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1999 Update Of The Kittery Comprehensive Plan

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Plan Update Committee**

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INTRODUCTION

The Kittery Town Council created the Kittery Comprehensive Plan Update Committee to review and update the Town's 1989 Comprehensive Plan. In addition, the Council requested that the Harbor Management Plan be incorporated into the updated Comprehensive Plan.

The Update Committee began its work by developing a mission statement. The mission statement for the Comprehensive Plan Update Committee is to:

“Develop a unified strategy to reinforce the small-town character of Kittery as a historic seacoast town consisting of economically diverse neighborhoods, working waterfronts, natural habitats and resources, rural landscapes, and commercial places, and to promote economic growth and guide/control residential development by providing distinct planning requirements consistent with that character, and by providing responsive public services, schools which are a source of community pride, and adequate public facilities while retaining a stable property tax rate.”

The following plan is the result of the Committee's work over more than three years. During this period, the Committee met more than 64 times. The Committee held five community forums to get input from the community. In addition, the Committee met with the Town Council on a number of occasions and worked with the Council to review each of the sections as it was developed by the Committee. Both the Planning Board and the Kittery Conservation Commission reviewed a draft of the Plan and provided comments some of which were incorporated into the Plan.

The Comprehensive Plan is intended to be a guide – it is not a law or a regulation. The Plan is designed to help the community's elected and appointed officials make decisions about the future of Kittery in a coordinated fashion. In addition, the Plan, when adopted by the Town Council, serves as the basis of the community's zoning and other land use regulations. Maine State Law requires that the Town's zoning ordinance and map be consistent with the adopted Comprehensive Plan. The policies set out in the Plan, including the Future Land Use Plan, are designed as guides for how the zoning should be revised. The actual details of any zoning changes will be developed by the Planning Board with public involvement and will need to be enacted by the Town Council. The policies provide a summary of the various zoning districts. It is the intention of the Update Committee that the development regulations such as setbacks, building coverage ratios, building height restrictions, and similar provisions remain unchanged unless they are specifically discussed in the Plan.

PART ONE

BACKGROUND

Chapters One through Three provide a brief overview of the Town of Kittery, the history of its growth and development, its place in the Southern Maine region, and a review of past planning activities.

CHAPTER ONE THE HISTORY OF KITTERY

Kittery, like most coastal New England communities, draws its existence from the sea and the availability of a good, deep water harbor created by a river, in this case the Piscataqua River. Early history records visits to the Isles of Shoals and the Piscataqua in the early years of the 17th Century with the first settlement by Europeans in 1623. Kittery was incorporated in 1647 making it the oldest incorporated town in Maine.

Kittery's early existence was tied to the sea and it developed as a fishing and shipbuilding center, a role that continues to the present. In the late 1600's, the area was the source of masts for the Royal Navy resulting in much of the area being harvested.

With continuing skirmishes, population growth was limited in the early years of the 18th Century. In the mid 1700's, efforts were taken to shore up the community's defenses and in the mid and late 1700's, development of Kittery Point occurred resulting in the construction of what are now considered to be many of the community's historical landmarks.

In 1800, the destiny of Kittery was forever changed with the establishment of a government shipyard on Fernald's Island. The growth of this facility became the driving force in the community. Over the following decades, the Town of Kittery developed adjacent to the entrance to the shipyard resulting in the downtown area of Wallingford Square and surrounding residential areas.

In the mid 1800's, railroad service was extended to Kittery. With the Civil War, a period of growth occurred as employment at the Shipyard increased to over 2,000 workers. Other private shipyards also were active in this period.

The late 1800's saw a new era in Kittery. The community began a 40-50 year period as a tourist center with the construction of summer hotels on the islands and at Kittery Point. Kittery became a destination for summer visitors from urban areas outside of Maine.

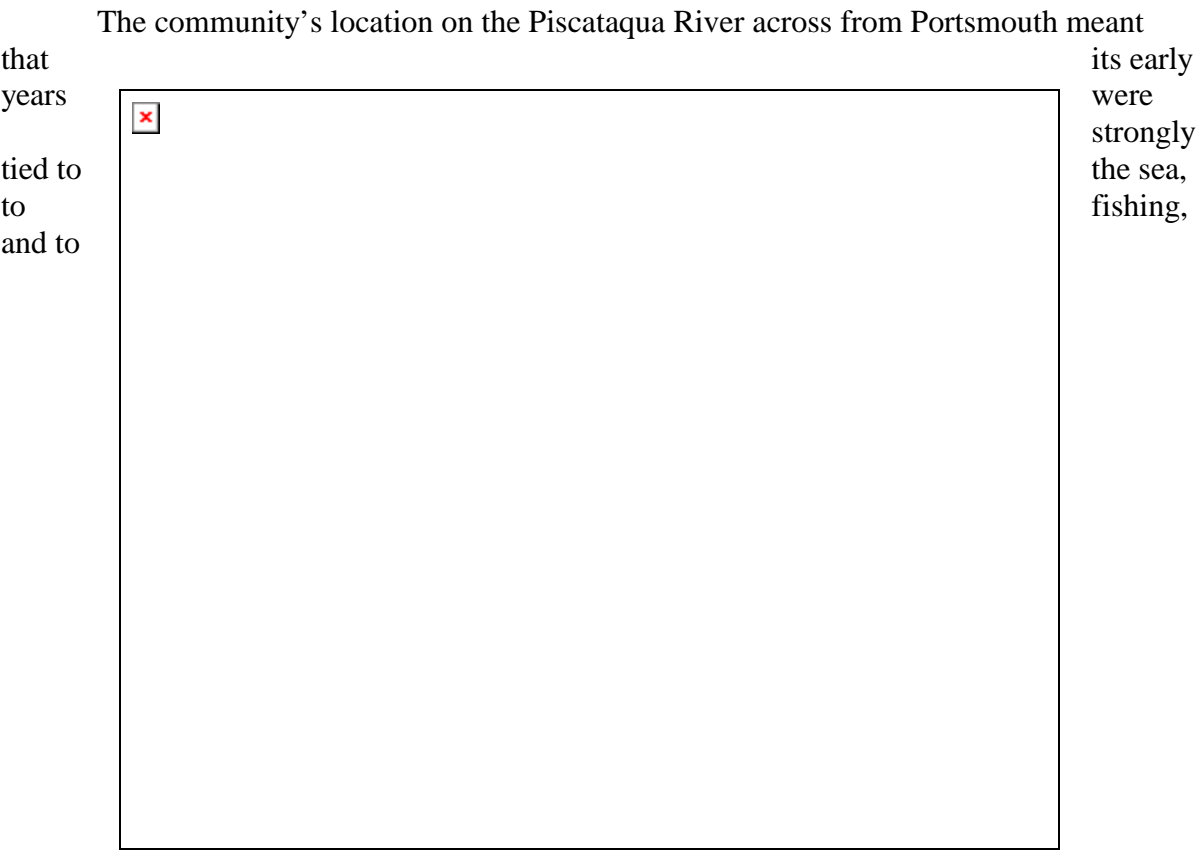
The 20th Century brought still more changes. The Shipyard remained active and experienced booms during the World Wars as it became a builder of submarines. At the same time, the first automobile bridge was built across the Piscataqua linking Kittery to Portsmouth and the world to the south populated by a new automobile oriented society.

After World War II, U.S. Route One emerged as the new gateway to Maine. This brought with it the development of facilities to serve the traveling public and tourists. In the 1980's, some of Route One was converted into a factory outlet retail center.

While Kittery has changed over the past 350 years, it remains firmly rooted in its heritage and its connection to the sea. At the same time, it has developed as a modern residential and retail community.

CHAPTER TWO THE REGIONAL SETTING

The Town of Kittery is the southern gateway to the State of Maine. As the southernmost municipality in Maine, Kittery functions as the link between New Hampshire and Maine.



shipbuilding. This relationship remains strong today. The location of the Portsmouth Naval Shipyard, a major submarine repair and refueling facility, on Seavey Island in Kittery reflects this heritage.

**Figure 2-1
Regional Setting**

Geographically and economically, Kittery is strongly tied to the Greater Portsmouth economy. Many Kittery residents are employed in New Hampshire and most residents travel to the Portsmouth area for shopping, services, and recreation.

At the same time, Kittery has served as a major employment center as a result of the Shipyard. Historically, thousands of workers commuted into Kittery daily from a broad region extending into New Hampshire and north and west into Maine. While this role has diminished in recent years as a result of cutbacks at the Shipyard, it still remains an important aspect of the community. The potential for further cutbacks creates an interest in efforts to diversify the Town's economy.

Kittery also functions as the tourist gateway to Maine. With both I-95 (the Maine Turnpike) and U.S. Route One entering Maine in Kittery, the community has long played a role in welcoming and servicing both the commercial traveler and the tourist. Over the past fifteen years, this role has been greatly changed and expanded with the development of the factory outlet centers along Route One.

Kittery is a community of contrasts. On one hand, it is a quiet, waterfront residential community with strong historical roots. On another, it is a major employment center although this role has changed as employment at the Shipyard has declined while retail and service employment has grown. And on still a third, it is a major specialty retail center. The

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goal of this plan is to find a way to balance these and other competing interests to maximize the quality of life in Kittery.

CHAPTER THREE LAND USE REGULATION AND COMPREHENSIVE PLANNING IN KITTERY 1952-1998

Kittery's first land use regulations were adopted by Town Meeting in 1952. They established two small Local Business Districts, Commercial Districts along Route One (except for Hunter and Newmarch Streets) and the Interstate (now Route One bypass), with the rest of the town as General or Single Residence Districts. The Selectmen were responsible for issuing permits and functioned as the Board of Appeals. The provision for a Planning Committee was stricken. This was basically a pyramidal zoning scheme, allowing any type of development in the Commercial areas, and becoming more and more restrictive in other zones.

With the passage of a Comprehensive Planning Act by the State in 1954, the requirements for local zoning were more clearly defined. The town added a provision for a Planning Committee in 1956 and initiated the required Comprehensive Planning process, hiring a consultant using state funds. The first Kittery Comprehensive Plan was adopted in 1958. It pointed out the limitations of the existing ordinance:

“At present, Kittery exercises only inadequate and poorly conceived controls over the use and development of its land resources. The present zoning ordinance is obsolete, poorly worded, and frequently in conflict with provisions of statutory law. There is even some question as to whether the present ordinance is legally in effect at all.”

The result of the consultant's work was Kittery's first 'real' zoning ordinance, adopted in 1960. With revisions, the essence of the 1960 ordinance remained in place until 1977, when a complete overhaul was undertaken.

The 1958 Comprehensive Plan was a far reaching and visionary document, Partial updates were completed in 1963 (land use and a townwide transportation study) and 1966 (recreation and municipal facilities). These later updates drew heavily on the 1958 Plan and recommended major road programs, public open space to protect Spruce Creek, Seapoint Beach, and Fort Foster, and protection of the town's scenic and historical character. Unfortunately, few of its recommendations were ever implemented.

In 1973, a further update of the Land Use section was undertaken. This incorporated a more extensive inventory of the land including the mapping of soils, wetlands, and flood prone areas.

In 1977, the zoning ordinance (now known as the Land Use and Development Code) was extensively revised, creating the different zones and boundaries that would remain essentially intact for nearly twenty years.

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The Comprehensive Plan was not updated again, in whole or in part, until 1989. This update was more complete than any earlier Plan, with extensive inventories of existing conditions in areas other than land use and recommendations for changes in several areas of town life. Perhaps the most notable recommendation of that Plan was the proposal to alter the type of commercial development on Route One by creating a Mixed Use District along Route One north of Haley Road.

The Land Use and Development Code was again overhauled in 1991, both to make administrative improvements and to implement some of the recommendations adopted in the 1989 Plan. Though not initially included in the changes adopted by the Town Council, a provision for a Mixed Use District was added to the ordinance by referendum later that year.

In recent years, a Badger's Island District, a Foreside District, a Village Residence District (Admiralty Village), a revised Mixed Use District, and a Shoreland Overlay Zone have been added to the Kittery Land Use and Development Code, along with refinements to wetlands, signage, and intra-family apartment regulations.

PART TWO

INVENTORIES, GOALS, AND POLICIES

Chapter Four provides an inventory of the existing conditions in Kittery and analyzes how these conditions may influence the future growth and development of the community and the issues and implications that should be addressed in the Comprehensive Plan. For each topic, Chapter Four also sets out recommended goals and policies for addressing the identified issues and implications.

The chapter addresses the following areas:

- population and demographics
- local economy
- natural resources
- marine resources
- water and sewer service
- land use patterns
- transportation
- housing
- public facilities
- recreation and open space
- cultural facilities
- historic and archaeological resources
- fiscal capacity

CHAPTER FOUR INVENTORIES, GOALS, AND POLICIES

This chapter provides an inventory of the existing conditions in Kittery and analyzes how these conditions may influence the future growth and development of the community. It also identifies the issues and implications that should be addressed in the Comprehensive Plan. For each topic, the chapter then sets out recommended goals and policies for addressing those issues and implications.

SECTION A. POPULATION AND DEMOGRAPHICS

Kittery's future will be shaped in part by regional and national trends. An understanding of the growth and change occurring within the population of a community is essential to developing a realistic direction for the future. In Kittery, this is particularly important since fluctuations at the Shipyard have influenced the population of the community and are likely to continue to do so in the future. Since the "official" population numbers include military staff living at the Shipyard and in military housing, changes in these populations are reflected in the Town's population figures. This section looks at how the population of Kittery is growing and changing and attempts to distinguish changes in the year round household population from changes in the military personnel living in military housing.

1. YEAR ROUND POPULATION

a. Components of the Year Round Population of Kittery

The year round population of Kittery consists of three (3) principal components:

- Households living in civilian housing within the Town
- Military households living in military housing in Kittery
- Military personnel living in base housing at the Shipyard

In analyzing how the population of Kittery has changed, it is important to recognize these different components and how they influence the total population of the community.

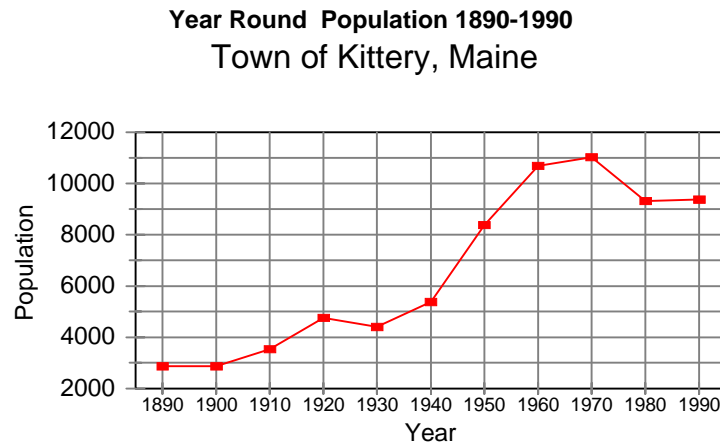
b. Population Change from 1890 to 1970

In 1890, the U.S. Census reported that the Town of Kittery had 2,864 year round residents. Over the next fifty years, the Town saw steady growth of its population reaching 5,374 in 1940 (see **Figure 4-1**). While it is difficult to separate the civilian and military population of the community during this period, it appears that some of this growth was the result of a growth in military personnel at the Shipyard.

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The Second World War and the increase in the importance of the submarine as part of the national defense system resulted in a major growth during the 1940's. While some population decrease occurred after the war, the Town's population stood at 8,380 in 1950, an increase of more than 3,000 or 56% since 1940. It appears that much of this increase was the result of growth in the military population at the Shipyard.

Figure 4-1



c. Population Change 1970 - 1990

In 1970, the Town had a total population of 11,028 residents (see **Table 1**). Of this number, 9,110 were residents living in households while 1,918 were individuals living in group quarters primarily Shipyard housing. Of the 9,110 people living in households, approximately 8,300 lived in civilian housing while the balance resided in military housing at Admiralty Village and officers' residences at the Shipyard.

TABLE 1
KITTERY POPULATION CHANGE 1970 - 1990

	Household Population	Group Quarters Population	Total Population
1970 Census	9,110	1,918	11,028
Change 70-80	-628 (-6.9%)	-1,086 (-56.7%)	-1,714 (-15.5%)
1980 Census	8,482	832	9,314
Change 80-90	+430 (+5.1%)	-372 (-44.7%)	+58 (+0.6%)

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1990 Census	8,912	460	9,372
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Source: U.S. Census 1970, 1980, and 1990

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During the 1970's, the year round population of Kittery decreased from 11,028 in 1970 to 9,314 in 1980 (see **Table 1**). While much of this decrease was the result of a decline in the military population living in base housing, the Town's household population also decreased during this decade. This decrease was probably the result of reduced employment at the Shipyard.

The 1980's saw the total year round population of the Town grow slightly but this masks the changes in the components of the population (see **Table 1**). During this decade, the household population grew by more than 400 people (from 8,482 in 1980 to 8,912 in 1990) while the population residing in group quarters, primarily base housing, continued to drop offsetting the gains in the year round household population.

As of 1990, the size of the three (3) components of Kittery's year round population were estimated to be:

- Approximately 8,100 residents living in households in the private housing market
- Approximately 800 residents living in military family and officers housing
- Approximately 460 residents living in group quarters primarily military housing at the Shipyard

This suggests that while the "Official" population figures for the Town have reported large changes over the past 40 to 50 years, in reality the year round population living in the private housing market has hovered around 8,000 residents for most of this time with minor fluctuations up and down reflecting, to some extent, the economy of the Shipyard.

In comparison, the neighboring Maine towns of York, Eliot, and South Berwick, as well as York County as a whole, experienced significant growth in their year round population over the most recent twenty year period. All three communities saw their population grow by over 50% (see **Table 2**) while the county population grew by almost 50% between 1970 and 1990.

TABLE 2
COMPARATIVE POPULATION CHANGE 1970 - 1990

	Kittery (H/H POP)	York	Eliot	S. Berwick	York County
1970 Pop.	9,110	5,690	3,497	3,488	111,576
% Δ 70-80	-6.9	+48.7	+41.5	+16.0	+25.2
1980 Pop	8,482	8,465	4,948	4,046	139,666
% Δ 80-90	+5.1	+16.0	+7.7	+45.3	+17.8

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1990 Pop	8,912	9,818	5,329	5,877	164,587
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Source: U.S. Census Reports; 1970, 1980, 1990

d. Population Change Since 1990

Since 1990, Kittery has experienced only a limited amount of residential development. The Southern Maine Regional Planning Commission developed a 1997 population estimate for the Town which placed the total population at 9,620 or an increase of about 150 residents since 1990. The Department of Human Services estimates that Kittery's population is growing slightly and had a 1996 population of 9,409.

Since the population in the military housing at the Shipyard varies with the Yard's workload, it is most useful to think in terms of the community's household population since these are the residents that utilize the Town's services, patronize local businesses, and support the community. In 1990, the household population of Kittery stood at 8,912 residents. Since 1990, the Town has experienced the construction of approximately 150 new housing units while it appears that the vacancy rate has decreased slightly. Therefore, it appears that the household population of Kittery as of 1997 is approximately 9,000 year round residents. This figure will be used as the basis for this plan.

e. Future Population Growth

Population growth is driven by a variety of factors including the regional economy and number of jobs, the community's attractiveness as a residential community, the availability and cost of housing, and the natural increase of the population.

Over the past decade and a half, Kittery has experienced slow but steady growth in its year round household population. Based upon historical trends, the year round household population of Kittery is projected to grow to approximately 9,750 by 2005 and 10,250 by 2010. These projections are somewhat higher than those developed by the Southern Maine Regional Planning Commission. If residential development continues at the rate experienced in 1998 and 1999, population growth could be significantly higher.

The program begun in 1999 to lease unused facilities at the Portsmouth Naval Shipyard to private employers may alter future population growth in the community if significant employment results. Phase One of the leasing program is anticipated to involve approximately 1,500 jobs. If this program is expanded in the future, it may result in higher levels of growth than forecasted above.

2. COMPONENTS OF HOUSEHOLD POPULATION CHANGE

Changes in household population are driven by two factors, natural change and net migration. Natural change is the difference between the number of births to Kittery residents

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and the number of deaths of Kittery residents. Net migration is the sum of people moving into Kittery and out of Kittery.

Table 3 shows the natural change and net migration in Kittery over the past two decades. This shows that Kittery experienced a significant natural increase but that many households migrate from Kittery resulting in a net out-migration. The 1996 DHS population estimate shows a similar pattern of a sizeable natural increase offset by net out-migration in the 1990-96 period.

TABLE 3
COMPONENTS OF POPULATION CHANGE 1970 - 1990

	Population
1970 Household Population	9,110
Births 1970-79	1,752
Deaths 1970-79	737
Natural Increase 70-79	+1,015
Net Migration 1970-79	-1,643
1980 Household Populations	8,482
Births 1980-89	1,550
Deaths 1980-89	804
Natural Increase 1980-89	+746
Net Migration 1980-89	-316
1990 Population	8,912

Source: Maine Department of Health and Human Services, U.S. Census, Planning Decisions, Inc.

This pattern is probably a function of the community's perceived role in the region and the movement of military personnel into and out of the community.

3. SEASONAL POPULATION

In spite of its coastal location and history as a summer resort a century ago, the Town of Kittery has only a small seasonal population. The 1990 Census reported that Kittery had less than a hundred seasonal homes. While it is likely that many older residents use their Kittery residences for only part of the year, seasonal use is not a major influence in the community.

4. SCHOOL POPULATION

Enrollment in the Kittery school system has been quite stable over the past 10 to 15 years (see Table 4). Total enrollment has declined from 1,292 students in October of 1985 to 1,180 students in October of 1997 then grew slightly in 1998. During this period, total enrollment has fluctuated between 1,200 and 1,300 with a slight downward trend since the early 1990's. Enrollment in the elementary, middle school, and high school grade groups has also shown a consistent pattern.

TABLE 4
OCTOBER 1 SCHOOL ENROLLMENTS 1985 - 1998

Date	Enrollment K-2	Enrollment 3-5	Enrollment 6-8	Enrollment 9-12	Total * Enrollment
1985	372	277	261	366	1292
1990	372	298	271	336	1277
1995	314	288	278	347	1227
1997	314	263	274	323	1180
1998	293	284	263	344	1184

*Note: Includes special education students not in traditional grades and students in the Transitional One Program (1990).

The School Department's enrollment projections done before the recent increase in residential development anticipated that total enrollment will continue to decrease somewhat over the next five to ten years dropping to around 1150 students early in the next century but this may change with the recent increase in housing starts. These projections were consistent with the historical growth trend and population projections since the number of births has been dropping. If residential development continues at the rate experienced over the past year, future enrollment may increase.

The Navy's program to lease unused space at the shipyard may have a long term impact on school enrollments. If employment increases significantly, some pressure on the school population could result. The impact assessment done by the shipyard in conjunction with Phase One of the leasing program found that the leasing program would have no impact on municipal or school services.

5. HOUSEHOLD CHANGE 1970-1990

Understanding how the number of households is changing is important for planning purposes since in terms of land use and municipal services, this is often the key unit. Table 5 shows how the number of year round households changed between 1970 and 1990.

In the 1970's, while total population was dropping significantly and the household population was dropping by almost 7%, Kittery experienced a 6% growth in the number of households. Similarly, in the 1980's, when total population change was almost flat and household population grew by 5%, the number of households increased by more than 10%. This is important since increased households typically mean more housing units and more demand for municipal services.

TABLE 5
HOUSEHOLD CHANGE 1970 - 1990

	Number of Households
1970 Census	3,083
Change 70-80	+173 (+5.6%)
1980 Census	3,256
Change 80-90	+351 (+10.8%)
1990 Census	3,607

Source: U.S. Census Reports; 1970, 1980, 1990

As with population, the rate of household growth in Kittery was significantly slower between 1970 and 1990 than in neighboring Maine towns or in York County (see Table 6). While York, Eliot, and South Berwick saw their number of households grow by almost double or more, Kittery experienced an increase of about 17%. During this period, the number of households residing in York County increased by almost 80%.

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TABLE 6
COMPARATIVE HOUSEHOLD CHANGE 1970 - 1990

	Kittery	York	Eliot	S. Berwick	York County
1970 Households	3,083	1,928	1,086	1,039	34,430
% Δ 70-80	+5.6	+63.5	+55.6	+32.8	+44.2
1980 Households	3,256	3,152	1,690	1,380	49,648
% Δ 80-90	+10.8	+20.2	+14.4	+52.5	+24.6
1990 Households	3,607	3,788	1,933	2,104	61,848

Source: U.S. Census Reports; 1970, 1980, 1990

This dichotomy between population and household change is the result of a decrease in the average household size. In 1970, the average Kittery household had 2.95 members. By 1980, this had dropped to 2.60 and, in 1990, it was down to 2.47. This is the result of basic changes in how we live; more elderly people living alone, fewer children per family, increased divorce rates, etc. This has dramatic impacts on the number of housing units needed to house a population of a given size, the amount of land used for residential purposes, and the perceptions of growth and change in the community. For example, housing 9,100 people in 1970 required 3,080 housing units. In 1990, this same population would require almost 600 more units of housing based upon the smaller household size.

6. DEMOGRAPHIC CHARACTERISTICS OF KITTERY'S POPULATION

Understanding not just the number of residents but also their characteristics and how they are changing is an important consideration as we plan for the future. This section looks at the key demographic characteristics of Kittery's population.

a. Household Composition

As noted above, the average Kittery household has been becoming smaller, from an average of 2.95 members in 1970 to just 2.47 members in 1990. This household size is smaller than for York County as a whole (2.63) and is significantly less than the neighboring towns of Eliot (2.76) and South Berwick (2.78), and less than York (2.57).

TABLE 7
COMPARATIVE HOUSEHOLD SIZE DISTRIBUTION - 1990

	1 Person	2 Persons	3 Persons	4 Persons	5 or More Persons	Average H/H
Kittery	24.4%	36.2%	17.5%	14.7%	7.1%	2.47
Eliot	18.1%	32.8%	18.7%	20.2%	10.2%	2.76
So. Berwick	17.2%	31.9%	20.3%	20.9%	9.9%	2.78
York	20.9%	36.9%	17.9%	15.7%	8.6%	2.57
York County	21.4%	33.7%	18.5%	17.2%	9.1%	2.63

Source: U.S. Census, 1990

This small household size is reflective of the composition of Kittery households. In 1990, 881 or 24.4% of Kittery households consisted of only one person, while another 36.2% had two people. In comparison, only 22% of Kittery households had four or more members (see Table 7).

b. Age Distribution

Kittery's population as of 1990 reflected a middle aged population with one exception, the young adult population. Kittery has a lower percentage of children than does York County or neighboring Maine towns, but a higher percentage of young adults aged 18 to 24 years. This reflects the presence of Navy personnel at the shipyard.

TABLE 8
AGE DISTRIBUTION KITTERY & YORK COUNTY RESIDENTS 1990

Age	Kittery		York County	
	#	%	#	%
< 18 Years	2,132	22.7	42,975	26.1
18 to 24 Years	1,054	11.3	14,936	8.8
25 to 44 Years	3,287	35.1	56,017	34.0
45 to 64 Years	1,672	17.8	30,391	18.5
65 Years & Older	1,227	13.1	20,808	12.6
Median Age	33.2 Years		33.7 Years	

Source: U.S. Census, 1990

Over one third of Kittery population's in 1990 was between 25 and 44 years old with almost 18% between 45 and 64 years of age. This is typical of York County as a whole. Just over one in eight Kittery residents in 1990 was over 65 years of age, a slightly higher percentage than York County as a whole and somewhat higher than the towns of Eliot and South Berwick but somewhat lower than the elderly share of York's population.

c. Occupational Characteristics

Kittery's residents are quite diverse from an occupational perspective. Approximately equal shares are employed in professional/executive occupations, technical, sales, and administrative occupations, and blue collar occupations (see Table 9). A small

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group is employed in service occupations. In spite of its tradition as a coastal, fishing community only 3% of employed residents work in natural resource occupations.

Compared to York County, Kittery's residents are somewhat more professional and less blue collar. This is an interesting contrast to Kittery's image as a blue collar, ship building community.

TABLE 9
OCCUPATIONAL CHARACTERISTICS KITTERY & YORK COUNTY 1990

Occupation	Kittery		York County	
	#	%	#	%
Professional	1,141	26.7	19,301	23.9
Tech, Sales, Admin.	1,222	28.6	22,850	28.3
Service	568	13.3	10,598	13.1
Farm, Forestry, Fishing	143	3.4	1,374	1.7
Production, Operators, Laborers	1,195	28.0	26,644	33.0
Total Employed Residents	4,269		80,767	

Source: U.S. Census, 1990

d. Household Income

Kittery is a solidly middle class community. Its median household income in 1989 (as reported in the 1990 Census) was \$33,793. This compared to a 1989 median of \$27,854 for the State of Maine, \$32,432 for York County, and \$35,009 for the Portsmouth-Dover-Rochester MSA. The neighboring Maine towns of Eliot (\$38,280), South Berwick (\$37,770), and York (\$39,088) all had somewhat higher household income levels.

Claritas, Inc., a national demographic research company, estimates that Kittery's median household income grew to \$36,795 in 1998 or an increase of approximately 9% during this period.

In 1989, approximately 16% of Kittery households had incomes of less than 15,000 while 18% had incomes between >15,000 and \$25,000 (see **Table 10**). Over 40% of

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households had incomes between 25,000 and 50,000 while one household in four had an income over \$50,000.

TABLE 10
HOUSEHOLD INCOME KITTERY & YORK COUNTY 1989

Range	Kittery		York County	
	#	%	#	%
< \$15,000	574	15.7	11,385	18.4
\$15,000 to 24,999	662	18.2	10,977	17.7
\$25,000 to 34,999	658	18.1	11,194	18.1
\$35,000 to 49,999	812	22.3	14,422	23.3
\$50,000 to 74,999	686	18.8	10,049	16.2
More Than \$75,000	254	7.0	3,923	6.3
Median	\$33,793		\$32,432	

Source: U.S. Census, 1990

7. ISSUES AND IMPLICATIONS

The inventory of Kittery's population and demographic characteristics suggest the following implications for the long ranging planning of the community.

1. The household population of Kittery has remained relatively stable over the last twenty-five years and is growing slowly, while the surrounding region has been growing at a faster rate. As a result of the recent increase in residential development, the Town should consider what its policy is with respect to population growth and whether the recent level of residential development will become a long term trend.

2. Kittery's population is quite diverse both economically and demographically. The Town should consider if it should work to maintain this diversity in the future.

3. Kittery has a higher percentage of lower income households than do neighboring communities. The Town should consider how it can assure that Kittery retains a mix of income groups.

4. The Kittery School Department currently has a limited capacity to accommodate enrollment growth especially at the Mitchell School serving grades K-2 which is currently over capacity. If the rate of residential growth increases, expansion of the Town's school facilities may be necessary placing an undue burden on the tax base. The Town should consider how growth can be managed to match school capacity.

5. The leasing of facilities at the Portsmouth Naval Shipyard for private use may change the historical patterns of growth. Therefore the Town should consider monitoring the impact of this program on the community.

8. GOALS AND POLICIES

State Goal: To encourage orderly growth and development in appropriate areas of each community....(Growth Management Act)

Local Goal: To manage population and household growth in a manner consistent with the Town's ability to absorb it

Pursuant to this goal, the policies of the Comprehensive Plan are as follows:

1. The Town will direct growth to suitable areas of the community. "Suitable" means areas relatively free of natural resource constraints, with the public facilities to accommodate growth, and able to absorb growth without undue harm to the community.

2. The Town will continue to accommodate a diversity of households.

3. The Town will work with regional organizations and other York County communities to assure an equitable distribution of affordable and rental housing is available throughout the region, not just in Kittery.

4. The Town will review the cumulative affect of development on schools, roads, sewers, and other municipal facilities and services and explore assessing developers for the impact of development on municipal facilities in addition to the existing sewer impact fee.

5. The Town will develop an approach for metering all residential growth at a rate similar to historic rates to assure that residential growth occurs at a gradual rate that can be absorbed without a negative impact on community facilities. This system should not include elderly housing and elder care facilities.

SECTION B. THE LOCAL ECONOMY

1. INTRODUCTION

Kittery's economy, like that of most Maine communities, has gone through a series of changes. During the 18th Century, the economy of Kittery, like much of seacoast Maine, was tied to fishing, shipbuilding, lumbering, and farming. The establishment of a government shipyard on Fernald's Island in 1800 changed the community forever. The Portsmouth Naval Shipyard emerged as the backbone of the local economy.

Beginning in the late 1800's, Kittery enjoyed a 40-50 year period as a tourist center. With the construction of summer hotels on the islands and at Kittery Point, the community became a destination for summer visitors from the city. Widespread ownership of personal automobiles put an end to that era.

During the 20th Century, Kittery's shipyard remained active as it converted to building submarines for the World Wars. An automobile bridge was built across the Piscataqua River linking Kittery to Portsmouth, allowing Route One to emerge as the new gateway into Maine. Facilities to serve the traveling public and tourists developed as a result. The remnants of this tourism period remain along Route One and, to some extent, are enjoying a new life.

In the 1980's, Kittery experienced the construction of a large number of factory outlet retail stores along the Route One corridor. This created a new economic role for the community as Kittery developed as one of the major outlet shopping centers in the country.

2. THE KITTERY LABOR FORCE

Since 1980, Kittery has experienced a reduction in the size of its civilian labor force, which is the number of residents of Kittery who are employed or actively seeking work. In 1980, Kittery's civilian labor force was approximately 4,800. By 1985, the labor force had grown to a peak of approximately 5,200, then fell to 5,000 by 1990. During the 1990's, the civilian labor force has continued the decline to about 4,500 in 1998 (see **Table 11**).

Within the Kittery-York Labor Market Area (LMA), Kittery residents accounted for 33% of the civilian labor force in 1980. The Kittery share decreased to 23% by 1998, a 31% decrease over the eighteen-year period. As a percentage of the York County labor force, Kittery residents declined from 8.3% in 1980, to only about 5% in 1998, or a 42% decrease since 1980.

TABLE 11
Civilian Labor Force
Town of Kittery
1980-1998

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Year	Civilian Labor Force	Employed	Unemployed	% of Kittery - York LMA ¹ Labor Force	% of York County Labor Force
1980	4,784	4,656	128	33.1%	8.3%
1985	5,228	5,171	57	26.6%	6.6%
1990	5,028	4,912	116	22.6%	5.6%
1995	4,608	4,519	89	23.4%	5.1%
1996	4,846	4,769	77	23.4%	5.0%
1997	4,479	4,399	80	22.8%	4.8%
1998*	4,464	4,421	43	22.8%	4.8%
% Change 1980-1998	-6.7%	-5.0%		-31.1%	-42.2%

Source: 1980,1985, 1990, 1995-1998 Civilian Labor Force Estimates, Maine Department of Labor, Market Information Services

Notes: *Preliminary Data

1 *Kittery-York LMA* includes: Berwick, Eliot, Kittery, South Berwick, York

3. EMPLOYMENT BY INDUSTRY GROUP

Over the past 18 years, the residents of Kittery have experienced many changes in their patterns of employment. Between 1980 and 1990, Kittery residents experienced a major drop in employment in the manufacturing sector, reflecting the community's and the region's loss of traditional manufacturing jobs (see Table 12). The number of residents in manufacturing jobs decreased by 292 in ten years (1,258 to 966), a roughly 23% decrease. In spite of this drop, manufacturing remains the largest industry group employing Kittery residents, with about 23% of the total employment.

The number of residents employed in personal, entertainment, and recreational services decreased from 163 in 1980 to 119 in 1990, a 27% decrease over the ten years (see Table 12).

During this same period, employment of Kittery residents in all other industry groups saw increases. The most significant increase in the number of residents employed in an industry group was in professional services. In 1980, there were 564 residents, or about 15% of all residents, employed in professional services. This increased by 58% to 892 in 1990.

There was also a significant percentage increase in the agriculture, forestry, and fisheries industry group although the absolute numbers are quite small. In 1980, there were 56 Kittery residents employed in this industry group, and by 1990 there were 124, a 121% increase.

Significant increases can also be seen in the number of Kittery residents employed in public administration, business services, repair services, and finance, insurance, and real estate.

TABLE 12

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**Resident Employment by Industry Group 1980-1990
Town of Kittery**

Industry Group	1980		1990		Change 1980 to 1990	
	#	%	#	%	80-90	%
Agriculture, Forestry, Fisheries	56	1.5%	124	2.9%	+68	+121.4%
Mining	—	—	—	—	—	—
Construction	239	6.5%	316	7.4%	+77	+32.2%
Manufacturing	1,258	34.2%	966	22.6%	-292	-23.2%
Transportation	103	2.8%	128	3.0%	+25	+24.3%
Communications & Utilities	81	2.2%	89	2.1%	+8	+9.9%
Wholesale Trade	111	3.0%	132	3.1%	+21	+18.9%
Retail Trade	731	19.9%	820	19.2%	+89	+12.2%
Finance, Insurance, and Real Estate	146	4.0%	244	5.7%	+98	+67.1%
Business & Repair Services	115	3.1%	206	4.8%	+91	+79.1%
Personal, Entertainment, Recreational Services	163	4.4%	119	2.8%	-44	-27.0%
Professional Services	564	15.3%	892	20.9%	+328	+58.2%
Public Administration	115	3.1%	233	5.5%	+118	+102.6%
TOTAL	3,682	100.0%	4,269	100.0%	+587	+15.9%

Source: 1980,1990 Census, Volume II - Profiles Selected Social, Economic & Housing Characteristics from Summary Tape File 3, York County, Maine. Table 2, Industry.

The percentage of Kittery residents employed in the different sectors of the economy follows a pattern similar to all residents in the Kittery-York Labor Market Area and in York County as a whole (see **Table 13**).

**TABLE 13
Resident Employment by Industry Group, 1990
Kittery, Kittery-York LMA, and York County**

Industry Group	Kittery		Kittery - York LMA		York County	
	#	%	#	%	#	%

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Agriculture, Forestry, Fisheries	124	2.9%	405	2.3%	1,476	1.8%
Mining	—	—	24	0.1%	103	0.1%
Construction	316	7.4%	1,460	8.2%	6,186	7.7%
Manufacturing	966	22.6%	4,434	24.8%	20,964	26.0%
Transportation	128	3.0%	525	2.9%	2,653	3.3%
Communications & Utilities	89	2.1%	373	2.1%	1,637	2.0%
Wholesale Trade	132	3.1%	485	2.7%	2,480	3.1%
Retail Trade	820	19.2%	3,213	18.0%	14,397	17.8%
Finance, Insurance, and Real Estate	244	5.7%	1,174	6.6%	4,989	6.2%
Business & Repair Services	206	4.8%	682	3.8%	2,573	3.2%
Personal, Entertainment, Recreation Services	119	2.8%	690	3.9%	3,535	4.4%
Professional Services	892	20.9%	3,456	19.4%	16,775	20.8%
Public Administration	233	5.5%	927	5.2%	2,999	3.7%
TOTAL	4,269	100.0%	17,848	100.0%	80,767	100.0%

Source: 1990 Census, Volume II - Profiles Selected Social, Economic & Housing Characteristics from Summary Tape File 3, York County, Maine. Table 2, Industry.

Note: **Kittery-York LMA** includes: Berwick, Eliot, Kittery, South Berwick, York

Table 14 compares Kittery's resident employment by occupation to the Kittery-York Labor Market Area and to York County. Compared with the Kittery-York LMA, Kittery has an occupational distribution less oriented toward operators, fabricators and laborers. The Town is, however, more oriented toward farming, forestry, fishing, precision production, crafts, repairs, and service occupations than the LMA as a whole.

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When comparing Kittery with York County, we see that Kittery is slightly less oriented toward operators, fabricators, laborers occupations, as was true in the Kittery-York LMA. Kittery's percentage of residents employed in managerial, professional, precision production, crafts and repair occupations is higher than that of York County as a whole.

TABLE 14
Resident Employment by Occupation, 1990
Kittery, Kittery-York LMA, and York County

Occupation	Kittery		Kittery - York LMA		York County	
	#	%	#	%	#	%
Managerial and Professional	1,141	26.7%	4,871	27.3%	19,301	23.9%
Technical, Sales, and Administrative	1,222	28.6%	5,138	28.8%	22,850	28.3%
Service	568	13.3%	2,274	12.7%	10,598	13.1%
Farming, Forestry, and Fishing	143	3.4%	395	2.2%	1,374	1.7%
Precision Production, Crafts, and Repairs	752	17.6%	2,788	15.6%	12,342	15.3%
Operators, Fabricators & Laborers	443	10.4%	2,382	13.3%	14,302	17.7%
TOTAL	4,269	100.0%	17,848	100.0%	80,767	100.0%

Source: 1990 Census, Volume II - Profiles Selected Social, Economic & Housing Characteristics from Summary Tape File 3, York County, Maine. Table 2, Occupation.

Note: **Kittery-York LMA** includes: Berwick, Eliot, Kittery, South Berwick, York

4. COMMUTER PATTERNS

In 1990, the Census reported that over ½ of employed Kittery residents worked in the Town of Kittery (see **Table 15**). Most of the balance worked in New Hampshire, primarily in the Greater Portsmouth area.

Comparing commuter patterns in 1990 with 1980 is difficult since there was a high level of unreported places of work in 1980. From the information that is available, it does appear that not much changed about where Kittery residents worked between 1980 and 1990.

The 1990 Census also reported that 12,331 workers indicated that they were employed in the Town of Kittery. This includes military personnel working at the Shipyard. Approximately 21% of these workers reported living in Kittery. The actual percentage of Kittery residents is probably somewhat higher since some military personnel probably reported their home as elsewhere even though they were living at the Shipyard. Of the balance, almost one in five reported living in the other towns that make up the Kittery LMA while 18% reported living in other York County communities. Three of every eight people (37.5%) who worked in Kittery in 1990 reported that they lived in New Hampshire primarily in the immediate Portsmouth-Dover-Rochester area. With employment reductions at the shipyard since 1990, the number of people working in Kittery has decreased, but the commuting pattern has probably remained about the same.

Table 15

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**Commuting Patterns
Employed Kittery Residents
1980-1990**

Place of Work	1980*		1990	
	#	%	#	%
Kittery	1703	38.2	2557	52.4
Balance of Kittery LMA	122	2.7	225	4.6
Other York County	—	—	92	1.9
New Hampshire	1530	34.3	1659	34.0

* Note: 887 employed Kittery residents or 20% of the employed population did not report their place of work.

Source: U.S. Census; 1980, 1990

5. KITTERY'S ECONOMIC BASE

Shipbuilding has long been the foundation of the Kittery economy. In spite of recent cutbacks, the Portsmouth Naval Shipyard continues to be the largest employer in the Town. During the late 1980's and into the 1990's, the Shipyard suffered employment losses tied chiefly to defense industry downsizing.

Most of the largest employers in Kittery other than the Shipyard are in the retail and service sectors. Table 16 shows the largest Kittery employers as of May 1999 based upon information collected directly from businesses. In some cases, recognizing that some of these positions are part time is important and that employment varies seasonally. In addition, the Kittery retail outlets as a group are a significant source of employment. According to the Kittery Outlet Association, the outlets currently employ approximately 800 people.

The recent effort by the Navy to lease unused portions of the Shipyard to private businesses is likely to change the employment picture. This effort will provide new employment without any change in the physical environment. The initial phase of the leasing program could result in as many as 1,500 new jobs in Kittery. The long term implications may be greater.

TABLE 16
Major Employers in Kittery - 1999
(As of May 1999)

<i>Company</i>	<i>Industry</i>	<i># of Employees</i>
<i>Portsmouth Naval Shipyard</i>	<i>Government Defense</i>	<i>4000 including contractors and tenants</i>
<i>Kittery Trading Post</i>	<i>Retail</i>	<i>240 winter / 300 summer</i>
<i>Kittery School Department</i>	<i>Education</i>	<i>200</i>

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<i>Watts Fluid Air</i>	<i>Manufacturing</i>	<i>190</i>
<i>Weathervane</i>	<i>Restaurant</i>	<i>135 winter / 210 summer</i>
<i>Greenpages, Inc.</i>	<i>Retail/Wholesale</i>	<i>110</i>
<i>Town of Kittery</i>	<i>Government</i>	<i>82</i>
<i>Warren's Lobster House</i>	<i>Restaurant</i>	<i>80 winter / 120 summer</i>
<i>Homestead, Inc.</i>	<i>Health Care</i>	<i>60</i>
<i>Ships Quarterdeck Restaurant</i>	<i>Restaurant</i>	<i>56 winter / 85 summer</i>
<i>BOC Gases</i>	<i>Industrial</i>	<i>34</i>
<i>Captain Simeon's Galley</i>	<i>Restaurant</i>	<i>25 winter / 38 summer</i>
<i>Bob's Clam Hut</i>	<i>Restaurant</i>	<i>20 winter / 50-60 summer</i>

Source: Kittery Naval Shipyard Information from the Shipyard, all others were individually called.

6. THE RETAIL SECTOR

The development of Kittery as an outlet shopping center in the 1980's dramatically changed the Town's economic role as a retail center. While most local businesses cater to the day-to-day needs of the residents of the community and are relatively small, the outlet and tourist related sectors are major economic factors in both the regional and state economy. Kittery has experienced significant growth in taxable retail sales since 1983 (see **Table 17**). Total taxable sales increased from \$40,047,000 to \$220,484,000 in fifteen years, a 451% increase. Interestingly, taxable sales continued to grow throughout the 1990's even with the economic downturn and limited retail expansion.

TABLE 17
Growth in Taxable Retail Sales 1983-1998
Town of Kittery, Maine
(in thousands of dollars)

<i>Year</i>	<i>Total Taxable Sales</i>	<i>Total Consumer Sales</i>	<i>General Merchandise</i>	<i>Other Retail</i>	<i>Restaurants</i>
<i>1983</i>	<i>\$40,047</i>	<i>\$39,516</i>	<i>\$4,685</i>	<i>\$16,773</i>	<i>—</i>
<i>1987</i>	<i>\$105,784</i>	<i>\$103,574</i>	<i>\$46,921</i>	<i>\$28,573</i>	<i>\$18,285</i>
<i>1990</i>	<i>\$141,960</i>	<i>\$138,631</i>	<i>\$71,366</i>	<i>\$17,397</i>	<i>\$21,619</i>
<i>1993</i>	<i>\$179,640</i>	<i>\$178,642</i>	<i>\$101,127</i>	<i>\$21,783</i>	<i>\$22,982</i>
<i>1996</i>	<i>\$196,340</i>	<i>\$192,279</i>	<i>\$104,493</i>	<i>\$42,765</i>	<i>\$24,638</i>

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1997	\$206,969	\$202,735	\$110,833	\$54,291	\$25,263
1998	\$220,484	\$217,194	\$124,377	\$55,371	\$25,485
% Change	+450.6%	+449.6%	+2,554.8%	+230.1%	+39.4%

Source: Maine State Planning Office, Maine Revenue Services, Report # F2R2171

TABLE 18
Taxable Total Consumer Sales 1990-1998
(in thousands of dollars)

Year	Kittery	Kittery ESA	Kittery % of ESA Sales
1990	\$138,631	\$310,802	44.6%
1991	\$155,947	\$340,778	45.8%
1992	\$173,059	\$362,581	47.7%
1993	\$178,642	\$372,822	47.9%
1994	\$183,438	\$385,029	47.6%
1995	\$182,427	\$401,032	45.5%
1996	\$192,279	\$422,699	45.5%
1997	\$202,735	\$442,546	45.8%
1998	\$217,194	\$471,835	46.0%

Kittery Economic Summary District includes the following: Cape Neddick, Eliot, Highpine, Kittery, Moody, Ogunquit, South Berwick, Webhannet, Wells, York

Source: Maine State Planning Office, Maine Revenue Services, Report # F2R2171, Maine Taxable Retail Sales Annual Review 1998, 1993, Report TS625

Within the Kittery Economic Summary Area (ESA), Kittery businesses account for almost half of the ESA's total taxable consumer sales (**see Table 18**). Kittery's share of total consumer sales in the ESA has varied only moderately since 1990.

Table 19 shows taxable sales for the general merchandise and other retail categories, the categories represented by most of the outlet stores. Kittery businesses in these two categories have continued to experience strong sales growth throughout the 1990's with Kittery taxable sales more than doubling in this period.

Kittery's percentage of the region's taxable sales in these categories grew from 72% in 1990 to 78% 1992, and has remained around 80% since then.

TABLE 19

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General Merchandise/Other Retail

Taxable Sales 1990-1998

(in thousand of dollars)

<i>Year</i>	<i>Kittery</i>	<i>Kittery ESA</i>	<i>Kittery % of ESA Sales</i>
1990	\$88,764	\$123,543	71.8%
1991	\$103,920	\$139,123	74.7%
1992	\$120,430	\$154,128	78.1%
1993	\$122,910	\$155,184	79.2%
1994	\$124,793	\$157,931	79.0%
1995	\$122,373	\$156,805	78.0%
1996	\$147,258	\$184,122	80.0%
1997	\$165,124	\$205,860	80.2%
1998	\$179,748	\$225,165	79.8%
<i>% Change 1990-1998</i>	<i>+102.5%</i>	<i>+82.3%</i>	

Kittery Economic Summary District includes the following towns: Cape Neddick, Eliot, Highpine, Kittery, Moody, Ogunquit, South Berwick, Webhannet, Wells, York

Source: Maine State Planning Office, Maine Revenue Services, Report # F2R2171, Maine Taxable Retail Sales Annual Review 1998, 1993, Report TS625

7. MARINE INDUSTRIES

In addition to the Shipyard, there are a number of people employed in other marine related activities. Approximately 90 commercial fishing boats moor at the Government Street Wharf and in Pepperrell Cove. Most of these are seasonal lobster fishermen but a few are year-round commercial operations. In addition, Badger's Island Marina and Dion's Yacht Yard provide both employment and services for the marine industry.

8. ISSUES AND IMPLICATIONS

The analysis of the inventory of the local economy suggests that the following issues need to be addressed in the Comprehensive Plan:

1. Defense cutbacks have led to sharply reduced employment at the Portsmouth Naval Shipyard, the major employer in the Town. Leasing of unused Shipyard facilities to private businesses will probably result in some increase in employment but replacing all of

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the lost jobs even in the long run is unlikely. The Town should consider if it needs to try to encourage the creation of more employment opportunities in Kittery.

2. While the loss in Shipyard jobs has had negative consequences for the local and regional economy, it has reduced traffic in the Foreside area, reduced parking conflicts, and minimized the overall impact of this facility on the Foreside. As facilities at the Shipyard are leased to private businesses, some of these issues may reemerge if employment levels grow. The Town should consider what role it should play in the reuse of the Shipyard and whether any actions are needed to minimize the impacts of reuse on the Foreside area and community in general.

3. Historically, the Town's economy was dependent almost entirely on a single employer, the Portsmouth Naval Shipyard. With the development of the factory outlets, a new dimension was added to the community's economic base. However, Kittery remains reliant on two industry sectors both of which are largely outside local control. Reuse of the Shipyard facilities may lead to some diversification of the Town's economy. The Town should consider if trying to encourage further diversification of the economic base is desirable and, if so, what needs to be done.

4. There are very limited areas in the Town with good access and public water and sewerage to accommodate new employers other than the Mixed Use District on Route One. If the Town wants to encourage business expansion and/or diversification, it should consider if actions are needed to make more areas available to accommodate these uses.

5. The Kittery outlet center is very successful and has a strong reputation within the industry. In the past, there have been private efforts to expand this role and it is likely that private development interests will continue to view Kittery as a good location for expansion of outlet retailing. The current Mixed Use District allows for retail growth under a controlled environment but the town desires to prohibit the growth of outlet malls.

6. Kittery has a mix of local retail and service businesses that meet the convenience needs of local residents but it lacks other aspects of retailing such as a supermarket or non-outlet shopping opportunities. As a result, many residents travel out-of-town for much of their basic shopping. The Town should consider if expanded shopping opportunities for local residents should be encouraged in Kittery and, if so, what role the Town could play in this effort.

7. It is possible that another round of military base closings may occur at some time in the future. The Town should consider what role it should play in future efforts to keep the Shipyard open.

8. Several southern Maine communities are considering the possibility of a regional industrial park as a way to provide appropriate sites for new economic activity. The Town should consider what role it should play in this regional effort.

9. The Town's marine industry is dependent on an infrastructure of facilities. This infrastructure is vulnerable to displacement or a lack of economic viability. The Town should consider what role the Town should play in trying to maintain the marine infrastructure needed for a viable marine industry.

10. Kittery businesses collect a significant amount of sales taxes that flow to the State of Maine. None of this revenue is retained in the community to offset the impact of these businesses on the community. The Town should explore whether it should initiate or support efforts to allow municipalities to retain a small share of sales tax revenues or institute an optional local sales tax.

11. Tax Increment Financing (TIF) is the only significant source of financing currently available to support economic

development activities. The “sheltering” feature of TIF’s can allow funds that would otherwise be lost to the Town to be retained in Kittery. The Town should consider if TIF’s can be used to promote sound economic development that is consistent with the Town’s policies.

9. GOALS AND POLICIES

State Goal: To promote an economic climate that increases job opportunities and overall economic well-being. (Growth Management Act)

Local Goals: To expand the number and range of high quality jobs that are available in Kittery.

To reduce the reliance of the community on two industry sectors as the Town’s primary economic base.

To maintain the traditional marine industries as viable economic activities.

To expand the range of goods and services that Kittery residents can obtain within the community.

To assure that all economic growth is fiscally and environmentally sound and is in keeping with the character of the community.

To strive for a balance between residential and nonresidential development.

Pursuant to these goals, the Town of Kittery’s policies with respect to the local economy are:

1. The Town should create an ongoing municipal economic development program to work to create sound economic growth that is consistent with the policies of this plan. This program should actively work to bring about improvements and diversification in the local and regional economies.

2. The Town should review and revise its development regulations for nonresidential development to assure that all new development is of a high quality, environmentally sound, and of a character that is appropriate for Kittery. The development standards of the Mixed Use District should serve as a model for this review.

3. The Town should designate areas to accommodate limited economic growth that are environmentally appropriate, have good access, and are capable of being served by public water and sewerage. The Future Land Use Plan identifies these areas.

4. The Town should continue to work with Shipyard interests and other community groups to make the case for keeping the Shipyard open as a military facility.

5. The Town should continue to work with the Shipyard to plan for the leasing of Shipyard facilities to private firms to minimize the impacts of growing private employment on the community in general and the Foreside in particular. The Portsmouth Naval Shipyard has had an enormous impact on the Town regarding traffic, parking, school enrollment, and environmental contamination. The Naval Shipyard is proceeding with the leasing of Shipyard facilities to private firms. This activity is not subject to the Town’s regulations

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and review processes. It also is not subject to property taxes. To assure that this reuse of the Shipyard does not have undesirable consequences for the community, it is important that there be open communication between the Shipyard and Town officials. The Town should support the reuse of Shipyard buildings but take the position that private activities at the Shipyard should be subject to review by the Town with respect to the Town's ordinances. A focus of this effort should be traffic and parking issues and on developing a system for the payment fees or assessments to the Town to offset the non-taxable status of the real estate.

6. The Town should continue the policy of requiring mixed use development in the portion of the Route One Corridor north of the Haley Road.

7. The Town should work cooperatively with other York County communities to explore regional approaches to economic development and the creation of appropriate sites for nonresidential development.

8. The Town should actively work to assure that the infrastructure needed to retain a viable marine industry remains in place. As part of the Town's land use regulations, preference should be given to marine and water dependent uses in those areas that are currently used by marine related activities or in other areas that are particularly suited for marine use.

9. The Town should consider working with the local legislative delegation and business organizations to explore the possibility of state legislation that would allow municipalities to retain a share of the State sales tax collected by businesses in the community or to impose a local option sales tax to be retained by the municipality as a way of equalizing costs and benefits to the community and offsetting losses in state aid resulting from increased property valuations.

10. The Town Council should explore adopting a policy for the use of Tax Increment Financing to support infrastructure improvements needed for sound economic development activities.

11. The Town should recognize that development may place unreasonable burdens on Town services and the Town's ability to finance these services, therefore remedial actions may be necessary from time to time to limit development and to balance current resources with future demands.

SECTION C. NATURAL RESOURCES

One of the goals of Maine's Growth Management Program is to "protect the State's critical natural resources, including without limitation, wetlands, wildlife and fisheries habitat, sand dunes, shoreland, scenic vistas, and unique natural areas." A comprehensive understanding of Kittery's physical environment, the interplay between the contributing elements, and the constraints and opportunities for development each presents is essential for making wise and informed land use decisions. Only with a broad understanding of Kittery's natural resources and the issues associated with them can the community make decisions about when technology should be employed, when natural constraints should be respected, and when preservation of natural systems best serve the needs of the community. In some cases, constraints can be overcome by careful design or the use of technology. For example, development in areas that lack suitable soils for septic systems might be overcome by installing public sewers.

This section describes the physical landscape of the upland areas of Kittery, as well as the location and size of the upland area's significant wildlife habitat, fisheries, unique natural areas and plant communities, and the habitat of any identified rare or endangered species. After Kittery's natural resources have been identified and described, this chapter enumerates identified threats to those resources,

considers existing measures designed to protect and/or preserve those resources, and predicts whether the existence or physical integrity of those natural resources are threatened by development and growth.

1. GEOLOGY

The land Kittery sits upon is part of the Seaboard Lowland section of the New England Physiographic Province. It is part of the Atlantic coastal plain, a topography that is broad and clearly defined in states to the south, but which narrows significantly in New England, ending near Portland. Typically the land is nearly flat from the coast to several miles inland. Drainage is poorly developed.

The history of the bedrock beneath Kittery is long and complex, containing rock dating back 375 to 450 million years ago. But the forces that acted to shape the landscape of Kittery as it is known today occurred much more recently. Continental ice sheets may have scoured the area as many as four times. The most recent glacier, part of the Wisconsin Continental Ice Sheet, covered the land with a layer of ice thousands of feet thick. The land was depressed into the earth's mantle. The sea level was 300 to 350 feet lower than it is today because of the enormous quantity of moisture stored in the ice. As the glacier advanced, it ground up and moved the rocks beneath it. Approximately 11,800 years ago, the ice sheet began to retreat. Torrents of meltwater poured from the glacier, carrying and redepositing sediment. Sea levels rose. Previously exposed land was inundated. The coast line of what is now Kittery was redefined.

Nearly all of Kittery southeast of the Turnpike is comprised of bedrock controlled landscapes with the depressional areas occupied by poorly and very poorly drained hydric soils formed in marine silts and clays. The area northwest of the Turnpike also has large areas of marine silts and clays, but there is a predominance of deep, upland glacial till with pockets of deep sands and gravel representing areas of glacial outwash. There are three distinct and one truncated drumlin landforms in northwest Kittery that represent, for the most part, the only areas of Kittery that are not wet or shallow to bedrock.

a. Soil Associations

There are five general soil associations in Kittery. The approximate boundaries of each are shown in **Figure 4-2**. The general characteristics of each association are described below. It should be noted that the soil associations for Kittery describe very broad geographic regions that have similar soil-landscape relationships and should only be used to gain a general idea of the nature of soils and landscapes within the Town. The smallest delineation is typically several hundred acres in size and has only minimal applicability for making land use decisions at the town wide level.

1. Lyman–Rock Outcrop–Sebago Association

This soil association encompasses all of Kittery's coastline eastward of Barter's Creek. The approximate boundary between this association and the association that lies to the west (Lyman–Rock Outcrop–Scantic association) is along an eastward arcing line drawn between the head of Barter's Creek to the head of Brave Boat Harbor.

Lyman soils are shallow, gently sloping to very steep, and somewhat excessively drained. Rock outcrop consist of areas of bedrock exposures. The Sebago soils are deep, level, and very poorly drained. The Sebago soils are surrounded by Lyman soils and Rock outcrop. The Lyman soils have a surface layer of fine sandy loam underlain at a shallow depth by bedrock. Permeability of Lyman soils is moderately rapid. The Sebago soils consist of organic material throughout and have moderately rapid permeability.

The bedrock exposures, moderately rapid permeability and shallow depth to bedrock of the Lyman soils, and the wetness and high water table in the Sebago soils limit the suitability of this soil association for on site water supply and waste disposal systems.

2. Lyman–Rock Outcrop–Scantic Association

This is the most prevalent soil association in Kittery. It begins westward of the Barter's Creek/Brave Boat Harbor line described in the section above. Eastward of Spruce Creek, it parallels and extends nearly to Route One. On the western side of Spruce Creek, this association extends a short distance westward of the Maine Turnpike. It encompasses all of Kittery Foreside and Seavey Island.

Lyman soil consists of glacial till deposited directly by the glacier as it receded. The Scantic soil was formed in marine and lacustrine sediments. The Lyman soils and rock outcrops are on ridges and hills, while the Scantic soils are on marine plains. Lyman soils are shallow, gently sloping to very steep, and somewhat excessively drained. Rock Outcrop consists of areas of bedrock exposures. The Scantic soils are deep, nearly level and poorly drained. The Lyman soils have a surface layer of fine sandy loam and are underlain at a shallow depth by bedrock. The Scantic soils have a surface layer of silt loam and are underlain by clayey material.

The shallow depth, moderately rapid permeability, and sometimes steep slopes of Lyman soils, bedrock exposures, and the poor drainage of Scantic soils limit their suitability for development with on site water supply and sewage disposal.

3. Marlow–Brayton–Peru Association

This soil association is found in two locations in Kittery. From just east of Route One, and abutting the Lyman–Rock Outcrop–Scantic association, this association encompasses the northwest quadrant of Kittery, extending southward to near Spruce Creek. A tongue of Scantic–Raynham–Buxton association borders both sides of Spruce Creek, extending into the Marlow–Brayton–Peru association. The Marlow–Brayton–Peru Association picks up again south of Spruce Creek, and runs along the Kittery/Eliot municipal border to an area a short distance north of Dennett Road.

The soils in this association are found on drumlins and glaciated uplands. The Marlow soils are well drained, the Brayton soils are somewhat poorly drained to poorly drained, and the Peru soils are moderately well drained. All three soils have a surface layer of fine sandy loam underlain by a moderately coarse textured, compact substratum of glacial origin. The soils have

moderate permeability in the surface layer and subsoil, and slow permeability in the substratum. A seasonal high water table and slow permeability in the substratum limit urban uses. On-site sewage disposal presents a groundwater pollution threat in Brayton and Peru soils. In the same soils, frost action presents a threat for foundations and roads.

4. Scantic-Raynham-Buxton Association

Three relatively small areas of Kittery have this soil association. They include: a narrow tongue that borders both sides of the freshwater section of Spruce Creek, a narrow band along the northwest section of the Kittery/York municipal border, and a small pocket in the vicinity of the intersection of Leach and Dennett Roads.

These soils were formed in marine and lacustrine sediments and are found primarily on marine and lake plains. The Scantic soils are poorly drained, nearly level and have a seasonable high water table. Surface runoff is slow. The Buxton soils are moderately well drained to somewhat poorly drained and are gently sloping to moderately steep and hilly. They are wet for short periods. The Scantic and Buxton soils have a surface layer of silt loam underlain by clayey material. Both soils have moderate to moderately slow permeability in the surface layer and slow to very slow permeability below the surface layer. The Raynham soils have a surface layer of silt loam underlain by silt loam and very fine sandy loam. They have moderate to moderately slow permeability in the surface and subsoil layer, and slow permeability in the substratum. Slope, the high water table in Scantic and Raynham soils, and the slow permeability in the Scantic and Buxton soils limit the suitability of this association for development with on site water supply and sewage disposal.

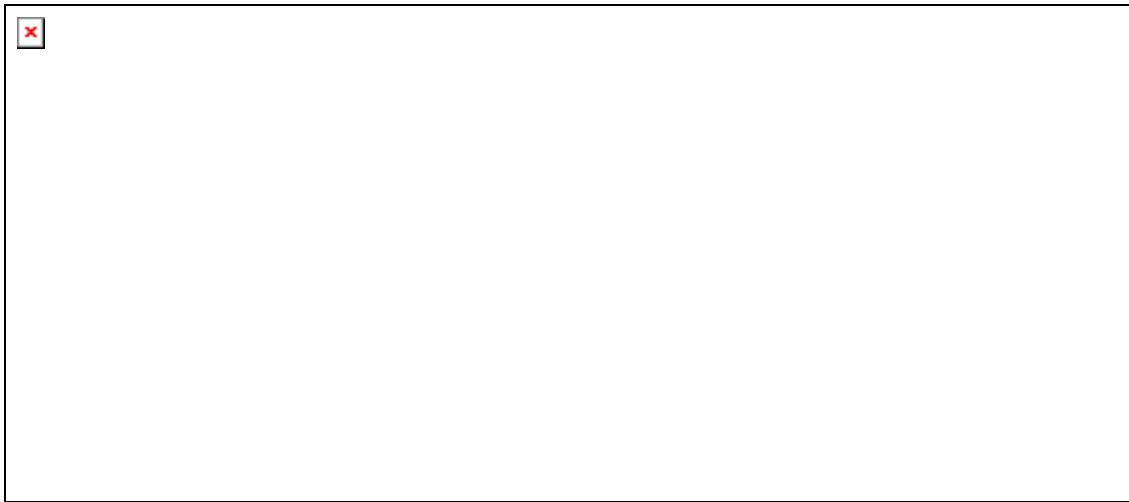
5. Naumburg-Croghan Association

One relatively small pocket of this association exists in Kittery. It begins near the intersection of the Maine Turnpike and Dennett Road and extends north westward to the Kittery/Eliot municipal border, running on both sides of Dennett Road.

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These soils were formed in materials deposited by glacial meltwater and are found primarily on outwash plains and deltas. The Naumburg soils are somewhat poorly drained to poorly drained, have a surface layer of sand, and are underlain by sandy material. The Croghan soils are moderately well drained, have a surface layer of loamy sand and are underlain by sandy material. Both soils have a high water table in the spring and fall, and both have rapid or very rapid permeability. The high water table and rapid permeability make groundwater contamination a major concern.

Figure 4-2
Soil Associations



Source: Soil Survey of York County, Maine, USDA Soil Conservation Service

b. Landforms and Watersheds

Changes in the topography of the land are measured by changes in elevation above sea level. The bulk of Kittery's upland landscape is characterized by flat or gently undulating terrain. >From the Atlantic, the land rises quickly to 20 feet above sea level. Over

most of Kittery, the elevation varies between 20 and 80 feet above sea level. Slopes in Kittery tend to be gentle. Notable exceptions, where the land rises more steeply include Cutts Ridge, Bartlett Hill, and the land on the north side of Barter's Creek. The highest point of land in Kittery is Cutts Ridge, at about 140 feet above sea level. It is located near the northwest corner of town, adjacent to the Eliot town line.

The topography of the land defines Kittery's watersheds. A watershed is an area of land within which precipitation falling upon it will drain to a single water body. High points of land define watershed boundaries. Kittery has five riverine watersheds and seven pond watersheds. Following is a brief description of the boundaries of each riverine watershed. The watersheds for the ponds are small, and very localized around the ponds. Legion, Cutts, and Deerings Ponds each have their own watershed, as do the two ponds on Seavey Island. The other two ponds with watersheds are unnamed. **Figure 4-3** shows the boundaries of each watershed.

1. Piscataqua River Watershed

This watershed includes all land within Kittery that drains to the Piscataqua River and Piscataqua River Estuary. Spinney Creek, draining the land along the Kittery/Eliot town line, comprises the western edge of the watershed. The watershed includes land on the southern edge of Kittery, runs north of Kittery Foreside, and follows the height of land through Remick Corners, crosses Spruce Creek at Whipple Road, and follows the height of land around Chauncey Creek onto Gerrish Island. The eastern edge of the watershed divides Gerrish Island, with the two thirds of the island that lies westward of a northeasterly running line that begins at Fort Foster and follows the height of land being included in the watershed. The other third of the island drains to the Atlantic.

2. Spruce Creek Watershed

This watershed drains the geographic heart of Kittery, with precipitation within the watershed running to Spruce Creek, and then to the Atlantic. In addition to Spruce Creek, Wilson Creek, Chickering Creek, Fuller Brook, Hill Creek, Hutchins Creek, Crocketts Brook, and Barters Creek drain the uplands surrounding the Spruce Creek Estuary. The head of the watershed begins in Eliot, a short distance over the Kittery/Eliot town line. The watershed divide follows the height of land southwest of Cutts Ridge, and runs in a southeasterly direction near Lewis Road. The divide continues southeasterly to the Bartlett Road/Shaydon Lane area, where the divide takes a more southerly course, intersecting with the Piscataqua River watershed divide at the height of land north of Chauncey Creek.

3. York River Watershed

This watershed drains the land in Kittery north of the Spruce Creek Watershed. It includes Cutts Ridge, and much of the land along the Kittery/York town line. The eastern edge of the watershed, which separates it from the Brave Boat Harbor watershed, lies near the intersection of Bartlett and Payne Roads. Tributary streams originating in Kittery include Cutts Ridge Stream, Libby Brook, and Johnson Brook. The wetlands and streams in this watershed drain to the York River, and then to the Atlantic.

4. Brave Boat Harbor Watershed

This watershed includes the land in the eastern corner of Kittery that abuts the Kittery/York town line and which surrounds Brave Boat Harbor. It includes a fairly narrow band of land extending southward from Brave Boat Harbor to near the south end of Crescent Beach. The watershed drains the land seaward of the height of land in this area. Much of the land is fairly flat and drainage is poorly defined. There are a few unnamed streams which exist in wetlands within the watershed, but the USGS topographic map for the region indicates that the streams do not reach the sea as surface water.

5. Gerrish Island Watershed

This is the smallest of Kittery's five watersheds. It includes the land southeast and seaward of the height of land on Gerrish Island. It encompasses approximately one third of the island. One small unnamed stream flows out of the wetlands in this area, meeting the Atlantic between Sisters Point and Swards Point.

2. SURFACE WATERS

With the Atlantic bordering the eastern edge of the community, and the Piscataqua River estuary defining the southern border, Kittery has a close relationship with the sea. The estuaries formed by Spinney, Spruce, and Chauncey Creeks create a long coast line. However, for all the abundance of saltwater, Kittery has relatively few freshwater resources. With the exception of the Piscataqua River, the headwaters for Kittery's estuaries are short, as are the tributary streams. They have been described in Section 1B of this chapter. A few small ponds dot the landscape.

The Maine Department of Environmental Protection monitors water quality throughout the state. In their *State of Maine 1994 Water Quality Assessment*, (the most recent available), no streams or ponds in Kittery were listed as not attaining the standards of their water quality classification.

3. GROUNDWATER

Groundwater includes all precipitation that percolates into the ground. Depending on the local geology, 10% to 50% of annual precipitation infiltrates into the ground to become groundwater. Two types of aquifers, bedrock and sand and gravel, contain the water.

Tapped through wells, groundwater provides the water needs of people not served by the public water system. In Kittery, this includes the Wilson Road area, and land in the northern third of town near the Kittery/York town line (Lewis, Norton, Miller, Bartlett Roads area). Groundwater also serves as a source of replenishment for surface streams and water bodies.

a. Sand and Gravel Aquifers

There are only two mapped sand and gravel aquifers in Kittery, both of which are near Cutts Ridge (see **Figure 4-3**). In the gravel pit on the northwest end of Cutts Ridge, the sand and gravel deposit has been measured at a minimum thickness varying between 36 and 50 feet. The depth to the water table in this area has been measured at 8 feet below the natural ground surface. In a nearby gravel pit that runs along the southwest flank of Cutts Ridge, the minimum thickness of sand and gravel deposits has been measured at 20 feet. Both of these aquifers are within the York River watershed.

While no map exists for the recharge area of this aquifer, the Maine Natural Resources Geology Department reports that recharge areas generally are very localized. The water percolating through the deep sands and gravel in this area is unlikely to be recharging a distant aquifer. The Department reports that domestic wells in this area typically tap into bedrock aquifers that are less susceptible to groundwater pollution.

b. Bedrock Aquifers

Identifying and defining bedrock aquifers, and the relationships between them, is a complex task. Maps showing the location of Kittery's bedrock aquifers are not currently available. Most of Kittery's domestic wells tap into bedrock aquifers.

4. THREATS TO WATER QUALITY

Development and land use can affect water quality in several ways. Improperly functioning subsurface sewage disposal systems may cause bacteria to contaminate surface or groundwater. Poor agricultural practices (including lawn care and gardening) can result in nutrient loading to ponds, rivers, and estuaries, and chemical pollution of the groundwater. Construction and development create more impervious ground surface that can result in faster runoff and erosion, increased transportation of point and non-point pollution to surface waters, and the lowering of the groundwater table. Toxic or hazardous substances can make their way into Kittery's water if it is improperly handled or spilled. An understanding of these potential threats will help the Town to make wise decisions about land use that may impact the quality of the community's water.

a. Surface Water

Kittery's ponds and streams are small in size and short in length. The primary threat to them is from non-point pollution running off roads, parking lots, and fields or lawns treated with chemicals. The environmental impact of stream pollution in Kittery is not restricted to the stream alone. The estuary to which the stream is tributary is also affected.

Estuaries are vibrant ecosystems that support diverse life forms. Pollution ingested at the bottom of the food chain can travel through the food chain to people. For example, shellfish are filter feeders. Toxins contained in the water or organisms that pass through them concentrate in the clam meat, or in the case of lobsters, in the tomalley. Nutrients running into an estuary can cause algal blooms, deplete the water's oxygen content, and adversely affect the ecosystem and the abundance and diversity of life it can support.

b. Groundwater

Groundwater, especially in sand and gravel aquifers, is susceptible to various sources of pollution. Possible contamination sources include leaking underground fuel oil and gasoline tanks, sand-salt piles, road salting, saltwater intrusion, old landfills and dumps, septic systems, agricultural chemicals (both for commercial and domestic use), manure piles, and point and non-

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Figure 4-3

point discharges of hazardous substances. Once ground water is polluted, it is very difficult to clean up. Because of their depth and the water purifying aspects of the overlying earth that it filters through, bedrock aquifers are less susceptible to pollution, but once polluted, are extremely difficult to clean up.

In coastal areas, saltwater intrusion can occur when the volume of freshwater removed from an aquifer exceeds the aquifers capacity to replenish itself. Coastal regions that have dense settlement patterns that are not served by public water are most at risk for this type of groundwater pollution.

Much of Kittery, and many of its citizens, are served by a public water supply. Only a very small percentage of the land in the community is underlain by a sand and gravel aquifer. The sections of town that are not currently served by public water are sparsely settled. Groundwater pollution threats to private water supplies in these areas are likely to be localized rather than widespread due to the small and isolated nature of these aquifers.

While only a limited number of Kittery residents rely on groundwater for domestic use, the community should still be diligent in protecting its groundwater, both for the benefit of Kittery and neighboring communities. It is a critical natural resource that once lost, is difficult, if not impossible, to regain.

1. Existing Threats

To identify existing groundwater threats, Chief Varney, the former chief of Kittery's Fire Department was contacted and the U.S. Environmental Protection Agency's Underground Storage Tank (UST), Resource Conservation and Recovery Act (RCRA), and Superfund Sites lists were reviewed. RCRA is an EPA program that regulates the transportation, handling, storage, and disposal of hazardous materials, including petroleum products.

Chief Varney did not have any serious concerns about any businesses storing or using hazardous materials in Kittery. Other than the Portsmouth Naval Shipyard (PNS), there are few large scale users of hazardous materials. Former Fire Chief Varney mentioned BOC Gases and Watts Fluidair, but was not concerned about the Kittery Fire Department's ability to respond to an emergency at either business. He was more concerned with the risks created by the volume of hazardous materials passing through Kittery on the Turnpike.

Portsmouth Naval Shipyard has its own fire and hazardous materials response team on site. Kittery Fire Department's only involvement with emergencies at PNS are to serve as back up to the shipyard's own response crews.

There are, or have been, hundreds of underground storage tanks in Kittery. The bulk of the tanks are small (less than a 1,000 gallons). Larger underground tanks (6,000+ gallons) are primarily used for storing gasoline and diesel fuel, or fuel oil for commercial/industrial buildings. Most of the smaller tanks have been for domestic use. A state program is currently under way to remove underground tanks. If soil contamination is found during tank removal, remediation steps are taken. As the tanks are removed, the potential threat to groundwater diminishes.

RCRA identifies users and storers of hazardous materials. Entities on the RCRA list are subject to federal and state regulations, oversight, and reporting requirements. Six Kittery businesses are on the RCRA list. They are BOC Gases, Import Auto Body, Middlesex Contractors and Riggers, We Care Cleaners, Watts Fluidair, and PNS. Of these, only PNS is classified as a large quantity generator. The rest are classified as private, small quantity generators or transporters of hazardous materials.

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The Portsmouth Naval Shipyard is a Superfund Site. The Shipyard became a Navy facility in 1800. It has been used for the construction of ships and submarines and is currently used to overhaul nuclear propulsion ballistic missile and attack submarines. Hazardous wastes have been stored, disposed of, spilled, or treated on more than 30 acres of the site. From 1945 to 1975, untreated acidic and alkaline wastes, waste battery acid and lead sludge, wastewater, spent electroplating baths, and other wastes from various industrial shops were discharged into the Piscataqua River through industrial waste outfalls. Twenty-five acres of tidal flats between two of the islands that comprise PNS were filled with wastes including chromium, lead, and cadmium-plating sludge, asbestos insulation, volatile organic compounds (VOCs), drums of waste paint and solvents, mercury contaminated materials, sandblasting grit that contained various metal wastes, and dredged sediments from the Piscataqua River.

Dredged river sediment taken from near PNS during the late 1970's was found to have elevated levels of metals, polychlorinated biphenyls (PCBs), and other contaminants. Soils at PNS are contaminated with chromium, lead, and cadmium-plating sludge, asbestos insulation, VOC's, waste paint and solvents, mercury, and various other metal wastes.

As of November 1997, Portsmouth Naval Shipyard had 5 underground storage tanks listed with RCRA as used for chemical storage. The capacity of the tanks, in gallons, was: 750, 2,300, 9,680, 7,000, and 6,000. The tanks were listed as not being in a sensitive area.

The groundwater beneath PNS is not hydraulically connected to groundwater that supplies domestic needs for people in the region. The EPA reports finding that water borne pollution that migrates offsite goes into the Piscataqua River and does not penetrate to the aquifer level.

Wetlands bordering Seavey Island have been found to be contaminated with hazardous substances attributable to PNS. Evidence of contamination attributable to PNS have been found in areas a short distance offshore of Seavey Island and at low or negligible levels in the Great Bay Estuary.

5. WETLANDS

Wetlands are found throughout Kittery. The ecological importance and value of wetlands have only become widely understood and appreciated over the last twenty years. Historically, wetlands were considered wasteland, something to be filled or drained. With increased understanding of their ecological role, that perception has changed. Wetlands control erosion, store flood waters, recycle nutrients, filter pollutants, and recharge ground waters. They provide open space and wildlife habitat. They are some of Maine's most productive areas, providing food for a wide spectrum of species. Coastal wetlands produce an average of from 60.5 to 242 pounds of nutrients per acre per day. These nutrients are carried by the tides, currents, and food chain, their influence extending far beyond the borders of the wetland.

Wetlands are defined by the Environmental Protection Agency (EPA), Army Corps of Engineers (COE), and the State of Maine as:

Those areas that are inundated or saturated by surface groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands usually include swamps, marshes, bogs, and similar areas. (EPA, 40CFR 230.3 and COE, 33 DFR 328.3)

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Most wetlands can be identified by three characteristics; the presence of 1) water loving plants, 2) hydric soils, and 3) a very high water table for at least part of the year. Water loving plants are the dominant vegetation type and can include plants that are typically associated with wetlands, such as cattails, as well as plants that grow equally well in wet or dry soils, such as red maple. Hydric soils are undrained and have colors and textures in the soil profile which indicate prolonged saturation during the growing season. Wetlands also have water present at or near the surface for one week or more during the growing season.

Not all wetlands are created equal. Some have more value than others for cleansing water, providing flood control, maintaining stream flows, or as wildlife habitat. However, in most cases, wetlands should be considered a severe constraint to development.

a. Types of Wetlands

There are a number of types of wetlands in Kittery. The most common are:

1. Palustrine Emergent

Palustrine wetlands are non-tidal marshes that have persistent wetland vegetation covering 30% or more of an area, or lesser percentages in areas of less than 20 acres. Emergent vegetation is characterized as non-woody plants that may be at least temporarily flooded at the base, but that do not tolerate prolonged inundation of the entire plant. Bulrushes and sedges are examples of this type of vegetation.

2. Palustrine Forested

Included in this category of non-tidal wetlands are wooded swamps. They generally occur along sluggish streams, on flat uplands, and in shallow lake basins or potholes. The soil is normally waterlogged but may be seasonally covered with as much as one foot or more of water. Tree species common in Maine's wooded swamps include tamarack, arborvitae, black spruce, balsam fir, red maple, and black ash. The floor of coniferous swamps usually have a thick carpeting of mosses. Deciduous swamps often support duckweeds, smartweeds, and other herbaceous vegetation. Animals that frequently inhabit this ecosystem include hole-nesting ducks, feeding waterfowl, deer, moose, beaver, and many small birds and mammals. Forested wetlands range from red maple swamps, which commonly have pools of standing water during the early growing season, to dense stands of white pine and red spruce growing in sandy soils with a fluctuating water table.

3. Palustrine Scrub Shrub

This wetland type is usually characterized by dense growth of alders, winterberry, highbush blueberry and species of viburnum. Shrub swamps occur primarily along sluggish streams, or as inclusions within forested wetlands. The soil is generally waterlogged, and may be covered by a foot or more of water. Alder and dogwood predominate in the drier areas; willow, buttonbush, and sweet gale characterize wetter sites. Animals that use these swamps, to varying degrees, include ducks, moose, deer, woodcock, and raccoons.

4. Palustrine Vernal Pools

Palustrine wetland types and their adjacent upland margin of 50 to 275 feet describe the complex ecological systems known as temporary ponds or vernal/autumnal pools. These wetlands can vary widely in size, depth, soil profile, number of weeks water is present, as well as plant, amphibian, crustacean, and animal inventories. The highest and best value of these ponds is that they

remain fish-less and shallow. While the pool area itself is an isolated depression, most organisms leave after the spring breeding season, using the surrounding upland of diffuse shade provided by shrubs, groundcover, leaves, and other plants. In Maine, there are four indicator species, three amphibians and a crustacean which occur only in vernal pools.

b. Location of Wetlands

Figure 4-3 shows the location of wetlands in Kittery that have been identified as part of the National Wetlands Inventory. Palustrine Forested wetlands are the most common type in Kittery. Following is a brief discussion of the location and types of wetlands found in Kittery.

Three relatively large forested wetlands are located on either side of Fernald Road, west of Martin Road. Two of the wetlands are between Ridgewood Drive and Fernald Road and are associated with an unnamed stream. The other sizable forested swamp in this area lies a short distance north of, and parallel to Route 236.

In the area bounded by Martin Road, Route 236, the Route 1 Bypass, and Dennett Road, there are several pockets of scrub shrub and forested wetland. There are two small pockets of emergent wetlands—one at the north end of Ranger Drive, the other a short distance north of the southbound Turnpike off ramp.

Examples of Kittery's wetland types are found along the freshwater reaches of Spinney Creek.

Scrub shrub wetlands are found along the southwest branch and middle reach of Spruce Creek.

Much of the broad expanse of relatively flat ground between Wilson Road and Cutts Ridge consists of forested wetland. One of Kittery's largest contiguous expanses of forested wetlands is located east of Wilson Road, and south of Cutts Ridge Brook. Although no stream is associated with this wetland, there is a pocket of marshland included within it, and two lobes of scrub shrub wetland extending from its northern fringe. Cutts Ridge Brook flows out of a forested wetland. An area of emergent wetland is found along the brook near the Kittery/Eliot townline.

A large expanse of forested/scrub shrub wetland is located in the northwest corner of town, between Gee and Betty Welch Roads.

Wetlands are prevalent in the low lying areas between the Turnpike and the Atlantic. All four wetlands types are found in this area. Kittery's largest expanse of palustrine marshland is found along Johnson Brook in this area.

A considerable amount of the low lying, interior portion of Gerrish Island is forested wetland. There are pockets of emergent wetland near the coast of Gerrish Island, with the largest marsh located in the Fort Foster area.

c. Threats to Wetlands

Wetlands filter pollutants and sediment from the environment. However, their filtering capacities can be exceeded. Pollution making its way into productive wetlands or estuaries can render shellfish beds unsuitable for harvesting. If the food chain within a wetland is disturbed, the effects ripple outward into the broader ecosystem. In Kittery, failing septic systems and non-point pollution from roads, parking lots, lawns, and fields pose the greatest threat to wetlands.

6. SIGNIFICANT WILDLIFE AND FISHERIES HABITAT

The ecological health of the environment is both a tenuous and resilient resource. Often, as a community grows, wildlife habitat diminishes or is fragmented. Stream and wetland ecology reflect the impact of more houses, parking lots, and roads. Yet even as habitat grows smaller and is of lesser quality, wildlife persists and adapts. As is evidenced by the resurgence of rabies in Southern Maine, conflicts can arise between human and natural communities. The availability of high quality habitat for fish and wildlife is essential to maintaining an abundant and diverse population for both ecological and sport purposes. Kittery has a number of areas that offer quality habitat for a variety of species.

The Maine Department of Inland Fisheries and Wildlife (IF&W) has assessed the value of habitats in Kittery. IF&W has identified these areas of special concern because of their importance as wildlife and fish habitat and as recreational resources. Wetlands, in addition to moderating flood waters and improving water quality, are also an essential and productive ecosystem for a broad variety of species.

a. Significant Wildlife Habitats

Kittery does not have any identified upland areas characterized as “Essential” Wildlife Habitat although there are a number of significant marine habitats including the Isles of Shoals that are discussed in the Marine Resources section. Such habitats are considered critical for the survival of Endangered and/or Threatened species.

The Natural Resource Protection Act [38 MRSA, Sec. 480-A-S], which is administered by the Maine Department of Environmental Protection, provides protection to certain natural resources. Included among these natural resources are significant wildlife habitats. Significant Wildlife Habitats, as defined by the Natural Resource Protection Act, include:

- habitats for State or Federally listed Endangered and/or Threatened species;
- high and moderate value deer wintering areas and travel corridors;
- high and moderate value waterfowl and wading bird habitats, including nesting and feeding areas;
- shorebird nesting, feeding, and staging areas;
- seabird nesting islands; and
- critical spawning and nursery areas for Atlantic sea run salmon.

Figure 4-4

Significant Wildlife Habitat in the upland areas of Kittery is limited to deer wintering areas and waterfowl and wading bird habitat. All "Significant" Wildlife Habitat areas identified by IF&W in Kittery are located east of the Turnpike.

1. Deer Wintering Areas

Maine's harsh winters can be devastating to deer herds. The deep snow, frigid temperatures, and low quality food supply of a severe winter can create a 35% or higher mortality rate within a herd. The primary behavioral mechanism deer use to cope with such conditions is to move to traditional wintering areas, or "yards". A typical deer yard is forested, with a softwood canopy. The canopy helps maintain warmer than average temperatures, reduces wind velocity, and improves mobility in snow by retaining much of the snowfall above the forest floor, allowing ground accumulations to become firmly packed.

Deer Wintering Yards in Kittery are located on Gerrish Island, southwest of Lewis Road, and southwest of Bedell Crossing. Their locations and approximate sizes are shown in **Figure 4-5**. IF&W has not rated the habitat value of these yards.

2. Waterfowl and Wading Bird Habitat

Waterfowl habitat includes areas used for breeding, migration, and wintering. Waterfowl pair habitat contains secluded areas for loafing and nesting, and open water for courtship. Nesting habitat includes dense, emergent, herbaceous or shrubby cover for seclusion, concealment, and protections from predation. Brood habitat has concealment cover interspersed with open water, and contains substantial amounts of herbaceous vegetation that is rich in invertebrate foods. Migration and staging habitats contain productive feeding areas with seclusion from disturbance. Wintering habitats in Maine contain open water areas that provide food and remain ice free during cold weather, and that also have sheltered areas nearby to provide protection from the cold. Isolation from human activity is important to minimize energy demands created by frequent disturbance.

Kittery has six wetland areas classified as "Significant" Waterfowl and Wading Bird Habitat, the location of which are shown in **Figure 4-5**. The three Waterfowl and Wading Bird Habitat areas located near the Kittery/York municipal border are characterized as palustrine scrub shrub wetlands in the National Wetlands Inventory. The other three Waterfowl and Wading Bird Habitat areas, located near the southern tip and eastern shore of Gerrish Island, are classified as palustrine emergent wetlands. IF&W has not rated the value of these habitats.

b. Other Habitats

The U.S. Fish and Wildlife Service has mapped "Important Fish and Wildlife Habitats in Southern Maine." Forty-three endangered species were included in the study. All are migrating birds or fish. The species included in the mapping have seriously reduced populations on a national, Gulf of Maine watershed, or State of Maine basis. Habitats mapped include areas that historically have been used by a species, as well as areas identified through a comprehensive screening process that have high habitat values for a given species.

Areas of Kittery identified on a composite map of high value habitat for the 43 species include significant contiguous acreage northeast of Gee and Betty Welch Roads to the Kittery/York town line, three closely associated parcels between the southwest side of Cutts Ridge and Wilson Road, a multitude of smaller pockets of habitat between Route One and Bartlett Road and north of Lewis and Miller Roads, large portions of the interior of Gerrish Island, and the Rachel Carson National Wildlife Refuge. The high value habitat areas are closely associated with wetlands in these areas.

c. Significant Fisheries

No upland streams within Kittery were rated as significant fisheries by IF&W. However many of Kittery's estuaries, coastal regions and islands, as discussed in the Marine Resources Chapter, are rated as Wildlife Concentration areas of local, state, and national significance.

7. UNIQUE NATURAL AREAS

The Maine Natural Areas Program (MNAP), a program of the Maine Department of Conservation, maintains information on the status and location of rare plants and exemplary natural communities in Maine. Because of the rarity and sensitive nature of many of the plants and natural communities the MNAP keeps records on, information on the location of the resources is general in nature. MNAP encourages landowners considering development in areas identified as containing rare plants to check with MNAP for more specific site locations, or to conduct a field survey. In many instances, the plant or community will not be present where the development is contemplated, or the proposed development will not impact habitat and no change of plans will be necessary.

MNAP ranks the rarity of a plant or natural community on a scale of 1 to 5 (based on the frequency of sightings or occurrences), on both a state and global basis with 1 being the most rare. Plants or communities that have obtained status as an endangered or threatened species at either the state or federal level are also noted. The Town of Kittery has a number of plants in these categories.

Plants listed as Critically Imperiled in Maine (five or fewer occurrences or very few remaining individuals or acres) that have been documented in Kittery include Bitternut Hickory (*Carya Cordiformis*), Eastern Joe-Pye Weed (*Eupatorium Dubium*), Scarlet Oak (*Quercus Coccinea*), and Wild Coffee (*Triosteum Aurantiacum*). Plants listed as critically imperiled that have historically been found in Kittery but that have not been sighted for more than 20 years include American Sea-Blite (*Suaeda Calceoliformis*), *Salicornia Bigelovii*, Northern Blazing Star (*Liatris Scariosa*), and White-Topped Aster (*Aster Paternus*).

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Figure 4-5

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Plants listed on the state level as Endangered (one documented occurrence within the last 20 years) that have been documented in Kittery include Bitternut Hickory, Eastern Joe-Pye Weed, and Scarlet Oak. Wild Coffee and White-Topped Aster are listed as Threatened (two to four documented occurrences in the last 20 years) on the state level. None of the rare or exemplary plants or natural communities identified in Kittery are federally listed as Endangered or Threatened.

Plants listed as Imperiled in Maine (6 to 20 occurrences within the last 20 years or few remaining individuals or acres) that have been documented in Kittery include Saltmarsh False-Foxglove (*Agalinis Maritima*), and Wild Garlic (*Allium Canadense*). Sassafras (*Sassafras Albidum*) is listed as Imperiled in Maine. The last documented sighting of the plant in Kittery was in 1916. The Sand Dune ecosystem is a natural community found in Kittery that is listed as Imperiled in Maine. None of these plants or communities are listed as Endangered or Threatened on the state or national level.

Spicebush (*Lindera Benzoin*) is listed as Rare (20 to 100 occurrences) in Maine and has been documented in Kittery. Two natural communities, Salt Hay Saltmarsh, and Coastal Dune-Marsh Ecosystem are classified as Rare in Maine.

All of the plants and natural communities identified above that have varying degrees of rarity in Maine are considered “demonstrably widespread, abundant, and secure globally.”

8. FLOODPLAINS

Floodplains are the low, mostly flat areas adjacent to rivers, streams, ponds and the ocean which are periodically covered by rising water or waves during periods of rain or snowmelt. Coastal flooding is generally attributed to high wind and wave action caused by storm activity. The Federal Emergency Management Agency (FEMA) has produced maps of the 100 year floodplains in Kittery. Shown on the maps is the area that has a 1% chance of being flooded during any year.

Improper use, filling, and development within the floodplains creates the potential for property damage, increased flooding, and downstream contamination. Although Kittery’s proximity to the ocean reduces downstream impacts from flooding, floodplains should be considered a severe constraint to development. The likelihood of severe property damage is high in floodplains of rivers and ponds with large drainage areas.

Following is a brief description of the location and size of the 100 year floodplains or flood hazard areas in the upland areas of each watershed in Kittery as delineated on the FEMA floodplains maps. The FEMA maps show the boundaries of those flood hazard areas that have been identified by detailed study as well as those areas that are identified based upon their characteristics.

a. Piscataqua River Watershed

The floodplain in the freshwater section of Spinney Creek is very narrow except for one section associated with a wetland located just upstream of where Spinney Creek flows into Eliot. The boundaries of this floodplain are indeterminate.

Although the floodplain for Legion Pond does not extend beyond the boundary of the pond, there is a large indeterminate floodplain associated with the area tributary to the pond.

There are several indeterminate floodplains associated with wetlands on the interior of Gerrish Island.

All other floodplains in this watershed are related to the Piscataqua River Estuary and/or coastal influences.

b. Spruce Creek Watershed

Floodplains of indeterminate boundaries border the freshwater sections of Spruce Creek, Wilson Creek, Fuller Brook, Hill Creek, Hutchins Creek, Chickering Creek, and Crocketts Brook. In many instances, the estimated size of the floodplain is disproportionately larger than the stream. In these instances, the topography surrounding the stream is flat and/or wetlands are present. The floodplains on these tributary streams are broad where they flow into Spruce Creek. Inundation of the lower floodplain areas is driven by coastal influences rather than freshwater runoff from the upper reaches of these sub-watersheds.

c. York River Watershed

The floodplains for the headwaters of Cutts Ridge and Libby Brooks, while predominantly indeterminate, are projected to be narrow and to closely follow the contours of the streams. A large wetland in the northwest corner of Kittery and the headwaters of Johnson Brook have broad indeterminate boundaries.

d. Brave Boat Harbor Watershed

All of the floodplains in the upland portion of this watershed are indeterminate. There are relatively broad expanses of floodplains in low lying areas between Bartlett and Brave Boat Harbor Roads that have no surface stream associated with them. There are large expanses adjacent to Brave Boat Harbor that are subject to coastal flooding.

e. Gerrish Island Watershed

An indeterminate floodplain, associated with a wetland, lies in the heart of Fort Foster. Other small pockets and tongues of indeterminate floodplains lie in low lying areas near the eastern shore of Gerrish Island.

9. SOILS

Section 1.a. of this chapter described the dominant soil associations in Kittery and their locations. This section will take a closer look at the soil types within those associations to determine their suitability for various land uses. Each soil type has different characteristics that make it more or less suitable for different land uses. The character of the soil – its texture, mix of clay, silt and sand, its depth to bedrock, the height of the water table, the percolation rate of water through the soil profile, and its load bearing capacity – all these, in conjunction with other factors such as slope, and proximity to water have bearing upon what can be done on a parcel of land. This

section will consider the limitations and opportunities presented by different soil types in Kittery in relation to subsurface waste disposal, agriculture, and forestry.

a. Subsurface Waste Disposal

In areas of Kittery not served by public sewer, subsurface sewage disposal systems are the most common means of waste disposal. These systems consist of a septic tank and leach field. The septic tank receives effluent from the building. Properly functioning leach fields distribute effluent from the septic tank into the soil where it is filtered as it percolates through the soil. The Maine State Plumbing Code does not allow new septic systems on slopes steeper than 20% and requires a minimum of 12 inches (or more with some soil types) between the bottom of the leach field bed and the seasonal high water table, bedrock, or other restrictive layer. Even though a subsurface waste disposal system may be permitted on a particular soil, site conditions such as the size of the area, nearness to water bodies (including wells), or other non-soil considerations could prevent approval of a septic system.

The York County Natural Resources Conservation Service, a branch of the United States Department of Agriculture, has rated soils for various land uses on a scale from “very low” to “very high” in its two reports: *Soil Survey Data for Growth Management in York County, Maine*, and *Soil Potential Ratings for Low Density Development in York County, Maine*. Soils in York County rated as unsuitable for subsurface waste disposal include: Biddeford, Brayton, Chocura, Ondawa, Podunk, Raynham, Rumney, Saco, Scantic, Sebago, Sulfihemists, Vassalboro, Waskish, Westbury, and Winooski. The limiting factors for all these soils are either that they are too wet, subject to flooding, organic, or some combination of these three factors.

Five soil types: Adams, Allagash, Colton, Croghan, and Naumburg are rated in the Maine State Plumbing Code as being unsuitable for septic systems or for requiring lot sizes ranging from 40,000 to 80,000 square feet, depending upon the specific conditions of the site, to keep from polluting groundwater. The primary limiting factor on these soils is excessive permeability. **Figure 4-6** show the location of soils in Kittery not served by public sewer that are rated as non-discharge soils, or that require lot sizes of one acre or more.

1. Piscataqua River Watershed

Kittery Foreside, the most densely settled part of Kittery, is included in this watershed. It is served by public sewer. However, public sewer does not serve the area west of the Turnpike or east of Spruce Creek.

As is the case with most of Kittery, the suitability of the land west of the Turnpike for septic systems varies. Near Spinney Creek, the soils are composed mostly of Lyman, Buxton, Peru, and Madawaska soils. In *Soil Survey Data for Growth Management in York County, Maine*, soils are rated on a scale from very low (poorly suited) to very high (well suited) for their capacity to host septic systems. Lyman soils are rated low, Buxton soils medium, Peru soils high, and Madawaska soils very low. Even though the Lyman and Madawaska soils are not particularly well suited to septic systems, the state plumbing code allows them. Often, there will be a better suited soil type on the same parcel, or a solution can be engineered to mitigate the problems associated with low ranking soils. For example, the most common limiting factor with Lyman soils is their shallowness to bedrock. By building a mounded septic system that artificially increases the depth to bedrock, a permissible septic system may be able to be developed if other mitigation occurs.

Inland from Spinney Creek up to the Bartlett Hill area, the dominant soil types include Colton, Adams, Scantic, Biddeford, Brayton and Westbury, and Lyman soils. All of these soil types are rated as low or very low for septic systems by the *Soil Survey Data for Growth Management in York County, Maine*. Biddeford soils are a very poorly drained mucky peat, often found in wetland areas. They are included on the state plumbing codes list of soils unsuitable for septic systems, as are the Scantic, and Brayton and Westbury soils. Also included in this area, east of Dennett Road and near the Turnpike, are Naumburg and Croghan soils, rated as very low because of their excessive permeability.

East of Spruce Creek, Lyman soils are the dominant soil type within the watershed. Pockets of Sebago Peat and Sulphemists, classified as unsuitable for septic systems by the state plumbing code, are found near Chauncey Creek, and Seapoint and Crescent Beaches. Sebago Peat soils are also found on the interior of Gerrish Island, often in association with wetlands.

2. Spruce Creek Watershed

The majority of this watershed is not served by public sewer. Areas served by public sewer include the land southwest of Spruce Creek and east of Remick Corners, and the land alongside Route One north of Ox Point Drive.

Lyman soils are the dominant soil type in the portion of the watershed not served by public sewer. The state plumbing code allows septic systems in this soil type, but systems frequently require special engineering to keep from polluting groundwater. Other soil types found in this area of Kittery include Scantic, Biddeford, and Naumburg soils, all rated as unsuitable for subsurface waste disposal or requiring lot sizes of one acre or more.

3. York River Watershed

The only land within this watershed currently served by public sewer is along Route One.

A wide range of soil types is found northwest of the Turnpike in the vicinity of Cutts Ridge. The dominant soil type is Scantic, classified as not permissible by the state plumbing code. However, interspersed throughout the area dominated by Scantic soils are pockets of Marlow, Skerry, Hermon, Buxton, and Peru soils, all of which are rated as medium or above for septic suitability.

by the *Soil Survey Data for Growth Management in York County, Maine*. Along streams and in wetland areas there are also significant areas of Biddeford peat.

Between Route One and the Turnpike, in addition to Lyman and Scantic soils, pockets of soils rated for septic suitability at medium or above are found, including Raynham, Hermon, Marlow, Scio, and Skerry soils. Eastward of Route One, Lyman soils dominate. Colton and Brayton and Westbury soils are also found in the uplands of this area of Kittery, while Scantic and Biddeford soils are found in the wetlands and along stream corridors.

4. Brave Boat Harbor Watershed

None of the land in this watershed is served by public sewer. Dense development in the area should be discouraged in that the dominant soil type, Lyman, is rated as low or very low for septic suitability, depending upon slope and depth to bedrock. The other soil types found in this area, Brayton and Westbury, Sebago peat, Biddeford peat, Sulphemists, and Chocura are all considered not permittable in the state plumbing code.

5. Gerrish Island Watershed

Likewise, without public sewer, development density should be kept low in this watershed. The dominant soil type is Lyman, with bands of Sebago, Biddeford, and Vassalboro peats found in the low lying stream corridor.

b. Prime Farmland Soils

The U.S. Department of Agriculture defines prime farmland as the land that is best suited to producing food, feed, forage, fiber, and oilseed crops. It has the soil quality, growing season,

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Figure 4-6

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and moisture supply needed to produce a sustained high yield of crops while using acceptable farming methods. Prime farmland produces high yields with the least amount of external input.

Prime farmland is a valuable, limited commodity. In areas experiencing growth and development, prime farmlands are under siege. The same characteristics that make soil good farmland make it desirable for development. Protection of prime farmland soils should be considered when making land use decisions.

Soils rated as prime farmland soils by the *Soil Survey Data for Growth Management in York County, Maine* include:

<u>Soil Type</u>	<u>Slope</u>
Adams loamy sand*	0-8%
Allagash very fine sandy loam	3-8%
Becket fine sandy loam	3-8%
Buxton silt loam	3-8%
Colton gravelly loamy coarse sand*	0-8%
Elmwood fine sandy loam	0-8%
Hermon fine sandy loam*	3-8%
Lyman fine sandy loam*	3-8%
Madawaska fine sandy loam	0-8%
Marlow fine sandy loam	3-8%
Ondawa fine sandy loam	
Peru fine sandy loam	0-8%
Podunk and Winooski soils**	
Skerry fine sandy loam	0-8%

*irrigated

**where drained

Source: Soil Survey Data for Growth Management in York County, Maine, Soil Conservation Service

Areas with prime farmland soils are few and far between in Kittery. Where the soils do exist, they tend to be contained in relatively small, isolated parcels. Kittery does not have any broad, contiguous areas of prime farmland.

Areas of Kittery identified as having prime farmland soils include:

- a narrow band of Buxton silt loam along the north shore of Spinney Creek;
- intermittent pockets of Lyman, Colton, Skerry, and Marlow soils around Wilson and Fernald Roads, as well as near Route 236;

- pockets of Lyman, Skerry, Marlow and Hermon soils northeast of Lewis Road;
- an expanse of Lyman surrounded by Sulfihemist soils off of McEacherns Way;
- isolated pockets of Lyman soil between Bartlett and Norton Roads;
- on Gerrish Island – a large pocket of Lyman soil in the Sisters Point area as well as a few isolated pockets westward of Sisters Point;
- and two pockets of varied, but contiguous, prime farmland soils, one north of Adams Road, and the other between the southeast point of Cutts Ridge and the Turnpike.

c. Prime Forestry Soils

In its *Soil Survey Data for Growth Management in York County, Maine*, the Soil Conservation Service defines prime forest land as having soils which are capable of growing wood at the economic productive growth rate for a given tree species. Soils with a productivity rating of medium, high, or very high were considered prime forestry soils. Soil classifications within a type did not change in relation to the slope of the soil. Management problems such as erosion hazard, equipment limitations, or seedling mortality are not factored in when calculating the productivity of a soil. Productivity is based on the total yield of wood per hectare of mature trees. The indicator species used for York County is eastern white pine.

All of the soils identified as prime farmland soils are also rated as prime forestry soils. Four additional soil types: Brayton, Westbury, Scantic, and Scio were also identified as prime forestry soils. Scio has the highest tree growth productivity rating of all York County soils.

Much of the land in Kittery consists of prime forestry soils. Larger contiguous regions of town with suitable soils include most of the land west of the Turnpike, much of Cutts Island and the non wetland soils southwest of Brave Boat Harbor, Crocketts Neck, and the non-wetland areas northeast of Spruce Creek.

10. STEEP SLOPES

Slope affects the suitability of land for development. It is expressed as a percentage of rise over run. A 10% slope means that there is a 10-foot elevation difference over a horizontal distance of 100 feet. As slope increases, so does the cost of development, and the potential severity of environmental impacts. The Maine State Plumbing Code does not allow installation of septic systems on slopes greater than 20%. Slopes in the 3% to 8% range are generally considered to offer the fewest restrictions to development. Development on slopes of less than 3%, while flat or nearly flat and suitable for nearly all types of construction, may experience drainage problems, especially in areas with high water tables or clayey soils.

Over most of Kittery, the slope is between 0% and 8%. The few areas with slopes steeper than 15% primarily occur along stream drainages and at rocky coastal outcroppings. These steeper areas present multiple challenges to development. The more common concern for development in Kittery is lack of adequate slope to promote drainage.

11. ISSUES AND IMPLICATIONS

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1. As a Superfund Site, Portsmouth Naval Shipyard (PNS) is a substantial pollution threat to Kittery, the surrounding area, and marine resources. The Town should consider how it supports efforts to clean up PNS to insure that the health of Kittery citizens is protected, and that other, natural resource based economic opportunities are not foreclosed.

2. There are two small mapped sand and gravel aquifers in Kittery. The Town should consider if these resources need additional protection to preserve the quality and quantity of the groundwater.

3. As development occurs, runoff from impervious surfaces increases contributing non-point pollution to the Town's surface waters. Kittery should consider if it needs to develop and apply performance standards that control stormwater runoff, reduce erosion, and minimize the migration of non-point pollution into the Town's freshwater resources.

4. The poorly drained topography of Kittery includes large contiguous areas of wetlands. Many coastal areas and low lying uplands are susceptible to flooding. The Town has already enacted a local Wetlands Ordinance to supplement state and federal regulation. The Town should consider if these regulations provide adequate protection of these resources.

5. Kittery does not have any upland areas identified by the Maine Department of Inland Fisheries and Wildlife as essential habitat (e.g. Bald Eagle and Rosette Tern habitat). However, contiguous parcels of undeveloped land are essential for maintaining Kittery's biological diversity. The Town should consider whether it needs to take additional measures such as establishing municipal ordinances, taxation incentives and other initiatives that will protect undeveloped areas important to the long term welfare of fish and wildlife resources including identified areas with habitat value.

6. Kittery's deer winter in three widely separated deer yards. It is unlikely that there is much interaction between the herds that winter in each yard. The Town should consider if it needs to take any additional action to protect these areas or to restrict the deer population.

7. The upland wetlands that are identified as having high waterfowl habitat are already zoned resource protection and covered by Shoreland Zoning. The Town should consider if any additional action is necessary to protect this resource.

8. The Town contains a number of plant communities that are relatively rare. These are in a number of locations throughout the community. The Town should consider if it needs to take any additional actions to protect these resources.

9. The Town has a number of inland areas that have been identified as being Flood Hazard Areas. Some of these are associated with freshwater wetlands and are already regulated by the Shoreland Zoning provisions. The Town should consider if any additional action is needed to prevent inappropriate use in these flood prone areas.

10. Few areas of Kittery have soils well suited to handling subsurface waste disposal. The extension of the public sewer system will probably be limited. Therefore, the density of development in these areas will need to be appropriate for on-site sewage disposal.

11. Because of the low assimilative capacity of the soils for septic wastes in the Brave Boat Harbor and Gerrish Island Watersheds, development densities in these areas should be kept low since it is very unlikely that public sewerage will be introduced.

12. Kittery has relatively few areas with prime farmland soils. The Town should consider what role, if any, agriculture should play in the future of the community and what steps, if any, should be taken to keep Kittery's prime farmland soils undeveloped.

12. GOALS AND POLICIES

State Goals: **To protect the quality and manage the quantity of the State's water resources, including lakes, aquifers, great ponds, estuaries, rivers and coastal areas. (Growth Management Act)**

To protect the State's other critical natural resources, including without limitation, wetlands, wildlife and fisheries habitat, sand dunes, shorelands, scenic vistas and unique natural areas. (Growth Management Act)

Local Goals: **To protect and improve the quality of the surface waters within Kittery.**

To protect and preserve the quality and supply of groundwater resources.

To protect wetlands that have significant functional value and adjacent uplands from encroachment and degradation.

To manage the use of flood prone areas to reduce the risk of property and environmental damage.

To protect significant wildlife and fisheries habitat and critical and unique areas.

Pursuant to these goals, the Town of Kittery's policies with respect to the management of its natural resources are:

Inland Surface Waters

1. The Town will continue to designate "Great Ponds" and related wetlands including the upland fringe as Resource Protection areas within which development and other intensive land use activities are restricted.

2. The Town will enact standards for the quality of stormwater runoff from new and expanded residential subdivisions and commercial developments. These standards shall be consistent with and not exceed any state standards for runoff quality. The standards should ensure that stormwater discharges do not have an unreasonably adverse impact on the water quality classification of the waterbody or prevent the reopening of viable clam flats. The standards should require that each situation where runoff needs to be managed be analyzed and "Best Management Practices" used. The selection of the appropriate BMP's should be related to the soil type since this will dictate which practices will be most effective in the particular situation.

3. The Town will work with owners of existing commercial and residential projects on a voluntary and cooperative basis to retrofit existing stormwater systems, where necessary, to improve the quality of the stormwater discharges. The Town may guide property owners in developing financing for these improvements.

4. The Town will continue efforts to eliminate the remaining combined sewer overflows (CSO's) through the separation of the combined sewer system and programs to reduce infiltration and inflow into the sanitary sewer system.

Groundwater

5. The Town will continue to work with the Portsmouth Naval Shipyard and the appropriate state and federal agencies to bring about the remediation of groundwater contamination associated with the shipyard.

6. Within any area identified as a sand and gravel aquifer, the objective of the Town will be to maintain the quality of the groundwater resource. While sand and gravel aquifers have only limited use as a source of drinking water in Kittery, the Town will require that if development occurs over these resources, that it complies to all state regulations and standards.

7. The Town should continue to identify and protect groundwater sources.

Wetlands

8. Freshwater wetlands that have been identified by the Department of Inland Fisheries and Wildlife as having high or moderate wildlife habitat value together with an upland buffer will continue to be designated Resource Protection.

9. The Town will continue to regulate the alteration of wetlands larger than one thousand square feet in area and to require that development be setback from the edge of the wetland as required by the current Land Use and Development Code Zoning Ordinance.

10. The Town should support efforts by conservation organizations to acquire, manage, and preserve high value wetlands.

Floodplains

11. In inland areas that are identified as flood hazard areas that are subject to periodic flooding, the Town will continue to manage use and development in accordance with State and Federal standards.

Fisheries And Wildlife Habitat

12. The riparian zone adjacent to rivers and streams plays an important role in the value of a water body as fishery and wildlife habitat. Retaining a natural buffer along these resources can have water quality benefits as well as habitat benefits. Therefore, the Town will work to maintain a naturally vegetated buffer along streams with high or moderate habitat value.

13. The Town contains a number of identified deer yards. The Town's development regulations should require that subdivision and nonresidential development proposals identify areas with habitat value and address the preservation of these habitats in the site planning process.

14. There are a number of large undeveloped areas that have potential habitat value. In the Future Land Use Plan, consideration should be given to designating these areas as non-growth areas and discouraging development that fragments these areas.

15. The Town, through the Conservation Commission, should develop and periodically update maps identifying the locations and value of wildlife habitats based upon an inventory of habitats.

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16. If any endangered species are identified in Kittery, the Town should consider adopting appropriate regulations to protect these species.

Unique And Critical Resources

17. There are a number of rare plants and plant communities that have been identified in Kittery. As part of the development review process for subdivisions and nonresidential developments, the Town should require that these resources be identified and their protection addressed as part of the site planning process.

Soils

18. Much of the outlying areas of Kittery will be reliant upon onsite sewage disposal for the foreseeable future. The density of development in these areas will be based upon the capacity of the soil to treat these wastes (see the Land Use Section).

SECTION D. SCENIC RESOURCES

The Town of Kittery is characterized by its coastal setting which results in a high quality visual environment and numerous scenic resources. This section identifies the key scenic resources of the community as identified by a rating system that considered the value of the resource as well as the frequency with which the public experiences these resources. The following subsections identify scenic areas, scenic views and vistas, and scenic roads that contribute to the character of Kittery and that can be experienced by the public from public places including streets and roads and the water.

1. SCENIC AREAS

Kittery is a coastal community and, as such, much of its visual and scenic quality is created by the interface of the land with the community's waterbodies. In many ways, the view of Kittery's various land areas from the water and the water from the land is the principal scenic feature of the community. Therefore, the entire shoreland of Kittery has been identified as a scenic area. While the character of this shoreland ranges from highly developed in the Shipyard and Foreside/Downtown areas to somewhat developed in areas adjacent to Rogers Park to undeveloped in the Brave Boat Harbor and Seapoint Beach areas, all of this shoreland is important to the Town's visual environment.

Other areas that contribute to the visual and scenic character of the community are the areas that were the centers of settlement at various points in the community's history. These include Kittery Point Village (see **Figure 4-7**) and the Wallingford Square area.

2. SCENIC VIEWS AND VISTAS

The variety of Kittery's landscape and mix of land and water creates many views and vistas that can be enjoyed by the public from publically accessible areas such as roads and streets and public facilities. To be considered as a scenic view or vista, the site has to contain one of the following features:

- A view over land toward the ocean or a tidal inlet or bay which is unobstructed by manmade or natural features
- A view over land or water toward a hill, open land or other natural feature that is relatively uncluttered and attractive
- A view over land or water that includes manmade structures usually associated with rural communities such as church steeples, barns, agricultural fields, etc.

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- A visual scene over land or water that includes traditional elements of a maritime community such as boats, piers, buoys, lighthouses, etc.

The following views and vistas have been rated as having the greatest scenic value for the community. They are broken into three groups; Category One or those of the highest value, Category Two or those of very high value, and Category Three or those of high value. The locations of the views are shown on **Figure 4-7**. See **Appendix C** for the rating criteria and charts.

a. Category One Scenic Views And Vistas

The following scenic views and vistas have been identified as having the highest value to the community:

- View 1-1. The view over Seapoint Beach (180 degree view)
- View 1-2. The view of the marsh from Seapoint Road past and across from the former boat building barn
- View 1-3. The view from Chauncey Creek Road toward Gerrish Island
- View 1-4. The view from Chauncey Creek Road toward the Rachel Carson Wildlife Refuge
- View 1-5. The view from the Gerrish Island Bridge looking to the east
- View 1-6. The view from the Route 103 bridge over Spruce Creek (360 degree view)
- View 1-7. The view from Old Ferry Lane toward the Back Channel and Harbor
- View 1-8. The view of Spruce Creek from the Route One/Quarterdeck area
- View 1-9. The view of the Back Channel from Badger's Island and the Foreside (180 degree view)
- View 1-10. The view on the approach to the Eliot Bridge (180 degree view)

b. Category Two Scenic Views And Vistas

The following scenic views and vistas have been identified as having very high value to the community:

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- View 2-1. The view from Chauncey Creek Road toward Pepperrell Cove
- View 2-2. The view of the harbor from the turn in Pepperrell Road at the Congregational Church
- View 2-3. Pocket views of the river from Whipple Road near Tilton Avenue
- View 2-4. The view of agricultural land (Johnson Farm Area) from the Wilson Road
- View 2-5. The view of Spruce Creek between Route One and I-95
- View 2-6. The view of Legion Pond from the Old Post Road
- View 2-7. The view of Pepperrell Cove from the Kittery Point town wharf area (180 degree view)
- View 2-8. The view from the Crockett Neck Road causeway easterly toward Barter's Creek
- View 2-9. The view from the Crockett Neck Road causeway westerly toward Spruce Creek
- View 2-10. The view of agricultural land from Picott Road
- View 2-11. The two views of Spruce Creek from Picott Road

- View 2-12. Pocket views of Pepperrell Cove and Wood Island from Pepperrell Road
- View 2-13. Fort Foster views (200 degree view from central area and views all around)

c. Category Three Scenic Views And Vistas

The following scenic views and vistas have been identified as having high value to the community:

- View 3-1. The view from Route 103 toward Brave Boat Harbor going west at the Town line
- View 3-2. The view from Route 103 toward Brave Boat Harbor going east near the Town line
- View 3-3. The view from the Gerrish Island bridge looking west along Chauncey Creek
- View 3-4. The view of Pepperrell Cove from the Fort McClary area (200 degree view)
- View 3-5. The view from Whipple Road northerly toward Spruce Creek
- View 3-6. The view from Seapoint Road northeast of Log Cottage
- View 3-7. The view from Seapoint Road over the stonewall toward the marsh and Gerrish Island
- View 3-8. The view from Tower Road toward Seapoint Beach/salt marsh (180 degree view)

d. Other Scenic Views And Vistas

In addition to the scenic views and vistas identified above, there are numerous lower quality views in the Town which are, nonetheless, worthy of mention. A number of these have been identified as part of the planning process and are identified in the appendix.

3. 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.

The following roads have been rated as having the greatest scenic value for the community. They are broken into three groups; Category One or those of the highest value, Category Two or those of very high value, and Category Three or those of high value. The locations of the roads are shown on **Figure 4-7**. See **Appendix D** for the rating criteria and chart.

a. Category One Scenic Roads

The following scenic roads have been identified as having the highest value to the community:

- Road 1-1. Route 103 including Whipple Road, Pepperrell Road, Tenney Hill Road, and Brave Boat Harbor Road
- Road 1-2. Seapoint Road
- Road 1-3. Chauncey Creek Road
- Road 1-4. Hunter and Newmarch Streets
- Road 1-5. Government Street
- Road 1-6. Crockett Neck Road from Route 103 to Bond Road
- Road 1-7. Old Ferry Lane
- Road 1-8. Picott Road
- Road 1-9. Wilson Road from Picott Road to the Eliot line
- Road 1-10. Haley Road from Route One to Hartley Farm Road

b. Category Two Scenic Roads

The following scenic roads have been identified as having the very high value to the community:

- Road 2-1. Tower Road
- Road 2-2. Love Lane
- Road 2-3. Cutts Road from Picott Road to Betty Welch Road
- Road 2-4. Goodwin Road
- Road 2-5. Old Dennett Road west of I-95
- Road 2-6. The half mile of Bartlett Road near the York line
- Road 2-7. Lawrence Lane
- Road 2-8. Adams Road

c. Category Three Scenic Roads

The following scenic roads have been identified as having the high value to the community:

Road 3-1. Miller Road

Road 3-2. The upper end of Norton Road

Road 3-3. Pocahontas Road Extension

Road 3-4. Litchfield Road

Road 3-5. Betty Welch Road

4. ISSUES AND IMPLICATIONS

The inventory and analysis of Kittery's Scenic Resources suggest that the Town needs to address the following areas:

1. The Town's scenic resources play a key role in defining the character of Kittery and, therefore, are identified by the community as important to preserve. However, some of these resources involve private property. Balancing the desire to preserve these resources with private property rights will be necessary for public acceptance of these concepts.

2. The Town's scenic roads provide a pleasant environment as people move about the Town. At the same time, there will be a need to maintain and improve these roads to facilitate traffic movement and safety. As the Town and private utilities make improvements, these will need to be balanced with preserving the scenic quality of the road.

3. Development adjacent to identified scenic roads may impact the scenic quality of the roadway. The Town will need to assure that the scenic nature of these roads is maintained to the extent feasible as new development occurs.

4. Maintaining the identified scenic views will require that new development recognizes and respects these resources. The Town's development review process will need to assure that these considerations are addressed.

5. The view of the Kittery shoreline from the water is a key resource of the community. Current shoreland zoning provisions provide some protection for the visual appearance of this shoreland area but additional attention of this feature may be warranted.

6. Many of the Town's high quality views may be diminished or lost over time to natural vegetative growth. The Town should create a mechanism to allow property owners to maintain these views.

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Figure 4-7

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7. The long term maintenance of the community's scenic resources will require a cooperative effort among the Town government, property owners, developers, and conservation interests. The Town will need to play a role in this process.

8. The growth in cellular communications combined with changing technology creates the potential for the installation of communication towers and antennas in areas that adversely impact on the Town's scenic resources.

5. GOALS AND POLICIES

State Goals: The State's Growth Management Law establishes goals that relate to the management of Scenic Resources. These include:

To protect the State's other critical natural resources, including without limitation, wetlands, wildlife and fisheries habitat, sand dunes, shorelands, scenic vistas, and unique natural areas.

To encourage orderly growth and development in appropriate areas of each community, while protecting the State's rural character, making efficient use of public services and preventing development sprawl.

In addition to the goals established in the Growth Management Law, the State's Coastal Management Policies require that State and local planning be consistent with the following objective:

Scenic and Natural Areas Protection. Protect and manage critical habitat and natural areas of State and national significance and maintain the scenic beauty and character of the coast even in areas where development occurs.

Local Goals: To maintain the scenic quality of the Town's visual environment while respecting private property rights.

To preserve the scenic quality of the Town's shoreland areas.

To maintain and enhance high value scenic views and vistas from public viewing sites.

To maintain and enhance the visual character of identified scenic roads in a way that balances visual considerations with traffic movement and safety.

Pursuant to these goals, the Town of Kittery adopts the following policies:

1. To help preserve the character of those roads that have been identified as scenic, a Scenic Road Overlay District will be created. This designation shall apply to all identified Scenic Roads but will deal only with the public right-of-way. The district regulations will require that approval be obtained from the Planning Board before any reconstruction or changes occur that impact the scenic character of the roadway. Under this provision, normal maintenance such as culvert cleaning, brush cutting, repaving of the existing road surface, maintaining existing ditches, striping, etc. could occur without review. Projects such as widening, installing curbs, reconstruction, new ditching, adding a bike lane, etc. that change the physical environment would require approval. The standards for reviewing activities will

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require that any improvement be done in a way that preserves the existing scenic character to the maximum extent feasible consistent with safety and operational considerations and that new or upgraded utilities be placed underground where feasible. Essentially, this becomes a balancing standard to assure that scenic issues are considered as part of any improvement project within the road right-of-way.

2. To minimize the impact of new development on the character of identified Scenic Roads, a provision will be added to the code requiring the use of existing curb cuts when creating a new lot, subdivision, or development that gains its legal frontage on a Category 1 Scenic Road unless there is no viable alternative for access.

3. A provision will also be added to the development standards minimizing, consistent with sight distance and safety considerations, the size of the opening that can be created in the vegetation within and adjacent to the road right-of-way to accommodate a new road or a new or relocated driveway that connects with a Category 1 Scenic Road.

4. The Town should establish architectural and site design standards for new residential and nonresidential structures that are constructed on lots that abut a Category 1 Scenic Road.

5. To assure that scenic resources are considered as development occurs, the Town's development standards will be revised to require that subdivisions and site plan proposals identify all scenic resources including scenic views and vistas and that these resources be addressed in the development plan. In addition to the requirements already covered in the ordinance, the Town's development standards will be revised to require that subdivisions and site plan proposals maintain stone walls, established treelines, and the vegetative character of the roadside area, buffer buildings and the development, and locate the proposed development in a manner that preserves identified views to the maximum extent possible. In addition, the standards will encourage developments to create new views and viewsheds provided they are consistent with Shoreland Zoning limitations on clearing. This requirement will be extended to the development of new lots adjacent to a Scenic Road Overlay District.

6. To help maintain high quality views, a provision will be added to the code that requires that fences and walls (both vegetative and structural) that impact on a Category 1 or 2 Scenic View or Vista as seen from a public road be less than three feet high except for agricultural fences.

7. The Town's development standards will be revised to require that subdivision and site plan proposals address the appearance of the project from adjacent water bodies and design the project to minimize the impact on the scenic character of the shoreline. Landscaping standards will be developed for new developments within the Shoreland Zone.

8. The Shoreland Zoning provisions will be revised by adding a requirement relating to the visual impact of a new residential structure.

9. The Shoreland Zoning standards will be revised to allow the Planning Board to permit a property owner on his/her property to do limited pruning and clearing of brush, trees, and other vegetation within a scenic view or vista to the extent necessary to maintain the view.

10. The Town will investigate State designation of Route 103 from Hunter Street to the end of Pepperrell Road as a state scenic byway to provide additional local control over road improvements to assure that the scenic character of this road is considered. The Town will also consider working cooperatively with adjacent towns and the Maine Department of Transportation to extend the byway designation.

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11. The Town should undertake an educational program to encourage the owners of parcels within the viewsheds of identified scenic views to make use of conservation easements or current use taxation programs such as the Farm and Open Space and Tree Growth Programs to allow the identified views to be maintained.

12. The Town should support the efforts of the Kittery Land Trust and other conservation groups to acquire key parcels or conservation easements within the viewsheds of identified scenic views.

13. The Town should continue to limit the placement of conventional communication towers to certain areas of the community where their impact on scenic resources will be minimized while encouraging the use of co-location to minimize the need for new towers. In addition, the Town should encourage the placement of needed antennas on existing buildings and structures where feasible provided it is done in a manner that minimizes the visual intrusion of these facilities.

SECTION E. MARINE RESOURCES

1. GEOGRAPHIC SETTING AND PHYSICAL CONDITIONS

a. Geographical Setting

For purposes of the Comprehensive Plan, Kittery Harbor includes all the water area within Kittery's jurisdiction including part of the Isles of Shoals. From a practical standpoint, the analysis focuses on the near shore waters and immediate waterfront areas of the mainland portion of the town.

Kittery's harbor and waterfront area is located at the north side of the mouth of the Piscataqua River and is considered part of Portsmouth Harbor which is located on the Maine-New Hampshire border approximately 50 miles north of Boston. The geographic proximity of these two maritime communities has resulted in a common history and interrelated activities. This geographic proximity has been reinforced by three (3) bridge crossings including the Memorial Bridge, the Route One Bypass Bridge (Sarah Long), and the Interstate I-95 Bridge. This deepwater harbor area represents the seawater access to such Seacoast communities as Eliot, South Berwick, Newington and Dover. The harbor and waterfront area extends from Brave Boat Harbor near the York boundary to Spinney Creek near the Eliot border. It includes approximately 34 miles of irregularly shaped shoreline including rocky outcrops, salt marshes, sandy beaches, mud flats, waterfront recreational areas, sheltered coves, marine commercial activities, and a major federal installation, the Portsmouth Naval Shipyard.

Kittery's harbor area has a number of key resource areas that together provide a unique marine environment. The locations of these areas are shown on the Natural Resources Map (see **Figure 4-3**). These areas are briefly summarized below.

1. Spinney Creek

Located just north of the I-95 bridge, this valuable subtidal area straddles the Eliot-Kittery town line. The creek has a significant aquaculture program for American and European oysters as well as hard shell clams. In addition to the marine resources, the creek has a few private float landings. A marina is located on the Piscataqua River in Eliot at the mouth of the creek.

2. Back Channel

The back channel runs from the western end of Badger's Island easterly to Spruce Creek between the mainland and Seavey Island, home of the Portsmouth Naval Shipyard. This channel provides good weather protection with depths ranging from 17-25 feet at MLW, although depths can be much shallower at the western end of Badger's Island. There are two public boat access points as well as several private wharves and landings along the channel. The back channel has become a major anchorage area for recreational boats. Due to its narrow configuration, low bridges, and rapid and irregular tidal currents, this channel is used primarily by small recreational vessels and fishermen.

3. Spruce Creek

Spruce Creek is a significant estuarine resource area. It is a three square mile tidal saltwater estuary fed by five freshwater streams. It is also influenced by the tidal flow from the Piscataqua River. At low tide, approximately 2.5 square miles of clam flats are exposed. It has a medium velocity tidal channel. The marine environment consists of mud flats, high salt marsh, and ledge. Farther up the estuary toward US Route 1, much of the creek is classified as low salt marsh. This area is rich in marine

life, particularly soft shell clams. There is a narrow, unmarked channel approximately 12 feet in depth upstream to Ram Island beyond which it decreases to approximately 8 feet and eventually disappears. The existing moorings belong primarily to the adjacent property owners.

4. Pepperrell Cove

Pepperrell Cove is the primary mooring facility in the town. Although this area is a designated 12-foot US Army Corps anchorage area, the depths generally range from 6-12 feet. There is space for more than 260 moorings, mostly for pleasure boats during the boating season. There are also a number of commercial boaters that use this facility, including two year-round fishermen and 79 seasonal fishermen.

5. Chauncey Creek

This tidal creek runs from approximately Seapoint Beach to Pepperrell Cove and is used primarily by small water craft. Because of a number of overboard discharges, this creek has not met the State of Maine standards for water quality. It is traversed by a power line and fixed bridge with limited clearance.

6. Seapoint Beach

Seapoint Beach is considered a highly sensitive area because of the number and variety of marine invertebrates and shorebirds as well as its extensive salt marsh. The area, which has spectacular ocean views, is used as a recreational and educational facility. The area receives considerable use by both residents and nonresidents.

7. Brave Boat Harbor

The harbor is used primarily by local small craft. There are a few private landings and no public facilities are provided. It has recently been opened for shellfish harvesting on a limited basis. The surf is sometimes a problem and breaks clear across the entrance during periods of disturbed weather.

8. Isles of Shoals

The Isles of Shoals are approximately 5-6 miles offshore and consist of a group of eight main islands and a number of islets, rocks, and ledges. The isles are frequented by fishermen and summer visitors with very few winter inhabitants. The Town has jurisdiction over the Islands of Cedar, Smuttynose, Malaga, Appledore, and Duck. The boundary between Maine and New Hampshire passes through the center of Gosport Harbor and between Star and Cedar Islands.

9. Gosport Harbor

The small harbor area associated with the Isles of Shoals is formed by breakwaters joining Star, Cedar, Smuttynose, and Malaga Islands. It is used as an anchorage by local fishermen and yachtsmen. The Harbor offers protection from all but westerly winds. There are several channels leading into Gosport Harbor; most are deep and free of hazards. Between Appledore and Smuttynose, channel depth is 20 feet.

b. Wind, Current, and Tide Characteristics

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The prevailing winds tend to be from the north and northeast during the winter and from the southwest during the summer. Thus, Kittery Harbor is relatively sheltered in the Piscataqua River area, although those areas facing the Atlantic are exposed to the winter southeasterly winds. The mean tidal range at Kittery Point is 8.7 feet, while at Portsmouth it is 7.8 feet.

Navigation in the Piscataqua portion of Kittery Harbor can be hampered by strong and variable tidal currents. Velocities can vary greatly depending upon the width, depth, and adjacent tributaries, such as Spruce Creek. 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. Currents are usually incrementally stronger on the ebb tide. The Maine Natural Areas Program lists the area off the Shipyard near Four Tree Island in Portsmouth as the fastest flowing tidewater on the U.S. east coast.

A U.S. Army Corps of Engineer study conducted 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 and near Dion's Boat Yard water 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. These currents typically run from 1-3 knots.

c. Federal Navigation Projects

The U.S. Army Corps of Engineers is responsible for three (3) areas of navigation in Kittery's harbor area. These include the Piscataqua River Channel, the Pepperrell Cove Anchorage area, and Gosport Harbor. Except for the Piscataqua River project, there has been no recent Army Corps activity in Kittery Harbor.

1. 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 original project was authorized in 1879 with numerous improvements to the channel since then, especially to widen the channel for navigation at such places as Henderson Point on Seavey Island and Badger's Island and for a turning basin at Boiling Rock. Most recently, the Corps dredged the area across from the New Hampshire Port Authority south of the Sarah Long Bridge to construct a turning basin. Navigation of deep draft vessels in the channel is limited to the three-hour period 1.5 hours before and after slack tide.

2. Gosport Harbor

The Army Corps constructed three breakwaters connecting Star, Cedar, Smuttynose, and Malaga Islands to create an anchorage for local fishermen, recreational boaters, and excursion boats from Portsmouth. The tidal range in this harbor is 8.7 feet. The Corps is responsible for maintaining these structures. The one between Star and Cedar Islands was recently rebuilt; the one between Cedar and Smuttynose Islands is breaking down and will eventually need to be rebuilt.

3. Pepperrell Cove

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The Army Corps is also responsible for the maintenance of this anchorage area. It is generally defined by the Kittery shoreline, Phillips Island, Gooseberry Island and Fishing Island. The project depth is to 12 feet at low tide, although there are a number of places within the anchorage that do not meet this depth, especially on the eastern third where depths of four to nine feet are common.

d. Hazards to Navigation

There are a number of dangerous ledges near the entrance to the harbor as well as within the sheltered portion of the main harbor. These include:

- Moore's Rock near the entrance to Brave Boat Harbor that is unmarked and has a five-foot cover at low tide.
 - A series of unmarked bedrock shoals between Brave Boat Harbor and Sea Point Beach, including East and West Sister shoals.
 - The area near the entrance to the inner harbor that has a number of potentially hazardous areas including Whaleback Island and Reef, Phillips Rock, and the waters between White and Wood Islands.
 - A set of wooden cribs in the inner harbor from a WWII 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 the Gosport Harbor that are well marked, but caution is needed, especially in strong winds. Duck Island is surrounded by ledges and shoals and can be hazardous.

There are also several low bridges that 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 (the 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.

e. Regulated Navigation Area

A regulated navigation area has been established by the U.S. Navy in the vicinity of the Shipyard for security reasons. The west end of Seavey Island from Henderson Point along the shore to the road/railroad bridge (Gate 1) 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 an exclusionary zone within which local control is prohibited. The regulations pertaining to this area are published in the U.S. Coast Pilot published by the National Oceanic Service with updates in the Notice to Mariners published by the Commander, First Coastal District in Boston. Information can also be obtained directly from the U.S. Coast Guard, First Coastal District.

f. Dredging Priorities

The Port Authority has established the following priorities for dredging:

1. Pepperrell Cove Anchorage

This anchorage was last dredged in 1916 to a depth of twelve feet. Water depths are now reduced to six to ten feet within half of the anchorage.

2. Gosport Harbor and Breakwater

The Gosport Harbor breakwater between Cider Island and Smuttynose was broken down by a 1991 storm and continues to deposit large chunks of granite into the harbor.

3. North Side Channel

The North Side Channel by Badgers Island West of Rice Avenue has continued to fill in since the turning basin for ships west of Badgers Island was dredged in 1991. At low tide, the channel can have as little as one foot of water.

2. NATURAL AND MARINE RESOURCES

The harbor has two distinct zones or habitats for marine resources, near shore waters and subtidal bottoms. See the Marine Resources Map for the location of these resources. Much of the following discussion is drawn from the *Comprehensive Harbor Plan for Kittery, Maine*, 1990 and documentation provided by the Maine Department of Inland Fisheries and Wildlife (DIFW) and Department of Marine Resources (DMR). In particular, the DIFW has mapped habitats that supersede previous reports prepared for the York County area that were included in the previous Harbor Plan. The more recent documentation and mapping of habitats reflect a better understanding of the status and needs of certain species, as well as changes in the legal protection of these habitats.

a. Near Shore Waters

1. Oysters

Although there are naturally occurring oysters in Spinney Creek, the commercially valuable species are under the management of Spinney Creek Shellfish Company. This firm has state leases for aquaculture production of American and European Oysters, as well as Little Neck or Hard Shell Clams. These lease areas are within Eliot's town waters.

2. Mussels

There are natural occurring mussels located at the mouth of Spinney Creek, but these are not commercially valuable and are not harvested.

3. Soft Shell Clams

The Spinney Creek Shellfish Company has begun a hatching steamer program as part of an effort to seed other intertidal areas. In addition, the company has also installed a depuration facility for shellfish (soft shell clams) purification, the only such facility in the State of Maine.

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There is a relatively large soft clam bed located in Spruce Creek between Shepherd's Mill Cove and Crockett's Neck. In addition, there are soft shell clam areas along the western edge of Gerrish Island in the inner harbor as well as in Chauncey Creek and Brave Boat Harbor. The state Department of Marine Resources has also identified sea clams off Seapoint and Crescent Beaches.

Until recently, these resources have been closed for harvesting because of water quality issues. Limited commercial harvesting in closed areas has been allowed periodically for depuration facilities. In the late 1980's, the Town began an effort to reclaim this resource. In 1988, the Kittery Conservation Commission began a water quality monitoring program that was instrumental in getting flats reopened. In addition, in the early 1990's, the Kittery Shellfish Committee was reactivated in order for the Town to take a more active role in shellfish management. During the three-year period from 1992 to 1994, the Committee seeded a half million seed clams each year in Brave Boat Harbor in order to reestablish the clam population. In the fall of 1997, the Department of Marine Resources opened a portion of the area for clamming on a limited basis--only on sundays in October, November, and December. There appeared to be a sufficient number of clams for the individuals who obtained licenses to dig. Currently, most of Brave Boat Harbor is open for harvesting and the Department of Marine Resources, in conjunction with the Conservation Commission and the Shellfish Committee, is working to open other intertidal areas in the Town, such as Spruce Creek, Gerrish Island, and Chauncey Creek. The shoreline survey for Gerrish Island has been completed as part of this effort.

4. Surf Clams

Surf clams can be found in a number of locations including Crescent Beach and off Gerrish Island.

5. Spawning Scallops

There are spawning scallops at the mouth of Spruce Creek where it enters the inner harbor. Commercial harvesting has taken place in recent years.

6. Shoreline Wildlife

Coastal Wildlife Concentration Areas

The State of Maine has two programs for identifying wildlife habitats that are administered by Maine Department of Inland Fisheries and Wildlife (DIFW). The first is for habitats under direct state control through the Natural Resources Protection Act and the Maine Endangered Species Act. The second is for habitats not under direct state protection that may receive indirect protection from various state or federal laws. Under the first program habitats are identified as "Essential" or "Significant." Under the second program, habitats are identified by diversity and abundance. The DIFW conducts resource inventories for marine wildlife along Maine's shoreline. These inventories include nesting birds and shore birds. The shoreline areas are mapped and ranked based upon the abundance, diversity and rarity of wildlife. These areas extend inland approximately 250 feet above mean high water and seaward to the 30-foot contour depth from the observed areas. Areas of significance are ranked into three classes: Class A (most abundant and diverse; state or national significance); Class B (relatively less abundant and diverse; regional significance); and Class C (least abundant and diverse on a relative scale).

The only area in Kittery that falls under direct state control through the Essential/ Significant Wildlife Habitat Program is the Isles of Shoals. DIFW has identified Appledore, Duck, Cedar, and Smuttynose Islands as Significant Habitat Seabird Nesting

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Islands. Among the species identified on the islands are the Common Eider, Double Crested Cormorant, Great Black-backed Gull, Herring Gull, Laughing Gull, Black Crowned Night Heron, Glossy Ibis, Little Blue Heron, and Snowy Egret.

In addition to the Essential Habitat area, the DIFW has identified several important wildlife concentration areas that are not under direct state control based upon diversity and abundance of species. These include the shorelines of Spruce Creek and Brave Boat Harbor and the shorelines and near shore waters of much of Gerrish Island (see **Figure 4-8**), all of which are ranked as Class B or having regional significance.

Waterfowl and Wading Bird Habitat

DIFW has identified several shoreline areas where there are diverse concentrations of waterfowl and wading bird habitats that include bitterns, herons, egrets, ibis, and rails. One of these areas is on the north side of Wood Island and the second is to the eastern side of the island. Although not identified by the state, the area between Fishing and Gerrish Islands has a significant concentration of wading birds that have been locally observed. This area may have developed into such habitat because of the continual shoaling of this area. Ram Island has a concentration of herons.

Shorebird Nesting, Feeding, and Staging Areas

These habitats provide critical feeding and resting areas for shorebirds during their migrations from Arctic breeding grounds to South America wintering areas. DIFW has identified Seapoint Beach and Crescent Beach as two such areas in Kittery. In addition to the closely associated beaches, there is an adjacent 70-acre salt marsh as well as outcrops of rocky shores. Local observers have also identified Clark's Island as a shorebird feeding and nesting area. Species observed include Herring Gulls, Great Black-backed Gulls, Laughing Gulls and Cormorants.

Seal Haulouts

The State of Maine has the largest population of harbor seals of any Atlantic state and supports the only significant breeding population in the eastern United States. Although DIFW has only identified Duck Island as a seal haulout area of significance to the state, the Town has identified seal haulouts of local significance in Kittery Harbor at the mouth of Spruce Creek, in Brave Boat Harbor, at Seapoint Beach, near Horn Island, and on White Island.

7. Fossil Tree Stumps

Approximately 2,000 to 3,000-year old fossil tree stumps are located in the intertidal area near Pepperrell Cove. This area has been listed on the state's Natural Area Inventory.

8. Explosion Breccia

This area along the shoreline of Gerrish Island near Sowards Cove represents an unusual geologic formation about 1,000 feet long. It is unusual because it is a physical record that illustrates the sequence of events of the breccia formation. This area is listed on the state's Register of Critical Areas.

9. Fin Fish

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Anaromous fish utilize the Piscataqua River as a migratory pathway. The States of Maine and New Hampshire, along with federal agencies, have been working cooperatively on restoring and enhancing fishery resources in the Salmon Falls River.

b. Subtidal Bottoms

1. Deep Water Scallops

Deep water scallops can be found in the inner harbor west of Gerrish Island and south of Pepperrell Cove. These scallops are harvested on a recreational and commercial basis.

2. Fisheries Habitats

Fisheries habitats have been identified at the entrance to Spinney Creek, in Crockett's Brook, and at Pepperrell Cove.

3. Sea Urchins

Sea urchins are found in the Back Channel and in the area above the Route One Bridge as well in offshore locations. These are being commercially harvested with four Kittery fishermen currently utilizing this resource.

4. Lobsters

As with much of the coast of Maine, lobsters are found widely along Kittery's coastline and harbor. The lobster fishery supports a significant group of fisherman, both year-round and seasonal.

c. Water Quality

The State of Maine has two agencies involved in the sampling of water quality in marine waters--the Department of Environmental Protection (DEP) and the Department of Marine Resources (DMR). The DEP monitors water quality as part of the Clean Water Act that requires states to classify public waters for the purpose of proper use, management, and the protection of water quality. The DMR, on the other hand, monitors water quality solely for the purpose of determining whether or not shellfish can be safely harvested.

In addition to the normal water quality monitoring programs conducted by these state agencies, there is currently an extensive program of marine resource and water quality studies being done in conjunction with the analysis of the shipyard.

1. Department of Environmental Protection

The Department classifies marine and estuarine waters based upon a proposed standard of use. Class SA is the highest classification and is applied to waters that are suitable for all sea water uses including swimming and shellfish harvesting. No direct discharges are permitted. Class SB waters have a relatively lower standard but are still suitable for bathing, fishing, and shell fishing under certain circumstances. Coliform bacteria may not exceed certain levels and these waters must sustain all indigenous marine organisms. Class SC is the lowest water quality class and is suitable for swimming, fishing, and the restricted harvesting of shellfish. The standard for coliform bacteria is lower than Class SB.

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Figure 4-8

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As of 1998, Kittery Harbor has multiple water quality classifications depending upon the specific location in the harbor. Most of the harbor area is classified as a class SB that allows fishing, shell fishing, and swimming. However, a portion of the Piscataqua River near the Naval Shipyard between Interstate 95 and a north-south line near Fishing Island and south of Route 103 is classified as SC. Another area, defined by a north-south line starting from Sisters Point to the Maine-New Hampshire border and east to Cedar Ledge beyond the Isles of Shoals is Class SA except for waters within 500 feet of the Research Station on Appledore Island.

As of 1998, much of the harbor area met the state standards for these water quality ratings. The only water body that is documented as a nonattainment area in Kittery is Spruce Creek due to the presence of licensed overboard discharges (OBD). Over the past few years, most of these OBD's have been removed. Although not documented by DEP, Chauncey Creek has numerous OBD's (approximately six) and is likely not to meet the Class SB standards. In addition, there are four combined sewer overflows (CSO's) that discharge into marine waters. It is likely that in the immediate area of these discharges, the water quality could be classified as a nonattainment area. The State operates a program to provide financial assistance to property owners to replace licensed overboard discharges with alternative treatment systems.

2. The Department of Marine Resources

The Department of Marine Resources (DMR), with the assistance of local volunteers, also samples the marine waters of Kittery annually for fecal coliform for the purpose of directly managing shellfish resources. This monitoring program is conducted in conformance with the *National Shellfish Sanitation Program Manual of Operations*. Based upon this sampling, the DMR classifies shellfish areas according to the following categories:

- *Approved* - Approved for growing or shellfish harvesting.
- *Conditionally Approved* - Approved for shellfishing under certain criteria for a predictable period. If an area does not meet these criteria, it may be closed.
- *Restricted* - Shellfish may be harvested only if permitted and subject to an effective purification process.
- *Prohibited* - Classified by the DMR as prohibited for the harvesting of shellfish for any purpose except for aquaculture activities.

At present, most of Kittery Harbor is classified as prohibited for shellfish harvesting due to past high fecal coliform counts and the presence of overboard discharges, especially in Chauncey Creek. However, there are a number of locations where the fecal coliform standard has not been exceeded for several years. Additional areas may be approved for shell fishing in the fall of 1999.

The Conservation Commission conducts a water quality monitoring program. There are 21 water quality sampling stations each of which is sampled six times per year (see **Figure 4-8**). Within Spruce Creek, there are eight sampling stations. Although this area is currently closed to shell fishing, six of the eight stations meet approved standards as of February of 1998. The two that do not meet the approved standard are located at the head of the creek near Route 1. Of the three stations sampled in Chauncey Creek, only one meets approved standards. In the Piscataqua and Back Channel area there are four stations, two of which meet approved standards; the two stations that do not meet approved standards are in the Back Channel and near the Route One Bypass Bridge. There are four sampling stations in Brave Boat Harbor. Only one station at the mouth of the harbor meets the approved standard but is no longer being monitored. The area near the mouth of the harbor has been opened for shellfish

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harvesting. Seapoint and Crescent Beaches with one station each are currently classified as prohibited although both stations meet approved standards.

d. Offshore Islands

1. Wood Island

This is a small 1.25 acre undeveloped island with a closed Coast Guard Lifeboat Station that is in a state of disrepair. At present it is used for passive recreation and is only accessible by small craft.

2. Whaleback Island

There is a lighthouse on Whaleback Island.

3. White Island

This small island ledge has no structures on it and can only be reached by small craft. It is known to have large flocks of cormorants taking refuge on it, especially during evening hours during the summer months. Seals have also been observed.

4. Isles of Shoals

This group of eight islands lies approximately five miles offshore, southeast of the mouth of Portsmouth/Kittery Harbor. Five of the eight islands lie within the borders of the State of Maine and the Town of Kittery. The other islands are within the jurisdiction of the State of New Hampshire and the Town of Rye. Those within Kittery include:

- *Appledore Island* -- This 85-acre island is currently the home of the Shoals Marine Laboratory, a joint educational/research venture of the University of New Hampshire (UNH) and Cornell University. Previously the island was home to a Coast Guard Station and was a vacation destination for a number of families. There are currently four private homes with seven moorings and one pier, dormitories and a cafeteria, an old observation tower and several radio towers. There are 10 separate owners including UNH. The Laboratory maintains a small pier, four moorings, and picnic grounds. The island can be reached by ferry from Portsmouth via Star Island. The northern portion of the island contains an approximately 18.5 acre multi species heronry-one of six in Maine. This state-recognized critical natural area supports a large number of snowy egrets, black-crowned night herons and glossy ibis.

•*Cedar, Malaga, Duck, and Smuttynose Islands* - Nine-acre Cedar Island has four privately-owned houses on it; Smuttynose has two. Haley Cove is formed by a stone breakwater joining Smuttynose to Malaga Island. The cove is only safe for vessels with drafts less than one foot because of uncharted rocks. There are nine moorings and one pier. The 8.5 acre Duck Island, owned by the Star Island Corporation, is approximately ½ mile north of Appledore and surrounded by ledges. There is a seal haulout that has been designated by the State.

5. Other Islands

There are a number of smaller islands including Fishing, Gooseberry, Squash, and Ram Islands in the Inner Harbor, and Whaleback and Horn Islands off Gerrish Island.

3. HARBOR LAND AND WATER USE

a. Waterfront Facilities and Structures

1. Kittery Landing

Located on Badger's Island, this private condominium facility contains 24 slips, the largest of which is 78 feet.

2. Warren's Lobster House

This facility consists of 300 feet of dockage for a dock and dine restaurant.

3. Badger's Island Marina

This facility offers 31 slips up to 100 feet, a 100-ton marine railway and a hydraulic trailer. Wet winter storage is available. Marine repair is available for engine and hull repairs. Electrical service, showers, head, and a laundromat are also available.

4. Dion's Yacht Yard

This facility offers 42 moorings and 10 slips including transient slips and moorings. The operator maintains a 75-foot marine rail; two 20 ton trailers, a 9-ton forklift, and an 8-ton crane. The yard provides inside and outside winter storage and offers complete marine repairs and following services: electrical, air conditioning, refrigeration, marine store, head, and showers.

5. Government Street Wharf

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The Town's Government Street Wharf is located within the protected area of Kittery Harbor in the Back Channel with a 30-by-35-foot pier but no float. There are approximately 15 moorings and 12 fishing vessels in the vicinity. A few pleasure boats use the wharf and moorings. There is no parking available. Electricity is available as well as a power hoist and boom. The wharf is accessible by a steep paved roadway in the commercial area of Kittery Foreside.

6. Traip Academy Boat Ramp

This facility is primarily for small boat launching and includes a floating dock, paved drive and dirt/grass area for parking. No services are available and lighting is inadequate. This facility is used primarily by power craft due to bridge clearance restrictions. Strong tidal currents are sometimes a problem.

7. Pepperrell Cove Waterfront

The waterfront area includes a restaurant, the nation's oldest family grocery store, and the Town's Pepperrell Cove Wharf. The store provides provisions, gasoline, oil, water, and ice.

Pepperrell Cove Wharf

In addition to the harbor master's office, there are two public piers, a hoist, and a dinghy float landing just west of the Cove that accesses 12 feet of water at MLW. There is also a 15-foot asphalt ramp. Full provisions are available as well as water and electricity. There are public rest rooms available during the summer months, but no pumpout facility for boats. The cove is generally 6-12 feet deep at MLW, although the depths can be much shallower than this in the eastern section of the cove.

b. Mooring and Anchorage Areas

There are 539 existing moorings in Kittery's harbor areas including 42 at Dion's Yacht Yard, and a smaller number at other locations that are privately controlled. This number is up by more than 100 from 1989 when the *Comprehensive Harbor Plan* was done. While there was some increase in the number of moorings in Pepperrell Cove, much of the increase is due the relative large increases in other areas of the harbor such as the Back Channel and Chauncey Creek.

Moorings are allocated and permitted though the Harbor Master based upon criteria defined in the *Town of Kittery Port Authority Rules and Regulations* as amended in 1997. Mooring distribution, by location, is shown in Table 20 for the years 1989 and 1997.

Although other harbor areas witnessed an increase in moorings over the past eight years, Pepperrell Cove is still the primary mooring facility in Kittery. The majority of the moorings are used by seasonal pleasure boats. However, there are 79 seasonal fishermen and two year-round fishermen who moor here. The cove has approximately 254 moorings in 1998 compared to 236 several years ago. Two of these are transient moorings.

TABLE 20
MOORING LOCATIONS 1989 & 1997

	1989	1997
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	Number	Percent	Number	Percent
1-99 - Pepperrell Cove (W)	45	10	55	10
100-250 - Pepperrell Cove (NW)	88	20	101	19
250-399 - Pepperrell Cove (SW)	103	24	104	19
400-499 - Spruce Creek	30	7	43	8
500-599 - Chauncey Creek	26	6	39	7
600-699 - Back Channel/Traip	66	15	87	16
700-799 - Badger's Island	15	3	21	4
800-899 - Main Channel	16	4	27	5
900-999 - Isles of Shoals	6	1	20	4
1000- 1042- Dion's Yacht Yard	42	10	42	8
Total	437	100	539	100

Source: Kittery Harbor Master

The Harbor Master maintains a waiting list for moorings. Applications for a mooring permit must be submitted to the harbor master for assignment to the waiting list. As of 1998, the waiting list has 256 names. This figure is up from 1990 when the list contained 185 names.

Vessels on the mooring and waiting lists have been classified by size to determine the potential mix of additional moorings to continue to accommodate existing vessels as well as those on the waiting list (see **Table 21**).

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TABLE 21
CURRENT MOORING LIST BOAT SIZE - 1997

Boat Sizes	% of Total Vessels
7'-15'	12
16'-20'	25
21'-25'	24
26'-30'	19
31'-35'	10
36'-40'	9
40'+	1

Source: Kittery Harbor Master

Based upon the data in Table 21, it is clear that the Town accommodates the greatest number of vessels in the 16'-30' range--fully 67% of all boats moored in the harbor. The mooring waiting list shows a similar distribution with 75% of all vessels in the 16-30' range (see Table 22).

TABLE 22
MOORING WAITING LIST - 1997

Boat Sizes	% of Total Vessels
7'-15'	2
16'-20'	21
21'-25'	26
26'-30'	28
31'-35'	10
36'-40'	10
40'+	3

Source: Kittery Harbor Master

At present, approximately 46% of people on the waiting list are residents of Kittery, while 54% are nonresidents. This compares to approximately 70% of the existing moorings being occupied by vessels belonging to Kittery residents.

In addition to these moorings, there are a significant number of individual, riparian moorings.

4. ISSUES AND IMPLICATIONS

The inventory and analysis of Kittery's Marine and Harbor Resources suggests that the Town needs to address the following areas:

a. Water Quality

- The improving water quality creates the potential that additional shellfish flats may be able to be reopened to harvesting but the presence of both licensed and illegal overboard discharges (OBD's), combined sewer overflows (CSO's), and other sources of pollution may limit this potential. The Town should address the issues of OBD's, CSO's and other point sources of pollution.
- Harvesting of shellfish requires a regular program for assuring that water quality standards are met including ongoing monitoring and periodic shoreline surveys. The Town should assure that these requirements are met.
- The upland watershed of Spruce Creek may influence the water quality of this resource. The community should reduce nonpoint pollution and address other sources of pollution in this area.
- Other watersheds that are tributary to the Town's coastal waters may also have adverse impacts on water quality. The Town should also reduce the impact of these areas.
- Neither the Pepperrell Cove Wharf nor Government Street Wharf have pumpout facilities. Provisions for pumpout facilities should be considered.

b. Shellfish Harvesting

- Water quality improvements and a large natural set of clams have provided increased potential for shellfish harvesting. This will give the Town new opportunities to tailor its management strategies to local needs. The community should consider how to allocate these resources between recreational, commercial, and aquaculture.

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- Shellfish harvesting has traditionally involved the exploitation of wild stocks, in essence a capture industry. As regional demand for shellfish and other seafood continues to increase, and while the percentage contributed by capture fisheries decreases, the industry will move toward more cultivation of marine species. The Town should consider if it should encourage the cultivation of marine species.
- Aquaculture offers new possibilities for the utilization of marine resources but raises issues about where aquaculture may take place. Since the leasing of subtidal areas is administered by the State, the Town may have only a limited role in this process. However, 12 MRSA S6673 vests significantly more authority in the Town for administering the leasing of areas in the intertidal zone for the purpose of cultivating shellfish. The Town should consider how to manage future aquaculture in the Town.
- c. **Habitats**
 - The coastal area and islands contain a number of significant habitats. The Town should consider if additional action is required to protect these resources and balance conservation with recreational use and development of these areas.
 - There are significant shoreline habitats along Spruce Creek, Gerrish Island, Brave Boat Harbor, Sea Point and Crescent Beaches, the upper end of Chauncey Creek, Wood Island, Mendum Cove, Weir Cove, Clark's Island, in the channel between Badger's Island and the mainland, and at the Isles of Shoals. The Town should consider if its development standards provide adequate protection for these resources.
- d. **Harbor Management/Navigation**
 - There are a number of areas in Kittery Harbor where sedimentation and shoaling have reduced the water depth below desirable levels. The Town should consider if there is anything the Town should be doing to address this.
 - There is significant demand for moorings and dockage in Kittery that exceeds the currently available supply. The community should consider trying to increase the supply of moorings and dockage.
 - Use of personal water craft is a growing concern. The Port Authority should consider trying to manage the use of these in certain areas.
- e. **Water Related Uses**
 - The private infrastructure to support the community's boating and marine industries is subject to change since it occupies high value waterfront land. The Town should review its role in trying to assure that marine related businesses can continue to exist.
 - Islands such as Wood and Ram are significant resources but also place significant responsibility for their management and upkeep on the Town. The community should explore the appropriate public use of facilities like this and how the Town should manage these areas.
 - There are limited facilities to support commercial fishing and lobstering. The Town should consider if it needs to provide designated parking for these uses at the Government Street wharf.

f. Access

•The Town has devoted significant effort to restoring the shellfish resource in Brave Boat Harbor but overland access is restricted by the Rachel Carson ownership. The Town should consider if provisions for reasonable access for clamming should be sought.

•While Kittery is a coastal community, public access to the water is very limited. The Town should consider trying to increase public access to the water.

•Parking to serve the various public facilities including Sea Point Beach, Fort Foster, the Town wharves, and other points of public access plays a key role in their use. The Town should review how it manages the available parking to provide for the optimum usage of these facilities.

g. Conservation of the Natural, Waterfront Character

- A key element of Kittery's attractiveness is its seacoast character. The Town should explore how this feature can be retained as the community grows and changes.

h. Hazard Management

•The Town contains a number of areas that have been identified as being subject to flooding. The Town should continue to manage use and development in these flood prone areas.

5. GOALS AND POLICIES

State Goals: The State's Growth Management Law establishes a number of goals that relate to the management of Marine Resources.

These include:

To protect the State's Marine Resources industry, ports and harbors from incompatible development and to promote access to the shore for commercial fishermen and the public.

To protect the quality and manage the quantity of the State's water resources, including lakes, aquifers, great ponds, estuaries, rivers, and coastal areas.

To protect the State's other critical natural resources, including without limitation, wetlands, wildlife and fisheries habitat, sand dunes, shorelands, scenic vistas, and unique natural areas.

To promote and protect the availability of outdoor recreation opportunities for all Maine citizens, including access to surface waters.

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In addition to the goals established in the Growth Management Law, the State's Coastal Management Policies require that State and local planning be consistent with the following:

1. **Port and Harbor Development.** Promote the maintenance, development and revitalization of the State's ports and harbors for fishing, transportation and recreation;
2. **Marine Resource Management.** Manage the marine environment and its related resources to preserve and improve the ecological integrity and diversity of marine communities and habitats, to expand our understanding of the productivity of the Gulf of Maine and coastal waters and to enhance the economic value of the State's renewable marine resources;
3. **Shoreline Management and Access.** Support shoreline management that gives preference to water-dependent uses over other uses, that promotes public access to the shoreline and that considers the cumulative effects of development on coastal resources;
4. **Hazard Area Development.** Discourage growth and new development in coastal areas where, because of coastal storms, flooding, landslides or sea-level rise, it is hazardous to human health and safety;
5. **State and Local Cooperative Management.** Encourage and support cooperative state and municipal management of coastal resources;
6. **Scenic and Natural Areas Protection.** Protect and manage critical habitat and natural areas of State and national significance and maintain the scenic beauty and character of the coast even in areas where development occurs;
7. **Recreation and Tourism.** Expand the opportunities for outdoor recreation and encourage appropriate coastal tourist activities and development;
8. **Water Quality.** Restore and maintain the quality of our fresh, marine and estuarine waters to allow for the broadest possible diversity of public and private uses; and
9. **Air Quality.** Restore and maintain coastal air quality to protect the health of citizens and visitors and to protect enjoyment of the natural beauty and marine characteristics of the Maine coast.

Local Goals: **To improve the quality of the Town's coastal waters.**

To increase the extent and vitality of the community's shellfishing industry.

To provide for the growth of aquaculture in a way that is positive for the entire community.

To protect important wildlife and aquatic habitats.

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To maintain and improve the community's navigable waters and designated mooring areas.

To assure continued access to waterfront sites by marine activities and water dependent uses.

To improve access to the Town's coastal waters for marine and recreational uses.

To protect private and public property from damage as a result of flooding and coastal storms.

To conserve the natural waterfront, seacoast character of Kittery by assuring that new development is aesthetically and environmentally compatible.

Pursuant to these goals, the Town of Kittery adopts the following policies:

1. The Town, in conjunction with the Maine Department of Environmental Protection, will undertake a program to work cooperatively with property owners to voluntarily remove all existing, legally licensed, overboard discharge systems (OBD's), with a priority for areas that are tributary to flats that have the potential for being reopened to shellfish harvesting. As part of this effort, the Town will assist property owners in obtaining state financial assistance for replacing these systems with other approved sewage disposal systems or for connecting to the public sewerage system. In addition, the Town will work with property owners who cannot afford to replace legal OBD's to develop financing methods to allow replacement to occur.

2. The Town will undertake a program to identify illegal overboard discharges and other unlicensed discharges into the Town's coastal waters on a systematic basis and to take action to have these discharges terminated. This effort will focus on both "straight pipes" and on failing or inadequate private sewage disposal systems. While the initial focus of this effort should be on areas that are tributary to flats, the long term objective should be to eliminate all illegal discharges. To this end, the Town will continue to provide support to the Shellfish Committee and the Conservation Commission to regularly conduct "shoreline surveys" in these areas.

3. The Town will continue to support the ongoing efforts of the Conservation Commission to conduct water quality monitoring of the community's coastal waters.

4. The Town will continue efforts to eliminate the remaining combined sewer overflows (CSO's) through the separation of the combined sewer system and programs to reduce infiltration and inflow into the sanitary sewer system.

5. The Town will enact standards for the quality of stormwater runoff from new and expanded residential subdivisions and commercial developments. These standards shall be consistent with any state standards for runoff quality. The standards should ensure that stormwater discharges do not have an unreasonably adverse impact on the water quality classification of the waterbody or prevent the reopening of viable clam flats. The standards should require that each situation where runoff needs to be managed be analyzed and "Best Management Practices" used. The selection of the appropriate BMP's should be related to the soil type since this will dictate which practices will be most effective in the particular situation. The focus of these standards will initially be in the Spruce Creek watershed but will be expanded town-wide.

6. The Town will work with owners of existing commercial and residential projects on a voluntary and cooperative basis to retrofit existing stormwater systems, where necessary, to improve the quality of the stormwater discharges. The Town will work with

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property owners to develop financing for these improvements.

7. The Town, in conjunction with the Harbor Master and Port Authority, will undertake an education program to discourage the illegal overboard discharge of wastes by boaters operating or moored in the Town's coastal waters and to work to assure that adequate pumpout facilities are available to meet the needs of the boating community.

8. The Town will continue to support its Shellfish Ordinance that formalizes the role of the Shellfish Committee and provides for the management of the Town's shellfish resources.

9. The Shellfish Committee will work with the Department of Marine Resources and other state agencies to identify those areas within which commercial aquaculture may occur, provide mechanisms for leases, and adopt appropriate safeguards to protect water quality and the interests of fishermen, boaters, and upland property owners.

10. The Town will continue to protect coastal areas with significant wildlife and fisheries habitat value. These include the Isles of Shoals, identified by the Maine Department of Inland Fisheries and Wildlife as a Class A habitat under state control, and the shorelines of Spruce Creek and Brave Boat Harbor and the shorelines and near shore waters of Gerrish Island, all identified by DIFW as Class B habitats of regional significance. The Town should work with the Maine Department of Inland Fisheries and Wildlife to identify the extent of the significant habitats in the following areas:

- Seapoint and Crescent Beaches
- Clark's Island
- White Island

The Town will continue to guide new development away from identified sensitive waterfront areas through Resource Protection and Shoreland Zoning. The Town will require that proposals for new residential subdivisions or nonresidential developments in or adjacent to shoreland areas include an independent assessment of the impact of the proposal on wildlife and fisheries habitat and, if potential adverse impacts are identified, a proposal for mitigating such impacts.

11. The Town should develop standards to ensure that new shoreland development is compatible with the visual environment.

12. The Port Authority will work with the appropriate state and federal agencies to develop a program to restore/maintain the regulatory depths in navigation channels and designated mooring areas in accordance with the priorities listed above.

13. The Port Authority and Harbor Master will continue to evaluate the usage of the designated mooring areas and attempt to increase the available supply of moorings in these areas through changes in the mooring patterns.

14. The Port Authority will review its regulations relating to speeds, noise, and wakes to assure that inappropriate boating activity is controlled in the following areas:

- The Back Channel
- Spruce Creek
- Chauncey Creek
- Adjacent to the shoreline of Gerrish Island
- Adjacent to Seapoint Beach
- Brave Boat Harbor

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- Isles of Shoals
- Adjacent to Wood Island

15. The community's land use and harbor management regulations will be revised to require that existing private mooring areas that are regulated by the Port Authority be maintained and access to the existing moorings guaranteed if there is a change of ownership or use of the upland property unless a removal or reduction in the number of moorings is specifically approved by the Port Authority based upon the finding that there are adequate replacement moorings and access in other locations in the town.

16. The Town's land use regulations should be revised to allow water-dependent and marine uses as the only permitted uses in those areas that are designated as commercial fisheries and marine activities areas in the Future Land Use Plan. Within these areas, other non-marine uses should be permitted only with case-by-case review to determine that the site is not needed for water related use. In conjunction with this change, the Town should explore ways to provide financial assistance for maintaining these areas in marine use.

17. The Town will develop a long range management program for Wood Island Lifeboat Station that identifies appropriate uses of the island, the type of public facilities (if any) that should be provided, and a strategy for providing the desired facilities and oversight. If Whaleback Island comes under Town control, a similar plan should be developed for that location.

18. The Town will work with the management of the Rachel Carson sanctuary to try to develop limited overland access to Brave Boat Harbor for shellfishing and recreational use.

19. The Town will work to discourage intense use of Seapoint Beach by increasing enforcement of parking restrictions near the beach.

20. The Town will develop a management plan for Fort Foster that balances the needs of competing interests.

21. The Town will develop a plan for managing access, use, and parking at the Government Street wharf and the Traip Academy boat ramp.

22. The Town will work to increase the number of points of public access to coastal waters. This effort will include:

- improving access to existing Town owned waterfront parcels that are unused or underutilized
- working with developers to set aside and/or create public access as part of development and reuse proposals
- establishing a Kittery 21st Century Fund to improve existing Town owned waterfront parcels and to acquire additional shorefront property that is appropriate for public access. This will include establishing a mechanism to provide for the ongoing funding of the effort.

Environmental considerations will be included in all public access projects.

23. The Town will continue to restrict development in areas that are subject to flooding and storm related inundation.

SECTION F. WATER AND SEWER SERVICE

Within the older, built-up area of Kittery and the Route One Corridor, public water and public sewerage are widely available. In addition, year-round public water service is generally available in the Kittery Point, Haley Road, Route 236 and Picott Road areas and on part of Gerrish Island. Seasonal water service is available on the easterly side of Gerrish Island and on Cutts Island. In the outlying, more rural areas of Kittery, water supply and sewage disposal are generally an individual responsibility, based on private wells and septic systems. This chapter provides an overview of the current status of the public water and sewer systems in Kittery.

1. PUBLIC WATER SERVICE

The Town of Kittery's water supply is provided by the Kittery Water District, a quasi-municipal corporation that supplies water to the municipality of Kittery, as well as parts of York and Eliot. The district operates independently from the municipalities. The system is financed by user fees. The Town of Kittery does not fund infrastructure improvements to the system.

a. Supply

The Kittery Water District draws its water from the Bell Marsh Reservoir and three ponds in York. The Water District's water treatment facilities were recently constructed and have a capacity of 5 million gallons per day (gpd). The current average daily usage is 2.5 to 3.0 million gpd. Total usage has dropped somewhat over the last five years due to decreasing use by the Shipyard. The Shipyard now accounts for about 41% of usage compared to 60% in the past.

Currently the Water District has no issues with water quantity, the treatment plant's capacity to meet current usage demands, or meeting drinking water quality standards.

b. Water Quality

The district relies on surface water sources. Protecting these sources from contamination is a key concern of the District due to unauthorized recreation that occurs seasonally. To help

protect the quality of the District's source, the Town of York has established a watershed protection district that covers the reservoir and ponds.

c. Service Area

The Water District currently serves about 4,800 households. **Figure 4-9** shows the areas of Kittery that are served by the public water system. All of the older built-up area of Kittery has public water as does the Route One Corridor to the York town line. Public water 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 many of the streets connecting to it. Seasonal water service is available on the easterly side of Gerrish Island and all of Cutts Island.

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. There are no planned extensions of the water supply system. The Water District is not adverse to extensions of service. The District has adequate treatment and pumping capacity to meet additional demand. At this time, the only mechanism that exists for funding the extension of water mains is for a developer or other entity requesting the extension to pay the full cost of the project. The lack of any other way of funding the extension of the water system makes expansion of the service area into areas where growth is desired problematic.

d. Adequacy of Service

The distribution system consists of approximately 86 miles of water mains. Most mains are adequately sized but about 10% could be increased in size. Some areas of Gerrish Island and all of Cutts Island are served by a surface distribution system that provides public water only six months a year.

The Public Utilities Commission standard of 20 pounds per square inch (psi) of residual pressure limits service to elevation 181 without the construction of a new standpipe or a low pressure service agreement with the District.

e. User Fees

The operation of the Water District is funded by user fees. Users are billed quarterly based upon actual water usage. Residential users with a 5/8" meter pay a minimum of \$29.40 for the first 1,500 cubic feet (cf) of use or approximately \$1.96 per 100 cf. The rate per 100 cf decreases as usage increases reaching \$1.13 per cf for usage in excess of 15,000 cf

per quarter. Commercial, multifamily residential, and industrial users with larger meters pay slightly lower rates for the initial quarterly minimum usage but have a higher minimum threshold.

Kittery's rates are lower than in many neighboring communities for small volume users but are higher in many cases for large volume users. For example, the York Water District charges residential customers with a 5/8" meter \$50.38 for the first 1,200 cf or \$4.20 per 100 cf and its rates stay significantly above Kittery's rates unless the connection uses more than 27,000 cf per quarter. The Kennebunk, Kennebunkport, and Wells Water District charges \$35.76 for the first 1,200 cf of quarterly use for a 5/8" service or \$2.98 per 100 cf. K,K&W's rates remain above Kittery's rates for all users. The South Berwick Water District charges customers with a 5/8" meter \$38.55 for the first 7500 gallons (1,003 cf) or approximately \$3.84 per 100 cf. At higher levels of use, the South Berwick rate drops to approximately \$1.06 per 100 cf. The Portsmouth Water and Sewer District serves both Portsmouth and Newington. Its charges customers with a 5/8" service \$30.48 for the first 1,200 cf used in a four month billing period or about \$2.54 per 100 cf. The rate for usage above this minimum is \$1.40 per 100cf.

2. PUBLIC SEWER SERVICE

The Town of Kittery operates the sewage collection, conveyance, and treatment systems. Wastewater sludge is handled by a private contractor that land spreads the material. The Town of Eliot contracts with the Town to treat wastewater generated in that community.

a. Sewage Treatment Capacity

The Municipal Wastewater Treatment Plant is located on Dennett Road and discharges into the Piscataqua River. The treatment plant was expanded in 1993. The expansion increased the plant's capacity from 1.2 million gallons per day (gpd) average flow to 2.5 million gpd. The plant was designed to handle a peak capacity of 4.2 million gpd.

The average daily flow rate at the plant is currently 1.2 to 1.4 million gpd. Flow rates increased somewhat with the extension of the Route One sewer to the York line. The Shipyard accounts for 30% to 40% of the total volume of waste water but its share has been dropping in recent years. The Town of Eliot currently sends about 0.1 million gpd to the Kittery treatment plant which is about half of its contract capacity.

The plant is operating at about 55% of design capacity in 1999, handling an average daily flow rate of 1.2 to 1.4 million gpd. A sewage treatment plant typically can operate at up to 80% of its design capacity before expansion needs to be considered. Future expansion of the plant may be constrained at its current location under current regulations. The Town owns an adjacent parcel but there are environmental constraints on its use. There currently is approximately 0.6 to 0.8 million gpd of available unused capacity at the plant. Of this amount, about 0.1 million gpd is committed contractually to Eliot. This leaves a useable

capacity to support additional or expanded users of approximately 0.5 to 0.7 million gpd. This is equal to about 2/3's of the flow currently generated by the sewer development in Kittery excluding the Shipyard and Town of Eliot flows.

The plant typically operates within its license requirements. The treatment plant effluent is currently chlorinated during the summer months. With expanded shellfish harvesting and aquaculture in the area, the Town may face the need to move to year-round chlorination.

The Town contracts for the disposal of the sewage sludge generated by the plant. The contractor land spreads the sludge. There is increased scrutiny of land application of sewage sludge and while the Town currently has no plans to change its method of disposal, it may need to consider alternatives in the future if the regulatory situation changes. A change will probably increase sludge disposal costs significantly.

b. Sewer Service Area

The area of Kittery served by public sewers is relatively small. Approximately 1,900 households are served by the system. Sewer service is generally available within the older built up area of the Kittery (see **Figure 4-9**). 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.

The Facilities Plan done for the Town in 1991 studied the possible extension of sewerage to Kittery Point but it is unlikely that this will ever happen. The plan also looked at the extension of the sewer system west of the Turnpike where service is not currently available. The plan envisioned a possible extension in the Dennett Road/Old Dennett Road area. The plan also envisioned a second extension westward on Route 236. This main could provide service to the Route 236 Corridor, Martin Road area, and Stevenson Road/Manson Road area. In the longer term, this could allow for the extension of sewers north on Picott Road.

c. Sewer System Constraints

While the Town's sewer system is in reasonably good shape, there are a few constraints. Within the older, built-up core of the community, there are some streets with old, undersized sewers that should be replaced in the near future.

A second constraint involves pump station capacity. A major share of sewage flow goes through pump stations. A number of these stations are or will become undersized as flows increase. To address this constraint, the Town has an ongoing program for upgrading these pump stations as needed.

The Town also has a few remaining areas with combined stormwater and sanitary sewage flows. While this is not a major issue for the Town, it is a long range issue. In

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addition, there are some issues with infiltration and inflow of stormwater into the sewer system. The Town has an ongoing program for dealing with this issue.

d. Sewer System Funding

Kittery's sewer system operates as a self supporting activity without financial support from the general fund. The major source of operating revenues is user fees. Users are billed quarterly. The fee consists of two parts, a flat \$24 per quarter to pay debt service costs and a variable fee based upon actual water usage. This fee is \$38 per quarter for the first 1,500 cf of use with any use over 1,500 cf billed at \$3.75 per 100cf.

Kittery's sewer rates are generally higher than in surrounding communities although the actual cost for the user depends on the exact situation since many sewer systems use a combination of fixed and variable fees. For example, the Wells Sanitary District charges residential users fixed fees of \$145 annually plus a usage fee of \$2.04 per 100 cf. South Berwick charges a flat debt service fee of \$105 per quarter plus a usage fee of \$0.70 per 100 cf. Portsmouth bills on a use basis at approximately \$1.40 per 100 cf.

In addition, the Town has adopted a sewer impact fee which is paid by all new users that connect to the sewer system and by current users that increase their sewage flow. The fee is designated to cover the cost of upgrading the sewage treatment plant to increase its capacity. The basic fee is \$2,000 per unit charge. One unit charge equals the sewage flow from a single family home, apartment unit, or 1,500 square feet of retail space.

The Town also has a "betterment fee" procedure within the Code of Ordinances 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.

3. ISSUES AND IMPLICATIONS

The analysis of the inventory suggests the following issues that need to be addressed in the Plan:

1. 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.

2. The sewer system funding currently includes an impact fee for new users to help pay for the treatment plant facilities. In addition, new users may need to pay a betterment fee for a sewer extension or a special entrance permit fee to connect to the system. These fees are designed to help pay for new or expanded capacity in the system and to assure that new users pay their fair share. At the same time, these fees may discourage new users from tying into the sewer system if they can rely on private on-site disposal methods. The Town should carefully consider the balance between these interests.

3. There is some available capacity at the treatment plant. Currently this capacity is allocated on a first come – first served basis. Since expansion of the plant at its current site may be constrained in the future, the Town should consider if it needs to have an allocation system for the available capacity if flows begin to increase significantly. In addition, the Town should consider exploring the feasibility of using the available Town land for future treatment plant needs.

4. The Town has no formal policy governing sewer extensions. Other than the “betterment fee,” the Town has no mechanisms in place to fund extensions other than through private construction by developers. In addition, while the Council must approve all sewer extensions, there are currently no criteria for determining which extensions are desirable and which are not. There should be a relationship between the Town’s land use policies and its sewer extension policies. The Town should consider where sewer extensions are desirable and how they can be financially accommodated.

5. The Town’s Facility Plan for the sewer system is now almost a decade old. The Plan was based upon projections of high levels of growth as a result of the development boom of the 1980's. The Plan is now less useful than it could or should be in making decisions about the system. The Town should consider if the Plan needs to be updated.

6. From time to time, fluoridation of the public water system has been proposed. The Town should consider whether this issue should again be brought to the voters for a formal referendum vote.

4. GOALS AND POLICIES

State Goals: To encourage orderly growth and development in appropriate areas of each community, while protecting the State’s rural character, making efficient use of public services and preventing development sprawl. (Growth Management Act)

To plan for, finance and develop an efficient system of public facilities and services to accommodate anticipated growth and economic development. (Growth Management Act)

Local Goals: To assure that the quality of the Town’s drinking water is maintained.

To provide adequate public water and sewer service in those areas of the community where higher intensity development is desired.

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Figure 4-9

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To assure that the provision of water and sewer service does not create undesired development pressure in rural areas.

Pursuant to these goals, the Town of Kittery adopts the following policies:

1. The Town should encourage the Kittery Water District to 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 the other ponds that serve as the District's supply to assure that the water quality of these sources is maintained.
2. The Town should undertake an update of its sewer Facilities Plan to provide solid information about the system to allow informed decisions to be made about system improvements, sewer extensions, and the potential to expand the treatment plant.
3. The Town's Sewer Ordinance should be revised to establish criteria to be used by the Town Council in considering sewer extensions. These criteria should assure that sewer extensions do not increase development pressure in those areas designated as Resource Protection, Rural Conservation, Low Density Residential, and Kittery Point Village on the Future Land Use Plan.
4. The Town should plan for the extension of sewers into those areas where they are needed to facilitate growth that is consistent with the land use policies. Extension of sewers west of the Turnpike in the Route 236 Corridor should be a priority if needed to facilitate high quality nonresidential development within designated growth areas.
5. The Town should explore creative funding mechanisms such as Tax Increment Financing to allow for the extension of public sewers into those areas where development is desired or that have existing problems with inadequate septic systems.
6. The Town should monitor the utilization of the capacity of the sewage treatment plant. As the unused capacity decreases, the Town should explore whether it needs to establish a system for allocating this capacity to assure that the maximum public benefit is obtained from this limited resource.
7. The Town should continue to upgrade the existing sewer and pump station system and continue to reduce the amount of infiltration and inflow of stormwater into the sewer system.
8. The Town should explore creating a financing arrangement for the payment of sewer impact fees that allows the user to spread this cost over a number of years similar to what is currently done for betterment fees.

9. The Town should consider holding a referendum on the issue of fluoridation of the public water supply to determine if there is support for this action.

SECTION G. LAND USE PATTERNS

1. INTRODUCTION

One of the goals of Maine's Growth Management program is to "encourage orderly growth and development in areas of each community, while protecting the State's rural character, making efficient use of public services and preventing development of sprawl." This section characterizes Kittery's current land use patterns and identifies development trends since 1985.

2. GENERAL PATTERN OF DEVELOPMENT

Kittery is primarily a residential community. Housing is found in every section of the town except the Route One retail outlet strip (see **Figure 4-10**).

Commercial activity is spread out along the primary travel routes through town. The outlet strip on Route One has the highest density of retail activity, but restaurants, hotels, professional offices, home based businesses, and personal services are mingled with residential uses along the Old Post Road, Route One, Route One Bypass, and in the Government Street/Kittery Foreside area. A few businesses are found on Pepperrell Road in the Kittery Point area. Route 236 has a few sparsely distributed commercial services/retail businesses along it in the section west of the Turnpike.

Industrial uses are limited to the Portsmouth Naval Shipyard (PNS), a light industrial park in the Ranger Drive area, and Watts FluidAir that is located at the intersection of Route One and Cutts Road.

Land used for agriculture is found in three areas of Kittery: a 93-acre parcel off Wilson Road (Johnson Farm), a 56.5 acre parcel near the intersection of Bartlett and Payne Roads, and an 8.5 acre parcel off Picott Road. The Picott Road parcel is the only one enrolled in the Farm and Open Space Tax Program.

Much of Kittery east of Haley Road and Route One is wooded. Three hundred and seventeen of the 335 acres in Kittery enrolled in the Tree Growth Tax Program are in this part of town. The other 18 acres are off Wilson Road near the Kittery/Eliot town line.

3. OVERVIEW OF RECENT DEVELOPMENT

The 1980's were a period of rapid growth in Southern Maine. Between the 1980 and 1990 Census, the total number of housing units in Kittery increased from 3,559 units to 3,857 units, an increase of 298 units (8.4%). Construction activity in a single year peaked in 1988

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with 74 building permits issued. By 1989, the boom was over. The number of new residential building permits dropped by two thirds to 24 units in 1989 and 1990.

4. RESIDENTIAL LAND USE

a. Housing Unit Trends 1980-1990

The U.S. Census has divided Kittery into three regions that are useful for analyzing where residential growth occurred. Two of the regions are “Census Designated Places” (CDP), the other region consists of the “Rest of Kittery.” The approximate boundaries of the three areas are:

- **Kittery CDP** includes Kittery Foreside and PNS. It is bounded on the south by the Piscataqua River. The boundary line follows the Maine Turnpike north to Wilson Road, drops southeast a short distance to Route One, then northeast to the point where Route One crosses Spruce Creek. The delineation line then runs south down the center of Spruce Creek to Portsmouth Harbor.
- **Kittery Point CDP** includes Kittery Point and the land contained within the bounds of Portsmouth Harbor to the south, up the eastern side of Spruce Creek to a point roughly even with the Crockett’s Brook lobe of Spruce Creek, where the boundary turns northeast and follows Bartlett Road to the vicinity of Charles Hill Road. From Charles Hill Road, the line runs overland to intersect with Brave Boat Harbor Road in the vicinity of McEacherns Way. The boundary then runs south along Brave Boat Harbor Road to the northwest lobe of Chauncey Creek which it follows to Portsmouth Harbor.
- **Rest of Kittery** includes the areas of town that are not part of the Kittery CDP or Kittery Point CDP. This includes all of the land west of the turnpike, most of the land northeast of Spruce Creek, and Cutts and Gerrish Islands.

Table 23 compares the number of year round housing units in 1980 to the total housing units in 1990 by the number of units in each structure type for the three areas of town. In comparing these figures, 72 units are unaccounted for in 1980 (**see Table 23 footnote**) that if still standing, are included in the 1990 figures. While this is an imprecise comparison, it still provides a useful means of looking at where residential growth occurred in Kittery during the 80's.

Kittery as a whole had a net gain of 297 units in two to nine unit structures during the 1980's. The Kittery CDP gained 292 units, the “Rest of Kittery” added 30 units, and there was a loss of 25 units in two to nine unit structures in the Kittery Point CDP.

The net number of single family homes increased by 25 units. The “Rest of Kittery” area had an increase of 229 single family units, the Kittery Point CDP added 11 single family

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units, but these increases were offset by a reduction of 215 one unit structures in the Kittery CDP.

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Figure 4-10

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Kittery added 68 mobile homes to its housing stock between 1980 and 1990. Three units were added in the Kittery CDP, none were added in the Kittery Point CDP, and 65 were added in the “Rest of Kittery”.

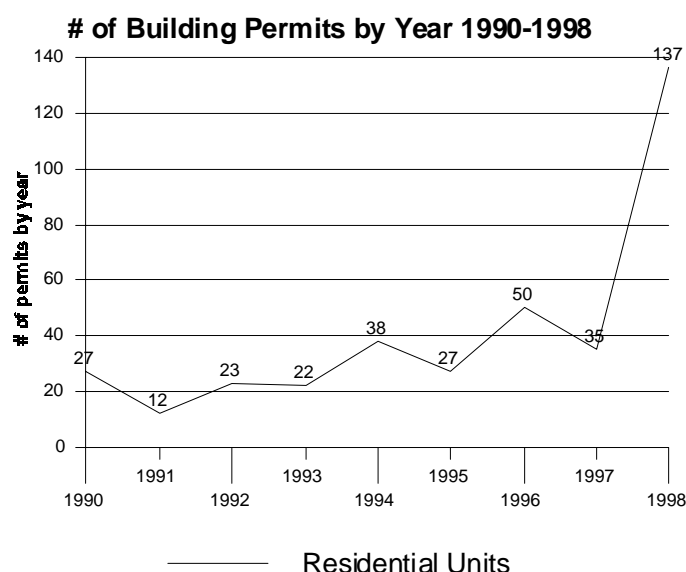
**TABLE 23
HOUSING UNITS BY CENSUS AREAS 1980-1990**

Number of Units in Structure	1980 Year Round Units				1990 Total Units			
	Kittery CDP	Kittery Pt. CDP	Rest of Kittery	Total	Kittery CDP	Kittery Pt. CDP	Rest of Kittery	Total
1	1,430	439	719	2,588	1,215	450	948	2,613
2	509	69	53	631	422	35	33	928
3-4					219	9	27	
5-9					160	0	23	
10-19	57	0	0	57	37	0	0	37
Mobile Homes	6	7	198	211	9	7	263	279
Total	2,002	515	970	3,559¹	2,062	501	1294	3,8572

Source: U.S. Census Summary File 1A

¹There were a total of 3,559 housing units in Kittery in 1980. Because of differences in the way units were reported between the 1980 and 1990 Censuses, there are 72 units in the 1980 Census categorized as “vacant units intended for seasonal occupancy and vacant units held for migratory workers” that are unaccounted for in the area of town summaries or by the number of units in the structure.

²Total does not include 51 units listed by the Census as “other,” which can include tents, vans, boats, railroad cars, recreational vehicles, and the like.

Figure 4-11

b. Housing Unit Trends 1990-1998

According to Kittery building permit records, 234 housing units were permitted between 1990 and 1997. Eighty-five percent (199) of these were single family units, 4 units were in duplexes, and 31 units were in multi unit structures. Between 1990 and 1997, the annual number of single family home building permits issued varied between 22 and 33 permits a year, except in 1991, which had 12 single family permits.

Building permits were issued for 137 housing units in 1998. Included in the permits were 28 single family homes, 14 duplex units (7 buildings with 2 units in each), 16 units of senior housing in one building, 14 mobile homes, and 65 units of multi-family affordable housing. **Figure 4-11** shows the total number of residential units permitted each year between 1990 and 1998.

c. Location of Residential Development 1990-1997

A review of building permit lot locations (see **Table 24**) shows that single family home construction was concentrated in the Haley Road area (47 permits), the Bartlett/Norton/ Miller Roads area (43 permits), and the area west of the Turnpike (40 permits). Forty-three units were permitted in the downtown area, but 36 of those were for senior housing additions to Meeting House Village. The shore area combined also had a significant number of permits issued, with 23 units on Gerrish Island, 10 in the Barter's

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Creek area, and 16 in the Chauncey Creek and Brave Boat Harbor area. Table 24 shows the total number of permits issued, by year, in different areas of Kittery.

TABLE 24
RESIDENTIAL DWELLING UNITS PERMITTED 1990-1998

Year	Haley Road	Bartlett/ Norton Road Area	Chauncey Creek/ Brave Boat Harbor Roads	West of TP	Down-town	Barter's Creek	Gerrish Island	Route One	Badger Island
1997	13	7	3	7	2	1	0	0	0
1996	5	11	3	1	23	2	3	1	0
1995	8	3	2	8	0	1	2	1	1
1994	7	2	2	8	13	3	2	1	0
1993	6	5	1	5	1	1	1	1	1
1992	4	3	1	6	1	1	6	0	0
1991	1	4	2	0	0	0	4	1	0
1990	3	8	2	5	3	1	5	0	0
'90-'97 Total	47	43	16	40	43	10	23	5	2
1998	9	5	2	8	18	5	8	65	17
'90-'98 Total	56	48	18	48	61	15	31	70	19

Source: Kittery Planning Office, based on addresses given on building permits

d. Subdivisions Approved 1988-1997

Between 1988 and 1997, the Kittery Planning Board approved a total of 141 residential housing units in subdivisions (see Table 25). Both single and multi-family

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housing units are included in the total. Not included are subdivisions that the Planning Board approved but that were not built. The number of units approved in each zoning district is as follows:

- 78 units (55%) were approved in Rural Residential Zones (40,000 sq.ft. minimum lot size unless in a cluster subdivision);
- 22 units (16%) were in Urban Residential Zones that have 20,000 sq.ft. minimum lot size requirements (19 of the units were senior housing at Meeting House Village)
- 21 units (15%) were approved in Suburban Residential Zones (40,000 sq.ft. minimum lot size without public sewer; 30,000 sq.ft. with public sewer);
- and 20 (14%) of the units were approved in Rural Conservation Zones (80,000 sq.ft. minimum lot size)

e. Subdivisions Approved in 1998-1999

In 1998, the Planning Board approved subdivisions with a total of 190 housing units. While the total number of units approved in 1998 exceeds the total number approved and developed between 1988 and 1997, several unique, larger scale projects are included in the 1998 total. Seventy units are for an expansion of Yankee Commons Trailer Park. While the units at Yankee Commons have been approved, early studies indicate that the costs of expansion may discourage development of the project. Woodland Commons, an affordable rental housing project accounts for 65 of the units. Meeting House Village is adding 14 units of senior housing. Of the 190 units in subdivisions that the Planning Board approved:

- 140 units are in the Mixed Use Zone (20,000 sq.ft. minimum lot size for dwelling units without public sewer, 6,000 sq.ft. minimum lot size for units with public sewer);
- 26 units are in the Urban Residential Zone (14 of which are in Meeting House Village);
- 14 units are in the Badger Island Zone;
- 7 units are in the Rural Residential Zone;
- and 3 units are in the Rural Conservation Zone.

In 1999, the level of subdivision activity dropped. The Planning Board approved two residential subdivisions with a total of 24 lots.

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**TABLE 25
SUBDIVISIONS APPROVED 1988-1997**

Date	Map/Lot	Street/ Subdivision	Zoning	# Lots Approved	Comments
97	49/3-3	Picott Rd.	Rural Res.	4	short cul-de-sac
97	53/1	Goodwin Rd.	Rural Cons.	3	
97	2/13	Tara Lane	Suburban Res. & Shoreland Overlay	8	approved but not built yet
96	14/51	143 Rogers Road	Urban Res.	19 units	Meeting House Village addition
95	53/21	27 Pocahontas Rd.	Rural Cons.	4	
94	17/43	225 Whipple Road	Urban Res & SO	3	1 large lot from which 2 smaller lots were subdivided
92	68/4A	Lynch Lane	Rural Res.	5	off Bartlett Road
91	39/17	Wellswood	Rural Res.	29	modular rental housing
90	39/3	Haley Rd.	Rural Res	9	
90	52/8	Pocahontas Rd.	Rural Cons.	3	
90	61/19A	Hill Creek Drive	Rural Res	14	off Lewis Road /PUD w/ joint septic
Total # of units approved in subdivisions '90-'97				101	

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Date	Map/Lot	Street/ Subdivision	Zoning	# Lots Approved	Comments
89	51/8	Whaleback Estates	Rural Cons	10	off Pocahontas Rd.
89	26/39	Crockett's Neck Rd.	Sub. Res.	3	
88		Haley and Crocketts Neck Rd.	Sub Res	10	Barter's Creek Road
88		Miller Road	Rur Res	3	
88	56/3-40 thru 3- 50	Elizabeth Lane	Rur Res	11	Bartlett, Miller, Norton, & Haley Rd. area
88	62/29	Bartlett Rd	Rur Res	3	strip development along Bartlett Rd. between Pinkham & Lynch Lane
Total # of units approved in subdivisions '88-'89				40	

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TABLE 26
SUBDIVISIONS APPROVED 1998-1999

Date	Map/ Lot	Street/ Subdivision	Zoning	# Lots/Units Approved	Comments
May '98		Meeting House Village	Urban Res	14	Rogers Road
June 98		Gerrish Island	Rural Cons	3	Scott's 3 lot subdivision
Aug 98		Woodland Commons	MU	65 3 & 4 plexes	Route 1 affordable housing, rental units, due for completion 8/99
Sep 98		Yankee Commons Trailer Park Expansion (by rest area)	Mixed Use	70	Route 1 Economically unfeasible (30K per site)
Oct 98		Kittery Landing	Badger Island	8 condo units	high end condo
Oct 98		Somerset	Badger Island	6 condo	high end condo
Nov 98		Yankee Green Trailer Park	Mixed Use	5	
Nov 98		Spruce Point Subdivision	Rural Res	7	Haley Road
Dec 98	23/	Dalrumple Subdivision	Urban Res	12	Debra Lane single family
Aug 99		Jmack Construction	Rural Res	11	Fernald Road
Aug 99		Lynch Subdivision	Rural Res	13	Bartlett Road

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Total # of units approved in subdivisions in 1998	190	
Total # of units approved in subdivisions in 1999	24	

5. COMMERCIAL LAND USE

Kittery's dominant commercial area is the strip of retail outlet stores along Route One. Approximately 120 national and regional chain stores currently operate there. However, few of the everyday needs of Kittery's citizens can be met in the outlet center area. To meet these needs, there are several smaller scale commercial areas located along the primary travel routes through town in which banks, pharmacies, hardware stores, and the like are located. In many of these areas, retail and service businesses mingle with residential land uses.

The one retail use that is conspicuously absent is a large grocery store. Most residents travel to New Hampshire or to neighboring towns for their primary food shopping and do their supplementary shopping at any of several small markets or convenience stores around town.

North of the outlet center area along Route One, there is sparse retail and restaurant commercial development

Restaurants, hotels, professional offices, home based businesses, and professional and personal service businesses are found along the Old Post Road, Route One, and Route One Bypass. At the southern end of Old Post Road is James Corner, a small commercial area that includes a boatyard/hardware store, car electronics, and personal services businesses.

The benefits of effort and investment by the Town are evident at Wallingford Square. Located at the intersection of Government and Wentworth Streets, Wallingford Square is the focal point of the traditional downtown, mixed use/retail area. Walker Street plays a similar, but secondary role. The town library is in this area.

Shapleigh Road, between Manson Avenue and Whipple Road has a pocket of commercial development that includes the post office, a bank, two drug/convenience store, and a hardware store.

Two small pockets of commercial development are found along Pepperrell Road in the Kittery Point area, one at the intersection with Pepperrell Terrace that includes a small grocery store, the Kittery Point Post Office, and an art gallery. The other, known as Lewis Square, is at the intersection with Haley Road. It consists of a church, gas station, and fire house.

Badger's Island has a boatyard as well as a mix of residential, restaurant, and retail uses.

A strip of warehouse and service type businesses is found along Route 236 west of Martin Road. The neighboring area around the Route 236 strip is residential.

6. INDUSTRIAL LAND USE

The Portsmouth Naval Shipyard (PNS), located on Seavey Island, is a 278-acre site, two thirds of which is covered by a high density industrial area. The shipyard was first established in 1690, became a Navy shipyard in 1800, and has been used for the construction of ships and submarines. It is currently used to overhaul nuclear propulsion ballistic and attack submarines.

PNS is currently negotiating to lease several buildings at the shipyard to private sector firms. The former Naval Prison Building was leased to a private concern in 1999.

Besides PNS, the amount of land used for industrial purposes in Kittery is limited. The PNS site is the only land currently zoned Industrial. Ranger Drive, located north of Dennett Road between the Turnpike and the Route One Bypass has been targeted for light industrial development. Current occupants of the area include BOC Gases, an automobile auction business, and a wholesale lobster dealer. The area is zoned Commercial, which allows as Special Exceptions, uses related to warehousing and storage, manufacturing operations, and research laboratories.

The Watts FluidAir facility, at the intersection of Cutts Road and Route One, is the only other large scale industrial land use in Kittery. It is in a Mixed Use zoning district.

7. ISSUES AND IMPLICATIONS

1. Between 1980 and 1990, nearly all of the increase in single family homes occurred outside of the traditional town centers of the Kittery CDP and the Kittery Point CDP. That trend has continued in the 1990's with 253 (70%) of the 364 building permits issued being in the Haley Road, Bartlett/Norton Roads, west of the Turnpike, Gerrish Island, or Route One areas. Of these areas, only Route One is currently served by public sewer. Much of the recent development has occurred outside of the growth areas designated in the 1988 Comprehensive Plan. This may have been the result of the defeat of some of the zoning changes proposed in that Plan. The town needs to review and consider the pattern of future residential development.

2. The soils in many of the areas where growth is occurring have limited capacity to handle subsurface waste disposal without threatening groundwater. Most domestic wells in the area come from bedrock aquifers, which minimizes the current threat to drinking water supply. The community should consider if the current minimum lot size requirements, and the current allowable density in cluster subdivisions, are appropriate given the treatment capacities of the soils.

3. Extension of the public sewerage system is difficult and expensive and no mechanism exists for extending the privately owned water system. The Town should consider how it can best provide these services in areas where development is appropriate.

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4. Some shorefront property owners on private wells have experienced saltwater intrusion into their wells. As development of island and shorefront areas on private water supplies continues to occur, the incidence of saltwater contamination of wells is likely to increase. Development densities in these shorefront areas not served by Town water should be reviewed to be sure that the carrying capacity of the aquifer is not exceeded.

5. Besides PNS, Kittery does not have any land zoned for industrial development, although the commercial zones do allow many nonresidential uses. The community's access to Interstate 95 and larger markets could give it an edge in attracting industrial development. If Kittery wishes to broaden and diversify its economic base beyond retail uses and the shipyard, the community should consider where this growth can occur.

6. The current Mixed Use Zone was designed to accommodate a range of residential and nonresidential uses. Much of the recent residential development occurred in the Mixed Use Zone along Route One but new residential uses were recently excluded from the district. The Town wants to prohibit the expansion of outlet malls in this area in preference to local retail, business park, and light industrial uses.

7. The Route 236 corridor west of the Turnpike is currently designated as a commercial area. The most appropriate use of this area should also be reviewed.

8. The Town has experienced incremental residential growth that has been accommodated within the Town's character. This pattern may be changing with a number of large residential projects under construction. This large scale residential development has the potential for altering the character of the community. The Town should consider how it manages large scale residential development to assure that it is compatible with the community and does not overtax the community's facilities.

9. The Route One Bypass/Ranger Drive area may have potential for nonresidential development but wetlands are an issue. The Town should consider what the most appropriate use of this area is.

10. The Town should review the density of development allowed in various zones to assure that they result in appropriate patterns of development.

8. GOALS AND POLICIES

State Goals: To encourage orderly growth and development in appropriate areas of each community, while protecting the State's rural character, making efficient use of public services and preventing development sprawl. (Growth Management Act)

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**To safeguard the State's agricultural and forest resources from development which threatens those resources.
(Growth Management Act)**

Local Goals: To foster a pattern of land use that respects and builds upon the present character of the established settlement pattern of village cores surrounded by open, outlying rural areas created by undeveloped land, fields, wooded areas, farmland, wetlands, and roadways.

To preserve and enhance the dominant natural waterfront/seacoast character and to continue to guide development away from sensitive waterfront areas.

To manage population and household growth in a manner consistent with the Town's ability to absorb it.

To guide development to identified growth areas while assuring that new development occurs in a manner that is compatible with the existing settlement pattern and that enhances the desired pattern of land use.

To discourage suburban sprawl.

To accommodate the growth of commercial and industrial activities in designated growth areas where public services and facilities are or can be provided.

To encourage a pattern of land use that can be served efficiently and that does not impose an undue burden on the Town's financial resources.

To avoid promoting development in areas of Kittery currently used for agriculture or other rural activities.

To protect environmentally and ecologically sensitive and scenic areas.

To ensure that development in unsewered areas reflects the limitations of the soils and topographical characteristics in the area.

To preserve open space throughout the community.

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To assure the firm but fair enforcement of the Town's land use regulations.

To insure the compatibility of a variety of land uses.

Pursuant to these goals, the Town's policies relating to land use are:

□General Pattern of Development

1. The guiding principle of the Town's effort to manage the use of land should be to encourage a development pattern that maintains the historical pattern of a built-up center, traditional moderate density neighborhoods, and open outlying areas. To facilitate this pattern, the Town should focus on directing development to vacant or underutilized areas within the built-up area that are served or can be served by public water and sewerage or to designated development areas on the fringe of the built-up area where public water and sewer service is or can be provided and on directing development away from areas with natural constraints for development, undeveloped shorefront areas, and areas in which public services are not available.

2. To facilitate this general pattern of development, the Town should play an active role in encouraging and supporting the redevelopment, reuse, and revitalization of the built-up areas of the community. The Town should support efforts to revitalize the Foreside. A healthy downtown can provide a positive image for the Town, as well as a focal point to encourage a sense of community. As retail outlet malls on Route 1 have proliferated, Downtown Kittery has become a focus of attention as residents seek to establish an area for themselves distinct from the areas in town which cater to the non-resident. The interest in downtown has positive potential, and is an interest that should be cultivated and sustained. In addition, the Town should support the maintenance and improvement of the community's older residential neighborhoods and protect them from undesirable nonresidential incursions and traffic.

3. The Portsmouth Naval Shipyard has had an enormous impact on the Town regarding traffic, parking, school enrollment, and environmental contamination. The Naval Shipyard is proceeding with the leasing of Shipyard facilities to private firms. This activity is not subject to the Town's regulations and review processes. It also is not subject to property taxes. To assure that this reuse of the Shipyard does not have undesirable consequences for the community, it is important that there be open communication between the Shipyard and Town officials. The Town should support the reuse of Shipyard buildings but take the position that private activities at the Shipyard should be subject to review by the Town with respect to the Town's ordinances.

4. The Town should continue to allow residential development that is compatible with the existing development pattern within the built-up area of Kittery to accommodate some of the demand for residential growth. The Town's land use regulations should allow new residential development in these areas at a somewhat higher density than is currently

permitted while assuring that the scale and character of this development is compatible with established neighborhood patterns. Within the watershed of Spruce Creek, special consideration should be given to stormwater management provisions and appropriate densities.

5. New development should be accommodated in designated growth areas where the Town can provide municipal services and where development can occur in an environmentally sensitive manner. As a general principle, these areas should be served or should be able to be reasonably served by public water and public sewer service.

6. Intensive development should be discouraged in areas of the community that are not currently or cannot be reasonably served by public water and sewerage. Within these areas, the objective should be to maintain the rural character by limiting residential development, retaining open space, and supporting the continuation of traditional natural resource uses including farming and forestry.

7. In those areas where there are significant natural constraints to development such as wetlands and floodplains, the Town should continue to restrict development and work to maintain the natural resource value of the area. In other areas, the Town should encourage and allow development that respects and works with the natural environment and allows for open space.

8. Commercial development should not be permitted to occur in shorefront areas that are predominantly residential.

9. The Town should review the performance standards for nonresidential uses dealing with noise, lighting, odors, air quality, water quality and similar elements and revise them as necessary to assure that these uses do not create nuisances or health hazards.

10. The Town should encourage the protection of open space and natural landscape features within developments.

□ Residential Policies

11. The Town's land use regulations should continue to allow a variety of housing types at a range of densities.

12. The Town should establish an on-going process for monitoring the rate and location of residential development. If the rate of new residential development exceeds the average rate of the past five years, the Town should explore a cap on the number of new residential units that can be constructed in any year to assure that the rate of residential development does not exceed the ability of the Town to provide the necessary facilities and services demanded by this growth. This system should not include elderly housing and eldercare facilities. As part of this process, the Town should also evaluate the split of new

units between rural and growth areas and evaluate whether a differential cap would be useful in guiding where development occurs.

13. The Town should continue to accommodate residential development in designated growth areas where sewerage is available or can be provided.

14. The Town's land use regulations should assure that residential development in areas designated as rural retains a rural rather than creates a suburban landscape. This should include the retention of open space and natural landscape features such as large trees and ledges.

15. The Town should consider allowing an expanded range of home occupation and natural resource uses in rural areas to create potentials for maintaining a working rural landscape that is consistent with historical patterns.

16. The Town's land use regulations should tie the density of residential development to the development suitability of the site when the use will rely on on-site sewage disposal. The zoning ordinance should contain an objective system for determining the minimum lot size based upon the site's suitability for low density residential development. This system should consider soil suitability, relationship to water bodies and wetlands, groundwater protection, and topography. The regulations should provide for an optional, alternative minimum lot size for an individual lot that is not part of a subdivision to minimize the burden on property owners.

☐Nonresidential Policies

17. The Town should upgrade the development standards in the Commercial and Local Business Zones to require high levels of site and building design by establishing design standards similar to those currently applied in the Mixed Use Zone. This should include provisions for the retention of green space and natural landscape features such as large trees and ledges.

18. The Town should support the Foreside Committee and encourage it to continue to be active and promote the use of Wallingford Square and the surrounding neighborhood areas in a manner which creates a vital activity center and focal point for the community.

19. The Town should consider exempting existing small parcels (less than 5 acres) in the Mixed Use Zone from the prohibition on the total retail use of the premises.

20. The Town should review the nonresidential zoning district boundaries and revise them as necessary to exclude established residential areas from these zones.

21. The Town should assure that in making any changes to nonresidential zones or boundaries that the creation of nonconforming uses is minimized.

22. The Town should review the uses allowed by right and by special exception in the nonresidential zoning districts to assure that the allowed uses are compatible and appropriate given the location of these districts and adjacent uses.

23. The Town should review the appropriateness of the Local Business Zone for areas such as Post Office Square and Lewis Square and consider whether two less intense, more village like business districts should be created for these areas.

24. The Town should review the buffering requirements for nonresidential uses that abut a residential or rural area and revise them to insure the compatibility of a variety of land uses while assuring that negative impacts are minimized.

25. The Town should explore the development of a policy on the use of Tax Increment Financing (TIF's) to support the infrastructure needs of desired nonresidential development.

26. The Town should review the requirements for pervious surface area, open space, and lot coverage in the various districts and revise them if necessary.

☐Public and Institutional Policies

27. The Town should work to assure that new municipal, state, and similar facilities that directly serve citizens are located within designated growth areas.

☐Farm and Forest Policies

28. The Town should actively work with the owners of agricultural and commercial forest land to keep this land in natural resource use and should educate property owners about the possible benefits of current use taxation programs. In addition, the Town should work with the York County Conservation District to educate woodlot owners on proper forest management to help maintain forest health.

29. The Town should recognize that residential development is incompatible with farm and forest use and therefore should actively discourage residential development in areas with active farmland and managed woodlots.

☐Open Space Policies

30. The Town should have the Planning Board and Conservation Commission develop an open space plan for the Town that identifies important areas that are suitable for open space and recreational use and establishes priorities for the protection or acquisition of a land. The Town should continue to explore and support opportunities to purchase and acquire open space/conservation easements and land, especially adjacent to Town Farm Forest and Rogers Park.

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31. The Town should support efforts by the Kittery Land Trust to privately acquire key parcels of open space.

32. The Town should actively work with the owners of large parcels of open land to educate them about non development options and to find ways that the owner's interests can be met without developing the land.

□Resource Protection Policies

33. The Town will continue its local regulation of wetlands.

34. The Town should update its shoreland zoning to reflect the most recent floodplain designations. Undeveloped areas within identified flood hazard areas should be included in the Resource Protection Zone.

35. The Town should study the creation of a tax incentive program to encourage the preservation of wetlands and adjacent uplands.

□Future Land Use Plan

36. The Future Land Use Plan (see **Figure 4-12**) shows graphically how these land use policies apply to the land area of the Town of Kittery and where growth should and should not occur over the next decade. The Future Land Use Plan is not a zoning map. It is intended to show, in a general sense, the desired pattern of land use and development. The boundaries shown on the Plan are intended to be general. The intention is that this Plan will guide a review of the Town's zoning ordinance and map to assure that those land use regulations are consistent with the policies set forth in this Comprehensive Plan.

The Future Land Use Plan embodies the concept that the Town should identify and designate “**growth areas**” or areas in which the anticipated nonresidential and residential growth will be accommodated, “**restricted growth areas**” where a limited amount of growth will be accommodated, “**neighborhood conservation areas**” or residential areas that are relatively fully developed and in which the objective is to maintain the current development pattern and character, and “**rural or non-growth areas**” or areas in which intensive development will be discouraged. Growth areas typically include those areas that are or can be conveniently served by public facilities and services, are physically suited for development, and promote a compact rather than sprawling pattern of development. Restricted growth areas include areas with public water but which have limitations for large amounts of growth. Neighborhood conservation areas typically are developed areas with little potential for additional development or change. Rural/non-growth areas typically include areas with significant natural resource constraints to development or use, areas with large amounts of agriculture or commercial forestry, areas which lack public utilities, and areas that are distant from public services.

For the purposes of the State Growth Management Law and related State funding, “growth areas”, “restricted growth areas”, and “neighborhood conservation areas” should be considered as growth areas but only to the extent that is consistent with the policies set forth

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in the Future Land Use Plan designations. The use of State technical assistance and/or funding shall accommodate growth and development only to the extent envisioned in this plan. For example, state funding for utility upgrades to correct deficiencies in a “neighborhood conservation areas” would be appropriate whereas improvements that would expand the capacity to allow more intensive use would not be.

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Figure 4-12

• **RURAL/NON-GROWTH DESIGNATIONS**

These are areas of the community where the Town desires to discourage growth and development.

a. ***Resource Protection***

This designation is essentially a nondevelopment designation. Within these areas only natural resource activities and low intensity recreational uses should be allowed. These areas should be retained essentially as natural areas. This designation should apply to fragile natural resources and/or resources that perform essential natural functions. This includes high value wetlands, a buffer around high value wetlands, and undeveloped 100 year floodplains. This designation is equivalent to the current Resource Protection Zone.

b. ***Resource Overlay***

This designation is essentially a restricted development designation. Within these areas, managed development should be allowed subject to performance standards to protect the resource value of important natural resources. This includes the entire shorefront as well as streams tributary to Spruce Creek. This designation is similar to the current Shoreline Overlay provisions.

c. ***Rural Conservation***

This designation includes those areas where the Town desires to maintain a rural landscape and to discourage intensive residential development. Allowed uses within these areas should include agriculture and forestry, limited community and recreational uses, traditional rural businesses, marine related uses, and low density residential uses with a variable minimum lot size of 1.5 to 3 acres depending on the suitability of the site for low density residential development including soil suitability, relationship to water bodies and wetlands, groundwater protection, and topography. In establishing the system for determining minimum lot sizes, the special nature of Gerrish and Cutts Islands should be recognized by requiring lots to be at least 80,000 square feet. The Town's land use regulations should include provisions to restrict large scale residential development. The Town should consider establishing a limit on the number of building permits that can be issued in any subdivision or residential development in any year or another approach for limiting large scale residential development in these areas. This limit should be tied to the initial size of the parcel being developed. In addition, the Town should restrict the creation of new lots fronting on existing public roads in these areas. In establishing the land use provisions for these areas, the Planning

Board should review the lot frontage and building coverage provisions to assure that they are appropriate for the character of the area and do not reduce the current level of protection.

• **NEIGHBORHOOD CONSERVATION DESIGNATIONS**

These are relatively fully developed residential neighborhoods in which the objective is to maintain the current development pattern and character while accommodating limited new residential construction.

d. Kittery Point Village

This designation is intended to preserve the established character and development pattern of the Kittery Point neighborhood while assuring that any new development is consistent with this pattern and is environmentally suitable. This area has the majority of Kittery's oldest buildings. Much of it is touched by the Piscataqua or Barter's Creek. It is a scattered, rather than a compact village with significant open space including many large lots. It is a scenic resource for the State as well as the community. Within this area, the minimum lot size should continue to be 40,000 square feet even though this density is not reflective of the current development pattern reflecting the lack of public sewerage, soil conditions, and environmental constraints. However, a limited amount of flexibility should be provided within the zoning provisions, based upon an objective evaluation system, for setbacks, height, and similar space and bulk regulations to allow development and modifications that match the character of the historical development pattern. Allowed uses should include single, two, and multi-family housing, community and public uses, marine related activities, and other low intensity uses. Any revisions to the zoning for this area should provide for minimum development standards that are similar to the current standards under the Suburban Residence District.

e Admiralty Village Residential

This designation is intended to apply to older, higher density, built-up residential areas where public water and sewerage are available or can be provided. Within these areas, the density and character of new residential development should be similar to the existing development pattern (up to 10 units per acres). In the watershed of Spruce Creek, all new construction should be designed to minimize stormwater impacts on Spruce Creek. Allowed uses in these areas should include single family, two-family, and multi-family housing, community and public uses, and similar low intensity uses. This designation is similar to the current Village Residence Zone.

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- **RESTRICTED GROWTH DESIGNATIONS**

These are areas of the community where the Town will accommodate a limited amount of the anticipated residential growth.

- f. Low Density Residential*

This designation is intended to accommodate low density residential development with a variable minimum lot size of 1 to 3 acres per unit based upon the suitability of the site for low density residential development, including soil suitability, relationship to water bodies and wetlands, groundwater protection, and topography. For the portions of this designation that are within the watershed of Spruce Creek, all new development including individual single family homes, should be sited and designed to minimize stormwater impacts on Spruce Creek. This designation is appropriate in outlying areas that may be served by public water but not by public sewerage. Allowed uses in this designation should include 1 and 2 family homes including manufactured housing on individual lots, community and public facilities, and other low impact uses. This designation is somewhat similar to the current Rural Residence Zone and development standards in these areas should be similar to the current standards in the Rural Residence Zone.

- **GROWTH DESIGNATIONS**

These are areas of the community where the Town will accommodate anticipated residential and nonresidential growth.

- g. Suburban Residential*

This designation is intended to accommodate residential development at a density of one to two units per acre. This designation is appropriate in areas that are on the fringe of the built-up area, have public water service, and may have the potential for public sewer service in the future. The basic minimum lot size in these areas should be 40,000 square feet. The Planning Board should study the possibility of reducing the minimum lot size if both public water and public sewerage are utilized from 30,000 square feet as is currently required to 20,000 square feet if this increased density is consistent with existing lot sizes in the neighborhood. For the portions of this designation that are within the watershed of Spruce Creek, all new development including individual single family homes, should be sited and designed to minimize storm water impacts on Spruce Creek. Allowed uses in these areas should

include single, two, and multi-family housing including manufactured housing on individual lots, community and public uses, agricultural uses, and similar low intensity uses. This designation is similar to the current Suburban Residence Zone.

h. Urban Residential

This designation is intended for areas within the older built up area of Kittery and areas on the fringe of the built-up area that are served or can be served by public water and sewerage and are appropriate to accommodate a limited amount of new, medium density residential development. The basic minimum lot area per dwelling unit should be reduced to 15,000 square feet from the current 20,000 square foot feet. requirement. For residential development that is located in the watershed of Spruce Creek, the minimum lot area per unit should be increased to 20,000 square feet unless there are provisions for stormwater management and/or treatment that eliminates all negative impacts on Spruce Creek. Cluster developments that retain significant open space and reflect village patterns of development should be allowed at a density of up to four units per net residential acre. Any project involving more than two dwelling units should be developed in a manner that retains a substantial portion of the site as open space even if it is not a cluster development. All new construction, including individual single family homes, should be sited and designed to minimize stormwater impacts on Spruce Creek. Allowed uses should include a wide range of residential uses, community and public uses, low intensity commercial uses such as inns, bed and breakfasts, galleries, craft studios, and other similar low intensity uses. Special provisions should be made to accommodate eldercare facilities within these areas at higher densities than other residential uses. This designation is similar to the current Urban Residence Zone.

i. Kittery Foreside

This designation is intended to allow reuse and development in the downtown area of Kittery Foreside.

Within this area, the Town's land use regulations should allow a wide range of uses including residential, retail, service, and community uses. The land use regulations should encourage an urban pattern of development with buildings located close to the street with a strong pedestrian orientation. Flexibility should be provided in the parking requirements to allow reasonable reuse and redevelopment. This designation is similar to the current Foreside zoning district.

j. Local Business

This designation is intended to provide for the continued nonresidential utilization of the Town's older roadside commercial areas while trying to encourage their upgrading. Within these areas, the land use regulations should allow residential, service, community, and retail uses but should exclude higher intensity uses such as manufacturing, warehousing and distribution, and similar uses. The land use regulations should encourage high quality site design, limited access, and the protection of adjacent residential areas. This designation is similar to the current Local Business Zone.

k. Commercial

This designation is intended to accommodate large scale retail uses together with service, community, and light manufacturing uses. The land use regulations in this area should require a high level of site design and should provide for access controls. Within these areas, residential uses should not be allowed. This designation is similar to the current Commercial zoning district. In the area between the Route One Bypass and Old Post Road, uses that front on the Bypass and gain their vehicular access from the Bypass shall be governed by the Commercial zoning requirements but shall be required to establish a buffer along Old Post Road if the property on the other side of Old Post Road is in a residential district. If, however, the use fronts on and gains its vehicular access from Old Post Road, it shall be governed by the standards of the Local Business Zone.

l. Turnpike Buffer

This designation is designed to allow mixed use development in undeveloped areas that are impacted by Turnpike noise. Within these areas, the land use regulations should allow a range of uses including small scale office and service uses, warehousing, contractors and similar uses. Housing should be not allowed in this area. The land use regulations in this area should require new development to be designed to minimize noise impacts and to minimize obtrusive views of the rear of buildings to preserve the motorists view from I-95.

m. Mixed Use District

The purpose of this designation is to provide opportunities for a mix of office, residential and limited retail uses, to alter the pattern of commercial activity on Route 1, to serve Kittery's needs, and to minimize traffic congestion. Selected light industrial uses could be accommodated with a special permit. A mix of uses on a site should be encouraged. A continuation of retail outlet malls in this district is not desired. Any retail establishments in this district

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should be oriented towards local needs. A clear list of permitted and prohibited uses needs to be developed. The land use regulations should continue to require that retail uses be allowed in individual projects involving a mix of uses except for existing single parcels with less than five acres of area. These small parcels should be allowed to be developed for exclusive retail use but only to the extent of their retail development rights from that parcel. New residential uses should not be

permitted in this areas except on existing lots at a density of one unit per five acres. The development regulations in this area should provide for a high quality of both site and building design as well as access controls. This designation is the same as the Mixed Use zoning requirements currently in effect as of July 14, 2000.

n. Business Park

This designation is intended to provide for business park development in an area with high visibility from I-95. Within this area, office, research and development, services, and hotel and motel uses should be allowed. This area is not currently served by public sewerage. Extension of sewer system may be necessary to accommodate this type of development. The development regulations should require high quality site design for all uses and the retention of a significant portion of the site as open space. In developing the standards for this district, the Town should review the wetland provisions to assess how they impact the development potential of this area.

o. Shipyard Mixed Use

This designation is intended to guide the reuse and redevelopment of the shipyard area as it comes under the Town's land use regulations. The standards should provide areas for more intense nonresidential uses such as manufacturing, warehousing and distribution, large scale offices, and research and development as well as the continued use of existing shipyard housing and preservation of historic structures. Within this area, retail uses should not be allowed.

p. Badgers Island

This designation applies to most of Badgers Island and is intended to continue to allow the redevelopment and reuse of this area. Within this area, the land use regulations should continue to allow a wide variety of uses including residential, marine related uses, offices, services, retail, and public and community uses. Special provisions should be provided to recognize the existing pattern of small lots. Residential uses should continue to be allowed at up to 7-8 units per acre. The regulations should continue to provide incentives to encourage appropriate waterfront activity. This designation reflects the current Badgers Island zone.

☐ Enforcement

37. The Town should provide adequate code enforcement and management staffing to ensure that the Town's land use ordinances are firmly, but fairly, enforced and the provisions of the various codes and regulations met.

SECTION H. TRANSPORTATION

1. TRANSPORTATION AND CIRCULATION

The Town of Kittery has several modes of transportation and transportation facilities. The Town's roadway system ranges from rural country roads that have changed very little during the past fifty years to a six-lane interstate highway that serves as the "Gateway" to Maine from the Boston metropolitan area. Associated with the roadway system are limited facilities for bicycles and pedestrians. Kittery is also served by rail, principally for the Naval Shipyard, as well as bus and taxi service from the City of Portsmouth. Although Portsmouth and Newington share the deep water portion of the Piscataqua River and consequently have substantial port facilities, Kittery has a significant commercial fishery as well as opportunities for recreational boating. Safe and efficient water navigation and well-maintained waterfront facilities are critical to Kittery's economy.

As the location of one of Maine's largest highway retail centers and home to the largest naval installation in northern New England, there are formidable demands placed on Kittery's transportation network. As the town continues to grow, Kittery will need to respond to the changing demands for providing a well-managed transportation system. This section of the Comprehensive Plan Update inventories and assesses the town's current transportation system.

2. REGIONAL TRANSPORTATION PLANNING

Kittery is part of two (2) transportation planning regions that are under the auspices of the Maine Department of Transportation (MDOT) and the Southern Maine Regional Planning Commission (SMRPC). Each of these planning regions have transportation planning committees that work with federal and state officials to establish regional transportation policies and action plans for transportation facility improvements. These improvement projects are based upon both local and regional needs.

The first of these is the Regional Transportation Advisory Committee Six, or RTAC 6, that covers York and Cumberland Counties. The northern portion of Kittery is covered under this program. The Committee was formed in an effort to advise the MDOT on regional transportation matters. The Town of Kittery has one representative to this committee. The Committee issued a *Regional Advisory Report* on February 20, 1998 as an update to its 1994 Report. This report was referenced in the MDOT Statewide 20-year Plan during 1998. In the advisory report, RTAC 6 identified regional transportation planning goals, objectives, and strategies.

The second regional planning program that affects Kittery is the Kittery Area Comprehensive Transportation Study (KACTS) which is the state designated Metropolitan Planning Organization (MPO) that includes the Maine portion of the Portsmouth-Dover-Rochester urbanized area (see **Figure 4-13**). Most of the southern portion of Kittery is in this area. This organization includes representatives from the Southern Maine Regional Planning Commission (SMRPC), MDOT, each of the Maine communities in the area, and local transportation providers. Kittery has two (2) representatives to this group. Staff is provided through the SMRPC. These participants have agreed to cooperate in a continuing transportation planning process that is consistent with federal law. Current projects recommended for implementation in Kittery in the KACTS plan include construction of sidewalks on Route 1, engineering design for bridge rehabilitation over Chauncey Creek



Figure 4-13 - Kittery KACTS Area

from Kittery Point to Gerrish Island, Route 103 bridge replacement over the Boston & Maine Railroad, and installation of “Watch for Bicyclists” signs on Route 236 south of Martin Road. Each of these projects will be funded through the MDOT.

3. VEHICULAR TRAFFIC AND ROADWAYS

a. State and Local Functional Classifications

The functional classification system is a means for classifying roadways according to function and is used to determine the long-term management and development of the Town's roadway network. The Maine Department of Transportation (MDOT) 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. MDOT classifies roadways as follows: arterials, collectors, and local roads. In total, Kittery has 73.42 miles of roadways, including Interstate 95.

1. Arterials

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

2. Collectors

These roadways link the arterial roadways with residential neighborhoods. Ideally, collectors are spaced conveniently to manage local road traffic and typically have two (2) travel lanes, two (2) parking lanes or six-to-eight foot shoulders and have a capacity to carry 8-10,000 vehicles per day. Old Post Road and Love Lane are examples of collector roads. There are 8.74 miles of state designated collector roadways in Kittery.

3. Local Roads

These 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 (2) travel lanes and one parking lane. Traffic volumes are minimal, usually under 1,000 trips per day. Kittery has 45.74 miles of local roads.

b. MDOT Functional Classifications

This functional classification system extends only to those roadways that have state and/or federal designation and are designated as collector level or higher (see **Figure 4-14**). Kittery's current roadway network consists of the following MDOT functional classification designations:

<i>Principal Arterials:</i>	Interstate
95 (Maine Turnpike)	

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US Route One
US Route One Bypass

Minor Arterials: Dennett
Road - West of I-95
Route 103 - East of I-95
Route 236 - East of I-95
Government Street

Collectors: Route 103
- West of I-95
Old Post Road
Love Lane
Manson Avenue
Woodlawn Avenue
Wainwright Avenue
Haley Road (From Route 103 to Bartlett Rd.)
Philbrick Avenue

c. 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 Kittery Land Use Code with design and construction standards for each class. The town identifies arterial highways, secondary arterials, primary collectors, secondary collectors, minor streets, and private roads. Although the town has accepted this approach to roadway 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. These classes of roadways are proposed to have the following vehicle capacities in average daily trips (ADT) and general standards:

1. Arterials

This includes both arterial highways (9,001 or more trips) and secondary arterials (3,001 to 9,000 trips). The street construction for these types of roadways will generally be affected by the type of development and may require design and construction standards based upon special studies for required roadway improvements and/or construction. Primary arterials designated by the Town include: Interstate - 95, Route One, Route One Bypass, Route 236 including Rogers and Shapleigh Roads, and Walker-Bridge Street. Designated secondary arterials include: New Dennett Road, Route 103 from the Eliot town line through Kittery to the York town line, Haley Road, and Wilson Road.

2. *Primary Collectors*

These are roads with 801 to 3,000 ADT. The Town standards provide for 60' rights-of-way, 22' of travel pavement, a 5' sidewalk, paved and gravel shoulders, and one side of street for parking. Designated primary collectors include: Martin Road, Manson-Picott Roads, Dana Avenue, Cutts-Betty Welch Roads, Bartlett Payne Roads, Norton-Lewis Roads, Crockett Neck Road 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.

3. *Secondary Collectors*

These are roads with 201 to 800 ADT. The Town standards provide for 60' rights-of-way, 20' of travel pavement, paved and gravel shoulders, and emergency parking. Examples 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.

4. *Minor Streets*

These are roads with 35 to 200 ADT. The Town standards provide for 50' rights-of-way, 20' of travel pavement, 5' of gravel shoulder on both sides, and sidewalks as determined by Planning Board. Examples 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.

Functional classifications and road standards are important to identify and manage in a community, because they are related to the type of land use and character of an area. Maintaining the character of a community and its neighborhoods can only be accomplished by maintaining a roadway network that is consistent with adjacent uses.

d. Roadway Maintenance Policy

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 (3) 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 (3) 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 year. For example, Foyes Lane is a local road that is 2,367 feet long with a rating of 92 that was sealed in 1994 and paved in 1995. On the other hand, Williams Avenue is 1,254 feet long had a rating of 38 until 1997 when it was reconstructed and fully resurfaced.

4. TRAFFIC VOLUMES

a. Traffic Counts

In Kittery traffic counts are conducted by the Maine Department of Transportation (MDOT) in cooperation with KACTS and the SMRPC on a periodic basis. The most recent comprehensive counts were in 1997. Although the MDOT has over 60 identified counting stations in the town, when counts are conducted not all of the stations are included. Three types of traffic counts are conducted in Kittery:

1. Continuous Counting

There is only one continuous counting station which is located on Interstate 95 near the New Hampshire border. This station records traffic hourly. This data is converted to daily traffic counts called Average Annual Daily Traffic (AADT).

2. Coverage Counts

These are 24 hour counts that are gathered between April and November twice in every five year period that have been conducted since 1987. Almost all counting stations in Kittery are under this program. These counts are also converted to AADT.

3. Surveillance Counts

These are conducted at seven stations every other year in the KACTS area of Kittery, although these are subject to change due to special projects or requests from the KACTS Committee. During the last several counting periods, only five or six stations were counted in Kittery. Counts are reported as AADT.

b. Traffic Volume Trends

The Continuous Counting Station on Interstate 95 at the New Hampshire border has increased incrementally every year since the last Master Plan Update in 1988. In 1993, the daily count was 29,145 and in 1997, it was 32,188.

Between 1995 to 1997, traffic volumes increased at all stations with the greatest increase recorded on Route 103 near Chauncey Creek and the smallest increase on Martin Road. For most of the stations, there was a decrease in traffic from 1991 to 1993, a pattern that was seen in much of the State (see **Figure 4-14**).

The following is a sampling of recent counts from stations in Kittery that were recorded by the MDOT.

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Figure 4-14

TABLE 27
TRAFFIC VOLUMES REPORTED AS AVERAGE ANNUAL DAILY TRAFFIC

Location	Year				% Chg. 95-97
	1993	1995	1997	1999	
Dennett Road S/E of Leach Road*	2,880	2,690	3,120		15.99%
US 1 @ NH State Line*	12,620	11,290	11,980	11,600	6.11%
US 1 Bypass @ NH State Line*	13,800	13,210	14,560	14,650	10.22%
US 1 @ Spruce Creek*	18,070	16,200	17,300	17,880	6.79%
US 1 N of Traffic Circle		5,640	6,230		10.46%
State 103 (Walker) E US 1	7,240	6,760	N/A		
State 103 (Tenney Hill) W Chauncey Creek		2,340	3,860	4,520	64.53%
State 236 (Rogers) N SR 236 (Shapleigh)	13,090	10,350	11,620		12.27%
Martin Road NE State 236	1,040	1,340	1,380		2.99%

* KACTS Surveillance Station

According to the April, 1997 *KACTS Traffic Count Report*, traffic volumes in Kittery have generally followed regional and national trends, with significant increases in the mid to late 1980's, followed by a decline in the early 1990's. It is likely that these traffic fluctuations have been affected by the national and regional economy. The recent decline may also be related to the drop in employment at the Portsmouth Naval Shipyard. The data suggests that traffic generally decreased on state routes and local roads during this period, although between 1991 and 1993 traffic volumes increased on US Route 1 and the Bypass indicating that these routes tend to carry traffic related to through travelers or those going to the Route One commercial district.

5. ACCIDENTS

Within the KACTS area of Kittery, the 1997 KACTS Transportation Plan identified eight (8) high accident locations. To be designated a high accident location, the intersection or road segment must experience at least eight (8) accidents within a three-year period and have a critical rate factor (CRF) of greater than 1.00. (The CRF is a measure of the number

of accidents that would be expected given the length of a roadway segment and the amount of traffic on the segment or within the intersection; a CRF greater than 1.00 indicates that there are more accidents than would be expected). **Table 28** provides accident data for these eight (8) locations. **Figure 4-14** identifies the location of these high accident areas.

Based upon this data, it appears that the Route One corridor, including the Bypass, is prone to the largest number of accidents in Kittery, particularly at the traffic circle and the segment between Wilson Road and Spruce Creek. The latter is in the center of the retail outlet shopping area. Based upon the percent of accidents with injuries, the Route One Bypass near the Piscataqua Bridge appears to be the most dangerous. This situation may be the result of the configuration of the roadway with associated access points in combination with high travel speeds. In 1990, a traffic study of this area was conducted by the consulting firm of VHB that made a number of recommendations to improve the safety around the traffic circle. One of the recommendations was to install a signal on the Route One Bypass that was implemented in the last year. This change has successfully redistributed truck traffic from the southbound truck stop to northbound travel without having to use the circle.

TABLE 28
HIGH ACCIDENT LOCATIONS 1995-1997

Location	No. of Accidents	CRF	% with Injuries
1. Traffic Circle (Routes 1 & 236)	30	2.63	13%
2. Whipple Rd. (103) @ Shapleigh Rd. (236)	11	1.47	18%
3. Route 236 at Martin and Stevenson	10	1.22	36%
4. Route 1 Bypass @ Sarah Long Bridge	8	1.73	63%
5. I-95 N at off ramp to Route 236 (Ramp E)	8	1.35	12%
6. Route 236 at end of I-95 N (Ramp K)	25	8.04	36%
7. Route 1 between Wilson Rd. & Spruce Crk.	40	1.93	40%
8. Route 1 between Adams Dr. & Ripley Rd.	13	1.46	15%

Source: *Maine Department of Transportation*

Because of the high accident rates and safety issues associated with the Route 236 (Shapleigh Road) commercial area near the intersection of Shapleigh Road with Whipple Road (Route 103) and Woodlawn Avenue and Route One in the outlet mall area, two (2) studies have been undertaken for the Town by the SMRPC under the KACTS program. The

first study, conducted in 1995, considered traffic safety issues along Route One by analyzing traffic accident data, pedestrian movement, and traffic signal functions. It was determined that the roadway was viewed both as an arterial by MDOT which wanted to maintain efficient traffic flow as well as a local roadway to serve commercial interests and pedestrian traffic. Consequently, any safety improvements will need to be implemented within the context of this dual purpose. Most of the improvements done to date occurred in the Weathervane/Trading Post area where curb cuts were reduced and the pedestrian movements were aided by a delayed green for intersecting traffic rather than a separate pedestrian phase.

A second more recent study was conducted in July 1997 for the Shapleigh Road (Route 236) corridor. The following issues were studied: road geometry and signs, accident records, traffic patterns and volumes, pedestrian movements, and the legal use of crosswalks. The study recommended: 1) the placement of a crosswalk in the vicinity of the Post Office/Osco Drug; 2) installation of additional signage (*Slow Congested Area*, etc.); 3) re-striping crosswalks at the Route 103/236 intersection; 4) pruning the Ace Hardware shrubs for better sight distance; 5) further evaluation of the Route 236/103 intersection for vehicular and pedestrian safety, and 6) study of the Osco Drug parking situation that has cars backing into traffic as well as no curbs or sidewalks. With the construction of the Rite Aid, this study will need to be updated.

6. SIDEWALKS

Most of the sidewalks in Kittery are along US Route One and in the urban downtown area. The sidewalks along Route One are located on Badger's Island and in the areas from Water Street to Love Lane 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, Whipple Road, Woodlawn Avenue and Pepperrell Road. Since the 1989 Comprehensive Plan, new sidewalks have been installed on Rogers Road from Whipple Road to Shapleigh Road and on Moore Street, Goodrich Street, Phelps Street and the eastern portion of Cole Street. In addition, the sidewalks along both Hunter and Newmarch Street (Route 1) were reconstructed in the spring and summer of 1998 as part of a Town-funded road reconstruction project in this area. At present, there are sidewalks within a reasonable walking distance of all public schools except for Shapleigh.

The Kittery Public Works Department maintains an inventory of sidewalks in a Sidewalk Condition Report that is included in **Appendix A**. Each sidewalk section is identified by type (paved or concrete) and length and condition (Excellent, Good, Fair, Poor). This report indicates that there are several large sections (greater than 200 feet long) of sidewalks that are in poor or very poor condition. These include:

- ! Dana Avenue - 1,135 feet
- ! Bridge Street from intersection of Cook to Government/Walker - 541 feet
- ! Williams Avenue from Whipple to Traip Academy - 218 feet

! A portion of Cook Street from Bridge Street to Legion Pond - 219 feet (*See proposed reconstruction project below.*)

The Dennett Road underpass sidewalk was scheduled for repair in 1998-99. All of Cook Street (approximately 1,300') is scheduled for reconstruction from Bridge Street to Legion Pond including reconstruction of the sidewalks. The KACTS Transportation Improvement Program (TIP) for Fiscal Years 1998-2000 includes a federal and state aid sidewalk construction project for Route One over the Spruce Creek causeway.

7. BRIDGES

The Maine Department of Transportation, the Maine Turnpike Authority, and the Kittery Department of Public Works are responsible for bridges in Kittery. There are approximately twenty (20) bridges and ramp structures maintained by the state that are associated with either Interstate 95, Route One, and the Route One Bypass including the bridges over the Piscataqua River. In addition, there are three (3) 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 One 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 One Bypass. 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: 1) a box culvert on Wilson Road over Spruce Creek, 2) a box culvert on Picott Road over Spruce Creek, 3) the Cutts Island Bridge on Seapoint Road, 4) a box culvert and causeway on Crockett's Neck Road over Barters Creek and 5) several smaller culverts where roads pass over water bodies.

The state bridge on Route 103 over Spruce Creek has been recently replaced. The KACTS Transportation Improvement Plan (TIP) identifies two (2) bridge projects in Kittery for the years 1998-2000 -- the rehabilitation of the Gerrish Island Bridge over Chauncey Creek and the replacement of the Boston and Maine Bridge on Route 103 west of Route 1. The MDOT has postponed the work on the Gerrish Island Bridge. Repair of the Cutts Island Bridge has been requested in the local Capital Improvement Program.

The MDOT has a state-wide bridge inspection program that is based upon the National Bridge Inspection Standards 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 1996 and were due to be inspected again in 1998. Similar to roads, bridge condition is rated on a numerical system from 1-100 where the higher the rating, the better the condition of the bridge. The state then establishes priorities for maintenance, repair and replacement of its own bridges.

8. PARKING

Parking is not generally a significant issue in much of Kittery, but there are isolated and/or seasonal problems. On occasion there maybe some problems in the Wallingford

Square area of Kittery Foreside. The recent plan for the Foreside area modifies some parking to encourage a more pedestrian friendly downtown. Parking can be accommodated on the south side of Rice Library, a location that was formerly used by shipyard workers, that is now leased by the Town. During summer months, parking for a lobster pound creates traffic and safety problems along Sea Point Road.

Parking does tend to be a problem where there is public boat access to the harbor area. The Government Street public wharf has limited parking of approximately 5-6 spaces. Most of these are typically used by local fishermen. The Traip Academy boat ramp also has very limited parking near the ramp. Parking is available at the Academy. There is also a Town landing in the Back Channel opposite Tilton Avenue that has essentially no parking. Tilton Avenue has been posted for "No Parking". The fourth site is the Kittery Point Town Wharf that has limited public parking, although Frisbee's has private parking associated available with its grocery market. Another alternative is to park at the Mitchell School, although this facility is several blocks from the pier.

9. OTHER MODES OF TRANSPORTATION

a. Bus Service

Since 1983, the Cooperative Alliance for Seacoast Transportation (COAST) has provided public bus service to Portsmouth and Berwick. At one time, there was service to Kittery, but it has been discontinued. During the past year, the University of New Hampshire has pulled out of this system in order to serve only UNH students. However, there are still routes that are available from Portsmouth to Exeter, Newmarket, Durham, Dover, and Rochester.

There are several interstate private bus carriers that serve the Portsmouth-Kittery area. C & J Trailways offers service out of the Pease International Tradeport and Vermont Transit and Greyhound Bus provide service from Portsmouth. These firms provide bus service to Boston and Logan Airport as well as Portland, Maine and other cities in northern New England.

The KACTS group have been working to establish a trolley service within Kittery that would provide routes to such locations as the Route One Outlets, the Foreside area, Portsmouth, and York. The service was scheduled to begin in the spring of 1999.

b. 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 elderly and needy individuals, but due to lack of interest, discontinued the project.

c. Social Service Agency Transportation

The York County Community Action Corp., provides public, demand-responsive transit service for the residents of Kittery and other York County towns. The service targets the elderly, disabled, and low income populations although it can be used by the general public on a space-available basis. The York Hospital also provides a shuttle bus service for patients who need transportation to and from the hospital in the southern York County area, including Kittery.

d. Rail Service

At present, there is no passenger rail service into Kittery. There is freight service to the Naval Shipyard operated by the Boston & Maine Division of Guilford Transportation Industries. Passenger service between Portland, Maine and Boston, Massachusetts is scheduled to begin in 2000 with the nearest stations in Dover, New Hampshire and Wells, Maine. The Wells station is proposed to be an intermodal transportation center for southern Maine.

e. Air Service

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 has been successful in bringing commercial air service to the Tradeport. There are some regularly scheduled flights at this time. The Tradeport also has a private charter service.

f. Bicycle Facilities

There is only one designated bicycle route in the KACTS area that runs from Route 4 in South Berwick down Route 236 through Eliot into Kittery. Both of these roads have adequate shoulder width to accommodate bicycle travel. There is currently a movement by several bicycle interest groups to establish a bike route called the Eastern Trail along existing rights-of-way from Casco Bay to Portsmouth. Such a bicycle route would incorporate the existing bicycle route on Route 236.

10. ISSUES AND IMPLICATIONS

The inventory of Kittery's transportation resources suggests that the Town needs to address the following areas:

1. Access to the Maine Turnpike is a key element in the Town's transportation network. The current exit concentrates traffic in one area. The Town should investigate developing a second access to the north of the malls.

2. The operation of the Maine Turnpike weigh station diverts truck traffic onto Route One if a weigh station is not operated concurrently on Route One. If both stations are in operation, some truck traffic is potentially diverted onto other roads such as Route 103. The Town should explore how it can work with the State Police and Maine Turnpike Authority to assure that enforcement of truck regulations on the arterial roads through Kittery does not divert trucks onto other routes that are not appropriate for this purpose.

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3. Traffic movement and safety within the Route One corridor are concerns. The Town should continue to pursue traffic improvements to the existing road network including the traffic circle. In addition, the Town should study if there are ways to improve the flow of local southbound traffic to allow easier movement between Route One in the area of the malls and the Route One/traffic circle/Foreside area to the south.

4. The Foreside/Wallingford Square area is relatively isolated from the major transportation network. The Town should explore ways to improve the connection between this area and the Route One Bypass.

5. As growth occurs in the communities to the west and development within Kittery increases, traffic and land use issues along Route 236 west of the Turnpike will become more important. The Town should consider developing a long range land use and transportation strategy for this corridor.

6. Maintaining the capacity of the existing arterial and collector road network will be important as the Town grows and development occurs. Managing new development and curb cuts could minimize the impact of development on the road network.

7. The area on Route 236 (Shapleigh Road) near the Post Office and the intersection of Whipple Road continues to experience traffic and safety problems. The Town should investigate how this situation can be improved.

8. Maintaining the existing road and street network is a key aspect of the transportation system. The Town needs to maintain a regular program of capital investment in these facilities through funding of the reserve accounts for this purpose.

9. Pedestrian movement and safety remain concerns especially in areas such as the Route One Corridor, around municipal and school facilities, along Route 236 from Rogers Road to the Post Office, and in the Foreside area. The Town needs to consider how it can improve sidewalks and pedestrian movement in the community.

10. The Town has limited facilities for bicyclists. Safety along the major traffic corridors is a concern. The Town should explore if additional facilities are needed, and if so, where.

11. Parking in Wallingford Square and in conjunction with the Town wharves and boat ramps is limited. The Town should investigate possible ways to improve these situations.

12. The potential for private reuse of parts of the Shipyard property raises renewed concerns about access to this facility, transportation alternatives, and the provision of employee parking to support these private uses since it is likely that some off site parking

may be required. The Town should consider whether it needs to consider traffic and parking issues in conjunction with the reuse possibility.

13. The scenic character of the Town's roads is a key feature of the community. The Town should consider how this character can be maintained while improving traffic safety and movement.

14. Public transportation currently plays a minimal role in the overall transportation system. The Town should determine if there is a need for expanded public transportation in the community and region.

15. Trench excavations in public ways cause accelerated deterioration and degradation to asphalt pavement surfaces shortening their useful life expectancy. Kittery taxpayers should not be expected to subsidize utilities, gas lines, and communications facilities. However, State law blocks the Town from fully recovering the cost of this depreciation. The Town needs to address how this depreciation of the Town's assets can be recovered from the entities that cause the openings.

11. GOALS AND POLICIES

State Goals: The State's Growth Management Law establishes the following goal that relates to transportation facilities and services:

To plan for, finance and develop an efficient system of public facilities and services to accommodate anticipated growth and economic development.

Local Goals: To improve access to the Maine Turnpike.

To improve the safety of the existing road network.

To maintain and improve the physical condition of the existing road and street system.

To maintain and improve the capacity of the arterial and collector road network in a manner that is consistent with the neighborhoods and which maintains their scenic character.

To ensure that new development does not overburden the road network, create safety problems, or impact existing residential neighborhoods.

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To improve the network of pedestrian and bicycle facilities available in the community.

To assure that there is adequate parking to serve the Foreside area and public facilities.

To promote regional solutions to transportation problems.

To improve the public transportation options available to the community and region.

Pursuant to these goals, the Town of Kittery adopts the following policies:

Maine Turnpike/I-95

1. The Town will work with the Maine Turnpike Authority, Maine Department of Transportation, and private land owners and developers to locate, design, and finance an additional Turnpike interchange. This effort should include investigating the use of innovative financing such as impact fees and tax increment financing to fund the local share of this project.

2. The Town should work with the Maine State Police, Maine Turnpike Authority, and the Maine Department of Transportation to minimize the diversion of traffic and impact on the Town resulting from the operation of the truck weigh stations on the Maine Turnpike and Route One.

3. The Town should encourage the Maine Turnpike Authority/Maine Department of Transportation to create a suitable vehicle stopping area in conjunction with the “Welcome to Maine” gateway signs on I-95.

4. Since they serve as the gateway to Maine as well as the entrances to Kittery for many people, the Town should pursue the repainting of the I-95 bridge along with the Memorial (Route One) and Sara Long (Route One Bypass) Bridges with the Maine and New Hampshire Transportation Departments.

5. The Town should review the current lighting design of I-95 with the Maine Department of Transportation and the Maine Turnpike Authority to see if an alternative to the current towers is available.

Route One Corridor

6. The Town will request that KACTS and the Maine Department of Transportation (MDOT) include improvements in traffic movement and safety in the outlet area of Route

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One through the creation of a center turn lane and/or designated left turn lanes in the regional Traffic Improvement Program (TIP).

7. The Town will also request that KACTS, RTAC, and MDOT undertake improvements in traffic safety and flow in the vicinity of the traffic circle at Route 236.

8. The Town should work with property owners to develop and fund a program to upgrade pedestrian facilities in the mall portion of the corridor including the installation of and improvement of pedestrian crossings.

9. The Town should explore providing new sidewalks and bicycle lanes in the portion of the corridor extending south from the traffic circle to Love Lane.

10. The Town should work cooperatively with property owners and continue to require that new developments create vehicle and pedestrian linkages between adjacent developments.

11. The Town will continue to manage new development in the corridor to limit curb cuts, require consolidated entrances where feasible, and require developers to provide traffic improvements necessary for safety and adequate traffic flow based upon traffic studies that consider the impact of new traffic on the overall corridor.

12. The Town should explore installing new, attractive, pedestrian scale lighting throughout the corridor. This lighting should serve as a model for lighting throughout the Town.

13. The Town should review the existing studies of possible alternatives to link the mall portion of Route One directly to the traffic circle and southerly portion of Route One to enable southbound local traffic to easily travel between the north and south sides of the community and encourage KACTS and MDOT to fund additional analysis of this project if necessary.

Arterial and Collector Road Network

14. The Town will work to maintain the existing capacity of the arterial and collector network through minor improvements and the continued management of new development to limit curb cuts, require consolidated entrances where feasible, and require developers to provide traffic improvements necessary for safety and adequate traffic flow.

15. The Town should work with the Maine Department of Transportation to expand the capacity of the arterial and collector network as needed to accommodate traffic growth through operational improvements that are consistent with the neighborhood and that maintain the scenic character of designated scenic roads consistent with safety and operational considerations.

16. The Town will continue its comprehensive, ongoing program for maintaining the physical condition of these roads. As part of this effort, the Town will work with the legislative delegation to obtain a change in the state law to allow the Town to implement the Ordinance Providing for a Street Depreciation Fee developed by the Department of Public

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Works and the Town Attorney to enable the Town to recover the cost of depreciation of a roadway when a road opening is made for utility or other work.

17. The Town will work with KACTS, RTAC, and the Towns of Eliot, Berwick, and South Berwick to develop a coordinated improvement plan and access management standards for Route 236 west of the Turnpike.

Local Streets

18. The Town should develop a policy for the use of “traffic calming” techniques on local streets that are used as short cuts or bypasses and work to reduce the impact of through traffic on these streets.

19. The Town should assure that road improvements maintain the scale and reflect the character of the adjacent neighborhood.

20. The Town should study the use of Rogers Road Extension to determine if safety problems at the intersection with Rogers Road can be corrected or minimized.

21. The Town should consider a program to acquire property or easements at the end of dead end streets to allow the construction of appropriate turnarounds.

22. The Town should encourage municipal and state departments to cooperate in preserving trees and stone walls along roadways and to retain winding roads and the lowest speed limit reasonable.

Pedestrian Facilities

23. The Town will revise and update the Sidewalk Master Plan to make it viable and establish priorities for sidewalk improvements. In this process, the Plan should focus on:

A. Providing funding for maintaining and expanding the sidewalk network in the Foreside area with a focus on filling gaps in the existing system in a manner that is consistent with the neighborhood and implementing the recommendations of the Kittery Foreside Strategic Plan.

B. Continuing to upgrade pedestrian facilities in the Route One corridor including sidewalks, pedestrian crossings, and links between commercial uses.

C. Constructing sidewalks in the vicinity of municipal and school facilities.

D. Requiring that developers construct sidewalks as part of the development in those areas designated for having sidewalks in the Master Plan.

Bicycle Facilities

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24. The Town will encourage KACTS and MDOT to develop bicycle lanes along Routes One and 236.

25. The Town should develop a bicycle plan that details an effective and safe network of bicycle routes in Kittery. This plan should address two key points:

- Bicycle routes that connect destination points within the town such as schools, the town center, the Shipyard, recreation areas, Town Hall, and commercial areas, and
- Bicycle routes that connect into the regional bicycle network including a safe and convenient route across Memorial Bridge for both cyclists and pedestrians.

26. The Town will support the development of the Eastern Trail from Portsmouth to Portland and work with other communities and MDOT to secure funding for this project.

Parking

27. The Town should develop a management plan that evaluates parking options at the Government Street wharf and at the Traip Academy boat ramp.

28. The Town will work with the Shipyard to develop a plan for accommodating employee parking in conjunction with private reuse of the shipyard facilities.

Public Transportation

29. The Town will continue to work with KACTS and RTAC to investigate the need for public transportation within the region and to explore ways to meet any identified needs.

Regional Transportation Planning

30. The Town will continue to support the KACTS and RTAC regional transportation planning processes.

SECTION I. HOUSING

A house or apartment is more than just shelter, it is where a life is built. It represents security, privacy, health, community, and all of the other things we associate with “home.” It is one of the necessities of life. Safe, decent, affordable housing is a basic right that all Americans should enjoy.

Unfortunately, that is not always the case. Rising land values, sprawl, and the consequent demand for more services that eventually increase taxes can all create housing affordability challenges for Kittery residents. Rising taxes can make meeting expenses difficult for elderly residents on fixed incomes that own their own homes. Rising land prices,

increased lot sizes, lower zoning densities, and overzealous infrastructure requirements can drive the cost of housing up and exclude young people and families just starting out. Lower and moderate income people wanting to move to Kittery may not be able to find an affordable place to live.

One of the goals of Maine's Growth Management Program is "to encourage and promote affordable, decent housing opportunities for all Maine citizens." This section looks at the supply and condition of housing in Kittery, considers its affordability in relation to local incomes, and analyzes its availability, especially for lower income households.

1. HOUSING STOCK

Estimating from the number of building permits issued, two hundred and seven housing units were built in Kittery between 1990 and 1997, increasing the housing stock 5.4%, from 3,857 units to 4,064 (see **Table 29**). Nearly 65% of the new units built were single family homes, 18% were mobile homes, and 15% were units in multifamily buildings. The increase in multifamily units is attributable to two additions of senior housing at Meeting House Village.

a. Condition of the Housing

Of Kittery's estimated 4,064 housing units in 1997, 50% were built prior to 1950. One third were built prior to the beginning of World War II, and one fifth have been built since 1980 (see **Table 30**).

Some housing units provide a roof over one's head, but little more. The 1990 Census reported the number of housing units that do not have complete kitchen or plumbing facilities. These characteristics may be used as a rough measure of substandard housing. In 1990, 26 units (0.6%) lacked complete kitchen facilities, and 18 units (0.4%) lacked complete plumbing.

The 1990 Census also reported the number of people living per room in a housing unit. This characteristic is often used as an indication of crowded living conditions, with more than one person per room considered overcrowded. The 1990 Census reported 27 units (0.7%) in Kittery as having more than one person per room.

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Table 29
ESTIMATED TOTAL UNITS IN KITTERY HOUSING STOCK

Year	Single Family Units	Units in Duplexes	Units in Multifamily Housing	Mobile Homes	Total Housing Units
1990 Total Units	2,613	490	475	279	3,857 ¹
1991	9	0	0	3 ²	12
1992	20	0	0	3 ²	23
1993	17	0	0	5 ²	22
1994	18	0	12	8 ²	38
1995	16	2	0	9 ²	27
1996	27	0	19	4 ²	50
1997	27	2	0	6 ²	35
# of units added	134	4	31	38	207
1997 Total units	2,747	494	506	317 ²	4,064
% Change '90-'97	5.1%	0.8%	6.5%	13.6%	5.4%

Source: U.S. Census (1990 Census Summary Tape File 1A), Kittery Planning Department Building Permit Report

¹Total shown does not include 51 units listed as "other" in Census

²Mobile homes reported are from Annual Reports that cover July 1 to June 30 time period. Number shown is an approximation for each calendar year. The annual reports do not distinguish between new and replacement mobile homes so the number of additional mobile homes may be slightly overstated.

Table 30
CONDITION OF KITTERY HOUSING STOCK

Year Built	# of units¹	% of units
1991-97	203	5.0%
'85 -'90	307	7.6%
'80 -'84	292	7.2%
'70 -'79	460	11.3%
'60 -'69	399	9.8%
'50 -'59	383	9.4%
'40 -'49	667	16.4%
1939 or earlier	1353	33.3%
Total # of Units (1997)	4064	100%
Lack Complete Kitchen (1990)	26	0.6%
Lack Complete Plumbing (1990)	18	0.4%
More than 1 person per room (1990)	27	0.7%

Source: U.S. Census (1990 Census Tape Summary File 3A)

¹The total number of units reported built within each time frame has been adjusted on a percentage of total basis from a statistical sample reported on U.S. Census Summary Tape 3A to reflect the number of units in the 100% count from U.S. Census Summary Tape 1A.

2. AFFORDABILITY

Affordable housing for homeowners is defined by the Maine Growth Management Act as housing in which the monthly mortgage payments, taxes, insurance, and utilities do not exceed between 28% and 33% of the homeowner's gross monthly income. For renters, the standard is 30%.

The 1990 Census reported the percentage of homeowners and renters that were paying more than 35% of their household income to housing costs. Table 31 shows the

percentages, by income ranges, for Kittery. For the groups as a whole, one out of every four renters, and one out of every eight homeowners was paying more than 35% of their income for shelter.

Those households making less than \$10,000 are especially hard hit, with more than eight of ten renter households spending more than 35% of their income on housing (see **Table 31**). Three out of five renter households with incomes between \$10,000 and \$20,00, and one in five renter households with incomes between \$20,000 and \$35,000 were above the 35% threshold.

Compared to state averages, a higher percentage of Kittery renters in all income categories pay more than 35% of their household income for housing. The difference is especially striking in the \$20,000 to \$35,000 income category for renters (19.9% vs. 6.6%), which may be an indication of a lack of lower cost rental units. The percentage of Kittery homeowners in the \$20,000 to \$35,000 bracket that pay more than 35% of their income for housing is much closer to the statewide average (14.7% vs. 11.6%).

Table 31
PERCENTAGE OF HOUSEHOLDS PAYING MORE THAN 35%
OF INCOME FOR SHELTER 1990 CENSUS

	% of Households paying >35% of income to shelter	
	Kittery	Maine
Renters		
<\$10,000	84.4%	66.9%
\$10,000 - \$19,999	59.2%	41.2%
\$20,000 - \$34,999	19.9%	6.6%
>\$35,000	2.0%	0.6%
All Renters N=1084	26.8%	31.1%
Homeowners		
<\$10,000	92.6%	58.7%
\$10,000 - \$19,999	18.0%	20.9%
\$20,000 - \$34,999	14.7%	11.6%
>\$35,000	3.1%	3.3%

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All Homeowners N= 1744	12.4%	13.2%
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Source: U.S. Census

In all but the lowest income category, the percentage of Kittery homeowners exceeding the 35% threshold was similar to statewide averages. Among homeowners making less than \$10,000, nine out of ten spent more than 35% of their income on housing. One in five homeowners with a household income between \$10,000 and \$20,000, and one in seven homeowners with a household income between \$20,000 and \$35,000 exceeded the threshold. The significantly higher percentage of homeowners in Kittery, compared to the state average, that

had incomes below \$10,000 and spent more than 35% of their income on housing may be a result of fewer very low cost homes in the Kittery market compared to other parts of the state.

Table 32 compares changes in the median rent and median sales price of homes in Kittery, and changes in the median household income in the Portsmouth-Kittery MSA between 1990 and the most recent housing cost and income estimates available. Other than for elderly housing and 200 units of military housing owned by the Navy that is not available to the general public, Kittery has not had large scale apartment buildings or multifamily housing projects. With the construction of the 65 unit Woodlands Commons project during 1999, this will change. Most rentals are by private individuals that have one or a few rental units, rather than large property management companies. Rental rates vary from \$450 for a studio unit with utilities, to \$1,000 or more for a single family home without utilities. A significant portion of the rental stock is in the 1940's vintage Admiralty Village duplex units that were formerly owned by the Navy. Two bedroom units in Admiralty Village rent for between \$550 and \$650 without utilities.

Table 32
1990-1998 KITTERY TREND IN INCOME AND HOUSING EXPENSE

	1990	1996	1998	% change
median gross rent (incl. utilities)	\$574¹		\$775⁴	35.0%
median home sales price	\$99,900²	\$95,500²		-4.4%
Median Portsmouth- Kittery MSA Household Income	\$35,328¹		\$43,285³	22.5%

Sources: ¹Census, ²Maine State Housing Authority, ³Claritas, ⁴Planning Decisions

Between 1990 and 1996, the median sales price of a home in Kittery decreased by 4%. The median household income in the Portsmouth-Kittery MSA increased by nearly 23% between 1990 and 1998, making it likely (even allowing for any appreciation that has occurred in the housing market since 1996) that purchasing a home in Kittery is relatively more affordable in 1998 than it was in 1990¹. The drop in mortgage interest rates between

¹The most comprehensive measure of residential median sales prices in communities, and the one used in this analysis, is derived from Maine Real Estate Transfer Tax data. The most recent year transfer tax data is available for is 1996. Local real estate sources report that the median sales prices for multi and single family homes in 1998 was \$114,950 (MLS)

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1990 and 1998 makes purchasing a home even more affordable, allowing homeowners to purchase a more expensive home than they could have in 1990 for the same monthly payment.

and the average for single family homes was \$127,000 (Kittery Assessor, average calculated using the two middle quartiles of sales).

Renters did not fare as well between 1990 and 1998. During this time period the cost of rental housing outpaced the growth in household income by more than 12%, indicating that rental housing is less affordable in 1998 than it was in 1990.

a. Definitions of Very Low, Lower, and Moderate Income Households for Kittery

One of the State of Maine's objectives is to assure a supply of housing that is affordable to households in three income groups: very low income (50% or less of Portsmouth-Kittery MSA median household income), lower income (>50% to 80% of Portsmouth-Kittery MSA median household income), and moderate income (>80% to 150% of Portsmouth-Kittery MSA median household income) households.

As defined above, and shown in Table 33, very low income households in Kittery make \$21,643 or less per year, lower income households make between \$21,644 and \$34,628, and moderate income households make between \$34,629 and \$64,928. **Table 33** also shows the estimated number of households, and the affordable rent and home purchase price ranges for each income category.

The starting point for determining what the affordable rent and home purchase price ranges are is to calculate what 30% of the monthly gross income is. To determine home purchase price ranges, the estimated taxes, insurance, and utility costs are subtracted from this 30% of income figure. The amount left is what is available for principal and interest payments. Two loan scenarios were considered. Both loans are based on a fixed rate, 30-year mortgage with 10% down. In February 1999, MSHA had a program for first time home buyers that offered an interest rate of 5.75%. A purchase price range was also calculated using the 7.5% interest rate commonly available in the market in February of 1999. For rental housing, the "affordable gross rent" includes rent on the housing unit as well as basic utilities.

b. Housing Affordability

1. Market Rate Rentals

i. Very Low Income Households

For households in the very low income category, the upper limit of affordable rents is below the median rent paid in Kittery (\$541 vs. \$775). Very low income renters compete in the open market for rental housing. Even though half of the rentals in Kittery are below the median rate, the high percentage of renters in the lowest two income categories that pay more than 35% of their income to shelter (Table 31) is an indication of the lack of success of very low income renters at finding affordable rentals in the market.

Table 33
AFFORDABILITY SUMMARY FOR KITTERY BASED ON
1998 PORTSMOUTH-KITTERY MSA
MEDIAN HOUSEHOLD INCOME OF \$43,285

	Very Low Income	Lower Income	Moderate Income
% of County Median Income	50% or less	>50% - 80%	>80% - 150%
In dollars	\$21,643	\$21,644 - \$34,628	\$34,629 - \$64,928
# of Households (est.)	922*	744*	1,248*
% of total households	25%	21%	34%
Affordable Gross Rent (at 30% of income)	\$541	\$542 - \$865	\$866 - \$1623
Home Purchase			
Affordable Mortgage (inc. PITI and utilities @ 30% of income)	\$541	\$542 - \$865	\$866 - \$1623
minus property taxes, insurance and utilities	\$225 ¹	\$275 ²	\$320 ³
Affordable Principal and Interest Mortgage Payment	\$316	\$317 - \$590	\$591 - \$1,303
Maximum Affordable House Purchase Price with 10% down & 30 year-fixed rate FHA at 7.5% interest MSHA at 5.75% interest ⁴	≤ \$50,200 @ 7.5% ≤ \$60,000 @ 5.75%	\$50,201 to \$93,750 @ 7.5% \$60,001 to \$112,300 @ 5.75%	\$93,750 to \$207,000 @ 7.5% above MSHA income caps

Sources: Planning Decisions, *Claritas

¹ assuming monthly costs of \$100 for taxes and insurance, \$125 for utilities

² assuming monthly costs of \$150 for taxes and insurance, \$125 for utilities

³ assuming monthly costs of \$195 for taxes and insurance, \$125 for utilities

⁴ MSHA program is for first time home buyers only

ii. Low Income Households

Seventy-two percent of the affordable rental rate range for low income households (\$542-\$865) is below the 1998 median rent (\$775) in Kittery. As was explained in the section above, households in this group compete, with limited success, with very low income households for the limited supply of housing with affordable rents in Kittery.

iii. Moderate Income Households

All of the affordable rental range for moderate income households (\$866-\$1623) is above Kittery's 1998 median rental rate of \$775.

2. Subsidized Rental Housing

i. Family

Kittery currently does not have any subsidized housing projects for families or a public housing authority. The Maine State Housing Authority reports only six Section 8 certificates available for families in Kittery. The Navy owns 200 units in the Admiralty Village area, but their use is limited to military personnel.

Woodland Commons, a 65 unit affordable tax credit project on the northern end of Route One, was completed in 1999. Rents in the project vary between \$299 and \$616 for two bedroom units, and \$332 to \$710 for three bedroom units. These rents largely fall within the range of affordable rents for very low and low income households.

ii. Elderly

The elderly can be especially hard hit by unaffordable housing. Claritas estimates that in 1998, 380, or 48% of households headed by a person age 65 or older had incomes of less than \$21,650 per year. Many of these people may be living in homes in which the mortgage has been paid off, or in which the payment is low, based on purchase prices and interest rates prevalent in the past. For those not in such a situation, or where single family homes have become too much to care for, Kittery has 62 units of subsidized senior housing at Foxwell and Foxwell II. Rents are limited to 30% of household income.

3. Home Purchase

i. Very Low Income Households

For those in the very low income bracket that do not already own a home, opportunities for home ownership are limited. The median price for homes sold in Kittery in 1996 was \$35,000 higher than the top end of the scale for households in this income bracket. According to MLS statistics, just four properties sold for less than \$60,000 in Kittery in 1998. The MLS does not capture or report all real estate sales activity in a community, especially on the low end of the market, but it is a reasonable measure of what is available. Of the 86 residential properties reported as sold through the MLS in 1998, less than 5% sold for \$60,000 or less. In February of 1999, the MLS had two homes, both single wide mobile homes, that were listed for less than \$60,000. They did not include land.

ii. Low Income Households

Low income households with incomes in the \$22,000 to \$35,000 range have limited access to the home purchase market. Households at the upper end of the range are probably able to purchase a modest home with a price of \$80,000 to \$100,000 within the 30% of income limitation. In February 1999, out of 18 residential properties listed with the MLS, 3 were listed for sale between \$50,200 and \$112,300.

iii. Moderate Income Households

Moderate income households with incomes of \$35,000 to \$65,000 can afford to purchase homes in the \$90,000 to \$200,000 range. With a median single family home sales price of \$95,000 to \$100,000 in recent years, moderate income households should be able to buy a home in Kittery. Out of the 18 residential properties listed for sale with the MLS, only one was above the affordability range of this group.

4. Mobile Homes

Kittery had an estimated 317 mobile homes in 1997. They account for a significant part of the lower cost housing in Kittery. It is noteworthy that even though mobile homes are among the more affordable housing options in Kittery, for very low income households, the costs of mobile home ownership can push the affordability threshold. The average lot rent in a Kittery mobile home park is \$265 per month. Based on the sales prices of used mobile homes and prevalent financing terms in February 1999, monthly loan payments on a decent used mobile home begin around \$160 (\$15,000 purchase price for an older single wide mobile home). Taxes and insurance add approximately \$40 to monthly housing expenses. With utility costs

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estimated at \$125, combined monthly costs to own a mobile home in a mobile home park begin around \$590. While there are mobile homes that sell for less than \$15,000, and lots that rent for less than \$265 per month, most mobile homes in Kittery are beyond the \$541 top end of the affordability scale for very low income households. For low income and moderate income households, mobile home ownership is well within the bounds of affordability.

c. Number of Households in Need of Affordable Housing

Not all households within the very low, lower, and moderate income ranges have an unfulfilled need for housing. Some are renters who are in an acceptable unit at a price that is affordable to them. Some are renters who because of their stage in life would not choose to buy a home even if they had the opportunity. Some, including many senior households or people who inherit family property, may have a relatively low income but already own a home and are content where they are.

To get a more accurate picture of the number of households in Kittery that may have unmet affordable housing needs, it is useful to look at several specific groups:

- 1. Moderate income households in their typical home buying years:** Included in this group are Kittery households headed by a person age 25-44, with a household income between \$34,600 and \$64,900. Claritas estimates that there are 694 such households in Kittery. The U.S. Navy has 200 units of military housing in the Admiralty Village area of Kittery. The majority of the tenants in the Navy housing are included within this category (based on Navy wage scales, the predominant military grades (E5-E7) reported to live in the housing, the age of tenants and a predominance of two income households). These households do not add to the free market housing demand in Kittery and should be subtracted from the 694 households estimated in this segment of the population, leaving approximately 500 moderate income households in their typical home buying years. The 1990 Census reported that statewide, 64% of households within metropolitan areas owned their home. If that same percentage applies in 1999, these households represent a need for approximately 320 homes in Kittery priced between \$93,750 and \$207,000.
- 2. Low income elderly households with a need/desire to rent:** Claritas estimates that Kittery has 201 households headed by a person age 62 or over that have household incomes between \$21,650 and \$34,600. Statewide, approximately 31% of people age 65 and over that live in metropolitan areas have a propensity to rent. If the same percentage holds true for Kittery, an estimated 62 senior households have a need or desire to rent housing where the range of total monthly housing cost is between \$542 and \$865.
- 3. Low income non-elderly households with a need/desire to rent:** Claritas estimates that Kittery has 541 low income households headed by a person younger than age 62. Statewide, approximately 38% of households in this category that live within metropolitan areas have a propensity to rent. If the same percentage holds true for Kittery, approximately 205 households have a need or desire to rent housing where the range of total monthly housing cost is between \$542 and \$865.

4. **Very low income elderly households with a need/desire to rent:** Claritas estimates that Kittery has 419 households headed by a person age 62 or over with a household income of less than \$21,650. In the 1990 Census 30% of elderly households living inside metropolitan areas, and 60% of elderly households living below the poverty level, or 126 to 251 households have the need or desire to rent decent, affordable housing with total monthly housing costs of \$541 or less.
5. **Very low income non-elderly households with a need/desire to rent:** Kittery has 532 households headed by a person younger than age 62, with a household income of less than \$21,650. The 1990 Census reports that 38% of non-elderly households living inside metropolitan areas, and 77% of non-elderly households living below the poverty level have a need or desire to rent decent, affordable (subsidized) housing with total monthly housing costs of \$541 or less. An estimated 202 to 409 households are in this category.

To summarize, about:

- *320 moderate income households in Kittery have affordable home buying needs;*
- *approximately 62 elderly and 205 non-elderly low income households have rental needs for units with total housing costs between \$542 and \$865;*
- *between 126 and 251 elderly households, and 202 to 409 non-elderly households have rental needs for decent affordable housing that rents for less than \$541 per month.*

d. Supply of Affordable Housing

1. **Homes for first time buyers:** The median price for a home in Kittery in 1996 was \$95,500. This means that of the 102 homes sold in Kittery that year, half of them sold for less than \$95,500, and half sold for more. The median price of homes is near the low end of the affordability scale for moderate income households in Kittery (\$93,750 to \$207,000), indicating that substantially more than half of the real estate in Kittery is within the affordability range of this group.

Between 1990 and 1996 the median price of a home rose and fell. It increased each year from \$99,900 in 1990, to \$121,250 in 1993. By 1996, it had dropped to \$95,500, a decrease from 1990 of 4.4%. During the same time period, the

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median household income in the Portsmouth-Kittery MSA increased more than 22%. By this measure, purchasing a home in Kittery is likely to be relatively more affordable in 1998 than it was in 1990.

Table 34 shows the value of owner occupied housing in Kittery as reported by homeowners at the time of the 1990 Census. More than 1,100 homes were valued between \$100,000 and \$200,000. The median value was \$130,500. In February 1999, the Multiple Listing Service had thirteen single family homes listed for sale in Kittery. Eleven of them were priced between \$100,000 and \$200,000, with six of them priced below \$130,000.

Based upon the supply of housing within the affordable price range at the time of the 1990 Census, the median sales prices of homes in recent years, the concentration of homes currently on the market within the affordable price range, and the drop in interest rates between 1990 and 1998, it is reasonable to conclude that there is an adequate supply of housing for moderate income households in Kittery.

Table 34
1990 VALUE OF OWNER OCCUPIED HOUSING IN KITTERY

VALUE	# OF UNITS
less than \$60,000	35
\$60,000 - \$74,999	43
\$75,000 - \$99,999	268
\$100,000 - \$124,999	454
\$125,000 - \$149,999	343
\$150,000 - \$174,999	192
\$175,000 and over	119
Median Value \$130,500	

Source: 1990 U.S. Census (Summary Tape File 3A)

- 2. Rental housing for low income renters:** The rental housing needs of this income group are served by the private market in Kittery.

Meeting House Village, a 44-unit, non-subsidized elderly housing project offers units with rents within the \$542 to \$865 range for this income group (1 bedroom units for \$593 to \$615, two bedroom units for \$703 to \$725). Rents include heat and hot water. Meeting House Village had a 99.6% occupancy rate in 1998. The project has 50 people on a waiting list, and is in the process of building 16 more units. This project alone substantially meets the estimated current need of 62 units of lower income senior housing. When combined with other market rate rentals in the area, the housing needs of this group should be readily met.

The estimated 205 non-elderly households that have a need/desire to rent are dependent on the marketplace. At \$775, the median rental rate in Kittery is in the upper half of the rental rate range for this income group. In 1990 there were 1,261 renter occupied units in Kittery. If 630 of those units are renting for less than \$775 there are enough units to meet housing demand, although it is likely that renters on the lower end of this group's income scale have a challenging time finding affordable housing as they compete for scarce low rent housing with the income group below them.

3. **Rental housing for very low income renters:** Kittery currently has two subsidized housing projects, both of which are for low income elderly, 50 units at Foxwell, and 12 units at Foxwell II. Tenants must be 62 or over. Rents are limited to 30% of the tenants income. Household incomes of renters at Foxwell cannot exceed \$23,650 for a one person household, or \$27,000 for a two-person household. At Foxwell II the income caps are \$14,750 and 16,900. Between the two projects there are fifty-two 1-bedroom units, and ten 2-bedroom units. The Foxwell projects have no vacancies and 50 people on a waiting list. The waiting list is shared with a closely affiliated 41 unit senior housing project, Baran Place, located in Eliot. The current supply of subsidized senior housing in Kittery is less than the projected demand (62 units of supply vs. demand of 126 to 251 units of demand).

There are currently 11 Section 8 Certificates at scattered sites around Kittery. Six of the certificates are for family units, and 5 are designated for elderly units. The rental rates paid by the tenants are limited to 30% of income.

Woodland Commons is a 65 unit subsidized housing project that was approved by the Kittery Planning Board in 1998. Construction began in February of 1999 and the project was completed in 1999. The project has thirty-one 2 bedroom units and thirty-four 3 bedroom units. Rental rates include utilities, are tiered, and are linked to the household income of tenants. For households making up to 30% of the median household income in the area, a 3-bedroom unit rents for \$332 a month. Households making up to 40%

of the median household income pay \$458, and those making up to 60% pay \$710. Rental rates on two bedroom units range between \$299 and \$616.

The projected demand for 202 to 409 units with rents (including utilities) of \$451 or less is not met by the current supply of rental units (including Woodland Commons). It is likely that mobile homes make up some of the difference, but living in a mobile home may force some low income people into a long term debt that they don't want, and may saddle them with home repair expenses they can ill afford.

3. AFFORDABLE HOUSING GOAL

The State of Maine requires that each municipality "seek to achieve a level of 10% of new residential development, based on a 5-year historical average of residential development in the municipality, meeting the definition of affordable housing. Municipalities are encouraged to seek creative approaches to assist in the development of affordable housing, including but not limited to, cluster zoning, reducing minimum lot and frontage sizes, increasing densities, and use of municipally owned land."

Very low and lower income renters face the greatest challenges in finding affordable housing in Kittery. Even with Woodland Commons occupied, there is little subsidized housing available for non-elderly households. Those in the very low and lower income categories compete for scarce low cost rentals. For very low income households, the rental rates may well exceed the 30% of household income threshold, but it is all that is available. Having more than 30% of a household's income committed to housing can put a household on the edge. It doesn't take much, a doctor's visit, or an unexpected car repair, to put a household over the edge.

On average, 29 new homes or dwelling units were built per year in Kittery between 1990 and 1997. If residential units approved in 1998 are included, the average increases to 43 new units per year. To achieve the State's goal, a minimum of 3 to 4 units per year would need to have been built that meet the State's criteria for affordable homes, or 30 to 40 affordable units over a ten year period. With the construction of Woodland Common, the Town is easily exceeding the state goal. The needs of moderate income home purchasers and low to middle income elderly renters have probably been being met by the market. Very low income and low income renters were being left behind prior to the construction of Woodland Common.

4. EXISTING AGENCIES, PAST STUDIES

a. York Cumberland Housing Development Corporation

This community based, nonprofit housing development organization manages 62 subsidized elderly housing units in two projects in Kittery, Foxwell and Foxwell II.

b. Housing Partnership of New Hampshire

This organization is the developer and manager of the 65 unit Woodlands Common project.

c. A Livable Future

This study, published in 1988 by the York County 2000 Housing Committee, as part of the York County 2000 planning effort of the late 1980's, laid out a regional strategy to address housing needs. The strategy recognized the importance of towns and cities as central players in the affordable housing effort. It recommended:

- that towns and cities pass an incentive based, model affordable housing zoning ordinance;
- leadership and staffing assistance be provided through the Southern Maine Regional Planning Commission for the affordable housing effort;
- dedication of part of the County's real estate transfer tax revenues be used to fund staffing and educational materials;
- banks be formally asked to provide interest rate concessions on designated affordable housing projects;
- developers in York County be asked to commit to planning at least 10% of all new units annually as affordable housing;
- businesses be asked to donate on a per employee basis to the affordable housing program's educational and planning effort; and
- pursuing state and federal involvement in financing affordable housing.

5. ISSUES AND IMPLICATIONS

1. The Kittery housing market includes single family homes in a wide range of prices. The current housing stock appears to be meeting the housing needs of moderate income households as well some households at the upper end of the lower income range. Most of these lower cost homes are existing homes. The Town will need to balance its desire for environmental protection and growth management with the ability to continue to build homes that meet the needs of moderate income households.

2. For lower and very low income households, Kittery's rental market is tight. In February of 1999, each of the property management companies, landlords, and Realtors spoken with had no vacancies. Most were maintaining waiting lists. The analysis of housing needs and the lack of vacancies in existing projects suggest that the market could support additional subsidized and market rental units. The Town should consider how it will respond to this need while assuring that rental housing is of a scale and character that is appropriate to Kittery.

3. As Kittery and Southern Maine face development pressures unseen since the 1980's, the Town should consider if it is time to take a more proactive role in developing affordable and/or subsidized housing. The Town should consider how it can work with groups like the Affordable Housing Venture to assure that the housing needs of all groups are met in a way that is appropriate for Kittery.

4. The Town's land use ordinances do not make any special provisions for assisted living or other types of specialized housing for the elderly. The required densities may be inappropriate for these types of facilities and should be reviewed.

6. GOALS AND POLICIES

State Goal: To encourage and promote affordable, decent housing opportunities for all Maine citizens. (Growth Management Act)

Local Goals: To encourage a diversity of housing to meet the needs of a wide range of residents.

To assure that as new housing is built in Kittery, at least 10% of the new units are affordable to lower or moderate income households.

Pursuant to these goals, the Town's policies with respect to housing are:

1. The Town will continue to allow for the construction of both single family and multi-family housing in a variety of locations at densities that are appropriate for the type of housing and the location. The Future Land Use Plan outlines these areas.

2. The Town will continue to allow housing for the elderly to be built at higher densities than other types of housing in areas that are currently zoned Urban Residential and will explore providing an elderly housing density bonus in other areas that are residentially zoned and served by public sewerage in recognition of the lower impact that this type of housing has on the community.

3. The Town should revise its land use regulations to allow for the construction of eldercare facilities such as congregate housing and assisted living facilities at appropriate densities provided that the character of these facilities is appropriate to Kittery.

4. The Town should work with nonprofit organizations and private developers to encourage that a balance is maintained in the supply of housing so that a range of lower, mid, and higher cost housing is available in Kittery including housing that is affordable to low and moderate income households.

SECTION J. PUBLIC FACILITIES

Growth and development in a community increase the demand for public services, infrastructure, and facilities. This chapter examines the capacity of the public facilities in Kittery to meet existing and future needs in the areas of:

- ◆ General Government Facilities
- ◆ Public Safety (Police, Fire, Emergency Medical Services, and Communications)
- ◆ Public Works (Solid Waste Disposal and Recycling, Highways, Roads, and Sidewalks)
- ◆ School Facilities
- ◆ Library

The community's recreational facilities and open space are addressed separately in the following section.

For each service area, this section presents a description of current facilities, an assessment of the capacity to meet existing needs, and an assessment of the capacity to meet anticipated future needs.

1. GENERAL GOVERNMENT FACILITIES

a. Existing Conditions

The Town constructed a new Town Hall in 1998. It was built on the site of the previous Town Hall. The new facility was built around and incorporated the structure of the previous Town Hall into its design. The new building houses most municipal government functions except the Recreation Department, Fire Department, Sewer Department, and Public Works Department. The building meets the current needs of the staff and public.

b. Future Needs

The Town Manager anticipates that there may be some small growth in municipal staffing if the Town continues to experience significant levels of residential growth. There is space within the new Town Hall to accommodate this growth. In addition, the building was designed with an unfinished second floor with the intent that this space could be finished to provide additional space as it is needed.

2. POLICE DEPARTMENT

a. Existing Conditions

The new Town Hall includes new facilities for the Police Department. These facilities are adequate to meet the current needs of the Department.

The Department currently has eighteen sworn officers including the Chief, three sergeants, one detective sergeant, one juvenile detective, and twelve patrol officers. In addition, the department employs a secretary and an animal control officer. Over the past 15 years, only one officer has been added to the force.

The Department currently provides 24-hour a day coverage with three shifts covering two geographic patrol areas, Kittery and Kittery Point.

In addition, the Department is responsible for dispatch services for both the Police and Fire Departments as well as the Town of Eliot's public safety services. Five dispatchers handle this responsibility on a 24-hour basis.

Both the Police Chief and Town Manager expressed concern about the current staffing levels. The Chief believes that the Town should consider establishing a third patrol district at least on a seasonal basis and increasing its administrative capacity to allow it to be more proactive about community policing rather than simply reacting to calls.

b. Future Needs

The Police Department's new facilities in the Town Hall area adequate to meet future needs. The facility was designed to allow future expansion into the currently unfinished second floor if and when the need arises.

If residential and nonresidential growth continues at significant levels, it is likely that staffing of the Police Department will need to increase. However, if a third patrol district is established to address what are current needs, this will provide the Department with the capacity to accommodate the level of growth projected in this plan.

3. EMERGENCY MEDICAL SERVICES

a. Existing Conditions

The Town currently contracts with American Medical Response, a private company, to provide ambulance service for the community. The company services Kittery, Eliot, and Rye from its local base in Eliot. The company provides excellent response and has accommodated growth in demand.

b. Future Needs

The Town anticipates continuing to contract for emergency medical services.

4. FIRE DEPARTMENT

a. Existing Conditions

The Fire Department operates from two stations, one in Kittery on Walker Street and one in Kittery Point at Lewis Square. The Walker Street Station was built in 1955 and has four bays. The station houses the following equipment:

- ◆ 1969 Ward LaFrance Pumper
- ◆ 1982 Mack Pumper
- ◆ 1988 Chevrolet Rescue Vehicle (1 ton pick-up, with a 6-seat cab)
- ◆ 1995 Pierce Pumper

The Kittery Point Station was built in 1953 and also has four bays. It currently houses the following equipment:

- ◆ 1967 International Pumper
- ◆ 1974 Utility Van (for transporting men to fires)**
- ◆ 1975 Maxim Pumper (recently refurbished)
- ◆ 1988 Tank Truck

** Being sold as of 3/00

Neither station has sleeping quarters nor locker room facilities. While the facilities are adequate for current operations, they may be limited in terms of future operations.

In addition to the Town's Fire Department, additional service is provided by the base Fire Department at the Portsmouth Naval Shipyard. This organization responds to structure fires and other major alarms in the community.

The Kittery Fire Department has an equipment reserve account funded annually. The Department is facing the need to replace two vehicles in the near future, the 1969 Ward LaFrance Pumper and the rescue vehicle. The current level of funding of the Fire Department equipment reserve account is inadequate to allow timely equipment replacement. In addition, the Town currently relies on Portsmouth Naval Shipyard for its ladder truck. The need for a Town ladder truck is increasing with the construction of larger houses and more commercial development.

The Department does not have any paid professional, full-time staff. Fire fighters are on call and are paid only when they respond to an alarm. The Fire Department is currently

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meeting service demands with good response times, but depending upon the day of the week and the time

of day, the turnout in response to a call may be barely adequate. The Department is experiencing a decline in the number of residents volunteering to become firefighters. In addition, the Department has limited resources to devote to fire prevention activities.

b. Future Needs

A key issue in assessing the future needs of the Fire Department is its ability to attract enough volunteers to continue to operate as an on-call department. The existing facilities are probably adequate in the short term if the Department is able to continue to operate on an on-call basis. If the Department needs to transition to paid staffing, the current fire stations may be inadequate. In addition, neither station can house a ladder truck. Additional residential and commercial development will increase the demand for fire services including a need for an increased focus on fire prevention activities.

The Fire Chief has suggested that one possible solution to future needs of the Department would be to build a new, centrally located station that would be the primary response to all calls. This facility could be built to accommodate full time staffing if that becomes necessary in the future. Under this scenario, the Kittery Point station would remain an active station but would have less equipment.

5. PUBLIC WORKS DEPARTMENT

a. Existing Conditions

The Public Works Department under the able direction of the Commissioner of Public Works is responsible for the maintenance of the Town's roads, the upkeep of the parks, recreation fields, and 23 cemeteries, and the maintaining of the Town's solid waste disposal and recycling. The department operates several facilities.

The Public Works garage is located adjacent to the Town Hall. It includes a six bay building that serves as the base for the department's equipment and houses the department's administrative facilities. The facility is old and outdated and needs to be either expanded or relocated. The site also lacks a salt and sand shed for the covered storage of road salt and sand. Besides its primary facility, the department also has small garages at Memorial Field and Shapleigh Field, several retired truck trailers that are used for storage, and the old Town barn.

Solid waste operations are located at the Town's recycling center that is on a twenty-two-acre site off Route 236. This site includes a transfer station for solid wastes, a recycling center, and a licensed demolition debris disposal site. Solid wastes are transported from the site to the Turnkey Landfill in Rochester, N.H. The facilities are adequate for current needs.

The Department has 16.5 year round employees and four summer employees. The Department has seen limited growth in the past decade.

b. Future Needs

The existing Public Works garage will need to be either expanded or relocated as demands on the department increase.

Options under consideration are to expand at the present site or to move the entire public works operation to the recycling center site.

The lack of a salt and sand shed will need to be addressed once a decision is made about the location of the public works garage. The Town has a reserve account for construction of a salt shed but the project has been a low priority for State funding due to its current location.

Future residential and commercial development as projected in the plan will not create major issues for the department but may result in the need for some expansion in staffing.

6. SCHOOL DEPARTMENT

a. Existing Conditions

The Kittery School Department operates four school buildings, the Horace Mitchell Primary School (grades K-2), the Frisbee Elementary School (grades 3-5), the Shapleigh Middle School (grades 6-8), and Traip Academy (grades 9-12). The Department has recently upgraded many of its facilities. The enrollment in the system has dropped somewhat over the past decade but enrollments have increased somewhat this fall after being stable. The most recent enrollment projections suggested that the number of students in the system would be stable or decline slightly over the next five to ten years but the recent enrollment jump may signal a change in this trend. The current facilities are generally adequate to meet the current needs of the department although there is a short term overcrowding problem at the Horace Mitchell School. There are plans to expand the Horace Mitchell Primary School and a building committee has been formed.

b. Future Needs

The current facilities are generally adequate to meet current and projected enrollments over the next five to ten years if the Horace Mitchell Primary School is expanded. If, however, residential development increases substantially resulting in enrollment growth, the Department will need to review its facility needs.

7. PUBLIC LIBRARY

a. Existing Conditions

The Rice Public Library is a private nonprofit corporation but receives most of its operating funds from the Town. It occupies two buildings, the original library building constructed in 1888 and the Taylor Annex, located across the street. The Taylor Annex was a former county court building and was acquired in 1989 to relieve overcrowding of the Rice building.

The current facilities are marginally adequate for present needs. As the collection has grown, space is beginning to be limited even with aggressive weeding. Staff space is currently marginally adequate. There is, however, limited space to accommodate newer technology such as computer work stations.

The Rice building was totally renovated in 1991. As a result of these renovations the structure is sound. The Taylor Annex was renovated in 1989 when it was acquired. Since a drainage problem has been corrected, the building is considered to be sound.

Operation of two separate building creates some problems in terms of staffing and security.

b. Future Needs

Usage of the Library is somewhat related to the population of the community. The size of the collection and the number of users has grown over the past decade. If the Town experiences significant growth, expansion of the Library's facilities may be necessary. The Library's five year plan recommends that the Library Board undertake a study of the feasibility of expanding both buildings.

8. ISSUES AND IMPLICATIONS

The inventory of Kittery's public facilities suggests the following issues and implications that need to be considered by the Town:

1. While the Town is in reasonably good shape from a facilities standpoint, some departments operate at or near the capacity of their facilities. This is especially true for the Public Works Department, School Department, and Rice Public Library. Under current rates of residential growth, most public facilities will probably be adequate for the next decade. If, however, the Town experiences a sustained rate of residential growth significantly higher than current levels, a number of areas could begin to experience facility issues. The Town should consider how its rate of residential growth impacts long term facility needs.
2. A major issue likely to confront the Town over the coming decade is the maintenance of its on-call approach to fire suppression. This may become more of an issue if the Shipyard were ever to close and the resources of the base fire department

lost. The Town should consider how it can continue to operate a volunteer department.

3. The facilities of the Public Works Department will need to be upgraded whether or not Kittery experiences much growth and development. The Town will need to begin making the key locational decision whether to expand the current garage or to relocate it to a new site.

4. Growth in the Town's population, as well as demographic changes such as more younger children or elderly residents, increases the demand for library services. The Town will need to consider how the library can accommodate the materials and equipment needed to serve the community if significant residential growth occurs.

5. The Town currently contracts for emergency medical services. The Town should consider the potential impact of the development of eldercare facilities on these services and the Town's current contractual arrangements.

6. The construction of the natural gas pipeline across Maine creates the opportunity for local gas service.

9. GOALS AND POLICIES

State Goal: To plan for, finance and develop an efficient system of public facilities and services to accommodate anticipated growth and economic development. (Growth Management Act)

Local Goals: To provide high quality but cost efficient public services and facilities to meet the needs of the residents of Kittery.

To assure that adequate public services are available in areas where growth and development are desired.

To discourage development in those areas of Kittery where it is difficult or expensive to provide municipal services.

To continue to increase the rate of recycling.

Pursuant to these goals, the Town's policies with respect to public facilities are:

1. The Town should review and revise its long range capital planning and budgeting system to better integrate consideration of long term facilities needs with current budget priorities.

2. The Town should explore creative approaches for maintaining a call fire department.
3. The Town should closely monitor changes in school enrollments and regularly update its enrollment projections to determine if the School Department's facilities are adequate to serve the expected school population.
4. The Town should pursue the expansion and modernization of the Horace Mitchell Primary School to accommodate projected enrollments.
5. The Town should initiate formal planning for the upgrading of the Town's public works facilities. As part of this effort, the relative merits of expanding at the present location or relocating the facility should be evaluated and a decision made as to which is the best long term solution.
6. The Town should work with the Library Board to evaluate options for meeting the library's long range space needs before any additional investment is made in the two existing facilities.
7. The Town should continue to encourage residents and businesses to recycle and should upgrade the Town's recycling facilities as necessary.
8. The Town should work with natural gas providers to provide service in Kittery.

SECTION K. RECREATION AND OPEN SPACE

This section identifies the Town of Kittery's recreational resources and discusses the adequacy of them to meet the community's needs. Other public and private resources that are suitable for active and passive recreation are also identified.

Current recreation facilities maintenance is provided by the Kittery Recreation Department, the Kittery Public Works Parks Department, the Kittery Conservation Commission, the Kittery School Department, the Kittery Port Authority, the Kittery Little League Association, the State Bureau of Outdoor Parks and Recreation, and the Rachel Carson Wildlife Refuge.

1. MUNICIPAL RECREATIONAL RESOURCES

The management of Town owned facilities, which totals 19 sites covering roughly 170.5 acres, is divided between the Recreation Department, the Public Works Parks Department, the School Department, the Kittery Conservation Commission, the Kittery Port Authority and the Little League Association. The following section contains descriptions of

the significant recreation areas included in this acreage. The locations of these facilities are shown on **Figure 4-15**.

a. Emery Field and Community/Recreation Center

This 5.75-acre facility and field is located on Cole Street. Such things as recreational programs, ball fields, an ice rink, and outside basketball are the types of recreational activities that can be found here. The center is also used as a senior meal site and for the Meals-on-Wheels program. The majority of the usage of the facility is by residents of the Town. During the fall season, the fields are used constantly for soccer.

At present, the 5,500 square feet Community/Recreation Center is inadequate for the needs of the Town and is in a state of disrepair. The Kittery Recreation Department has identified that repairs needed on the Center are costly, and the facilities are too small to handle all of the programs offered in the Town. At this point there are no showers, changing rooms, weight rooms, or cardiovascular areas. There is a small room used for basketball. However, it has very low ceilings and heater units are positioned in the area used for play. There is also a need for a place for adults and children to meet.

The senior area, which is used during the day, can only seat approximately twenty-five seniors comfortably for a meal, but the kitchen is considered unacceptable for serving meals, and the building is also not totally handicapped accessible. There is a need for more storage space, more office space, more parking, a place for seniors to meet, and a playground area is needed next to the Community/Recreation Center.

b. Shapleigh Recreational Field

Shapleigh Recreational Field is a 5.98 acre field used by the Shapleigh School, Recreation Department, Traip Academy, Little League, and residents for recreational activities. Located on Stevenson Road in the West Kittery Planning District, this field accommodates high school athletic activities such as track and field events, soccer, field hockey, and women's softball. The facility is also used for t-ball and Little League practices, but use is limited due to foul ball problems. The heavy usage of this field has called for new requirements limiting the use of the field by additional teams for athletic activities. (Map 29, Lot 24)

c. Shapleigh School Recreational Area

This quarter acre recreational area at the Shapleigh School on Manson Road in the West Kittery Planning District has two outdoor basketball courts. The students at the school use the facilities during school hours, but residents have free use after school is out for the day. (Map 37, Lot 3)

d. Eagle Point - Spruce Creek

This 25-acre parcel is on Philbrick Avenue in the Downtown Planning District. The major use of this park is for passive recreational activities. It is moderately used. (Map 24, Lot 35)

e. Frisbee Field

Frisbee Field is a 1½ acre recreational field in the Downtown Planning District. It is heavily used for such activities as school intermural programs, recess, baseball, soccer, and softball. (Map 15, Lot 91)

f. Frisbee School Recreational Area

This half-acre recreational area is found at the Frisbee School on Goodsoe Road. It consists of a playground with swings, a jungle-gym, merry-go-rounds, two outdoor basketball courts, and a Little League ballfield. The students at the Frisbee School use the facilities during school hours while residents have free use after school is out for the day. (Map 15)

g. Rogers Park

Rogers Park can be found at the end of Dion Avenue in the Downtown Planning District, and is about 23 acres in size. It is an area used for passive recreation, such as trail walking and dog walking. The Kittery Conservation Commission, which has developed a management plan for the park, is responsible for maintenance of the park. (Map 23, Lot 19)

h. Sea Point & Crescent Beaches

These beaches, which are roughly 4.5 acres in size, are on Seapoint Road and are considered to be in the Islands Planning District. The types of activities found here are swimming, jogging, fishing, dog walking, sunbathing, and nature studies. Each year there is an estimated thirty-thousand people who enjoy these beaches. (Map 58, Lots 5 and 7)

i. Legion Pond

Legion Pond is best known for the activity of ice skating in the winter. It can be found on Old Post Road in the Downtown Planning District and is about 3.5 acres. The pond is not plowed for skating by the Town and has a low level of use by residents. (Map 8, Lot 19)

j. Memorial Field Swimming Pool

The swimming pool is located in the Downtown Planning District and the major activity is swimming. It also has slides and swings. The pool is roughly 50 years old and is

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in a state of disrepair. It is outdated with no bathroom facilities, no showers, and it is not handicapped accessible. (Map 8, Lot 19)

k. Memorial Field

Memorial Field can be found on the Old Post Road and is home to such activities as football, baseball, and a small youth baseball field. A new field house was recently constructed. This 5.25 acre field is used mainly by the High School, Little League, and Babe Ruth Baseball League. (Map 8, Lot 19)

l. Fort Foster

Fort Foster can be found on Gerrish Island off Pocahontas Road. It is located in the Islands Planning District and consists of about 88.9 acres of land. The activities at this Fort are marine science studies, swimming, bird watching, scuba diving, wind surfing, fishing, and dog walking. It has two beaches, sixty picnic tables and open space, as well as historic interest to offer to the average 400 people who visit it daily in season. (Map 51, Lot 9)

m. Wood Island Life Boat Station

While this 1.25 acre station has historic significance, it plays only a very minor role in the recreational activities of the Town. Recreational uses include picnicking and sunbathing. The level of use is low with only 750 to 1,000 people visiting it each year since accessibility is difficult. (Map 51, Lot 9)

n. Mitchell School Recreational Area

The Mitchell School Recreational Area is on one acre on Mitchell School Lane in Kittery Point. It consists of a playground with swings, climber, and slide and a basketball court. There is also a small multipurpose field that is used for a number of activities. The students at the Mitchell School use the facilities during school hours, but residents have free use after school is out for the day. (Map 27, Lot 20)

o. Spinney Cove

This 1.99 acre open space area currently is not associated with any scheduled or specific recreational activities. It is a very scenic area with roughly 350 feet of waterfront that has no department scheduled to perform regular maintenance. (Map 2, Lot 64a)

p. Old Town Barn

Located on 1.5 acres, this barn is used as a snow storage area and storage garage for off season equipment. (Map 1, Lot 57)

q. Howell's Park

This small quarter acre park is located off Whipple Road and is unofficially considered Town conservation land. (Map 10, Lot 117)

r. Williams Avenue Park

This eighth of an acre park on Williams Avenue is designated as unofficial conservation land. The Conservation Commission has landscaped the area and installed a perennial garden. (Map 9)

s. **Rudolf Park**

This quarter acre park located off Rogers Road and Lutts Avenue is used for passive recreation. (Map 9, Lot 105)

2. **MUNICIPAL CONSERVATION LANDS**

a. **Town Forest**

The 72-acre Town Forest is located at 77 Haley Road, and is managed by the Kittery Conservation Commission. The Commission has developed a management plan for the land. Trails were recently created for walking and cross-country skiing. (Map 48, Lot 7)

b. **Rossellen Drive Swamp**

This swamp, at 8 Rossellen Drive, is unofficially considered Town conservation land. (Map 35, Lot 18)

c. **Horn Island**

Located just off the coast near Fort Foster, this 0.8 acre island is unofficially considered Town conservation land. (Map 51, Lot 13)

d. **Other Town Owned Land**

There are four other parcels totaling roughly 18 acres that are owned by the Town of Kittery that have potential to be used for recreation or for open space:

- A quarter acre lot located off Badgers Island West. This lot has water frontage along the Back Channel. (Map 1, Lot 34)
- Two parcels which total 3.37 acres that are off Ranger Drive near the Maine Turnpike exit in Kittery. (Map 7, Lots 5-1, 5-2)
- A 14.25 acre parcel with access from Martin Road that is used as a game area. (Map 11, Lot 10)

3. **STATE AND FEDERAL RECREATIONAL FACILITIES AND OPEN SPACE**

Currently there are four state and federally owned recreational facilities and open space areas in Kittery. The federally owned facilities consist of more than 140 acres, and the state owned properties include roughly 30 acres. These properties are shown on **Figure 4-15**.

a. Fort McClary

Fort McClary, which consists of 27.5 acres can be found on Pepperrell Road in Kittery Point. The Fort is divided into two parts that are separated by Pepperrell Road and is maintained by the Maine Bureau of Parks and Recreation. It has roughly 32,000 users each year. The southern section of the Fort borders the Piscataqua River. The northern section borders Bartons Creek and includes picnic tables, a swing set, and passive recreational activities. (Map 26, Lot 1, Map 18, Lot 25)

b. Rachel Carson National Wildlife Trust

The National Wildlife Refuge System's (NWRS) mission is to "preserve a national network of lands and waters for the conservation and management of fish, wildlife and plant resources of the United States for the benefit of present and future generations." The NWRS is administered by the U.S. Fish and Wildlife Service and is governed under the U.S. Department of the Interior.

There are ten divisions of the refuge that are spread over 45 miles of the Southern Maine coast. The Kittery area trust is off Brave Boat Harbor Road and is referred to as the Brave Boat Harbor Division. It is maintained by the Rachel Carson Trust.

The Brave Boat Harbor Division of the Rachel Carson Preserve includes several lots in Kittery with a total of more than 140 acres. Future land acquisitions may provide better opportunities for public use of the land in this division. Currently the only public use facilities are at the Upper Wells Division, on Route 9 northeast of Wells. The Kittery land has passive recreational activities and wildlife management activities. However, at this time, the refuge is not encouraging visitors to the Brave Boat Harbor Division area. (Map 63, Lots 54, 50, 49, 49b, 38A, and Map 69, Lots 11, 17, 25, 30, 31, 32, 32D, 38, 43, 44, 46)

c. Portsmouth Naval Shipyard

The Shipyard has developed a range of recreational facilities to meet the needs of military personnel and base workers. Historically, access to these facilities has been restricted to people connected with the Shipyard. Due to the large number of Kittery residents with access to the Shipyard, these facilities have played a role in meeting the needs of Kittery's residents even though they are not available to the general public. With the ongoing changes in use at the Shipyard, these facilities may play a larger role in meeting the recreational needs of the entire Kittery community in the future.

The Shipyard's outdoor recreational facilities are located at the eastern end of the Shipyard and include two playing fields with lights, five tennis courts, a running track, three parks, two children's playgrounds, and a basketball court. There are also two marinas with a current capacity of up to two hundred boats that are now available for use by the general public. The marina near Clark Island is in the process of being expanded.

The Shipyard's indoor recreational facilities include a gymnasium, fitness center, tennis courts, racquet ball courts, a 10-pin bowling center, an auto hobby shop, a wood working shop, a library and recreation center, a movie theater, an auditorium, and a museum.

Other recreational facilities at the Shipyard include an All-hands Club (formerly an Officer's Club), a pizza restaurant, a mobile canteen, a discount ticket office, a gear rental office, two stocked freshwater fishing ponds, and several designated saltwater fishing areas.

d. John Paul Jones Park

This park is owned by the State of Maine and is located along U.S. Route One between Hunter Avenue and Newmarch Street and is roughly 2 acres in size. (Map 4, Lot 201)

4. PRIVATE RECREATIONAL FACILITIES AND OPEN SPACE

Kittery Land Trust

The Kittery Land Trust owns eight properties and three conservation easements throughout the Town of Kittery. These properties are shown on **Figure 4-15**.

The following is a list of eight properties owned by the Kittery Land Trust:

- **Armstrong Property off Lewis Road.** This forest and wetland property on Norton Road consists of 34 acres. (Map 67, Lot 19)
- **Campbell Property between Cutts and Gerrish Islands.** The property is a salt water marsh consisting of 34.5 acres that can be found at 55 Tower Road. (Map 58, Lot 38)
- **Cook Property off State Road.** This wetland property off State Road is approximately 5 acres in size. (Map 8, Lot 28 and Map 3, Lot 147)
- **Hubbard Property at Cutts Island.** Located on Thaxter Lane, this ocean front property consists of .7 acres. (Map 64, Lot 13)
- **Hubbard Property at the Point at Seapoint Beach.** This ocean front property can be found on Seapoint Road and consists of 2.7 acres of land. (Map 58, Lot 3)
- **Grace Frawley Property off Norton Road.** This parcel contains forest and wetlands and consists of 64 acres. (Map 6, lot 4)
- **John Cutts Property of Haley Road.** This property contains forest

and wetlands and consists of 22 acres. (Map 43, lot 2 and Map 35)

- **Ralph Remick Property off Dennett Road.** This parcel includes upland forest consisting of 80 acres. (Map 28, lot 6 and Map 19, Map 11)

The following is a list of the three conservation easements held by the Kittery Land Trust as of March 1, 1998:

- **Hall Property.** Located at the corner of Bowen Road and Old Ferry Lane, this property is less than 1 acre in size and consists of mowed grass and trees. (Map 17, Lot 51)
- **Moulton Property.** Located on Haley Road, this property is about 12 acres and consists of a field with a duck pond. (Map 39, Lot 2)
- **Thompson Property.** This 18-acre parcel can be found on Mill Pond Road and is woodland on Spruce Creek. (Map 23, Lot 7E)

5. LAND IN CURRENT USE TAXATION

The Town of Kittery has a number of parcels enrolled in the State Current Use Taxation programs (tree growth, farm and open space). There are eleven parcels in the tree growth program with a total of about 335 acres, and one parcel in the farmland tax program totaling 8.5 acres. The location of these parcels is shown on **Figure 4-15**.

The eleven properties in the Tree Growth Tax Program are:

- **The Harold Durgin Family Trust.** Located at 460 U.S. Route One, the parcel contains 43 acres of which 28 acres are in the Tree Growth program. (Map 61, Lot 27)
- **The Harold Durgin Family Trust.** This property, which can be found at 450 U.S. Route 1, spans two lots and totals 30.03 acres. (Map 61, Lots 28 and 28b)
- **Jacqueline Emery Property.** Located at 44 Foyes Lane, this property totals 58.31 acres, 45 acres are in tree growth and 7.31 are swamp. (Map 57, Lot 1)
- **Jacqueline Emery Property.** This property on Foyes Lane consists of 40 acres of land. (Map 56, Lot 1)
- **David and Ruth Evans Property.** This property found off Brave Boat Harbor Road consists of 17 acres of land. (Map 63, Lot 25)

- **David and Ruth Evans Property.** Located off Brave Boat Harbor Road, this property consists of 19.1 acres. (Map 57, Lot 22)
- **Grace Frawley Property.** Located at 160 Norton Road, this parcel is about 52 acres in size. (Map 68, Lot 4)
- **Chester and Elsa Johnson Property.** This 18-acre property can be found on Wilson Road. (Map 54, Lot 19)
- **Heirs of Samuel K. Kramer and Paul Kramer Property.** The smallest of the Tree Growth Taxation Program properties in Kittery, with 8.3 acres, this property can be found off Charles Hill Road. (Map 63, Lot 34)
- **Heirs of Samuel K. Kramer and Paul Kramer Property.** The property located on Charles Hill Road consists of 27.5 acres. (Map 62, Lot 13)
- **Heirs of Samuel K. Kramer and Paul Kramer Property.** Located at 27 Charles Hill Road, this property is 48.2 acres in size, of which 43.2 acres are enrolled in the tree growth program. (Map 56, Lot 8)

The one property in the Farm and Open Space Tax Program is:

- **Herbert and Carolyn Marsh Farm.** This agricultural area is located at 93 Piccott Road and spans 8.5 acres. (Map 49, Lot 7)

6. ACTIVE FARMLAND NOT IN CURRENT USE TAXATION

There are two properties in the Town that are being used for agricultural purposes that are not currently enrolled in a current use taxation program. The properties, which are listed below, are shown on **Figure 4-15**.

- **Chester and Elsa Johnson Farm.** This agricultural area located off Wilson Road is 93 acres in size. (Map 59, Lot 21)
- **Jonathan Sawyer III Farm.** Located at 110 Bartlett Road, this farm is 56.5 acres in size. (Map 68, Lot 13)

7. WATER ACCESS

Kittery is bordered by the Atlantic Ocean on the east and the Piscataqua River on the south. Although much of the land along the ocean is private, there are several areas for the public to gain access to the water.

a. Badger's Island Marina

This marina on Badger's Island has thirty-two boat slips available.

b. Town Wharf, Pepperrell Cove

This Wharf is located in Kittery Point on 0.4 acres. The primary equipment at the facility is two piers and floats, a one ton hoist, gas, diesel and water. The piers, floats, and hoist are maintained by the Kittery Port Authority, and the gas and diesel service is run by Cap'n Simeon's. There are also thirty-two parking spots on the Wharf.

c. Town Wharf, Government Street

This Wharf is located in the Downtown Planning District on 0.1 acres. The primary equipment at the facility is a pier and hoist maintained by the Kittery Port Authority.

d. Traip Academy Boat Launch

This boat launch on Williams Avenue is in the Downtown Planning District. There are four parking spots available at the launch site. The use of the boat launch is informal and is maintained by the Kittery Port Authority.

8. STATE COMPREHENSIVE OUTDOOR RECREATION PLAN STANDARDS

In 1988, the Maine Bureau of Parks and Recreation updated the State Comprehensive Outdoor Recreation Plan (SCORP). The 1988 SCORP established adequacy benchmarks for community recreational facilities. The benchmarks were established on a per 1,000 person basis, as the average of recreational facilities provided by Maine municipalities larger than 2,500 people. National averages were also provided for comparative value in many categories. The benchmarks serve as a basis for comparing the adequacy of recreation facilities.

State and national benchmarks for various recreational facilities identified in the 1988 SCORP are shown in Table 35. The table also shows what facilities Kittery should have to meet state benchmarks standards, and what the town currently has for facilities.

The information in the table does not include the recreational facilities at the Portsmouth Naval Shipyard since these facilities are not available to the general public. However, these facilities do meet part of the need for recreational facilities in the community.

9. ADEQUACY OF KITTERY'S FACILITIES TO MEET NEED

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In seven of the eleven recreational facilities categories, Kittery meets or exceeds SCORP adequacy standards. The acreage owned by the Town is higher than the benchmark standards, and open space and recreational acreage under state, federal and private jurisdiction only increases that figure.

Kittery either exceeds or meets the standards in the number of softball fields, playgrounds, places to swim, the number of picnic tables, outdoor basketball courts and it has

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Figure 4-15

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the recommended one recreational hall per community. The number of picnic tables exceeds the standard and does not reflect those provided at state or federally owned facilities.

The standards suggest that the Town is deficient in the number of baseball fields, soccer fields, tennis courts, and parking spaces at boat ramps. There is a critical need for additional facilities to accommodate soccer at all levels. The number of soccer fields compared to the population suggests that Kittery is short by three fields.

Table 35
RECREATIONAL FACILITIES AVAILABLE IN KITTERY
AS COMPARED TO SCORP ADEQUACY BENCHMARKS STANDARDS
 (Kittery 1998 estimated population 9,000)

FACILITY	BENCHMARK (per 1,000 people)		Maine Benchmark Standard for Kittery	Facilities Provided by Kittery as of January 1999	Difference in actual facilities verse Benchmarks
	Maine	National			
Municipal Acres	15.34	—	138.1	170.5	+32.4
Baseball Fields	.47	.17	4.2	1	-3
Softball Fields	.41	.33	3.7	4	0
Soccer Fields	.43	.22	3.9	1	-3
Outdoor Basketball Courts	.47	.5	4.2	6	+2
Tennis Courts	.67	.5	6	0	-6
Recreation Hall	1 (per community)	.1	1	1	0
Playgrounds	.59	.5	5.3	5	0
Picnic Tables	4.9	2	44.1	65	+21
Boat Ramps/ Parking Spaces	4.85	—	43.7	36*	-8
Swimming	1 pool or beach/ 15,000 population	1 pool or beach/ 15,000 population	1	7	+6

Source: Maine State Comprehensive Outdoor Recreation Plan, Bureau of Parks and Recreation 1988; Kittery Parks and Recreation Department; Kittery Department of Public Works; Milton Hall

*Does not include parking at nearby schools.

Note: Data does not include recreational facilities at the Portsmouth Naval Shipyard.

While the SCORP standards suggest that there is a significant need for tennis courts, this does not reflect the local experience. Currently there are no tennis courts in Kittery open to the public but there is little reported demand for this use. There are two unused/underutilized courts at Admiralty Village that is part of Portsmouth Naval Shipyard that might be available for public use in the future.

The standards also suggest that there is a scarcity of baseball fields. Where the standards suggest that Kittery should have roughly four fields, there is only one. However, the local experience is that the current facilities are adequate for the current needs.

Parking spaces are also deficient at boat ramps, but this figure does not include spaces at nearby schools. Although frequently used by boaters, the parking spaces at the schools are not set aside for that use.

10. ISSUES AND IMPLICATIONS

1. Facilities for active recreational use are below benchmark standards in some categories. Based upon the state standards, the Town needs to consider additions of tennis courts, baseball fields, and soccer fields. Local experience, however, suggests that the primary need is for additional soccer facilities with limited need for baseball fields or tennis courts.

2. The high usage of Fort Foster and other beaches by nonresidents on weekends impinges on local use. At the same time, this use generates the revenue used to operate and maintain these facilities. The Town should continue to review how it balances these competing demands.

3. During the off season, access to the main parking area at Fort Foster is restricted resulting in users parking along the access road. The Town should explore how this situation could be improved.

4. There is a potential for Portsmouth Naval Shipyard's recreational facilities becoming more available for limited public usage in the future adding to the recreation resources for the Town. This needs to be evaluated in the Town's planning for recreation facilities.

5. The miles of nature trails in Kittery are extensive. There is currently limited interconnection between trails and there is a lack of good information about these facilities.

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The Town should explore ways to interconnect the existing trail network as well as developing more accurate information about the network.

6. The current Community/Recreation Center and swimming pool are inadequate for current needs and are in poor condition. The Town needs to consider how it will deal with these issues.

7. The Town Council has recently appointed a Park Commission. The duties of the commission will be to provide ongoing citizen input and advice relating to the maintenance, improvement, protection and operation of town-owned property that is or will be developed into parks in order to insure the preservation, beauty and protection of the properties.

8. While the Conservation Commission and Land Trust are involved in land conservation activities, there are no organized priorities for land acquisition or preservation nor Town financial support.

11. GOALS AND POLICIES

State Goal: To promote and protect the availability of outdoor recreation opportunities for all Maine citizens, including access to surface waters. (Growth Management Act)

Local Goals: To provide recreational facilities to adequately meet the needs of the Town's current population and to provide facilities for the growing population.

To maintain the current level of public access to the Atlantic Ocean and Piscataqua River and to expand and improve access as opportunities arise.

To maintain the rural, open landscape in designated non-growth areas.

Pursuant to these goals, the Town's policies are:

1. The Town will continue to require that new subdivisions address the need for recreation and open space resulting from the development but the Town should revise its system to allow either the provision of on-site facilities or financial participation in off-site facilities through the payment of in-lieu of or impact fees.

2. The Town should work to increase the number of athletic fields, especially soccer fields, available for use by both the Kittery school system and residents.

3. The Town should work with the Shipyard to explore the use of the existing tennis courts at Admiralty Village by the public to address the lack of tennis courts in the Town.

4. The Town should work to develop interconnections between the existing trails and begin developing information about the nature trails within the Town and promoting usage of them for recreational purposes.

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5. The Town should consider enlarging the facilities available at the Community/Recreation Center or replacing the center in order to provide adequate facilities for not only the current population but for the future population.

6. The Town should have the Planning Board and Conservation Commission develop an open space plan for the Town that identifies important areas that are suitable for open space and recreational use and establishes priorities for the protection or acquisition of a land. This plan should encourage the linkage of open spaces to create a continuous open space network that can also function as a contiguous wildlife corridor. The Town should continue to explore and support opportunities to purchase and acquire open space/conservation easements and land. The Town should also explore creating a land acquisition fund to be used for acquiring key open space that is identified in the plan that is threatened by change in ownership or potential development.

7. The Town should explore requiring developers to contribute to a fund for the purchase of recreation and/or conservation land or creating an impact fee for this purpose.

8. The Town should support efforts by the Kittery Land Trust to privately acquire key parcels of open space.

9. The Town should actively work with the owners of large parcels of open land to educate them about non development options and to find ways that the owners' interests can be met without developing the land.

10. The Town should work to discourage intense use of Seapoint Beach by increasing enforcement of parking restrictions near the beach.

11. The Town should develop a management plan for Fort Foster that balances the needs of competing interests. This plan should look at approaches for providing off-season parking.

12. The Town should develop a plan for managing access, use, and parking at the Government Street wharf and the Traip Academy boat ramp.

13. The Town should work to increase the number of points of public access to coastal waters. This effort should include:

- improving access to existing Town owned waterfront parcels that are unused or underutilized
- working with developers to set aside and/or create public access as part of development and reuse proposals
- establishing a fund to improve existing Town owned waterfront parcels and to

acquire additional shorefront property that is appropriate for public access. This will include establishing a mechanism to provide for the ongoing funding of the effort.

Environmental considerations should be included in all public access projects.

14. The Town should study the creation of a Tree Board.

SECTION L. CULTURAL RESOURCES

Kittery is part of the Portsmouth-Dover-Rochester Metropolitan area. The Portsmouth area has a large number and wide range of cultural resources as well as entertainment and shopping opportunities. As a result, many residents of Kittery travel to Portsmouth and other

New Hampshire communities for many of their shopping, entertainment, and cultural needs. In spite of this relationship, Kittery has a number of cultural resources.

1. HISTORIC AND ARCHAEOLOGICAL RESOURCES

The Town of Kittery has a large number of historic and archaeological sites including fourteen individual historic sites and two historic districts that are included on the National Register of Historic Places. These resources are discussed in detail in Section M.

2. THE RICE PUBLIC LIBRARY

The Rice Public Library is a significant cultural resource for the Town of Kittery. The main building was built in 1888 and is listed as an historic structure on the National Register of Historic Places. The library, in addition to its traditional role as a “lending library”, offers a wide range of programs for children and adults in the community. In addition, the library has a “Maine Room” which houses a collection of historical and genealogical materials. This facility is discussed in more detail in Section 12 Public Facilities.

3. THE KITTERY HISTORICAL AND NAVAL MUSEUM

The museum is located adjacent to the municipal building and includes a collection of artifacts documenting the history of Kittery and the Portsmouth Naval Shipyard. The museum provides a view of the role of shipbuilding in the region. The museum also has control of an historic building, the Mitchell Garrison, which has been dismantled and is in storage. The Museum hopes to be able to reassemble this building adjacent to its facility.

4. THE SAFFORD SCHOOL

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The Town owns the Safford School, a one room schoolhouse on the Tenney Hill Road. This building is currently rented to a private party but has potential for community use.

5. PORTSMOUTH NAVAL SHIPYARD MUSEUM AND VISITOR CENTER

The Portsmouth Naval Shipyard Museum and Visitor Center was reopened in June of 1999 in Building 31 on the Shipyard. It is located just over the Gate 2 (Back Gate) bridge and has its own parking area. It is open to the public on the last Saturday of each month from 10 a.m. to 3 p.m. and during the week by appointment.

Originally designed as a Gun Powder Magazine by Shipyard Civil Engineer Benjamin Chandler, this granite block building was erected in 1850. It was used to store gun powder until World War II when it was converted into a Commissary (Grocery Store) and Base Exchange (Department Store). When the Shipyard Commissary and Base Exchange were relocated to larger quarters on the Shipyard, the Museum was moved into this historic building which is one of several Shipyard buildings currently listed on the National Register of Historic Places.

The Museum has many historic and interesting artifacts which tell of the community's shipbuilding heritage dating from the 1600's to the present day. The exhibit demonstrates Portsmouth Naval Shipyard's journey from 'Sails to Atoms'.

6. KITTERY ART ASSOCIATION

The Kittery Art Association is a private organization dedicated to promoting the fine arts in Kittery. The Association works to provide local artists with an opportunity to exhibit their works.

7. ISSUES AND IMPLICATIONS

An analysis of the inventory of cultural resources suggests that the Town should consider the following:

1. The ship building industry is a keystone of the cultural heritage of the community. The Kittery Historical and Naval Museum and the Portsmouth Naval Shipyard Museum both provide repositories for information and artifacts about this industry. The Town, in conjunction with the two museums, should consider if the changes occurring at the shipyard can provide additional opportunities to showcase the shipbuilding industry and its heritage in Kittery as a way of stimulating additional tourism in the Foreside area and increasing utilization of the facilities.

2. The community has wisely "mothballed" a historic building that needed to be removed from its former site. The Town should consider how it can work with the museum to allow for the reassembly and use of this building.

3. The Safford School could be more of a cultural resource for the community if it were to be used for a community purpose. The Town should consider the possible uses for

this facility. One use that could be explored would be to convert this into a home for the Kittery Historical Society.

8. GOALS AND POLICIES

State Goal: To plan for, finance and develop an efficient system of public facilities and services to accommodate anticipated growth and economic development. (Growth Management Act)

Local Goal: To expand the range of cultural facilities and opportunities available within Kittery to meet the needs of Kittery's residents.

Pursuant to these goals, the Town's policies are:

1. The Town should work cooperatively with the Kittery Historical and Naval Museum and the Portsmouth Naval Shipyard Museum to promote these resources and use them for local education and as a way to attract visitors to Kittery.
2. The Town should support expansion of the Historical and Naval Museum and explore the possibilities for the display of the Mitchell Garrison.
3. The Town should investigate possible public or community uses for the Safford School Building and consider returning the property to community use if an appropriate use can be identified.
4. The Town should consider increasing public support for the arts and cultural activities within the community.

SECTION M. HISTORIC AND ARCHAEOLOGICAL RESOURCES

It is important for communities to remember and preserve traces of their past. Doing so adds richness and texture to the physical fabric of a community, makes history come alive, and helps to create a sense of "place." Examples of how people settled and lived not only provide context and an understanding of the past, but give us perspective on the future.

Early records show that people visited the Isles of Shoals and the Piscataqua in the early part of the 17th Century. These records reveal that Kittery was first settled by Europeans in roughly 1623. The Town was eventually incorporated in 1647, making it the oldest incorporated Town in the State of Maine. Kittery's early existence was tied to the sea as it evolved primarily as a fishing and shipbuilding center. The Kittery Point settlement

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reflects this period of the community's history, and it contains many of what are now considered the community's historic landmarks. The most notable family in the shipbuilding business was the Badgers, who built more than a hundred vessels at their own yard on Badger's Island, Kittery.

From the early days of settlement in the early 1600's up to the outbreak of the Revolutionary War, there were continual skirmishes at sea and on land with the French, Spanish, and native Indians. With these continuing skirmishes, population growth was limited in the early years of the 18th Century. Land in Kittery away from the coast line was granted to colonists in various sized lots. These were primarily used for farming. These lands were passed from generation to generation until the demand for land caused families to sell plots for others to build homes. During the colonial era, many of Kittery's local leaders were well known throughout colonial America, and even in England. Many of these leaders left legacies for the future generations to enjoy through their mansions and elaborate homes which still stand today. One of these colonial families, the Pepperrells, left behind the John Bray House, the Pepperrell Mansion, and the Lady Pepperrell House.

On June 12, 1800, the United States Government purchased Fernald's Island (aka Dennett's Island) from William Dennett, Jr. and established one of our Nation's first publicly owned Shipyards. From the War of 1812 through the World Wars and until 1969, the Portsmouth Naval Shipyard was engaged in ship construction, overhaul, and repair. Naval vessels ranging from wooden and iron-clad warships to nuclear powered submarines have been constructed for nearly two centuries. The growth of the facility over the decades became a driving force in the community and necessitated the purchase of the adjacent islands (Pumpkin, Seavey's, Jamaica, and Clark's). The Town of Kittery was developing simultaneously adjacent to the entrance to the Shipyard resulting in the Foreside area of Wallingford Square and the surrounding residential areas. Since the 1970's, the Shipyard's primary mission has been to overhaul and repair nuclear powered submarines.

The late 1800's brought another change to Kittery with its establishment as a tourist center. This was the result of the construction of summer hotels on the islands and at Kittery Point.

In the 20th Century, the Shipyard remained active and experienced booms during the World Wars as it became a builder of submarines. At about the same time, the first automobile bridge was built across the Piscataqua River linking Kittery to Portsmouth. Prior to that they were linked by Ferry service. After World War II, US Route One emerged as the new gateway to Maine bringing with it more tourism and development.

Kittery has a rich and varied history. This chapter identifies the known historic and archaeological resources and identifies areas in need of further study.

1. ARCHAEOLOGICAL RESOURCES

a. Prehistoric Sites

In prehistoric times, Kittery's coastline attracted native people who drew their existence from the ocean and the deep water harbor created by the Piscataqua River. The Maine Historic Preservation Commission (MHPC) has identified six prehistoric

archaeological sites in Kittery. Five of the sites are found at the Portsmouth Naval Shipyard and one is located in the Rachel Carson Preserve at Brave Boat Harbor. The MHPC reports that surveys of all six sites have been completed. In addition, they suggest that all other salt water shoreline must be considered as sensitive.

b. Historic Sites

The MHPC has identified thirty-four historic archaeological sites in Kittery that are found primarily along Spruce Creek and on the Isles of Shoals, ranging in date from the early 17th Century to the early 20th Century.

As of June 1998, although there have been excavations conducted along Spruce Creek and on the Isles of Shoals, no comprehensive professional survey of historic archaeological sites has been conducted in Kittery, except for an area on the Isles of Shoals. Preliminary survey work done in 1995 on Clark's Island found two 18th-Century house sites.

The MHPC recommends that future fieldwork focus on sites relating to the earliest European settlement of the Town, beginning in the 1620's.

2. HISTORIC RESOURCES

The force of change is powerful and without awareness and sensitivity much can be lost in the march of progress. Maine's Growth Management Act requires that "the value of historic and archaeological resources is recognized and that protection is afforded to those resources that merit it." Historic properties within a community provide a tangible link to the past and help provide a sense of identity and stability. This section focuses on the historic aspects of the Town of Kittery.

a. National Register of Historic Places

The National Register of Historic Places is the official list of the Nation's cultural resources worthy of preservation. It is administered by the National Park Service under the Department of the Interior. Properties listed in the National Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering and culture. Among other benefits, inclusion on the list makes a site eligible for Federal tax benefits, consideration in the planning for Federal or federally assisted projects, and qualification for Federal assistance for historic preservation when funds are available.

As of May 1998, Kittery had fourteen individual sites and two historic districts included on the National Register. The individual sites are:

- **Fort McClary, off ME Route 103:** The fort is located in Kittery Point and is on roughly twenty seven-and-a-half acres of land. It has deteriorated quite a

bit from its state in 1845 when construction had reached a high point, however, the Maine Park and Recreation Commission has made steady progress in repairing the site. Great walls of granite masonry surround the fort's buildings, and the front sea wall overlooking Portsmouth Harbor and the Piscataqua River is 500 feet long and 30 feet high.

- **Lady Pepperrell House, ME Route 103:** This high-Georgian style house sits on the corner of Pepperrell Road opposite the Congregational Church. It was built in 1760 for the widow of Sir William Pepperrell.
- **William Pepperrell House, ME Route 103:** Built in 1682 by Col. William Pepperrell on land deeded to him by his father-in-law, John Bray, this house was the birthplace of Sir William Pepperrell, knighted for the successful capture of Louisburg from the French in 1745. It was later the home of John Haley Bellamy, noted carver of the Bellamy eagles and figureheads. This is called Pepperrell Mansion because of the magnificent interior woodworking.
- **First Congregational Church, Old Parsonage, and Burying Ground, Pepperrell Road:** The First Parish Meeting House (Congregational Church) was built in 1730. The old parsonage, formerly the Newmarch home, was built in 1729 for the first pastor, Rev. John Newmarch, who served here more than 50 years. It is now a parish and community hall, and is located beside the present parsonage. The Old Burying Ground is located to the south of the church on the opposite side of Pepperrell Road. It is an area of approximately one acre bounded on three sides by a low rubble stone wall and on the fourth by the Piscataqua River. Records show that in 1733, the Town voted to build a stone wall around the cemetery. It contains a variety of headstones dating from the mid eighteenth through mid twentieth centuries. The cemetery contains a well known Robert Browning epitaph to Levi Lincoln Thaxter, Celia's husband.
- **Dennett Garrison, 100 Dennett Road:** Built in 1707, this house was designated a garrison in 1720 and is one of the oldest surviving buildings in Maine. Located on Dennett Road, it has been in the Dennett family since built, and retains many original features. The Dennett's provided local leadership and officers to the Navy and merchant shipping.
- **Rice Public Library, 8 Wentworth Street:** This two-and-a-half story library built in 1888, is a fine example of the Romanesque Revival style. It is an ornate brick building with a hipped roof, facade tower, two external and one internal chimneys, and granite trim.
- **Bray House, Pepperrell Road:** This house was built in 1662 by John Bray, shipwright. It is the oldest house in Maine, and one of the oldest in the

country. It is located on Pepperrell Road and faces the harbor.

- **William Dean Howells House, Pepperrell Road:** This is a very well preserved residence with a Mansard style roof, frame construction, clapboard siding, and fieldstone foundation, all dating from c. 1870. It was the summer residence of William Dean Howells, Dean of American Letters. Noted authors including Mark Twain visited here.
- **Whaleback Light Station:** Completed in 1872, this structure rises out of a shallow rock outcropping some fifty-nine feet above the mean high water level. The Whaleback Light Station is a conical ashlar granite tower. An abutting rectangular brick fog signal building has been demolished. Within its granite walls, the tower houses the former keeper's quarters and storage facilities.
- **Samuel Badger Monument:** This monument, in Kittery Foreside behind 16 Otis Avenue, is a three-tier granite and marble object that stands about nine feet high. It is in the center of the Badger Plot, a small family cemetery that was enclosed by a wrought iron fence much of which has been restored. The monument includes a bust of Samuel Badger by the noted sculptor, D. W. French. It depicts Badger's head in relief and the picture of a ship.
- **John Paul Jones Memorial Park, Newmarch Street and Hunter Avenue:** This park is a long and relatively narrow green space containing about two acres of land bounded by Newmarch Street and Hunter Avenue. Its centerpiece is the granite and bronze Sailors and Soldiers Monument by Bashka Paeff completed in 1926. The park also contains several smaller memorials.
- **Robert and Louisa Traip House, 2 Wentworth Street:** This two-and-a-half story Greek Revival style frame dwelling on a granite foundation is located on a small corner lot adjacent to the commercial district in Kittery Foreside. The main part of the house has been turned at a right angle to its original location.
- **Mark F. and Eliza J. Wentworth House, 9 Wentworth Street:** This is a two story, five-bay frame dwelling in Kittery Foreside with Italianate style detailing overlaid on what appears to be an earlier Greek Revival style building. General Wentworth was the commander of the 27th Maine during the Civil War.

The two historic districts are:

- **Portsmouth Naval Shipyard Historic District:** On November 17, 1977, the National Park Service, Department of the Interior, entered the Portsmouth

Naval Shipyard Historic District on the National Register of Historic Places. The district includes over 50 acres of land and 58 buildings and structures. The Shipyard represents one of the country's earliest complete industrial operations. Most of the significant buildings were constructed between 1850 and 1900. The district includes the oldest part of the Naval Shipyard including most of the residential and historic industrial structures. Most of these structures are stylistically Greek Revival with some earlier Federal and some later Italianate, Mansard, and Colonial Revival examples.

Recently the Shipyard has completed a cultural resource survey which identified 59 additional buildings and structures eligible for inclusion in the National Register making in all 117. Notable additions to the current list are the former Submarine Buildings Ways (Building 178) built circa 1942 and the former Disciplinary Barracks or Naval Prison (Building 93) built circa 1908. Also noteworthy are the former Mast Shed (Building 7) and the Administrative Offices of the Shipyard (Building 86) which are eligible to listed as National Historic Landmarks.

An accounting of the buildings and structures within the Historic District and currently listed on the National Register of Historic Places is contained in Appendix B.

- **Isles of Shoals Historic District:** This historic district is the site of homes stemming from the early fishing industry. Its history reflects the early explorations along the coast of New England and the Puritan/Royalist conflict in England during the 17th century. The islands share in the 18th, 19th, and 20th century history of the nearby mainland communities.

b. Locally Significant Historic Resources

Besides the properties on the National Register, Kittery contains several other locally significant resources. According to the Maine Historic Preservation Commission, a comprehensive survey of Kittery's historic aboveground resources needs to be conducted to identify additional properties that may be eligible for nomination to the National Register of Historic Places.

Two historic neighborhoods or districts should be noted, Kittery Foreside and Kittery Point Village. While a number of National Register properties are found in the Kittery Point neighborhood, the entire area should be considered as a local historic district.

There are also other buildings that are not on the historic register but should be considered as historically significant. These include:

- **Fernald House:** Built in 1690 at the head of Williams Avenue, this house

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which faces the river has been little changed. It was the home of the Fernald family for many generations.

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- **Whipple Garrison:** Built about 1665 by Robert Cutt, this property was designated a garrison at the time of the Indian raids. It is the birthplace of William Whipple, sea captain and signer of the Declaration of Independence. It is located at Locke's Cove on Whipple Road.
- **Jenkins House:** Located on Rogers Road, this house was built before 1800. Many of the original features have been retained and many period pieces are among the furnishings.
- **Samuel Badger House:** Though dated 1790, part of this house is said to be much older. The main part of the house was built by Captain Samuel Badger in 1824. Badger built many ships in his nearby shipyard. The house, located on Government Street, faces the river.
- **Dodovah Curtis House:** This house is on Route 1 north of the malls. It was moved to this location in the 1980's from its former location on Route One near Spruce Creek. It had been moved to that location in the late 1800's from across the road. It was built before 1700 and once was a stagecoach inn on the King's Highway. It was once the home of Madam Wood, Maine's first novelist.
- **Daniel Pierce House:** Located on Picott Road, near the head of Spruce Creek, this house was built in 1763 by Dr. Daniel Pierce. He had an office and drug store in the front of the house.
- **Rice House:** Built about 1750 on the corner of Rice Avenue and Government Street, this was the home of Samuel Rice. He was half owner of the ferry to Portsmouth.
- **Austin School:** Located at Fort Hill, on Whipple Road, is a wooden building built in 1875 and named for the Reverend Daniel Austin, a retired Unitarian minister. He lived in the neighborhood and donated a bell for it. It was enlarged in 1919.
- **Second Christian Church:** Located on Government Street, it was organized in 1843 by the Elder Mark Fernald. The present building, built in 1896, replaced the original one which was destroyed by fire.
- **St. Mark's United Methodist Church:** Also located on Government Street, it was built in 1868. In 1929, the First Methodist Church of North Kittery united with this church. An addition was added in 1954, and until 1968 it was called the Second Methodist Church.
- **1773 Gunnison House:** Located on Badger's Island West, this was the oldest

house on Badger's Island. It was owned by prominent shipbuilding families including the Langdon's and the Badger's. Its first owner, Samuel Gunnison, was a descendant of Hugh, one of Kittery's original settlers in the 1600's. This structure is being dismantled and stored.

- **William Badger Tomb:** This structure is located near the far end of Badger's Island facing the Back Channel. The grave is marked by a raised horizontal slate tablet with an inscription.
- **Willowbank:** This estate on Whipple Road, the Intervene, was built before 1735 and has been occupied by many familiar local families, many members from whom are buried on the property. In 1931, the estate was owned by John P. Benson, an outstanding American artist and mural painter, whose studio stood on the other side of the street.
- **Shapleigh House:** Located across from the Shapleigh School in North Kittery, the house was built by Captain John Shapleigh, the great-grandson of Kittery Point's first settler and proprietor. Captain Shapleigh was a well-to-do farmer and captain of the local militia. Only the cellar hole remains.
- **Mitchell Garrison:** This building originally stood in Brave Boat Harbor near the York line and is now stored. The Kittery Historical and Naval Museum plans to rebuild it adjacent to their building. This was the house of Christopher and was mentioned in a 1665 deed.

Kittery Point:

- **Joan Deering House:** This house, on Pepperrell Road, was built in 1700 and was a tavern for a number of years.
- **Robert F. Gerrish House:** The original part of the house was built in 1700 and was known as the Piggin House. Much of it is wainscoted and has sliding window shutters.
- **Robert Follet House:** This house now stands where the former Champernowne Hotel stood and was built in 1765. Rebuilt by John Mead Howells, an expert on early American architecture, he used it as a summer home. He was the son of William Dean Howells, the novelist.
- **Roger Russell / Captain Hooke / Mayo House:** This house was built before 1674 and was once home to the Portsmouth Yacht Club. It is on the shore near the Howells' houses.
- **Old Billings House:** Built before 1794 and located near the Mayo house, this

house was home to Lieutenant Daniel Billings, who fought in the Revolution. His grandson, Captain Samuel was born in the house and commanded a great many ships including the Kittery built Granite State. This picturesque house has Beverly Ears, which give it second story windows looking seaward.

- **Trolley Station:** Located on Coleman Avenue, it is now a lovely waterside home.
- **Pepperrell Terrace:** This apartment building includes a section of the Hotel Pepperrell, all that remains of Kittery Point's four summer resort hotels.
- **Frisbee's Super Market, Inc. and Cap'n Simeon's Gallery:** Located on Pepperrell Road at the head of the Town Pier, this complex includes America's oldest family store, est. 1828. Cap'n Simeon's restaurant is located in the original building dating back to the 1680's.
- **Pepperrell Counting House:** Located on Bellamy Lane, this home was remodeled by wood carver, John Haley Bellamy. John was a Kittery native and most noted carver of American Eagles, largely as figureheads for ships. The building was used as a carving shop and is now a studio cottage.
- **Pepperrell Tomb:** This is located behind Frisbee Super Market's back parking lot in a small memorial park. It is a family tomb thought to be erected about 1736 by Sir William, in memory of his father who died in 1734.
- **1795 House:** 95 Pepperrell Road is a well kept cape. Its history needs to be researched.
- **1798 House:** This home located at 116 Pepperrell Road, was built by Captain John Moore after whom Moore's Island takes its name. It was sold to Pelatiah Fernald, sea captain and brother of Elder Mark Fernald. It was retained by the Fernalds until 1897 when it was owned by George Savary Wasson, artist and writer, including of the book Captain Simeon's Store.
- **Rev. (Elder) Mark Fernald House:** This 1800 cape at 5 Mitchell School Lane, was built by Mark Fernald, itinerant missionary, carpenter and founder of the Christian Church in Maine, and a founder of the First Christian Church, Haley Road and the Second Christian Church, Government Street. The house was moved to its current site at the turn of the century from its original site on Pepperrell Road across from the 1798 House.
- **1784 House:** 1784 is the earliest deed mentioning this house which sets at the intersection of Haley and Pepperrell Roads on a small hill. It is older than that, however, as in that year it was sold by James Kerswell who kept an

ordinary in the building.

- **First Baptist Church:** Located at Hutchins Corner, Lewis Square, the church was organized in 1827. The present building was dedicated in 1875. It has a gilded weathercock. Many Kittery Point citizens are buried in its cemetery including Horace Mitchell, Sr., after whom the school which abuts it, was named. Horace built the Champernowne Hotel in 1890, was a corporation lawyer, one of the first trustees of Traip Academy, and descendant of Christopher Mitchell.
 - **First Christian Church:** This church located on Haley Road, was organized in 1806. The present church was built in 1849 in place of one destroyed by fire. In the adjoining cemetery is the grave of elder Mark Fernald, born 1784, pioneer preacher of the denomination and able missionary until his death in 1851.
 - **Frizzell-Phillips House:** Located at 154 Pepperrell Road, this house is also called the 1763 House. It was built by Andrew Phillips, Sargent in the Revolutionary war and descendant of William Pepperrell on land purchased from Captain Samuel Mitchell. It has had many owners. The current ones have done extensive historic renovations, discovering that at one point it was probably a tavern.
 - **Safford School:** Located on Tenney Hill Road, this is a one room building built for a District School in 1871-72. It is named for Elder Moses Safford, a founder of the First Christian Church.
 - **1740 House:** This home on Chauncey Creek Road is a pleasing one story house which rambles in all directions seeming to cling to the banks of the Creek. The original core, based on evidence by deeds, was the house of Captain Samuel Mitchell, a Kittery shipwright.
- Champernowne Farm:** Established in 1880 and located on Cutts Island, this was the home of Rosamond Thaxter, granddaughter of Celia Thaxter, Isles of Shoals essayist and poet. Nearby in the old Cutt cemetery is the grave of Captain Francis Champernowne, nephew of Sir Ferdinando Gorges, proprietor of Maine.

Cemeteries:

Kittery is covered with little burial plots that once kept families near their homes. To date 130+ cemeteries have been listed and a Committee has formed to care for them.

3. EXISTING PROTECTION OF HISTORIC AND ARCHAEOLOGICAL RESOURCES

The Town currently provides very weak protection for historic and archaeological resources beyond that provided by state and federal requirements. The only local protection is a requirement in the Town's land use regulations that the Planning Board determine that subdivisions and other development proposals do not have an undue adverse impact on historic sites before the project is approved. There are no current provisions dealing specifically with archaeological resources except in the Shoreland Zoning provisions.

4. ISSUES AND IMPLICATIONS

An analysis of the inventory of historic and archaeological resources suggests that the Town should consider the following:

1. While the Town has many identified historic archaeological sites, no systematic evaluation of these resources has been undertaken. The Town should consider how it can facilitate additional work to evaluate and protect these sites.
2. There may be other unidentified, prehistoric archaeological sites along Kittery's shoreline especially Spruce Creek and the Isles of Shoals (based on inventory). These sites are in danger of accidental disruption or destruction from development and other construction activity. The Town should consider how it can protect these potential resources.
3. The Town has a number of properties listed on the National Register of Historic Places. There are no local provisions for the protection of these properties. The Town should consider what role it should play in protecting these resources.
4. While the Town has several properties listed on the National Register of Historic Places, there are other historically valuable structures that have not been identified. No systematic evaluation of older properties has occurred. The Town should consider how it can facilitate further evaluation of the community's older buildings to identify and protect those with historic or architectural significance.
5. The Town has a number of neighborhoods such as the Kittery Point neighborhood that have special historic environments. The Town should consider if some level of local protection is desirable to maintain the character of these neighborhoods.
6. The Life Boat Station on Wood Island is owned by the Town and is deteriorating. There is local interest in preserving this site. The Town should explore the appropriate use and management of this facility and Wood Island in general.

5. GOALS AND POLICIES

State Goal: To preserve the State's historic and archaeological resources. (Growth Management Act)

Local Goals: To preserve the community's historic buildings, sites, and neighborhoods.

To assure that the community's archaeological resources are identified and protected from inadvertent damage or destruction.

To preserve and promote Kittery's historic and archaeological resources.

Pursuant to these goals, the Town's policies are:

1. The Town will establish a volunteer program in conjunction with local historic groups and the Maine Historic Preservation Commission to document historic sites, buildings, and structures in the community and to guide property owners in applying for inclusion on the National Register of Historic Places if appropriate.
2. The Town should undertake a program to educate the owners of identified historic properties about the significance of these sites and the importance of maintaining the character of the structures.
3. The Town will create a review process requiring a waiting period before an identified historic structure can be demolished or relocated.
4. As part of its development review process, the Town will require applicants for subdivision or site plan approval to document any identified historic resources that may be impacted by the project and to address the impact of the project on these resources.
5. The Town should consider creating a local Historic Commission. This Commission should establish voluntary design standards and educate property owners about the importance of conforming to these provisions. In the long term, this may be expanded to requiring that all new construction activities including additions and significant modifications to existing historic buildings obtain approval demonstrating that the project is compatible with the visual environment of the neighborhood.
6. The Town should work in conjunction with the Maine State Historic Preservation Commission to conduct professional surveys of the Town's identified and potential prehistoric and historic archaeological sites/areas as funding from the Commission is available.
7. As part of its development review process, the Town should require applicants for subdivision or site plan approval to investigate the potential archaeological significance of the site and to protect, as appropriate, any identified archeological resources.

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8. The Town will continue to support efforts to investigate the restoration/preservation of the life boat station on Wood Island.

9. To encourage better public awareness of the Town's historical and archaeological resources, the Town should consider providing appropriate signage, encouraging public exhibitions of artifacts, and publishing a brochure of Kittery's historic properties.

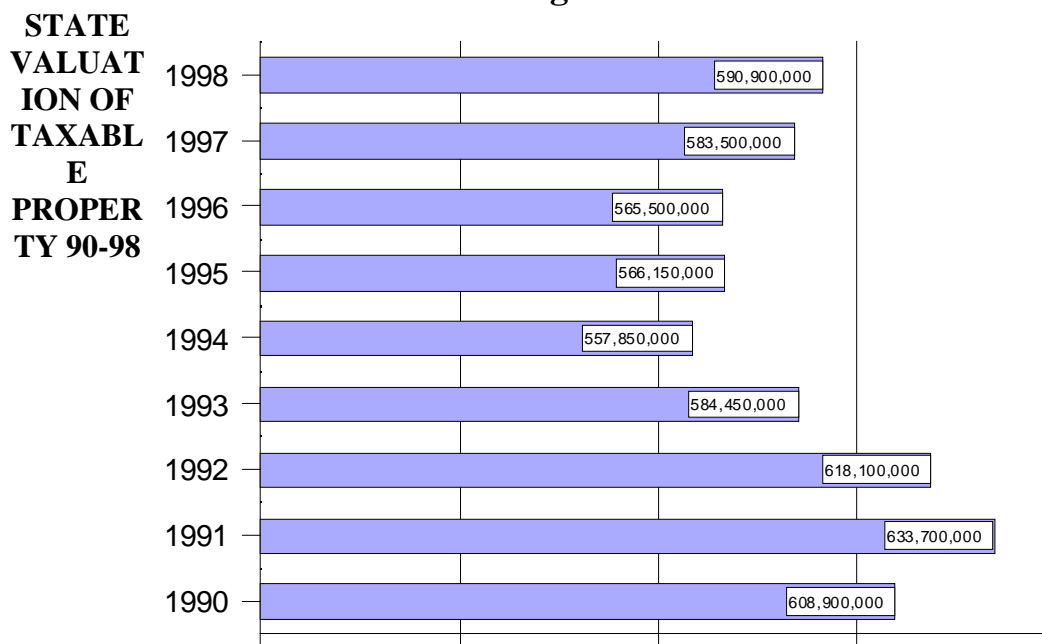
10. The Town should explore providing property tax reductions for people who own and maintain historical properties.

SECTION N. FISCAL CAPACITY

The fiscal capacity of a community is a key factor in its ability to accommodate growth while providing the facilities and services needed by the community. This section looks at the current financial condition of the Town of Kittery and its ability to service new growth.

1. ASSESSED VALUATION AND TAX RATE

An important component of the Town's fiscal health is its taxable real and personal property or total assessed valuation. The Town saw its total assessed valuation as measured by the State's equalized valuation grow through 1991. This growth in valuation was fueled by increasing property values, housing starts, and a strong real estate market that had begun in the mid-1980's (see **Figure 4-16**). In 1992 through 1994, as Maine languished in recession, development activity diminished, and the real estate market cooled, Kittery's total state assessed valuation decreased. Beginning in 1995, state valuation began to increase, reflecting the rebound of real estate prices and the new residential development occurring in Kittery. Between 1994 and 1998, the Town of Kittery's state valuation increased 5.9%. However, Kittery's total state valuation has yet to return to the 1991 peak.

Figure 4-16

Source: Municipal Valuation Return Statistical Summary 90-97, Maine Bureau of Taxation

Local assessed valuation in 1998 was \$659,049,500, 4.8% less than the 1993 high of \$692,509,400 (see **Table 36**). In the decade of the 1990's, the local assessed valuation reached its lowest level in 1994, at \$614,041,700. From 1994 to 1998 the assessed valuation increased by 7.3%.

During the period 1994-1998, the property tax commitment (the amount of the budget raised through property taxes) grew from \$9,947,476 in 1994, to \$10,828,183 in 1998 (see **Table 37**). This was an increase of 8.9%, slightly more than the 7.3% rate of growth in assessed valuation.

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Table 36
LOCAL ASSESSED VALUATION 90-98
(Total Real and Personal Property)

Year	Local Valuation
April 1, 1990	\$628,180,400
April 1, 1991	\$632,262,800
April 1, 1992	\$659,250,200
April 1, 1993	\$692,509,400
April 1, 1994	\$614,041,700
April 1, 1995	\$623,756,800
April 1, 1996	\$624,523,100
April 1, 1997	\$619,192,900
April 1, 1998	\$659,049,500

Source: Municipal Valuation Return Statistical Summary 93-97, Kittery Assessor's Office

Table 37
PROPERTY TAX COMMITMENT 93-98

Year	Commitment
1993-94	\$10,110,637
1994-95	\$9,947,476
1995-96	\$10,104,860
1996-97	\$10,354,593
1997-98	\$10,402,441
1998-99	\$10,828,183

Source: Municipal Valuation Return Statistical Summary 93-97, Kittery Assessor's Office

As a result of the changes in the property tax commitment and total assessed value, the Town has seen its property tax rate increase from \$16.20/\$1000 in 1994, to \$16.43/\$1000 in 1998 (see **Table 38**). Even though the property tax commitment increased from 1997 to 1998, the tax rate declined from \$16.80/\$1000 in 1997 to \$16.43/\$1000 in 1998. The decrease in the tax rate is attributable to a revaluation of property in 1998 and a spike in building starts (see **Land Use Chapter**), which resulted in a 6.4% increase in total assessed valuation from \$619,192,900 in 1997 to \$659,049,500 in 1998.

Table 38
PROPERTY TAX RATE 93-98

Year	Tax Rate	Assessment Ratio
1993-94	14.60/1000	113%
1994-95	16.20/1000	100%
1995-96	16.20/1000	105%
1996-97	16.58/1000	100%
1997-98	16.80/1000	107%
1998-99	16.43/1000	100%

Source: Municipal Valuation Return Statistical Summary 93-97, Kittery Assessor's Office

In 1998, the Town of Kittery's local property tax rate was 12.5% higher than York's and 16.9% higher than Eliot's, but 12.6% lower than South Berwick's tax rate (see **Table 39**). For 1998, Kittery's full value tax rate based upon state valuations was higher than York's and Eliot's, and lower than South Berwick's.

Table 39
TAX RATE COMPARISON 1998

Municipality	Tax Rate (per thousand)	Full Value Tax Rate (per thousand)
Kittery	16.43	18.32
York	14.60	14.44
Eliot	14.05	14.37

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South Berwick	18.50	19.03
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Source: Town Assessor's Office in each community

2. OPERATING REVENUES AND EXPENDITURES

This section looks at the sources of the revenues that are used to operate the municipal government and school system and how the Town spends those resources. The section includes an analysis of changes in revenues and expenditures between 1990 and 1998 to allow the recent experience of the community to be tracked. Included within these comparisons are side-by-side comparisons that take inflation into account.

a. Revenues

In 1998 the property tax generated two thirds of the revenue needed for operating Kittery's municipal government, including the school system. State aid for education was the second largest source of municipal revenues, accounting for nearly 18% of revenues (see **Table 40**). Taken together, these two revenue sources accounted for 84.4% of the revenues collected by Kittery in 1998. In 1990, these same two revenue sources accounted for 84.9% of the revenues collected. Property taxes played a more significant role in 1990, accounting for 72.6% of the revenues (see **Table 41**).

Table 40
MUNICIPAL GENERAL FUND REVENUES BY MAJOR CATEGORY
YEAR ENDING JUNE 30, 1998

Source	Amount	% of Total
Property Taxes	\$10,388,195	66.7%
Excise Taxes	\$948,201	6.1%
Interest and Penalties	\$67,760	0.4%
Licenses, Permits, Fines, & Fees	\$407,264	2.6%
State Education Aid	\$2,765,970	17.7%
State Revenue Sharing	\$649,198	4.2%
Other Intergovernmental Transfers	\$8,289	0.1%
Charges for Services	\$149,699	1.0%
Other Revenues	\$200,378	1.3%
Total	\$15,584,954	100.0%

Source: Town of Kittery Financial Audit Report, June 30, 1998

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Table 41
MUNICIPAL GENERAL FUND REVENUES BY MAJOR CATEGORY
YEAR ENDING JUNE 30, 1990

Category	Amount	% of Total
Property Taxes	\$7,702,766	72.6%
Excise Taxes	\$615,525	5.8%
Interest and Penalties	\$53,582	0.5%
Licenses, Permits, Fines, & Fees	\$227,568	2.1%
State Education Aid	\$1,309,829	12.3%
State Revenue Sharing	\$450,000	4.2%
Other Intergovernmental Transfers	\$98,216	0.9%
Charges for Services	\$30,164	0.3%
Other Revenues	\$129,439	1.2%
Total	\$10,617,089	100.0%

Source: Town of Kittery Financial Audit Report, June 30, 1990

Table 42 shows, in constant 1998 dollars, changes in the amount of income generated by major revenue source categories. Of the \$2,344,056 increase in revenues between 1990 and 1998, nearly half of the increase was generated by an increase in state education aid and one third was generated through an increase in property tax revenue.

b. Expenditures

For fiscal year 1997-98, it cost just over \$15.1 million to operate the municipal government and Kittery's schools. Of this amount, 62.0% went to school operations, 36.3% went to other municipal functions, and 1.7% to county tax (see **Table 43**). Within the municipal portion of the budget, public safety services, which include police and fire protection and ambulance service, account for the largest share of the budget (see **Table 44**). Other major expenditure categories are public works (8.5%), and general government operations (6.4%). Cultural and recreational programs account for 4.3% of the budget, and debt service accounts for 4.1%.

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Since 1990, the share of expenditures going to education increased from 56.2% to 62.0% in 1998 (see **Table 43**).

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Table 42
1990-1998 COMPARISON OF MUNICIPAL GENERAL FUND REVENUES
BY MAJOR CATEGORY ADJUSTED FOR INFLATION TO 1998 DOLLARS

Category	1990	1998	% change	% of total change
Property Taxes	\$9,606,357	\$10,388,195	8.1%	33.4%
Excise Taxes	\$767,640	\$948,201	23.5%	7.7%
Interest and Penalties	\$66,824	\$67,760	1.4%	0.0%
Licenses, Permits, Fines, & Fees	\$283,807	\$407,264	43.5%	5.3%
State Education Aid	\$1,633,528	\$2,765,970	69.3%	48.3%
State Revenue Sharing	\$561,209	\$649,198	15.7%	3.8%
Other Intergovernmental Transfers	\$122,488	\$8,289	-93.2%	-4.9%
Charges for Services	\$37,618	\$149,699	297.9%	4.8%
Other Revenues	\$161,427	\$200,378	24.1%	1.7%
Total	\$13,240,898	\$15,584,954	17.7%	100.0%

Source: Town of Kittery Financial Audit Reports, June 30, 1990 and June 30, 1998

Table 43
SHARE OF TOTAL EXPENDITURES

	Schools %	General %	County %
1990	56.2	42.3	1.5
1996	60.7	37.6	1.7
1997	61.6	36.7	1.7
1998	62.0	36.3	1.7

Source: Town of Kittery Financial Audit Reports

In constant 1998 dollars, spending on education accounts for \$2.1 million of the \$2.2 million increase in expenditures between 1990 and 1998. General government, public works,

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and leisure time activities each saw modest increases in expenditures. In constant dollars, and as a percentage of the municipal budget, expenditures for public safety declined between 1990 and 1998 (see **Tables 44-46**).

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Table 44
MUNICIPAL GENERAL FUND EXPENDITURES BY MAJOR CATEGORY
YEAR ENDING JUNE 30, 1998

Category	Amount	% of Total
General Government	\$971,630	6.4%
Public Safety	\$1,820,812	12.0%
Public Works	\$1,278,887	8.5%
Health, Welfare, and Social Services	\$138,007	0.9%
Culture & Recreation	\$652,600	4.3%
Education	\$9,366,124	62.0%
Fixed Charges	\$262,915	1.7%
Debt Service ¹	\$621,945	4.1%
Total	\$15,112,920	100.0%

Source: Town of Kittery Financial Audit Report, June 30, 1998

¹ Debt Service does not include school or 1992 sewer bonds

Table 45
MUNICIPAL GENERAL FUND EXPENDITURES BY MAJOR CATEGORY
YEAR ENDING JUNE 30, 1990

Category	Amount	% of Total
General Government	\$649,398	6.3%
Public Safety	\$1,473,958	14.2%
Public Works	\$938,768	9.1%
Health, Welfare, and Social Services	\$147,282	1.4%
Culture & Recreation	\$417,150	4.0%
Education	\$5,826,474	56.2%
Fixed Charges	\$204,759	2.0%

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Debt Service ¹	\$714,055	6.9%
Total	\$10,371,844	100.0%

Source: Town of Kittery Financial Audit Report, June 30, 1990

¹ Debt Service does not include school bonds

Table 46
1990-1998 COMPARISON OF GENERAL FUND MUNICIPAL EXPENDITURES
BY MAJOR CATEGORY ADJUSTED FOR INFLATION TO 1998 DOLLARS

Category	1990	1998	% change	% of total change
General Government	\$809,884	\$971,630	20.0%	7.4%
Public Safety	\$1,838,218	\$1,820,812	-0.9%	-0.8%
Public Works	\$1,170,767	\$1,278,887	9.2%	5.0%
Health, Welfare, and Social Services	\$183,680	\$138,007	-24.9%	-2.1%
Culture & Recreation	\$520,241	\$652,600	25.4%	6.1%
Education	\$7,266,375	\$9,366,124	28.9%	96.4%
Fixed Charges	\$255,361	\$262,915	3.0%	0.3%
Debt Service ¹	\$890,520	\$621,945	-30.2%	-12.3%
Total	\$12,935,046	\$15,112,920	16.8%	100.0%

Source: Town of Kittery Financial Audit Reports, June 30, 1990 and June 30, 1998

¹ Debt Service does not include school or 1992 sewer bonds

Kittery has recently taken significant steps to upgrade its municipal facilities. The town offices and police station moved into a new municipal building in 1998. The cost of the building was entirely paid from money invested in a Capital Projects Fund and undesignated fund balances.

The Town extended the sewer line in Route One to the York line with \$500,000 from the State of Maine (which chose to extend sewer to the State owned rest area located at the northern end of Route One), \$100,000 from Watts Fluidair, \$90,000 from MSHA, and unspent money from previous Kittery Sewer Bonds. This represented the first major investment in the community's sewer system since the 1992 bond used to increase capacity at

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the wastewater treatment plant. The improvement was done at minimal cost to Kittery taxpayers and has increased the attractiveness of the northern Route One Corridor for commercial and residential development.

Kittery's undesignated fund balance as of the end of 1998 was nearly \$2.6 million, or about 17% of total operating expenses.

3. DEBT SERVICE

Kittery, like many urban communities, uses long term borrowing to finance major capital expenditures. As of June 30, 1998, the Town had \$19.3 million in outstanding debt (see Table 47), including Enterprise Fund Debt for the expansion of the wastewater treatment plant. In 1998, Kittery's long term debt was equivalent to 3.27% of the state's assessed valuation for Kittery, well within the statute limitation of 15%, as well as the 5% limit widely regarded as the fiscally responsible limit. The debt is primarily for sewer improvements and expansions, and school construction and expansions. The principal and interest payments on this debt in FY 1999/00 are slightly less than \$2.4 million (see Table 48). By FY 2002/03, the annual debt service will be down to \$2.14 million. Over the next ten years, the Town will retire a number of smaller bonds issued for projects undertaken in the mid-to-late 1980's, but the major portion of the outstanding debt extends beyond a decade.

Table 47
LONG TERM DEBT PAYABLE AS OF JUNE 30, 1998

General Obligation Bonds	Interest Rate	Final Maturity Date	Balance End of Year
1986 Sewer Project (Sewer Line Extension)	4.25 - 7.02%	2006	\$850,000
1988 Sewer Expansion (Sewer Line Extension)	6.00 - 7.70%	2008	\$910,000
1989 Capital Improvement (Sewer Line Extension)	7.25 - 7.30%	2009	\$1,980,000
1990 School Bond (Upgrades to Traip Academy)	7.00 - 7.375%	2011	\$4,500,000
1992 Sewer Bond <i>Enterprise Fund</i> (Improvements to Wastewater Treatment Plant)	4.1%	2012	\$3,000,000
1995 School Bond (Shapleigh Middle School)	5.125 - 5.750%	2016	\$6,210,000
1997 School Bond (Frisbee School)	4.80 - 6.50%	2012	\$1,865,000
TOTAL			\$19,315,000

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Source: Town of Kittery Financial Audit Report, June 30, 1998

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Table 48
ANNUAL DEBT SERVICE COST AS OF JUNE 30, 1998
(Including Enterprise Fund Bond Debt)

Year	Principal	Total Interest	Total Cost
1998/99	\$1,370,000	\$1,092,823	\$2,462,823
1999/00	\$1,375,000	\$1,010,481	\$2,385,481
2000/01	\$1,375,000	\$928,673	\$2,303,673
2001/02	\$1,370,000	\$847,760	\$2,217,760
2002/03	\$1,370,000	\$766,611	\$2,136,611
Thereafter	\$12,455,000	\$3,518,498	\$15,973,498
TOTAL	\$19,315,000	\$8,164,846	\$27,479,846

Source: Town of Kittery Financial Audit Report, June 30, 1998

4. CAPITAL PLANNING

The Town of Kittery has an established system for planning for capital expenditures. Annually, the Planning Board prepares a Capital Improvements Program which assesses the Town's capital spending needs for the next five years and recommends capital spending priorities for the upcoming fiscal year. This program is then provided to the Town Council to be used in the annual budget process.

This effort has recently been supplemented by a review of operational and facility needs resulting from growth conducted by the Town Manager and Department Heads. This is discussed in more detail in Chapter Six.

5. ISSUES AND IMPLICATIONS

1. State aid for education provided an increasing share of municipal revenues between 1990 and 1998. The changes made to the school funding formula during the 1999 legislative session will likely result in less state aid to Kittery schools in the coming years. This will increase the pressure on the community to find ways to fund the educational system without increasing the tax rate. If residential construction that results in children being added to the school system continues, the town will need to consider how these added costs will be borne.

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2. Kittery has several potential major capital expenditure needs identified in its five year capital plan. As Kittery plans for its future, paying for these capital needs will need to be considered.

3. Kittery's property tax rate is in the mid-range of urban/suburban communities in southern Maine and higher than many rural communities. Significant increases in the property tax rate could become a deterrent to economic growth.

4. The Town has been actively upgrading its infrastructure in recent years. It has done so without incurring additional debt. However, needed capital improvements will put increasing pressure on the tax rate. The Town will need to consider how it funds these projects including the possibility of balancing the incurrence of new debt against the retirement of existing debt.

5. The Town's current capital planning and budgeting process is not fully meeting the Town's needs. The Town should consider a major re-evaluation of its long term capital planning and financing system.

6. GOALS AND POLICIES

State Goal: To plan for, finance and develop an efficient system of public facilities and services to accommodate anticipated growth and economic development. (Growth Management Act)

Local Goal: To maintain a relatively stable property tax burden while providing a high level of community services and facilities.

Pursuant to these goals, the policies of the Town of Kittery are:

1. The Town should review and revise its long range capital planning and budgeting system to better integrate consideration of long term facilities needs with current budget priorities.

2. The Town should actively explore alternative funding including grants, Tax Increment Financing, and private fund raising for needed capital expenditures.

3. The Town should work to balance new capital debt with the retirement of existing debt to minimize the impact of capital expenditures on the tax rate.

4. The Town should support the expansion of the nonresidential tax base if such expansion will result in additional net revenues to the Town after consideration of tax shifts resulting from the new valuation and increased service demands resulting from the development. The Town should continue to allow the Planning Board to require a detailed fiscal impact analysis as part of the development review process for all major residential and nonresidential developments.

5. The Town should consider working with the local legislative delegation and business organizations to explore the possibility of state legislation that would allow municipalities to retain a share of the State sales tax collected by businesses in the community or to impose a local option sales tax to be retained by the municipality as a way of equalizing costs and benefits to the community and offsetting losses in state aid resulting from increased property valuations.

6. The Town should continue to work with the Shipyard to plan for the leasing of Shipyard facilities to private firms to minimize the impacts of growing private employment on the community in general and the Foreside in particular. A focus of this effort should be traffic and parking issues and on developing a system for the payment fees or assessments to the Town to offset the non-taxable status of the real estate.

PART THREE

IMPLEMENTATION STRATEGIES

Chapters Five through Seven set out actions that should be taken to bring the policies established in Part Two to reality. Chapter Five establishes a step-by-step implementation program. Chapter Six looks at the investments in capital facilities that will be needed to accommodate growth. Chapter Seven analyses the regional implications of the Plan and the need for regional activities and coordination.

CHAPTER FIVE IMPLEMENTATION STRATEGY

Part Three of the Comprehensive Plan sets forth goals and policies for the Town of Kittery. This chapter sets out the specific activities that the community will need to take to implement those goals and policies. The activities are divided into four groups:

- **On-Going Activities** that are already occurring and need to be continued or new activities that need to occur on a continuing basis.
- **Short Term Activities** that should be completed within two years of the adoption of this update of the Comprehensive Plan.
- **Mid Term Activities** that should be completed within three to five years of the adoption of the update.
- **Long Term Activities** that may require five years or more years to complete.

In developing this implementation strategy, the Town recognizes that its priorities may change over time as opportunities arise, funding sources become available, or the economy improves or declines. To address this situation, the implementation strategy proposes that the Town create a Comprehensive Plan Implementation Committee (CPIC) at the time the plan is adopted. This group will be responsible for overseeing the progress of the Town in implementing the plan. The Plan envisions that this group will consist of representatives from the various Town committees and members of the general public. It is anticipated that the CPIC will be a working committee that will take on certain implementation responsibilities when other approaches are not feasible.

In the following table, each of the activities necessary to implement the plan are listed. The activities are divided into the four time frames and are grouped by the type of activity. For each activity, the responsibility for the implementation is identified. In the last column, the priority of that activity is listed.

ON-GOING ACTIVITIES			
Policy Reference	Activity	Suggested Responsibility	Priority
B.4.	Continue to work to keep the Shipyard open as a military facility	Council and Town Manager	On-going

ON-GOING ACTIVITIES			
B.5. & N.6.	Continue to work with Shipyard to minimize negative impacts of leasing program	Council and Town Manager	On-going
C.4. & E.4.	Continue efforts to eliminate remaining CSO's	Commissioner of Public Works and Sewer Dept.	On-going
C.5.	Continue working with Shipyard to remediate groundwater contamination	Town Manager and Conservation Commission	On-going
D.12.	Support efforts by land trust and conservation organizations to acquire land in scenic viewsheds	Council	Medium
E.1.	Undertake program to work with property owners to eliminate OBD's	Shellfish Committee, Conservation Commission, and CEO	High
E.3.	Continue to support water quality monitoring	Council and Conservation Commission	On-going
E.8.	Continued support for management of shellfish resources	Council and Shellfish Committee	On-going
F.6.	Monitor utilization of sewage treatment plant capacity	Council and Sewer Dept.	Low
F.7.	Continue upgrading sewer and pump station capacity	Council and Sewer Dept.	On-going
G.2. & G.18.	Support Revitalization of Kittery Foreside	Council	High
G.21.	Minimize the creation of nonconformities in zoning revisions	Council and Planning Board	Low
H.4.	Pursue on-going painting of bridges	Town Manager	Low

ON-GOING ACTIVITIES			
H.11. & H.14.	Continue to manage new development to enhance traffic flow and safety	Planning Board & Town Planner	On-going
H.16.	Continue comprehensive, on-going road maintenance program	Commissioner of Public Works	On-going
H.29.	Continue to support the regional transportation planning process	Town Manager and Town Planner	On-going
I.1.	Continue to allow a variety of new housing	Planning Board	On-going
M.8.	Continue to support efforts restore life boat station on Wood Island	Council, Estes Committee, and Town Manager	On-going
SHORT TERM ACTIVITIES (Within Two Years)			
	1. IMPLEMENTATION OVERSIGHT		
	Establish Comprehensive Plan Implementation Committee	Town Council	High
	2. LAND USE REGULATIONS		
	a. Zoning Amendments		
B.2. G.17, & G.26.	Revise development standards for nonresidential development	Planning Board & Town Planner	Medium
B.8. & E.16.	Assure that marine and water dependent uses are accommodated	Planning Board & Town Planner	Medium
C.2. & E.5.	Establish stormwater quality standards for residential and nonresidential development	Planning Board, Conservation Commission, & Town Planner	Medium

ON-GOING ACTIVITIES			
C.6.	Assure that development over sand & gravel aquifers meets state standards	Planning Board & Town Planner	Medium
C.12.	Maintain a buffer along streams with high or moderate habitat value	Planning Board, Conservation Commission, & Town Planner	High
D.1.	Establish a Scenic Road Overlay district	Planning Board, Conservation Commission, & Town Planner	Medium
D.2.	Establish curb cut controls on Class I scenic roads	Planning Board & Town Planner	Medium
D.6.	Establish standards for walls and fences along Class I and II scenic roads	Planning Board & Town Planner	Medium
D.8.	Revise Shoreland Zoning to address visual impact of residential structures	Planning Board & Town Planner	Medium
D.9.	Revise shoreland provisions to allow limited pruning and clearing to maintain scenic views and vistas	Planning Board, Town Planner, & Conservation Commission	Medium
E.15.	Require the maintenance of moorings upon change of use	Port Authority	Medium
G.9.	Review and revise nonresidential performance standards	Planning Board & Town Planner	Low
G.16.	Establish variable density system for lots with on-site sewage disposal	Planning Board & Town Planner	High
G.20. & G.22.	Review and revise nonresidential zoning district boundaries and uses	Planning Board, & Town Planner	Low

ON-GOING ACTIVITIES			
G.24.	Review and revise buffering requirement for nonresidential uses	Planning Board, Conservation Commission & Town Planner	Medium
G.33.	Review wetlands zoning provisions	Planning Board, Conservation Commission, & Town Planner	Low
G.34.	Revise Shoreland Zoning to incorporate most recent floodplain mapping	Planning Board & Town Planner	Medium
G.36.	Revise zoning district standards and zoning map to reflect the policies of the Future Land Use Plan	Planning Board & Town Planner	Medium
I.3.	Revise zoning regulations to allow for construction of eldercare facilities at appropriate densities	Planning Board & Town Planner	Low
M.3.	Create a waiting period for the demolition of identified historic structures	Planning Board & Town Planner	Low
	b. Site Plan and Subdivision Review Revisions		
C.2. & E.5.	Establish stormwater quality standards for residential & nonresidential development	Planning Board, Conservation Commission, & Town Planner	Medium
C.17.	Require that development proposals address rare plants and plant communities	Planning Board, Conservation Commission & Town Planner	Medium

ON-GOING ACTIVITIES			
D.5.	Require that development proposals address identified scenic resources	Planning Board & Town Planner	Medium
E.10.	Require that development proposals assess and mitigate impacts on wildlife and fisheries habitat	Planning Board, Conservation Commission, & Town Planner	Low
G.14.	Establish standards for residential development in rural areas	Planning Board & Town Planner	Medium
M.4.	Require that development proposals address historic resources	Planning Board & Town Planner	Medium
M.7.	Require that development proposals investigate archaeological significance	Planning Board & Town Planner	Low
	3. Studies		
E.10.	Identify areas of significant wildlife and fisheries habitat	Conservation Commission	Medium
E.17.	Develop long term management plan for Wood Island Lifeboat Station	Council, Estes Committee, & Town Manager	Low
F.2.	Undertake an update of the sewer facilities plan	Council & Sewer Dept.	High
F.8.	Explore allowing payment of sewer impact fees over time	Sewer Dept.	Medium
G.19.	Explore exempting lots of less than five acres from the prohibition on total retail use in the Mixed Use zone	Planning Board & Town Planner	Medium
H.23.	Revise and update the Sidewalk Master Plan	Commissioner of Public Works and Planning Board	Medium

ON-GOING ACTIVITIES			
H.28.	Develop a plan for accommodating employee parking in connection with Shipyard reuse	Foreside Committee & Town Planner	Low
J.1. & N.1.	Review and revise long range capital planning and budgeting system	Council, Planning Board, Town Manager, & Town Planner	Medium
K.6. & G.30.	Develop an open space plan	Planning Board and/or Conservation Commission	High
N.2.	Explore alternative funding for needed capital expenditures	Council & Town Manager	Medium
	4. Capital Projects		
H.6.	Undertake safety and movement improvements on Route One	Town Manager, Commissioner of Public Works, and Planning Board	Medium
H.26.	Support development of the Eastern Trail	Conservation Commission & Town Planner	Low
J.4.	Pursue expansion and modernization of the Horace Mitchell School	Council, School Committee, & Facilities Committee	Medium
K.2.	Work to increase number of athletic fields	Council, School Committee, & Recreation Dept.	Low
	5. Other Activities		
A.5. & G.12.	Establish a system for monitoring residential development and evaluating if a system for metering the rate of residential development is needed	Council, CPIC, & Town Planner	High

ON-GOING ACTIVITIES			
B.1.	Create an ongoing municipal economic development program	Council, Economic Development Committee, & Town Manager	Medium
B.7.	Work with York County communities to explore regional approaches to economic development	Economic Development Committee, & Town Planner	Low
C.10.	Support efforts by conservation organizations to acquire, manage, and preserve wetlands	Conservation Commission and Town Council	Medium
E.2.	Undertake program to identify and eliminate illegal overboard discharges	Conservation Commission & Shellfish Committee	High
E.7.	Undertake education program for boaters to discourage discharges	Harbor Master and Port Authority	Medium
E.9.	Work with state on standards for aquaculture	Shellfish Committee	Medium
E.19. & K.10.	Increase enforcement of parking regulations at Sea Point Beach	Council, Town Manager, & Police Dept.	Low
F.3.	Establish sewer extension policy	Council, Town Manager, Sewer Department, & Town Planner	Medium
G.28.	Work with property owners and educate about possible benefits of current use taxation	CPIC, Conservation Commission, Town Planner, & Assessor	Low
J.3.	Monitor school enrollments and update enrollment projections	School Superintendent, School Committee, & Town Planner	Medium
L.4.	Consider increasing public support for the arts and cultural activities	Council & Town Manager	Medium
MID TERM ACTIVITIES (Within Three to Five Years)			

ON-GOING ACTIVITIES			
	1. LAND USE REGULATIONS		
	a. Zoning Amendments		
D.4.	Establish architectural and site design standards for development along Class I Scenic Roads	Planning Board & Town Planner	High
I.2.	Explore providing elderly housing density bonus in other zones	Planning Board & Town Planner	Medium
	b. Site Plan and Subdivision Review Revisions		
C.13.	Require that development proposals address preservation of identified deer yards	Planning Board & Town Planner	Medium
D.3.	Establish standards for road openings on Class I Scenic Roads	Planning Board & Town Planner	Medium
D.7. & E.11.	Establish standards for appearance from water bodies	Planning Board, Port Authority, & Town Planner	Medium
K.1.	Revise provisions for recreation and open space	Planning Board, Conservation Commission & Town Planner	Medium
K.7.	Require developers to contribute to open space	Planning Board and Town Planner	Medium
	2. STUDIES		
B.10. & F.5. & G.26.	Explore establishing TIF Policy	CPIC, Council, Planning Board, & Town Manager	Medium
D.10.	Investigate designation of Route 103 as scenic byway	CPIC, Conservation Commission, and Town Planner	Medium

ON-GOING ACTIVITIES			
E.13.	Monitor usage of mooring areas to maximize available supply of moorings	Port Authority & Harbor Master	Medium
E.20. & K.11.	Develop management plan for Fort Foster	CPIC, Conservation Commission, Commissioner of Public Works, and Parks Commission	Medium
E.21. & K.12.	Develop plan for management of public wharfs	CPIC & Port Authority	Medium
F.4.	Plan for extension of sewers into identified growth areas to facilitate growth	Planning Board, Town Planner, & Sewer Dept.	Medium
G.23.	Study the potential for creating neighborhood/village business districts	Planning Board & Town Planner	Medium
H.20.	Study to use of Rodgers Road Extension to correct or minimize safety problems	Commissioner of Public Works	Medium
H.25.	Develop a bicycle plan	Commissioner of Public Works and Planning Board	Medium
J.2.	Explore creative approaches for maintaining a call fire department	Council, Town Manager, & Fire Chief	Medium
J.5.	Initiate planning for the upgrading of the Town's public works facility	Council & Commissioner of Public Works	Low
	3. CAPITAL PROJECTS		
H.1.	Develop additional turnpike interchange north of Route One commercial strip	Council & Town Manager	High

ON-GOING ACTIVITIES			
H.7.	Undertake safety and flow improvements at traffic circle	Town Manager, Police Department, & Commissioner of Public Works	Medium
H.9.	Explore providing sidewalks and bicycle lanes on portion of Route One	Commissioner of Public Works	Medium
H.15.	Expand capacity of arterial and collector road network as needed	Council, Town Manager, & Commissioner of Public Works	Low
H.17.	Explore coordinated improvement plan for Route 236 west of the Turnpike	Council, Town Manager, & Commissioner of Public Works	Medium
H.21.	Consider a program to construct turnarounds on dead end streets	Council, Town Manager, Commissioner of Public Works, and Town Planner	Medium
K.4.	Develop interconnections between existing trails	Recreation Department, Conservation Commission, & Town Planner	Medium
K.5.	Enlarge or replace the community/ recreation center	Council, Town Manager, & Recreation Dept.	Medium
	4. OTHER ACTIVITIES		
A.4.	Review the cumulative impact of development and establish impact fees if warranted	Council, CPIC, Planning Board, & Town Planner	Medium
C.3. & E.6.	Develop program to work with owners to retrofit stormwater systems	CPIC, Planning Board, & Town Planner	Medium
D.11.	Undertake educational program for property owners in scenic viewsheds	CPIC, Conservation Commission, & Town Planner	Medium

ON-GOING ACTIVITIES			
E.12.	Develop program for maintaining depths of navigation channels and mooring areas	Port Authority	Medium
E.14.	Review rules relating to boating in sensitive areas	Port Authority	Medium
E.18.	Explore potential for overland access to Brave Boat Harbor	Conservation Commission, & Town Planner	Medium
E.22. & K.13.	Increase the number of points of public access to coastal waters	CPIC, Conservation Commission, & Town Planner	Medium
H.2.	Develop program for managing impact of turnpike weigh stations	Council, Town Manager, and Police Department	Medium
H.8.	Develop program in conjunction with property owners to upgrade pedestrian facilities in mall portion of Route One Corridor	Town Manager, Police Department & Town Planner	Medium
H.18.	Develop a policy for use of "traffic calming" techniques	Council, Commissioner of Public Works, Police Department, & Town Planner	Low
J.8.	Work with natural gas companies on service	Commissioner of Public Works and Manager	Medium
K.3.	Explore the use of existing tennis courts at Admiralty Village with Shipyard	Recreation Department	Low
K.9.	Work with and educate the owners of large parcels of open land to keep land undeveloped	Conservation Commission, Kittery Land Trust, & Town Planner	High
L.1.	Work with museums to promote and use them to attract visitors	Council, Historical Society, & Town Manager	Medium

ON-GOING ACTIVITIES			
M.1.	Establish volunteer program to document historic resources	CPIC, Historical Society, & Town Planner	Medium
M.2.	Undertake a program to educate owners of identified historic properties	CPIC, Historical Society, & Town Manager	Medium
LONG TERM ACTIVITIES			
A.3.	Establish a regional approach for addressing affordable housing	CPIC & Town Planner	Medium
B.9. & M.5.	Work with legislative delegation on sales tax options	Council & Town Manager	Low
C.15.	Update wildlife habitat maps	Conservation Commission	Medium
C.16.	Develop standards to protect any identified endangered species	Planning Board and Conservation Commission	Low
F.9.	Hold referendum on fluoridation of water supply	Council & Town Manager	Low
G.15.	Evaluate potential of expanded home occupation and national resource uses in rural areas	Planning Board & Town Planner	Medium
H.3.	Work with MeDOT and MTA to create appropriate stopping area on Turnpike	Council & Town Manager	Medium
H.5.	Explore alternative I-95 lighting design	Council & Town Manager	Low
H.9.	Explore providing pedestrian and bicycle facilities on Route One south of the traffic circle	Council, Commissioner of Public Works, and Police Department	Medium
H.12.	Explore installing new, attractive pedestrian scale lighting in Route One Corridor	Council, Commissioner of Public Works & Town Planner	Medium

ON-GOING ACTIVITIES			
H.13.	Evaluate potential of connecting southbound Route One and conduct additional analysis if necessary	Council, Town Manager, & Commissioner of Public Works	Medium
H.27.	Develop a management plan for Government Street Wharf and Traip Academy Boat Ramp	Harbor Master & Port Authority	Medium
H.30.	Investigate the need for regional public transportation	Town Planner	Medium
I.4.	Work with nonprofit organizations and developers to maintain balance in the housing supply	Planning Board & Town Planner	Low
J.6.	Evaluate options for meeting the Library's long range space needs	Library Board, Council, and Town Manager	Medium
L.2.	Support expansion of the Historical and Naval Museum	Council, Historical Society, & Town Manager	Medium
L.3.	Investigate possible public or community use for Safford School	Council & Town Manager	Low
M.5.	Evaluate creating Local Historic Commission and establishing voluntary design standards for historic structures	Planning Board & Town Planner	Medium
M.6.	Conduct professional surveys of archaeological sites	Council & Town Manager	Low
M.9.	Consider signage, exhibitions, and brochure of historic properties	Historical Society	Low
M.10.	Explore property tax reductions for historic properties	Council & Town Manager	Medium

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CHAPTER SIX CAPITAL INVESTMENT STRATEGY

The Comprehensive Plan envisions that the Town will continue to experience some residential and economic growth. This growth will increase the demand on Town services and facilities. This chapter analyzes the capacity of the Town to accommodate the projected growth and identifies the capital investments that may be necessary to service the increased demand.

SECTION A. CAPITAL IMPROVEMENT PLANNING PROCESS

The Town of Kittery has an established capital improvement planning process. The Planning Board is charged by the Town Charter with developing an annual capital plan for recommendation to the Town Council for consideration in the budget process. The Planning Board does an annual assessment of the Town's capital needs and develops a five year capital program that includes projects recommended for funding in the current year as well as priorities for the future funding of other projects. This effort has had only limited success in addressing the Town's capital needs because of limited involvement with the Town Council. To augment this process, the Town Manager and department heads recently developed an inventory of both operating needs and capital facilities necessary to address municipal service growth. This process resulted in a separate prioritized list of needed expenditures for the next few years.

Since the Town's current capital planning and budgeting system is not fully meeting the Town's needs, this plan contains a recommendation that the community formally review and revise the process as necessary.

SECTION B. CAPITAL INVESTMENT STRATEGY

The implementation of the goals and policies set forth in this Comprehensive Plan will require that the Town make investments in its infrastructure if it is to continue to offer the same high level of facilities and services to the residents of the community and if it is to continue to expand its tax base. This section identifies the capital investments that will probably be necessary over the next five to ten years to accommodate the projected growth and desired economic development.

- **Upgrading of Existing Sewer Mains**

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The Town has an ongoing program of replacing existing sewer lines that are undersized or deteriorating. Improvements are done as funds are available in the sewer department's operating budget which is funded by sewer user fees.

- **Upgrading of the Route One Sewer Line**

The Town is in the process of analyzing the capacity of the Route One sewer. As additional development occurs in the Route One corridor, upgrading of this line may be needed to accommodate the additional flows. The preliminary cost estimate for this project is \$750,000. This cost will be paid through either retained earnings in the sewer account or through a bond that will be repaid with user fees.

- **Upgrading of Existing Sewer Pump Stations**

The existing sewer system contains a number of pump stations. The sewer department has an on-going program of upgrading the capacity of these stations as flows increase. A number of pump stations may need upgrading in the next five years. These costs are paid for out of the sewer department operating budget which is funded with sewer user fees.

- **Route One Traffic Improvements**

Improvements in the Route One corridor in the mall area are planned to increase safety and traffic movement. This project has been endorsed by the regional transportation planning process of KACTS. The local cost of the improvements is estimated to be \$150,000 and this funding is already earmarked in dedicated accounts.

- **Expansion of the Horace Mitchell School**

The Horace Mitchell School currently is operating above capacity. The School Department has established a building committee to develop proposals to expand and modernize the facility to meet projected enrollment needs. At this time, the estimated cost of this project is unknown. It will probably be financed through bonding.

- **Athletic Fields**

The Town currently has a deficiency in athletic fields to meet both current and future needs. The Town's capital planning process has identified the immediate need to acquire land for this purpose with construction of a soccer field planned for 2001 at a cost of \$250,000 and future construction of two practice fields at a cost of \$150,000. The Town plans to use unencumbered surpluses for the land acquisition and possibly construction of these facilities. If these funds are inadequate, the balance would need to be bonded.

- **Improvements to the Route One - Route 236 Traffic Circle**

The need to improve the traffic circle has been identified in previous studies but no decision has been made as to the nature of the improvements. If traffic volumes grow as a

result of commercial and residential growth, this improvement will probably become necessary.

- **Extension of Sewers West of the Turnpike Along Route 236**

The Future Land Use Plan envisions that the public sewer system may be expanded westward along Route 236 to accommodate quality, nonresidential development. The magnitude and costs of this project will depend on the specific development proposal. The Town's sewer facilities Master Plan has developed preliminary proposals for extending sewers into this area. The Town is beginning the process of updating that plan. This will provide up-to-date information on the feasibility and costs of this project.

SECTION C. OTHER CAPITAL PROJECTS

In addition to the projects identified above that are necessary to accommodate projected growth, this Plan identifies a number of other capital projects that should be undertaken to address existing deficiencies or to enhance the quality of the community. These projects include:

- Creation of a new turnpike exit
- Expansion or replacement of the existing community/recreation center
- Relocation or expansion of the public works garage
- On-going funding for the revitalization of the Kittery Foreside area
- Improvement of Route 236 including access management provisions
- Acquisition and development of suitable turn-arounds on existing deadend streets
- Relighting of the Route One corridor with pedestrian scale street lights
- Routine improvement of the arterial and collector road network
- Development of a new ramp between the Route One Bypass and the traffic circle.
- Creation of an open space acquisition fund

CHAPTER SEVEN REGIONAL COORDINATION

SECTION A. REGIONAL ISSUES

While the focus of this Comprehensive Plan is on the Town of Kittery and its resources and opportunities, some of the issues identified in Part Two extend beyond or are influenced by activities outside of the geographical limits of the Town. This section looks at those regional issues and how the Town's policies effect those issues.

- **Regional Economic Development**

Kittery is part of the Greater Portsmouth economy as well as economically connected to other southern Maine communities. The Town should support and participate in regional efforts to expand good quality employment opportunities including exploring the possible development of a regional business/industrial park in which the revenues are shared among participating municipalities.

- **Regional Recreational Center**

The Town of Kittery needs to either upgrade or replace its existing community/recreation center. The Town already cooperates with nearby towns on recreational issues and residents of other communities participate in Kittery's recreational programs. The Town should therefore explore the possibility of making the Town's recreation center into a regional facility with a pool that would serve other communities such as Eliot, South Berwick, and York.

- **Isles of Shoals Moorings**

Gosport Harbor at the Isles of Shoals is bisected by the Maine - New Hampshire state line. Moorings are located on both sides of the boundary and the number has been increasing in recent years. To avoid conflicts, the Kittery Port Authority should work with the New Hampshire Port Authority to coordinate the number and placement of moorings in Gosport Harbor.

- **Regional Bus Service**

There currently is no scheduled bus service in Kittery. Past efforts to establish service have not been supported. However, changing employment patterns with the privatization of shipyard facilities, trolley service at the malls, and changing patterns of transportation may result in growing interest in trying to establish local bus service on a

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limited basis. The Town should support regional efforts to explore the need for bus service and possible regional approaches to meeting this need.

- **Regional Watershed Planning**

The watersheds of a number of Kittery water bodies extend into Eliot and York. Sound watershed management requires that the entire geographic area of the watershed be addressed. The Town should continue to work with the Town of Eliot to manage development in the Spruce Creek watershed to allow improvement in the estuary's water quality and initiate efforts to work with the adjacent community on joint watershed management for the other water bodies.

- **Regional Coordination of Compliance with Stormwater Requirements**

In addition to regional watershed planning, Kittery should explore ways to work with its neighboring communities on improvements necessary to comply with emerging stormwater standards.

- **Regional Open Space Planning**

The Town should work cooperatively with adjacent communities, private conservation organizations, and the Southern Maine Regional Planning Commission to develop a regional open space plan that links open spaces in the individual communities into a regional system with connections as appropriate.

- **Regional Bicycle Routes**

The Town of Kittery has actively supported the development of the Eastern Trail as a regional bike path. The Town should continue to work with other municipalities, KACTS, and RTAC to develop a coordinated system of bicycle routes within the Portsmouth and southern Maine area.

- **Regional Affordable Housing Initiatives**

Because of the diversity of the community's housing stock, there is a risk that Kittery could become the only community with a reasonable supply of affordable housing in the region. Kittery should take the initiative to promote a regional approach to assuring that there is an adequate supply of affordable housing in southern Maine and that each community does its fair share in meeting this need.

SECTION B. COMPATIBILITY WITH REGIONAL PLANS

The Southern Maine Regional Planning Commission (SMRPC) is the designated regional agency responsible for regional planning in southern Maine including the Town of

Kittery. In 1990, SMRPC developed a regional policy plan in response to the State Growth Management Law. This plan, *A Plan for Southern Maine*, established regional goals and policies in a large number of areas. The plan was updated in 1992 by SMRPC resulting in *Regional Policies for Southern Maine/1992*. The policies looked at three areas, public utilities and services housing and economic development, and natural resources. This section reviews how the Town of Kittery's goals and policies set forth in this plan compare to the regional policies adopted by SMRPC in 1992. Those areas in which there are differences between the regional and local policies are noted.

1. Public Utilities and Services

The goals and policies of this Comprehensive Plan are generally consistent with the adopted regional policies with respect to public utilities and services. The policies of this plan deviate from the regional policies in the following areas:

- l. The regional policies advocate the sharing of services among municipalities, joint purchasing, and other regional efforts. While the Town of Kittery actively participates in a number of regional efforts (i.e. recreation center, sewage treatment for Eliot, etc.), and this plan identifies a number of areas for regional cooperation, the plan does not explicitly contain policies in some of the areas identified in the regional plan.
- m. The regional policies call for water districts to establish adequate maintenance schedules. The Kittery Water District is an autonomous organization with its own maintenance schedules. While the plan recognizes the role of the district in providing public water service, it does not address the internal operations of the district.
- n. The regional policies discourage strip commercial development along major arterial highways. Realistically, most of Route One in Kittery is already developed for commercial purposes. This Plan takes the approach of managing future development in the Route One Corridor rather than excluding future nonresidential development.
- o. The regional policies call for municipal plans to address the provision of human services and for municipalities to "institute or encourage human service programs which will reduce the instances of adolescent pregnancy, reduce family stress, chemical dependency and domestic violence, and improve crisis intervention." These issues are not addressed in the Plan. While the Town is active in the area of human services, the Town believes that these issues are outside of the scope of this Comprehensive Plan.
- p. The regional plan addresses the areas of waste reduction, recycling, and special and bulky wastes. While the Plan addresses the waste disposal system,

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it does not establish goals and policies with respect to these topics, as proposed in the regional policies.

2. Housing and Economic Development

The goals and policies of this Comprehensive Plan relating to housing and economic development are generally consistent with the adopted regional goals and policies. The regional policies advocate using techniques to reduce the cost of housing including provisions for infill housing at appropriate densities and frontages. In spite of concern about infill development among some segments of the Kittery community, this Comprehensive Plan does try to provide for a range of types and densities of residential development, including infill housing in areas with public water and sewer service.

3. Natural Resources

The goals and policies of this Comprehensive Plan are generally consistent with the adopted regional goals and policies relating to natural resources. The policies of this Plan deviate from the regional goals and policies in the following areas:

- a. The regional policies propose increased public awareness of and access to existing points of public access to the water. This Comprehensive Plan includes policies aimed at managing the use of existing access points at Seapoint Beach and Fort Foster to reduce the potential for overuse.
- b. The regional policies advocate for municipalities providing adequate coastal facilities for oil and refuse disposal and holding tank pump outs. While this plan recognizes the importance of these facilities, it proposes a regional rather than municipal approach.
- c. The regional policies propose that the plan address the allocation of moorings. This is a responsibility of the Kittery Port Authority. While the plan recommends that the Port Authority review its pattern of moorings, it does not address how the authority should allocate moorings.

Revised 11/10/00

APPENDIX A
SIDEWALK CONDITION REPORT
(Sidewalk footage only, does not include driveway and road entrance)

				Street
Ratings: Excellent(Ex), Good(G), Fair(F),Poor (P)				
Route 1, Badgers Island east side	P		338'	VG
Route 1, Badgers Island west side	P		373'	VG
Route 1, Badgers Island Bridge both sides	P	C	153'	1,016' G E
Route 1, Hunter St.	P		409'	P
Route 1, Newmarch St.	P		417'	P
Route 1, State Rd. east side from Government to Walker	P		334'	G
Route 1, State Rd. east side from Walker to Love Lane	P		200'	G
Route 1, Kittery Mall Rd. east side from Ox Point Drive to Wilson Rd.	P		479'	G
Route 1, Kittery Mall Rd. east side from Wilson Rd. to Spruce Creek Bridge (technically not a sidewalk)	P		640'	G

1999 Update of the Kittery Comprehensive Plan

Revised 11/10/00

according to engineers)

Route 1, Kittery Mall Rd. east side from in front of Kittery Place Tanger II	P P	290'	385'	G G	G
Route 1, Kittery Mall Rd. east side in front of Tanger II	P		215'		G
Route 1, Kittery Mall Rd. west side from Dansk Mall Rd. to Wilson Rd.		P		211'	F
Route 1, Kittery Mall Road west side from Wilson Rd. to north Litchfield Road	P C	P 536' 1,000'	603'	VG G	G
Route 1, Kittery Mall Road west in front of Tidewater Mall	P		810'		VG

Street			Total	Typ
Footage Ratings: Excellent(Ex), Good(G), Fair(F),Poor (P)				
Litchfield Rd.		None		
Dana Ave.				P
Dennett Rd. underpass toward Eliot Rd.				
Cook St./Old Post Rd. from Legion Pond to intersection Bridge St.	P	C	1,200' 75' P	G
Bridge St. from Route 1 Bypass to intersection of Cook St.		C	490'	VG
Bridge St. south side from intersection of Cook St. to Government & Walker		P C	85' 456'	VP VP
Bridge St. north side starting intersection of Cook and ending at Route 1		P	668'	F
**** needs patching				
Walker St. north side from Route 1 to Main St. Government, Wentworth, and Stoddard St. Walker, Maine to Government		P C	644' 752'	G G
Walker St. south side from Route 1 to intersection Most		C	885'	
			good	

Government, Wentworth, and Stoddard St., to Main St.

**** needs 3 5' section

Government St. north side to Odd Fellows Hall Jones Ave. to Route I	C	1,032'	F
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**** needs several sections replaced

Government St. north side from Route 1 to Walker and
Wentworth St. intersection

Government St. south side from Commercial St. to Pleasant St.	P	65'	G
--	---	-----	---

**** only goes 1/2 way

Government St. south side from Jones Ave to Masonic Temple	P	176'	VG
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Masonic Temple to intersection of Walker and Wentworth inters.	C	180'	G
	C	60'	VP

Footage	Type	Feet	Rating	Total	
Ratings: Excellent(Ex), Good(G), Fair(F),Poor (P)					
Government St. south side from Badger House to Town Landing access road **** paved over concrete Street	C	P 259'	156' G	P	
Government St. east side Cook Block		C	96'		VG
Government St. east side Sugrue Block		C	95'		P
Stoddard St., Sugrue Side Other side	C	C 178'	135' G	G	
Pleasant St.	C	281'	E		
Wentworth St. west side from intersection Government, Stoddard, and Walker St. to Railroad tracks ***** needs some repair		C 350' 261'	G E		
Rogers Rd. west side from Love Lane to Shapleigh Rd.		P	1980'		VG
Whipple Rd. north side from Rogers Rd. Wentworth intersection to intersection Shapleigh and Woodlawn		C	P 708'		176 G
*****replace 34'					
Whipple Rd. south side from Wentworth St. railroad tracks to intersection Williams Ave.		P	200'		VG
Whipple Rd. north side from Woodlawn Ave. to Wyman Ave. ***** replace 390'	C	P 698'	262' G 308"		F

Whipple Rd. south side by Gate 2 ***** lot spalling	C	217'	F	
Williams Ave. west side from Whipple to Traip Academy ***** replace 6 sections	C	400'	G	
Williams Ave. east side from Whipple to Traip Academy ***** replace	P	218'	P	
Rogers Rd. from Goodsoe Rd to Shapleigh Rd at Dion Ave. ***** has some sunken areas	C	888'	G	
Dion Ave. ***** broken section spalling	C	1,020'	F	
Shapleigh Rd. from Dion Ave. to Manson Ave. *some sunken areas	P	785'	G	
Shapleigh Rd. corner by Osco Drug parking lot	P	106'	G	
	Type	Feet	Rating	Total
Footage Ratings: Excellent(Ex), Good(G), Fair(F),Poor (P)				
Shapleigh Rd. from Ace. Hardware to intersection Woodlawn Ave. and Whipple Rd. Street	P	143'		G
Manson Ave. from Shapleigh Rd to senior housing	C	297'	G	
Manson Ave. from Boush St. to Woodlawn Ave.	C	282'	G	

Moore St., Mead St., and McDougal St.	Manson Ave. from intersection of	Woodlawn Ave. to	676
Moore St.	C	342'	G
Cole St.	C	320'	550' VG G
Goodrich St.	C	595'	G
Phelps St.	P	412'	G
Woodlawn Ave. from intersection Shapleigh & Whipple to Wainwright Ave.	C	P 992'	194' F F
Woodlawn Ave. from intersection Wainwright to Manson Ave. ****best patched	C	932'	G
Wainwright St.	None		
Pepperrell Road from Coleman Ave. to Smith Lane	C	444'	G
Pepperrell Rd. Smith Lane to Haley Rd. from School Lane going toward Post Office should replace about 200' . Rest is good but have problems with shrubs &	C	1,388	G
Bridge St. to Legion Pond	C	P 1,060'	219' F P

From Government to Route I
***** replace 100' / rest is good

C

711'

*

APPENDIX B
PORTSMOUTH NAVAL SHIPYARD HISTORIC DISTRICT

National Register Number	Shipyards Building Number	Description
1*	55	Oakum House. Later: Acetylene Plant. c1849
2*#	130	Gate House. Later: Human Relations Office. c1918.
3	74	Production Shop. Greek Revival - 2 stories, brick with stone trim and gable roof. c1902
4*	292	Sewage Pumping Station. c1971
5	59	Boat House/Carpenter Shop. Later: Administration Supply Storehouse. 1865 Greek Revival, 2 ½ stories, brick with stone trim and gable roof. Originally a boat house and carpenter shop.
6	60	Production Shop Supply Storehouse. 1902, 2 stories, brick with stone trim, gable roof and stepped gable.
7	65	Tool Shed/Paint Shop. Later: Storehouse. 1874, Greek Revival 2 ½ stories, brick with gable roof. Originally a residential quarters.
8*	264	Bus Shelter. c1942
9	62	Gas House. Later: Public Works Shop. c1873.
10	63	Cart and Wheel Shed. Later: Public Works Storehouse. c1874
11	43	Timber Shed. Later: Public Works Supply and Storehouse. Mid 19th century, Greek Revival, 1 ½ stories, stone with match-boarded half story, gable roof. Originally a stable. c1853.
12*	188	Storehouse. c1943
13	40	Stable. Later: Storehouse. Greek Revival, 2 stories, brick with stone trim and gable roof. Originally a stable for cattle. c1851.
14*	97	Scale House. c1905
15	75	Foundry. Later: Production Shop. Mid 19th century, Greek Revival, 2 ½ stories, brick with stone trim and gable roof.

16	44	Timber Shed. Later: Public Works Shop. 1859, Greek Revival, 1 ½ stories, brick with match-board half story and gable roof. Originally a storehouse.
17*	64	Fire Engine House. Later: Production Shop. c1869.
18	42	Timber Shed. Later: Production and Public Works Shop. c1849
19	41	Boiler House. Later: Administration Building. c1880.
20	Quarters L	Residential quarters. c1864.
21*	186	Residential quarters and garage. c1942
22	Quarters A	Residential quarters. 1815/1818, Federal with Colonial components, 2 ½ stories, clapboarded with vertical match-board one-story apses, gable roof. Ornate facade featuring a balustrade second story porch.
23*	A7	Stable. Later: Tool House for Quarters A. c1946.
24	45	Saw Shed. Later: Production Shop. c1894.
25	14	Head House and Engine House. Later: Administration and Bank. 1853, Greek Revival, 3 ½ stories, stone and gable roof. Originally a Head House, boiler and engine house.
26	15	Boiler Room. Later: Post Office and Administration. 1855, Italianate, 2 stories with clock tower, brick with stone trim and wooden tower. Originally a machine shop and steam engineering house.
27	13	Administration, Telephone Exchange, Police Station, Communications Center. c1859.
28	18	Smithy, Foundry, and Machine Shop. Later: Administration. 19th century, Greek Revival, 2 story, brick with stone trim. c1826.
29	261	Memorial, USS Sailfish.
30*	263	Bus Shelter. c1947
31	179	Guest House. Early 20th century, Colonial Revival, 1 story clapboard. c1942.
32	Quarters K	Residential quarters. Mid-19th century Greek Revival, 2 stories, brick with stone trim, gable roof, and colonnaded 1-story facade porch. c1867.
33*	TB 19	Quarter's B garage and storage. c1850.

34*	266	Elevated Water Tank. c1942.
35*	163	Valve House for the Water Tank. c1942.
36	35	Lime House and Stable. Later: Public Works Storehouse and garage for Quarters K. 1851, 1 ½ stories, brick with stone trim and gable roof.
37	--	United States Cemetery. 1820 - .
38	34	Unloaded Shell House (magazine - ordnance). Later: Cold Storage Building. 1857, 1 story, stone, hip roof.
40	32	Magazine (ordnance). Later: Museum storage. 1848, 1 story, stone, hip roof.
41	31	Museum and Visitor Center. 1859, 1 story, stone, hip roof. Originally a magazine.
42	253	Tennis Courts
43	29	Fire Station and Administration Building. 1865, Greek Revival, 2 ½ stories, brick with stone trim, gable roof with wooden double facade dormers.
44	Quarters B	Residential quarters. 1849, Greek Revival, 2 ½ stories, brick with stone trim and gable roof.
45	Quarters C and D	Residential quarters. Mid 19th-century, Greek Revival, 2 ½ stories, brick with stone trim and gable roof. Duplex. c1834.
46	Quarters E and F	Residential quarters. 1833, Federal, s ½ stories, brick with stone trim and gable roof. Duplex. c1833.
47	Quarters G, H, I, and J	Residential quarters. Mid 19th century, Greek Revival, 2 ½ stories, brick with stone trim, gable roof. Built as a row house with four entrances. c1828.
48	86	Administration Building. c1905 Colonial Revival, 3 stories.
52	20	Metalworking Shop. Later: Material Test Laboratory and Print Shop. c1865.
53	22	Ordnance Building. Later: All Hands Club, Theater, Resource Center, Auditorium. 1857, Greek Revival, 3 stories, clapboarded, gable roof. Originally an ordinance and armory building.
54	Quarters O	Residential quarters. Greek Revival, 2 ½ stories, brick with stone trim and gable roof. c1901

55	Quarters P	Residential quarters. Mansard, 3 stories, brick with stone trim and Mansard roof. c1901
56	27	Paint Shop. Later: Administration. 1864, Greek Revival, 2 ½ stories, brick with stone trim and gable roof. Originally a Paint Shop.
57*	A19	Garage for Quarters O and P. c1939.
58	M6	Marine Carpenter Shop. Later: Maintenance Shop. c1860
59*	M18	Supply Office and Storehouse. Later: Photo Lab. c1960.
60	M4	Marine Bakery. Later: Armory and Gymnasium. c1860.
61*#	M15	Storehouse. c1927
62	M1	Marine Barracks. Later: Residential quarters. Italianate, 3 ½ stories, brick, gable roof. Veranda on first and second stories. c1825.

* - *Does not contribute to the Shipyard Historic District.*

- *Structure no longer exists.*