facility in Kittery, carried the largest weekday daily traffic volume with 37,500 vehicles per day (vpd) in 2014. Traffic volume on I-95 increased by 0.3% per year between 2010 and 2014.
- Daily volumes on US Route 1, ranged from 4,110 vpd to 16,930 vpd in 2013. US Route 1 experienced decrease in traffic volume by 3.2% to 6.1% per year between 2010 and 2013.

- Daily volumes on Rogers Road (State Route 236) ranged from 10,740 vpd to 18,660 vpd in 2013. As shown in Table 6.3, two segments on Rogers Road experienced increase in traffic volume while one segment experienced decrease in volume.
- Shapleigh Road (State Route 236) carried 10,340 vpd to 12,070 vpd. Daily traffic volume on Shapleigh Road increased up to 7.3% per year.

SUMMARY OF KEY POINTS Traffic Volumes

- I-95: 37,500 vehicles per day (vpd), Route 1: 16,930 vpd and Route 236: 18,660 vpd have the highest daily traffic volume.
- Most of the roadway segments experienced decrease in daily traffic volume between 2010 and 2013. Shapleigh Road increased up to 22% during this period.
- When I-95 experiences congestion, particularly during summer months, local roadways experience congestion and are used as cut-throughs.
- Route 103 is a narrow, winding roadway shared by vehicles, motorcycles, and bicyclists, particularly on warm weather weekends.
- Walker Street (State Route 103) experienced daily traffic volumes ranging from 8,110 vpd to 8,460 vpd in 2013. Traffic volume on Walker Street decreased by 0.6% to 1% per year between 2010 and 2013.
- Whipple Road southeast of Woodlawn Avenue experienced 8,830 vpd in 2013, a decrease of 2.6% from 2010 to 2013.

KITTERY COMPREHENSIVE PLAN EXISTING CONDITIONS INVENTORY

- Daily traffic volume on Government Street ranged from 1,970 vpd to 7,570 vpd in 2013. Government Street east of Hunter Avenue had the largest decrease in traffic volume (a decrease of 10.4% per year between 2010 and 2013).
- The remaining roadways in Kittery carried fewer than 5,000 vehicles per day.

Additionally, daily traffic volume on US Route 1 Bypass ranged from 2,640 vpd southwest of US Route 1 to 15,670 vpd at New Hampshire state line at Sarah Mildred Long Bridge.

Route 103 is a narrow, winding roadway shared by vehicles, motorcycles, and bicyclists, particularly on warm weather weekends.

Table 6.3: Roadway Traffic Growth in Kittery

Location	Daily Traffic Volume on Roadways		Percent Change	Annual Percent Change
	2010	2013		
I-95 SB @ NH State Line ¹	37,010	37,500	1%	0.3%
US 1 SW/O SR 101 (Wilson Rd)	18,730	16,930	-10%	-3.2%
US 1 @ Spruce Creek BR #2553	17,650	16,260	-8%	-2.6%
US 1 NE/O Haley Rd	12,330	10,940	-11%	-3.8%
US 1 SW/O Rest Area Rd	11,080	9,820	-11%	-3.8%
US 1 (State Rd) S/O Traffic Circle	9,880	9,200	-7%	-2.3%
US 1 SB SW/O I-95 NB On Ramp	9,250	8,400	-9%	-3.1%
US 1 (State Rd) N/O Love Ln	9,790	8,390	-14%	-4.8%
US 1 NB S/O US 1 Bypass NB	7,040	6,470	-8%	-2.7%

US 1 (State Rd) N/O Traffic Circle	7,310	6,230	-15%	-4.9%
US 1 SB SW/O I-95 SB on RP from US 1 SB	5,000	4,560	-9%	-2.9%
US 1 (State Rd) NB S/O SR 103 (Walker St.)	5,030	4,110	-18%	-6.1%
Rogers Rd (SR 236) NW/O Martin Rd	17,990	18,660	4%	1.2%
Rogers Rd (SR 236) SE/O Stevenson	18,120	18,630	3%	0.9%
Rogers Rd (SR 236) E/O Traffic Circle	12,220	10,990	-10%	-3.4%
Rogers Rd (SR 236) N/O Dion Ave	11,570	10,740	-7%	-2.4%
Shapleigh Rd (SR 236) SE/O Rogers Rd	10,460	12,070	15%	5.1%
Shapleigh Rd (SR 236) NW/O Whipple Rd (SR 103)	8,490	10,340	22%	7.3%
SR 236 SB NW/O Traffic Circle @ Overpass	11,350	10,720	-6%	-1.9%
SR 236 NB SE/O Dana Ave	9,060	9,400	4%	1.3%
SR 236 NB NW/O Traffic Circle @ Overpass	8,510	7,520	-12%	-3.9%
Walker St (SR 103) E/O US 1 (State Rd)	8,690	8,460	-3%	-0.9%
Walker St (SR 103) E/O Main St	8,570	8,360	-2%	-0.8%
Walker St (SR 103) W/O Jones Ave	8,600	8,350	-3%	-1.0%
Walker St (SR 103) W/O SR 103 (Wentworth)	8,270	8,110	-2%	-0.6%
Whipple Rd (SR 103) SE/O Woodlawn Ave	9,590	8,830	-8%	-2.6%
Government St (SR 103) SE/O Bridge St	7,420	7,570	2%	0.7%
Government St NW/O Stimson St	1,750	2,040	17%	5.5%
Government St (OW) E/O Hunter Ave	2,860	1,970	-31%	-10.4%

KITTERY COMPREHENSIVE PLAN EXISTING CONDITIONS INVENTORY

Dennett Rd N/O I-95 SB On Ramp	3,200	3,890	22%	7.2%
Manson Ave E/O Shapleigh Rd (SR 236)	2,350	2,750	17%	5.7%
Haley Rd E/O US 1	2,710	2,660	-2%	-0.6%
Haley Rd N/O Crocketts Neck Rd	1,830	1,640	-10%	-3.5%
Tenney Hill (SR 103) W/O Chauncy Creek Rd	2,460	2,270	-8%	-2.6%
Cutts Rd N/O US 1	2,120	2,040	-4%	-1.3%
Government St NW/O Stimson St	1,750	2,040	17%	5.5%
Stevenson Rd NE/O Rogers Rd (SR 236)	1,650	1,750	6%	2.0%
Old Post Rd NE/O Cook St (SR 103)	2,060	1,730	-16%	-5.3%
Chauncy Creed Rd SE/O Tenny Hill (SR 103)	1,270	1,080	-15%	-5.0%

Source: Maine Department of Transportation. 2014 Maine Transportation Count Book.

Note:

1 For I-95, 2014 volume was available instead of 2013 therefore, 2014 volume was used.

TRAFFIC OPERATIONS

In Kittery, traffic congestion on local streets is experienced due to traffic generated by the stores on Route 1 and the Portsmouth Naval Shipyard (PNSY). The Portsmouth Naval Shipyard has

more than 5,000 employees⁸, who enter and exit the PNSY through Gate 1 near Walker Street and Wentworth Street and Gate 2 at Whipple Road and Wyman Avenue. Traffic backing up into residential neighborhoods during the daytime shift change is a major issue. This Comprehensive Plan will help identify measures to manage and reduce traffic to Kittery's transportation system.

The PNSY promotes carpooling and offers transportation via the COAST bus system. In Kittery, COAST provides year round limited transit services from PNSY to towns in New Hampshire and Maine.

When I-95 experiences congestion, particularly during summer months, local roadways experience congestion and are used as cut-throughs.



⁸ KACTS. Long Range Transportation Plan Update 2014-2040. Approved: September 08, 2014.

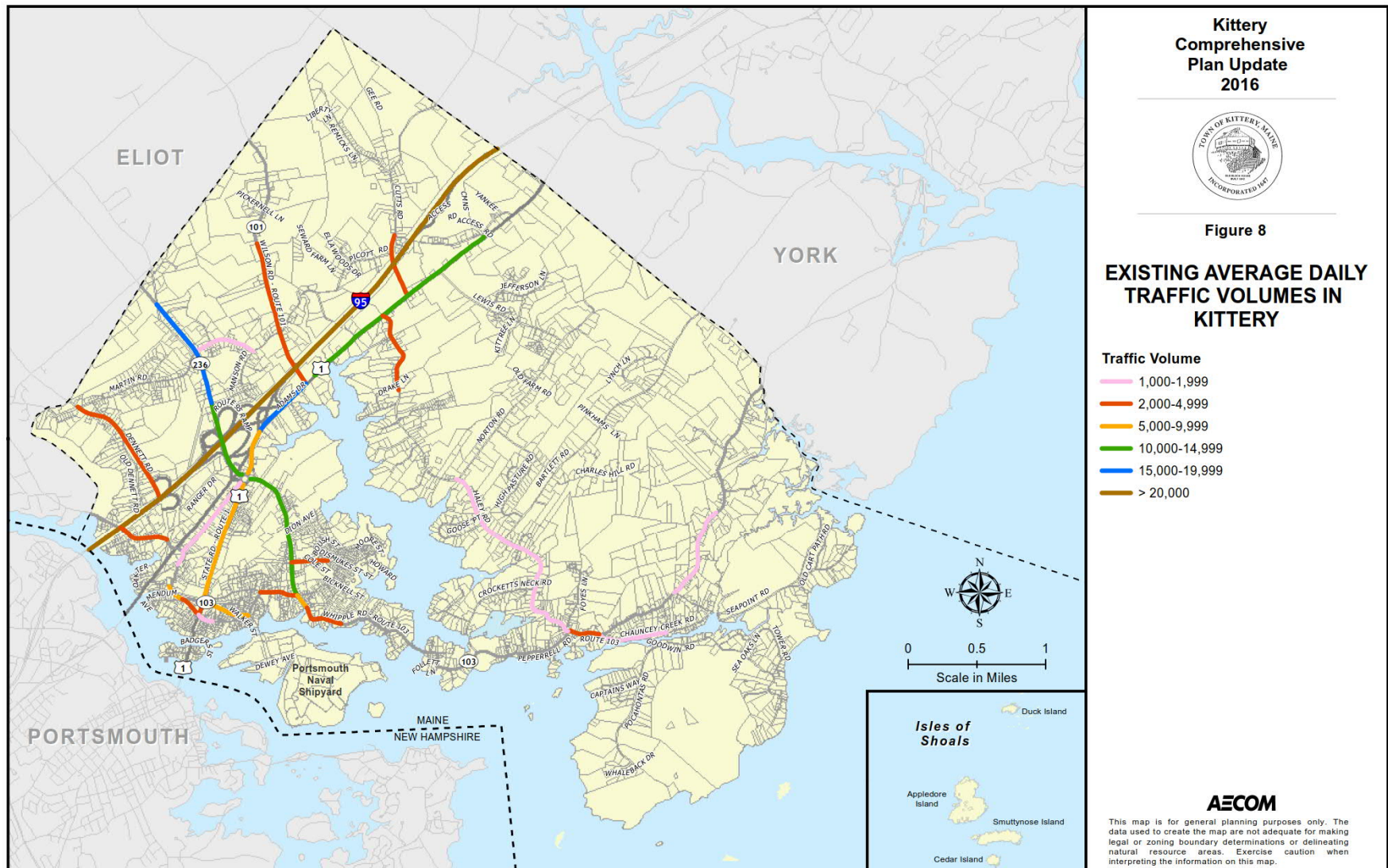


Figure 6.8: Existing Average Daily Traffic Volumes in Kittery

MAINTAINING THE TRANSPORTATION INFRASTRUCTURE

This section discusses transportation infrastructures, including pavement management, bridges and sidewalks.

SUMMARY OF KEY POINTS

Maintaining the Transportation Infrastructure

- The DPW conducts a full roadway inventory every three years and it is used as a basis for setting road maintenance priorities. Typically, the roadways with ratings of less than 50 would be on the priority list for maintenance in a given years.
- Most of the sidewalks in Kittery are along US Route 1 and in the urban downtown area.
- Most of the bridges in Kittery received a Federal Sufficiency Rating (SFR) above 50. Viaduct and Sarah Mildred Long Bridge have the lowest ratings of 16.4 and 21, respectively. Memorial Bridge replacement was completed in 2013.

PAVEMENT MANAGEMENT

The Department of Public Works (DPW) has established a policy for local roadway maintenance that is referred to as the Road Surface Management System. This system groups roadways into three categories: 1) State Aid Roads, 2) Local Collector/Connector Roads, and 3) Local Roads. Within each of these categories roadway segments are identified and for each segment a rating is given as well as the length of the roadway and the date of last

maintenance (i.e., sealed, paved, other). The inventory also identifies the specific repairs that are necessary.

The rating system is based upon a numerical rating from 1 to 100 where 100 is the highest rating. Such roadway conditions as deficient drainage, rutting, pot holes, cracks, and shoulder raveling are rated. The DPW conducts a full roadway inventory every three years and it is used as a basis for setting road maintenance priorities. Typically, the roadways with ratings of less than 50 would be on the priority list for maintenance in a given years.

Kittery's current budget for road maintenance and improvement includes \$900,000 in state aid and \$ 600,000 in bond money for paving.

Figure 6.9 “Road Surface Ratings and Repair Categories” illustrates the road surface repair categories.



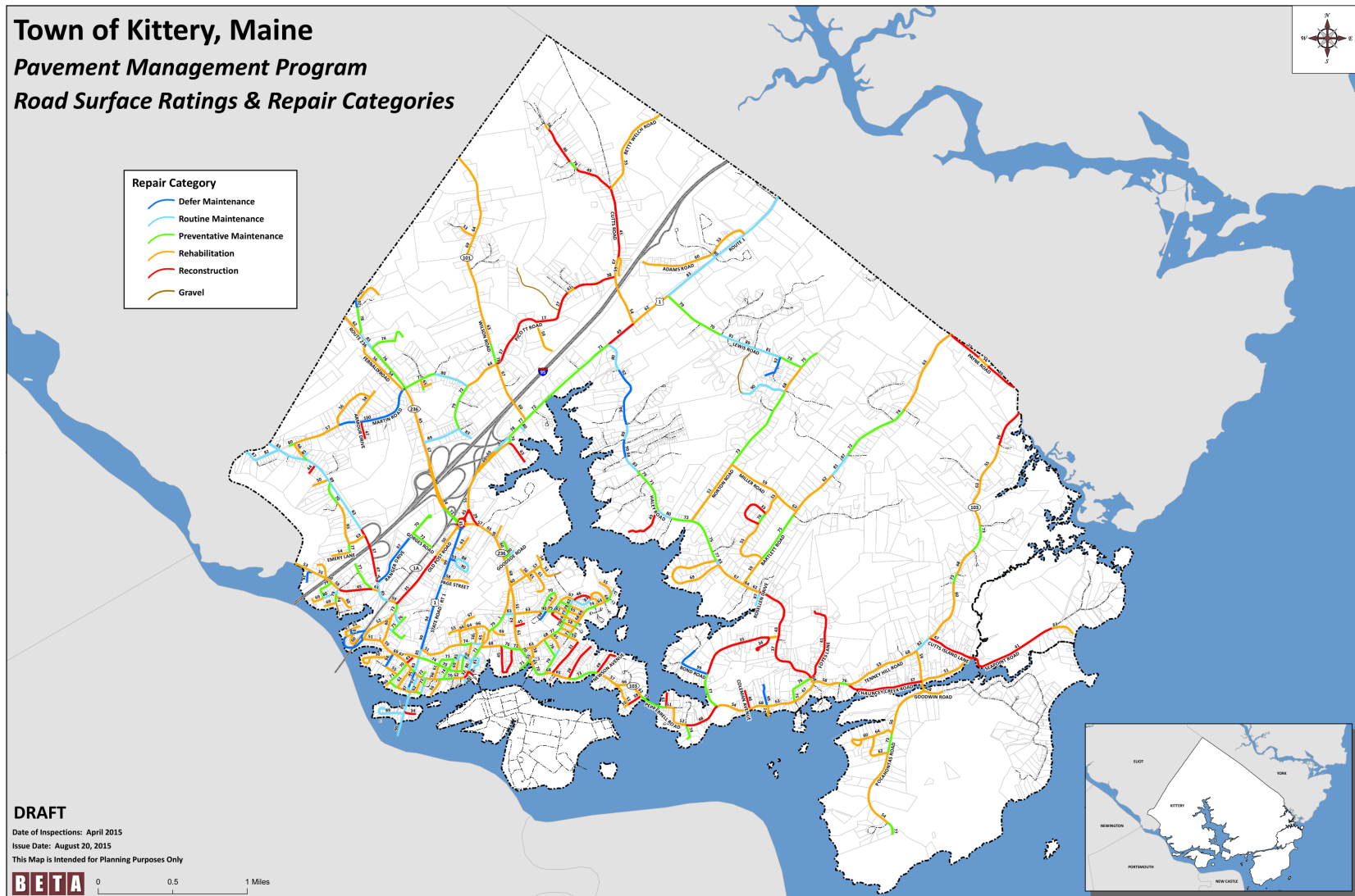


Figure 6.9: Road Surface Ratings and Repair Categories for Kittery
 Source: Town of Kittery, Maine and BETA. August 20, 2015

SIDEWALKS

The Kittery Department of Public Works maintains an inventory of sidewalks in a Sidewalk Condition Report. Each sidewalk section is identified by type (paved or concrete) and length and condition (Excellent, Good, Fair, Poor).

Most of the sidewalks in Kittery are along US Route 1 and in the Foreside area. The sidewalks along Route 1 are located on Badger's Island and in the areas from Water Street to the south of traffic circle and the Kittery Mall Outlets. Large lengths of sidewalks in the Foreside and urban business districts are along Dana Avenue, Cook Street/Old Post Road, Government Street, Walker Street, Bridge Street, Dion Avenue, Manson Avenue, Rogers Road, Shapleigh Road, Whipple Road, Woodlawn Avenue and Pepperrell Road. Sidewalk is also present along short segment of Dennett Road (from Old Post Road to South Eliot Road).

The KACTS has completed a study with Kittery to identify opportunities to make the Route 1 Bypass more bike and pedestrian friendly, especially once the new Sarah Mildred Long Bridge is constructed.

Some recent sidewalk projects include:

- Repaving of the sections of Taylor parking lot and front sidewalk in 2012⁹;
- New sidewalks around the "When Pigs Fly" property in 2011¹⁰; and

⁹ 2011-2012 Annual Report for the Town of Kittery, Maine.

- Completion of Stevenson Road and sidewalk improvements in FY 2010-2011¹¹.

The Town of Kittery was awarded 1.5 million dollars to continue improving the Route 1 corridor, including the Memorial Traffic Circle rebuild, additional sidewalks, drainage, island reconstruction, culvert replacement, pavement overlays and other related work.¹² Construction is due to begin in summer 2017.

BRIDGES

The MaineDOT, the Maine Turnpike Authority, and the Kittery Department of Public Works are responsible for bridges in Kittery. There are approximately 20 bridges and ramp structures maintained by the state that are associated with Interstate-95, Route 1 and the Route 1 Bypass, including the bridges over the Piscataqua River. In addition, there are three state maintained "local" bridges, including the Kittery Point Bridge over Spruce Creek on Route 103, the Gerrish Island Bridge over Chauncey Creek and the Route 1 Bridge/Culvert over Spruce Creek. The state also owns and maintains the Route 103 overpass on the Boston and Maine spur and a Boston and Maine tunnel under an abandoned section of rail at the Route 1 Bypass.

Three bridges between Kittery and Portsmouth, New Hampshire: the Memorial Bridge (Route 1), Sarah Mildred Long Bridge (Route 1 Bypass) and the I-95 High Level Bridge provide important

¹⁰ Ibid

¹¹ 2010-2011 Annual Report for the Town of Kittery, Maine.

¹² 2013-2014 Annual Report for the Town of Kittery, Maine.

connections between Maine and New Hampshire. These three bridges are owned jointly by the MaineDOT and the New Hampshire DOT.

The Town of Kittery is responsible for bridge structures that are ten (10) feet or less in span. The Town is responsible for the following bridge structures:

- A box culvert on Wilson Road over Spruce Creek;
- A box culvert on Picott Road over Spruce Creek;
- The Cutts Island Bridge on Seapoint Road;
- A box culvert and causeway on Crockett's Neck Road over Barthers Creek; and
- Several smaller culverts where roads pass over water bodies.

The MaineDOT has a state-wide bridge inspection program that is based upon the National Bridge Inspection Standards (NBIS) system. All bridges are inspected at least every two years and depending on the location, use and, condition may be inspected on a less formal basis more frequently. In Kittery, the bridges were last inspected in 2011 and 2012 (see Table 6.4). Similar to roads, bridge condition is rated on a numerical system, called Federal Sufficiency Rating (FSR). Each FSR has a numeric indicator of the overall value of the sufficiency of the bridge, with rating form 0-100 where the higher the rating, the better the condition of the bridge. The FSR include both structural deficiencies as well as functional obsolescence. The state then establishes priorities for maintenance, repair and replacement of its own bridges.

As shown by the ratings of the bridges in Table 6.4, most of the bridges in Kittery received a rating above 50. Viaduct and Sarah

Mildred Long Bridge have the lowest ratings of 16.4 and 21, respectively.

Table 6.4: State-aid Bridges in Kittery

Bridge Number	Bridge Name	Federal Sufficiency Rating (FSR)	Last Inspected
1361	B&M Railroad Tunnel	56.5	1/23/2012
1362	Eliot Road Overpass	93.2	1/9/2012
1477	Piscataqua Maine Approach	84.0	10/23/2012
2031	Badger Island	65.6	12/5/2012
2546	Memorial	N/A	N/A
2553	Mill	71.4	4/27/2012
3013	Kittery Point	88.6	12/5/2012
3641	Sarah Mildred Long	21.0	12/29/2009
3783	Gerrish Island	88.1	1/9/2012
3860	Kittery Overpass	57.9	12/26/2012
5276	Viaduct	16.4	9/26/2012
5620	B&M Overpass	92.5	4/27/2012
6222	Ramp M-US 1/I-95 Ramp	76.5	1/18/2012
6223	Wilson Road Bridge	76.9	1/18/2012
6224	Spruce Creek	95.1	12/5/2012
6275	I-95/Dennett Road	83.0	1/23/2012
6276	Route 236 over I-95	87.5	1/23/2012
6277	Ramp H Bridge	99.6	4/30/2012
6278	Ramp J Bridge	97.8	1/23/2012
6330	I-95/Piscataqua River	76.0	1/27/2011

Source: KACTS MPO Long Range Transportation Plan Update 2014-2040. September 8, 2014.

The MaineDOT puts emphasis on maintaining health of “forever bridges”, which are high-value bridges which, when replaced, will create extraordinary impacts to customers or create significant funding needs that could severely impact bridge resources. These bridges must last at least 100 years or longer in some cases. “Forever bridges” in Kittery includes Memorial Bridge, Sarah Mildred Long Bridge, and I-95/Route 103 bridge over Piscataqua River.¹³

Recent bridge projects in Kittery include the Memorial Bridge replacement project that was completed in 2013. The original structure was a lift span bridge that was constructed in 1920. The bridge was replaced due to maintenance issues, serious structural deficiencies, and weight restrictions. The new bridge is still a lift span bridge and includes sidewalks and bike lanes on both sides of the bridge and several pedestrian overlooks. Ongoing bridge project includes planning for the reconstruction of the new \$180,000,000 the Sarah Mildred Long Bridge. It is scheduled to be replaced by 2017. The new bridge will include a bicycle lane but not sidewalks. Bridge improvement for I-95 is included in the MaineDOT’s 2015-2016-2017 Work Plan. The improvement would

be on I-95/Piscataqua River Bridge over the Piscataqua River, located on the Maine-New Hampshire state line.¹⁴

SAFETY

One measurement of safety is to evaluate the history of crashes on roadways and intersections. Town, Maine and KACTS are dedicated to reducing the number of crashes and fatalities on roads and support the federal *Toward the Zero Deaths* initiative.

SUMMARY OF KEY POINTS

Safety

- There were nine high crash locations (six of them are intersections and three are segments of roadway) in Kittery between 2013 and 2015.
- According to the annual Town report for 2013, Kittery experienced a reduction in accidents by 10% compared to 2012.

MaineDOT uses crash data obtained from the State and local police to determine high crash locations (HCL). Every intersection (node) and section of roadway (link) is analyzed to come up with a Critical Rate Factor (CRF). The CRF is a comparison of actual crash rate on a link or at a node to the expected accident rate based on road type, vehicle miles of travel, and a statewide

¹³ MaineDOT. Keeping Our Bridges Safe. 2014 Report. <http://www.maine.gov/mdot/publications/docs/plansreports/kobs2014.pdf>

¹⁴ MaineDOT Work Plan. Calendar Years 2015-2016-2017. <http://www.maine.gov/mdot/projects/workplan/docs/2015/WorkPlan2015-2016-2017.pdf>

average of accident rates. A CRF greater than 1 on a link or at a node indicates a crash rate higher than should be expected at that location when based on statewide data.

In addition to determining the CRF, MaineDOT maintains data on all the crashes on the links and at the nodes. Reports are produced at locations with CRF greater than 1 that have more than 8 crashes during a 3 year period. These locations are then called high crash locations. MaineDOT and municipalities use the High Crash Location data to make informed decisions about highway safety improvements. In order to qualify, High Crash Locations must be at locations that have had at least eight crashes in the same location for a three-year period. It also must exceed the Critical Rate Factor of crashes. A CRF is the average expected rate of crashes for a location.

Table 6.5 lists the high crash locations in Kittery based on MaineDOT analysis of crashes between 2013 and 2015. As shown in the table, there were nine high crash locations (six at intersections and three on roadway segments) in Kittery between 2013 and 2015. These locations are further illustrated in Figure 6.10.

Table 6.5: High Crash Locations in Kittery (2013-2015)

High Crash Location Description	Total Crashes	Critical Rate Factor (CRF)	Ranking State/ County
Intersection (Node)			

Intersection of New State Road, Rogers Road, State Road	37	4.27	40/10
Intersection of Manson Road, Picott Road and Wilson Road	8	3.18	81/19
Intersection of Shapleigh Road, Whipple Road and Woodlawn Avenue	12	2.50	120/31
Intersection of Ramp off to Rogers Road Rogers Road South Bound	8	1.75	171/40
Intersection of Manson Avenue, Shapleigh Road	9	1.70	175/48
Intersection of State Road and Walker Street	16	1.06	228/60
Section of Roadway (Link)			
End of US 1 Bypass to Intersection of US 1 Bypass & US 1 Bypass South Bound	11	1.63	125/14
End of I-95 Southbound to Intersection of Exit 1 On-Ramp from I-95 North to Dennett Road I-95 SB	9	1.61	127/15
Intersection of Entrance to Maine Outlet/Entrance to Shop Center/US 1 to Intersection of Entrance to Mall/ US 1/Wilson Road	18	1.09	179/35

Source: MaineDOT – Traffic Engineering, Crash Records Section. High Crash Locations from 1/1/2013 to 12/31/2015.

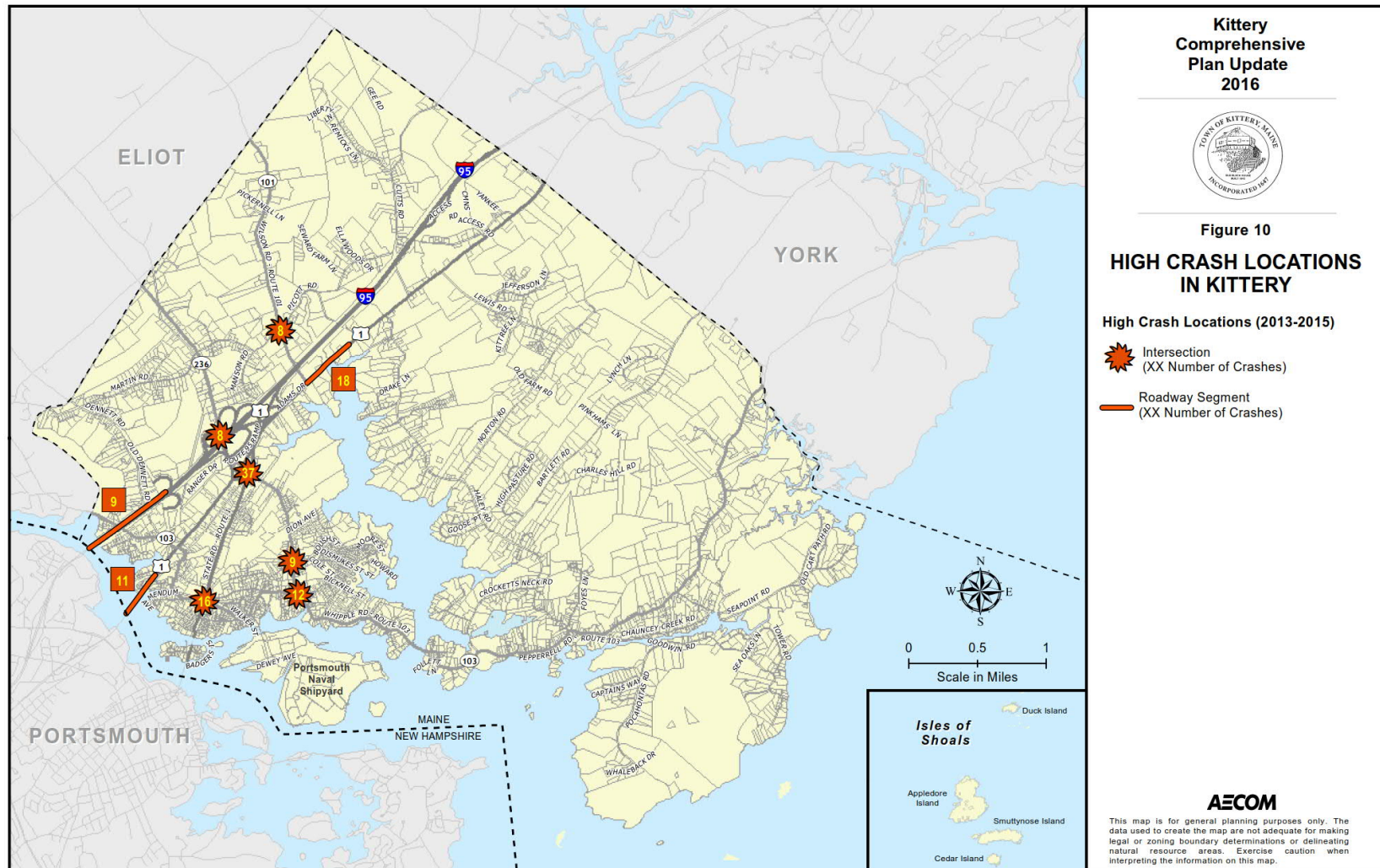


Figure 6.10: High Crash Locations in Kittery

Source for High Crash Locations: MaineDOT – Traffic Engineering, Crash Records Section. High Crash Locations from 1/1/2013 to 12/31/2015.

In 2013, Kittery experienced a reduction in crashes by 10% compared to 2012. According to the 2013-2014 Annual Town Report, Kittery's goal is to achieve 10% reduction in traffic accidents.¹⁵

In FY 2011-2012, the Kittery Police Department created a new position for bicycle officer. The bicycle officer patrols high pedestrian traffic areas, such as the malls, beaches, and parks, on a mountain bike. This has enabled the officer to interact with pedestrians and provide responses to areas where police vehicle cannot practically reach.

PEDESTRIAN AND BICYCLE FACILITIES

This section discusses the current level of pedestrian and bicycle facilities in Kittery including sidewalks, trails, paths and bike accommodations. Pedestrian and bicycle facilities are used for both commuting and recreational purposes. Common strategies to ensure pedestrian safety include providing sidewalks and controlled crossings in areas where pedestrian activity is significant or encouraged. Bicycle safety measures include providing at least four-foot (five-foot preferred) bike lanes on paved shoulder of a roadway.

The design and construction standards for streets and pedestrian ways provided in the Land Use and Development Code of Kittery

¹⁵ 2013 – 2014 Annual Report for the Town of Kittery, Maine. July 1, 2013 – June 30, 2014.

SUMMARY OF KEY POINTS Pedestrian and Bicycle Facilities

- Approximately 2.5-miles of the Eastern Trail runs through Kittery from the Maine State Line on the Memorial Bridge to Dennett Road after which it continues to the Town of Eliot. An alternative on-road trail route is also provided through South Eliot Road/Main Street/Route 103.
- The State designated Route 236 bike route runs through Kittery. Route 236 has adequate shoulder width to accommodate bicycle travel.
- The KACTS has completed a study with Kittery to identify opportunities to make Route 1 Bypass more bike and pedestrian friendly.
- Kittery does not participate in the MaineDOT Safe Routes to School (SRTS) Program.

provides design standards for sidewalks but does not provide standards for bicycle accommodations.¹⁶

BIKE ACCOMMODATION

ROUTE 236 BIKE ROUTE

The State designated Route 236 bike route was the only designated bicycle route in the KACTS area and Kittery until

¹⁶ Town of Kittery. Title 16 Land Use and Development Code. Recodified on July 26, 2010 and latest amendment made on October 26, 2015. Page 178.

recently when Eastern Trail began. The Route 236 bike route runs from Route 4 in South Berwick down Route 236 through Eliot and Kittery. Both of these roads have adequate shoulder width to accommodate bicycle travel.

EASTERN TRAIL

The Eastern Trail is a 65-mile section of the East Coast Greenway, a transportation-recreation greenway connecting Kittery, in southernmost Maine, to Casco Bay in South Portland.¹⁷ The Eastern Trail includes both off-road sections and scenic on-road route that mostly follows quiet country roads. In Kittery, the Eastern Trail is approximately 2.5-miles long and begins at the Maine State Line on the Memorial Bridge over the Piscataqua River and runs on-road through Hunter Avenue, Newmarch Street, Government Street, Cook Street, Old Post Road and Dennett Road after which it continues to the Town of Eliot. The alternative on-road trail route is also provided through South Eliot Road/Main Street/Route 103.¹⁸ This bicycle route also incorporates the existing bicycle route on Route 236 in other towns.

BICYCLE COALITION OF MAINE

The Bicycle Coalition of Maine is an advocacy group that works to make Maine a better place to bicycle. It was founded by a small

group of cyclists in 1992. Since then it has grown into one of the most effective bike advocacy groups in the country.¹⁹

The Bicycle Coalition of Maine's five-year strategic plan guides its work for expanding biking in Maine, improving bike safety, passing bike-friendly laws and spreading a love of cycling to children and adults. The group also manages the Maine Safe Routes to School (SRTS) Program in partnership with the Maine Department of Transportation. This federally funded initiative promotes safe walking and bicycling for Maine's school children. Since the start of the program in 2005, the Maine SRTS Program has worked with hundreds of local schools throughout the state to engage in walk and bike to school activities and projects. Currently, Kittery does not participate in the MaineDOT SRTS Program.



¹⁷ Eastern Trail Alliance. <http://www.easterntail.org/>

¹⁸ Eastern Trail Guide. "Welcome to the Eastern Trail in Southern Maine". 2nd Edition, 2014. <http://www.easterntail.org/documents/etbooklet.pdf>

¹⁹ The Bicycle Coalition of Maine. <http://www.bikemaine.org/about>

BICYCLE AND PEDESTRIAN STUDIES/PROEJCTS

ROUTE 1 BYPASS BICYCLE AND PEDESTRIAN PLAN

The KACTS has completed a study with Kittery to identify opportunities to make the Route 1 Bypass more bike and pedestrian friendly, especially once the new Sarah Mildred Long Bridge is constructed. In late 2014, the KACTS and the Town retained Sebago Technics to conduct a neighborhood pedestrian and bicycle improvement plan for Route 1 Bypass from Memorial Circle to the Sarah Mildred Long Bridge and develop a long-term vision for improving bicycle and pedestrian safety. The study area consisted of the section of the Town bordered by US Route 1 (to the east), Memorial Circle (to the north), Bridge and Government Streets (to the south), and Dennett and South Eliot Roads westerly to the Maine Turnpike. The study provided three options for improvement.

ROUTE 103 BICYCLE-PEDESTRIAN TRAIL

The MaineDOT work plan for Calendar Years 2015-2016-2017 lists bicycle-pedestrian project on Route 103. It is listed as an on-road new construction project on Route 103 beginning at Old Ferry Lane and extending westerly 0.52 of a mile.²⁰

Additionally, MaineDOT and the Maine Office of Tourism have published 33 Loop Bike Tours in a book entitled “Explore Maine by Bike”. It includes Route 103 in Kittery in Tour 8 (Kittery Coastal

²⁰ MaineDOT Work Plan. Calendar Years 2015-2016-2017. January 2015. Pg. 135.

Signature Rides) with three tour loops that are 12, 17, and 22-mile long and extend from York to Nubble Light, Kittery to Elliot and York to Kittery, respectively.²¹

TRANSIT

This section describes transit services, paratransit service, private bus carriers and ride sharing program available in Kittery.

SUMMARY OF KEY POINTS

Transit

- In Kittery, the COAST provides year round limited transit services. Out of five COAST routes, four are express commuter routes.
- There used to be shuttle bus service that operated on Route 103 in Kittery, but it has not been provided for several years.
- Paratransit service, ridesharing program and van services are available to Kittery residents through various organizations.

FIXED – ROUTE BUS SERVICE IN KITTERY

Since 1983, the Cooperative Alliance for Seacoast Transportation (COAST) has provided public bus service to Portsmouth and

²¹ Explore Maine. Tour 8 – Kittery Coastal Signature Rides. <http://www.exploremaine.org/bike/beaches/kittery.shtml>

Berwick. In Kittery, COAST provides year round limited transit services from Portsmouth Naval Shipyard (PNSY) to towns in New Hampshire and Maine. Currently, COAST operates five Routes: 2cc, 41cc, 100, 101 and 103 to and from the PNSY Gate 1. Route 2cc operates between PNSY Gate 1 to Rochester, New Hampshire. Routes 100, 101, 103 and 41cc are known as COAST's "Clipper Connection" express commuter routes. These bus routes begin in PNSY and serve the communities of Portsmouth, New Hampshire (Route 41cc), Rochester, New Hampshire (Route 103), and Dover, New Hampshire (Route 101). Route 100 begins at PNSY and serves Somersworth in New Hampshire, and Eliot, South Berwick, Berwick in Maine. The COAST service is open to the public, but serves primarily employees of the Navy Yard and Portsmouth. Monthly pass holders of the Clipper Connection service are eligible for the "Emergency Ride Home" program.



A shuttle bus service used to operate on Route 103 in Kittery, but it has not been provided for several years. Fair Tide has recently evaluated the need for shuttle bus service. At this time, it

appears that demand for the service is not large enough to be considered for grant guidelines. Fair Tide may consider applying in the future as condition and demand may change. Fair Tide was established in 1998 by a group of southern Maine and seacoast New Hampshire citizens. Fair Tide provides short-term affordable housing for people who are homeless, and individualized support services and referrals to community services. It also advocates on participants' behalf at both the local and state government levels.²²

PARATRANSIT SERVICE

York County Community Action Corporation (YCCAC) provides transportation services to all the KACTS towns. YCCAC currently operates demand-responsive service for the residents of Kittery and other York County towns. The service is mainly targeted for the elderly, disabled, and low income populations although it is also available for the general public. YCCAC provides four scheduled transit services to few towns and year round "Local Rides" service to all the communities in the York County. Local Rides routes provide services from home to the closest regional shopping and medical destinations for each town served. Riders are usually picked up at their homes with a return trip an hour or more later. Map and schedules for the Local Rides service are available in the YCCAC website. Towns are coded with different colors based on the day service is available for the town. Local Rides service in Kittery is available on Fridays, with destinations in Kittery, Portsmouth and Newington.²³ The York Hospital also

²² <http://www.fairtide.org/people/>

²³ York County Community Action Corporation. Local Rides. <https://www.yccac.org/index.php/local-rides>

provides a shuttle bus service for patients who need transportation to and from the hospital in the southern York County area, including Kittery.

Electric Vehicle (EV) charging stations may be part of the York Hospital's future plans.

PRIVATE BUS CARRIERS

There are several interstate private bus carriers that serve the Portsmouth-Kittery area. C & J (formerly C & J Trailways) offers service out of the Portsmouth Transportation Center located at the Grafton Drive entrance of the Pease International Tradeport, Dover and Durham. Greyhound Bus Lines provides limited service in Dover, New Hampshire. These bus carriers provide bus service to Boston and Logan Airport as well as Portland, Maine and other cities in northern New England.

RIDESHARING PROGRAM

GoMaine is a statewide commuter services program sponsored by MaineDOT and the Maine Turnpike Authority. GoMaine helps individuals find carpools for commuting to work and rides for events. While vanpools were previously operated by GoMaine, today they are operated by several private organizations and commuters. GoMaine has partnered with vRide and Enterprise Rideshare for vanpool. There are a couple of vanpools available from the Portsmouth Naval Shipyard in Kittery. By signing up with

the Go Maine NuRide program, commuters can get rewards including the "Emergency Ride Home" benefit.²⁴

VAN SERVICE

Kittery Community Center provides van service through town-owned four vans for special events. The Kittery Community Center also provides adult trips (for 18 years and over) to places of attractions in Maine, Massachusetts and New Hampshire, including Larz Anderson Auto Museum in Brookline, Massachusetts; Freeport Shopping and Lunch in Freeport, Maine; Bedrock Gardens in Lee, New Hampshire; Pickity Place in Mason, New Hampshire; Lake Sunapee Cruise in Sunapee, New Hampshire and Cabbage Island Clambake in Boothbay, Maine. Registrations are required to be done at the Community Center.

In addition to this, the State of Maine also provides van service to York County if a reservation is made ahead by phone. Durgin Pines, a nursing home located in Kittery just off the turnpike between York Hospital and Portsmouth Hospital, and Sentry Hill, a retirement community in York have their own vans.

OTHER TRANSPORTATION SERVICES

Other transportation services, including taxi service, rail service, airports, marine facilities and parking are summarized below.

²⁴ GoMaine. <http://www.gomaine.org/>

TAXI SERVICE

Kittery is not consistently served by taxi service. Portsmouth taxi companies provide limited coverage of the Kittery area. At one time, Kittery offered to implement a subsidized taxi service for the elderly and needy individuals, but due to lack of interest, discontinued the project.

RAIL SERVICE

Currently, there is no passenger rail service into Kittery. Amtrak Downeaster began providing passenger service between Portland, Maine and Boston, Massachusetts in 2000, which was extended to Freeport and Brunswick, Maine in 2012. The nearest stations from Kittery are Dover, New Hampshire and Wells, Maine. There is a freight service to the Portsmouth Naval Shipyard operated by the Boston & Maine Division of Guilford Transportation Industries.

MARINE FACILITIES

Kittery has some small harbor facilities in addition to the Portsmouth Naval Shipyard. They are located on the north side of the Piscataqua River basin and Portsmouth Harbor. A lighted whistle buoy, Whaleback Light, and the Portsmouth Harbor Light at New Castle mark the entrance to the harbor, and the channel is marked with buoys, lighted buoys, and day beacons. The primary activities on the smaller harbors are fishing and recreational boating. There are no docking facilities outside of the Portsmouth Naval Shipyard for working large ocean-going vessels. Refer to Chapter 8 for marine facilities.

AIRPORT

Boston, Massachusetts, Manchester, New Hampshire and Portland are the closest major air terminals, each approximately one hour from Kittery. Shuttle service is available to Boston and Portland from private carriers. Littlebrook Airport off Route 236 in Eliot has a 2,500-foot paved runway suitable for small planes. The Pease Development Authority located in Portsmouth, New Hampshire also provides regularly scheduled commercial air service flights for the Pease International Tradeport. The Tradeport also has a private charter service.

PARKING

There are generally very few off-street municipal parking lots in Kittery. However, parking provided at municipal buildings such as Rice Library and Taylor Building, is sometimes used by the public to shop/eat in the Foreside area. These lots serve as shared parking spaces for visitors on nights and weekends. Most public parking in the Foreside area is on-street parking, with the majority of off-street parking being private. With the recent addition of new restaurants and shops, parking demand has increased in the Foreside area. Some residents have indicated that it is difficult to park in this area during peak periods, particularly during the summer.

SUMMARY OF KEY POINTS

Parking

- There is a parking shortage in the Foreside area and along the water during the peak summer season.

Additionally, during the summer parking is limited for non-residents who want to access the water.

High demand for parking has also been indicated at access points to beaches (Sea Point) and public boat access to the harbor area. The Government Street public wharf has limited parking of approximately 5-6 spaces, with most of these typically used by local fishermen. The Traip Academy boat ramp also has very limited parking near the ramp with additional parking available at the Academy. Kittery Point Town Wharf has limited public parking.²⁵

Table 6.6 summarizes the existing municipal parking areas in Kittery along with the capacity and occupancy during peak periods.

The South Berwick Feasibility Study has recommended providing additional park-and-ride lots to serve the MPO communities and improve commuting traffic along the Route 236 Corridor. The study also recommended for using Transportation Demand Management (TDM) measures to serve the commuter shed for the Naval Shipyard in Kittery and the Pease International Tradeport in Portsmouth.

Recent parking lot projects include:

- Resurfacing of sections of the Taylor parking lot that was completed in the FY 2012-2013 and 2013-2014; and
- Reconstruction of Traip parking lot in FY 2010-2011.

²⁵ The Kittery Comprehensive Plan Update Committee. 1999 Update of the Kittery Comprehensive Plan. Adopted by Council on 3/25/2002.

Table 6.6: Existing Municipal Parking Areas in Kittery

Parking Area	Capacity	Occupancy during Peak Periods
Fort Foster	150 spaces	100% during summer months
Haley Field	54 spaces	100%*
Legion Pond	5 spaces	100%*
Memorial Field	55 spaces	100%*
Rice Avenue	30 spaces	Less than 100%*
School Lane	25 spaces	Less than 100%*
Seapoint Beach	10 spaces	100% during summer months
Shapleigh Field - parking is at the adjacent school	134 available spaces	Less than 100%*
Town Forest on Haley Road	8 spaces	Less than 100%*
Town Pier on Bellamy Lane	28 spaces	100%*
Wallingford Square downtown	12 spaces	100%

Note: *Estimated

Source: Town of Kittery

The Land Use and Development Code of Kittery lists parking standards for specific uses but it does not provide any parking standards for development in village or downtown areas.²⁶

²⁶ Town of Kittery. Title 16 Land Use and Development Code. Recodified on July 26, 2010 and latest amendment made on October 26, 2015. Page 193.

IDENTIFICATION OF PRELIMINARY ISSUES, CHALLENGES AND OPPORTUNITIES

The following is a preliminary list of issues, challenges and opportunities posed by the findings of the inventory of existing conditions of Kittery's transportation and circulation system. Please note that these are subject to change with the preparation of goals and objectives, not yet drafted (at the time the inventory was prepared).

- Traffic issue around Portsmouth Naval Shipyard;
- No public transit service;
- Lack of parking in Foreside and shoreline areas;
- Need for more bicycle facilities;
- Provide pedestrian facilities with new infrastructure projects and develop pedestrian friendly environments; and
- Develop Complete Streets policy and evaluate roadway standards for complete streets.

http://www.kitteryme.gov/Pages/KitteryME_TownCode/Title%2016%20thru%2010-26-2015.pdf

Kittery
Comprehensive
Plan Update
2016



Map 6.1
**ROADWAY SYSTEMS IN
KITTERY**

- Functional Class**
- Principal Arterial Interstate
 - Principal Arterial Non-Interstate
 - Minor Arterial
 - Collector
 - Local



0 0.5 1
Scale in Miles

**Isles of
Shoals**



AECOM

This map is for general planning purposes only. The data used to create the map are not adequate for making legal or zoning boundary determinations or delineating natural resource areas. Exercise caution when interpreting the information on this map.

Kittery
Comprehensive
Plan Update
2016



Map 6.2

EXISTING AVERAGE DAILY
TRAFFIC VOLUMES IN
KITTERY

Traffic Volume

- 1,000-1,999
- 2,000-4,999
- 5,000-9,999
- 10,000-14,999
- 15,000-19,999
- > 20,000



0 0.5 1
Scale in Miles

Isles of
Shoals



AECOM

This map is for general planning purposes only. The data used to create the map are not adequate for making legal or zoning boundary determinations or delineating natural resource areas. Exercise caution when interpreting the information on this map.

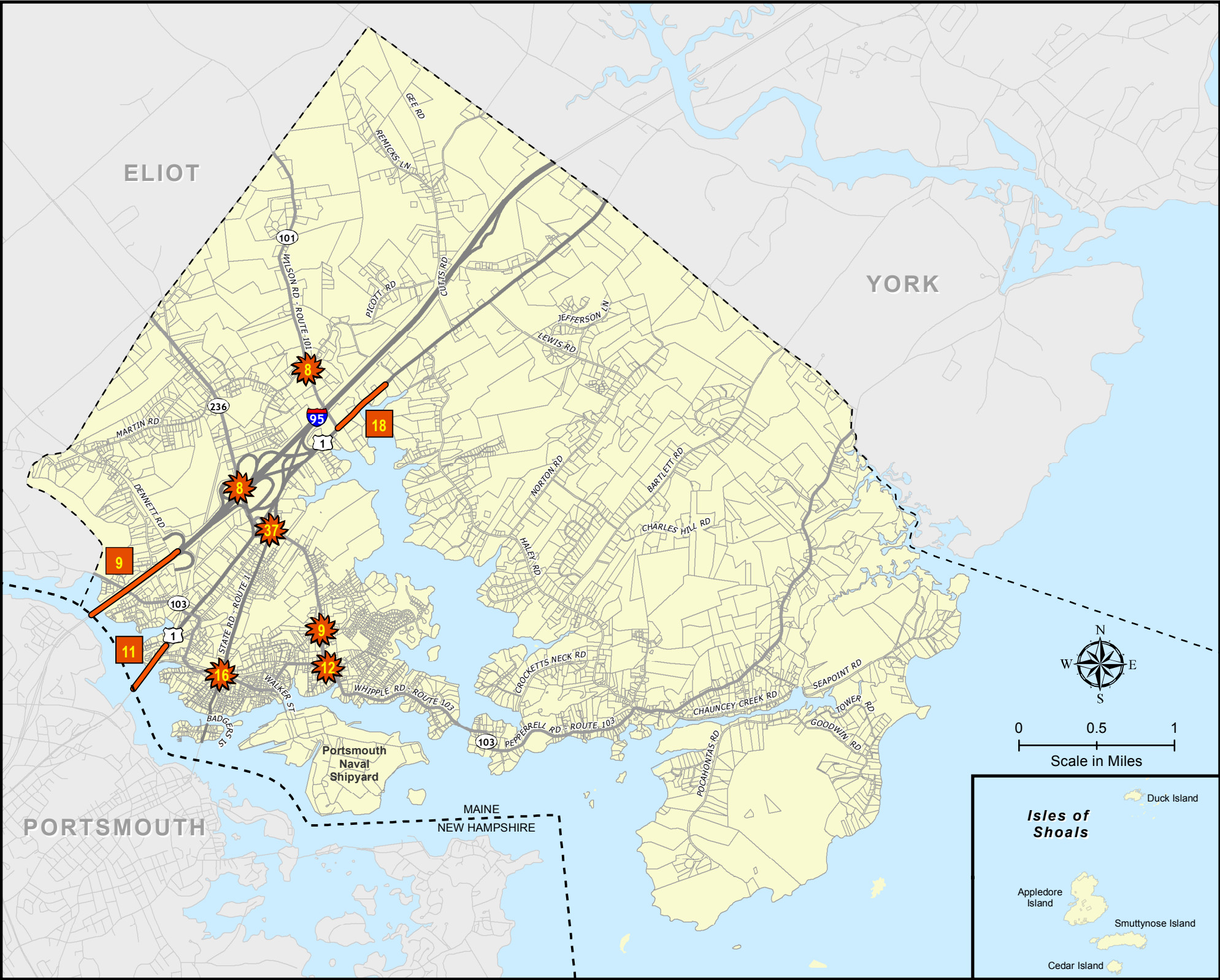


Map 6.3

HIGH CRASH LOCATIONS
IN KITTERY

High Crash Locations (2013-2015)

- Intersection
(XX Number of Crashes)
- Roadway Segment
(XX Number of Crashes)



0 0.5 1
Scale in Miles

Isles of
Shoals



AECOM

This map is for general planning purposes only. The data used to create the map are not adequate for making legal or zoning boundary determinations or delineating natural resource areas. Exercise caution when interpreting the information on this map.

PUBLIC FACILITIES AND SERVICES

7

CHAPTER CONTENTS

This chapter identifies and describes the public facilities and services the Town of Kittery provides to its residents and business owners.

Over the next two decades facilities and services may need to adapt to reflect the needs of the community. For example,

- Aging facilities will need to be repaired, replaced and/or upgraded.
- Existing Town services will need to be adjusted and adapted to meet various codes, changes in technology, and changes in available methods for increased efficiency.
- New services and facilities may be needed to accommodate a growing elderly population.
- Future planning of public services and facilities should be related to demographic changes as well as projected and desired development patterns.
- Predictions regarding climate change should be incorporated in planning for public services and facilities; sustainability practices should be maintained and increased.

Regional trends and facility needs will impact the way in which services are provided, the buildings which house them, as well as their capital needs, and therefore, the Town budget. Additionally, regionalizing services in some cases may help to make them more efficient and cost effective.



Kittery Town Hall

The information presented in this chapter is a compilation of a review of relevant previous studies, and documents and information posted on the web and presented in Town reports. Additionally, “leadership interviews” were conducted with key Town Staff (see end of chapter for a complete list). Site visits were also conducted.

Summary of Key Points

- The **Municipal Complex/Town Hall** building is in very good condition and has room for expansion if this were needed in the future.
- **Public meeting space** is adequate.
- Kittery's **schools** are adequate in terms of size and condition to meet current needs as well as those in the foreseeable future. New enrollment projections are needed in order to monitor potential future changes in enrollment.
- Implementation of the **Athletic Fields** Study recommendation will help meet recreation needs.
- **Public safety** service can be improved by:
 - Joint dispatch for Police calls (pending grant) is expected to result in efficiencies.
 - There may be a need to increase the number of sworn officers to police a larger population taking into account tourists, shoppers and Shipyard employees
 - The Fire Department may need to transition to full-time professional fire fighters.
- The **Library's** most critical decision with regard to the future is how to combine all the library's functions into one building and whether this should be accomplished by constructing an addition to the existing historic Rice building or by creating a new facility on the site of the Kittery Community Center.
- The Kittery **Community Center** will continue its efforts to expand revenue and may need to increasingly orient future programming to the growing senior population.

Summary of Key Points (continued)

- The **Port Authority** would like to develop a Strategic Plan and to explore ways of increasing access and enjoyment of the water, and striking a better balance between tourism and fishing.
- There is a need to update the Town's **GIS maps**.
- DPW would like to explore new technologies for **communicating with residents**
- It may be more efficient to create a **regional Resource Recovery Facility** by merging Kittery's with that of the Town of Eliot.
- **Stormwater infrastructure** will need resources for continued maintenance and replacement of aging structures.
- The **Kittery Water District** is planning to construct a new Treatment facility while it continues to upgrade the pipes. It does not plan on expanding the system in the foreseeable future. Additional regional cooperation with surrounding towns may result in increased cost efficiencies.
- The recent expansion of the **sewer system** to the Business Park is expected to result in encouraging economic development. Also recent expansion to a mobile home community is expected to reduce septic contamination of Spruce Creek.
- The Energy Efficiency Committee is working with the Town Manager and Council on programs, policies and projects to develop **sustainable** energy practices.

For each service area, a description of the current facility and/or service is provided, followed by an assessment of the capacity to meet existing needs as well as anticipated future needs. The following Public Facilities and Services are addressed in this chapter.

MUNICIPAL ADMINISTRATIVE OFFICES & PUBLIC MEETING SPACE

Town Hall/Municipal Complex
Public Meeting Space
Communication

SCHOOLS AND EDUCATION

PUBLIC SAFETY

Fire
Police
Medical Emergency

LIBRARY

Rice Public Library
Walker Street Annex

RECREATION¹

Recreation Department/Community Center
Parks and Beaches
Public Piers²
Conservation Land/Town Forest

¹ See **Chapter 2: Natural Resources, Open Space and Recreation** for a more detailed discussion of Recreational facilities.

² See **Chapter 8: Marine Resources** for a more detailed discussion of public piers as well as other waterfront assets.

HEALTHCARE

PUBLIC WORKS

Department of Public Works Facility
Street Maintenance
Stormwater Management
Solid waste Disposal & Recycling/Resource Recovery Center

SEWER AND WASTER SERVICES

Water
Wastewater

SUSTAINABILITY MEASURES (Energy Conservation)

Power
Programs and Plans



Kittery Community Center

BACKGROUND INFORMATION

POPULATION CHARACTERISTICS

The population of Kittery has been relatively stable over past couple of decades, with a slight tendency towards declining evident since 1970. While current population projections generally assume that this trend will continue, it is possible that increasing development pressure in Portsmouth may result in more people moving to Kittery for the affordability of housing, good schools, and other amenities.

Kittery is an aging community. Between 2000 and 2014, residents age 55 to 64 increased by 65 percent, and the number of elderly residents is expected to continue to increase. This is important in terms of the number and types of services that may be needed in the future.

Despite being a tourist destination, there is not much change in the Town's population over the summer months, with the exception of foreign students who come on work visas and work in area establishments. These young people have a hard time finding housing that is affordable to them and are an important element of Kittery's seasonal economy.

Another fairly unique component of Kittery's population is the number of military families that live in or near Kittery. While many families associated with the Naval Shipyard used to live in Kittery, apparently this is becoming less frequent. It is important to consider what impacts any future changes in the uses at Shipyard may have on the need for Kittery facilities and services.

Additional population characteristics that may be of interest and importance when considering the future provision of facilities and services include the following:

- The racial and ethnic composition of Kittery closely resembles that of York County, with a majority of residents identifying as White, non-Hispanic
- The educational attainment of Kittery residents is slightly higher than that of York County.
- The number of family households in Kittery with children under the age of eighteen has declined since 2000.
- Between 2000 and 2014, average household size shrank from 2.29 persons per household to 2.16 persons per household.



OVERVIEW OF MUNICIPALLY-OWNED PROPERTIES

The properties listed below are owned and/or funded by the Town of Kittery. Please see Figure 1.1. Public Facilities and Services for their location.

Town Hall

DPW

Schools

Mitchell Elementary School (grades K-3)

Shapleigh School (grades 4-8)

R.W. Traip Academy (grades 9-12)

Library³

Community Center

Public Safety (police, 2 fire stations, emergency medical)

Public Piers

Fort Foster

Recreational Facilities (fields, parks, beaches, conservation land)

Town Forest/Farm

Wastewater Treatment Plant

Resource Recovery Center

The Town also owns:

- an old school building on the corner of Curtis Island Lane and Route 103
- the lot currently used for parking in Wallingford Square (13 spaces)

³ The Library is owned by the Trustees of the Library and supported by the Town of Kittery



Wastewater Treatment Facility

TOWN ADMINISTRATION OFFICES, COMMUNICATION AND PUBLIC MEETING SPACE

Summary of Key Points

- The Town Hall is in very good condition and has room for expansion if this were needed in the future
- Public meeting space is adequate.
- The lack of a local newspaper has resulted in reliance and high usage of cable TV, social media and community bulletin boards for communication.

TOWN HALL

A majority of town administrative offices are housed in the Municipal Complex/Town Hall building, located at 200 Rogers Road, and constructed in 1998. It was built on the site of the previous Town Hall and houses the administrative offices for the Town Manager, Town Clerk, Finance, Assessing, Planning, Code, and the Harbormaster. The Police and School Departments are also housed in the Municipal Complex in adjacent spaces. The Public Works Department is located in another building directly behind the Town Hall.

The following government functions are not located in the Municipal Complex:

- Recreation Department
- Fire Department

- Sewer Department
- Library

The building continues to meet the needs of the staff and the public. The Town Hall building is in very good condition with the exception of the HVAC system that is in need of repair. The roof was replaced last year.

FUTURE PLANS/NEEDS

The Town Hall building was designed with room for expansion; the second floor is unfinished and could be renovated to accommodate additional needs if necessary (building code issues may need to be addressed). There may be some small growth in municipal staffing if the Town experiences an increase in the current levels of residential growth.

Human Resources is housed in the School Department. It may be more efficient for them to be housed in the Town Hall in the future.

COMMUNICATION

There are four cable TV providers in Kittery (Time Warner, Satellite Television, Xfinity, and Direct TV). The Town has its own community cable TV channel which streams key municipal meetings including Town Council, Planning Board and School Committee.

In terms of internet access, Comcast is available almost everywhere and Fairpoint fiber and Fairpoint DSL are available many places throughout Town.

The lack of a local newspaper results in some difficulty with regard to communication among town residents. The following are current modes of communication:

- Cable TV, Channel 22
- Our Kittery blog
- Seacoast on-line
- Portsmouth Herald
- Town Manager's Facebook and Twitter

A number of **Community Bulletin Boards** are located throughout the community including:

- Main Squeeze
- Golden Harvest
- Lil's
- Beach Pea Bakery
- Banks
- Carl's Meat Market
- David Pratt Framer
- Terra Cotta Pasta
- Fabulous Finds
- Frisbees/Enoteca Market
- Kittery Point Post Office
- Library – outside bulletin board and 2 inside bulletin boards
- Kittery Community Center

- Pine Tree Country Store

PUBLIC MEETING SPACE

There are a number of spaces available for community meetings, the largest of which is at the Traip Academy. There are some large events, such as the Maine caucuses, that Kittery cannot accommodate. Additionally, there are times when specific places are booked, but usually an alternative space is available. Public meeting space is adequate for Kittery's needs now and in the foreseeable future.

Table 7-1: Public Meeting Spaces

Space/Location	Capacity	Comments
Shapleigh School	150 people	Gym, Caf, library
Mitchell School		Cafeteria, library
R.W. Traip Academy	Over 200 people	Auditorium Gym, Caf, library
Community Center	100 – 200 people the latter if bleachers are opened	STAR Theatre plus additional smaller spaces
Rice Library	60 people	Can accommodate more but without seating
Town Hall	75 people 20 people 12 people	Council Chambers Conference Room A Conference Room B

SCHOOLS AND EDUCATION

Summary of Key Points

- The Schools are adequate in terms of size and condition to meet current needs as well as those in the foreseeable future. Traip Academy is in need of additional repairs.
- The lack of playing fields is addressed in the Athletic Fields Study. When its recommendations are implemented, current needs will have been met.
- More current enrollment projections are needed in order to monitor potential future changes in the school population
- More internships in the community are needed for students to complete their proficiency learning experience; transportation to these internships is a challenge

Mitchell Elementary School (grades K-3)

- Located at 7 School Lane, Kittery Point

Shapleigh School (grades 4-8)

- Located at 43 Stevenson Road, Kittery
- Has walking track (only one at a school)

R.W. Traip Academy (grades 9-12)

- Located at 12 Williams Avenue, Kittery
- No outdoor athletic facilities

The School Department undertook a School Building improvements program during the years 2009-2011; it included:

- Closing and converting the Frisbee School into the Kittery Community Center
- Building additions to the Mitchell (K-3) school and the Shapleigh (4-8) schools

- Minor upgrades and renovations to the Traip Academy (grades 9-12)



Horace Mitchell Primary School

The Mitchell and Shapleigh Schools are in good shape and both have the ability to accommodate a small increase in enrollments if this were to occur. Shapleigh School has a track used for the middle and high school track and field, and for walking by all.

The Traip Academy is over 100 years old and while additions and upgrades have been made, there are a few more needed. Technology, HVAC and flooring have all been upgraded. There is a plan in place, with a yearly budget allocation for the completion

of needed upgrades. There are no capacity issues. Challenges with the school that are more difficult to address include the fact that there are no adjacent playing fields (and no seemingly easy way to provide these) and the fact that the schools reportedly lacks a “campus feel.”

The State of Maine legislates that school districts must apply proficiency-based learning⁴ as their approach to pedagogy. Reportedly, the Kittery School District is ahead of neighboring districts because they started earlier when they developed the district’s “Vision for the Future.”

Because of the layout of the Town, it is not feasible for children to walk to school, except for the few who live near the schools. Some students bike to school. The School Department contracts the bus service to an outside vendor who operates on a two-tier schedule. The older students are brought to school first, followed by the younger ones, the way it is carried out in most communities, even though it is contrary to teenagers’ biological clocks and need for sleep. It is difficult to change this schedule as doing so has other negative impacts.

⁴ Proficiency-based education refers to any system of academic instruction, assessment, grading and reporting that is based on students demonstrating mastery of the knowledge and skills they are expected to learn before they progress to the next lesson, get promoted to the next grade level or receive a diploma. The general goal of proficiency-based education is to ensure that students acquire the knowledge and skills that are deemed to be essential to success in school, higher education, careers and adult life. If students struggle to meet minimum expected standards, they receive additional instruction, practice time and academic support to help them achieve proficiency, but they do not progress in their education until expected standards are met. (from: <http://www.maine.gov/doe/proficiency/about/proficiency-based.html>)

STUDENT ENROLLMENT

As evident in Table 7-2 below, enrollment has been relatively stable over the last few years, even with some decline, which is also consistent with statewide enrollments. There are a total of 1,014 students currently enrolled in Kittery’s public schools. There is little ethnic/racial diversity: approximately 90% of the students are White, 1.5% are Asian, 2.5% African American, and 3.4% are Latino⁵.

TABLE 7-2: Student Enrollment: Years 2000-2016

YEAR	Students attending Kittery Schools ⁶	Yearly Change (%)
2000-01	1244	
2001-02	1240	-0.32
2002-03	1193	-3.79
2003-04	1167	-2.18
2004-05	1120	-4.03
2005-06	1082	-3.39
2006-07	1077	-.046
2007-08	1048	-2.69
2008-09	1001	-4.48
2009-10	971	-3.00
2010-2011	1014	+4.43
2011-12	1013	-0.10
2012-13	1082	+6.81
2013-14	1082	0
2014-15	1084	+0.18
2015-16	1063	-1.94

⁵ ME DOE

⁶ October 1st enrollments, Kittery School Superintendent’s Office

As is evident in the Table 7-3, of the three public schools in Kittery, Shapleigh School (grades 4-8) has the highest student enrollment.

TABLE 7-3: Enrollment and Capacity by School: 10/15/2015

School	Enrollment	Capacity
Mitchell School (grades K-3)	376	450
Shapleigh School (grades 4-8)	418	525
R.W. Traip Academy (grades 9-12)	269	400

Statewide Enrollment Trends⁷: After peaking in the 1970s at close to 250,000 students, public school enrollment in Maine has been declining steadily. While projections are sometimes elusive, according to the Maine Department of Education, state-wide projections are that enrollment will reach a low point in the next few years and then begin to rise again, but at a much slower pace than that of the recent decline (see Table 7-4 for comparison of student enrollment between 1998 and 2012 statewide).

TABLE 7-4: Statewide Enrollment: Declining (1998 – 2013)⁸

Year	Students in Maine public schools
1998-99	214,842
2012-13	185,767

According to the enrollment projections presented in Table 7-5, developed in 2009 (the only ones available), Kittery's student population will increase ever so slightly in the near future. It is

⁷ Maine Department of Education, "A Snapshot of Education in Maine," <http://maine.gov/doe/inside/snapshot.html>

⁸ m: Maine Department of Education, "A Snapshot of Education in Maine," <http://maine.gov/doe/inside/snapshot.html>

important to note that over the last few years these estimates did not result in accurate projections and therefore, need to be updated. As is evident in Table 7-3, all three schools have the capacity to accommodate an increase in enrollment if that were to occur.

TABLE: 7-5: Kittery Student Enrollment Projections: 2016-2019⁹

School Year	Total K-2	Total 3-5	Total 6-8	Total K-8	Total 9-12	TOTAL K-12
2016-17	263	237	234	733	242	975
2017-18	263	245	226	733	245	979
2018-19	263	235	232	730	252	982

Over 90% of the Navy families attend Kittery schools and they make up about 30% of the school population (many of these students attend Kittery school for only 15-24 months because their parent(s) is assigned to repair a specific vessel at the PNSY and are stationed in Kittery for only this amount of time). Also, the number of children generated by Shipyard assignments varies dramatically depending on where the boats are originally stationed. For example, if the boat is from Groton, CT families may keep the children in the Groton school system and "commute" home on the weekends. If, on the other hand, the boat is from San Diego, the families are more likely to move to Kittery for the one or two year assignment. Having a transient and diverse student body presents its own set of opportunities and challenges.

⁹ Planning Decisions, Inc., Best Fit Model (1/26/2009)

**Table 7-6 Percent of students from military families (PNS):
February 1, 2016¹⁰**

School	Grades	Percentage of children from military families
Mitchell School	K-3	22%
Shapleigh School	4-8	18%
Traip Academy	9-12	13
Overall District	K-12	18%

Due to the age of the Shipyard enlisted individuals, most of the children from the military families tend to be younger (as is evident in Table 7-6, Mitchell School, with the youngest grades, has the highest percentage of children from the PNS). The backgrounds and incomes of the students' families vary widely. This provides a unique opportunity for the more permanent Kittery students to become exposed to children from all over the country, thus enriching their educational experience.

The transient, short-term assignment of the students from the military families, also poses a number of challenges. The Kittery public school system necessarily serves a variety of levels and needs. There is an intensive intervention program to support students experiencing gaps in their educational experience due to the fact that they jump from school system to school system. According to the School Superintendent,¹¹ the Kittery School system performs as well, if not better than other school systems in Maine with similar demographics.

¹⁰ information provided by Superintendent of Kittery Schools

¹¹ during a Leadership Interview conducted on February 16, 2016

FUNDING¹²

Funding for education is a shared state and local responsibility. State funding to local school districts is based primarily on the Essential Programs and Services (EPS) formula. The Department of Education uses the formula to calculate the amount a district should expect to spend to provide an "adequate" education aligned with the Maine *Learning Results* academic standards, and determines the portion the state will pay based on available funds and local factors such as student enrollment and property values. Kittery is considered to be a "minimum receiver" community, that is, according to the State which bases its evaluation on the Town's tax assessments, Kittery can support the school system through local taxpayer money (rather than through state funds). As a result Kittery only 5% of the Kittery School Department's overall budget comes from the State, and the Town only receives 30% of approved special education funding (approximately \$600,000 of a total budget of \$16M). While this funding issue has been under review at the state level for several years, it is not anticipated that anything will change in the foreseeable future. The additional support programs that Kittery schools provide are funded through State funds for special needs, and from federal funds that follow military connected children. They also receive Federal Impact Aid (\$200,000) in lieu of the tax-exempt housing that the military families stay in.

¹² From: Maine Department of Education, "A Snapshot of Education in Maine," <http://maine.gov/doe/inside/snapshot.html>

PRIVATE SCHOOLS AND OTHER EDUCATIONAL INSTITUTIONS IN OR NEAR KITTERY, MAINE

Approximately 90% of school-aged Kittery residents attend Kittery's public schools. Those who do not attend Kittery public schools go to the following private and parochial schools located in Maine and New Hampshire¹³:

- Berwick Academy
- Brixham Monotessori School
- Catherine McAuley High School
- Friends of the Liberty School
- Hebron Academy
- Mission Bay Christian School
- Portsmouth Christian Academy
- Seacoast Waldorf School
- St. Mary's Academy
- St. Patrick's School
- St. Thomas Aquinas High School
- Seacoast Christian Academy

Sanford Vocational High School

The regional vocational high school provides an alternative to Traip Academy for Kittery students. The school provides a wide range of programs including automotive technology, building trades, computers, culinary arts, health occupations, law enforcement, among others.

Enrollment of Kittery residents at Sanford Vocational High School has been relatively low (approximately 8-10 students attended

¹³ Kittery School Superintendent's Office

the school over the last few years). Reportedly there have been numerous reasons for the low enrollment, including the fact that commuting to the school takes 45-50 minutes each way.

The Kittery School Department recently purchased a mini-van to transport students to the Vocational High School, resulting in a shorter and more comfortable ride. Twenty (20) students have expressed interest in attending the school for the 2016-2017 academic year. If all these students are accepted in their programs and they choose to attend, the School Department will have to find an alternative transportation plan as the current van is fully utilized. Most likely an additional bus will be needed.

Kittery Adult Education

Kittery Adult Education provides lifelong learning opportunities for residents of all ages in the areas of academics, literacy, ESL and enrichment. Classes are held at the Traip Academy. Kittery Adult Education offices are located at 12 Williams Avenue.

The Town shares the Adult Education Director with the Marshwood School District (Eliot and South Berwick) that also offers their classes to Kittery residents, thereby increasing the number and type of opportunities available.

FUTURE PLANS/NEEDS

There are no significant capital needs, either for renovations or for increasing the capacity of the schools as they are all in good condition and are able to accommodate existing and any potential small increases in enrollment. Needed repairs to the

Traip Academy will be undertaken in the near future. See the Capital Improvements Plan (CIP) for details.

The lack of playing fields is addressed in the Athletic Fields Study. When its recommendations are implemented, current needs will have been met.

The School Department will undertake to produce new enrollment projections as a way of being proactive about the population it serves. Also, along with the Town, the School Department will continue to monitor any changes in the patterns of growth at the Shipyard as these may affect future school enrollments.

One of the goals of proficiency-based learning is to have every student have the experience of a community internship before they graduate. The Superintendent would like to increase opportunities for students to participate in Outreach and Service Learning in the community. VISTA volunteer services are currently exploring such opportunities in the community. Transportation for students to get to these internships is an issue. Exploring public transportation options (e.g. town shuttle) may also give high school students more flexibility in terms of getting to school and back.

Over 50% of the Town's budget is allocated to the schools. It may be useful to revisit combining the School Department and Town payroll systems.

Opportunities for regional cooperation:

The Superintendent has agreements with other school districts and sometimes places students in other districts based on their needs. Kittery School District collaborates with MSAD #35 (Marshwood School District) and York whenever possible to save money for all three school systems. The three districts communicate regularly and seek out ways to work together whenever possible and practical. An analysis of potential cost savings of becoming a combined school district concluded that it would not be more cost effective for Kittery.



Traip Academy

PUBLIC SAFETY

Summary of Key Points

- There is a pending grant for joint dispatch for public safety with four surrounding communities; the dispatch service will be located in Kittery's Police Department. This could be expanded to more communities in the future.
- The Police Department is in the process of setting up a regional opiate addiction program that seeks to decriminalize addicts and connect them to treatment.
- There may be a need to increase the number of sworn officers for the Police Department in order to police a larger population (that takes into account the tourists, shoppers and Shipyard employees).
- The Fire Department is having difficulty recruiting volunteers for its on-call fire fighting force. It may be necessary to transition the Fire Department to full-time professional fire fighters. In the meantime, adding sleeping quarters to the central Fire Station may help recruit more volunteers and prepare for the professional staff.
- The Town will continue to use American Ambulance New England for emergency medical services.

POLICE DEPARTMENT

The Police Department is located next door to Town Hall in the Municipal Complex. It has its own separate entrance and section of the building. The facility is more than adequate to meet current as well as future needs (the second floor houses significant shell space that could be used for any needed expansion).

The Police Department has a total of twenty (20) sworn officers and is comprised of the following staff:

1 Police Chief
 1 Lieutenant
 3 Sergeants
 12 patrol officers
 2 detectives
 1 school resource officer
 1 part-time Administrative Assistant
 6 dispatchers
 1 part-time Animal Control

The Police Chief is retiring in June 2016, and the Town is advertising for new Chief. For three years, the towns of Kittery and Eliot shared a Police Chief through an inter-municipal agreement. Kittery will no longer be sharing Police Chief with the Town of Eliot. The new Police Chief will only work for the Town of Kittery. Additional funding will need to be allocated to a full time Chief's salary.

According to the current Chief of Police, Kittery could use additional officers (the national average is 2 officers/ 1,000 residents). Currently Kittery has 20 sworn officers which is approximately in line with the national average. In Kittery's case however, in addition to the Town's residents, public safety is an issue for the shoppers patronizing the outlets and the tourists visiting the beaches and parks increasing the daily population of the Town, especially in the summer months. This is why the Chief supports an increase in the number of officers for the future.

CALLS FOR SERVICE

The calls for service have been fairly consistent over the last three years at approximately 15,000 calls per year. The primary categories are as follows:

Car accidents/traffic:

- Rt. 1 North (outlets) generate approximately 14% of all traffic accidents per year
 - There are approximately 3.5 million visitors to the outlets annually
- The Shipyard is the major contributor to traffic congestion
 - They already encourage carpooling and have vans that transport employees as they have parking limitations on Seavey Island (Shipyard).
 - The Police Chief has made a request to the Shipyard with regard to directing traffic and they were willing to every so often, make a 3-minute delay for those leaving from Gate 2, so as to allow the traffic to flow.

- The Shipyard has its own police services provided by the Department of Defense. However, the Kittery Police Department does respond to Shipyard calls and there is some coordination of services.
- Tourists contribute to traffic congestion seasonally
- Foreside: the recent increase in development in the Foreside district has led to an increase in traffic and parking issues
- There are seasonal increases in traffic in Fort Foster and Seapoint Beach areas.
- Peak traffic times are: 6:00AM -8:00 AM & 200PM-5:00PM; most of the congestion is created by employees of the Shipyard going to and from work
- The Maine Department of Transportation identified the top three high crash locations in Kittery as being:
 - I-95 off ramp (Exit 2) due to a blind spot
 - Rotary Circle – scheduled for reconstruction
 - Rt. 1 By-pass at the intersection with Bridge Street.
 Some of these accidents occur when the bridge is up and drivers are not paying attention and don't stop in time. The Sarah Long Mildred Bridge is being replaced.

Criminal activity:

- The Rt. 1 North (outlets) area generates approximately 14% of all criminal activity (in the form of shoplifting). An interesting coincidence is that the same area generates the exact same percentage (14%) of the traffic accidents in Town.
- Heroin use has been on the rise (as is the case nationwide). In 2105 there were 4 opiate-related deaths in Kittery and 20 overdoses. With only one and a half months into 2016 at the time of writing, there has already been one opiate related

death. According to the Police Chief, heroin addiction drives the majority of criminal offenses, that is, thefts, burglaries and robberies.

The Department coordinates with the School Department and provides for a School Resource Officer. The Department does not operate a traditional D.A.R.E (Drug Abuse Resistance Education) program, but instead has created a curriculum regarding making good decisions, promoting leadership and coping skills.

RESPONSE TIME

The average response time (during 2015) was 4.9 minutes.

VEHICLES

The Department has 16 vehicles in total including 1 motorcycle (plan is to dedicate as a fulltime traffic officer), 3 marked cars, and 1 supervisor's vehicle. Some of the vehicles are currently being replaced. See the Capital Improvement Plan (CIP).

JOINT DISPATCH

Currently the Kittery Police Department already conducts dispatch for public safety for the Towns of Kittery and Elliot. The Town has submitted a grant for a regional fire and police joint dispatch with the towns of Kittery, Eliot, Berwick and South Berwick. An estimated \$200,000 will be saved if regional dispatch is instituted. The Town Managers of each community will be the governing board. The Department also dispatches for

the American Ambulance Service, Kittery's medical emergency service.

PATROL ZONES

The Department provides 24-hour a day coverage with three shifts covering two geographic patrol areas. Using the natural boundary of Spruce Creek, the two zones are the "North Zone" which includes Kittery Point and the outlet area and the "South Zone" which includes the Foreside District. Additionally, there is a third "Floating Zone," using Rt. 1 as a divider, including Rt. 236 and smaller, less populated, quieter areas. Using the zones as a way of defining areas to be patrolled has reportedly increased efficiency and effectiveness. Additionally, officers and their Sergeants work as a team.

FUTURE PLANS/NEEDS

The Chief believes that the Police Department should expand over the next five years to reflect the actual daytime population of the Town (that is, in addition to residents, to account for the Shipyard employees, tourists, and shoppers). He believes that increasing from the current 20 sworn officers to a total of 30 sworn staff members would help the Department to be more proactive. As previously mentioned, this is to cope with the significant increase in population due to outlet shoppers and tourists. There is space to expand on second floor of Town Hall, if needed.

The Police Chief also believes that the Kittery Police Department dispatch could, over time, expand to provide regional dispatch services for up to 6 communities (this is two additional towns than is currently the plan). The space for expansion exists on the second floor. This increase in dispatch would generate additional revenue for Kittery.

The Police Chief is in the process of establishing an organization, *HOPE (Heroin-Opiate Prevention Effort) for the Seacoast*, to combat opiate addiction on a regional level. Together with York, ME, Portsmouth, Dover, Summers and Rochester, NH, they are in the process of developing capacity based on the Operation HOPE models of Gloucester, MA and Scarborough, ME¹⁴ that decriminalize addiction and offers treatment to those suffering from opiate addiction. They are currently training police officers and angels¹⁵ and establishing connections with treatment centers.

¹⁴ The program creates a partnership between law enforcement and treatment facilities. Dealers will still be arrested, but individuals may surrender drugs, needles or other paraphernalia at the police station without fear of arrest. From: Kelley, Michael, "Operation Hope is making an impact," Scarborough Leader, 11-13-2016.

[http://leader.mainelymediallc.com/news/2015-11-](http://leader.mainelymediallc.com/news/2015-11-13/Front_Page/Operation_HOPE_is_making_an_impact.html)

[13/Front_Page/Operation_HOPE_is_making_an_impact.html](http://leader.mainelymediallc.com/news/2015-11-13/Front_Page/Operation_HOPE_is_making_an_impact.html)

¹⁵ "Angels" are individuals trained to help those suffering from addiction to find resources for treatment. The goal is to humanize individuals suffering from addiction, and to help them through empathy and understanding.

FIRE DEPARTMENT

The Kittery Fire Department operates from two Fire Stations. The Walker Street Station was closed in 2007 and is now used by the emergency medical service, American Ambulance New England (AANE). The following describes each of the two currently operating stations.

GORGES ROAD FIRE STATION, KITTERY

- Built in 2007
- Has six (6) bays
- Facility
 - Full locker room and shower (separate facilities for men and women)
 - Kitchen area
 - Physical fitness space
 - Training area
 - Offices and conference room
 - SCBA room (Self contained breathing apparatus)
 - Gear storage/washing/drying
- Equipment/Apparatus
 - Ladder truck
 - 2 utility vehicles
 - heavy duty rescue
 - 2 pumpers
 - tank truck
 - Harbor Master's boat

LEWIS SQUARE STATION ON KITTERY POINT

- Built in 2007

- Has three (3) bays
- Facility
 - Shower and locker facilities (only 1, no separate male/female facilities)
 - On-call addition
 - Kitchen
 - Training room
 - Office/radio room

Both stations are adequate with the exception of the fact that neither station has sleeping quarters.

STAFF

The Fire Department is fully staffed by on-call fire fighters. That is, the Department does not have any paid, full-time career fire fighters. Fire fighters are on-call and are paid only when they respond to an alarm. Currently there are 49 total fire fighters; approximately 25 of these are active. There are 44 men and three women. The Chief recently initiated a bonus program such that if a fire fighter makes 33% of the calls in a year, they will receive a \$1,000 bonus. The Chief also recently increased their pay in an attempt to keep existing fire fighters, and to attract new recruits. The Fire Department's response time is under 10 minutes, which is within public safety standards for an on-call fire department. There is no location in Kittery that is further than 5 miles from one of the stations and the Department has good working relationships with fire departments in surrounding communities.

APPARATUS

The Kittery Fire Department has an apparatus reserve account funded annually. The Fire Chief reported that all apparatus is currently adequate. Each piece of apparatus is kept for a maximum of twenty-five (25) years. Additionally, the apparatus has been organized so that there is a specific piece of apparatus for each specific function needed. This makes for a more efficient fleet



Photo by John Galla www.firenews.org

Some of Kittery's fire trucks

The Department's mutual aid system is operated by a "run card" system. When the size or type of incident requires additional resources, the scene commander may initiate the mutual aid through Kittery Dispatch.

- First alarm is Kittery apparatus and automatic mutual aid from Eliot for smoke in building or confirmed structure fire.
- Second alarm calls for assistance from Eliot, York, Portsmouth, and Portsmouth Naval Yard.
- Third alarm and above initiates assistance from other regional fire departments.

RESPONSE TIME

The average response time for the year ending on 05/31/2016 was 6 minutes and 10 seconds.

The Fire Chief has a concern regarding response time to Gerrish Island. He considers the area to be a "wildland interface" problem. Wildlife interface is where several structures are built in and around heavily wooded/forested areas with little to no water supply.

FUTURE PLANS/NEEDS

The Town is experiencing difficulty recruiting on-call fire fighters. Requirements are becoming more stringent than in the past, for

example, it takes a year to train a fire fighter. This requires a high degree of commitment from a volunteer. Additionally, the lack of affordable housing and other high living expenses is discouraging for young people considering moving to Kittery, reducing the pool of potential volunteers. The Fire Department will continue to explore creative approaches for maintaining an on-call fire department.

In the future, there will most likely be a need for career fire fighters.

As the Fire Department transitions to a career fire fighting staff, the Chief thinks that a key step is to add sleeping quarters to the Station. There is ample space on the parcel of the Main Station building to accommodate such an addition. Sleeping quarters could be beneficial during the transition for a number of reasons, including the following:

- Currently when there is a storm, fire fighters have to sleep in the truck cabs or on cots in the station.
- Southern Main Community College Fire Science Program students are given the opportunity to participate in a "live in" program where, as part of their curriculum they are housed in several fire stations in southern Maine. Kittery does not participate in this program because of the lack of sleeping quarters and the distance from South Portland. It may be worth considering this program for possible expansion of services by York County Community College in Wells, Maine.
- Fire fighters are attracted to the community spirit of a common room and sleeping quarters; many join for this sense of community.

EMERGENCY MEDICAL RESPONSE

The Town currently contracts with American Ambulance New England (AANE), a private company, to provide ambulance service for Kittery. They service Kittery and Eliot, ME from its base at 25 Walker Street in Kittery. Kittery's Fire Chief is the Administrator.

According to Kittery Fire Chief,¹⁶ the American Ambulance has met the response times indicated in the existing contract. In addition, American Ambulance pays Kittery \$16,000 a year for dispatching services.

The Town owns the building (the former Walker Street Fire Station) that it leases to AANE for free. AANE pays for all utilities and day-to-day maintenance. The Town is responsible for more substantial upkeep of the building (for example, the Town will be replacing the boiler and repaving of the parking lot, while AANE paid for new windows, insulation, and painting of the building). In exchange for the use of the building, they do not charge the Town of Kittery for the services they provide. They also serve the Town of Eliot from this location.

Ambulance services are free to all Town employees. Town residents pay through their health insurance. In addition to Emergency Medical Services, AANE provides free blood pressure clinics, CPR classes and it maintains the 18 defibrillators, located

¹⁶from *OurKittery: News and Updates on Kittery*, <http://ourkittery.com>

throughout the Town (in all schools, athletic fields, and public buildings).

CALLS FOR SERVICE

Emergency medical service calls have reportedly been increasing due to the increase in the elderly population.

Table 7-7: Calls for EMS service

Town	Approximate Annual calls for service
Kittery	1,200
Eliot	400

Two (2) of the paramedic wagons that AANE use are housed in the Main Kittery Fire Station.

RESPONSE TIME

The average response time in 2015 was 3 minutes and 15 seconds.

FUTURE PLANS/NEEDS

In January 2016, the Kittery Town Council voted to authorize the Town Manager to execute a new four-year agreement for EMS services with American Ambulance New England (AANE), with an option for an additional four years.

The agreement will allow Kittery and Elliot to continue their joint services with AANE, which they started two years ago. Their

current contract is set to expire at the end of June. The vote also extends American Ambulance's lease agreement of the old Walker Street Fire Station to utilize for the ambulance services.

LIBRARY

Summary of Key Points

- The most critical decision facing the Library in the near future is how to combine all the library's functions into one building and whether this should be accomplished by constructing an addition to the existing historic Rice building or by creating a new facility on the site of the Kittery Community Center.

The Rice Public Library is a private nonprofit corporation. The Trustees of the Library own the Library, but 99% of their funding is from the Town. It currently occupies two buildings, both in the Foreside district, across the street from each other. Both are historic buildings.

The original library building located on Wentworth Street, was constructed in 1888, and the Taylor Annex, a former county court building was acquired in 1989 to relieve overcrowding in the Rice Building. The Rice building was renovated in 1991 and the Taylor Annex in 1989. Both are considered to be structurally sound. The Rice building is considered by many to be the most architecturally significant building in Kittery and is listed on the National Register of Historic Places.

As previously mentioned, the Town of Kittery provides the majority of operational funding for the Library. Institutional administration is under the direction of a seven-member (public) Board of Directors, while daily management of the facility and specialized staff is the responsibility of the Library Director. Additional funding comes from the Friends of the Rice Public Library, and from grants and donations from area businesses and individuals.



Rice Public Library

The library functions out of the two buildings as follows:

RICE LIBRARY BUILDING

- Non-Fiction
- Administrative functions
- 7 computers
- genealogy and local Kittery history
- seating areas
- 3,000 books on CD
- reference
- young adults collection and space (will expand into reference area)
- Basement meeting/movie room
- History room/collection (4,000 items)

Only the basement is handicap accessible.

TAYLOR LIBRARY BUILDING

- Children's room and collection (story time once a week; 40 -60 children attend; staff from the library also go to Pre-schools)
- Fiction
- DVD collection
- 5 computers
- large print collection
- art exhibits
- very limited seating
- staff room

The building is handicap accessible. A ramp runs along the side of the library.

The Rice building has an exceptionally beautiful exterior and interior and the Children's room in the Taylor building is unusually cozy. However, the current facilities are inadequate for current and future needs. First, having library functions in two separate buildings results in inefficiencies as well as inconveniencing both patrons and staff who must continually go back and forth between the two facilities.

Secondly, overall space for current and future needs is scarce. Space for additional books and other materials is limited and is very limited for additional computers at both buildings. Seating is extremely limited at the Taylor building.

COLLECTION

The library adds between 3,000 – 4,000 items per year to its collection and tries to weed out an equal amount.

TABLE 7-8: Rice Library Circulation (2014 – 2015)

Collection	2014	2015
Children & Young Adult borrowing	27,439	27,821
Adult: Print, audio, video	60,331	58,018

The Rice Public Library is part of the Minerva system of libraries giving it access to 60 other library collections. Twenty-five crates of books are ordered from other member libraries weekly. 23,000 items are borrowed and loaned each year.

STAFF

The library has a total of 6 FTEs (4 full time staff, 2 part time and 8 substitutes who work 2 hours at a time)

USAGE

The library is enjoyed by many residents of all ages (5,956 at last count). In 2015 a total of 88,990 items were borrowed, 515 children participated in the summer reading program, and there has been an increase in participation in children and teen programming as well as lectures and adult programs¹⁷

- Once a month there is a family movie night (approximately 60 people attend)
- Once a month there is an adult movie night (approximately 15 people attend); the Friends of the Library also show movies at retirement and nursing homes
- 2 book groups currently meet in the library

Food and drink are allowed throughout the buildings.

The Library also organizes off-site events at Fort Foster, Kittery Block Party, and and Kittery estates (for senior citizens)

LIBRARY HOURS

The library is open five days a week, including extended evening hours on two nights per week, and is closed on Mondays and Sundays.

Tuesdays 10:00 AM – 5:00 PM

Wednesdays 12:00 AM – 8:00 PM

Thursdays 12:00 AM – 8:00 PM

Fridays 10:00 AM – 5:00 PM

Saturdays 10:00 AM – 2:00 PM

FUTURE PLANS/NEEDS

SHORT TERM:

The Library Director would like to focus on the following priorities:

- Supporting early literacy (“Read 25 books by age 5).
- Community building (by participating in joint sponsorship of off-site events)
- Digitizing the library collection of photographs
- Supporting increasing elderly population
 - Delivery of books to elders that are confined to their homes
 - Demonstrations (e-books, books for the seeing impaired, computer classes) at the library and at senior housing
 - Entertainment (movies, etc.) at senior housing

¹⁷ from interview with Library Director, February 16, 2016

LONG TERM:

A Library Building Committee has been formed to study alternative locations for a consolidated library facility. They are also considering the reuse of the two buildings currently used by the library.

Two options are being considered for the future¹⁸. The clear advantages and disadvantages to both need to be carefully considered. It is important to note that the Library's Board of Directors and Staff have a strong preference for Option 2, constructing a new building in a new location (See Appendix A).

OPTION 1: Sell Taylor Annex and renovate and expand the Rice Library building at its existing location. The site is quite large and a preliminary conceptual design developed a few years ago showed an expansion to the back of the building and a parking garage built into the slope increasing the number of parking spaces over those currently on-site by a non-trivial amount.

Some Advantages

- Will continue to provide street life and more reasons to go to the Foreside District (libraries are often in downtown locations and provide more reasons to go there)
- Is walking distance from the high school
- Will save a beautiful historically significant building functioning as originally intended

¹⁸ Based on conversation with former Town Manager Nancy Colbert Puff, at the time also a member of the Library Building Committee. December 9, 2015

- May be able to provide more parking than is currently available
- Could result in a stunning building of contrasting historical and modern architectural features like some famous libraries

Some Disadvantages

- Will have to alter some of the original building (especially the back wall which will be the where the addition will necessarily be connected to the old building)
- May be expensive to make the whole building handicap accessible (i.e. installation of elevator)
- The two parts of the building, new and old, will probably not flow perfectly
- The current zoning does not allow for an expansion of the Rice or the Taylor buildings. This also poses constraints on what a potential buyer could do with the building(s), thus reducing their value.

OPTION 2: Sell both the Taylor Annex and the Rice Library building and relocate as a new facility to the Community Center parcel, adding 30 additional parking spaces to the existing Community Center parking area.

Some Advantages

- May be close to potential patrons as they frequent the Community Center
- May make collaboration on events with the Community Center/Recreation Department easier/more frequent
- Can design a modern building to meet specific needs
- Will have access to outdoor space

- Will be easy to make entire building handicap accessible
- Leaves the Rice building available for reuse. One idea being discussed is to convert it to a Maritime Museum to be run by the Kittery Naval and Historical Society with the Portsmouth Navy Yard lending their artifacts for exhibits (this would counterbalance the negative impact leaving the Foreside area would have on the town center feeling), but cannot guarantee that this would happen
- Would be a net zero building (run on solar power)
- Developer(s) has expressed interest in demolishing Taylor Annex building and building a Bed and Breakfast on the site (to house those coming to work at the Shipyard for short, but extended periods of time)

Some Disadvantages

- Leaves the Rice Building vulnerable to destruction of its historic architecture
- Leaving the Foreside area may impact the district negatively as it makes it less of a destination at a time when it is striving to become more of one
- May not have enough parking
- May take over parts of the Community Center's parcel currently allocated to needed athletic fields
- Building a new building directly in front of the Community Center may have a negative visual impact on the KCC
- Demolition of the Taylor Building
- Currently the library contributes to the street life of the Foreside District in a number of ways, including by being in two buildings in the town center, participating in the June Block Party, etc.
- May add to traffic congestion on Rogers Road

- Would have to be more deliberate about not duplicating programming with the Community Center

Additionally, since the Library receives 95% of its funding from the Town, it may make sense to consider making it a Town entity in the future.



Taylor Library Annex

RECREATION

Summary of Key Points

- The Kittery Community Center will be renovating the Annex and reorganizing uses in the near future.
- Future programming may need to be more oriented to an increasing senior population and may include Adult Day Care and a full-time staff dedicated to senior programming.
- An increase in demand for pre-school services is expected.
- The Center is continuing efforts at expanding revenue - generating activities so as increase its financial independence.
- The recently completed Athletic Fields Plan identifies the need for \$20 million worth of improvements and additional facilities.
- The Port Authority would like to develop a Strategic Plan and to explore ways of increasing access and enjoyment of the water including through kayaking, sailing, and a water taxi service to Portsmouth.

Kittery offers a variety of opportunities for recreation, a number of which are municipally-owned, while significant open space/recreational areas are also state and federal properties. Management of the Town-owned facilities is shared by the Recreation Department, the Department of Public Works, the

School Department, Kittery Conservation Commission and the Kittery Port Authority. For a more detailed inventory and assessment of the Town's Recreational Facilities, please see: **Chapter 2: Natural Resources, Water, Agricultural and Forest Resources, and Open Space and Recreation.**



Fort McClary State Park

KITTERY COMMUNITY CENTER (KCC)

The newly renovated, former Frisbee Elementary School is run as a Community Center by the Recreation Department. The Center, located at 120 Rogers Road, is four years old and has become a significant hub for Kittery residents of all ages (“toddler to over one hundred years old”). Approximately 250 people use the Center every day.

The original building was built in 1940. The facility has been converted to a modern 63,000 square foot Community Center (including the Annex) that includes a full size gymnasium, a full theater, Community Room, Fitness Room, and smaller meeting rooms, a commercial kitchen and other spaces and amenities that are all available for rent. People rent these for wedding receptions, birthday parties, business conferences and other events.

Unfortunately due to a series of HVAC failures and ice dams, the building has experienced five floods in three years. The HVAC system has been replaced. Hopefully the need for repair and cleanup due to flooding has been reduced.

HOURS OF OPERATION

The Center’s hours of operation are as follows:

Monday – Friday	6:00 AM – 9:00 PM
Saturday	8:00 AM – 4:00 PM
Sunday	12:00 PM – 4:00 PM

Hours are more limited during the summer months.



Kittery Community Center

PROGRAMMING

As previously mentioned, the Kittery Community Center (KCC) has a wide range of programs for all ages; these include:

STAR Theatre is used for live theater performances, dance recitals, wedding receptions, lectures, trainings, workshops and movies). It seats 171 for a performance setting (accommodated by retractable bleachers) or 100 if seated at tables and chairs.

Preschool. The Preschool provides a nature based learning environment for children ages 2-5 in three classrooms (2years, 3 years and Pre-K). The adjacent outdoor space (“Forest

Classroom”) is critical to this program. The Indoor classrooms are where more structured learning occurs.

After School Program. There are two after school classrooms run by four S.A.F.E. (Safe Alternatives for Enrichment) counselors.

Summer Camps. The Community Center offers summer camps per week or for the entire summer for various grade levels.

Fitness. There is a fitness room and fitness and wellness classes which require membership to use. There is no charge for Kittery residents to use the walking track and gymnasium.

Seniors. Kittery does not have a Council on Aging. The Community Center provides activities and opportunities for socializing for Kittery’s senior citizens, including breakfasts, lunches, lectures, bingo, and field trips. KCC also provides flu clinics. The Center’s 2 mini coaches are used for over 55 field trips. Seniors also use the gymnasium for playing pickle ball among other activities.

The Senior housing complexes have their own programming (luncheons, lectures, etc.) so the Center has to strike a balance in order to be well attended cannot be too much duplication.

Although there is not a Kittery Council on Aging, York County Community Action Corporation (YCCAC) partners with Southern Maine Agency on Aging to provide services to Kittery residents. They provide referrals, information and health screening at assisted living and other elderly housing complexes. Other partners include York District Public Health Council and York Hospital.

TRANSPORTATION

As mentioned above the Community Center has 2 vans used for field trips for seniors and also for others (of any age) that have signed up for a particular program. The Center also owns a small bus. The KCC vans are currently underutilized. The Center is in the midst of discussions with Fair Tide (homeless shelter) regarding the need/feasibility of a town shuttle.

York Hospital provides free transportation to those needing a ride to one of their healthcare facilities.

OUTDOOR SPACE AND ATHLETIC FIELDS

The KCC is on 12 acres of land and is adjacent to Rogers Park, conservation land that abuts Spruce Creek. The preschool and afterschool programs use Rogers Park extensively. There are one baseball and two soccer fields on the site, and Arts in the Park (concerts) are held on the lawn. Summer programs also use the fields and playground.

The Recreation Department is responsible for the scheduling of all athletic fields in Kittery and the two pavilions at Fort Foster.

REVENUE

The number of members at KCC is continually increasing resulting in yearly increases in revenues. The Center is currently 70% self-supporting; the General Manager expects this trend to increase, with the goal of becoming 100% self-supporting in the future.

The programs that provide the most income to the KCC are the summer daycare/pre-school program. The Center generates additional income through memberships and rental of spaces and other facilities. Additionally, for any art displayed in the Morgan Gallery that is sold KCC receives a 30% commission.

STAFF

The following staff manages the Center and offers the programming.

The Kittery Community Center is run by the Director of the Recreation Department who is also the General Manager. Additional administrative staff include: an Assistant Director, Recreation Supervisor and Sports Coordinator.

Preschool and afterschool programs are run by the teachers of the respective programs.

- Eyes of the World Discovery Discover Center (pre-school program): 10 teachers



- S.A.F.E. Afterschool Program: 4 counselors

Support Staff (1), Reception (4) and Custodial staff (4)

FUTURE PLANS/NEEDS

The KCC will be renovating the entire Annex (which is currently occupied by renters and Head Start). The plan is to:

- Relocate the S.A.F.E. afterschool program to the Annex so that it is separate and more protected/safer
- Create a studio for Cable Channel 91 with facilities to work with high school students.

As the population of Kittery ages, the General Manager of the Community Center¹⁹ believes that in the future there may be a need for Adult Day Care. It may be desirable for families to have to have pre-school, after school and elder day care all in the same facility, that is, at the Community Center.

Additionally, the Center may need to do more for the active senior population (babyboomers). This may require a full-time position dedicated to programming for seniors. Activities will also need to be adapted to the expectations of this generation of seniors which differ from those of the previous generation(s).

The General Manager also expects there to be an increase in the demand for preschool services, extending care to even younger

¹⁹ from an interview on February 16, 2016

children (two additional rooms, one baby room and one for one-year olds).

As previously mentioned, the Community Center is currently 70% self-sufficient. Efforts to increase financial independence will continue. Additional capacity exists for generating income by renting out space for more weddings/large events, greater utilization of the theatre, and finding a way to maximize use of the banquet room and commercial kitchen. Additionally, the buses are underutilized. The General Manager of KCC is of the opinion that a Grant Writer will be needed in the future to help fund the increasing programming.

The playground needs updating and needs to be redone.

PARKS AND BEACHES AND CONSERVATION LAND

There are a number of parks, beaches and conservation areas enjoyed by Kittery residents and visitors to the Town. The most significant are listed below. See **Chapter 2: Natural Resources, Open Space and Recreation** for a more complete discussion and map of these areas.

FORT FOSTER

Fort Foster is a 94-acre town-owned park located on Gerrish Island. It is open from Memorial Day to Labor Day and weekends in May through September and the gates open from 10:00 AM to 8:00 PM or dusk, whichever comes first. Both residents and non-residents enjoy the park's amenities that include a 675-foot pier (built in 1942), ball field, playground, restroom facilities, picnic and barbeque areas, and designated areas for swimming, scuba, windsurfing and kayaking.

Additionally, the park has two pavilions for rental (private parties, weddings, etc.). The "Big Pavilion" can accommodate an event of up to 100 people, while the "Small Pavilion" can accommodate up to 50.

Fees: The Town charges the following for use of the park:

- \$10/vehicle
- \$5/adult and \$1/child (arriving by foot or on bicycle)
- \$100/tour bus
- \$50/school bus with students
- \$20.00 Residents season pass
- \$60.00 Non-resident season pass
- \$50/day for use of the Small Pavilion
- \$100/day for use of the Big Pavilion



Seapoint Beach

SEAPOINT AND CRESCENT BEACHES

These beaches are approximately 4.5 acres and are located off Seapoint Road. Activities include swimming, jogging, fishing, dog walking, and sunbathing. Approximately 30,000 people enjoy these beaches annually.

ATHLETIC FIELDS

Kittery has the following athletic fields, maintained by the Department of Public Works:

- Memorial Field (5.25 acres, located on Old Post Road, used for football and baseball; mainly used by the High School and Little League)
- Shapleigh Field (5.98 acre field used by the Shapleigh School, Traip Academy, Little League and residents for a variety of activities including track and field events, soccer, field hockey)
- Hailey Field, located at 6 Litchfield Road
- Emery Field, located at 2 Cole Street



Town Forest/Town Farm. A 72-acre forest located at 77 Haley Road, managed by the Kittery Conservation Commission and used mostly for trail walking and cross country skiing.

Eagle Point, Spruce Creek. A 25-acre parcel accessed by Phelps Street off Philbrick Avenue is primarily used for passive recreation.

Rogers Park. Rogers Park is a 23-acre park, located at the end of Dion Avenue. It is used primarily for trail walking and dog walking and is managed by the Conservation Commission.

NON-TOWN OWNED RECREATIONAL FACILITIES

Fort McClary (state): picnic areas, historic features, trails

Rachel Carson National Wildlife Refuge (federal): wooded area, walking trails

John Paul Jones. The State is in the process of transferring ownership of this park to the Town.

FUTURE PLANS/NEEDS

The recently completed *Athletic Fields Study* identifies the need for additional fields and estimates an approximate \$20 million worth of expenses associated with meeting these needs. Please see **Chapter 2: Natural Resources, Open Space and Recreation** for a

more complete discussion of future plans and needs for parks, beaches and conservation lands.

PUBLIC PIERS

The Kittery Port Authority is a semi-autonomous Board that manages and maintains the Town's waterfront assets. The Authority is independent by statute, but Town Council approves their budget. The Port Authority (a seven member board appointed by Town Council) hires and manages the Harbor Master, who is a Town employee.

The Port Authority is responsible for enforcement (Harbor Master writes tickets to boaters breaking rules), and is expected to respond to emergencies (e.g. boaters in distress, medical emergencies). There are many entities that have varied degrees of jurisdiction in the Harbor (these include the State of New Hampshire Marine Authority, Coast Guard, City of Portsmouth, Kittery Harbor Master, Maine DEP, US Army Corps of Engineers, Navy). This can reportedly be a challenge when coordination amongst these entities is needed.

Anything below the highest annual tide (HAT), that is mainly piers and moors, is in the jurisdiction of the Port Authority. Buildings on piers are also the jurisdiction of the KPA. The Authority manages 575 moorings (the majority of which are at Pepperrell Cove), maintains a waiting list, and collects fees (\$150 per year for boats 25' or less; boats over 25' are charged \$6 per foot) for these.

Pepperrell Cove is the Port Authority's main asset. The Town-owned waterfront facilities are as follows:

- Pepperrell Cove: Frisbee Pier and one other pier
 - Harbormaster's office
 - Approximately 400 moorings
- Government Street Pier (also known as Town Pier): off Government Street, Foreside
- Pier at Traip Academy (day fishermen and little motor boats are the primary users; they park in the school parking lot). It is also used by back channel mooring holders to tie dingys.
- Back Channel (in back of Kittery Point Yacht Yard) moorings
- Isle of Shoals (moorings)

Fishermen reportedly have adequate dock space and storage for their equipment.

For a more detailed inventory and assessment of the Town's Marine Facilities, please see: **Chapter 8: Marine Resources.**

FUTURE PLANS/NEEDS

Other than Kittery's, there are only three other Port Authorities in the state of Maine. A committee has formed to review the advantages and disadvantages of having the Kittery Port Authority continue to operate as a semi-autonomous entity. Portsmouth regulates the large ships, but there is an anchorage near Fort McClary located in Kittery water that would need oversight if the KPA was no longer regulating Kittery waters.



The Port Authority is exploring the possibility of establishing an enterprise fund process to give the Authority more budgetary independence.

The Chair of the Port Authority would like to undertake the development of a Strategic Plan that articulates a vision for the future and outlines the action steps for achieving the goals.

Additionally, the Port Authority Chair is interested in exploring a number of ideas including the following:

- Developing a place for kayaks (public) and small boats (the challenge for finding an appropriate location is parking). KPA or the Town of Kittery could enter into an agreement with Frisbee's Holdings for access to additional parking.

- The Pier at Fort Foster is owned by the State, but managed by the Town – could be an opportunity for kayaking
- Developing a place to teach children to sail
- Establishing a water taxi service at the downtown dock (Government Street Pier, Foreside) between Kittery and Portsmouth.
 - The challenge would be parking (one way this could be addressed is to have people park on the Portsmouth side). This could encourage additional commercial activity in the Foreside district.
 - Currently the pier is primarily being used by 28 commercial fishermen who use it to load and unload their traps, bait, fuel and lobsters. There is no ramp.
 - Also, the Government Street Pier could be better connected to the Foreside district.
- Striking a better balance between tourism and fishing (currently ground fishing is not economically feasible due to regulations)
- Better coordination between the various entities that monitor harbor activities.

HEALTHCARE

Summary of Key Points

- Kittery residents have access to a wide range of quality health care services, including walk-in clinic, outpatient laboratory testing, physical therapy and mental health care provided by a number of providers.
- Additionally, York hospital provides free transportation to residents needing a ride to one of their healthcare facilities.
- The Town also subsidizes a number of non-profit agencies that provide specific services.

While there is not an inpatient hospital located in Kittery, Kittery residents have access to a wide range of healthcare resources. If they need inpatient care they can go to York Hospital in nearby York.

The following health care facilities are located in Kittery:

York Hospital, located at 35 Walker Street, in Kittery offers the following health care services:

- Walk-in Care (open 7 days a week)
- Outpatient Laboratory Testing
- X-ray services
- Family Practice for all age groups

Kittery Physical Therapy and Kittery Oncology are located at 75 US Route 1 Bypass in Kittery.

York Hospital provides free transportation to those needing a ride to one of their healthcare facilities.

Patients needing in-patient care can go to York Hospital, a general medical/surgical hospital with 79 beds, located in York, ME

Maine Behavioral Healthcare, located at 453 U.S. Route 1 in Kittery, provides outpatient or partial hospitalization mental health services to youth with serious emotional disturbance, adults with serious mental illness, persons with mental health and substance abuse disorders, and forensic clients.

Durgin Pines, located at 9 Lewis Road in Kittery, provides long-term care and rehabilitation services. They are affiliated with local physicians and healthcare organizations and offer 26 beds for rehabilitation and 55 rooms for long term care residents. They also offer a 16-child pre-school that provides an intergenerational program for patients and residents.

NON-PROFIT AGENCIES

Additionally, each year the Town considers requests for funding from non-profit agencies, with the intent of supporting services received by members of the Kittery community. The following agencies are in the proposed budget²⁰ (for a total of between approximately \$12,000 - \$14,000):

- Fair Tide (housing for homeless, thrift store)
- Aids Response-Seacoast (provides education, direct assistance and advocacy for persons and communities affected by HIV/AIDS)
- American Red Cross (helping people prevent, prepare for and recover from community emergencies and large scale disasters - natural or human-caused).
- Caring Unlimited, Inc. (hotline, emergency shelter for victims of domestic violence, transitional housing, children's services)
- York County Community Action (support to low-income pregnant women and new mothers)
- Home Health Visiting Nurses (provide home healthcare with local and nurses, therapists, social workers and home health aides).
- South Maine Area Agency on Aging (Meals on Wheels, Wellness, and other services to support older adults and adults with disabilities.
- Cross Roads House (food, shelter, and support for homeless women and children)
- Kids Free to Grow (Child Abuse Prevention)
- Maine 4H Foundation (grants and scholarships to youth)

²⁰ Town of Kittery Budget, Fiscal Year 2017, Community Agencies, page 49

DEPARTMENT OF PUBLIC WORKS

Summary of Key Points

- It may be more efficient to merge Kittery's Resource Recovery Facility with that of Eliot's, creating a regional facility.
- Stormwater infrastructure improvements will require additional resources in the future
- There is a need to update the Town's GIS maps.
- DPW would like to explore new technologies used by other communities to communicate with residents

DEPARTMENT OF PUBLIC WORKS (DPW)

The Department of Public Works operates out of several facilities. It is responsible for the maintenance of the Town's roads, stormwater infrastructure, parks, recreation fields, and 23 cemeteries as well as the maintenance of the Town's solid waste disposal and recycling (at the Towns Resource Recovery Facility). The Department is responsible for snow removal on all Town roads, although the School Department plows school roads.

DPW is responsible for mowing and maintaining the Town's traffic islands, athletic fields (Memorial, Shapleigh, Hailey, and Emery), and to provide support to the Conservation Commission's volunteers for the management of the Town Forest, Town Farm and Rogers Park. DPW is also responsible for staffing and maintaining the 94-acres at Fort Foster, including the 575-foot Town pier, 2 pavilions (scheduled through the Recreation

Department), 2 restroom facilities, and gatehouse. During the months that the park is open, DPW has a maintenance person on duty all day. The gatehouse is also staffed. See the discussion regarding Fort Foster under "Recreation" for more details.

PAVEMENT MANAGEMENT

A Pavement Management Inventory was completed in 2014 and will soon be entered into a web-based program. This includes an inventory of Kittery's sidewalks, however, their condition is not documented. The most up-to-date Sidewalks Conditions Report is 17 years old, so it cannot be considered relevant.

TREE INVENTORY

DPW maintains a Tree Inventory. The inventory, which was conducted in 1994, lists street trees and other publically-owned shade trees in Kittery. Data pertaining to species, location, maintenance needs, etc. was collected in order to develop a comprehensive urban forestry management plan. There is no street tree program per se.

FACILITY

The Public Works garage is located behind the Municipal Complex. It includes a total of 17-bays across four buildings. The building that serves as the Department's administrative center as well as main storage of equipment are in good condition and adequate for current needs, with space for expansion if needed.

VEHICLES

All vehicles are stored inside, each with its own bay. This means that if more vehicles were purchased in the future, there is some room for them to be stored inside as they could be stored in between the existing vehicles if needed.

In the long term, the Department may need one more truck and also maybe a bucket truck for tree trimming (this vehicle could be stored outdoors).

The Department also has small garages at Memorial Field and Shapleigh Field, several retired truck trailers and the old Town Barn used for storage. The garage at Memorial Field is used as the Parks departments shop throughout the summer and stores the parks equipment. The garage at Shapleigh Field is for more storage and the irrigation system. The old Town Barn is off of Rice Ave and Water St., it is used by the Harbor Master for storage.

STAFF

The Department has 17 year-round employees and 7 summer employees. It is reportedly difficult to find staffing for the summer positions because while the other beach communities can hire college students out of school for the summer, Fort Foster has a longer season which college students cannot cover (its open from Memorial Day to Labor Day and only weekends in May and September).

FUTURE PLANS/NEEDS

DPW would like to have the Town's GIS system updated and to make the parcel mapping data consistent with aerial imagery. The Town's GIS website is hosted by Woodard and Curran, an engineering firm. The Town has a limited maintenance contract with them. Additional ways to achieve the goal of updating the maps may be explored.

If there is significant development in the future, there may be a need for additional staff and/or vehicles. Some time ago, the Commissioner of Public Works made a recommendation to Town Council that for every ten (10) additional miles of road that the Town accepts, the Department of Public Works will be allocated one additional staff member and one additional vehicle. This could also occur if the Town was asked to take responsibility for roads currently under State control.

An updated Sidewalk conditions report would be helpful in supporting future efforts to improve walkability in Town.

It may also be useful to bring the Tree Inventory up to date.

Looking to the future, the Department would like to consider integrating more technology into the way it operates. Some examples include:

- York has a computerized communication system that connects residents, commissioners and other town officials that makes enforcement easier. It has in place a computer/web-based interface that allows residents to connect to town officials (to their computer or devise) with a logged inquiry regarding specific

issues. The system provides for easier and quicker responses and better opportunities for follow up.

- Portsmouth has a “click and fix” application that allows residents to report needs from the app on their cell phone.

SOLID WASTE DISPOSAL AND RECYCLING

Solid waste disposal is under the direction of the Commissioner of Public Works and is operated at the Town’s Resource Recovery Facility. The Facility, located on a twenty-two acre site off Route 236 and Mackenzie Road, includes a transfer station for material solid wastes (MSW’s), a recycling center and a licensed demolition debris disposal site. Solid waste is transported from the site to EcoMaine, located in Portland, Maine.

The Resource Recovery Facility is comprised of the following:

- Bailer Building: recycling of paper, cardboard, aluminum, plastics
- Licensed compost area, landfill and hazardous waste facility
- 2 Freebie Barn buildings run by volunteers for the recycling of household items given free to residents

South Berwick currently brings their paper for recycling, an income generator for Kittery.

The facilities are adequate for current needs and the facility has room for future expansion if needed.

FUTURE PLANS/NEEDS

The Department plans to continue to encourage residents and businesses to recycle and to upgrade the Town’s recycling facilities as necessary.

According to Stormwater Coordinator, the main trash building is in need of a roof over the trash trailer to reduce the amount of unpermitted, leachate reaching ground water in the grassy knoll. A holding tank, or other such containment system, will also be required to capture leachate. Additionally, the corrugated metal building at the Resource Recovery Facility is rusting and old, in need of replacement/repair.

The Solid Waste Facility processes a wide range of materials including:

- Demolition Debris (e.g. waste lumber, asphalt shingles, gypsum wallboard, tires, residential ashes, mattresses)
- MSW Recyclables (e.g. corrugated cardboard, newspapers, magazines, telephone books, mixed paper, glass, aluminum cans, tin/steel cans, plastics)
- Recovered Demolition Materials (e.g. lumber including energy recovery, leaves/yard waste compost, brush and chips, inert bricks, metal, batteries, brass, copper, waste oil and antifreeze, log wood)

As is evident in Table 7-9, the amount of materials processed at the Facility over the past five years has remained relatively stable. Also, the percentage of type of material relative to the total (e.g. demolition debris as percent of total) has also remained relatively the same.

**Table 7- 9: Kittery Solid Waste Facility:
Materials in Tons (2011-2015)**

MATERIALS	2011	2012	2013	2014	2015
Municipal Solid Waste (MSW)	2,307 (44%)	2,307 (47%)	2,142 (44%)	1,966 (46.2%)	1,996 (49%)
Demolition Debris	1,102 (20.5%)	863 (16.6%)	822 (14.5%)	698 (16.4%)	665 (12.3%)
TOTAL MSW & Demo Debris	3,409 (65.5%)	3,170 (64%)	2,964 (60%)	2,664 (62.7%)	2,661 (61%)
MSW Recyclables	1,127 (22%)	1,193 (23%)	1,273 (26%)	1,105 (26%)	1,239 (26.5%)
Demo Recoverables	624 (12.5%)	585 (13%)	635 (13.5%)	478 (11.2%)	615 (12.5%)
TOTAL MSW Recyclables & Demo Recoverables	1,751 34.%	1,778 (36%)	1,908 (40%)	1,583 (37.3%)	1,854 (39%)
TOTAL All MSW & Demo	5,160 (100%)	4,948 (100%)	4,872 (100%)	4,247 (100%)	4,515 (100%)

The Transfer Stations of Kittery and Eliot, respectively, are four miles apart. It may be desirable to specialize in the type(s) of processing or consider merging into one regional facility. In the case of a merger, this may require additional staff due to the fact that there would be an increase in the amount of materials being recycled (staff could be from Kittery and/or Eliot).

STORMWATER MANAGEMENT

The Department of Public Works recently completed an Inventory of some of the Town's stormwater infrastructure and has determined that it is generally in "very good" condition. Kittery does not have any combined sewer overflows²¹.

The Town's Stormwater Coordinator is also the Project Manager for the 319 Clean Water Grant and responsible for monitoring contaminated areas. Bacterial sources of pollution have been identified in Admiralty Village and other areas in the Spruce Creek Watershed. Clam flats have been closed since 2005. The Portsmouth Pierce Island Wastewater facility needs to be updated before the clam flats can be re-opened. Some parts of the Creek have seen improvement.

The towns of Berwick, South Berwick, Eliot, Kittery and York, Maine are subject to the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4s) which was issued by the Maine Department of Environmental Protection (DEP) on July 1, 2013. Because the permit is a Clean Water Act-based Maine Pollution Discharge Elimination System (MEPDES) permit, it is limited to a duration of five (5) years, and therefore expires on June 30, 2018²².

²¹ Combined sewer systems are wastewater collection systems designed to carry sanitary sewage (consisting of domestic, commercial, and industrial wastewater) and stormwater in a single piping system to a treatment facility.

²² *Stormwater Program Management Plan for York County MS4s*, Submitted to Maine DEP: December 2013.

The Town has been a regulated MS4 community²³ since 2003. Communities are regulated under this program when and if they are identified as having “Urbanized Areas²⁴” in their municipal boundary. Once a community becomes regulated by the General Permit, only the Urbanized Area portions of the Town are regulated. In 2003, when the towns of Berwick, South Berwick, Eliot and Kittery became regulated, they decided to work together in implementing the requirements of the General Permit as a cost saving measure.

Each of the three General Permits that have been issued have required that the towns develop, implement, and enforce a 5-year Stormwater Program Management Plan ("Plan") to coincide with

²³ Municipal Separate Storm Sewer System General Permit authorizes the direct discharge of stormwater from a regulated small municipal separate storm sewer system (“MS4”) to a MS4 or waters of the State other than groundwater, provided that the MS4 is located in an Urbanized Area as determined by the inclusive sum of the 2000 and 2010 Decennial Census by the Bureau of Census. The MS4 general permits describe permit coverage and limitations, definitions, authorization and notice requirements, stormwater program management plan requirements, and standard conditions for municipalities, transportation MS4s and state federally-owned MS4s. (Maine Department of Environmental Protection, 7/01/2013).

²⁴ An Urbanized Area is a US Census-defined term, requiring a population density of 1,000 people per square mile, within a Central Place. Central Places consist of an accumulation of 50,000 in adjacent census blocks that each have the density of 1,000 people per square mile. The Greater Portsmouth Area is a Central Place, and the towns of Berwick, South Berwick, Eliot and Kittery have had Urbanized Areas within their municipal boundaries since the first General Permit was issued in Maine in 2003

the term of the General Permit. This Plan is effectively a revision of the prior Plan, updated to reflect the new General Permit requirements. The General Permit stipulates that the Town will “reduce or eliminate polluted Stormwater runoff to the Maximum Extent Practicable.”²⁵

GOALS (MINIMUM CONTROL MEASURES)

The 2013-2018 Stormwater Management Plan outlines six minimum control measures (MCMs) for the York County cluster of MS4s. Kittery is on track for meeting the requirements of the DEP approved plan.

Additionally, the Town must define appropriate Best Management Practices (BMP), designate a person(s) responsible for each BMP, define a timeline for implementation of each BMP, and define measurable goals for each BMP. Kittery has designated the Stormwater Coordinator to be responsible for implementing each Best Management Practice.

The following describes the York County Stormwater System (MS4) six major goals or minimum control measures²⁶:

1. Public education and outreach on stormwater impacts : among other efforts, the Towns are cooperating on the preparation of a Statewide Public Awareness Plan to raise awareness of

²⁵ The term means available and feasible considering cost, existing technology, and logistics based on the overall purpose of the project.

²⁶ **Stormwater Program Management Plan for York County MS4s**, Submitted to Maine DEP: December 2013.

stormwater issues such as the path stormwater runoff takes, sources of stormwater pollution and the impact of that polluted stormwater runoff on the community.

2. Public involvement and participation: The York County MS4s will annually host/conduct or participate in at least one public event (either jointly or individually) such as storm drain stenciling, stream clean-up, household hazardous waste collection day, volunteer monitoring, neighborhood educational events with a pollution prevention, water quality or environmental theme, conservation commission outreach program, Urban Impaired Stream outreach program, or adopt a storm drain or local stream program. The target audience will be adults living in the Urbanized Area of the Towns.

3. Illicit discharge detection and elimination: Each of the towns created a watershed-based maps of their MS4 infrastructure. Annually by June 30 each year, the towns will update either the GIS systems or the paper copies of the maps to reflect new infrastructure and changes to the infrastructure.

4. Construction site stormwater runoff control: Implement and enforce a program to reduce pollutants in any stormwater runoff to the regulated small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre.

5. Post-construction stormwater management in new development and redevelopment: During the previous permit cycle, the town of Kittery passed a Post Construction Discharge Ordinance. The town will continue to implement these ordinances.

6. Pollution prevention/good housekeeping for municipal

operations: During the previous permit cycle, Kittery developed an inventory of all municipal operations conducted in, on, or associated with facilities, buildings, golf courses, cemeteries, parks and open space that have the potential to cause or contribute to stormwater or surface water pollution. The town will review the inventories and update them if necessary to include any new properties that have the potential to cause or contribute to stormwater or surface water pollution.

FUTURE PLANS/NEEDS

Future needs include the continued maintenance of stormwater infrastructure and the replacement of aging infrastructure.

The Department will continue to implement the 2014 Watershed Management Plan for Spruce Creek.

Kittery is now in its third permit cycle; each cycle last for five years. Reportedly, each permit cycle is accompanied by more requirements. The Department expects that the 2018 cycle (the next one) will require more sampling, mapping of septic systems and inspections. As a result, more staff time and other resources will be needed. The Town is considering making the Shoreland Resource Office a full time position split between DPW and code enforcement.

The Department would like to explore becoming a “Stormwater Utility” in order to fund future improvements. This would apply a user fee designating a tax for a specific use and would be based on the percentage of impervious cover. Reportedly there are six

towns in Maine that use this mechanism to fund their Stormwater infrastructure improvements. The first step would be to conduct a Stormwater Utility Feasibility Study.

WATER AND SEWER SERVICES

Summary of Key Points

- Both the Kittery Water District and the Town sewer system derive a significant portion of their usage and revenues from the Shipyard. If the status of the Shipyard were to change in the future resulting in a drop in usage, this could result in a significant shifting of costs for available capacity to the other users of these systems. This does not seem to be an issue in the near future.
- Kittery Water District is planning to construct a new Treatment Facility while it continues to upgrade the pipes. Additional regional cooperation with surrounding towns may result in increased cost-efficiencies.
- The recent expansion of the sewer system to the Business Park is expected to result in encouraging economic development
- It may be beneficial to explore the creation of a municipal Tri-generation Plant to provide power (heat, steam and hot water). This may be attractive to potential users of the Business Park

WATER

The Kittery Water District system dates back to 1907. The original waterworks facilities were constructed to supply water to the Portsmouth Naval Shipyard (PNS).

Today the Town of Kittery's water supply continues to be provided by the Kittery Water District (KWD) a quasi-municipal corporation, which supplies water to Kittery, as well as parts of York and Eilot. The District also continues to supply the Portsmouth Naval Shipyard, the largest water customer in Kittery.

ADMINISTRATIVE OFFICES

The District's administrative office building, located on Rt. 1 (17 State Road, Kittery), is reportedly adequate. The building houses accounting staff, superintendent's office, trustee's conference room, technical services department, garage and vehicle maintenance facility, foreman's office and meter testing shop. A yard area for storage of piping, valves, earth materials and other materials is located near the administrative building. The site has sufficient space to meet the District's needs. The District has rented a portion of its unused office space to an outside entity.

Due to the building's location, developers have occasionally expressed an interest in redeveloping the site (retail/mixed use, housing). The only way that the Water District could afford to do this would be if rather than the developer buying the property, if instead they built a new facility for the Water District to relocate to. This seems like it could possibly work at some time, however, it is not an easy transaction to make workable for both parties.

WATER SUPPLY

The Kittery Water District draws water from the Bell Marsh Reservoir and three ponds in York (Middle Pond, Folly Pond, and Boutler Pond). The Water District's water treatment facilities were constructed in 1959 and have a capacity of 4.6 million gallons per day (GPD). The District currently pumps an average of 2.5 million gallons per day (GPD), with peak winter demand of 4.6 million gallons per day (GPD), therefore, there is significant additional capacity.

As previously mentioned, the Portsmouth Naval Shipyard (PNS) is the District's largest user. The Shipyard has its own water supply storage and distribution system owned and operated by the U.S. Navy. The Kittery Water District supplies water to the Navy Yard through two metered connections, located at Gate 1 and Gate 2 of the Shipyard.

According to the **Water System Master Plan**, the Portsmouth Naval Shipyard has experienced a significant reduction in water-use since the mid-1990's. Prior to 1994, water-use at the PNS averaged 62% to 73% of the total KWD average-day demands. A water conservation program that began in 1993, dramatically lowered daily usage at the base. According to the KWD Superintendent, in 2015 the Shipyard accounted for 37% of Kittery Water District water usage overall. As a result the District has had to increase its rates.

WATER QUALITY

The Kittery Water District relies on surface water sources that must be protected from contamination. The Town of York has established a Watershed Protection District that provides protection for the reservoir and three ponds. The District owns 2500 acres of undeveloped forested property to protect its sources from contamination. Passive recreation is allowed on the District's property with restrictions; no bodily contact with the water is allowed.

SERVICE AREA/DISTRIBUTION SYSTEM

The Kittery Water District currently serves approximately 70% of the Town's residents and approximately 95% of the businesses in town. All of the older built-up area of Kittery is connected to the public water system as is the Route One Corridor to the York town line. The water system extends eastward to serve Kittery Point, some of Gerrish Island and the Brave Boat Harbor Road. Water service also is available along the Haley Road and most of the streets connecting to it. Seasonal water service is available on the easterly side of Gerrish Island and all of Cutts Island. An over ground water main is activated for 6 months of the year.

West of the Turnpike, public water service is available in the Eliot Road, Dennett Road, and Martin Road areas as well as along Route 236. Water service is also available in the Stevenson/Manson Road area. A water main extends to portions of Picott Road and out the Cutts Road to the Betty Welch Road and Remick's Lane.

Public water service is generally not available in the Wilson Road area west of the Turnpike and in the Norton, Bartlett, Miller, Lewis Roads area north of Spruce Creek.

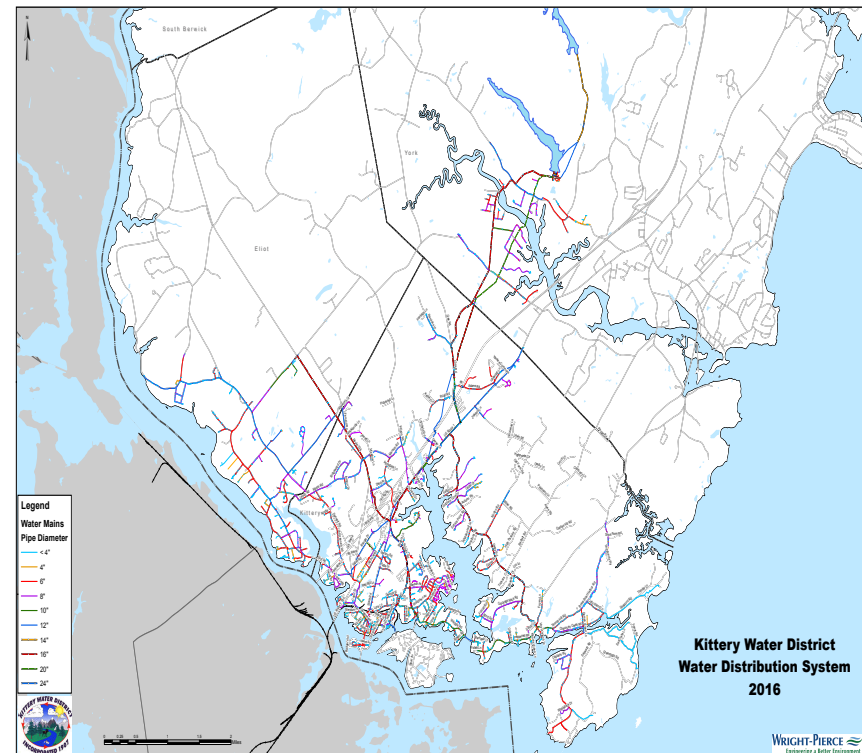
The distribution system consists of approximately 96 miles of water mains. According to the Water District's Superintendent most mains are adequately sized, with the exception of approximately 20% that should be increased in size.

The District last updated its Master Plan in 2010. Since 1999 the District has expanded its service area very little. Almost all of the system's expansion has been undertaken by developers. The District's mission is to replace and upgrade the existing 96 miles of water mains rather than expand into new territory. They would like their piping system to be reliable, free of leaks, and able to provide clean and safe potable water to their consumers.

The District has adequate treatment and pumping capacity to meet additional demand. However, there are no planned extensions of the water supply system because the District does not have adequate revenue to pay for this. Usually the extension of water mains are funded is by a developer or other entity requesting the extension; they pay the full cost of the project. A developer has expressed interest in extending the system to the Kittery Business Park sometime during 2016.

FUNDING

The water system is financed through user fees. Residents and business owners are charged user fees for access to water according to their actual water usage. The rate per 100 cubic feet



Water Distribution System

decreases as usage increases. Commercial, multi-family residential, and industrial users with large meters pay slightly lower rates for the initial quarterly minimum usage, but have a higher minimum threshold. The Town of Kittery does not fund infrastructure improvements to the system. The Water District increased its rates by 10% in January of 2016. Kittery is still in the bottom lowest cost water districts in the State.²⁷

The KWD does not plan on extending any new mains themselves. The lack of any other way of funding the extension of the water system makes it difficult to guide growth through the expansion of the water system.

FUTURE PLANS/NEEDS

The Kittery Water System Master Plan (2010) lists three main goals for the future²⁸:

- Water Treatment Facility - The District's Francis L. Hatch Water Treatment Facility is over 50 years old and reaching the end of its useful life. Significant investment in the existing facility over the past 20 years has modernized the facility sufficiently to extend its life for another 10 years. It is not possible to access components located within the concrete without disrupting service. The District has plans already drawn up for a new plant, and the Superintendent hopes to have the new plant to be constructed at the same location (28 New Boston Road,

York) completed by 2021. The Water District is currently working on a financing plan (considering municipal bonds, asking for Department of Defense contributions, among other mechanisms).

- Water Withdrawal Management - Regulation of water withdrawals from surface water supplies will be implemented in the State of Maine over the next 10-year planning period. Determination of the withdrawal capacity of the District's reservoir system during this period will define the size of the treatment facility upgrade needed to meet the needs of the system.
- Portsmouth Naval Shipyard - The long-term viability of this important customer remains a question in the local economy. The District intends to monitor and observe water-use at the facility over the next 10-years.

The Master Plan also recommends that the Water District focus on ways to integrate community growth and planning objectives with the water system. Since the remaining developable land in both Kittery and surrounding service communities is primarily zoned for residential development, a future water-use projection will consider moderate growth in non-residential water-use. The existing plant has the capacity to accommodate this potential increase in water consumption.

Additionally, the District will continue its annual investment of approximately \$0.5 million towards upgrades, repairs and improvements to the system, primarily in the form of pipe

²⁷ from interview with Mike Rogers, Water District Superintendent, February 24, 2016

²⁸ from *Kittery Water System Master Plan*, 2010

replacements, increasing the size of piping and focusing on water quality.

The relocation of the Kittery Water District administrative offices continues to be an open question.

REGIONAL COOPERATION

The Water District will continue to work cooperatively with the Town of York to assure that there are reasonable management provisions in place for the watersheds of Bell Marsh Reservoir and other ponds that serve as the District's supply to assure that the water quality of these sources is maintained.

According to the Water Supply Master Plan, the York Water District and Kittery Water District have held informal discussions over the last several years regarding the consolidation of their water supplies. Each District retains a separate and distinct reservoir system located in the Town of York. The close proximity of these sources of supply to each other, the contiguous watershed protection and public ownership of land surrounding the reservoirs, and surplus supply yield in the Kittery reservoir system, make the potential for local cooperation between the two utilities possible.

The South Berwick Water District (SBWD) is currently considering securing property to develop additional well supplies to increase the future supply capacity to meet projected demands. As an alternative to developing new sources, the SBWD has considered the potential economics of an interconnection with the Kittery

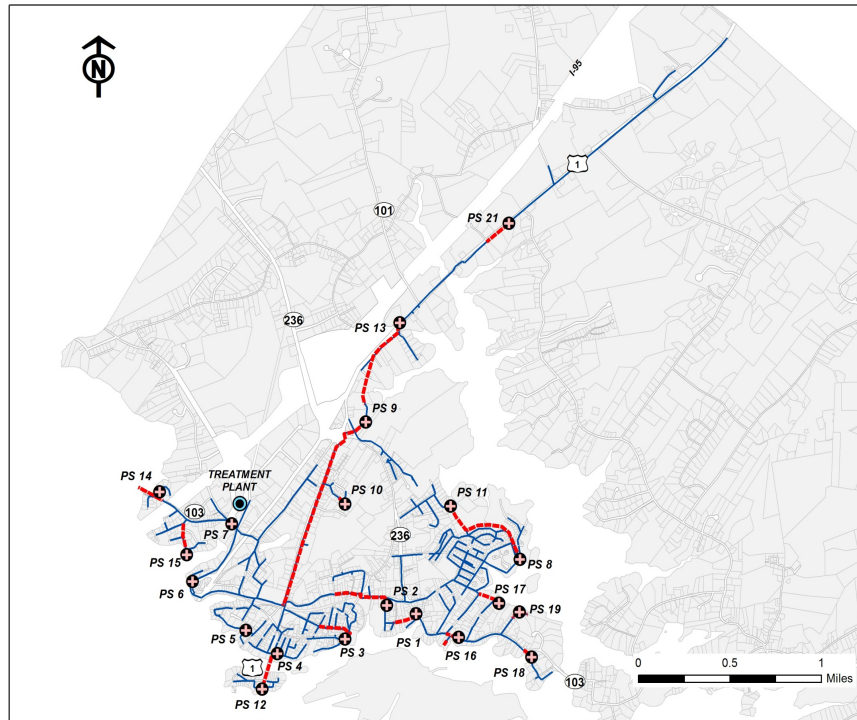
Water District from an avoided cost perspective. Recently, the two Districts' conducted an informal study to determine the relative magnitude of costs required to construct an interconnection between the two utilities along US Route 236. The technical requirements for this interconnection have been documented.

WASTEWATER TREATMENT DEPARTMENT

The Municipal Sewage Treatment Plant is located on Dennett Road. The Plant discharges into the Piscataqua River. Sewage treatment is provided to 30% of Kittery residents and most of the town's businesses. This includes the Foreside, the Admiralty Village area, Route One and the Eliot Road area. The Route One commercial strip from Ox Point Drive north to the York line is also serviced.

Kittery Point and most of the eastern part of the Town are not sewered; they are instead on subsurface wastewater disposal systems (septic).

The Wastewater Treatment Plant is in the process of completing implementation of a 30-year plan. It is expected that the last phase of the master plan action items will be finished by June 2016. The Plant and its related infrastructure are all in good condition as they have been upgraded over the last few years. The entire facility is heated by local Maine renewable energy (in the form of wood pellets) which feeds the plant's boilers.



Existing Sewer System

The system, which has a replacement value of \$100 million, is comprised of the following infrastructure components:

- Wastewater Treatment Facility (2.4 MGD)
- Pumping Stations (24 total)
- Buried Sewer Pipes (33 miles)
- 2,000 Sewer Connections for Kittery, Portsmouth Naval Shipyard, and Eliot

As evident in Table 7-10, the system has additional capacity for expansion. Additionally, over the last decade or so, the Department has worked diligently on reducing its Infiltration and Inflow to the system which has reportedly resulted in significantly increasing the system's capacity. Infiltration/Inflow (I/I) causes dilution in sanitary sewers. Dilution of sewage decreases the efficiency of treatment, and may cause sewage volumes to exceed design capacity.

TABLE 7-10: Wastewater Treatment Plant: Licensed capacity as compared to Actual Usage (GPD): 2016

Licensed Capacity GPD (gallons per day)	Actual Usage GPD (gallons per day)
2.4 million GPD	1.2 million GPD

The Business Industrial Park was recently connected to the municipal system. The location of the park, directly off of the Interstate highway (95), combined with the newly connected sewer service is expected to attract large users. Some potential users may be waiting for water service to be made available to this area of Town before they consider a move to the Business Park. There is discussion of the possibility of a large developer extending water service into the Business Park sometime during the year of 2016²⁹.

The extension of the sewer system to the northwest of Interstate 95 is expected to:

²⁹ According to the Superintendent of the Kittery Sewer System

- Facilitate economic development (Business Park & Route 236)
- Provide sewer to properties with land unsuitable for septic systems
- Increase tax revenue through increased property values

The sewer system was also recently expanded to a mobile home community where the septic systems were responsible for the contamination of Spruce Creek. This was affecting shellfish and at times the water quality at the Town's beaches. The residents in this area will be required to tie in to the municipal system. The Town requirements for hook up are as follows:

"Owners of all houses, buildings or properties used for human occupancy, employment, recreation, or other purposes requiring the disposal of sewage situated within the Town and abutting on any street, alley or right-of-way in which there is located a public sanitary sewer of the Town, are required at their expense to install suitable toilet facilities therein, and to connect such facilities directly with the proper public sewer ... provided that said public sewer is within one hundred (100) feet of the property line as measured along any public way. " (Kittery Town Code, Title 13.1.1.11).

For larger developments, the Town's requirements are as follows: *"Connection to public sewer is required for a commercial or industrial development or a residential subdivision, where public sewer, within an abutting public way, is within one thousand (1,000) feet of the property line as measured along said public way. In such an event the developer shall connect to public sewer per the town's Superintendent of Sewer Services (SSS) specifications and in accordance with Title 13. The developer shall provide written*

certification to the Planning Board from the SSS that the proposed addition to public sewer is within the capacity of the collection and wastewater treatment system." (Kittery Town Code, Title 16.8.7)

The Department's customer with the highest flow is the Naval Shipyard. They have their own system for the approximately 6,000 people working there, but they pump their untreated wastewater into Kittery's municipal system. They pay Kittery \$1 million annually for this service. Additionally, the Navy funds the sewer fees incurred by their housing in Admiralty Village.

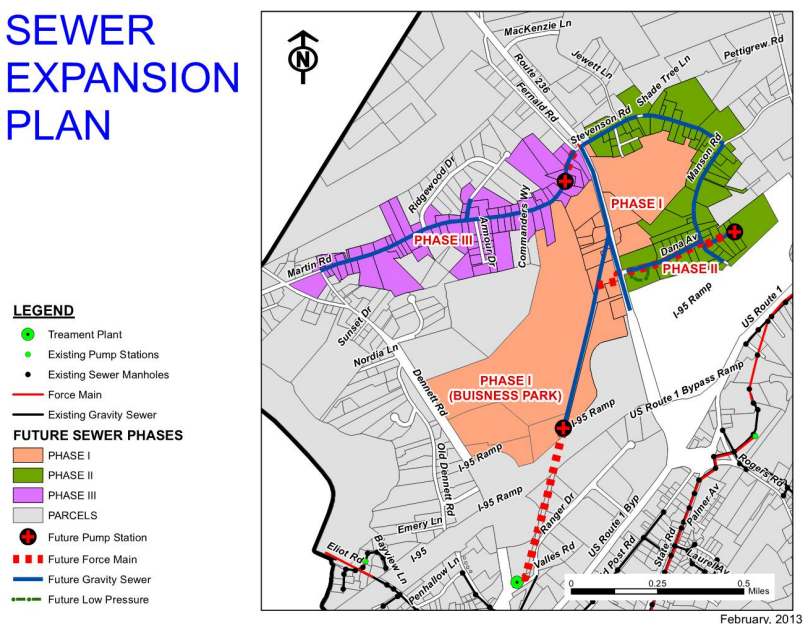
STAFF

The Sewer Department has the following staff:

Superintendent
Chief Operator
3 Operators
1 Laboratory Technician
1 Maintenance technician



SEWER EXPANSION PLAN



The Town also has a “betterment fee” procedure within the Town Code that allows the Town Council to assess property owners that benefit from a sewer extension for up to half of the cost of the project. The system includes a provision for the payment of a “Special Sewer Entrance Permit Fee” of \$2,500 if a user that has not paid a betterment fee connects to a sewer funded through this method.

The Treatment Plant itself has undergone a number of upgrades in the last 12 years, the most recent of these was completed in August, 2015. The incorporation of new technologies has resulted in decreasing electricity bills.

The Plant processes (by centrifuge) the sludge generated by the wastewater treatment process and sells it to a company that mixes it with woodchips and turn it into soil for land and soil enrichment (compost). Kittery pays to have the sludge hauled away.

FUNDING

The municipal system is funded through an enterprise fund, user fees pay for the service. These are in the process of being increased. The enterprise account is its own budget. It is self-supporting without any financial support from the general fund. Capital needs have been supported through bonds paid by assessments, impact and user fees, and funded depreciation. Current contracts also oblige the Shipyard and the Town of Eliot to pay for a portion of the Wastewater Treatment Facilities capital costs. The Town of Kittery cannot use money from the account for other purposes.

FUTURE PLANS/NEEDS

According to the Superintendent of Sewer Services,³⁰ new technologies are being developed that will make it economically feasible to provide sewage treatment to Kittery Point and the rural areas of Town in the future. Currently it is too difficult (and expensive) to provide this service (due to the large amount of ledge and swamp in these areas). It is expected that low-pressure pumping systems continue to be improved.

³⁰ as discussed in an interview on February 12, 2016

Alternatively, the Town could charge for installing a small treatment facility(s) in areas that are difficult to connect to the existing municipal system.

The Wastewater Department recently completed a study and will present a proposed rate increase to Town Council within the next year.

It is expected that large users attracted to the Business Park will also generate income for the Wastewater Treatment Department.

The Department plans to continue to upgrade and maintain the system.

Something else to possibly explore in the future is the possibility of having a pump station on the water. It would need to be monitored, but it may be a better way to process the wastewater from ships in the harbor. Currently, these ships empty their sewage onto a barge which then brings it to Portsmouth for treatment.

In the future it may be desirable to explore ways of reusing gray water for household use. Currently it is apparently not cost-effective.

The Superintendent proposes that in the future, the land owned by the Town Wastewater Department that is adjacent to the Plant could be used for a Tri-generation plant to provide power (heat, steam and hot water). The Town would own this and generate energy for the Business Park. It would also be able to supply natural gas, both attracting new businesses to Kittery and simultaneously generating revenue for the Town. The

Superintendent believes that in this way, the Town could provide utilities at rates that would be competitive with those charged in the state of New Hampshire. CMP (Central Maine Power) is apparently in favor of exploring this concept.

SUSTAINABILITY MEASURES (ENERGY EFFICIENCY)

Kittery has made significant strides in an effort to be mindful of the future of its environment. The following are some examples of the sustainability measures and activities the Town has been involved with.

POWER

THREE-PHASED POWER

Three-phased electric power is a common method of alternating current electric power generation, transmission, and distribution. It is a type of polyphase system. It is commonly used to power large motors and other heavy loads. A three-phase system can often be more economical than a single-phase because it uses less conductor material to transmit electrical power³¹. The Portsmouth Naval Shipyard uses three-phase power.

³¹ from Wikipedia, https://en.wikipedia.org/wiki/Three-phase_electric_power

ELECTRICITY AND FUEL

Currently, Central Maine Power (CMP) is the principal electricity provider for Kittery residents.

Seventy-five percent (75%) of the Town relies on fuel oil for heating, while another 10+% rely on natural gas or propane. Multiple providers are available with costs varying based on market changes, seasonal and promotional offers. Manufacturers are exempt from paying 95% of the sales tax on fuel and/or electricity used in their manufacturing operations.

WIND TURBINE

In 2007 a 50-kilowatt wind turbine was installed (funded by the Maine Renewable Resources fund). The electricity produced by the wind turbine is sufficient to offset all of the electricity used at the transfer station and about one-quarter of electricity used at Shapleigh Middle School. Under Maine's "net annual metering" legislation, all of the electricity produced by the wind turbine over the course of a year can be subtracted from overall electricity use at the two facilities.

PROGRAMS AND PLANS

GREEN ALLIANCE PROGRAM

Kittery encourages businesses to consider more eco-friendly choices in their manufacturing procedures and the goods and

services they use through the Green Alliance Program.³² Their mission is as follows:

"To increase the profits of businesses that are having the least impact on the environment and to encourage more sustainable business practices through "Business-to-Business" mentoring and strength in partnership. To educate and influence the public to consider the goods and services they use in their own communities and to encourage more sustainable choices."



solar panels

KITTERY'S ENERGY EFFICIENCY COMMITTEE

The Energy Efficiency Committee is a town-sanctioned committee that works to reduce Kittery's energy use and promote conservation in the schools and the community. It is charged with

³² <http://www.greenalliance.biz/about-us>

advising the Town Manager and Council on energy programs, projects, and policies, which through conservation and alternative energy use, work to achieve a reduction in Kittery's reliance on fossil fuels. KEAC, an outgrowth of a smaller Town Council energy committee, allows wider community involvement and reflects growing community interest in energy conservation issues.

Committee's Goal: Reduce energy consumption and develop more sustainable energy practices in the Town of Kittery.

Objectives: Develop and recommend alternative energy and conservation guidelines, policies, programs, and projects that will assist the Town of Kittery in developing sustainable practices and reducing energy consumption in accordance with the US. Mayors Climate Protection Agreement, adopted by the Town Council on January 28, 2008, other State and Federal energy programs, and related initiatives.

FUTURE PLANS/NEEDS

Kittery's Energy Efficiency Committee has the following goals:

Policy changes/ordinances

- Building energy efficiency standards
- Ordinances to allow for residential/commercial/municipal wind, solar no idling policy (including signs at bridges)

Reducing Energy Use/Costs

- School energy use inventory
- Biofuels
- Improved recycling

Education (public awareness and school programs)

- Website, updated community awareness, education on energy issues
- School based curriculum – Clean Air Zone, MEEP
- School garden
- No idling: schools, bridges and localities
- Regular column in Kittery Quarterly
- Safe routes to school grant money, sidewalks, walking/biking programs

Consumers

- Fuel cooperative (oil, biofuels, wood)
- Wholesale pass electric cooperative
- Green electricity
- CFL program
- Home energy audits

Innovations/renewables

- Solar/geothermal for fire station
- Wind for Mitchell School
- Support for wind turbine at transfer station
- Tidal at Crocket Neck, Chauncey Creek, Thompson at Spruce Creek
- Solar for schools (\$ available for this)
- Wholesale pass thru electric as new system

Transportation

- Municipal vehicles fuel efficiency, no idling, biodiesel
- School buses, efficiency, biofuels, cleaner tailpipes, efficient

routes

- Safe routes to school, walking, biking
- Electric car (and related charging station)

Miscellaneous: Organics for landscaping, no pesticides

IDENTIFICATION OF PRELIMINARY ISSUES, CHALLENGES AND OPPORTUNITIES

The following is a preliminary list of issues, challenges and opportunities posed by the findings of the inventory of existing conditions of Kittery's public facilities and services. Please note that these are subject to change with the preparation of goals and objectives, not yet drafted (at the time the inventory was prepared).

- The population of Kittery has been relatively stable over past couple of decades. While current population projections generally assume that this trend will continue, it is possible that increasing development pressure in Portsmouth may result in more people moving to Kittery for the affordability of housing, good schools, and other amenities. This potential increase in population could impact the demand on public facilities and services.
- The Town Hall is in very good condition and has room for expansion if this were needed in the future.
- The lack of a local newspaper has resulted in reliance and high usage of cable TV, social media and community bulletin

boards for communication. There may be a need to strengthen the means of communication.

- The Schools are adequate in terms of size and condition to meet current needs as well as those in the foreseeable future as they have some capacity to accommodate any potential increases in enrollment (as long as they were not significant). More current enrollment projections are needed in order to monitor potential future changes in the school population.
- Public transportation options could help provide flexibility to high school students in their effort to participate in internships as well as in getting to and from school.
- Joint dispatch for public safety could be expanded to more communities in the future. There is room for expansion on the second floor of the Kittery Police Department.
- The Police Department's participation in a new regional opiate addiction program will decriminalize addicts and connect them to treatment. This should result in a decrease in crime as reportedly much of the criminal activity is related to drug activity.
- There may be a need to increase the number of sworn officers for the Police Department in order to police a larger population (that takes into account the tourists, shoppers and Shipyard employees).

- It may be necessary to transition the Fire Department to full-time professional fire fighters. In the meantime, adding sleeping quarters to the Fire Station may help recruit more volunteers and prepare for the professional staff.
- The library's most critical decision with regard to the future is how to combine all the library's functions into one building and whether this should be accomplished by building an addition to the existing historic Rice building or by constructing a completely new building on the site of the Kittery Community Center.
- Future programming at the Community Center may need to be more oriented to an increasing senior population and may include Adult Day Care and a full-time staff dedicated to senior programming.
- The Community Center is continuing efforts at expanding revenue-generating activities so as increase its financial independence. An increase in demand for pre-school and other services is expected, making this feasible.
- The recently completed Athletic Fields Plan identifies the need for \$20 million worth of improvements and additional facilities. Financing these will be a challenge.
- The Port Authority would like to develop a Strategic Plan and to explore ways of increasing access and enjoyment of the water including through kayaking, sailing, and a water taxi service to Portsmouth.
- There may be some duplication of effort between the School Department (especially pre- and after-school programs) and those offered by the Community Center. Looking forward, these programs should be evaluated as to their efficiency and as to whether or not they are duplicating efforts or providing a differentiated service (e.g. to a different population, etc.). The same should be done for the programs offered by the Library.
- It is important to work cooperatively with the Sewer Department and Kittery Water District to ensure that the provision of water and sewer services do not create undesirable development in the rural areas.
- Both the Water District and the sewer system derive a significant portion of their usage and revenues from the Shipyard. If the status of the Shipyard were to change in the future resulting in a drop in usage, this could result in a significant shifting of costs for available capacity to the other users of these systems. This does not seem to be an issue in the near future.
- There may be an opportunity to redevelop the site where the KWD is currently located. The Town would need to support the KWD in their relocation efforts.
- There is a need to update the Town's GIS maps. Currently it is the responsibility of the Town Planner. He may need additional resources to complete this task.
- New communication technologies may provide an opportunity to improve DPW efficiency and enforcement.

- There may be an opportunity to increase efficiency by merging Kittery's Resource Recovery Facility with that of Eliot's, creating a regional facility.
- Kittery Water District is planning to construct a new Treatment Facility while it continues to upgrade the pipes. It does not plan any expansion of mains in the foreseeable future. Additional regional cooperation with surrounding towns may result in increased cost-efficiencies.
- The recent expansion of the sewage system to the Business Park is expected to result in encouraging economic development. However, since this is in private ownership, the Town is limited in what it can do to attract additional development.
- It may be beneficial to explore the creation of a municipal Tri-generation Plant to provide power (heat, steam and hot water). This may be attractive to potential users of the Business Park.
- Consider conducting a Stormwater Utility Feasibility Study in order to determine if this is an appropriate mechanism for Kittery to finance its Stormwater improvements.
- Kittery has taken steps to be mindful of the environment. It may be time to be more proactive regarding implementation of sustainability measures, especially with regard to sea level rise and climate change preparedness.

- It may be useful to review climate change adaptation plans of other coastal Main towns such as Wells and Georgetown
- An updated Sidewalks Conditions Report would be helpful in supporting future efforts to improve walkability.
- It may be useful to update the Town's Tree Inventory.

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INTERVIEWS

FIRE DEPARTMENT

David O’Brien, Fire Chief

POLICE DEPARTMENT

Theodor Short, Chief of Police

PORT AUTHORITY

Peter Whitman (Chair of Kittery Port Authority)

PLANNING

Chris DiMatteo, Town Planner

TOWN MANAGER

Nancy Colbert Puff

PUBLIC WORKS AND UTILITIES

Normal Albert, Commissioner of Public Works

Jessa Kellogg, Stormwater Coordinator

WASTEWATER TREATMENT DEPARTMENT

George Kathios, Superintendent of Sewer

WATER DEPARTMENT

Mike Rogers, Superintendent of the Kittery Water District

RECREATION/COMMUNITY CENTER

Janice Grady, Recreation Director and General Manager of the
Kittery Community Center

LIBRARY (Rice Public Library)

Lee Perkins, Director

SCHOOLS

Allyn Hutton, Superintendent of Kittery Schools

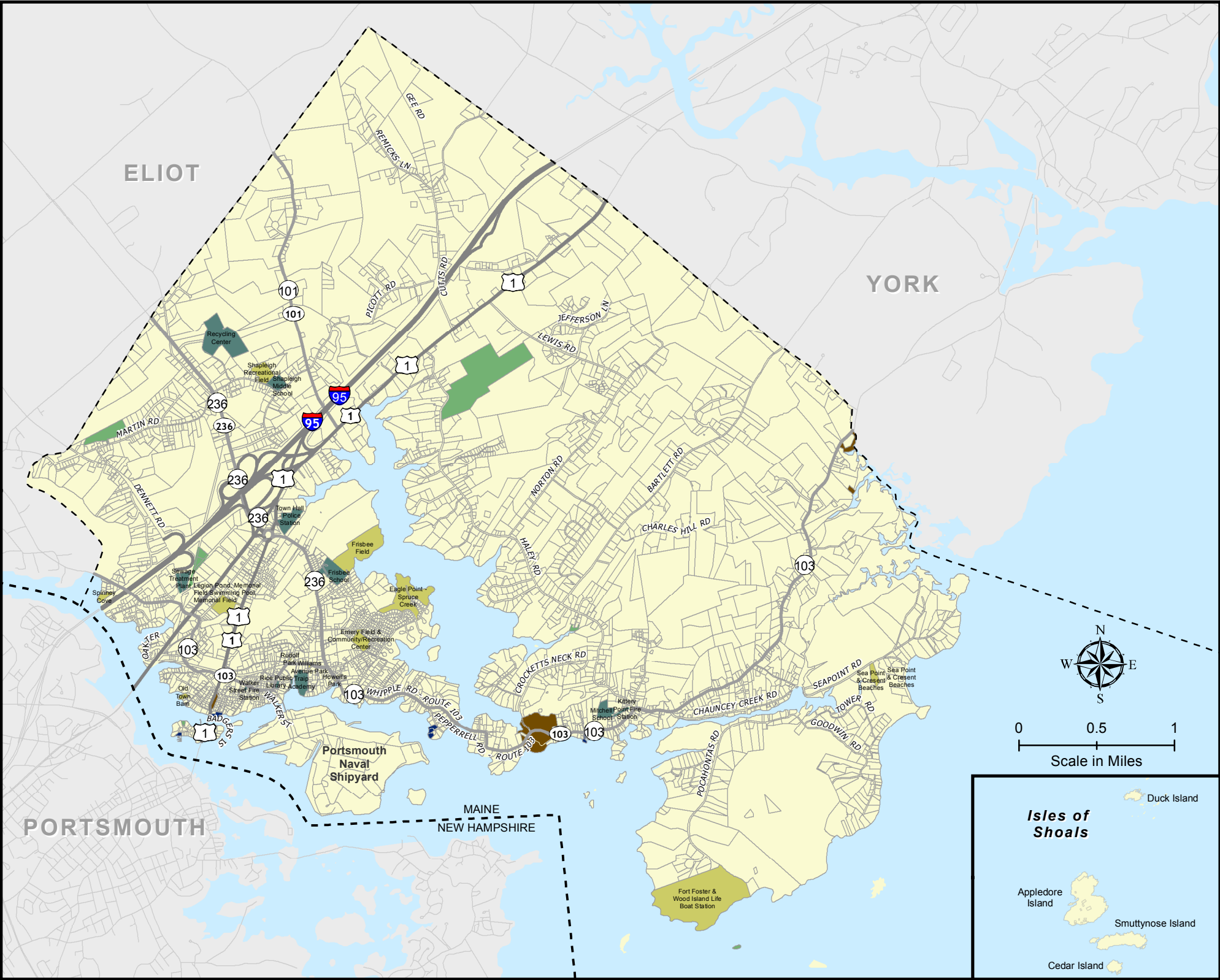
Kittery
Comprehensive
Plan Update
2016



Map 7.1
**PUBLIC FACILITIES
AND OPEN SPACE**

Public Facilities & Open Space

- Municipal Conservation Land
- Municipal Facilities
- Parks and Recreation Facilities
- Public Piers
- State & Federal Recreational Facilities and Open Space



0 0.5 1
Scale in Miles

**Isles of
Shoals**



Public Piers, public facilities and open space were provided by Planning Decisions, Inc. and digitized by RANIT at UNH, September 1999.



This map is for general planning purposes only. The data used to create the map are not adequate for making legal or zoning boundary determinations or delineating natural resource areas. Exercise caution when interpreting the information on this map.

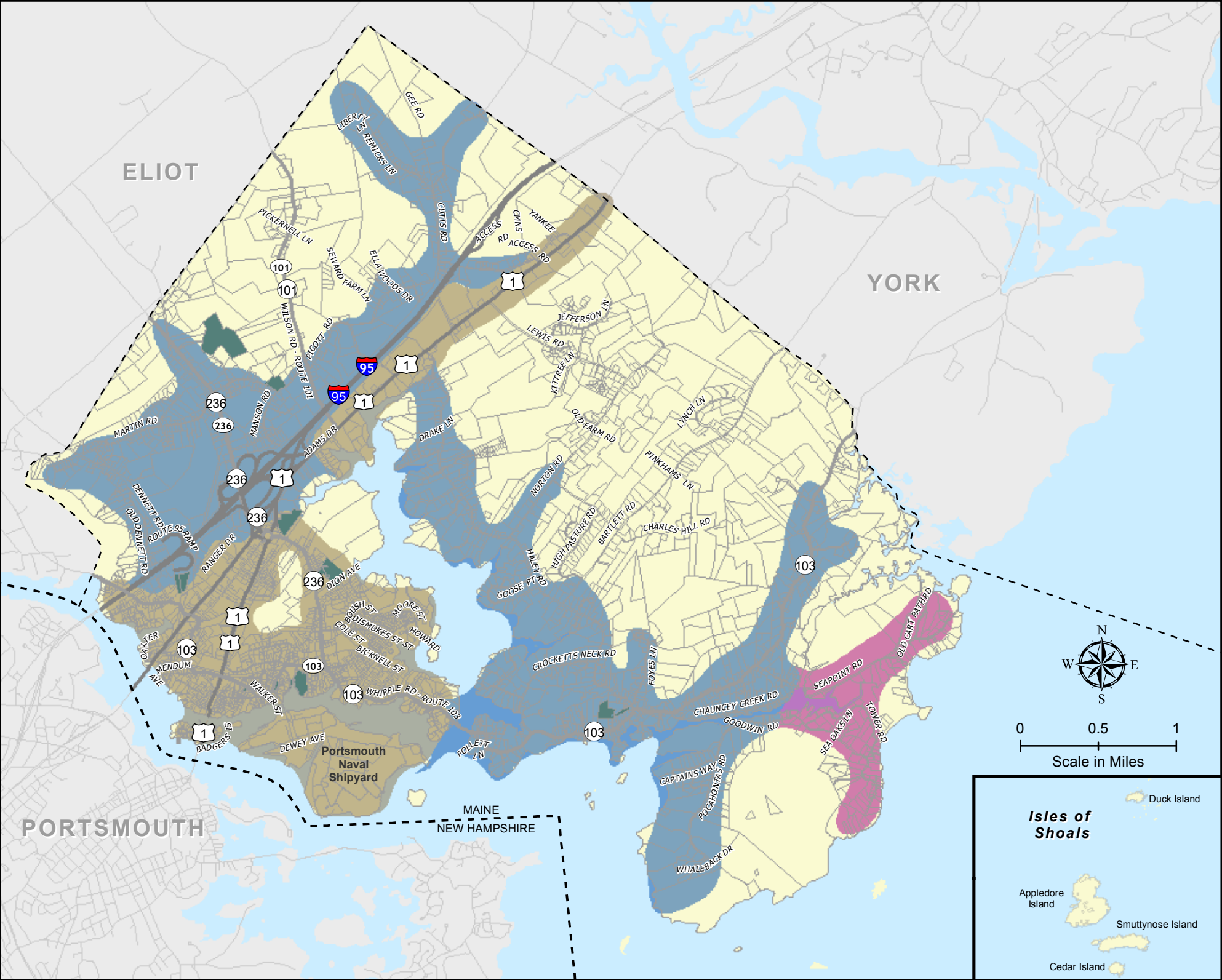
Kittery
Comprehensive
Plan Update
2016



Map 7.2
PUBLIC FACILITIES
AND OPEN SPACE

Water and Sewer Service Areas:

- Summer Water Only
- Water Only
- Water and Sewer
- Municipal Facilities



Water and sewer service areas and sewage treatment plants were provided by Planning Decisions, Inc. and digitized by Complex Systems Research Center, September, 1999.

AECOM

This map is for general planning purposes only. The data used to create the map are not adequate for making legal or zoning boundary determinations or delineating natural resource areas. Exercise caution when interpreting the information on this map.

APPENDIX A

MEMO FROM THE LEE PERKINS, LIBRARY DIRECTOR
MARCH 4, 2016**Long term:**

“A Library Committee has been formed to study alternative locations for a consolidated library facility as well as the reuse of the two buildings currently used by the library.

The Five questions posed by the Town Council Include

- 1. Where will a new facility be located on the proposed site?*
- 2. How will the facility be accessed?*
- 3. What is the impact on the neighborhood?*
- 4. What is the future disposition of the Rice and Taylor Buildings?*
- 5. What is the impact of the new facility on the Library's operational budget?*

The following is a list of goals for the new library:

- Accessible for people with disabilities
- 21st Century Library
- Center of population
- 1 stop convenience - all collections under one roof
- A green energy –efficient library building
- More space with room to grow for our collections
- Multi purpose rooms will provide opportunities for programs
- Space for additional computer terminals
- Computer classes, literacy and adult ed. day time
- Space for teen Game room and Maker space
- Designated areas to read and study, space for patrons using Ipads,

laptops

• Space for trend toward using libraries as shared workspace for independent contractors and other self-employed people. Libraries with Wii, copiers, fax machines etc. can provide space for people to bring their work and meet others who share the same challenges.

- Space for teens
- Larger Children Department
- Adding Additional Parking spaces for the Library and KCC

Current Rice Library Building

- RPL will never be a green building
- Adding parking underground will be a huge expense- if this is possible
- The building will never be completely handicapped accessible even with an elevator • The Building would be on many levels and will require a significant increase in staffing also heating and cooling • The RPL is not designed to meet the technology needs of our patrons now or in the future. • The long term upkeep of the Rice Building is overwhelming the current operational budget

Conclusion:

The Library Board of Directors and the Staff of the Rice Public Library, patrons and community members having worked extensively on this project, conclude that the only option is to build a new 20,000 square foot green library to meet the demands and needs of the present and for future of our community. The Library is one of the essential services of the Town. “

MARINE RESOURCES

8

This chapter identifies and describes the marine resources located in the Town of Kittery, the facilities operated by the Town to provide access for residents and visitors to the water and waterfront areas, and associated topics.

MAJOR MARINE RESOURCE AREAS

This section discusses the primary water areas within the Town of Kittery's jurisdiction, including a portion of the Isles of Shoals. The discussion and analysis emphasizes the waterfront and near shore areas of the mainland portion of the town.

The waterfront and marine resources have played an important role in the history and development of Kittery. The harbor and waterfront areas are located on the north side of the mouth of the Piscataqua River, and have approximately 34 miles of shoreline including rock outcrops, salt marshes, sandy beaches, mud flats, waterfront recreational areas, coves and mooring, marine commercial facilities, and a major federal installation at the Portsmouth Naval Shipyard. Much of the shoreline is in private ownership, with several large public parks such as Fort Foster and Fort McClary.

KEY WATERWAYS WITHIN KITTERY

Piscataqua River: Leading out to sea along the Kittery shoreline, the Piscataqua is an authorized navigation channel for 6.2 miles of its 13 mile length, with a depth of 35 ft. Mean Low Water (MLW) and width of 400 to 600 feet. The Piscataqua is used by a wide range of shipping interests, including freighters and cargo vessels,

US military and Coast Guard, commercial fisherman, and recreational boaters. The river separates Maine from New Hampshire, and is crossed by three bridges: the Memorial Bridge (reconstructed in 2013), the Sarah Mildred Long Bridge carrying US Route 1, and the Piscataqua River Bridge carrying Interstate 95. The Memorial Bridge and Sarah Mildred Long Bridge are both lift bridges to accommodate shipping. The Piscataqua River has an extremely fast tidal current of approximately 4 knots (4.6 mph), and is considered the second-fastest-flowing navigable river in the nation. The lower six miles of river is part of Portsmouth Harbor.

Summary of Key Points

- Kittery has a complex waterfront, with large-scale commercial and military craft, marina and docking facilities, commercial fishing, and recreational boating.
- Swift currents and obstructions can pose a hazard to navigation
- There are a wide variety of natural habitats and environmental resources in Kittery, including the open ocean, river channels, protected bays, and estuarine and intertidal areas.
- Limitations exist on access to the waterfront from crowded shorefront launching facilities and long waiting lists for moorings, and boat traffic is increasing.
- Contamination from wastewater treatment outfalls and other sources has affected shellfishing and overall water quality. Runoff from impervious surfaces contributes to water pollution, and there are no pesticide or fertilizer ordinances in place to reduce infiltration into adjacent waterbodies.
- Sea-level rise has the potential to increase floodplains, storm damages, and reduce public access to recreation areas on the waterfront.



Figure 1 Commercial vessel transiting Piscataqua River with assistance from tugs, after passing Sarah Mildred Long Bridge

Spinney Creek: located just north of the Interstate 95 Bridge, this subtidal creek features a commercial aquaculture facility, several private float landings, and a private marina in Eliot, ME at the confluence of the creek with the Piscataqua River. There is a fixed road bridge carrying Route 103 over the creek. While there is non-point pollution in Spinney Creek, the water quality in the Creek has improved; as of the 2012 Maine Marine Resources report, it continues to meet the “Restricted” standard for shellfish cultivation.

Back Channel

This waterbody, an offshoot of the main Piscataqua River, runs from the western end of Badger’s Island easterly to Spruce Creek between the mainland and Seavey Island, the location of the Portsmouth Naval Shipyard. The channel has depths ranging from 17-25 feet at Mean Low Water (MLW), although depths can be shallower at the western end of Badger’s Island. There are two public access launching areas along the channel, as well as several private wharves and landings. The Back Channel is important for recreational boaters, particularly those docking on the northern side of Badger’s Island. The channel is the waterbody closest to the revitalized commercial area in the Kittery Foreside.



Figure 2 - View of Back Channel from Memorial Bridge

Chauncey Creek

The creek runs from the eastern end of Pepperrell Cove to Seapoint Beach (also referred to as Sea Point Beach), separating Gerrish Island from the mainland; due to its shallow depth, it is used primarily by small watercraft. The creek does not reach open water at Seapoint Beach, but it does reach Brave Boat Harbor at high tide. The fixed bridge to Gerrish Island crosses the creek. Several private docks and a popular waterfront restaurant are located on the banks. Chauncey Creek is classified as a “Prohibited” area for shellfish cultivation due to the presence of Overboard Discharges (OBD) systems, which discharge treated effluent into the water. However, with the recent conversions to septic systems on numerous properties, only three OBDs remain active on Chauncey Creek. This has led to an improvement in water quality. Carry-in boat access to the creek is found at the intersection of Cutts Island Lane and Seapoint Road.

Spruce Creek

A significant estuarine resource, Spruce Creek is a three-square mile tidal saltwater estuary, fed by five freshwater streams which runs roughly up the middle of Kittery. At low tide, approximately 2.5 miles of clam flats are exposed. There is an unmarked channel with depths from 22 feet at the confluence with the Back Channel, lessening to 13 feet or less near Shepherds Hill Cove. The confluence is crossed by the Route 103/Whipple Road Bridge to Kittery Point.

Pepperrell Cove

Adjacent to Kittery Point and Fort McClary State Park, this is the primary mooring area in the town, with approximately 400 moorings under the jurisdiction of the Kittery Port Authority. The majority of these moorings are used seasonally by recreational



Figure 3-Chauncey Creek, looking upstream

boaters, and a significant number of year-round commercial fishermen.

The Frisbee Wharf, used by commercial and recreational boaters, provides boating access into Pepperrell Cove through two municipally-owned piers: Frisbee Pier, which is primarily used by commercial fishermen, and Pepperrell Pier, which is primarily used by recreational boaters. Depths in the anchorage area range from 13 feet to 7 feet at Mean Lower Low Water (MLLW), or less in certain areas.

Brave Boat Harbor

Used primarily by small craft due to shallow depths, Brave Boat Harbor has limited private landings and no public facilities. The harbor is exposed to the ocean and is thus prone to choppy

waters and high winds during storms. It is located within the Brave Boat Harbor Division of the Rachel Carson National Wildlife Refuge. The refuge, which has 11 divisions along the Maine coast, was established in 1966 in cooperation with the State of Maine to protect valuable salt marshes and estuaries for migratory birds. Residents report increasing boat traffic in recent years, including larger power boats. The Kittery Harbor Master patrols in Brave Boat Harbor in season, and responds to emergency calls and complaints for unsafe boating operation, such as excessive speed and no-wake zone violations.



Figure 4-Pepperrell Pier at Pepperrell Cove

KEY WATERFRONT NATURAL AREAS

Seapoint Beach

This area is considered to be environmentally sensitive, and a highly valuable environmental asset because of the number of marine invertebrates and shorebirds found here, and the extensive salt marsh. The area is a popular location for visits by residents and non-residents, and has expansive views of the ocean. The beach is a popular location for residents and visitors to bring dogs, which has created issues concerning the appropriate disposal of pet waste.

Rachel Carson National Wildlife Refuge

Part of an 11-division coastal wildlife refuge, this facility features high-quality habitats and estuarine areas. Visitors are allowed within the facility, and carry-in boat access is available on Chauncey Creek at the intersection of Cutts Island Lane and Seapoint Road. Brave Boat Harbor is located in the central portion of the Refuge property.

Fort Foster

This historic military structure and the accompanying 88 acres of parkland and several thousand feet of ocean shoreline are managed by the Town of Kittery, and receive many thousands of visitors each year. There are three beaches (including “Scuba Diving Beach”), extensive trails, picnic areas, and restrooms in season. Lifeguards are not provided, and due to strong tidal currents, there is no swimming or diving allowed from the pier. The pier was constructed for the loading and unloading of deep draft vessels. Citing the currents in the area and exposure to storm wind and waves, the municipal recreation department has not installed floats at the pier. Non-motorized craft such as

windsurfers and sea kayaks are allowed to be launched from the portion known as “Windsurfer’s Beach”. Commercial tours using non-motorized craft, such as sea kayak tours, are not allowed to launch within Fort Foster. A large freshwater wetland complex runs generally north to south through the park; the marsh at the southerly end of the park is particularly valuable to nesting birds, and the entire complex is valuable habitat to a wide variety of species.

Nearshore Islands

The largest islands within Kittery are Badger’s Island, home to a marina, restaurants, and housing, and Seavey Island, site of the 278-acre Portsmouth Naval Shipyard. A facility of the US Navy, the Shipyard is responsible for the overhaul, repair, and modernization of naval submarines. The Shipyard also serves as the home port for three “medium endurance” US Coast Guard cutters. Shipbuilding in the region began in the late 1600s, with



Figure 5-Shoreline of Badger’s Island

numerous ships build at the Naval Shipyard in the 1800s.

There are a number of small islands in the nearshore waters of Kittery, including Wood Island, Fishing Island, White Island, and Gooseberry Island. The majority of these islands are uninhabited. Wood Island is the home of the **Wood Island Life-Saving Museum**. Owned by the Town of Kittery, the Wood Island Life Saving Station was built in 1907 to accommodate men of the US Life Saving Service (forerunner of the US Coast Guard) who performed rescue missions, using small rowing boats, to mariners in distress. It is a rare and historic building eligible for the National Register and its condition has deteriorated over time. It stands near the entrance to the Piscataqua River and consists of the Station, two sea walls (north and south) and a marine railway for boat launching. The non-profit Wood Island Life Saving Station Association (WILSSA) has led efforts to restore the building, sea walls, and marine railway, and to build a new pier to create a maritime museum open to the public, accessible by boat. WILSSA has raised over \$750,000 to support this effort. WILSSA is also attempting to secure the involvement of the Maine National Guard to help rebuild the sea walls and marine railway, and construct the pier. Work to clean the building of hazardous materials and repair its exterior was begun in summer 2016. Funds for the restoration were recently provided by Environmental Protection Agency (EPA), National Park Service, and the State of Maine, each providing \$200,000 for the remediation and exterior renovation projects.

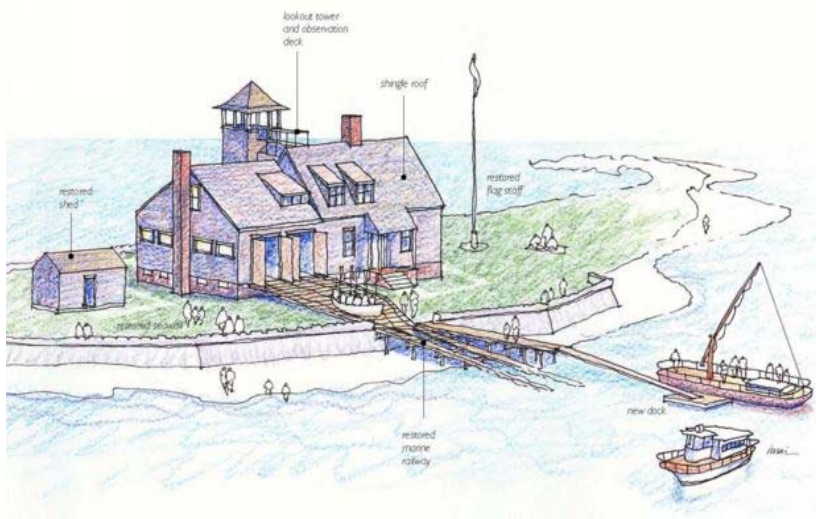


Figure 6-Conceptual Sketch of Restoration at Wood Island Life Saving Station

Isles of Shoals

Located approximately nine miles offshore from Pepperrell Cove, this archipelago contains eight main islands and a number of islets, rocks, and ledges. With an extensive history of fishing and habitation, the Shoals are a significant historic and environmental resource. The Town of Kittery has jurisdiction over the five main islands within State of Maine waters: Cedar, Smuttynose, Malaga, Appledore, and Duck. The boundary line between Maine and New Hampshire runs through the center of Gosport Harbor and between Star and Cedar Islands. Appledore Island is the largest of the islands in Kittery's jurisdiction, and is home to the University of New Hampshire/Cornell University Shoals Marine Laboratory, and several private homes.

Gosport Harbor is extensively used by private boaters to the Isles of Shoals, and by the Isles of Shoals Steamship Company for its excursion and supply boats docking at Star Island. These docks are maintained by the non-profit Star Island Corporation. The Harbor can be reached by several deep channels and is protected from all but westerly winds.

WIND, CURRENT, AND TIDE CHARACTERISTICS

The prevailing winds tend to be from the north and northeast during the winter and from the southwest during the summer. Thus, Kittery's waterways are relatively sheltered, although those areas facing the Atlantic Ocean are exposed to southeasterly winter winds. Exposed areas of note include Fort Foster and Brave Boat Harbor. The mean tidal range at Kittery Point is 8.7 feet, while at Portsmouth, NH it is 7.8 feet.

Navigation in the Piscataqua River can be complicated by strong and variable tidal currents, which can vary greatly depending on the width, depth, and adjacent tributaries. Tidal currents are considered to be very strong in the main channel of the harbor, although they are much less in the coves and estuarine areas. The Maine Natural Areas Program lists the area off the Naval Shipyard near Four Tree Island in Portsmouth as the fastest flowing tidewater on the U.S. east coast.

A U.S. Army Corps of Engineers (USACE) study in 1984 measured current velocities in various places on the Piscataqua River and the waters near Badger's and Seavey Islands. The highest velocities were recorded in the River near the western tip of Badger's Island where currents reached 4-6 knots in mid-channel

on the flood tides. In the back channel of Badger's Island, the current velocities were measured at 2-3 knots. Near Seavey Island in the open water, velocities reached four knots; near the mouth of Spruce Creek, currents were approximately two knots. The National Oceanic and Atmospheric Administration (NOAA) has conducted tidal measurements at the mouth of Portsmouth Harbor off Wood Island, and found currents to typically run from 1-3 knots.

Currents of this velocity can pose a hazard to small craft, particularly to human-powered craft such as kayaks.

FEDERAL NAVIGATION PROJECTS

The USACE is responsible for three navigation projects in Kittery's harbor area: the Piscataqua River Channel, the Pepperrell Cove Anchorage area, and Gosport Harbor. In 1986, Congress authorized a project to widen various sections of the Piscataqua, with completion of this work in 1992. No recent USACE activity has occurred in Kittery's waterways.

Portsmouth Harbor

Within this harbor, a federally-designated channel provides for a 35-foot deep channel that ranges in width from 400 to 700 feet wide and extends from New Castle and Clark's Island in Kittery to the Atlantic Terminal in Newington. The USACE dredged the area across from the New Hampshire Port Authority south of the Sarah Long Bridge to construct a turning basin.

Gosport Harbor

The USACE constructed three breakwaters connecting Star, Cedar, Smuttynose, and Malaga Islands to create an anchorage for local fishermen, recreational boaters, and excursion boats from Portsmouth, and is responsible for maintaining these structures. The tidal range in the harbor is 8.7 feet.

HAZARDS TO NAVIGATION

There are a number of dangerous rock ledges near confluence of the Piscataqua River and the Atlantic Ocean, as well as within more sheltered areas, including:

- Moore's Rock near the entrance to Brave Boat Harbor is unmarked and has a five-foot cover at low tide.
- A series of unmarked bedrock shoals between Brave Boat Harbor and Seapoint Beach, including East and West Sister shoals.
- The area at the confluence of the Piscataqua River and the open ocean has a number of potentially hazardous areas including Whaleback Island and Reef, Phillips Rocks, and the waters between White and Wood Island. Whaleback Island is marked by the historic Whaleback Light, which is still in operation.
- A set of wooden cribs from a World War II submarine net between Wood Island and Fort Foster.
- The shoal associated with Hicks Rock as well as several shallow areas in the back channel.

- Shoal areas near Gosport Harbor that are well marked but require caution, particularly in strong winds. Duck Island is surrounded by ledges and shoals and can be hazardous.

Several low bridges pose hazards to navigation, especially to fishermen and recreational boaters; these include the Badger's Island Bridge, Bridges 1 and 2 over the Back Channel to Seavey Island (Portsmouth Naval Shipyard), the Kittery Point Bridge on Route 103, and the Gerrish Island Bridge over Chauncey Creek. The vertical clearances for these structures range from six to eight feet at high tide.

There are railroad trestles from defunct rail lines still in place in Spruce Creek, Chauncey Creek, and Brave Boat Harbor. These trestles were placed for the Boston & Maine Railroad and the Electric Trolley. The trestles could be a potential hazard to boats, particularly at low tide, and are slowly deteriorating.

REGULATED NAVIGATION AREA

For security reasons, a regulated navigation area has been established by the U.S. Navy in the vicinity of the Naval Shipyard. The west end of Seavey Island from Henderson Point along the shore to the road/railroad bridge across the Back Channel is designated as a restricted area within which civilian navigation is prohibited. At the east end of Seavey Island, the cove between Clark's, Seavey, and Jamaica Islands is designated as exclusionary zone within which local control is prohibited. The regulations governing this area are published in Chapter 2, U.S. Coast Pilot 1. Additions or revisions to Chapter 2 are published in the Notice to Mariners. As noted on the navigation chart for the area,



Figure 7- Shoreline of Seavey Island and Regulated Navigation Area

information concerning the regulations may be obtained at the Office of the Commander, 1ST Coast Guard District in Boston, MA.

DREDGING AND MAINTENANCE PRIORITIES

In the 1999 Update of the Comprehensive Plan, the Kittery Port Authority established the following priorities for dredging:

1. Pepperrell Cove Anchorage: The anchorage was last dredged in 1916 to a depth of twelve feet. The navigation chart for the area shows depth of 11 to 7 feet at MLW, with local sources stating water depths are six to ten feet in half of the anchorage area.

2. Gosport Harbor and Breakwater: these granite structures are exposed to wind and waves during storms, and require periodic maintenance
3. North Side Channel: This channel by Badger's Island west of Rice Avenue has filled in since the turning basin for ships west of Badger's Island was dredged in 1991. At mean low water, the western end of the channel is shown as having only ½ foot of depth.

There are no currently developed plans for dredging these areas.

WATER QUALITY AND CONTAMINATION

To monitor water quality for shellfish cultivation, the Maine Department of Marine Resources has assigned "Growing Area" designations to different zones along the coast. Kittery is within Growing Area WA, along with South Berwick and Eliot. This Growing Area is located between the Piscataqua River and Sisters Point in Kittery, and includes the Isles of Shoals. There are restrictions on shellfish cultivation within Area WA due to pollution. The most recent annual review for Area WA is the 2010 document, which has a report date of January 30, 2012. Major sources affecting the Piscataqua River are wastewater treatment plant (WWTP) outfalls from South Berwick in Maine, and from Portsmouth and Newington in New Hampshire. The wastewater treatment facility in Kittery provides secondary treatment and complies with Maine DEP license requirements. The Portsmouth outfall is the greatest in volume, with the largest impact on water quality. A significant portion of the Portsmouth Naval Shipyard's wastewater is treated by Kittery's treatment plant.

The presence of several municipal and residential overboard discharges (OBD) in Kittery is a contributing factor to pollution levels. A significant number of OBDs on Chauncey Creek have been removed in recent years, with only three now in active use. All of the Piscataqua River is classified "prohibited" for shellfish cultivation down to Gerrish Island, including Spruce Creek and Chauncey Creek. Spinney Creek is classified as restricted due to non-point pollution; the mouth of the river at Gerrish Island is classified approved, and the Isles of Shoals are classified prohibited due to point source pollution.

Run-off from non-point and point sources, such as impervious surfaces in commercial properties and from residential lawns, is a contributing factor to the reduction in water quality.

Spruce Creek is an area of special concern with regards to pollution. The creek's watershed is 9.6 square miles, with 90% located within the Town of Kittery. The watershed empties into the Piscataqua River 1.5 miles north of the river's confluence with the Gulf of Maine. The watershed is fed primarily by six freshwater streams (Wilson Brook, Fuller Brook, Hill Brook, Hutchins Creek, Chickering Creek, and Crocketts Brook), and contains approximately three square miles of tidal area consisting of high salt marsh, ledge, and mud flats. As noted in the 2008 *Spruce Creek Watershed Improvement Project* document, "Spruce Creek, particularly the tidal portion, is being intensely manipulated and impacted by people's desire to live near the water and to have water views, and by polluted stormwater."

The report continues to state, "Due to poor water quality, Spruce Creek is listed in the State of Maine's 305(b) report as impaired under Category 5-B-1: Estuarine and Marine Water Impaired by

Bacteria (TMDL Required), for nonpoint pollution sources”. The watershed is also identified by Maine Department of Environmental Protection as a “nonpoint source pollution priority watershed” due to bacterial contamination, low dissolved oxygen, toxic contamination, and a compromised ability to support commercial marine fisheries”. The Maine DEP also lists the Spruce Creek watershed as one of the seven coastal watersheds in the state being “most at risk from development”. Kittery recently completed a municipal sewer expansion in the upstream area of Spruce Creek that will eliminate the overboard discharges of the mobile home park located on Dana Avenue. This expansion will connect 200 units of failed or failing septic system to the municipal system, and thus will achieve significant reductions in water pollutant levels in the area.

The Town of Kittery has been monitoring coastal and inland water quality on an annual basis for the last ten years, and these efforts are ongoing. The Town has been awarded a fourth round of US Environmental Protection Agency (EPA) Section 319 grant funding for the Spruce Creek Watershed Improvement Project (SCWIP) which aims to help reduce bacteria inputs, improve water quality, and reopen shellfish harvesting areas in Spruce Creek. Spruce Creek is monitored closely by the Maine Division of Marine Resources (DMR), which samples nine sites six times per year for fecal coliform bacteria. The Town of Kittery-funded sampling effort tests for *Escherichia coli* (*E. coli*) bacteria and the Maine Healthy Beaches program samples for *Enterococci* bacteria at Fort Foster and Seapoint Beach.

Kittery has developed a local plan to identify and eliminate pollution sources through its Watershed-Based Management Plan (2008) and updated in 2014. Through the Section 319 grant,

Kittery has been actively trying to identify point sources of bacteria and remedy them when located. Kittery is also subject to the Maine General Municipal Storm Sewer System (MS4) Permit which requires the Town to have a non-stormwater discharge ordinance and an illicit discharge (defined as any discharge not entirely composed of stormwater) control measures.

The shellfish harvesting areas (flats) in Kittery have been closed since 2005, due to contamination from nonpoint sources of bacteria. Shellfish harvesting in the past was done on a recreational, and not commercial, basis.

There are limited public waste pumpout facilities for boaters between Great Bay and the mouth of the Piscataqua River. The State of New Hampshire operates a pumpout vessel, the service has limited hours, requires an appointment, and the vessel must cover a large area of operation. At present, there is no land-based public waste pumpout facility in Kittery, but a pumpout facility is under construction at the Kittery Point Yacht Yard, and is expected to be operational in spring 2017. This facility is being built with Boating Improvement Grant (BIG) funds.

Portsmouth Naval Shipyard is a high-density industrial area with 376 buildings on site. It was built on Dennett, Seavey, Jamaica, and Clark Islands, connected by 90 acres of fill material. The EPA states in its on-line Superfund Site Profile for the Naval Shipyard that “hazardous wastes have been stored, disposed of, spilled, or treated at more than 30 acres on site. Following immediate actions to protection human health and the environment, site investigation and long-term cleanup planning are ongoing”. The EPA notes that from 1945 to 1975, untreated wastes were discharged into the Piscataqua River via industrial waste outfalls;

from 1945 until about 1978, 25 acres of tidal flats were filled with various chemical and industrial wastes, and dredged sediments from the Piscataqua River. In the late 1970s, “dredge sediment samples collected near the industrial outfalls were found to be contaminated with elevated concentrations of metals, polychlorinated biphenyls (PCBs) and other contaminants. The US Navy has indicated that the probable source of the contaminants is the industrial outfalls at the Shipyard. Groundwater supplies drinking water to 10,000 people within four miles of the site. However, ground beneath the PNS (the island) is not hydraulically connected to the groundwater that supplies drinking water.”

The long-term remediation plan for the Shipyard includes capping of the Defense Reutilization and Marketing Office (DRMO) Storage Yard, stabilizing the DRMO shoreline, removing underground storage tanks, and removing the mercury burial vaults. Work is currently underway at seven areas; in addition, preliminary evaluations of several areas are determining whether a remedial investigation should be performed at those areas.

A significant portion of the land area of the Portsmouth Naval Shipyard lies within the FEMA Special Flood Hazard Area (SFHA), which is the area subject to inundation by the 1% annual chance flood. Rising sea levels would expose more of the Shipyard to flooding, with the accompanying concern that hazardous waste-containing areas may be more exposed to flooding (and rising groundwater) and thus increase the potential for the release of pollutants into surrounding waters.

MUNICIPAL MANAGEMENT OF MARINE RESOURCES

The Town of Kittery has a Port Authority, one of three in the State of Maine, and a Harbor Master. The Port Authority is responsible for overall management of the town’s marine facilities; e.g.; wharves, piers, docks, and 575 moorings, the majority of which are at Pepperrell Cove. The Port Authority is an independent entity, authorized by State statute. Funding is derived primarily from collection of mooring and docking fees, and the Kittery Town Council approves the Port Authority’s budget. The mooring fees are \$150 per year for vessels 25’ or less in length; vessels over 25’ are charged \$6 per foot. The Port Authority has seven members, including a chairperson, who serve five-year terms.

The Port Authority employs the Kittery Harbor Master, who oversees operations at the various facilities, and provides marine law enforcement, rescue and education services to boaters within the tidal waters of the community. The Port Authority and Harbor Master work with commercial fishermen, recreational boaters, marina owners, and other marine law enforcement agencies on the Piscataqua River and adjacent waterbodies. The Harbor Master can write tickets for boating violations, such as exceeding speed limits in no-wake zones, and provides emergency response in the Town-owned boat. One of the chief responsibilities of the Port Authority and the Harbor Master is management of the Town-owned landside and State-owned waterside mooring facilities at Pepperrell Cove, the largest of the public docking areas in Kittery. The Port Authority has an annual budget of approximately \$125,000. On the 2015 mooring registry, there are a total of 513 registered moorings, with 105 assigned to commercial vessels, 43 to the Kittery Point Yacht Yard, 45 to riparian fishing

vessels, and the remainder to pleasure craft. There is a twelve to fifteen-year waiting list for mooring spaces in Kittery. The town removes its floats in October or November each year, and recreational boaters will typically store their vessels on land over the winter to avoid exposure to high wind and waves.

The Kittery Port Authority has issued a Storm Preparedness Plan to ensure that all boaters in Kittery are aware of approaching hazardous conditions and to aid in preparation. The plan establishes a series of alert levels and recommended actions to be taken:

- Alert Level 0: begins at the start of hurricane season on June 1. Monitor National Oceanic and Atmospheric Administration (NOAA) weather radio
- Alert Level 1: when tropic conditions exist within 1,000 mile radius of Kittery. Prepare an action timetable for this particular storm.
- Alert 2: 72-48 hours until landfall, under a storm threat. Monitor storm track and begin preparations for a direct landfall; alert all boaters, particularly those in Pepperrell Cove; implement plan for securing all facilities, including the removal of floats and ramps.
- Alert 3: 48-24 hours until storm landfall. Hurricane watch issued at this time. Communicate with police, fire, Maine Emergency Management Agency (MEMA) and Coast Guard. All waterfront tasks should be completed by this time.
- Alert 4: 24-0 hours until landfall. Hurricane warning issued at this time; all persons working at waterfront to wear a life jacket; monitor NOAA radio, television, and any official

communications; no unnecessary activity at waterfront, and prepare to evacuate waterfront.

- Alert 5: Hurricane. Remain in safe shelter; no waterfront activity allowed.

The storm preparedness plan provides detailed description of options available to boaters, with emphasis on personal safety over the protection of vessels. The best option for trailerable boats is to remove them from the water and place them in safe storage, such as a garage or covered area. Information is also provided for boats that cannot be removed from the water, with specific instructions for securing boats at moorings or anchorages. The plan states that taking a vessel offshore (to “ride out”) a storm is not a viable option unless it is over 100’ in length and the captain has heavy weather experience. A detailed set of guidelines and timetable are provided for preparations to be made at Pepperrell Cove. The plan notes that the Port Authority should strongly consider setting moorings in Chauncey Creek for storage of the Pepperrell Cove floats during storms.

FACILITIES UNDER JURISDICTION OF KITTERY PORT AUTHORITY

Pepperrell Cove

Located in Kittery Point, this is the primary location for Town-operated moorings and launching within the community, with approximately 400 moorings. The facility is used for access to boats moored in Pepperrell Cove, and for the associated storage of dinghies to reached moored vessels. The majority of the Town’s moorings are in Pepperrell Cove. A commercial fishing pier (Frisbee Pier) was constructed in Pepperrell Cove in the

1990s, and is mainly used by lobstermen for setting traps and offloading catch. The adjacent Pepperrell Pier is primarily used by recreational boaters. The approximately twenty Town-owned parking spaces on the wharf, and the spaces available in a privately-owned fee-for-parking lot across Pepperrell Road/Route 103, are an important resource for boaters. The privately-owned lot is part of the former Frisbee Market property. The Harbor Master's office is located on the pier, and there is a bathroom for public use, 24 hours a day and seven days a week, in season. The bathroom uses a holding tank, which requires pumping out, and is maintained by the Harbor Master. The bathroom is closed when the water supply to the Cove is turned off at the end of the season.



Figure 8-Frisbee Pier at Pepperrell Cove, primarily used by commercial fishermen

Beyond the wharf, piers, and parking areas, which were donated to the Town by the Frisbee family in 1955, the Town of Kittery does not own real estate at the site. Following an application in 2010, Kittery was awarded a Boating Improvement Grant (BIG) Program to construct a new pier, ramp and floating dock system

for 12 transient, non-trailerable vessels 26 feet or longer on Pepperrell Pier. The floats provide dinghy tie-up spaces, and the 80-foot ramp from the pier to the float system is compliant with the access provisions of the Americans with Disabilities Act (ADA). The project addressed long-term needs for additional transient boating, and for the replacement of the dilapidated pier constructed in 1954. The provision of additional dock space is intended to support small businesses in the area in providing services to boaters, and to provide greater access to Kittery's waterfront areas.

The wharf landform is man-made, and expansion of the facility would require additional construction in the water the purchase of adjacent real estate. The floats are installed and removed by crane, and stored on-site during the off-season. While storage of the floats on the wharf reduces on-site parking, removal to an off-site location would require an extensive operation to move the floats on to the land, identification of a storage location, and transportation to that location.

When no moorings are available, vessels are directed to the nearby anchorage area at historic Fort McClary.

Traip Academy Boat Launch

The Town maintains a float and paved public launch for trailered or hand-carried vessels, such as kayaks, adjacent to the Traip Academy school. The launch can be used at any point in the tidal cycle, and is used by commercial fishermen and recreational boaters. The launch and floats receive the greatest use during the summer, and on weekends in later spring and early autumn. The school and boat launch share the use of a parking area, which is possible due to the relative timing of boating usage and the

school calendar. There are approximately 15 moorings in the area, located in the Back Channel. The float system was recently extended under Small Harbor Improvement Grant (SHIP) from the Maine Department of Transportation.

Government Street Wharf

This facility is located in the Kittery Foreside, on Town Wharf road south of Government Street. The dock is approximately 40 feet long by 30 feet wide, does not have a ramp or float system, and is primarily used by commercial fishermen for loading and unloading vessels. Approximately 30 fishermen regularly use the wharf, which is a key facility for the working waterfront. Bait and fuel trucks will make deliveries here, and catches are offloaded. There is no public parking at the dock. The facility is within close walking distance to the businesses of Wallingford Square in the Foreside.

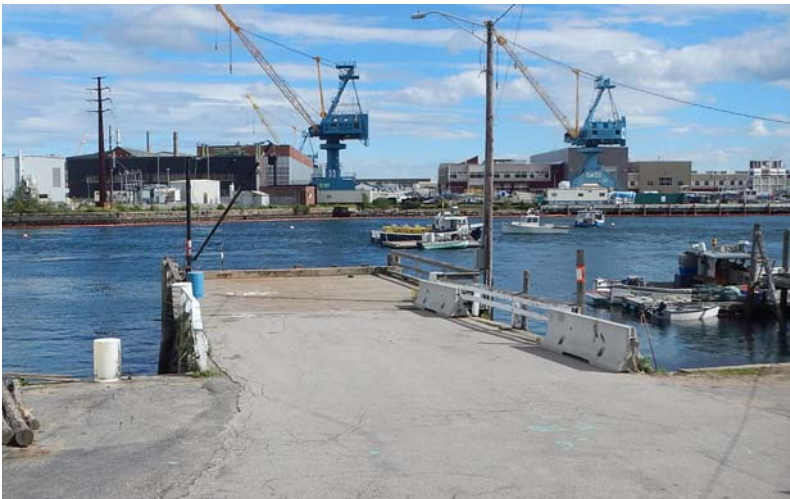


Figure 9- Government Street Wharf

Back Channel

There are a significant number of moorings in the Back Channel, particularly east of the Wyman Avenue Bridge to Seavey Island. While there is sufficient water space to increase the number of moorings, or to add “pony floats”, there are no dedicated areas for parking and landside dinghy storage.

Gosport Harbor at Isles of Shoals

The Town of Kittery maintains moorings in Gosport Harbor, which are leased to permit holders.

MARINE-DEPENDENT USES

Access to the water has played an important part in the commercial development of Kittery. Waterfront usage has stayed relatively consistent in recent years, with some decline in commercial fishing, and an increase in waterborne tourism. The redesign of Pepperrell Pier and addition of floating docks for transient vessels prioritized its use for recreational over commercial users, although it is still used by commercial fishermen. The main shore facility location for commercial usage is the Government Street Wharf, which is used by lobstermen for loading and unloading supplies, equipment, and catch. Large vessel repair and maintenance activities continue at Portsmouth Naval Shipyard.

There are a number of marine dependent uses in the community, which include:

Marinas

Facilities for docking, launching, supply, and repair of private vessels are found at several sites in Kittery, including Badgers Island Marina, Kittery Point Yacht Yard, and Great Cove Boat Club. The American Marine & Boat Sales business on Badger's Island has a ramp to the Piscataqua River, and Seafari Charters & Marine Services operates from Badger's Island. There are additional marinas in neighboring Portsmouth and New Castle.

Lobster Pounds and Waterside Restaurants

Lobsters in the Rough on Badger's Island, Warren's Lobster House, and Chauncey Creek Lobster Pier are located on the waterfront.

Portsmouth Naval Shipyard, Seavey Island

As a site for construction, repair, and overhaul of large military vessels, the Shipyard has extensive water access and maintains regulated navigation areas in the adjacent waterway to ensure safe operation of boats through channel separation.

Although not marine-dependent usages, the businesses in Kittery Foreside and in Kittery Point near Pepperrell Cove benefit from proximity to water, and have a potential for increased visitation from people arriving by boat.

Excursion Boats Operating in Kittery Area

There are a number of private or non-profit organizations operating boating tours and passenger services in the greater Portsmouth Harbor and Kittery areas. These include:

- Gundalow Company: This non-profit organization constructed a reproduction of the early cargo vessels

known as gundalows which operated on the Piscataqua River from the late 1600s until the beginning of the 20th century. The ship *Piscataqua* provides public sails daily during the season, along with educational sails and private charters.

- Portsmouth Harbor Cruises: Offers motorized cruises of Portsmouth Harbor and areas along the Kittery Point and Gerrish Island shorelines, the inland Piscataqua and Great Bay, and to the Isles of Shoals.
- Captain & Patty's Cruises operates a historical boat tour of the Piscataqua River basin, starting in Pepperrell Cove, including historic forts, lighthouses, the Portsmouth Naval Shipyard, and Portsmouth and New Castle Harbors.
- Isles of Shoals Steamship Company: This multi-vessel firm offers day visits to Star Island, a tour of the Isles of Shoals, a Portsmouth Harbor tour, and brings supplies and visitors for extended stays to Star Island.

COASTAL AND NEARSHORE LANDUSE REGULATION

The primary working harbors and shorefront facilities for commercial boating are found in the Kittery Foreside (including the Government Street Wharf), on Badger's Island, and at Pepperrell Cove. Mixed-use zones cover the Kittery Foreside and Badger's Island, and a Business-Local (B-L) zone covers the area adjacent to the Frisbee Pier.

There are three zoning overlay districts in Kittery that cover coastal and nearshore areas: the Resource Protection (OZ-RP), Shoreland Protection Area (OZ-SL), and the Commercial Fisheries/Maritime uses (OZ-CFMU) overlay districts.

The Shoreland and Resource Protection Overlays are designated to limit potential water pollution sources; protect spawning and birding grounds; and preserve access and views to coastal waters. The Resource Protection Overlay primarily covers inland parcels where fresh water bodies or wetland occur, while the Shoreland Protection Overlay covers inland freshwater resources and the coastal shoreline of Kittery. The zone, based on Maine Department of Environmental Protection (MDEP) mandatory shoreland zoning, encompasses a 250 foot buffer from the upland edge of the protected resource. The required setback is 100 feet, reduced to seventy-five feet in the Kittery Foreside and Badger's Island mixed use districts. Within the overlay, by-right uses are extremely limited. Within most zoning districts the only use permitted within the overlay is public open space or recreational uses, with some exceptions for civic uses. All other uses that would otherwise be allowed in the underlying zoning district are required to be permitted through Special Exception.

The Commercial Fisheries Overlay provides for the development and expansion of water-dependent commercial fisheries/maritime activities. Areas in the overlay have been chosen based on suitability criteria that include shelter from prevailing winds/waves, slope of the land, depth of the waterbody within one hundred fifty feet of the shoreline, and compatibility with adjacent uses. This district extends into the upland area 75 feet from the normal high-water line, or to the property boundary line as identified on the municipal zoning map. Parcels that fall under

this overlay district are primarily located along the Foreside, Kittery Point, Badger's Island, the Shipyard, and select parcels up the coast along Pepperrell Road and Chauncey Creek Road. The permitted uses under the overlay include all functionally water-dependent commercial fisheries and maritime uses, as well as the permitted uses under the base zoning districts. This zone designation applies to Badger's Island, the Foreside, Pepperrell Cove, and the shoreline of Seavey Island (Portsmouth Naval Shipyard).

FLOODPLAIN

Floodplains are determined and mapped by the Federal Emergency Management Agency (FEMA) and its National Flood Insurance Program (NFIP), which produce Digital Flood Insurance Rate Maps (DFIRMs). The FIRMs delineate the 1% Annual Chance of Exceedance (ACE) flood and the 0.2% ACE flood. In common terminology, these flood events are known as the "100-year" and "500-year" floods, respectively. The 1% ACE floodplain is referred to as the Special Flood Hazard Area (SFHA) or A-Zone; within this zone, property owners with federally-backed mortgages are required to carry flood insurance. In coastal areas such as Kittery, the SFHA includes a zone on the immediate shoreline known as the "VE Zone", or velocity zone (also known as wave impact zone). The VE Zone is subject to inundation by the 1% ACE flooding event, with additional hazards associated from storm-induced waves. Such waves pose a danger for buildings, and may lead to extensive damage or collapse.

Kittery's floodplain areas are included on specific map panels within the larger York County, ME flood map. The flood map now in effect for York County was adopted in 1984. The floodplain includes the shorelines and adjacent areas along the open shoreline, such as Gerrish Island; the shoreline of Kittery Point and Kittery, extends up the Piscataqua River and Chauncey Creek, and includes an extensive area in the Spruce Creek watershed.

Within the SFHA, locally-adopted floodplain management codes regulate the building of new construction and (if reaching the threshold of "substantial improvement") the retrofit of existing structures, in order to reduce impacts from flooding.

In November 2013, FEMA issued a Preliminary Digital FIRM (DFIRM) for York County. The map was based on two-foot contour topography and updated flooding frequency and elevation data and modeling analysis. The 2013 maps presented an expanded floodplain over the 1984 edition. The following areas were included in the expansion of the floodplain boundary in the 2013 Preliminary DFIRMs:

Changes to the Flood Zone Study limits: The velocity zone was extended to include the southeast side of Badger's Island. Previously, this zone terminated at the eastern tip of Seavey Island at the mouth of the Back Channel. There are areas previously within the A zone that are now in the AE zone (flood zone with an identified Base Flood Elevation). The flood zone boundary was extended further landward in intermittent areas along the coastline: east of Wyman Avenue along the Back Channel; from Bowen Road to Gerrish Island Lane; the southwester portion of Fort Foster; the northeast side of Gerrish Island; and the coastline east of Thaxter Lane north of Seapoint

Beach. There are changes to the boundary further inland that are mainly located in several places along Bartlett Road.

The effect of these changes was to newly include approximately 75 structures in the floodplain, with 65 in the coastal area and the remainder in the inland area.

The Town of Kittery, and other municipalities along the southern Maine coast, did not agree with the revised floodplain boundaries and Base Flood Elevations shown in the November 2013 Preliminary DFIRMs, and took exception to the specific modeling techniques applied to determine wave heights and flood depths. In December 2014, FEMA announced the withdrawal of the Preliminary DFIRMs for all municipalities in York and Cumberland Counties. In April 2015, FEMA participated in a binding arbitration process known as the Scientific Resolution Panel (SRP). The Town of Kittery was represented by a coastal engineering consultant at the SRP. As of this time, FEMA has not yet issued a revised Preliminary DFIRM for York County, and thus the 1984 floodplain map remains as the legally adopted basis for local floodplain management regulations.

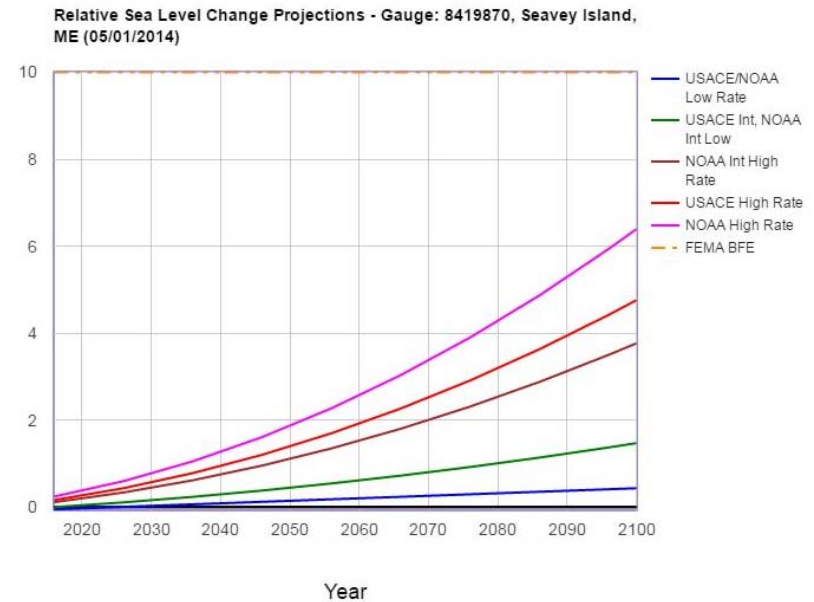
It is anticipated that FEMA will issue a revised Preliminary DFIRM for York County in 2017.

SEA LEVEL RISE AND CLIMATE CHANGE

As a coastal community, with a densely developed shoreline, extensive recreational areas and a working waterfront, Kittery is subject to changes in sea level rise and associated impacts.

The Town of Kittery has not prepared a sea level rise or climate change adaptation plan. As noted in the *Climate Change Adaptation Report: Georgetown, Maine* (2015), Gulf of Maine waters are warming faster than 99.8% of the world's oceans, with 5.5 degrees Fahrenheit of increase in the last decade. Warming ocean temperatures can have notable increases on commercial fishing, through altering habitat and suitability for species long found in the area. Warmer waters can also lead to increased frequency and intensity of coastal storms.

Forecasts for the rate of sea level rise have been prepared by the USACE and NOAA, based on different sets of assumptions and annual increases. A chart showing the range of predicted increase at Seavey Island (Portsmouth Naval Shipyard) is shown below. The rates of predicted change are grouped by the “curve” used. These curves present low, intermediate, and high assumed rates of changes, with the accompanying increase in sea level over present day, shown in feet.



The different scenarios typically show an increase in the rate of change in the 2050-2060 timeframe. For ease of comparison, selected rates and predicted levels of rise (in feet) for future years are shown in the table below.

Future Year	USACE/NOAA Low	NOAA Intermediate High	NOAA High
2036	0.06	0.62	1.05
2056	0.18	1.35	2.27
2100	0.43	3.77	6.39
<i>Note: Values shown are relative sea level change in feet over present-day</i> Source: US Army Corps of Engineers Sea-Level Change Curve Calculator			

Sea level increases, particularly those predicted in the intermediate high and high scenarios, could have a range of impacts, including: extending floodplain areas landward, increased depths of storm surge during coastal storms, increased damage to shorefront infrastructure (such as stormwater infrastructure such as culverts and roadside ditches, roads, bridges, and utility lines) and to homes and businesses. Other impacts could be seen on public recreation areas on the waterfront and to environmentally sensitive areas such as wetlands and intertidal areas. Because of the rocky shoreline in many areas of Kittery, wetlands may tend to drown in place rather than migrate landward in response to rising water levels.

Extensive areas of the Portsmouth Naval Shipyard are already in the Special Flood Hazard Area; elevated water levels would likely increase inundation of the shipyard during storm events, and may impact the polluted areas on-site. One concern would be the

potential for the leaching of contaminants during floods or due to elevated water levels.

PUBLIC AND VISUAL ACCESS

As discussed, Kittery has extensive public open space areas, which provide excellent visual access to the Piscataqua River, Portsmouth Harbor, the Gulf of Maine, and the Atlantic Ocean. These areas include Fort McClary State Historic Site, Fort Foster, and the Rachel Carson National Wildlife Refuge-Brave Boat Harbor area. Commercial areas such as the Foreside and Badger's Island also provide visual access to surrounding waters. Landside public access to interior waterways, such as Spruce Creek, is somewhat limited due to extensive private ownership and development of interior areas. A notable exception is Rogers Park, a 27-acre property dedicated to public recreation and open space preservation, adjacent to Broad Cove within Spruce Creek. A discussion of scenic views is provided in the Natural Resources chapter.

IDENTIFICATION OF PRELIMINARY ISSUES, CHALLENGES AND OPPORTUNITIES

The following is a preliminary list of issues, challenges and opportunities posed by the findings of the inventory of existing conditions of Kittery's marine resources.

- Demand for access to the waterfront and for boating access is consistently high. Demand for moorings is greater than the available supply, and there is a multi-year waiting list.
- A significant portion of the available parking near the Pepperrell Cove wharf is in private ownership (as part of the former Frisbee Market property), and the property is currently for sale. The parking lot parcel on the north side of Route 103/Pepperrell Road has deed restrictions stating it can only be used for parking. However, the deed does not stipulate that the parking lot be available for use of the general public, or for wharf and pier users.
- Run-off and direct source pollution have led to contamination of area waters and led to shellfishing restrictions and prohibitions in certain areas.
- Development pressure in Spruce Creek watershed further threatens water quality.
- Commercial fishing operations based in Kittery have decreased from previous years.
- Commercial and non-profit boat tour traffic has increased in recent years, and many of the cruises visit Kittery waters. However, there is at present no convenient location for boats to dock in town for day visits.
- Kittery has high-value environmental resources and parks that serve as a powerful draw to residents and visitors.
- The Kittery Foreside is a successful commercial area in close proximity to the waterfront.
- Wood Island Life Saving Station offers a unique resource for education and visitation in the near future.
- Major anchorages such as Pepperrell Cove have not been dredged in decades, leading to limitation on vessels that can safely moor and transit the area.
- Storm winds and waves limit opportunities for additional moorings in exposed areas such as Fort Foster. Locations for storage of floats during storms should be evaluated, such as setting moorings in Chauncey Creek for storage of Pepperrell Cove floats during storm events.

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INTERVIEWS

PORT AUTHORITY

Peter Whitman (Chair of Kittery Port Authority, 2016)

KITTERY HARBOR MASTER

Derek Jacobs

WOOD ISLAND LIFE SAVING STATION ASSOCIATION (WILSSA)

Sam Reid, member

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ADDITIONAL SOURCES

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Chris DiMatteo, Town Planner

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Tom Hibschrann

FISCAL CAPACITY AND CAPITAL INVESTMENT

9

FISCAL CAPACITY AND CAPITAL INVESTMENT

The fiscal capacity and capital investment chapter provides an overview of the current fiscal health and financial commitments the Town has made. This chapter will review the Town's valuation, tax rate, revenue and expenditures, debt obligations, and planned capital improvements. Where possible, comparisons are made between Kittery and nearby communities with similar characteristics.

Summary of Key Points

- Kittery's local valuation increased by 4 percent between 2010 and 2015.
- The tax rate in Kittery increased by 10.2 percent between 2010 and 2015.
- If population continues to decline in Kittery and service demand remains at or above the current level, property taxes will likely have to increase.
- Kittery's annual revenue generation has been steadily growing year over year.
- Federal and state aid to Kittery has been shrinking since 2010 which increases the reliance on local taxes.
- Kittery has an excellent bond rating.
- The Tax Increment Financing district established for the Kittery business park carries with it debt obligations from sewer extensions. These debt obligations come due in 2017, and revenues from the TIF do not begin until 2022.

VALUATION

In the State of Maine, property valuations for municipalities are calculated by the state and the municipality. The state valuation is used to determine the levy of county taxes, state funds for education and revenue sharing, and in establishing bond debt limits. The State's valuation is informed by field work and meetings with local assessors to determine appropriate ratios of full value for which local assessments are made. Adjustments are made to local assessments using those ratios to equalize valuations at 100 percent of full and fair cash market value.

The second form of valuation occurs at the municipal level and is used to determine local taxes. The Town's valuation is based on assessed values for real estate and personal property as determined by the Town Assessor. The assessed value of property is based on recent sales of comparable properties around Kittery. In 2015, the Town's local valuation was set at \$1,409,812,100, which equals a 4 percent increase since 2010.

Figure 9.1 shows the local and state valuations for Kittery from 2010 through 2015. The State's valuation for Kittery shows a downward trajectory from 2010 to 2014. This is likely do to the State's valuation process lagging two to three years behind the current fiscal year, meaning the 2014 state valuation is really representative of conditions in 2011/2012. The decline in state valuation during this time period is likely the result of the property value adjustments coming out of the Great Recession. Valuation levels out in 2014 and rises in 2015.

TAX RATE

After the Town Assessor determines the total local valuation of eligible property within the town, the tax rate (or Mill Rate) is calculated. The tax rate is the assessment to each property owner for their share of the tax levy. The tax rate is calculated by dividing the total amount of taxes needed to support the Town's budget divided by the local valuation. The tax rate is assigned on a one-thousandth of the assessed value of a piece of property. In Fiscal Year 2015, the approved tax rate in Kittery was \$15.52 per thousand dollars of valuation. As an example, if a property was worth \$100,000 the owner would be responsible for paying \$1,552 in taxes in FY 2015.

Figure 9.2 shows the growth in Kittery's local valuation and tax rate from 2010 to 2015. Between 2012 and 2013, the tax rate jumped from \$14.45 to \$15.14. This was due in part to a \$1.7 million dollar increase in municipal and school expenditures while non-tax revenues only increased by \$567,000. The increase in expenditures during that Fiscal Year was due to increases in health insurance and costs associated with the new Community Center coming on line. For all other years between 2010 and 2015, the fluctuation in revenues and expenditures was fairly consistent.

With the increase in tax rate over the five-year period, individual property tax bills have increased by an average of \$495. The increase in taxes has been necessary to offset decreases in

Figure 9.1: Kittery's Local vs. State Valuation

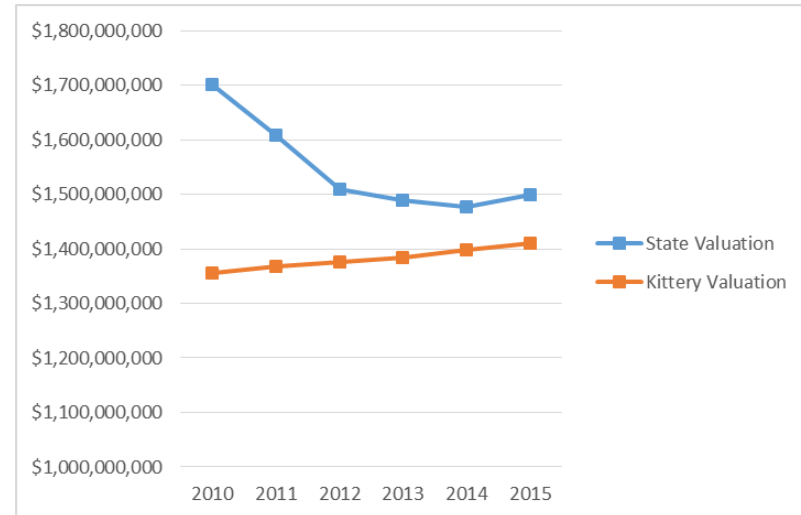
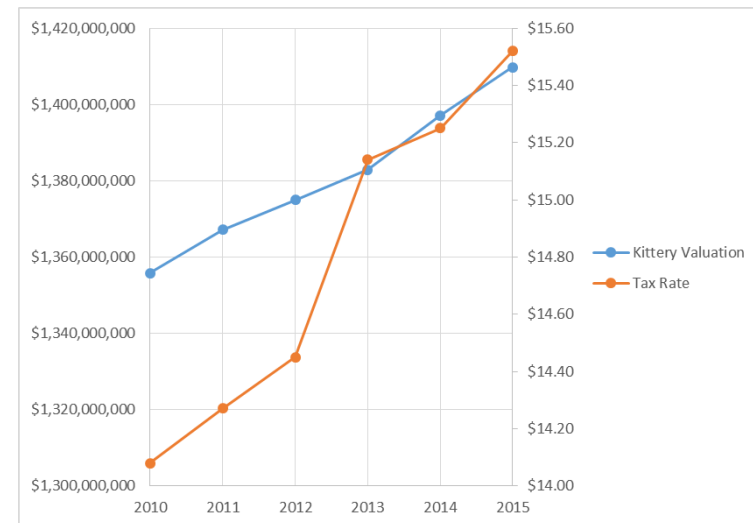


Figure 9.2: Town of Kittery Tax Rate and Valuation



KITTERY COMPREHENSIVE PLAN EXISTING CONDITIONS INVENTORY

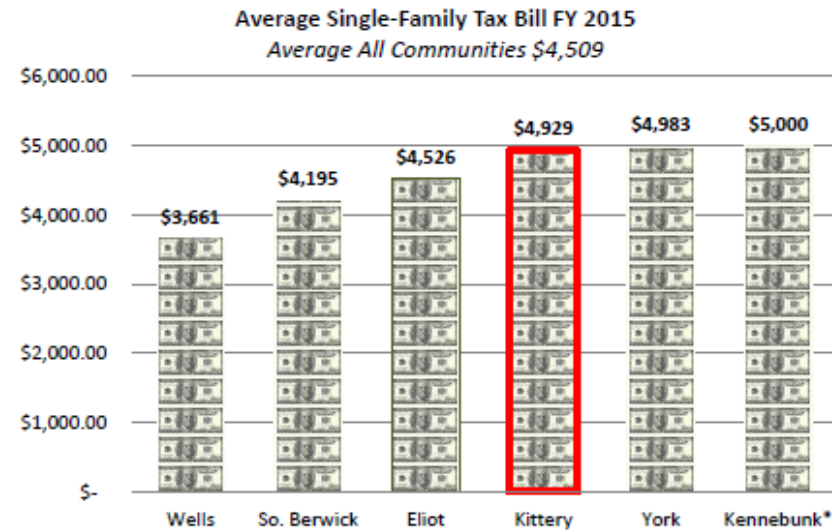
federal and state revenue sources, as well as increases in town expenses such as employee benefits and health insurance.

According to the approved FY 2016 budget document on the Town's website, Kittery's average single family tax bill for FY 2015 was higher than that of Wells, South Berwick, and Eliot, and nearly identical to that of York and Kennebunk (all comparable neighboring towns). The average single family tax bill in Kittery for FY 2015 was \$4,929. The valuation of property in Kittery, compared to neighboring towns, is lower. Even though Kittery's population is almost identical to that of Wells, Kittery's property valuation is about half as high. The higher property valuation in towns such as Wells may reflect properties and buildings which are in better condition or in more desirable locations (e.g., waterfront areas) compared to Kittery, thereby driving up assessed values. A comparison of Kittery's average single family tax bill to other nearby towns is shown in Figure 9.3.

The Town's Economic Development Committee has promoted the development of commercial property in town as a way to diversify the tax base. Non-residential development can result in a positive revenue to cost ratio related to the public service costs the Town will incur. Kittery does have a favorable percentage of non-residential properties on the tax role compared to neighboring communities. Approximately 78 percent of Kittery's valuation is derived from residential properties, with 22 percent coming from commercial, industrial, and personal property. Of

the neighboring communities listed above, Kittery ranks second highest in the percent of residential versus commercial valuation.

Figure 9.3: Average Single Family Tax Bill Comparison



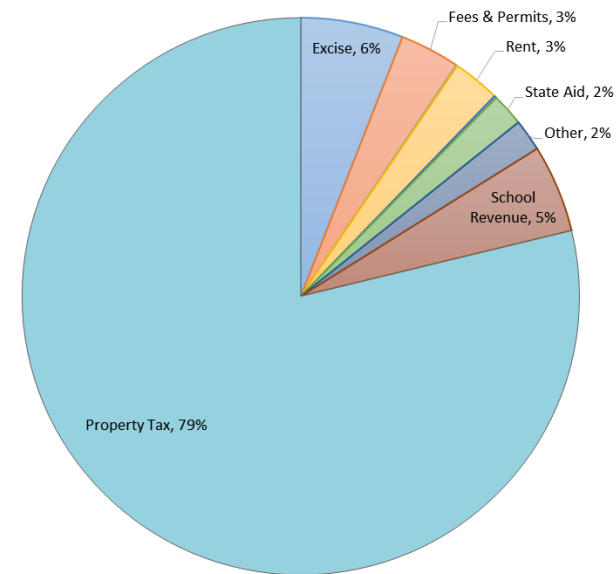
According to the Town's Finance Director, the Town issued 149 individual tax liens against properties in 2015. Since 2010, the Town has issued 881 individual tax liens with an average of 147 per year. If property taxes are not paid in Town, a tax lien can be placed on a piece of property and could eventually lead to a tax foreclosure. The Town did not indicate that any tax lien foreclosures have occurred during this time period, however.

REVENUE

According to the approved FY 2016 budget document on the Town's website, total revenue in Fiscal Year 2015 was \$27,124,366, including the overlay reserve. Property tax revenue made up 80 percent of the total, with municipal non-tax revenue making up another 15 percent. The remainder was shared between school non-tax revenue and the overlay reserve which is set aside to offset tax abatements. Budget information provided by the Town Manager note that revenues have been steadily increasing year over year since FY 2012. Figure 9.4 shows the breakdown of revenue sources for Fiscal Year 2015.

In addition to revenue generated locally by the municipality, the State of Maine also provides revenue sharing funding back to each municipality based a set formula which accounts for State Valuation, population, and tax assessments. According to data from the Office of the State Treasurer for calendar years 2010 through 2015, Kittery's revenue sharing reimbursements have declined by 23.5 percent over the five-year period¹. At a time when costs are increasing, particularly school expenditures, the decrease in state revenue sharing is affecting the amount of locally generated revenue needed to continue with current service levels.

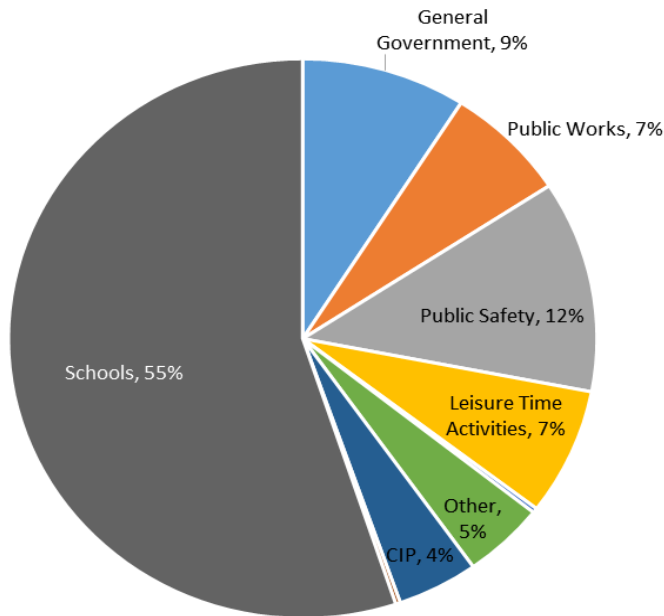
Figure 9.4: Fiscal Year 2015 Revenue Sources



EXPENDITURES

In Fiscal Year 2015, the Town spent \$27,141,118 on town functions, services, and schools. Of the twenty-seven million in expenditures, 55 percent went to pay for costs associated with the schools. Only 9 percent of the budget was spent on general government functions such as town administration, finance, legal services, and planning.

Figure 9.5: Fiscal Year 2015 Expenditures



On the expenditures side, a point worth noting is the Kittery school district was not regionalized as part of the 2010 school reorganization effort. While many school districts were forced to reorganize and regionalize with neighbors, the Kittery school district chose not to. A financial analysis completed at that time indicated that regionalizing with another school district would not save Kittery much money. The school district does coordinate with York and MSAD #35 whenever possible to save money on

programming. Examples of this include the sharing of an Adult Education Director and certain transportation services.

DEBT

Municipal debt maximums are set by the State of Maine. A municipality cannot incur debt in excess of 7.5 percent of its last state valuation. This does not include debt for schools, which can raise the debt limit to 10 percent of the state valuation. Municipalities can also take on debt for storm and sewer purposes, airport expenses, and special district purposes, but at no point can that total debt exceed 15 percent of the state's equalized valuation for Kittery.

As of June 20, 2014, the Town's long-term debt obligation was \$19,043,254 or 1.27 percent of the State Valuation. Since 2010, the Town has taken on six significant debt obligations:

1. \$2,665,992 - Upgrade to waste water facilities under the Clean Water Revolving Loan Fund program.
2. \$6,750,000 – Mitchell School
3. \$5,500,000 – Community Center
4. \$1,890,000 – Mitchell School
5. \$11,990,025 – Upgrades to sewers through the Clean Water Revolving Loan Fund
6. \$3,079,000 – CIP Bonds

The two additional bonds (#5 and #6 above) increased the Town's total debt to \$32,545,880, or 2.17 percent of the State's Valuation.

The most recent bond rating completed for the Town placed it at Aa2 for Moody's and AA+ for S&P, which is one below the top bond rating.

The nearly twelve million dollar bond for sewer extensions out to the business park in Kittery was done as part of a ten year Tax Increment Finance (TIF) District initiative. As of today, no new development or betterments have taken place in the business district that would raise the tax increment to begin contributing money to paying off the bonded debt. The first debt obligation payments come due to the Town in Fiscal Year 2017 at a projected cost of \$583,617. Beginning in 2022, the anticipated tax increment payments from new development are expected. If tax increments do not increase in the coming years, the Town will be responsible for paying back the debt incurred by the public infrastructure extensions.

INVESTMENTS

At the end of Fiscal Year 2014, the Town had an unassigned fund budget totaling \$4,345,203, which was an increase of \$187,965 over the prior fiscal year. According to the FY 2016 budget summary, the Town has a policy to maintain an unassigned fund balance in an amount equal to 2-2.5 months of government operations. For FY 2014, the amount was slightly below that policy directive. It is important to note that the Town does maintain significant reserves in its capital and program budgets, and the School Department also maintains its own reserves.

CAPITAL IMPROVEMENT PROGRAM

The purpose of the Capital Improvement Program (CIP) is to establish a framework for the financing of different capital needs over time. It represents a plan to commit to and pay for capital improvements. The types of investments listed in a CIP are typically larger, more expensive, and longer lasting, and they are not regularly occurring items. Kittery's CIP process was established in 2008. The CIP Committee is appointed by Town Council and is charged with evaluating all projects greater than \$25,000 in cost with an expected life of more than five years, as well as replacement assets greater than \$5,000. The Committee develops a five-year plan and submits it to the Town Manager for incorporation into the fiscal year budget request.

The FY 2016 recommended CIP was relatively level funded at \$1.159 million dollars in order to meet the Council's guideline of a maximum 1.7 percent increase in expense over the previous year. A majority of the CIP funding requests are for standard expenses that may come up in a given year such as equipment maintenance/replacement, sidewalk projects, parking lot maintenance, school building upgrades, and improvements to parks and recreation facilities.

ISSUES, CHALLENGES AND OPPORTUNITIES

The following is a preliminary list of issues, challenges and opportunities posed by the findings of the inventory of existing conditions of Kittery's fiscal capacity.

ISSUES AND CHALLENGES

The Town's tax rate has continued to increase even as local valuation increases. This is the result of a decrease in federal and state aid contributions and rising municipal expenditures largely outside the control of Town government. If total population continues to decline in Kittery, the tax base will need to spread across a smaller number of households, thereby continuing to increase taxes in the community.

In regards to future debt, the Town must ensure that when taking on debt with the expectation it will be paid off through a TIF or other measures that the Town be certain projections of future tax revenues will be realized. If not, the Town will be responsible for repaying a portion, or the entirety, of the debt obligation.

OPPORTUNITIES

Kittery is currently in very sound fiscal health. Current debt obligations are low as a percentage of total valuation, expenses are relatively stable, and revenues are rising. The Town should consider how it can increase its local valuation by encouraging the development or improvement of property in town as a way to increase assessed values. The Town's average tax bill for

homeowners is high when compared with nearby neighbors. This could have the effect of pricing lower- and middle-income households out of Kittery. The Town is already losing population, and a continued decrease to the population base will impact future tax receipts.

Through the Comprehensive Plan process, the Town should be thinking about the future of the commercial properties along Route 1 and the implications of what may happen if those ever turn over. The Town's commercial tax base is high relative to surrounding communities, and losing that diversity in the tax base would be cause for concern. This could be helped by the projected build-out of the Business Park area along Route 236. Sewer service has been extended to the area, and water is expected to be extended by the developer in the future.

REFERENCES

DOCUMENTS

- Town of Kittery Approved Budget for Fiscal Year 2016.
- 2016 Kittery Capital Improvement Plan.
- Kittery Bond Rating Statement dated September 1, 2015.
- TIF District #3 – Business Park Report dated December 13, 2010.
- Revenue Sufficiency Analysis, provided by Nancy Colbert Puff on February 9, 2016.

ⁱ Office of the State Treasurer of Maine website.
http://www.maine.gov/treasurer/revenue_sharing/monthly_distribution_s.html. Data pulled for January 2010 through December 2015.

INTERVIEWS

- February 9, 2016 – Nancy Colbert Puff, Kittery Town Manager.
- February 12, 2016 – Allyn Hutton, Kittery School District Superintendent (via email).

LAND USE

10

LAND USE

The land use chapter provides an overview of the land use patterns and zoning regulations in Kittery. This chapter will discuss the variety of land uses in Kittery and provide a general overview of the town's residential, commercial, and industrial zoning districts and the permitting process.

Summary of Key Points

- The land use pattern in Kittery varies greatly as one travels from north to south.
- Development, particularly residential, has been occurring in the limited/no growth areas of Town.
- The density of development drops considerably between the southern and northern portions of town.
- A majority of the land in Kittery is being utilized for residential development and open space.
- Kittery has eighteen zoning districts, many with overlapping use allowances and dimensional standards.
- Kittery has four overlay districts to help protect wetlands, waterways, and fisheries.
- The Industrial district lacks dimensional standards to guide the design of future development.
- The Route 1 Mixed-Use district's dimensional standards may not allow for a built form consistent with the district's intended purpose.



OVERVIEW

The term “land use” refers to the way in which land is utilized in a community to support different activities. The land in a town may be used to support the development of residential, commercial, industrial, or institutional uses. Land can also be used for roadways and utility corridors. Land can also be open, vacant, or preserved for public use or wildlife. The land use patterns that developed over time in a town are telling of the era, the mode of transportation used at the time, the geography of the land, access to water resources, and the economic status of the people who lived there.

As a component of the Comprehensive Plan, land use is connected to all other components because everything is in one way or another connected to land. The Town’s housing stock, commercial land supporting economic development, open space, community facilities, recreation opportunities, transportation connections, and the tax base are all tied back to land. Zoning, which was introduced in the early twentieth century, is a method of regulating land use with the intent of defining and managing growth and community character. The resulting vision and goals of this Comprehensive Plan will help shape recommendations for the future land use patterns and zoning regulations in Kittery. In concert with the goals for the other elements of the Plan, zoning changes can become a key mechanism for implementation.

EXISTING CONDITIONS

GENERAL LAND USE PATTERNS

Kittery was incorporated in 1647, making it the oldest town in Maine. Kittery sits on the southern border of Maine and New Hampshire, bounded on the eastern and southeastern sides by water. Water has been a major contributor to Kittery’s history since 1647. In the late 1600s, the area was a source of masts for the Royal Navy resulting in much of the land being harvested of timber. The creation of the Naval Shipyard in 1800 helped shape much of Kittery up through the mid-twentieth century. Over the following decades, housing and businesses were constructed adjacent to the Navy yard, and this resulted in the creation of what is known today as Foreside and Kittery Pointⁱ.

Today, Kittery is primarily a residential community with housing located in nearly every section of the town with the exception of the Route 1 outlet malls. Housing types range from large waterfront estates on Gerrish Island to small scale apartments for senior residents at Meetinghouse Village, and just about everything in between. Since the adoption of the last Comprehensive Plan in 1999, there have been approximately 524 new housing units constructed in Kittery. A more detailed discussion of residential land use patterns is explained in the Recent Development Patterns section.

The Town has a strong, and growing, commercial base anchored primarily by the area along Route 1 where the Outlet Malls reside and the more traditional “downtown area” of the Foreside. In addition to these two commercial areas, Kittery also has other business nodes which range in size and include locations like the Route 1 Bypass, the Business Park, the mixed use area along Route 1 north of the Outlet Malls, and Gourmet Alley. For a more detailed description of each commercial area, see the Economic Development Chapter of the Comprehensive Plan.

Industrial development has played a significant role in Kittery’s economy for decades with the Portsmouth Naval Shipyard (PSNY). While the employment composition of the Shipyard has changed over time, it still stands as the largest employer in Kittery. Smaller pockets of industrial land uses can be found along Ranger Drive, Dennett Road (Route 236), and at the Watts Fluid facility along Route 1 north of the Outlet Malls.

The Town has a fairly substantial amount of land held as open space (both protected and unprotected/undeveloped). This includes a range of open space types such as federally protected land in the Rachel Carson Wildlife Refuge, one of the last remaining active farms at Rustlewood, and Town Forest a seventy-two-acre town-owned forest. Although the prior Comprehensive Plan called for limited growth and increased land conservation in the areas north of Spruce Creek, this goal was not fully realized over the last sixteen years.

Land use and development patterns vary considerably throughout Kittery. To describe the differences in a more geographic manner, the Town has been broken up into seven different districts following the same districts used in the 1989 Comprehensive Plan. The following sections provide a summary of each district’s patterns. The boundaries for each district can be seen in Figure 10.1.

NORTH KITTERY DISTRICT

The North Kittery District is located north of Route 236 and west of Interstate 95, and was one of the more rural sections of towns. New residential development, particularly along Cutts Road, Gee Road, Remicks Lane, Wilson Road, and Route 236, have carved up the rural landscape for a more suburban-style residential development pattern. The 1999 Comprehensive Plan recommended this area remain a no/limited growth district, and the area is zoned as such with the Residential – Rural (R-RL) designation. The North Kittery District is home to one of the last remaining working farms in Kittery, Rustlewood Farm. The north side of Route 236 is dotted with several commercial and industrial businesses which include Taylor Lobster Company, PTE Precision Machining, and the Kittery Resource Recovery Facility.

WEST KITTERY DISTRICT

The West Kittery District is located south of Route 236 and west of Interstate 95, bounded by the east side of Eliot. This area is a mix of commercial development along Route 236, and suburban residential development around the edges of Spinney Creak along Dennett Road, Leach Road, and Bolt Hill Road. The West Kittery District is the location where the Kittery Business Park is planned for, which may include new commercial businesses, offices, and residential units. Existing commercial uses are currently limited to the south side of Route 236 where businesses such as Kennebec Equipment, Gagne and Son, and Great Bay Academy of Dance are located. Since 2000, this area has seen some new development primarily in the form of suburban-style residential along the north side of Dennett Road. There have been a few commercial and industrial developments as well, mostly limited to Route 236 and the west end of Dennett Road.

ROUTE 1 DISTRICT

The Route 1 District falls in between Route 1 and Interstate 95 and runs from the York/Kittery line to the north down to the interchange of I-95 and Route 236. This is the primary commercial corridor in Kittery, and the location of the Kittery Outlets and the Kittery Trading Post. Commercial land uses are most prevalent between the interchange and Cutts Road, with a few houses off Ox Point Drive and Cottage Way. North of Cutts Road the land uses and development pattern change dramatically with larger

parcels of land housing single use buildings, and wide swaths of open spaces between developments. There is a mix of mobile home parks, a large rehab and long-term care facility, a large multifamily apartment complex, and several stand-alone retail buildings and restaurants. Since 2000, very little new development has occurred in this district despite zoning changes and this being a primary growth area for the Town.

DOWNTOWN DISTRICT

Bounded by I-95 to the west, the Piscataqua River to the south and Spruce Creek to the east, the Downtown District is a unique mix of dense residential neighborhoods and commercial nodes. This area includes the Foreside, commercial strips along the Route 1 Bypass, higher density residential developments like Admiralty Village, and neighborhoods off Government Street, Whipple Road, and Philbrick Avenue. The Downtown District has been the historical center of Kittery for decades, and has seen a renaissance recently with the success of the Foreside. Since 2000, there have been a number of residential, commercial, industrial, and mixed use developments that have occurred. In addition to the Route 1 District, the Downtown District was the other primary growth area in Kittery identified in the 1999 Comprehensive Plan.

BARTLETT ROAD AND KITTERY POINT DISTRICTS

These two districts, north of Spruce Creek, were two rural districts in Kittery that included open spaces, forested land, and farms. Over the last thirty years, large lot subdivisions have been slowly carving up the landscape and creating suburban-style subdivisions on what was once open land. This land use type and development pattern continued after the year 2000 with residential subdivisions off Norton Road, Lewis Road, Bartlett Road, and Haley Road despite the 1999 Comprehensive Plan calling for no/limited growth in these locations.

This area also includes Kittery Point, located along Route 103 between Pepperrell Cove and Barters Creek. Kittery Point is a mix of waterfront homes, small residential neighborhoods, and pockets of neighborhood-service commercial development. The 1999 Comprehensive Plan labeled Kittery Point a neighborhood conservation area, which would allow modest infill development complementary to the existing character of the area.

ISLANDS DISTRICT

The Islands District covers Gerrish Island on the mainland of Kittery, and the Isles of Shoals off the coast of Kittery. Gerrish Island is a mix of large single-family residential homes and conservation land. Pocahontas Road and Goodwin Road create a loop around Gerrish Island with the central feature of the Delano Easement protecting approximately 400 acres of land in the middle of Gerrish Island. Access roads and drives emanate off the

loop road providing access to the homes and small subdivisions on the island. Since 2000, there have been several residential developments on Gerrish Island but not nearly at the level of what occurred in some of the other no/limited growth areas in Kittery.

Table 10.1: Land Use Acreage

Town of Kittery, 2015 Assessors Data	Kittery
PERCENT BY LAND USE TYPE	
Agriculture	2.3%
Auto Centric Commercial	0.2%
Industrial	2.3%
Institutional	2.7%
Multifamily	4.5%
Office/Bank	0.4%
Open Space	21.4%
Other Commercial	0.8%
Residential	53.3%
Restaurant/Retail	1.5%
Utility	0.1%
Vacant Land	10.4%

RECENT DEVELOPMENT PATTERNS

Between the years 2000 and 2016, the Town permitted new development on just over 1,100 acres of land, which included 524 new residential lots and/or units. Of those new lots/units, 36

percent were permitted in the Residential – Rural (R-RL) zoning district. In the R-RL district, there were 187 units/parcels permitted on nearly 750 acres of land over the sixteen-year period. Contrast that with new residential development in the Residential – Urban (UR) district where 150 units/parcels were permitted on only ninety-seven acres of land. New residential development in the R-RL district accounted for 74 percent of the acreage of all new development permitted in Kittery. The residential development permitted in the UR district only utilized 7 percent.

This speaks to the continued suburbanization of Kittery's outlying rural residential districts since the adoption of the 1999 Comprehensive Plan. That plan called for conservation of land in the rural zoning districts, and promoted the clustering of new housing to conserve land, resources, and the cost of supplying public utilities and infrastructure.

Figure 10.2 shows the location of new development built between 2000 and 2016.

APPROVED SUBDIVISIONS 2000-2016

In addition to looking at overall land use patterns in Kittery, a list of approved subdivisions was compiled to illustrate the number of lots or units approved between 2000 and early 2016. Over this sixteen-year period, nearly 36 percent of approved lots and housing units were within the Residential Rural (RR/R-RL) zoning

district. Another 12 percent were within the Residential Suburban (RS) zoning district.

The future land use map and goals from the 1999 Comprehensive Plan provided a framework for directing new residential growth toward the areas all along Route 1 and southeast of Route 1 down through the Foreside. Areas zoned R-RL were designated as rural/non-growth locations to help preserve the land, natural and agricultural landscapes, and water quality. This strategy was not successful, as more than one-third of new lots and units approved during the last sixteen years fell within the areas designated as no-growth. Table 10.2 provides information on the approved subdivisions from 2000 through the first part of 2016.

KITTERY COMPREHENSIVE PLAN EXISTING CONDITIONS INVENTORY

Table 10.2: Approved Subdivisions 2000-2016

Town of Kittery Planning Department, 2016

Date	Map/Lot	Street/Subdivision	Zoning	# Lots/Units Approved
2000	60/24, 24A, 24B	Adams Road. Sentry Commons Health Center	MU & RR	6 Lots
2001	8/41	Off Route One Meetinghouse Village Village Green Drive	UR	26 Units
2001	22/21	Off Rogers Rd Shepards Cove Coventry Assets	UR	108 Units
2001	1/44	Add'l Units Exist Structure	UR	NET +2
2001	34/5	Off Haley Road ROW Extension	RR	NET +2
2001	20/41	Off Martin Road ROW Plan	SR	NET +2
2001	18/35&35-1	Lawrence Lane Amend Subdivision	SR	NET -1
2001	30/26&26A	Off Manson Rd ROW Extension	RR	NET +2
2002	17/43&24	Off Route 103 Major Subdivision	UR	10 Lots
2002	15/59	Off Boush Street Kittery Apartments	UR	17 Units
2002	12/1	Off Dennett Road Minor Subdivision	SR	3 Lots
2002	1/33	32 Badger's Island West	BI	3 Units
2002	62/15C	Off Bartlett Road ROW Extension	RR	NET +2
2002	48/1	Off Haley/Trafton Ln Whitetail Subdivision	RR	NET +2
2003	22/21	Off Rogers Rd Amended Subdv	UR	113 Units
2003	61/25&26	Off Lewis Road Major Subdivision	RR	40 Lots
2003	4/188	9 Main Street Subdivision	KF	6 Units
2003	61/8,9&11	Off Norton Road Major Subdivision	RR	13 Lots
2004	19/4-2	Ridgewood Drive Amended Maj Subdv	SR	NET+1
2004	22/21	Off Rogers Rd Amended Subdv	UR	115 Units
2004	65/18&18A	Off Remicks Lane ROW Extension	RR	4 Lots
2004	61/19A	Off Lewis Road Hill Creek Drive Amended Subdivision	RR	9 Lots
2004	61/28A	Off Lewis Road ROW Plan Review	RR	3 Lots
2005	65/17&17B	Off Remicks Lane ROW Plan Review	RR	NET +1
2005	4/91&	Off Wentworth	KF	6 Units

KITTERY COMPREHENSIVE PLAN EXISTING CONDITIONS INVENTORY

Date	Map/Lot	Street/Subdivision	Zoning	# Lots/Units Approved
2006	41/5	Off Haley Road Janah Subdivision	RR	6 Lots
2006	63/64	Off Brave Boat Harbor ROW Plan	RR	NET +2
2006	3/69	Bridge Street Major Subdivision	LB	8 Units
2006	61/4	Off Norton Road ROW Plan review	RR	NET+1
2007	51/2	Off Pocahontas Road Minor Subdivision	RC	3 Lots
2007	39/17A	Off Haley Road Fuller Brook Estates	RR	8 Lots
2007	66/22	Off Woodside Woodside Meadows	RR	5 Lots
2007	54/16	Off Wilson Rd. Pentuckett (Devon) Woods	RR	12 Lots
2007	42/20 & 20A	Off Haley Road ROW Plan review	RR	NET +1
2008	69/18	Brave Boat Harbor	RR	3 Lots
2008	12/1	Off Dennett Road KMB Builders	SR	8 Lots
2008	61/8	Off High Point Circle Operation Blessing Subdivision	RR	3 Lots
2009	57/7	Frog Hollow Lane – Division of Land- Amend ROW Plan	RR	2 Lots
2010	38/13	Cottage Way (Rt One) Spruce Creek Subdivision	RR	10 Lots
2010	18/22A, 22B, 22C	Off Pepperrell Rd. Sluiceway Condominiums	KPV	4 Units
2011	48/8 61/29	Clover Landing	R-RL	14 Lots
2011	65/12	Clayton Lane	R-RL	4 Lots
2012	54/4A, 4A1, 4A2	8 & 10 Pettigrew Rd	R-RL	3 units NET +1
2012	29/20A, 20B1, 20C, 20D	10 – 16 Jewett Lane	R-RL	4 lots
2012	3/2	50 State Rd	BL-1	3 units NET +1
2013	65/26	44 Remicks Lane	R-RL	3 lots NET +1
2013	61/25, 29	Lewis Farm II	R-RL	17 Lots
2014	47/18-4	Roylos (Haley Rd)	R-RL	2 Lots
2014	28/14	93 Route 236	C-2	3 lots NET +1
2014	54/14	Burns (60 Wilson Road)	R-RL	9 Lots
2014	22/21	Shepard's Cove (Rogers Rd)	R-U	95 units NET -20
2014	63/19	143 BBH	R-RL	4 lots
2015	28/14	"Morgan Court" Fernald Rd	C-2	4 lots (9 units)
2016	66/24, 25	Yankee Commons	MU	77 sites

Figure 10.1: Planning District Map

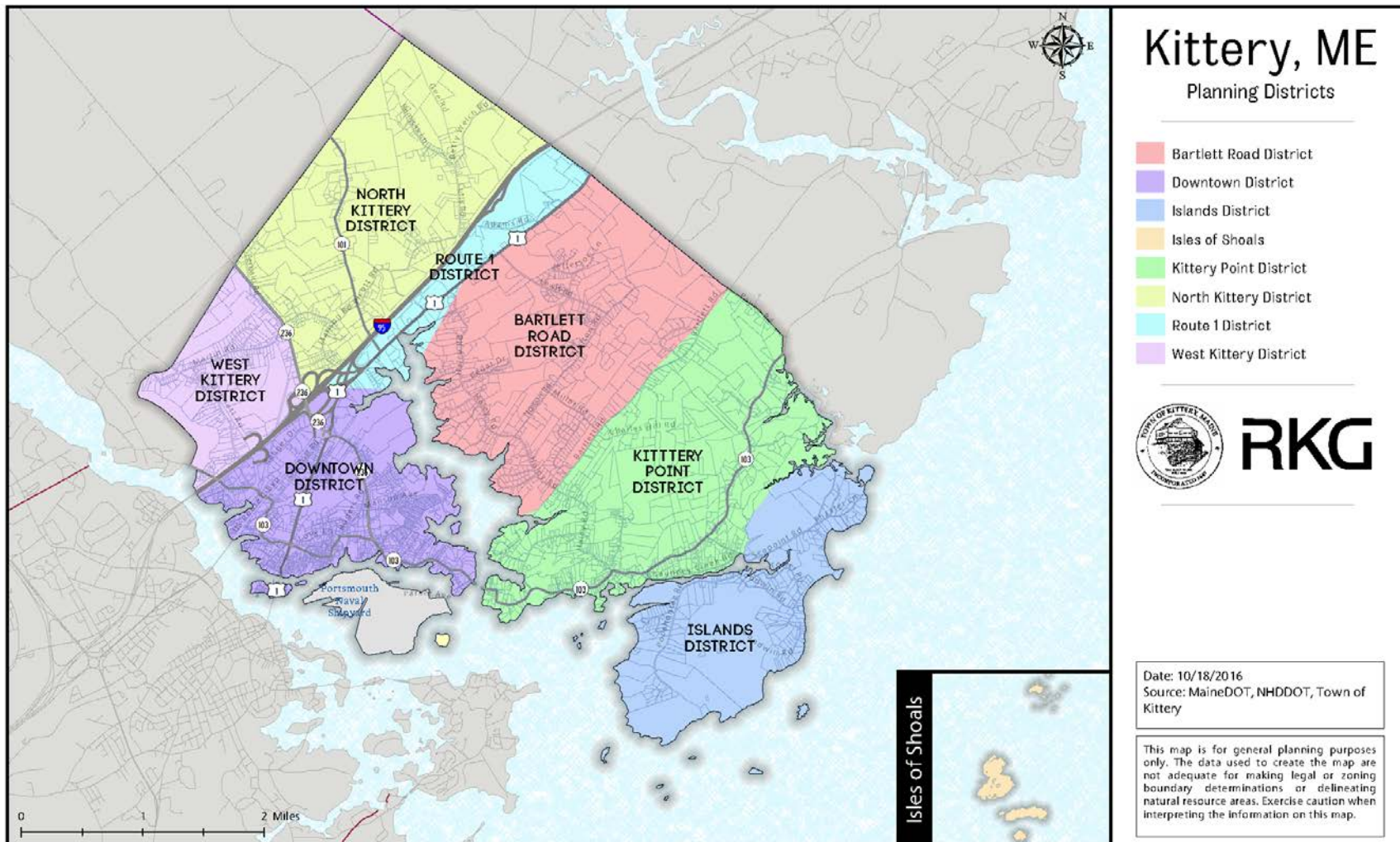
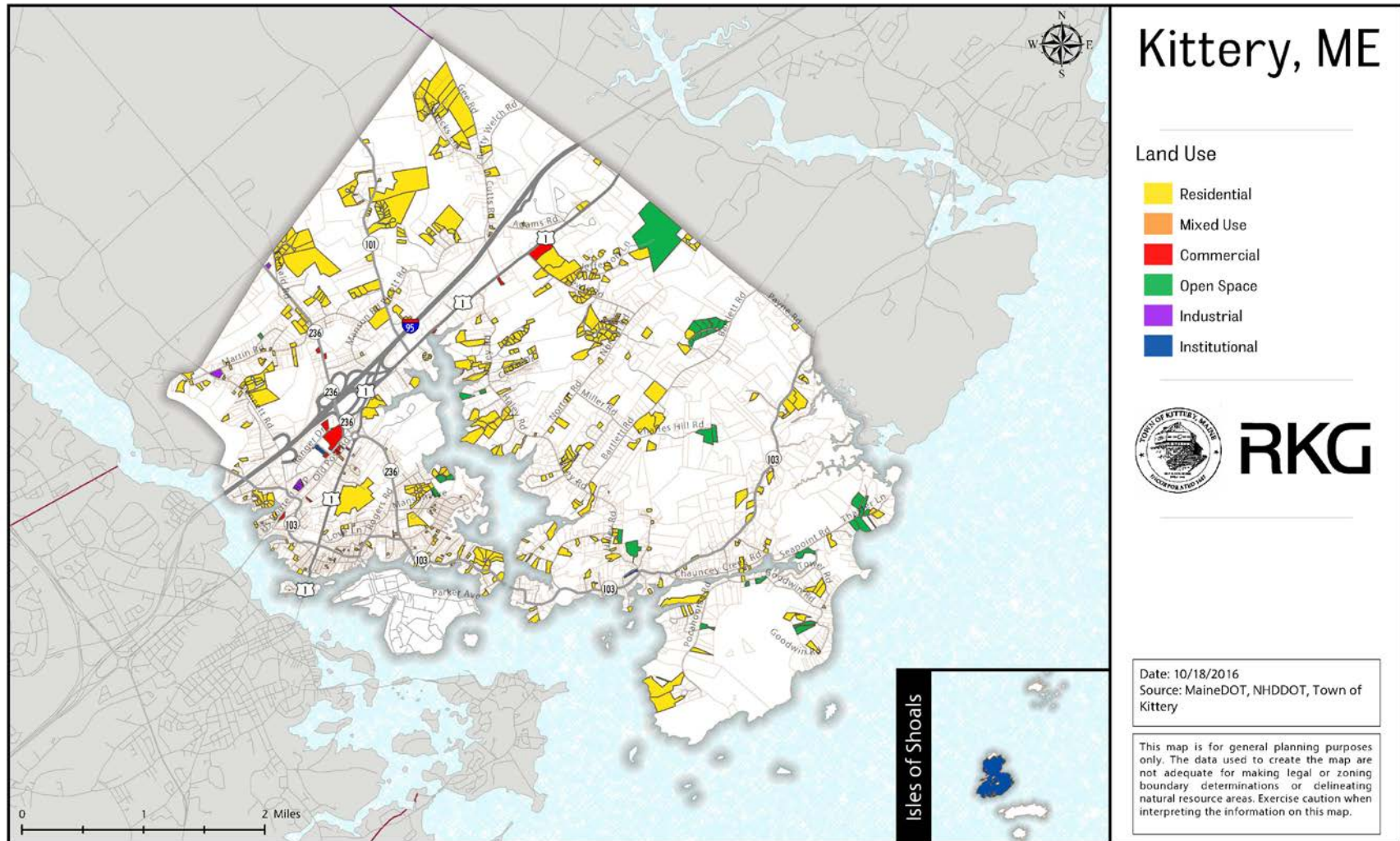


Figure 10.2: New Development by Land Use Category in Kittery (2000-2016)



ZONING IN KITTERY

An important component to any Comprehensive Plan is a review of the Town's zoning. The local influence over the character and quality of the built environment is the underpinning of zoning control. Through the written regulations of zoning and the graphical representation on a zoning map, a town can guide future development in a way that benefits the people who live and work there.

USE DISTRICTS

The current Land Use and Development Code, last amended on October 26, 2015, divides Kittery into eighteen base zoning districts with four overlay zones. These base zones are divisions of land based upon the uses desired in each, e.g., residential, commercial, industrial, etc. The overlay districts are primarily in place for the protection of wetlands, waterways, and fisheries. There is nothing inherently wrong with having a large number of zoning districts so long as the intent of the district is captured by the regulations written. Table 10.2 shows the percentage of land in each zoning district in Kittery.

RESIDENTIAL

Approximately 78 percent of the land in Kittery falls within residential zoning districts, primarily the Residential – Rural (R-RL) district. This comprises nearly all of the land north of Spruce Creek and the northwest corner of Kittery. The remainder is

within the Rural Conservation, Suburban, Urban, and Village residential districts. The Rural Conservation district comprises all of Gerrish Island and Cutts Island on the east side of Kittery, making up over 11 percent of the total land area.

The six different residential districts are each written with a different purpose statement, permitted uses, and dimensional requirements. The R-RLC district is the most restrictive, requiring a minimum lot size of 80,000 square feet (nearly two acres) and a 6 percent building coverage allowance. The Residential Suburban, Urban, and Kittery Point Village districts have very similar dimensional requirements but slightly different use regulations. Each requires a minimum lot size of 40,000 square feet (one acre), and each limits building coverage to 15-20 percent of the total lot area with large setback requirements and 15 percent open space on the lot. The purpose statement for each district seems clear, but the dimensional regulations may not be accomplishing what the district is intended to do. For example, the purpose of the Rural Residential district is to curb sprawl and maintain a rural character. With a minimum lot size of 40,000 square feet and generous setback requirements, it has almost the same dimensions as the suburban and Kittery Point residential districts. Although the purpose statements for each are different, the dimensions do not vary very much. This supports why a great majority of residential growth through subdivisions has been in the R-RL portion of town over the last two to three decades.

Table 10.3: Zoning District Acreage

Town of Kittery, 2015 Assessors Data	Kittery	
PERCENT BY ZONING DISTRICT	Acres	Percent
Business – Local	65	0.6%
Business – Local 1	41	0.4%
Business – Park	101	1.0%
Commercial - 1	113	1.1%
Commercial - 2	68	0.6%
Commercial - 3	115	1.1%
Conservation	973	9.2%
Mixed Use	470	4.5%
Mixed Use - Badgers Island	13	0.1%
Mixed Use - Kittery Foreside	56	0.5%
Residential - Kittery Point Village	466	4.4%
Residential – Rural	5,175	49.0%
Residential - Rural Conservation	1,187	11.2%
Residential – Suburban	642	6.1%
Residential – Urban	718	6.8%
Residential – Village	84	0.8%
Transportation – Maine Turnpike	0	0.0%
Industrial	275	2.6%

Among the allowable uses for each district, the only major difference between residential districts is the allowance of duplexes in both Village districts and multi-unit residences in the Kittery Point residential district, which are limited to buildings with less than four units. Otherwise, each district allows single family homes, modular homes, and a variety of civic and recreational uses.

COMMERCIAL

Kittery has three business districts, three commercial districts, and three mixed use districts which all allow different types of commercial uses. The commercial areas are mostly limited to the areas around Route 1, Route 236, the Route 1 Bypass, and the Foreside/Downtown. These are the main transportation thoroughfares and locations where goods and services can be easily reached by residents, regional shoppers, and tourists alike.

BUSINESS DISTRICTS

The three business zoning districts, Business Local, Business Local 1, and Business Park, differ quite a bit from each other and have regulations that generally match the purpose of the district. The Business Local 1 (B-L1) district resides in two locations in Kittery, both on the edges of the Foreside/Downtown Kittery area. The purpose of this district is to encourage smart growth and good urban design patterns in a way that will serve as a focal point for the provision of local sales, urban residences, services, and business space. The development pattern should reflect traditional New England buildings with commercial uses on the first floor with residences above. This is supported by smaller minimum lot sizes, higher lot coverage, and less restrictive setback requirements.

The largest sections of the Business Local (B-L) district are located along the southern portion of State Road (Route 1) and the southeast side of the Route 1 Bypass in the vicinity of Sarah

Mildred Long Bridge. The purpose of this district is to provide local sales, services, and business space within Town. The nature of the location of this district is such that it supports more local-serving retail and services compared to farther up Route 1 where the outlets are. The current uses along Route 1 and the Route 1 Bypass are single-use commercial buildings and single family residences. This district does not have a minimum lot size or a maximum building coverage, and it has relatively minimal setback requirements compared to many other districts in the Town. This, and the B-L1 district, are the only zones that have a maximum front yard setback versus a minimum. Single family dwellings are permitted in the district, but are regulated by a fairly large minimum lot size per dwelling unit requirement for parcels where sewer service is not yet available. This is in alignment with the state's minimum lot size for lots served by septic.

In addition to the larger sections of Business Local along State Road (Route 1) and the southeast portion of the Bypass, there are several smaller pockets of B-L1 that help support neighborhood serving local retail. For example, just north of the intersection of Whipple Road and Shapleigh Road there is a small pocket of B-L1 which contains uses such as a gas station, brewery, two banks, and a hardware store. Further east along Route 103, in Kittery Point, there are two more areas of B-L which contain gas stations, a market, and a post office.

The Business Park (B-PK) zoning district encompasses the business park area between Dennett Road and Route 236, where

sewer service was recently extended. The purpose of this district is to create a high quality park-like setting for both businesses and residences. The area encourages a cluster of mixed use development on large tracts of land to foster greater business growth and a sense of community. The intent of the district is to provide a more efficient use of land than might be obtained through segregated development. Currently, the land area contained within this zoning district is vacant therefore there are no prevailing development patterns to describe. The district has a very high minimum lot size (120,000 square feet) compared to the other business districts. The district also requires a minimum of 10,000 square feet per dwelling unit for any residential development including apartments. This severely restricts the amount of residential that could be accommodated on a parcel of land in the district, and would make it difficult to accomplish the mixed use pattern as intended.

COMMERCIAL DISTRICTS

The Commercial 1, 2, and 3 districts provide locations for general retail sales, services, and business space in locations capable of serving community-wide and regional trade areas which are primarily accessible by the automobile. These three commercial districts are located along Route 1 north of the traffic circle and Route 236 and along the northern section of the Route 1 Bypass. Each of these areas are set up to accommodate local and regional traffic and serve as a retail and employment destination. These commercial areas, unlike the business districts, do not allow

residential development. Each requires a minimum of 40,000 square feet of land in order to develop with large front, side, and rear setbacks.

The purpose of these districts matches well with what has been constructed to date in Kittery. Along Route 1, the regional outlets, restaurants, and hotels do serve a very wide trade area, drawing patrons from all over New England. The development along the Route 1 Bypass includes a number of motels, convenience stores, gas stations, and small retail and sales establishments. The development along Route 236 is very similar to the Bypass, with a number of stand-alone commercial and service-oriented buildings on single parcels. Along the Bypass and Route 236, there are several single family homes that dot the landscape in between commercial development.

MIXED USE DISTRICTS

The final commercial district type in Kittery are the three mixed use districts: Mixed Use (MU), Mixed Use-Kittery Foreside (MU-KF), and Mixed Use-Badgers Island (MU-BI). The MU-KF and MU-BI districts are very specific to two well-established mixed use areas in Kittery, the Foreside and Badgers Island. These two locations have a long development history of mixing both residential and commercial uses for decades. The development pattern that comprises both locations is representative of a walkable, compact, mixed use village district. Buildings were constructed in close proximity to one another, and the roadway network is more gridded than what can be found in other parts of Kittery. It is worth noting that the entirety of Badgers Island falls within the Shoreland Overlay Zone.

Both mixed use districts have very similar purpose statements which relate to their ability to provide businesses, services, and residences as a way to help revitalize areas in close proximity to the Shipyard and Portsmouth. Both require a balance of businesses and homes to keep the support the area's vitality and create sustainable economic development opportunities. While the purpose statements are similar, the development pattern is quite different. Approximately 75 percent of the land area on Badger's Island is subject to the restrictions of the Shoreland Overlay Zone which impacts what can be built and the density allowed.

The main difference between the two mixed use districts in terms of uses is apartments are not allowed in the MU-BI district, where they are allowed at up to twelve units per lot in the MU-KF district. While residential is allowed in both districts, the minimum land area per dwelling unit requirements of 5,000 to 6,000 square feet will make those uses difficult to accommodate. The lot sizes in both districts are already quite small, which would require a developer to have to assemble several parcels to build a multifamily or mixed use building. This increases to 10,000 square feet in the Shoreland Zone which covers the Badgers Island mixed use district. The setback requirements in both districts are very low and will help new buildings match the character of older structures.

The Mixed Use (MU) district along the northern segment of Route 1 is very different than the two districts previously described. The purpose of the district is to provide opportunities for a mix of office, service, and limited residential and retail uses to alter the pattern of commercial activity on Route 1. A mix of uses on a single parcel is desired, and in some cases required

according to the zoning. The MU district is intended to accommodate growth along Route 1. The minimum parcel size is 200,000 square feet (roughly 4.5 acres). The district is set up to accommodate primarily commercial uses, but no more than 15 percent of total square feet can be dedicated to retail (including parking) and no more than 20,000 square feet can be dedicated a single retail use.

Residential development is allowed in the MU district, but single family homes must have a minimum of 200,000 square feet of land area per dwelling unit. Multifamily units can only be developed as part of the upper stories of a mixed use building and require a minimum land area of 40,000 square feet per dwelling unit. If the building is served by sewer, the minimum is reduced to 20,000 square feet per unit. If the development is for eldercare, the minimum land area per dwelling unit requirements drop significantly so long as the development is connected to public sewers. A unit with two or more bedrooms requires only 5,000 square feet of land area per unit, 4,000 square feet for units with less than two bedrooms, and 2,500 square feet for a residential care unit. For nursing care and convalescent care units, the minimum drops to 2,000 square feet. A large portion of this zone is being developed as residential through the expansion of the Yankee Common Mobile Home Park.

INDUSTRIAL

The Industrial zoning district in Kittery is exclusively relegated to the Naval Shipyard, making up about 2.6 percent of the Town's land area. The use regulations for the district are standard, allowing manufacturing, research and development, and

accessory structures to a home occupation. Interestingly, the Industrial district does not have any dimensional standards outside of minimum side and rear yard setbacks of thirty feet. While flexibility is certainly encouraged with the rapidly changing definition of industrial uses, some baseline dimensional standards could be beneficial especially if the district were to expand to other parts of town.

OVERLAY DISTRICTS

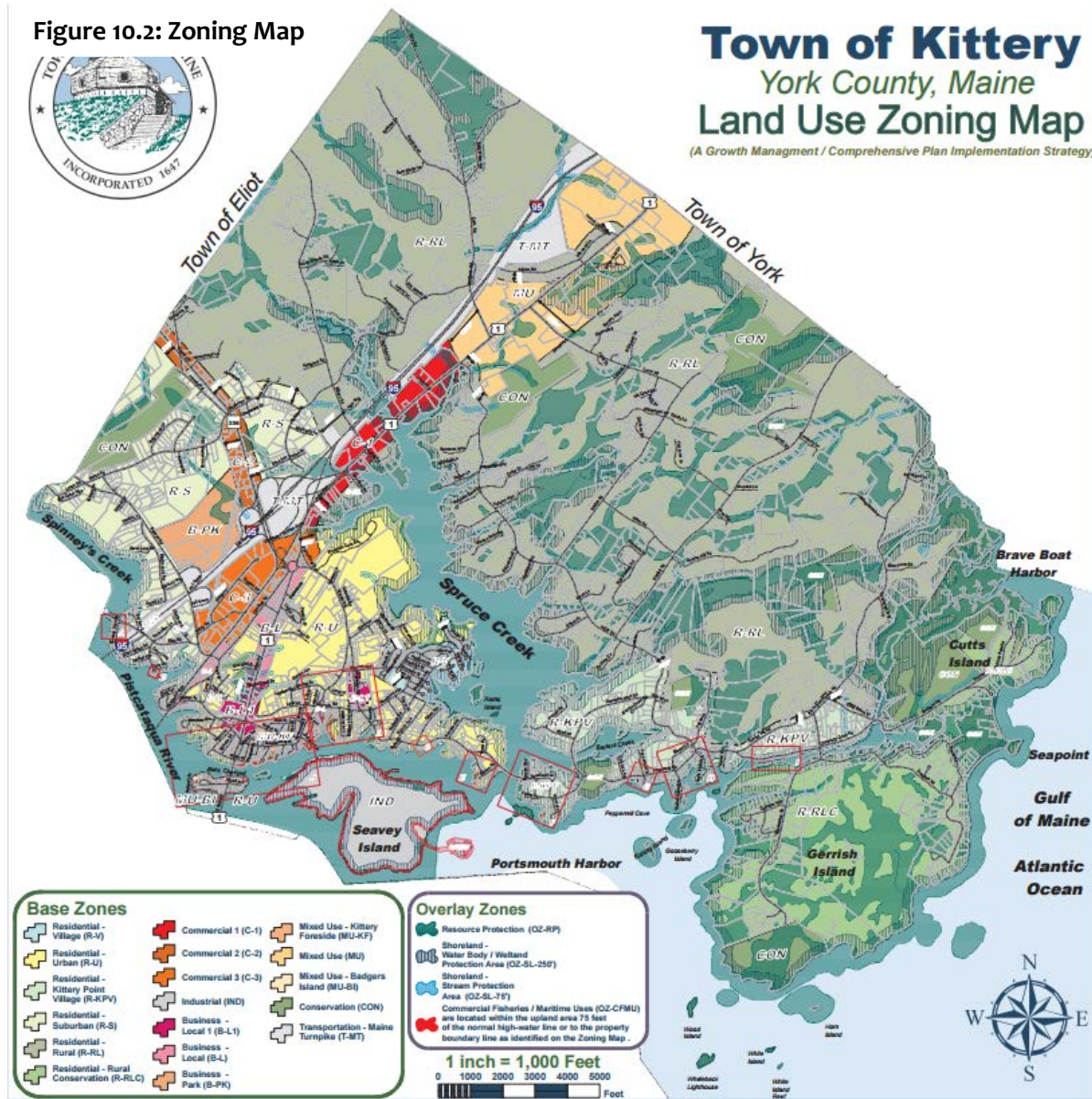
In addition to the base zoning districts identified in the zoning code, there are three additional overlay districts in Kittery. The Resource Protection (OZ-RP), Shoreland Protection Area (OZ-SL), and the Commercial Fisheries/Maritime uses (OZ-CFMU) overlay districts are in place to help the Town protect natural resources and water bodies from the impacts of development, and as a way to promote fishing and maritime uses.

The Shoreland and Resource Protection Overlays are intended to further the maintenance of safe and healthful conditions; prevent and control potential water pollution sources; protect spawning and birding grounds; and preserving access and views to coastal waters. The Resource Protection Overlay primary covers inland parcels where fresh water bodies or wetland occur, while the Shoreland Protection Overlay pertains to inland freshwater resources and the coastal shoreline of Kittery. The zone encompasses a 250-foot buffer from the upland edge of the protected resource. The required setback is 100 feet, and reduced

to seventy-five feet in the Kittery Foreside and Badgers Island mixed use districts. Within the overlay by-right uses are extremely limited. Within most zoning districts the only use permitted within the overlay is public open space or recreational uses, with some exceptions for civic uses. All other uses that would otherwise be allowed in the underlying zoning district are required to be permitted through Special Exception.

The Commercial Fisheries Overlay is different from the Protection Overlays. The OZ-CMFU is to provide for the development and expansion of water-dependent commercial fisheries/maritime activities. Areas in the overlay should have been chosen based on suitability criteria that include shelter from prevailing winds/waves, slope of the land, depth of the water body within one hundred fifty feet of the shoreline, and compatibility with adjacent uses. Parcels that fall under this overlay district are primarily located along the Foreside, Kittery Point, Badgers Island, the Naval Shipyard, and select parcels up the coast along Pepperrell Road and Chauncey Creek Road. The permitted uses under the overlay include all functionally water dependent commercial fisheries and maritime uses, as well as the permitted uses under the base zoning districts. This creates issues where the majority of properties end up being nonconforming.

Figure 10.2: Zoning Map



IDENTIFICATION OF PRELIMINARY ISSUES, CHALLENGES AND OPPORTUNITIES

The following is a preliminary list of issues, challenges and opportunities posed by the findings of the inventory of existing conditions of Kittery's land use and zoning. Please note that these are subject to change with the preparation of goals and objectives, not yet drafted (at the time the inventory was prepared).

ISSUES AND CHALLENGES

The Town's Zoning Code has several issues and challenges as it pertains to implementing the land use vision of Kittery residents. The purpose statements for several of the base zoning districts, and the accompanying dimensional regulations are not in sync. Currently, there are eighteen individual zoning districts across Kittery. This is a large number of districts for a community of nine thousand residents. It may not be an issue if the purpose of the district and the implementation regulations are in alignment. In Kittery, that is not always the case. Here are some issues and challenges with the current zoning districts, use restrictions, and dimensional regulations:

- Some of the zoning districts that regulate the same type of use (residential, commercial, mixed use) have very similar dimensional requirements and only differ by one or two listed uses. There seems to be a lot of redundancy in

the regulations. This is particularly true for the three commercial zoning districts (1, 2, and 3).

- The minimum lot size requirements for "rural" residential zoning districts are seen by some as too restricting and by others as not large enough. The Town needs to determine whether or not it wants to protect these rural areas or continue to allow suburban-style residential subdivisions.
- The mixed use district along Route 1 requires a minimum lot size of 200,000 square feet, yet the district purpose statement calls for smart growth or cluster development. It will be challenging to create a more compact development pattern using these large lot size minimums.
- The Commercial districts all have the same dimensional requirements, but differ when it comes to the design elements listed for each. Most of the design standards in the zoning are good ideas, and should apply to all three districts.
- The Commercial districts do not currently allow residential uses. The Town may benefit in the long term from allowing a diversity of uses in the Commercial districts to create additional flexibility for property owners, and construct residential units in closer proximity to local businesses.
- The Industrial zoning district is currently limited to the Naval Shipyard. There are currently no other areas in Town that support industrial development, neither heavy industry or light manufacturing.

- The Route 1 Mixed Use district may become problematic with its extremely large minimum lot size. A property owner could construct a single family home on a 200,000 square foot lot and effectively remove that lot from providing any economic development benefit to the Town. It will also be challenging for a developer or property owner to make a mixed use development work in this district with restrictions on upper-story residential. The minimum lot size per dwelling unit requirements are very high and would only allow a few units to be constructed on a parcel. This could create financial feasibility challenges for the property owner/developer.

OPPORTUNITIES

The Comprehensive Planning process provides an excellent opportunity to hold a community-wide discussion about development and preservation goals in the context of how zoning can be used as a tool to accomplish those goals. In some cases, the current zoning regulations may not match the intent and purpose of the district. Where that disconnect exists, it offers an opportunity to recommend changes that could bring the intended purpose of the district and the regulations that bind uses, dimensions, parking, and other elements together.

Kittery
Comprehensive
Plan Update
2016



Map 10.1

EXISTING LAND USE

- Agriculture
- Auto Centric Commercial
- Industrial
- Institutional
- Mixed Use
- Multifamily
- Office/Bank
- Open Space
- Other Commercial
- Residential
- Restaurant/Retail
- Utility
- Vacant Land



0 0.5 1
Scale in Miles

Isles of
Shoals



AECOM

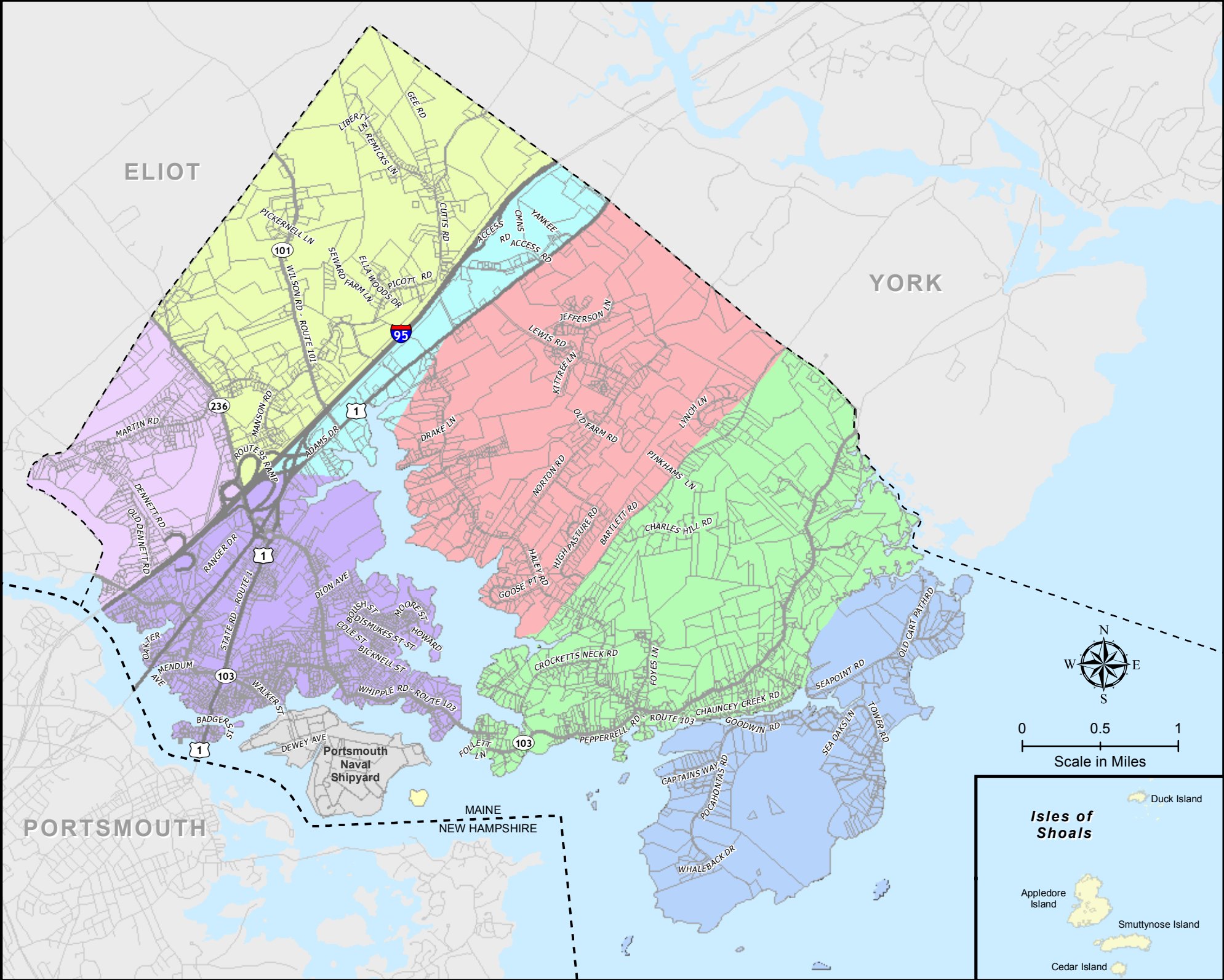
This map is for general planning purposes only. The data used to create the map are not adequate for making legal or zoning boundary determinations or delineating natural resource areas. Exercise caution when interpreting the information on this map.

Kittery
Comprehensive
Plan Update
2016



Map 10.2
PLANNING DISTRICTS

- Bartlett Road District
- Downtown District
- Islands District
- Isles of Shoals
- Kittery Point District
- North Kittery District
- Route 1 District
- West Kittery District



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This map is for general planning purposes only. The data used to create the map are not adequate for making legal or zoning boundary determinations or delineating natural resource areas. Exercise caution when interpreting the information on this map.

Kittery
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Plan Update
2016



Figure 10.3
**DEVELOPMENT
CONSTRAINTS**

Slope in Percent

- 0 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 51

Flood Zones

- 100-year Flood Plain
- 500-Year Flood Plain



0 0.5 1
Scale in Miles

**Isles of
Shoals**



Flood data was retrieved from FEMA, January, 2015.

AECOM

This map is for general planning purposes only. The data used to create the map are not adequate for making legal or zoning boundary determinations or delineating natural resource areas. Exercise caution when interpreting the information on this map.

REFERENCES

DOCUMENTS

1. Kittery Land Use and Development Code. Last Amended October 26, 2015.

¹ Chapter One: The History of Kittery. 1999 Update of the Comprehensive Plan. <http://www.kitteryme.gov/Pages/FOV1-00025CA8/chapter1>

