



Orleans Comprehensive Plan



-Adopted December 1999-

-Amended May 2001-

-Amended October 2006-

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Introduction



Capt. Cass Seafood, Rock Harbor

1. Introduction

The Local Comprehensive Plan is intended to serve as a document to help guide decisions about studies and actions that will ensure that Orleans will continue as a desirable town in which to live and to visit in the future. This Plan is intended to act as the Official Town Plan and should itself be revisited and revised periodically. The Orleans Home Rule Charter, 9-2-1 states “within the limits of available resources, the Planning Board shall be responsible for the development and periodic updating of an official town plan or portions thereof.” Further it should be noted that (9-2-4) “...the Official Town Plan(s) shall be considered when revisiting the Zoning Bylaw. The Planning Board shall also utilize the Plan(s) in making its recommendations to the Town. It shall also be used by other multi-member bodies in discharging their responsibilities.”(9-2-5) “The Board shall annually review the official town plan and recommend any necessary amendments thereto to the Town Meeting.”

The recommendations contained in this plan are to be used in the development of the Capital Improvement Plan (CIP). By reference, the CIP is incorporated into this Plan.

Orleans, and in fact, all of Cape Cod has undergone remarkable changes over the past several decades. Since the 1970's, Orleans population has more than doubled. Growth and development continue to create new challenges for the town. Traffic woes in the summer have become a major concern of citizens, the nitrogen pollution of our marine waters needs to be addressed, and affordable housing and maintaining community character continue to be a top priority and a struggle. During this period of change the Town has maintained a steady tax rate developed and added to many key local and regional services, and continues to provide strong educational opportunities through very good schools.

As Orleans navigates the twenty-first century it is faced with the reality that the quality of life has been and will continue to be impacted by the population growth. Planning for buildout is ongoing and the town will continue to mitigate the impacts of growth through zoning changes, wastewater and traffic solutions and other means necessary. Thus, the directions of the Plan are based on several realities: that the environment has already been impacted, that Orleans will grow over the next several decades, and that the Town will require expanded municipal services.

The Plan discusses many issues but does not define or address every decision that the Town may wish to make. This Plan was developed based upon the voiced opinions and views of the townspeople. The decisions to implement parts of the Plan will be made at future Town Meetings, and will likely be determined by sentiment and available resources.

The Plan consists of nine chapters:

1. Land Use and Growth Management
2. Natural Resources

3. Economic Development
4. Community Facilities and Service
5. Health and Human Services
6. Transportation
7. Affordable Housing
8. Open Space and Recreation
9. Historic Preservation and Community Character

The findings of several recent and current reports and studies were used to help identify problems and issues that affect the long-term prospects of the community. They include, but are not limited to the following:

- *U.S.G.S. Groundwater Modeling Report – 2005*
- *Enhancing Wastewater Management on Cape Cod – Wright Pierce - July 2004*
- *Orleans Wastewater Management District Study – Horsley and Whitten - 2005*
- *The Village Center Traffic Study – Judith Nitsch – May 2004*
- *Water Supply Master Plan. Prepared by Comprehensive Environmental Inc. (CEI), 1998.*
- *Conservation, Recreation and Open Space Plan (CROS Plan) Prepared by Orleans Planning Department, September 1999/2006*
- *Annual Cape Cod Commission Traffic Count Report*
- *Monomoy Capacity Study. Prepared by the Cape Cod Commission and Whiteman & Taintor, 1996.*
- *Cape Trends. Cape Cod Commission. 1998.*
- *Pleasant Bay Management Plan. April 1998.*

1.1 The Planning Process

1.1.1 The Local Comprehensive Planning Committee

The process for development and approval of an Official Town Plan is set forth in Chapter 9, Section 2 of the Orleans Home Rule Charter.

In 1988, a Long Range Planning Advisory Committee was appointed to oversee the preparation of an Official Town Plan, as required by the Charter. The committee sponsored a survey of Orleans residents that was used in the development of the new Plan, which was adopted in 1991 as the Official Town Plan.

The process of drafting the 1999 Orleans Comprehensive Plan took place in two distinct phases.

In 1993, the Board of Selectmen appointed a Local Comprehensive Planning Committee (LCPC). The original committee had ten members, many of whom represented other boards. This committee worked for four years developing a preliminary draft of all the chapters. With the help of the Planning Board, a plan was completed which included a summary of the main issues and priorities.

In 1998, the LCPC hired the planning consulting firm of Whiteman & Taintor to assist them in the task. The LCPC worked diligently to build upon the previous group's efforts and to tailor the Plan to meet the needs of the community. During this time, the Town hired a new Director of Planning and Community Development and an Assistant Town Planner, who were thoroughly involved in revising the draft Plan.

Throughout the process, the LCPC held open sessions and worked to ensure that the Plan accurately represented the views and opinions of the residents. Several forums and workshops were held to gather public input before the committee discussed final recommendations. The draft Plan was presented to the public in the form of a series of public workshops in the spring of 1999. Relevant chapters were sent to individual boards and committees for their input. The Board of Selectmen discussed each chapter in depth at its regular meetings. Working meetings were held on each chapter over the summer months of 1999 in order to incorporate opinions expressed by residents and members of other Town committees prior to assembling the Plan in its entirety. This second draft Plan was developed based on the input received and was presented at another series of public meetings to ensure that the Plan truly reflected the opinions of residents before the final version was published.

The Plan was adopted by the Town Meeting in December 1999. Upon review by the Cape Cod Commission, several amendments were requested in order for the Plan to be certified as consistent with the Regional Policy Plan. The amended Plan was returned to the Town Meeting and approved in May 2001.

In 2005 and 2006 the Planning Board began an effort to update data and action items throughout the plan. Over the period of 16 months at regularly scheduled public meetings the Planning Board and Planning Department reviewed each chapter independently. This 5-year update was intended to incorporate current data to ensure that the Plan remains a viable reference and guidance document for the appropriate and orderly development of the town. Minor changes to the Action items were made, and completed Actions have been moved to an appendix.

1.1.2 Public Participation

A three-pronged approach was employed to solicit public input to be used as the basis of the Plan.

Outreach Meetings

The LCPC members listened to all known civic, public and private organizations in town. The LCPC requested time on agendas to meet and explain the Plan and to ask for input. The

completed first draft was made widely available in town. Input was sought from diverse organizations such as the Orleans Citizens Forum, Orleans Taxpayers Association, and the Chamber of Commerce, as well as Town boards and committees to review relevant information. A wide range of comments was received, which the LCPC considered as the Plan was drafted. Well-attended meetings were then conducted to ensure that the Plan represented the views of citizens.

Public Opinion Survey

LCPC members prepared a public opinion survey (henceforth called the Town Survey) that contained 28 questions, 3 questions on each of the elements of the draft Plan. A professional research analyst was consulted during each step of the survey process. This brought professionalism to the survey process and increased the reliability of the results. In June 1994, 5,719 surveys were mailed to every resident and taxpayer. The survey received a 40% response rate with 2,299 surveys returned. A full copy of the results is included in the Appendices. The survey results were used by the LCPC to provide direction for the Plan and to develop appropriate recommendations.

In 2005, a similar survey was sent again to all residents and taxpayers. The response rate was 24%, with a total of 1,237 surveys returned.

Open Workshops

The third approach used to obtain public input was a series of Open House/Workshops held on each chapter of the Plan. The workshops varied in technique but each provided an opportunity to present information and receive feedback from participants. Consensus-building techniques, such as role playing, discussion groups and even a quiz show, were used to create a relaxed, friendly environment for people to freely express their hopes, fears and aspirations for the future of Orleans. Attendance at the workshops varied from 12 to nearly 200 participants. Considerable effort was made to announce the workshops in advance in order to increase attendance. A month before each workshop, flyers and press releases in the local newspaper, radio stations and Cable TV, were distributed to announce the events. Memos were sent to all boards, committees and departments to invite all local officials and employees of the Town to join in the planning process.

A final workshop on the Village Center was held in December 1998. It was felt that the Village Center was a focal point for many of the issues of concern in the town. Nearly 200 residents and business owners attended the workshop. Topics of discussion included traffic, managed growth, community activities, and protection of the environmental resources. Strong support for a vibrant, attractive shopping area was also expressed. Many of the opinions were incorporated into the Plan.

The LCPC relied upon the comments from the workshop series, the survey results and outreach comments to guide them as the Plan began to take shape. Minutes that summarize all public meetings of the LCPC are on record with the Town Clerk.

1.1.3 Plan Organization

The Plan is organized into nine primary chapters. In addition, there is a Background section at the beginning of the Plan which provides an overview of Orleans' development and population trends. The next section provides a Vision Statement to reflect what the Local Comprehensive Plan is intended to achieve. The goals and policies of the Town are presented for each chapter to be used to guide decision making. For the purposes of this Plan and its use in coming years, the terms "goals", "policies", and "implementation" should be used as follows:

- *Goal:* A statement that defines the broad direction the Town of Orleans wishes to pursue.
- *Policy:* A statement defining the Town's position and parameters for decision making.
- *Implementation:* A specific action to be taken to achieve a stated goal.

Each major topic chapter contains an Overview, Inventory, Analysis and Implementation program section. The overview section introduces the topic. Inventory section describes the current situation and recent history, while the Analysis section identifies known and projected issues relating to the chapter's major topic and proposes possible solutions. Any statement within the Inventory or Analysis sections that directly relates to a recommended action in the Implementation Program is followed by a two-letter prefix and number in parentheses.

The Implementation Program section identifies actions recommended to address specific issues, together with estimated time and required resources, and assigns lead agencies for implementation of the action. Action recommendations are provided at the end of each chapter as well as in the Implementation Program at the end of the document.

The Plan describes many of the activities that will need to be undertaken by the Town over the next 20 years. While it would be desirable to be able to complete all of the actions of this plan, it must be recognized that completing the actions will in many cases require approval by Town Meeting voters and/or require substantial costs to be funded. Adoption of this plan does not in of itself create any new bylaws or obligate spending. Public decisions will still be needed to set priorities, especially on costly items that are recommended for action in a similar time frame. Budgeting for capital improvements and other high cost items should be in an amount that is consistent with the current overall fiscal situation and requirements of the Town, and with other goals of this plan.

Completion times included in the plan have been projected and have been described as near-term, mid-term, and far-term. Upon approval of this plan, it will be the responsibility of the Board of Selectmen to work with the Town Administrator to develop a more concise schedule for implementation. Such a schedule should be based on the goals and priorities of the Town, needs in Town departments, and fiscal responsibility

In order to place the implementation actions of the Plan in a workable context for comparative analysis, a two-element measure has been devised. Each implementation action is assigned a completion time and a required resources value, defined as follows:

- **Completion Time** - The time by which the recommended action should be taken. Times are expressed as near-term (within 3 fiscal years), mid-term (4-7 fiscal years) and long term (8 fiscal years or more).
- **Required Resource** - a value representing a composite of relevant resource factors estimated to be required to complete the implementation action. Relevant Required Resource factors include:
 - Work time;
 - Complexity;
 - Estimated cost.
 - A blend of resource factors or types appropriate to each implementation action that allows meaningful comparability between them. Note that under this definition of resources needed to complete an implementation action, dollar cost is not the sole determinant; in some cases where significant resources are required there may be minimal or no dollar costs involved. Relative values for Required Resources are:
 - High (H)
 - Medium (M)
 - Low (L)

The source of all factual material is given throughout the Plan. The most contemporary source materials available were used wherever appropriate. However, when complete data sets were not available for comparison purposes, the Plan relied on 2000 US Census data. This was especially true in the Affordable Housing chapter where housing data is related to incomes.

1.2 Consistency with the Regional Policy Plan

In 1990, following the creation of the Cape Cod Commission, the Commission developed the County's Regional Policy Plan (RPP). The RPP outlines a strategy for protecting the Cape's natural resources, balancing economic growth and providing adequate capital facilities. The RPP is both a planning and a regulatory document. The primary purpose of the RPP is to outline a coherent set of planning policies and objectives to guide development on the Cape and protect its resources.

The development of the Local Comprehensive Plan is voluntary. The Plan will be submitted to the Commission for review and certification as being consistent with the Regional Policy Plan.

It is the intent of the Plan to set forth policies and recommendations that are substantially consistent with those of the Regional Policy Plan. However, there are instances where the policies of the RPP may not be appropriate to Orleans and were therefore omitted. In cases of Developments of Regional Impact (DRI), the Commission requires a lengthy and thorough review before approving a project. Orleans will continue to rely on the expertise of Commission staff in these matters. Minimum Performance Standards (MPS) that relate to DRIs are included in this Plan by Reference.

Background



Windmill Park

2. Background

2.1 History of Orleans Development

The area now known as Orleans has literally been a crossroads since geological times. The prehistoric trans-cape trails of native inhabitants merged in Orleans. Physically, Orleans is the intersection of the Cape Cod Bay Lobe and the South Channel Lobe of the retreating Wisconsin Glacier 15,000 years ago. In other words, the town is located at the elbow of Cape Cod's famous bent arm shape.

Orleans was settled by Pilgrims who were dissatisfied with the poor soil quality and small land grants of "Plimouth." Governor Prence received a large land grant from the Plymouth Colony in 1644 and established what was first known as the "Second Pilgrim Colony" and renamed "Nosset." This area stretched from Yarmouth through Wellfleet. The name was later changed again to Eastham and was divided into the Southern Parish (Orleans) and the Northern Parish. As early as 1717, the people of the Southern Parish expressed the desire to become an independent entity. Orleans was finally incorporated as a town on March 3, 1797 after separating from Eastham. Orleans' population at the time was more than 1,700 residents.

Most of Orleans during the colonial time period was composed of farms that were large and dispersed. East Orleans in particular had soil which was very fertile for producing grain. The South Orleans area was also reserved for the Nauset Indians in 1660 as their Potanunquit (or Portanimitut) village. According to the Massachusetts Historical Commission this was one of the three most important tribal settlements on Cape Cod during colonial times.

Most colonial Cape Cod settlements developed along a harbor and the roads leading to it, and commerce congregated in these areas. Orleans was no exception. Its development emerged around Rock Harbor on Cape Cod Bay, and along Main Street. East Orleans developed the first church in the village center in 1718. The small business core was located at the juncture of Main Street and County Road, which is now known as Cranberry Highway or Route 6A. This area remains a vital part of the community, as it is still the Village Center and serves as the downtown.

Because of the high quality of the soil, Orleans was Cape Cod's premiere grain-growing town during the 1800s. However, much of the farming was done simply to sustain the population; therefore, only a small surplus was produced that could be traded with other towns. Because of the abundance of water resources, many residents turned to fishing and whaling as a means of commerce. Shipping was conducted out of Rock Harbor- its location on Cape Cod Bay made it the best location in Orleans for ships to depart to and arrive from Boston. Rock Harbor was a marginal port capable of servicing only coastal packets and shallow draft vessels because of the tidal creek's narrow width and extensive flats. Still, the harbor flourished as the local port of trade through the 18th and 19th centuries. Pleasant Bay and the Nauset Marsh systems were more important for local activities and resources such as finfish, shellfish, fowl and salt hay.

These areas are located on the south side of Cape Cod, where the distance to Boston combined with hazardous inlets and channels did not make them suitable for trade.

In the 1800s salt made in Orleans' saltworks became an important industry, which emerged out of the need to preserve the large quantities of fish that were caught and distributed to other markets. Saltworks sprang up in many inlets and coves around Orleans. Salt remained a strong industry until approximately 1847 when salt mines in New York offered an inexpensive alternative to the saltworks in Orleans.

By the 1860s, the salt industry had all but disappeared and had been replaced by the cranberry industry. Cranberry bogs were formed in a number of locations as cranberry cultivation became an important agricultural activity in Orleans during the late 1800s.

The shipping industry also grew in the 1800s in order to keep up with salt and fishing activities. "Packet" boats out of Rock Harbor brought goods to Boston and returned with supplies not available on Cape Cod.

The completion of the Old Colony Railroad in 1865 and its extension in the 1870s to the lower Cape improved the transport of goods through Orleans. Packet boats and salt-making faded out of existence and were replaced by freight trains which provided an inexpensive form of transport.

By 1870, Orleans' population had declined to 1,300. Like most other Cape Cod towns, this was due to an economic recession and the decline of the maritime industry around the Civil War period. However, the addition of the Old Colony Railroad in Orleans helped establish the future growth of the town. The railroad led to the development of a small garment industry and also prompted the formation of more service-oriented businesses. As the Old Colony Railroad brought visitors from Boston and other cities to vacation in Orleans, the tourism trade proved to be lucrative and the town's economy moved in that direction.

Over the next one hundred years, (1870-1970), Orleans' growth was based mostly on the tourism industry. A number of inns, hotels, small stores and shops were opened. In addition, vacation homes were built around Tonset and Nauset Heights, and other scattered locations near attractive natural resources. Since 1950, development has spread throughout the town, geared towards seasonal visitors, retirees, and residents who are attracted by Orleans' quality of life. They appreciate the small town character and natural resources that contribute to the community's sense of place.

In 1962, the Cape Cod National Seashore was created. The creation of a national park on Cape Cod resulted in increased interest in the entire area. Cape Cod became a desirable vacation spot for visitors from all over the country and overseas. Orleans, in turn, experienced a significant increase in commercial growth. In continuing with the crossroads tradition of the area, Orleans today is considered the lower Cape's business center where three major highways-Route 6, Route 6A, and Route 28-meet.

Since 1970, the population of Orleans has more than doubled, from fewer than 3,000 to more than 6,800. The majority of growth since the 1970s was and continues to be associated with an influx of well-educated and affluent retirees. This has had a positive influence on the economic stability of the Town. From 1970 through 1989, 2,378 new housing units were constructed. From 1990 to 2000, 429 more units were constructed. Most of these new units were single family homes on a minimum lot size of 40,000 square feet, a requirement that was adopted in 1973. This type of building resulted in a suburban style of development in many areas, as opposed to the traditional compact style of earlier neighborhoods. Orleans, while a vacation destination, has a relatively high year-round population compared to other outer Cape Cod towns. The seasonal population influx is a major factor in the economic base of the town.

The Town has absorbed the increase in population, and has been able to provide adequate public services. The potential population increase from 2006 to buildout¹ represents a 52% percent increase in the Town's population. Coupled with the large influx of seasonal residents and visitors, such growth will adversely impact the quality of life and the character of the community, by adding to the congestion of roads and recreation areas, and by increasing the demand on public services. It is therefore vitally important that the Town anticipate growth and work to carefully plan appropriate responses in order to safeguard the quality of life of its residents.

2.2 Demographics and Growth Trends

2.2.1 Population Growth

Population Characteristics

Since 1970, Orleans has had a fluctuating rate of population growth. In the 10 years after 1970, the population more than doubled. The rate of population growth has moderated significantly in the 1980's. In the last 5 year period Orleans year-round population has not increased significantly, even though many new homes per year have been constructed. In the last ten years the town has averaged 53 new dwelling units per year. At approximately 2 people per dwelling on average, this would add 106 residents per year. The Town has not seen this population growth reflected in its town census which would indicate, over the short term, that the Town remains highly seasonal in nature.

¹ The buildout analysis is discussed in the Land Use & Growth Management Chapter

Table 2: A: Population and Growth Projections, 1970-2015

Year	Population	Total Change	Percent Change (5 yr. intervals)
1970	2,579	--	
1975	3,605	1,026	40%
1980	5,543	1,938	54%
1985	6,115	572	10%
1990	6,061	-54	-1%
1995	6,085	24	0%
2000	6,900	815	13%
2005	6,495	-405	-6%
2010*	7,017	522	--
2015*	7,379	362	--

Source: Orleans Town Clerk

* Projections from Cape Cod Commission

Based upon a buildout analysis performed by the Orleans Planning Department, the projected population at buildout is projected to be between around 9,000 and 10,400 by the year 2040. The buildout analysis is discussed in detail in the Land Use and Growth Management chapter.

More than 37% of Orleans population is over the age of 65. Half of the population is over 55, which ranks Orleans as the oldest community in the Commonwealth. New homes in Orleans are typically occupied by retirees and seasonal residents. Young families are finding it increasingly difficult to buy or rent a home in Orleans because of high costs and a scarcity of condominiums and apartments. Therefore, while new homes are being built, the population will not increase as quickly as it would if the new homes were being occupied by young families. This assumption is reflected in the buildout analysis. If Orleans were to become more of a bedroom community to emerging business centers in Hyannis and Plymouth, the population at buildout could be higher than is estimated above.

Seasonal Population

Orleans is subject to a huge seasonal population influx. U.S. Census data does not provide information on seasonal population. The Town estimates the seasonal population is triple the year-round population. According to this estimate, the total population in the summer of 2005 was near 20,000.

Other trends in population which are expected to continue include the following:

- The percent of population over 65 will continue to be the highest represented and this segment will have a higher than average income.
- The average household size will remain around 2.0 to 2.5 people per home.

- The percent of year round residents will remain around 60 to 65%
- The seasonal influx of tourists and summer residents will continue to have a major impact on the local economy and municipal services.
- The summer seasonal population peaks will begin to reach a perceived capacity and these peaks will spread to other adjacent months.

2.2.2 Socio-Economic Characteristics

Education

In comparison to the rest of the Commonwealth, Orleans residents are better educated, as shown in the table derived from the 2000 Census. The percentage of adults holding a 4-year college degree is significantly higher than the County and State figures.

Table 2: B: 2000 Educational Attainment

	Percent Bachelor's Degree or higher	Percent Graduate or Professional
Orleans	44%	18%
Barnstable County	24%	13%
Massachusetts	33%	14%

Source: 2000 US Census

Income

Household Income

Orleans households have had a higher per capita income than Barnstable County or the Commonwealth as a whole between 1980 and 2000.

Table 2: C: Per Capita Income 1980-2000

	1980		1990		2000	
	Income	% change	Income	% change	Income	% change
Orleans	\$8,958	88%	\$19,249	115%	\$29,553	54%
Barnstable County	\$7,428	121%	\$16,402	121%	\$25,318	54%
Massachusetts	\$7,457	118%	\$17,224	131%	\$25,952	51%

Source: U.S. Census 2000

Ethnicity

The ethnicity of Orleans residents does not exhibit any significant degree of diversity. The non-white population is significantly less than the County and State figures.

Table 2: D: 2000 Minority Population

Orleans	2%
Barnstable County	6%
Massachusetts	15%

Source: 2000 US Census

Occupations

The percent of adults who are active in the workforce is lower in Orleans than in the county or state. This is representative of our population in town that is older and predominantly made up of retirees. Further information on occupations and other economic statistics may be found in the Economic Development chapter.

Table 2: E: Percent of Adults in Labor Force

Orleans	47%
Barnstable County	59%
Massachusetts	66%

Source: 2000 US Census

School Trends

As an older age community, Orleans has a lower school enrollment than the County average.

Table 2: F: School Enrollment, 2000

	% of Population Enrolled in School
Orleans	16%
Barnstable County	21%

Source: US Census 2000

A review of recent enrollment figures shows that enrollment has been fairly stable. The figures of school age children at present has shown a decline in the upper grades, and stable enrollment in the future. High housing costs in Orleans make the town less affordable for young families than other nearby towns. The trend toward a greater retiree component of the population suggests that school enrollment will not escalate.

Development Trends

Over the last 20 years, more than 1,100 homes have been built. Homes constructed since the 1990s exhibit a trend toward being larger even though they are often for seasonal residents or retirees. The average size of a home in Orleans is 1,876 square feet. However, new residences constructed in the last 10 years have averaged 2,400 square feet in size.

Sales prices of homes in Orleans have also undergone dramatic changes. In 2005, the average sales price of a single family home was \$700,000. The cost of land and housing in Orleans continues to preclude working families from settling in town. If the Town wishes to maintain a diverse population, it must continue to find ways to provide moderately priced housing opportunities, for both residents and seasonal workers.

A noticeable shift has occurred in the year-round/seasonal housing ratio. Over the past 20 years, the ratio has changed from 40% year-round and 60% seasonal to the current ratio of 61% year-round and 39% seasonal. The seasonal influx is still very important to the local economy, as many year-round homes are more densely occupied in the summer months. Nevertheless, many businesses that began by targeting tourists are now profitable on a year-round basis.

Town Government and Services

Orleans operates under a Home Rule Charter, with a five-member elected Board of Selectmen and an appointed Town Administrator. Municipal government is considered by most residents to be stable and to provide a good level of service. The Town has just over 100 full-time employees, and hires a large number of seasonal workers to meet the demands of the summer season.

The public water system supplies nearly all homes and is highly regarded by residents and officials of the Commonwealth. Wastewater disposal is entirely by on-site septic systems, and the Town is part operator of a septage disposal facility.

There are more than 100 miles of roadway in the Town, more than half of which are private. Three State highways pass through Orleans, presenting the Town with many traffic management problems.

The tax rate in Orleans has been relatively stable. The Town Budget for FY2006 was over \$23 million. Town debt is low, and the Town's bond rating is excellent. The Town faces some major capital expenditure in the immediate future if it is to maintain a high level of public services. For example, a new Highway Garage is needed, and the Town is in the process of developing a comprehensive wastewater management plan. These issues are addressed in the Community Facilities and Services Chapter.

Town Vision and Growth Policy



Village Center Visioning Forum, 2005

3. Town Vision and Growth Policy

3.1 Vision Statement

Orleans in 2020 will be a thriving community that has preserved its semi-rural seaside character, maintained the health of its abundant natural resources, and carefully managed its residential and commercial growth, thereby enhancing the quality of life for its citizens and visitors. It will maintain its maritime heritage and traditional occupations. It will have an attractive, readily accessible business center, and a business and professional community that provides diverse year-round employment and a wide variety of goods and services. Orleans will be a family vacation destination with ready access to its open spaces, recreational facilities, and beaches. Orleans will be a desirable home for people of diverse backgrounds and a good place in which to raise children. Its people will continue to participate in town government, civic activities, and be generous in their support of education and the arts.

It is the policy of this Town to ensure that future growth is at a level and in such a manner that will have no or minimal adverse effect upon semi-rural character and environmental integrity of the Town. Tracts of land that are currently developable should be preserved permanently through public and private action to attain a goal of at least 400 acres of additional openspace. Future residential housing development should be designed to preserve open lands where practicable, should be away from environmentally sensitive areas, and should contribute to meeting the needs of the community for affordable housing. Future business activities should be oriented primarily in village areas and strip commercial development prevented

Land Use and Growth Management



Residential Development, East Orleans

4. Land Use and Growth Management

4.1 Overview

The Land Use and Growth Management chapter inventories how land is used in Orleans and analyzes the trends in land use and growth-related development. The chapter integrates the information collected in all subsequent chapters and is compared against the Vision Statement and the community's present and future goals. This vision is consistent with the purpose of the Cape Cod Commission's Regional Policy Plan, which is to "ensure that future growth respects the capacity of the land to absorb the impacts of that growth and its associated facilities." A truly comprehensive Plan should draw connections between the recommendations herein and the Town's zoning, subdivision, health and conservation regulations. The effectiveness of local regulations to guide and manage growth in a manner that supports the Town's Vision Statement is assessed throughout the Plan. Revisions and additions to such regulations are noted where appropriate.

This chapter examines development trends and compares them with the Zoning Bylaw and other regulations to determine if the type of development that is encouraged is indeed the kind of development the Town wishes to foster. The chapter begins with an inventory and assessment of the current land use patterns. An evaluation of past development levels is made by looking at the number and type of building permits issued over the last 27 years. The analysis portion uses development trends to forecast the location and impacts of future development. The final portion recommends specific actions to manage future growth and to properly direct it into appropriate areas.

4.2 Goals & Policies

Goal

To only permit growth and development that is consistent with the carrying capacity of Orleans' natural environment in order to maintain the quality of life in our Town.

Policies

- All development should be designed in such a manner that will retain the semi-rural character of the community.
- Commercial development should be encouraged in concentrated nodes of activity while strip development is discouraged.
- All new commercial and multifamily development should be restricted to appropriate areas where infrastructure (roads, water, sewage disposal, drainage) has or will have the capacity to absorb its impact.

- Residential development of five or more lots should submit an Open Space Residential Development preliminary plan for consideration by the Planning Board.
- All new development should be compatible with the natural environment. The adverse environmental effects of existing development should be catalogued and corrected as necessary.
- Land use regulations should ensure that surface and ground water resources are of the highest possible quality.
- Development and redevelopment should reflect the traditional maritime character and/or architecture typical of the area and should be designed to maintain and enhance views of the shoreline from public ways, access points and existing development.

Goal

To encourage the preservation and creation of village centers and downtown areas that provide a pleasant environment for living, working and shopping for residents and visitors.

Policy

- Villages should be the main foci of business activity, and should provide a safe, attractive and pedestrian-oriented environment.

Goal

To preserve and enhance agricultural uses that are environmentally compatible with Orleans' natural resources in order to maintain opportunities to enjoy the traditional occupations, economic diversity, and scenic resources associated with agricultural lands.

Policies

- New development adjacent to lands in active agricultural production should maintain or provide a thickly vegetated buffer of sufficient width to prevent conflicts between the development and existing agricultural uses. New agricultural operations in developed residential areas should also provide a buffer to minimize impacts on these adjoining areas.

4.3 Current Land Use Pattern

As discussed in the Background chapter of this Plan, the existing land use pattern was dictated by several factors. The early European settlers established several villages around which subsequent development focused. Orleans consists of historically concentrated village centers, beachside summer colonies, and residential areas near coastal areas or forest. Overall density is low, with many tree lined country ways offering access to waterfront locations. The quality of residential life is considered high. There are several neighborhoods located in defined areas, each with its own character and sense of place. Among the most prominent areas are Rock Harbor, Skaket, Nauset Heights, East Orleans, Barley Neck, Pochet, and the several residential areas of South Orleans.

Development is influenced by the availability of appropriate infrastructure. Water service is available to 97% of all homes and businesses. Orleans relies on a sole-source aquifer for all of its drinking water, whether provided by the public water system or a private well. Issues relating to water quality and quantity are fully discussed in the Natural Resources and Community Facilities and Services chapters of this Plan. There are no public sewers in Orleans. All sewage disposal is by individual septic systems, which has had an impact on the intensity of development in the Village Center and the entire downtown area.

Throughout town there are parcels of land protected to some degree by various means, including public and private ownership for conservation purposes, conservation restrictions, and agricultural tax incentives. The largest tracts of protected land lie within the boundary of the Cape Cod National Seashore on the eastern edge of the town and in the town-owned watershed area in the southwest.

Historic village centers, including East Orleans, South Orleans and Orleans Village Center, are noted for their architectural diversity and their role in serving as convening places where residents conduct their everyday business. Lighting, signs, architectural style, pedestrian amenities and landscaping all contribute to the character of the area. Currently, the only settlement areas with historic protection are lands that fall within the Old King's Highway Regional Historic District.

Commercial development in Orleans is primarily located in the northwest area of town. The largest concentrated commercial development is located along Route 6A from exit twelve of Route 6 to the Orleans Rotary.

East Orleans

The East Orleans village is located along Main Street where it merges with Beach Road. While this village contains a variety of uses, it is smaller in area and contains less intensive uses than the downtown Village Center and has a stronger residential component. Main Street in East Orleans is lined with Cape Cod style and Victorian homes, some of which have been converted to small businesses. The area contains a variety of commercial and business services, including a post office, clothing boutiques,

grocery stores, real estate agencies, bed and breakfasts, restaurants and inns. The businesses advertise with low profile signs. The architecture is intimate in scale and of a residential character.

South Orleans

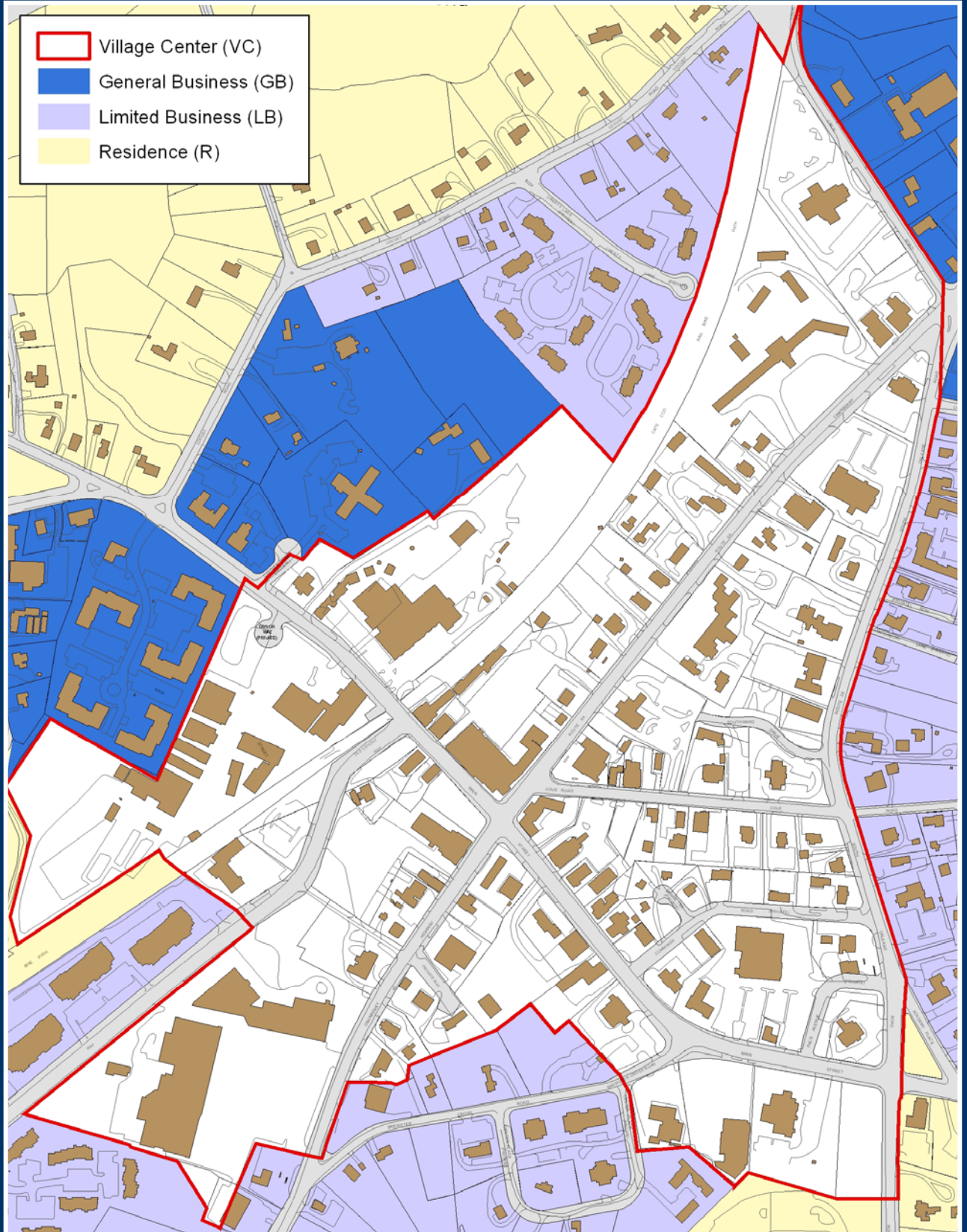
The South Orleans village is situated at the intersection of Route 28, Route 39, and Quanset Road and is the smallest of the three villages. Currently, both residential and commercial development is sparse. The area contains a post office, a general store, a gas station and a few other commercial businesses. Two real estate agencies are also located in the area, although they are outside the Rural Business District. A small commercial plaza is the focus of development near the crossroads of Route 28 and Route 39.

Village Center

The primary focus of the Village Center is along the pedestrian oriented segment of Main Street between Route 28 and Route 6A. This is but one subsection of an extensive downtown commercial area. The area is divided into three zoning districts: General Business, Limited Business, and the Village Center District. The importance of the Village Center is discussed throughout this Plan and many recommendations are tied to the vitality of this area.

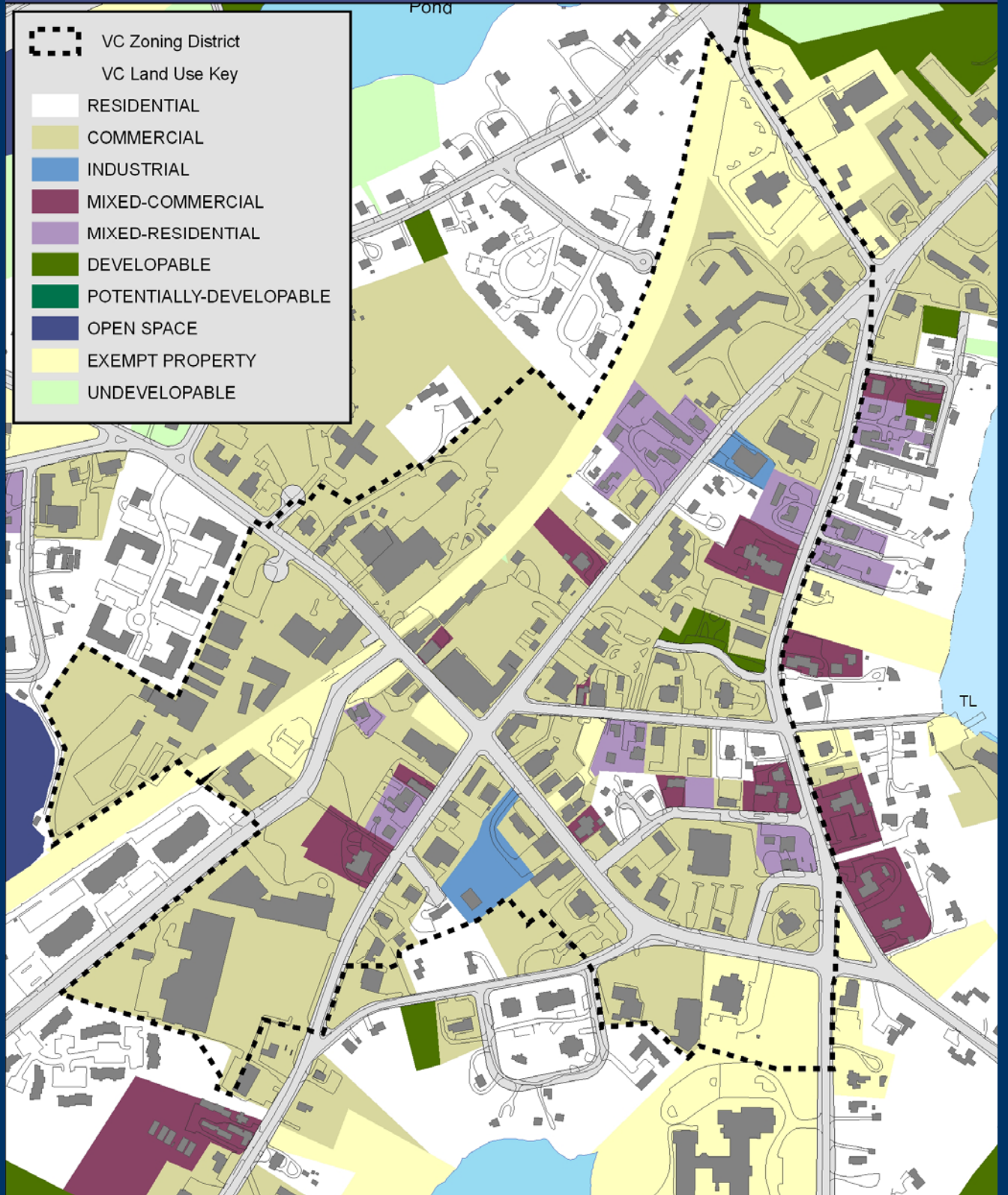


Orleans Comprehensive Plan: Village Center Zoning





Orleans Comprehensive Plan: Village Center Land Use



Regional Centers

There are several concentrated areas of regional commercial activity, largely due to Orleans' proximity to Route 6, Route 6A and Route 28. These areas contain commercial establishments that typically have a wider service area. Although it has been expressed in the community that some residents do not wish Orleans to serve as the economic hub for the Lower Cape, certain establishments already exist which draw persons from outside of town boundaries. Located at the intersection of Route 6A and West Road is a shopping plaza with a supermarket and other retail stores. In addition, a supermarket and a department store are located on Route 6A, south of the Orleans Rotary. Many of the communities on the Lower Cape do not have these types of establishments and are therefore reliant upon these larger commercial centers.

4.4 Land Use Inventory

The Town of Orleans has a land area of 8,973 acres (approximately 14 square miles). Data presented in this section and tables 1 through 7 are based on 2003 Town of Orleans Assessor data. By analyzing the assessor's data we get a summary of how land in Orleans is currently being used.

The table below summarizes the current land use pattern in Orleans.

Table 4-A: Land Use Summary

Land Use Category	Acreage	Percent of Total Land Area
Multiple Use	62	.69%
Residential	3874	43.17%
Commercial	239	2.66%
Industrial	33	.37%
Forest/Agriculture/Recreation	558	6.22%
Exempt Property	2437	27.16%
Road Layouts and Fresh Water Bodies	923	10.29%
Developable Lands	605	6.74%
Undevelopable Lands	242	2.7%
Total	8973	100%

Source: Orleans Assessors Database, 2003

4.4.1 Residential Use

The most common use of land is for single family homes. The town was originally settled as fishing and farming community with a small central village. As the area

became attractive to summer visitors, cottages and rental rooms were constructed near the shore.

The minimum lot area of 40,000 square feet in the Residential District has helped to create a low-density land use pattern and contributes to a feeling of openness within the community. However, as larger homes are constructed with amenities such as tennis courts and swimming pools, an increasing amount of the land area within each lot is developed.

Multifamily dwellings are primarily located in the center of town. Large apartment complexes are located on Main Street near Mid-Cape Home Center and near Hopkins Lane in East Orleans. In total, there are 642 condominium units throughout Orleans.

The following table details the number of parcels and acreage for the different types of residential uses in Orleans.

Table 4-B: Residential Land Uses

Residential Land Uses	Number of Parcels in Class	Acreage	% of <u>Total</u> Land Area
Single Family	3619	3305.63	36.84%
Two Family	44	49.39	.55%
Condominiums	51	108.71	1.21%
All other types of Residences	265	410.31	13.50%
Total	3979	3874	43.17%

Source: Orleans Assessors Database 2003

4.4.2 Commercial Use

There are currently over 1.2 million square feet of built space used for business purposes. Since 2001, commercial development has been outpaced by residential development. The commercial development that has occurred has primarily involved the redevelopment of property. This trend continues today as obsolete commercial developments get upgraded and retrofitted for new businesses. One of the more recent examples of this upgrading has taken place at Cranberry Plaza where Stop and Shop has redeveloped the site, occupied a larger portion of the plaza, and has upgraded the rest of the existing commercial structure for a new retailer. Table 4-C below shows a breakout of how the 239 acres of property is being used for commercial use.

Table 4-C: Commercial Land Uses

Commercial Land Use	Number of Parcels	Acreage	% of Total Land Area
Group Quarters (Motels-Inns-etc.)	16	35.02	.39%
Warehouse and Distribution Facilities	27	17.67	.19%
Retail Trade	105	125.08	1.39%
Office	53	41.23	.45%
Public Service Properties	4	9.98	.11%
Cultural/Entertainment/Recreation	7	7.10	.07%
Commercial Agricultural Land	2	2.9	.03%
Total:	214	239	3.0%

Source: Orleans Assessors Database, 2003

4.4.3 Mixed Use

In some areas of town parcels are commonly used for both commercial and residential purposes. Apartments are allowed over commercial structures in all of the non-residential districts in Orleans. Depending on the primary use of the property it is classified in one of two mixed use categories listed in the table below and makes up less than 1% of the total land area in Orleans.

Table 4-D: Mixed Land Uses

Mixed Land Use	Number of Parcels	Acreage	% of Total Land Area
Mixed Use - Primarily Residential	45	28.51	.31%
Mixed Use - Primarily Commercial	46	33.3	.37%
Total:	91	62	.68%

4.4.4 Industrial Use

Currently, industrial uses are accommodated on nineteen parcels consisting of 33 total acres. The major concentration of industrial land uses exists in the Industrial District off Finlay Road and Lots Hollow Road, in the western part of town. The area is

characterized by warehouses and service buildings, with very little landscaping. Many necessary services, such as landscapers, auto repair shops, and construction contractors, are located in the Industrial District. At present, it is the only zoning district that allows for many of these types of uses.

4.4.5 Agricultural Use

Agricultural uses comprise less than 1% of Orleans’ total developable upland area. There are 31 acres of land in agricultural use (MGL Chapter 61A), and 24 acres in forest land (MGL Chapter 61). Parcels in these programs are protected for a limited period of time in exchange for a reduction in local property taxes. Owners of land in this classification are assessed at the current use value of the property rather than at its development potential, thus encouraging owners to preserve the parcel for agriculture or forestry use. These lands are vulnerable to future development but the Town has the right of first refusal if the parcel is offered for sale.

4.4.6 Governmental/Institutional/Church

Tax exempt lands account for 27% of all developable upland area, the majority of which is used for public open space and/or recreation. This includes Town and federal land in the National Seashore (1,400 acres), Pochet Islands Trust (360 acres), school lands used partially for recreation, and parcels with other municipal buildings. Most of this land has been protected from development by deed restriction. However, the Town needs to retain the ability to use municipal land to meet operational needs in the future. An analysis of future municipal lands needs is recommended and discussed more in the Community Facilities chapter.

Table 4-E: Tax Exempt Lands

Tax Exempt Use	Number of Parcels in Class	Acreage	% of Total Land Area
US Government	28	113.63	1.26%
Comm. of Massachusetts	25	21.15	.23%
Barnstable County	1	9.90	.11%
Municipality	156	1744.82	19.44%
Charitable Organizations-Trusts	172	495.72	5.52%
Churches-Places of Worship	20	31.13	.34%
Housing Authority Property	5	20.4	.22%
Total	407	2437	27%

Source: Orleans Assessors Database, 2003

4.4.7 Open Space/Recreation

Privately owned land in the form of a conservation trust or a conservation restriction is protected from development. A conservation restriction placed on a property allows for the development rights to be held by a federal, state, or town government, or by a non-profit agency. It ensures that land will remain in its natural, open state. Land that is owned by a municipal, state, or federal agency, or a non-profit organization is highly protected so long as the land is owned and managed specifically for the purpose of conservation and/or recreation. Massachusetts law makes it very difficult for a government or non-profit agency to sell or transfer conservation land, or to use it for a different municipal purpose.

Table 4-F: Conservation Lands, Open Space, and Protected Parks

Land Use Type and Ownership	Acres	% of Total Land Area
Privately Owned Open Space Lands		
Orleans Conservation Trust (OCT)		
Holdings of the OCT	427	4.70%
Conservation Restrictions held by the OCT	53.6	.60%
Massachusetts Audubon CR	3.8	.04%
Other Open Space	364.4	4.06%
Publicly Owned Open Space Lands		
State Open Space Lands		
Protected	1.19	.01%
Federal Open Space Lands		
Protected	103.6	1.15%
Town Open Space Lands		
Town Owned Open Space	1725	19.20%
Town-held Conservation Restriction	63.81	.71%
Total of Open Space Acreage	2742.4	30.5%

Source: 2003 Assessors Records

4.4.8 Vacant Land

As of 2003, 6.74% of the total land area in Orleans was classified as vacant developable land. This represents land that is clear and most notably developable land.

Table 4-G: Vacant Developable Land

Land Use Type	Acreage	% of <u>Total</u> Land Area
Residential Land	561	6.25%
Commercial Land	29	.32%
Industrial Land	15	.16%
Total	605	6.7%

Source: Orleans Assessors Database, 2003

Lands classified by the Assessor's Office as "undevelopable" may not be developed at this time due to physical or regulatory constraints. Typically these lands are lowlands, wetlands, bogs, and marshland. It is highly unlikely that any of the 234 acres currently classified as undevelopable in Orleans will ever be developed.

4.5 Trends in Land Use

The MacConnell Land Use Summary presented below shows how land use changed between 1971, 1990 and 1999. The MacConnell series is one of the longest running time series of land use information in the State of Massachusetts. The summary categorizes land uses and creates land use maps and statistics that are based on land cover as seen in aerial photographs. What make the series interesting is that it allows communities to track the land use changes over time back to 1971.

What is notable when looking at the MacConnell summary is the percentage of land devoted to residential purposes. There has been a continued increase in residential development in Orleans that is consistent with the concurrent reduction in other land use types. Between 1971 and 1999 the decrease in Open and Agricultural land corresponds directly with the increase in land put towards residential uses. In 1971, 55% of the total upland area was Open and Agricultural land as compared to only 38% in 1999. The area used for residential purposes increased from 26% to 42% almost doubling in the 28 year time span. In fact, there has only been a slight increase, 1.5%, in both Commercial and Industrial developments further reinforcing the trend of open land in Orleans being used for residential purposes.

Table 4-H: MacConnell Land Use Trends 1971-1999

Land Use Type	MacConnell Land Use Data			
	1971 % of Land Area	1984 % of Land Area	1990 % of Land Area	1999 % of Land Area
Open land & Agricultural	55.0%	46.5%	42.2%	38.35%
Residential	25.6%	34.5%	38.2%	41.7%
Wetlands	12.7%	12.6%	12.6%	12.9%
Recreation	0.3%	0.3%	.35%	.3%
Commercial	2.0%	2.3%	2.6%	2.6%
Transportation	1.2%	1.0%	1.0%	1.0%
Industrial	0.2%	0.7%	1.0%	1.1%

Source: MacConnell Land Use Inventory 1971, 1984, 1990, 1999

4.5.1 Subdivision Trends

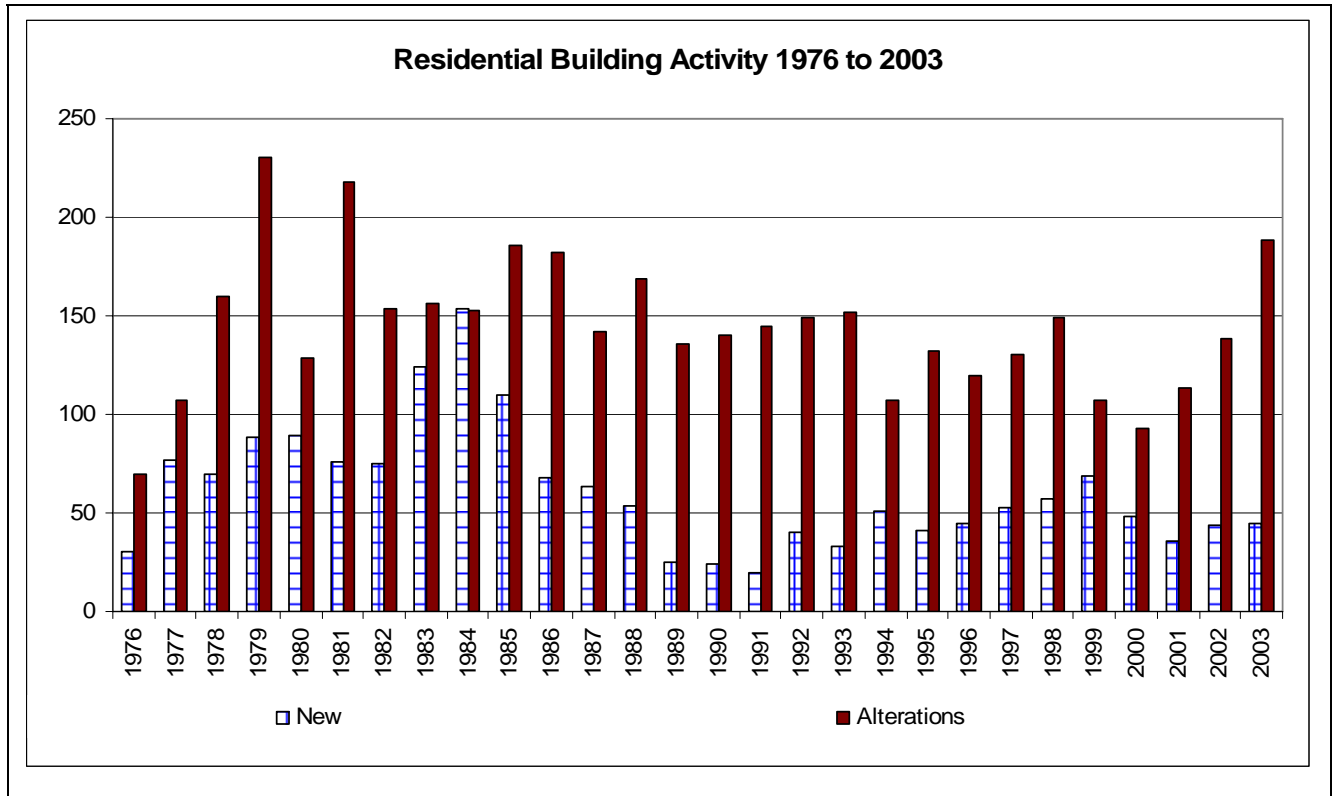
A noticeable trend in development is subdivision activity involving previously approved “paper” subdivisions in the form of lot releases, re-subdivision of previously formulated plans, and road construction. This infill type of development has been experienced in all areas of the town. As areas get closer to their build-out potential, residents may notice a loss of the “rural character” of some neighborhoods.

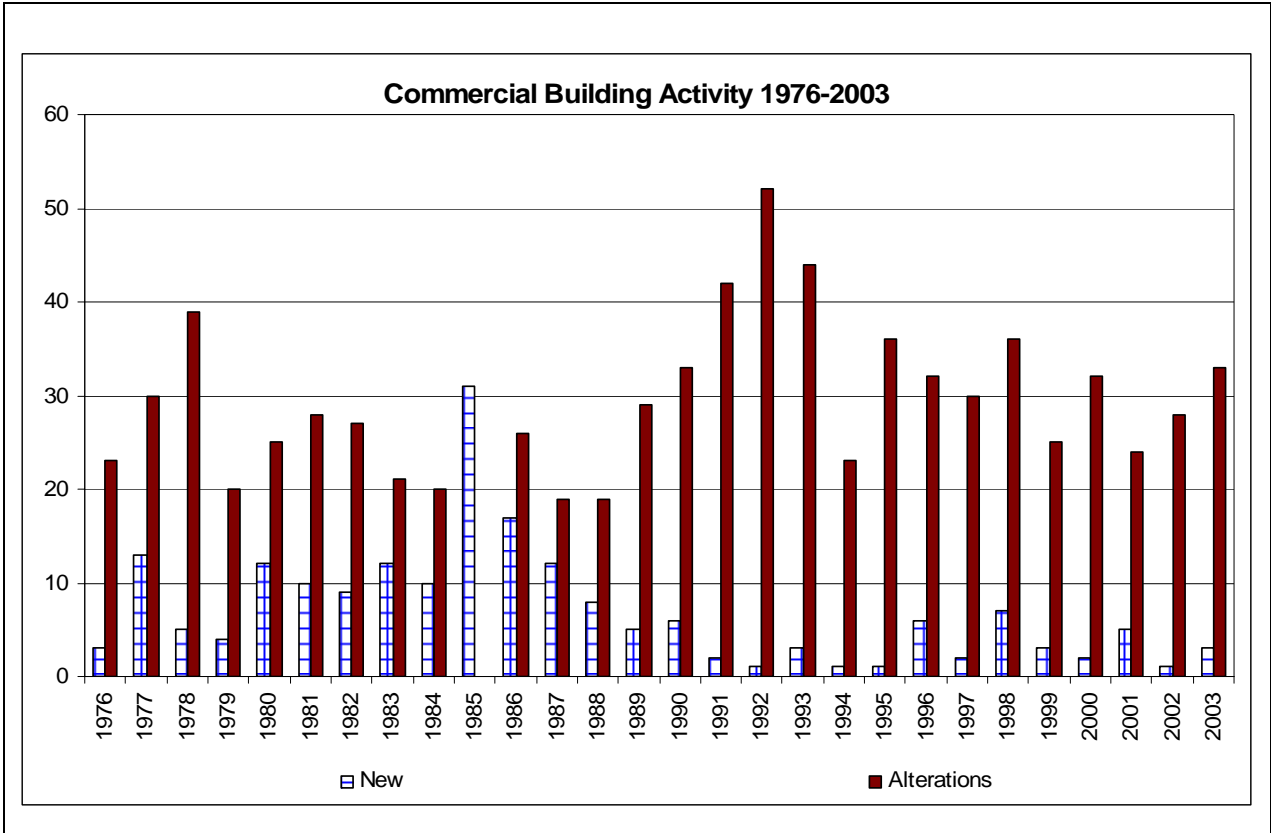
Since 1990, 185 lots have been created through both definitive and ANR subdivision plans. As Orleans moves closer to build-out the Planning Department is seeing smaller scale subdivision plans, creating one or two new lots, and subdivision of lands that would have previously been considered marginal. Subdivision activity since 1990 has been relatively consistent averaging 14 new lots per year.

There currently exist more than 500 building lots in Orleans. Regardless of sub-division activity in the future, there is still significant growth potential throughout the Town.

4.5.2 Building Permits

The issuance of building permits is another indicator of land use change. Even though undeveloped lands may be subdivided for residential development, or zoned for business or industrial development, the impact of the development is generally not felt until the building permits are issued and construction begins.





As residential projects are completed, the Town must assess their impact on natural resources, capital facilities and the character of the community. Part of Orleans’ desirable character is the amount of open space in town. It must be assumed that any undeveloped land that is not permanently protected will be developed in the future. The challenge will be to accommodate additional development without losing the essential scenic and rural qualities that make Orleans feel like a “small town.”

Over the last 25 years, the Town has seen major land use changes both in the increase of residential acreage and the decrease in agricultural, pastoral and forested land. If current zoning and other land use regulations persist, this trend is predicted to continue. In the analysis section, these regulations are assessed to determine their influence on land use decisions and their congruency with the Town’s Vision Statement.

4.6 Current Zoning and Land Use Controls

4.6.1 Zoning Districts

The Zoning Bylaw establishes one residential district, Residence District [R], and six districts in which business uses are permitted:

1. Rural Business District [RB]
2. Limited Business District [LB]
3. Marine Business District [MB]

4. General Business District [GB]
5. Village Center District [VC]
6. Industrial District [I]

In addition, there are six overlay districts addressing environmental concerns:

1. Conservancy District [CD]
2. Seashore Conservancy District [SC]
3. Water Resource Overlay District [WR]
4. Shoreline Overlay District [S]
5. Floodplain Overlay District [F].
6. Residential Affordable Housing Overlay District [RAH]

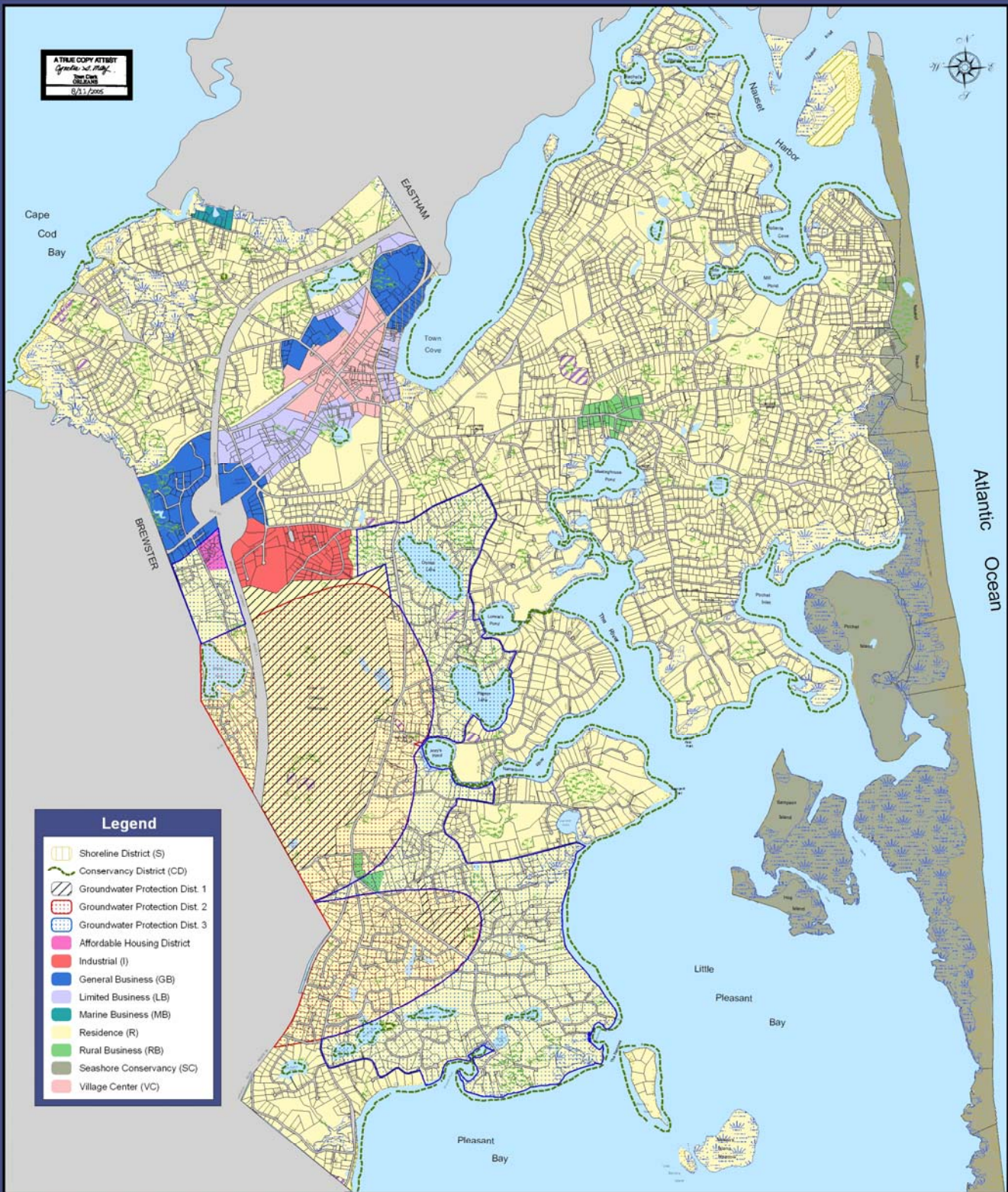
Each zoning district has a detailed set of regulations that guide the type and density of development. The six overlay districts add special regulations on top of those of the existing zone beneath to ensure appropriate development in environmentally sensitive and hazardous areas.

Since 2001 the town has converted 3 separate areas of the downtown from General Business to Limited Business. These zoning changes provide the Town greater ability to regulate new development and redevelopment through the Special Permit process.



Town of Orleans Zoning Map

A TRUE COPY ATTEST
Cynthia M. Harty
Town Clerk
ORLEANS
01/13/2025

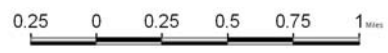


Legend

- Shoreline District (S)
- Conservancy District (CD)
- Groundwater Protection Dist. 1
- Groundwater Protection Dist. 2
- Groundwater Protection Dist. 3
- Affordable Housing District
- Industrial (I)
- General Business (GB)
- Limited Business (LB)
- Marine Business (MB)
- Residence (R)
- Rural Business (RB)
- Seashore Conservancy (SC)
- Village Center (VC)



Map created by the Town of Orleans Planning Department. Last Updated August 19th



Residential District

Most of the town's land area is included within the Residential District [R], which permits agricultural uses, religious and educational uses, and detached residential dwellings. Congregate housing, marinas, and some accessory uses are allowed by special permit through the Board of Appeals.

The minimum lot size is 40,000 square feet and the building coverage is limited to 15% of the buildable upland area. In addition, the building coverage may not exceed 4,000 square feet without a special permit. The minimum frontage requirement is 150 feet, and front, side and rear setbacks must be at least 25 feet.

As an alternative to the traditional subdivision requirements, the Town also provides an Open Space Residential Development, often referred to as Cluster Development, provision within the Zoning Bylaw. This option can be used by special permit within the Residential District. The objectives of the Bylaw are to preserve open space that provides views and scenery and wildlife habitat, and to ensure that development is in keeping with a site's existing topography and natural features. The design standards allow for a reduction of the minimum lot area to 20,000 square feet provided that the number of dwelling units does not exceed the maximum that would be built under conventional subdivision requirements. At least 35% of the parcel's buildable upland must be conserved as open space.

Business Districts

Rural Business Districts [RB] are located in the villages of East Orleans and South Orleans. **Limited Business Districts [LB]** are in four areas surrounding the Village Center along Routes 6 and 6A. These areas are characterized by a variety of service-oriented businesses located in a relatively dense land use pattern. The commercial uses in these districts are generally less intensive than those in the General Business District (discussed below) but are far less residential in nature than any of the villages.

The RB and LB districts are fairly similar in the types of uses permitted. Both districts allow agricultural uses, residential uses (detached, renting of rooms, residences in structures used for commerce, and conversion of existing dwellings to multiple dwellings by right and apartments by special permit), gift shops, offices, and many types of accessory uses. The differences among these districts vary in the intensity and scale of uses: specific retail uses, marinas, and accessory uses for livestock are allowed as of right within an RB district, but each of these uses is subject to special permit restrictions in an LB district. In contrast, restaurants with entertainment and serving alcohol, service or public utility uses, communication buildings, and retail sale of gardening and agricultural products are allowed by special permit within an LB district but are prohibited in an RB district. The only uses allowed "as of right" within an LB district which are prohibited in an RB district are private clubs, hotels and motels.

There is no minimum lot size requirement in the RB or LB districts except that a building may not cover more than 15% of the lot in the RB district. The RB district also requires a

minimum frontage of 100 feet in most instances, and has side and rear setbacks of 25 feet; 10-foot side and rear setbacks are required in the LB district. Both districts have a minimum front yard setback of 25 feet and a maximum building height of 30 feet. The differences in dimensional requirements are consistent with the residential nature of the RB district as opposed to the more commercial orientation of the LB district.

The **Marine Business District [MB]** is a relatively small district located in the Rock Harbor area. This district permits agricultural uses, religious and educational uses, detached residential units, residences in structures used for commerce, maritime related retail and wholesale uses, restaurants which do not serve alcohol, marinas, and some accessory uses. There is no minimum lot size requirement within this district but building coverage is limited to 15% of the lot area. The dimensional requirements mandate 100 feet of lot frontage and front, side and rear setbacks of 25 feet.

The **General Business District [GB]** is located primarily along Route 6A from the Brewster town line to the Skaket Corners area and from Canal Street, running along 6A, to the Orleans Rotary (i.e. junction of Routes 6 and 6A). This district allows for agricultural uses, religious and educational uses, hospitals, convalescent homes, multiple dwelling units (but not detached units), dwellings in structures used for commerce, gift shops, offices, restaurants, a variety of retail uses, marinas, newspaper printing, service or public utilities, filling stations, places of assembly, hotels and motels, retail sales of agricultural and gardening supplies, communication buildings and appurtenances by right. Industry and light manufacturing uses and most accessory uses are allowed by special permit. There is no minimum lot size or frontage requirement in this district nor are there restrictions for lot coverage. The required minimum front yard setback is 25 feet and the side and rear yard setbacks are a minimum of 10 feet.

The **Village Center District [VC]** encompasses the area between the Orleans Marketplace and Canal Road from west to east, and between Snow's Hardware and the Main Street & Route 28 intersection from north to south. All uses permitted within the GB district are allowed in the VC district, with the exception of drive-ins, drive-throughs and other facilities serving autos; Fast food restaurants are prohibited throughout the Town under current zoning. The VC district has specific provisions for site design, building style and pedestrian amenities that are not included in other districts. There is no minimum lot size requirement within the VC district but front yard setbacks must be at least 15 feet and no more than 25 feet. The minimum front yard may contain pedestrian areas, terraces, landscaped areas and driveways. Buildings in the VC district are required to contain first floor windows that cover at least 1/3 of the facade facing the street. New buildings or buildings requiring alterations must also provide sidewalks and planting areas.

There are several key differences between the commercial areas along Route 6A and the villages in Orleans. The commercial areas feature more intense land uses than one would find in any of the village areas. The strip style developments along Route 6A cater more to the automobile than to the pedestrian. The Village Center, though located adjacent to the GB district, features less intensive land uses and is more pedestrian

oriented. The Village Center provides more pedestrian amenities, such as brick sidewalks along Main Street and features a variety of small-scale businesses.

Industrial District

The **Industrial District [I]** is located south of Finlay Road to the east of Route 6 and serves as the community's industrial area. Agricultural uses, religious and educational uses, dwellings in buildings used for commerce, offices, marinas, newspaper printing, service or public utilities, filling stations, used car lots, places of assembly, dog kennels, retail sales of agricultural and gardening supplies, communication appurtenances and buildings, wholesale, industry and light manufacturing are allowed by right. Congregate housing, retail, places of amusement, communication towers, accessory scientific uses and accessory dwellings are allowed by special permit. With the exception of dwellings in buildings used for commerce and congregate housing, residential uses are specifically prohibited in this district.

Environmental Protection

Conservancy District

The Conservancy District was created to preserve and maintain ground, surface and coastal water quality and reduce the risk of flooding. These districts are located along tidewater and wetlands areas (excluding the areas within the National Seashore boundaries). Permitted uses include fishing and shellfishing, growing and harvesting of crops, erosion control structures, and passive recreation.

Seashore Conservancy District

The Seashore Conservancy District is intended to provide further preservation of the Cape Cod National Seashore by prohibiting commercial and industrial uses in these areas and by preserving the natural amenities for aesthetics, education and recreation purposes. The only uses permitted are related to conservation, traditional fishing activities, and flood control. There are also three overlay districts in Orleans: the Groundwater Protection District, the Shoreline District and the Floodplain District. All uses that are permitted in the underlying zoning district are allowed in the overlay district unless specifically prohibited.

Groundwater Protection Districts

The purpose of the Groundwater Protection Districts is to "promote the health, safety and welfare of Orleans residents by providing a legal framework for the protection of the Town's groundwater resources which will ensure an adequate future supply of high quality Town drinking water." Prohibited uses include landfills, wastewater treatment plants, automobile graveyards, used car lots, storage and disposal of hazardous materials, car washes, boat or motor vehicle repair, animal feed lots, and commercial or recreational uses that require removal of natural vegetation or application of chemicals.

Shoreline Protection Districts

The purpose of the Shoreline Protection District is to “protect the use of shoreline areas and which encourages water dependent uses, public access and visibility to the shoreline and 100’ developmental setbacks from the mean high water mark.” Uses permitted in the underlying district must meet the following criteria to be allowed without a special permit: be functionally dependent upon water body access, provide opportunity for pedestrian access to the water side of any building, cover less than 10% of the lot area with buildings, and place no building, parking area or disposal facility within 100 feet of mean high water unless functionally dependent upon closer proximity.

Floodplain District

The purpose of the Floodplain District is to regulate development in flood prone areas to mitigate environmental and monetary impacts and to minimize the public safety hazard created by development in such areas. No building may be located within areas designated as coastal high-hazard areas; all new construction must be located landward of the mean high tide; and all new construction must be elevated on anchored pilings or columns.

Residential Affordable Housing District

The purpose of the Residential Affordable Housing District is to provide affordable housing for the inhabitants of the Town of Orleans. This overlay district allows for smaller lot sizes, 17,000 sq ft, and a less restrictive frontage requirement of 70 feet. This in turn results in higher densities in the overlay district allowing a developer or developers to build more houses to be sold or conveyed to eligible tenants or buyers.

4.6.2 Subdivision Regulation

Subdivision regulation is used to ensure that new residential and commercial developments meet a minimum set of design standards, including lot configuration, road construction and utilities provision. It is meant to protect the attributes of the existing community while providing for a development that will meet the requirements of future lot owners.

A subdivision is generally defined as the division of a tract of land into two or more lots. The Subdivision Control Law is provided in Massachusetts General Law, Chapter 41, Section 81K-81GG and primarily addresses the construction of new roads within residential subdivisions and the provision for municipal services (primarily to ensure sanitary conditions in the subdivision) that will be necessary as a result of the new development. Subdivision rules and regulations are separate from zoning: the subdivision process renders a lot sellable while zoning renders a lot buildable.

Subdivision regulation in Orleans is similar to that in other communities. The Planning Board reviews all subdivisions to ensure their consistency with the adopted rules and regulations. The specific rules and regulations must be met by all proposed subdivisions unless the Planning Board grants a waiver.

The Town of Orleans Subdivision Rules and Regulations were amended in 1993 and appear to conform to the regulations of the State Statute. The inclusion of design standards, while they cannot specifically be used to approve or deny a subdivision, provides the Town with an opportunity to mold and shape a proposed development. In addition, the flexibility in the types of roads permitted also allows the Town to permit subdivisions that ensure adequate access while preserving the character of the community.

4.6.3 Site Plan Review

Through the Zoning Bylaw, the Town has created a site plan review process. The Site Plan Review Committee, consisting of Town officials (Town Planner, Building Commissioner, Health Agent, Fire Chief, Highway Manager, Conservation Agent, Water Department Manager), has been charged with the duty of site plan review to ensure that proposed projects meet Town building, zoning, health, wetlands, and design standards. The goal of this process is to ensure that a proposed project will be suitable to the neighborhood and surrounding environment.

Developments which meet a certain threshold (including those that require a special permit, create a certain amount of new parking, add 1,000 square feet of floor area, affect drainage or utilities, or change use) are referred by the Building Commissioner to the Site Plan Review Committee, first for an informal review, and then a formal review. An applicant must gain approval at the formal review prior to issuance of a building permit.

4.6.4 Architectural Review

The Zoning Bylaw provides for the creation of the Architectural Review Committee. The Committee consists of five members appointed by the Board of Selectmen, and is charged with the review of all building and special permit applications for additions, renovations, alterations, and demolitions. It also applies to exterior alterations not requiring a building permit, including changes in color, design, building materials, windows, doors, signs, light fixtures, and other elements. This review does not apply to one- and two-family residences intended to remain in residential use. It does not apply to applications in the Old Kings Highway Historic District or the Industrial District.

The purpose of architectural review is to preserve and enhance the Town's cultural, economic and historic resources by preventing new construction and alterations that are incompatible with older existing building styles, and by promoting conservation of aesthetically and historically significant buildings. Building and/or special permits are issued only after Committee approval.

4.7 Analysis

4.7.1 Trends in Land Use and Development

Residential density is primarily determined through zoning regulations, which currently limit residential development to one dwelling unit per acre. However, nearly two-thirds

of the existing homes were constructed on smaller lots. Either the homes were built, or the lots were created and “grandfathered” as buildable lots prior to zoning. These legal, nonconforming lots have an average lot size of 24,000 square feet, with several dozen homes located on lots which are less than 10,000 square feet. Because the Town does not provide public sewer service, higher development densities result in a higher density of wastewater, which eventually discharges into the groundwater table.

A noticeable trend in Orleans’ housing stock is the conversion of seasonal units to year-round homes. This appears to be at least partly a natural progression as summer homeowners choose to retire to Cape Cod. Building Code issues may also play a role, forcing all construction to attain certain minimum standards that are more consistent with a year-round dwelling than a seasonal home.

The Building Commissioner has reported that there has been an increase in the number of larger homes. The average size of a home in Orleans is 1,876 square feet. However, new residences constructed between 1994-2003 averaged 2,456 square feet in size.

Commercial development occurs in designated business districts. Because of the high seasonal influx on Cape Cod, the town has more businesses than could be reasonably supported by the year-round population. Changes in the business districts have not been as noticeable as in the residential areas. The major change has been the conversion of single-family homes to business use. For example, the General Business District along Route 6A has changed from primarily residential uses to an area with few homes remaining and an increasing number of business establishments.

As discussed elsewhere in this Plan, wastewater disposal issues have had an impact on the intensity and types of commercial development in the downtown. Lack of wastewater solutions can prevent some types of development in the village center. Many of the recommendations of this Plan focus on efforts to improve the appearance, function, and economic vitality of the Village Center. The lack of a public sewer system is a major obstacle to this objective. In conjunction with the town-wide wastewater management study, the Town is exploring alternative means of wastewater disposal to permit diverse business opportunities in business nodes, including the Village Center. (CF-27)

Industrial uses are restricted to the Industrial District off Finlay Road. This area has experienced an increase in development over the last two decades but many parcels remain underdeveloped. However, development of this area is expected to continue in the future.

4.7.2 Build-out Analysis

In assessing current and future land use, it is important and useful to develop an understanding of the future growth potential. A *buildout analysis* is an estimate of how much growth can occur under existing regulations. Buildout findings are used to anticipate community infrastructure needs and demands for public services.

In Orleans, a buildout analysis was completed for the 1999 version of this Plan, and estimated potential growth in the Residential District only. The information has been and continues to be enormously helpful in many areas of community planning. The buildout has become the basis for several growth management initiatives that were approved at Town Meeting.

In 2004, a more refined buildout analysis was completed and continues to be maintained. The most significant change in the updated buildout was expanding the forecast to include multifamily potential in the downtown area as well as accessory apartments development and zoning provisions that allow two homes on certain one-acre parcels. The commercial buildout analysis was also completed on a parcel by parcel basis, based on Zoning constraints such as building height, lot coverage, and parking requirements.

The findings of the buildout analysis were used throughout this plan, and are summarized below.

Residential Build-out Findings

The following assumptions were made in the analysis:

1. Minimum lot size would remain at 40,000 square feet;
2. All further subdivision of land would be done to create the maximum number of building lots;
3. All large lots with existing homes would eventually be subdivided to the greatest extent allowed by law;
4. Wetland areas would not be developed;
5. 15% of the lot areas would be used for roadways and other infrastructure.

The amount of developable land, and land with additional development potential, was determined by analyzing all parcels in the assessor’s database. Land that was physically constrained and/or no longer available for development was removed from the calculations resulting in the amount and location of buildable upland that is both suitable and available for development. The remaining land was categorized by its zoning district to determine just how much development it could support under current zoning regulations.

Table 4-I: Town-Wide Buildout Potential

	Theoretical Buildout	Practical Buildout
Existing Dwellings	5,069	5,069
Potential Dwellings	1,820	1,645

Potential Accessory Apartments	1,267	317
Buildout Potential (in dwellings)	8,156	7,031

Source: Orleans Planning Department, 2004

Existing dwellings – includes single family homes, condominiums, apartments, accessory apartments

Potential dwellings – Represents total allowable development under present Zoning regulations, and consists of SFH, apartments, condominiums, apartments in Commercial Structures.

Potential Accessory Apartments – Under present Zoning, lots with 40,000 square feet of upland may construct one accessory apartment not larger than 800 square feet.

The total development potential is described above. However, it is estimated that a lower level of development will be the maximum “practical buildout” of the Town. This is based on many public discussions, knowledge of development trends, and anticipation of continued open space protection efforts. In addition, stricter development regulations would also have a lessening effect on potential buildout.

Theoretical buildout will likely be very difficult to reach. If historic building trends continue a more moderate level of build-out would be reached around 2040. At this time development activity would slow and become limited.

The development of community infrastructure such as public drinking water, sewer systems, and road networks requires an accurate projection of system demands. For such projects, a “planning horizon” is often anticipated based on a pro-rated percentage of overall buildout. In the case of wastewater management planning, discussed elsewhere in this Plan, the planning horizon is set at 2030, under the supposition that any capital facilities will be designed to serve community needs for at least 20 years after completion.

Commercial/ Industrial Build-out Findings

The Cape Cod Commission's 1996 Monomoy Capacity Study evaluated the full extent to which business properties could be developed in the future. A development potential formula was applied to each parcel in a business district. The process is described in greater detail in the Monomoy Capacity Study. The study reported Orleans as having the potential to support an additional 4.4 million square feet of commercial space. This forecast seemed high and since 1996 Orleans has implemented a number of zoning changes that would affect the potential of parcels to support new commercial and industrial space. Through a close examination of the Assessors records an estimate of the Commercial and Industrial Build-out is described in the table below:

Table 4-J: Commercial & Industrial Build-out Potential

	Theoretical Building Space Potential	Practical Building Space
Existing Commercial/ Industrial Space	1,300,000 s.f	1,300,000 s.f.
Potential New C/I Space	400,000 s.f.	275,000 s.f.
Total Potential Commercial/ Industrial Space	1,700,000 s.f	1,575,000 s.f.

Source: Orleans Planning Dept. / 2004 Assessors Data.

Under present zoning regulations, total commercial and industrial space in the town has the potential to increase more than 30%. In the last 15 years, however, Orleans has averaged only 6,700 square feet of new commercial space per year. Based on this figure, a “practical buildout” of commercial facilities is likely to be significantly lower, as shown in Table 4-J. Remaining commercially zoned land will likely be under-utilized or will be used for residential purposes.

Village Growth Centers

Village Growth Centers are defined as “Small, pedestrian oriented settlements which are suitable for a mix of residential and compatible small-scale commercial uses” (Cape Cod Commission, 1991). The potential for further development within village centers was determined by the using 2003 assessor’s data, MacConnell and Department of Environmental Protection (DEP) land use maps, and the Orleans Zoning Map. The analysis identified commercial development and vacant commercially developable land. The potential for further development was then determined for each parcel. Certain parcels are classified as having more than one development potential category. This may be due to their proximity to wetlands or other natural resources. As such, total parcels by development type (i.e. existing commercial property, vacant or developable commercial property, State Class Code parcels, and existing commercial property outside of a zoning district) may be less than the total development potential areas for that category.

East Orleans

The East Orleans Rural Business District has the potential for further growth. The following table describes both the existing and vacant commercial parcels in terms of their development potential. Not listed in the table is the potential for wholesale redevelopment in the district. Recently two commercial properties in the East Orleans RB district have been re-developed for residential use. This trend may continue as long as it is an allowed use in the RB zoning districts.

Table 4-K: Existing and Potential Commercial Development in the East Orleans Rural Business District

	Total Parcels
Existing commercial property	20
Vacant or developable commercial property	6
Properties developed for residential use	13
Total Parcels	39

Source: Town of Orleans, 2003

South Orleans

The South Orleans Rural Business District contains 6 parcels. Two of the parcels are currently developed for commercial uses, including a shopping plaza and a motel. Three parcels are currently undeveloped, although one is Town-owned and is used for a park. The final parcel within the district is developed for a single family home. Two properties adjacent to the Rural Business District contain office uses and have minimal development potential.

Further business development in South Orleans would have the potential to create increased traffic in close proximity to a major intersection. The RB district is located adjacent to the intersection of Routes 28, 39 and Quanset Road. This Rural Business District serves a growing area of the Town. It contains a post office and serves as a gathering place for residents of the area. The area should be studied for analysis of traffic issues and to determine the types of businesses that would be appropriate for the location. (LU-1)

Village Center

The table below inventories the existing development and the potential for new development within the downtown. The area is divided into three zoning districts, the General Business, the Limited Business and the Village Center District.

Table 4-L: Existing and Potential Commercial Development in the Downtown Area

	Total Parcels
General Business District	
Existing Commercial Property	60
Potential Future Commercial Property	11
Total Parcels, GB Zone	120
Limited Business District	
Existing Commercial Property	44
Potential Future Commercial Property	9
Total Parcels, LB Zone	130
Village Center District	
Existing Commercial Property	71
Potential Future Commercial Property	1
Total Parcels, VC Zone	106
Total	356

Source: Town of Orleans, 2003

Anticipated Population Change

From the residential build-out information presented above, it is possible to project population growth. The 2000 U.S. Census data were used to determine the year-round/seasonal occupancy ratio and the average number of persons per unit. If it is assumed that the year round occupancy ratio and number of residents per household will remain constant, build-out can be projected as shown in the following table. At build-out, the number of persons residing in Orleans is expected to increase by 32 percent over the 2002 population to a total of 9,135.

Table 4-M: Anticipated Population Change

Year-round Population (2004)	6,692
Number of Homes Occupied Year-round	3,117
Average # Residents Per Year-round Home	2.1
Percent of Home Occupied Year-round	60.8%
Total Potential New Dwellings	1,820
Total Potential New Year-round Dwellings	1,106
Potential Number of New Residents	2,322
Projected Population at Build-out	8,870

*:this does not include any accessory apartment development that would increase the projected population.

If, however, the ratio of year-round homes to seasonal dwellings continues to increase, as has been the trend over the past two decades, the build-out population could exceed 10,000 residents.

Residential Development Trends

The number of single-family building permits issued over the last twenty years has fluctuated around an average of 61 per year. The single-family home is the predominant form of development the town can expect in its future. Cape Cod is desirable as a retirement location and contains prime parcels available for residential development. Future residential development has the potential to significantly impact the quality of life for residents.

With the exception of the Village Center, all sections of the Town contain tracts of undeveloped land that could be subdivided for residential development. However, new development is most likely to occur as infill housing within existing subdivisions. The infill development of these areas will increase the residential density and inevitably result in a reduction of the semi-rural character of the community. In areas where development and redevelopment are possible, the town should encourage cluster development options in order to retain as much open space as possible. Most large lots with subdivision potential have already been divided or removed from available land through open space purchase or conservation restriction. Less than a dozen lots of 10+ acres exist which could be divided.

Land use regulations currently in effect are for the most part sufficient to preclude development from destroying environmentally sensitive areas, but remaining buildable upland will still be subject to development pressures. One way to reduce the build-out potential of the community is to acquire the development rights to parcels, either through acquisition or gift, creating conservation restrictions. Town residents have long recognized the importance of purchasing open space. The Town should continue to make open space acquisition a priority to protect the quality and character of the community. (OS-1, OS-3, OS-6)

Commercial Development Trends

Strip development is now perceived to be undesirable in Orleans due to its inconsistency with historic village patterns of development and the desire to create concentrated business locations. Strip style developments along Route 6A are automobile-oriented as opposed to the pedestrian-orientation of Orleans' villages. For instance, these commercial areas contain large parking lots in front of shopping centers and numerous curb cuts along the street. This results in a conglomeration of business signs and curb cuts along the streets corridor. Furthermore, the size and types of businesses located in these areas have a more regional focus, and therefore are dependent upon customers traveling by automobile. Left hand turns from Route 6A into business areas intensify traffic congestion in the summer months and cause drivers to take risks entering and exiting the flow of traffic.

A more desirable way to organize business activity is within specific nodes of development. In this type of arrangement, several businesses would be located in a central area. By clustering businesses, shoppers can park once and walk to a number of locations. This pattern of development will also result in fewer curb-cuts improving safety.

Three major nodes of business development and two minor nodes exist at this time. Major nodes include the Village Center, Skaket Corners, and the Cranberry Cove Plaza. Minor nodes of activity exist in the East Orleans and South Orleans Rural Business Districts. The Town should encourage new business development to occur in these areas and use zoning to discourage further strip commercialization. (ED-5) This issue is discussed further in the Growth Management Section of this chapter.

Orleans has long been regarded as the commercial hub of the Lower Cape. This will likely continue into the future, meaning that Orleans will continue to support more business activity than is needed to serve its own population. Encouraging development in development nodes should minimize the adverse impacts on the town serving as the business hub.

As seen in the business/industrial build-out analysis, Orleans had 1.2 million square feet of commercial space in 1996, with the potential to increase by an additional 60 percent. The potential for future business development is much higher than the potential for residential development. Residential growth at build-out is estimated to increase the population by over 30%. It appears that the amount of land zoned for business uses exceeds the expected market to be created by projected future residential growth. Although businesses generally do not maximize the development potential of a commercial lot (resulting in a somewhat inefficient consumption land for each development), there is still an over abundance of land zoned for business purposes. A percentage of existing General Business zoned land should be rezoned for other uses. (LU-2, ED-5)

Industrial Development Trends

The Cape Cod Commission defines industrial Growth Centers as “special districts designed to accommodate manufacturing, warehousing, transportation terminals, wholesale business and related uses.” Industrial development is permitted only in the Industrial District, located off Finlay Road. This is the area the Town has designated for construction and support services such as vehicle and machinery repair. In most cases, the businesses are purely functional, with little attention given to landscaping or other aesthetics. This gives the District an unattractive look. To the extent the Town may wish to attract more high technology businesses, it should seek methods of improving the appearance of the Industrial District. (ED-9, HC-14) This, in addition to incentives that could be provided to prospective companies, could provide the Town with a stronger economic base in the light industry sector. (ED-10, ED-11) This is discussed in greater detail in the Economic Development Chapter.

4.7.3 Impacts of Development Trends

The anticipated population growth and residential and commercial development will have an effect on the availability and efficiency of Town facilities and services, and will impact the town's appearance. Areas that will be impacted by growth include the Town's water supply, its transportation system, its amount of open space, the groundwater and coastal water quality, and its natural areas. Following is a brief discussion of the primary facility impacts of continued development and population growth. A more complete discussion of facility needs is provided in the Community Facilities and Services chapter.

Water Supply System

An increasing population will result in a corresponding increase in demand for water. Annual water use is expected to increase from a 2003 level of 231 million gallons (MG) to a 2020 level of 324 MG per year. Increases in demand become crucial when maximum daily demand approaches the daily system capacity. The Water Department is already responding to anticipated demand by beginning the regulatory approval process of adding a new well to the existing 7 well public water system. Orleans has also constructed an Iron and Manganese filtration plant to serve the wells, and enhance water quality. (CF-21, CF-22) These efforts will ensure that the Town is able to meet the water needs of the community in the foreseeable future. See the Community Facilities chapter for a complete discussion of water supply issues.

Wastewater

The current method for managing wastewater in Orleans is by individual septic system. Limited wastewater treatment options impact future land use by limiting the intensity and types of development that could be allowed in the Village Center and other development nodes. Desirable types of development, such as medical offices and theatres, are prevented from operating due to stringent state septic requirements. The costs of individual systems for these types of uses make such development unattractive.

This inability to concentrate development contributes to developmental sprawl. The Town has started to plan for alternative wastewater treatment options. As recommended and further discussed in the Community Facilities and Services chapter, the Town is developing a town-wide wastewater management plan to determine the appropriate treatment alternatives for various areas. (CF-27) Wastewater issues are discussed in more depth in the Community Facilities and Services and Natural Resources chapters.

Transportation

Transportation problems, including traffic congestion, are most pronounced during the summer season. However, projections by the Cape Cod Commission anticipate that off-season traffic congestion in 2015 will be equal to present summer traffic. These projections are alarming, and call for a comprehensive approach to transportation

planning that includes road capacity improvements, traffic management measures, and alternative modes of transportation. The growing transportation system, and corresponding road maintenance programs will continue to put additional demands on Highway Department staff and Town resources.

Enhancements, such as directional signs, would help to improve traffic circulation. (T-16) The existing parking regulations should also be reviewed to assure that they are appropriate for the community and that they encourage shared parking lots and driveways when feasible. (T-20) As the Cape Cod population continues to grow toward build-out, the transportation system will play a critical role in maintaining a healthy local economy and a high quality of life for Orleans residents. Transportation issues are discussed in more depth in the Transportation chapter.

Emergency Services

The Fire/Rescue and Police Departments will have to expand to meet future needs. As build-out is approached, both departments will require additional staffing and equipment. (CF-32) An addition to the Fire Station should be considered, as well as an expanded or new Police Station. With the larger population to serve, and the associated increase in traffic, a Fire/Rescue and/or Police substation should be considered for South Orleans. See the Community Facilities and Services chapter for a full discussion of these issues.

Education

Historically the majority of the population increase that Orleans has experienced as it approaches build-out consists of retirees, resulting in minimal impact on school enrollment. This trend is still dominant, but Orleans school forecasts show there will be nearly 400 additional elementary school age children at build-out. Even with the continued shift towards more retirees, additional school capacity may be required in the future. School enrollment projections presented in the Community Facilities and Services chapter reflect this trend.

Other Public Services

The fiscal impacts of new residential development in most communities are negative; that is, new residences usually create more demand for community services than they pay for in property taxes. The largest component of these costs is for the public school system. In Orleans, however, most new residential development accommodates retirees and seasonal residents who do not send children to the public school system. Development adds value to the tax base, increasing the overall assessment and lowering the tax rate. High value seasonal homes generally contribute more in taxes than they receive in Town services. Therefore, residential development in Orleans could be considered to have a positive fiscal impact if it continues to be consistent with past trends.

As the population grows, other community services will need to be supplemented including: Health and Human Services, the Council on Aging, Parks and Beaches, and

the Recreation Department. Town departments will be expected to expand facilities and services to meet the needs of a growing population. An in-depth discussion of current and future Town facilities needs is provided in the Community Facilities and Services chapter.

Community Character

Future development will also have a significant impact on the character of the town as natural areas are developed. This will be especially acute when infill lots in existing neighborhoods are developed. The benefits of open space dictate that the Town make a continued commitment to preserving natural resource areas to preclude population congestion and retain the semi-rural character of the community.

Opening access to the waterfront has the potential to dramatically improve residents' visual experience in the downtown. Also essential is the appearance of, and type of development along Route 6A and the downtown. Limiting sprawl patterns of development along parts of Route 6A through zoning provisions is recommended (ED-5)

In order to reduce the impacts of expected population growth, the Town must take action to manage future development in the community. This will require a combination of revising land use regulations and vigorously pursuing protection of open space. It is recommended that open space acquisition be a priority within the Town's overall land use plan. (OS-3)

Natural Resources

New development is impacting the water quality in our ponds and estuaries. Several water bodies in the town already show evidence of reduced water quality, including Arey's Pond, Kescayogansett Pond, and Mill Pond. The primary problem is cumulative nutrient loading from septic systems. The Town should continue to purchase land within the watersheds of sensitive water bodies, wherever possible, to reduce the development potential of these areas. Other options such as dredging to improve the flow should also be considered. As discussed above, the town-wide wastewater management study is under development and expected to be completed in 2008.. (CF-27)

4.7.4 Growth Management

The combination of a Town's zoning, subdivision, and other land use regulations and tools constitute its growth management strategy. These tools should be used in a coordinated, comprehensive way in order to reach land use goals. This section presents Orleans' growth management strategy and addresses many of the issues described in this chapter.

As a means for dealing with the anticipated impacts of population growth and the resulting demand for development of various types, and to protect and preserve Orleans' small town character, changes to existing land use regulations should be

considered. The recommended changes are intended to make regulations more consistent with the goals of promoting growth that does not adversely impact community values or environmental resources. This includes promoting growth that will be sensitive to Orleans' landscape and environmental resources, as well as preserve existing village centers, residential neighborhoods, historic resources, and agricultural uses.

Rules and regulations related to zoning, subdivision controls health regulations and conservation requirements help to guide where and how development may take place. However, revisions to existing regulations are needed if the Town wishes to enhance its residential, commercial, industrial and village areas. As discussed above, this can be accomplished by developing growth centers, or nodes. Focusing development in specified nodes will reduce the potential for strip commercial development and other types of development sprawl. The primary tool for creating and expanding these nodes is the Zoning Bylaw.

Transfer of Development Rights (TDR) is a planning tool by which the development rights for a parcel are conveyed to another location. The former parcel is preserved in a natural state and the density limit is increased for the "receiving" parcel. Because of high real estate values, this method may not work for land conservation, but it may be effective as a method for limiting nitrogen loading in sensitive watershed areas. This would require that a proposed development would have to offset the nitrogen loading impacts of the development by preserving other land within the watershed as open space. This concept should be further explored as part of the wastewater management planning process.

When public sewer is provided in a community, it often has the effect of spurring development. A betterment is charged to properties which gain frontage on the sewer line (and therefore have opportunity to connect). For commercial properties, this becomes an added business cost, and many business owners will wish to expand to generate addition revenue to offset the cost. At present on-site septic system requirements work as a development constraint on small business lots or businesses that require high wastewater disposal capacity, such as a restaurant or public assembly hall. Sewering eliminates the constraint. It is therefore important that the Town review and align other local bylaws and regulations while wastewater treatment recommendations are being formulated, so that growth is properly managed (LU-15).

Zoning Bylaw Revisions

Zoning Bylaw Definitions

To describe more accurately the type of development that is desirable in a particular area of town as well as to reflect changes in demographics and business types, several definitions should be reviewed, revised or added to the Zoning Bylaw as needed (LU-3), including:

- Customary or Self-Employed Home Occupations
- Hotel, Motel or Motor Inn

- Bed & Breakfast
- Restaurants
- Restaurant, Drive-in
- Restaurant, Fast Food
- Dog Kennels or Veterinary Hospitals
- Commercial Recreation vs. Amusement Park
- Theaters
- Dwelling unit
- Light Industry or Manufacturing
- Wholesale business

Revisions to Zoning Requirements

Residential District

It is recommended that the current minimum lot size of 40,000 square feet be maintained for residential development, and that alternatives to the traditional subdivision, including cluster development, should be encouraged. (LU-5)

As the Town moves closer to build-out, the zoning provision in chapter 164-22.A.7 should be given careful consideration for either revision or removal from the Zoning Bylaw. The provision allows for a second dwelling on a one acre lot that meets the criteria defined in the bylaw. This local exemption contradicts the town's one acre zoning by allowing a density that has not been supported by residents since 1982.

Business Districts

There are several issues relating to the business districts as they exist that should be addressed through Zoning Bylaw changes.

The uses allowed in the Village Center District should be carefully considered. (LU-6) It is recommended that the Town work with the property owners in the Village Center to identify additional zoning amendments that would enhance desirable characteristics. (LU-7)

- Zoning revisions should include provisions to encourage mixed-use developments in the Village Center. Mixed-use should be defined as "a planned development containing both business and residential land uses on a single lot." (ED-7) Detailed guidelines should be provided for these types of development to ensure that they are compatible with the village character.

District Designations

Business Districts

As mentioned previously, concentrated nodes of business activity should be encouraged in order to reduce the potential for strip development. Business nodes should be of sufficient depth to allow for options in site layout. This will allow for businesses to locate parking to the rear of the building and increase opportunities to take advantage of shared driveways reducing the number of curb cuts. The creation of business nodes also creates a pedestrian friendly environment and begins to define a sense of place along major transportation corridors.

Amendments to the Rural Business District boundaries in East Orleans should be considered in order to remove parcels from the district that are currently being used in a residential capacity. (LU-10)

Subdivision Rules and Regulations

The Subdivision Rules and Regulations currently lack a defined decision making process. Consideration should be given to adding a section that clearly states the criteria for Planning Board review. (LU-11) The criteria could be as follows:

1. Completeness and technical adequacy of all submissions;
2. Elimination of safety, health and/or traffic hazard, or other environmental degradation;
3. Conformity with Design Guidelines and the Zoning Bylaw
4. Efficient determination of proper environmental protection.

It is recommended that all new subdivisions of 10 or more lots be required to submit an environmentally sensitive development plan according to the provisions of the Open Space Residential Development provision of the Zoning Bylaw. (LU-5) This will allow smaller building lots, preserve open space and reduce infrastructure costs without allowing for an additional number of units above that permitted in a conventional subdivision.

Road Standards

Road standards are a primary tool for shaping the appearance and functioning of future development. The following is a discussion of the standards currently employed by the Town.

The Town currently has many unpaved roads that contribute to the rustic quality of particular areas within the community. In keeping with this characteristic, a rural road alternative is available for subdivision roads that serve no more than four dwellings. In general, a subdivision road servicing 1-4 dwellings must provide a road surface type that is hardened or contains gravel with a hardening base. Roads in this size subdivision must also provide a right of way of 33 feet and a road surface width of 14 feet. Roads

servicing five or more dwellings must be of bituminous concrete, 18-20 feet wide, and provide a 40-foot right of way.

Determining the pavement width of streets is of great importance in designing a residential area. Pavement widths have an impact on vehicular speeds, visual scale, the cost of construction, and maintenance. The width of the street should be based on the volume and type of traffic. Generally, the minimum width that will reasonably satisfy all realistic needs should be used.

The right-of-way width should only be as wide as necessary to accommodate the street pavement and other facilities and uses such as sidewalks, utilities, drainage, snow storage and grading. In instances where utilities are to be located under the street pavement and if sidewalks will not be included, a narrower right-of-way can be provided. Orleans requires that utility lines be placed underground in subdivisions with two or more dwellings and does not require sidewalks in subdivisions. Therefore, the right-of-way may be reduced from the standards above. However, if sidewalks are installed the current right of way width may be warranted.

The road standards discussed above are appropriate to adequately manage future subdivision development. No changes are recommended.

Erosion Control

As new development is forced to target less desirable building sites, slopes and other land characteristics can make the development more prone to causing erosion of sediments. Prevention of erosion, both during and post-construction is especially important near wetlands and other environmentally sensitive areas. In some cases sediment washes off construction sites into roadways, creating a public hazard. For these reasons, the Town should adopt a soil erosion and sediment control bylaw to mitigate the impacts of new development (LU-14).

4.7.5 Future Needs for Various Types of Land Uses

The following is a discussion of some of the land use needs that Orleans is facing. Some of these issues were also addressed in the Growth Management section above.

Affordable Housing

There is a demonstrated need for more affordable housing opportunities for young families. Orleans is in the midst of a trend toward larger homes with seasonal and retirement populations. Young working families are being priced out of the market.

The town should work with private developers to create an affordable housing component and allow apartments as a mixed use project in village areas. These issues are discussed in depth in the Affordable Housing Chapter.

Commercial

As stated above, the land currently zoned for General Business development would accommodate a 60% increase in business space. This seemingly exceeds the anticipated demand for business space based on build-out projections. In the past land has been rezoned from General Business to the more restrictive Limited Business zone and Village Center zone. Both zones allow many business opportunities but the rezoning effort removed what was perceived to be a surplus of land zoned for General Business purposes.

Industrial

The Town's Industrial District provides the location for support and service industries such as landscaping, vehicle repair, and warehousing/storage. These types of businesses are needed in the community. As the population continues to grow, the demand for support services will grow accordingly.

While there are opportunities for redevelopment, there are currently few vacant parcels in the Industrial District. Land for expanding the district in the future is unavailable because it is surrounded by the public watershed, the soon-to-be-capped landfill, and a residential neighborhood. It is therefore important that the land in the district be used efficiently to ensure that the service needs of the community can be met in the future.

Institutional/Government

As discussed in the Community Services and Facilities chapter, the Town will need new and expanded facilities to meet the needs of a growing population. This plan has identified the need for a new Highway Department/Public Works facility. Orleans will also likely need to accommodate wastewater facilities or components of facilities in the future such as sites for pumping stations, treatment plants or local package treatment plants, and areas for effluent disposal. There is also a need for the Town to acquire land in the Village Center for public parking space. The Town should conduct an assessment of all Town-owned facilities and properties to determine their potential to accommodate anticipated needs. (CF-1) Additional land should be identified and acquired as needed.

Open Space/Recreation

Orleans residents have expressed a strong desire to acquire and maintain additional open space acreage. This was exhibited in the results of the survey recently conducted for the Conservation, Recreation and Open Space (CROS) Plan, which indicated that 84% of respondents were in favor of Town-supported land acquisition. The primary purpose for such acquisitions, as cited by respondents, was for water supply protection and natural habitat conservation, as well as shoreline access. Open space preservation is discussed in more depth in the Open Space and Recreation chapter.

4.7.6 Areas in Need of Redevelopment/Revitalization

Village Center

The Village Center is the central gathering place in the community. It is the focus of community events and plays a role in the daily life of many residents. A recurrent theme in this Plan is to foster a vibrant community center that is attractive, functional, and meets the needs of residents and visitors alike. The Town should continue to pursue a vision for the Village Center that will maintain its character and economic viability into the future.

It may be appropriate to encourage some types of growth in this area in the future. Residents of the town have consistently supported efforts to make the area a more interesting, attractive, and economically vibrant place. The Village Center is also considered an appropriate location for apartments. Having people live/work in the village brings life to the area and fosters an active environment.

Orleans presently allows up to 3 apartments in commercial buildings within the Village Center, provided the primary use remains commercial. More units are permitted only if a parcel contains 60,000 square feet, and then only upon the granting of a Special Permit by the Zoning Board of Appeals. Few parcels in the Village Center contain the necessary land area. Consideration should be given in the near future to allowing more apartments on smaller parcels, in conjunction with community wastewater treatment availability, to encourage a stronger residential component of the Village Center (LU-16).

Industrial District

There are a number of underutilized parcels in the Industrial District. These have the potential for better organization to consolidate existing uses and allow for new uses on the remaining land. The appearance of the district also needs improvement, a process that is being accomplished over time through the Site Plan Review process as new uses are added to existing parcels.

4.7.7 Efforts to Conserve Energy

It is important that efforts be made to ensure that future development is responsive to the need to conserve energy. This Plan contains several recommended local actions to foster good energy conservation practices. The Town will incorporate efficiency into the design of Town facilities (CF-9). New developments will be required to place utility wires underground (HC-7). Increasing bicycle and walking networks is a top priority (T-29). The Town also vigorously enforces the energy efficiency requirements of the State Building Code.

4.8 Implementation Program

	Action	Time for Completion	Resources Required	Lead Responsible Agency
LU-1	Study traffic issues and determine appropriate uses for the Rural Business District that serves South Orleans residents.	FY 07-10	L	Planning Board
<i>LU-2</i>	<i>A percentage of General Business zoned land should be rezoned for less-intensive uses.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Planning Board</i>
LU-3	Consider revision of the Zoning Bylaw to include or modify definitions for the following: <ul style="list-style-type: none"> • Customary or self-employed Home Occupations • Motels/Hotels • Inns • Bed & Breakfasts • Restaurants • Restaurant, Drive-in • Restaurant, Fast Food • Dog kennels • Veterinary hospitals • Commercial recreation • Amusement Park • Theaters • Dwelling units • Light industry • Manufacturing • Wholesale business 	FY 07-10	L	Zoning Bylaw Task Force
<i>LU-4</i>	<i>Revise the Use Table of the Zoning Bylaw to reflect the following:</i> <ul style="list-style-type: none"> • <i>The Use Table should be reconfigured to provide better readability.</i> • <i>Apartments associated with commercial buildings within the Industrial District should be limited to 1-bedroom units.</i> 	<i>Addressed See Appendix</i>	<i>L</i>	<i>Zoning Bylaw Task Force</i>

LU-5	<i>Require all new subdivisions of 10 or more lots to submit an environmentally sensitive Open Space Residential Development plan.</i>	<i>Addressed See Appendix</i>	L	<i>Planning Board</i>
LU-6	Revise the Use Table of the Zoning Bylaws as it pertains to the Village Center District in order to emphasize the village as a unique area and to encourage uses that are consistent with a village setting.	FY 07-10	M	Zoning Bylaw Task Force
LU-7	Work with property owners in the Village Center to identify zoning amendments that would enhance desirable village characteristics.	FY 07-10	L	Planning Board
LU-8	<i>Evaluate zoning districts along Old Colony Way, considering existing land uses, traffic, and future growth potential.</i>	<i>Addressed See Appendix</i>	L	<i>Planning Board</i>
LU-9	<i>Expand the boundaries of the Village Center as appropriate to incorporate businesses on both sides of Main Street and Route 28.</i>	<i>Addressed See Appendix</i>	L	<i>Planning Board</i>
LU-10	<i>Amend the Rural Business District in East Orleans to remove parcels that would more appropriately be zoned for residential use.</i>	<i>Addressed See Appendix</i>	L	<i>Planning Board</i>
LU-11	<i>Revise the Subdivision Rules and Regulations to include a defined section that explains the decision making criteria for approval or denial of a subdivision plan.</i>	<i>Addressed See Appendix</i>	L	<i>Planning Board</i>
LU-12	Amend Subdivision Regulations to require submittal of an Open Space Residential Development Preliminary Plan for all subdivisions of five or more lots. Such amendment should include review criteria by which the Planning Board will determine the most appropriate type of subdivision.	FY 07-10	L	Planning Board
LU-13	Add Conservation Restrictions to municipal lands that are not needed for other municipal uses.	FY 07-10	M	Board of Selectmen
LU-14	Adopt a soil erosion and sediment control ordinance to minimize adverse impacts of development on adjacent and neighboring properties.	FY 07-10	L	Planning Board
LU-15	Amend Zoning Bylaw to mitigate possible unintended building growth from effective wastewater management facilities.	FY 07-10	M	Planning Board
LU-16	Expand apartment zoning in the Village Center, provided the street level is used for business purposes.	FY 07-10	L	Planning Board

Natural Resources



Tonset Road, Town Landing

5. Natural Resources

5.1 Overview

Orleans is located on an outwash plain in a temperate environment. The area has a wealth of natural resources that define the attractiveness of Orleans as a place to live. The natural environment also serves a role in the economy, attracting tourism and supporting commercial and recreational fishing. Future growth must be balanced with protecting these resources.

As land development progresses, so does the potential for damage to the environment. Sound land management policies can minimize adverse impacts. Planning is especially critical in coastal and wetland areas where much of the wildlife is fragile and cannot tolerate environmental changes. However, due to the beauty and uniqueness of these resources, areas near these features are desirable for development.

Clearly, human impact on natural resources is an issue that is multifaceted. One of the most pressing natural resource issues is the effect of nutrient loading on ground and surface waters. One of the highest priorities for the Town is to develop wastewater management solutions that will ensure protection of drinking water and the health of ponds, lakes, and coastal embayments.

Much of Orleans' economic, recreational, and environmental livelihood depends on natural resources. This chapter provides a description of Orleans' natural resources including an abundance of coastal areas, surface and ground water, and wetland. Of the 21 square miles that comprise the Town of Orleans, over one third is surface water or wetland. By analyzing this comprehensive inventory, potential actions and implementation strategies can be formulated based on the Town's goals regarding natural resources.

5.2 Goals & Policies

Groundwater Resources Goal

All new public supply wells will provide high quality drinking water without the need for treatment of biological or industrial contamination.

Policies

- Nitrate-nitrogen loading standards should be adopted that protect surface and ground waters, using as guidance a goal of 5 ppm nitrate-nitrogen loading for new development and redevelopment.

- Septic systems and other sources of contamination should be sited so as to avoid contamination of existing or proposed wells.
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Ensure that the mass of nitrogen entering coastal waters does not exceed a level that would accelerate natural eutrophication.

Policies

- Maintain nitrogen loading levels at a point below that which will accelerate natural eutrophication for all watersheds to coastal waters.
- Upon completion of the Town's wastewater management plan, set nitrogen loading limits for each watershed area, encompassing the entire town.
- Involve Harwich, Brewster, and Eastham in the development of nitrogen loading limits in watersheds that extend into those towns, to the extent possible.

Surface Water Resources Goal

To preserve and improve the ecological integrity of fresh and marine waters.

Policies

- The Town shall regularly monitor the health of local surface waters.
- Surface water standards should be set to ensure a suitable habitat for the protection and propagation of desirable fish, shellfish and other aquatic organisms; and to support fish and shellfish that are free of contamination that could pose a human health risk; and to ensure that the Town's waters are suitable for swimming without human health risk.
- In order to limit phosphorus inputs, no subsurface disposal systems should be permitted within 300 feet of mean high water of fresh water ponds unless the applicant demonstrates by a ground water study that the site's groundwater is not discharging to the pond. Where strict interpretation of the requirement would result in a regulatory taking, the setback to the pond should be the maximum feasible.
- Nitrate-nitrogen loading standards should be adopted that protect surface waters, using as guidance a goal of 5 ppm nitrate-nitrogen loading for new development and redevelopment.

Coastal Resources Goals

- To maintain coastal water quality that allows fishing, shellfishing, and/or swimming in all three estuaries, and to protect those coastal ecosystems which support shellfish and finfish habitat.
- To ensure that the Town maintains the integrity of its beaches for residents and visitors to enjoy.

- To limit development in areas subject to coastal storm flowage, particularly high hazard areas, in order to minimize the loss of life, structural and environmental damage resulting from storms, flooding and erosion.
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Policies

- Development and redevelopment along the coastline should not interfere with existing public access and traditional public rights of way and environmentally appropriate use of the shoreline.
- Public access to the shore should be encouraged where such access will not impair natural resources.
- Carrying capacity of all shore areas should be assessed before expanding parking areas or otherwise allowing greater use.
- No new direct, untreated stormwater discharges should be permitted into any coastal waters, wetlands, or fresh water ponds, including discharges above or below the mean high water level.
- Stormwater management systems proposed in V-zones should be designed to have a base elevation two feet above the base flood elevation. For systems proposed in A-zones, the base elevation should be designed to be one foot above the base flood elevation. In situations where this cannot be achieved due to low elevation, the Town may allow a system that provides maximum feasible compliance.
- All public or private commercial marinas should provide or contribute to the provision of adequate boat sewage pump-out facilities in each harbor and should provide restrooms for their patrons. Such marinas should also provide or contribute to provision of adequate collection facilities for solid waste and waste oil for their patrons.
- New dredging projects or expansion of existing dredging projects should not be permitted unless a substantial benefit can be demonstrated. For example, enhancement of fish or shellfish habitat, necessary improvements to navigational safety or maintenance of economic viability.
- To accommodate relative sea level rise, all new buildings should have the lowest floor set one foot above the base flood elevation in FEMA A-zones and two feet above the base flood elevation in FEMA V-zones, as shown on the most recent FEMA maps at the time of application.
- No new development or redevelopment should be permitted on barrier beaches and coastal dunes as defined by the Wetlands Protection Act and associated regulations and policies. Existing structures may be reconstructed or renovated, provided there is no increase in floor area (unless a public benefit can be demonstrated) or intensity of use, or conversion from seasonal to year round use.
 - A. If the reconstruction/renovation is greater than 50% of the replacement cost of a structure, and is located within a V-zone, the lowest horizontal structural member should be elevated at least two feet above the 100 year flood elevation. If the structure is located in the A-zone, the lowest floor should be elevated at least one foot above the 100 year flood elevation. On a barrier beach or coastal dune and in either the V- or A-zone, the structure should be on open pilings, to allow for storm flowage and beach and dune migration.

B. If the structure is on a barrier beach or dune and is outside the 100 year coastal floodplain, and is proposed to be reconstructed/renovated greater than 50% of its replacement cost value before reconstruction and renovation, it should be elevated at least two feet above grade on open pilings to allow dune migration.

Water-dependent public recreational facilities in these locations may be developed providing that it can be demonstrated that the proposed development will not compromise the integrity of coastal resources, and are appropriately elevated on pilings or floodproofed.

- Where fire, storm, or similar disaster has caused damage to or loss of buildings in FEMA A- and V-zones, on barrier beaches, coastal banks or coastal dunes of greater than 50 percent of their replacement cost, all reconstruction should be in compliance with current applicable regulations. Any reconstruction should not enlarge or expand the use of an existing structure.
- Except in village centers, no new public infrastructure or expansion of existing infrastructure should be made in flood hazard zones (FEMA A- and V-zones) unless it is shown that there is an overriding public benefit provided, and provided that such infrastructure will not promote new growth and development in flood hazard areas.
- Where land subject to coastal storm flowage is significant to the interests of flood control and storm damage prevention, no activity should increase the elevation or velocity of flood waters or increase flows due to a change in drainage or flowage characteristics on the subject site, adjacent properties, or any public or private way.
- Within the 10 year floodplain no activity shall impede the landward migration of other resource areas within this area of the floodplain. Relative sea level rise and the landward migration of resource areas in response to relative sea level rise shall be incorporated into the design, construction, and location of structures and other activities proposed.

Wetland, Wildlife and Plant Habitat Goals

- To ensure no loss of wetlands in Orleans will occur through development.
 - To prevent loss or degradation of critical wildlife and plant habitat, minimize the impact of new development on wildlife and plant habitat, and maintain existing populations and species diversity.
 - To protect standing specimen trees.
 - To protect all vernal pools in the Town.
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Policies

- Wetlands should not be altered except (a) for water-dependent projects where there is no feasible alternative and where appropriate mitigation is implemented, or (b) for installation and maintenance of utility lines where disturbed wetland areas are restored following construction or maintenance activities.
- Vegetated, undisturbed buffer areas of at least 100-foot width should be maintained from the edge of coastal inland wetlands including isolated wetlands, to protect their natural functions. This policy should not be construed to preclude pedestrian access paths, vista pruning, or construction and maintenance of water dependent structures, or dwellings,

within the buffer area, any of which may be permitted at the discretion of the Conservation Commission where there is no feasible alternative location or method available.

- Untreated stormwater should not be discharged directly into natural wetlands and waterbodies. New stormwater discharges should be located a minimum of 100 feet from wetlands and waterbodies.
- Developments should be planned to minimize impacts to wildlife and plant habitat.
- Clearing of vegetation and alteration of natural topography should be minimized, with native vegetation planted as needed to enhance or restore wildlife habitat.
- Fragmentation of wildlife and plant habitat should be minimized by the establishment of greenways and wildlife corridors, as well as by the protection of large unfragmented areas, and the use of open space planning.
- Development should be prohibited in vernal pools and within a 100 foot buffer around these areas, unless such buffer would result in a regulatory taking. In such cases, development should be designed to achieve maximum feasible compliance, as determined by the Conservation Commission.

5.3 Inventory

5.3.1 Coastal Resources

The coastal waters of Orleans are among its most prized attributes and one of the principal reasons that Orleans is such a desirable place to live and visit. The town has three separate productive estuaries within its borders – Cape Cod Bay, Nauset Harbor/Town Cove and Pleasant Bay, as well as frontage on the Atlantic Ocean.

Harbors & Bays

The Town of Orleans includes 9 square miles of Cape Cod Bay. Resources include three separate salt marsh systems (Namskaket, Little Namskaket and Rock Harbor Creek). Quahogs, scallops, lobster, and a large variety of commercially and recreationally important finfish such as bass, bluefish, flounder, tautog and tuna, populate deep water.

Nauset Harbor/Town Cove, which includes Nauset Marsh, is more than 1.8 square miles in size and is shared with the Town of Eastham. The estuary is widely used for many types of fishing. It is flanked by the Cape Cod National Seashore on the north and portions of the estuary are included within the National Seashore boundary. It is the most productive estuary for shellfish, exclusive of quahogs, in Orleans. It is a habitat for 59 species of fish and shellfish, and more than 90 species of other invertebrates (Roman et al 1989). The Atlantic Ocean is accessible from Nauset Harbor through a very unstable and narrow inlet. Nauset Spit, the barrier beach protecting the estuary, is a breeding area for several species of birds including rare terns and a threatened species, the piping plover.

Pleasant Bay, is 5.4 square miles in size and extends beyond the border of Orleans through Harwich into Chatham. The barrier beach is included in the Cape Cod National Seashore. Pleasant Bay is highly regarded for its prodigious amounts of fish, especially bass and bluefish. The bordering ponds associated with Pleasant Bay are known breeding territory for winter flounder. Historically, Pleasant Bay was an important area for quahogs with occasional large sets of bay scallops.

Areas of Critical Environmental Concern

Areas of Critical Environmental Concern (ACEC) in Massachusetts are designated by the Secretary of Environmental Affairs in order to identify and protect critical resource areas, including wetland and wildlife habitats, farmlands and scenic landscapes. Once an area is designated as an ACEC, all new developments must be reviewed under the Massachusetts Environmental Policy Act. A development or proposed use is not allowed in an ACEC if it is determined that it might have adverse environmental impacts on the area.

The Commonwealth has designated both Pleasant Bay and Cape Cod Bay as ACECs. The performance standards of the Conservation Commission for the Nauset System are the same as ACEC standards.

Shellfishing Areas

Shellfishing, a historic industry in Orleans, is still economically important. The Town is fortunate to have four major species within its waters: soft-shell clams, quahogs, scallops and mussels. Stock abundance fluctuates depending on natural conditions and harvest demands. In the last 5 years of harvest data available, the value of commercially harvested shellfish has been as high as 1.4 million dollars and as low as four hundred thousand dollars demonstrating the cyclical nature of the harvest.

Water quality must be maintained at a high level in order to be classified as open for shellfishing. With some exceptions, water quality has remained high enough to allow shellfishing. The Town continues to implement measures to protect its resources through a drainage remediation program, wetland regulations and environmental and wastewater planning.

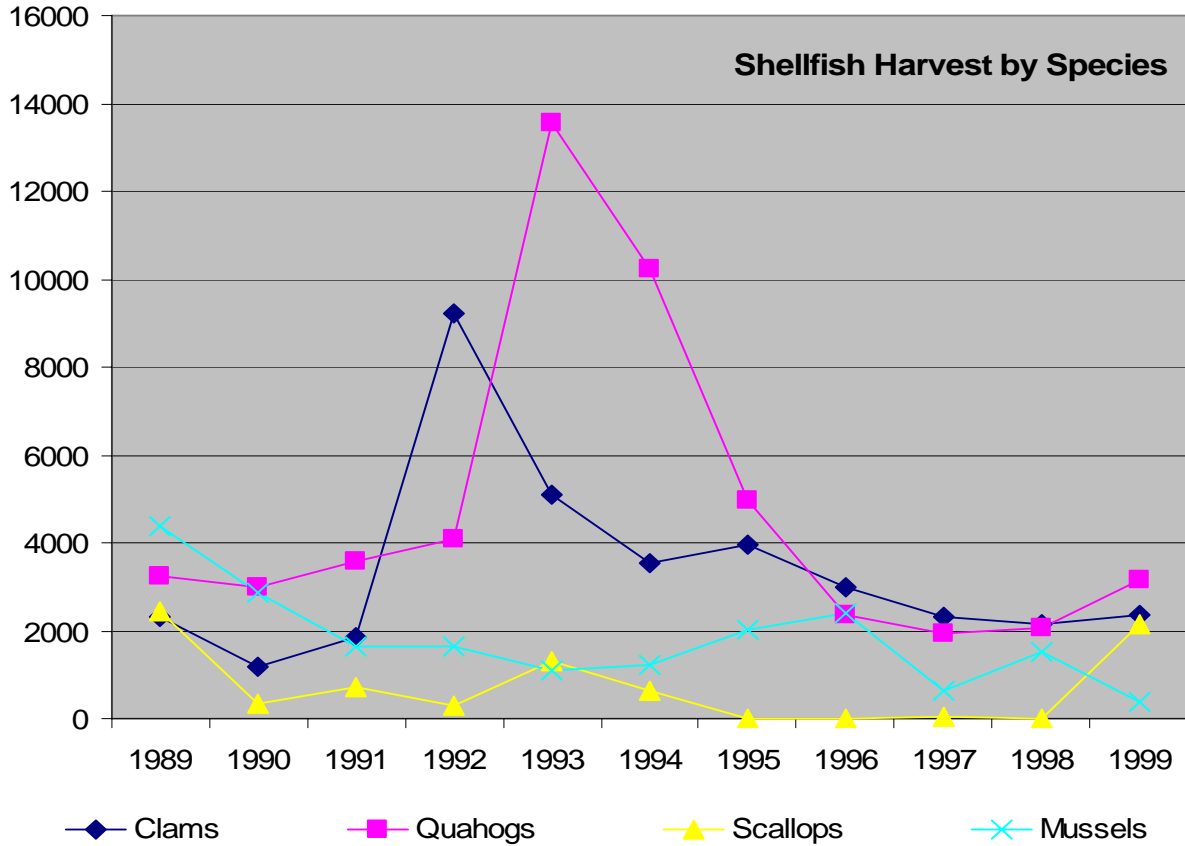
Level of Activity

In 2003, there were 198 commercial and 1,051 recreational shellfishing permits issued. Enforcement of shellfish regulations is performed by the Shellfish Department. The department has 2 year-round employees and 3 seasonal staff who assist with oversight and enforcement.

Catch reports, and total commercial value, identify that shellfish harvests since 1970 represent a cyclical nature of species populations. Staple species for local shellfishermen include quahogs and steamer clams. Less important species include scallops, mussels, and razor clams. Harvest statistics for any one species may be due to abundance or economics. Most species, especially scallops, are well known for the wide fluctuations in abundance. In past years high populations

of Green Crabs, a predator species to some shellfish, have reduced the amount of scallop brood stock having an effect on the abundance of the species.

Figure 5 - A



Propagation

Orleans has an active shellfish propagation program. Each year, the Town purchases seed quahogs and scallops that are released into local waters to grow to market size. The number of shellfish purchased each year has been .5 million to 1.5 million, depending on the availability of funds. The Shellfish Department has also participated in relay projects in which contaminated shellfish were harvested from other areas in the Commonwealth, shipped to a depuration plant, then transplanted to local waters. In June 2004, using grant funds from Barnstable County, the Town purchased 100 bushels of quahogs for transplanting.

From 1975 to 1990, the Town operated a shellfish propagation lab on the shore of Town Cove near the Goose Hummock Shop. Staff experimented with nursery and grow-out techniques, and produced up to one million seed shellfish annually. In 1990, it was determined that the local lab was not cost-effective and it was closed.

In recent years, the Shellfish Department has been successful in obtaining state and federal grants for a number of shellfish propagation projects. The department has experimented with catching spat on various media, evaluated, and utilized different grow-out box designs.

Aquaculture

Orleans has a small aquaculture industry, with 24 private grant holders (22 in Pleasant Bay, 2 in Nauset Harbor) who primarily grow quahogs and oysters. The Pleasant Bay Management Alliance has developed a format for a sediment survey of the bay's floor to be performed by Northeastern University to determine the potential for future aquaculture opportunities. The survey work is currently on-going.

Working Waterfront

Historically, Orleans' harbors and bays have been working waterfronts. Abundant fisheries were instrumental in the settlement of Cape Cod, and still play a role today. Rock Harbor, home to a winter fleet of quahog boats, also hosts the largest charter boat fishing fleet on Cape Cod in the summer months. Nauset Harbor and Pleasant Bay support a variety of fishermen, predominantly oriented towards shellfishing and lobstering.

Orleans currently has 4 water-dependent commercial areas: Goose Hummock Shop and Nauset Marine in Town Cove; Nauset Marine East Marina on Meetinghouse Pond; Arey's Pond Boatyard in Arey's Pond (Pleasant Bay); and the Rock Harbor fleet on Cape Cod Bay.

Shallow waters and shifting sands create less than ideal conditions for fishing boats. Rock Harbor is a tidal harbor usable only 2 hours before and after high tide. Nauset Harbor has constantly changing shoals and an extremely hazardous inlet to the Atlantic Ocean. Today, town landings are being used for fishing and shellfishing, as well as for commercial ventures such as tour boats, charter fishing, and rental of kayaks. Coastal Banks

Coastal banks of varying slopes and heights face the force of storms depending on the tide and wind direction. Even if they are well-vegetated and stable, a bad storm can undermine the toe of the bank causing it to slump and form a steeper grade. It is difficult for vegetation to grow on steep banks as they erode faster than those with a stable grade. The eroding soil from the bank serves a valuable function of supplying sediment to marshes and beaches.

The high coastal banks have the most commanding water views in town. Accordingly, most have been developed and many houses are constructed within 50 feet of the top of the coastal bank. Homeowners, fearful of the loss of valuable property, have requested permission to protect their banks and slow the rate of erosion.

The Town has permitted revetments totaling more than 1.5 miles of shoreline. The majority of the hazard prone shorelines have been protected through the construction of massive rock revetments as well as less imposing structures made of gabions (wire mesh filled with rocks) or coco fiber rolls. These structures reduce beach nourishment, an adverse impact of limiting

erosion. Because the natural systems are impacted, any new applications for revetments or other “hard” erosion control structures should be carefully evaluated before being approved.

5.3.2 Water Recreation

There are 24 town landings. Ten of these landings contain launching ramps for boat access. Parking is available at all but one of these facilities, though additional land for parking is scarce. Most of the town landings are little more than roads that end at the water. There is a waiting list for mooring space at many town landings.

The Marine Resources Survey (see appendix) indicated that expansion of parking at town landings was not a high priority, even though several landings are congested in the summer, especially on peak season weekends.

Priscilla Beach and Snow Shore Landing are the principle landings used for commercial fishing operations within Nauset Inlet. Conflicts arise between commercial and recreational users over equipment stored on the beach, odor of bait, and shortage of mooring space for non-commercial users since preference is given to commercial boat owners.

The following is a list of town landings that provide or enhance access to water bodies.

Table 5 - A: Town Landings

Location	Estuary	Ramp	Location	Estuary	Ramp
Rock Harbor	Cape Cod Bay	Y	Barley Neck (2)	Pleasant Bay	N
Goose Hummock	Nauset Harbor	Y	River Road	Pleasant Bay	Y
Yacht Club	Nauset Harbor	Y	Lonnie’s (1)	Pleasant Bay	Y
Asa’s Landing	Nauset Harbor	N	Lonnie’s (2)	Pleasant Bay	N
Gibson	Nauset Harbor	N	Arey’s Lane	Pleasant Bay	N
Ruggles Road	Nauset Harbor	N	Namequoit	Pleasant Bay	N
Tonset	Nauset Harbor	N	Portanimicut	Pleasant Bay	Y
Snow Shore	Nauset Harbor	N	Quanset	Pleasant Bay	Y
Roberts Cove	Nauset Harbor	N	Route 28	Pleasant Bay	N
Mill Pond	Nauset Harbor	Y	Pochet (Sparrowhawk)	Pleasant Bay	N
Doane Way	Nauset Harbor	N	Gilman Lane.	Pleasant Bay	N
Priscilla Beach	Nauset Harbor	N	Briar Spring	Pleasant Bay	N

Rock Harbor is home to a recreational and commercial sportfishing fleet. Maintenance dredging to keep the harbor open was last done in 1992 and again in fall of 2004. Dredge spoil has been placed on coastal dunes in both Orleans and Eastham. Dock and bulkhead facilities were reconstructed in 1999. Increasingly cold winters and subsequent ice flows sometimes displace the fender pilings. The Town is anticipating significant work at Rock Harbor involving the

replacement of a portion of the main bulkhead in fiscal year 2009 and has included this future work in its Capital Plan.

Boats of all types are being used for recreational and commercial activities including finfishing for bass, bluefish, flounder; shellfishing and lobstering. Gaining in popularity throughout the town are self-propelled forms of water craft such as canoes, kayaks and rowing skiffs. Pleasant Bay has historically been a mecca for sailboats and sailing remains popular. The Orleans Yacht Club has held sailing classes and races for many years in Town Cove.

Personal Watercraft

Personal Watercraft, commonly known as jetskis or waverunners, have been recently regulated in Orleans. The number of complaints about the noise, speed, and careless operation of these watercraft were enough for the Town to adopt regulations in the General Bylaws dealing with their operation. At the 2001 May Annual Town Meeting the Town voted to not allow Personal Watercraft to operate in the waters of Pleasant Bay, the Nauset Estuary, and within the boundaries of the National Seashore. The Town does still allow operators of PWC to launch at Rock Harbor and use their craft in Cape Cod Bay.

Aquifer and Groundwater

Orleans relies on the Monomoy Lens as its sole source aquifer for the municipal water supply. The municipal water supply is drawn from an area of nearly 500 acres located west of Route 28 in South Orleans, an area commonly referred to as the Watershed. An additional well site closer to Pleasant Bay has one well (#7). Groundwater in this area is part of the Monomoy lens of the Cape Cod Aquifer, an EPA designated sole source aquifer. The Monomoy lens, one of 6 distinct lenses on Cape Cod, spans the areas of the towns of Yarmouth, Dennis, Harwich, Chatham, Brewster and Orleans. The Orleans watershed is at the eastern edge of the Monomoy lens. The groundwater direction of flow to Orleans municipal supply wells is from west to east, primarily from the town of Brewster. Detailed information about the Monomoy lens can be found in the "Monomoy Lens Groundwater Protection Project," completed in December 1995, by the Cape Cod Commission.

As part of the research performed in preparation for this Plan, the Town retained the services of the Cape Cod Commission Water Resources Office to conduct a groundwater assessment for Orleans. Included in the report were maps showing (1) the locations of groundwater monitoring wells, (2) elevations of the groundwater table, and (3) identifying subsurface ground watersheds. These maps provide valuable information regarding the depth to groundwater, flow direction and contributing watersheds to each estuary which can be used to monitor water quality. Specific detailed information on the town's groundwater resources is available in the final report entitled "Orleans Water Table Mapping Project" dated May 1995.

Orleans has 7 wells capable of pumping nearly 5.0 million gallons per day (MGD). The potential site for adding an eighth well is currently in the licensing process. Detailed information on the infrastructure associated with the water supply is provided in the Community Facilities and Services Chapter.

Groundwater Protection

To further protect the groundwater, the Orleans Zoning Bylaw was amended in 1991 to include the delineation of Groundwater Protection Districts which provided a "legal framework for the protection of the Town's groundwater resources" (Orleans Code 164-17). The bylaw regulates land usage within districts varying as to their proximity and direction of ground water flow to the wellfields.

- District 1 includes the Watershed and the land around Well #7. Two additional parcels totaling 11 acres were purchased in 2002, with land bank funds, abutting the Watershed at the intersection of Rt 28 and Namequoit Road. Regulations state that only those uses that directly or indirectly relate to the protection or production of Town drinking water are allowed. All other uses are prohibited.
- District 2 consists of all land located within the Zones of Contribution for the public supply wells as determined by the Cape Cod Commission except for those zones of contribution which are within District 1. This district has land use regulations such as requiring that 30% of a lot is to be retained in its natural state and 60% of the lot area must be pervious to water. Storage and/or use of toxic or hazardous materials are prohibited. The installation of a sewage disposal system with a wastewater flow greater than 110 gallons per day per 10,000 square feet of lot area or 15,000 gallons per day regardless of lot size is also prohibited.
- District 3 is further from the wellfield and allows larger sized septic systems for residential development (only) but still prohibits the storage and/or use of toxic or hazardous materials and requires that 30% of the lot remain in its natural state.
- District 4 encompasses all areas not otherwise delineated and reverts to the remainder of the Zoning Bylaw.

5.3.3 Surface Water: Lakes and Ponds

The Town contains 107 areas of surface water with a total area of 233 acres. Water bodies range in size from less than 100 square feet to 45 acres (Pilgrim Lake). Seventeen of these areas are freshwater kettle ponds of two acres or greater. These water features are an important asset to the natural resources of the town as they provide wildlife habitat, recreational opportunities, and scenic landscapes.

Swimming, fishing, and boating in small craft are possible in many of the larger ponds. Baker's Pond, Cedar Pond, Crystal Lake and Pilgrim Lake are over 10 acres in size and are considered "Great Ponds." The state owns the bed and waters of all Great Ponds. The remaining 13 ponds are located throughout town with 5 ponds clustered in South Orleans (Uncle Seth's Pond, Shoal Pond, Deep Pond, Twinings Pond, and Sarah's Pond). Gould Pond and Wash Pond are located in the watershed area. All ponds, with the exception of Icehouse Pond in East Orleans, which is perched on a clay deposit, are visible extensions of the groundwater. They are dependent on the fluctuation of the aquifer's water table for their own surface level.

The activities at three of the Great Ponds - Pilgrim Lake, Crystal Lake, and Baker's Pond - are particularly important to recreation. Pilgrim Lake, which hosts the town's swimming classes, is

a very popular recreational area especially for small children. Amenities include floats for shallow and deep swimming, rest room facilities and parking. Crystal Lake is also popular for swimming but has only small parking areas on Route 28 and Monument Road. The Monument Road landing includes a sand beach and a ramp accessible to the physically challenged with a platform for fishing. Baker's Pond has a Commonwealth fishermen's landing, and the Town owns a conservation area with panoramic views of the water. Baker's Pond is stocked with trout by the Commonwealth annually.

All three lakes are important to wildlife, especially finfish. Pilgrim Lake is the one remaining terminus spawning pond for anadromous herring, that arrive each spring to spawn and whose offspring return to the sea in the fall. Historically, Crystal Lake was also a herring run as were several other ponds including Cedar Pond and Uncle Seth's Pond. Crystal Lake has been stocked for years with trout from the Massachusetts Division of Fish and Game.

The kettle ponds on the lower cape tend to be naturally acidic because of the lack of buffering capacity with the soil, unless they are influenced by their proximity to salt water. Acidic ponds support fewer pond plants and appear clear. Baker's Pond has been limed by the State Division of Fisheries and Wildlife to reduce acidity and support trout.

5.3.4 Wetlands

Wetland resources are important environmentally and for historical reasons. They provide important natural functions such as flood control, groundwater recharge, filtering of pollutants and nutrients, and providing wildlife and fisheries habitat. Wetlands offer recreational opportunities, such as birdwatching, fishing, and boating, as well as economic opportunities such as cranberry production. The buffer zones to these areas are not only the most likely to have archaeological significance but also the most likely to be developed.

Conservation Regulations

Orleans' Wetlands Bylaw builds on State provisions and includes some items that are stricter than the State Wetlands Act, MGL 131 s. 40:

1. State Act requires fresh water wetlands to be bordering on another resource area in order to be considered. The local Bylaw eliminated this requirement, so that isolated wetlands are also under local jurisdiction;
2. The Bylaw recognizes aesthetics as part of the approval criteria, which the State Act does not.
3. Orleans' Bylaw does not allow wetland replication as a mitigation measure.

Work that takes place in a coastal or inland resource area, as defined by the statutes above, is similarly regulated. The crux of the difference between the State and Town wetlands regulations is in the treatment of work in the buffer zone, which is defined as 100 feet landward of the most landward resource. For example, a coastal bank is more landward than a beach or marsh, and therefore it becomes the resource from which a 100-foot setback is measured.

Orleans has recognized that much development takes place in the buffer zone. Many homes have been built over time about 50 feet from the edge of a resource area. Therefore, the regulations attempt to manage the area from the edge of the resource area more strictly than land farther removed from the wetland. The first 25 feet of the buffer zone must be maintained in its natural state, including all natural vegetation. Between 25 feet and 50 feet, only those activities that will enhance the resources are to be permitted. Beyond 50 feet, construction can take place, subject to the review of the Conservation Commission.

Salt Marshes

Salt marshes play a vital role in the overall productivity of the estuaries. They are among the most productive ecosystems on earth and are home to a myriad of species. They provide habitat for countless species of plants and animals.

Salt marshes fall into two basic categories: large expansive marsh systems and fringe marshes. Orleans has large marsh systems in all three estuaries; Cape Cod Bay, Nauset/Town Cove and Pleasant Bay. Cape Cod Bay and Pleasant Bay have been designated as Areas of Critical Environmental Concern (ACEC) by the Commonwealth, and contain significant marsh systems (see Wetland Map). Overall, the town has 900 acres of salt marsh. The Nauset/Town Cove estuary has extensive marshes, the majority of which are in Eastham but there is a substantial marsh at the head of Town Cove. Cape Cod Bay has long marshes along the banks of Namskaket Creek, Little Namskaket Creek, and Rock Harbor. Pleasant Bay has extensive marshes on the west shore of the Nauset barrier beach and around Pochet, Sampson, Hog and Little Sipson's Islands.

All three estuaries also have fringe marshes - ribbons of marsh paralleling shorelines in areas of relatively low wave energy. Salt marshes help protect the shoreline by diffusing wave energy during storms. Rare species breed on the borders of the saltmarsh such as the diamondback terrapin.

In some respects, marshes are resilient to man's activities, but actions such as filling or building a revetment can eliminate a marsh system. The Orleans Wetland Bylaw augments the Wetlands Protection Act which protects salt and freshwater wetlands. Alteration to any wetland resource is prohibited except by strict variance procedure.



Orleans Comprehensive Plan: Wetlands



Freshwater Marshes

The total area of freshwater wetlands is estimated to be 150 acres but the exact figure is unknown. Not all local wetlands are found at low elevations below the water table, some are perched above a clay barrier in the soil. Wetland locations in developed areas have been recorded, but borders of known wetlands can expand in extremely wet years (such as 1996-1997). Wetland plants can thrive if there is enough water for a substantial portion of the year. Many rare plants grow around the borders of coastal plain ponds and bogs. Historical records in Orleans from the Massachusetts Natural Heritage Program identify the following pond shore species: pondshore knotweed, Plymouth gentian, black-fruited spike-rush, umbrella grass, and terete arrowhead.

A significant threat to salt and fresh water marshes is phragmites, an invasive plant that has become dominant in many wetlands in the region. Once this plant is established in an area, it takes over, displacing native species and reducing ecological diversity of the wetland. Phragmites has been observed in Town Cove, Meetinghouse Pond, and many other locations. The solution to this problem is difficult and complex, but it remains an obstacle to maintaining natural diversity in the marshes.

Invasive Species

Invasive Species establish easily, grow and spread rapidly, and are typically difficult to remove or destroy once they begin to proliferate. They commonly destroy habitat, threaten endangered species, and supplant the vegetation that makes Cape Cod unique. Orleans has established an Invasive Species Committee that is using volunteer help to identify and map invasives around town. The Committee is dedicated to gathering and conveying information on the presence, distribution, ecological impacts, and management of invasive plant species. In conjunction with the Conservation Commission, they are promoting the use of native or non-invasive, alternative plants throughout the town, and are working cooperatively with researchers, organizations, government agencies, and the general public to identify and encourage the management of invasive species.

Vernal pools

Vernal pools fill with water seasonally and are usually dry by the middle of the summer. Without continual water, these pools will not support fish. Vernal pools are a breeding habitat for amphibians, including some rare species, because of the absence of fish which would feed on their eggs and young. Under the revised Wetland Protection Act, all certified vernal pools are subject to protection. There are 40 certified vernal pools in Orleans.

White Cedar Swamps

The 1990 Critical Habitats Atlas for Cape Cod identifies six separate wetlands dominated by Atlantic White Cedar in Orleans, most of which are privately owned. However, a six acre white cedar swamp located at the head of Little Namskaket Creek is owned by the Orleans Conservation Trust and the Town owns 22 acres of a white cedar swamp on Namequoit Road.

5.4 Analysis

5.4.1 Coastal Resources Analysis

Shellfish Analysis

Level of Activity

While the Shellfish Department has been able to add purchased seed to the local resource, they lack the manpower necessary to expand the existing program or to monitor survival rates necessary to evaluate the success of the program. During the summer season, the Department has a staff of five, which also provides harbor management and enforcement services. This can be compared to Chatham, which has a larger fishery and employs up to 15 part-time shellfish constables in the summer. Consideration should be given to increasing staffing in the Shellfish Department.

The Shellfish Department has in the past worked with the schools on environmental education. It may be practical in the future to develop a curriculum that involves students in monitoring shellfish stocks and/or assisting in shellfish propagation programs. (NR-1)

Propagation

The Town abandoned its shellfish hatchery in 1990. At the time, it was not a cost-effective means of developing seed stock to augment the local resource. Since that time, significant innovations have occurred in the aquaculture industry that could be utilized in a local hatchery. A shellfish hatchery would likely require the efforts of a full-time aquaculturist, but could yield benefits to the local shellfish industry that would outweigh the costs. If a hatchery was successful in increasing local shellfish stocks, it would seem appropriate that a portion of the fees for shellfish permits be used to fund the operation of the facility. (NR-2, NR-3) To do this the Town would have to establish a revolving fund based on permit fees that would be used for resource enhancement programs. (NR-4)

Aquaculture

Shellfish grants have been demonstrated to be economically viable in Pleasant Bay and Nauset Harbor. There are currently no plans to expand the number of grants, but the potential should be explored. (NR-5) To that end, the Pleasant Bay Management Alliance has begun surveying Pleasant Bay to determine which areas, if any, may be suitable for future grants, work is currently on-going. Nauset Harbor has already been determined to have such abundant natural shellfish resources as to preclude any expansion of shellfish grants in the future.

An expanded aquaculture program in the town could have a number of benefits. Cultured shellfish would augment the natural fishery providing seed that would be carried by tidal currents to natural areas. The industry is also an environmentally benign form of economic development. Increased aquaculture activity would generate revenue for growers, much of which would likely be spent in local shops.

There are several issues that must be considered before additional grant areas are approved. Navigational hazards caused by pens and markers must be minimized to avoid conflicts with recreational boaters. Aesthetic issues are a concern to waterfront neighbors. The impacts of wildlife habitat loss and reduced genetic diversity should also be evaluated. The benefits and impacts of expanded aquaculture in the town should be fully explored.

Overall Shellfish Management

An overall shellfish management plan is needed to establish methods for maintaining and enhancing shellfish stocks. (NR-2) An inventory of shellfish habitat areas should be conducted to determine baseline data as to the type and abundance of shellfish in each area. Shellfish users groups need to be identified, including non-fishermen who might be affected by shellfish activities or future aquaculture, i.e. waterfront property owners, recreation boaters, etc. Areas of local waters that need attention should be prioritized. These may include land uses that affect water quality, shellfish beds that experience over-harvesting, and the possibility of setting aside areas for recreational permit holders. (NR-3)

Shellfish resources provide benefits to the community in quality of life, residential enjoyment, and economic benefits. This plan recommends that an overall shellfish management plan be developed and funded to ensure continued viability of shellfish resources.

Coastal Water Quality

The major pollutant sources that affect coastal waters have been determined to be atmospheric deposition, septic systems, stormwater runoff, and domestic fertilizers for lawns. Scientific data varies as to the percentage of total nitrogen contributed from each source. As a rule of thumb, the source of non-atmospheric nitrogen loading is approximately 75% from septic systems, 15% from fertilizers, and 10% from stormwater.

Flushing times of local embayments play an important role in determining what the water quality will be in the bay. Areas with slow flushing times, such as salt ponds, are more sensitive to pollutant loading because the pollutants have a higher residency time in the water body. Biological and chemical pollutants contribute to water quality degradation, impacting the natural ecology and the quality of life of people who use the shore.

Past Studies and On-Going Research

In 1991 the Buzzards Bay Project (USEPA and EOEA, 1991) reviewed water quality information for coastal embayments and correlated the effects of nitrogen loading in rapidly-flushed shallow embayments to the residence time of the water in them. In larger bodies of water with a long residence time, the size of the pond and the amount of nitrogen entering the system could be used to estimate nutrient loading.

In 1997, the Woods Hole Oceanographic Institute modeled the flushing times for Nauset Harbor/Town Cove based on one and two inlets. The calculations were based on the present situation of one inlet. The findings indicated that although the main body of the embayment

flushed rapidly (every 14 hours), Mill Pond took 16 days and Salt Pond in Eastham took 113 days to flush.

In 1998, a study on nitrogen loading in Pleasant Bay was completed by the Water Resources Office of the Cape Cod Commission. The study incorporated building density, groundwater flow and flushing rates to determine limits of nitrogen that the embayments could assimilate with no adverse effects. These flushing models can be used to estimate nutrient loading and land use policy decisions. The study found that the upper salt ponds of Pleasant Bay were approaching eutrophic levels. Ponds affected include Arey's Pond, Kescayogansett Pond, Pah Wah Pond, and Meetinghouse Pond. Further development within the watersheds bordering Pleasant Bay will exacerbate the situation unless nutrient loading can be reduced.

In October 2000, Orleans began the process of developing a town-wide Wastewater Management Plan with the formation of Wastewater Management Steering Committee. Wastewater planning in Orleans is seen as the lynchpin to the town's future. The process currently under way will have an impact on the natural environment, and also impacts village center planning, affordable housing, and economic development.

Beginning with the summer of 2001, the Town completed 4 years of comprehensive water quality testing of marine waters and significant freshwater sources. More than 100 volunteers were trained to collect semiweekly samples from 46 sampling stations throughout the summer months. This effort was initiated under the guidance Dr. Brian Howes of the University of Massachusetts, School of Marine and Science Technology. SMAST has developed a program for coastal water quality modeling that has been adopted by the state as part of the Massachusetts Estuaries Project (MEP).

On a parallel track, the Orleans Water Quality Task Force has begun testing and evaluating each of the town's fresh water ponds.

Orleans voters allocated \$375,000 for the development of environmental modeling of all marine water bodies in the town. This scientific data is necessary to understand what needs to be done to restore healthy waters. The funding has been accepted as the local match required for participation in the Massachusetts Estuaries Project (MEP). Orleans embayments are listed on the MEP priorities list, with water quality modeling reports expected in June 2005.

In addition to water quality modeling work, the Town of Orleans has two supporting studies also underway as of 2004. A federally funded Wastewater Management District study is examining the financial and administrative aspects of managing wastewater in Orleans. Also, Barnstable County has funded a feasibility study of the Tri Town septage treatment plant, exploring both continued use and options to expand treatment on the Tri-Town site. Both studies are detailed further in the Community Facilities chapter of this plan and are expected to be completed prior to the delivery of water quality models as part of the MEP.

Water quality data suggest that Town Cove and Pleasant Bay are being adversely affected by nutrient loading. Observation and anecdotal information reveal that algal areas have increased, eelgrass beds have diminished, and odors from bottom mud are more prevalent - all indicators of a change in the ecology caused by nutrient loading. The Town should consider the merits of

declaring these embayments as Nitrogen Sensitive Areas and developing regulations that limit nitrogen loading from both residential and business sources. (NR-8)

Nitrogen Sensitive Areas would include tidally restricted embayments which do not flush nutrients out of the water body quickly enough to prevent eutrophication. The sensitivity of a water body to nitrogen pollution would depend on such factors as contributing watershed, depth of water, residency time, etc. Solutions to excessive nitrogen for areas would need to be tailored to the specific conditions, and might include nitrogen-removing septic systems, community systems, or small, private wastewater treatment facilities.

The Department of Environmental Protection requires that Nitrogen Sensitive Areas be mapped based on scientific evaluations of the impacted water body. DEP places septic system limits on these areas so that no system releases more than 440 gallons of effluent daily per acre. This level may not be sufficient to protect water bodies from the effects of eutrophication. However, Title 5 permits local Boards of Health to adopt stricter regulations than the State for this purpose.

It has been documented that nitrogen from septic systems does not attenuate as it travels through the sub-soils and passes into the groundwater. The speed at which the groundwater travels has been estimated at 1 foot per day, meaning the adverse effects of nitrogen loading on water quality may not be fully reflected for several years. Alternative wastewater solutions must be explored if the Town is to reverse this trend of diminishing water quality due to nitrogen loading. (CF-27) Town Cove receives groundwater from the Village Center area, so the most beneficial approach may require some type of communal wastewater treatment facility or facilities. Around Pleasant Bay, where building densities are lower, other nitrogen-removing systems may be considered required.

Wastewater Impacts

Septic system effluent has been found to be the primary source of contaminants that cause coastal water quality degradation. In a conventional septic system, though most bacteria are removed from the wastewater, nutrients, particularly nitrogen, pass through and enter into the groundwater table, eventually discharging into coastal waters.

The effect of releasing additional nitrogen into water bodies is the same as applying fertilizer. Excessive plant growth can choke out other species, creating less diversity and disturbing the life cycle of many marine animals. For example, immature bay scallops require eelgrass, a plant that is highly sensitive to changes in water quality. Increased plant growth is also a component of eutrophication. When this growth dies off, the material left behind begins to decay, using up oxygen in the process. Low oxygen levels can cause fish kills and other harmful effects. The MWQTF began investigating nutrient levels in 1998. Data collected indicate that many of smaller ponds and coves at the head of Pleasant Bay are being affected by nitrogen loading. Kescayogansett Pond and Arey's Pond exhibit evidence of eutrophication at this time.

A Comprehensive Wastewater Management Plan is needed, and is recommended in the Community Facilities & Services chapter. This planning process has begun. Voters approved the first phase of the wastewater study at the May 2000 Town Meeting. In May of 2004 voters supported funding the second phase of the Comprehensive Wastewater Management Plan with

a scheduled completion date of 2007. The plan will recommend treatment options and facilities needed to protect the Town's coastal waters from the adverse effects of development.

"The Town may consider zoning and other regulatory measures to limit development within watersheds to sensitive coastal waters. Although most subdivision activity has already taken place, the Town should consider actions to limit nitrogen loading associated with future development.

"There are several measures that have the potential to help mitigate nitrogen loading associated with wastewater. Open space acquisition reduces overall development potential, along with the associated impacts of development. Transfer of Development Rights (TDR) is a concept by which nitrogen loading could be prevented in critical areas and allowed to occur in less sensitive locations. Land Averaging is a similar concept, except that nitrogen loading credits would have to be purchased by owners of small lots to ensure that the overall loading in the coastal watersheds stays below critical loading limits.

It is impossible to address nitrogen loading issues for Orleans without recognizing the environmental connections to Brewster, Harwich, Chatham, and Eastham. Groundwater does not respect political boundaries and much of the Town's groundwater basins lie in those surrounding towns. For example, nearly two-thirds of the watershed for Pleasant Bay is outside Orleans. Predicated on the results of the wastewater management plan, it may be necessary to designate the Pleasant Bay watershed as a District of Critical Planning Concern (DCPC) so that protective regulations can be developed. The Town should foster a working relationship with Brewster, Chatham, and Harwich to explore this possibility. This planning mechanism would allow the towns to concentrate on developing appropriate controls to limit nitrogen loading to the Bay.

Because the detrimental effects of nitrogen loading have significant environmental consequences, the Town should not stand in the way of residents who wish to install alternative septic systems. Encouragement of alternative septic systems should be done in a way that does not preclude congregate treatment options in the future. When the comprehensive Wastewater Management Plan is completed more stringent treatment may be required that can be achieved with advanced alternative systems. In addition, centralized or community septic systems may be needed in some areas of the Town.

Stormwater Runoff Impacts

Stormwater runoff has also been found to contribute to coastal water quality degradation. Untreated stormwater runoff from roads, parking lots, and residential areas carries contaminants such as petroleum products, fecal coliform bacteria, lawn pesticides and herbicides, and nutrients, including nitrogen. Testing for fecal coliform bacteria is used as an indicator of water quality for public health purposes. The safety of coastal waters for shellfishing and swimming is determined through water quality analysis for fecal coliform concentrations.

The Town formed the Marine Water Quality Task Force in 1987 to determine means to prevent fecal coliform from entering coastal waters. The Task Force identified all direct discharge points in the town, and instituted an extensive water quality monitoring and analysis program.

The Town instituted a drainage remediation program to mitigate the problems identified by the taskforce. All storm drains were mapped and prioritized. Five major drains were corrected in 1993 and five more were completed in 1999. In 1997-1998, the Town expanded its efforts to study the eutrophication effects of five sub-embayments: Meeting House Pond, Kescayogansett Pond, Areys Pond, Paw-Wah Pond and Quansett Pond.

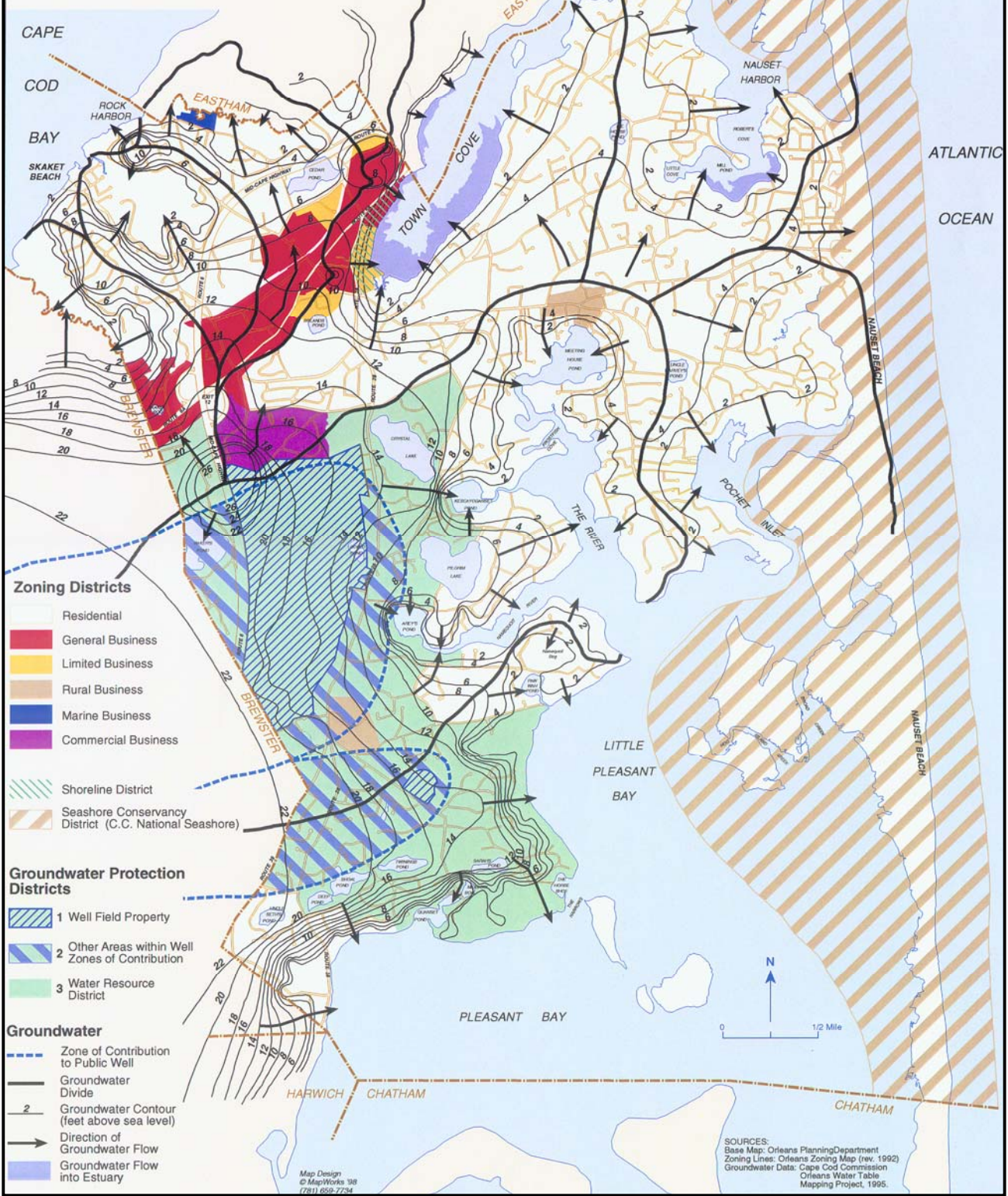
It should be the policy of the town of Orleans that no untreated stormwater be discharged directly into coastal waters. The Town should continue to support and fund coastal water quality monitoring and remediation of existing problem drainage sites. (NR-7)

Groundwater Impacts

Studies show that the areas of high groundwater intrusion are also the areas of highest nutrient content in the water. The dominant land-based source of nitrogen is septic waste from both approved Title 5 septic systems and older cesspools. A secondary source is landscape fertilizer. Controlling the extent of the problem is directly related to land use practices by individual homeowners. Policies to restrict or eliminate fertilizer, especially on lawns within 100 feet of a wetland, would help reduce the amount of excess nutrients that reaches these areas. (NR-9, NR-10) Without policies to promote alternative septic designs that reduce nitrogen at the source and prevent it from entering the ground water, the bays and other water bodies will continue to receive damaging nitrates for years to come.

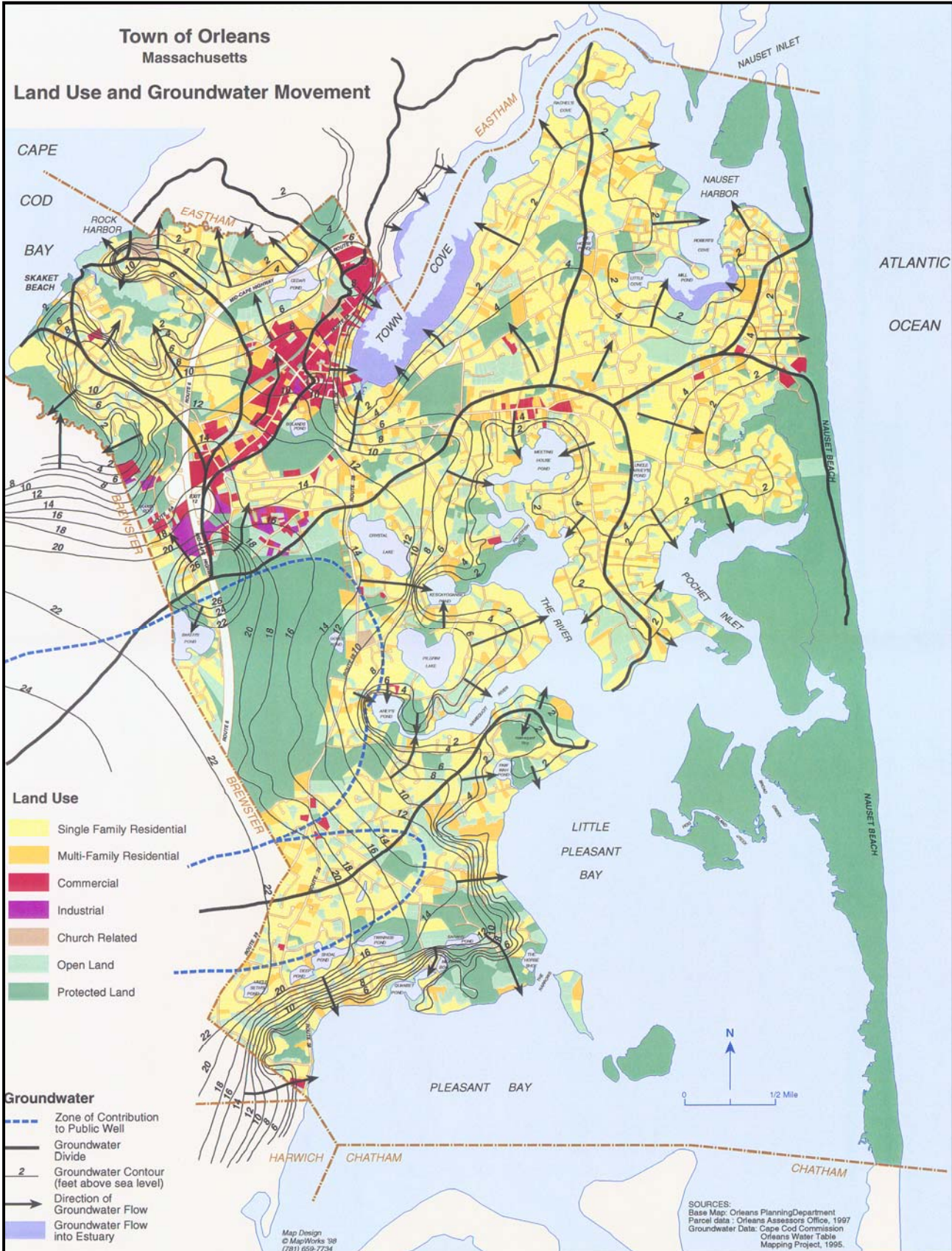
**Town of Orleans
Massachusetts**

Zoning and Groundwater Movement



**Town of Orleans
Massachusetts**

Land Use and Groundwater Movement



Land Use

- Single Family Residential
- Multi-Family Residential
- Commercial
- Industrial
- Church Related
- Open Land
- Protected Land

Groundwater

- Zone of Contribution to Public Well
- Groundwater Divide
- 2 Groundwater Contour (feet above sea level)
- Direction of Groundwater Flow
- Groundwater Flow into Estuary



Map Design
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SOURCES:
Base Map: Orleans Planning Department
Parcel data: Orleans Assessors Office, 1997
Groundwater Data: Cape Cod Commission
Orleans Water Table
Mapping Project, 1995.

Beach and Shoreline Protection

Flood zones

Federal Emergency Management Agency, (FEMA) maps show that extensive areas of the Town are located within the 100-year flood zone. Low elevation properties around the marsh creeks of Cape Cod Bay, Nauset Harbor and Pleasant Bay are presently at risk from flooding. The flood zone maps for Pleasant Bay were adjusted after the 1987 breach in Chatham from the 10-foot contour representing the 100-year storm level to the 13-foot contour. As a result, the flood zones were expanded.

Although the Building Code allows construction in the flood zone, it is not considered desirable due to the potential for storm damage. Flood insurance maps supplied by FEMA show the location of Velocity Zones (V Zones) within Orleans. These are “areas of the 100-year flood zone with velocity (wave action),” which can cause significant damage to buildings and structures. The Town should discourage building in the FEMA V zones, which are areas subject to coastal storm wave action and currents. (NR-11)

5.4.2 Surface Water: Lakes and Ponds

Water quality in the ponds is considered good, and at present there are no indications that the ponds are affected by pollution, with the exception of Cedar Pond (discussed below). Nonetheless, pollution of ponds in other towns has occurred. In fresh water, phosphorus is the limiting factor which keeps plants and algae from excessive growth. Direct discharge of stormwater into surface waters is prohibited. (NR-12) Currently, the Town has monitoring programs for both its salt water areas and fresh water ponds.

The water quality of Cedar Pond (a Great Pond) is poor, resulting in fish kills and algae blooms. Increased industrial and residential development near the pond and its location next to Route 6 has contributed to its decline. However, a major pollutant source is the hundreds of cormorants that frequent the pond in the summer and roost on the power lines over the water. In 1999, the Town started a program to prevent the birds from roosting on the power lines by scaring them off with loud noises in the afternoon. This approach has been met with good success limiting the pollution from the birds.

5.4.3 Water Recreation

Issues at Public Beaches

Nauset Beach has a 1,000 car capacity parking area, bathhouse and concession stand. It is the starting point and check-in area for off-road vehicles to travel toward Chatham. The Atlantic shore continues to erode, reducing the beach area. In 2002, the Town installed a new septic system beneath the parking lot, further away from the beach. Funding is currently being sought to renovate the bathhouse and concession stand.

A new parking area further from the beach may be needed if the existing area is rendered unusable by erosion. At this time there is approximately 250 feet of dune area between the parking lot and the ocean. The current erosion rate of Nauset Beach is approximately five feet per year. At this rate the waters edge may reach the parking lot in approximately 50 years.

Skaket Beach on Cape Cod Bay has a 170 car capacity parking area, bathhouse and concession stand. The popularity of this beach is greater than its parking capacity. The beach suffers from erosion but the Town has a permit to excavate sand from the extensive surrounding sand flats and to place the sand on the beach. Beach nourishment by the Town should continue at Skaket Beach to maintain existing recreational opportunities. (NR-15)

Pleasant Bay on Route 28 in South Orleans has a small beach with limited parking on the State highway. There are no public facilities. The Town owns several acres of open space land across the highway but it was purchased with the caveat that it would not be used for parking. The area is one of the most popular mooring areas for Pleasant Bay. There have been no plans or proposals to increase either the beach area or parking facilities.

A critical area of parking need is at Crystal Lake, where beachgoers routinely park along public streets when the small parking area is full. However, before expanding any beach parking areas, the Town should carefully consider what the maximum usage of the beach should be so that excessive use does not ruin the desirable features of the area. The Conservation Commission manages the area, and in 2001 determined that more parking would lead to excessive use of the small beach area. ADA-compliant portable restrooms are located at the site during the summer season.

Docks & Piers

As more homes are built along the coast, there is a concern that increasing the number of docks and piers will have an adverse impact on water quality and the public's ability to enjoy the shore. In 2001 the Pleasant Bay Alliance member Towns adopted regulations that prohibited new docks and piers in most of Pleasant Bay.

Discharges from Boats

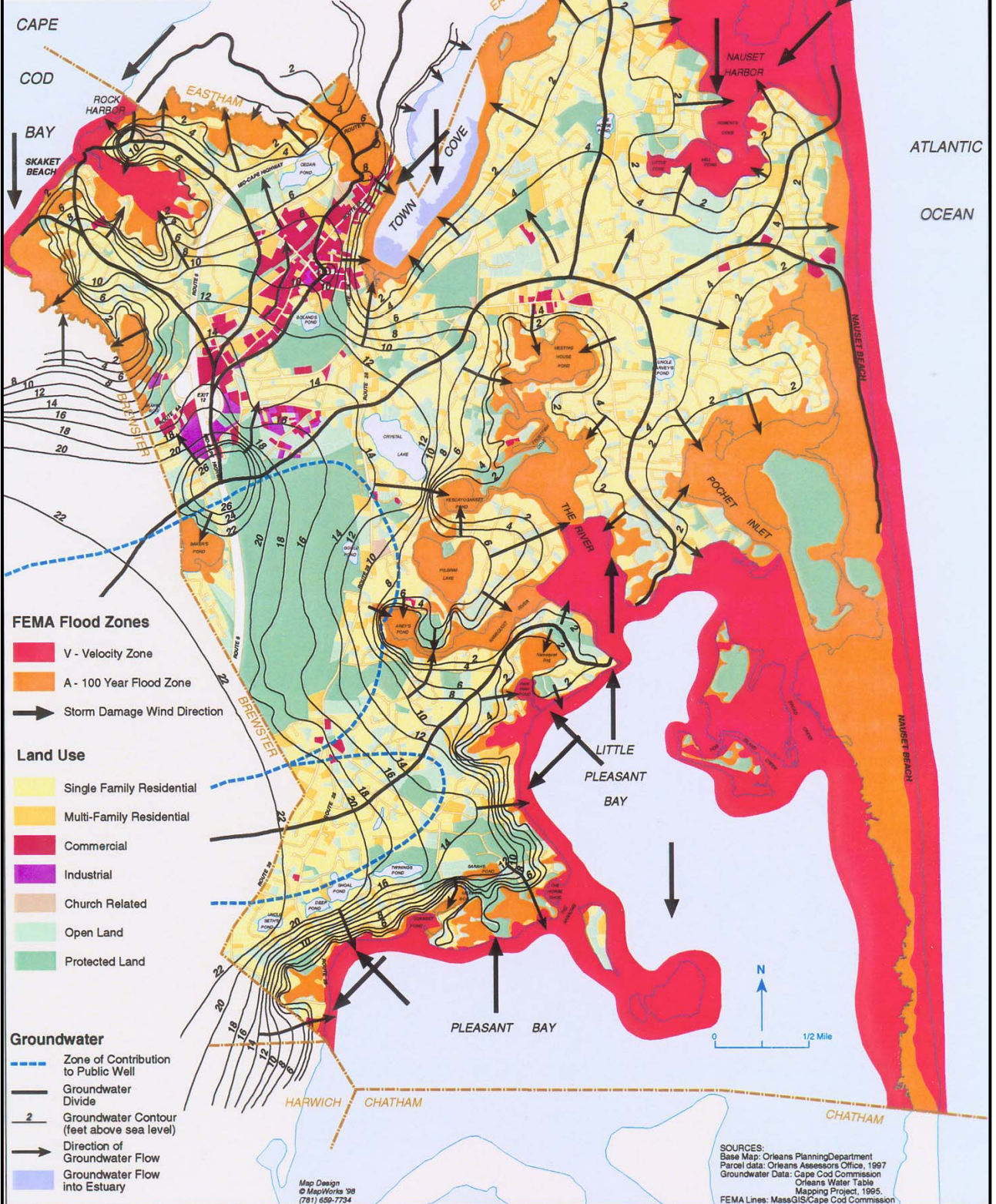
An important source of coastal pollutants is wastewater discharged from boats. The Commonwealth has begun the process of declaring all waters in the State as no-discharge zones. Until this action is completed, it is recommended that the Town declare all waterways in Orleans as "No Discharge Zones." In addition, the permitting process for docks and piers in salt and fresh waters should follow clear criteria for water quality and shoreline preservation. (NR-17)

5.4.4 Aquifer and Groundwater

The 13.1 square miles of upland in Orleans flow into 10 separate watersheds. Of immense importance is the area around the center of the town where the flow is in three different

directions. A complete description of the public water supply system may be found in the Community Facilities & Services Chapter.

**Town of Orleans
Massachusetts
FEMA Flood Zones
with Land Use and
Groundwater Movement**



FEMA Flood Zones

- V - Velocity Zone
- A - 100 Year Flood Zone
- Storm Damage Wind Direction

Land Use

- Single Family Residential
- Multi-Family Residential
- Commercial
- Industrial
- Church Related
- Open Land
- Protected Land

Groundwater

- Zone of Contribution to Public Well
- Groundwater Divide
- Groundwater Contour (feet above sea level)
- Direction of Groundwater Flow
- Groundwater Flow into Estuary

Map Design
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(781) 659-7754

SOURCES:
Base Map: Orleans Planning Department
Parcel data: Orleans Assessors Office, 1997
Groundwater Data: Cape Cod Commission
Orleans Water Table
Mapping Project, 1995
FEMA Lines: MassGIS/Cape Cod Commission

Watershed Protection

Protection of the watershed is of primary concern. Orleans' Zones of Contribution (or recharge areas) to its major wellfields has one of the highest percentages of protected open space of any on Cape Cod. This includes not only the 500-acre watershed itself but also the 1,800 acre Nickerson State Park in Brewster, and 16 acres adjacent to Baker's Pond.

The Zoning Bylaw would have to be amended requiring a 4/5 majority in order to use the land in the Watershed for a purpose other than the production of drinking water. In addition, the original Act of the Legislature would have to be amended and several other regulations would have to be changed. The Town should continue to protect the Zones of Contribution of the public water supply by pursuing programs of land acquisition and applying for grant funding. (NR-20)

Although the Town has protected more than 500 acres around the public wellfields, the contributing land area to those wells is many times larger. Water that enters the ground within the Area of Contribution (DEP Zone II) of a well can eventually become part of the recharge to that well. For Orleans wells, the Zone II extends into Brewster. It is therefore prudent for the Town to work with Brewster officials to protect lands within the contributing area of the wells.

5.4.5 Wetland, Wildlife, and Plant Habitat Analysis

Existing wetlands have, to a great extent, been protected from human alteration in Orleans. Degraded water quality in wetlands, and its impact on rare or endangered species remain concerns. The threat of invasive species replacing native species is also a concern.

Habitat for rare and endangered species in Orleans should be protected in hope of providing enough habitat for the population of the threatened flora or fauna to restore itself. In order to permanently protect rare species, it is recommended that lands known to contain such creatures and plants be a priority for open space acquisition. The Commonwealth's Natural Heritage Maps should be used for such determinations. (NR-21)

Vernal pools support many rare species, and should be targeted for protection. Any new vernal pools should be added to the Commonwealth certification list. This allows the Conservation Commission to exercise regulatory authority to protect vernal pools. (NR-22)

Another significant component of habitat preservation is to provide wildlife corridors that allow wild animals to complete their lifecycles free from human obstruction. The Cape Cod Commission has mapped proposed wildlife corridors, including corridors through Orleans. These areas should continue to be part of the review criteria for potential open space acquisitions. (NR-23)

Invasive species, especially in wetland areas, are becoming a problem in coastal and fresh water bodies. When a new species is introduced to a habitat in which it can dominate, other species of plants and animals suffer, upsetting the natural balance of the ecosystem. Examples of invasive

species are abundant and diverse, such as phragmites replacing cattails in swamps. While the task of removing invasive species from the wild and restoring native populations is an enormous undertaking, the Town can take action to require that only native plants are permitted in sensitive resource areas. It is recommended that the Town adopt a regulation that will require waterfront property owners to plant only native species within 50 feet of the resource area. (NR-24) It is also suggested that the Town explore and evaluate methods and the cost of programs to eradicate non-native species. (NR-25)

5.5 Implementation Program

	Action	Time for Completion	Resources Required	Lead Responsible Agency
NR-1	Continue to work with school officials to encourage the participation of students in resource enhancement programs.	Ongoing	L	Shellfish Dept.
NR-2	<i>Develop an overall shellfish management program, funded primarily through licensing fees, to protect and enhance local resources.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Shellfish Dept.</i>
NR-3	Explore and evaluate methods and programs to expand local shellfish resources through the Town's propagation program consistent with preservation of water quality.	Ongoing	L	Shellfish Dept.
NR-4	<i>Consider creating a shellfish revolving fund to provide financial support of shellfish enhancement programs.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Board of Selectmen</i>
NR-5	Continue to pursue grants for projects that will enhance shellfish resources.	Ongoing	L	Shellfish Dept.
NR-6	Prevent direct discharge of untreated stormwater into coastal embayments and ponds.	FY 07-10	H	Highway Dept.
NR-7	<i>Continue marine water quality monitoring through volunteers and financial support of the Town.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Board of Selectmen</i>
NR-8	Consider the designation of watershed areas contributing to the embayments of Town Cove, Pleasant Bay, and Cape Cod as Nitrogen Sensitive Areas.	FY 07-10	M	Board of Health
NR-9	<i>Develop an active public awareness program to encourage minimum use of fertilizers, herbicides and pesticides.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Conservation Commission</i>
NR-10	Develop a minimal use program for fertilizers, pesticides, and herbicides on all Town owned properties.	FY 07-10	L	Parks & Beaches Department
NR-11	<i>Consider adopting and enforcing regulations to limit development in FEMA V Zones.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Conservation Commission</i>
NR-12	Prevent direct discharge of untreated stormwater into fresh water bodies.	FY 07-10	H	Highway Dept.
NR-13	<i>Develop and implement a program of water quality monitoring for the Town's fresh waters.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Board of Selectmen</i>

NR-14	<i>Continue efforts to permanently solve the cormorant problem at Cedar Pond.</i>	<i>Addressed See Appendix</i>	L	<i>Board of Selectmen</i>
NR-15	Continue beach nourishment at Skaket Beach.	Ongoing	M	Parks & Beaches
NR-16	<i>Develop criteria for new docks and shoreline structures. Make regulations consistent with the recommendations of the Pleasant Bay Resource Management Plan.</i>	<i>Addressed See Appendix</i>	L	<i>Conservation Commission</i>
NR-17	Declare all coastal waters as No Discharge Zones.	FY 07-10	L	Board of Selectmen
NR-18	Develop criteria for permitting docks and piers in fresh water ponds.	FY 07-10	L	Conservation Commission
NR-19	<i>Establish a management plan for the Town Watershed areas.</i>	<i>Addressed See Appendix</i>	L	<i>Board of Water Commissioners</i>
NR-20	Continue to protect Zones of Contribution of the public water supply through programs of land acquisition.	Ongoing	H	Open Space/ Land Bank Committee
NR-21	Permanently protect lands containing endangered or threatened species as identified by the Massachusetts Natural Heritage Program and the Endangered Species Act.	Ongoing	H	Open Space /Land Bank Committee
NR-22	Identify all vernal pools located within the Town to ensure their proper regulation by the Conservation Commission.	FY 07-10	L	Conservation Commission
NR-23	Continue to make preservation of wildlife corridors a consideration of programs of land acquisition and conservation.	Ongoing	L	Open Space /Land Bank Committee
NR-24	<i>Consider adopting a regulation that will require waterfront property owners to plant only native species within 50 feet of a resource area.</i>	<i>Addressed See Appendix</i>	L	<i>Conservation Commission</i>
NR-25	Explore and evaluate methods and the cost of programs to eradicate non-native species.	FY 07-10	L	Conservation Commission
NR-26	<i>Water quality measurements for Namskaket Creek, Mill Pond, and Town Cove should be incorporated into the efforts of the Water Quality Task Force.</i>	<i>Addressed See Appendix</i>	M	<i>Water Quality Task Force</i>
NR-27	Upon completion of the Wastewater Management Plan, adopt nitrogen loading standards for all watershed areas that will protect the ecological integrity of the Town's coastal waters.	FY 07-10	M	Board of Health
NR-28	<i>Consider adopting a regulation that would require advanced treatment whenever a septic system setback is less than 100 feet from a wetland resource.</i>	<i>Addressed See Appendix</i>	M	<i>Board of Health</i>
NR-29	<i>Amend the Site Plan Review section of the Zoning Bylaw to provide for the protection of specimen trees.</i>	<i>Addressed See Appendix</i>	L	<i>Planning Board</i>

NR-30	<i>Investigate the feasibility and implications of extending the current 50-foot undisturbed wetland buffer to 100 feet for the entire town.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Conservation Commission</i>
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Economic Development



Snow's, Orleans Village Center

6. Economic Development

6.1 Overview

The purpose of this chapter is to identify strategies that will improve year-round employment opportunities and balance the needs of businesses and consumers, while maintaining the character of the town. It is the intention of this Plan to improve the quality of business activity, not to encourage new growth.

The essential economic nature of Orleans is that of a cross-road town with a wide range of established small businesses and services. It is, and most likely will continue to be, an economic center for surrounding towns as other communities' commercial centers are less well developed and have a narrower range of products and services.

Orleans has a seasonal economy that is affected by shifts in the population during various times of the year. These seasonal fluctuations are common throughout Cape Cod and can be broken down into three primary groups of people: year round residents, seasonal residents and summer visitors. The summer population is estimated to triple from the base population for Orleans.

From an economic standpoint the calendar year can be divided into 3 separate and distinct periods.

- Peak season: June through August. The economy is functioning at its highest volume of trade. The base population of 6,692 (2004 Town Clerk) triples during peak season to reach over 20,000.
- Spring and Fall: September through December and May through June. The volume of economic activity is moderate. Population estimates for this time period are difficult to determine because the population is transient during these months.
- Winter: January through April. The amount of economic activity is at its lowest with a base population of approximately 6,692, as of 2004. In addition, an increasingly, large component of the population spends part of the winter in warmer climates.

Seasonal fluctuations in population impact the types of businesses that locate in Orleans and the times of their operation (both hours and months). This in turn, impacts employment opportunities and the diversity of services available.

The town is economically influenced by the relative desirability of the community as a place to live, work and visit. The Town's geography and environment provide the primary magnet for a residential location, more so than economic opportunity. For many, however, the choice of

Orleans as a residence is influenced by the range and quality of products and services provided by the business community.

Orleans has other characteristics which contribute to its economic well-being such as highway accessibility, a variety of business types as well as a number of the same type of business for comparison shopping and cultural and sports *venues* such as Snow Library, the Academy of Performing Arts, and the Eldredge Park field.

Overall, Orleans has a relatively healthy economic base. The nonresidential tax base is a higher percentage of the total assessed value than our surrounding communities but equal to the Cape Cod average. The high percentage of seasonal homes helps keep the cost of municipal services down; and when this is combined with a strong nonresidential base, the Town is able to maintain a relatively low tax rate. Unemployment levels fluctuate seasonally but have been consistently lower than the monthly averages for Barnstable County. In addition, the monthly unemployment rate during the winter season has decreased in recent years as the labor force has increased, indicating a strong job market overall.

Orleans' economic prosperity primarily comes through revenue generated by consumer spending by residents (retired, year-round and summer), tourists, and regional shoppers as well as residential development, regional commercial services, and a small industrial base.

6.2 Goals & Policies

Goal

To promote business and a level of activity that is compatible with Orleans' environmental, cultural, and economic strengths in order to ensure balanced economic development.

Policies

- Village centers should be maintained by concentrating small-scale retail, office, and community activities within these areas.
- Larger retail and other commercial activities should be concentrated where adequate infrastructure is available.
- Economic development should contribute to the existing character of the Town.
- Resource-based economically productive areas including agricultural land, harbors, fishing grounds, and recreational areas should be maintained. The Town should recognize the benefits of traditional occupations and continue to foster their viability.
- Tourism that builds on the historic, natural and recreational resources of Orleans and the surrounding towns should continue to be a component of the Town's economy.

Goal

To direct future development to locations that can support those activities and not adversely impact the environment.

Policies

- Industrial development should only be accommodated in the Industrial District.
- Business development should be located in designated nodes of activity.
- Compact forms of development and redevelopment and, where appropriate, mixed use residential/commercial development, should be encouraged in order to minimize land consumption to protect open space and to direct development to activity nodes.

Goal

To encourage the creation and diversification of employment opportunities.

Policies

- The Town should facilitate businesses that provide quality year-round employment.
- The Town should accommodate and support home-based businesses that are compatible with residential neighborhoods.
- Improvements to the telecommunications infrastructure should be encouraged and supported.

6.3 Inventory

6.3.1 Economic Profile

Business Locations

Commercial development in Orleans is primarily located in the northwest area of town. The largest concentration of commercial development is located along Route 6A from the Brewster line to the Eastham Rotary. This area is zoned primarily as General Business [GB] or Limited Business [LB]. The Town also has three village areas. The Village Center is located along Main Street and Route 6A. The East Orleans Village is further east along Main Street where it merges with Beach Road. Finally, the South Orleans Village, which is the smallest of the village centers, is situated at the intersection of Route 28, Route 39, and Quanset Road in the southern end of

the Town. The Village Center is zoned VC while the East and South Orleans villages are zoned Rural Business [RB].

The Industrial District is located south of Finlay Road, to the east of Route 6. The area is a mixture of wholesale, warehousing and light manufacturing businesses. This area contains the greatest potential for increasing nonresidential land uses that contribute to the tax base and provide employment opportunities. This issue is examined in greater detail in the Business Potential section of this chapter.

Number of Businesses/Demographics

The Massachusetts Department of Employment and Training (DET) publishes information regarding employment and wages in Massachusetts communities. This information represents the jobs available in various sectors within a particular town but does not indicate whether or not these jobs are held by Orleans residents. The data are for establishments that are subject to unemployment compensation laws, and thus exclude very small businesses and self-employed persons. Firms that either hire no employees or have only part time workers may not show up in the data.

According to DET there were 479 establishments subject to unemployment compensation laws located in Orleans in 2003, while in 1993 there were 404 such establishments. This is an overall increase of 75 establishments in the last 10 years, or an average of 7.5 new businesses per year. The table below shows the last decade of employment and wage data for comparison.

Table 6- A: Employment and Wages in Orleans
(establishments subject to compensation laws)

Year	Number of Establishments	Total Employment	Total Annual Payroll	Average Annual Wage
1993	404	3505	\$69,916,813	\$19,948
1994	420	3527	\$73,283,182	\$20,778
1995	440	3722	\$80,073,539	\$21,514
1996	455	3743	\$85,167,885	\$22,754
1997	465	3909	\$93,050,198	\$23,804
1998	487	4091	\$104,208,859	\$25,473
1999	483	4268	\$114,131,200	\$26,741
2000	467	4391	\$121,966,590	\$27,776
2001	467	4366	\$126,464,343	\$29,016
2002	472	4312	\$129,735,767	\$30,108
2003	479	4357	\$134,783,756	\$30,940

Source: Massachusetts Department of Employment and Training, 2003.

Wholesale & Retail Trade

There are 14 establishments within the wholesale trade SIC code. The retail SIC classification is a large component of Orleans' economic base with 103 establishments. This category includes retail establishments that cater to local residents, tourists, and some businesses. These types of businesses are located throughout Orleans in village areas and in more intensive business zones.

One of the most significant components of the retail classification is eating and drinking establishments.

Services

The services sector consists of the largest number of businesses. The largest segments of this sector are business services (photocopying, building maintenance and computer services, etc.) health services, and personal services (dry cleaners, beauty/barber shops, diet centers, etc.).

Manufacturing/Transportation & Communication

There are a total of 14 manufacturing businesses in Orleans, most of which are located in the Industrial District or along Route 6A. These primarily include business such as fiberglass boat construction and fabrication businesses.

Construction & Landscaping

The number of construction establishments and corresponding employment levels are significantly impacted by economic cycles. During strong economic times construction activity increases with the addition of new homes and businesses. Landscaping is a seasonal industry in Orleans, though much of the work may be performed during the "shoulder seasons" when people are opening or closing businesses and homes. There are 58 construction establishments. These businesses include electricians, painters, and plumbing and heating services.

Fishing/ Farming¹

The town has a well established fishing industry made up of commercial fishermen and a charter fleet of deep sea fishing boats for hire. This industry is not a major factor in the economy, but it does provide employment and is a tourist attraction. It is part of the fabric of the community and should be encouraged to remain economically viable. Several lobster and fishing boats are stationed in Nauset Harbor and Pleasant Bay. In addition, Rock Harbor contains the largest charter fishing fleet on Cape Cod.

¹ *The Commonwealth's judicial system has recently classified aquaculture as farming, not fishing. However, for continuity within this Plan, we classify aquaculture as fishing.*

Shellfishing plays an important role in the community. In 2003, there were 198 commercial and 1,051 recreational shellfishing permits issued. It is estimated that commercial shellfishing provides full-time employment for approximately 50-75 residents. The Town currently has 24 acres of tidal fishing flatlands granted for aquaculture (a total of 24 grant holders). These grants bring in revenue dollars to the town's economy through sale of shellfish to local and non-local markets (*see the Natural Resources chapter*)

Tourism

Tourism plays a significant role in the Cape Cod economy. Many visitors come to enjoy the beaches, the quiet pace of the Cape, seasonal art shows and cultural performances.

The types of businesses that can be categorized as "the tourism industry" vary from one community to the next and encompass a variety of SIC categories. In Orleans the key tourism economic sectors are retail and service which account for roughly 311 establishments. If the construction industry is also considered, which mainly serves the second home market, another 58 establishments can be added to the total. While many of the establishments cater to year-round residents, in addition to seasonal residents and seasonal visitors, the tourism industry plays a substantial role in the success of a business in Orleans.

Retiree Population

Orleans has the oldest population in the Commonwealth with a median age of 55, and is home to many retirees'. Studies suggest that the spending of each retiree household is the equivalent of 3.7 factory jobs in dollars added to the local economy². From a statistical standpoint, retirement households do not require as many tax-supported services as do young families with school-age children. Tax-supported social and health services, however, do tend to increase with a retiree population.

Retiree households generally require more home maintenance services, such as housekeeping, lawn maintenance, and home upkeep. In addition, retirees contribute to the labor pool usually as part-time employees. They often seek limited hours to avoid exceeding Social Security salary caps. In balance, the retiree population in Orleans contributes a significant value to the year-round economic health of the community.

6.3.2 Employment

Employment in Orleans Businesses

The following table shows the latest available trends in different SIC sectors or business and employment categories. Over the years, the number of establishments subject to unemployment

² Charles F. Longino, Jr., Sociology professor at Wake Forest University

compensation laws continues to rise with the largest growth in the Wholesale and Retail Trade sectors. .

Table 6- B: Employment by Sector in Orleans 1993-2001

Year	Establishments	Total Employment	All Govt.	Construction	Manufacturing	Transp Comm Utilities	Wholesale & Retail Trade	FIRE	Services
1993	404	3505	478	107	234	111	1611	293	648
1994	420	3527	496	115	234	107	1651	252	646
1995	440	3722	522	105	241	102	1792	277	711
1996	455	3743	552	113	230	93	1709	284	716
1997	465	3909	553	118	242	103	1777	284	783
1998	487	4091	581	129	242	74	1898	284	834
1999	483	4268	604	149	238	77	1962	304	880
2000	467	4391	628	154	224	83	2040	308	885
2001	479	4366	645	164	208	85	2022	301	876

FIRE= Finance, Insurance, and Real Estate

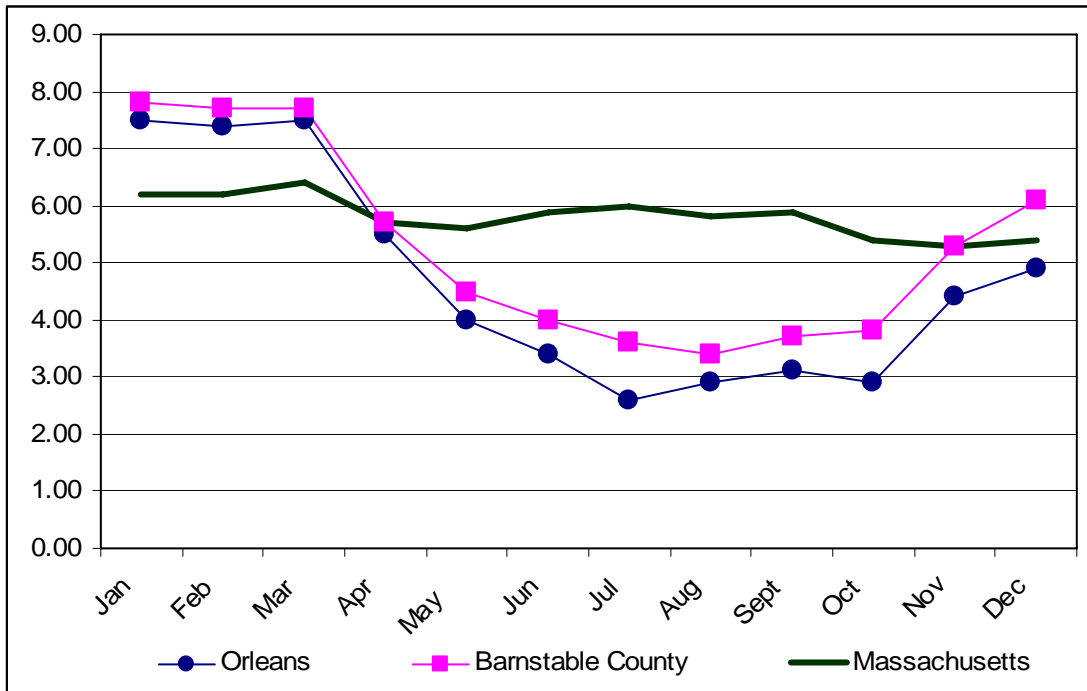
Source: Massachusetts Division of Employment and Training

In general, Cape and Islands economy is based on small businesses 63% of the region's companies employ fewer than 20 people. By dividing the total number of employees by the number of establishments, the average company size in Orleans for the year 2001 was calculated to include about 9 employees. It is important to note that the total number of establishments includes government entities as well as private businesses. Since data is not available on the number of establishments per sector in Orleans, it is not completely clear how many establishments might be represented by the government sector. For purposes of this analysis, it is assumed that the government sector consists of three establishments (federal, state and local). If the total employment is reduced by the number of government employees and the number of establishments reduced by 3, the average company size in 2001 is calculated to include 8 employees.

Employment and Unemployment Rates

Many businesses in Orleans have wide seasonal employment fluctuations due to the cyclical nature of tourism. Even in the best of times, employment falls off in the winter. Unemployment fluctuates at a level normal for a seasonal community and in recent years has generally been lower than other towns on the Cape. As shown below, the unemployment rate in Orleans in 2003 was lower than that of Barnstable County. Both the Town and County unemployment rates varied according to season, while in comparison, the State unemployment rate remained relatively steady throughout the year. The unemployment rates for both Orleans and the County were below the rate for the State during the summer months, and higher during the winter season.

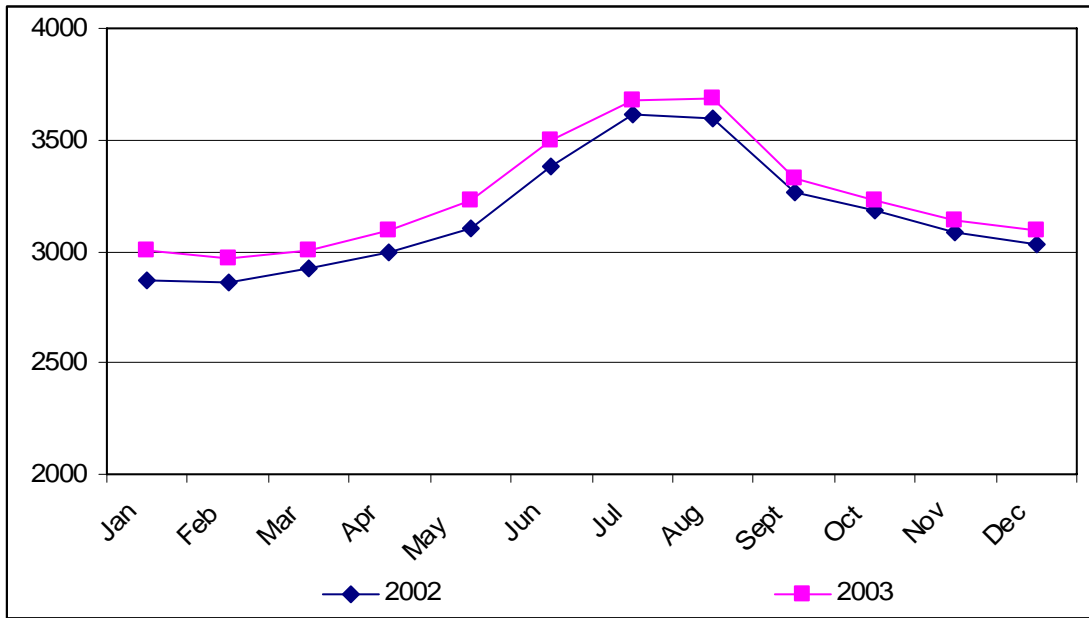
Figure 6 - A: Unemployment Rates by Month for 2003



Source: Massachusetts Division of Employment and Training

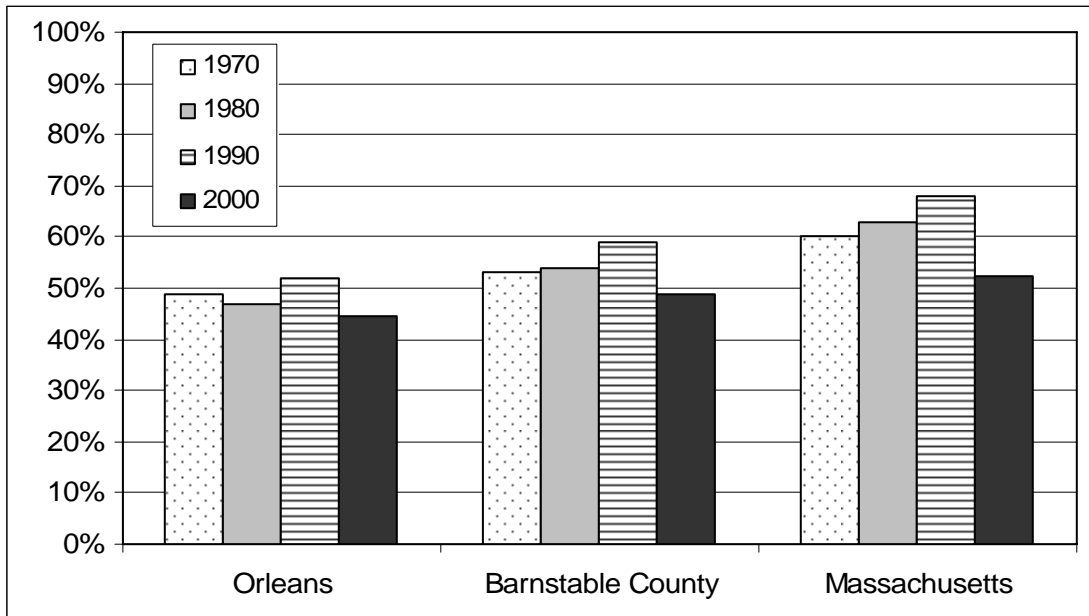
The analysis of employment and unemployment trends is complicated by the fact that many non-residents come to Orleans during the summer months to take advantage of seasonal employment opportunities. This is reflected in the varying sizes of the labor force during the summer months. The labor force is defined as the number of persons employed or actively seeking work. As indicated below, the Town's labor force expands during the summer as seasonal businesses open and attract non-resident employees. Overall, the size of the labor force increased in 2003 and yet unemployment levels decreased, indicating a stronger economy for employment opportunities than in 2002.

Figure 6 - B: Orleans' Labor Force by Month, 2002-2003



In comparison with Barnstable County and the State, a smaller percentage of Orleans' population participated in the labor force. This can be attributed to the relatively large size of the retiree population as a percentage of the total population.

Figure 6 - C: Percent of Population in Labor Force, 1970-2000



Source: 2000 U.S. Census / Cape Trends

Between 1990 and 2000, the percentage of the population participating in the labor force decreased in Orleans, the County and the State. The decrease in the percentage of the population participating in the work force in Orleans a function of the high retiree component of the population. After all, Orleans has the oldest population in the state and 6 out of the 10 oldest communities in the state are located in Barnstable County.

Home Occupations

According to the U.S. Census, there has been an increase in the number of persons working at home in Orleans, Barnstable County and the State. In, 1980 , 74 people worked at home, in 1990 239 people worked at home and in 2000, 205 people worked at home. These figures are significant as they represent 8% of the work force in 2000. Orleans has a large share of stay at home workers as compared to Barnstable County (2.8%) and in Massachusetts (3.1%). Changes in work life due to technological advances lead to an expectation that this trend will increase.

Commuting Patterns

A common trend shared by Orleans, the County and the State is the increase in the number of workers using private automobiles. There is an increase in the number of people driving alone to work and a decrease in the number of people car-pooling.

Table 6 - C: Means of Transportation to Work for Orleans Residents 16 years and Older

Means of Transportation	Number	Percent
Automobile (drove alone)	1981	80.7%
Automobile (carpooled)	88	3.6%
Public Transportation	28	1.1%
Bicycle	5	.2%
Walking	115	4.7%
Other Means	34	1.4%
Worked at Home	205	8.3%

Source: 2000 U.S. Census

As shown below, 47% of employed residents worked in Orleans in 2000 while the rest primarily worked in other Cape Cod towns. Only 6.2% commuted to areas off-Cape. This is comparable to the commuting patterns of the last decade as nearly half of the Town's residents continue to work in Town.

Table 6 - D: Commuting Destinations
of Orleans Residents, 2000

Destination	Number	Percent
Orleans	1,159	47.2%
Brewster	196	8.0%
Barnstable	156	6.3%
Eastham	118	4.8%
Chatham	66	2.7%
Harwich	80	3.3%
Dennis	63	2.6%
Yarmouth	220	9.0%
Wellfleet	109	4.4%
Falmouth	23	0.9%
Other Cape Towns	72	4.0%
Off-Cape	152	6.2%
Total Workers	2,455	100.0%

Source: US Census, 2000

As shown below, only 32% of local jobs are held by local residents (includes self-employment). The largest shares of nonresident employees come from the surrounding towns of Brewster, Eastham and Harwich, a travel pattern that has existed for over 10 years.

Table 6 - E: Commuting Origins of Orleans Workers, 2000

Origin	Number	Percent
Orleans	1,159	31.8%
Brewster	583	16.0%
Eastham	455	12.5%
Harwich	277	7.6%
Chatham	103	2.8%
Barnstable	179	4.9%
Dennis	208	5.7%
Wellfleet	104	2.9%
Yarmouth	149	4.1%
Sandwich	56	1.5%
Bourne	75	2.1%
Falmouth	70	1.9%

Mashpee	41	1.1%
Off Cape	176	4.8%
Total Workers	3,635	100.0%

Source: US Census, 2000

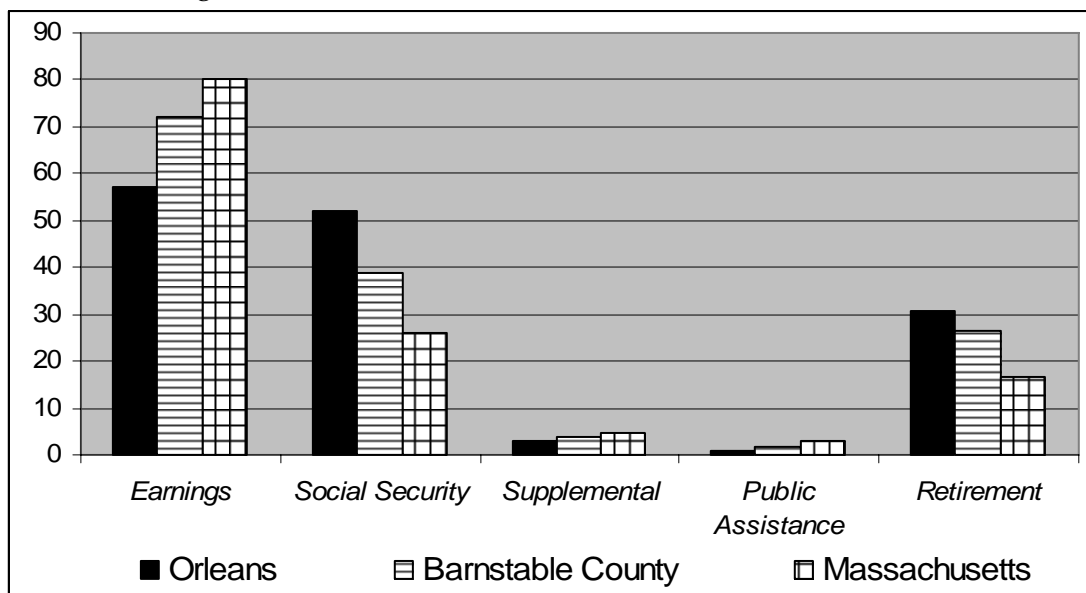
6.3.3 Income and Wages

Residents of Orleans receive income from sources which include wages and salary, self-employment income, social security income, retirement income (including investment income), rental income, and public assistance. Household incomes may include payments from one or several of these sources. For example, a household may have a combination of retired, employed and self-employed persons.

The following Figure compares sources of income for the Town of Orleans and Barnstable County and State according to the 2000 U.S. Census. Compared to Barnstable County, a greater percentage of households in Orleans received income from social security, rental and retirement income. Conversely, 72% of households in Barnstable County received wage or salary income compared to 57% of households in Orleans. These differences are attributable to the higher median age of Orleans residents and the corresponding higher proportion of retirees.

The percentage of households receiving public assistance was relatively low for both Orleans and Barnstable County, with 2% of Barnstable County households and less than 1% of Orleans households receiving income from public assistance.

Figure 6 - D: Sources of Income for Orleans Residents, 2000



Source: 2000 U.S. Census

6.3.4 Tax Base Trends

The FY 2004 tax rate of \$4.41 generated a total tax levy of \$13,796,000. The total assessed value for the Town that year was \$3,128,390,680. In the recent past, the Town has experienced a significant rise in all real estate values. The table below shows the tax value for residential, commercial and industrial properties over the last 3 years. In that time period the highest rate of increase is amongst the residential properties. This increase includes both increased value and new growth added to the Town.

Table 6 - F: Summary of Orleans' Tax Value, Levy, and Rate
in Thousands of Dollars

	2002 (X 1000)	2003 (X 1000)	2004 (X 1000)	% Increase 2002 to 2004
Residential	\$2,135,454	\$2,294,011	\$2,879,108	35%
Comm. / Ind.	\$139,675	\$154,250	\$172,381	23%
Personal Property	\$33,714	\$34,052	\$39,453	17%
Total Assessment	\$2,335,951	\$2,512,449	\$3,128,391	34%
Tax Levy	\$12,521	\$12,864	\$13,796	10%
Tax Rate	\$5.36	\$5.12	\$4.41	

Source: Town of Orleans

6.3.5 Marketing Advisory Groups

Chamber of Commerce

The Orleans Chamber of Commerce is the only non-governmental economic development organization in town. The Chamber consists of approximately 300 members. The Chamber has been able to receive funding from Town Meeting for specific projects such as the following:

- Salaries for staffing, production of pamphlets, and capital improvements to the Information Center;
- Route 6 signs;
- Financial support of beautification projects sponsored by the Orleans Improvement Association.
- Web promotion of accommodations, local dining establishments, and local events.

Other Groups

At a regional level, several organizations have been established to deal with economic issues on Cape Cod. The Lower Cape Cod Community Development Corporation (CDC), of which Orleans is a part, has developed a small business loan pool, a seafood marketing campaign, and

a Cape Cod products catalogue and has been active in housing projects. The Cape Cod Center for the Environment and a Sustainable Economy has encouraged programs demonstrating how environmental protection can work in conjunction with economic development in areas such as eco-tourism, environmental technology, and sustainable food production. Other active groups include the Cape Cod Chamber, Cape Cod Technology Council, and the Business Roundtable.

The Cape Cod Economic Development Council is responsible for marketing the industrial areas and vacant commercial space on Cape Cod. In addition, the Council, Lower Cape Community Development Corporation, Cape Cod Community College, and Service Corps of Retired Executives are expanding efforts to provide technical and financing assistance to existing and prospective businesses.

6.4 Analysis

6.4.1 Economic Development Benefits

Economic development serves three basic purposes in a community: providing jobs and income, providing services desired by residents and visitors, and providing a tax base that helps to pay for the provision of public services and facilities. These three aspects of economic development are analyzed below in order to determine Orleans' priorities.

Providing Jobs and Income

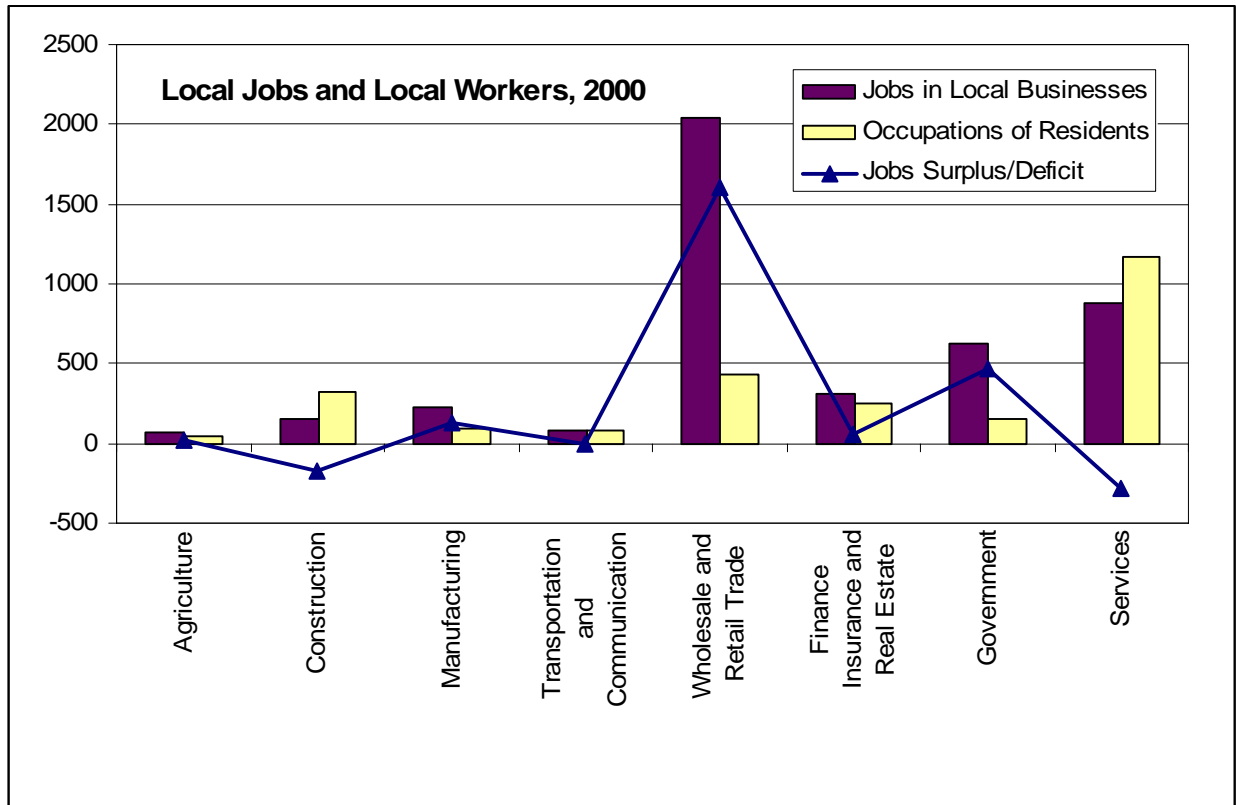
As described in the inventory of employment section, the total number of jobs available in Orleans in 2000 was 4,391, and the average unemployment rate was lower than for the Cape as a whole. Based on these statistics, Orleans' economy is currently providing sufficient employment for its labor force. However, it should be noted that the skills of the labor force may not match the available jobs. In addition, since the town's economy is an integral part of the regional economy, the jobs-to-worker relationship should be examined on a larger scale. It should be noted that due to the availability of more jobs than there are local workers, Orleans "imports" employees.

Only 57% of the population depends upon wages for income due to the high number of retirees in Orleans. Therefore, less than 2/3 of Orleans' population is dependent upon local employment opportunities as a source of income.

In order to begin to assess the degree of match between worker skills and available employment, the occupation of residents can be compared to the number of establishments by sector. The figure below presents the average number of jobs in each sector that existed in Orleans in 2000 (total employment of 4,391) and the number of Orleans residents who were working in each sector in the same year (total employed of 2,555). The line represents the differences between the jobs in Orleans and the occupations of Orleans residents in each sector. Positive values mean that there were more jobs in Orleans than residents working in that sector (i.e. a job "surplus" in that sector), while the negative values mean that there were more Orleans

residents working in the sector than jobs available in the town. There were job surpluses in the Trade, FIRE (Finance Insurance & Real Estate), Government and Services sectors, indicating that non-residents were filling many of these positions. The high number of jobs in the Wholesale/Retail Trade sector may be due to the relatively high number of shopping centers and restaurants in Orleans as compared to other areas. The surplus in the Government sector may be attributable to the presence of the Nauset Regional School District, which has both the Middle School and Administrative Offices in Orleans.

Figure 6 - E: Job Surplus and Deficit in Orleans, 2000



In contrast, there are more residents employed in the Construction and Service sectors than there are jobs in Orleans for these sectors.

Once again, it should be noted that the seasonal nature of employment opportunities in the Cape Cod region results in fluctuating unemployment rates throughout the year. One of the objectives of the Town should be to encourage more year-round employment opportunities through encouragement of businesses that have a more stable year-round market, and which therefore serve the needs of year-round employees. (ED-1)

Seasonal businesses have a problem finding qualified labor during the busy season. Housing costs on Cape Cod are high in the summer, making it difficult for workers to find seasonal housing. Affordable housing strategies are discussed in the Affordable Housing Chapter which could improve this situation.

Providing Services

As noted above, Orleans is relatively self-sufficient in providing goods and services to residents and visitors due to its cross-roads location and the variety of the type and scale of commercial uses. The village center provides small restaurants and specialty shops as well as municipal services and other convenience goods. The larger commercial areas cater to both local and regional customers by providing grocery stores, retail chains and more intensive commercial services.

Providing a Diverse Tax Base

The 2004 commercial and industrial portion of Orleans' property tax base is 7%, slightly higher than surrounding towns of Eastham and Brewster but less than other Cape towns like Provincetown, Yarmouth, Bourne and Barnstable. On average, the Cape Cod commercial and industrial tax base for FY 2004 comprises 7% of a community's total tax base while at the State level it comprises 24% of the total tax base.

The Town's financial strategy is enhanced by the number of residential properties that are only occupied during the summer months, thereby reducing the year-round demand on municipal services. According to the 2000 U.S. Census, 60% of housing units are classified as "year-round" while 40% are seasonal (in addition many of the year-round units are not actually occupied during the winter months). Thus, about 40% of the residential tax base does not represent a year-round demand for most municipal services, including education, the costliest single municipal function. Therefore, from the perspective of municipal finance, these seasonally occupied properties have a fiscal impact similar to the commercial and industrial tax base.

It is important for the Town to recognize the value of viable commercial and industrial districts, and work to ensure that local businesses have the opportunity to succeed. To this end, Commercial and Industrial property value trends should be monitored.

6.4.2 Business Potential

The needs and desires for economic development within Orleans are consistent with the objectives identified within the Cape Cod Commission Regional Policy Plan (RPP). The RPP describes a strategy that focuses on the main sectors of Cape Cod's economic base such as promoting off-season tourism, especially activities related to the Cape's environment and history. Managing tourism means targeting an upgrading of the tourist's experience. Investment in the town and how it appears, operates, and accommodates our visiting population will help create a quality tourist experience and keep them returning to Orleans to vacation.

Residents and business owners at the Village Center Workshop expressed a strong desire to create an attractive Village Center oriented toward a pedestrian shopping experience. When asked if they would support the Town be actively involved in shaping the future of business and activities in the downtown 87% of residents and taxpayers agreed (*2006 Resident/Taxpayer*

Survey). The recommended market study should focus on developing a village “identity” that will attract people to the Village Center. (ED-2)

As discussed in the buildout analysis section of the Land Use and Growth Management Chapter, there is 2,097,348 square feet of potentially developable space in Orleans’ business and industrial districts. A large part of this potential increase in space represents the un-built second stories of structures in the business zoning districts. See *Land Use Chapter for description of zoning districts*.

An inventory and assessment of all business zoned land was conducted and the results can be seen below. The results of the analysis indicated that there were approximately 548 acres of commercial property at that time, 46 of which were vacant.

Table 6 - G: Business and Industrial Property, 2004

Zoning District	Total # Lots	Total Acres	Total Vacant Lots	Vacant Acres
General Business*	125	177	12	11
Limited Business	127	140	10	7
Rural Business	44	33	7	3
Industrial	90	98	17	13
Village Center	106	92	0	0
Marine Business	9	8	0	0
Total	501	548	46	34

Source: Orleans 2004 Assessor’s Records

Improvements

The Commercial and Industrial Districts have potential for further development, especially re-development. Much of this development potential is possible through infill or more intensive development of existing business properties. Although constraints such as environmental issues, lack of wastewater management systems and traffic management concerns do exist, and may limit infill, development and redevelopment has been occurring.

Commercial additions and alterations have increased in recent years as many of the existing commercial properties undergo updates. From 1983 to 2004 alterations to commercial properties have been steady at an average of 18 alterations a year. From 1995 to 2004 the Town has seen that level of activity rise to an average of 31 alterations a year (for further information on Commercial and Industrial Build-out potential see the Land Use Chapter).

The appearance of the districts could be improved through landscaping and screening (HC-16) as described in the Design Guidelines section of the Historic Preservation and Community Character chapter. Many properties have made such improvements as part of the Site Plan Review process as they have undergone re-development.

Access improvements are being planned and implemented where possible to alleviate traffic and safety issues and improve the attractiveness of the commercial and industrial districts. The re-design of Skaket corners (see Transportation section) will provide decreased delays at the Town's busiest intersection. Planned improvements to Lots Hollow Road and Eldredge Park Way would improve truck and heavy vehicle access from Rt 6A and Rt 6 to the Town's Industrial District, landfill, and public skating rink. The pending re-design and construction of Rt 28 and Finlay/Pond Road will improve safety and access to the Industrial District from the east.

Consistent with efforts to promote infill development and build-out of the Industrial District, the Town should consider designating the Industrial District as an Economic Opportunity Area in order to provide business development incentives. (See discussion of EOAs below as well as recommendation. (ED-4)

The General Business District also contains many parcels with moderate to high development potential. This district should contain more concentrated business nodes rather than continuing the pattern of commercial strip development that has emerged. Three major existing nodes of development have been identified. Skaket Corners, Cranberry Plaza, and the Village Center are all considered to be nodes along the commercial strip of the Business corridor that runs along Route 6A. In 2001, the area between Skaket Corners and the Village Center was reclassified as a limited business district to discourage "commercial strip" development. The areas between Village Center and the Cranberry Cove Plaza should be considered for "downzoning" to a more restrictive business zone (i.e. General Business to Limited Business), so that the current uses are maintained without creating a non-conformity with the zoning. This will help larger new developments locate in the more permissive zone that exists in the nodes identified above. (ED-5)

The Village Center contains no vacant land. However, new development and redevelopment has been occurring. Zoning should allow this area to remain a vital part of the community. Development policies should discourage strip mall development and promote a pedestrian friendly environment. This means ensuring that buildings are sited close to the street, with parking to the side or rear, and that sidewalks, pathways, and crosswalks are designed to facilitate pedestrian movement. (ED-6) The amount of activity can be enhanced by encouraging the mixed use of structures (ED-7) and allowing outdoor cafe style seating for restaurants (ED-8). Infrastructure improvements such as wastewater management systems should be implemented as described in the Comprehensive Wastewater Management Plan. Further suggestions for enhancing this area are included in the Design Guidelines section of the Historic Preservation and Community Character chapter.

The Town should explore a variety of financing and business incentive options in order to take advantage of the remaining business development potential, and to encourage re-investment in existing properties. Specific strategies could include the creation of business loan pools, facade improvement programs, tax increment financing, and the establishment of the Village Center as an Economic Opportunity Area. (ED-4, ED-9, ED-10, ED-11)

An Economic Opportunity Area (EOA) is a State designation of an area with a particular economic need or priority for development. The purpose of an EOA is to encourage businesses

to expand, relocate, or build new facilities in order to create permanent new jobs within the Area. Municipalities must offer such businesses local real estate tax incentives, either a Special Tax Assessment or Tax Increment Financing.

Projects within EOAs benefit in the following ways:

- 5% State Investment Tax Credit;
- 10% Abandoned Building Tax Credit;
- Priority for State capital funding
- Municipal Tax Incentives

A Special Tax Assessment is a five-year program that phases in the payment of property taxes on new facilities. This relieves the business of some costs during the early years of operation. Tax Increment Financing (TIF) is an agreement between the municipality and the land owner that exempts property taxes for up to twenty years, based on the value of new construction being added. Such agreement may include a percentage tax reduction or a payment in lieu of taxes, and must be coupled with an agreement by the business to a certain level of construction activity within the time period.

Construction & Landscaping

The need to improve permitting processes has been documented. Some areas that can be improved include accessibility, efficiency, consistency, and public comprehension of the permitting processes. (ED-12)

Fishing / Farming

Off-shore fishing, shellfishing, and aquaculture, have had a significant influence on Orleans' history. Recent surveys and other public input indicate that these activities should be nurtured in the future to help maintain the character of the Town. The industry is part of the fabric of the community, and should be encouraged so that it remains economically viable. To this end, the Town has endorsed the Pleasant Bay Management Plan and has re-established its Shellfish Advisory Committee.

It will be important to increase the shellfish stocks to ensure that shellfishing is a sustainable industry in the future. The current policies for shellfish grants should be reviewed and updated where appropriate. (ED-13)

Home Occupations

Due to the improvement in technology and infrastructure, a sizable retirement population, and the desire to live in Orleans, home occupations have become an increasingly common business option. Many retiree's move to Orleans and often remain working out of their homes as part time consultants.

The current Town Bylaw defines a home occupation as including:

“carpenters, electricians, painters, plumbers, paperhangers, shellfish opening and the storage of fishing equipment as customarily carried out in the town, masons, radio and television repairs, dressmaking, hand laundering, home handicrafts, home cooking, lawn mower and bicycle repairs, the practice of any recognized profession and any other similar nature which may be approved on Special Permit by the Board of Appeals, provided that there is no outside display of goods.”

The specific nature of this list of occupations should be flexible enough to accommodate changes in technology and business types, but restrictive enough to protect the residential character of the neighborhoods. Occupations and professions that may be conducted as a home occupation should be identified. A home occupation should be authorized as a secondary use of a residence. (ED-14)

6.4.3 Tourism Economy

Tourism is largely based on the attractiveness and appeal of a particular destination. Therefore, it is important to protect the “product” (i.e., the town) that one is attempting to sell. Places that are attractions in and of themselves, such as the Village Center and beaches, are what people want to visit, rather than a particular store or restaurant. Therefore, it is important to consider the preservation of the Town character and the environment as vital components of tourism in Orleans.

The Chamber of Commerce estimates that 25,000 people come to its Information Center each year between June and November. The beaches, Rock Harbor, the Village Center, and the newly extended Cape Cod Rail Trail are just some of the attractions in Orleans which draw visitors. In addition, Orleans also serves as a gateway town for the Cape Cod National Seashore and its 2.5 million annual visitors, as well as Nickerson State Park that operates at full capacity during the summer months.

Although it is evident that tourism is an important part of the town’s economy, it is difficult to arrive at a firm estimate of exactly how much of Orleans’ total economic activity is attributable to the tourism industry. The inventory section of this chapter indicates that almost 50% of the businesses in Orleans could be categorized as being at least partially dependent on the tourism industry. Eating establishments and hotels/motels are most directly impacted by the tourism economy. As of FY2003, the State room occupancy tax resulted in a total revenue to the Town of \$315,954, a 6% increase from FY2002.

Many residents have expressed concerns regarding the increase in traffic volumes during the tourist season. This is especially true in the Village Center. The issue of traffic and its ramifications are discussed in detail in the Transportation Chapter.

A recent trend that may impact tourism in Orleans is the conversion of overnight accommodation to multi-family housing. In some instances hotels that have become old and “functionally obsolete” have been converted to owner occupied housing units. If this continues

to happen it could have a significant impact on vacancy rates during the summer season and possibly room tax revenue. Ultimately as the properties go from being part of the commercial tax base to the residential tax base it could cost the community in increased services.

6.4.4 Marketing & Outreach

Educational Opportunities

Better education and job training are essential to economic development. High-quality work skills can enable a worker to take advantage of new occupational opportunities as they arise. A high-quality work force is also an attractive asset for a business to consider in locating in a particular community. Cape Cod Community College, Massachusetts Maritime Academy, college extension programs available throughout Cape Cod, and local school systems need to focus on teaching the skills that are needed in today's work world.³

A significant proportion of Orleans' local economy is retail or service related. Additional job training for the service-related industry to cater to the town's summer visitors would be beneficial to the work force. Such "awareness" programs have been offered in the past by the Chamber of Commerce. In addition, training for specialized services which meet the needs of the elderly would be useful (e.g., home health care and computer technology).

6.4.5 Economic Development Issues & Concerns

Orleans is fortunate in that it is relatively self sufficient as an economic unit because most goods and services are available locally. In contrast, most of the surrounding communities (Brewster, Eastham, Wellfleet and Truro) contain small scale business and service uses that cater primarily to tourists. They must rely on establishments located in Orleans to provide larger scale operations such as grocery stores and retail chains. The limited commercial character of the surrounding communities is likely to remain much as it is, although East Harwich offers a large supermarket and significant specialty retail outlets. While there may be an increase in commercial activities in these communities, many residents throughout the region will still travel to Orleans for basic products and services. While the community is divided as to whether or not Orleans should pursue a role as a regional hub, this Plan recognizes that regional shopping establishments exist. The town should ensure that these regional shopping businesses are managed in such a way that they do not detract from the town's character.

The Town recognizes that the quality of the environment is the most important factor in its economic well being. Consequently, future economic development must adhere to environmentally sensitive practices in order to preserve the natural qualities of Orleans.

³Cape Cod Commission Regional Policy Plan, 1996, page 61.

A number of residents perceive the town's main business area as a conglomeration of commercial and service buildings searching for some degree of coherence. To others, Route 6A is a less than attractive main road with a series of unattractive parking lots. A comparison of residential and commercial build-out has shown that business districts are larger than needed. These districts have led to strip development along the principal streets and a clutter of signs and lighting configurations which do not add to the attractiveness of the town. Detailed analysis should be performed to: 1) obtain an accurate current business inventory, and 2) determine possibilities for creating more concentrated business nodes. (ED-15) A public wastewater management system will be necessary in order for desirable village densities to be reached in these areas (refer to Community Facilities and Natural Resources Chapters).

The nonresidential portion of the tax base has remained relatively stable over time. The nonresidential portion of the tax base can increase in two ways: (1) by increasing the number of nonresidential properties through new development; and (2) by increasing the value of existing properties. Orleans' primary objective is to maintain stable non-residential property values through encouraging infill development within business nodes and reinvestment in existing property. It is important for the Town to continue to monitor tax base trends so that high quality municipal services can be maintained.

Traffic continues to increase as the population increases and businesses develop. As discussed in the Transportation Chapter, traffic congestion is a major concern in the Village Center. Options for reducing traffic flow were suggested during the Village Center Workshop and participants agreed that there is a need for more directional signs in the Village Center to direct people to appropriate parking locations, to beaches, and to connecting roadways. (ED-6) Orleans needs to develop a strategy to effectively address traffic congestion.

Although Orleans is a cross-roads community, the distance to major urban centers can be a deterrent to some larger businesses. However, due to improvements in technology, Orleans can overcome many of the region's traditional geographic barriers to doing business in a national and even international marketplace.

The seasonal nature of the regional economy results in higher unemployment levels during the off-season. While unemployment levels have been decreasing during the winter months, the encouragement of more year-round employment opportunities should be pursued. There is potential for addressing this issue within the Industrial District.

The local economy relies heavily on building construction and home services, and as the community grows there will be a need for space from which to operate such businesses. The Industrial District should be oriented toward meeting the business needs of small, owner operated service businesses.

6.5 Implementation Program

	Action	Time for Completion	Resources Required	Lead Responsible Agency
ED-1	Develop a plan to attract enterprises that have a year-round customer base.	FY 07-10	M	Planning Department
ED-2	Perform a market feasibility study to determine the types of desirable businesses for Orleans.	FY 07-10	M	Planning Department
<i>ED-3</i>	<i>Perform a consumer preferences study to determine what viable businesses or services are needed.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Planning Department</i>
<i>ED-4</i>	<i>Explore the feasibility of establishing as an Economic Opportunity Area (EOA) the business district on Route 6A from the Eastham line to the intersection of Route 6A & Route 28, and for the Industrial District, to allow the Town to participate in State economic development programs.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Planning Department</i>
ED-5	Focus the concentration of business growth to established commercial nodes by amending the Zoning Map to limit growth on Route 6A, particularly between Skaket Corners and Orleans Marketplace.	Ongoing	M	Planning Board
ED-6	Develop a cohesive Village Center Plan to address such issues as traffic, parking, signs, streetscape, pedestrian linkages, and building facades.	FY 07-10	H	Planning Department
ED-7	Amend Zoning Bylaws to encourage mixed use of downtown buildings by allowing retail, office, service and residential uses on different floors of the same structure.	FY 07-10	L	Zoning Bylaw Task Force
ED-8	Revise applicable regulations to increase opportunities for seasonal outdoor cafe style seating for food service establishments.	FY 07-10	L	Board of Health
ED-9	Seek funds for commercial rehabilitation appearance loans through community development grants and other funding alternatives.	FY 07-10	L	Planning Department
<i>ED-10</i>	<i>Investigate and identify Tax-Incentive/Financing programs available to attract investment in existing properties.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>EDC</i>
ED-11	Investigate Town-sponsored business development programs to support new and existing enterprises, e.g. loan programs, tax incentives, review of existing rules/regulations, bylaws and fee structures.	FY 07-10	L	Planning Department
ED-12	Improve accessibility, efficiency, consistency, and public comprehension of Town permitting processes.	Ongoing	L	Planning Department

ED-13	Review and update shellfish grant policies to encourage the shellfish industry.	FY 07-10	L	Harbormaster
ED-14	Revise the Zoning Bylaws to provide opportunities for home occupations that are consistent with the Town's character.	FY 07-10	L	Zoning Bylaw Task Force
ED-15	<i>Perform a detailed analysis of all business districts to obtain an accurate inventory of existing uses as well as to determine planning potential, and to build a database.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Planning Department</i>
ED-16	<i>Continue to work with the Chamber of Commerce to plan special events and focus marketing efforts on activities that lengthen the annual tourist season.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Board of Selectmen</i>
ED-17	<i>Consider the designation of the Village Center as a Growth/Activity Center to foster a development style that is consistent with a small, focused community area to minimize further land consumption and preserve open space.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Planning Board</i>

Community Facilities and Services



Orleans Town Hall

7. Community Facilities and Services

7.1 Overview

Community facilities and services are a major contribution to the quality of life for Orleans residents. Residents enjoy a high level of service, but should look to the future demands placed on the system by projected population growth. This chapter provides an inventory and analysis of existing services. The analysis measures the capacity and level of service of capital facilities such as water supply and distribution, waste management, health, public safety and education. All Town owned facilities, infrastructure, and equipment are included in this definition, as well as human-based resources.

7.2 Goals & Policies

Community Facilities and Services Goal

To provide high quality facilities to meet the community and regional needs consistent with the goals and policies established in the Orleans Comprehensive Plan and the Regional Policy Plan.

Policies

- Current and future facility needs of the community including the adequacy and location of facilities should be assessed on a periodic basis.
- Development of new infrastructure should only occur after an analysis of the impact of this infrastructure with regard to land use, traffic, water quality, natural resources, historic preservation, and community character.

Development of new infrastructure should only occur after an analysis of the impact of this infrastructure with regard to land use, traffic, water quality, natural resources, historic preservation, and community character, as well as other applicable issue areas noted in the Regional Policy Plan and should be consistent with the Orleans Comprehensive Plan and Capital Improvement Plan.

Policies

- Privately provided infrastructure to service development and redevelopment should be consistent with the Orleans Comprehensive Plan and, when constructed off-site, should receive formal approval from the town prior to construction.
- Approval of development and redevelopment which increases the intensity of use should be based on existing infrastructure and system capability or on a development's ability to provide for or contribute to the infrastructure and services necessary to support it. The provision of infrastructure and services should be

consistent with the minimum performance standards in the Regional Policy Plan and consistent with the Orleans Comprehensive Plan and Capital Improvement Plan. Installation of necessary infrastructure should be timed to meet the need generated by the development or a contribution of funds toward the necessary improvements should be provided.

Water Supply Goal

To provide safe and adequate drinking water for the residents and businesses of Orleans.

Policies

- The Town should maintain a current water supply system master plan, with established thresholds for actions to ensure an adequate production of quality drinking water.
- The Town should monitor water quality and protect the yield of Town wells.

Wastewater Management Goal

To ensure that all sewage generated within the Town is properly treated to protect the long-term health of the community's ground and surface water resources.

Policies

- The construction of public or private sewage treatment facilities (PSTFs) should not allow development to occur at a higher density than would be allowed by local zoning.
- PSTFs should not be constructed in FEMA V zones and floodways, Areas of Critical Environmental Concern (ACEC), wetlands, and buffer areas, barrier beaches, coastal dunes or critical wildlife habitat. PSTFs may be constructed in FEMA A zones only to remediate water quality problems from existing development within such A zones.

Solid Waste Management Goal

To manage solid waste using an integrated solid waste management system that includes waste reduction, recycling, composting, incineration and landfilling, and to divert 40% of municipal solid waste from incinerator and landfill facilities through recycling and composting programs by 2005, consistent with regional goals.

Policies

- The Town should take all necessary action to meet State goals for recycling and composting.

- Development and redevelopment should allocate adequate storage space for interim storage of materials to be recycled.
- Construction and demolition debris from development and redevelopment should be removed from construction sites and disposed of in accordance with the solid waste management system.

Hazardous Waste Goal

To ensure that hazardous wastes generated by Orleans households and businesses are disposed of in an environmentally sound manner.

- Development and redevelopment should make reasonable efforts to minimize hazardous waste generation through source reduction, reuse, material substitution, employee education and recycling.

Stormwater Goal

To provide treatment of stormwater runoff before release into surface waters, beginning with all direct discharge points to salt ponds and other environmentally sensitive areas.

Policies

- Stormwater should be managed and disposed of onsite. Development and redevelopment should use Best Management Practices (BMPs) to minimize runoff and maximize stormwater treatment.
- No direct discharge of untreated stormwater, parking lot runoff and/or wastewater into marine and fresh surface water and wetlands should be permitted.

7.3 Inventory

The Town of Orleans provides certain services, including police, fire and ambulance service, a municipal water supply, and a strong public school system along with other basic town services. Town staff and boards are also responsible for administration of various state and local regulations, such as wetlands regulations, building codes, and health codes. Additional services, such as road maintenance, water provision, beach and park operations, and recreation programs are also the responsibility of town staff. An inventory of Town services is discussed in some depth in the following sections.

Improvements to capital facilities are planned and scheduled according to the Town's Five-Year Capital Improvement Plan (CIP). The CIP is a moderately extensive estimate of the needs for capital expenditures that is used for budget planning. The CIP is developed by the Town administrator with input from all Town departments, and serves as a useful tool for the Board of Selectmen, Finance Committee, and other boards. The recommendations contained in this plan are to be used in the development of the Capital Improvement Plan. By reference, the CIP is incorporated into this Plan. The Capital Improvement Plan is not binding upon the townspeople, and all expenditures it recommends must be approved at Town meeting.

7.3.1 General Town Administration and Services

The Town of Orleans maintains a staff in excess of one hundred permanent and full-time employees, with an additional number of part-time and seasonal employees to support Town services. The table below provides a listing of the number of permanent full-time employees by department and their annual budget for the 2006 fiscal year (FY06). This list does not include employees of the school department.

Table 7-A: Departmental Budgets and Employees

Department/Expense	FY06 Operating Budget	Permanent and full-time employees*
Selectmen/Town Executive	\$391,867	4.00
Telephone	\$27,965	
Cable Television	\$43,400	1
Finance Committee	\$86,044	
Finance Director/Town Accountant	\$202,206	2.00
Assessor	\$218,696	3.00
Treasurer Collector	\$216,147	3.73
Computer Systems	\$168,444	1
Conservation Department	\$96,708	2.00
Town Clerk	\$101,093	2.00
Planning Department	\$181,390	3.00
Zoning Board of Appeals	\$9,600	
Town Reports/Town Meeting	\$13,070	
Town Office Building	\$72,789	0.88
Community Center	\$22,038	
Police Department	\$1,892,394	26.00
Police Building	\$52,518	
Fuel	\$123,074	
Fire/Rescue Department	\$1,988,906	16.00
Fire Building	\$48,233	
Building Department	\$222,522	3.00
Building Board of Appeals	\$250	
Sealer of Weights & Measures	\$500	
Tree Warden	\$85,802	.57
Shellfish/Harbormaster	\$192,468	3.00
Highway Department	\$640,259	9.00
Disposal Area	\$560,105	3.00

Water Department	\$806,016	9.00
Health Department	\$230,733	4.00
Council on Aging	\$368,376	2.00
Human Services	\$633,722	
Veterans Benefits	\$34,613	
Snow Library	\$442,196	2.75
Recreation Department	\$125,633	1.00
Windmill	\$7,497	
Parks & Beaches	\$1,000,108	6.66
<hr/>		
Total		107

* Note: The staffing figures include only full-time and permanent part-time employees receiving benefits.

Source: Town of Orleans Annual Budget for Fiscal Year 2006. The figures above are "as listed" in the FY 2006 Budget. The Town owns and maintains numerous properties, buildings, and facilities necessary to the provision of services. Table 7-B provides an inventory of Town-owned properties. This list does not include properties of the Nauset Regional School District.

The Town of Orleans owns a large number of facilities that are located throughout town. They serve a variety of purposes that range from Town Hall, home to Town administrative operations, to fields and public safety buildings. The table below provides a listing of the Town owned facilities and their respective location.

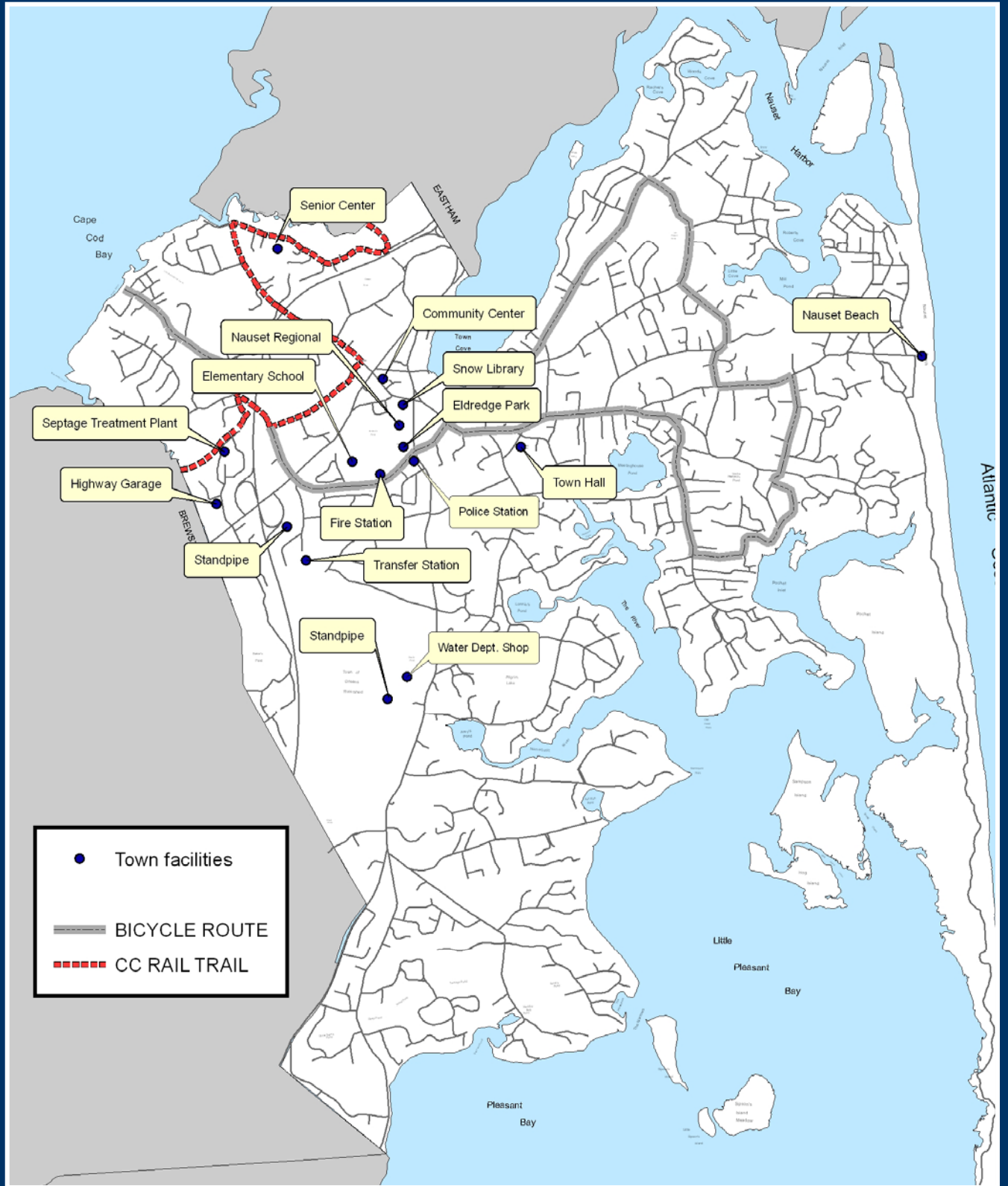
Table 7-B: Town-owned Facilities

Property	Location
Administrative Building and Bathhouse	Nauset Beach
Administrative Building and Bathhouse	Skaket Beach
Baseball Fields, Tennis Courts, Field Lighting	Eldredge Park Way
Duplex Dwelling #2	Wildflower Lane
Duplex Dwelling	Wildflower Lane
Elementary School and Gym	Eldredge Park Way
Fire/Rescue Station	Eldredge Park Way
Former American Legion Hall	Main Street
Highway Department Garage	Bay Ridge Lane
Highway Department Garage/Office	Bay Ridge Lane
Music Shell	Eldredge Park Way
Parks Department Office	Bay Ridge Lane
Police Station and Harbormaster Office	Eldredge Park Way
Rock Harbor (Docks, Piers and Floats)	Rock Harbor
Sea Call Farm Building	Tonset Road
Senior Center	Rock Harbor Road
Snow Library	Main Street
Storage Building	Transfer Station
Town Hall Annex	Main Street
Town Hall Office	School Road
Transfer Station	Lots Hollow Road
War Memorials (3) Flag Pole	Academy Place
Water Department Garage and Pump 1	Route 28
Water Department Pump 7	Quanset Road
Water Department Pumps 2,3	Chatham Road
Water Department Pumps 4,5,6	Cliff Road
Water Dept. Iron & Manganese Plant	Cliff Road
Windmill Museum	Town Cove

Source: Statement of Values for insured Town properties & department managers 2003



Orleans Comprehensive Plan: Community Facilities



Town Hall

Administrative and regulatory services of the Town are provided at Town Hall on School Road. The existing facility is 14,800 square feet in size. In November 2005, the Town Hall was evacuated to a temporary facility while a major renovation is under way.

The building, originally a school, was considered inadequate to meet the needs of the Town for public offices and meeting space. The design of the building was inefficient, handicapped access was incomplete, and the heating system was not reliable. The Town considered building a new facility but the final decision was to renovate the existing Town Hall. The renovated facility will be 18,000 square feet in size, with modern communications and audio/visual systems. The building was planned to accommodate the needs of the Town for the foreseeable future.

Occupancy of the renovated Town Hall is anticipated for spring 2007.

7.3.2 Library Services

The Snow Library facility, located on the corner of Main Street and Route 28 in the Village Center, currently meets the needs of residents and has been planned to accommodate the level of use anticipated for a growing population for the next 20 years. Library membership is free to all residents of Massachusetts and non-resident taxpayers. An annual donation of \$10.00 is requested of individuals not residing in Massachusetts who wish to obtain a card. A CLAMS (Cape Libraries Automated Materials Sharing) library card may be used at over 26 libraries on Cape Cod and the Islands of Martha's Vineyard and Nantucket.

The library was renovated in 1992, adding 5,700 square feet to increase the total area to 16,500 square feet. The library remains a well run and successful facility. In circulation, Snow Library was 2nd in its population group and ranked 14th out of all 336 public libraries in the state. In attendance, Snow Library was 3rd in its population group and 10th in the state.

As a member of the Cape Libraries Automated Materials Sharing (CLAMS) Network, Snow Library has in place the core technology for library telecommunications. This type of technology will have to be updated periodically, including new equipment. As with building space, technology is critical to providing citizen access to information.

Circulation & Reference Services

Circulation of library materials has shown a steady increase from 98,427 items in fiscal year 1995 to 158,367 items in fiscal year 2005. This increase is partially due to the increase in library operating hours over the past several years, from 38 hours per week in 1995 to 49 hours in 2005. Library reference service also continues to increase, with 7,865 transactions completed in fiscal year 2005 (Snow Library, 2005).

Internet Access and Computer Stations

In recent years access to the internet and internet workstations have become a very popular use of the library facilities and continues to be a valuable community service. The Library first offered internet access in 1992. Patrons can book one of the four stations where they are able to sit down at a computer to do research, shopping, or just surf the internet for up to one hour. The library also maintains “express” stations where patrons can sit down for 15 minutes or less to check email. Recent upgrades in technology infrastructure have allowed the facility to be a wireless internet “hot spot”. Wireless access is available to anyone within 500-1000 feet of the library, and on summer days numerous people use the service from their vehicles via laptop computer. With wireless internet becoming more popular the Library expects internet access to be an important community service well into the future.

Marion Craine Room Gallery

The Crane Room at Snow library is a 125 seat meeting room and exhibit space available for public use. The meeting space has been a valuable venue for public information forums and other available public events. The room is also available for public display of art and other exhibits at the approval of the Library Director.

Programs

Snow Library offers many programs to the community, and is a valued resource. Programs for children are provided by the youth services librarian and are offered throughout the year. The services include:

- Summer reading programs
- Story hours for preschool and toddler groups
- Outreach to Orleans Elementary, Nauset Middle and High Schools, and Lighthouse Charter School.

The library also offers several adult programs, which include:

- Sunday at Snow Lectures, held November through March (sponsored by the Trustees of Snow Library and the Friends of Snow Library)
- Lifetime Learning classes held in the Fall and Winter (sponsored by the Friends of Snow Library)
- Art exhibits presented on a monthly basis

Future program additions will depend upon the demographics of the area and, in all probability, will require an expansion of services for an older population.

7.3.3 Parks & Beaches

Operations

The Parks and Beaches Department is responsible for the maintenance and operation of all parks, playing fields, town cemeteries, public buildings grounds, public beaches, conservation areas, and numerous Town buildings.

The Parks portion of the department is devoted to maintenance of the park grounds, playing fields, cemeteries, conservation lands, bike and walking trails, plantings at traffic islands, and Town Buildings (Police Station, Fire Station, Town Office Building, Elementary School, Senior Center, Library and Community Center). This totals 129.4 acres of grounds, with 38 acres of lawn. The Department is also responsible for maintenance of 25,680 square feet of Town Buildings, including cleaning and trash removal.

The Beaches portion of the department covers water safety programs, collection of parking fees, beach passes and stickers, the off-road vehicle program, shorebird monitoring program, traffic control and enforcement of parking and off-road vehicle rules and regulations, overseeing concession contracts and operations, beach concert scheduling, and buildings and grounds maintenance and custodial services. The beach facilities include 864 acres of land, 8,200 square feet of buildings, and 22 miles of off-road vehicle trails.

Parks and Beaches facilities accommodate various activities, programs, and events, including swimming, surfing, fishing, sunbathing, biking, team sports, tennis, Cape Cod League baseball, Monday night concerts at Nauset Beach, Pops in the Park concert, and art shows at Depot Square.

Eldredge Field hosts Orleans Cardinals (Cape Cod League) baseball games each summer. The park is also home to Pops in the Park, Nauset Regional High School Homecoming, and two tennis tournaments each year. The department estimates that over one million visitors make use of Parks and Beaches facilities from May 1st to Columbus Day each year.

Staffing & Facilities

The Parks and Beaches Department maintains a staff of 6 ²/₃ permanent employees, and up to an additional 65 seasonal full- and part-time employees. The increase in population during the summer, and the seasonal use of most facilities requires that the operations of the department expand greatly during these months, including some twenty-four hour, seven day per week operations. Seasonal positions include beach supervisors, gate officers, park patrol, beach patrol, lifeguards, shorebird monitors, and laborers. Staffing with seasonal employees continues to be a problem. With the high costs of living on Cape Cod and the lack of affordable seasonal accommodations the Town could experience a shortage of available seasonal employees in the future.

The office and maintenance facility is located at 18 Bay Ridge Lane on land currently shared with the Highway and Harbormaster/Shellfish Departments. The Parks and Beaches building is a converted garage built in 1968 and remodeled for office use in the early 1980's. The building is in good condition. The maintenance operation is carried out in a shared portion of a 2,400 square foot metal barn. Constructed in 1975, the metal skin of the structure needs to be replaced. Two wooden storage structures (400 sq.ft. and 144 sq.ft.), original bathhouses at Nauset and Skaket Beaches, are also located on the site.

Table 7-C: Beach Parking Facilities

Beach	Number of Spaces
Nauset Beach	1000
Skaket Beach	175
Pilgrim Lake	60
Crystal Lake	8

Source: Parks & Beaches Department, 2004

The department currently has adequate office space to meet its needs; however, the existing maintenance and storage facilities are inadequate to meet the needs of the department. There is inadequate space for storage of equipment, vehicles, benches, lifeguard stands, and bulk purchases. There is also inadequate space to build floats and perform other tasks. In 1998 the Town commissioned Gaffney Architects to conduct a study of space needs for several departments, including Parks and Beaches, Highway/Transfer Station, Water, and Harbor Master. The report found that the Parks and Beaches Department was operating with less than the required amount of space. The report recommended that administrative functions continue in the existing building, and that equipment storage be accommodated in the existing Highway Department garage, which would be vacated under the recommendations of the report. The Parks and Beaches Department estimates that if it were to make use of the entire Highway Department metal barn, its space needs would be satisfied until 2010. A recently approved feasibility study for new Highway Department facilities should provide the Town with additional information on the space needs of that department. Any vacated space may be available for use by the Parks Department in the future. This could supply the additional space needed for Parks and Beaches operations that was detailed in the Gaffney report.

There are a number of Park and Beach facilities that have plans for future refurbishment and replacement.

Nauset Beach is the Town's most significant public beach (see Natural Resources chapter). Its 1,000 car parking area provides significant capacity for residents and visitors alike. Despite having the largest car parking capacity of any parking lot on the Outer Cape, it commonly fills up in the summer months. In recent years the Atlantic shoreline directly in front of the Nauset beach parking lot has significantly eroded. In many cases the level of erosion in this area has exceeded the shoreline average of 5' a year. At this time there is approximately 250 feet of dune area between the parking lot and the ocean. Under the current erosion average of five feet per year, the waters edge could reach the parking lot in approximately 50 years. However, there is potential for a major storm to erode into the parking lot much sooner, especially at the north end of the parking lot which is only 170 feet from the dune edge.

A new parking area further from the beach may be needed if the existing area is rendered unusable by erosion. The Town has put a 2 million dollar place holder in the capital plan in 2010 for developing off-site parking for Nauset Beach. Other investments have been made at Nauset Beach such as the installation a new septic system beneath

the parking lot, further away from the beach. In addition, funding has been placed in the capital plan for the replacement of the snack bar in FY 2007.

Skaket Beach, the Town's large bay side beach also has plans for future improvements. The Skaket Beach snack bar is scheduled to be replaced in 2007. The beach also undergoes regular re-nourishment to replace sand washed away with winter storms (see Natural Resources chapter).

The music shell, located at Eldredge Park, is aging and in need of major repairs. In fact, the music shell is scheduled to be replaced in 2008 for the sum of \$300,000.

In addition to the services provided by the Parks and Beaches Department, the Town also provides recreational services and programs through its Recreation Department.

7.3.4 Recreation

The Recreation Department offers various programs to all segments of the population on a year-round basis. The department has one full-time staff person (the Recreation Director) but hires 30 to 35 part-time seasonal employees for approximately 7 weeks in the summer months. The department office is currently located at the Community Center in the Village Center. The Community Center is staffed and open, for inside activities, 3 days a week in the summer.

Recreational activities take place at facilities throughout town. The Department continues to offer quality recreational programming for all ages. Utilizing the school facilities, the Town's many parks and beaches, and having dedicated groups of volunteers and summer staff, Orleans makes available a good number of healthy social and physical programs year round.

The facility needs of the department are currently being met. Although school enrollment has been declining participation in Recreation Department programs has been stable throughout the calendar year and over the last 5 years. Additional students from the charter school and high school have been increasingly participating in the Department's programs.

Community Center

The existing Community Center, formerly the Town Hall Annex, is located on Main Street in the Village Center. This building is partially used by the Recreation Department for office and storage space, and as a play area for young people. The Orleans Chamber of Commerce also uses a portion of the building. The building has a limited ability to accommodate recreation and cultural programs and events.

Recreation programming and the need for a community center are discussed in more depth in the Open Space and Recreation chapter.

7.3.5 Harbormaster/Shellfish Department

The Harbormaster/ Shellfish Department is responsible for providing services to the Town's waterfront, including harbor and Town landing maintenance, installing and

removing of seasonal equipment, and providing mooring and shellfish licenses. The department also enforces shellfishing regulations and restrictions. The department oversees the operation of Rock Harbor, and all other waterways facilities, leases, and incomes, and enforces local waterways bylaws and Massachusetts General Laws. Department staff participate in marine rescues, develop resource management plans for shellfish and other coastal resources, as well as enforce the Federal Clean Water Act and Endangered Species Act.

The department maintains a total of twenty-four Town landings. A listing of Town landings is provided in the Analysis section of this chapter. In the past several town landings have recently been improved by using available state funds through the Department of Environmental Protection. The Rock Harbor bulkhead is currently in need of improvement. The sheet pile and floats are expected to be replaced as well as the pilings used to create the slip space. This work is currently being planned for 2009.

The Department currently employs three permanent, year-round staff, one part-time assistant, and three seasonal employees.

7.3.6 Water Department

The Town developed a Water Supply Master Plan in 1998 with consulting assistance from Comprehensive Environmental Inc. (CEI) of Dedham, MA. A study was performed over a twelve-month period and included several meetings with the Water Department, Water Advisory Board and the Water Commissioners.

There are six groundwater lenses on Cape Cod that are hydraulically independent under natural conditions and are separated by tidal rivers. The lenses are bound laterally by the surface water bodies of Cape Cod Bay, Nantucket Sound and the Atlantic Ocean. Cape Cod is surrounded and partially underlain by salt water and a ground water divide crosses the Cape from west to east. This divide is the highest elevation of the water table from which water flows down and to either side. Water to the north of the divide flows into Cape Cod Bay and the Atlantic Ocean; water to the south of the divide flows to Nantucket Sound and to the Atlantic Ocean.

The Orleans wellhead protection areas, which encompass the Town's seven water supply wells, are located in the Monomoy lens of the Cape Cod Aquifer. This lens is bounded by the Atlantic Ocean, Cape Cod Bay, Bass River and by the Nauset lens. Groundwater in the Monomoy lens generally flows west to east.

The Water Department's administrative operations are housed in Town Hall. The administrative staff consists of the Water Superintendent, the business manager, and a clerk. The administrative staff is responsible for processing water bills, department accounting, and processing requests for new service, maintaining service files, pumping records, and chemical reports.

The Water Department serves approximately 5,060 accounts (97% of the town) through over 140 miles of water mains. The system has a total of seven production wells. Wells #1-3 were installed in 1962; Well #4 in 1973, Well #5 in 1974, Well #6 in 1984, and Well #7 in 1990. Wells #4,5, 6, and 1 are year round supply wells that feed the Town water

system via the water treatment plant. Wells #2 and 3 are on-line and augment the water supply system by adding capacity directly to the water supply system. Well #7, in South Orleans, is online and is primarily used for peak demand periods and seasonal use.

There are two storage tanks (standpipes) with a total capacity of 3.1 MG (million gallons), and usable storage of 1.9 MG. A water distribution system is considered adequate if it can provide the required flow for fires in addition to average consumption on the maximum day of the year. The Town has standby power on wells # 2, 3, and 7 and also has standby power on wells 4 and 5 via the water treatment plant. Wells 1 and 6 have no standby power. In addition, there are interconnections with the Town of Brewster valves to allow flow in either direction.

The majority of water mains are 8" in diameter and are made either of cast iron or ductile iron (cement lined). In 1989, the Town initiated replacement of all undersized mains (less than 6"). The distribution network is systematically flushed to remove sediment and precipitated iron in the spring and fall. Hydrants are inspected on a three-year cycle and repaired when needed.

System Capacity

As currently permitted under the State Water Management Act, the average daily capacity of the water system is limited to 1.78 MG. Over the past ten years, the average daily demand has been 0.86 MG, in 2004 it was .83MG. Typically, the greatest demand for water is in the summer months. The average daily demand for July 2004 was 1.58 MG. The peak water use days often jump very high as compared to the average day. The peak maximum day in 2004, June 28th, recorded 2.44 MG pumped.

Based on population and water demand projections, the Water Supply Master Plan projected that town water demand would reach the upper level of system capacity by 2013. This is based on the requirement that a system provide enough capacity to exceed the Peak Maximum daily demand by 1 MG, which represents a safety factor in the event that one well should go off-line due to a mechanical or other problem during the maximum day demand. The estimate also assumes that all existing wells would still be online at that time. The current maximum capacity of the system, using wells #1-7, is approximately 4.968 MG. The maximum day demand was projected to reach 3.38 MG by 2013. These water demand and capacity projections were based on historic trends in water consumption, population growth, new construction and new or upgraded water connections, and continued production from the 6 of 7 wells currently on line.

The Water Department in 1998 established a potential site for a new well within the Watershed. In May 1999, the Town approved spending \$100,000 for an extended pump test to determine the impact of the new well on the groundwater table. With the addition of the new well, it was projected that Orleans' water supply needs will be met through 2020. Currently there is \$200,000 in the FY 2009 capital plan for the construction of well #8.

The Town is continuing to experience a proliferation of private water wells, both potable and nonpotable, primarily in areas of Town not currently served by municipal water (approximately 5% of the Town). There has been an increase in the number of irrigation

wells installed, reducing the demand on the Town's public water supply during the summer months.

Currently, the Water Department conducts a Water Conservation Program with an annual open house during Drinking Water Week. Drinking Water Week provides an opportunity for residents to visit the pumping and water treatment facilities of the Water Department in order to learn more about the production of our drinking water. Other programs conducted by the Department include an annual newsletter, a tiered payment rate for water consumption, and biannual bills that have conservation messages. Also, the Orleans Elementary School's curriculum includes a tour and instruction of the production facilities.

Water Quality

The Town has met all criteria of the federal Safe Drinking Water Act, including the recent amendments of 1996. The Lead and Copper Rule of the Act limits the levels of these substances which may be present in drinking water at the faucet.

To prevent the leaching of copper and lead from household plumbing, the Town is required to neutralize the drinking water with potassium hydroxide. This treatment is currently being performed at the new water treatment plant (I&M plant) discussed later in this section. The Town not only continues to work to improve the quality of water once it is in the supply system, but also protects the quality of groundwater through land acquisition and land use regulation on watershed properties and in groundwater protection districts.

Bacteria

The combination of alkalization, phosphates and resident iron within the water supply has led to greater than usual layering out of biofilm along the walls of the water mains, providing a protective coating for the coliform bacteria. This issue was investigated in Orleans in 1994 and 1995 by consultants (Whitman & Howard, CEI). The consultant's report recommended chlorination, periodic flushing, and physical improvements to the system, all of which have been completed by the Water Department. By 1998, there was no sustained evidence of elevated bacterial count.

Slow flow within some of the "dead-end" portions of the distribution system and elevated water temperature and thermal layering in the stand pipes during the summer months are considered to be contributing factors to bacteria growth. The Water Department has introduced a plan to continue replacing undersized water mains, reducing "dead-ends" by looping the system, and studying the significance of water temperature in bacteria growth.

Nitrate Nitrogen

Non-point source pollution associated with individual septic systems has been shown to be a major contributor to drinking water quality problems in some Cape Cod communities. It should be noted that even a fully functional Title 5 septic system does not remove nitrogen from wastewater. Nitrogen passes through the soil to the

groundwater table and is then transported to its eventual release into a surface water body. In most Cape Cod soils, groundwater travels approximately one foot per day. This means that effluent from a septic system may take months or years to reach a down-gradient water body or water supply well.

Fortunately, Orleans has yet to experience degradation of the water supply resulting from nitrate contamination. Sampling results presented in the 1998 *Water Supply Master Plan* indicated nitrate nitrogen levels less than 0.1 mg/l (PPM), well below the federal drinking water standard of 10 PPM, and Regional Policy Plan recommendation of 5 PPM. Nitrogen levels in the drinking water supply continue to remain low today.

Iron and Manganese

Iron and manganese are commonly found in many New England water supplies. There have always been moderate amounts of iron in Orleans' water supply. However, high levels of manganese coupled with existing iron levels resulted in Well #1 being removed from use in the early 1990s. Furthermore, increased but sequestrable levels are present in other wells, most notably in Well #6. It is common for groundwater sources to exhibit this increase in iron and manganese over time and in many cases the source or cause is not found. Polyphosphate has been used in the past at the wells with high iron and manganese in an effort to prevent oxidation and precipitation.

In 2004, an iron & manganese removal facility (*I&M Plant*) was constructed to treat all water pumped from the main watershed area. The plant went on-line in March 2005. At present, Wells # 1, 4, 5, and 6 all feed the I&M plant. The plant is highly automated and no additional water department staff are necessary to run the facility. A network of 305 alarms and an automated alarm reporting system keep staff informed at all times that the plant is operating correctly and efficiently. Redundant systems occur throughout the plant and a generator stands by to keep the plant on-line and available during times of prolonged power outages. This major step has allowed the Town to put all 7 wells back into production, which increased the pumping capacity of the system as well as improved the overall quality of Orleans' drinking water supply.

Salt Water Intrusion

Because of its proximity to Pleasant Bay, Well #7 is the most prone to salt water intrusion. In 1998, a study was conducted to determine the potential for seawater intrusion. It was found that there has been no deterioration of the water quality in the history of the well (first exploration in 1983). Using an algorithm based on the elevation of the groundwater table under non-pumping conditions, it was hypothesized that the freshwater/saltwater interface is 400 feet below ground surface, or that the freshwater lens under Well #7 extends to bedrock. If true, there will be no need to alter the pumping characteristics of this well.

Impaired Groundwater Areas

There are some areas of degraded groundwater of concern to the Town due to their potential impacts on groundwater and surface water quality. The Health Department has identified the Town landfill, the Tri Town septage treatment plant, a sand and gravel

company, and a dry cleaner and service station in the Village Center as sources of contamination of varying degree. There has been limited exploration and analysis as to the outer limits of degraded groundwater from the above mentioned sites. However, monitoring wells are maintained in the area of the closed landfill, and the septage treatment plant. In other areas, state environmental officials are responsible for groundwater monitoring associated with the identified impaired areas.

Remediation projects have been completed for the old Hopkins Cleaner site and the Getty Service Station. Both of these businesses were located on Route 6A in the downtown area. According to a 1998 report, cleanup of the soil at the two sites has been completed. Groundwater cleanup for the gas station contamination has also been completed.

Although soil contamination at the Hopkins Cleaner site has been cleaned-up, the low-level tetrachloroethylene (commonly referred to as PCE) groundwater contamination has not been remediated. The level of PCE contamination was determined to be below that requiring cleanup under state regulations. In 1996, the groundwater beneath the downtown was reclassified by the state to a non-drinking water status which requires a lower level clean-up. The groundwater carrying the PCE is moving in the direction of Town Cove and is expected to have an as yet undetermined impact on this resource. There are no private water wells in the path of this movement.

The Commonwealth has designated the downtown area as an area of dense urban development, which is meant to raise concern regarding groundwater quality for any existing or future private wells in the area. Most new development in Town, especially in the Village Center, is on public water but the designation does raise the threshold for triggering cleanup of contamination.

The treated effluent from the Tri-town Septage Treatment Plant, located on Overland Way, is discharged and eventually reaches groundwater. This impacted groundwater is being tracked by the USGS as part of a groundwater study. Groundwater monitoring is also carried out as part of the requirements for plant operation, as regulated by the state. There is no immediate concern relating to this state permitted discharge.

There is also a sand & gravel excavation facility located outside of Orleans that was cited in August 2003 for a potential hazardous materials release. The site is located within the DEP Zone II for Orleans drinking water supply wells. Follow-up action by the DEP resulted in a cleanup of construction and demolition debris from the site as well as a requirement to install monitoring wells down gradient of the subject site. One concern cited by the Town environmental consultant was that the disposal plume emanating from buried wood waste showed elevated concentrations of nitrogen, which will continue to move down gradient with groundwater movement. The Orleans Health and Water Departments are fully aware of the need to closely monitor activities on the site in order to protect public drinking water.

The Health Department has begun a registration program for all private wells in town. This information will allow the department to identify private wells at risk of contamination due to any identified contamination.

7.3.7 Wastewater

Orleans currently relies entirely upon septic systems for the disposal of wastewater. As the population of Cape Cod has increased, it has become apparent that the level of treatment provided by individual systems is not sufficient to protect the natural resources of the community. In Orleans, all water that is discharged into the ground eventually flows underground to fresh or marine surface waters. In many cases, the nutrients contained in wastewater effluent have caused eutrophication, or accelerated aging, of the receiving water bodies. For this primary reason, the Town of Orleans has begun the process of developing a comprehensive wastewater management plan (CWMP). The plan will propose an integrated, phased program to develop wastewater facilities in order to properly treat residential and commercial effluent.

Septage Treatment Facility

In the mid-1980s, the Towns of Orleans, Brewster, and Eastham joined together to construct the Tri-town Septage Treatment Facility, located on Overland Drive in Orleans. Septage pumped from businesses and residences in the region is treated at this facility utilizing advanced wastewater treatment processes. The facility has a permit for the treatment of 45,000 gallons per day (GPD). Septage is also accepted at the plant from Provincetown, Truro, Wellfleet, Dennis, Yarmouth, Chatham, and Harwich. Upgrades to the processing equipment have been ongoing.

In 2005, through funding from Barnstable County, the Town completed an engineering study of the Tri-town facility. The final report recommends a series of upgrades to maintain plant operations through 2025. There are also recommendations to increase plant capacity to 60,000 GPD and to add nitrogen-removal components. The study also considered the potential for adding a *sewage* treatment facility at the site.

Wastewater Management Planning

In 2001, the Town began the wastewater planning process by initiating a program of town-wide water quality testing. All marine waterbodies in the town were tested throughout the summer months as part of the Massachusetts Estuaries Project. The program was designed by The University of Massachusetts, School of Marine Science & Technology (SMAST). More than 100 local residents were trained in proper water sampling techniques. The intense level of testing continued through 2004, and was scaled back to more limited testing in 2005.

In 2003, Orleans was one of 12 recipients nationwide of a wastewater management grant from the Small Flows Clearinghouse. The federal grant was used to investigate the administrative, financial and regulatory aspects of managing wastewater. A report issued in 2005 described and evaluated the many management options that can be considered by the town and recommended that Orleans adopt an Integrated Water Management District. The district would manage any proposed wastewater facilities, and would also play a role in regulating the proper treatment and disposal of stormwater runoff, and lesser but important contributor of water-borne pollutants.

In 2005, the Comprehensive Wastewater Management Plan was formally commenced with the hiring the engineering firm Wright-Pierce. The process is expected to be completed in 2008, after which the highest priority facilities will be designed.

Future Wastewater Treatment Facilities

Until the Town makes further progress in its CWMP process, a true understanding of the need for future community facilities will remain unknown. Wastewater treatment requires three basic sets of equipment: collection system, treatment plant, and effluent disposal area. Because much of Orleans is low density, traditional centralized treatment facilities may not be cost-effective for large portions of the town. This is especially true around the headwaters of Pleasant Bay where a number of nitrogen-impacted embayments are located.

It is likely that the Orleans CWMP will recommend a combination of centralized, decentralized, and individual on-site treatment/disposal systems. Some areas of the Town will likely continue to rely on individual septic systems for the foreseeable future.

A decentralized approach would encompass the use of a number of small “package facilities” located in close proximity to the neighborhood being served. If this approach is found to be practical during the CWMP development process, the Town will need to purchase strategic parcels of land for facilities. A good example of a decentralized facility is the new sewage treatment plant at the Community of Jesus campus. Located within the watershed of Rock Harbor, the plant is licensed to treat up to 20,000 gallons per day of effluent, the equivalent of approximately 100 homes. The plant cost approximately \$1.4 million to construct in 2001.

7.3.8 Highway Department

The Highway Department facility is located on Bay Ridge Lane, and shares a 3.88-acre site with the Parks and Beaches Department. The site is used to its full capacity, including buildings, storage sheds, parking, and outdoor equipment storage. Equipment and materials for all aspects of street maintenance are stored in the maintenance garage. The existing facility provides approximately 3,000 square feet of administration and operations space, far below the 10,000 square feet recommended in the Gaffney Report.

The department is responsible for maintaining 53 miles of public streets and all public parking areas (except beaches). Ten full-time workers are employed.

The Town voted in 2005 to conduct a feasibility study for a new Town Maintenance facility to replace the existing Highway Department garage on Bay Ridge Lane. The study will seek to update information previously outlined in the Gaffney Report. The study will include the review of possible existing Town owned locations for the new facility. Ideally any proposed larger facility would be constructed in a more central location in Town that could potentially accommodate the combined operations of several Town departments.

Solid Waste Management

The Solid Waste Management Facility consists of the closed landfill and the Transfer Station with all its components: recycling containers and structures, trash compactors, white goods (appliances) areas, and demolition and composting areas. It is operated and maintained by the Town Highway Department for disposal of acceptable waste generated within the borders of the Town of Orleans.

The facility on Lots Hollow Road is used for material storage. This material is then compacted and shipped to a location outside of town. Municipal Solid Waste (MSW) is the material that is generally bagged and placed in the compactor hoppers at the facility or collected by private haulers and taken to the Yarmouth facility. Acceptable MSW is defined by the contractor receiving facility (SEMASS and recycling receivers). This waste is delivered to the SEMASS incinerator in Rochester, or to appropriate recycling facilities.

The Town currently has a contract with SEMASS to accept municipal solid waste. The contract, originally executed in January of 1985, was recently renewed to run until 2015. The contract is to accept MSW at a rate of \$37.50 a ton. Because of the Town's early enrollment in the SEMASS partnership the cost per ton for accepting waste is a good value to Orleans. Construction and demolition debris is collected and sent to a landfill in Bourne. The costs of transportation and handling are supported through tipping fees, separate from the basic sticker cost. In 2005, the cost for a residential or commercial sticker was \$60. The capital and operating costs of solid waste disposal and recycling are supported through sticker fees, tipping fees and municipal taxes. As of 2004 the operating cost for all solid waste disposal totaled approximately \$554,295. Revenues from tipping fees and sticker sales cover approximately two-thirds of operating costs, with the remainder covered by tax revenues.

The Board of Health maintains authority over the operation and maintenance of the facility. The *Rules and Regulations for the use of Orleans Solid Waste Facility* and the *Disposal Managers Operations and Maintenance Plan* are the two documents that define those parameters. In addition, the Board of Health determines the sticker fees and tipping charges and defines "sticker eligibility." The Board of Selectmen contract for refuse removal, establish the level of staff and personnel policies, and determine "sticker eligibility" for beach stickers, which double as Transfer Station stickers. The Board of Selectmen determines the policy by which Transfer Station operations will be funded.

Table 7-D describes the method of disposal and the amount of solid waste generated between 2000 and 2004.

Table 7-D: Solid Waste Management System

Type of Waste	Disposal Method	Average*	2000*	2001*	2003*	2004*
Municipal Solid Waste	Brought to Orleans then shipped to SEMASS	3440	3514	3496	3314	3439
Construction/ Demolition Debris	Landfilled in Bourne	4162	1653	1100	978	431
Recycled materials	Recycled	1772	1507	1532	2044	2007

* : Data in TONS of waste

Source: Orleans Highway Manager, 2005

Solid waste and recyclable materials are delivered by commercial refuse haulers, contracted by the Town, to either the SEMASS incinerator or to the recycling market place. The capital and operational costs of solid waste disposal and recycling are supported through both fees and taxes.

Landfill

The landfill was closed by State mandate in June 1991. Capping work started in 2004 and was completed in 2005. All of the major issues with the Massachusetts Department of Environmental Protection were resolved and work is complete.

As discussed in the water quality section above, there was an area of degraded groundwater associated with the landfill. Now that capping is complete this will halt further infiltration and leaching of water through the waste, and the ongoing decline in contaminant concentration levels in the groundwater is expected to continue.

Recycling and Composting

Under Town Bylaw, residents and commercial establishments disposing of waste at the Transfer Station are required to separate recyclable items from other trash. Items that are currently recycled include: glass, newsprint, cardboard, plastic, tires, surplus paint, waste oil, gasoline, fluorescent bulbs, batteries, tin and aluminum cans, metal, and freon. Used household goods can be dropped off or obtained at the gift house. Organic matter such as brush, grass, leaves and pine needles are composted. Since 2000, Orleans' recycling program has grown by 500 tons and accommodates approximately 34 % of all solid waste. The Regional Policy Plan has set a goal of recycling or composting 30% of the waste stream by 2000, and 40% by 2005. Our recycling efforts should continue to be increased as DEP has implemented additional waste bans and the costs of disposal are anticipated to increase.

Waste Reclamation

In an effort to recycle in creative ways, the gift house provides the opportunity for unwanted but serviceable goods to be reclaimed for use. Residents can also remove composted material and unused paint for their use.

Hazardous Waste Collection

Hazardous waste is collected on the designated annual Household Hazardous Waste Collection Day. This county program, funded through taxes, provides for Hazardous Waste Collection day(s) at least once a year and sometimes more when held in conjunction with a neighboring town.

Certain household hazardous waste materials are also collected at the Transfer Station on a daily basis. Waste oil is collected in a 500-gallon approved container and removed as necessary. Gasoline collection is also available, although residents' primary need is in the spring and fall. Batteries, televisions, and electronic appliances are also collected for recycling.

The Town opens a paint shed for recyclables once per month during the summer for residents. This program has been temporarily suspended during the landfill capping and transfer station re-configuration. The Paint recycle program will continue, on a similar schedule, once the re-configuration is complete.

Stormwater Collection, Treatment and Discharge

The majority of the Town's roadway drainage system consists of leaching catch basins that require annual maintenance. Maintenance costs are approximately \$7,000 a year per catch basin cleaning. An additional \$10,000 is spent per year for as-needed drainage system maintenance. Updating and replacing deficient drainage infrastructure continues to be a priority for Orleans. In 2005 the Town voted to appropriate an additional \$500,000 for the Highway Department to continue drainage system repairs throughout town. The department maintains a comprehensive list of drainage problem areas and will soon begin corrective actions on the highest priority locations.

There are several locations where catch basins are connected to leaching galleys or treatment systems to prevent the direct discharge of untreated stormwater into water bodies. Many of these systems have been equipped with particle separators to remove suspended solids. As part of a proactive program to improve coastal water quality, point source discharges of pollution from roadway run-off are systematically being eliminated. In the 1990s, the Town completed drainage improvement projects recommended by the Marine Water Quality Task Force at a cost of over half a million dollars. As a result of these improvement projects, stormwater discharged directly into water bodies has been greatly reduced.

As part of this drainage remediation program, the following Town-owned properties have had stormwater drainage facilities upgraded: Head of the Cove and Academy Place, Barley Neck Road, Town Landing at Meeting House Pond, and Tonset and Main Street (under street layout). The drainage system used on these properties consists of large sediment tanks with piped connections to leaching galleys and overflow pipes to the water bodies. In 1999, the Town installed remediation equipment on Kescayogansett Road near Lonnie's Pond and at Snow Shore landing. These systems employed sand filters and biological processes to treat stormwater prior to its discharge to local waters.

The stormwater drainage system at Cranberry Cove Plaza has been a problem for several decades. Stormwater that passes through the pond system for the complex originates from several locations in addition to the Stop & Shop site, including Route 6A and a number of businesses within the drainage area. In 1989, a release of hazardous materials from this site was responsible for the death of millions of seed shellfish at the Town Shellfish Lab, which has since been removed. In 2005, the Town completed a comprehensive study of all stormwater sources and recommended a phased program to effectively improve stormwater prior to release. The Town will be attempting to secure state funds through the Coastal Pollutant Remediation Program (CPR) to install better treatment systems for the area.

Other areas where construction, renovation, or expansion of the storm water drainage system has been completed or in progress, include: Briar Spring Road, Brick Hill Road Extension, Crescent Ridge Road, Crystal Lake/Monument Rd. & Rt. 28, Hopkins Lane, Loomis Lane, Arey's Pond, Pilgrim Drive, Quanset Road, Ruggles Road, Tonset Road (Near cemetery), Town Highway Garage, and Salt Works Circle.

7.3.9 Public Safety

Police Department

Currently, the Police Department's facilities are adequate to meet the needs of the resident and seasonal population. The existing police station, remodeled in 1989, is in good condition and is adequate to meet space needs of existing personnel; however, the heating system is in need of upgrading. The building houses the Police Department operations, Public Safety Dispatch, lock-up facilities, and includes a three-bay garage. The police station is located at the intersection of Route 28 and Eldredge Park Way, on 1.32 acres of land shared with the Harbor Master/Shellfish Constable.

As the Town approaches buildout, the increase in population will result in the need for additional officers, vehicles, lockup facilities, and other facilities. Currently, in the summer months, police staffing is not adequate to meet the Town's needs and seasonal help is hired. The Police department personnel consist of the following: a Police Chief, two Lieutenants, four Sergeants, one Detective, and twelve Patrolman. There are also four civilian dispatchers as well as two administrative assistants. In addition to the full time staff, the Town hired seven (7) seasonal Traffic Officers in 2005 . The current permanent staff of sworn police officers represents a level of 3.0 officers per 1,000 of population, a level that has been maintained since the late 1990's. The national average is 3.5 sworn officers per 1,000 of population.

The Town recently voted to approve an amount of \$75,000 to be included in the FY 2006 Capital Plan to study re-design of the Police Station. This study will look at optimizing the existing facility and the growing demands and needs of the department. The study will focus on re-design of the centrally located building in order to bring the station up to current state codes regarding police facilities.

The Police Department's mission is to enhance the quality of life in Orleans by providing a safe environment for residents and visitors. The Department provides key community services and addresses many concerns, including the following:

1. Community Policing – This term, created several years ago by a former Police Chief, was introduced as a way to get citizens and police officers together to solve quality of life issues. By working together in the community they can help solve crime, problems related to crime, fear of crime, and create a safer unified community. This continues to be a key philosophy for the Department.
2. Elder Services - As discussed in the Health and Human Services Chapter, the Police Department participates in many health and human service functions. These popular services to the senior population could increase the demand on departmental resources as the population of older citizens continues to grow.
3. Roadway Safety – Educating the public about roadway safety, speeding and seatbelt laws, and aggressive driving behavior continues to be a top priority for the department. The department has received local and national recognition for its roadway safety efforts. Seasonal congestion continues to overwhelm the transportation system. This is expected to continue, and intensify, particularly as the population of Orleans and other towns on the lower cape continues to grow.
4. Homeland Security – Since 9/11/01 our nation stressed the need for enhanced homeland security. The Orleans Police Department continues to evaluate our security levels and provide enhanced training for department employees.

Fire/Rescue Department

Orleans Fire/Rescue Department is staffed 24 hours a day. The Fire/Rescue Department is housed in a two-story brick building at 58 Eldredge Park Way, on land shared with the Elementary School. The facility, renovated in 1989, is in very good condition. It has three truck bays, and four bays in the ambulance portion of the facility.

The facility is used to its full capacity at this time and any future expansion of the department will require an addition to the facility. The original design of the Fire/Rescue Station included space to accommodate expansion for 25-30 years. However, due to cost constraints, the facility was scaled back when constructed in 1989. Approximately 1,200 square feet of office space, and 2,500 square feet of apparatus space was removed from the original design. Now, sixteen years into the life of the facility, the department has maximized the use of the building. In addition, much of the infrastructure in the building (now 16 years old) will need updating and replacing. A large part of the departments annual budget continues to be directed towards apparatus maintenance due to the increased number of trip to the hospital (*see Human Resource Chapter*).

As with the Police Department, the Fire Department's staffing resources will be increasingly stretched as the community continues to grow and age. Currently the department consists 19 full time personal and 15 call personal. Over the last 10 years the department has added 4 full time staff and relied on 3 fewer call firefighters.

There are planned capital investments in the next five years in order to support existing operations. These investments include replacing the ladder truck in FY 2008 at an estimated cost of \$575,000 and continuing the ambulance replacement program. The Fire

Department has 3 ambulances total and one is replaced every 2 years. This program has been successful in maintaining the ambulance fleet and not allowing an ambulance in operation to be older than 6 years. A feasibility study for a possible expansion of the facility is listed in the Capital Improvement Plan for fiscal year 2010.

7.3.10 Cemeteries

The Orleans Cemetery Association is currently the sole entity providing new burial plots for sale to serve the needs of Town residents. The Association cemetery is comprised of approximately forty acres located in East Orleans, bounded by Tonset Road, Main Street, and Meeting House Road. The cemetery sells approximately 35-40 plots per year.

Association officials estimate that at the current rate of sale, and with the increase in the number of cremations (requiring less space), the cemetery will be able to accommodate the needs of the community for the foreseeable future.

7.3.11 Education

Education in Massachusetts is regulated to a great extent by the Legislature, which delegates local authority to the School Committee. Since school curricula and spending are dictated by the State, this Plan does not attempt to engage in a discussion of the merits of the education system or its operating budget. In addition, most local school related issues are under the jurisdiction of the School Committee. However, schools are tied to the financial structure and growth of a community and should be addressed to some degree by the Local Comprehensive Plan. The focus in this section is projecting the capital facilities needs of local schools.

Local Schools

Students in Orleans attend local schools through grade five, then attend either the Nauset Regional Middle School or Cape Cod Lighthouse Charter School for grades six through eight. Students attend either Nauset Regional High School or Cape Cod Regional Technical School for grades nine through twelve. It should be noted that school choice is available on the outer Cape, which allows students to attend schools in other towns.

Orleans Elementary School

The design capacity of Orleans Elementary School is 480 students. In 1997, the school had its highest enrollment in recent history with 344 students. Current enrollment and projections, based on a cohort-survival ratio technique, indicate leveling and slight decline in future enrollment. It is unclear whether the decrease in student enrollments is part of a cycle or is a long-term trend. Construction data for new homes and census data suggest a continued population trend away from young families and toward an increased retiree population.

Table 7-E: Orleans Elementary School Enrollment

Grade	Actual Enrollment					Projected Enrollment			
	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
K	34	41	34	40	30	29	31	31	31
1	45	33	40	32	43	31	29	31	31
2	38	40	34	36	33	30	31	29	31
3	37	39	43	35	38	44	31	32	30
4	47	35	39	47	38	34	44	31	32
5	54	49	39	42	47	40	36	47	33
TOTAL	255	237	229	232	229	208	202	201	188

Source: Orleans Elementary School, 2005

Nauset Regional Middle School

Nauset Regional Middle School is located on Route 28 at Eldredge Parkway. The school accommodates grades six through eight and has a capacity of 900 students. As of June 2004, enrollment totaled 759. As with the Elementary School, enrollment projections show a decline in the prospective number of students. In 2009 enrollment is forecast to be 579 students with 128 kids attending from Orleans.

Table 7-F: Nauset Middle School, Orleans Student Enrollment

Grade	Actual Enrollment					Projected Enrollment			
	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
6	55	41	45	39	40	42	42	37	49
7	45	51	42	47	42	49	42	42	37
8	52	47	49	41	48	44	48	42	42
TOTAL	152	139	136	127	130	135	132	121	128

Source: Nauset Regional School District, 2005

Nauset Regional High School

Nauset High School in North Eastham has a capacity of 1,000 students and the flexibility to accommodate several hundred additional students. Total enrollment in the Nauset High School in 2004-05 was 1094 students, 205 from Orleans. The facility has been expanded to accommodate projected growth within the region, although growth from Orleans is not expected to be a significant component of overall student population increases as Orleans' projected High School enrollment is declining.

Table 7-G : Nauset High School, Orleans Student Enrollment

Grade	Actual Enrollment					Projected Enrollment			
	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
9	52	63	59	57	54	49	44	44	36
10	40	38	55	47	49	46	43	39	39
11	35	37	42	55	45	45	44	41	37
12	38	29	35	42	57	50	43	42	39
TOTAL	165	167	191	201	205	190	174	166	151

Source: Nauset Regional School District, 2005. Projected enrollment figures are based on the average percentage of students from Orleans at 18.7%.

Cape Cod Regional Technical High School (CCRT)

A small contingent of Orleans high school students is educated at the CCRT. Over the last thirteen years, the total number of Orleans students attending the school was 15, but Orleans School officials expect that number to increase slightly in the future. Based on projected enrollment rates, no major expansion of facilities at Cape Cod Tech is expected. Aside from enrollment, other ongoing and future needs include \$100,000 per year for technology updates, and an increased Operating Budget for maintenance of the buildings as they age.

Cape Cod Lighthouse Charter School

The Cape Cod Lighthouse Charter School, located in Orleans, has a capacity of 160 students, grades 6-8. During the 2005 school year, 14 Orleans residents attended the school. Classroom space is adequate to meet the needs of faculty and children, although there is concern about the lack of an outdoor recreational area. The lack of available land at the current location negates expansion of the facility for the development of playing fields.

7.4 Analysis

7.4.1 Town Administration and Facilities

The following sections discuss anticipated Town needs to address ongoing and anticipated services. Several facilities are currently in need of expansion, or are expected to require expansion in the future. These expansions are due, in part, to the need to continue service provisions for a growing and aging population. With the need for expanded facilities comes the potential need for the Town to acquire additional land to accommodate new and expanded operations.

Town Hall

Municipal business cannot be conducted effectively within the existing Town Hall facilities. In February 2004 the Town approved \$425,000 to hire an architectural firm to design the Town Hall Renovation. In May of 2005 the Town approved the total project cost estimated at \$6.2 million for the renovations. Work began in April of 2006 with Town staff working out of a temporary facility for approximately one year. It is expected that in Spring of 2007 Orleans will have a functioning, fully renovated, Town Hall located at the existing site. This milestone will wrap up many years of studies and design plans and will provide the Town with a facility capable of meeting its operational needs well into the future.

Other Issues

Insurance coverage should be adequate for all facilities to protect the Town in the event of a major loss. Replacement cost figures related to existing insurance coverage are from insurance appraisals completed in 1995, and were updated in 2004. . The Town should maintain and periodically update the current list of all Town facilities and their actual cash value or replacements cost, and insure these facilities accordingly. (CF-7)

Residents have expressed a strong desire for environmental and natural resource protection. Recycling of waste, such as paper, should occur throughout Town facilities. (CF-8) New buildings should be designed to be energy efficient and to take advantage of the latest in environmentally friendly technologies and recycled materials. (CF-9)

7.4.2 Library Services

The 1992 library renovations were designed to accommodate twenty years of growth. Although demand for the use of library space is currently heavy due to the lack of public meeting space throughout the town, this might be expected to change with the renovated Town Hall and its additional meeting space.

Snow Library anticipates a need for additional staff resulting from changing technology and an expansion of operating hours. With the dramatic change in information technology there is a need for staff with expertise in system maintenance and database searching.

Although the Snow Library facility currently meets the needs of residents, there are issues associated with Library service that will require capital expenditures to resolve:

- Technological upgrades and equipment will be necessary to remain compatible with the Cape Librarians Automated Materials Sharing Network (CLAMS) (CF-10);
- Building renovations and repairs, and possibly expansion, will be needed over the next twenty years.

Snow Library is in the process of formulating a five-year plan to be submitted to the Massachusetts Board of Library Commissioners. Subsequent five-year plans will then be completed. A major study of the capability of the existing building to meet anticipated library service requirements in 2010 should be planned to assess possible renovation/expansion and technology infrastructure needs.

7.4.3 Parks & Beaches

The Parks and Beaches Department is responsible for an extensive amount of facilities and programs, particularly during the summer season. Existing staff and operations facilities are stretched to maintain a high level of service. Additional staff and new facilities will be required to continue required operations. The need for additional staff and equipment will be accentuated by new conservation land acquisitions and any new parks, fields, and trails, as recommended in the Open Space and Recreation Chapter. The direction the Town takes on these items will determine the need for additional permanent and seasonal staff, as well as facilities and equipment.

At the present time, with existing responsibilities, the Department is in need of expanded maintenance and storage facilities. New or expanded facilities should be provided in conjunction with the proposed relocation of the Highway Department. (CF-11) The Parks and Beaches Superintendent has estimated that expanding into the existing Highway metal shed would provide adequate space until 2010. Existing office space is sufficient, although a new heating system is needed. Following is a listing of anticipated capital items and facilities needs.

Nauset Beach

- Additional toilet/changing/storage facilities
- Repairs to gazebo
- Renovate/relocate snack bar
- Replacement and new boardwalks
- Implementation of erosion control measures

Skaket Beach

- New changing facilities
- New handicapped boardwalk
- Purchase and provide better access to existing Cape Cod Bay waterfront

Crystal Lake

- Provide restroom facilities
- Purchase pond-front property to provide better access

Eldredge Field/Music Shell

- Music shell structural work
- New irrigation system

Community Center

- Replace electrical wiring

Jonathan Young Windmill

- Continuous repairs

New Facilities needs

- Restrooms
- New multipurpose athletic field (baseball, soccer, football)
- Insect/pest management program for Town buildings and grounds
- Irrigation systems (preferably supplied by new wells) at Police Station, Village Green, Eldredge Small, Soldiers Monument, Depot Square, Center Cemetery, any new athletic fields
- New equipment: tow-behind slice seeder, tow-behind coring machine, 500 gallon watering tank

Parking areas at Skaket Beach, and Pilgrim and Crystal Lakes are limited. Before pursuing expansion of these parking areas, the Town should determine the upper limit of use and the appropriate amount of parking and other services that these facilities are able to accommodate. (CF-12) It may not be desirable to increase parking to attract more use if the result will be to degrade the natural resources, or to negatively impact the users' experience.

The Department is currently in need of additional staff during the warm-weather months. As mentioned in the inventory section, department operations expand considerably during these months. This need for staff is expanding into the spring and fall as the number of visitors during these times of year is continuing to increase. Specifically, the Department currently needs additional part-time office help and an additional lifeguard during the summer season. Beach Patrol hours should also be expanded into the Spring and Fall months due to increasing use during these times.

Limited housing availability and the relatively low pay for seasonal Town employees have contributed to the inability to recruit adequate seasonal labor. This, combined with on-the-job injuries will continue to add to costs for completing needed work and deferment of some necessary maintenance.

Maintaining the level of service at Nauset Beach in the face of continuous beach erosion is a primary concern. (CF-13) Erosion is expected to continue which will result in the need to relocate the restrooms and snack bar. The department should develop a plan to

respond to Beach erosion at Nauset Beach, including relocation of buildings and parking facilities.

The town should develop a schedule to implement the necessary improvements identified above. (CF-15, CF-16)

7.4.4 Recreation

The existing recreation facilities are adequate for the programs currently offered. Any new proposed facilities would result in added programs that would then require the additional staff. It is expected that over time new facilities will be needed to meet the needs of the Town for the anticipated growth and aging of the population. To properly manage existing programs, the department is in need of at least one part-time assistant. The level of future staffing would be determined by the extent of the programming offered in response to the desires of Town residents. As the older segment of the town's population continues to grow, programs should be adapted to serve this group.

Community Center

The Town should revisit the use of the existing Community Center as it examines the community's facilities needs for recreational, cultural, and arts programs. (CF-2)

(CF-2) Interest has been expressed in the need for an indoor community swimming pool, an area for cultural gatherings, as well as any number of other community activities. This community center could also be designed to accommodate recreational programs and classes, in addition to cultural and arts activities. (OS-18) The community center should be located to maximize potential use and accessibility.

The Town should conduct a needs and cost analysis for community center and pool facilities. (CF-2) This analysis should include an examination of the suitability of existing Town facilities for use for these purposes, and determine the optimum location for any new facility. As discussed in the Open Space and Recreation Chapter, depending on the identified needs and the will of residents, a new facility should be designed and constructed. (CF-2, OS-18)

7.4.5 Harbormaster/Shellfish Department

The Harbormaster/Shellfish Department currently operates from a two-bay garage that is not adequate to meet space needs. Although the current location appears to be advantageous due to the close working relationship with the Police Department, the harbormaster office and storage space should be expanded. There is limited room to accommodate necessary building and parking expansion at the current site which may require relocation of these departments. The Department estimates a need to expand the facilities by 600-1000 square feet, while the Gaffney Report estimates a need for over 1,200 square feet of additional space. It also recommends relocating the Harbormaster/Shellfish Department to the existing Highway Department facility, assuming that the Highway Department relocates to another facility.

In addition to current needs discussed above, the Department may need further expansion to meet the needs of a growing boating population. If demands on the department continue to increase, additional staff, boats, and a garage bay will likely be necessary.

A greater use of existing town landings is anticipated, which will require improvements and additional maintenance. There will also be more demand for expanded mooring facilities, and new landings. Even though there are currently waiting lists for moorings at Town landings, the Town should consider the potential impacts of expanded mooring and landing facilities. The current cap on moorings is primarily due to parking limitations. Although there may be space within the Town’s estuaries to expand mooring fields, expansion should not occur at the expense of water quality, shellfish and finfish habitat, eelgrass and other vegetation, or safety.

Expansion of parking facilities at the Town landings would require purchase of private property. The current level of facilities (24 landings and approximately 1,400 moorings) is the maximum that the ecosystem will support without experiencing substantial degradation, and public safety hazards.

The Harbormaster has recommended that the following improvements to existing Town landings should be considered:

Table 7-H: Town Landing Improvements

Area	Proposed Improvement
Snow Shore Landing	Repave parking area; Reconstruct retaining wall
Priscilla Landing	Install trench drain at northern edge of pavement; Install drainage system; pave parking area; install fencing
Sparrowhawk Landing	Repave parking area; Install catch basin
Gilman Lane Landing	Re-pave parking area
Portanimicut Road Landing	Replace bulkhead; Reconstruct launch ramp and retaining wall; Repave parking area; Install drainage system
Arey’s Pond	Repave parking area; Install wooden staircase to shore.
Kescayogansett Landing(N)	Repave parking area; Reconstruct launch ramp; Improve fencing;
River Road Landing	Repave parking area; Install catch basins and trench drains; Reconstruct launch ramp, and pier
Meetinghouse Pond Landing	Repave parking area; Improve drainage; Reconstruct launch ramp;; Place sand on beach; Place pier and floating docks;
Cove Road Landing	Repave parking area; Reconstruct launch ramp.
Goose Hummock Landing	Re-grade parking area. Install drainage improvements as needed. Install fence at top of retaining wall. Reconstruct launch ramp, retaining wall, pier and floating docks.
Rock Harbor Landing	Harden interior shoreline with rip-rap. Reconstruct launch ramp

and retaining wall. Replace bulkheads, fender piles, tie-up piles, floating docks, utilities. Provide additional floating docks to increase capacity. Install restroom/information building.

Tonset Road Landing

Maintain existing staircase to shore. Install public dinghy rack.

The Town should develop an implementation schedule for all necessary improvements. (CF-18, CF-19)

7.4.6 Water Department

Water Quantity

Water Department

Water Departmental field operations are based in a three-bay concrete block building located on the Town watershed land, accessed from Route 28. In addition to the bays, 770 square feet is allocated for operations. Six full-time staff are responsible for meter installation, new service connections, monitoring wells and water tanks, and water quality monitoring. Because the facility is located inside the Town watershed and a pumping station also located in the facility, vehicle storage and other shop related activities are not permitted under DEP regulations.

The Gaffney Report recommended that administrative and operations functions of the Department be housed at one location. (CF-11) Such a facility would house the administrative and field operations, and would include the control center and new water quality lab. The new lab should be designed to accommodate other Town water analysis needs as determined to be appropriate. The Town should examine the need for a new water quality lab to serve the needs of Town departments (i.e. Water, Health, Conservation, and various boards and committees). Furthermore, the Town should explore the potential for creating a regional lab in cooperation with other outer-Cape communities. Such a facility may offer cost efficiencies if a Town lab is found to be not economically feasible. (CF-20)

Expansion of the existing garage facility located on Watershed land is not feasible due to DEP regulatory concerns relating to the proximity of the maintenance garage to the well at that site. Relocating the facility to a less-sensitive portion of the Watershed property (northwest corner, adjacent to the landfill) may be an option. Because of the proximity of this area to the landfill, the possibility of DEP permitting a new supply well there would be remote. All options for relocation of the Water and Highway Departments should be considered in the context of creation of a Department of Public Works. The Town has initiated discussions to create a Department of Public Works, which would encompass the Highway Department, Transfer Station administration, the Water Departments and Beaches Department.

System Capacity

Based on population projections and current system capacity, the system is expected to reach the limit of its ability to maintain the required 1 MGD buffer by 2013. There is a valid need, therefore, to increase water production by some means which may include an additional well by 2013.

Review of water consumption trends had shown a flat to decreasing annual demand in spite of a rising population. However, for the purposes of fire protection, Orleans is also concerned that peak demand is met in any one time period." The current system consists of 6 of 7 operating wells with a maximum capacity of 4.5 MGD. The historic maximum pumping day occurred in 1999 at 3.1 MG. At buildout, with a population of approximately 10,000, the maximum daily demand will possibly be 4.3 MG. Nonetheless, Orleans employs a formula using 16 hours of pumping per day rather than 24, or 2/3 of capacity. Thus, the current maximum capacity is considered to be 3 MGD using the 6 wells. To reach the theoretical need for 4.3 MGD, the system would have to provide an additional 1.3 MG.

The Town has recently completed an iron/manganese treatment plant that has made it possible to utilize Well #1, which was previously limited due to iron levels. The well can produce .5 MGD. In addition, the Town completed prolonged pump testing for a proposed 8th well. Funds are anticipated in the Capital Improvement Plan for fiscal year 2009 for the development and permitting of the well, which will have a capacity of .5 MGD.

While there is a high capacity for water production from the Monomoy lens, and an additional site for a future well, the regulatory process for getting a new well on line is lengthy. (CF-21) The timeframe to install Well #8 will depend on population growth, associated water consumption rates, and the potential for treatment at well #1. (CF-22) The Town should continue to monitor water use (particularly summer peak use), population growth, water hookups, and the characteristics of water use. In addition, the target date for a new well to go on-line should be evaluated each year. Efforts to locate a site for the well, including conducting pump tests, should continue.

Recognizing that Orleans is one of a limited number of Outer-Cape communities with a water supply adequate to meet the town's present and future needs, some have raised questions regarding the potential for the creation of a regional water system to serve the Outer Cape. It has been suggested that such a system would rely, at least in part, on Orleans groundwater for its supply. State water officials have indicated to the Orleans Water Superintendent that creation of a regional system is not being considered at this time. The Town should, however, anticipate the potential for future creation of a regional water system should the need arise.

The Town should be cognizant of the potential impacts of development in adjacent communities on water supply. Cooperation among area communities and the Cape Cod Commission should be fostered to ensure that the regional water resource impacts of new development are recognized.

The Town should expand its water conservation program to reduce average consumption. (CF-23) Conservation efforts should focus on peak summer demand. As discussed above, the system, as it exists, has a finite daily supply capacity. As the

population continues to grow, so does concern for the ability to meet demand and maintain adequate supply for fire protection on peak usage days. Expanded conservation education should include information on measures such as limiting lawn watering and other outdoor water use, and curtailing use of dishwashers and washing machines, particularly on high-demand days. Included in an expanded conservation program should be demonstration projects within Town facilities retrofitted for reduced water usage. (CF-9) All new Town facilities should be designed using water conservation infrastructure. The Town should produce an updated water conservation plan to address all water consumption, public and private.

Water Quality

The Town must continue to address threats that jeopardize the quality of drinking water. The Town should consider land acquisition and other strategies in the vicinity of wellhead areas as a means of protecting groundwater quality. (NR-20) This is important for protection of all public and private water supply wells, but is particularly important in the case of Well #7, which has limited protection.

In addition to high quality drinking water, it is an expressed goal of this Plan to maintain clean, attractive water bodies for fishing and recreational enjoyment. (NR-7, NR-13) A trend toward lower water quality is becoming evident through the water quality monitoring efforts of the Water Quality Task Force. This issue is discussed in more depth in the Natural Resources chapter of this Plan.

Bacteria

Based on hydraulic monitoring and temperature measurements, it is possible that decreasing the amount of time that water remains in the pipes (residence time) will lead to less bacterial problems. The Water Department has been upgrading its water mains to at least 6" diameter piping, and planning to reduce "dead ends" by looping wherever possible in order to reduce residence time. A hydraulic modeling and monitoring system was installed in 1998 to assist in this program. The department is also considering a way to measure stagnation within the standpipes; if significant tank stagnation is found, the department will examine suitable mixing strategies.

Nitrate Nitrogen

Non-point source pollution associated with individual septic systems has been shown to be a major contributor to water quality problems in some areas of Cape Cod. Although there is no immediate threat of nitrogen contamination of Orleans' drinking water supplies, the Town should continue to monitor the situation. This issue is discussed further in the Wastewater analysis section, below. (CF-24, CF-25)

Iron and Manganese

The levels of iron and manganese differ from well to well. Well #1 was off-line until recently because of the elevated mineral content at this site. Even though the mineral content of the remaining wells is safe, the wells contribute increased perceptible iron into a system that is already prone to biofilm. Review of the history of those wells

indicates an increase of mineral levels over time which is the reason Well#6 was used sparingly.

In 2005, the Water Department brought on-line a state-of-the-art iron & manganese filtration plant. All wells within the main watershed feed into the plant before the water is pumped into the distribution system. The plant has reduced iron in the finished water by 99%. This allows the regular pumping of all wells in watershed, which improves the operation of the entire system. The presence of biofilm that is fed by iron in the water is also expected to improve.

Salt Water Intrusion

While there does not appear to be an immediate threat to drinking water supplies posed by saltwater intrusion, the Town should continue to monitor water, particularly from Well #7, in order to detect any changes in water quality.

Impaired Groundwater Areas

There are currently four areas in town that have been classified as Impaired Groundwater Areas. There has been limited exploration and analysis as to the outer limits of these areas. The reports produced to date have found that because the groundwater in these areas is flowing away from the Town's supply wells there is no risk to public water supplies.

According to the *Comprehensive Site Assessment Report* prepared for the Town by Coastal Engineering Co., Inc., dated January 1999, groundwater in the area of the landfill is generally moving in a north-northeasterly direction, toward Town Cove but found that there was "no risk" to public drinking water supplies as a result of the landfill. Although there is no immediate risk to public health, the landfill has the potential to impact private wells and surface water in the future with some level of contamination. The state has jurisdiction over the landfill capping project and groundwater monitoring. Landfill leachate constituents and concentrations are currently unknown. The Town should ensure that monitoring to determine the components of the leachate and the extent and movement of impacted groundwater be conducted by either the Commonwealth or the Town. Based on this information the Town should identify potential impacts to private wells and surface water in the path of the impaired groundwater. (CF-3) The proposed well registration program will provide the department with a tool to help identify at-risk private wells, and allow protection of public health.

In 2005, the Town completed capping of the landfill. The cap is a clay barrier which prevents precipitation from entering into the soil and groundwater beneath the buried solid waste.

The Tri-Town Septage Treatment Facility on Oak Ridge Lane is highly regulated and monitored by the state. There is no immediate concern regarding surface water or drinking water contamination, however, as with the other degraded groundwater areas, the Town should continue to monitor the situation. Each year, the United States Geological Survey provides an update on the plume from the leaching fields as it migrates toward Cape Cod Bay.

The Town should work with the appropriate state agencies to identify the outer limits and movement of all identified groundwater contamination, and assess the risk to groundwater and surface water resources. (CF-3) With the information gathered through these analyses the Town should then specify high risk areas where restrictions on new well installation could be imposed. Using the well registration system, at-risk wells could also be identified. Impacted households should be connected to Town water. (CF-26)

7.4.7 Wastewater

Virtually all wastewater generated in Orleans is treated and disposed on-site through individual septic systems. A small number of businesses utilize on-site treatment facilities. The Town has recognized that on-site solutions have limited ability to remove important pollutants from the waste stream. Nitrate nitrogen loading from septic systems passes into the groundwater and eventually discharges into marine waters. Above certain levels, it causes accelerated eutrophication of coastal waters. Freshwater ponds, in contrast, are sensitive to phosphorus loading, which is also a component of wastewater effluent.

Concerns about the impacts of development on sensitive environmental resources is the primary reason that in 2001, the Orleans began the process of broadly assessing water quality and developing a long-range plan in response. In 2005, the Town hired Wright-Pierce to develop a comprehensive wastewater management plan (CWMP). The plan is expected to be completed in 2008, and will contain prioritized recommendations for wastewater treatment and disposal facilities needed to protect the community's surface and groundwater.

Tri-Town Septage Facility

The Tri-town Septage Treatment Facility is designed to treat the solids that are pumped from septic tanks and delivered by truck. Based on projected buildout, the plant will meet the capacity demand of member towns for the next twenty years. At present, septage is accepted from other Cape towns for economic and operations reasons. In 2005, the engineering firm Wright-Pierce completed a study of the facility, and recommended a host of short and long-term capital improvements to ensure viability of the plant in the future. The Town should work with the Tri-town District to implement the recommendations of the study to maintain a viable facility for the future (CF-35).

Growth & Development Limitations from Wastewater

Much of the Town of Orleans is impacted to some degree by wastewater treatment and disposal limitations. The ability to place an on-site a septic system limits the development potential of many small commercial parcels, particularly in the Village Center. The Village Center has many desirable qualities of a modern village, but its continuing concentrated growth is restricted by septic system requirements.

During the formulation of this Plan, several business owners described the hardships placed on their commercial properties to comply with Title 5 requirements. The cost to upgrade a restaurant's septic system can exceed \$100,000. Such costs and restrictions

limit the ability of the Town to direct future growth to the Village Center and the two major commercial nodes (Skaket Corners and Cranberry Plaza); such limitations encourage commercial sprawl to areas where there is more vacant land available. It is a goal of the Town to focus village-style growth in the future.

The Massachusetts Department of Environmental Protection regulates septic system design, and requires nominal sewage volume capacity that must be accommodated for different types of development. Businesses with high sewage volume are severely constrained from locating in the downtown area, even though it is this area in which the Town wishes to focus growth. Any business generating in excess of 15,000 gallons per day of wastewater would require an advanced septic treatment facility. This factor has prevented a theater from locating in the downtown and limited expansion of a number of viable businesses.

As part of the CWMP process, the Town will be considering wastewater treatment options that would allow for more development in the Village Center. If community sewerage is proposed, changes to the Zoning Bylaw will be needed to protect against unwanted development.

Primary goals of this plan are to protect the rural character and natural resources of Orleans, and to direct commercial activities into existing commercial nodes. (ED-5) Unless wastewater disposal issues are seriously addressed, future business development will continue to occur at suburban densities along Route 6A where larger lots are available, resulting in a sprawling development pattern. Orleans' marine and freshwater bodies will continue to be threatened by nitrogen and other sewage constituents that pass through septic systems. The Town should take action to protect the environment and character of the community, while allowing for responsible economic development in appropriate locations.

Public water is available throughout the town. A wastewater management study is needed to determine the most appropriate locations for future wastewater treatment infrastructure to protect the environment and to guide the location of future growth. The purpose of wastewater management for Orleans is to reverse the negative impacts of development and to allow appropriate and desirable development to occur in an environmentally friendly manner. The CWMP will specify where wastewater infrastructure is recommended, and is intended to complement the basic growth control regulations adopted by the Town.

Centralized sewer for the Village Center has been discussed as an option that would allow for more compact, pedestrian-oriented development within the downtown area. This would be consistent with the Commonwealth's Smart Growth Initiative. Some have argued, however, that the lack of public sewer service is an effective growth management tool. While this may be true in some instances in limiting residential growth, it jeopardizes the future success of the town's economic base. Providing community wastewater management in the downtown would allow flexibility in the types of businesses in the area, and permit the type of compact, pedestrian-oriented village that residents desire. Any study of wastewater management must include the need to review and amend the Zoning Bylaws to properly manage growth if and when

the constraint of septic systems is overcome. Zoning district boundaries and bylaw requirements such as floor area ratio, parking, and setbacks should be reexamined town-wide, and particularly in the village center, in the context of any proposed sewage disposal strategy resulting from a wastewater management study. (CF-27, ED-5, ED-6)

Community wastewater issues are complex, highly regulated, and cost driven. For example, a local decision today to install public sewers would begin a lengthy and cumbersome regulatory process, likely on the order of 8-10 years before the project was completed. The CWMP process presently under way is the start of that process (CF-27). At present, it is thought that the plan will likely recommend a combination of individual, community and centralized treatment facilities to protect the Town's waters and provide for orderly and appropriate development. When the CWMP is adopted, the Town must be in position to act upon its recommendations and begin to implement the highest priority actions. (CF-28)

During the early development phases of the comprehensive wastewater management plan, it became evident that Orleans does not presently have the administrative capacity manage new facilities. In 2005, a study of wastewater management districts was completed by the Horsely Witten Group. The study investigated municipal options for addressing the administrative, regulatory, and financial aspects of wastewater management.

The report recommends converting the Board of Water Commissioners to a Board of Water Commissioners to a town-wide Integrated Water Management District. The District would have authority over the public water system, new wastewater treatment facilities, and eventually over stormwater management at a later phase. The conversion process will need to begin upon completion of the CWMP so that the Town is in a position to take positive steps to implement the plan (CF-34).

7.4.8 Highway Department

The Highway Department is in need of a new facility. The current building is too small for equipment storage, resulting in the need to store equipment outside. Exposing equipment to the elements reduces life span, precipitating the need for quicker replacement. The building is outdated for its current personnel and storage needs, has a termite problem, as well as a failing septic system. (CF-11) The Gaffney Report found that the Highway Department has far less space than needed. As discussed earlier, the report recommends relocating the Highway operations to the vacant Commonwealth Electric building located adjacent to the existing highway facility. The report also recommended that the Water Department, Building Department, and Health Department relocate to the Commonwealth Electric building; however, this has been sold and is no longer available to the Town.

Discussions are ongoing regarding the construction of a new highway maintenance and storage garage. A feasible study for a new facility was funded in 2006 and will provide updated recommendations as to the best location for a new garage.

The future organization of the Highway Department and the creation of a Department of Public Works could affect the decision on a new facility. The Town should determine

the location of, and design and construct a new Highway/Public Works facility. The Town should consider providing for centralized vehicle maintenance and wash-down at the new facility. Currently, one highway staff member works to maintain 25 Highway, Parks, and Water Department vehicles. A central vehicle maintenance facility with appropriate staffing would allow for more effective maintenance to be performed on all vehicles owned by the Town, with expected cost savings.

As responsibilities for road maintenance increase, there will be an increase in the workload. In addition to the new roads being constructed, there is continuous pressure on the Town to accept some existing private roads, thus adding them to the Town system. (T-3) Staffing needs may be expected to increase. The Town is required to pay snow removal contractors at prevailing wages. It may be more cost effective for the Town to hire addition staff to provide snow removal services. The superintendent recommends that several additional programs be initiated in the department, including access management, tree maintenance, sidewalk construction and maintenance, and possibly some maintenance of private roads. Additionally, the Town should examine other department staff needs, including the need for an Assistant Highway Manager. (T-7)

Additional Highway Department needs and concerns are discussed in the Transportation Chapter.

Solid Waste Management Facilities

Since 1999, several changes to the transfer station have been effected. A review of the operations and capital needs was done as part of the landfill capping process. Municipal solid waste that was located beneath parts of the site has been relocated to the landfill cap. The fees structure for Transfer Station was amended in 2003 and is due to be reconsidered in 2006.

Traffic flow was improved as part of the landfill capping project. There are more containers for itemized materials than in the past. There remains a need for additional storage for materials before they are shipped off-site.

A policy has been developed for the operation of the gift house by volunteers to ensure that the use is consistent with the main purpose of the transfer station. Recently, the practice of allowing residents to pick through discarded metals for recyclable materials has been prohibited due to liability concerns.

Overall, the Transfer Station functions effectively, although there are aspects that should be improved. Recycling materials need to be better managed and there remains opportunity to improve station function and efficiency. The Town should periodically review all operations of the Transfer Station and make changes to ensure a safe, convenient operation, and to encourage a high level of recycling. (CF-30) Commercial use procedures should be streamlined through the use of technology, such as monthly billing. This will free-up staff time at the facility. Also, a "bag and tag" or similar program might help to alleviate many of the problems in operations at the site.

Methods to increase recycling should be carefully evaluated, and the most appropriate method implemented to bring the Town in line with the State's recycling goal of 56% by 2010. Recycling at the Transfer station is free, and should remain so even if the Town must pay to remove recyclables. Changes to State regulations regarding the acceptance of certain materials are subject to change and may cause the Town to alter its policies in the future to remain compliant. A solid waste collection system that requires the customer to pay for each bag of waste may encourage recycling. Curbside pick up of recyclables is an option to increase recyclables. This would be convenient for homeowners but would require significant financial support by the Town.

The Town must enforce its Recycling Bylaw if it truly wishes to increase recycling. The bylaw mandates recycling for plastics, glass, aluminum, cardboard, newsprint and a host of other materials. A system of fines is contained in the bylaw. There has been no enforcement of this provision.

The Town itself should begin to set an example for businesses and residents by recycling as much of the waste stream from Town buildings as possible. A public awareness program is also needed educate residents on the need for recycling, and the benefits to the community and region of removing recyclables from the landfill waste stream.

The current fee system at the Transfer Station is supported by a combination of general municipal budget and user fees. Fees for certain items, such as demolition debris, are much lower than in other towns, resulting in the station receiving debris from other towns in the region. With the advent of private construction & demolition processing facilities in the region, the burden on the Orleans facility is expected to decrease in the future.

Brush and yard waste is accepted free of charge, and the cost to process the material into compost is borne by the community. The Town needs to periodically review the fee schedule and costs associated with running the Transfer Station to ensure that (1) fees are appropriate to the material being collected, and (2) the Town does not become a collection point for materials generated in other communities, which is currently prohibited, but difficult to enforce. Enforcement of tipping fees and regulations should be a primary concern.

Approximately 3,000 tons of municipal solid waste generated annually within the Town is bypassing the Orleans Transfer Station and being transported to the Yarmouth transfer station. This tonnage is accounted for as Orleans trash but the Town expense for handling and storage is eliminated, producing a financial advantage for Orleans.

As discussed in the Inventory section, much of the Town's waste is transported to the SEMASS facility in Rochester, MA. Under the current contract the Town pays \$25/ton for disposal at SEMASS. When the current contract ends in 2016, costs are expected to at least double. Additionally, SEMASS towns are subject to direct charges for improvements and other costs at the SEMASS facility, which can occur at any time. These costs should be anticipated in drafting operating budgets and plans for the facility.

Landfill

The municipal landfill capping project was completed in 2005. To the rear of the landfill are several parcels purchased by the Town because they contained buried solid waste from the municipal landfill. The parcels were cleaned as part of the landfill cap, resulting in several acres of municipal land that may be suitable for an active purpose. The site is one of several being considered for a new Highway Department garage. A formal plan for re-use of the capped landfill, and a decision on a location for a new Highway Department/DPW facility is needed. (CF-31)

The contamination plume emanating from the landfill should be continuously monitored to anticipate any potential impact to groundwater and surface water bodies.

Recycling and Composting

In 1999, Orleans' recycling program accommodated 10% of all solid waste. The region had set a goal of recycling or composting 40% by 2005. The 2005 goal was not realistic in Orleans and an aggressive program to encourage recycling would be required to significantly increase recycling.

It is recommended that the Highway Superintendent/ Disposal Manager, the Board of Health, and the Solid Waste Advisory Committee work together to develop plans for the transfer station that address existing problems and address the solid waste disposal needs of the seasonal and year round population. As addressed in the Town Hall discussion, the Town should take the initiative in establishing a recycling program for Town facilities, including Town purchase of recycled items. (CF-8)

Stormwater Collection, Treatment, and Discharge

In recent years, the Town has recognized the negative impact of stormwater on the town's fresh and salt water resources. Priorities for remediation of discharge sites have been developed by the Marine Water Quality Task Force. It is recommended that the Town continue its efforts to remedy all significant pollutant sources associated with stormwater runoff.

As the number of residential homes in town increases, road and drainage systems to service the new housing developments will be needed. Drainage systems for new roads are generally adequate to contain, treat and direct run-off appropriately. However, as the existing drainage infrastructure continues to age, pipes, catch basins, head walls, leaching chambers, etc., will need to be repaired and replaced. The operating life of many of the existing leaching catch basins is limited and many will need replacement in the next 5 to 10 years.

In 2005, Town Meeting voters recognized the need to improve drainage systems by approving a \$500,000 warrant article that funded drainage improvements. The Highway Department is systematically working through a prioritized list of needed repairs.

In recent years, the Highway Department has utilized the Town GIS system to map drainage systems in key areas of the town. This information will provide records of the

direction of flow and discharge of the many drainage networks for which there are no plans on record.

The Highway Department is also in the process of developing a computerized pavement management system. One component of the system allows information on catch basins and drainage structures to be evaluated and programmed for systematic maintenance, including cleaning and repair of culverts. The pavement management system should be incorporated into the operations of the Highway Department and should take advantage of, and be incorporated into the Town's Geographic Information System. (T-1)

7.4.9 Public Safety

Police Department

The Police Department will need additional facilities, space, staff, and equipment to accommodate the needs of Orleans' future population. The Police Department should be prepared to respond to the need for changes in service resulting from projected changes in demographics and factors such as traffic. (CF-32) As discussed for the Fire/Rescue Department below, it may be appropriate to establish a substation to serve those areas particularly impacted by traffic and increased development.

Over the coming decade, the Department may be required to expand its permanent, full-time and seasonal personnel. In order to return the level of 3.5 per 1,000 as the population grows the department will have to add up to fourteen additional officers, for a total of 34 officers. This will lead to the need for five additional vehicles. Table 42 provides the Police Department staffing comparison for 1990, 1998, and anticipated needs at buildout.

Table 7-I: Police Department Staffing

	Popula- tion	Officers	Seasonal Officers	Reserve officers	Dispatch	Clerical	Janitor- ial	Totals
1990	6,061	21	12	6	2	2.5	1	44.5
1998	6,827	20	0	4	4	2	.5	30.5
Buildout (est.)	8,975	34	15-20	10	10	3	2	74-79

The Police Station facility located at 90 Route 28 currently meets the department's needs; however, the addition of new staff would require an expansion of the facility. The ability of the existing site to accommodate an expansion is limited, which may require that a site for a new Police Station be located. If a new Police Station is not pursued in the short-term, as discussed in the inventory section, a new heating system for the existing station will be required.

Fire/Rescue Department

Two major issues have been identified to maintain adequate Fire and Rescue Services. The first issue is the adequacy of personnel to handle rescue and fire calls, which is exacerbated by both the elderly population of the town and the increase in population during the summer season. The department now three rescue vehicles, which are necessary to serve the population. The second issue is the shortage of staff to handle the fire prevention program. This is due to the increase in inspections, work load increases created by new regulations, and the continued building construction over the past few years.

In addition to the immediate staffing concerns, the Fire /Rescue Department projects that it will need an additional six personnel over the next twenty years to fulfill its current role, including its role as the primary emergency medical service provider. An increase in equipment would also be required. The Department relies heavily on, “on call” fire personnel who supplement the full-time staff. The issue of medical response is discussed in more depth in the Health and Human Services Chapter.

With the projected need for additional personnel and equipment, an addition to the existing fire station will be required. An addition would provide for needed office and storage space, and equipment floor space. The existing wash-down area at the Fire Station, as well as those at the Highway Garage and Police Station, will have to be altered and/or consolidated in a central town facility in response to DEP water quality concerns relating to discharges from these areas (a central wash-down facility is discussed in the Highway Department section of this chapter). The Fire Chief anticipates that an addition will require 2,500 square feet of office/storage space, and an equivalent amount of additional apparatus space.

Also discussed in the Health and Human Services chapter, issues relating to emergency and medical response are of primary concern to the Fire/Rescue Department and the Police Department. (CF-32) Increasing traffic, particularly in the summer months, impacts the ability to respond to some areas of Town. There may be a need to establish a Fire/Rescue Department substation to respond to calls in areas of Town severely impacted by traffic. Such a facility might also house a police substation. The Fire/Rescue Department anticipated that a substation in South Orleans may be required in coming years. Such a station should provide space for two engines and a rescue vehicle, as well as office space. The Town should examine the feasibility of a combined Police and Fire/Rescue substation located as needed to provide required public safety services in the future. (CF-32) The Town should also consider the feasibility of providing a “life-flight” helicopter pad to meet emergency response needs.

7.4.10 Education

If Elementary School enrollment projections for Orleans are accurate, the existing facility is sufficient for the foreseeable future. If enrollments increase, the short-term solution will be to increase classroom size. If demographics stay consistent, as the town approaches its buildout population, there will be nearly 400 elementary school students. Even with a continued shift toward more retirees, the increased student population may necessitate an expansion of school facilities. For the next decade, it does not appear

likely that any expansion will be necessary. School officials should monitor trends in enrollment and respond accordingly if increased enrollment is projected beyond the capacity of the existing facility. (CF-4)

Overall, current demands placed on the school buildings and recreation fields do not exceed their designed capacity. However, Nauset Regional Middle School's fields are showing signs of over use as they are currently just barely able to accommodate school, town and regional activities for residents and visitors. Therefore, additional play fields should be developed in the future, as recommended in the Open Space and Recreation Chapter.

7.5 Impact Fees

As a means of funding the recommended community facilities improvements discussed in this chapter, the Town might consider the implementation of development impact fees. An impact fee is a one-time assessments on new development used to fund necessary improvements to municipal facilities of benefit to that development.

New development has impacts on a variety of facilities and services depending on its type. For example, some types of development might be expected to introduce additional students to the school system, increase traffic on local roads, increase demand on the water system, and place greater demand on fire, rescue and police services. The type of development will dictate the level of impact on these and other municipal facilities. Over time, the impact of numerous development projects accumulates until a point is reached that requires the Town to construct new facilities, add staff, and/or expand services. Without the collection of impact fees, the cost for such improvements is borne by all property owners through property tax revenue. Collecting impact fees on new development shifts a portion of the burden for supplying expanded services and facilities from the municipality to the development that is seen to be contributing to the need. The developer is charged only a proportional share of the total cost for improvements, depending on the level of impact. Fees are collected, and system improvements are generally implemented concurrently with the development.

Impact fees allow new development to pay its own way, and are seen as a tool for managing growth in a community. This method of growth management is most effective in rapidly growing communities that anticipate, or are currently experiencing, adverse impact on the level of municipal services. A discussion of the Town's growth management options is included in the Land Use and Growth Management chapter.

For Orleans the use of impact fees was evaluated, but was not recommended for action. The level of new development in Orleans (40-60 homes and 2-3 businesses annually) does not appear to be high enough to make impact fees an appropriate mechanism for funding infrastructure improvements. The requirements for record-keeping, administration, and justification of changes in levels of service would be difficult to accomplish with little promise of return. If changes occur in the level of growth or legislation makes them easier to develop, the need for impact fees can be revisited.

7.6 Implementation Program

	Action	Time for Completion	Resources Required	Lead Responsible Agency
CF-1	Conduct an analysis of near and distant future land acquisition needs in order to accommodate future town facilities.	FY 07-10	L	Planning Department
CF-2	Perform an analysis of the needs, public interest, and costs for a new multipurpose community center.	FY 11-20	M	Planning Department
CF-3	Work with state officials to ensure that appropriate monitoring programs for contaminated groundwater areas are instituted, including identification of potential impacts to public health and the environment.	FY 07-10	L	Board of Health
CF-4	Monitor school enrollment trends and respond accordingly if increased enrollment is projected beyond the capacity of the existing facility.	Ongoing	L	School Board
CF-5	<i>Complete planning for a new Town Hall.</i>	<i>Addressed See Appendix</i>	<i>H</i>	<i>Town Hall Building Committee</i>
CF-6	<i>Construct a new Town Hall.</i>	<i>Addressed See Appendix</i>	<i>H</i>	<i>Board of Selectmen</i>
CF-7	<i>Maintain a current list of all Town facilities and their actual cash value or replacement cost, and insure these facilities accordingly.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Town Administrator</i>
CF-8	Develop and implement a recycling program for Town facilities.	FY 07-10	L	Town Administrator
CF-9	Incorporate energy efficiency into the design and improvement of Town facilities.	Ongoing	L	Town Administrator
CF-10	Assess capabilities of existing library facility for changing technology.	FY 11-20	L	Library Board of Trustees
CF-11	Construct office, storage and maintenance facility(ies) for Highway Department, Parks & Beaches, and Water Department.	FY 07-10	H	Board of Selectmen
CF-12	Determine the appropriate level of services, including parking, at parks and beaches.	FY 07-10	L	Parks Commissioners
CF-13	Develop a plan to respond to beach erosion at Nauset Beach.	FY 07-10	L	Parks & Beaches Department
CF-14	<i>Replace failed septic system at Nauset Beach.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Parks & Beaches Department</i>

CF-15	Implement improvements to parks and beaches as scheduled.	FY 07-10	M	Parks & Beaches Department
CF-16	<i>Develop a schedule to implement improvements to parks and beaches.</i>	<i>Addressed See Appendix</i>	L	<i>Parks & Beaches Department</i>
CF-17	Examine the adequacy and location of Harbormaster/Shellfish Constable Department facilities.	FY 07-10	L	Town Administrator
CF-18	<i>Develop a schedule to implement improvements to all Town Landings.</i>	<i>Addressed See Appendix</i>	L	<i>Harbormaster</i>
CF-19	Implement improvements to Town Landings as scheduled.	Far-term	M	Harbormaster
CF-20	<i>Consider creation of a Town or regional water analysis lab.</i>	<i>Addressed See Appendix</i>	L	<i>Board of Selectmen</i>
CF-21	Continue development, to the point of licensing, of potential site for Well #8.	FY 07-10	M	Board of Water Commissioners
CF-22	Bring Well #8 on-line based on water demand.	FY 11-20	H	Board of Water Commissioners
CF-23	<i>Update the Town's Water Conservation Plan.</i>	<i>Addressed See Appendix</i>	L	<i>Water Department</i>
CF-24	<i>Conduct a feasibility study of greensand or other filtering process for removal of iron and manganese.</i>	<i>Addressed See Appendix</i>	M	<i>Water Department</i>
CF-25	<i>Based on the findings of the study in CF-24, implement a program to remove iron and manganese from the water system.</i>	<i>Addressed See Appendix</i>	H	<i>Board of Water Commissioners</i>
CF-26	Identify private wells at risk of contamination, and require that affected households connect to Town water.	Ongoing	M	Board of Health
CF-27	Develop a wastewater management plan for the entire town.	FY 07-10	H	Board of Selectmen
CF-28	Implement recommendations of the wastewater management plan	FY 07-10	H	Board of Selectmen
CF-29	Redesign the Transfer Facility to meet state standards.	FY 07-10	L	Highway Dept.
CF-30	Implement the new Transfer Station design.	FY 07-10	H	Highway Dept.
CF-31	<i>Complete the capping of the landfill, and continue monitoring the groundwater to anticipate potential impacts to private wells and surface water.</i>	<i>Addressed See Appendix</i>	H	<i>Highway Dept.</i>
CF-32	Study the future facilities and staffing needs of the Police, and Fire & Rescue Departments.	FY 07-10	M	Town Administrator

CF-33	Initiate consideration of potential sites for wastewater treatment.	FY 07-10	M	Wastewater Management Steering Committee
CF-34	Prepare administrative structure for town Comprehensive Wastewater Management.	FY 07-10	M	Board of Selectmen
CF-35	Work with the Tri-town District to evaluate the actions recommended in the 2005 Tri-Town Facility Study to maintain a viable facility for the future.	FY 07-10	M	Board of Selectmen

Health and Human Services



Snow Library

8. Health and Human Services

8.1 Overview

The Health and Human Services Chapter has been prepared to assist the Town in coordinating and enhancing its participation in community public health. This chapter reviews pertinent demographics, existing health and human needs, existing programs, projected service needs and future needs for facilities, services and personnel.

Orleans has an unusually high percentage of elderly, resulting in a higher percentage of medical needs, which ranges from life threats to minor emergencies, the walking wounded, and the “worried well.” Providing emergency medical care in Orleans is a challenge because of the town’s distance from Cape Cod Hospital, the nearest emergency facility. In addition, serious traffic congestion in the summer can increase emergency response times. Roughly 10-12% of the population is unable to afford medical insurance. Although free care is available through many Cape Cod agencies, the coordination of these services needs serious improvement.

The issue to be addressed in the Health and Human Services Chapter is how medical coordination should be provided or contracted by the Town.

8.2 Goals and Policies

Goal

To protect and improve the quality of life of all Orleans residents by supporting and encouraging a comprehensive range of health and human services which will be accessible to all.

Policies

- The Town should work with appropriate organizations and agencies to facilitate adequate health care for Orleans residents.
- The Town should address the current and future public safety, health and service needs of Orleans residents.
- The Town should provide facilities and programs to help meet the social & recreation needs of its citizens, such as day care (for preschool children and adults) and youth recreation programs.

8.3 Inventory

Demographics

Knowledge of the major characteristics of the demographics of Orleans is essential to all evaluations of the health and human services needs of the community. Orleans is a

community of 6,692 year-round residents (2004 Town Clerk), and a summer population of approximately 20,000–25,000 residents. The Town has the oldest average population in the State. In Orleans, 58% of the population is over the age of 50. According to the 2000 Census, the number of residents age 85 and over increased by 38% between 1990 and 2000. The table above shows the change in population from 1990 to 2000 in different age cohorts shows. This illustrates which age groups are growing the fastest. The 55 to 59 year old residents have undergone the largest increase indicating a strong influx of new retirees over the last decade. This has also been accompanied by a decrease in the younger age groups with the largest decrease seen in the 20 to 24 year old age group.

Table 8-A: Population by Age Cohort 1990-2000

Age Cohort	1990	2000	Change
Under 5 years	233	158	-32%
5 to 9 years	243	227	-7%
10 to 14 years	253	306	21%
15 to 19 years	240	262	9%
20 to 24 years	257	144	-44%
25 to 34 years	667	390	-42%
35 to 44 years	780	709	-9%
45 to 54 years	648	933	44%
55 to 59 years	280	468	67%
60 to 64 years	435	471	8%
65 to 74 years	1030	1,145	11%
75 to 84 years	578	842	46%
85 years and over	216	299	38%
Total Census Population	5860	6354	

The following are additional demographics to provide an overview of the Town of Orleans (2000 US Census):

- The percentage of the population of school-age children is among the lowest in the County (only 10% of the population is under 15 years of age).
- The per capita income in Orleans is \$29,520, higher than the county per capita income of \$25,318.
- The median household income level of Orleans residents is \$42,609, lower than the county level of \$45,933.
- The residents of Orleans are highly educated; 45% of residents have achieved Bachelor’s degrees or higher, as compared to 33% Countywide.
- Information on Health Status Indicators for Orleans in 2004 in Table 8-B.

Table 8-B: Health Status Indicators for Orleans

Health Status Indicator	# in Selected Area	Orleans Rate or Percent	Statewide Rate or Percent
<u>Prenatal and Child Health Indicators:</u>			
Low birth weight	None in area	0%	7.5%
Births to adolescents as a percentage of total births	None in area	0%	5.9%
Mothers not receiving prenatal care during first trimester	None in area	0%	15.8%
Mothers with adequate prenatal care	33	94%	84.7%
Mothers receiving publicly funded prenatal care	8	22.9%	28.5%
Elevated blood lead levels in children aged 6-mos. to 6 yr., cases/1,000 children screened	None in area	0.0	.6%
<u>Hospital Discharges for Primary Manageable Conditions:</u>			
Age-Adjusted Rate / 100,000 Persons			
Asthma	n/a	n/a	128.3*
Bacterial pneumonia	18	110.8*	354.6*
Angina	n/a	n/a	28.3*
<u>Substance Abuse Indicators, Rate/100,000 Persons</u>			
Admissions to treatment programs	122	1924*	1820*
Injection drug user admissions to programs	22	347*	554*
Alcohol and other drug related hospital discharges	14	221*	362*

Source: MassChip 2000

**Age-adjusted rate: A procedure for adjusting rates, designed to minimize the effects of differences in age distributions when comparing rates for different populations. Age-adjusted rates are usually expressed per 100,000 persons. For standardization within MassCHIP the standard population used is the 2000 US population. n/a : data suppressed for confidentiality reasons ; usually due to a small amount recorded*

The above table of health indicators show that Orleans is in good standing when compared to the State as a whole. In fact the only health indicator representing concern for Orleans is the number of residents admitted to substance abuse treatment programs.

Emergency Services

There are no local or nearby emergency clinics available to Orleans residents. The Cape Cod Hospital is located in Hyannis, approximately 24 miles from Orleans. Orleans trips to the emergency room can be summed up by the following three statistics: 30% of the emergency room visits are for accidents or injuries, 13% are for serious illness, and the remaining 57% of the visits are for non-emergency services.

The Fontaine Medical Center in Harwich is approximately 8 miles away, but does not provide 24 hours of operation, major emergency service, or transportation. Several years ago, the Center was opened for 24-hour a day service for two weeks on an experimental basis after which it was cut back to only daytime hours due to the lack of serious after-hour use.

Local physicians provide minor emergency services, mostly during daytime hours. Due to the lack of after hours medical services, the majority of emergency medical care is provided by the Orleans Fire Department. Minor emergency services are provided by private physicians for their patients. The Fire Department provides rescue service, education for children and the elderly, blood pressure services, and miscellaneous medical and general assistance for the elderly such as helping people in and out of bed.

The growing and aging population of Orleans puts a heavy demand on the Orleans Rescue Squad. Approximately 54% of all Fire Department calls are for the elderly population (65 and over) and 77% of all Fire Department calls are for medical purposes. The cost of Fire Department rescue services typically exceeds total insurance reimbursement for ambulance runs to Cape Cod Hospital. Insurance covers a portion of the billing for approximately 85% of the calls. The uninsured portion is billed directly to the patient.

Table 8-C: Orleans Rescue Statistics 2004

Priority 1* calls:	16
Priority 2** calls:	856
Priority 3*** calls	864
Priority 4 **** calls	35
Walk-ins at Station:	187
Blood Pressure checks	994
People Transported to CCH:	965
Mutual Aid Runs to Other Towns:	<u>55</u>
Total Medical Incidents	1766
Total Fire Incidents	<u>513</u>
Total Fire/Rescue Incidents for Year 2004	2,279

Source: Orleans Fire Department- Town Report

** Life-Threatening Condition (to hospital)*

*** Patient with Possible Life-Threatening Condition (to hospital)*

**** Patient with Non-Life-Threatening Condition*

***** Multiple description calls*

Because the Rescue Squad personnel are unable, in most cases, to medically determine whether a person has a real emergency need or not, and because of the legal liability involved, many ambulance runs may be unnecessary, and require additional high cost overtime for personnel to fulfill these outcalls. Because of this, many people are taken to the hospital, and then sent back home later by taxi because of non-emergency. The use of emergency medical transport for non-emergency situations ties up important resources that could jeopardize the health and safety of others in need of service. In addition, traffic congestion puts an increasing burden on the Fire Department Rescue Squad in terms of turnaround time for trips to Cape Cod Hospital. It also is a great concern for timely help in serious emergencies.

In an attempt to reduce the number of non-emergency calls, the Fire and Police Departments have increased public education. To deal with persons who have no support structure and fear they may not be able to contact anyone, the Fire and Police Departments provide classes to inform people of when to call, whom to call, when not to call, etc.

Medical Care

Major medical care facilities, although located in Hyannis, provide top quality medical care for all Cape Cod residents. Cape Cod Hospital, a 218-bed facility, has been voted one of America's top hospitals for 3 consecutive years. Cape Cod Health Care, of which the hospital is an affiliate, also manages the VNA, Falmouth Hospital, Fontaine Medical Center, and other related outpatient services.

Outer Cape Healthcare Services (OCHS), a not-for-profit organization available to private patients regardless of their ability to pay, opened in Orleans in 1999. Their affiliation with Beth Israel Deaconess Medical Center in Boston gives patients more choices and ready access to a renowned, academic medical center. This facility assists in providing additional medical services, but after-hours care and emergency medical services are not included.

Local medical care is entirely provided by private physicians who are able to provide services for their patients during business hours, such as treating simple wounds or determining if an emergency hospital visit is warranted.

Services

Many health and human services are provided by a number of organizations and departments, with varying levels of responsibility.

The Orleans Police Department provides several health programs and human services:

- Elderly Affairs group meets regularly with groups and individuals to help solve problems ranging from loneliness to crimes against the elderly.
- The SALT (Seniors and Law Enforcers Together) Team, which includes a group of senior citizens, a police officer, and other interested parties, meets regularly to be proactive in identifying issues that will affect the elderly. In areas of town this

program has actually developed into a Neighborhood Watch program strengthening the cooperation between seniors and law enforcement.

- Reassurance for the elderly: Every morning about 140 elderly call the police station to let the police know they are alive and well. Police follow up on no-calls. An annual holiday dinner is held where talks on elderly safety are given to members of the program.
- Medical emergencies are generally handled by the Fire Department, except when they involve mental illness or violence issues.
- R.A.D. (Rape Aggression Defense) courses are available to women and young girls. This ten-session self-defense workshop provides personal protection skills to women.
- Infant seat belt fittings are available at the police station by officers who have been instructed in the proper placement and installation of child safety seats.

The Town of Orleans Health Department provides a very limited role in health and human services, except for prevention and screening clinics. Approximately 75% of the Department's business deals with septic systems. Approximately 25% deals with food service and public health.

The Department contracts with the VNA of Cape Cod, Inc. for free-of-charge or low cost immunization and screening clinics. Screening clinics include cancer, breast cancer, HIV, cholesterol, hearing and skin cancer. Immunization includes state issued flu, hepatitis and pneumonia shots (\$15,131 - 2005 budget). All clinics are pre-announced in the newspaper, on the radio and/or on cable television. The yearly contract includes:

- 11 Special Programs (blood pressure/counseling/vaccinations/screenings/immunizations)
- 5 Wellness Programs
- 41 Total Home Visits (physical therapy/medical/social/maternal)

The Health Department clinics have a significant impact on early assessment of medical problems which would not be identified if dependent on trips to private physicians. The Health Department does not coordinate health and human services available to Orleans citizens. A major medical role would require additional staff at significant cost to the taxpayer which could possibly be offset by creative negotiations with Cape Cod Healthcare, Inc. for a full or partially salaried Cape Cod Healthcare employee.

The Orleans Council on Aging (COA) plays a significant role in the coordination of health and human services for the elderly, as well as assistance in admission of elderly into the hospital, nursing homes, or assisted living facilities. The Orleans Senior Center, expanded in the year 2000 to 8,000 square feet, is a state of the art facility. The COA provides transportation to food stores, shopping, and errands to help the senior's maintain their independence without having a car. Two vans, the Roadrunner I and II provide transport to the Orleans adult day care facility, The Day Center. The Café at the COA provides lunches cooked on the premises every Monday and Friday. Other COA services are listed below:

- Outreach workers visit and assess elders over age 80 in their homes to determine if assistance is needed. Loneliness and depression are the primary health problem among that population. Volunteers are matched with lonely elders for weekly socialization. The Outreach Workers also work cooperatively with the Orleans Fire Department assisting seniors who have been transported to the hospital by providing volunteers to drive them home as well as assistance in the home.
- The COA organizes many activities including: an Amateur Radio Club, Beginner's Bridge, Boston Bus, Bowling, Duplicate Bridge, Fitness Classes (including Yoga and a Men Only class), Friday at the Movies, Senior Tennis, Trips, Walking Group, and Watercolor class.
- Support groups are provided at the COA for people coping with: cancer, arthritis, COPD, Parkinson's, prostate cancer, Alzheimer's, and sight-loss.
- Personal assistance for, fuel assistance, food stamps, legal assistance, health insurance counseling, income tax preparation, and wellness facilitation are also offered.

Organizations

A large number of Cape Cod Human Service Agencies are available to Orleans citizens. Some are fully, others partially funded by the Town; some may be covered by private insurance, Medicaid or Medicare. Information on agencies available and their Town funding is given below:

Table 8-D: Inventory of Services Approved for Funding, FY 2006 ATM & STM

Agency	Service Provided	\$ that Orleans for Agency
AIDS Support Group of Cape Cod	Provides services to persons living with HIV and AIDS within Cape Cod Communities.	\$2,242
Alliance for the Mentally Ill of Cape Cod and the Islands	AMI's mission is to advocate for the improvement of the quality of life for those who suffer from brain disorders, with the ultimate goal of eradicating these diseases through education and research.	\$547
Bayview Associates - South Shore Mental Health	Supports a mental health clinic, a community residence and other programs to assist individuals and their families in dealing with mental and psychological problems.	\$6,896
CC Child Development	Serves low income children and their families through education, nutrition, health services and parenting support.	\$2,585
CC Council on Alcoholism and Drug Dependence	Serves individuals suffering from alcoholism/drug dependence through counseling, education and referral to other services.	\$4,368
CC Human Services	Serves individuals dealing with substance abuse and/or mental health needs through counseling, outreach, and other services.	\$5,455
Community Connections	Provides comprehensive services including speech, occupational, physical, and other needed therapies and builds functional skill to help people with disabilities gain independence.	\$1,644
Consumer Assistance Council	Assists consumers by providing information so they are aware of their legal rights should they have difficulties dealing with a business.	\$120
Elder Services of Cape Cod and the Islands	Provides many programs including meals on wheels, a home care program, protective services, elder at risk program, family caregiver support, long term care screening, nursing home ombudsman program, senior AIDES program, community grants, information and referral program, and a senior nutrition program.	\$2,735
Gosnold	Provides inpatient care and offer outpatient services for all aspects of substance abuse and mental health treatment to those affected with addition, substance abuse and/or mental health illness.	\$4,608
Independence House	Serves battered women, children and sexual assault victims through counseling, shelter, advocacy and other services.	\$4,497
Interfaith Council for the Homeless	Provides a variety of services to alleviate and prevent homelessness.	\$3,046
Legal Services to CC and Islands	Serves low income and elderly residents by assisting them with their legal problems through casework and education.	\$3,213
Lower Cape Outreach Council	Serves individuals and families in a financial crisis by providing food, clothing, financial aid and other support.	\$6,118
Sight Loss Svcs	Serves the newly blind, the visually impaired and people with	\$757

Inc.	progressive eye disease through support, outreach, education and adaptive aids.	
Orleans After School Activities Program	Provides safe, quality, after school care for Orleans Elementary School students after school, during vacations and in the summer.	\$7,939
Outer Cape Health Services	Provides high quality primary health care to those living in town regardless of their financial circumstances.	\$5,479
Nauset Together We Can Juice Bar	Provides social programs for teenagers	\$5,470
TOTAL		\$73,850

Home health care is a major form of support for Orleans seniors, and is available from a number of agencies including but not limited to: Visiting Nurse Association (VNA), Managed Health Care Systems, and Elder Services. The goal of these agencies, and others, is to provide support to homebound clients to maintain an optimal level of activity and independence as long as they can safely do so in their own environment. This necessitates communication and collaboration with other services throughout the Town, especially since many Orleans elders live alone.

The Cape Cod Healthcare, Inc., now an umbrella of Cape Cod hospitals and health services such as the VNA, the Fontaine Medical Center, and other medical affiliates. Other grass roots medical and care organizations such as Lower/Outer Cape Community Coalition, Barnstable County Health Department, and the Cape & Islands Cooperative Health Group are working at a local level with Cape Cod Healthcare, Inc. to coordinate efforts to increase access to health care.

A Cape Cod Healthcare survey reported the following barriers to health care:

- Non-affordability of common health care
- Limited hours of operation of physicians and clinics
- Lack of transportation to health care facilities
- Lack of information on available services
- Discrimination

Cape Cod Hospital’s Community Benefits Advisory Council and other Cape Cod organizations are gathering information about medical needs on Cape Cod, including Orleans. This is an ongoing effort and actual recommendations may be several years away.

Daycare and Youth Programs

Private daycare programs for children are limited. There is a before- and after-Elementary School program. Summer recreation programs usually are limited to morning sessions, leaving afternoons uncovered for daycare, and result in young children of working parents being home alone in the afternoons. In addition, daycare is not affordable to many parents, especially single parent families and those with low wages. However, some emergency funding and scholarships are available to those who qualify.

Much of the coordination of the emergency fund, scholarships, and grant programs is presently through the Cape Cod Children’s Place, Inc. of Eastham. In addition, some grassroots agencies coordinating daycare and scholarship programs are Lower Cape Outreach Council, Interfaith Council and local churches.

Programs for young people are limited in Orleans, but include the following:

- Juice Bar: A non-alcoholic bar for young people featuring special programs such as dances, movies, etc. Costs for drinks and programs are low.
- Community Center: Open Wednesday and Friday evenings (and Monday, during the summer); arts and crafts.
- The Orleans Recreation Department: Provides year round activities. (See “Orleans Recreational Programs”, below:

Table 8-E: Orleans Recreational Programs

Fall Programs: (Grades K-8, Adult)	Winter Programs: (Grades Preschool-8, Adult)	Spring Programs: (Grades 1-8, Adult)	Summer Programs: (Ages 4-16, Adult)
Soccer	Basketball	Softball	Swimming
Field Hockey	Movement/Ball Skills	Baseball	Tennis
Adult Tennis	Public Skating	Adult Tennis	Arts and Crafts
Adult Fitness	Saturday Basketball	Youth Center	Summer Recreation
Youth Center	Youth Center	Instructional Softball/Baseball	
Instructional Soccer	Instructional Basketball		

Source: Orleans Recreation Department, 2004

Special Needs

Availability of housing for the frail elderly is limited to the 50-bed Orleans Convalescent and Retirement Center. Subsidized housing is available at Tonset Woods and Rock Harbor Village apartment complexes. Special Needs housing in Orleans is available on a limited basis: 30 units in various locations. In addition, there is a periodic need for temporary shelter for residents with critical housing needs.

Many frail elderly are at risk of accidents and are in need of daily care but are unable to receive services because of Medicare cutbacks and their inability to afford medical insurance.

There are a number of service providers in Orleans for the mentally challenged and handicapped such as Amens House, Nauset, Inc., Canal House, Cove Club, Free Space, and the home at 53 Meeting House Road.

Handicapped accessibility for buildings is being monitored by the Orleans Commission on Disabilities. An increasing number of facilities, recreational sites, stores, offices, parking areas and sidewalks comply with the State Architectural Access Board and Federal ADA requirements, but many businesses do not yet comply. In Orleans, the building Commissioner is the enforcement authority of the American Disabilities Act .

Information on the percentages of elderly with Alzheimer's disease indicate the need for adult daycare. According to the National Alzheimer's Association, 50% of people over age 85 have Alzheimer's disease. In addition they estimate 19% of seniors between the ages of 75 and 84 have the disease. As a benefit to those seniors, the Council on Aging operates a full adult day care facility, the Day Center for seniors in need of care. In addition, the Town of Eastham also operates the Lower Cape Adult Day Care center that provides adult day care services.

8.4 Analysis

Health and human services although available, may not be sufficient for the Town growing and aging population. The needs of the community are being met by agencies not intended for the service they are providing. The effective use of existing human services needs to be optimized and coordinated to make the most out of a limited resource.

8.4.1 Emergency and Medical Services

With no local or nearby emergency clinic available, much of the emergency care is left with the Fire Department Rescue Squad. As the population increases, especially the elderly populations, the burden on the Fire Department will increase accordingly. This increase will come at a cost to the taxpayer only partially offset by insurance payments. With the Fire Department filling the gap for miscellaneous medical and general assistance needs, the need for additional staff and equipment will be inevitable.

The provision of urgent and emergency care is a regional as well as a local problem. Not uncommonly, paramedical personnel, in the best interests of the patient, will take patients to Cape Cod Hospital in Hyannis. This on average takes more than 3 hours with an ambulance crew of 3. After evaluation by Hospital staff, the same patient may be discharged by the emergency room to return home, usually by private carrier. At times, this use of Fire Department staff is inappropriate, but necessary under the current system.

The Town of Orleans, as well as the entire Outer Cape, needs a local/regional urgent care facility, where patients with life-threatening situations can be cared for. As an initial step, such an urgent care facility should be developed, open 7 days a week, optimally open 24 hours a day. Long-term, Orleans and the Outer Cape should work with the medical system (Cape Cod Healthcare, Inc) to develop an urgent care facility with overnight capability for a limited number of patients. Ideally, the Outer Cape will eventually have a facility that could provide care for life-threatening situations. (HS-2)

8.4.2 Services

Child Daycare and Youth Programs

Few statistics are available that address the shortage of daycare and the numbers of parents who cannot afford daycare, except for those who have contacted local agencies and applied for financial assistance. Though many Cape towns such as Provincetown have mechanisms in place to receive and disperse grants and emergency funds, Orleans does not.

Orleans should evaluate and work toward the establishment of daycare consistent with the needs of Orleans' parents, including sick children's daycare by COA elderly volunteers. Private services should be encouraged, with necessary concessions in regulations by the Town. (HS-3)

After-school programs and facilities such as the Community Center and Juice Bar are in need of additional funding to broaden the range of services (HS-4). In fact, the Juice bar will be in need of a new home in the next year due the current location changing ownership. Additional social and athletic programs should be pursued, and consideration given to use of Town and regional school facilities for non-school team sports. (HS-5)

Elderly Needs

Housing for the frail elderly is a major concern. Nursing home and assisted living facilities are very limited in neighboring towns, with waiting lists and few openings. There is no affordable daycare for the elderly in Orleans. Statistics for Alzheimer's indicate that Adult Day Care will increasingly be needed in the future. The small Orleans Convalescent Home does not accept State assisted patients and Assisted Living Facilities are not available in Orleans. This means that the frail elderly have to leave the town when they are no longer able to care for their home and themselves. Orleans should evaluate and continue to support affordable adult daycare facilities at the Council of Aging. (HS-6) The Town should also evaluate and work towards the establishment of additional assisted living/nursing home facilities and respite care, either through encouraging private investment or exploring Town supported facilities including Town contribution of land. (HS-7)

Town Responsibility

There are various opinions regarding whether the Town of Orleans should be responsible for the coordination and provision of health and human services, and how it should be administered. Some hold that the Board of Health should have overall responsibility; some feel that a full or part-time Town nurse should be employed for more personal contact and medical coordination and/or care (the cost of which may be offset partially or completely by Cape Cod Hospital and/or health insurance); some hold that a new volunteer Town committee should be established to coordinate health and human services agencies, including the publication of a health and human services handbook.

It is felt that the provision of medical services should only be on a contractual basis, coordinated with or a cooperative venture with Cape Cod Healthcare, Inc. This could be the first step in establishing a more expansive care delivery system in Orleans, and a link with the only hospital in the area. Above all, the Town should be involved in Cape Cod Healthcare, Inc.'s determination of their responsibility for health care in Orleans.

It should be noted that all of the above services, including present services provided by Orleans, are a significant cost for the Town. The goal is to use allocated funds for these types of services most efficiently. This is not an issue for just Orleans, but affects all towns in the region. Town officials should work to resolve the issues with regional agencies.

8.5 Implementation Program

	Action	Time for Completion	Resources Required	Lead Responsible Agency
<i>HS-1</i>	<i>Establish a new permanent position of coordinator and administrator for all health and human service functions of the Town.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Board of Selectmen</i>
HS-2	Work with Cape Cod Healthcare and other appropriate organizations to improve the triage and delivery of health care to people in Orleans.	FY 07-10	M	Board of Health
<i>HS-3</i>	<i>Evaluate and work towards establishment of day care for children consistent with the needs of Orleans parents.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Board of Selectmen</i>
HS-4	Consider permanent Town funding for the Community Center and Juice Bar.	FY 07-10	L	Board of Selectmen
HS-5	Work towards establishment of additional social and athletic after school facilities and programs, including use of school facilities for non-school team sports, music, art, and after hours use by home-schoolers.	FY 07-10	M	Recreation Department
<i>HS-6</i>	<i>Continue the support of five-day affordable adult day care at the Council on Aging.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Council on Aging</i>
HS-7	Evaluate and work towards the establishment of additional assisted living/nursing home facilities and congregate housing, either through encouraging private investment or exploring Town supported facilities.	FY 07-10	M	Board of Selectmen

Transportation



Skaket Corners, Rt 6A and Eldredge Park Way

9. Transportation

9.1 Overview

This chapter presents goals, an overview, issues and recommendations associated with Orleans' transportation system. Many recommendations reflect the need to better manage automobile traffic and to find alternatives to their use, such as bicycling, walking, and public transportation. Transportation and general circulation problems throughout the town present complex and urgent challenges to the community.

Orleans serves as a commercial hub for this region of the Cape. It is burdened by the presence of three State highways that pass through the town. Orleans' network of roads must be able to accommodate both year-round residents and a large influx of seasonal residents and tourists. During peak travel periods, the north-south flow of traffic is mainly composed of people either shopping downtown or passing through Orleans to other parts of the Cape. The east-west traffic is composed of people using downtown or on their way to the beaches and lakes. This has resulted in an overuse of the major roads and concern for safety at many major intersections. The downtown must provide convenient, adequate, and accessible parking. All plans for improvements to the transportation system must be consistent with the character of the town and its vision for the future.

Developments of Regional Impact (DRIs), as defined by the Cape Cod Commission, can have a deleterious effect on traffic management. The Town of Orleans must continue to work with the Cape Cod Commission to ensure that large development projects will not add further traffic to a transportation system that is already overburdened during the summer season. This Commission's Regional Policy Plan contains a set of Minimum Performance Standards that relate directly to traffic impacts of DRIs (MPS 4.1.1.1-4.1.1.17, 4.1.2.1- 4.1.2.5). Those standards are adopted into this Plan by reference and should be used to mitigate the traffic impacts of Developments of Regional Impact.

9.2 Goals

Goal

To establish and maintain a multi-modal transportation system for present and future year-round and seasonal needs. The system should be safe, convenient, accessible, effective, economical and should be consistent with the Town's historic, scenic, natural resource, land use development and growth management policies.

Policies

- Transportation and circulation improvements should be consistent with the town character, accommodate the visibility and access needs of local merchants, encourage pedestrian and bicycle activity, and give clear directions.

- Transportation impacts should be identified and potential improvements should be evaluated using established performance indicators as defined in the Highway Capacity Manual⁸.
- Traffic improvement measures should be designed with sensitivity to seasonal variations in traffic patterns. However, roadway design should reflect year-round traffic demands, and the Town should develop other management strategies to address peak seasonal traffic flow.
- Traffic flow solutions should be considered on a macro-level, i.e. areas in which several intersections are interrelated should be reviewed as a whole, not intersection by intersection.
- Transportation improvement measures required as a result of new development or redevelopment should be consistent with community character and should not degrade historic, scenic or natural resources.
- Existing transportation rights-of-way should be preserved for transportation uses, including bicycle and pedestrian access ways.
- Adjacent business uses should share access points and provide connections between parcels so as to minimize curb cuts, driveways, and vehicular turning movements.
- The Town should support public transportation services.

Goal

To allow for less dependence on private automobiles by integrating a variety of transportation modes and by promoting alternatives which reduce travel such as telecommunications and home occupations.

Policies

- Roads and intersections should be widened to provide for safe bicycle and pedestrian travel and accessibility, where appropriate.
- Bicycle and walking should be encouraged as an alternative to automobile trips. Where appropriate, historic footpaths should be maintained and safe bicycle and walking links should be created to establish an interconnected transportation system.
- Town regulations should encourage home occupations and up-to-date communications links.

⁸ Third Edition Updated 1994, *Highway Capacity Manual*, Transportation Research Board.

Goal

To assure convenient access to and safety in the downtown area.

Policies

- Mixed use development that minimizes dependence on the automobile should be encouraged.
- The Town should deploy additional enforcement resources in the peak summer months.
- Every effort should be made to reduce the speed of automobiles and create separation between moving vehicles.

9.3 Inventory

9.3.1 Roadway Network

Orleans has 58 miles of town roadways. There is approximately an equal amount of privately owned roads. The network of State roads, (Route 6, Route 6A, and Route 28) converge at the rotary on the Eastham border. However, Route 39 intersects with, and ends at Route 28 in South Orleans. The convergence of the state roads in Orleans has historically influenced the development of the Town. In the early 1950s, when the Town created zoning districts and regulations, the areas on either side of the entire length of Route 6A and portions of Route 28 were zoned for commercial development. These roads provided the means for people in the lower Cape region to travel to the town's business districts. State roads helped Orleans develop into the commercial hub of the Lower Cape, and their presence ensures that the area will continue to serve this purpose.

The roadway network is one of many elements that contribute to the Town's rural, historic seaside character. The town's numerous miles of narrow, often unpaved private roads constitute one of the features that contributes to the town's Cape Cod charm.

Classification of Orleans' Roadways

The Cape Cod Commission's Regional Policy Plan categorizes roadways as Major Regional Roadways, Regional Roadways with Scenic and Historic Qualities, Local Roadways of Regional Significance and Other Local Roadways (Cape Cod Commission, 2002). Control of roads in Orleans is divided into three categories: State roads, Town accepted roads, and private ways. Below is a brief description of each. The following section describes how the roads in Orleans relate to these categories.

State Roads

Route 6, 28 and 6A are the three state roads that traverse Orleans. Route 6 is the only Major Regional Roadway in Orleans. Route 28 and Route 6A, designated as Regional Roadways with Scenic and Historic Qualities, have also been labeled as scenic under the provisions of MGL Ch. 40, 15C.

Local Roads

There are two categories of public streets in Orleans: those within accepted public layouts and those for which there is no layout. A layout is a plan that establishes a swath of land within which the roadway, sidewalks, utilities and other features are located. This is also known as the public right of way.

Town-accepted streets total 58 miles. The Orleans Highway Department is responsible for maintenance of all local public roads. Approximately 50% of the public streets are historic ways which were improved by the Town over the years without benefit of a formal layout. Without a layout, the Town owns only the extent of the paved road. This situation creates management difficulties for the Highway Department when repairs are necessary and makes it difficult to add safety features such as bike lanes and sidewalks.

Private Roads

More than half of the roadway miles in the Town are private roads. In general, private roads are owned by the abutters. It is the responsibility of the owners to maintain the road. In Orleans, no public funds are expended to maintain private roads. For instance, snow removal for private ways is the responsibility of the property owners.

In most cases, private roads are a benefit to the community. These are the roads which tend to be much more rural in nature than public streets. They are usually narrower than Town roads, and may have a gravel surface instead of asphalt, which is both environmentally and aesthetically desirable.

The Town has enacted an Emergency Access Bylaw, Chapter 90 of the general code, requiring private roads to have a minimum clearance of fourteen feet high and fourteen feet wide, to allow for passage by emergency vehicles. This bylaw provides for the protection of the general public by insuring safe and adequate access over all ways within the town for oversized emergency vehicles for the purpose of providing emergency medical, law enforcement and/or fire protection services. The Fire Chief inspects roads and penalties may be imposed if roads are not properly maintained in accordance with the bylaw.

Scenic Roads

Massachusetts General Law Chapter 40, Section 15, authorizes a municipality, upon recommendation of its Planning Board, Conservation Commission or Historical Commission, to designate "scenic roads." Any road in a community, other than state numbered routes or highways, may be designated as a scenic road. The purpose of the statute is to provide an opportunity for the Planning Board to review the cutting or removal of trees, alteration of stone walls, or other alterations within the road right of way of a designated scenic road.

Local Roadways of Regional Significance are roads that have been designated by the Cape Cod Commission because of their importance to the transportation network of the region. Scenic roads in Orleans that are classified as Local Roadways of Regional Significance include:

Table 9-A: Local Roadways of Regional Significance

Beach Road *	Rock Harbor Road *
Bridge Road	Skaket Beach Road
Eldredge Parkway	West Road
Main Street	

Other local roadways that have also been designated as Scenic by the Town include:

Table 9-B: Orleans Scenic Roadways

Arey's Lane (to town landing only)	Monument Road *	Barley Neck Road *
Namequoit Road	Briar Springs Road	Namskaket Road
Brick Hill Road	Pochet Road	Champlain Road
Portanimitcut Road	Defiance Lane	Quanset Road
Freeman Lane	River Road	Gibson Road
Shore View Drive	Great Oak Road	Snow's Shore Road
Herring Brook Way	Tar Kiln Road	Hopkins Lane
Tonset Road	Locust Road *	Uncle Harvey's Way
Mill Pond Road	Eldredge Park Way	West Road

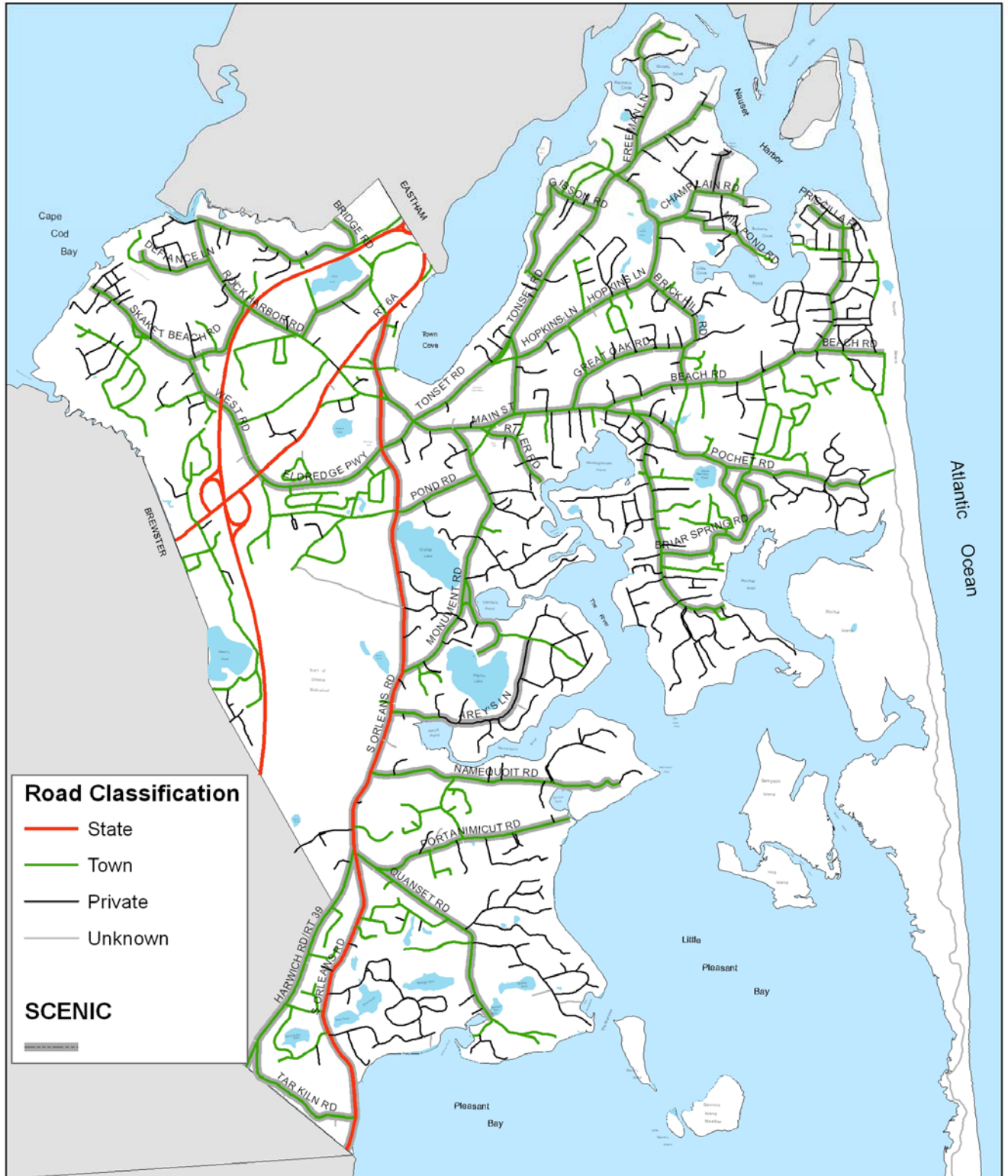
Also See Map of Scenic Roads

() Denotes streets for which there is no formal layout.*

From the 1940's through the early 1990's the Town sustained a full-time staffed tree department to maintain its roadside trees. Although the Town no longer has a Tree Department it does have a full time Tree Warden who has part time help that is shared from the Parks and Beaches Department. The Tree Warden remains committed to improving the safety along scenic and town roads by taking down hazard trees, planting appropriate roadside species, and pruning and maintaining the existing shade trees along the roadways.

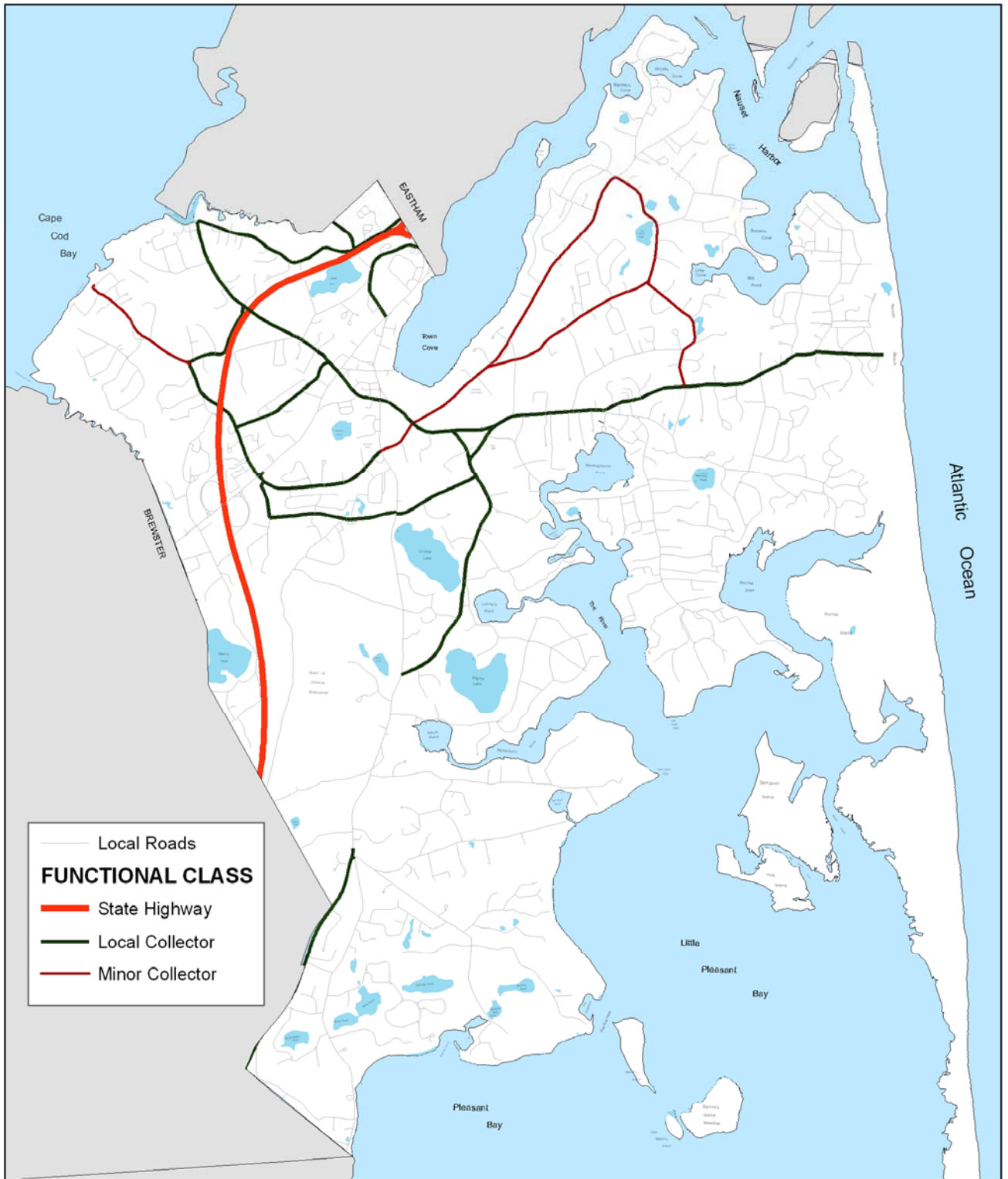


Orleans Comprehensive Plan: Roadway Status





Orleans Comprehensive Plan: Road Functional Classifications



9.3.2 Parking

The Town maintains a total of 2,641 public parking spaces. The following table inventories 806 public parking spaces on Town owned property in the downtown area and land owned by the Nauset Regional School District.

Table 9-C: Downtown Public Parking Facilities

Public Parking	Use Category	Number of Spaces
Bike Path - off Main Street	General	19
Main Street - On-street spaces	General	56
Depot Square (Old Colony and Main Street)	General	51
Town Hall Annex (spaces located at rear of Community Ctr.)	General	30
Town Cove lot at Goose Hummock	General	60±
Guertin Bros. Lot (off Main Street)	General	22
Nauset Regional Middle School *	School	412
Orleans Elementary School*	School	118
Snow Library	Municipal	38
Total Downtown Parking		806

Source: Town of Orleans, 2005

*Note: * School facilities not available during school hours.*

Table 9-D: Other Public Parking Facilities

Public Parking	Use Category	Number of Spaces
Rock Harbor	Beach/boating	130
Skaket Beach	Beach	175
Nauset Beach	Beach	1,000
Crystal Lake	Beach	8
Pilgrim Lake	Beach	60
All Town Landings	Boating/ fishing	283
Police Station/Harbor Master	Municipal	42
Fire Station	Municipal	33
Town Hall	Municipal	48
Highway Department/Parks Department	Municipal	16
Sea Call Farm	Conservation	12
Baker's Pond	Conservation	12
Kent's Point	Conservation	10
Pah Wah Pond	Conservation	6
Total Out-of-Town Public Parking		1,835
TOTAL PUBLIC PARKING		2,641

In addition, there are several private parking lots that serve the community's downtown parking needs. A parking analysis of the existing businesses in the downtown was undertaken by the Planning Department in 2000 in order to determine where there was a surplus or deficit when it comes to required parking areas. It was found that in most cases private lots have a surplus of parking that is often used for public parking spaces. Below is a list of businesses providing the most significant private lots in the downtown:

- CVS Lot
- Snow & Sons
- Mid-Cape Home Center
- Friends Market
- Besse Lot (off Main Street)
- Hole-in-One/Watson's Lot
- Post Office Square
- Orleans Marketplace
- Lowell Square

The Besse Lot is the only private lot in the above list that has the potential to become a public parking lot. There are roughly 30 spaces located on the Besse Lot. If developed for public parking the area could support close to 100 spaces depending on site design and access. There are other areas within the downtown which are underutilized and have the potential to help alleviate parking problems. The area behind the Bon Repos bedding store, and land behind the Red Barn and Whole Food Store all have the potential to help alleviate seasonal parking problems in the village.

9.3.3 Public Transportation

Public transportation is a means to alleviate traffic congestion and mitigate environmental impacts caused by vehicles, road improvements and run-off. There are a variety of public transportation facilities available to Orleans residents. These facilities, however, are underutilized. Most connections to air, rail, and ferry services are provided by private companies, including the Plymouth and Brockton bus line.

Table 9-E: Public Transportation Facilities & Service Area

Transportation Type	Service Area
Plymouth and Brockton Street Railway (P&B)	Provincetown to Boston (including Logan Airport)
H2O	Hyannis to Orleans busline
Flex Route	Harwich to Provincetown busline
B Bus Service	Ride by appointment throughout entire Cape
Taxi Service	
On-call private service	
Ferry Service	
Boston-Provincetown Ferry	Provincetown to Boston
	Harwich to Nantucket
Steamship Authority	Hyannis to Nantucket & MV
Air Service	
Barnstable Airport	
Chatham Municipal Airport	
Provincetown Municipal Airport	

The current local demand for public transportation is difficult to accurately access. Recently, steps have been taken to make transit more reliable, recognizable, and frequent. The new Flex Route bus line service is expected to serve a wide area of Orleans and enhance mobility options of residents year round. This new service runs a fixed route between Harwich and Provincetown but also has the ability to deviate up to a mile from its route to pick up riders. A new bus stop, or mini modal center is planned

for Cranberry Cove Plaza (Stop and Shop) that would serve as a connection point for the local routes and the express service off Cape (P&B Bus).

9.3.4 Bicycle Paths and Pedestrian Walkways

Two modes of transportation which reduce the number of cars on the roads and lessen the impact on infrastructure and the environment are walking and bicycling. There are a limited number of sidewalks in the town, most of which are congregated in the downtown area. A significant portion of the town is in need of sidewalk improvements. As area road and intersection improvements are performed sidewalks also get re-built and repaired.

There is a need to link outlying public parking areas with the downtown and to establish walking paths between abutting business properties. It is important to link the three primary villages (E. Orleans, S. Orleans, and the Village Center) for bicycle and pedestrian access. There are no bike lanes on either of the state routes that travel through town. Other than the Cape Cod Rail Trail travel on bicycle can be dangerous on the busy, narrow streets in town. Steps to improve bicycle safety and provide the needed bike connections are a priority of the Orleans Bikeway Committee.

Bicycle routes are categorized according to their functional classification. The following is an explanation of the basic types of bicycle facilities:

Class I - A separated bike path exclusively for non-motorized vehicles.

Class II - Bike lanes adjacent to a roadway that have striping or pavement markings to separate them from traffic.

Class III - An on-road bikeway that may have wider street pavement to allow safe use by bicyclists.

The Cape Cod Rail Trail is part of a designated bicycle path which runs along the former railroad right-of-way and passes through the center of town. A recently constructed bicycle bridge over route 6 and an extended bike path into the center of Orleans from the north has improved the safety and the popularity of the Rail Trail. With these new additions the center of Orleans has a Class I connection to points north.

9.4 Analysis

9.4.1 Road Maintenance & Improvement

Pavement Management System

Improvements to public roadways are funded by the Commonwealth, either through the Regional Transportation Improvement Plan or through Chapter 90 reimbursement. In 2005, the Town will receive \$184,000 to maintain its 58 miles of public roadway, a level that has been decreasing in recent years. This amount is not adequate to maintain all roads, resulting in the need to prioritize road work, and to augment state road repair funds with local tax dollars.

The Highway Department maintains a computerized pavement management system. This system includes a detailed condition survey of all public roads in the Town. Indicators of condition include the age of the road, surface condition, base condition, level of traffic, and other characteristics to assist Town officials in making annual budgeting decisions to properly maintain local roads. It is recommended that the Town continue to maintain the pavement management system and use it in developing its annual road maintenance budget. (T-1)

Other components of the transportation network that are under the authority of the Highway Department include sidewalks, and in the future bicycle paths. A unified transportation maintenance program should include these components.

Public Street Layouts & Private Streets

Most of the major routes in the town began as cart paths during the settlement period and were gradually improved over time. In most cases, the Town has accepted a road layout, which essentially conveys ownership of the street corridor to the municipality.

There still remain, however, a number of significant public streets for which no layout exists. For example, Rock Harbor Road is a major local road that is not formally laid out. (T-3) In these cases, the Town's authority does not extend beyond the width of the pavement. Abutting property owners are responsible for maintaining the area from the edge of the pavement to the boundary of their property. This limitation of Town authority creates difficulties when the community wishes to improve a local road. In order to install a sidewalk, bikeway, or widen the road, the Town must acquire property to create a public right of way – a difficult and time consuming task. It is therefore recommended that the Town begin a program of laying out and accepting all existing public streets. (T-3)

With more than half of all roads being private ways, equity issues arise as to the appropriate level of services which are provided by the Town. Private ways are not currently maintained by the Town. In some communities, it has been determined that snow removal on private ways can be provided by the municipality. In Chatham, any private way which meets standards set by the Highway Department is plowed by the Town. The Town of Orleans should investigate the costs and other issues surrounding snow removal and other services on private ways. (T-4)

Scenic Roads, Rural Character & Trees

As discussed in the Inventory section, there is an extensive list of Town-designated scenic roads in Orleans. While the listing covers nearly all connecting roads in the Town, there may still be other roads which need to be designated as Scenic Roads to protect their character. One example is Nauset Heights Road, a public street that provides access to several neighborhoods and Nauset Harbor landings. Efforts should be made to review the existing list and determine whether other roads should be brought to Town Meeting for scenic designation. (T-5)

Back in 1998, the Town's Tree Warden developed a "tree inventory" for 23 roads. The inventory is still maintained today and lists over 1150 trees. Additionally, there are over

1000 known public shade trees on 131 Town roads of which 32 are designated as scenic roads. Working from the concept of an inventory, a maintenance program can be established. The Tree Warden’s current maintenance efforts include pruning and lifting trees in the road layout, and removal of hazard trees supplemented by the planting of new shade trees. The Tree Warden also oversees the Scenic Road Bylaw with the Planning Board and enforces Massachusetts’ laws pertaining to public shade trees. The two parties have worked together to resolve a number of cases. The addition of a planting program in concert with the cutting requests has worked well in and should be continued.

Scenic roads for which there is no public layout limits the Town’s ability to regulate activities which are proposed on or near the roadway. It is recommended that the Town take action to ensure that all scenic roads are located within an accepted layout. (T-3, T-5)

9.4.2 Road Capacity

Existing and Future Conditions

The roadway intersections with existing and projected design problems should be evaluated and management tools implemented to address them. (T-8, T-9) The Cape Cod Commissions Regional Transportation Plan compares the demand placed on Orleans road network with their operating capacity. Capacity is defined as “...the number of vehicles that can pass through an intersection or section of roadway over a fixed period of time, usually one hour.” The width of the road and the type of traffic (cars and trucks) passing through determine the base number of vehicles that should be able to flow through freely in a given hour. (Regional Transportation Plan, 2003).

The Regional Transportation Plan forecasts traffic conditions on the Lower Cape based on the existing traffic counts taken annually and the CCC’s growth projections. Many of the same locations have been counted multiple times over the last 10 years and provide a timeline of traffic data. What the traffic counts show is a continually increasing traffic volume on all of our major roadways of about 1.5% per year.

Table 9-F: Relationship between Volume/Capacity (V/C) and Congestion

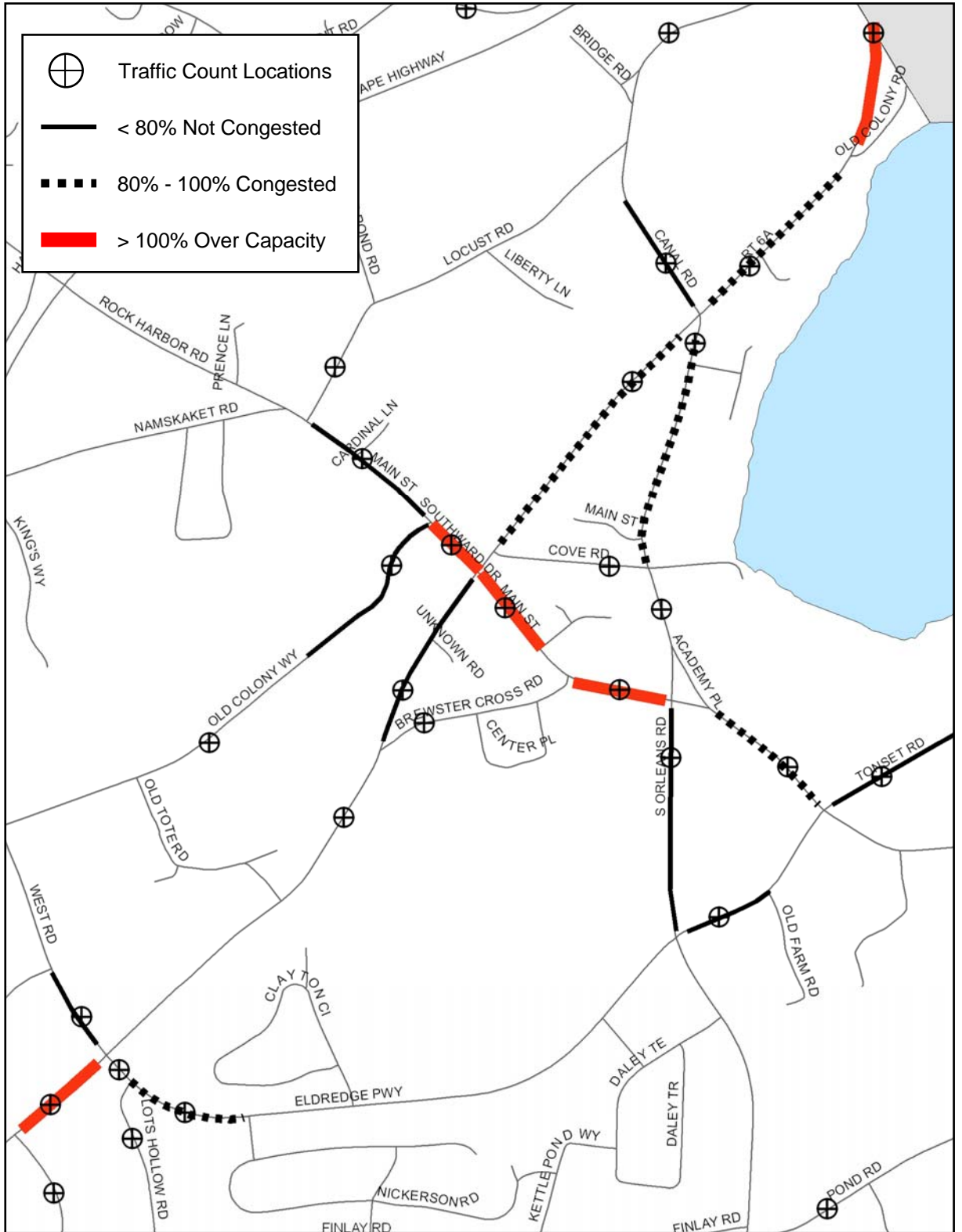
Volume / Capacity measured as a Percentage	Level of Congestion
100% and over	Over Capacity
80%-100%	Congested
80% and lower	Not Congested

Source: Cape Cod Commission

Maps of traffic for base year conditions and future year conditions are provided to demonstrate that many local roads will be operating beyond their capacity in the future.



Orleans Comprehensive Plan: Roadway Volume/Capacity 2004



Village Center Traffic

In 2003 the Town obtained a \$25,000 grant to have a detailed traffic study done of the Village Center by Judith Nitsch and Associates (JENI). The study goal was to quantify and qualify the transportation activities in town and make recommendations to aid in alleviating area traffic impacts and improve circulation of cars, bicycles and pedestrians in the Village Center.

As part of the study, traffic was counted in the Village Center at 10 different intersections during peak summer periods from 3pm to 6pm. Once up to date traffic volumes were collected, JENI then calculated a Level of Service for each intersection. A Level of Service (LOS), pertains not only to the functioning of a road, but also to the functioning of an intersection and its relative effect on intersection delay and safety. Listed below are intersection Levels of Service, they can be referred to like an intersection report card where an F is failing grade and a C is a passing grade.

Table 9-G: Intersection Level of Service in the Village Center

LOCATION	2003 LOS	2008 LOS	2013 LOS
Route 6A /Brewster Cross Road	F	F	F
Main Street / Old Colony Way	D	E	F
Rt 6A / Main Street	B	C	C
Route 6A / Cove Road	D	F	F
Route 6A / Route 28 / Canal Road	F	F	F
Route 28 / Cove Road	F	F	F
Route 28 / Academy Place	F	F	F
Route 28 / Main Street	B	B	C
Main Street / Tonset Road	D	E	E
Main Street / Brewster Cross Road	B	C	C

LOS described above for each intersection as a whole (not by movement or approach) Source:Village Center Traffic Study,2003

What the above table demonstrates is that if NO ACTION, or improvements, were taken at the intersections in the Village Center that 6 out of the 10 intersections will be operating in a failure condition in the year 2013.

The Village Center Study makes a number of recommendations to help guide the Town in improving traffic in the downtown. The Planning Board prioritized these recommendations and the following represent action items they would like to see remain in this plan and carried out:

Short Term (1-3 years)

- For all crosswalks under Town jurisdiction, create a consistent marking pattern such as the red brick street imprint used at Route6A/Main Street;
- At Brewster Cross Road/Main Street install a raised median island to “tighten-up” the intersection;

- Re-stripe the Brewster Cross Road/Main Street intersection to show land lines so the intersection can be better channelized and be compatible with the improvement above and add 3 curbside spaces on Main Street in front of the Compass Bank;
- Upgrade the Main Street/Tonset Road intersection, as signal equipment is outdated and obsolete. An application has recently been filed through the MHD Footprints Roads Pilot Program to improve this intersection. If this application is unsuccessful, the Town should place the project in its budgeting program for future upgrade;
- The Town should request the MHD to upgrade the pedestrian signal heads at Route 6A/Main Street and install signal heads at the Route 28/Main Street intersection. Countdown pedestrian signals are recommended;
- The Town should request the MHD to alter the signal timing at Route 28/Main Street to add more green time for the northbound (southbound) approach;
- Monitor the development on Main Street in the area of Friends Market and Post Office Square as Main Street should be reviewed for altering/consolidating curb cuts to better serve the two-way center left turn land on Main Street once redevelopment occurs;
- At Main Street/Old Colony Way install an elephant track crosswalk at the crossing of the Cape Cod Rail Trail with Main Street and place the portable pedestrian crosswalk sign at the crosswalk adjacent to Mahoney's Restaurant. In addition, maintain police officer control during the sunny days of July and August from 10 AM - 4 PM. Also Snow's east driveway opening should be designated as one-way in-only;

Long-Term (5-10 years)

- The Town working with the MHD should place the Route 28/Route 6A intersection on the Transportation Improvement Program;
- Through the Capital Budgeting Program, the Town should acquire the Besse Lot, which is located on Main Street, behind the Hogan Art Gallery and Honey Candles. Access-only should be provided from Main Street and full access/egress should be provided on Brewster Cross Road;
- Erect a standard green on white parking trailblazing sign along the gateways to the Town Center to identify to visitors the designated public parking areas;

Safety Problems

As traffic congestion increases it leads to increased driver confusion and conflicts. The following table provides an accident summary of major intersections in the town. (T-10, T-8) The top ranking accident location, 6A and Eldredge Park Way, has been re-designed with construction in 2005 that hopes to improve the safety record of this location. Other intersections have also been re-designed such as Old Colony and Main Street constructed in 2003 and Rt 28 and Finlay Road scheduled for 2007. These improvements should improve the safety of these intersections.

Table 9-H: Accidents at Intersections in Orleans

Roadway/ Intersection	# of Accidents 1997-2003
Route 28/ Finlay/Pond	18
6A/West & Eldredge Parkway	113
Rt. 6A/ Route 28 Canal Road	72
Main St. / Old Colony Way	15
Route 6A / Brewster Cross Rd.	29
Lots Hollow Rd & Eldredge Parkway	1
Route 6A / Main St.	48
Route 6A / Cranberry Cove Plaza	20
Rts. 28 /Rt. 39 / Quanset Road	5
Post Office Square	9

Accident data from Orleans Police Dept.

Other problem areas which should also be addressed in the future include:

Table 9-I: Roadway Problem Areas

• Route 28 & Monument Road	• Cottage Street & Route 28
• Cove Road & Route 28	• Cove Road & Route 6A
• Main Street & Route 28 (green arrow)	• Windmill Plaza (E. Orl.)
• Tonset Road & Main Street	• Beach Road & Nauset Hts.
• Monument Rd & Herringbrook Rd.	

As road capacity is approached, even a relatively small increase in traffic volume can cause a dramatic increase in congestion and safety. The other dynamic which occurs during high volume periods is that motorists seek alternative routes to avoid congested areas. The result, local roads carry higher volumes and become inherently less safe. Another result of heavy congestion is peak spreading. This is when motorists plan their travel outside of the known congested travel times and spread out the traffic congestion from a one hour peak period to possible a 2 hour peak period of congestion. In fact this type of driver behavior already exists during the congested summer traffic season.

In recognition of the need to begin immediate work to resolve existing traffic and safety problems, Town Meeting voters have approved transportation improvement projects at Skaket Corners, Main Street @ Old Colony Way, and Route 28 @ Finlay Road. Construction has been completed at Main Street and Old Colony Way, Skaket Corners, and is planned to start in 2007 for Finlay Road.

A Network Approach

Solutions to problem intersections and congested roadways cannot be solved on an individual basis. Many of the problems are interrelated, requiring a thoughtful, holistic analysis of the transportation network to determine which solutions offer the greatest overall benefits. Traffic associated with the Industrial District provides a good example.

Traffic into and out of the Industrial District must pass through one of two intersections, Finlay Road @ Route 28 or Lots Hollow Road @ Eldredge Parkway. Both intersections have problems, as does the intersection of Giddiah Hill Road on Finlay Road. To compound the problem, Lots Hollow Road also ends near Skaket Corners so that traffic flow in that intersection affects Lots Hollow Road. Improving one intersection without considering associated areas may have unanticipated adverse consequences. Therefore, the two entry points must be evaluated together. (T-11)

The Town has made efforts to improve both of these key intersections described above. The intersection of Finlay Road and Rt 28 is on the Transportation Improvement Program, a federally funded program, and is scheduled for improvement in 2007. The intersections of Eldredge Park Way and Lots Hollow Road are targeted for improvements via a Public Works Economic Development grant (PWED). The concept re-design would extend Lots Hollow Road where it would approach Eldredge Park Way further to the East creating a safer more efficient intersection. The coordination of this improvement with the Skaket Corners expansion would make the whole area road network function more efficiently.

Other problem areas that should also be considered together include:

- Main Street @ Route 28, Main Street @ Route 6A, Cove Road @ Route 6A (T-12)
- Cranberry Cove Plaza @ Route 6A, Routes 28 & 6A @ Canal Road, Canal Road (east end) @ 6A

Alternatives that may help improve the above locations may include traffic management methods and/or hard solutions (construction). It is recommended that traffic studies be performed for each of the above problem areas to determine how different improvement scenarios relate to each other in order to select the best approach to alleviate traffic problems in Orleans. (T-8, T-11, T-13, T-14)

Areas of congestion in Orleans are associated primarily with Route 6A and the General Business District, and are generally confined to the summer months. (T-9, T-12, T-13) For residents, convenient and enjoyable access to the downtown is denied not so much by having to wait but by the lack of orderliness that causes gridlock and rewards aggressive behavior. The deployment of summer foot patrols to direct traffic is a cost-effective method of restoring order and civility to the downtown. This is a quality of life issue for Orleans residents. Strategies that could be employed to reduce seasonal congestion may include the following:

- Increase traffic controls at major intersections. (T-8)
- Improve directional signs for visitors. (T-16)
- Encourage “through traffic” to use Route 6 to bypass the center of town.

- Limit left turns for traffic entering Route 6A. (T-8)
- Establish walking linkages between businesses to encourage shoppers to walk between destinations. (T-18)
- Establish set biking lanes on roads and bike path linkages to East and South Orleans. (OS-22)
- Facilitate State construction of a Park & Ride lot on Bay Ridge Lane (T-19)

Another method of reducing congestion and improving safety is access management or reducing the number of curb cuts. This could be accomplished by providing interconnecting and common driveways along Rt 6A that would serve a number of adjacent businesses and direct entrance and egress traffic to limited locations. (T-20, T-21, T-22) This concept would best be used along the easterly section of Route 6A from the Cranberry Cove Plaza to the Fog Cutter Route 28 intersection. Reduction and consolidation of curb cuts are commonly requested and carried out during the site plan review process of re-development. These efforts by the Town should continue.

A long-term strategy to reduce congestion in the downtown area could involve setting up one-way traffic flow on Cove Road, and Brewster Cross Road. These alternatives were considered as part of the Village Center Transportation Study and the Town should consider if there is action to be taken on these measures.

Left turns onto main roads during the summer cause an unsafe situation and exacerbates traffic congestion. As motorists are forced to wait an increasingly long time to enter traffic, they tend to take risks that can lead to accidents. It is recommended that the Town examine the potential benefits of limiting left turns during the busy summer months. (T-8)

Certain land use regulations will also help address traffic problems, particularly along Route 6A where nearly all of the properties are business oriented and there is a large amount of commercial sprawl. This type of strip development that encourages automobile use should be constrained in the area. In order to focus new development into centers as opposed to strip development, the area in the General Business District between the Orleans Marketplace and Skaket Corners was rezoned as limited business district. (T-23, ED-5)

9.4.3 Transportation Improvements

Each of the intersections discussed above may need to be improved or redesigned to meet the population and land use projections. Structural improvements such as turning lanes and road widening should be based on year-round needs as opposed to seasonal demands. Improvements should be designed within the framework of retaining the Town's semi-rural character. (T-10, T-8)

Parking Facilities and Needs

Additional public parking is needed to enhance the downtown area. Added parking facilities would reduce congestion in the Village Center area. Development of a public parking lot in the Village Center was recommended as part of the Village Center

Transportation Plan and could allow more people to show and utilize the downtown. Better utilization of existing lots, such as the Nauset Regional Middle School lot, could make it easier to access the entire downtown area. (T-15)

There is a need for walkway interconnections between parking areas, both public and private. This would allow vehicles that enter a parking area that is at capacity to proceed to an adjacent lot without the need to enter the street network. (T-18) Interconnections between private and public parking areas would drastically improve the function of the downtown during peak times by allowing overflow traffic to proceed to the next parking area without having to reenter the street network. It is desirable to allow visitors to “park once” and be within walking distance of many shops and businesses. It will be important to design parking area interconnections in such a way that cut-through traffic is discouraged. (T-11, T-25)

Alternatives that could minimize the need for additional public parking include:

- Enhance alternative modes of transportation, e.g. Flex Route and or summer trolley service, to reduce the amount of cars on town streets.
- Utilize existing parking lots to a greater extent. (T-15)
- Create walking paths between the Village Center and adjacent areas. (T-18)

In order to properly prepare to meet the parking needs of the population, the Town should incorporate a municipal land acquisition program into its capital planning. (T-25) Nearly all land purchases by the Town have been for open space preservation purposes. If sufficient new parking could be acquired, it would be desirable to reconfigure parking on Main Street and create better bicycle and pedestrian lanes. There is a need to explore opportunities to develop more efficient traffic solutions and find ways to foster an enjoyable experience for downtown visitors.

There are also parking problems at many of the Town Landings and some of the beaches. (CF-12) The Town may wish to consider requiring parking stickers for Town landings and beaches. (T-27) In addition, they may also wish to encourage water based travel as an alternative to using cars. (T-26) The Community Facilities and Services chapter discusses potential improvements at these sites and some of the issues involved.

Demand for Pedestrian and Bicycle Paths, Sidewalks and Facilities

Comments from participants in the Village Center Workshop and Town Survey showed residents’ interest in expanding on and off road bicycle paths. Residents have also expressed a desire for additional hiking trails on conservation land and the addition of sidewalks along major streets. (T-28) Based on the public desire for additional bicycle paths, sidewalks and pedestrian walkways, it is recommended that the appropriate Town departments and committees evaluate the feasibility of expanding pedestrian and bicycle facilities. (T-29) Bike path extensions should be constructed to connect to South Orleans, East Orleans, and Rock Harbor/Skaket areas. (OS-22)

In addition to expanding and improving bicycle and walking routes, efforts must be made to improve the safety and function of the transportation system, especially where different modes connect or cross. Creating brick or cobblestone crosswalks from curb

edges provides an attractive road crossing for pedestrians and at the same time slows vehicular traffic. There are other traffic calming techniques that could be used, such as “neckdowns” at crosswalks which reduce the distance for a pedestrian to cross the street. Bike racks should also be placed in appropriate areas to encourage bicycle use. Relatively small improvements such as these not only create a safer pedestrian environment, but help to promote the small village atmosphere that residents desire.

As more diverse modes of transportation interact, it is important that everyone who utilizes the area comply with traffic laws to ensure adequate public safety. Some residents and business owners have requested that traffic laws be better enforced in the Village Center and throughout the Town. The State, however, has control over speeds on many roads in Orleans. (T-31, T-30) This Plan recognizes the benefits of having a police presence in the Village Center to assist with congestion problems and maintain pedestrian flow when streets are utilized beyond design capacity.

Public Transportation Needs

In 2006, the FLEX bus service began operating full-time between Harwich and Provincetown. The service provides buses running every 30 minutes, with rides costing a dollar or less. Funding for the buses was provided through a grant to the Cape Cod National Seashore. Operating costs are borne by the State (75%) and the participating towns (25%). For the first full year, Orleans’ cost is estimated to be \$37,000.

The Flex service is somewhat unique, in that it has the ability to deviate up to a mile from the set route to pick up or drop off riders. Route deviation arrangements are made by phone at least two hours prior to the pick up or drop off. It is hoped that the ability to “flex” will make the service more user-friendly and encourage strong ridership.

As part of a good public transportation network, a centralized center is needed for drop-offs, parking, change-overs, etc. Following up the Flex service, the National Park Service has provided a grant to study and locate two local transportation centers on the Lower Cape. One will be located in Provincetown and the other in Orleans. The study phase is expected to be completed in 2007, and future funding may be available for purchase and construction of the center (T-33).

A working group with representatives from each town has been established to review the Flex service and recommend changes to improve service. The Cape Cod Regional Transit Authority manages the service, and will be working with the group in the coming years to assure that the transit needs of Lower Cape residents are being met.”

9.5 Implementation Program

	Action	Time for Completion	Resources Required	Lead Responsible Agency
T-1	Complete and utilize a Pavement Management System to develop a systematic approach to street maintenance and improvement.	FY 07-10	L	Highway Dept.
T-2	Incorporate adequate maintenance of roadways, sidewalks, and bicycle paths into the Highway Department budget.	FY 07-10	M	Board of Selectmen
T-3	Develop public layout plans for all major public roads in the Town.	FY 11-20	H	Highway Dept.
T-4	<i>Develop a policy for services to private roads.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Board of Selectmen</i>
T-5	Prioritize private Scenic Roads that have regional significance for layout to ensure proper regulatory review.	FY 07-10	L	Highway Dept.
T-6	<i>Commit necessary resources to manage tree and vegetation cutback work along all public roads.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Highway Dept.</i>
T-7	<i>Fund the Highway Department at an appropriate level to support the maintenance and replacement of new and existing roads.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Board of Selectmen</i>
T-8	Based on the T-11, T-13, T-14 traffic studies, commission a design and establish a traffic management program to correct the cited deficiencies	FY 11-20	H	Board of Selectmen
T-9	Develop effective transportation management solutions for existing seasonal traffic problems.	Ongoing	M	Town Administrator
T-10	Traffic circulation problems identified in the analysis section need to be analyzed and solutions determined.	FY 07-10	L	Traffic Advisory Comm.
T-11	<i>Conduct a comprehensive traffic study of the area serving the Industrial District, from Skaket Corners to Route 28.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Planning Department</i>
T-12	Ensure that reconstruction along Route 6A and Route 28 specifically address safety and access problems.	Ongoing	L	Planning Board
T-13	<i>Conduct a comprehensive traffic study of the Village Center, concentrating on problems at Route 6A and Main Street.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Planning Department</i>
T-14	Conduct a comprehensive traffic study of the Route 6A corridor between Route 28 and the Eastham rotary.	FY 07-10	M	Planning Department
T-15	Assure adequate connections between school parking lots and the Village Center.	FY 07-10	M	Highway Dept.

T-16	Provide better directional signs to destinations and parking areas.	FY 07-10	L	Highway Dept.
T-17	<i>Petition MassHighway to remove the "Shore Road" sign at exit 12 and install signs at town entry points directing through traffic to bypass Route 6A and remain on Route 6.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Highway Dept.</i>
T-18	Build or expand walking paths to connect various locations in the downtown.	FY 07-10	M	Highway Dept.
T-19	<i>Facilitate State construction of a Park & Ride lot on Bay Ridge Lane.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Highway Dept.</i>
T-20	Re-evaluate parking regulations in the Zoning Bylaws in order to assure that the location, number, size, and screening of parking lots is appropriate, and to promote shared driveways and internal connections between parking lots.	FY 07-10	L	Planning Board
T-21	Work with property owners to reduce the number of curb cuts on Routes 6A, 28, and in the Village Center.	FY 11-20	L	Highway Dept.
T-22	Develop an access management bylaw to improve safety of residential and commercial curb cuts.	FY 07-10	L	Planning Board
T-23	Amend the Zoning Bylaws to reduce the size of the General Business District to alleviate the current and projected traffic congestion along Route 6A.	FY 07-10	M	Planning Board
T-24	Establish a transit/transportation center to support public transportation for residents and provide protection from weather, sanitary facilities, and local information.	FY 07-10	H	Planning Department
T-25	Acquire land in strategic locations for better traffic and parking management in the downtown area.	FY 11-20	H	Board of Selectmen
T-26	<i>Consider water-based travel as an alternative to using cars to access the downtown and beaches.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Board of Selectmen</i>
T-27	Consider requiring parking stickers for all Town Landings and beaches.	FY 07-10	L	Board of Selectmen
T-28	Implement sidewalk and bikeway extension program on main roads.	FY 11-20	H	Highway Dept.
T-29	Develop a systematic program for extending sidewalks and bikeways in areas where there is high pedestrian traffic.	FY 07-10	L	Highway Dept.
T-30	<i>Enforce parking regulations on public streets and at Town landings</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Board of Selectmen</i>
T-31	<i>Work with State officials to re-evaluate speed limits on State roads.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Board of Selectmen</i>
T-32	Consider methods to foster a viable public transportation system, possibly targeting key needs groups such as the elderly.	FY 07-10	L	Town Administrator

Affordable Housing



Finlay Road Affordable Housing Project

10. Affordable Housing

10.1 Overview

Affordable housing is defined by the Cape Cod Commission as dwelling units that cost no more than 30% of the gross income of households that are at or below 80% of the county median income. The Commonwealth, however, requires that housing be subsidized in some manner or restricted in price by deed in order to be considered “affordable.” The analysis and conclusions of this chapter are predicated on providing the level of affordable housing that is required by the Commonwealth.

In Orleans, affordable housing is a long-term problem with no simple or quick solution. No opportunity, public or private, should be overlooked in an effort to move forward. Success will be measured in the sum of many small steps and initiatives.

While Orleans shares many county-wide housing problems, conditions for the development of affordable housing are, in many respects, more difficult in Orleans than in other towns. Housing and land costs are high and year-round rental opportunities are limited and expensive. For this reason the importance of Town initiatives and active support on every level cannot be overemphasized. The Town has demonstrated a commitment to increase the stock of permanently affordable rental opportunities as well as opportunities for first time home-buyers.

10.2 Goals & Policies

Goal

To promote the provision of fair, decent, safe, affordable housing for rental or purchase that meets the needs of present and future Orleans' residents. The Town will seek to raise its affordable housing stock to 10% of all year round units by 2020.

Policies

- Affordable housing should be encouraged in all areas including areas of mixed-use residential and business development, but not in industrial areas.
- Residential construction and redevelopment of 10 units or more should provide at least 10% of the proposed units as affordable units, under a program of qualification administered by the Orleans Housing Authority.
- Affordable housing units should remain affordable long-term through the use of deed restrictions or rental restrictions.

- Affordable housing units should be compatible with respect to design, appearance, construction, and quality of materials with other structures in the area.
- Housing contributions should be placed in the Affordable Housing Trust Fund, to be used to further affordable housing initiatives as recommended by the Joint Committee on Affordable Housing.

Goal

To promote equal opportunity in housing, both ownership and rental, and give special consideration to meeting the housing needs of the most vulnerable segments of Orleans' population including, but not limited to: very low income (50% of median income), low income (51%-80% of median income), single parent heads of households, elderly, minorities, the homeless, disabled, and others with special needs.

Policies

The Town should actively participate in regional affordable housing strategies, funding opportunities, and initiatives

- The Town should consider other options for affordable housing alternatives adhering to the needs of displaced residents and seasonal employees.
- In all of its actions the Town shall work to prevent discrimination in housing because of race, color, creed, religion, sex, national origin, primary language, age, political affiliation, disability, sexual orientation or any other consideration prohibited by law, and shall not knowingly approve any development that so discriminates.

Goal

To utilize seek out, provide support and encourage the development of innovative strategies designed to address the housing needs of Orleans' residents, with particular attention to the needs of low and moderate income renters.

Policies

- Reuse of existing structures as a means for creating affordable housing should be encouraged.
- The Town should monitor changes in the special needs population and provide additional programs and facilities as necessary.

Goal

10.3 Inventory

The following inventory and analysis describes the condition, type, and affordability of Orleans' housing stock with respect to income, age, and household relationship. The inventory includes: (1) the location of housing types; (2) opportunities for conversion of existing structures to affordable housing units; and, (3) housing facilities that meet the needs of special segments of the population. Also included is an inventory of housing organizations both on the Cape and within Orleans with the ability to develop or manage affordable housing units.

Affordable Housing Units are those which may be purchased or rented by those who meet the guidelines for maximum annual income for a low-income or moderate-income family or household, and whose expenditure for housing costs does not exceed 30% of the gross annual income of an owner and 30% of the gross annual income of a renter in the previous calendar year. Based on October, 2004 data the a family of four (4) making less than \$49,450.00 annually qualifies for affordable housing units in Orleans are:

The following series of tables provide information on housing in Orleans. The source of the data is the 2000 U.S. Census. The U.S. Census is conducted every 10 years and is the most complete, and in some cases the only, source of data for certain statistics. For example, income data is only available through the Census report. However, data on the median sales price of a home is currently available. In illustrating the difference between housing cost and the ability to afford a home, based on income, the income figures cannot be compared to recent housing data. Therefore, 2000 Census data is used as the basis for information because it is consistent, reliable and is the most commonly used source of data for comprehensive planning purposes.

Table 10 - A: 2000 Year Round and Seasonal Housing in Orleans

Type of Housing Stock	Number of Units	% of Total Units
Year round housing	3,106	60.8%
<i>Owner occupied</i>	2,329	75%
<i>Renter occupied</i>	745	24%
Seasonal Housing	2,002	39.2%
Total Housing Units:	5,108	100%

Source: 2000 US Census Data

The table below presents information on the number and type of housing units in Orleans.

Table 10 - B: 2000 Housing Units

Total housing units	5,108	100.0 %
UNITS IN STRUCTURE		
1-unit, detached - (Single Family Home)	4,167	81.6 %
1-unit, attached	141	2.8 %
2 units	176	3.4 %
3 or 4 units	153	3.0 %
5 to 9 units	62	1.2 %
10 to 19 units	134	2.6 %
20 or more units	270	5.3 %
Mobile home	5	0.1 %
Boat, RV, van, etc.	0	0.0 %

Source: 2000 US Census Data

The table below inventories the type and number of subsidized housing units in 2004.

Table 10 - C: 2004 Affordable Unit Type and Number

1. Tonset Woods	100 one bedroom units	Restricted to elderly or disabled
2. Rock Harbor Village	80 one bedroom units 20 two bedroom units	Restricted to elderly or disabled
3. 181 Main Street	8 one bedroom units	Restricted to elderly or disabled
4. 53 Meetinghouse Rd	2 four bedroom units	Restricted to elderly or disabled
5. Canal House	8 one bedroom units	Restricted to substance abuse patients only
6. 3 Tonset Rd	1 staffed residence	Restricted to mentally disabled
7. Opa's Way	12 single family homes	Restricted to families who earn 60% to 80% of the median family income
8. Windmill Plaza	4 one bedroom units	Restricted to families who earn 60% to 80% of the median family income
9. Habitat for Humanity -Rt 28	2 single family homes	Restricted to families who earn 60% to 80% of the median family income
10. John Avellar Cir.	10 units	Restricted to families who earn 60% to 80% of the median family income
11. Finlay Road	3 Units	Restricted to families who earn 60% to 80% of the median family income
12 Wise Living	11 Units	Restricted to elderly who earn 60% to 80% of the median family income

Source: Orleans Housing Task Force, 2004

The Commonwealth defines affordable housing differently than the Cape Cod Commission. According to the Commonwealth housing may be considered “affordable” if it: (1) has a subsidized mortgage; (2) has a rental subsidy such as Section 8; or (3) is restricted in price by a long-term deed restriction. This means that low cost housing that does not meet the criteria of the Commonwealth does not count toward the 10% goal.

Orleans Current Position

Even though Orleans is challenged by affordable housing issues, the Town has the highest percentage of affordable housing units in the county. According to the State Department of Housing and Community Development, 8.5% of the Town's housing stock is considered to be affordable. What this statistic does not reveal, however, is the very small percentage of affordable housing stock available to families within this 8.5%. Two hundred and nineteen units of affordable rentals are restricted to the elderly and persons with disabilities. For families, there were only 14 permanently affordable rentals in Orleans. The following statistics show that Orleans is again making progress towards achieving a 10% goal.

In 1980, 8.8% of Orleans housing stock was subsidized. This dropped to 8.1% by 1997. A total of 915 housing units were constructed between 1980 and 1990, only 11 of which were developed as affordable, thus lowering the percentage of affordable housing stock. In 2004, the amount of subsidized housing stock is back up to 8.5%. New housing production in Orleans has stabilized at around 45 units a year and since 1990 the Town has added 31 units of affordable housing. It is important to note that the percentage will decrease if market rate units are developed at a faster rate than affordable units. With every new home constructed, the Town falls further behind in achieving the goal if there are not affordable homes built to keep pace. In 2004, the median single family home sale price was \$638,000. At market prices like these the affordability gap grows even larger and affordable housing development becomes more and more difficult.

Based on the projected number of housing units at buildout, there will need to be 467 affordable housing units in order to reach the 10% goal set by the Commonwealth. Since there are 250 existing affordable units, there will need to be an additional 217 units. Table 10 - D shows the calculation of these figures.

Table 10 - E: Future Affordable Housing Units Required to Meet 10% Goal

Current Total Housing Units (2000 US Census)	5,108
Current Total Occupied Year-round (60.8%) (2000 US)	3,106
Additional New Units at Build-out* (Year-round - 60.8%)	1,562
Total Year-round units at Buildout*	4,668
Total Affordable Units Required (10%)	467
Total Current Affordable Units	250
Total New Affordable Units Needed	217

Source: Current units based on 2000 U.S. Census;

*Buildout projections in the Land Use Chapter were based on the 40 yr outlook and 2003 Assessors data.

This can be achieved through a variety of approaches including, but not limited to: (1) conversion of existing housing stock, (2) development of new private or public affordable units, (3) passage of inclusionary zoning requirements that would require a certain percentage of affordable units be constructed as part of all new developments over a certain size.

If no new affordable housing is developed by buildout, the percentage of affordable housing stock would fall to approximately 5%.

There are other issues which work against the achievement of the 10% goal. They include the following:

1. *Shortage and high price of rental housing* - The lower price rental market has long been difficult in Orleans, which has produced few standard rental units over the years. In the summer of 1999, rental vacancies were so scarce that a tenant losing a rental stood a good chance of not finding a replacement, even becoming homeless, accelerating the trend of Orleans toward a more homogeneous population of middle and upper income people.
2. *Inability to purchase housing* - Low and moderate income families find it difficult to save enough money to afford the 5%-10% down payment on a home. While some could afford the mortgage payments, saving the \$ 15,000 - 20,000 down payment prevents many people who could pay for a home from buying one.
3. *Housing for People with Special Needs* - Orleans has a number of residents with special needs. Some have benefited by the construction of specially designed environments such as Canal House for people recovering from substance abuse. However, other special needs are not being met. There is a need for temporary shelter for the homeless and for assisted living for the elderly. Although there is still unmet need, historically the Town has had significantly more success with the development of housing for elderly or people with special needs than it has with producing family housing.

4. *Scarcity of rental units* - The lack of low rent or market rate units is now recognized by housing advocates as an acute problem throughout the Cape. Many homes that had long been utilized for lower priced year-round rentals have changed hands. They are commonly purchased and used as second homes or for year round use by retired people.
5. *Emergency Housing* - There is a need for a program to meet the needs of residents who find themselves in a desperate housing situation. Though regional agencies exist, their resources are limited and they are not always able to adequately serve the population.

Generally, Orleans shares the same housing problems as the rest of the Cape. However, more solutions are available to those few municipalities that have sewers. Also, sales and rental prices tend to be lower in most other Lower Cape towns.

Affordable rentals are a key to a healthy housing situation. Most young adults begin living independently in a rental apartment; few buy a home immediately. If affordable rentals are not available in the Town, local people will be forced to seek housing elsewhere. A goal of this plan is to foster population diversity. This can only be accomplished by having a diverse stock of housing opportunities, so that people of all ages and social strata have an opportunity to find local housing that is within their financial means.

10.3.1 Condition of Existing Housing Stock

There are no distinct sections of town or neighborhoods that have problems with the housing stock. There are a few exceptions, but for the most part, the condition of the Town's housing stock is rated as good to very good.

The Town periodically examines low-priced land parcels suitable for new construction of affordable units. Due to the recent increases in the land prices and the scarcity of available land parcels are not available or attainable. Also frequently examined are low-priced existing units suitable for rehabilitation. Because this the Town has determined this is a preferred means of creating affordable units, the Town should: (1) have a mechanism for quickly uncovering and disclosing to its housing agencies distressed, foreclosed, or tax-taken properties; and, (2) be prepared to actively avail itself of funding through private, regional, or government initiatives, and become a partner when possible, in such regional efforts. Habitat for Humanity and the Lower Cape Community Development Corporation continue to work on this issue.

10.3.2 Inventory of Housing for People with Special Needs

Within Orleans there are a number of housing developments established to serve the needs of specific sectors of the population. Below is a description of each type of development.

- *Tonset Woods*: Located at 94 Hopkins Lane, Tonset Woods provides 100 1-bedroom apartments for elderly and disabled residents. It is operated by the Orleans Housing

Authority, and subsidized as needed by the state to ensure that residents pay no more than 30% of their income for housing.

- *Rock Harbor Village*: This apartment complex is located on Main Street near the village center. It provides 80 single bedroom and 20 two bedroom apartments for elderly and disabled residents. The units are supported by Section 8 through MHFA.
- *181 Main Street, and 53 Meetinghouse Road*: Orleans has two group homes for adults with mental disabilities. A house at 181 Main Street is home to 8 adults. A duplex at 53 Meetinghouse Road has two four-bedroom apartments. Both are funded by Chapter 689 through MHFA. Both were developed with state funds by the Orleans Housing Authority.
- *Canal House*: Located at 71 Canal Road, this facility provides housing for people with substance abuse problems. It has 8 single occupancy units, is owned by Lower Cape Community Development Corporation, and is subsidized by the Orleans Housing Authority through the federal Section 8 rehabilitation program, as well as state and county HOME funds.
- *3 Tonset Road*. Emmaus House – A staffed residence for people with mental disabilities owned by the Federated Church of Orleans and subsidized by the Orleans Housing Authority.

10.3.3 Organizations that Develop or Manage Affordable Housing

Orleans Housing Authority

The Orleans Housing Authority is an elected public agency created by vote of Town Meeting in 1969 in accordance with Massachusetts General Laws. It has developed and managed rental housing since 1972 and has the capacity to develop and manage additional affordable housing, given proper provision for funding of staff assigned, or consultants needed. Funding sources often specify whether housing authorities are eligible applicants for grants. The Housing Authority is staffed by two management and two maintenance personnel.

Orleans Housing Task Force

The Orleans Housing Task Force is a volunteer Town Committee charged with the creation of affordable housing particularly for low and moderate income families. With no administrative staff or budget, it relies on either funding for consultants or working in partnership with other established organizations in its role as a developer. It does not have management capacity.

Affordable Housing Bylaw-Joint Committee on Affordable Housing

In May of 2000, the Town adopted an affordable Housing Bylaw to further advance the development of affordable units in Orleans. The purpose of this Bylaw is to define a coherent

set of policies and objectives for the development of affordable housing in compliance with state law and regional programs. This bylaw is also intended to assure that an appropriate share of the remaining undeveloped land in the Town is used to meet the Town's critical need for affordable housing. The Bylaw also directs how funds will be managed and administered from the Town Affordable Housing Trust Fund; a fund set up to foster the development of affordable units in Town. Expenditures are allocated by a joint committee made up of the Housing Task Force and the Orleans Housing Authority.

Lower Cape Community Development Corporation (CDC)

The Lower Cape Community Development Corporation is located in North Eastham. It is a regional, nonprofit housing and economic development agency serving the eight Lower Cape towns. It is steadily developing its capacity to develop and administer affordable housing. It can work in a partnership or cooperative role with the Town, the Orleans Housing Authority or other local groups working on projects compatible with the CDC's identified goals.

Housing Assistance Corporation (HAC)

The Housing Assistance Corporation is a regional nonprofit housing agency located in Hyannis that has the capacity to manage rental and home ownership programs. HAC is also often a willing partner or consultant on efforts compatible with its established goals.

Habitat for Humanity

Habitat for Humanity has built affordable homes in many Cape Cod towns using volunteer labor and donated materials to offset the high cost of housing. They also rehabilitate homes and adapt them for residents with special needs.

Interfaith Council for the Homeless

A private charity that deals with housing problems, and the crises of homelessness.

Cape Cod Commission

The Commission helps secure funding, provides technical assistance, serves as an information clearinghouse, and leads innovative efforts for affordable housing. This is a significant source of funds for affordable housing programs.

National and State Response to the Need for Affordable Housing

Historically there have been both federal and state responses to the need for affordable housing. In 1949, the Federal Housing Act was passed. The primary purpose of the Act was to "expand home ownership and rental housing opportunities for people not adequately served by the private mortgage markets." Title VIII of the Civil Rights Act outlawed discrimination in housing based on race, ethnicity, color, sex, or religion. This protection was expanded to the developmentally and physically disabled by the Federal Fair Housing Amendments Act of 1988.

In 1969 the Massachusetts legislature passed Chapter 774, also known as the “anti-snob zoning act.” This law established a goal of making 10% of all housing units in a community affordable for low and moderate income families. Chapter 774 also includes incentives and disincentives for the cities and towns to work toward compliance with the 10% goal. Under Chapter 774 a developer can submit a comprehensive permit application, also known as a Chapter 40B application, for an affordable housing development which does not have to comply with any local zoning requirements. This application is acted upon by the local Zoning Board of Appeals (ZBA) and the action of the ZBA is on a single “comprehensive permit” from all land use boards. The problem of a comprehensive permit is that it does not have to comply with local zoning requirements. Chapter 40B, the comprehensive permit process, is intended to provide motivation for communities to work toward compliance with the 10% affordable housing goal. Also, its purpose is to streamline the permitting process for affordable homes, and to allow higher density regardless of local zoning laws.

10.4 Analysis

10.4.1 Public Preferences

In 1996, voters agreed to purchase land as recommended by the Housing Task Force to be used to develop homes for first-time buyers. In 1997, a 12-unit subdivision was approved, and in 1998, Town Meeting created an overlay district to allow affordable homes to be built on the land. In 1998, the Board of Appeals allowed a variance so that a single-family derelict house could be converted to a two-family year-round rental that could provide affordable housing. In 2004 the Town gifted a 1.4 acre parcel to a private developer who, in turn, developed a 3 unit condominium building under chapter 40B for affordable candidates.

Open House/Workshop

In March of 1996, an open house/workshop concerning affordable housing was held. The comments that were received were supportive of the concept of affordable housing. Attendees of the workshop did have some concerns about how affordable housing plans were developed and how they would be financed.

Several ideas were presented at the workshop regarding how land and money could be attained for affordable housing. Among the ideas were using land that defaults on taxes; encouraging potential land donors to allow for mixed use, including housing where appropriate (in lieu of “conservation only” restrictions); purchasing land outright; and developing a revolving account to help with this goal.

Other issues discussed included a concern for maintaining affordability of existing affordable housing, and educating the public about loan and grant programs that are available to help create affordable housing.

Housing Summit

In October of 2002, the Town held an Affordable Housing Summit run by a professional facilitator to discuss the past and future of affordable housing in town. The goal of the summit was to focus on priorities for affordable and other housing issues in the Town. The consensus of those in attendance was that several strategies to boosting the affordable housing stock should be looked at. Purchasing condominiums for affordable housing, developing apartments over business in the downtown, and providing tax incentives and reverse mortgages were just some of the ideas discussed. Also reviewed were some of the hurdles that the community may face when trying to develop affordable housing. Increased density, appearance, income levels, cost, and stigmas were just some of the many issues discussed. Information at the end of the summit was presented to the Orleans Board of Selectman and overall, is still being used today.

10.4.2 Affordability of Housing

There are several factors that have prevented people from being able to afford housing by purchase or rental in Orleans:

- The high cost of land;
- The seasonal nature of the economy with many low-income service industry jobs and no winter income for some;
- The influx of second homeowners and off-Cape retirees which has increased demand for housing and prices;
- The demographics of Orleans including the proportion of elderly persons to young persons, and the lower than average median household incomes (\$42,609) as compared to the State's median household income of \$50,502.

Demographics of Income

Analysis of relative housing costs requires a comparison with incomes to determine whether a family with a median income can afford housing. Current year statistics would be most valuable in this regard, but local income data is only available through the decennial U.S. Census. Therefore, for comparative purposes, 2000 U.S. Census data is used to compare housing costs to family income.

Table 10 - F presents information on income levels of households and demonstrates what they can afford to pay, per month, for housing (no more than 30% of their income).

Table 10 - G: 2000 Income and the ability to pay for housing

Income Groups	# of Households	% Total Households	30% Income	Affordability per Month
less than \$10,000	309	10.0%	\$up to \$2,999	up to \$250
\$10,000 - \$24,999	698	22.6%	\$2,999 - \$7,499	\$250 - \$624
\$25,000 - \$34,999	299	9.7%	\$7,499 - \$10,499	\$624 - \$874
\$35,000 - \$49,999	442	14.3%	\$10,499 - \$14,999	\$874 - \$1,249
\$50,000 - \$74,999	540	17.5%	\$14,999 - \$22,499	\$1,249 - \$1,875
\$75,000 - \$99,999	324	10.5%	\$22,499 - \$29,999	\$1,875 - \$2,499
\$100,000 or more	477	15.4%	\$ 30,000 or more	\$2,499 or more
Total:	3089	100.00%		
Median Household Income	\$42,609		\$12,783	\$1,065

Source: 2000 US Census Data

Keeping in mind that the median household income for Orleans residents in 2000 was \$42,609, Table 10 - H compares income distribution to affordable mortgages. This table demonstrates what the household can borrow. For the median household in Orleans it is a mortgage up to \$208, 0000 depending on the interest rate secured with the loan.

Table 10 - I: 2000 Income Distribution Compared to Affordable Mortgages

Income Distribution	% Total Households	Affordability per month (approx.)	Affordable 30 Year Mortgages (approx.) with Fixed Interest Rates at:		
			6.00%	7.00%	8.00%
less than \$10,000	10%	less than \$249	Less than \$20,848	Less than \$37,426	Less than \$35,068
\$10,000 - \$24,999	22.6%	\$249- \$624	\$20,848 - \$104,077	\$37,426 - \$93,791	\$35,068- \$85,174
\$25,000 - \$34,999	9.7%	\$624- \$875	- \$145,942	\$93,791 - \$131,519	\$85,174- \$119,245
\$35,000 - \$49,999	14.3%	\$875- \$1,250	- \$208,489	\$131,519 - \$187,884	\$119,245- \$170,352
\$50,000 - \$74,999	17.5%	\$1,250- \$1,875	- \$312,734	\$187,884 - \$281,826	\$170,352- \$255,529
\$75,000 - \$99,999	10.5%	\$1,875- \$2,500	- \$416,979	\$281,826 - \$375,768	\$255,529- \$340,706
\$100,000 or more	15.4%	More than \$2,499	More than \$417,000	More than \$376,000	More than \$340,706
Median Household Income	\$42,609	\$738	\$123,092	\$110,926	\$100,574

Source: 2000 US Census Data

The standard practice of lending institutions is to calculate the amount people can afford to spend on housing by assuming that housing costs should not exceed 30% of their total gross income. For rental units, this monthly cost should include utilities. Home ownership costs should include Principle, Interest, Taxes, and Insurance (PITI). Mortgages do not include the 5% down payment. These figures are equivalent to the mortgage.

In 2004, the average single family “starter home” (the lowest 25% of 2004 sales) sale price was \$422,320. In order for a person to afford a home at that price (with a 30-year mortgage of \$401,204 - sale price minus 5% down payment), one would need to make the following payment per month to meet the specified fixed interest rates:

Table 10 - J

% Interest Rate	Cost per Month	Annual Income Needed
6.00%	\$2,405.42	\$96,216.80
7.00%	\$2,669.22	\$106,768.80
8.00%	\$ 2,943.89	\$117,755.60

Banks have determined that a family should not spend more then 30% of its income on housing. Thus, a household at the Orleans median income (\$42,609 based on 2000 Census could only afford to pay \$1,065 per month.

Households that could afford the “starter home” described above would need a combined income of about \$100,000 a year. In 2000, 15.4% of total households in Orleans had a household income of over \$100,000.

10.4.3 Future Demands

Population and Projections

Population forecasts, from the build-out analysis in the Land Use chapter indicate that Orleans’ population would grow to near 10,000 people year round. The number of new year round units expected at build-out is 1,520 for a total of 4,668 units.

Need for Affordable Housing

In order to meet the goal of 10% of the housing stock as affordable housing at projected buildout, 467 housing units would have to be dedicated to affordable housing. Since the Town currently has 250 affordable units, 208 of the new units will have to be affordable.

Development over the period 1976-1996 increased the housing stock in Orleans by an average of 64 new units per year. Because remaining land is more difficult to develop, it may reasonably be assumed that housing growth will proceed at a slower rate in the next twenty years. Indeed, the rate of development from 1995 to 2004 averaged 47 units per year. Assuming that growth levels remain fairly constant, the next twenty years could see 900 new dwelling units in the Town. To keep pace with development, at least 90 of the units should be affordable.

For the Town to engage in an affordable housing development program, it will need to acquire land for this purpose. When asked if the Town should be buying land and developing affordable housing 64% agreed they would support such actions (*2006 Resident/Taxpayer Survey*). Large vacant parcels in the Town are becoming rare. Therefore, the Town may need to be flexible in the type of land it acquires, and the development that can be put on the land. Public opinion favors scattering of units as opposed to concentrating them in one place. It is recommended that the Town include in its capital budgeting the need to purchase land to be used for affordable housing. (AH-1)

High housing costs have priced the low and moderate income households out of the market in Orleans. Trends show Orleans families are now seeking homes in other areas on the Cape and some have been forced to leave the Cape altogether. There is also a need for the ability to respond to families in need of emergency housing assistance. It will take a joint effort by the Town, the Interfaith Counsel for the Homeless, the Lower Cape Outreach Council, and the private sector to address these needs on an ongoing basis. (AH-2, AH-3)

Homelessness is a threat for many families. The shortage of affordable rental housing can create a crisis for any family which loses its rental. Thus far, the problem has been addressed primarily through private charities. Interfaith has played an important role in this area. There are indications that the efforts of private charities are being increasingly strained and that public intervention may be needed.

The lower wages characteristic of tourist, service, and seasonal economies signify that the category “low income family” will include numbers of working families, as well as a smaller percentage who rely on some type of public or insurance benefit. A recent trend noted by homeless advocates is that of an increasing number of working families needful of emergency housing or emergency housing assistance. Single parent families statistically have significant representation among families below the poverty level.

Single heads of households

Single heads of households and non family households are often at low or moderate income levels, particularly if they are supporting children. In Orleans, the median household income, \$42,609, is lower than the median family household income, \$62,629. Single heads of household and non family households will have difficulty affording a mortgage on a median priced home in Orleans. New housing programs should target this group for assistance through new housing development and through outreach programs to help make them become more aware of existing housing assistance programs. (AH-3)

Senior Citizens

Orleans has the oldest population on Cape Cod (*Census 2000*). Based on past experience, elder care agencies support the need for congregate type facilities for elderly persons in Orleans. Continuing care health facilities have also become a viable means to provide housing for the elderly. However these are often moderate or upper income housing alternatives. Given the town’s high percentage of senior citizens, an effort should be made to continue the availability of affordable and available home care services. This need for combined shelter and services crosses income lines and therefore would need to be planned carefully to serve those who need and desire such a facility in order to stay close to their friends and family. An assisted living facility with some affordable units should be encouraged by the Town. (AH-4) In fact, when asked if they would support the Town actively encouraging the development of an assisted living facility, 76% of residents and taxpayers agreed (*2006 Resident/Taxpayer Survey*).

Rock Harbor Village (100 units) has a temporary restriction which maintains the affordability of the complex for elderly residents. The restrictions expire in 2019 when the subsidized mortgage is retired. The Town should take action now to ensure that the units will retain their affordable status on a permanent basis. (AH-5) The Joint Committee of Affordable Housing has expressed interest to the owner in 2001 and 2003 in permanently protecting these units for affordable candidates. At present, the owner will not discuss options due to the existing protection in place.

Disabled and others with special needs

The high cost of housing indicates that there will be a continuing need for some type of affordable housing for people who are unable to work full time because of a disabling condition. In some instances certain building modifications or supportive services are needed. Stable, decent, affordable housing is the primary need for individuals that are disabled or have special needs.

The various special needs residences with supportive services created in Orleans for a specifically identified population (i.e. people with mental retardation, mental illness, substance abuse recovery, etc.) have resulted from the efforts of the Housing Authority, the Lower Cape Community Development Corporation, area churches, social services agencies and citizen's groups. An example of their recent success in this area is the Recovery House on Canal Road. In addition to the two agencies mentioned, citizen interest and initiative to provide housing for special need groups is also an approach that should be encouraged by the town.

The housing needs of this group of residents appear to be adequately met at present. The Town in conjunction with the Housing Authority should respond to increases in the special needs population as necessary.

Seasonal Workers

A large work force is needed during the summer to take care of the influx of tourists and summer residents. The Town and local businesses are experiencing increasing difficulty in finding this help due in part to the lack of affordable housing for them. This problem could be alleviated by changing the present zoning bylaws to allow properly supervised dormitory-type housing for some of these workers. (AH-6)

Other Barriers to Affordable Housing

In addition to the socioeconomic characteristics of Orleans that inhibit people from attaining affordable housing, local zoning and other land use regulations play a role in creating barriers to affordable housing. It was overcome in one instance through the creation of an affordable housing overlay district for the Baker's Pond Affordable Housing Project. Additional strategies include encouraging apartments over storefronts, (AH-7) allowing dormitory style housing for seasonal workers (AH-6) and allowing small rental units within private homes. (AH-8)

The Housing Task Force has worked diligently to identify and assess opportunities for affordable housing. However, there have been occasions when the Task Force has missed the chance to consider an available parcel of land that has had potential to support affordable housing. To remedy this situation, better internal communications are needed to assure that all boards or agencies which may have interest in an available parcel are given opportunity to review the matter and consider its merits before a decision is made. (AH-9)

The Town should pursue the following options for increasing affordable housing:

- Identify and implement programs to better utilize the existing and potential housing stock to meet the affordable housing needs of our very low, low, and moderate-income residents, including any defined special needs populations. (AH-10)
- Obtain land suitable for affordable housing development (or mixed municipal use, including housing) and develop new housing. (AH-1)
- Develop a program to facilitate private sector construction of affordable housing. (AH-11)
- Develop and implement programs to address the social service needs and self-sufficiency goals of public housing tenants. (AH-10)
- Integrate affordable housing goals into other regulatory, planning and zoning statements or regulations. (AH-6, AH-7, AH-8, AH-10, AH-12)
- Perform a detailed study of the 1999 Barnstable Inclusionary Bylaw (require all new housing to contribute toward affordable housing) to determine if this should be adapted to Orleans to help fund affordable housing initiatives. (AH-13)

Protecting Existing Units

Since 1999, Orleans has developed and sold 15 housing units to qualified families. When the units are resold, deed requirements stipulate that it be made available to an income-qualified buyer. A qualified purchaser is identified, either through a housing lottery or the Housing Assistance Corporation's "ready to buy" list. Costs associated with advertising, qualifying buyers, and completing the real estate transaction must be available to ensure the long-term affordability of the units.

Deed restrictions required by the Massachusetts Department of Housing and Community Development stated that affordable housing was to be sold for a percentage of the appraised value. When a home is resold, a new appraisal is completed by the seller, and the original percentage is applied to determine the new purchase price. Due to the extraordinary increase in home prices between 1999 and 2006, this method of calculating resale price results in a new price that is higher than most qualified purchasers can afford.

In order to ensure that all existing affordable units are protected long-term and can be sold to qualified buyers, funding should be set aside expedite purchases and if necessary buydown the appraisal-based purchase price (AH-14). The Community Preservation Act may provide funding for this program. In 2006, DHCD recognized the problem and has approved a new deed rider that calculates resale price based on escalation of income limitation, not appraised value."

Summary

The combination of high land and housing costs of existing stock in Orleans force many local individuals and families to seek housing in other towns. More affordable housing is needed,

both for purchase and rental, to retain a diversity of population in Orleans. The Town has demonstrated a willingness to address this issue in the past. It should continue to actively encourage organizations, such as the Lower Cape Community Development Corporation, Habitat for Humanity, and the private sector in their efforts to both build and rehabilitate affordable housing in Orleans. (AH-3)

The Town should continue to work towards the benchmark of providing 45 affordable dwellings over the next twenty years. Initiatives such as the inclusionary bylaw as well as Zoning amendments for the Village Center should be explored to find ways to facilitate affordable housing and affordable rental dwellings on the upper levels of commercial buildings. Affordable housing efforts should be included in the Capital Improvement Plan when applicable. (AH-1) Continuing to be proactive is the only way to catch up with the current deficit in affordable housing units.

10.5 Implementation Program

	Action	Time for Completion	Resources Required	Lead Responsible Agency
AH-1	Develop 35 new units of affordable housing for families over the next twenty years, and support this activity by scheduling it in the Capital Improvement Plan.	FY 11-20	H	Board of Selectmen
AH-2	Develop a program to address the emergency housing needs of Orleans residents, in coordination with Interfaith Council for the Homeless.	FY 07-10	L	Housing Task Force/ Housing Authority
AH-3	Actively encourage organizations such as the Lower Cape Community Development Corporation and Habitat for Humanity in their efforts to both build and rehabilitate affordable housing in Orleans.	Ongoing	L	Housing Task Force/ Housing Authority
AH-4	Encourage the development of a senior citizen assisted living facility that has an affordable component of at least 10%.	FY 07-10	L	Planning Board
AH-5	Negotiate the retention of Rock Harbor Village as affordable housing units. Deed restrictions are due to expire in 2019.	FY 11-20	M	Board of Selectmen
AH-6	<i>Consider amending the Zoning Bylaws to allow dormitory-type housing for seasonal workers under proper controls.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Zoning Bylaw Task Force</i>
AH-7	Actively encourage affordable housing by amending the Zoning Bylaws to facilitate the development of apartments in the business districts.	FY 07-10	L	Planning Board
AH-8	<i>Consider amending the Zoning Bylaws to facilitate affordable housing through small rental units in private homes.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Zoning Bylaw Task Force</i>
AH-9	Establish a process to assure that Town housing boards are given an opportunity to consider available land parcels for affordable housing.	FY 07-10	L	Town Administrator
AH-10	<i>Develop an ongoing Affordable Housing Plan to meet future needs, both rental and ownership, to reach the 10% goal.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Housing Task Force</i>
AH-11	Develop a program to facilitate private-sector construction of affordable housing.	FY 07-10	L	Housing Task Force
AH-12	Consider an inclusionary bylaw that requires that 10% of all new residential development or subdivision lots and condominiums of 10 or more lots or units be dedicated to affordable housing.	FY 07-10	L	Zoning Bylaw Task Force

AH-13	<i>Study the 1999 Barnstable Inclusionary Bylaw. Consider whether such a bylaw is suitable for Orleans.</i>	<i>Addressed See Appendix</i>	L	<i>Planning Department</i>
AH-14	Develop methods including improved deed restrictions to ensure the long-term affordability of current and future affordable housing units.	FY 07-10	L	Housing Task Force

Open Space and Recreation



Window on the Cove

11. Open Space and Recreation

11.1 Overview

The natural beauty of Orleans' woodlands, beaches, ponds and estuaries is important to the residents and visitors of the town. This natural beauty is one of the main reasons many choose to live in or visit Orleans. Open space lands are also important to those who live, work or play in Orleans because they provide the benefits of pristine natural resources people cherish. Open space provides natural buffers between developed neighborhoods, adding to a sense of place on public as well as private lands. They protect vital drinking water, provide habitat for wildlife and plant life, and help to preserve the water quality of coastal estuaries and fresh water ponds. Natural open space areas allow for scenic vistas and provide places for recreation. Furthermore, they enhance the semi-rural seaside character of the Town.

It is an inescapable fact that nearly all remaining open land that is capable of development will eventually be developed unless action is taken to preserve it. Orleans is a community where one can still drink high quality water, breathe fresh sea air, walk forested land and meadows, catch and eat healthy fish, swim at magnificent beaches and take pride in 350 years of maritime history. Protection can come through a variety of methods such as acquisition, conservation restrictions, easements and regulations designed to preserve natural, cultural and historic resources. Though small in geographic area, the Town's ecological, cultural and recreational blessings are great and we must be vigilant in preserving them. As a community, we need to manage the growth of the Town's economy in a way that offers both protection for this special natural environment and new opportunities for our recreation.

11.2 Goals & Policies

Goal

To protect as open space as much land as possible, in order to preserve a healthy natural environment, safeguard ground water quality, provide habitat for wildlife, provide extensive opportunities for recreation and retain the picturesque quality of the Town.

Policies

- Management of shared open space and natural resources such as Nauset Beach, Town Cove and Pleasant Bay should be done in cooperation with neighboring towns, when appropriate.
- The design of proposed developments should fully protect water resources, historic and archaeological sites, scenic vistas and wildlife habitat areas.

- Open space within proposed developments should be contiguous and interconnecting with adjacent open space when present, and be subject to permanent conservation restriction.
- Development located adjacent to already preserved conservation land should be planned in a way that prevents adverse impact to that land and maximizes the overall area of contiguous open space.
- Management plans should be created and maintained for all open space lands under Town stewardship.
- Ecologically sensitive land and water bodies should be protected to enhance ground water recharge, wildlife habitats, scenic views, salt and fresh water quality, and the small seaside character of the Town.
- Acquisition of open space land in Nitrogen Sensitive Areas should be a priority consideration.

Goal

To provide reasonable access to protected conservation and recreation lands for persons with varying physical abilities due to age and mobility factors or a disability.

Policies

- Suitable access for disabled or otherwise severely physically disadvantaged persons should be provided to open space lands, as appropriate to and if possible in each area.

Goal

To provide, improve and, where needed, expand opportunities, programs and facilities for passive and active recreation during all seasons to support the needs of residents and visitors of all ages.

Policies

- Current information about recreation programs and facilities should be made available to the public.
- Year-round recreation programs for all age groups should be provided.
- Adverse impacts to salt and fresh water resources should be prevented in order to ensure their continuing viability for water recreation purposes.

- The use of beaches should be fully compatible with natural resource protection requirements, including the preservation of wildlife habitats.
- Bike trails should be developed separate from roadways if possible.
- Periodic surveys of residents should be conducted to assess current recreational needs.
- The need for small neighborhood recreation sites that meet the desires of local residents and fit in with the surroundings should be determined periodically.

11.3 Inventory

11.3.1 Open Space Land

Orleans currently has more than 2,700 acres of protected open space land that is owned and managed by a variety of public and private agencies, and by individuals. The primary open space providers in Orleans are the Town and the Orleans Conservation Trust (OCT). Town-owned conservation and recreation lands represent roughly 20% of the Town totaling 1,477 acres. OCT is the single largest private landholder in the community owning 427 acres of natural areas and protecting another 54 acres through conservation restrictions. There are 368 additionally protected lands held by other agencies and trusts.

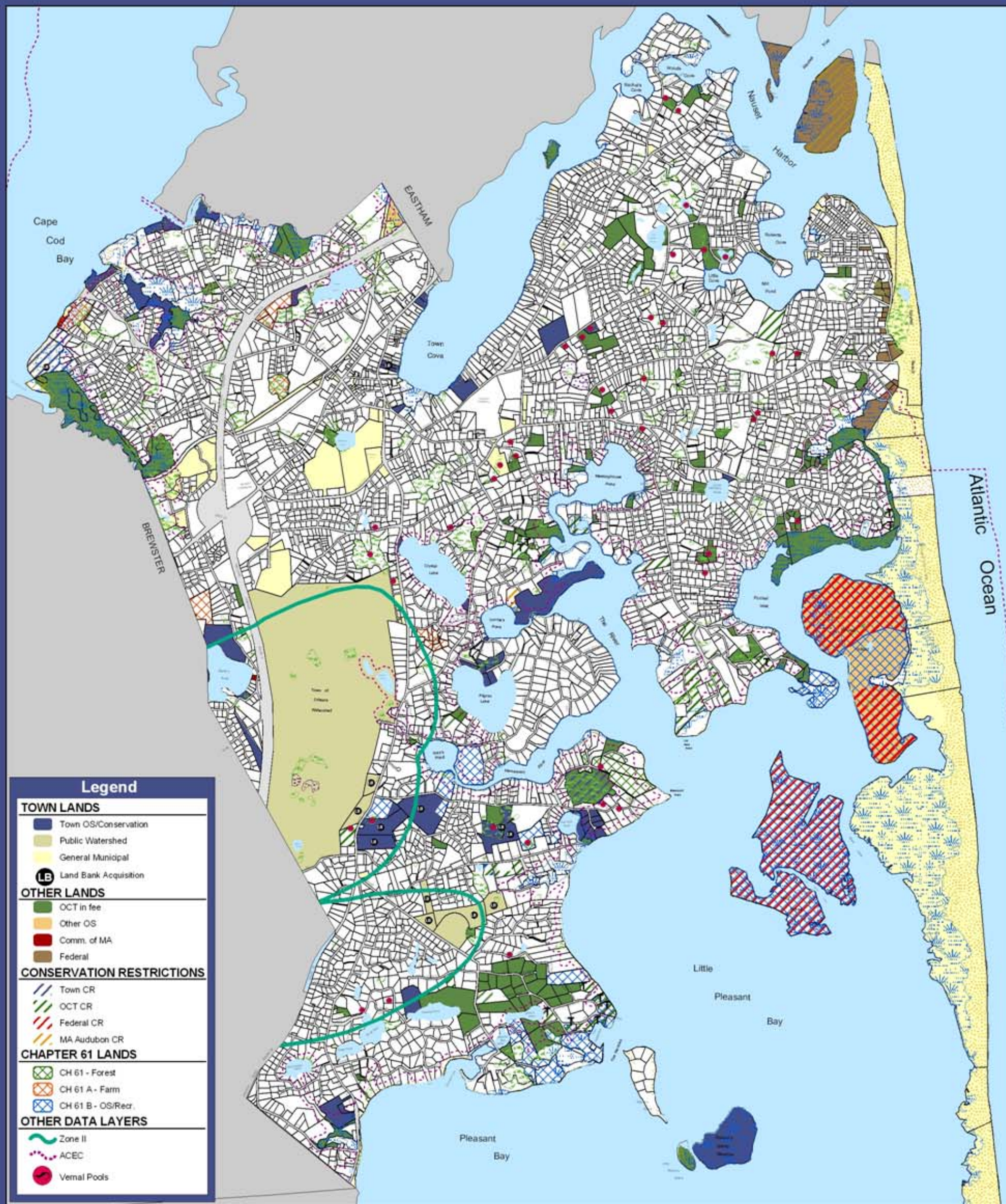
The table below displays the acreage of protected open space owned by the various agencies or trusts responsible for its protection. The corresponding town Open Space Map displays the location of these parcels throughout town. The Conservation, Recreation and Open Space (CROS) Plan includes a detailed inventory of all open space, conservation and recreation lands. This inventory section summarizes relevant data from the CROS plan and includes a summary of protected lands recently purchased by the Town and other agencies.

Table: 11 - A

Open Space Summary			
Agency		Acres	% of Town
<i>Publicly Owned Open Space</i>		<i>1894</i>	<i>21%</i>
Town	Owned outright	1725	19%
Town	Conservation Restriction	64	1%
Federal		104	1%
State		1	<1%
<i>Privately Owned Open Space</i>		<i>849</i>	<i>9%</i>
OCT	Owned outright	427	5%
OCT	Conservation Restriction	54	<1%
Other		368	4%
TOTALS		2743	31%



Town of Orleans: 2004 Open Space Inventory



Legend

TOWN LANDS

- Town OS/Conservation
- Public Watershed
- General Municipal

OTHER LANDS

- Land Bank Acquisition
- OCT in fee
- Other OS
- Comm. of MA
- Federal

CONSERVATION RESTRICTIONS

- Town CR
- OCT CR
- Federal CR
- MA Audubon CR

CHAPTER 61 LANDS

- CH 61 - Forest
- CH 61 A - Farm
- CH 61 B - OS/Recr.

OTHER DATA LAYERS

- Zone II
- ACEC
- Vernal Pools



This map is illustrative and intended for planning purposes only
Map created by the Town of Orleans Planning Department



0.5 0.25 0 0.5 1 Miles

The Town has an active preservation history purchasing more than \$10 million worth of open space in the 1980's, over \$2.5 million in the 1990's and over \$5.7 million since the year 2000. Orleans continues to maintain the policy of acquiring open space for the protection of its natural resources. These efforts include the major purchases of extensive woodlands to secure a 500 acre watershed for preserving drinking water resources and the purchase of nearly all of Nauset Beach for the purposes of recreation and conservation. The majority of the 1,725 acres of land under Town management is permanently protected. A portion of the Town protected land is used for General Municipal purposes such as the 38 acres, comprising 9 park sites and the green space areas of the Nauset Regional Middle School and the Orleans Elementary School. These general municipal lands are not preserved as open space in perpetuity but are likely to remain protected as public parks and green space.

As mentioned, conservation land trusts have played a major role in shaping open space protection in Orleans. As a non-profit, charitable organization recognized by the IRS, a land trust can offer tax advantages to a landowner for gifts of land. The Orleans Conservation Trust (OCT) is directly involved in acquiring and managing land in town for its natural, recreational, scenic or historic qualities.

11.3.2 Recreation Facilities

Orleans is fortunate to have a variety of protected lands for both active and passive recreational opportunities.

Active Recreation Facilities

The Town recreation area for active sports is the Eldredge Park / Middle School / Elementary School complex, which contains a variety of playing fields, two playgrounds and a band shell. Cape Cod League baseball games, and other high level sports events are held at Eldredge Park, recently cited as one of the finest amateur baseball fields in the country. Other field space is located on the school fields, including a baseball and three softball diamonds, six tennis courts, an outdoor basketball court, a ¼ mile stone-dust track, and soccer fields. These facilities are used by the schools during the school year and by the Recreation Commission year-round. The complex also contains a skateboard park operated by a non-profit group.

The other active recreation field is the Little League field adjacent to Town Hall on School Road.

Passive Recreation

The many beautiful beaches include more than 800 acres of Atlantic Ocean frontage, a beach on Cape Cod Bay, and fresh water beaches at Pilgrim & Crystal Lakes. All are extensively used year-round by residents, summer residents and tourists.

In addition to beaches, the Town has purchased a number of strategically-located parcels throughout the Town, and made them open to the public for walking, birdwatching, and other passive types of recreation. There are 11 other parks in town with a total of 126 acres, ranging in size from the single acre Window on the Cove up to the recently acquired 42-acre John Kenrick Woods. The majority of this land acreage was acquired between 1998 and 2004 using funding supplied through the Cape Cod Land Bank.



Orleans Comprehensive Plan: Recreational Facilities



Orleans possesses a variety of recreational areas for use by residents and visitors. These protected lands provide a variety of recreational opportunities for both passive and active recreation. **Error! Reference source not found.** summarizes the current inventory of the open space dedicated to recreation, and identifies the management responsibility..

Table: 11 - B Town Recreation Lands

		Managed By
Active Recreation Lands		
Nauset Regional Middle School	13 acres	Regional School District
Orleans Elementary School	11 acres	Orleans School Committee
Eldredge Park	6 acres	Parks & Beaches Dept.
Little League Field	1 acre	Parks & Beaches Dept.
Passive Recreation Lands		
Nauset Beach	858 acres	Parks & Beaches Dept.
Skaket Beach	4 acres	Parks & Beaches Dept.
Crystal Lake Beach	1 acre	Conservation Commission
John Kenrick Woods	42 acres	Conservation Commission
Kent's Point	27.7 acres	Conservation Commission
Baker's Pond	16 acres	Conservation Commission
Council On Aging	12 acres	Council on Aging
Rail Trail	10 acres	MA DCR
Christian Property	7.5 acres	Conservation Commission
Pilgrim Lake Beach	4 acres	Parks & Beaches
Window on the Cove	2.4 acres	Conservation Commission
Windmill on the Cove	2.2 acres	Conservation Commission
Village Green, Main St.	1 acres	Parks & Beaches Dept.
Meadow on the Cove	1 acre	Conservation Commission

Several natural amenities in Orleans also serve a recreational function. Nauset Beach provides ocean-surf recreation on the Atlantic Ocean and includes supporting facilities for visitors such as extensive restroom facilities, a food vendor and generous parking facilities. Skaket Beach on Cape Cod Bay, offers an especially safe beach environment for young children, a snack bar, restrooms and ample parking. Pilgrim Lake, Baker's Pond and Crystal Lake offer convenient fresh water beaches with limited parking. There is also a beach located on Pleasant Bay, just off Route 28.

Management plans for public open space parcels managed by the Conservation Commission have been developed with broad public input on the best public use of facilities and protection of

natural resources. Management plans are on file for Kent's Point, Baker's Pond, John Kenrick Woods, and Paw Wah Point. These efforts have been aided by private groups, often composed of citizens who reside near a particular open space area and want to have input into its use.

Several parks are also available to the public for passive recreation, including the Jonathan Young Windmill Park on Route 6A and the Window On The Cove Park on Main Street at Academy Place. Conservation sites such as Kent's Point, Baker's Pond, John Kenrick Woods, and Pah Wah Point also provide hiking trails and other passive recreation amenities. In addition, there are boat launching ramps at some town landings.

11.4 Analysis

11.4.1 Public Opinion Survey

In 1999 a public opinion survey of residents was conducted regarding their needs for open space and recreation. Survey questions dealt with the types of open space to be protected, the kinds of recreational amenities desired, and the preferred methods of preserving land for conservation and recreation. The following bulleted items briefly summarize the survey results.

- The characteristics best describing Orleans, in order of preference (top 3), were: "a town that actively encourages preservation and conservation" (72%), "a retirement community" and "a community that has preserved its small town character"
- Respondents considered most important the preservation of "open spaces to meet our water and conservation needs" (53%), followed by "semi-rural character of the town" (28%) and "public access to the shore" (26%);
- Among objectives for protection under the Land Bank, respondents chose "wellfields, aquifers, recharge areas for drinking water" (44%), "ocean/pond frontage, beaches and dunes" (25%) and "fresh and salt water marshes" (24%);
- Concerning residential growth policies, 79% desired to "regulate growth in existing developed areas" 82% desired to "regulate growth in undeveloped areas" and 45% did not wish to "encourage higher density in the Village Center"
- As for the type of housing/zoning favored in order to preserve open space, 42% preferred cluster housing for this purpose, 48% desired larger than one-acre zoning, and duplex housing was cited by 35%;
- In response to the desired method for preserving open space, by land acquisition or by conservation restriction, 84% favored "vote for Town-supported land acquisition" with "donate money to buy land" as the second choice (39%);
- Regarding the level of satisfaction with the places in Town for children/youth recreation and for adult recreation, 81% were "very satisfied" or "satisfied" with children/youth facilities and 82% were "very satisfied" or "satisfied" with adult places;
- Of the 15 choices for new or expanded recreation facilities, the following, in order, were preferred: "public access to fresh and salt water shorelines" (39%), "conservation areas" (38%), "bike trails" (27%), "swimming pool (indoor)" and "neighborhood parks" (tie) (18%);

- Of 6 choices for “the very highest priority action the Town should take” in the open space/recreation arena, 54% responded “acquire additional open space” and 17% favored “improve conservation land with low-key amenities”.

11.4.2 Recent Open Space Transactions and Costs

Over the past decade the Town has acquired a significant amount of conservation and recreation lands. More than \$8 million of Town funds were expended in these efforts to protect land from development permanently, by fee simple acquisition or the purchase of a permanent conservation restriction or easement. Table 11 - D details open space obtained by the Town since 1987 for the purposes of conservation or recreation.

Table: 11 - C : A timeline of Open Space Transactions

Year	Property	Acres	Price	Grant/Gift \$	Town Cost (excl. int.)
1987	Window on Cove Park	1.0	\$390,000	\$0	\$390,000
	Crystal Lake/ Dickinson	1.0	\$235,000	\$148,050	\$86,950
	Pah Wah Pond	11.5	\$1,600,000	\$360,000	\$1,240,000
	Sea Call Farm	6.3	\$1,600,000	\$0	\$1,600,000
1988	Baker's Pond	15.6	\$1,456,165	\$839,500	\$616,665
	Kent's Point	27.7	\$1,800,000	\$0	\$1,800,000
1989	Tar Kiln (Poor)	10.5	\$680,000	\$0	\$680,000
1994	Skaket Beach**** (Alemian)	4.0	\$300,000	\$156,000	\$144,000
	Rock Harbor Rd. (Heyelman)	1.7	(donation)	\$0	\$0
1997	Skaket Beach** (Hamilton)	0.9	(donation)	\$0	\$0
1998	Skaket Beach (Gavigan)	1.9	\$350,000	\$0	\$350,000
	Skaket Beach*** (Gavigan)	1.0	\$525,000	\$525,000	\$0
	Portanimicut* (Gallagher)	2.4	\$15,000	\$0	\$15,000
	Namequoit Bog*	22.5	\$185,000	\$85,000	\$100,000
1999	Portanimicut Rd. (Christian)****	7.8	\$345,000	\$250,000	\$245,000
	Route 28 (Town Cove) (Smith)	2.4	\$650,000	\$0	\$650,000
	Namskaket (Sea Path) (Furst)	17.0	\$150,000	\$100,000	\$50,000
2000	Gullquist	25	\$1,675,000	\$0	\$1,675,000
	Sparrow	10.8	\$575,000	\$0	\$575,000
2002	Earle	8.7	\$474,300	\$0	\$474,300
	Sparrow****	12.0	\$789,000	\$500,000	\$289,000
2003	Sparrow	20.3	\$2,200,000	\$134,180	\$2,065,820
TOTALS		747.3	\$15,994,465	\$3,097,730	\$12,896,735

* Conservation Restriction

** Gift from the Community of Jesus

*** Gift from the Commonwealth of Massachusetts

**** Self Help Program Grant from DCS application pending (first Land Bank acquisition)

+ \$50,000 grant from Commonwealth of Massachusetts, \$50,000 grant from Barnstable County

\$50,000 provided for maintenance purposes, saving Town expenditure

It should be noted that the Gavigan and Christian transactions were fee simple acquisitions of developed land, rather than parcels without any structures. The Alemian, Gallagher, Furst and Namequoit Bay transactions involved the purchase of conservation restriction rights, on

essentially undeveloped land: "All other transactions were fee simple acquisitions of undeveloped land." This illustrates that a combination of approaches can and should be employed to maximize opportunities for purchasing permanent protection.

11.4.3 Funding Open Space Protection

Since the Land Bank was approved by voters in 1998, Town Meeting has approved 9 recommendations for the acquisition of 15 parcels of approximately 111 acres. An additional two parcels of almost 14 acres were also protected due to these purchases, resulting in approximately 125 acres preserved by the Land Bank.

The Land Bank provided the Open Space Committee with the credibility to pursue major land preservation priorities set by the first Open Space Committee in 1986. This was due to the Land Bank's defined 20 year surtax and the resultant ability to bond large acquisitions. These will not be available under the CPA. There is conservatively \$300,000 of bonding authority remaining in the Land Bank account. The Committee's current land protection priorities exceed this remaining balance. These priorities may become significant opportunities for any future CPA funds.

In May of 2005 the Town of Orleans adopted the Community Preservation Act. The Commonwealth of Massachusetts provides matching funds for CPA communities for at least 2005 through 2009. For the first two years of the program funds are anticipated to be matched by 100% of the CPA levy. In the future, Orleans will rely on the CPA as the source for future Open Space protection funding. In order to achieve the 400-acre goal, both the public and private sectors together will have to continue to fund open space and recreation lands protection at this recent historical level.

To further supplement these funding sources, the Town will need to continue to aggressively pursue grant funding from the Commonwealth and Barnstable County in the future, particularly targeting the Self Help, SAND and SCORP programs offered by the Executive Office of Environmental Affairs (EOEA). (OS-5) Success in obtaining grants for projects that preserve the natural environment or protect land for recreation or conservation can result in very substantial assistance to the Town. The Town has recently updated its Conservation, Recreation, and Open Space Plan (CROS) in order to remain eligible for this funding source. In addition, the OS/LBC should periodically encourage landowners to preserve land parcels as open space through conservation restriction, deed restriction, sale or donation and educate them concerning the financial and environmental benefits of doing so. (OS-6). Finally, the Town should continue to support and actively encourage the private Orleans Conservation Trust to sustain its substantial efforts to acquire or otherwise protect open space lands.

Working together as a team --- individual landowners, the OCT and Town government --- is the key to accomplishing the ambitious goal of preserving 400 acres over the next 20 years. If this goal is reached, or even nearly reached, we will have laid the foundation for securing the environmental health and semi-rural character of the Town for future generations.

11.4.4 Open Space Land Protection Goals

The Regional Policy Plan (RPP) of the Cape Cod Commission established a goal for each town to preserve 50% of its remaining developable (vacant) land. For Orleans to achieve this goal would require the protection of about 302 acres. Assuming a conservative average price of \$150,000 per acre, nearly \$45 million would be needed today to acquire that much open space land (not considering donations and conservation restrictions), and the future price tag would undoubtedly be appreciably greater. It is readily apparent, therefore, that the RPP goal of preserving 50% of Orleans' remaining developable, vacant land as open space is fiscally unrealistic.

Orleans needs to set a more practical and relevant goal for preserving its open space. The Open Space Committee has developed and maintains current a list of parcels that are candidates for protection by acquisition or permanent conservation restriction/easement, as charged by the Board of Selectmen. That list contains approximately 400 acres that meet one or more of the Town's objectives for open space preservation as reflected in the CROS Plan and that are consistent with the requirements of the Land Bank legislation. (OS-3) The Town and private efforts could acquire or otherwise protect open space parcels from this list using funding built up over time in a new "Open Space Preservation Reserve" accrual account of the Budget (OS-1)

CROS Plan

Goals have been established in the CROS Plan by the Open Space Committee for open space protection in order to "protect the water supply," preserve and manage natural resources, special places, wildlife habitats and the Town's semi-rural seaside character. The Open Space Committee pursues these goals in maintaining a list of potential properties to acquire or put under CR status. The goals of this Plan are consistent with the Orleans CROS Plan.

SCORP

The Massachusetts Statewide Comprehensive Outdoor Recreation Plan (SCORP) describes the open space and outdoor recreation policies of the EOE. The document is used by the EOE to guide expenditures authorized by the legislature. The most recent SCORP (*For Our Common Good – Open Space and Outdoor Recreation in Massachusetts 1988-1992*) presents the goals and objectives for outdoor recreation for a five-year period.

The SCORP states that the influx of tourists onto the Cape and Islands each summer is a critical issue. The provision for water-based recreation, ocean access and the emphasis on conservation of the wildlife habitat and water supply require special planning attention.

11.4.5 Improving Public Access and Recreation Facilities Management

The limited access and amenities afforded the public to most town landings and to some beaches and other conservation and recreation areas is a continuing problem, particularly

during the summer season with the major influx of part-year residents and tourists. Insufficient or limited parking is the primary constraint at most town landings, Crystal Lake, Baker's Pond and Pilgrim Lake beaches, and at the Kent's Point and Pah Wah Pond conservation sites. (T-30)

Amenities such as benches and informational signs describing the uses available at each location are also limited. (OS-7) Management plans should be drafted for all recreation and conservation sites not already covered by such documentation to guide those responsible for the proper stewardship of these areas and to inform the public of authorized and unauthorized activities in each area. (OS-8) In addition, the Town needs to publicize these recreation/conservation sites and their features more thoroughly and more frequently. The Town should promote the need for open space protection and publicize its benefits by developing and disseminating educational materials, working closely with private conservation organizations and with County and State agencies. (OS-19) A detailed brochure and map should be made available for this purpose, as well as descriptions of recreation and conservation areas and information on recreation programs and schedules listed on the Town's web site. (OS-10) A video of these facilities and programs should be shown periodically on cable television. In addition, all recreation programs should be evaluated periodically to make sure that they fully meet the needs of residents. (OS-11)

Village Pocket Parks

Another way to access public recreation opportunities is through the creation of pocket parks. The need for pocket parks in areas of the town should be studied. If the recreation need can be determined and land acquired, they should be planned and constructed for the convenience of local people. (OS-12, OS-13) Pocket parks could contain amenities such as small playgrounds, basketball courts, drinking fountains, and play equipment. (OS-14) It may also be necessary to provide parking, but park design should emphasize that the primary means to access these small recreation areas is on a bike or on foot. To emphasize the local nature of these village recreation sites, sidewalks to and within their boundaries should be created and ample space provided for bike parking. Village pocket parks not only would expand the recreation opportunities for East Orleans, South Orleans, Rock Harbor and Skaket Beach area residents and visitors, they also would alleviate the occasional congestion and crowding at the main Eldredge Parkway/ Nauset Regional Middle School/Orleans Elementary School recreation complex.

Aiding Public Access

Public access can be enhanced by providing amenities appropriate to each conservation or recreation site. (OS-7) Some expansion of vehicle parking at certain town landings, beaches and recreation sites would be highly beneficial. The need for additional parking spaces at town landings having boat launch facilities is especially acute. (CF-12) Signs at each site to inform the public of its intended uses and capacities are required.

Active management of recreation sites is necessary to ensure that their quality is maintained, and that expansion commensurate with the rate of residential and tourism growth is carefully planned. (OS-17) Information as to the location, purpose, available amenities, and hours of operation for all recreation facilities, town landings and conservation/park sites should be

maintained at the Information Center and listed on the Town web site. Publicity regarding recreation areas, programs and hours of operation should also be periodically posted on the cable television public access channel and in newspapers and information brochures. (OS-10)

Community Center

The idea of a multi-purpose community center and pool facility constructed in or near the Village Center would represent a major financial undertaking for the Town. It would have to be studied carefully based on definite feedback from residents as to its required social, cultural, and recreation capacities. If this kind of new multi-function recreation facility is clearly wanted and would be financially supported, then its design and construction should foster the intended social interaction among residents. It should be culturally and aesthetically pleasing, and the features of its indoor swimming pool and other recreation capabilities should fully satisfy the needs of residents of all ages. (OS-18)

Town Cove Waterfront Park

The Town Cove Landscape Preservation Project Final Report, July 1991, stated that, although Town Cove should be a prominent place in Orleans due to its central location, its major role played in the Town's history and the broad expanse of water views it affords, it "remains an undervalued resource." Over the years, changes in the built landscape have gradually shifted focus away from Town Cove, reducing both visual and physical access to the water. Areas that once provided open views have been obscured by commercial developments that have favored a more prominent orientation to the street. Among the recommendations of the Town Cove Plan was the creation of a waterfront park that would integrate Town-owned parcels, including Sea Call Farm, Window On the Cove, Jonathan Young Windmill and the town landings at Cove Road and Goose Hummock. The Town Cove Waterfront Park Study Committee was formed at that time to address the environmental and aesthetic issues involved and to develop a recreation plan linking the Town-owned properties bordering the Cove. The recent purchase of the Smith property on Route 28 by the Town fulfills another step in the ultimate creation of a along suitable recreation area along the Town Cove waterfront. Many of the proposals in the 1991 Report remain viable today for aesthetically enhancing the Route 28 and adjoining Route 6A border of this special area, including brick sidewalks and decorative lighting, and Zoning Bylaw changes to afford more unobstructed views of Town Cove. (OS-19)

Recreation Committee

The Town has an active Recreation Committee that consists of seven members appointed by the Board of Selectmen. The Recreation Committee works with the community, the Board of Selectmen, the Town Administrator, and the Recreation Director to improve and/or expand recreational programming and facilities through a commitment to provide quality recreation programs to all population groups in the Town.

Bike Paths Network

The bike paths existing today are heavily used during the warmer seasons, especially the Rail Trail, the Main Street/Beach Road path to Nauset Beach, and other short stretches in the Village Center. However, these paths are fragmented and are thus inherently unsafe for regular bike transportation. (OS-21) Planning needs to commence for the rest of a network of bike paths between villages that would link the fragmentary pieces already in place and afford contiguous routing to the Village Center. A bike path network will relieve vehicle traffic congestion only if it is well used, and it would be well used only if it is safe from vehicles' interference and convenient for bike riders. As the network is extended outward from the Village Center, care should be taken to connect it with pocket parks and shopping areas. (OS-22)

Extension and creation of bicycle trails are further addressed in the Transportation Chapter.

Cape Cod Pathways Walking Trail

In addition to creating bike trails, Orleans should complete the segment of the Cape Cod Pathways "Sea Path" Walking Trail and connect to the Brewster segment by the purchase of contiguous open space lands that connect with parcels already acquired in the Namskaket Creek/Skaket Beach area. (OS-23) The Town should also consider other areas for which pathways are appropriate.

11.5 Implementation Program

	Action	Time for Completion	Resources Required	Lead Responsible Agency
OS-1	<i>Create an "Open Space Preservation Reserve" account/line item in the budget for the accrual of Land Bank and annually appropriated funds to be used for open space, conservation and recreation land permanent protection.</i>	<i>Addressed See Appendix</i>	L	<i>Board of Selectmen</i>
OS-2	Using Community Preservation Act and budget appropriated funding, plus private funding, preserve 400 or more acres of high priority parcels for ground and surface water protection, conservation, recreation and other environmental purposes.	FY 11-20	H	Open Space Committee
OS-3	Continue to maintain a list of priority open space parcels to acquire, or otherwise protect from development, based on goals in the CROS Plan.	Ongoing	L	Open Space Committee
OS-4	<i>Fund the Open Space Preservation Reserve account of the budget at an amount consistent with the goals of this plan for preserving open space, conservation and recreation lands.</i>	<i>Addressed See Appendix</i>	H	<i>Board of Selectmen</i>
OS-5	Continue to aggressively pursue State, County and Federal grant funding by devising suitable projects that support open space protection, recreation lands acquisition and natural resources preservation.	Ongoing	M	Open Space Committee
OS-6	Encourage owners of undeveloped land to preserve it through conservation restriction, deed restriction, tax deferment (MGL Chapter 61), donation, gift or other suitable means.	Ongoing	L	Open Space Committee
OS-7	<i>Continue to improve public access to open space and conservation sites by making them handicap-accessible where possible, and by adding information signs, benches, trail route markers, limited parking and other unobtrusive amenities as appropriate to each site.</i>	<i>Addressed See Appendix</i>	M	<i>Conservation Commission</i>
OS-8	Draft and produce management plans for Town-owned open space lands not already covered by such documentation, including parks, town landings, the watershed and conservation sites, and publicize their existence in information brochures.	FY 07-10	M	Conservation Commission
OS-9	Promote the need for open space protection and inform the public periodically of its benefits by developing and disseminating educational materials, working closely with private conservation organizations and with County and State agencies.	Ongoing	L	Open Space Committee

OS-10	Provide and maintain a brochure, including a map that describes the recreation features of all pocket parks, beaches, town landings, hiking areas, bike paths and all other recreation facilities.	Ongoing	M	Parks & Beaches Department
OS-11	Evaluate recreation programs periodically to ensure that they are meeting the needs of residents. Inform the public on a seasonal basis of available programs by information brochure dissemination and other appropriate means.	Ongoing	L	Recreation Department
OS-12	<i>Define the specific recreation needs for small pocket parks in East Orleans, South Orleans, Rock Harbor and Skaket, as appropriate to each neighborhood site.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Planning Department</i>
OS-13	<i>Plan, design and construct appropriately outfitted pocket park recreation areas in designated neighborhoods based on assessed local recreation needs</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Planning Department</i>
OS-14	Install drinking water and toilet facilities at appropriate recreation areas.	FY 07-10	M	Parks & Beaches Department
OS-15	Define the recreation features and capabilities as desired by residents for the capped landfill site, including the provision of ample parking, water fountains and toilet facilities.	FY 07-10	L	Planning Department
OS-16	Build a suitable recreation facility on the capped landfill site.	FY 07-10	H	Planning Department
OS-17	Draft and produce management plans for all publicly owned recreation areas not already covered by such documentation, to ensure that they are properly maintained and meet the current needs of residents of all ages.	FY 07-10	M	Parks & Beaches Department
OS-18	Based on the results of CF-2, and if supported by residents, plan, design and build a multi-purpose municipal community center.	FY 11-20	H	Board of Selectmen
OS-19	<i>Plan and design a Town Cove Waterfront Park incorporating recommendations of the 1991 Town Cove Landscape Preservation Project, and coordinate this effort with the Village Center improvement project.</i>	<i>Addressed See Appendix</i>	<i>H</i>	<i>Planning Department</i>
OS-20	<i>Consider establishing a Recreation Advisory Committee to provide needed advice and technical assistance to the Recreation Department.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Board of Selectmen</i>
OS-21	<i>Complete construction of the Orleans segments of the Cape Cod Rail Trail bike pathway, including urging the State to expedite construction of a bridge over Route 6, to link the Rail Trail with the completed Brewster and Eastham segments.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Highway Dept.</i>

OS-22	Determine optimal routes and construct bike and walking pathways to connect the Village Center with the East Orleans, South Orleans, Rock Harbor and Skaket areas.	FY 11-20	H	Bikeway's Committee / Highway Dept.
OS-23	Complete the Orleans segment of the "Sea Path" portion of the Cape Cod Pathways Walking Trail and link it up with the Brewster segment by preserving contiguous open space that connects with parcels already protected.	FY 07-10	M	Open Space Committee

Historic Preservation and Community Character



Orleans Historical Society

12. Historic Preservation and Community Character

12.1 Overview

Orleans is valued for its coastal resources, small town character, open landscapes and historic villages. These resources contribute to Orleans' unique sense of place, and "protection of the town character" has been cited as an underlying goal throughout the planning process and this document. Without planning, land use changes can in a relatively short period of time lead to dramatic alterations in the appearance of a community, the lifestyle of its residents, and the condition of valuable resources.

Communities on Cape Cod are struggling to manage growth, balance tourism with the preservation of the environment, preserve historic resources and protect town character. Identification of the historic resources and elements that contribute to Orleans' character is essential to preservation. This identification raises awareness of their significance and allows opportunities for protection. Historic areas, archaeological resources, distinctive landscapes, and the built environment must be carefully managed as Orleans continues to grow.

This chapter provides an assessment of the resources that contribute to the character of Orleans so that they may be incorporated into the larger goals and strategies of the Town. The purpose of this chapter is to determine strategies to preserve and enhance the homes, villages, scenic roads and vistas that contribute to Orleans' character.

12.2 Goals & Policies

Goal

To preserve the important historic and cultural features of the Cape landscape and built environment that are critical components of Orleans' heritage and economy.

Policies

- Additions or alterations to historic structures should be consistent with each building's architectural style and should not diminish its historic and architectural significance.
- The distinguishing, original qualities of a historic building, structure, landscape, or site and its setting should be preserved.
- The destruction, removal or alteration of historic material or architectural features should be avoided.
- Where development is proposed on or adjacent to prehistoric or historic archaeological sites or sites with high archaeological sensitivity as identified by the

Massachusetts Historical Commission or Orleans Historical Commission during the review process, it should be configured so as to maintain and/or enhance such resources where possible. A pre-development investigation of such sites should be required before a final design proposal is submitted.

Goal

To encourage redevelopment of existing structures as an alternative to new construction, and to ensure that future development and redevelopment respects the traditions and character of our historic village centers and outlying rural areas so as to protect the visual character of Orleans consistent with the Cape Cod Commission's Design Manual "Designing the Future to Honor the Past" (Technical Bulletin 96-001).

Policies

- All development should be designed and constructed so as to minimize adverse impacts on the natural environment and the character of the town.
- All development meeting Site Plan Review thresholds should implement a landscape plan which addresses the functional aspects of landscaping, such as drainage, erosion prevention, wildlife enhancement, screening and buffering, wind barriers, provision for shade, energy conservation, sound absorption, dust abatement and reduction of glare.
- Building height, scale, and exterior materials should be harmonious with the character of the surrounding area.
- Landscaped buffers should be provided to limit the visual impacts on vistas, open landscapes, scenic roadways, historic districts, or individual historic structures. Preservation of existing natural vegetation in these buffer areas is preferred.
- Redevelopment in existing Industrial and Business districts should improve the visual character of the site, employing adequate buffers between parking areas and the street and significant improvement as necessary to interior parking lot landscaping, and facade improvements and frontage buildings.
- The height and scale of a new building or structure and any addition to an existing building should be compatible and harmonious with its site and existing surrounding buildings. No new development should include a single structure which has a footprint greater than 50,000 square feet unless it can be demonstrated, through the design of the building and vegetative or other screening methods, that the project will not have adverse visual impacts on the surrounding community.

12.3 Inventory

12.3.1 Historic Resources

Local Historic Districts

A local historic district is established and administered by a community to protect distinctive characteristics of an important area, and to encourage structural designs that are compatible with the area's historical setting. The first step in establishing a local historic district is to appoint a district study committee to conduct a survey of the proposed area. The survey is then used to prepare a preliminary report for local and state review. A final report is submitted to the Town for approval of the local historic district bylaw. Once a local historic district is established, a local historical district commission is appointed to review all applications for exterior changes to properties within the district. The design review process ensures that changes to the properties will not detract from the district's historic character. Review criteria are determined by the Town and vary for each local district.

The only registered historic district in Orleans is the Old King's Highway Regional Historic District (OKHRHD). The OKHRHD provides a means of preserving the original small village atmosphere and style of all Cape Cod towns along Route 6A. This area, fronting on Cape Cod Bay, was the original location of settlement. Orleans has chosen to be a part of this district. The Orleans Old King's Highway District Committee reviews proposed building additions and changes as well as proposed new buildings for compliance with specified standards. In the case of an appeal, decisions are brought from the local committee to the Old Kings Highway Regional Historic Commission.

In 1995, a committee was established to explore the creation of a historic district in East Orleans along Main Street from Rt 28 to Barley Neck Road and some of the ancillary roads such as Tonset and Monument Roads. The Board of Selectman mailed informational surveys to 202 property owners in the proposed district. The majority of the property owners (65%) supported the adoption of the proposed district but in 1996 the proposed bylaw did not pass at the annual town meeting and the committee disbanded.

National Register of Historic Places

The State Register of Historic Places includes all resources listed on the National Register of Historic Places. The National Register of Historic Places documents and records the nation's most important and irreplaceable buildings, sites, structures, objects and districts worthy of protection. Nominations for inclusion on the National Register are based on local and state surveys and are generally initiated by the local Historical Commission. Unlike a local historic district designation, the National Register recognition does not place constraints on what owners may do with their property when using private funds. While the National Register of Historic Places is not a design review program, it does provide limited protection from state and federal actions. Recognition of an area by the National Register of Historic Places provides eligibility for matching

state and federal restoration and research grants and certain federal tax benefits for certified rehabilitation projects.

The only National Register properties in Orleans are the French Cable Station and Meeting House Museum. The *French Cable Station Museum* is located on Route 28 in the Orleans Village Center and is owned and operated by a Board of Directors. From 1890 to 1959, it received and sent messages from and to Brest, France, via the cable laid upon the Atlantic Ocean floor.

The *Meeting House Museum* was built in 1833 and is located at the corner of Main Street and River Road. Currently the home of the Orleans Historical Society and Museum, the Greek Revival style structure was formerly the Universalist Meeting House. The former Hurd Chapel, which was originally located in the Orleans Cemetery, was moved to this site in 1978. It contains exhibits of farm tools and sea rescue equipment. The building is listed on the National Register of Historic Places.

In 2003 a forum was held on the establishment of a Main Street National Historic Register District. A panel of experts from the Cape Cod Commission and the Massachusetts Historical Commission along with local officials held an informational meeting to describe the protection that a National Register designation affords. Following the public meetings on the designation, opposition was received and the Board of Selectmen forwarded the concept to a special study committee.

State Register of Historic Places

The State Register of Historic Places serves as a master list of designated historic properties in Massachusetts and provides an added measure of protection to these properties. The property must meet at least one of the following criteria to be included on the State Register:

1. Listed in or determined eligible for listing in the National Register of Historic Places;
2. Located within a local historic district;
3. Local, state and national landmarks;
4. State archaeological landmarks; or
5. Properties with preservation restrictions.

Inclusion on the State Register ensures that properties will not be inadvertently harmed by activities supported by state agencies. The State Register serves as a guide for developers and state agencies in order to determine if state funded, permitted, or licensed projects will affect historic properties.

There are currently three sites in Orleans listed on the State Register: the French Cable Station, Oak Ridge Prehistoric Site, and the Old King's Highway Regional Historic District.

Other Historic Buildings and Sites

Historic sites are located throughout the town and are marked by bronze tablets maintained by the Orleans Historical Society and publicized as The Orleans Historical Tour.

Houses and Sites

The ***Captain Linnell House***, located on Skaket Beach Road, is modeled after a French villa near Marseilles. Captain Ebenezer Harding Linnell, Captain of the clipper ship *Eagle Wing*, built the Greek Revival style house in 1854. The house now functions as a restaurant.

The ***Crosby Home*** is a full Cape Cod house located near the end of Tonset Road. It was the home of Joshua Crosby (1779-1861), quarter deck gun captain on the U. S. frigate *Constitution* during the combat with *H. M. S. Guerriere* on August 19, 1812. He also served under Commodore Oliver Hazzard Perry in the Battle of Lake Erie during the War of 1812.

The ***Site of the Snow Homestead***, located on Champlain Road, was the home of Isaac Snow (1758-1855), the last Revolutionary War survivor in Barnstable County. He also lived in Cobbler's Dell on Barley Neck Road. He was a builder, a miller in the nearby East Mill, a mariner and a cobbler. He led the Orleans militia against the British landing at Rock Harbor during the War of 1812.

The ***Oldest House***, located at 31 Canal Road, was built in 1723. The structure is oak framed, from Eastham's original 1644 meeting house and fort. It was occupied by the Snow family from 1723 to 1956. Although originally a full Cape, it was later reduced to a half Cape house.

Stanger House, located on Monument Road, is a full Cape Cod cottage that was built in 1754. It was the setting for the American nature classic, *That Quail Robert*, written by Margaret Stanger in 1966.

The ***Captain John Kenrick House*** is a full Cape Cod style house located on Route 28 in South Orleans. Built in the late 1700s, this is the oldest house in good condition in Orleans.

The ***Captain Simeon Mayo House***, a Greek Revival house built in 1851, is located at 80 Main Street. Captain Mayo sailed in the China trade and made voyages to Africa as well. The house had been owned until recently by one family and is therefore largely in its original state.

Houses built prior to 1900: Under the direction of the Massachusetts Historical Commission, a survey of the 432 houses built prior to 1900 was begun in 1979 and basic architectural and historical information has been gathered. Inventory forms have been sent to the state and have been included in the Massachusetts Cultural Resource Inventory (MACRIS).

The *Site of Hopkins Homestead*, located off Tonset Road on Town Cove, was the home of Giles Hopkins. Born in England in 1610, and a *Mayflower* passenger, he settled here in 1648 and died here in 1690. He was the progenitor of the Hopkins family of Cape Cod.

The *Doane Mansion Site* was owned by Squire John Doane (1791-1881), who was a lawyer, state senator and arborist. His land included much of the present day Orleans Center, extending to the Brewster line. His house was removed from its hilltop to make room for Post Office Square. It is now located on Monument Road. The architecture is Greek Revival style.

Jeremiah's Gutter is located at Route 6A near the Eastham town line. It was the course of Cape Cod's first canal, used in 1717 to allow travel from the Bay to Ocean by way of creeks. It was also used extensively during the War of 1812 to elude British blockaders.

Commercial Establishments

The *Country Store*, located on Main Street in East Orleans, is a composition of eclectic architecture. The rear two-thirds was built prior to 1835 by William Myrick. It was sold in 1858 to Lot Higgins and moved to its present site. It was managed by Samuel Higgins until 1935, but later became known as David Bessom's store.

Galley West, a gift shop, is located at the Church of the Holy Spirit at the end of Monument Road near Route 28. The ell on the main house was the galley of the ship *Orissa*, wrecked on Pochet Beach in Orleans in January of 1857.

The *Site of Higgins Tavern* is the site where Henry David Thoreau rested in 1849. In 1829, it was a Stage Coach Tavern and U.S. postal relay station where coaches arrived three times weekly from Sandwich and Yarmouth. The original building is the central section of a present-day motel located on Route 6A.

Snow's Folly, presently the Orleans Inn, is located on Route 6A on Town Cove. The Victorian style structure was built by Captain Aaron Snow in 1875 using lumber from the cargo of a Maine schooner wrecked on Nauset Beach. Captain Snow was an early merchant of coal, grain and lumber transported to Orleans by his 90-ton schooner, *Nettie M. Rogers*, which docked in Town Cove. This was the beginning of today's H.H. Snow and Sons store.

Marine Resources

Nauset Beach is located at the end of Beach Road in East Orleans on the Atlantic Ocean. Several early explorers landed here, including Gosnold in 1602 and Champlain in 1605. The first recorded shipwreck on the eastern seaboard occurred here on December 17, 1626, when the ketch *Sparrow Hawk* was wrecked near Pochet. A German U-boat shelled the coast of Orleans during World War I in 1918 and sank three coal barges off shore.

Pleasant Bay is bordered by Orleans, Harwich, Brewster, and Chatham. Today it is Cape Cod's best inland waterway for boating and striper and bluefishing. The home of Webster Rogers, Orleans last Civil War veteran, is located on nearby Route 28.

Rock Harbor is located at the end of Rock Harbor Road on Cape Cod Bay. This area was the town's earliest populated, commercial and maritime village. Later it was a packet landing site for passengers and freight between Orleans, Plymouth, Boston, Maine and the Maritime Provinces. On December 19, 1814, the Orleans Militia repulsed a British landing force of the *H.M.S. Newcastle* during the War of 1812, occasioned by the refusal of the town to pay a \$1,000 tax levy by the British on the saltworks in the harbor.

The **Salt Works and Tide Mill** are located near the entrance to Nauset Harbor and the Mill Pond at Doane Way. The pond gets its name from the tide water grist mill that was built circa 1700. The foundation still stands today across the entrance to the Mill Pond and is visible at low tide. Operated by Timothy Cole and Lewis Doane, the mill ground twice a day on incoming and outgoing tides in the late 1700s and early 1800s. Nearby was the largest salt works in town, running 1000 feet along the east shore of Robert's Cove.

Snow Shore is a fishermen's landing in the Nauset estuary, named for Stephen Snow, a Tonset settler in 1644. The shore was once lined with fish shacks and flakes where catches were sun cured and salted, then sent to fish markets in Boston.

Coast Guard Vessel CG36500 is a 36-foot wooden motorized lifeboat famous for venturing out in 60-foot seas and 70 knot winds and rescued 32 crewmen from the stricken tank vessel *Pendelton* on the night of February 18, 1952.

CG36500 was built in 1946 at Curtis Bay, Maryland Coast Guard Yard, and stationed at the Chatham, Massachusetts Coast Guard Lifeboat Station. It was taken out of service in 1968. The Cape Cod National Seashore at that time obtained 36500 for preservation, but due to financial reasons were unable to restore her. In 1981, the Orleans Historical Society of Orleans, Massachusetts took interest and proceeded with negotiations to have it transferred to them. They were successful and it became theirs in the fall of 1981. Many lower Cape citizens volunteered time and tools to restore the hull. After countless hours of labor, a sparkling, fully-restored boat now takes summer cruises and trips to various ports along the coast.

In May of 2005 the CG36500 was listed on the National Register of Historic Places.

Other Significant Sites

Odd Fellows Hall is located at the corner of Rock Harbor and Namskaket Roads. The Greek Revival style building was constructed in 1846 as the Northwest (district) School. Since 1894 it has been the Fraternal Lodge #132, Independent Order of Odd Fellows. The Hall is considered the most threatened early structure in Orleans.

The **Jonathan Young Windmill/Town Cove Park** is located on Route 6A. This mill, built in the early 1700s in South Orleans, was moved to the center of town in 1839. The site was on a hill overlooking the Town Cove until 1897 when it was purchased and moved to Hyannisport. In 1983, it was given to the Orleans Historical Society. After it was restored by volunteers and located in Town Cove Park, it was given to the Town of Orleans for a cultural and historic exhibit.

Sea Call Farm occupies 6.35 acres of land with a view of the Town Cove. It is the only remaining ensemble of intact farmland with farm buildings in Orleans. The land was purchased in 1921 by William Fiske, who built the farmhouse between 1912 and 1922. Up until the property was purchased for conservation land by the Town of Orleans in 1987, it was owned and continuously lived in by members of the Fiske family.

In 2003 Sea Call Farm was listed on the top ten Most Endangered Historic Resources in the Commonwealth by PreservatiON MASS. This designation is intended to focus attention on and rally support for imperiled historic buildings and landscapes. Both the Orleans Historical Commission and Historical Society consistently support preserving the farm complex as a window to Orleans' past.

The Orleans Historical Commission has retained Candace Jenkins, a preservation consultant, who is preparing a National Register District listing now under the stewardship of the Massachusetts Historical Commission.

12.3.2 Archaeological Resources

Prehistoric and/or archaeological resource areas have been identified and recorded by the Massachusetts Historical Commission (MHC). Known prehistoric sites contain evidence of human habitation prior to European settlement. A number of encampments have been discovered which help provide an understanding of early human activities on Cape Cod. In an effort to protect these sites from vandalism, they are not included in this report. Anyone interested in determining if archeological resources are present in a given location should contact MHC for assistance.

Potential impacts to archaeological sites by proposed projects are reviewed according to Section 106 of the National Historic Preservation Act, the Massachusetts Environmental Policy Act, or Massachusetts Burial legislation. In most cases, the Historical Commissions would be contacted for review for any proposed project which could impact one of these sites.

12.3.3 Scenic Landscapes

Scenic Landscape Inventory

As part of a statewide preservation effort, the Department of Environmental Management (DEM) conducted a survey in 1983 to assess the Commonwealth's scenic landscape inventory. The inventory uses three classes of scenic quality designated as "distinctive," "noteworthy," and "common." Distinctive landscapes include areas of the highest visual quality and include only about 4% of the Commonwealth. "Noteworthy" landscapes consist of somewhat less significant, although still important, visual quality and are limited to only 5% of the Commonwealth. The "common" landscapes comprising 91% of the Commonwealth's landscape, contain smaller sections of scenic quality but do not have the consistently high levels found in distinctive and noteworthy areas. The DEM survey classified Nauset Beach as a distinctive landscape and the Cape Cod Bay shoreline, Nauset Marsh and most of Pleasant Bay as noteworthy.

Scenic Roads

Orleans has designated a network of scenic roads as described in the Transportation Chapter. These roads are enjoyed by bicyclists, walkers, joggers and motorists, and provide character and a sense of place for the community. Many of the streets provide scenic water views, while others are narrow winding country lanes that add to the character of neighborhoods. In recognition of the role and importance of these roads, they have been designated by Town Meeting voters as “Scenic Roads,” a classification which protects them from destruction. No changes may be made within the layout of a scenic road without approval of the Planning Board.

Other Distinctive Areas

Orleans has a multitude of special places and scenic vistas. From the bay side creeks to the many salt ponds to the spectacular open sea on the east, the seaside setting has played a crucial role in the development and desirability of the community. Below is a list of some of the more noteworthy locations, many of which are targeted for protection in the Conservation, Recreation, and Open Space Plan.

- Views from *Kent's Point*, *Pah Wah Point* and *Sea Call Farm* (all town-owned) provide vistas outward to salt water and are equally attractive when viewed from the water.
- *Rock Harbor*, a summertime sport fishing center, attracts many visitors during all seasons of the year to enjoy the boats moored at the docks, the views of Cape Cod Bay and the surrounding marshes. This is one of the few areas on the East Coast where one can view the setting sun over the water.
- *29 Town Landings* provide vistas at a number of sites, including Quanset, Pah Wah and Kescayogansett Ponds. Town landings at the head of Town Cove are centers of activity. This is an area where shell and fin fishermen moor their boats; visitors come to take advantage of naturalist guided trips through the Nauset Marshes to the “Backside”; sailors at the town landing next to the Orleans Yacht Club learn to sail their boats and to race; and bird watchers enjoy birds at all times of the year.
- *Snow Shore Landing* provides excellent views of Nauset Marsh, the great outer beach and the ocean. Snow Shore Landing and landings at the Mill Pond accommodate shell and fin fishermen.
- Orleans boasts *17 ponds and lakes*, totaling 179 acres of fresh water area. Public access is available to four Great Ponds: Baker’s Pond, Cedar Pond, Pilgrim Lake and Crystal Lake.

12.3.4 Culturally Significant Landscapes

The built environment also provides significant landscapes which are enjoyed by residents and visitors. They include the following:

- The *Town Center* contains the original shopping center and cultural center of the town. It also contains a small cemetery at the corner of Main Street and Route 6A.

Two 19th century buildings remain (numbers 28 and 31 Main Street) at the west end of the town center. At the eastern end, where Route 28 crosses Main Street, can be found the Methodist Church, Academy Place (containing war memorials), the Village Green and the Snow Library. Along Main Street, between the east and west ends, architecturally significant structures (numbers 42 and 48 Main Street) are occupied by businesses. This area is enhanced by brick sidewalks, attractive plantings, a small landscaped area fronting the Community Center that is used by the Recreation Department and the Orleans Chamber of Commerce. The Orleans Improvement Association has provided attractive signs designating the Town Center.

- The *East Orleans Main Street Historic Area* is remarkable for its 19th century Greek revival structures which lend distinction to the town and reflect its village history. Many of these structures are used as bed and breakfast lodgings. The area includes the Orleans Federated Church (1828) and cemetery, the Meeting House built in 1833 (home of the Orleans Historical Society and formerly the Universalist Meeting House), the United Methodist Church, the former Town Hall (which is now the Academy of Performing Arts) and the Civil War Monument.
- *East Orleans Village*, located at the end of the Main Street historic area, is a small rural business district serving residents of East Orleans. It contains the old post office building, a small shopping area and the former Bessom's General Store. Just beyond is a recently restored 1860, Greek Revival structure now called Barley Neck Inn. This area, which includes the above-mentioned Main Street area, was considered for designation as a local historic district but the proposal was defeated at Town Meeting in May 1996. Long-term protection of this valued street of Greek Revival houses and 18th & 19th century structures is important to preserving an historic resource of the town.
- *South Orleans Village* is a small rural business district serving residents living along the shores of Pleasant Bay and inland to the "Chatham Road" (Route 28). It contains a General Store, the South Orleans Post Office and a few specialty shops.
- The *junction of School Road and River Road and Main Street* contains the Historical Society Meeting House, the American Legion, and the Town Hall.
- Water related cultural resources: *Town Cove* is a gathering place for persons drawn to boating. The Yacht Club, the town dock, outfitters and marinas draw fishermen, sailors and tourists. *Rock Harbor* is famous for its sports fishing fleet. *Arey's Pond* and *Meeting House Pond* offer anchorage and Marinas. *Nauset Beach, Skaket Beach, Pilgrim Lake* and *Crystal Lake* are welcome beaches on a hot summer's day. *Pleasant Bay*, the vast water body shared with Chatham, Brewster and Harwich, is used for shell fishing, aquaculture, fishing, boating and swimming.

Cultural Activities

Orleans residents actively support and participate in the arts. There are opportunities for artistic workshops for people of all ages. The Academy of Performing Arts is very active

and has numerous galleries for display of locally produced artwork. Public display of art also occurs at Town Hall.

There are many churches in the Town that add to the fabric and culture of the community. They organize and operate numerous activities each year centered on culture and the arts.

There are no institutions of higher education in Orleans, but residents are able to get access to higher education through Cape Cod Community College, Massachusetts Maritime Academy as well as other Massachusetts colleges.

12.4 Analysis

12.4.1 Public Preferences

Residents have expressed through workshops, surveys and interviews that they enjoy and wish to retain the small-town, rural character of Orleans. In the past, residents have supported standards and Bylaws that promote community character and smart growth across many issues and areas of Town. Orleans residents, even in the midst of inevitable change, wish to see the town remain much as it is today; a semi-rural town which values its maritime tradition and preserves the atmosphere of a New England village.

12.4.2 Existing Levels of Protection

Local preservation activities are organized by several regional and local agencies, each playing an important role in maintaining the historical and community character of the town. They are listed below with a description of their duties.

Orleans Historical Commission – Town-appointed commission which oversees historic preservation activities in the community. The Commission has recently completed an inventory of all local historic structures, and is working to increase awareness of Orleans' historic significance. The Commission is responsible for nominating properties or districts for inclusion on the State Historic Register. The Commission is working to establish Main Street in East Orleans as a National Register Historic District. (HC-2)

The Historical Commission also administers the Town's Demolition Delay Bylaw, which prevents the demolition of historic structures for up to 12 months while options for preservation are considered.

Old King's Highway Regional Historic Committee – A regional board which is responsible for protecting the integrity of the Regional Historic District that is located generally north of Route 6. This district runs the length of historic Route 6A and includes an area in Orleans. The Committee must approve any construction, alteration or demolition of any building in the historic district.

Orleans Historical Society – A private non-profit agency that owns the Meetinghouse and the Hurd Chapel.

Site Plan Review Committee – A committee of Town department heads, including Planning, Health, Conservation, Building Inspection, Water and Highway. The committee reviews all non-residential development proposals for compliance with town regulations and proper design standards. Proposals approved by this group have the potential to significantly impact community character and aesthetics.

Architectural Review Committee – This appointed Town body is charged with reviewing new building plans, renovation, relocation and addition plans to insure compatibility of scale and style. This does not, however, apply to building in the Industrial District or the Old King’s Highway District.

12.4.3 Areas in Need of Improvement

Historic Resources

Unprotected Historic Areas & Structures

Anticipated growth of population and associated development pressures can lead to alteration or destruction of privately owned historic houses. Likewise, structures of inappropriate style and scale might be proposed for historic areas if guidelines and regulations are not created. In 2006, guidelines for the Architectural Review Committee were revised and adopted by Town Meeting. The Board of Selectman designated the Historic Commission to address historic district issues.

Lack of Awareness

The protection of both buildings and landscapes will ultimately depend upon the extent to which the citizens value them. Education will be key in gaining an appreciation of Orleans’ past and of its historic structures and sites. (HC-4) To that end, the Town can encourage a cooperative and continuing effort toward a shared knowledge, using the many talents available including the Historical Society, the Historical Commission, the Snow Library and the schools.

Mapping of Historic Resources

It will continue to be important for the Planning Department to maintain up to date information on the location of historic resources. The continuing development of the Town’s Geographic Information System (GIS) is an effective way to accomplish this task. The Planning Department, Historical Commission, and the Selectmen can be aided in their understanding of issues involving historic sites by knowing their location and surrounding development. (HC-5)

Archeological Resources

Archeological resources are known to exist in several locations throughout the town. The extent to which other archeological sites may exist has not yet been determined. Some residents have suggested conducting a study by a professional archaeologist to define and map such sites. This is not thought to be desirable at this time due to budgetary constraints and the potential for vandalism. The Massachusetts Historical Commission zealously protects information on archeological sites.

Demolition of Historic Buildings

The Town has a Demolition Delay Bylaw that allows temporary protection to the immediate loss of historic structures in Orleans. The purpose of the bylaw is to preserve and protect significant buildings within the Town that reflect distinctive features of the architectural, historical, and cultural heritage of Orleans. The bylaw encourages owners of such buildings to seek out persons who might be willing to purchase, preserve, rehabilitate or restore such buildings rather than demolish them. The current bylaw protects the historic structure for a period of one year so protection measures can be explored.

At present the demolition delay bylaw has been used to delay the demolition of some historic structures so they could be documented prior to tear down. Unfortunately, the bylaw has yet to save a building and currently the Historical Commission is exploring ways of making the Bylaw a more affective tool in their preservation efforts.

In 2002, Orleans voters approved a Demolition Delay Bylaw that requires review by the Historical Commission before a historic structure can be demolished. The bylaw is merely a requirement that the owner meet with the Historical Commission to seek alternatives to demolition. At the end of the delay period, the building may be demolished if an alternative has not been agreed upon. In 2005, the delay was extended to 12 months

In recent years, several historic structures have been demolished. Property owners of such structures have been willing to allow it to be relocated, but the Town does not have a site to which the structures could be moved. With the opportunity for funding through the Community Preservation Act, strong consideration should be given to purchasing an appropriate piece of land that could become the new home of a structure proposed for demolition, either temporarily or permanently (HC-23).

Historic structures in need of rehabilitation

Orleans is fortunate in that most historic structures are in good condition and well maintained. There are, however, a number of historic structures in need of improvements:

1. The *Aaron Snow House* (Orleans Inn) has recently been purchased by a family interested in restoring it. Major structural repairs have been completed.
2. The *Academy of Performing Arts* (formerly Town Hall) is gradually being repaired by the Board of Directors as money becomes available.
3. The *Oldest House* (1723) has been sold to a private owner and restored.
4. *Odd Fellows Hall*, Rock Harbor Road, is an early elementary school building that is badly in need of repairs. It is the most immediately threatened historic structure in Orleans.

Community Character

Village Center

Residents of Orleans, along with some local merchants, participated in a public forum in Summer 2005 to discuss the Village Center and review some smart growth design concepts prepared by the Association to Preserve Cape Cod (APCC). The concepts presented how increased building height and denser development in the Village Center could offer housing options and foster a vibrant center. Other concepts presented were encouraging parking to be placed in the rear of buildings, allowing for shared parking, and creating connections between businesses to allow people to walk from one shop to the next. Forum participants identified the following specific suggestions for improvements to the Village Center:

- Flower pots and landscaping are desirable and should be encouraged.
- Outdoor dining is desirable and should be allowed.
- Parking should be located near a lot of shops, and easy walkways provided.
- There is a need for signs to direct vehicles to parking (parking trailblazing), signage could direct parking to the back of buildings where appropriate.
- Any building height increase should only be allowed with a required pitched roof. Do not allow 3 story boxes in the downtown, regulations should be drafted to address this.
- Better streetscape creates connectivity and makes people more willing to park once & walk. Centralized parking would promote this activity.
- Need to consider how much building potential exists under present regulations before considering any increase. What is the amount of current zoning envelope being used by existing building footprints and required parking? How much more is available for use under existing regulations? This will help determine acceptable levels of increase.

In the coming years a full Village Center Plan will be developed and likely incorporate some of the ideas of past visioning workshops and forums. A Village Center plan is an “area specific” plan that will recommend zoning changes for the downtown, promote pedestrian and bike amenities through good design, and define the desired mix of housing and business expressed by the community. The 2006 Town survey demonstrated strong community support for developing a Village Center master plan. In the survey, 72% of respondents agreed or strongly agreed spending up to \$129,000 in FY 2009 for the development of such a plan. Also, 87% agreed or strongly agreed the Town should be involved in shaping the future of the downtown through Village Center planning.

Lighting, Utilities and Signs

The use of bright lighting without the appropriate screening techniques detracts from the visually pleasing environment for Orleans’ village character. In 2004, the Town passed an Outdoor Lighting Bylaw that requires that all outdoor lighting fixtures be shielded and directed downward. During public meetings on the Bylaw it was determined that glare was the major cause of light pollution and spillover of light onto

abutting properties. The Bylaw requires all new lights have shields to control glare and that lights be directed down to prevent against light pollution. The Bylaw, a general bylaw, set a time period of 5 years for all existing lights to also come into compliance with this bylaw.

Electric wires and poles clutter the landscape and detract from quaint appearance of the community. Parts of the village area have been almost entirely denuded of trees to create space for wires. If Orleans is to improve its appearance, the issue of utility poles needs to be addressed. (HC-7) All new businesses and dwellings should be required to place utility lines underground. (HC-14). At present, all new subdivisions are required to have underground utilities.

In recent years, there has been discussion regarding the possibility of placing utilities underground. Proponents argue that the aesthetic improvements and elimination of storm-related interruptions would adequately compensate for the additional cost of such an endeavor. Commonwealth Electric maintains a position that they will not obstruct efforts to place utilities underground but they provide no incentives to do so. A group, called the Cape Cod Underground Utilities Committee, has been formed on Cape Cod to study the issue and investigate cost-effective alternatives. In addition, Town Meeting in 1999 created a local committee to explore costs and issues associated with burying utilities at Rock Harbor. It is recommended that the Town continue to follow research efforts and explore the possibility of conducting a pilot project in the village area. It is hoped that cost-effective methods will be found to enable the Town to place utility structures underground along Main Street, Route 6A and Route 28 in the center of town. (HC-7) This may require state legislative action as well as regional cooperation.

Screening and Landscaping

Landscaping plays an important role in the appearance of a community. It can be used to create boundaries and transitions between developments as well as providing screening for areas that would otherwise interrupt the character of the streetscape.

Also, wires that cross over a water body such as Cedar Pond, can become a roosting area for large numbers of birds which causes fouling of the water. In addition, the Town should remain aware for future facility plans of ComElectric, and work with them to ensure that the new structures do not adversely impact the Town. (HC-12)

The planting of trees along Route 6A would create a more pleasing appearance. (HC-17) Such work would likely require a cooperative effort with Mass. Highway to ensure that beautification efforts are consistent with State guidelines for traffic safety. Items such as flower barrels can unify an area, and improve its attractiveness to shoppers. These could be distributed immediately by the Chamber of Commerce, with business owners being responsible for maintenance.

More attention to the needs of pedestrians and cyclists is needed throughout the town. Good sidewalks, benches, bicycle racks and safe pedestrian crossings, as well as tree plantings and window boxes, lend character to the villages and attract people. (ED-6) These amenities could be provided by the Town or by private property owners.

Site Plan Review

The Zoning Bylaw requires approval of a site plan for all significant development projects (see 4.6.3 for further description). Applicants are required to provide a site plan that properly addresses drainage and erosion control, provides fencing and/or buffering of adjacent residential uses, and minimizes off-site impacts such as lighting spillover, glare, noise, and dust. The bylaw also requires efforts to conserve and protect natural features and wildlife habitat. The process allows an applicant to meet with all relevant Town departments simultaneously, resulting in a comprehensive review of project impacts as they relate to the health, safety, and welfare of the community.

Shopping Areas

Although benches have been provided at several locations in town for pedestrian use (at the Village Green, Academy Place, Parish Park, and along Main Street beside the graveyard), little effort has been made to provide such amenities in the various malls and shopping centers. The retention of an attractive, pedestrian-oriented village center is a vital component of maintaining the sense of community. (HC-8) Several strip malls would profit from redesign of parking arrangements and new and extended plantings: Friends Market/Homeport, Cranberry Cove and Lowell Square.

More significant alterations to improve the visual appeal of the business districts should be part of an overall plan for each area. Village improvements are addressed in detail in the Economic Development and Land Use chapters of this plan as well as in the Design Guidelines section of this chapter.

Scenic Landscapes

Scenic vistas and scenic roads are part of what contributes to a town's character and should therefore be maintained. Growth of trees and underbrush at scenic vistas and town landings should be reviewed periodically and improvements made as needed. Orleans should explore opportunities to buy scenic lands along ocean, bay and pond shores as they become available. These beautiful areas attract people to the town, and so they should be preserved for future enjoyment as well as protected from development pressure.

Designation of scenic roads only affects work within the public right of way, and does not provide any protection of scenic landscapes viewed from the road. In order to preserve important views, the Town must use some combination of land acquisition, zoning regulations and incentives to landowners. (HC-18) It is important to identify those landscapes which, if lost, would diminish the town's character.

In addition to the existing Scenic Road Bylaw, the Planning Board should adopt guidelines to supplement the controls available under the Scenic Road Act. Such guidelines should include, but not be limited to, no unnecessary widening of streets or intersections, maintaining planted islands, preserving mature trees where safety is not compromised, and other means to preserve the beauty of the scenic roads. (HC-18, T-5)

Visual access to the water is important to the quality of life of all residents. Those who do not own waterfront property are able to obtain a connection with the natural Cape setting by seeing the shore from a multitude of locations. With the decline of agriculture, many of the towns open fields and meadows have reverted back to woodlands, obscuring water views from the public. New housing, fencing, and landscaping add to the condition.

12.4.4 Design Guidelines

The current Zoning Bylaw contains a section regarding architectural review (Section 164-33.1). This process applies to all building permit and special permit applications in order to review the appearance of structures and sites which may affect the town's cultural, economic and historic resources. The Architectural Review Committee is precluded from mandating any official aesthetic style or from imposing the style of any particular historic period, but the general guidelines provided in the Bylaw are sufficient to encourage the desired type of development style. However, there are additional considerations that should be included elsewhere in the Zoning Bylaw or made known to potential developers. (HC-9, HC-15)

Site Layout and Streetscape

A traditional Village Center features a mix of small scale uses on relatively small lots with narrow building setbacks. Main Street in the Village Center and East Orleans provides this traditional village setting. The location of buildings near the street provides a sense of enclosure for pedestrians and the frequency and variety of building entrances and shop windows along the sidewalk edge make for a more interesting place to walk.

Design guidelines and zoning regulations should ensure that this development pattern is preserved. Smaller lot size requirements in the villages should be maintained in order to encourage the greater density of buildings within the villages while encouraging a variety of store fronts along the street. In higher traffic areas such as Route 6A in the Village Center and Route 28 in South Orleans, the streetscape can be enhanced by providing additional landscaping between the street and sidewalk or between the sidewalk and the front of the building. The placement of utility lines underground could also improve the appearance of the villages. (HC-7)

The specific dimensional standards for the Village Center (VC) district are consistent with a village setting. However, the minimum front yard setback of 25 feet in the Rural Business (RB) district may be excessive based on the location of existing structures in East Orleans. This requirement is in contrast to the maximum setback requirement of 25 feet in the VC district. In order to ensure that new construction is consistent with the character of the existing area, a provision should be added to state that the setbacks in the RB district should not exceed the average front yards existing on adjacent lots. (HC-9, HC-20)

The other commercial areas of Orleans, particularly the General Business district, feature more intensive land use. There are numerous strip developments along Route 6A which detract from the small town feel of Orleans and make the area less pedestrian friendly.

(HC-21) The layout of any future development in the General Business district should make efficient use of space and try to avoid the traditional large retail strip dominated by a vast parking area. New development should site buildings at the front of the lot, with parking in the rear; and redevelopment should include structures near the street and continuous sidewalks from the street to the shopping center. (HC-9, HC-21)

Parking

The current parking regulations require sufficient landscaping and screening and also allow for flexibility by allowing businesses to share parking areas and businesses in the Village Center to make use of public parking.

Parking in the villages is currently located in a variety of places in relation to the businesses the lots serve (i.e., in front of the building, to the side of the building, on the street and in public lots). Because of the seasonal tourism focus of many businesses in the General Business district, the area features several large parking lots to accommodate motorists from outside of the area. It is preferable to locate parking behind existing and new buildings whenever possible. Certain guidelines should be adhered to with respect to parking (T-20):

- Where possible, shared driveways should be used for access into parking areas. This reduces the amount of asphalt area and creates a safer environment for pedestrians.
- Where parking lots are already located in front of developments, they should be properly screened and landscaped. This creates a buffer between the sidewalk and the lot and makes for more pleasant streets.
- Avoid a “sea of asphalt” through internal landscaping; adding bushes or planting a tree to break up long strips of parking stalls.
- Connections between parking lots should be provided to allow overflow vehicles to find parking space without having to re-enter the street network.
- Retain on-street parking on Main Street to modulate traffic flow.

While screening and internal lot landscaping are currently required within the Bylaw, some improvements should be made. The screening requirement should be expanded to include loading areas as well as parking lots. This will improve the appearance of the Industrial District in particular, as many businesses are industrial in nature and contain prominent loading facilities. (HC-16)

The front yard landscaping provision requires a minimum depth of six feet from the street line in all Business and Commercial districts. However, the only guidance provided is it “shall be landscaped appropriately and maintained in a sightly condition at all times.” The primary objective of this requirement is to define the property edge. This can be accomplished through landscaping as well as through the use of picket fences, stone walls or split rail fences. In many instances, businesses have made use of split rail fences along Giddiah Hill Road within the Industrial District to define the property boundary and street edge. (HC-16)

It appears that several businesses have adhered to the six-foot front landscaping requirement and other required buffers, but due to a lack of specificity in the Bylaw, have used only grass as the landscaping material. Plant materials should be specified for landscaping and buffer requirements such as requiring plant types and size. For example, deciduous trees should be expected to reach a height of 20 feet in 10 years, evergreen and ornamental trees should be at least 8 feet in height at the time of planting, and shrubs and hedges should be at least 2-1/2 feet in height or have a spread of at least 18 inches at the time of planting. Landscaping provisions should require that plants should be of healthy quality and be of a specified minimum size, and a maintenance agreement should be included in the property covenant. While some of these suggestions may seem obvious, each should be stated in the Bylaw to ensure that landscaping is appropriate. (HC-16, HC-17)

Building Style

Building style guidelines in terms of facade, material, and color are an important part of maintaining the character of Orleans. Buildings play an important role in defining the sense of place of an area. Residents of Orleans would like to see diverse architectural building styles, especially in the Village Center; but the color and material of a building should not contrast greatly with adjacent buildings. Furthermore, long blank walls should be avoided, and windows and doors should be at a human scale and in proportion with the area. Diverse styles and facades that include porches, arcades and awnings will complement the area and nearby buildings in village settings. Although this diversity of building types helps to make Orleans more visually interesting, at the same time it is important to maintain the character of a Cape Cod village that residents want to preserve. (HC-9)

Several of the buildings in the General Business district are representative of a suburban strip-style development. However, large retail developments can be designed to match the character of an area and give rise to an improved environment for pedestrian use. Some of the retail developments in Orleans' General Business district feature pitched roofs and architectural designs that more closely reflect the character of the town. Any future developments in the area should avoid long buildings and flat roofs, and utilize creative architectural designs which will help to soften the visual impact of strip development on the surrounding area.

The thirty-foot maximum building height limit for all districts is appropriate in most cases. However, a 30-foot high flat roofed commercial building may not be compatible with the character that Orleans is trying to preserve. At a Village Center visioning forum held in August 2005, residents considered allowing increased building height, but requiring a distinct pitched roof. This would be consistent with existing buildings such as the Orleans Whole Foods Store which is often cited as an example of good and desirable design. The concept was well-received.

One way to allow additional building height without permitting flat-roofed commercial buildings would be to create a new definition of building height. By measuring building height halfway between the top of the ridge and the wall plate would allow additional height only pitched roofs. By allowing increased height the upper floor could be

occupied but it would be limited to 40 or 50% of the usable floor area of lower floors. As part of planning for a vibrant Village Center, the Town should consider increasing building height, supplemented with a limit on the number of stories and possible limits on the use of those upper stories, in the building (HC-10). This type of provision will tend to encourage the use of gable, pitched, or hipped roofs, as opposed to flat roofs, for those property owners who wish to maximize the height of their buildings.

Signs

Residents in attendance at the Village Center Workshop expressed interest in creating directional signs that were more efficient for wayfinding within the town. There is a need to produce signs that better identify parking areas near the Village Center. (T-16) In addition, there are concerns about the number, size, location and style of individual business signs.

The existing sign regulations detail the proper location for signs and provide some key definitions, but do not provide sufficient guidance for businesses to provide signs consistent with the character of a particular district. Specifically, the current regulations do not adequately describe the types of signs permitted; differentiate among zoning districts; or provide suggestions as to the colors or materials to be used for a sign.

The Town should consider revisions to the sign regulations (HC-15). Key elements of an effective sign bylaw include the following:

- *Number of signs permitted:* A possible approach is to limit signs to one per business plus one directory or free-standing sign per building. This is somewhat less than the current regulations permitting up to three signs per business and may alleviate some of the “sign clutter” noted by residents.
- *Types of signs:* The definition section should be expanded to include descriptions of various types of signs such as billboards, roof signs, projecting signs, free standing signs, etc., because each should be regulated differently. The districts in which these types of signs are permitted should be clearly stated. For example, billboards are unlikely to enhance the character of Orleans and should therefore be prohibited in all districts. Projecting signs are consistent with a village setting while free-standing signs are usually more common along major roadways, such as Route 6A. Business signs in villages should be smaller in order to focus the attention of the pedestrian rather than the driver of an automobile while signs along a business strip may justify a larger size due to the higher speed of traffic.
- *Sign design:* The color, size and material used in signs should be consistent with an attractive functional, unobtrusive style. The most legible and effective signs do not depend necessarily on large size and bright colors and can complement the surrounding area while still catching the attention of potential customers. Treated natural wood and metal or plywood that is prepared and painted are suitable materials. Generally, no more than three colors are necessary to express a message. It is also preferable to display a minimal amount of wording on a sign. Store facades with several advertising messages are less effective as a motorist will not be able to determine the essential message in the short time he or she is glancing at the sign.

- *Sign illumination:* Signs should be back lit (halo signs) or illuminated from above by shielded fixtures. This practice minimizes light trespass and glare and is consistent with town regulations. Interior illuminated signs are prohibited.
- *Sign locations:* Signs should be located in respect to the existing “sign line” established by the signs on nearby stores and buildings. In addition, signs should be placed in locations where they conceal the least amount of architectural detailing such as columns, archways, sills, cornices, etc. Signs should not extend to a height above the roof line and are preferably located below the eaves.

Pedestrian Amenities

Pedestrian amenities are a vital component of any Village Center and include such things as decorative street lighting, benches, planters, improved sidewalks and crossings, as well as other amenities that make the area more pedestrian-friendly. Widening sidewalks and adding landscaping buffers between the street and sidewalk on Route 6A and Cove Road will make for a more comfortable place to walk in the Village Center, and can also play a role in traffic calming. Distinct paving patterns on sidewalks such as the brick used on Main Street in East Orleans create a more attractive streetscape, and should be expanded through additional parts of the villages. Creating benches and seating areas along walkways and outside of businesses will encourage more pedestrian use and help to make the village areas gathering places and destinations.

Lighting in general should be kept at a minimal level necessary for safety. Pole lighting should be kept low, not more than 12 feet, and fixtures should be “boxed” or otherwise directed to eliminate spillage onto other properties or public streets. (HC-13)

12.5 Implementation Program

	Action	Time for Completion	Resources Required	Lead Responsible Agency
HC-1	<p>Extend the current charge to the Orleans Historical Commission to include the following:</p> <ul style="list-style-type: none"> Appoint a member of the Historic Commission to act as Town Historian. This individual must be equipped to provide knowledge and advice on historical issues to concerned government departments; 	FY 07-10	L	Board of Selectmen
HC-2	Continue efforts to protect the historic character of parts of East Orleans along Main Street by nominating it for inclusion on the National Register of Historic Places.	FY 07-10	L	Historical Commission
HC-3	Explore feasible options for restoring historic structures and seek funding for the regular maintenance of historic structures, sites, and markers.	FY 07-10	L	Planning Department
HC-4	Improve the awareness and public education regarding historic structures and sites in Orleans in order to improve protection efforts.	Ongoing	L	Historical Commission
HC-5	Periodically update an inventory of historic resources in the Town's Geographic Information System database.	Ongoing	L	Planning Department
HC-6	<i>Develop and adopt an appropriate Demolition Delay Bylaw to prevent the loss of historic structures.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Historical Commission</i>
HC-7	Develop and initiate a plan to place all utility lines underground in village areas.	FY 07-10	H	Planning Board
HC-8	Develop a plan for pedestrian-friendly improvements in village areas including the addition of traditional street lighting that is consistent with the area's history and character.	FY 07-10	M	Planning Department
HC-9	<i>Adopt design guidelines for businesses to encourage building and site design that is in harmony with a Cape Cod village. Standards should be developed for building materials, facades, rooflines, architectural design, pedestrian access, and safety.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Planning Board</i>
HC-10	Revise the building height regulations for structures in business and village districts.	FY 07-10	L	Zoning Bylaw Task Force
HC-11	<i>Improve the gateways to Orleans by improving landscaping & screening and removing sign clutter at Skaket Corners and the Eastham rotary.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Parks & Beaches Department</i>
HC-12	<i>Develop a working relationship with ComElectric to revisit the issue of relocating the substation at Skaket Corners and to ensure that future facilities do not adversely impact the character of the community.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Board of Selectmen</i>

HC-13	<i>Review and alter regulations for lighting to reduce glare, eliminate spillage, and eliminate excess lighting.</i>	<i>Addressed See Appendix</i>	L	<i>Zoning Bylaw Task Force</i>
HC-14	Amend Zoning Bylaws to require underground wiring for all new businesses and dwellings, regardless of whether they are in new subdivisions.	FY 07-10	L	Zoning Bylaw Task Force
HC-15	Review sign regulations to ensure that the number, size, location, style, and illumination of signs are in scale and compatible with the character of the area in which they are located.	FY 07-10	L	Zoning Bylaw Task Force
HC-16	Work with landowners in the Industrial District to revise standards for landscape design and the screening of loading and storage areas, to improve the appearance of the district.	FY 07-10	L	Planning Board
HC-17	In cooperation with property owners, develop a landscape improvement program along the Route 6A corridor.	FY 07-10	M	Planning Department
HC-18	<i>Adopt a set of guidelines for any proposed alterations to Scenic Roads.</i>	<i>Addressed See Appendix</i>	L	<i>Planning Board</i>
HC-19	<i>Establish a Town policy to define and protect vista views</i>	<i>Addressed See Appendix</i>	L	<i>Board of Selectmen</i>
HC-20	Draft policies and design guidelines for development and redevelopment of South Orleans and East Orleans business districts using the Cape Cod Commission's Designing the Future to Honor the Past for guidance.	FY 07-10	L	Planning Board
HC-21	Amend the Zoning Bylaw to prohibit future strip commercial development.	FY 07-10	L	Zoning Bylaw Task Force
HC-22	Consider adopting a Town bylaw to protect archeological resources from the impacts of future development. The Historical Commission should review subdivision applications to determine if the proposal is located on or near a known archeological resource.	FY 07-10	L	Historical Commission
HC-23	Secure a lot or site where the storage of historic structures would be appropriate and would save them from demolition	FY 07-10	H	Board of Selectmen

Implementation Program



Little Quanset Pond, South Orleans

13. Implementation Program

The purpose of the Implementation Program is to identify specific actions the Town of Orleans should undertake in order to meet the goals and policies established in each chapter of the Local Comprehensive Plan.

There are 197 actions recommended in the Plan which cover a variety of issues. In order to achieve a workable and realistic program, these actions will need to be implemented over varying time frames. For instance, some actions may require a relatively long time frame to implement, while others should be addressed over a much shorter term.

This section organizes the recommended actions from each element of the Orleans Local Comprehensive Plan. They are listed according to the appropriate agencies or organizations which should be responsible for implementing that action. Each recommended action also identifies the anticipated fiscal year of completion for a particular action. Applicable agencies, boards, commissions and departments responsible for implementing one or more actions are as follows (in alphabetical order):

- Board of Health
- Board of Selectmen
- Town Administrator
- Board of Water Commissioners
- Conservation Commission
- Council on Aging
- Economic Development Council
- Harbormaster
- Highway Department
- Historical Commission
- Housing Authority/Housing Task Force
- Library Board of Trustees
- Open Space/Land Bank Committee
- Parks & Beaches Department
- Planning Board
- Planning Department
- Recreation Department
- School Board
- Shellfish Department

- Town Hall Building Committee
- Traffic Advisory Committee
- Water Department
- Zoning Bylaw Task Force

The letter prefix for each of the action numbers indicates which element of the plan the action corresponds to. The following codes are used:

Land Use and Growth Management	LU
Natural Resources	NR
Economic Development	ED
Community Facilities and Services	CF
Health and Human Services	HS
Transportation	T
Affordable Housing	AF
Open Space and Recreation	OS
Historic Preservation and Community Character	HC

Organizing the actions in this manner allows the Town to identify which issues to address as well as the time frame needed to implement each action. Furthermore, the format provides the Town with a means to track the progress of the implementation program. These actions, once carried out, will serve as a catalyst for making the Town’s Vision, as described at the beginning of the Plan, become and remain a reality.

Board of Health

	Action	Time for Completion	Resources Required	Lead Responsible Agency
CF-26	Identify private wells at risk of contamination, and require that affected households connect to Town water.	Ongoing	M	Board of Health
ED-8	Revise applicable regulations to increase opportunities for seasonal outdoor cafe style seating for food service establishments.	FY 07-10	L	Board of Health
CF-3	Work with state officials to ensure that appropriate monitoring programs for contaminated groundwater areas are instituted, including identification of potential impacts to public health and the environment.	FY 07-10	L	Board of Health
HS-2	Work with Cape Cod Healthcare and other appropriate organizations to improve the triage and delivery of health care to people in Orleans.	FY 07-10	M	Board of Health
NR-8	Consider the designation of watershed areas contributing to the embayments of Town Cove, Pleasant Bay, and Cape Cod Bay as Nitrogen Sensitive Areas.	FY 07-10	M	Board of Health
NR-27	Upon completion of the Wastewater Management Plan, adopt nitrogen loading standards for all watershed areas that will protect the ecological integrity of the Town's coastal waters.	FY 07-10	M	Board of Health
NR-28	<i>Consider adopting a regulation that would require advanced treatment whenever a septic system setback is less than 100 feet from a wetland resource.</i>	<i>Addressed See Appendix</i>	M	<i>Board of Health</i>

Board of Selectmen

	Action	Time for Completion	Resources Required	Lead Responsible Agency
NR-7	<i>Continue marine water quality monitoring through volunteers and financial support of the Town.</i>	<i>Addressed See Appendix</i>	L	<i>Board of Selectmen</i>
NR-14	<i>Continue efforts to permanently solve the cormorant problem at Cedar Pond.</i>	<i>Addressed See Appendix</i>	L	<i>Board of Selectmen</i>
ED-16	<i>Continue to work with the Chamber of Commerce to plan special events and focus marketing efforts on activities that lengthen the annual tourist season.</i>	<i>Addressed See Appendix</i>	L	<i>Board of Selectmen</i>
T-7	<i>Fund the Highway Department at an appropriate level to support the maintenance and replacement of new and existing roads.</i>	<i>Addressed See Appendix</i>	L	<i>Board of Selectmen</i>

OS-4	<i>Fund the Open Space Preservation Reserve account of the budget at an amount consistent with the goals of this plan for preserving open space, conservation and recreation lands.</i>	<i>Addressed See Appendix</i>	H	<i>Board of Selectmen</i>
HC-12	<i>Develop a working relationship with ComElectric to revisit the issue of relocating the substation at Skaket Corners and to ensure that future facilities do not adversely impact the character of the community.</i>	<i>Addressed See Appendix</i>	M	<i>Board of Selectmen</i>
NR-4	<i>Consider creating a shellfish revolving fund to provide financial support of shellfish enhancement programs.</i>	<i>Addressed See Appendix</i>	L	<i>Board of Selectmen</i>
NR-13	<i>Develop and implement a program of water quality monitoring for the Town's fresh waters.</i>	<i>Addressed See Appendix</i>	L	<i>Board of Selectmen</i>
NR-17	Declare all coastal waters as No Discharge Zones.	FY 07-10	L	Board of Selectmen
CF-20	<i>Consider creation of a Town or regional water analysis lab.</i>	<i>Addressed See Appendix</i>	L	<i>Board of Selectmen</i>
CF-27	Develop a wastewater management plan for the entire town.	FY 07-10	H	Board of Selectmen
HS-1	<i>Establish a new permanent position of coordinator and administrator for all health and human service functions of the Town.</i>	<i>Addressed See Appendix</i>	M	<i>Board of Selectmen</i>
HS-3	<i>Evaluate and work towards establishment of day care for children consistent with the needs of Orleans parents.</i>	<i>Addressed See Appendix</i>	M	<i>Board of Selectmen</i>
HS-4	Consider permanent Town funding for the Community Center and Juice Bar.	FY 07-10	L	Board of Selectmen
T-2	Incorporate adequate maintenance of roadways, sidewalks, and bicycle paths into the Highway Department budget.	FY 07-10	M	Board of Selectmen
T-4	<i>Develop a policy for services to private roads.</i>	<i>Addressed See Appendix</i>	L	<i>Board of Selectmen</i>
T-27	Consider requiring parking stickers for all Town Landings and beaches.	FY 07-10	L	Board of Selectmen
T-30	<i>Enforce parking regulations on public streets and at Town landings</i>	<i>Addressed See Appendix</i>	L	<i>Board of Selectmen</i>
OS-1	<i>Create an "Open Space Preservation Reserve" account/line item in the budget for the accrual of Land Bank and annually appropriated funds to be used for open space, conservation and recreation land permanent protection.</i>	<i>Addressed See Appendix</i>	L	<i>Board of Selectmen</i>
OS-20	<i>Consider establishing a Recreation Advisory Committee to provide needed advice and technical assistance to the Recreation Department.</i>	<i>Addressed See Appendix</i>	L	<i>Board of Selectmen</i>

LU-13	Add Conservation Restrictions to municipal lands that are not needed for other municipal uses.	FY 07-10	M	Board of Selectmen
HC-1	Extend the current charge to the Orleans Historical Commission to include the following: <ul style="list-style-type: none"> • Appoint a member of the Historic Commission to act as Town Historian. This individual must be equipped to provide knowledge and advice on historical issues to concerned government departments; • Initiate a review of existing information on prehistoric sites and determine if a professional survey is necessary to properly protect prehistoric resources. 	FY 07-10	L	Board of Selectmen
HC-19	<i>Establish a Town policy to define and protect vista views</i>	<i>Addressed See Appendix</i>	L	<i>Board of Selectmen</i>
CF-6	<i>Construct a new Town Hall.</i>	<i>Addressed See Appendix</i>	H	<i>Board of Selectmen</i>
HC-23	Secure a lot or site where the storage of historic structures would be appropriate and would save them from demolition.	FY 07-10	H	Board of Selectmen
CF-11	Construct office, storage and maintenance facility(ies) for Highway Department, Parks & Beaches, and Water Department.	FY 07-10	H	Board of Selectmen
CF-28	Implement recommendations of the wastewater management plan	FY 07-10	H	Board of Selectmen
CF-34	Prepare administrative structure for town Comprehensive Wastewater Management.	FY 07-10	M	Board of Selectmen
CF-35	Work with the Tri-town District to evaluate the actions recommended in the 2005 Tri-Town Facility Study to maintain a viable facility for the future.	FY 07-10	M	Board of Selectmen
HS-7	Evaluate and work towards the establishment of additional assisted living/nursing home facilities and congregate housing, either through encouraging private investment or exploring Town supported facilities.	FY 07-10	M	Board of Selectmen
T-26	<i>Consider water-based travel as an alternative to using cars to access the downtown and beaches.</i>	<i>Addressed See Appendix</i>	L	<i>Board of Selectmen</i>
T-31	<i>Work with State officials to re-evaluate speed limits on State roads.</i>	<i>Addressed See Appendix</i>	L	<i>Board of Selectmen</i>
AH-5	Negotiate the retention of Rock Harbor Village as affordable housing units. Deed restrictions are due to expire in 2019.	FY 07-10	M	Board of Selectmen

T-8	Based on the T-11, T-13, T-14 traffic studies, commission a design and establish a traffic management program to correct the cited deficiencies	FY 11-20	H	Board of Selectmen
T-25	Acquire land in strategic locations for better traffic and parking management in the downtown area.	FY 11-20	H	Board of Selectmen
AH-1	Develop 35 new units of affordable housing for families over the next twenty years, and support this activity by scheduling it in the Capital Improvement Plan.	FY 11-20	H	Board of Selectmen
OS-18	Based on the results of CF-2, and if supported by residents, plan, design and build a multi-purpose municipal community center.	FY 11-20	H	Board of Selectmen

Town Administrator

	Action	Time for Completion	Resources Required	Lead Responsible Agency
CF-7	<i>Maintain a current list of all Town facilities and their actual cash value or replacement cost, and insure these facilities accordingly.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Town Administrator</i>
CF-8	Develop and implement a recycling program for Town facilities.	FY 07-10	L	Town Administrator
CF-9	Incorporate energy efficiency into the design and improvement of Town facilities.	Ongoing	L	Town Administrator
CF-17	Examine the adequacy and location of Harbormaster/Shellfish Constable Department facilities.	FY 07-10	L	Town Administrator
T-9	Develop effective transportation management solutions for existing seasonal traffic problems.	FY 07-10	M	Town Administrator
T-32	Consider methods to foster a viable public transportation system, possibly targeting key needs groups such as the elderly.	FY 07-10	L	Town Administrator
AH-9	Establish a process to assure that Town housing boards are given an opportunity to consider available land parcels for affordable housing.	FY 07-10	L	Town Administrator
CF-32	Study the future facilities and staffing needs of the Police, and Fire & Rescue Departments.	FY 07-10	M	Town Administrator

Board of Water Commissioners

	Action	Time for Completion	Resources Required	Lead Responsible Agency
NR-19	<i>Establish a management plan for the Town Watershed areas.</i>	<i>Addressed</i>	<i>L</i>	<i>Board of Water</i>

		<i>See Appendix</i>		<i>Commissioners</i>
CF-21	Continue development, to the point of licensing, of potential site for Well #8.	FY 07-10	M	Board of Water Commissioners
CF-25	<i>Based on the findings of the study in CF-24, implement a program to remove iron and manganese from the water system.</i>	<i>Addressed See Appendix</i>	<i>H</i>	<i>Board of Water Commissioners</i>
CF-22	Bring Well #8 on-line based on water demand.	Far-term	H	Board of Water Commissioners

Conservation Commission

	Action	Time for Completion	Resources Required	Lead Responsible Agency
NR-9	<i>Develop an active public awareness program to encourage minimum use of fertilizers, herbicides and pesticides.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Conservation Commission</i>
NR-11	<i>Consider adopting and enforcing regulations to limit development in FEMA V Zones.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Conservation Commission</i>
NR-16	<i>Develop criteria for new docks and shoreline structures. Make regulations consistent with the recommendations of the Pleasant Bay Resource Management Plan.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Conservation Commission</i>
NR-18	Develop criteria for permitting docks and piers in fresh water ponds.	FY 07-10	L	Conservation Commission
NR-22	Identify all vernal pools located within the Town to ensure their proper regulation by the Conservation Commission.	FY 07-10	L	Conservation Commission
NR-24	<i>Consider adopting a regulation that will require waterfront property owners to plant only native species within 50 feet of a resource area.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Conservation Commission</i>
NR-25	Explore and evaluate methods and the cost of programs to eradicate non-native species.	FY 07-10	L	Conservation Commission
NR-30	<i>Investigate the feasibility and implications of extending the current 50-foot undisturbed wetland buffer to 100 feet for the entire town.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Conservation Commission</i>
OS-7	<i>Continue to improve public access to open space and conservation sites by making them handicap-accessible where possible, and by adding information signs, benches, trail route markers, limited parking and other unobtrusive amenities as appropriate to each site.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Conservation Commission</i>
OS-8	Draft and produce management plans for Town-owned open space lands not already covered by such documentation, including parks, town landings, the watershed and conservation sites, and publicize their existence in information brochures.	FY 07-10	M	Conservation Commission

Council on Aging

	Action	Time for Completion	Resources Required	Lead Responsible Agency
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HS-6	Continue the support of five-day affordable adult day care at the Council on Aging.	Addressed See Appendix	M	Council on Aging
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Economic Development Council

	Action	Time for Completion	Resources Required	Lead Responsible Agency
ED-9	Seek funds for commercial rehabilitation appearance loans through community development grants and other funding alternatives.	FY 07-10	L	EDC
ED-10	Investigate and identify Tax-Incentive/Financing programs available to attract investment in existing properties.	Addressed See Appendix	L	EDC
ED-11	Investigate Town-sponsored business development programs to support new and existing enterprises, e.g. loan programs, tax incentives, review of existing rules/regulations, bylaws and fee structures.	FY 07-10	L	EDC
HC-17	In cooperation with property owners, develop a landscape improvement program along the Route 6A corridor.	FY 07-10	M	EDC

Harbormaster

	Action	Time for Completion	Resources Required	Lead Responsible Agency
ED-13	Review and update shellfish grant policies to encourage the shellfish industry.	FY 07-10	L	Harbormaster
CF-18	Develop a schedule to implement improvements to all Town Landings.	Addressed See Appendix	L	Harbormaster
CF-19	Implement improvements to Town Landings as scheduled.	FY 11-20	M	Harbormaster

Highway Department

	Action	Time for Completion	Resources Required	Lead Responsible Agency
CF-29	Redesign the Transfer Facility to meet state standards.	FY 07-10	L	Highway Dept.

CF-30	Implement the new Transfer Station design.	FY 07-10	H	Highway Dept.
CF-31	<i>Complete the capping of the landfill, and continue monitoring the groundwater to anticipate potential impacts to private wells and surface water.</i>	<i>Addressed See Appendix</i>	<i>H</i>	<i>Highway Dept.</i>
T-1	Complete and utilize a Pavement Management System to develop a systematic approach to street maintenance and improvement.	FY 07-10	L	Highway Dept.
T-5	Prioritize private Scenic Roads that have regional significance for layout to ensure proper regulatory review.	FY 07-10	L	Highway Dept.
T-6	<i>Commit necessary resources to manage tree and vegetation cutback work along all public roads.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Highway Dept.</i>
T-15	Assure adequate connections between school parking lots and the Village Center.	FY 07-10	M	Highway Dept.
T-16	Provide better directional signs to destinations and parking areas.	FY 07-10	L	Highway Dept.
T-17	<i>Petition MassHighway to remove the "Shore Road" sign at exit 12 and install signs at town entry points directing through traffic to bypass Route 6A and remain on Route 6.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Highway Dept.</i>
T-29	Develop a systematic program for extending sidewalks and bikeways in areas where there is high pedestrian traffic.	FY 07-10	L	Highway Dept.
OS-21	<i>Complete construction of the Orleans segments of the Cape Cod Rail Trail bike pathway, including urging the State to expedite construction of a bridge over Route 6, to link the Rail Trail with the completed Brewster and Eastham segments.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Highway Dept.</i>
NR-12	Prevent direct discharge of untreated stormwater into fresh water bodies.	FY 07-10	H	Highway Dept.
T-18	Build or expand walking paths to connect various locations in the downtown.	FY 07-10	M	Highway Dept.
T-19	<i>Facilitate State construction of a Park & Ride lot on Bay Ridge Lane.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Highway Dept.</i>
NR-6	Prevent direct discharge of untreated stormwater into coastal embayments and ponds.	FY 11-20	H	Highway Dept.
T-3	Develop public layout plans for all major public roads in the Town.	FY 11-20	H	Highway Dept.
T-21	Work with property owners to reduce the number of curb cuts on Routes 6A, 28, and in the Village Center.	FY 11-20	L	Highway Dept.
T-28	Implement sidewalk and bikeway extension program on main roads.	FY 11-20	H	Highway Dept.

OS-22	Determine optimal routes and construct bike and walking pathways to connect the Village Center with the East Orleans, South Orleans, Rock Harbor and Skaket areas.	FY 11-20	H	Highway Dept.
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Historical Commission

	Action	Time for Completion	Resources Required	Lead Responsible Agency
HC-4	Improve the awareness and public education regarding historic structures and sites in Orleans in order to improve protection efforts.	Ongoing	L	Historical Commission
HC-2	Continue efforts to protect the historic character of parts of East Orleans along Main Street by nominating it for inclusion on the National Register of Historic Places.	FY 07-10	L	Historical Commission
HC-6	<i>Develop and adopt an appropriate Demolition Delay Bylaw to prevent the loss of historic structures.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Historical Commission</i>
HC-22	Consider adopting a Town bylaw to protect archeological resources from the impacts of future development. The Historical Commission should review subdivision applications to determine if the proposal is located on or near a known archeological resource.	FY 07-10	L	Historical Commission

Housing Authority/Housing Task Force

	Action	Time for Completion	Resources Required	Lead Responsible Agency
AH-3	Actively encourage organizations such as the Lower Cape Community Development Corporation and Habitat for Humanity in their efforts to both build and rehabilitate affordable housing in Orleans.	Ongoing	L	Housing Task Force/ Housing Authority
AH-2	Develop a program to address the emergency housing needs of Orleans residents, in coordination with Interfaith Council for the Homeless.	FY 07-10	L	Housing Task Force/ Housing Authority
AH-10	<i>Develop an ongoing Affordable Housing Plan to meet future needs, both rental and ownership, to reach the 10% goal.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Housing Task Force</i>

AH-11	Develop a program to facilitate private-sector construction of affordable housing.	FY 07-10	L	Housing Task Force
AH-14	Develop methods including improved deed restrictions to ensure the long-term affordability of current and future affordable units.	FY 07-10	L	Housing Task Force

Library Board of Trustees

	Action	Time for Completion	Resources Required	Lead Responsible Agency
CF-10	Assess capabilities of existing library facility for changing technology.	FY 11-20	L	Library Board of Trustees

Open Space/Land Bank Committee

	Action	Time for Completion	Resources Required	Lead Responsible Agency
NR-20	Continue to protect Zones of Contribution of the public water supply through programs of land acquisition.	Ongoing	H	Open Space Committee
NR-21	Permanently protect lands containing endangered or threatened species as identified by the Massachusetts Natural Heritage Program and the Endangered Species Act.	Ongoing	H	Open Space Committee
NR-23	Continue to make preservation of wildlife corridors a consideration of programs of land acquisition and conservation.	Ongoing	L	Open Space Committee
OS-3	Continue to maintain a list of priority open space parcels to acquire, or otherwise protect from development, based on goals in the CROS Plan.	Ongoing	L	Open Space Committee
OS-5	Continue to aggressively pursue State, County and Federal grant funding by devising suitable projects that support open space protection, recreation lands acquisition and natural resources preservation.	Ongoing	M	Open Space Committee
OS-6	Encourage owners of undeveloped land to preserve it through conservation restriction, deed restriction, tax deferment (MGL Chapter 61), donation, gift or other suitable means.	Ongoing	L	Open Space Committee
OS-9	Promote the need for open space protection and inform the public periodically of its benefits by developing and disseminating educational materials, working closely with private conservation organizations and with County and State agencies.	Ongoing	L	Open Space Committee

OS-23	Complete the Orleans segment of the "Sea Path" portion of the Cape Cod Pathways Walking Trail and link it up with the Brewster segment by preserving contiguous open space that connects with parcels already protected.	FY 07-10	M	Open Space Committee
OS-2	Using Land Bank and budget appropriated funding, plus private funding, preserve 400 or more acres of high priority parcels for ground and surface water protection, conservation, recreation and other environmental purposes	FY 11-20	H	Open Space Committee

Parks & Beaches Department

	Action	Time for Completion	Resources Required	Lead Responsible Agency
NR-15	Continue beach nourishment at Skaket Beach.	Ongoing	M	Parks & Beaches Department
OS-10	Provide and maintain a brochure, including a map that describes the recreation features of all pocket parks, beaches, town landings, hiking areas, bike paths and all other recreation facilities.	Ongoing	M	Parks & Beaches Department
HC-11	<i>Improve the gateways to Orleans by improving landscaping & screening and removing sign clutter at Skaket Corners and the Eastham rotary.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Parks & Beaches Department</i>
NR-10	Develop a minimal use program for fertilizers, pesticides, and herbicides on all Town owned properties.	FY 07-10	L	Parks & Beaches Department
CF-12	Determine the appropriate level of services, including parking, at parks and beaches.	FY 07-10	L	Parks & Beaches Department
CF-13	Develop a plan to respond to beach erosion at Nauset Beach.	FY 07-10	L	Parks & Beaches Department
CF-14	<i>Replace failed septic system at Nauset Beach.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Parks & Beaches Department</i>
CF-15	Implement improvements to parks and beaches as scheduled.	FY 07-10	M	Parks & Beaches Department
CF-16	<i>Develop a schedule to implement improvements to parks and beaches.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Parks & Beaches Department</i>
OS-14	Install drinking water and toilet facilities at appropriate recreation areas.	FY 07-10	M	Parks & Beaches Department

OS-17	Draft and produce management plans for all publicly owned recreation areas not already covered by such documentation, to ensure that they are properly maintained and meet the current needs of residents of all ages.	FY 07-10	M	Parks & Beaches Department
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Planning Board

	Action	Time for Completion	Resources Required	Lead Responsible Agency
ED-5	Focus the concentration of business growth to established commercial nodes by amending the Zoning Map to limit growth on Route 6A, particularly between Skaket Corners and Orleans Marketplace.	Ongoing	M	Planning Board
T-12	Ensure that reconstruction along Route 6A and Route 28 specifically address safety and access problems.	Ongoing	L	Planning Board
AH-7	Actively encourage affordable housing by amending the Zoning Bylaws to facilitate the development of apartments in the business districts.	Ongoing	L	Planning Board
LU-5	<i>Require all new subdivisions of 10 or more lots to submit an environmentally sensitive Open Space Residential Development plan.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Planning Board</i>
LU-7	Work with property owners in the Village Center to identify zoning amendments that would enhance desirable village characteristics.	FY 07-10	L	Planning Board
LU-8	<i>Evaluate zoning districts along Old Colony Way, considering existing land uses, traffic, and future growth potential.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Planning Board</i>
LU-9	<i>Expand the boundaries of the Village Center as appropriate to incorporate businesses on both sides of Main Street and Route 28.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Planning Board</i>
LU-10	<i>Amend the Rural Business District in East Orleans to remove parcels that would more appropriately be zoned for residential use.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Planning Board</i>
LU-11	<i>Revise the Subdivision Rules and Regulations to include a defined section that explains the decision making criteria for approval or denial of a subdivision plan.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Planning Board</i>

LU-12	Amend Subdivision Regulations to require submittal of an Open Space Residential Development Preliminary Plan for all subdivisions of five or more lots. Such amendment should include review criteria by which the Planning Board will determine the most appropriate type of subdivision.	FY 07-10	L	Planning Board
LU-14	Adopt a soil erosion and sediment control ordinance to minimize adverse impacts of development on adjacent and neighboring properties.	FY 07-10	L	Planning Board
LU-15	Amend Zoning Bylaw to mitigate possible unintended building growth from effective wastewater management facilities.	FY 07-10	M	Planning Board
LU-16	Expand apartment zoning in the Village Center, provided the street level is used for business purposes.	FY 07-10	L	Planning Board
T-20	Re-evaluate parking regulations in the Zoning Bylaws in order to assure that the location, number, size, and screening of parking lots is appropriate, and to promote shared driveways and internal connections between parking lots.	FY 07-10	L	Planning Board
T-23	Amend the Zoning Bylaws to reduce the size of the General Business District to alleviate the current and projected traffic congestion along Route 6A.	FY 07-10	M	Planning Board
HC-9	<i>Adopt design guidelines for businesses to encourage building and site design that is in harmony with a Cape Cod village. Standards should be developed for building materials, facades, rooflines, architectural design, pedestrian access, and safety.</i>	<i>Addressed See Appendix</i>	L	<i>Planning Board</i>
HC-18	<i>Adopt a set of guidelines for any proposed alterations to Scenic Roads.</i>	<i>Addressed See Appendix</i>	L	<i>Planning Board</i>
HC-20	Draft policies and design guidelines for development and redevelopment of South Orleans and East Orleans business districts using the Cape Cod Commission's Designing the Future to Honor the Past for guidance.	FY 07-10	L	Planning Board
LU-1	Study traffic issues and determine appropriate uses for the Rural Business District that serves South Orleans residents.	FY 07-10	L	Planning Board
LU-2	<i>A percentage of General Business zoned land should be rezoned for less-intensive uses.</i>	<i>Addressed See Appendix</i>	M	<i>Planning Board</i>
T-22	Develop an access management bylaw to improve safety of residential and commercial curb cuts.	FY 07-10	L	Planning Board
AH-4	Encourage the development of a senior citizen assisted living facility that has an affordable component of at least 10%.	FY 07-10	L	Planning Board
HC-7	Develop and initiate a plan to place all utility lines underground in village areas.	FY 07-10	H	Planning Board

HC-16	Work with landowners in the Industrial District to revise standards for landscape design and the screening of loading and storage areas, to improve the appearance of the district.	FY 07-10	L	Planning Board
ED-17	<i>Consider the designation of the Village Center as a Growth/Activity Center to foster a development style that is consistent with a small, focused community area to minimize further land consumption and preserve open space.</i>	<i>Addressed See Appendix</i>	L	<i>Planning Board</i>
NR-29	<i>Amend the Site Plan Review section of the Zoning Bylaw to provide for the protection of specimen trees.</i>	<i>Addressed See Appendix</i>	L	<i>Planning Board</i>

Planning Department

	Action	Time for Completion	Resources Required	Lead Responsible Agency
ED-12	Improve accessibility, efficiency, consistency, and public comprehension of Town permitting processes.	Ongoing	L	Planning Department
HC-5	Include and periodically update an inventory of historic resources in the Town's Geographic Information System database.	Ongoing	L	Planning Department
ED-1	Develop a plan to attract enterprises that have a year-round customer base.	FY 07-10	M	Planning Department
ED-2	Perform a market feasibility study to determine the types of desirable businesses for Orleans.	FY 07-10	M	Planning Department
ED-3	<i>Perform a consumer preferences study to determine what viable businesses or services are needed.</i>	<i>Addressed See Appendix</i>	M	<i>Planning Department</i>
ED-6	Develop a cohesive Village Center Plan to address such issues as traffic, parking, signs, streetscape, pedestrian linkages, and building facades.	FY 07-10	H	Planning Department
ED-15	<i>Perform a detailed analysis of all business districts to obtain an accurate inventory of existing uses as well as to determine planning potential, and to build a database.</i>	<i>Addressed See Appendix</i>	M	<i>Planning Department</i>
T-11	<i>Conduct a comprehensive traffic study of the area serving the Industrial District, from Skaket Corners to Route 28.</i>	<i>Addressed See Appendix</i>	M	<i>Planning Department</i>
T-13	<i>Conduct a comprehensive traffic study of the Village Center, concentrating on problems at Route 6A and Main Street.</i>	<i>Addressed See Appendix</i>	M	<i>Planning Department</i>
T-14	Conduct a comprehensive traffic study of the Route 6A corridor between Route 28 and the Eastham rotary.	FY 07-10	M	Planning Department
T-24	<i>Establish a transit/transportation center to support public transportation for residents and provide protection from weather, sanitary facilities, and local information.</i>	<i>Addressed See Appendix</i>	H	<i>Planning Department</i>

AH-13	<i>Study the 1999 Barnstable Inclusionary Bylaw. Consider whether such a bylaw is suitable for Orleans.</i>	<i>Addressed See Appendix</i>	L	Planning Department
OS-12	<i>Define the specific recreation needs for small pocket parks in East Orleans, South Orleans, Rock Harbor and Skaket, as appropriate to each neighborhood site.</i>	<i>Addressed See Appendix</i>	L	Planning Department
OS-15	Define the recreation features and capabilities as desired by residents for the capped landfill site, including the provision of ample parking, water fountains and toilet facilities.	FY 07-10	L	Planning Department
HC-8	Develop a plan for pedestrian-friendly improvements in village areas including the addition of traditional street lighting that is consistent with the area's history and character.	FY 07-10	M	Planning Department
ED-4	<i>Explore the feasibility of establishing as an Economic Opportunity Area (EOA) the business district on Route 6A from the Eastham line to the intersection of Route 6A & Route 28, and for the Industrial District, to allow the Town to participate in State economic development programs.</i>	<i>Addressed See Appendix</i>	L	Planning Department
CF-1	Conduct an analysis of near and distant future land acquisition needs in order to accommodate future town facilities.	FY 07-10	L	Planning Department
CF-2	Perform an analysis of the needs, public interest, and costs for a new multipurpose community center.	FY 07-10	M	Planning Department
OS-16	Build a suitable recreation facility on the capped landfill site.	FY 07-10	H	Planning Department
OS-19	<i>Plan and design a Town Cove Waterfront Park incorporating recommendations of the 1991 Town Cove Landscape Preservation Project, and coordinate this effort with the Village Center improvement project.</i>	<i>Addressed See Appendix</i>	H	Planning Department
HC-3	Explore feasible options for restoring historic structures and seek funding for the regular maintenance of historic structures, sites, and markers.	FY 07-10	L	Planning Department
OS-13	<i>Plan, design and construct appropriately outfitted pocket park recreation areas in designated neighborhoods based on assessed local recreation needs</i>	<i>Addressed See Appendix</i>	M	Planning Department

Recreation Department

	Action	Time for Completion	Resources Required	Lead Responsible Agency
HS-5	Work towards establishment of additional social and athletic after school facilities and programs, including use of school facilities for non-school team sports, music, art, and after hours use by home-schoolers.	FY 07-10	M	Recreation Department

OS-11	Evaluate recreation programs periodically to ensure that they are meeting the needs of residents. Inform the public on a seasonal basis of available programs by information brochure dissemination and other appropriate means.	Ongoing	L	Recreation Department
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School Board

	Action	Time for Completion	Resources Required	Lead Responsible Agency
CF-4	Monitor school enrollment trends and respond accordingly if increased enrollment is projected beyond the capacity of the existing facility.	Ongoing	L	School Board

Shellfish Department

	Action	Time for Completion	Resources Required	Lead Responsible Agency
NR-1	Continue to work with school officials to encourage the participation of students in resource enhancement programs.	Ongoing	L	Shellfish Dept.
NR-3	Explore and evaluate methods and programs to expand local shellfish resources through the Town's propagation program consistent with preservation of water quality.	Ongoing	L	Shellfish Dept.
NR-5	Continue to pursue grants for projects that will enhance shellfish resources.	Ongoing	L	Shellfish Dept.
NR-2	<i>Develop an overall shellfish management program, funded primarily through licensing fees, to protect and enhance local resources.</i>	<i>Addressed See Appendix</i>	M	<i>Shellfish Dept.</i>

Town Hall Building Committee

	Action	Time for Completion	Resources Required	Lead Responsible Agency
CF-5	<i>Complete planning for a new Town Hall.</i>	<i>Addressed See Appendix</i>	H	<i>Town Hall Building Committee</i>

Traffic Advisory Committee

	Action	Time for Completion	Resources Required	Lead Responsible Agency
T-10	Traffic circulation problems identified in the analysis section need to be analyzed and solutions determined.	FY 07-10	L	Traffic Advisory Comm.

Wastewater Management Steering Committee

	Action	Time for Completion	Resources Required	Lead Responsible Agency
CF-33	Initiate consideration of potential sites for wastewater treatment.	FY 07-10	M	Wastewater Management Steering Committee

Water Department

	Action	Time for Completion	Resources Required	Lead Responsible Agency
CF-23	<i>Update the Town's Water Conservation Plan.</i>	<i>Addressed See Appendix</i>	<i>L</i>	<i>Water Department</i>
CF-24	<i>Conduct a feasibility study of greensand or other filtering process for removal of iron and manganese.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Water Department</i>

Water Quality Task Force

	Action	Time for Completion	Resources Required	Lead Responsible Agency
NR-26	<i>Water quality measurements for Namskaket Creek, Mill Pond, and Town Cove should be incorporated into the efforts of the Water Quality Task Force.</i>	<i>Addressed See Appendix</i>	<i>M</i>	<i>Water Quality Task Force</i>

Zoning Bylaw Task Force

	Action	Time for Completion	Resources Required	Lead Responsible Agency
LU-3	<p>Consider revision of the Zoning Bylaw to include or modify definitions for the following:</p> <ul style="list-style-type: none"> • Customary or self-employed Home Occupations • Motels/Hotels • Inns • Bed & Breakfasts • Restaurants • Restaurant, Drive-in • Restaurant, Fast Food • Dog kennels • Veterinary hospitals • Commercial recreation • Amusement Park • Theaters • Dwelling units • Light industry • Manufacturing • Wholesale business 	FY 07-10	L	Zoning Bylaw Task Force
LU-4	<p><i>Revise the Use Table of the Zoning Bylaw to reflect the following:</i></p> <ul style="list-style-type: none"> • <i>The Use Table should be reconfigured to provide better readability.</i> • <i>Apartments associated with commercial buildings within the Industrial District should be limited to 1-bedroom units.</i> 	<i>Addressed See Appendix</i>	L	Zoning Bylaw Task Force
LU-6	<p>Revise the Use Table of the Zoning Bylaws as it pertains to the Village Center District in order to emphasize the village as a unique area and to encourage uses that are consistent with a village setting.</p>	FY 07-10	M	Zoning Bylaw Task Force
ED-7	<p>Amend Zoning Bylaws to encourage mixed use of downtown buildings by allowing retail, office, service and residential uses on different floors of the same structure.</p>	FY 07-10	L	Zoning Bylaw Task Force
ED-14	<p>Revise the Zoning Bylaws to provide opportunities for home occupations that are consistent with the Town's character.</p>	FY 07-10	L	Zoning Bylaw Task Force
AH-6	<p><i>Consider amending the Zoning Bylaws to allow dormitory-type housing for seasonal workers under proper controls.</i></p>	<i>Addressed See Appendix</i>	L	Zoning Bylaw Task Force

AH-8	<i>Consider amending the Zoning Bylaws to facilitate affordable housing through small rental units in private homes.</i>	<i>Addressed See Appendix</i>	L	Zoning Bylaw Task Force
AH-12	Consider an inclusionary bylaw that requires that 10% of all new residential development or subdivision lots and condominiums of 10 or more lots or units be dedicated to affordable housing.	FY 07-10	L	Zoning Bylaw Task Force
HC-10	Revise the height regulations for structures in business and village districts by adding a 2-1/2 story limit.	FY 07-10	L	Zoning Bylaw Task Force
HC-13	<i>Review and alter regulations for lighting to reduce glare, eliminate spillage, and eliminate excess lighting.</i>	<i>Addressed See Appendix</i>	L	Zoning Bylaw Task Force
HC-14	Amend Zoning Bylaws to require underground wiring for all new businesses and dwellings, regardless of whether they are in new subdivisions.	FY 07-10	L	Zoning Bylaw Task Force
HC-15	Review sign regulations to ensure that the number, size, location, style, and illumination of signs are in scale and compatible with the character of the area in which they are located.	FY 07-10	L	Zoning Bylaw Task Force
HC-21	Amend the Zoning Bylaw to prohibit future strip commercial development.	FY 07-10	L	Zoning Bylaw Task Force

Appendices & Glossary



14. Appendices

Appendix
Public Survey Results

ECONOMIC DEVELOPMENT

1. Should town government be involved with the following activities as priorities to provide for its future economic development?

		NO RESP		YES		NO		DON'TKNOW		TOTAL	
a. Promotion & investment in Tourism	1-A	54	2.35%	1221	53.11%	861	37.45%	163	7.09%	2299	100.00%
b. Development of additional sporting and recreational events	1-B	49	2.13%	1157	50.33%	807	35.10%	286	12.44%	2299	100.00%
c. Development of additional cultural and arts program	1-C	52	2.26%	1542	67.07%	516	22.44%	189	8.22%	2299	100.00%
d. Promotion and investment in growth in "native" industries (fishing, shellfishing, cranberry production, other)	1-D	38	1.65%	1715	74.60%	406	17.66%	140	6.09%	2299	100.00%
e. Attracting additional light industry within the industrial zone	1-E	37	1.61%	1204	52.37%	858	37.32%	200	8.70%	2299	100.00%
f. Expanding the Village Center and encouraging additional commercial activity in this area	1-F	44	1.91%	838	36.45%	1247	54.24%	170	7.39%	2299	100.00%
g. Supporting the development of the town as the commercial "hub" of the lower Cape by encouraging new and expanded large scale retail development, such as a new mall	1-G	55	2.39%	182	7.92%	1998	86.91%	64	2.78%	2299	100.00%
h. Supporting the retention of existing businesses by developing and implementing business development programs, such as revolving loans and tax incentives	1-H	71	3.09%	1369	59.55%	605	26.32%	254	11.05%	2299	100.00%

2. What types of businesses should the town foster in the future?

		NO RESP		YES		NO		DON'T KNOW		TOTAL	
a. retail stores	2-A	129	5.61%	1275	55.46%	735	31.97%	160	6.96%	2299	100.00%
b. restaurants	2-B	124	5.39%	1094	47.59%	926	40.28%	155	6.74%	2299	100.00%
c. business services, ie finance, insurance, etc.	2-C	151	6.57%	1032	44.89%	866	37.67%	250	10.87%	2299	100.00%
d. auto gasoline/service shop	2-D	133	5.79%	383	16.66%	1596	69.42%	187	8.13%	2299	100.00%
e. auto dealerships	2-E	123	5.35%	216	9.40%	1791	77.90%	169	7.35%	2299	100.00%
f. supermarkets	2-F	123	5.35%	211	9.18%	1864	81.08%	101	4.39%	2299	100.00%
g. large retail/wholesale discount stores	2-G	111	4.83%	176	7.66%	1920	83.51%	92	4.00%	2299	100.00%
h. manufacturing enterprises	2-H	131	5.70%	463	20.14%	1490	64.81%	215	9.35%	2299	100.00%
i. marine-related businesses	2-I	109	4.74%	1471	63.98%	539	23.44%	180	7.83%	2299	100.00%
j. entertainment	2-J	138	6.00%	936	40.71%	964	41.93%	261	11.35%	2299	100.00%
k. hotels/motels	2-K	149	6.48%	442	19.23%	1486	64.64%	222	9.66%	2299	100.00%
l. light industry	2-L	124	5.39%	1075	46.76%	871	37.89%	229	9.96%	2299	100.00%
m. medical facilities, such as a walk-in clinic	2-M	91	3.96%	1693	73.64%	381	16.57%	134	5.83%	2299	100.00%
n. institution for higher education	2-N	130	5.65%	1145	49.80%	761	33.10%	263	11.44%	2299	100.00%

2. Your additional comments regarding the types of businesses that the town should promote:

		YES	
#0 No Response	2-P	1687	73.38%
#1 Leave as is. Current mix is good.	2-P	96	4.18%
#2 Town should not be involved promoting Bus.	2-P	63	2.74%
#3 Artists/Craftsmen	2-P	54	2.35%
#4 Education/Research	2-P	5	0.22%
#5 Other	2-P	394	17.14%

OF RESP
15.69%
10.29%
8.82%
0.82%
64.38%

2299

3. Do you feel that the town should maintain strong local controls over the following items relating to business enterprises:

		NO RESP		YES		NO		DONTKNOW		TOTAL	
a. signs	3-A	39	1.70%	2067	89.91%	141	6.13%	52	2.26%	2299	100.00%
b. lighting	3-B	44	1.91%	2022	87.95%	169	7.35%	64	2.78%	2299	100.00%
c. facades/architecture	3-C	47	2.04%	1975	85.91%	182	7.92%	95	4.13%	2299	100.00%

COMMUNITY FACILITIES, SERVICES AND TRANSPORTATION:

4. In planning to provide for the future, should Orleans town government (1) increase support for the following activities or services, (2) decrease support or (3) maintain support at the present level? Assume that an increase in support could mean an increase in taxes.

		NORESP		INCR.		DECR.		MAINTAIN		TOTAL	
a. library programs and services for:											
children	4-A-1	90	3.91%	848	36.89%	36	1.57%	1325	57.63%	2299	100.00%
teens	4-A-2	118	5.13%	927	40.32%	39	1.70%	1215	52.85%	2299	100.00%
adults	4-A-3	125	5.44%	704	30.62%	51	2.22%	1419	61.72%	2299	100.00%
senior citizens	4-A-4	114	4.96%	710	30.88%	66	2.87%	1409	61.29%	2299	100.00%
individuals with disabilities	4-A-5	126	5.48%	766	33.32%	61	2.65%	1346	58.55%	2299	100.00%
b. bikeways	4-B	59	2.57%	1335	58.12%	70	3.05%	833	36.26%	2297	100.00%
c. public rest rooms	4-C	66	2.87%	1089	47.37%	96	4.18%	1048	45.59%	2299	100.00%
d. tourists/information services	4-D	80	3.48%	668	29.06%	102	4.44%	1449	63.03%	2299	100.00%
e. public parks	4-E	85	3.70%	754	32.80%	78	3.39%	1382	60.11%	2299	100.00%
f. public safety activities:											
Police	4-F-1	66	2.87%	505	21.97%	81	3.52%	1647	71.64%	2299	100.00%
Fire and Rescue	4-F-2	78	3.39%	499	21.71%	74	3.22%	1648	71.68%	2299	100.00%
Harbormaster	4-F3	81	3.52%	449	19.53%	70	3.04%	1699	73.90%	2299	100.00%
g. Waterfront activities and facilities:											
boating	4-G-1	78	3.39%	524	22.79%	82	3.57%	1615	70.25%	2299	100.00%
shellfishing	4-G-2	89	3.87%	576	25.05%	72	3.13%	1562	67.94%	2299	100.00%
beaches	4-G-3	73	3.18%	586	25.49%	47	2.04%	1593	69.29%	2299	100.00%
h. road maintenance	4-H	69	3.00%	551	23.97%	65	2.83%	1614	70.20%	2299	100.00%
i. drainage systems and improvements	4-I	106	4.61%	645	28.06%	55	2.39%	1493	64.94%	2299	100.00%
j. public parking	4-J	79	3.44%	474	20.62%	113	4.92%	1633	71.03%	2299	100.00%
k. public transportation:											
town	4-K-1	160	6.96%	882	38.36%	160	6.96%	1097	47.72%	2299	100.00%
regionally	4-K-2	177	7.70%	940	40.89%	147	6.39%	1035	45.02%	2299	100.00%
l. public water supply system	4-L	107	4.65%	563	24.49%	41	1.78%	1588	69.07%	2299	100.00%
m. conservation programs and activities	4-M	79	3.44%	966	42.02%	157	6.83%	1097	47.72%	2299	100.00%
n. recycling facility and services	4-N	72	3.13%	821	35.71%	73	3.18%	1333	57.98%	2299	100.00%
o. sidewalks	4-O	66	2.87%	738	32.10%	126	5.48%	1369	59.55%	2299	100.00%

4. In planning to provide for the future, should Orleans town government (1) increase support for the following activities or services, (2) decrease support or (3) maintain support at the present level? Assume that an increase in support could mean an increase in taxes.

		NORESP		INCR.	
p. other activities and/or services:					
Underground Util	4-P-1	2286	99.43%	13	0.57%
Golf Course	4-P-2	2284	99.35%	15	0.65%
Recreation Center	4-P-3	2282	99.26%	17	0.74%
Public Bike Access	4-P-4	2282	99.26%	17	0.74%
Other	4-P-5	2003	87.12%	296	12.88%

TOTAL	
2299	100.00%
2299	100.00%
2299	100.00%
2299	100.00%
2299	100.00%

5. Please LIST the three activities/services from the preceding list that you consider to be the most important, particularly in planning for the future of the community.

		NUMBER OF RESPONSES	
a. library programs and services for:	5-1-A	408	17.75%
b. bikeways	5-1-B	426	18.53%
c. public rest rooms	5-1-C	186	8.09%
d. tourist/information services	5-1-D	148	6.44%
e. public parks	5-1-E	209	9.09%
f. public safety activities:	5-1-F	594	25.84%
g. Waterfront activities and facilities:	5-1-G	515	22.40%
h. road maintenance	5-1-H	219	9.53%
i. drainage systems and improvements	5-1-I	108	4.70%
j. public parking	5-1-J	64	2.78%
k. public transportation:	5-1-K	319	13.88%
l. public water supply system	5-1-L	521	22.66%
m. conservation programs and activities	5-1-M	553	24.05%
n. recycling facility and services	5-1-N	197	8.57%
o. sidewalks	5-1-O	192	8.35%
No Response	5-1-Q	2238	N/A

LAND USE:

6. Do you think our current 1-acre residential zoning is appropriate to accomodate future growth of the Town?	6-1	NO RESP		YES		NO		DON'TKNOW		TOTAL	
		44	1.91%	1779	77.38%	220	9.57%	256	11.14%	2299	100.00%

WHY? #0 No Response	6-W-0	1224	53.24%
#1 Environmental protection, groundwater protect	6-W-1	134	5.83%
#2 Keep town from being overdeveloped	6-W-2	277	12.05%
#3 Preserve community character-green space	6-W-3	159	6.92%
#4 Maintain real estate values	6-W-4	25	1.09%
#5 Other	6-W-5	480	20.88%

TOTAL	
2299	100.00%

7. Do you think the current zoning districts of residential, commercial and retail business zones provide for balanced future growth?	7	NO RESP		YES		NO		DON'TKNOW		TOTAL	
		89	3.87%	1128	49.06%	77	3.35%	1005	43.71%	2299	100.00%

8. How would you describe the existing land use regulations such as:

a. zoning bylaw	8-A	NORESP		TOO STR		ADEQ		NOT STR		DON'TKNOW	
b. subdivision rules	8-B	98	4.26%	127	5.52%	1001	43.54%	327	14.22%	746	32.45%
c. conservation regulations	8-C	100	4.35%	94	4.09%	872	37.93%	425	18.49%	808	35.15%
d. health regulations	8-D	88	3.83%	280	12.18%	912	39.67%	407	17.70%	612	26.62%
		97	4.22%	140	6.09%	1108	48.19%	216	9.40%	738	32.10%

AFFORDABLE HOUSING:

9. Do you think the Town should make a stronger effort to provide affordable housing for:

a. Young families	9-A	NO RESP		YES		NO		DON'TKNOW		TOTAL	
b. Senior Citizens	9-B	77	3.35%	1077	46.85%	775	33.71%	370	16.09%	2299	100.00%
c. Handicapped + Disabled	9-C	96	4.18%	826	35.93%	933	40.58%	444	19.31%	2299	100.00%
		95	4.13%	871	37.89%	766	33.32%	567	24.66%	2299	100.00%

10. Would you support allowing 1/4 acre lots in certain areas to provide affordable homes for first-time home buyers?	10	NO RESP		SUPP		NO SUPP		DON'T KNOW		TOTAL	
		56	2.44%	553	24.05%	1426	62.03%	264	11.48%	2299	100.00%

11. Should the town purchase land for affordable housing?	11	NO RESP		YES		NO		DON'T KNOW		TOTAL	
		84	3.65%	581	25.27%	1249	54.33%	385	16.75%	2299	100.00%

COMMUNITY CHARACTER:

12. What are the 3 most important aspects of the Town's character that should be preserved?
Please number in order of priority with 1 being the most important.

	RANK	BLANK	#1	#2	#3	TOTAL					
a. Maritime/Nautical Tradition	12-A	1121	48.76%	388	16.88%	328	14.27%	462	20.10%	2299	100.00%
b. Fishing/Shellfishing	12-B	1433	62.33%	215	9.35%	320	13.92%	331	14.40%	2299	100.00%
c. Environmental Quality	12-C	724	31.49%	732	31.84%	436	18.96%	407	17.70%	2299	100.00%
d. Commercial Hub of the Lower Cape	12-D	2015	87.65%	91	3.96%	71	3.09%	122	5.31%	2299	100.00%
e. Small Town	12-E	642	27.93%	843	36.67%	507	22.05%	307	13.35%	2299	100.00%
f. New England/Cape Cod style architecture	12-F	1264	54.98%	287	12.48%	374	16.27%	374	16.27%	2299	100.00%
g. Don't know	12-G	2264	98.48%	16	0.70%	5	0.22%	14	0.61%	2299	100.00%
h. Other	12-H	2211	96.17%	47	2.04%	12	0.52%	29	1.26%	2299	100.00%

13. List up to 4 special places in Town where you are most likely to bring visitors/guests to "show off" the Town? (Please print clearly.)

		BLANK	CHKD	TOTAL			
#1 Nauset Beach or Outer Beach	13-1	465	20.23%	1834	79.77%	2299	100.00%
#2 Rock Harbor	13-2	1072	46.63%	1227	53.37%	2299	100.00%
#3 Skaket Beach	13-3	1364	59.33%	935	40.67%	2299	100.00%
#4 Pleasant Bay	13-4	1916	83.34%	383	16.66%	2299	100.00%
#5 Town Cove	13-5	1978	86.04%	321	13.96%	2299	100.00%
#6 Village Center	13-6	1880	81.77%	419	18.23%	2299	100.00%
#7 Other	13-7	929	40.41%	1370	59.59%	2299	100.00%

14. Imagine it is the year 2020. How would you like to describe your Town? Please choose one.

		BLANK		CHKD	
a. Commercial Hub of the Lower Cape	14-A	2223	96.69%	76	3.31%
b. Home of aquaculture industry	14-B	2189	95.22%	110	4.78%
c. Cultural Center of the Lower Cape	14-C	1970	85.69%	329	14.31%
d. Summer Resort	14-D	2051	89.21%	248	10.79%
e. Semi-Rural Town with a balance of residential and commercial uses	14-E	827	35.97%	1472	64.03%
f. Other. #0 No Response	14-F-0	2132	92.74%		
#1 Rural Village	14-F-1	78	3.39%		
#2 Old New England Maritime Village	14-F-2	14	0.61%		
#3 Other	14-F-3	75	3.26%		

TOTAL	
2299	100.00%
2299	100.00%
2299	100.00%
2299	100.00%
2299	100.00%

TOTAL
2299

NATURAL RESOURCES:

15. The protection of our groundwater to maintain high quality drinking water is a high priority for us all. Which of the following actions would you support to ensure this?

		NO RESP		YES		NO		DON'TKNOW		TOTAL	
a. Develop and implement plans to require water-saving devices in all new buildings.	15-A	98	4.26%	1733	75.38%	224	9.74%	244	10.61%	2299	100.00%
b. Regulate use of pesticides and fertilizers on town-owned properties. Encourage the same for private property.	15-B	64	2.78%	1916	83.34%	125	5.44%	194	8.44%	2299	100.00%
c. Allow innovative septic systems to reduce nitrogen loading when systems are upgraded.	15-C	77	3.35%	1675	72.86%	108	4.70%	439	19.10%	2299	100.00%
d. Continue to purchase land for protection of zones of contribution to wells.	15-D	105	4.57%	1514	65.85%	330	14.35%	350	15.22%	2299	100.00%
e. Promote public education about activities which may lead to ground water contamination.	15-E	100	4.35%	2023	87.99%	62	2.70%	114	4.96%	2299	100.00%

16. Recreational waters require protection against contamination. Which of the following would you support to achieve this?

		NO RESP		YES		NO		DON'TKNOW		TOTAL	
a. Restrict development along shores, pond fronts and wetlands.	16-A	100	4.35%	1732	75.34%	269	11.70%	198	8.61%	2299	100.00%
b. Build pump-out facilities for boats and enforce their use.	16-B	128	5.57%	1689	73.47%	123	5.35%	359	15.62%	2299	100.00%
c. Encourage use of community docks and piers, and restrict such facilities.	16-C	123	5.35%	1142	49.67%	600	26.10%	434	18.88%	2299	100.00%
d. Continue a program of eliminating direct roadway runoff discharges to all surface bodies.	16-D	82	3.57%	1919	83.47%	92	4.00%	206	8.96%	2299	100.00%

HEALTH AND HUMAN SERVICES

17: Please indicate which of the following services you use now or have used in the past.

		NO RESP		YES		NO	
a. Adult immunization program	17-A	239	10.40%	566	24.62%	1494	64.98%
b. Blood pressure clinic	17-B	268	11.66%	422	18.36%	1609	69.99%
c. Mammography screening	17-C	310	13.48%	373	16.22%	1616	70.29%
d. Substance abuse counseling program	17-D	376	16.35%	81	3.52%	1842	80.12%
e. Rehabilitation services	17-E	369	16.05%	143	6.22%	1787	77.73%
f. Home health care	17-F	326	14.18%	272	11.83%	1701	73.99%
g. Congregate or home delivered meals	17-G	361	15.70%	129	5.61%	1809	78.69%
h. HIV counseling	17-H	388	16.88%	47	2.04%	1864	81.08%
i. Family Planning	17-I	374	16.27%	115	5.00%	1810	78.73%
j. Mental health counseling service	17-J	526	22.88%	1041	45.28%	732	31.84%

TOTAL	
2299	100.00%
2299	100.00%
2299	100.00%
2299	100.00%
2299	100.00%
2299	100.00%
2299	100.00%
2299	100.00%
2299	100.00%
2299	100.00%

18. Which of the following services not presently available in Orleans would you like to see here?

		NO RESP		YES		NO	
a. Adult day care facilities	18-A	239	10.40%	566	24.62%	1494	64.98%
b. Children day care facilities	18-B	268	11.66%	422	18.36%	1609	69.99%
c. Facilities for victims of domestic violence	18-C	310	13.48%	373	16.22%	1616	70.29%
d. Temporary facilities for the homeless	18-D	376	16.35%	81	3.52%	1842	80.12%
e. Transportation to medical facilities	18-E	369	16.05%	143	6.22%	1787	77.73%
f. Mental health services	18-F	326	14.18%	272	11.83%	1701	73.99%

TOTAL	
2299	100.00%
2299	100.00%
2299	100.00%
2299	100.00%
2299	100.00%
2299	100.00%

g. Other (please specify)

#0 No Response	18-G	2107	91.65%
#1 Transportation for senior citizens	18-G	84	3.65%
#2 More summer programs for children	18-G	31	1.35%
#3 Other	18-G	77	3.35%

TOTAL
2299

19. Which of the following would you favor for the preservation and protection of open space?

Assume a yes response may result in an increase in taxes.

		NO RESP		YES		NO		DON'TKNOW		TOTAL	
a. Continued land-acquisition program	19-A	128	5.57%	1102	47.93%	737	32.06%	332	14.44%	2299	100.00%
b. Purchase of public access ways over private property for recreational trails	19-B	140	6.09%	784	34.10%	994	43.24%	381	16.57%	2299	100.00%
c. Establish a land bank derived from a land transfer tax to provide funds for open space	19-C	118	5.13%	1037	45.11%	645	28.06%	499	21.71%	2299	100.00%

20. Do you believe that Orleans provides adequate services for the following groups?

		NO RESP		YES		NO		DON'TKNOW		TOTAL	
a. Young children	20-A	94	4.09%	1181	51.37%	286	12.44%	738	32.10%	2299	100.00%
b. Teens	20-B	89	3.87%	646	28.10%	753	32.75%	811	35.28%	2299	100.00%
c. Adults	20-C	121	5.26%	1230	53.50%	309	13.44%	639	27.79%	2299	100.00%
d. Senior Citizens	20-D	104	4.52%	1161	50.50%	232	10.09%	802	34.88%	2299	100.00%
e. Handicapped	20-E	130	5.65%	474	20.62%	346	15.05%	1349	58.68%	2299	100.00%

21. The bike path has proven to be very attractive to residents and tourists. Is there another such activity which you think should be developed? What is it?

CHKD			
#1 More bike paths	21-1	132	14.43%
#2 Golf course	21-2	77	8.42%
#3 Hiking Trails	21-3	125	13.66%
#4 Tennis courts	21-4	27	2.95%
#5 Canoeing/Rowing Docks and Facilities	21-5	21	2.30%
#6 Public/Community Pool	21-6	20	2.19%
#7 Other	21-7	513	56.07%

TOTAL
915

22. Which of the following would you like to see developed in Orleans?

		NO RESP		YES		NO		DON'TKNOW		TOTAL	
a. Gambling casinos	22-A	117	5.09%	35	1.52%	2115	92.00%	32	1.39%	2299	100.00%
b. Amusement park	22-B	124	5.39%	46	2.00%	2095	91.13%	34	1.48%	2299	100.00%
c. Boat tours	22-C	123	5.35%	1125	48.93%	772	33.58%	279	12.14%	2299	100.00%
d. Historical tours	22-D	120	5.22%	1638	71.25%	351	15.27%	190	8.26%	2299	100.00%
e. Concerts and other outdoor events, such as pops in the park	22-E	68	2.96%	1962	85.34%	197	8.57%	72	3.13%	2299	100.00%
f. Movie theaters	22-F	152	6.61%	965	41.97%	978	42.54%	204	8.87%	2299	100.00%

Other:

		COUNT	
#1 Golf Course	22-G-1	37	12.46%
#2 Teenage Facilities	22-G-2	18	6.06%
#3 Theater/Playhouse	22-G-3	47	15.82%
#4 Other	22-G-4	195	65.66%

TOTAL
297

PERSONAL INFORMATION:

23. Are you a:

		COUNT	
a. Year-round resident?	23	1495	65.03%
b. Seasonal resident?	23	473	20.57%
c. Non-resident property owner?	23	313	13.61%
No Response	23	18	0.78%

TOTAL
2299

24. Please indicate your age.

		COUNT	
a. Under 18	24	2	0.09%
b. 18-30	24	39	1.70%
c. 31-50	24	608	26.45%
d. 51-65	24	714	31.06%
e. Over 65	24	919	39.97%
No Response	24	17	0.74%

TOTAL
2299

25. Please indicate your employment status.

		COUNT	
a. Employed full-time	25	977	42.50%
b. Employed part-time	25	222	9.66%
c. Unemployed	25	18	0.78%
d. Retired	25	951	41.37%
e. Student	25	7	0.30%
f. Home maker	25	102	4.44%
No Response	25	22	0.96%

TOTAL
2299

26. Please indicate:

		COUNT	
a. Male	26	1295	56.33%
b. Female	26	923	40.15%
Joint file	26	55	2.39%
No Response	26	26	1.13%

TOTAL
2299

27. Please indicate the number of children under 18 years of age in your household.

		COUNT	
a. 0	27	1795	78.08%
b. 1	27	200	8.70%
c. 2	27	170	7.39%
d. 3 or more	27	88	3.83%
No Response	27	46	2.00%

TOTAL
2299

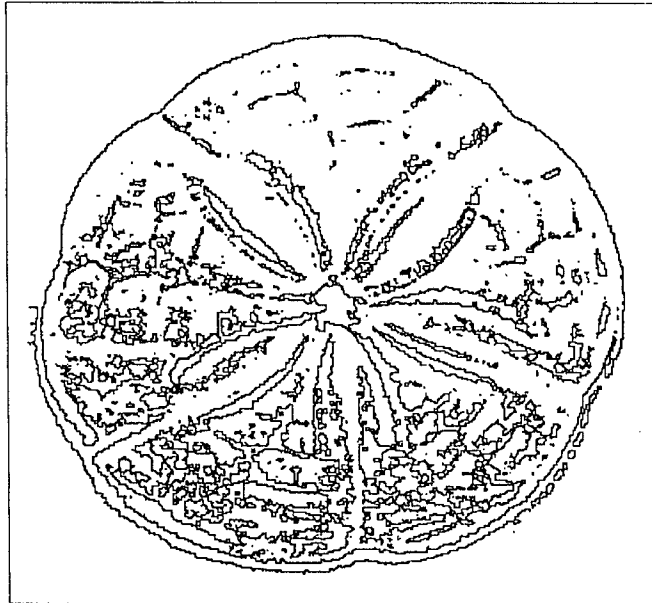
28. Please circle the number on the map to the right, which represents the quadrant of Town that you live in.

		COUNT	
1	28	568	24.71%
2	28	1056	45.93%
3	28	240	10.44%
4	28	370	16.09%
NO RESPONSE	28	65	2.83%

TOTAL
2299

Appendix
Marine Resources Survey

MARINE RESOURCES SURVEY



TOWN OF ORLEANS

1. Are you:

Resident	531	56.85%
Property Owner	673	72.06%
Seasonal Visitor	54	5.78%
Resident Other Cape Cod	54	5.78%

2. Please check the appropriate boxes below to indicate your current uses of the waters:

AREAS USED	CLAMS	QUAHAUGS	SCALLOPS	MUSSELS	LOBSTERS	BASS/BLUES/OTHER	FLOUNDER	SWIMMING	SAILING	POWER BOATING	WATER SKI	CANOE/KAYAK	BEACH ACCESS	BEACH WALK	WATERFOWL/HUNTING
TOWN COVE	160	183	83	76	25	90	102	77	93	184	30	86	115	133	24
	17.13%	19.59%	8.89%	8.14%	2.68%	9.64%	10.92%	8.24%	9.96%	19.70%	3.21%	9.21%	12.31%	14.24%	2.57%
NAUSET HARBOR	156	99	19	121	38	114	91	127	56	166	14	75	137	171	39
	16.70%	10.60%	2.03%	12.96%	4.07%	12.21%	9.74%	13.60%	6.00%	17.77%	1.50%	8.03%	14.67%	18.31%	4.18%
MILL POND	109	89	16	100	8	23	57	58	27	74	2	63	50	115	4
	11.67%	9.53%	1.71%	10.71%	0.86%	2.46%	6.10%	6.21%	2.89%	7.92%	0.21%	6.75%	5.35%	12.31%	0.43%
MEET POND&RIVER	64	59	6	7	1	41	42	73	107	196	13	92	48	54	3
	6.85%	6.32%	0.64%	0.75%	0.11%	4.39%	4.50%	7.82%	11.46%	20.99%	1.39%	9.85%	5.14%	5.78%	0.32%
LONNIE'S POND&RIVER	42	43	2	5	0	13	22	23	52	95	2	54	19	20	1
	4.50%	4.60%	0.21%	0.54%	0.00%	1.39%	2.36%	2.46%	5.57%	10.17%	0.21%	5.78%	2.03%	2.14%	0.11%
AREY'S POND&RIVER	28	21	6	4	0	14	16	24	85	115	4	67	17	22	0
	3.00%	2.25%	0.64%	0.43%	0.00%	1.50%	1.71%	2.57%	9.10%	12.31%	0.43%	7.17%	1.82%	2.36%	0.00%
LITTLE PLEASANT BAY	94	92	90	19	9	111	54	173	215	260	41	99	102	113	25
	10.06%	9.85%	9.64%	2.03%	0.96%	11.88%	5.78%	18.52%	23.02%	27.84%	4.39%	10.60%	10.92%	12.10%	2.68%
PAU WAH	12	14	11	4	2	13	13	24	45	75	4	40	36	73	4
	1.28%	1.50%	1.18%	0.43%	0.21%	1.39%	1.39%	2.57%	4.82%	8.03%	0.43%	4.28%	3.85%	7.82%	0.43%
BIG PLEASANT BAY	54	59	64	14	30	136	46	183	224	265	41	40	118	102	20
	5.78%	6.32%	6.85%	1.50%	3.21%	14.56%	4.93%	19.59%	23.98%	28.37%	4.39%	4.28%	12.63%	10.92%	2.14%
QUANSET	17	15	3	2	2	9	7	14	33	46	5	12	21	24	1
	1.82%	1.61%	0.32%	0.21%	0.21%	0.96%	0.75%	1.50%	3.53%	4.93%	0.54%	1.28%	2.25%	2.57%	0.11%
CAPE COD BAY	55	58	31	9	7	115	53	310	41	119	14	26	191	282	27
	5.89%	6.21%	3.32%	0.96%	0.75%	12.31%	5.67%	33.19%	4.39%	12.74%	1.50%	2.78%	20.45%	30.19%	2.89%
NAUSET BEACH	15	7	2	4	2	110	17	466	24	58	5		339	513	26
	1.61%	0.75%	0.21%	0.43%	0.21%	11.78%	1.82%	49.89%	2.57%	6.21%	0.54%	0.00%	36.30%	54.93%	2.78%
NAUSET SPIT	37	17	6	22	6	105	18	213	27	79	5	26	219	328	29
	3.96%	1.82%	0.64%	2.36%	0.64%	11.24%	1.93%	22.81%	2.89%	8.46%	0.54%	2.78%	23.45%	35.12%	3.10%
NAUSET BEACH TO CHATHAM	14	9	4	7	6	97	13	184	22	64	4	8	212	274	35
	1.50%	0.96%	0.43%	0.75%	0.64%	10.39%	1.39%	19.70%	2.36%	6.85%	0.43%	0.86%	22.70%	29.34%	3.75%

2. (Continued)

TOWN LANDINGS USED	PARK TO FISH/SHELLFISH	BOAT LAUNCH/MOORING
GOOSE HUMMOCK	54	96
	5.78%	10.28%
YACHT CLUB	101	180
	10.81%	19.27%
ASA'S	90	18
	9.64%	1.93%
TONSET	52	32
	5.57%	3.43%
SNOW SHORE	99	63
	10.60%	6.75%
MILL POND	117	94
	12.53%	10.06%
PRISCILLA	96	55
	10.28%	5.89%
RIVER RD	77	175
	8.24%	18.74%
BARLEY NECK RD	48	65
	5.14%	6.96%
POCHET	31	30
	3.32%	3.21%
LONNIE'S	37	43
	3.96%	4.60%
PAU WAH	48	99
	5.14%	10.60%
QUANSET	27	58
	2.89%	6.21%
RT 28	41	131
	4.39%	14.03%
ROCK HARBOR-ORLEANS	115	0
	12.31%	0.00%
ROCK HARBOR-EASTHAM	63	118
	6.75%	12.63%

3. How often do you go shellfishing?

a) Never	402	43.04%
b) 1/Yr	119	12.74%
c) 5/Yr	162	17.34%
d) 10/Yr	83	8.89%
e) More	126	13.49%

f) Scallops	6	0.64%
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Type of license

Commercial	48	5.14%
Family	354	37.90%

4. If you have a boat, do you

a) Launch	228	24.41%
b) Moor	248	26.55%
c) Both	196	20.99%

5. If you have a private dock, do others use your dock?

Yes	215	23.02%
-----	-----	--------

a) Family	44	4.71%
b) Neighbors	34	3.64%
c) Friends	28	3.00%

6. The activities listed below may enhance boating but could also impact water quality in the long run.

Should the town do any of the following?

	Yes		No		
a)	164	17.56%	623	66.70%	Re-zone portions of waterfront for marine business?
b)	238	25.48%	571	61.13%	Allow private businesses to use public purposes (i.e. eco-tours, parasail, etc.)
c)	341	36.51%	477	51.07%	Expand parking facilities at town landings?
d)	173	18.52%	612	65.52%	Increase the number of launching ramps at town landings?
e)	340	36.40%	449	48.07%	Allow the construction and use of private docks?
f)	397	42.51%	397	42.51%	Expand mooring areas to allow for and reduce waiting lists for mooring and reduce w

7. The activities below may protect natural resources or improve water quality.

Should the town do any of the following?

	Yes		No		
a)	755	80.84%	74	7.92%	Expand shellfish seeding program?
b)	625	66.92%	138	14.78%	Support development of a shellfish seed grow-out facility?
c)	564	60.39%	205	21.95%	Support a marine education facility?
d)	499	53.43%	252	26.98%	Promote private aquaculture?
e)	319	34.15%	419	44.86%	Promote private aquaculture if it means decreased areas for boating?
f)	507	54.28%	207	22.16%	Operate pump-out facility?
g)	93	9.96%	646	69.16%	Reduce the number of moorings?
h)	573	61.35%	216	23.13%	Increase the amount of no-wake zones to reduce turbidity?
i)	548	58.67%	129	13.81%	Encourage "green tourism" activities?
j)	737	78.91%	35	3.75%	Continue program of drainage remediation?

8. Maintaining high water quality and healthy natural resources may require personal expense and restrictions on personal activities even if you do not directly on the waterfront. Would you be willing to do any of the following to protect our marine waters.

	Yes		No		
a)	599	64.13%	162	17.34%	Pay higher fees for shellfish permit?
b)	525	56.21%	225	24.09%	Pay for shellfish seeding?
c)	543	58.14%	222	23.77%	Pay for increased enforcement?
d)	376	40.26%	322	34.48%	Install a nutrient-reducing septic system at greater cost?
e)	704	75.37%	108	11.56%	Reduce or eliminate nitrogen-rich fertilizers on your property?
f)	521	55.78%	222	23.77%	Reduce or eliminate all surface care from entering road
g)	568	60.81%	111	11.88%	Use a boat pump-out facility even if inconvenient?

9. List, in order of importance, the 5 most important activities/uses of the waters to you.

1 = most important

5 = least

	1		2		3		4		5	
a) Fish/Shellfish	230	24.63%	78	8.35%	89	9.53%	64	6.85%	112	11.99%
b) Power Boat	130	13.92%	115	12.31%	82	8.78%	46	4.93%	140	14.99%
c) Sail	157	16.81%	88	9.42%	80	8.57%	53	5.67%	118	12.63%
d) Other Boat	50	5.35%	39	4.18%	63	6.75%	27	2.89%	96	10.28%
e) Swimming	288	30.84%	163	17.45%	131	14.03%	97	10.39%	79	8.46%
f) Beach Activities	213	22.81%	131	14.03%	138	14.78%	89	9.53%	80	8.57%
g) Picnic/lunch near Shore	130	13.92%	79	8.46%	94	10.06%	95	10.17%	104	11.13%
h) Walk along Shore	283	30.30%	148	15.85%	103	11.03%	89	9.53%	98	10.49%
i) Viewing water/scenic beauty	292	31.26%	89	9.53%	70	7.49%	86	9.21%	125	13.38%
j) Jet Ski	10	1.07%	1	0.11%	3	0.32%	10	1.07%	236	25.27%
k) Wind-surf	25	2.68%	20	2.14%	34	3.64%	30	3.21%	163	17.45%
l) Use of Private Dock	64	6.85%	22	2.36%	36	3.85%	20	2.14%	163	17.45%
m) Use of town launch ramp	115	12.31%	63	6.75%	76	8.14%	55	5.89%	114	12.21%

10. If you have experienced conflicts between the various users of the waters, what are the conflicts and where did they take place?

CONFLICT

a) Jet Skis	107	11.46%
b) Parking/Landings	21	2.25%
c) Power Boat/Sail Boat/Wake	117	12.53%
d) Shellfishing	36	3.85%
e) Boating/Fishing	11	1.18%
f) Other	88	9.42%

LOCATION

g) The Narrows	11	1.18%
h) Meeting House River	20	2.14%
i) Town Cove	23	2.46%
j) Mausest Inlet	32	3.43%
k) Pleasant Bay	50	5.35%
l) nauset Estuary	5	0.54%
m) Other	59	6.32%

11. Please provide any additional written comments you believe would be helpful in our efforts.

a) Preservation	49	5.25%
b) Water Quality	28	3.00%
c) Shellfish Mgt	32	3.43%
d) Landing/Water	19	2.03%
e) Finfish/Shellfish	9	0.96%
f) Other	216	23.13%

1. Are you:

PERCENTAGES

Resident	56.85%
Property Owner	72.06%
Seasonal Visitor	5.78%
Resident Other Cape Cod	5.78%

2. Please check the appropriate boxes below to indicate your current uses of the waters:

AREAS USED	CLAMS	QUAHAUGS	SCALLOPS	MUSSELS	LOBSTERS	BASS/BLUES/OTHER	FLOUNDER	SWIMMING	SAILING	POWER BOATING	WATER SKI	CANOE/KAYAK	BEACH ACCESS	BEACH WALK	WATERFOWL/HUNTING
TOWN COVE	17.13%	19.59%	8.89%	8.14%	2.68%	9.64%	10.92%	8.24%	9.96%	19.70%	3.21%	9.21%	12.31%	14.24%	2.57%
NAUSET HARBOR	16.70%	10.60%	2.03%	12.96%	4.07%	12.21%	9.74%	13.60%	6.00%	17.77%	1.50%	8.03%	14.67%	18.31%	4.18%
MILL POND	11.67%	9.53%	1.71%	10.71%	0.86%	2.46%	6.10%	6.21%	2.89%	7.92%	0.21%	6.75%	5.35%	12.31%	0.43%
MEET POND&RIVER	6.85%	6.32%	0.64%	0.75%	0.11%	4.39%	4.50%	7.82%	11.46%	20.99%	1.39%	9.85%	5.14%	5.78%	0.32%
LONNIE'S POND&RIVER	4.50%	4.60%	0.21%	0.54%	0.00%	1.39%	2.36%	2.46%	5.57%	10.17%	0.21%	5.78%	2.03%	2.14%	0.11%
AREY'S POND&RIVER	3.00%	2.25%	0.64%	0.43%	0.00%	1.50%	1.71%	2.57%	9.10%	12.31%	0.43%	7.17%	1.82%	2.36%	0.00%
LITTLE PLEASANT BAY	10.06%	9.85%	9.64%	2.03%	0.96%	11.88%	5.78%	18.52%	23.02%	27.84%	4.39%	10.60%	10.92%	12.10%	2.68%
PAU WAH	1.28%	1.50%	1.18%	0.43%	0.21%	1.39%	1.39%	2.57%	4.82%	8.03%	0.43%	4.28%	3.85%	7.82%	0.43%
BIG PLEASANT BAY	5.78%	6.32%	6.85%	1.50%	3.21%	14.56%	4.93%	19.59%	23.98%	28.37%	4.39%	4.28%	12.63%	10.92%	2.14%
QUANSET	1.82%	1.61%	0.32%	0.21%	0.21%	0.96%	0.75%	1.50%	3.53%	4.93%	0.54%	1.28%	2.25%	2.57%	0.11%
CAPE COD BAY	5.89%	6.21%	3.32%	0.96%	0.75%	12.31%	5.67%	33.19%	4.39%	12.74%	1.50%	2.78%	20.45%	30.19%	2.89%
NAUSET BEACH	1.61%	0.75%	0.21%	0.43%	0.21%	11.78%	1.82%	49.89%	2.57%	6.21%	0.54%	0.00%	36.30%	54.93%	2.78%
NAUSET SPIT	3.96%	1.82%	0.64%	2.36%	0.64%	11.24%	1.93%	22.81%	2.89%	8.46%	0.54%	2.78%	23.45%	35.12%	3.10%
NAUSET BEACH TO CHATHAM	1.50%	0.96%	0.43%	0.75%	0.64%	10.39%	1.39%	19.70%	2.36%	6.85%	0.43%	0.86%	22.70%	29.34%	3.75%

2. (Continued)

TOWN LANDINGS USED	PARK TO FISH/SHELLFISH	BOAT LAUNCH/MOORING
GOOSE HUMMOCK	5.78%	10.28%
YACHT CLUB	10.81%	19.27%
ASA'S	9.64%	1.93%
TONSET	5.57%	3.43%
SNOW SHORE	10.60%	6.75%
MILL POND	12.53%	10.06%
PRISCILLA	10.28%	5.89%
RIVER RD	8.24%	18.74%
BARLEY NECK RD	5.14%	6.96%
POCHET	3.32%	3.21%
LONNIE'S	3.96%	4.60%
PAU WAH	5.14%	10.60%
QUANSET	2.89%	6.21%
RT 28	4.39%	14.03%
ROCK HARBOR-ORLEANS	12.31%	0.00%
ROCK HARBOR-EASTHAM	6.75%	12.63%

PERCENTAGES

3. How often do you go shellfishing?

a) Never	43.04%
b) 1/Yr	12.74%
c) 5/Yr	17.34%
d) 10/Yr	8.89%
e) More	13.49%

f) Scallops	0.64%
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Type of license

Commercial	5.14%
Family	37.90%

4. If you have a boat, do you

a) Launch	24.41%
b) Moor	26.55%
c) Both	20.99%

5. If you have a private dock, do others use your dock?

Yes	23.02%
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a) Family	4.71%
b) Neighbors	3.64%
c) Friends	3.00%

6. The activities listed below may enhance boating but could also impact water quality in the long run. Should the town do any of the following?

	Yes	No	
a)	17.56%	66.70%	Re-zone portions of waterfront for marine business?
b)	25.48%	61.13%	Allow private businesses to use public dock purposes (i.e. eco-tours, parasail, instr purposes (i.e. eco-tours, pa
c)	36.51%	51.07%	Expand parking facilities at town landings?
d)	18.52%	65.52%	Increase the number of launching ramps at town landings?
e)	36.40%	48.07%	Allow the construction and use of private docks?
f)	42.51%	42.51%	Expand mooring areas to allow for additional and reduce waiting lists for mooring space

7. The activities below may protect natural resources or improve water quality. Should the town do any of the following?

	Yes	No	
a)	80.84%	7.92%	Expand shellfish seeding program?
b)	66.92%	14.78%	Support development of a shellfish seed grow-out facility?
c)	60.39%	21.95%	Support a marine education facility?
d)	53.43%	26.98%	Promote private aquaculture?
e)	34.15%	44.86%	Promote private aquaculture if it means decreased areas for boating?
f)	54.28%	22.16%	Operate pump-out facility?
g)	9.96%	69.16%	Reduce the number of moorings?
h)	61.35%	23.13%	Increase the amount of no-wake zones to reduce turbidity?
i)	58.67%	13.81%	Encourage "green tourism" activities?
j)	78.91%	3.75%	Continue program of drainage remediation?

8. Maintaining high water quality and healthy natural resources may require personal expense and restrictions on personal activities even if you do not directly on the waterfront. Would you be willing to do any of the following to protect our marine waters.

	Yes	No	
a)	64.13%	17.34%	Pay higher fees for shellfish permit?
b)	56.21%	24.09%	Pay for shellfish seeding?
c)	58.14%	23.77%	Pay for increased enforcement?
d)	40.26%	34.48%	Install a nutrient-reducing septic system at greater cost?
e)	75.37%	11.56%	Reduce or eliminate nitrogen-rich fertilizers on your property?
f)	55.78%	23.77%	Reduce or eliminate all surface water runoff care from entering roadways or wa care from
g)	60.81%	11.88%	Use a boat pump-out facility even if inconvenient?

9. List, in order of importance, the 5 most important activities/uses of the waters to you.

1 = most important 5 = least

PERCENTAGES

	1	2	3	4	5
a) Fish/Shellfish	24.63%	8.35%	9.53%	6.85%	11.99%
b) Power Boat	13.92%	12.31%	8.78%	4.93%	14.99%
c) Sail	16.81%	9.42%	8.57%	5.67%	12.63%
d) Other Boat	5.35%	4.18%	6.75%	2.89%	10.28%
e) Swimming	30.84%	17.45%	14.03%	10.39%	8.46%
f) Beach Activities	22.81%	14.03%	14.78%	9.53%	8.57%
g) Picnic/lunch near Shore	13.92%	8.46%	10.06%	10.17%	11.13%
h) Walk along Shore	30.30%	15.85%	11.03%	9.53%	10.49%
i) Viewing water/scenic beauty	31.26%	9.53%	7.49%	9.21%	13.38%
j) Jet Ski	1.07%	0.11%	0.32%	1.07%	25.27%
k) Wind-surf	2.68%	2.14%	3.64%	3.21%	17.45%
l) Use of Private Dock	6.85%	2.36%	3.85%	2.14%	17.45%
m) Use of town launch ramp	12.31%	6.75%	8.14%	5.89%	12.21%

10. If you have experienced conflicts between the various users of the waters, what are the conflicts and where did they take place?

CONFLICT

a) Jet Skis	11.46%
b) Parking/Landings	2.25%
c) Power Boat/Sail Boat/Wake	12.53%
d) Shellfishing	3.85%
e) Boating/Fishing	1.18%
f) Other	9.42%

LOCATION

g) The Narrows	1.18%
h) Meeting House River	2.14%
i) Town Cove	2.46%
j) Mauseet Inlet	3.43%
k) Pleasant Bay	5.35%
l) nauset Estuary	0.54%
m) Other	6.32%

11. Please provide any additional written comments you believe would be helpful in our efforts.

a) Preservation	5.25%
b) Water Quality	3.00%
c) Shellfish Mgt	3.43%
d) Landing/Water	2.03%
e) Finfish/Shellfish	0.96%
f) Other	23.13%

Appendix

Action Items Fully Addressed

ACTION ITEMS FULLY ADDRESSED

CHAPTER 4: LAND USE				
<i>Action</i>		<i>Time for completion</i>	<i>Responsible Agency</i>	<i>Description of Efforts</i>
LU-2	A percentage of General Business zoned land should be rezoned for less-intensive uses.	Mid-term	Planning Board	Portions of GB District between 6A and Old Colony Way were rezoned May 2002. Changes along Rt. 6A approved at May 2003 TM
LU-4	Revise the Use Table of the Zoning Bylaw to reflect the following: <ul style="list-style-type: none"> • The Use Table should be reconfigured to provide better readability. Apartments associated with commercial buildings within the Industrial District should be limited to 1-bedroom units.	Near-term	Zoning Bylaw Task Force	An updated use table was adopted by Town Meeting in 2006. Limitations on apartments in the Industrial District was defeated by Town Meeting in May of 2000.
LU-5	Require all new subdivisions of 10 or more lots to submit an environmentally sensitive Open Space Residential Development plan.	Near-term	Planning Board	Defeated by Town Meeting, May 2002. Defeated by Town Meeting, May 2003 In May of 2005 the Town Meeting amended the Open Space Residential Development Bylaw by allowing cluster subdivisions by right therefore eliminating the special permit requirements for this type of subdivision.
LU-8	Evaluate zoning districts along Old Colony Way, considering existing land uses, traffic, and future growth potential.	Near-term	Planning Board	Rezoning approved at May 01 TM
LU-9	Expand the boundaries of the Village Center as appropriate to incorporate businesses on both sides of Main Street and Route 28.	Near-term	Planning Board	Boundary amendments approved by May 2002 TM.
LU-10	Amend the Rural Business District in East Orleans to remove parcels that would more appropriately be zoned for residential use.	Near-term	Planning Board	The Zoning Map was amended in May 2005. A total of 6 residential properties were removed from the East Orleans RB District.
LU-11	Revise the Subdivision Rules and Regulations to include a defined section that explains the decision making criteria for approval or denial of a subdivision plan.	Near-term	Planning Board	Board determined action not necessary. Board continues to follow state and local rules and regulations for approving or denying plans.

ACTION ITEMS FULLY ADDRESSED

CHAPTER 5: NATURAL RESOURCES				
<i>Action</i>		<i>Time for completion</i>	<i>Responsible Agency</i>	<i>Description of Efforts</i>
NR-2	Develop an overall shellfish management program, funded primarily through licensing fees, to protect and enhance local resources.	Near-term	Shellfish Dept.	FY07 budget will include request for shellfish seed and grow-out equipment.
NR-4	Consider creating a shellfish revolving fund to provide financial support of shellfish enhancement programs.	Near-term	Board of Selectmen	Funded 100% through budget.
NR-7	Continue marine water quality monitoring through volunteers and financial support of the Town.	Continuing	Board of Selectmen	Water Quality Task Force has expanded its sampling program to include nutrient testing in cooperation with PBMA and WWMSC. Ongoing – Additional funding provided.
NR-9	Develop an active public awareness program to encourage minimum use of fertilizers, herbicides and pesticides.	Near-term	Conservation Commission	New brochures completed in 2003.
NR-11	Consider adopting and enforcing regulations to limit development in FEMA V Zones.	Near-term	Conservation Commission	Town staff reviewed Orleans' status with FEMA officials. Consensus of staff that additional regulations are unnecessary. Cons. Comm. has reviewed.
NR-13	Develop and implement a program of water quality monitoring for the Town's fresh waters.	Near-term	Board of Selectmen	Programs in place for Crystal, Pilgrim, Baker's Pond, Pilgrim Lake. "Snapshot" of all fresh ponds August 2001 – ongoing.
NR-14	Continue efforts to permanently solve the cormorant problem at Cedar Pond.	Continuing	Board of Selectmen	Police program underway and being evaluated for long-term effectiveness - ongoing.
NR-16	Develop criteria for new docks and shoreline structures. Make regulations consistent with the recommendations of the Pleasant Bay Resource Management Plan.	Near-term	Conservation Commission	Regulations adopted January 2000
NR-19	Establish a management plan for the Town Watershed areas.	Near-term	Board of Water Commissioners	Approved June 21, 2000
NR-24	Consider adopting a regulation that will require waterfront property owners to plant only native species within 50 feet of a resource area.	Near-term	Conservation Commission	Regulation changes adopted March 2002
NR-26	Water quality measurements for Namskaket Creek, Mill Pond, and Town Cove should be incorporated into the efforts of the Water Quality Task Force.	Near-term	Water Quality Task Force	Water quality testing begun on all areas.

ACTION ITEMS FULLY ADDRESSED

NR-28	Consider adopting a regulation that would require advanced treatment whenever a septic system setback is less than 100 feet.	Near-term	Board of Health	When the Board of Health amended its Subsurface Sewage Disposal Regulations (December 2003) the Board determined that adoption of such a provision would not be appropriate until the recommendations of the Wastewater Management Plan are set. The Board of Health will be revisiting its Subsurface Sewage Disposal Regulations upon the completion of the town's Wastewater Management Plan.
NR-29	Amend Zoning Bylaws, Site Plan Review section, to provide for the protection of specimen trees.	Near-term	Planning Board	Found to be unnecessary, based on existing regulation 164-33-IV. F. which require retention of any tree larger than 6" caliber.
NR-30	Investigate the feasibility and implications of extending the current 50-foot undisturbed wetland buffer to 100 feet for the entire town.	Near-term	Conservation Commission	Report on issue forwarded to Board of Selectmen. No further action taken.

ACTION ITEMS FULLY ADDRESSED

CHAPTER 6: ECONOMIC DEVELOPMENT				
<i>Action</i>		<i>Time for completion</i>	<i>Responsible Agency</i>	<i>Description of Efforts</i>
ED-3	Perform a consumer preferences study to determine what viable businesses or services are needed.	Near-term	Planning Department	Public survey completed Dec. 2000 Additional public input gathered through Village Center Workshop, August 2005.
ED-4	Explore the feasibility of establishing as an Economic Opportunity Area (EOA) the business district on Route 6A from the Eastham line to the intersection of Route 6A & Route 28, and for the Industrial District, to allow the Town to participate in State economic development programs.	Mid-term	Planning Department	Requires identification of blighted economic areas, which do not exist in sufficient concentrations in Orleans.
ED-10	Investigate and identify Tax-Incentive/Financing programs available to attract investment in existing properties.	Near-term	EDC	EDC discovered that TIF requires designation as an Economic Opportunity Area, which must describe economic "blight" conditions in area. Since Orleans does not qualify, no further action will be taken.
ED-15	Perform a detailed analysis of all business districts to obtain an accurate inventory of existing uses as well as to determine planning potential, and to build a database.	Near-term	Planning Department	Business parcel inventory completed. Town Clerk continues to maintain a business list of licensed business in Town.
ED-16	Continue to work with the Chamber of Commerce to plan special events and focus marketing efforts on activities that lengthen the annual tourist season.	Continuing	Board of Selectmen	Chamber of Commerce handling former EDC role.
ED-17	Consider the designation of the Village Center as a Growth/Activity Center to foster a development style that is consistent with a small, focused community area to minimize further land consumption and preserve open space."	Mid-term	Planning Board	Evaluation of Growth/Activity Centers found little benefit to the community.

ACTION ITEMS FULLY ADDRESSED

CHAPTER 7: COMMUNITY FACILITIES AND SERVICES				
<i>Action</i>		<i>Time for completion</i>	<i>Responsible Agency</i>	<i>Description of Efforts</i>
CF-5	Complete planning for a new Town Hall	Near-term	Town Hall Building Committee (now Municipal Properties Study Committee)	Project scheduled for Town Meeting approval November 2005. If approved, proceeding with construction through FY07.
CF-6	Construct a New Town Hall	Near-term	Board of Selectman	Construction of the New Town Hall is underway and expected to be completed in Febuary of 2007.
CF-7	Maintain a current list of all Town facilities and their actual cash value or replacement cost, and insure these facilities accordingly.	Continuing	Town Administrator	Re-appraisals completed June 2001. Town's insurance carrier will update appraisals every 3 years.
CF-14	Replace failed septic system at Nauset Beach.	Near-term	Parks & Beaches Department	Completed
CF-16	Develop a schedule to implement improvements to parks and beaches.	Near-term	Parks & Beaches Department	Completed
CF-18	Develop a schedule to implement improvements to all Town Landings.	Near-term	Harbormaster	Schedule being implemented by Harbormaster.
CF-20	Consider creation of a Town or regional water analysis lab.	Near-term	Board of Selectmen	Board's position is that all testing should be done by an outside lab and not out of the Town's Community Center. Samples should go to Barns. County Lab.
CF-23	Update the Town's Water Conservation Plan.	Near-term	Water Department	Submitted to State, awaiting approval.
CF-24	Conduct a feasibility study of greensand or other filtering process for removal of iron and manganese.	Near-term	Water Department	Study completed 2001.
CF-25	Based on the findings of the study in CF-24, implement a program to remove iron and manganese from the water system.	Mid-term	Board of Water Commissioners	Iron & manganese filtration plant completed and on-line as of summer 2005.
CF-31	Complete the capping of the landfill, and continue monitoring the groundwater to anticipate potential impacts to private wells and surface water.	Near-term	Highway Department	Capping is complete.

ACTION ITEMS FULLY ADDRESSED

CHAPTER 8: HEALTH AND HUMAN SERVICES				
<i>Action</i>		<i>Time for completion</i>	<i>Responsible Agency</i>	<i>Description of Efforts</i>
HS-1	Establish a new permanent position of coordinator and administrator for all health and human service functions of the Town.	Near-term	Board of Selectmen	Nursing/health objectives were accomplished through hiring of additional staff, including COA Outreach and Wellness Facilitator, two additional EMTs and designation of an EMS Coordinator in the Fire Department, and a part-time health inspector. Although there is not a coordinator in particular, the need has been covered in another way. Will explore expanded use of the Town's web site as a clearing house of information and resources for public access.
HS-3	Evaluate and work towards establishment of day care for children consistent with the needs of Orleans parents.	Near-term	Board of Selectmen	Orleans After School Program, summer program had funding restored in Nov. 05 through a Town Meeting article. Town funded – ongoing.
HS-6	Continue the support of five-day affordable adult day care at the Council on Aging.	Continuing	Council on Aging	Program is fully self-supporting, operating at 62-78% capacity.

ACTION ITEMS FULLY ADDRESSED

CHAPTER 9: TRANSPORTATION				
	<i>Action</i>	<i>Time for completion</i>	<i>Responsible Agency</i>	<i>Description of Efforts</i>
T-4	Develop a policy for services to private roads.	Near-term	Board of Selectmen	The town has no policy for services to private roads. No further action to be taken at this time.
T-6	Commit necessary resources to manage tree and vegetation cutback work along all public roads.	Near-term	Highway Dept.	Tree Warden hired. Additional labor and equipment resources required for adequate maintenance.
T-7	Fund the Highway Department at an appropriate level to support the maintenance and replacement of new and existing roads.	Continuing	Board of Selectmen	See T-2. Single Article funding of \$750,000 approved in May 2005.
T-11	Conduct a comprehensive traffic study of the area serving the Industrial District, from Skaket Corners to Route 28.	Near-Term	M	Bruce Campbell and Associates completed a study in 2003. A \$500,000 PWED Grant was awarded in 2004/5 for the re-location of Lots Hollow Road.
T-13	Conduct a comprehensive traffic study of the Village Center, concentrating on problems at Route 6A and Main Street.	Near-term	Planning Department	Study completed in 2004, to be used as part of Village Center Master Plan efforts.
T-17	Petition MassHighway to remove the "Shore Road" sign at exit 12 and install signs at town entry points directing through traffic to bypass Route 6A and remain on Route 6.	Near-term	Highway Dept.	Sign has been changed to "Nauset Beach" exit 12.
T-19	Facilitate State construction of a Park & Ride lot on Bay Ridge Lane.	Mid -term	Highway Department	MHD determined that site is not suitable for Park and Ride lot due to slope issues.
T-26	Consider water-based travel as an alternative to using cars to access the downtown and beaches.	Mid-term	Board of Selectmen	Determined to take no action at this time.
T-30	Enforce parking regulations on public streets and at Town landings	Near-term	Board of Selectmen	This is an ongoing action. Adequately addressed
T-31	Work with State officials to re-evaluate speed limits on State roads.	Mid-term	Board of Selectmen	Ongoing. Adequately addressed

ACTION ITEMS FULLY ADDRESSED

CHAPTER 10: AFFORDABLE HOUSING				
<i>Action</i>		<i>Time for completion</i>	<i>Responsible Agency</i>	<i>Description of Efforts</i>
AH-6	Consider amending the Zoning Bylaws to allow dormitory-type housing for seasonal workers under proper controls.	Near-term	Zoning Bylaw Task Force	Congregate housing regulations approved May 2001. Further regulations subject to completion of WMP.
AH-8	Consider amending the Zoning Bylaws to facilitate affordable housing through small rental units in private homes.	Mid-term	Zoning Bylaw Task Force	Adopted Zoning amendment to allow accessory apartments by right in all Residential Zoning Districts. Council on Aging has a new program to link elderly homeowners with prospective renters of single rooms within the home.
AH-10	Develop a Continuing Affordable Housing Plan to meet future needs, both rental and ownership, to reach the 10% goal.	Near-term	Housing Task Force	Joint committee (HTF/HA) formed 2000 Housing Action Plan completed, approved by DHCD.
AH-13	Study the 1999 Barnstable Inclusionary Bylaw. Consider whether such a bylaw is suitable for Orleans.	Near-term	Planning Department	Barnstable bylaw struck down by Courts. Therefore, no action should be taken to adopt a similar bylaw.

ACTION ITEMS FULLY ADDRESSED

CHAPTER 11: OPEN SPACE				
<i>Action</i>		<i>Time for completion</i>	<i>Responsible Agency</i>	<i>Description of Efforts</i>
OS-1	Create an "Open Space Preservation Reserve" account/line item in the budget for the accrual of Land Bank and annually appropriated funds to be used for open space, conservation and recreation land permanent protection.	Near-term	Board of Selectmen	Currently addressed in CIP for Open Space purchases with 5 year commitment, not appropriated for town budget line item.
OS-4	Fund the Open Space Preservation Reserve account of the budget at an amount consistent with the goals of this plan for preserving open space, conservation and recreation lands.	Continuing	Board of Selectmen	Open Space Reserve Account has not been established. Open Space/ Land Bank Committee anticipates that the Land Bank may be depleted in FY05. CIP – 5 year funding.
OS-7	Continue to improve public access to open space and conservation sites by making them handicap-accessible where possible, and by adding information signs, benches, trail route markers, limited parking and other unobtrusive amenities as appropriate to each site.	Mid-term	Conservation Commission	Christian property improvements (rough trail, viewing platform, ADA) completed. Seasonal toilet installed at Crystal Lake. Parking lot constructed at Windmill Park. Smith Parking lot completed. Continuing work.
OS-12	Define the specific recreation needs for small pocket parks in East Orleans, South Orleans, Rock Harbor and Skaket, as appropriate to each neighborhood site.	Near-term	Planning Department	Need for small parks not sufficient to support action. Focus on maintaining a variety of recreational opportunities at centralized facilities near schools.
OS-13	Plan, design and construct appropriately outfitted pocket park recreation areas in designated neighborhoods based on assessed local recreation needs	Far-term	Planning Department	No further action to be taken at this time.
OS-19	Plan and design a Town Cove Waterfront Park incorporating recommendations of the 1991 Town Cove Landscape Preservation Project, and coordinate this effort with the Village Center improvement project.	Mid-term	Planning Department	Shore path project rejected by neighbors. Waterfront parcels on Town Cove are being acquired periodically.
OS-20	Consider Establishing a Recreation Advisory Committee to provide needed advice and technical assistance to the Recreation Department.	Near-term	Board of Selectmen	Committee re-established and meeting regularly.
OS-21	Complete construction of the Orleans segments of the Cape Cod Rail Trail bike pathway, including urging the State to expedite construction of a bridge over Route 6, to link the Rail Trail with the completed Brewster and Eastham segments.	Near-term	Highway Dept.	Completed

ACTION ITEMS FULLY ADDRESSED

CHAPTER 12: HISTORIC PRESERVATION AND COMMUNITY CHARACTER				
<i>Action</i>		<i>Time for completion</i>	<i>Responsible Agency</i>	<i>Description of Efforts</i>
HC-6	Develop and adopt an appropriate Demolition Delay Bylaw to prevent the loss of historic structures.	Near-term	Historical Commission	Adopted May 2000. Article to extend delay period from 6 to 18 months under consideration at Fall 2005 Town Meeting.
HC-9	Adopt design guidelines for businesses to encourage building and site design that is in harmony with a Cape Cod village. Standards should be developed for building materials, facades, rooflines, architectural design, pedestrian access, and safety.	Near-term	Planning Board	Updated Architectural Review Committee regulations in the zoning bylaw adopted at 2006 Annual Town Meeting. New regulations promote development that is in harmony with the Cape Cod Village style.
HC-11	Improve the gateways to Orleans by improving landscaping & screening and removing sign clutter at Skaket Corners and the Eastham rotary.	Continuing	Parks & Beaches Department	"Welcome to Orleans" sign added on Route 6A. All Town properties are landscaped. Need for Chamber or OIA to work with private landowners on improvements.
HC-12	Develop a working relationship with ComElectric to revisit the issue of relocating the substation at Skaket Corners and to ensure that future facilities do not adversely impact the character of the community.	Continuing	Board of Selectmen	Ongoing. CommElectric is now NStar.
HC-13	Review and alter regulations for lighting to reduce glare, eliminate spillage, and eliminate excess lighting.	Near-term	Zoning Bylaw Task Force	2004 Annual Town Meeting adopted a General Bylaw that prohibits glare and light trespass onto abutting properties. All lights on commercial properties must come into compliance by May 2009.
HC-18	Adopt a set of guidelines for any proposed alterations to Scenic Roads.	Near-term	Planning Board	Based on past record of modifying projects instead of denial, action is deemed unnecessary.
HC-19	Establish a Town policy to define and protect vista views	Near-term	Board of Selectmen	Policy developed by Board of Selectmen, 2001

Appendix

Glossary of Terms

Glossary Of Terms

Best Management Practices (BMP) – Stormwater management techniques and devices that are acceptable to the Massachusetts Department of Environmental Protection, including retention/detention basins, vegetated swales, infiltration galleys, etc.

Bicycle Lane – A striped or otherwise marked area along a street that allows sufficient space for bicycles to ride alongside vehicle traffic.

Bicycle Path – A designated path set apart from and running parallel to a street that physically separates bicycles from vehicles.

Bicycle Trail – A travel corridor dedicated solely for alternative transportation, including bicycles, pedestrians, and sometimes horseback riding.

Buildout Analysis – An estimate of the potential for future development based on the amount of available land and the limitations of existing regulations.

Economic Opportunity Area - State designation of an area with a particular economic need or priority for development. The purpose is to provide incentives to encourage businesses to expand, relocate, or build new facilities in order to create permanent new jobs within the Area.

Environmentally Compatible – Activities which do not cause adverse affects on natural ecosystems.

FEMA A – Areas of the 100-year flood zone.

FEMA V - Areas of the 100-year flood with velocity (wave action).

Infrastructure – Structures and services necessary to support certain types of activities. Used most commonly in this Plan to refer to roads, utilities, and communications.

Marine Resources Survey – An opinion survey distributed in 1995 to determine residents views on a variety of issues related to coastal access and marine activities.

Primary Coastal Dune – The part of a dune system closest to the edge of the sea that is subject to the most intense impacts of a storm.

Redevelopment – A substantial physical reconstruction or a change of use of an existing building.

Relative Priority – The term as used in the Implementation Program of this plan. It shall mean a comparison of the cost and effort required to complete each action item in the plan. Cost

includes the direct costs to the Town as well as the cost of staff time devoted to a project. Effort may include the time required, the type of public process(es) required, the number of steps which are necessary, or the overall complexity of a project.

SCORP – State Conservation, Open Space, and Recreation Plan. A State-wide plan of the Massachusetts Department of Environmental Management.

Stormwater runoff – The volume of water in a storm that cannot be absorbed into the ground quickly enough and is channeled by gravity to low areas. Untreated stormwater may contain coliform bacteria, nutrients, pathogens, and/or polycarbon pollutants.

Strip Development – Linear commercial development along a major street that is oriented toward an automobile dominated shopping environment.

Town Survey – 1994 public opinion survey sent to all households. This survey received a response rate of nearly 40% and was used as a basis for developing goals and recommendations that are in sync with the opinions of residents.

Upland Area – Land area that is not within a resource area under the jurisdiction of the Conservation Commission.

Vernal Pool – A low area of land that contains surface water only during the short periods of the year that is used as part of the lifecycle of certain amphibious animals.

Village Center – The area in the central core of the downtown, as designated on the Orleans Zoning Map as the Village Center Overlay District.

Village Center Workshop – A workshop held in December 1998, attended by nearly 200 residents and business owners to determine residents interests in the future of the Village Center.

Village Growth/Activity Center – Small, pedestrian-oriented settlements which are suitable for a mix of residential and compatible small-scale commercial uses.

Wastewater – The liquid component of septic systems that leaches into the ground.