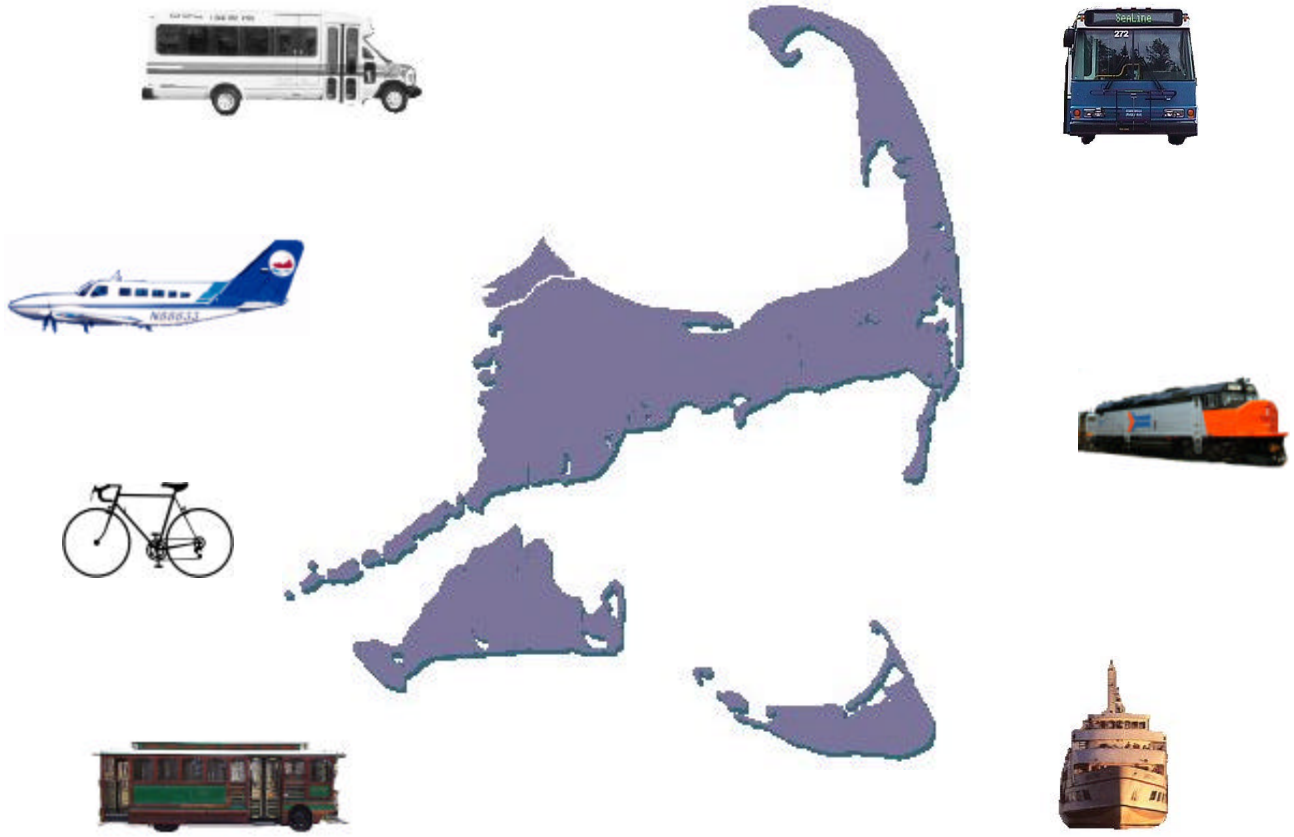
Cape Cod Transit Task Force



Five-Year Public Transportation Plan

June, 2002

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Prepared For:

Cape Cod Regional Transit Authority
On behalf of the
Cape Cod Transit Task Force

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PREFACE

Momentum has been building over the past twenty months to address transportation, growth, development and quality of life issues on Cape Cod and the Islands. Starting with the Cape Cod Transit Summit in February 2000 and the formation of the Cape Cod Transit Task Force, region-wide priorities regarding public transportation on Cape Cod and the Islands, and goals and objectives for guiding short-range planning have been identified. There is consensus that improved public transportation services are needed both *to mitigate seasonal traffic congestion* and *to meet the mobility needs of the year-round transit-dependent population*. However, there is also wide ranging opinion on the characteristics and qualities of an ideal public transportation system for Cape Cod. Translating broad statements of goals and objectives into specific policies, investments, and services is a challenging process that requires an understanding of competing interests and varying points of view, as well as the trade-offs associated with decisions concerning growth, resource protection, and transportation.

The U.S. Department of Transportation's Volpe National Transportation Systems Center has been working in cooperation with the Cape Cod Regional Transit Authority, the Cape Cod Commission, and other organizations participating on the Cape Cod Transit Task Force to develop this short-range five-year plan for public transportation to, from, and within Cape Cod and the Islands. The recommendations incorporated in this plan result from an extensive public process that involved approximately 50 public meetings, two large-scale summits, and a summit focused on outer-Cape transportation issues. The findings from this five-year plan are anticipated to be deployed for the existing transportation network, and would also serve as an initial basis for a subsequent, more comprehensive, longer-range (25-year) plan. This five-year planning effort encompasses both operational and initial capital improvements, and builds on current plans and proposals.

The vision this plan sets forth is to provide a comprehensive, accessible, and integrated public transportation system that allows the traveler to say *"I CAN get there from here…WHEN I want to go!"*

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List of Acronyms and Abbreviation

AVL	Automatic Vehicle Location
BCHS	Barnstable County Human Services
CACO	Cape Cod National Seashore
CCCRR	Cape Cod Central Railroad
CCC	Cape Cod Commission
CHAMBER	Cape Cod Chamber of Commerce
CCRTA	Cape Cod Regional Transit Authority
CMAQ	Congestion Mitigation and Air Quality
DEP	Department of Environmental Protection
EOTC	Executive Office of Transportation and Construction
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GATRA	Greater Attleboro Taunton Regional Transit Authority
GIS	Geographical Information Systems
HOV	High Occupancy Vehicles
ITS	Intelligent Transportation Systems
JPO	Joint Program Office
MBTA	Massachusetts Bay Transportation Authority
MHD	Massachusetts Highway Department
MPO	Metropolitan Planning Organization
MVC	Martha's Vineyard Commission
NOAA	National Oceanic and Atmospheric Administration
NRTA	Nantucket Regional Transit Authority
NPS	National Park Service
P&B	Plymouth and Brockton Street Railway Company
RDCs	Rail Diesel Cars
RPP	Regional Policy Plan
SSA	Woods Hole, Martha's Vineyard and Nantucket Steamship Authority
TMA	Transportation Management Association
USDOT	United States Department of Transportation
VRTA	Martha's Vineyard Regional Transportation Authority

Acknowledgements

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- Congressman William Delahunt's Office - Mark Forest (co-chair)
- Massachusetts Executive Office of Transportation and Construction - Tom Cahir (co-chair) and Ed Carr
- Cape Cod Commission - Margo Fenn
- Cape Cod Central Railroad - John Kennedy
- Barnstable County Human Services - Len Stewart
- Cape Cod Chamber of Commerce - Wendy Northcross and Dan Wolf
- Southeastern Massachusetts Private Motor Carriers Association - John Greene
- Barnstable Co. Assembly of Delegates and Lower/Outer Cape Community Coalition - Mary Lou Petitt
- Massachusetts Highway Department - Doug Kelleher
- Cape Cod National Seashore - Ben Pearson
- Woods Hole, Martha's Vineyard and Nantucket Steamship Authority - Armand Tiberio and James Swindler
- Cape Cod Regional Transit Authority – Robert Parady

In addition, special acknowledgments are offered to individuals who are not formal members of the CCTTF, but contributed significantly to the development of this Five-year Plan:

- Angela Gompert, Martha's Vineyard Transit Authority
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- J.B. Riggs Parker, Woods Hole, Martha's Vineyard and Nantucket Steamship Authority Board Chair
- Christopher Lovelock, interested citizen

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1. INTRODUCTION

This five-year plan calls for easily implemented improvements within the context of the existing public transportation network. It encompasses both operating and limited capital improvements, and builds on current plans and proposals, forming the basis for a more comprehensive, longer-range 25-year plan.

The focus of this plan began with improving public transit. However, alleviating congestion on Cape Cod requires a multi-modal system-wide approach that addresses both intra- and inter-regional travel and considers public policy and institutional issues. Another critical component to planning the Cape's public transportation resources is consideration of its geographical and economic relationship to Martha's Vineyard and Nantucket. The growth in travel to and from the Islands requires the implementation of effective strategies, which will result in the efficient management of public transportation resources both on and off the Cape, to move people more efficiently and result in less congestion.

As with any public transportation plan, challenges exist specific to the area or region, which must be addressed. For Cape Cod, its unique geography along with its historical and environmental conditions require that this plan address:

- Providing traveling choices to meet the needs of a rapidly expanding year round population;
- Facilitating connections between various travel modes;
- Supplying alternative services between Cape Cod and other regions, including the Islands of Martha's Vineyard and Nantucket;
- Ensuring that any infrastructure investments are in keeping with the character of Cape Cod and the Islands, and are supported by a majority of the public; and,
- Meeting Health and Human Services mobility needs for access to employment, healthcare, social services, family support tasks, and education.

The plan focuses on meeting intra-regional and inter-regional travel requirements. It is vital to recognize that planning for Cape Cod and the Islands must be undertaken to include a larger regional context as shown in Figure 1.1, including Boston, New England and the New York City metropolitan area. This distinction is made to ensure that the mobility needs of Cape Cod and the Islands' year round residents are addressed while planning is conducted to help alleviate the increasing levels of congestion, as more people have discovered Cape Cod and the Islands as year-round retirement, and vacation destinations.

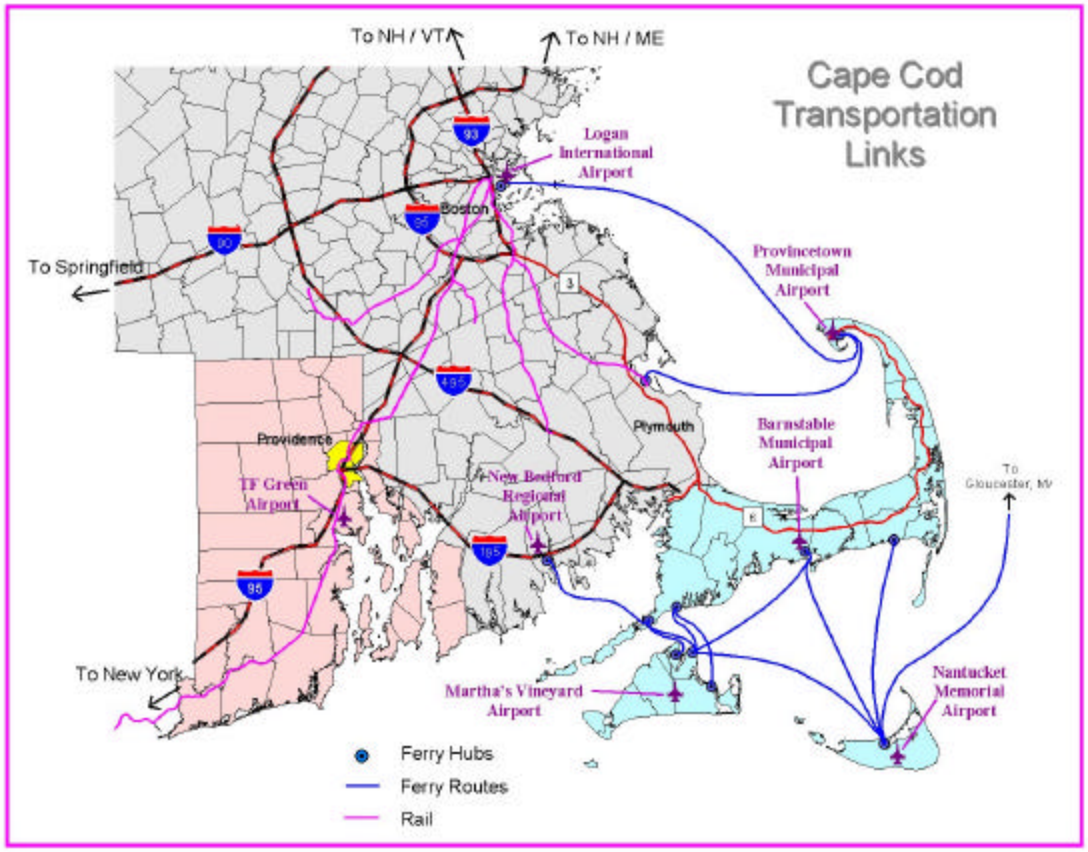

Figure 1.1 Cape Cod Regional Transportation Links

1.1 BACKGROUND

Momentum for this five-year plan began with the Cape Cod Transit Summit I, which was convened in February 2000. Sponsored by the Cape Cod Regional Transit Authority (CCRTA) and the Cape Cod Chamber of Commerce, the purpose of the Summit was to develop a community consensus on the future of public transportation on Cape Cod. More than 100 people attended, including Congressman William Delahunt, Executive Office of Transportation and Construction Secretary Kevin J. Sullivan, CCRTA Advisory Board Members, stakeholders, and the public.

Various views were expressed regarding public transportation needs and priorities for the Cape. There was consensus that improved public transportation services were needed both to mitigate seasonal traffic congestion, and to provide mobility options for the year-round population. However, there was wide ranging opinion on the characteristics and qualities of an ideal public transportation system for Cape Cod.

The Cape Cod Summit resulted in the formation of the Cape Cod Transit Task Force (Task Force) in October 2000 by Executive Office of Transportation and

Construction Secretary Kevin J. Sullivan. Soon after, the Task Force contracted with the U.S. Department of Transportation's John A. Volpe National Transportation Systems Center (Volpe Center) to examine the region's public transportation system and prepare a plan that identified actions to be implemented incrementally during the five-year planning period. A second Transit Summit was convened in March 2001 to report on what progress had been made, and to solicit public input.

The Task Force is the main advisory committee for the 5-Year Cape Cod Public Transportation Plan being conducted by the Volpe Center. The Task Force consists of stakeholders representing federal, state, and local officials, social service providers, as well as public transportation providers for the Cape Cod region. Members of the Task Force are cited by name in the acknowledgements section.

1.2 PLAN FRAMEWORK

The sections of this Plan include:

- A description of existing socioeconomic conditions and trends,
- The current public transportation system,
- Recommendations for near- (1-2 years) and long-term (3-5 years) projects with cost estimates by mode,
- Marketing strategies,
- Possible funding sources, and
- Institutional options for ensuring effective management of Cape Cod's public transportation resources.

This plan is intended to be a routemap for improving public transportation services. It considers all modes other than automobile, using an identification of service issues and limitations as a basis for determining sets of remedies that are consistent with the Task Force's goals and objectives, as well as the values that have been historically important to Cape Cod residents. The consensus of the Task Force was to be realistic in public transportation planning, and to consider solutions with available funding and resources.

1.3 PLANNING EFFORTS AND SUCCESS TO DATE

The Volpe Center was instructed by the Task Force in October 2000 to produce "implementable" action items that would be presented at Transit Summit II (in March 2001) for implementation during the 2001 summer season, in addition to producing this Five-Year Public Transportation Plan. The Volpe Center presented the following recommendations at Transit Summit II:

- Implement schedule coordination of all public transportation modes;

- Introduce Relax and Ride – a motorcoach from the Rt. 128 commuter rail parking lot to Woods Hole with a one-price ticket for bus, steamship, and the Martha's Vineyard Transit Authority (VTA);
- Develop a targeted marketing campaign to increase awareness of CCRTA routes and services;
- Introduce Sunday CCRTA service on the SeaLine, Hyannis to Orleans, and Villager fixed routes, in part to facilitate 'car-free' Cape weekends, and reduce congestion levels;
- Discontinue the Falmouth-Mashpee Trolley, the Hyannis Area Trolleys, the Hyannis Park & Ride Shuttle, and the Dennis Trolley due to low ridership and high costs;
- Shift the early morning CCRTA Hyannis to Orleans bus to trip to a late afternoon trip;
- Add three daily round trips to the CCRTA SeaLine schedule, and
- Add two summer evening bus round trips from Hyannis to the Dennisport shopping area (via Patriot Square) along the Hyannis to Orleans route to substitute for the elimination of the evening Dennis Trolley services.

Thus far, the results have been encouraging. The following actions have been taken since Transit Summit II:

- Several schedule coordination meetings were held between transportation service providers, and they have agreed to a yearly schedule coordination summit before schedules are printed;
- The Relax and Ride service was initiated for 10 weekends commencing on July 4th weekend and ending Labor Day weekend. Although evaluation activities are currently being conducted, Massachusetts Congestion Mitigation and Air Quality (CMAQ) funds have been earmarked for the summer 2002 season; and
- The under-performing trolley services were cancelled, and the operating funds from these services were used to fund the recommended route proposals and Sunday Service. These actions were approved and implemented by the CCRTA Advisory Board. This led to a summer 2001 CCRTA ridership increase of 25 percent over the same period in 2000. Ridership on the Hyannis to Orleans route was up 111 percent, the Provincetown/Truro Shuttle was up 48 percent, and the SeaLine bus route was up 26 percent. This dramatic increase in ridership is directly related to the Volpe Center early implementation recommendations, and other innovative measures undertaken by the CCRTA staff, including an extensive marketing campaign throughout the summer[1].

[1] CCRTA staff in conjunction with Chip Bishop Communications and Management coordinated the summer 2001 marketing efforts, discussed in more detail in Chapter 5.

2. EXISTING CONDITIONS AND TRENDS

An understanding of existing conditions and trends provides an opportunity to define the public transportation problems facing Cape Cod. It also provides the context for formulating programmatic recommendations and implementing strategies.

The fact is that Cape Cod's roadways have become increasingly congested, and continued auto dependency by year-round and in-season populations must be limited to avoid permanently damaging Cape Cod's natural allure and its economy. Another concern is enhancing and/or introducing mobility options that serve the needs of the growing number of Cape Cod's elderly and low-income populations who cannot drive or afford to own an automobile, and shifting full-time residents commuting to off-Cape sites to high occupancy modes.

The extent of the transportation problem is tied to demographics, income levels, and suburban-like development patterns. The planning challenge goes beyond expanding available public transportation resources to meet increases in travel demand. Planned public transportation services must be consistent with Cape Cod's interests in preserving its historical, human-scaled rural villages and seacoast, as well as its natural resources – the sea, sand dunes, salt marshes, and clean air.

2.1 AUTO TRAVEL – A HISTORICAL PERSPECTIVE

The scope and scale of change on the Cape over the past half-century has been dramatic. With the country's increasing dependence on automobile travel, along with the construction of a highway network that facilitates intra- and interstate travel, the Cape has become far more accessible to people living in the Boston and Providence metropolitan areas, Connecticut, New York, New Jersey and Pennsylvania. Cape Cod, which had historically been geographically distinct and sparsely populated with only a few service centers, has become increasingly more suburbanized. It has also become a popular vacation destination along the east coast, is an attractive place to live and retire, and an attractive year-round residence for Boston-area workers.

These changes have seriously affected traffic levels over the last 25 years. As illustrated in Figure 2.1, which contrasts average annual and summer weekday bridge crossings from 1985 to 1998, average annual traffic levels at the Sagamore and Bourne Bridges now exceed levels experienced 15 to 16 years ago at the height of the summer.

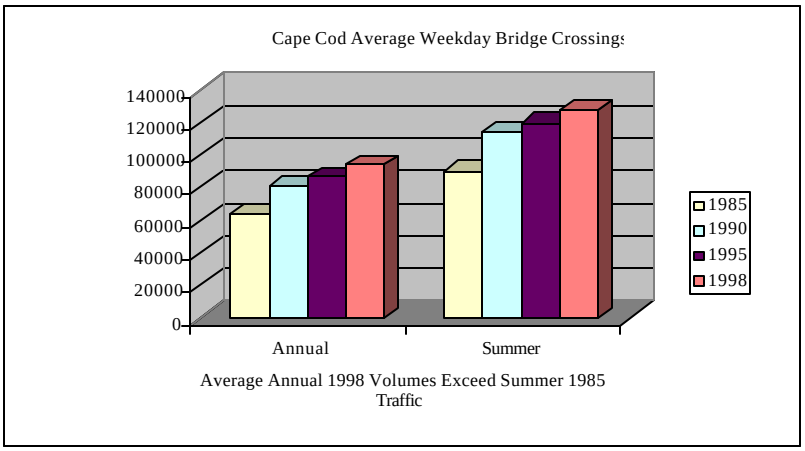

FIGURE 2.1 Weekday Bridge Traffic

Besides the tremendous growth in year-round residents, the Cape and the Islands have become very popular tourist destinations from May through October. The regional population is estimated to triple during the summer[2], and as many as 5 million people visit the National Seashore each year[3]. Traffic levels on the Cape are compounded by the fact that most people traveling to the islands must connect with either air service at Barnstable Municipal Airport or ferry services located in Hyannis and Woods Hole.

2.1.1 Cape Cod Commuters

The most recent census data available for Cape Cod commuters is for 1990. The data indicates that of the 81,779 year round Cape residents who held a job, 10,446 or 12.8 percent commuted to a job outside of Barnstable County. Of this number, 2,011 or 19 percent commuted to the Boston area, and 1 percent commuted to the Islands, and the remaining 80 percent traveled to other off Cape job locations.

While figures from the 2000 Census are not currently available, the expectation is that the commuting patterns of year-round residents have changed significantly since 1990, with a larger number of residents commuting to the Boston area. The introduction of the Old Colony Commuter Rail Line with extensions as far south as Kingston and Middleboro has attracted a number of commuters who drive to either of these rail locations, park their cars and catch a train destined for South Station. The intercity bus ridership has also increased along with the frequency of service. According to the 1990 census, only 371 of the Boston bound commuters used the bus. Bus ridership counts for 2000 indicate that an average of over 1,000 commuter round trips are made from the Cape to the Boston area every weekday. In addition to this number, an average of 375 one-

[2] Source: Cape Cod Commission, 2000
[3] Source: Cape Cod National Seashore, 2000

way trips per day are made on the Logan Direct service operated by Plymouth and Brockton Street Railway Bus Lines.

2.2 DEVELOPMENT PATTERNS

Automobile dependency has paved the way for sprawling suburban growth throughout the country. As witnessed by long-time Cape residents, suburbanization generates more automobile travel, which then stimulates more land development and traffic.

The acreage devoted to farming on the Cape declined by more than 50 percent over the last 50 years. At the same time, residential acreage more than tripled, followed by almost an equal rate of change in land dedicated to commercial development.

2.3 LAND USE PLANNING

The Regional Policy Plan (RPP) prepared by the Cape Cod Commission, asserts that transportation and land use planning should be coordinated to:

- Manage growth in line with the carrying capacity of the environment
- Concentrate growth in preserved or newly-created village centers
- Prohibit strip development outside designated growth centers
- Protect natural resource areas

One of the Commission's key implementation tools is its "village-style" model bylaws/ordinance. It channels new development into growth centers and historic villages. The densities that are encouraged by the RPP and the model bylaw or ordinance improve the viability of public transportation. Public transportation works best as an alternative to the automobile – from both a service and financial perspective - where passengers can walk to a bus stop, transit station, or terminal and to their destinations.

2.4 DEMOGRAPHICS

From 1970 to 2000, the population residing in Barnstable County, Martha's Vineyard, and Nantucket more than doubled from 106,547 to an estimated 246,737[4]. The rate of growth in the 1970s was over 50 percent; it then slowed to about 26 percent in the 1980s, and 21 percent in the 1990s. Projections for the next 10 years, as shown in Figure 2.2, call for a 24.5 percent growth rate or an increase of about 52,000 people. Some of the segments that have grown the fastest include retirees and racial/ethnic minorities, many of whom can no longer drive or afford to own an automobile. In 1990, 22 percent of Barnstable County's population was over 65 years old, compared to a statewide average of 14

[4] The U.S. Census Bureau has developed these estimates and projections.

percent. As shown in Figure 2.3, the year round population over 65 years old will grow to 60,000 residents by 2010.

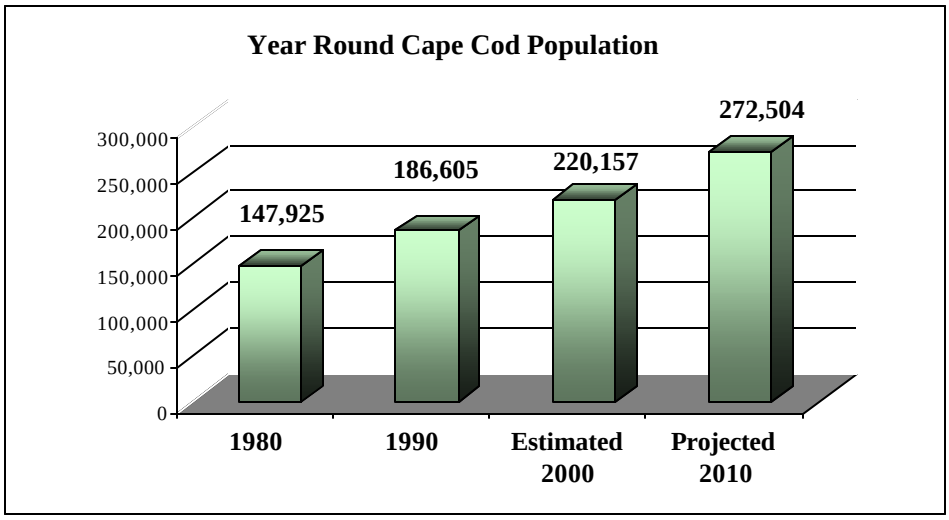

FIGURE 2.2 Cape Cod Population Estimates

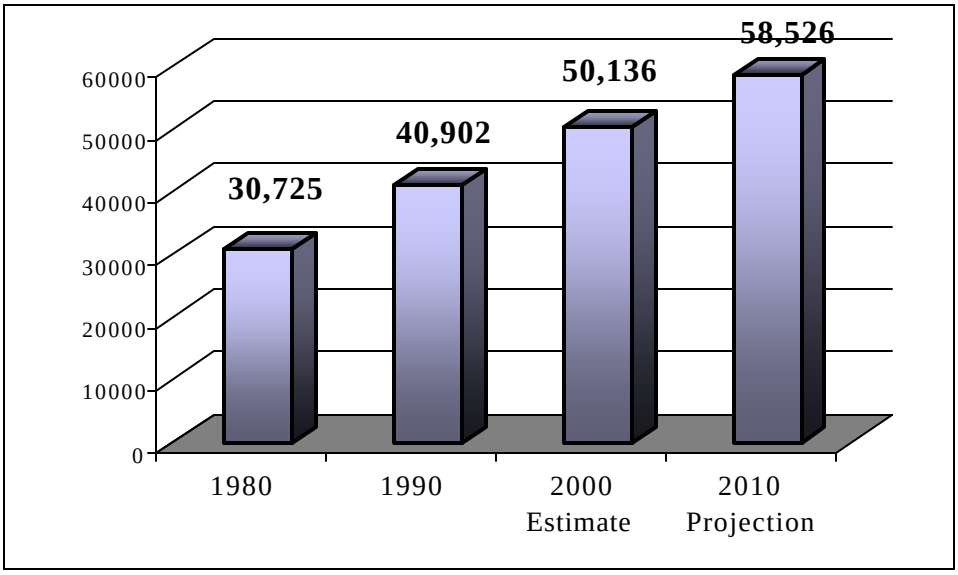

FIGURE 2.3 Cape Cod Population Over 65 Years of Age

The median age of Barnstable County residents rose by almost 9 years to 39.5 from 1960 to 1990. By 2010, the median age is projected to increase to 44 as "baby boomers" retire and move to the Cape. At public meetings conducted in Eastham, Outer Cape administrators stated that over 40 percent of the year round residents of the five Outer Cape towns are over 60 years of age.

Employment in Barnstable County grew from 51,400 in1980 to 88,600 in 2000, a 72 percent increase. The retail and services sectors employed the largest percentage of Cape residents, representing 62 percent, followed by government

services at 15 percent.

2.5 INCOME LEVELS

Median household income in Barnstable County rose from $31,766 in 1989 to $40,791 in 1997, or a 28.4 percent increase[5]. A study conducted by The Economic Policy Institute, a Washington DC research group, ranked the Barnstable-Yarmouth Metropolitan Statistical Area as the fifth most expensive place to live among 400 regions studied nationwide because of high energy costs, expensive housing and the high cost of child care[6]. Barnstable-Yarmouth living costs ranked between those of Washington, DC and San Francisco, CA.

The average salary varies significantly depending on the industry. The resort industry, employing about 22 percent of the year-round workforce, pays the least, with residents earning an annual average salary of $17,401. Residents working in the high-tech industry, in contrast, earn an annual average salary of $40,696.

The Economic Policy Institute study showed that 29 percent of working families with one to three children under age 12 do not earn enough income to meet basic family needs. Since 47 percent of the Cape's households have annual income below $30,000 per year, owning and maintaining an automobile must be financially onerous, suggesting demand must exist for alternative, more reasonably priced public transportation options.

2.6 THE CAPE COD HOUSEHOLD TRANSPORTATION SURVEY

In addition to determining the extent of how transportation problems are tied to demographics, income levels, and suburban-like development patterns, the actual experience and perceptions of those who use, or would like to use, public transportation on Cape Cod are critical to developing, testing and then recommending a set of effective improvements. These perceptions can offer insight on what people want, and how they will respond and behave. They also provide insight on the travel needs of different market segments, ensuring that the portion of the population that is most vulnerable is not "left behind."

The Barnstable County Department of Human Services conducted the Cape Cod Household Transportation Survey in November 2000.[7] The intent was to determine travel behavior of Cape Cod year-round residents, and assess their perceptions of public transportation. The data illuminated the mobility needs and transportation service demands that exist Cape-wide, and among different

[5] The U.S. Census Bureau developed this estimate.
[6] See *"Hardships in America: The Real Story of Working Families"* by Heather Bousley, et al, The Economic Policy Institute, Washington DC July 2001.
[7] Part of the Human Condition 2001 Human Services Needs Assessment Project—a comprehensive three-year effort aimed at improving the human environment on Cape Cod. For further details, visit http://www.bchumanservices.net/thc2001/thc2001index.html

market segments. Beyond characterizing travel demand, the data indicated the types of transportation services and improvements that need to be considered in the context of Cape-wide transportation planning.

The Cape Cod Household Transportation survey took a two-prong sampling approach to capture travel behavior and demand information. More than 550 surveys were randomly mailed to households. Over 200 additional surveys were passed out in a deliberate attempt to secure the participation of households that are frequently under-represented, but have special transportation needs. This included low income, unemployed, non-English speaking, and "zero vehicle" households.

A total of 407 Cape Cod households were surveyed successfully, representing a 54 percent response. The general view held among respondents was that:

- They do not have transportation problems as long as they have access to a suitable vehicle (automobile or light-duty truck) although more than 20 percent indicated that they did not have a working vehicle; and
- Public transit buses exist primarily to serve the disadvantaged and those who are too old or too infirm to operate an automobile.

Of the households surveyed:

- 33 percent included children;
- 33 percent included one or more persons 65 or older; and
- 40 percent had incomes below the 1990 County median of $31,776.

Detailed analysis of the survey data resulted in a number of significant findings regarding: on-Cape destinations, trip types, public transportation usage, knowledge of public bus stop locations, work shifts, and suitability of available vehicles. Additional findings related to individuals' perceptions regarding the Cape's public transportation system.

2.6.1 Most Common Modes of Transportation

Personal vehicles are the preferred mode of transportation for the majority of respondents. Respondents' second choice of travel is catching a ride with a relative, friend or neighbor. The third and fourth most common choices are biking and walking. Fourteen percent of respondents reported that someone from their household walks or rides a bicycle to work. Ten percent of respondents live with someone who walks or bicycles to healthcare or social service appointments.

2.6.2 Frequent On-Cape Destinations and Trip Types

Respondents cited the Hyannis area most frequently as a travel destination for all trip types. Downtown Hyannis followed by downtown Falmouth was cited as the most frequent employment destination. Cape Cod Community College's Hyannis and West Barnstable campuses were the most frequently cited destinations for education and training trips. Respondents named Cape Cod Hospital and the surrounding medical complex in Hyannis as the most frequent destination for healthcare and social service-related trips. The most frequent destinations for shopping were the Cape Cod Mall and downtown Hyannis.

Shopping was the most common trip type, followed by healthcare/social service, employment, and school/job training program trips

2.6.3 Public Transportation System Usage

Thirteen percent of respondents reported that someone in their household had used a bus to travel on Cape Cod in the last 7 days.

Patronage on CCRTA routes varied considerably, as shown in Figure 2.4. Ridership was the greatest on CCRTA's b-Bus, followed by the Sea Line, Hyannis to Orleans, and the Villager routes. Patronage on Bonanza and P & B routes constituted 15 percent of the total trips reported.

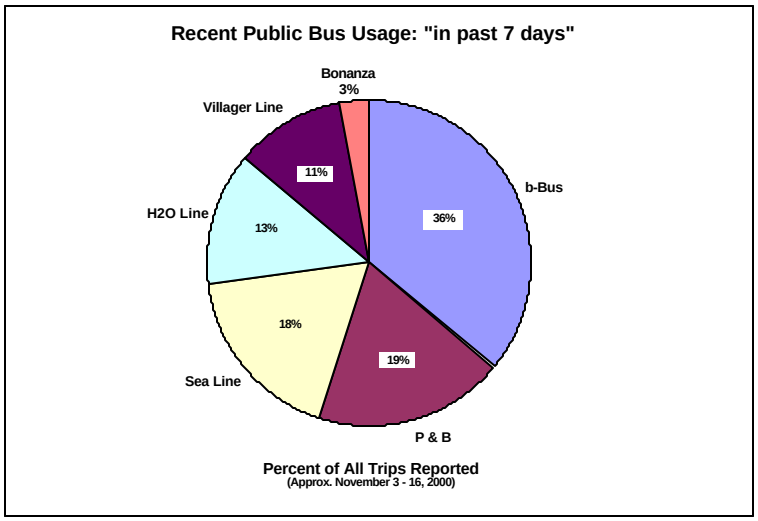

FIGURE 2.4 Recent Public Bus Usage on Cape Cod

Households more inclined toward transit include adults living alone, single parents, extended families, and individuals who are unemployed or disabled. These households have substantially lower annual incomes when compared to households that exclusively rely on private automobiles. Two-thirds of participating households had incomes below the 1990 Barnstable County median.

2.6.4 Knowledge of Public Bus Stop Locations

Fifty-one percent of respondents believed there were no bus stops within walking distance of their home. Twenty-five percent had no knowledge of bus stops. Sixteen percent indicated they knew of a bus stop location near their home.

2.6.5 Time of Day for Employment Trips

Most of the employment trips reported by the respondents occur during daytime hours Monday through Friday. Fifteen percent of respondents, however, indicated that a member of their households worked either an evening or night shift. According to 12 percent of respondents, availability for work by time of day was driven by their access to affordable childcare.

2.6.6 Suitability of Vehicle Available

Seventy-five percent of respondents indicated that they always had a working vehicle available, 15 percent reported often or seldom availability, and the remaining 10 percent reported they never have a working vehicle available.

2.6.7 Taxicab Service

Almost all respondents reported that taxicab fares are too high for their use.

2.6.8 Public Transportation Perceptions

Survey participants were asked if household members had “suffered a hardship,” during the past 30 days as a result of not having accessible public transportation. They were also asked to provide written comments about their perceptions of public transportation on Cape Cod. The following are the survey results:

- Nine percent reported that some household member had “suffered a hardship”. This occurred most frequently when planning or attempting to travel to jobs, and medical and social service appointments.
- Written comments indicated that limited public transportation has contributed to seniors feeling isolated, and limited teenagers’ mobility.

- Primary reasons for not using the Cape's public transportation system more frequently included the lack of bus stops close to trip ends and infrequent bus schedules.
- Respondents indicated a high regard for the P & B Bus Line services, CCRTA's b-bus, and Council On Aging (COA) van services.

2.6.9 Public Transportation Needs

Survey responses indicated that more frequent use of public transportation requires:

1 Increasing headway on existing scheduled routes;
2 Evening/night bus service;
3 Additional bus stops;
4 Additional bus routes to better accommodates actual travel by trip type and destinations;
5 More predictable arrival and departure times; and,
6 Lower fares and targeted services that cater to families traveling with children (particularly, those requiring childcare), teenagers, seniors and the disabled.

Many of these issues, observations and limitations were also identified during the Volpe Center's review of the Cape's transportation system that was conducted as the basis for developing this Plan. Chapters 3 and 4 of the Plan examine the issues, observations and limitations, and identify improvements to be undertaken.

3. EXISTING PUBLIC TRANSPORTATION SYSTEM

3.1 OVERVIEW

Cape Cod and the Islands are served by a variety of public transportation providers. Bus, rail, ferry and air services are available to and from Cape Cod. The CCRTA operates local and regional public transportation and demand-response services, and private operators provide both intra- and inter regional transportation. The Martha's Vineyard and Nantucket Regional Transportation Authorities provide ground transportation on the Islands. Year-round ferry service connects Hyannis and Falmouth with Nantucket and Martha's Vineyard. Seasonal ferry service connects Provincetown with Boston and Plymouth. There is seasonal excursion train service from Hyannis to the Cape Cod Canal Railroad Bridge operated by the Cape Cod Central Railroad. The Provincetown, Barnstable, Martha's Vineyard and Nantucket Memorial airports provide scheduled air service between Boston, the Islands, and other points north, south and west. And, the Cape now has over 50 miles of bicycle paths, providing an alternative to local and recreational automobile travel, particularly during the summer months. A map of many of the private and public transportation services on Cape Cod is pictured in Figure 3.1.[8]

FIGURE 3.1 Public Transportation on Cape Cod

[8] Figures 3.1 and 3.8 can be found in the "SmartGuide" published by the Cape Cod Chamber of Commerce.

3.2 PUBLIC GROUND TRANSPORTATION ON CAPE COD AND THE ISLANDS

The Cape Cod Regional Transit Authority (CCRTA), and the privately owned Plymouth & Brockton Street Railway Company (P&B), and Bonanza Bus Lines, Inc., all provide Cape Cod public ground transportation service. The CCRTA operates two types of fixed routes, buses and a shuttle/trolley service, and an on demand service, all under contract with Cape Area Transportation Systems, Inc. (A subsidiary of ATE Management and Service Company). The trolley and shuttle routes operate only during the seasonal months. Bonanza Bus Lines and P&B comprise the only regularly scheduled land-based public transportation mode currently available to the Cape from off-Cape locations. The CCRTA has extensive vehicle Intelligent Transportation Systems in place to assist reporting and performance, and is currently overseeing the construction of a new transportation center in Hyannis.

3.2.1 Cape Cod Regional Transit Authority Routes and Services

The CCRTA year-round fixed routes are the SeaLine, the Hyannis to Orleans line and the Villager Line. Fares are based on the distance traveled and range from $1.00 to $3.50. Medicare cardholders, disability cardholders and senior citizens receive a discount, and children under 5 ride for free. The average fare collected in FY'00 for the SeaLine was $1.31, and $1.20 for the Hyannis to Orleans. All of the buses are equipped with bike racks and are wheelchair accessible. The buses operate Monday through Saturday except on holidays. The CCRTA also provides some special summer trolley and shuttle routes throughout the Cape.

3.2.1.1 SeaLine Route

The SeaLine bus route provides service along Route 28, from the P&B terminal in Hyannis to Falmouth. It serves the Falmouth Bus Depot and Woods Hole, including the Steamship Authority docks. From late May to late September after 9:00 am, the SeaLine terminates at the Falmouth Mall in Teaticket. The Woods Hole Trolley connecting at the Falmouth Mall then provides service to the Falmouth Bus Depot and Woods Hole.

The SeaLine serves major shopping areas and the centers of Osterville and Centerville as seen in Figure 3.2. Winter weekday service from Hyannis to Woods Hole begins at 6:10 am with the last bus at 6:30 p.m.

FIGURE 3.2 SeaLine Route

3.2.1.2 Hyannis to Orleans Route

The Hyannis to Orleans bus route provides service along Route 28 from Hyannis to Orleans, with detours to supermarkets and shopping centers in Yarmouth, Dennis, and Harwich as seen in Figure 3.3. Winter weekday service starts at 5:55 am from Orleans with the last bus at 4:27 p.m. The first two weekday runs from Orleans begin near the Mobil station in Orleans Center and end at the P&B terminal in Hyannis. During the rest of the day, buses leave from the Stop & Shop near the Route 6 and 6A rotary in Orleans.

FIGURE 3.3 Hyannis to Orleans Line Route

3.2.1.3 Villager Route

The Villager bus route provides, year-round service from the Senior Center in the west end of Hyannis through the center of Hyannis to the Barnstable County Complex with detours to the Steamship Authority and Hy-Line Cruise docks (upon request), to the shopping malls and plazas along Route 132, and the Cape Cod Community College as seen in Figure 3.4. Winter weekday service starts from the Senior Center at 7:10 am with the last bus at 6:07 p.m.

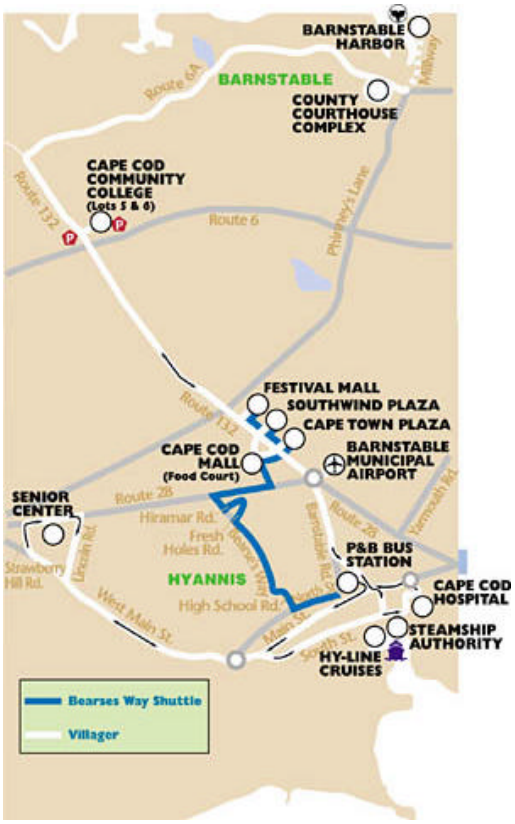

FIGURE 3.4 Villager Bus Route

Figure 3.5 summarizes the demand for each of the fixed route services over the past 4 years.

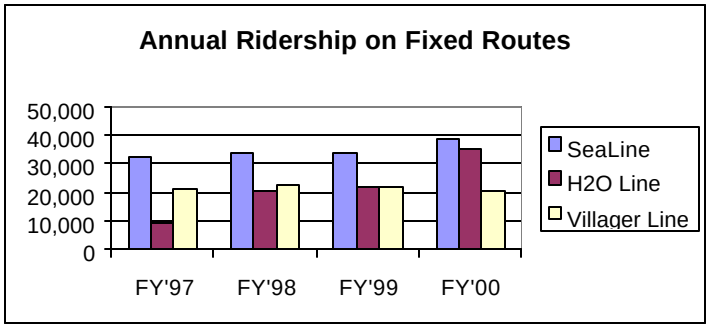

FIGURE 3.5 ANNUAL RIDERSHIP

3.2.1.4 CCRTA Summer 2000 Services

During the summer of 2000, CCRTA operated seven trolley and shuttle routes. Except for the free Hyannis Park and Ride Shuttle, fares were $1.00 with children under 5 riding for free and 50 cents for seniors, Medicare cardholders, and persons with disabilities. The following table lists the highlights for each service.

TABLE 3.1 CCRTA Summer Schedule

Service name	Dates of operation.	Days of operation	Average fare collected	Service begins	Service ends	Frequency at peak
Woods Hole Trolley	May to Sept	7	$0.67	9:30 am	7:30 p.m.	30 min
Mashpee Trolley	June Labor Day	7	$0.68	9:30 am	7:30 p.m.	60 min
Hyannis Downtown/Malls	June - Labor Day	7	$0.49	10:00 am	9:30 p.m.	30 min
Hyannis Parking Shuttle	June - Labor Day	7		6:00 am	8:30 p.m.	30 min
Yarmouth Trolley	June Labor Day	7	$0.74	9:00 am	5:00 p.m.	30 min
Dennis Trolley	June Labor Day	7	$0.75	9:15 am	11:05 p.m.	60 min
Provincetown Shuttle	Late June - Oct.	7	$0.98	7:15 am	12:15 am[9]	20 min

The following figure 3.6 illustrates the passenger demand for each of the trolley/shuttle lines.

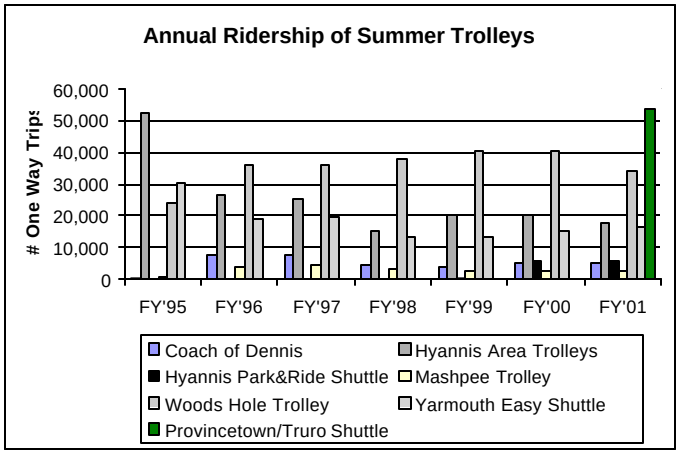

FIGURE 3.6 Annual Trolley Ridership

[9] The Provincetown Shuttle terminates during the summer at 12:15 am, and terminates at 8:15 pm Monday through Thursday, and Sundays, during the Fall.

3.2.1.5 CCRTA Intelligent Transportation Systems

The Cape Cod Intelligent Transportation System (ITS) program is a public-private partnership between the Cape Cod Regional Transit Authority, the GeoGraphics Laboratory at Bridgewater State College, First Transit, the Cape Cod Commission, the Cape Cod Chamber of Commerce, the Massachusetts Executive Office of Transportation and Construction, the Joint Program Office for Intelligent Transportation Systems (JPO/ITS) of the Federal Highway Administration (FHWA), and the Federal Transit Administration (FTA). Currently, the following types of ITS are being used on the Cape:

- A geographic information system (GIS)- based decision support system on a local area network environment
- Global Positioning Systems-based automatic vehicle location (AVL) for all CCRTA's paratransit and fixed route services
- Upgraded paratransit scheduling and management information capabilities based on GIS technology
- Mobile data computers for on-board vehicle data collection, downloading of paratransit schedules, and two-way messaging.
- Emergency alarms, integrated with AVL
- CCRTA and the GeoGraphics Laboratory at Bridgewater State College are cooperating on the development and deployment of a low-cost Web-based Advanced Travel Planner using state-of-the art GIS technology applied to tourist travel information and itinerary trip planning for access to jobs for individuals transitioning off welfare.

CCRTA has equipped all of its fixed route and b-Bus vehicles with automatic vehicle locators and mobile data computers. Using the vehicle location information, the CCRTA Web site (www.capecodtransit.org) provides potential customers with the opportunity to see where CCRTA buses are in real time. The mobile data computers have the capability of accepting both magnetic stripe and smart cards for fare payment. CCRTA also uses computer assisted dispatching for their b-Bus system.

3.2.1.6 Demand Responsive Transportation

The Cape Cod Regional Transit Authority provides door-to-door, ride-by-appointment accessible service for people of all ages for trips of any purpose. Called the 'b-Bus,' trips must be reserved by 11 a.m. at least a day in advance by calling 1-800-352-7155 (385-8326 locally) for weekday rides, and on Friday for weekend and Monday service. Elderly and disabled riders receive priority. Service is available at either 7 a.m. or 8 a.m., and terminates at either 4 p.m. or 7 p.m. (7:17 p.m. in Chatham) depending on the town. Weekend service encompasses fewer hours. In addition to general-purpose travel between any two points, there are regularly scheduled trips between locations from each town.

The b-Bus service is mainly provided using mini-buses, although there are several vans available for particular situations. Fares for adults and children 6 and older are $2, plus 10 cents per mile for general purposes, $1.50 for medical trips, and one-half off these stated fares with a payment of a $10 monthly Frequent Rider Program fee. Seniors and persons with disabilities pay one-half of the adult fares. Private and public organizations or programs pay for some trips. In FY'2000, b-Bus service carried 190,421 passengers at a net cost per trip of $11.49.[10]

The CCRTA provides medical service to Boston once a week through their Boston Local Transportation (BLT) program. Riders using this service can pick up this bus at park-and-ride locations from Wellfleet to Sagamore. The CCRTA has supplied vans and mini-buses to Councils on Aging in Bourne, Brewster, Chatham, Falmouth and Provincetown with a new request pending in Truro, due to the rapid growth of the aging populations. On July 1, 2001, the CCRTA became the Human Service Broker for Cape Cod and the Islands for the Massachusetts Departments of Medical Assistance, Mental Retardation, and Public Health. A goal of the program is to provide services more cost-effectively.

Descriptions of significant CCRTA contract transportation services with State and local human service agencies are described in Table 3.2.

TABLE 3.2 CCRTA Contract Services

CCRTA Service Recipient	Service Type	Service Span	Number of Vehicles Used
Habilitation assistance Corporation	Provide transportation to Bourne Day Rehabilitation for Massachusetts Department of Mental Retardation clients	Monday-Friday, Year-round	Six (6) vehicles
Community Connections, Inc.	Provide transportation to Lower Cape Day Habilitation – Cape and the Islands Intensive Day in Dennisport for Massachusetts Department of Mental Retardation clients	Monday-Friday, Year-round	Four (4) vehicles
Nauset, Inc.	Provide transportation to Nauset Workshops for Massachusetts Department of Mental Retardation clients	Monday-Friday, Year-round	Three routes operated to each site

[10] In order to judge the level of efficiency of the b-Bus, the b-Bus cost per trip was compared to those reported by other agencies in the 1998 National Transit Database. The cost per trip for agencies operating between 30 and 60 demand response vehicles, and with service area and population size somewhat similar to that of the Cape, averaged $14.33. Agencies operating between 30 and 60 demand response vehicles without any service area or population restriction averaged $14.81 per passenger trip. The comparable figure reported by CCRTA for 1998 was $10.24. Consequently, the b-Bus service efficiency appears to be better than the average demand response system.

CCRTA Service Recipient (CONT'D)	Service Type	Service Span	Number of Vehicles Used
Massachusetts Department of Medical Assistance	Brokerage for medical trips for Medicaid trips for the Massachusetts Department of Medical Assistance	As-needed	As-needed
Falmouth Hospital	Provide transportation to individuals needing rides to Falmouth Hospital, JLM Care Center, Visiting Nurse Association of Upper Cape, and the offices of Falmouth hospital physicians	Monday-Friday, Year-round	Two vehicles in the summer, one vehicle for the rest of the year
Department of Transitional Assistance	Provide transportation to work for clients transitioning off of Welfare	As-needed	As-needed
Department of Public Health	Provide transportation to Early Intervention Program for pre-school children and parents	Monday-Friday, Year-round	As-needed
Elder Service of Cape Cod and the Islands	Provide transportation for seniors to hot lunch programs at Senior Centers	Service varies by town	As-needed

In addition, there is a large network of social service organizations that also provide demand response transportation. These services vary in every aspect such as vehicle type, eligibility requirements, fares, areas of coverage, and times of operation. Some of the services are coordinated with each other, but the majority operates independently and duplicates service in some areas while other areas experience service gaps. The following profit and non-profit/service providers organize some form of transportation for their clients:

- American Cancer Society
- American Red Cross
- Angel Flight New England
- Cape Cod Ambulance Services, Inc. *(a for-profit organization)*
- Chatham FISH
- Community Connections
- Disabled American Veterans
- Easy Rider of Lower Cape Cod *(a for-profit organization)*
- Housing Assistance Corp. Of Hyannis
- Helping Our Women
- Interfaith Council for the Homeless
- Nauset FISH
- Provincetown Aids Support Group and Habilitation Assistance Group
- Van Go *(a for-profit organization)*
- We Go *(a for-profit organization)*
- Well Run Transportation *(a for-profit organization)*
- Wheelchair Transit *(a for-profit organization)*

3.2.1.7 Hyannis Transportation Center

The Hyannis Transportation Center, now under construction in a rail yard in the East End of Hyannis, is the physical representation of a coordinated, regional approach to transportation envisioned for the region (shown in Figure 3.7). When it opens in the summer of 2002, the center will become the transportation hub for year-round residents and visitors. The 17,000-sq. ft., two-story center will be home to CCRTA buses and trolleys, intercity buses, airport and ferry shuttles, facilities for Cape Cod Central Railroad passengers, and visitor amenities. It will have parking for 220 cars on a landscaped, eight-acre lot. Construction is being underwritten by $5.6 million in federal capital grants, state land and state road improvement funds, along with RTA cash reserves. It will be owned and managed by the CCRTA.

As part of its marketing initiative, the CCRTA will work in cooperation with the Cape Cod Chamber of Commerce to promote awareness of the center and its services to those living and working on Cape Cod, as well as to travelers off Cape. With knowledge of a new, central facility for non-auto arrivals and departures and links to other modes of transportation, Cape-bound travelers should be more inclined to make auto-free travel choices, and thus aid in the reduction of traffic congestion. Additionally, the CCRTA is investigating options to allow vehicle rental companies serving nearby Barnstable Municipal Airport to make their vehicles available in a convenient way to travelers using the transportation center.

Figure 3.7 Architects Rendering of the Hyannis Transportation Center

3.2.1.8 Nantucket Regional Transit Authority

The Nantucket Regional Transit Authority (NRTA) was created in 1995 after over 10 years of planning. Its first operating season extended for 100 days from June 8 through September 15, 1995. During its no-fare inaugural season, the shuttle system transported 139,364 passengers utilizing two loops, which connected the

downtown core district with densely developed areas and parking lots along the fringe of the Core. It has grown substantially since this time. For the 2001 Shuttle Season, the Nantucket Regional Transit Authority (NRTA) expanded its season from May 25 – October 8, 2001, to include Columbus Day weekend. All fixed route service remained the same: Mid Island Loop, Miacomet Loop, Madaket Route, Sconset via Polpis Road, Sconset via Old South Road, Sconset via Milestone Road, Jetties Beach, and Surfside Beach. New fare and pass categories were added for seniors, the fare was established at half fare and a season pass was available for $25.00. Season passes rates (student, season, and commuter) were increased by $5.00 and fares on the fixed route and beach service remained on changed. The Commuter Solution program was offered a $10 discount was offered to businesses that purchased passes for their employees[11]. Park and Ride lots were once again provided along the shuttle routes for added convenience. Benches and bike racks have been located along the shuttle routes.

The NRTA has 14 mini-buses in its fleet, operating 11 during the season, with 3 buses utilized as spares. Valley Transportation Services, Inc (VTS) of Wilmington, Vermont, operates the system. In order to ensure a sufficient number of drivers to operate the system, VTS opened its application process internationally, which has greatly benefited the system and the Shuttle service that is provided to the community. The NRTA in conjunction with Visitor Services and the Nantucket Planning and Economic Development Commission (NP&EDC) sponsored the 3rd Annual "*Do the Ride Thing*." This promotion encourages people to use alternative modes of transportation. Participants in the weeklong event are eligible to win prizes donated by local businesses. The NRTA, Nantucket Elementary School, the Athenaeum, and Friends of Nantucket Public Schools once again offered the Ride to Read program. This program encouraged elementary aged school children to continue their reading skills throughout the summer by taking the bus to the library. The NRTA participates in the Commonwealth's Bikes-n-Transit program. All Nantucket bike paths are accessible along the Shuttle routes. The NRTA also participated in TEAM Nantucket. On July 2, 2001, the NRTA began providing door-to-door van service called *Your Island Ride* to elders and person with disabilities.

3.2.1.9 Martha's Vineyard Transit Authority

The Martha's Vineyard Transit Authority (VTA) was created in 1980. In the early years, the VTA primarily provided dial-a-ride services. In the mid 1980's, the VTA began running two seasonal intra-town shuttles. In 1994 the VTA added one more seasonal intra-town fixed route. While these services were adequate in the mid 1980's they were not given the growth the Island had been experiencing. Preserving the rural character of Martha's Vineyard has long been a common regional goal. In the 1980's and 1990's, the rapid increases of population,

[11] In 2000, the NRTA won the American Public Transportation Association marketing award for the Commuter Solution program

tourism, seasonal use and related traffic reached levels that clearly threatened the region's rural character. Recognizing that the increasing numbers of automobiles threatened to destroy the rural quality of life, the six Island towns supported a substantial expansion of the VTA fixed route services in 1999.

The VTA's transit services are an integral part of the region's transportation network. The growing use of the VTA's services helps increase traveler safety, protect and enhance the Island's rural character, provide new economic opportunities, and reduce noise, pollution and energy use. It also has the benefits of protecting and enhancing property values and other positive economic impacts.

Prior to expansion, the VTA operated three (3) seasonal fixed routes. In FY 1998 the VTA expanded to six (6) seasonal fixed routes. In FY 1999 the VTA operated thirteen (13) seasonal fixed routes carrying 173,681 passengers, which resulted in a 49 percent ridership increase. In FY 2000 the VTA operated the same routes, increased frequency and ran three (3) off-season buses and carried 271,842, resulting in a 57 percent ridership increase. In FY 2001 the VTA carried 364,146 passengers resulting in a 34 percent passenger increase. In FY 2002 the VTA added three more routes, bringing the total number of routes to sixteen (16). This produced 252,519 people in the month of July alone. The VTA is projecting ridership to surpass 650,000 riders in FY 2002.

3.3 PRIVATELY OPERATED BUS SERVICE

Bonanza Bus Lines, Inc. and the Plymouth & Brockton Street Railway Company (P&B) offer year-round service to Cape Cod. They are the only regularly scheduled land-based public transportation available to the Cape from mainland locations. Both are private for-profit companies, operating standard 45-foot long coaches with a 55-passenger capacity. Currently, it is not possible to use credit cards on the Cape to purchase tickets from either company. Both companies supply their drivers with means of communicating with their operations centers.

3.3.1 Plymouth and Brockton Street Railway Company

The privately owned P&B serves 25 cities and towns from Boston to Cape Cod, and is partially subsidized by the Massachusetts Bay Transportation Authority, (MBTA), MassPort and the CCRTA. The P&B web site is located at www.p-b.com. Its Hyannis Elm Street terminal is the central hub. Many of the buses are wheelchair lift-equipped. The company operates two principal services to Cape Cod, a semi-express running from Orleans/Hyannis to Logan Airport and Boston, and a local run from Provincetown to Hyannis.

P&B operate two round trips from Provincetown to Hyannis during the off-season, and five round trips during the summer. Connections can be made in Hyannis with Bonanza Bus Lines services to New Bedford and Fall River, MA,

Providence, RI, and New York City. Some connections can also be made with CCRTA fixed local routes and P&B's service to Boston and Logan Airport. One-way fares range from $3 from Provincetown to Truro to $9 from Provincetown to Hyannis.

P&B's express service offers 35 round trips each weekday and 20 round trips Saturdays, Sundays, and holidays with extra trips added during the summer months. The route runs along Routes 132 and 6 on Cape Cod and Route 3 and the Southeast Expressway into Boston. Sixteen of these trips are “Logan Direct,” providing hourly access from Hyannis to Logan Airport starting at 3:15 am. These trips begin at the Hyannis P&B terminal, and most stop at lots in Barnstable and Sagamore, the P&B terminal in Plymouth, the lot in Rockland, South Station in Boston, and finally Logan Airport. A few skip Rockland and/or South Station.

P&B provides Boston commuter-oriented service from Orleans and Hyannis on weekdays starting at 4:45 am and ending either at South Station or Park Square in Boston with returns in the afternoon. Fares vary between $16 and $27 each way depending on the length of the trip. Discounts are available through the purchase of a ten-ticket book.

Between November 1999 and October 2000, ridership on the Provincetown-Hyannis route was 27,095, averaging 74 passengers per day. For the Orleans and Hyannis to Boston routes beginning November 1999 and ending October 2000, annual ridership on the non-Logan Direct trips was 368,881 and on the Logan Direct trips, 136,739, an average of 1,385 passengers per day. Ridership during the summer months is about 20 percent higher than during the rest of the year. Compared to figures for the previous year, ridership increased 10 percent on the non-Logan direct trips and 23 percent on the Logan Direct trips.

3.3.2 Bonanza Bus Lines, Inc.

Bonanza Bus Lines, Inc. is a regional carrier operating in New England and the New York City metropolitan area, and is owned by Coach USA of Houston, TX[12]. The Bonanza web site is located at www.bonanzabus.com. It offers two unsubsidized routes to Cape Cod, New York to Hyannis, and Boston to Woods Hole. The company adds service during the summer months. Bonanza Bus Lines maintains a 50-car parking lot in Bourne. One-way fares range from $5.75 for the Hyannis to Bourne route, to $49 for the Hyannis to New York City route.

Bonanza Bus Lines run eleven (11) daily round-trips between Woods Hole/Falmouth and Boston during the summer season. Outside of the summer season, there are eight daily services northbound from Woods Hole/Falmouth to Boston, and nine southbound. Many of these services have connections to Logan Airport. There are five daily round trips between the Port Authority bus terminal in New York and Bourne, except on Fridays when there are six round-

[12] Coach USA is a subsidiary of Stagecoach PLC of the United Kingdom

trips. Buses from Hyannis to New York do not stop anywhere else on Cape Cod (even though they pass the Barnstable Park & Ride Lot). Buses from Woods Hole/Falmouth to Boston stop in Bourne, and passengers can connect there to the New York City service. Also, most New York buses make stops in New Bedford and Fall River, but not in downtown Providence as the Providence bus depot is several miles outside of downtown.[13]

Bonanza transported approximately 61,000 passengers on its New York to Hyannis service between November 1999 and October 2000. This represents a 13 percent increase over the same period as the previous year. On the Boston to Woods Hole route, 188,187 passengers traveled on Bonanza service between November 1999 and October 2000. This represented a 13 percent annual increase over the same period as the previous year.

3.4 RAIL TRANSPORTATION

All rail lines and structures from Rhode Island through Southeastern Massachusetts, with the exception of the Cape Cod Canal Railroad Bridge in Bourne, through to Hyannis are owned by the Commonwealth of Massachusetts. The vertical-lift railroad bridge is owned, operated and maintained by the U.S. Army Corps of Engineers, and is currently undergoing major rehabilitation.[14] This bridge is normally left in the "up" position for access of the Canal by marine traffic, and is lowered for rail traffic as needed. Marine traffic has statutory right-of-way over rail traffic. While the tracks to Falmouth, Yarmouth and Hyannis still exist and are in useable condition, all of the tracks beyond Yarmouth have been removed and the right-of-way has been converted to the Cape Cod Rail Trail. Bicyclists and pedestrians use the trail, mainly for recreational purposes.

Year round passenger rail service ended in 1959 due to decreased ridership and competition from the automobile. Various amounts of seasonal service operated throughout the 1980's. From 1986 until 1996, Amtrak operated under contract with the Commonwealth of Massachusetts a weekend-only summer train known as the "Cape Codder" between New York City and Hyannis. It was discontinued due to low ridership, in part caused by low customer awareness due to a limited marketing campaign. Initially, the trains operated as a direct service between New York and Hyannis, with intermediate stops at Wareham, Buzzards Bay, and Sandwich. During the 1988 summer season, service also operated between New York and Falmouth, but lasted only one season due to the unavailability of continued state subsidies.

During the final two seasons of service (1995-96), Amtrak operated trains as far as Providence on the Northeast Corridor, with passengers forced to transfer to another train which utilized MBTA commuter equipment to make the final leg to

[13] It is possible to connect from the bus depot to TF Green Airport, but it is time-consuming.
[14] This rehabilitation effort is occurring in large part through $25 million in Federal funds secured through the office of Congressman William Delahunt.

Hyannis. Ridership during these final two seasons dropped nearly three-quarters, due mainly to the cumbersome change required. Efforts were made by EOTC and members of the Task Force to restore some form of 'Cape Codder' service to Cape Cod for the Summer 2001 season. Due to financial and equipment constraints, as well as a lack of subsidy, Amtrak stated that resumption of this service is not economically feasible for the foreseeable future.

3.4.1 Cape Cod Central Railroad and Bay Colony Railroad Company

The only excursion rail service on Cape Cod is the Cape Cod Central Railroad (CCCRR), which uses the EOTC right of way. The CCCRR operates three daily scenic rail rides except on Mondays, between Hyannis and the Cape side of the Bourne Railroad Bridge from late May through October with stops in West Barnstable and Sandwich. The CCCRR website is located at www.capetrain.com. They also offer an evening dinner train with a lounge car starting in the early spring running through the end of the calendar year, and a Tuesday family supper train during summer evenings. The Hyannis station is currently used by the CCCRR for boarding tourist and dinner train passengers selling tickets, dispensing information, and administrative offices. Adjacent to the single main track station is the Hyannis rail yard and maintenance facility.

The service is geared primarily for tourists. During the 2000 season, 50,000 passengers rode the rails, representing a 300 percent increase from the 16,000 passengers in 1999. The operator projects 65,000 passengers in 2001. The regular round-trip fare is $13.

The Bay Colony Railroad Company (BCLR), a freight railroad, uses the tracks over which the CCCRR operates on a year-round basis. The BCLR leases tracks between Middleborough and Hyannis, as well as some additional small branch lines, from EOTC. This lease is in effect until 2006. The BCLR has the responsibility for maintaining the tracks in compliance with certain Federal Railroad Administration guidelines, as well as dispatching all trains. On the Cape, the BCLR's operates trains containing trash to the SEMASS facility in Rochester, MA in the morning, and returns these trains empty in the evening. Upon request, BCLR provides freight rail service to the Massachusetts Military Reservation.

3.4.2 Passenger Rail to the Cape Proposals

While at the present time there is no passenger rail service to Cape Cod, the feasibility of re-introducing rail passenger service is being explored to identify its role in meeting the goals of transportation planning on Cape Cod, including the potential to:

- Offer rail passenger service as part of an enhanced transportation plan providing for greater mobility options;

- Divert people traveling by private auto to and from the Cape (to/from Boston, New York, New Jersey);
- Intercept people traveling by private auto (originating in Boston, New York, RI, CT, on-Cape) to abandon their cars partway through the journey before coming onto the Cape;
- Provide an accessible, (e.g. ADA, elderly, youth) environmentally friendly alternative mode of travel to the private automobile;
- Create a fully integrated, intermodal rail passenger service in the Greater Cape Cod region, and
- Make better use of a Commonwealth-owned asset.

There are two proposals for rail passenger service presently being considered.[15] These are:

(1) Cape Cod Feeder Rail Passenger Access, March 30, 2001 presented by George C. Betke, Jr., John F. Kennedy, and Alfred Michon[16].

(2) A Locally Initiated High Quality Passenger Rail Connection from Cape Cod, the Islands and Capeway Communities to Amtrak's Hi-Speed Acela Express Service – A CMAQ Proposal, presented by the Cape Cod Regional Transit Authority and the Greater Attleboro-Taunton Regional Transit Authority, with The Moakley Center for Transportation of the University of Massachusetts at Bridgewater.

The Task Force has evaluated some of the issues and costs associated with these proposals, and is contained in Appendix A dated February 26, 2002.

At the present time, the Massachusetts EOTC cannot provide operating subsidies for transportation services without specific legislative approval and funding[17]. EOTC is providing capital infrastructure improvements at the Hyannis Rail Yard, and is reviewing other capital rail improvements. Proposals for passenger service should be viewed as self-supporting, and EOTC has stated that any passenger rail service proposals may include a fee to EOTC to operate over the state-owned right-of-way. The terms and amount of the fee have not yet been identified.

[15] Note that as part of the planning process, direct Amtrak service between New York City and Cape Cod has also been suggested. However, Amtrak has not submitted a detailed proposal for this service for evaluation.
[16] Mr. Betke is the Chief Executive Officer of Farmrail System Inc., an employee-owned holding company for Class III Railroads in New York and Oklahoma. Farmrail has several Rail Diesel Cars (RDCs), which would be used to provide this service. Mr. Kennedy is the president of the Cape Cod Central Railroad, which currently operates a tourist and dinner train railroad out of Hyannis. Mr. Michon is a resident of North Falmouth and has an extensive career in the private railroad industry.
[17] The only Commonwealth entity that can provide operating subsidies is the MBTA.

3.5 FERRIES

Barnstable County's long coastline and its proximity to Martha's Vineyard and Nantucket make travel to, from and among Cape Cod destinations by ferry a natural transportation alternative, if not a necessity. The numerous existing options for ferry travel, as shown in Figure 3.8, can be grouped into three main categories:

- Travel between Mainland points and Provincetown
- Travel between Barnstable County and Island points
- Travel between Mainland and Island points, and Island-to-Island points

It should be noted that there are no ferry services between Barnstable County points, and between mainland points and mid or upper Cape locations.

FIGURE 3.8 Sea and Air Routes for Cape Cod and the Islands

3.5.1 Travel between the Mainland and Provincetown

Four operators offer seasonal passenger service between mainland locations and Provincetown: Bay State Cruise Company, Boston Harbor Cruises, Captain John Boats, and Gloucester to Provincetown Boat Express. During the height of the summer season, three of the companies offer daily service. During the shoulder season[18], service is limited to weekends. To Provincetown visitors, these ferry services offer the advantages of substantially shortening the trip

[18] The 'Shoulder Season' is described as mid-April until Memorial Day in the spring, and Labor Day until late October in the autumn.

distance and travel time, avoiding traffic congestion along the way, and avoiding parking hassles in Provincetown.

Ridership figures are not available for individual services. A 1999 survey of Provincetown ferry riders sponsored by the Cape Cod Commission indicated that the final destination of 85 percent of the riders was Provincetown, with the remainder heading to Truro or Wellfleet.[19]

3.5.2 Travel between the Cape and the Islands

Five primary operators offer ferry service from the Cape to Nantucket and Martha's Vineyard. The largest of these, the Woods Hole, Martha's Vineyard and Nantucket Steamship Authority (SSA) provides the only year-round passenger and vehicle ferry service to the Islands from Hyannis and Falmouth.

The Massachusetts Legislature established the SSA in 1949 for the purposes of:

- Establishing regulations for ferry service policies;
- Operating ferry service, managing and regulating all other for-profit ferry service and,
- Managing the demand for transportation to the islands.

The SSA owns all of the dock facilities it uses, and most of the parking lots it uses. A 1997 survey of SSA passengers showed that about one third originate on Nantucket and Martha's Vineyard.[20] In 1998 about 15 percent of traffic on Route 28 in the summer was generated by the SSA, slightly higher on weekends and lower on weekdays.[21]

Hy-Line Cruises has been operating passenger ferry service since 1971. Most of Hy-Line's service is seasonal from May to October. On regular passenger ferry service during the height of the season, they offer four daily trips to Martha's Vineyard and five to Nantucket. They estimate ridership to be 350,000 during the peak traveling season to Nantucket and about 150,000 to Martha's Vineyard.[22] On a summer weekend day, it is estimated that around 2,500 passengers use their Hyannis facility.

The Island Queen, with a capacity of 600, runs regular passenger ferry service from Falmouth Harbor to Oak Bluffs from May to October, with seven to eight daily round trips during the height of summer. Since Falmouth is the closest Cape ferry port to the Vineyard, the trip takes only 35 minutes each way. The Falmouth-Edgartown Ferry Service also operates a seasonal ferry to Martha's

[19] "Cape Cod Ferry Service Draft Research Report", September 1999, Cape Cod Commission.
[20] SSA 1997 Onboard Passenger Survey database, SSA Passenger Data 97.xls.
[21] "Falmouth Ferry Traffic Study - Draft Interim Report", July 26, 2000, The Cape Cod Commission.
[22] Conversation with Hy-Line Cruises Director of Operations, December 11, 2000.

Vineyard, and is the only one to call at Edgartown. Operating on weekends only during the shoulder season, they run five to six round trips daily from June to September.

The Freedom Cruise Line offers seasonal passenger ferry service from May to October aboard the *Freedom*, from Harwich Port to Nantucket. They offer three daily round-trips during the summer months and one in the spring and fall.

3.5.3 Travel between Mainland and Island Points, and Island-to-Island Points

There are a number of limited services currently in operation from New Bedford to Cuttyhunk and Martha's Vineyard, from Connecticut and Long Island to Martha's Vineyard, and from Gloucester to Nantucket. Cuttyhunk Boat Lines operates year-round passenger service from New Bedford to Cuttyhunk. The frequency of service ranges from one round-trip per week during the winter months to ten round-trips a week during the summer months.

The SSA now runs seasonal passenger service from New Bedford. They offer parking in New Bedford near the dock and a 90-minute trip to Oak Bluffs. In May and October there is one daily round trip, and during the height of summer there are four.

Fox Navigation, an affiliate of Foxwoods Casino, transports passengers from the State Pier area in New London, Connecticut to Vineyard Haven in 3 hours. Service is available Friday through Monday from May to October offering one to two round-trips per day.

The Yankee Fleet operating out of Gloucester offers an unusual overnight service to Nantucket aboard the M/V *Yankee Freedom*, a "Super Cruiser" yacht. Passengers may opt to spend the night (7-hour trip) in cushioned booths or book air-conditioned sleeping accommodations. The vessel arrives in Nantucket early Tuesdays and Fridays around 4:30-5:00 a.m.; passengers may sleep on board until 9:30 am. The vessel returns on Tuesday and Friday evenings and arrives back in Gloucester early Wednesday and Saturday mornings.

3.6 AIR TRANSPORTATION

Commercial air service on Cape Cod uses Barnstable Municipal Airport and the Provincetown Municipal Airport. Both airports are general aviation fields that service private planes as well commercial airlines. Air service to and from the Islands is mainly through Nantucket Memorial and Martha’s Vineyard Airports. They are also general aviation fields servicing private and commercial airlines, as well. A third of Nantucket air traffic is military-related.

3.6.1 Barnstable Municipal Airport

Most scheduled air service to and from Cape Cod utilizes the Barnstable Municipal Airport, the major aviation center on Cape Cod. The airport is served by four passenger airlines offering scheduled service: Cape Air, Island Airlines, Nantucket Airlines, and US Airways Express (operated by Colgan Air). Non-stop service is offered to five destinations: Boston, Nantucket, Martha's Vineyard, Providence, and New York.

Frequency of service varies with the season. Table 3.3 lists by location the number of scheduled round-trips.

TABLE 3.3 Round-Trips by Location

Destination	Boston	Vineyard	Nantucket	Prov./NYC
December 1999	4 round trips	5 round trips	28 to/29 from	Varies
July 2000	11 round trips	7 round trips	30 to /31 from	Varies

Total 1999 passengers by month are shown below in Figure 3.9. The seasonal variation is quite significant. The July total is almost two and one-half times the February total. Total passenger volume has grown continuously since 1992, except for 1996.

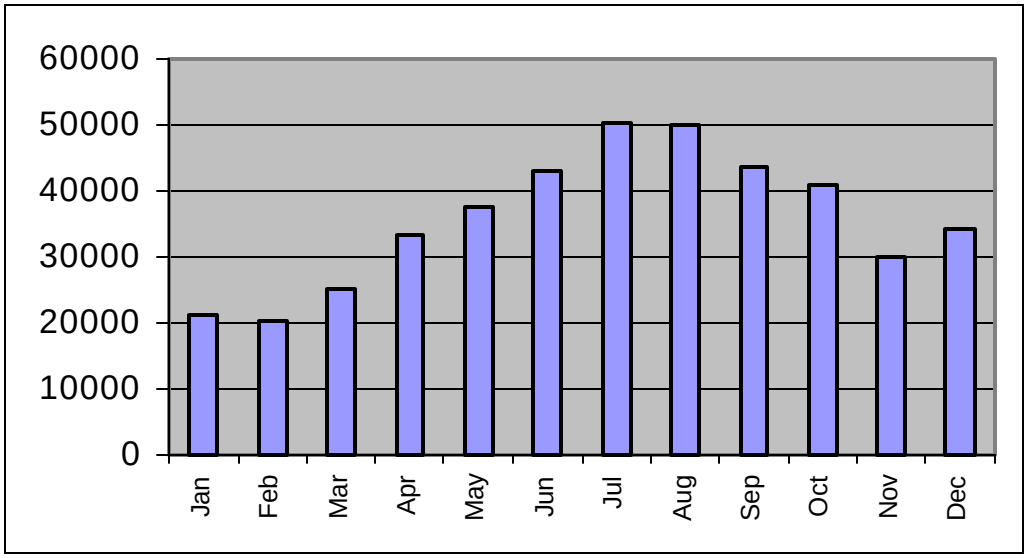

FIGURE 3.9 1999 Monthly Passenger Volume at Barnstable Airport

The number of passengers increased from 240,338 in 1992 to 428,967 in 1999 as demonstrated in Figure 3.10.

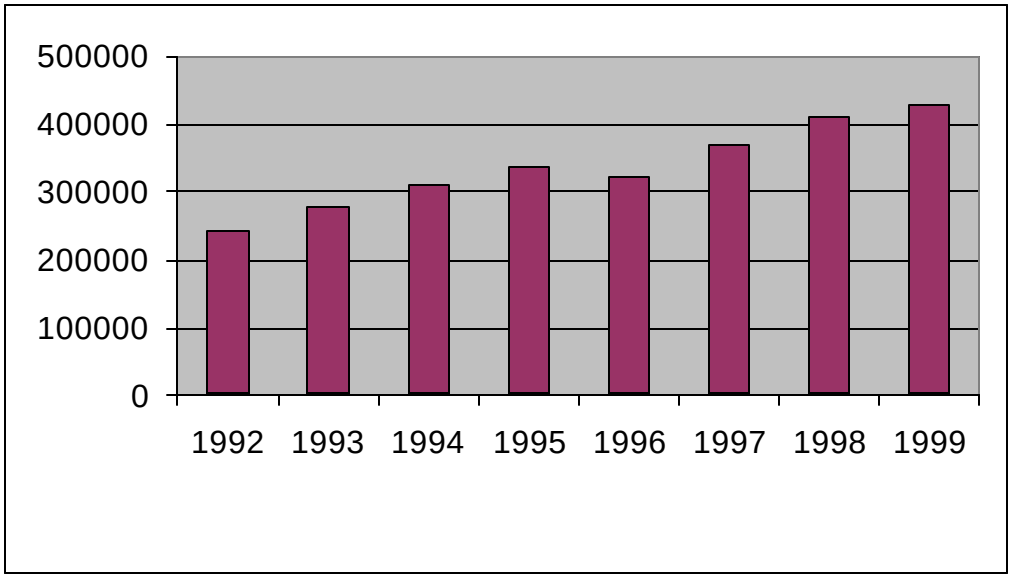

FIGURE 3.10 Yearly Passenger Volumes at Barnstable Airport

Passenger counts indicate that over 70 percent of air travel to and from the airport is between Hyannis and Nantucket. A Barnstable Municipal Airport Terminal Access Study[23] has estimated that the number of passengers will grow by 50 percent and 76 percent by 2010. Airport modernization is under consideration. Access to the airport is primarily by private auto (69 percent). Rental cars, taxis, and limousines account for another 24 percent. Less than 1 percent arrive by bus.

3.6.2 Provincetown Airport

Cape Air exclusively serves Provincetown Airport on a scheduled and adjusted basis. The actual service provided by Cape Air is often greater than the amount scheduled due to passenger demand. Conversely, during the winter months, service provided may be less than scheduled due to cancellations and inclement weather.

Cape Air each way between Boston and Provincetown carries over 15,600 passengers. The peak months are July and August, with over 3,000 passengers traveling in both directions each month.

3.6.3 Nantucket Memorial Airport

Cape Air, Colgan Air, Continental Express, Island Airlines, Nantucket Airlines and US Airways Express serve Nantucket Memorial Airport. Destinations include Boston, Providence, Barnstable, New Bedford, Martha's Vineyard, New York

[23] Barnstable Municipal Airport Terminal Access Study, Phase One: Long-Range Aviation Forecasts, Prepared by SH&E, March 1995.

City, Washington DC, and Philadelphia. Sixty-six percent of airport aircraft operations are civil related and thirty-three percent are military-related. For calendar year 2000, there were 302,161 civilian passengers that traveled through the airport.

The Nantucket Memorial Airport has been conducting an ongoing analysis of the Island's short- and long-term aviation transportation needs through the year 2015 under a joint planning grant from the FAA and the Massachusetts Aeronautics Commission (MAC). Specifically, this effort has focused on:

- The infrastructure improvements required for re-use of the former U.S. Navy "bunker" area in the southeast quadrant of the Airport.
- The Airport's Noise Abatement Program which, augmented by airfield safety improvements, will result in runway 15-33 becoming a preferential noise abatement runway for General Aviation (GA) and Cessna 402 air taxi aircraft.
- The existing and future spatial needs of the Airport's Passenger Terminal Building.

Each of these initiatives, especially the spatial needs of the Passenger Terminal Building, has been the subject of a series of planning workshops with the Airport's Citizen Advisory Committee (CAC) and the general public. The workshops have focused on an analysis of recent trends in air passenger service to the Island, and the implications of those trends for forecasting the future needs for additional space in the Terminal Building.

3.6.4 Martha's Vineyard Airport

Cape Air and US Airways Express provide year-round direct air service for passengers and freight to Martha's Vineyard Airport from Hyannis, Boston, Nantucket, Providence and New Bedford. Continental Express and United Express provide direct flights to New York City, Philadelphia and Washington, DC during the summer season only. It is an Index 'A' airport with Aircraft Rescue and Firefighting coverage during periods of airline operations. Martha's Vineyard Airport is the only airport in the Commonwealth that is owned and operated by a county. The Airport averages about 164 flights per day, and nearly all flights are for civilian purposes.

3.7 BICYCLES

Public support and enthusiasm for the development of bicycle and pedestrian facilities has been growing over the last two decades. Current facilities include a signed bike route – the 70-mile Cape Cod Bicycle Rail Trail Route 1, and several independent bike paths as described in Table 3.4. Bike paths on Cape Cod include the 25-mile Cape Cod Trail through Dennis, Harwich, Brewster and Orleans, Eastham and Wellfleet, the 14-mile Cape Cod Canal Bikeway in Bourne

and Sandwich, the 3.3-mile Shining Sea Trail in Falmouth, the 11 miles of bike trails within the Cape Cod National Seashore and 8 miles of bike trails in Nickerson State Park. Other bike paths include sections along Old Bass River Road and Setucket Road in Dennis and Yarmouth, and Old Stage Road and Route 28 in Barnstable.

TABLE 3.4 Existing Bicycle Facilities on Cape Cod

Town	Existing Bicycle Facilities
Provincetown	National Seashore Province Lands Bike Trails: 7.3 miles
Truro	National Seashore Head of the Meadow Trail: 2 miles
Wellfleet	Cape Cod Rail Trail
Eastham	Cape Code National Seashore Nauset Trail: 1.6 miles
	Cape Cod Rail Trail: 1.2 miles
Orleans	Cape Cod Rail Trail
Brewster	Cape Cod Rail Trail
Harwich	Cape Cod Rail Trail
Chatham	None
Dennis	Old Bass River Road Bike Path: 3.5 miles
	Setucket Road Bike Path: 1.8 miles
	Cape Cod Rail Trail
Yarmouth	Setucket Road Bikepath: 1.0 mile
	Bayberry Hill Golf Course Bikepath: .75 mile
Barnstable	Rte. 28 Bike Path: 1.7 miles
	Old Stage Road Bike Path: 1 mile
Sandwich	Cape Cod Canal Bikeway: 2.0 miles
	Rte. 6 Service Road
Mashpee	None
Falmouth	Falmouth Shining Sea Trail: 3.3 miles
Bourne	Cape Cod Canal Bikeway

4. FIVE-YEAR VISION AND PLAN

4.1 FIVE-YEAR VISION

Five-Year Vision
A comprehensive, accessible, and integrated public transportation system that allows the traveler to say *"I CAN get there from here…WHEN I want to go!"*

Few places can equal the distinctive identity of Cape Cod – the sea, dunes, and salt marshes joined in natural harmony with the small town life of human-scaled seacoast and rural villages. However, the booming popularity of this area has brought with it the problems normally associated with rapid growth: traffic jams, mounting trash and water quality problems, development and congestion of a once-rural area, damage to irreplaceable environmental resources, housing shortages, and other issues that affect the quality of life of Cape Cod's residents and visitors.

The challenge is to adequately respond to demographic and development pressures without eradicating Cape Cod's natural and historic character. Including public transportation as an integral component of land use planning helps ensure growth that is sustainable and allows for the preservation of these resources while creating new opportunities to enhance, rather than diminish, the quality of life.

The formation of the Task Force created a mechanism for implementing public transportation solutions that contribute to the preservation of natural, coastal, historical, and cultural resources, and help balance continued growth with economic, human service, and mobility objectives. Guided by the goals and objectives set by the first Transit Summit, this five-year-plan is driven by the vision of a comprehensive, accessible, and integrated public transportation system that builds on the existing infrastructure to serve the varied needs of Cape Cod's diverse population. By the end of 2007, this vision should begin to become a reality.

4.1.1 Adopting the Transit Summit Goals and Objectives

The recommendations incorporated in this plan result from an extensive public process that involved approximately 50 public meetings, two large-scale summits, and a summit focused on outer-Cape transportation issues. In February 2000, the first Cape Cod Transit Summit established the following goals and objectives, which were adopted by the Task Force early in the planning process. Goals indicate broad policy directions, which provide a basis for developing this plan and for evaluating program proposals. Goals are supported by more specific objectives that delineate the tangible, measurable components of a plan, and are often keyed to timing and plan/project implementation.

Goal 1. Reduce auto dependency

- Identify existing public transportation services and determine un-met needs of year-round and seasonal residents
- Recommend new or improved public transportation services
- Recommend strategies for restricting auto or Single Occupancy Vehicle use in certain, or all, areas of the Cape

Goal 2. Mitigate seasonal traffic

- Consider demand management strategies, in conjunction with Cape Cod National Seashore strategies and Steamship Authority strategies
- Coordinate on-Cape and Cape/mainland public transportation services

Goal 3. Meet the needs of the year-round population

- Determine origin and destination needs for the transit dependent
- Create an appropriate and coordinated mix of public and private transportation services

Goal 4. Develop coordination, communication, and cooperation

- Develop a continuing forum for regional public transportation problem identification and solutions
- Establish cooperative marketing of public transportation services

Goal 5. Incorporate smart growth and land use planning

- Identify critical growth and development patterns
- Develop public transportation services that address growth. Translating broad statements of goals and objectives into specific policies, investments, and services is a challenging process.

4.1.2 Making the Vision a Reality: Transportation Services in Five Years

In five years, getting to and around the Cape without a car could be the preferred manner of travel – users will have the option of straightforward and dependable public transportation. A network of transportation centers supported by a real-time information network will enable users to easily plan a trip to the local grocery store or to their favorite vacation spot. Additional benefits of a well-coordinated transportation system will be support to "smart growth" development, fewer adverse impacts on the environment, and improved human services. In short, the vision this plan sets forth is *"I CAN get there from here…WHEN I want to go!"*

4.1.2.1 Coordinating Service Through Transportation Centers

The comprehensive Cape Cod public transportation system will connect local and regional transportation services at transportation centers of various sizes. Services will be coordinated to provide accessible, integrated, and reliable transportation for seasonal visitors as well as year-round residents.

To help consolidate growth where transportation is readily available, many of the smaller transportation centers will be located in regional and village growth centers identified by the towns. These transportation centers will be designed in collaboration with local business and town planners to encourage transit-oriented development.

As the improved public transportation services attract more people to Cape Cod without their cars, many of the transportation centers will act as gateways for visitors arriving from off-Cape, enabling seamless access to destinations on the Cape and Islands. This access will be supplemented by a number of new CCRTA routes and connections with private providers operating year-round and seasonally to meet these demands. The major gateway will be the Hyannis Transportation Center, currently under construction and scheduled to open in Summer 2002. It will be the principal hub for the CCRTA, intercity bus, and seasonal rail service. The Hyannis center will be connected to both Nantucket and Martha's Vineyard by the Hyannis ferry services, and to the Barnstable Airport by a shuttle system. Several smaller facilities will be located in places such as MacMillan Wharf, where visitors will transfer from the ferries arriving in Provincetown to local services that will provide direct access to the National Seashore and the outer Cape as far as Orleans.

4.1.2.2 Increasing Mobility and Capacity with ITS

Properly integrating Intelligent Transportation Systems (ITS) technology with the existing systems will help improve operations, communications, and customer service. For example, the transportation centers will be equipped with interactive information systems that travelers can use to schedule their trip and to plan transfers between providers. These information systems will also be available online and at kiosks located in key destinations and activity centers. The information systems will be integrated with real-time data; they will anticipate congested travel times and indicate estimated arrival times of transportation services when service schedules cannot be met. These estimated arrival times will also be available to service providers so they can make minor adjustments to their schedules and provide "smart transfers" for delayed travelers.

The convenience of scheduled services will be enhanced with a "smart card" fare-collection system. Travelers will purchase one card that they will "swipe" to pay for a variety of transportation services. The smart card may also provide discounts at locations such as shopping malls and beaches that are interested in encouraging access by public transportation.

On roads and highways, communication tools such as variable message boards will help improve traffic flow and provide advisories for Cape attractions (e.g., "Coast Guard Beach Parking Full, proceed north to Marconi Beach").

4.1.2.3 Enabling Car-Free Travel

Car-free travel to the Cape will be easier thanks to coordinated bus, air, and rail connections. Incentives to leave the car at home will include "through-ticketing" all-inclusive tickets. For example, this could enable travelers to take Amtrak from New York City to an intercity bus in Westwood, Massachusetts, to a ferry in Woods Hole to Martha's Vineyard, with an optional VTA pass for travel on the Island at their final destination. Additional proposed services would connect Cape Cod to other interregional centers such as T.F. Green Airport, more CCRTA routes in previously unserved areas of the Cape, and expanded weekday and Sunday CCRTA service on the regional bus routes. These all have the goal of providing visitors and year-round residents mobility options that don't require a car.

In addition to the coordinated public transportation system, an expanded system of bicycle facilities will connect existing paths and bikeways. Performed in conjunction with existing bicycle planning, this expansion will increase the options available to bicyclists for both recreation and day-to-day transportation needs. The CCRTA will continue to include bicycle racks on their vehicles and storage facilities will be made a component of the transportation centers.

4.1.2.4 Raising Awareness

Extensive and sustained marketing programs, for both on and off the Cape, will increase awareness of improved public transportation. For example, the "Smart Guide" developed by the Cape Cod Chamber of Commerce will be widely available to those planning Cape visits. The guide will be kept up to date and will highlight the options presented in the plan as they come on line. This plan spells out a comprehensive marketing plan that details both how to get the word out and what to say. Strategies will include branding, media relations and public outreach, media alternatives, special services, promotions, and pricing policies. This will include the translation of public transportation literature and web based information into Spanish, Portuguese, and Haitian Creole languages.

4.1.2.5 Mitigating Seasonal Car Traffic

Visitors who bring their cars on vacation will be accommodated with satellite parking systems designed to serve major attractions such as the Cape Cod National Seashore, the ferries, and areas such as Provincetown where parking is difficult to find. The parking areas will be established on existing lots, such as schools, that are not used much in the summer season. These lots will be served by shuttles and CCRTA buses, and will provide frequent transportation to and from Cape attractions and other transportation centers.

4.1.2.6 Contributing to Human Services

Demand-response human services transportation is also expected to undergo major changes. A single dispatch and control service will coordinate the large number of trips that are scheduled every day and the services of the many agencies involved. The new model will offer more choices and improve customer convenience. This scheduling and dispatch system will make extensive use of a transportation monitoring system to efficiently and reliably deploy services on time.

4.1.3 Achieving Our Goals: Planning and Programming

The five-year plan calls for easily implemented improvements within the context of the existing public transportation network. This approach requires a shift away from traditional, capital-intensive solutions to those that require lower levels of financial commitment. For example, incorporating ITS into the transportation system can improve efficiency of the existing infrastructure while expanding capacity and enhancing travelers' experience.

The planning and programming of public transportation improvements should be measured in terms of the following critical areas.

- **Economic impacts.** Providing public transportation facilities and services that enhance the economy, strengthen fiscal integrity, and meet the financial needs of the year-round residents and business community.

- **Population growth.** Supporting existing and anticipated population levels with increased accessibility and capacity by focusing on the existing public transportation system, major corridors, and activity centers.

- **Visitors**. Accommodating the tremendous influx of seasonal visitors, and preventing further declines in service levels, by focusing on the existing public transportation system and combining investments in technology, infrastructure, and public outreach. This includes the use of alternative public transportation, with a goal of making "car-free" weekends and vacations possible.

- **Environment**. Protecting the Cape's natural and historical resources by investing in public transportation alternatives that will reduce auto dependency.

- **Intra and inter-regional connectivity.** Implementing improvements to public transportation facilities and services that support and sustain a multimodal public transportation network and enhance regional accessibility. That is, make it easier to travel internally within the Cape, but also to the rest of Massachusetts, New England, and the Mid-Atlantic States. At the same time, planning on the Cape must be accomplished in the context of recent federal legislation and policy that calls for:

- Managing existing facilities and preserving rights-of-way to achieve greater operating efficiencies
- Implementing improvements that are less capital intensive, but effective in shaping travel demand
- Ensuring that investments meet economic, social, and environmental objectives.

4.2 PUBLIC TRANSPORTATION SERVICE ISSUES

By examining the existing system – that is, how each of the modes is meeting the mobility needs of Cape Cod's residents and seasonal visitors, it is possible to identify issues that affect service, and identify potential improvements that would be consistent with regional goals and objectives. The identification of these issues was undertaken by mode with consideration of improving the mobility of year-round residents and seasonal visitors. The compilation of these issues is based on the Volpe Center's examination of the existing public transportation system, and information from the Cape Cod Household Transportation Survey. This list should not be considered all-inclusive, but addresses a large number of observed issues, and corresponds to the individual needs of year-round and seasonal residents. In addition, this list does not include highway-related issues.

In the case of the CCRTA, it's original charter allowed it to provide fixed route *or* demand response transportation. It was decided that the CCRTA pursue demand response service, and leave fixed route service to the private sector. Over time, all private sector attempts to operate unsubsidized fixed route service failed, except for the P&B Hyannis to Provincetown service. In response, the CCRTA gradually expanded its regional route and trolley systems, generally through a series of locally initiated plans and proposals. Many of the following issues merely reflect what was observed, and no attempt has been made to explain the circumstances of how and why the current system evolved as it has.

4.2.1 CCRTA Public Transportation

- Regional route public transit provides a relatively low level of year round service, has some large headway gaps, and is not designed to easily satisfy intra-regional travel demand from one major activity center to another.
- Many rural areas of Cape Cod have no regular transit service.
- CCRTA staff has no full-time transit planner. Transit planning is typically reactive and not proactive to address changing socioeconomic conditions.
- Requests for new or enhanced transit service are a town-by-town decision, with little coordination between towns.
- The ability to obtain demand response transit service to travel from specific origins to specific destinations at the time of choice is limited.
- While the CCRTA provides a great deal of health and human services transportation, there is a need for more coordination between health and

human service organizations and the CCRTA in meeting the transportation needs of market segments, which are typically transit dependent - elderly, teenagers, disabled and poor.

- The current CCRTA operations and maintenance facility is woefully inadequate for the size of the fleet and the operations staff required.
- Typically, schedules do not provide many convenient connections between public and private carrier routes.
- Few bus stops have schedules posted, and many stops do not have bus stop signs, deterring the infrequent rider who ordinarily is not aware of stops and schedules.
- Buses will pull over and pick up a rider if the rider hails the driver from the side of the road, but this fact is not well known Capewide.
- Bus fares are not typically posted on the side of buses (in part because of multiple fares), or at many bus stops.
- Few shelters exist to protect waiting passengers from the weather, thereby inhibiting bus ridership during inclement weather.
- Many potential riders are unaware of CCRTA services because of the historically minimal nature of marketing and promotion prior to 2001 (recent surveys indicate only an approximate 23 percent awareness of CCRTA services capewide).
- Given that the regional route system does not extend throughout the Cape, many visitors may not know that a public transit system exists.
- The Cape's two airports with scheduled air passenger service – Barnstable Municipal and Provincetown Municipal airports have limited or no CCRTA service. (The airport on Martha's Vineyard has direct transit service, and the airport on Nantucket has limited transit service).
- Public transit dollars have historically been committed to services, such as trolleys that operate only in the summer, several of which have a high cost per passenger carried.
- The summer trolleys and shuttles historically do not cover large sections or sub-areas of Cape Cod, which have no fixed route service, and that many tourists want to visit.
- Summer service has not focused on connecting seasonal centers of demand-moving people between hotels, motels and campsites to activity centers, including the National Seashore.
- Low levels of service limit the viability of transit by visitors as an alternative to using their automobiles once they have arrived on the Cape.
- Limited transit information is available to visitors when they are planning their Cape Cod vacation.
- Given that there is no or limited public transportation service to Barnstable Municipal and Provincetown Municipal airports, people who fly to the Cape must rent a car or arrange for a taxi or someone that know to pick them up.
- There is little coordination of services with adjacent regional transportation systems.

4.2.2 Private Transportation Carriers

- Only one of the two private for-profit bus companies operating on the Cape, the Plymouth & Brockton Street Railway Company (P&B), provides services that cater to local residents, and enhances the CCRTA service.
- The schedules of the two private bus carriers are typically not coordinated with local transportation services, such as the ferries operating from Hyannis and Woods Hole, CCRTA buses, airport service, and health and human services.
- Potential patrons, particularly on the Hyannis to Provincetown route operated by P&B, must rely on flagging down buses along Route 6 between designated stops in North Truro, Truro, Wellfleet, South Wellfleet, North Eastham, Orleans, and Harwich. On the two-lane segment of Route 6, this creates traffic hazards and backups.
- Designated bus stops along the Hyannis to Provincetown route are not consistent limiting the public's awareness of where to go, or where they will be dropped off once they have reached their destination. The stops include a town hall, town post office, a CVS, a local market, and a park and ride lot.
- Patrons cannot use credit/debit cards to purchase tickets on the P&B and Bonanza Bus Lines Cape Cod bus routes.
- Unlike other major airports, Logan Airport does not offer in-terminal ticket sales for regional bus carriers including P&B and Bonanza.
- There is no direct service from the Cape to downtown Providence, the Providence Amtrak station, or T.F. Green Airport.
- Bonanza services to New York do not stop at the Barnstable Park-and Ride lot (even though they pass by it), forcing would-be passengers to drive into Hyannis to access the service.

4.2.3 Transportation Centers

- The Cape's first inter-modal center in Hyannis is expected to open in Spring 2002. From an on-Cape and Islands perspective, its success will depend upon its ability to coordinate public transportation services, allowing residents to connect from mode to mode, thus improving regional mobility. Making certain that people moving through the Hyannis transportation center will be able to easily (if not seamlessly) connect with the ferry lines and Barnstable Airport will be a challenge.
- The potential for rail service connections needs to be more fully developed at this time.
- At the present time, there are no plans for rental car companies to locate at the Hyannis Transportation Center.
- Although the Cape's geography is conducive to developing at least one other center that would facilitate transfers among public transportation services, none (besides Hyannis) is being planned for the near future.

4.2.4 Ferries

- No water taxi services exist, or are planned in the near future. These services would enhance travel within the Cape from one seacoast village to another.
- Many of the year-round residents on the islands rely on Cape services; however, the ferry and the public transit schedules are not well coordinated. It is also not well publicized how any of the Cape residents using public transportation can reach their final destination.
- At the present time, the CCRTA Sea Line route and Hyannis to Orleans Line route do not make stops at the Hy-Line Terminal in Hyannis.

4.2.5 Health and Human Services

- The CCRTA already provides considerable coordination among the many entities providing demand-response transportation services on the Cape. Nevertheless, further collaboration could address the need to:

    - Disseminate service information;
    - Centralize dispatching;
    - Eliminate duplicative services;
    - Share performance data, and
    - Coordinate capital procurements and fixed facilities.

4.3 TRANSPORTATION IMPROVEMENTS AND COST ESTIMATES

The five-year plan must respond to existing conditions and trends, acknowledge what public transportation limitations exist, and determine what opportunities they present for transforming regional goals and objectives into an achievable vision - a Cape where auto-congestion is limited, but overall mobility, including to the Islands, is enhanced through further development of an integrated transportation system. This will require time, identification of viable improvements, and building institutional, financial, and community support.

Public transportation improvements, which can be implemented incrementally over a five-year process and possibly beyond, are described in this section. The intent is twofold:

- Present improvements, which can be planned, programmed, and implemented
- Demonstrate to decision-makers the magnitude of the need, the number of projects, and extent of financing required.

The improvements are grouped as near-term and long-term. Each grouping represents a staging period for implementation, and an increasing level of planning and programming complexity. “Near-term” represents early implementation actions, which can be acted upon over the next two years without

significant planning and regulatory approvals. “Long-term” covers projects, which can be initiated and/or implemented three years hence, and in many cases, beyond. They typically are larger in scope and require more planning considerations, regulatory approvals, and funding.

All proposals contained in the five-year plan were developed with consideration of the *Cape Cod Household Transportation Survey's* key findings:

1 Increasing frequencies on existing scheduled routes
2 Evening/night bus service
3 Additional bus stops
4 Additional bus routes to better accommodates actual travel by trip type and destinations,
5 More predictable arrival and departure times, and
6 Lower Fares and services that cater to families traveling with children (particularly, those requiring childcare), teenagers, seniors and the disabled.

With the exception of lower bus fares (which is a public policy consideration outside of the scope of this project), the proposed near- and long-term improvements at a minimum address and comply with these suggested solutions, and build on them with the intent of providing a more efficient, effective and equitable public transportation system.

Tables 4.3 and 4.4 list all near-term and long-term improvements that the Volpe Center has identified for inclusion in the five-year-plan. The improvements are listed by mode or a public transportation management category, and according to a recommended implementation time frame. This list is intended to move forward the development of a comprehensive public transportation system, and provide decision-makers with options regarding the allocation of public transportation resources.

Nine categories essential to Cape Cod public transportation development and improvement are identified in Table 4.5. These categories include various modes of transportation such as transit, aviation, and rail. They also include categories such as demand response coordination, maintenance facilities, and Intelligent Transportation Systems (ITS) that are critical to the management and sustainability of the public transportation system. Marketing is identified as the tenth and separate category because of the importance of information dissemination to ensure that on and off Cape travelers know what services are available and when. Professional Development is identified separately as the eleventh category as a means for educating policy-makers and administrators on issues and opportunities affecting public transportation.

4.3.1 Local Transit

Local transit refers to bus projects or services that operate on Cape Cod. These services include the Hyannis to Orleans Line, the Villager Line, and the Sea Line, all of which are operated by the CCRTA. The near-term improvements include introducing of Sunday service, extending Hyannis to Orleans Line service during the fall and winter seasons, and providing service to various unserved corridors. It is also recommended that the Sea Line and Hyannis to Orleans Line provide a stop at the Hy-Line ferry terminal in Hyannis, similar to the current Villager route stop. These various cost estimates also include CCRTA's vehicle replacement needs.

Based on feedback gathered from the public comment process, there appears to be a substantial market for transportation services geared toward activities that teenagers would like to pursue[24]. It was stated that many families do not own second automobiles and/or have a parent working evenings, and without transit options teenagers are precluded from participating in meaningful group activities or gainful employment, and especially in industries that are currently experiencing an employment shortage. This includes gathering places such as the Juice Bar in Orleans, the Skate Park in Wellfleet, and evening service for service sector workers, such as at the Mashpee Commons and the Cape Cod Mall.

Table 4.1 depicts cost estimates of six proposed service enhancements. All calculations are based on FTA cost estimates for transit systems operating fewer than 50 buses. These estimates are designed to provide a range of projected costs so that decision-makers have options in determining priorities and service levels.

4.3.1.1 Fixed route Sunday Service

The lack of year-round regional service on Sunday is a significant deterrent to the goal of enticing visitors to come to Cape Cod without cars. Sunday service would be helpful to year-round residents during the rest of the year when there are no trolleys or shuttles running and b-Bus service is limited overall and ends service at 1 p.m. Any Sunday service should be coordinated with the Plymouth and Brockton schedule to Boston, the Bonanza service to Boston and to Providence and beyond, and with the ferry services where feasible. The proposed Sunday service on the regional routes is calculated on 52 operating

[24]Ms. Karna Nelson, a student at Dennis-Yarmouth High School, has proposed a three-bus system to go from Provincetown to Orleans, Orleans to Hyannis, and Hyannis to Falmouth. It would provide transportation for after school and weekend jobs, and would access movie theatres, beaches and other areas that teenagers would like to go. Also, there is a residence near Dennis-Yarmouth High school for unwed teen mothers that have a need for reliable transit service, especially to doctor offices in Hyannis. Marketing would occur at teen forums, and discounted tickets would be made available.

days. The cost estimates were based on a 50-mile service per round-trip. Estimates are given for a minimum of four round-trips to a maximum of eight round-trips.

4.3.1.2 Additional Fall and Winter Service on the Hyannis to Orleans Route

The proposed additional fall and winter service for the Hyannis to Orleans bus route is calculated on 325 operating days. These additional runs will supplement existing service by increasing morning and evening peak service. The cost estimates were based on a 50-mile service per round-trip. Estimates are given for a minimum of four round-trips to a maximum of eight round-trips.

4.3.1.3 Bourne to Falmouth (New Service)

The Bourne-Falmouth proposal is a bus route from Falmouth Center to Bourne along Palmer Avenue, Route 28A, Country Road, Shore Road, and ending at the Bonanza Bus stop on Trowbridge Road in Bourne. This route would also connect with a Greater Attleboro Taunton Regional Transit Authority (GATRA) route at the same Trowbridge Road location. The Bourne-Falmouth corridor estimates are based on 325 operating days. The cost estimates are based on a 30-mile service per round-trip. Estimates are given for a minimum of four round-trips per day to a maximum of eight round-trips per day.

4.3.1.4 Bourne to Barnstable Village (New Service)

The Bourne-Barnstable Village proposal is a bus route from the Bonanza Bus Terminal in Bourne along Sandwich Road (6 West), and 6A to Barnstable Village. Also, a route from Barnstable Village to Orleans along Route 6A and terminating at the Stop and Shop near the Orleans Rotary is recommended. Transfers to the Hyannis to Orleans Line and a potential route from Orleans to Provincetown would be possible at this location. Transfers to the Hyannis to Orleans Line and the P&B service between Hyannis and Provincetown could be made near the CVS store in Orleans Center. The Bourne-Barnstable Village and Barnstable Village-Orleans corridors are based on 325 operating days. The cost estimates are based on a 75-mile service per round-trip. Estimates are given for minimum of four round-trips to a maximum of eight round-trips.

4.3.1.5 Orleans to Provincetown (New Service)

The Orleans-Provincetown proposal is a bus route from the center of Orleans, along Rt. 6 past the National Seashore to Provincetown. Connections can include the National Seashore Visitors Center and beaches, and the Provincetown-Truro Shuttle. Research suggests that there is a significant market for residents, tourists and workers who need access to retail and commercial facilities especially at either end of this route, but are presently underserved.

Moreover, during public meetings in Eastham, it was noted that the over 40 percent of the year round residents of the five Outer Cape towns are over 60 years of age. It was stated that local and express transit throughout the Outer Cape would be a necessary component in meeting the mobility needs of residents, especially the elderly. The Orleans-Provincetown corridors are based on 325 operating days. The cost estimates are based on an 80-mile service per round-trip. Estimates are given for minimum of four round-trips to a maximum of eight round-trips. At the present time, it appears that regulatory issues exist regarding private carrier operating rights along this corridor. The designation of an operator of this route is expected to be the subject of negotiation.

TABLE 4.1 Annual Cost Estimates by Proposed Service Enhancement

Service	4 Round-trips	6 Round-trips	8 Round-trips
Regional Route Sunday Service	$40,456	$60,684	$80,912
Additional Hyannis to Orleans Fall/Winter Service	$30,342	$45,513	$60,684
Bourne-Falmouth Corridor	$151,710	$227,565	$303,420
Bourne-Barnstable Village Corridor	$252,850	$379,275	$505,700
Barnstable Village-Orleans Corridor	$252,850	$379,275	$505,700
Orleans-Provincetown Corridor	$273,078	$409,617	$546,156

* All figures are based on FTA, Data Tables for the 1999 National Transit Database Report Year, 2001.

**Cost estimates are calculated using a $3.89 cost per vehicle mile.

***Sunday Service is based on 52 operating days.

****All other service is based on 325 operating days.

4.3.1.6 Whale Watch Shuttles (New Service)

Another proposal is to provide ride-sharing services that would be marketed to "whale-watchers" heading for Provincetown and Barnstable excursions. These potential customers generate thousands of vehicle miles traveled throughout Cape Cod. Metered street parking in Barnstable and the cost of parking lots in Provincetown sends drivers cruising the streets to find the very few unmetered spots. By creating a service that allows individuals to access reliable and timely service from major locations in the mid and outer Cape starting in Hyannis to the various private whale-watching operations, there should be a significant reduction in vehicle traffic. An expected benefit of this recommendation is to ease the congestion on Route 6, specifically on the outer Cape where traffic delays are common along the two-lane stretch. One recommendation is to introduce a shuttle bus program operating from the Hyannis Transportation Center to the Barnstable Park and Ride, and ultimately to Provincetown that would also make intermediary stops. One possible stop would be the parking lot next to the Wellfleet Drive-in. The location is well situated given its proximity to Route 6,

Provincetown Center, and the summer residences of many of the potential whale-watchers[25]. Another option would be to run exclusive shuttles from the drive-in parking lot into Provincetown, and integrate connections with the proposed Orleans-Provincetown route. Although this would not eliminate Route 6 congestion, it would represent an initial attempt in achieving a longer-term goal of moving people into higher occupancy vehicles.

To be effective, the program needs to operate on cooperative agreements between a private bus company or the CCRTA, parking providers, and whale watching companies. The program will be most effective if joint ticketing can be implemented successfully. As an example, an individual could park at a Hyannis area parking facility, board a shuttle to one of the various whale-watching locations, and board a guide boat all on one ticket. This allows for connectivity throughout the program, which benefits customers, businesses, and local residents who now have a less congested transportation system.

4.3.1.7 Fleet Management Study

Once the parameters for these proposed service improvements become more fully formed, it is proposed that the CCRTA embark on a formal fleet management study for the entire CCRTA system. This would revolve around an analysis of:

- Revenue and non-revenue vehicle-miles and vehicle-hours
- Weekday service measures
- Annual service measures, and
- Fleet size, and types of vehicles to be used
- Employees, by category

In Section 4.3.5 Facilities, the recommendation is made that the maintenance and operations facility in Dennis be replaced. This fleet management study and the planning for the maintenance and operations facility should be coordinated to determine not only where the new facility will be located, but also what type of services and equipment this facility will require.

4.3.1.8 Satellite Parking Centers

The creation of a satellite parking system with transit feeders to the five main service centers around Cape Cod is proposed. These centers are Hyannis, Falmouth/Woods Hole, Chatham, Orleans and Provincetown. The conceptual model will be patterned after the Greater Portland, ME OpSail 2000

[25] At the present time, there have been no negotiations or commitments with the owner on the use of this property. Nonetheless, the strategic value of this location would make it an excellent candidate for a public/private partnership mutually beneficial to all parties.

Transportation Plan.[26] While it is beyond the scope of this plan to identify the exact locations of these satellite-parking centers, it is expected to include school and other municipal lots, which are not substantially utilized during the summer and/or weekends. It is also recognized that no one municipality should be the 'parking lot' for the Cape.

4.3.2 Inter-Regional Transit

Inter-Regional Transit refers to bus projects and services that operate within the greater Cape Cod region but also provide critical connections to mainland population centers such as Boston and Providence. It is recommended that intercity bus service between T.F. Green Airport and Union Station (Amtrak) in Providence, RI and destinations on Cape Cod be pursued. The two projects that are of primary importance in this category are the newly created Relax n' Ride program operated from the Amtrak/MBTA Station near the Route 128 and I-95 intersection and a proposed Relax n' Ride II to be operated from the Providence, RI area. Since these projects are contracted services, they are included as operating costs rather than capital costs.

A long-term proposal is the construction of exclusive bus lanes on sections of Route 3 and Route 6 near the Sagamore Bridge. Buses traveling toward the Sagamore Bridge get caught in the same traffic as persons traveling in automobiles. Delays can be substantial at certain periods, especially on Friday afternoons (from North of the bridge) during good weather months, Saturday mornings during the summer (both directions), and Sunday and Holiday afternoons and evenings (from South of the bridge) during good weather months. In order to make bus service more attractive, the reconstruction of the roadway shoulder on Route 3 from Exit 2 to the bridge and construction of a new lane on Route 6 from Exit 2 to the bridge for exclusive bus use is recommended. This could potentially save 20 minutes or more of travel time for bus passengers. It would be essential for there to be police enforcement of the prohibition of automobiles in these lanes during peak traffic periods. This is recommended as a temporary measure until the Sagamore Rotary is replaced by a new bridge approach design. Extensive interaction with MassHighway, FHWA, other government agencies, and the public will have to be undertaken to address environmental, circulation and other issues before this project can be undertaken.

[26] The OpSail 2000 system consisted of nine parking facilities/lots in five different areas around Portland, ME. These lots served as transfer points for visitors to the waterfront in downtown Portland. Through the assistance of both public and private transit entities, five-thousand (5,000) visitors were transported on buses with frequent headways, especially during the morning and late afternoon hours over two days. During the event, the fare was $2 charged inbound for adults and children were free. Further research is needed to identify parking facilities on the Cape.

4.3.3 Aviation

Aviation improvements are mainly expansions of airline services off-Cape Cod to entice travelers who would typically drive to Barnstable Municipal Airport to fly to either Martha's Vineyard or Nantucket. As noted in Table 4.5, these various projects are calculated as operating subsidies to ultimately develop self-sufficient services. Projects included in the near-term include a comprehensive marketing campaign as well as service from Newark to New Bedford Municipal Airport, with passenger transfers to the SSA ferries bound for the Islands or bus service to Cape Cod.

Projects included in the long-term include a further expansion of service from New York JFK and Cincinnati to New Bedford Municipal Airport[27]. Another recommended improvement includes air service from Providence's T.F. Green Airport to Provincetown. This is a viable possibility given Southwest Airlines national system with its choice of Providence as a hub of operations, and the fact that the Cape in general, and Provincetown in particular, attracts visitors from across the country during summer months.

4.3.4 Travel Management

Travel Management improvements include Intelligent Transportation Systems (ITS), a category of high-tech solutions incorporating electronic devices and networks allowing for more efficient and effective usage of the current public transportation system.

Projects in the near-term include procurement and use of a variety of sized information display boards and infrared bus passenger counters. Signs range in size from large display boards similar to those currently used on Route 128/95S in Lynnfield, as well as small display boards that are currently used at Logan International Airport and many MBTA stations. The bus infrared passenger counters will be installed in each of the twenty-two new mini-buses recommended for CCRTA purchase in the near-term. Stat devices are designed to capture the number of people boarding and de-boarding each time a bus makes a stop. More accurate ridership data will make it possible to more analyze the performance of existing bus routes and plan future ones.

Long-term expenditures include procurement and use of traffic cameras capable of transmitting live or "real-time" data to the various display boards, and a control dispatcher who could direct drivers to avoid congested areas. Additional projects include the deployment of smart kiosks providing transportation information in the five major town service centers, and the development of a fully integrated radio frequency tracking system.

[27] As proposed in the "Regional Air Service Development Study for New Bedford Regional Airport, prepared by SH&E, February, 2001.

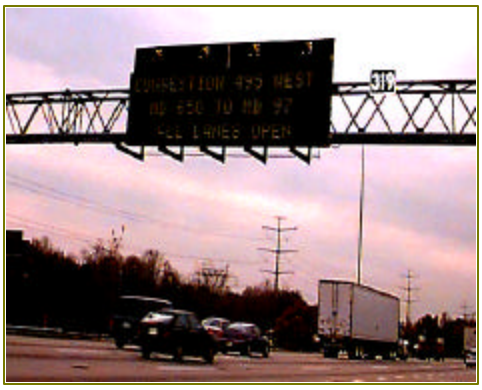

FIGURE 4.1 Large Information Display Board and Traffic Camera

4.3.5 Facilities

This category of improvements includes new facilities that are needed to improve the effectiveness of CCRTA's service. Candidate projects include replacement of the existing CCRTA Dennis facility and local transportation facilities throughout the Cape.

4.3.5.1 CCRTA Maintenance and Operations Facility

The CCRTA has outgrown its current maintenance facility in Dennis. Many vehicles have to be stored in remote locations due to the lack of storage space on-site. A dearth of maintenance bays means that vehicles might possibly not be repaired in a timely way, adversely affecting service.

The replacement of the current CCRTA service center is proposed to include a bus operations facility, a covered vehicle and parts storage area, and fueling, washing, and repair facilities. It will need to include a dispatch and schedule function area with space for dispatchers and human services brokerage staff, management offices, a training room, a break room, money counting room, computer space, and a reception area.[28] Since the current service center is inadequate, any future growth or service development will only make conditions more critical. Therefore, this facility should be given significant consideration if other transit projects and services are to be implemented. As stated in Section 4.3.1.7, a Fleet Management study should be conducted in tandem with any new facility analysis.

[28] At the present time, the CCRTA is negotiating to acquire 10 acres of commercial property off Theophilus Smith Road in South Dennis for the recommended service center.

4.3.5.2 Local Transportation Centers

The key to improving public transportation is connecting existing services and coordinating existing and proposed services. This process requires a physical facility to allow these coordinated connections to occur. The local transportation centers will be established in a manner that will promote transit-oriented development, and support land use and other local planning concerns as well as complement regional and village growth centers. The centers will be designed to support the public and private transportation services in the area and will have amenities such as information kiosks, shelter, and bicycle storage facilities and, where appropriate, parking.

Three areas are expected to require transportation centers in the next five years. These facilities will be in addition to the Hyannis Transportation Center currently under construction, and will be developed at a much smaller scale. The facilities recommended by this plan are to be located in the following areas:

- **MacMillian Wharf:** This facility will serve as a linkage between the expanding ferry service at the wharf, local transit service, intercity bus service, and potential shuttle services. The facility has the promise to be developed as a joint private/public partnership with the local chamber of commerce, local businesses including whale watch companies, and the National Oceanic and Atmospheric Administration (NOAA).

- **Orleans:** This facility will provide transfer options and connections between modes, and to increase accessibility to the National Seashore and Provincetown. The connections envisioned are between the existing Hyannis to Orleans Line, the proposed service between Provincetown and Orleans, proposed Whale Watch services, potential expansion of this year's pilot service in Chatham and inter city bus service.

- **Upper Cape:** There is a need for a transportation center in the upper Cape area for connections to adjacent RTA service, intercity bus services, CCRTA services, ferry services, potential rail service, and potential water taxi services. Sites under consideration are near Tedechi's Market in Bourne, the Buzzard's Bay Depot, and off MacArthur Blvd. in Bourne.

4.3.6 Bicycles

Bicycle projects or proposals include developing and upgrading bicycle pathways and improving safety throughout Cape Cod. Communities on the Cape are currently promoting bicycling as a component of an integrated transportation system. Projects in the near-term include installation of bicycle racks in each town center on Cape Cod, installing bicycle safety awareness signs, and conducting police bicycle safety training. Long-term projects include the

development of bicycle pathways or roadway shoulders that will allow bicycle travel from Bourne to Provincetown. This primarily refers to pathway development from Bourne to Falmouth and from Falmouth to the current bicycle pathways in Hyannis.

Gaps remain in the development of a Cape Cod bikeway system. Proposed bicycle improvements by town are described in Table 4.2. These projects/proposals, which vary widely in terms of design development, consist primarily of independent bike paths and bike lanes in conjunction with municipal road improvements. Five projects involving six communities estimated at $4.4 million and covering 14.7 miles, are currently programmed for development.

It is recommended that a Cape Regional Bicycle/Pedestrian Coordinator be hired, and reside at the Cape Cod Commission. The coordinator would organize all local bikeway and pedestrian planning and development efforts and support the growth of the Cape Cod Bikeways organization. Experience from across the US has shown that the availability of a coordinator makes a difference in successfully implementing bicycle and pedestrian programs. More than any other region in Massachusetts, the appointment of a Cape regional coordinator is critical to implementing the range of tasks listed below.

TABLE 4.2 Proposed Bicycle Improvements on Cape Cod

Town	Proposed Improvements
Provincetown	Rte. 6 from Truro to Race Point Road
	Safety Improvements to the Province Lands Bike Trails
	A 1.4 mile path from Herring Cove to Rte. 6A
Truro	Alternate route for Cape Cod Bicycle Route 1
Wellfleet	Extension of the Cape Cod Rail Trail from LeCount Hollow Rd. terminus to Wellfleet Center
	Extension of the Cape Cod Rail Trail from Wellfleet Center to Truro
	Alternate Route for Cape Cod Bicycle Route 1
Eastham	Extension of the Cape Cod Rail Trail to LeCount Hollow Rd.
Orleans	Bicycle/Pedestrian Rte. 6 Overpass and CCRT Link (under construction)
Brewster	Cape Cod Rail Trail Facility
	Harwich-Brewster-Chatham Bikeway Loop
Harwich	Harwich-Chatham Rail Trail
	Bicycle/Pedestrian Rte.6 Underpass and CCRT Link
	Harwich-Brewster-Chatham Bikeway Loop
Chatham	Harwich-Chatham Rail Trail
	Harwich-Brewster-Chatham Bikeway Loop
Dennis	Setucket Road Bike Path: complete missing sections
	Old Bass River Road Bike Path to CCRT entrance (Rte. 134)
	Cape Cod Rail Trail: resurfacing and maintenance
Yarmouth	Yarmouth Bike Path: 6 miles connecting Rte. 28 to the Setucket Road Bikepath
	Cape Cod Rail Trail: extending from Dennis through Yarmouth
Barnstable	Cape Cod Rail Trail: extending from Dennis through Barnstable
Sandwich	Cape Cod Canal to Rte. 6 Service Road

Town	Proposed Improvements
Sandwich (cont'd)	Cotuit Road South of Mashpee
	Bicycle Facility Improvements for Rte. 6A
	Cape Cod Rail Trail
Mashpee	Red Brook Rd. to Great Oak Rd.
	Rte.28 to Falmouth
	Cotuit Rd. to Sandwich
Falmouth	Shining Sea Trail Extension
	Rte. 151 to Mashpee
	Rte. 28 to Mashpee
	Old Palmer Road Bike Path
	Bourne to Falmouth Bike Path
Bourne	Bourne to Falmouth Bike Path
	Cape Cod Rail Trail Extension

4.3.7 Rail

A goal of the CCTTF was to investigate improvements that could result in the expansion and promotion of passenger service on Cape Cod. Through the efforts of Congressman William Delahunt, work is progressing on the rehabilitation of the Rail Bridge over the Cape Cod Canal. At the April 13, 2001 Task Force meeting, the Task Force supported making passenger rail service to Cape Cod a Task Force priority. At a minimum, the Task Force recommends seasonal passenger rail service to/from the Cape utilizing existing Commonwealth owned rail assets.

The study conducted by the CCTTF and Massachusetts EOTC identified capital costs and operational issues associated with the restoration of rail service to Cape Cod, as shown in Appendix A dated February 26, 2002. Any future proposals must address these issues In addition, EOTC is assessing ridership, gauging community support, working with other rail consultants on the Cape with particular emphasis on safety issues. They are also working to address the issues surrounding coordination with the MBTA and the BCLR. All of this information will form the basis for a forthcoming EOTC developed Request for Proposals for passenger rail service to/from Cape Cod. Ongoing research, planning and negotiations make up the critical first phase of this multi-phased approach to ensuring viable rail service on Cape Cod. Continued attempts are also ongoing with Amtrak to find ways to re-institute the seasonal 'Cape Codder' service. While the possibility of seasonal passenger rail service to the Cape appears promising, more planning and research is required before a preferred rail option can be proposed in this 5-Year Public Transportation Plan.

4.3.8 Waterways

These projects include water taxi and ferry service between Cape Cod locations, the Island, and mainland Massachusetts. Near-term projects include the

development of water taxis in Sandwich Harbor, Falmouth Harbor, Hyannis Harbor, and/or Barnstable Harbor. Long-term, another ferry will be necessary to supplement service between Boston and Provincetown during peak seasonal operating periods[29].

4.3.9 Human Services

This category refers to demand response projects and services that promote increased service levels and ridership among the various demand response providers on Cape Cod. Currently, there are approximately 30 organizations that perform contract services on Cape Cod for the elderly and individuals who are mentally and physically challenged. These include the CCRTA b-Bus, various Councils on Aging, Elder Services of Cape Cod, and the American Red Cross. The CCRTA currently contracts several services out to other organizations such as Nauset, Inc. to provide specialized services.

Cape Cod could benefit from a more efficient and better co-coordinated system. Based on feedback gathered from the public comment process, there appears to be a need for more options and coordination to Boston area hospitals and other health providers. Since so many agencies exist, it would be more efficient and effective to create a single dispatch and control service. This would allow for inter-agency cooperation, and for development of cross customer services. Service provider coordination could promote better trip management, fuel and driver efficiency, and faster response times. Coordination may boost ridership since more options will be available to potential customers and dispatchers will be better able to provide scheduling solutions. Finally, since dispatching services will be more cost effective, the savings can be directed at procurement of vehicles or increasing service coverage.[30]

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[29] The Massachusetts EOTC commissioned an Eastern Massachusetts Ferry Systems Study with the USDOT Volpe Center in December 2001. This scope of this study is for eastern Massachusetts, and not including the Vineyard Sound. The Volpe Center is currently conducting focus groups with ferry operators, port and harbor managers, and other stakeholders to elicit information and data. The goals include development of a service assessment tool, selection of ferry services for the detailed assessment and data collection. The output will be (1) a modified and finalized scoring elements and weightings for the Volpe Center ferry assessment tool; (2) a finalized list of existing, proposed, and potential ferry services, and (3) input from operators on particular cost elements in the Volpe Center ferry economics model. It is anticipated that recommendations from this Five-year Public Transportation Plan will be considered and incorporated with the recommendations from the Ferry Systems Study, including coordination of land-based public transportation with proposed ferry services.

[30] An example of such a system is the Suburban Mobility Authority for Regional Transportation (SMART) in Southeastern Michigan. This system has established itself as the central dispatch authority for four counties, with the goal of serving 75 different towns. SMART currently schedules 2,000 rides per day and hope to eventually schedule up to 4,000. The success of the system is its use of technology to make systems more customer-friendly. Customers make a reservation through an 800-number that is connected to Trapeze-Flex dispatching software. This software also improves staff performance and flexibility.

Since many of the CCRTA demand responsive b-Buses already have AVL technologies, the only technical obstacle to this system would be to install AVL on vehicles operated by other agencies. This necessitates that the participating agencies must establish a working partnership. They would need to create a coordinating council or task force and develop inter-agency agreements or memoranda of understanding defining roles and responsibilities. In addition, the CCRTA needs to develop a centralized database of eligible clients and eligibility requirements.

Near-term improvements call for the various agencies and organizations to establish agreements on service and draft memorandums of understanding[31]. In the long-term, operations and dispatch activities could exist in the new CCRTA service center, as discussed in the section on facilities.

4.3.10 Professional Development

Issues and proposals surrounding public transportation, including those proposed in this plan, can be complex and vexing. Moreover, many transit board members, local officials, Task Force members and other interested individuals have not been afforded the opportunity for comprehensive training and professional development. Some find themselves in a position of responsibility with only rudimentary knowledge of complicated public transportation issues. It is proposed that a Cape Cod Public Transportation Professional Development Conference be developed for members of the Barnstable County government, town and county officials, CCRTA and Steamship Authority Board members, and Task Force members, as well as other interested individuals.

The participants of this conference will observe and follow the process of delivering transportation to the public. This conference will consist of working groups and skill-building workshops. Key topics will include finance, organizational structure, operations and maintenance, planning, legal, and marketing. Emerging trends and innovative strategies will be discussed. Attendees will be able to participate in discussions led by transportation leaders and experts about critical issues affecting public transportation on Cape Cod and elsewhere. The intent is to increase the skill set of policy-makers and administrators on how transportation functions, resources, and relationships work together to deliver service, provide a forum to exchange ideas, and develop a means to build a network of contacts to help meet future challenges. It is proposed that this conference be developed sometime in the next calendar year in collaboration with a future Transit Summit, and that another conference should be developed two-four years hence.

[31] For the purposes of this plan, no cost estimates have been given for this largely administrative exercise.

4.4 COORDINATION OF SERVICES

As has been demonstrated, a significant number of public transportation services exist on Cape Cod. One of the initial key Volpe Center findings was that coordination of these services has been historically deficient. An initial effort in November 2000 by the Task Force was to develop improved coordination between public and private providers for Cape Cod. It is essential that this effort is institutionalized and sustained. To this end, a number of elements have been identified to facilitate this activity.

4.4.1 Development of a Public/Private Transportation Coordination Council

It is proposed that a Transportation Coordination Council be created, and will include all Cape and Islands air, surface and water public and private transportation providers. In addition to consumers of public transportation services, the following entities (but not limited to) need to be included to represent the regional planning and development and business interests of the region:

- Cape Cod Commission,
- Nantucket Planning and Economic Development Commission,
- Martha's Vineyard Commission,
- Barnstable County,
- National Park Service Cape Cod National Seashore, and
- Cape Cod Chamber of Commerce

It is anticipated that many of the current roles and responsibilities of the Task Force will be subsumed into this Council. Responsibilities will include:

- Develop a Memorandum of Understanding between all Transportation providers. It will describe a universally agreed structure of the Council, and delineate roles and responsibilities to foster efficiency, effectiveness and accountability.

- Convene coordination meetings with transportation providers. This activity will include sponsoring meetings to help develop coordinated schedules, keep providers informed of planned special events, advocate for new services as needed, and keep providers informed of potential changes in travel demand patterns and demographics.

- Develop joint marketing agreements. Marketing resources may be shared among the private and public providers for increased effectiveness and efficiency.

- Provide a forum for the examination of current regulatory and licensing agreements. There are many rules and regulations that affect public transportation on the Cape, and presently there is no consistent, formal public forum for information dissemination and debate. The Council will look to ways for examining outmoded or inefficient regulatory practices with a goal towards providing recommendations and modifications to governing bodies, in a manner that is fair and equitable.

- Sustain and improve the SmartGuide for Cape Cod. The SmartGuide is an important document and Internet web site that catalogs the available services and connections in and around Cape Cod. The Council should take the lead to ensure that timely and appropriate transportation schedules and services are included, and are distributed and marketed to appropriate venues. The SmartGuide needs to establish a sustainable funding source, and the Council will identify this funding.

- Advocate consolidation of Information Systems, Ticketing, and Smart Media. The following are recommended tasks:

    - The Council will introduce and advocate the sharing of information systems, such as AVL data, to allow real time information to be provided to customers through transportation center kiosks and Internet sites.
    - The Council will lead the development of joint ticketing concepts with the transportation providers and travel industries to improve the convenience and appeal of public transportation for Cape Cod, in particular for Cape and Islands visitors. The Council will oversee implementation of the development of "smartcards" that can be used between services. This will begin with the definition of a common system and media. The popularity of these "smartcards" and promotion of transit use will require development of promotions. For example, they may include discounts to shoppers who access shopping areas by transit. This would be advantageous for proprietors with limited parking who want to attract customers, with out investing in additional parking facilities.

4.4.2 Coordination between Island and Cape Transit Services

One of the major sources of traffic through the Cape is the seasonal demand for service to the Islands. This traffic impacts the roadways on the Cape, as well as requires the provisions of parking facilities and dedicated shuttle systems. Development of better coordination between the ferry operators, local transit and interregional providers can help reduce traffic and congestion, increase their own ridership, while helping make trips to and from the islands more appealing through the use of public transportation. Proposed areas include:

Hyannis: Shuttle coordination from the inter-city carrier to the Hyannis ferry docks is currently an informal arrangement. Hyannis bound buses contact the shuttle dispatcher when their services are needed, and a shuttle to the ferry services meets the bus at the Hyannis P&B Terminal.

The shuttle service runs approximately every 20 minutes during the summer season, and the traveler from the islands that needs to use the shuttle has to wait for the next available vehicle. The SSA is willing to notify the shuttle dispatcher in a manner similar to the P&B buses so the connection will be made with a minimum waiting time. A similar communication arrangement would also be made possible with the Hy-Line ferry services in Hyannis.

Woods Hole: Bonanza Bus Lines currently serve the SSA vessels directly. Coordination between the Bonanza Buses has been discussed for arriving and departing Woods Hole ferries and this will be the subject of future coordination efforts. The CCRTA's SeaLine Route provides service between Falmouth and Hyannis. This service is supplemented in the summer season (May to September) by a trolley service between the Woods Hole ferry facilities, the Falmouth Bus Depot, and a connection with the SeaLine at the Falmouth Mall. Improvements to this connection via the trolley (which runs every 30 minutes during peak hours, 7 days a week between 9:30 am and 7:30 pm) were not suggested for the 2001 summer season. The Woods Hole Trolley has been one of the most successful of the seasonal CCRTA services. Plans for Summer 2002 include a more coordinated schedule or dispatch system for this trolley.

The "Relax and Ride" service started in 2001 will be funded in the summer of 2002. Based on lessons learned during the first year of service, it is expected to be more successful. This service, and others like it, will use off-Cape transportation facilities to collect island bound passengers and deliver them to the ferry facilities on Cape Cod.

4.4.3 Human Service Coordination

The centralized dispatch of all Cape Cod Human Transportation Services is one of the most important elements in terms of coordinating human service transportation needs. This system will help to eliminate duplication of routes by companion agencies, and optimize the amount of service that can be provided by existing and future resources.

The major issue with this effort will be the ability of this large number of providers to work together and participate in creating this system. The CCRTA has recently been tasked with the responsibility for contracting all of the state and federally funded human service transportation for the Cape and the Islands, so developing this cooperation will logically rest with the CCRTA with assistance from the Coordinating Council.

4.5 TRANSPORTATION IMPROVEMENTS

Tables 4.3 and 4.4 provide a comprehensive list of all of the improvements identified by the Volpe Center for the five-year planning period. Improvements are listed by transportation category and categorized as either near-term in Table 4.3 or long-term in Table 4.4. Near-term refers to projects or services that can be implemented within a 1-2 year period and long-term refers to projects or services that can be implemented within a 3-5 year period.

TABLE 4.3 Near-Term Improvements by Category and Time Frame

Category	Near-term Improvements (2002-2003)
Local Transit	More frequent service in the fall and winter on the Hyannis to Orleans Bus Line
Local Transit	Fixed Route Sunday Service
Local Transit	Under served Corridor: Falmouth-Bourne
Local Transit	Under served Corridor: Bourne-Barnstable Village
Local Transit	Under served Corridor: Barnstable Village-Orleans
Local Transit	Under served Corridor: Orleans-Provincetown
Local Transit	Additional Vehicles for fixed routes and replacement vehicles for fixed routes
Local Transit	Replacement/Upgrading of bus stop sign system.
Local Transit	Construction of bus shelters at key transfer points.
Local Transit	Whale Watch Express Bus Service
Local Transit	Fleet Management Planning
Inter-Regional Transit	Relax and Ride Rt. 128-Woods Hole
Inter-Regional Transit	Possible development of Relax n' Ride II, from Westwood, MA to SSA pier in New Bedford, with connections at New Bedford Airport.
Inter-Regional Transit	Possible development of Relax n' Ride II, I 195 to serve visitors from Rhode Island, New York and Connecticut
Aviation	New carrier service: From Newark and Philadelphia to New Bedford *(including subsidy)*
Aviation	New carrier service: From Providence, RI TF Green to Provincetown, MA *(including subsidy)*
Travel Management	Three (3) fixed medium-sized information display boards
Travel Management	Two (2) fixed large-sized information display boards
Travel Management	Two (2) fixed small-sized information display boards

Category	Near-term Improvements (2002-2003)
Travel Management	Twenty-two (22) Infrared passenger counters
Human Services	Draft and approve memorandum of understand documents between service providers, and service agreements
Human Services	The creation of a single call taking, reservation, scheduling and dispatch center.
Bicycles	Conduct police training on bicycle safety and enforcement (15 officers).
Bicycles	Painting bicycle lanes (40 miles).
Bicycles	Installation of bicycle awareness signs (along all roads and at key intersections (300 signs).
Bicycles	Installation of bicycle racks in town centers, attractions and destinations (30 racks).
Bicycles	Hire a Regional/Pedestrian Coordinator
Marketing	Develop comprehensive Capewide Public Transportation Marketing Plan as detailed in Chapter 5
Professional Development	Develop a comprehensive professional development conference to develop a broader understanding of public transportation issues for Cape stakeholders.

TABLE 4.4 Long-Term Improvements by Category and Time Frame

Category	Long-term Improvements (2004-2007)
Local Transit	Development of a satellite parking/shuttle service for the major service centers on Cape Cod.
Inter-Regional Transit	High Occupancy Vehicle Lanes: Continue to work with MassHighway to pursue options for dedicated HOV lanes in and around the canal area.[32] Reconstruct roadway shoulder on Rt. 3 from Exit 2 to the bridge and construction of a new lane on Rt. 6 from Exit 2 to the bridge.
Aviation	New carrier service: New York JFK *(including subsidy)*
Aviation	New carrier service: Cincinnati, OH *(including subsidy)*
Waterways	Ferries
Waterways	Water Shuttles
Travel Management	Seven (7) traffic cameras w/ night vision
Travel Management	A sensor system to relay bus locations (50 sensors)
Travel Management	A fully integrated radio frequency system to relay bus locations

[32] Although further study is needed on effects to the environment and circulation, recommended options for immediate review are (1) reconstruct the roadway shoulder on Rt. 3 from Exit 2 to the bridge, and (2) construction of a new lane on Rt. 6 from Exit 2 to the bridge.

Category	Long-term Improvements (2004-2007)
Travel Management	Twenty (20) Infrared car counters for parking lots
Travel Management	Ten (10) Smart kiosks for tourist related locations.
Facilities	Replacement of the bus operations center in Dennis. This facility is inadequate for current levels let alone future needs.
Facilities	The creation of local intermodal facilities at the MacMillan Wharf, in Orleans, and at a location in the upper Cape.
Bicycles	Establishing a network of bicycle routes that link major towns and destinations (50 miles).

4.5.1 Near and Long-Term Cost Estimates

Table 4.5 summarizes the cost estimates and various projects that comprise the proposals presented in Tables 4.3 and 4.4, by category. Cost estimates for local transit represent maximum estimates for proposed projects and services. The cost estimates identified assume that operations will begin on the first day of the implemented year and follow the time frame projected. The symbol N/A is used to describe cost estimates that are not applicable due to the nature of the project and the implementation time frame.

TABLE 4.5 Near and Long-Term Cost Estimates by Category

	Near-term (2002-3)		Long-term (2004-7)	
	Capital	Operating	Capital	Operating
Local Transit	$3,227,000	$3,477,394	$590,000	$5,216,091
Inter Regional Transit	$250,000	N/A	$18,688,000	$1,672,200
Aviation	N/A	$1,700,000	N/A	$3,000,000
Waterways	N/A	N/A	$2,600,000	$6,573,000
Travel Management	$1,022,000	$75,800	$659,000	$441,300
Facilities	N/A	N/A	$8,500,000	$360,000
Human Services	N/A	N/A	$500,000	$600,000
Bicycles	$115,000	$100,000	$5,100,000	$165,000
Rail	N/A	N/A	N/A	N/A
Marketing	N/A	$300,000	N/A	$480,000
Professional Development	N/A	$50,000	N/A	$55,000
Totals	**$4,614,000**	**$5,703,194**	**$36,637,000**	**$18,562,591**

* All figures are based on year 2001 real dollars.

**Near-term Operating Costs include 2 years of expenditures.

5. THE MARKETING AND IMAGE OF PUBLIC TRANSPORTATION SERVICE ON CAPE COD

5.1 MARKETING – ITS IMPORTANCE

Critical to selling a service is making known its availability, as well as its desirability. No matter how well the product is designed, consumers will not emerge unless there is increasing information in the marketplace of its existence, and how it could positively affect the consumer's day-to-day life. Although transit (as well as other public transportation) services are not a tangible retail product or a consumer durable good, they like many services exhibit similar attributes. They provide consumers with a means to improve the quality of their lives in that they make another travel choice available.

At the same time, even though CCRTA has been operating since the 1970s, its existence is not well known among year-round residents and most seasonal visitors.[32] In addition, Cape Cod's transit service market is unique in its mix of year-round and seasonal visitors, and its large percentages of elderly and individuals that are economically deprived, or in need of specialized human services. Thus, establishment of an aggressive marketing campaign is essential to achieving a five-year public transportation goal of reducing congestion and diverting more and more of the year-round and seasonal auto-users to transit.

Another critical component to successful marketing is adopting evaluation techniques that can be used to assess market demand, tailor service routes, and expand patronage. By applying them, it becomes much easier to determine which routes are under-performing, where latent demand exists, what route possibilities exist, and designing targeted promotions.

5.1.1 Current Marketing Efforts of the CCRTA

For the 2001 summer season, the CCRTA mounted a broad and aggressive marketing campaign, financed with additional funds provided by the CCRTA Advisory Board. The goal of the campaign was to raise awareness of the CCRTA's services and encourage ridership.

The campaign included publication of the first-ever CCRTA System Map & Guidebook. The *Cape Cod Times* distributed this System Map to 68,000 subscribers during the first week of June. In addition, the CCRTA produced two 30-second television commercials that were broadcast on-Cape throughout the summer on major cable TV networks.

[32] Recent surveys suggest that only about 23 percent of Cape Cod residents are aware that transit services are available capewide.

Residents who live within ¼mile of a bus route in Hyannis and Falmouth were directly mailed a system map and a free-ride coupon. Print ads - some featuring free-ride coupons - appeared regularly in the *Cape Cod Times* and the *Falmouth Enterprise.*

The CCRTA also engaged a local personality, "*Mave who Waves*" for promotional appearances throughout the Cape to promote the practice of flagging down CCRTA buses along the fixed routes. In Provincetown, the new, clean-fueled buses servicing the Provincetown-Truro Shuttle, provided by the National Park Service Cape Cod National Seashore, were rolled out with a street celebration that attracted hundreds of people and local media.

The ongoing marketing efforts for the CCRTA reflect suggestions provided at Transit Summit II, as well as creative thinking independent from the efforts of the Task Force. The direct effect of these marketing efforts was a 25 percent increase in July and August CCRTA ridership over the previous period in FY2000. The current marketing efforts and the dramatic ridership increase indicate that there is measurable and tangible value to a sustained marketing effort. The next step is to develop a comprehensive Cape-wide public transportation-marketing plan that builds on this success, and includes a wider array of public transportation providers and stakeholders.

5.2 DEVELOPING AND IMPLEMENTING A MARKETING PLAN

The following steps are suggested for developing and implementing a comprehensive Cape-wide public transportation-marketing plan:

- **Management.** One, resources must be identified and committed to development of an effective marketing plan with the understanding and cooperation of all of the public transportation providers and stakeholders. Two, a staff member must be assigned to act as an official spokesperson to promote the image and communicate the benefits of the transit service. This person would also manage the day-to-day development of the marketing plan, assist in its implementation, respond to public inquiries and complaints, track the success of the plan and its various components, and conduct program evaluations (determine what works and what does not).

- **Market Research Tools.** Market research tools that use quantitative and qualitative techniques are essential to creating and re-evaluating a marketing plan. An initial task could include examining the existing transit services to determine how well they are utilized. It is also important to identify those portions of the market that have gone untapped, and determine which segments should be targeted as potential transit users. Surveys can be used to secure information regarding travel behavior, which then can be segmented to develop discrete recommendations. Focus groups present means of assessing non-transit users' travel desires, and determining what transit attributes or fare possibilities would convert them to becoming a user. (The CCRTA conducted research in 1999 that is useful but should be updated to reflect the proposed recommendations contained in this Plan.)

- **Becoming Market Driven.** The marketing plan must be externally focused, incorporating strategies for reaching all possible market segments, including individuals who live as far away as New York City, Philadelphia or Washington, D.C. The marketing plan must primarily focus on how to better brand and promote the CCRTA specifically, and achieve greater recognition of an integrated Cape Cod-wide public transportation system for all public transportation modes.

The assessment conducted by the Volpe Center in the preliminary stages of developing this plan indicates that buses and bus stops are not well marked or known and bus shelters do not exist at key stops. This led to the development of the list of short-term implementation actions included later in this section of the plan.

5.3 MARKET STRATEGIES

A good marketing plan translates customers' preferences into operational improvements and/or public outreach endeavors that will produce a positive (and financially sound) response among targeted market segments. Strategies that appear promising, based on the research that has been conducted so far, include:

- **Branding**
  - Create an easily recognizable symbol that would apply to any form of public transportation on the Cape, regardless of carrier. A possible example could be a derivative of the "T" symbol used not only by the MBTA in Boston, but also by several other transit agencies throughout the U.S. The Cape version could be a blue T against a yellow background within a blue-edged square or circle. In the case of bus stops, the T symbol would appear prominently and below it, smaller decals could be applied for each carrier serving that stop.
  - Developing a new logo, color scheme and identity for RTA service that conveys the attributes of the transit services and can be applied to physical assets, used in print, electronic and broadcast media advertising, route maps and schedules.
  - Installing bus stop signs and shelters, system maps, and schedules at all bus stops.

- **Media Relations and Public Outreach**
  - Encouraging public interest pieces along with helpful hints about transit in locally and regionally focused newspapers and magazines.
  - Presenting to Cape Cod interest groups and employers, including the Chambers of Commerce, hotel groups, etc., to inform them about the extent and ease of using the transit system.
  - Enhancing the current toll-free number phone system to enable people to access up-to-date traveler information, and voice concerns.
  - Posting additional transit information on the Internet through www.capecodtransit.org.
  - Sponsoring community events.
  - Translate public transportation literature and web based information into Spanish, Portuguese, and Haitian Creole languages.

- **Advertising**
  - Developing/placing print and broadcast advertisements that feature CCRTA and promote auto-free vacations in key off-Cape markets.

- Developing/distributing transit guides, that include ferry and air schedules, and also provide visitors with total trip plans/directions between typical origins and destinations.
- Installing automated traveler information kiosks with system user oriented information in hotels/motels, campgrounds, supermarkets, town centers, laundromats and the National Seashore.

- **Media Alternatives**
  - Selecting combinations of media alternatives that best suit the message and the target audience, such as the New York Times and the Internet to reach Manhattan summer visitors, and church newsletters and advertisements on local talk radio programs to reach untapped, year-round residents.

- **Special Services**
  - Instituting integrated fare cards (smart cards) for multiple modes, dining and shopping.

- **Promotions**
  - Providing discounted advertising space on buses and in bus stop shelters to local merchants in exchange for discounts to purchases made by transit users. (This would work well in the evenings when many of the Cape's summer visitors are searching for dining options.)
  - Encouraging employers and health centers to provide discounted bus passes or smart cards to employees and patients.
  - Instituting ride-free days at key times during the year.
  - Developing a transit display with giveaways, which would be used for promotional purposes at community events and fairs.

- **Pricing**
  - All fares rounded to the nearest dollar to simplify information and change giving.
  - A reduction of current fares for intra-cape travel on P&B and Bonanza.
  - Monthly bus passes for commuters.
  - Weekly passes for vacationers for travel on intra-cape routes.
  - Family tickets that provide very cheap travel for accompanied children.
  - Half-price travel on the Cape for children under 18.
  - Stored value farecards that could be used on any carrier.
  - Allowing the use of credit/debit cards for ticket purchase.
  - Sale of transit tickets through ATM's.

5.4 LISTING OF NEAR-TERM, LOW-COST MARKETING-ORIENTED IMPLEMENTATION ACTIONS

These near-term action items described in Table 5.1 are based on assessments conducted by the Volpe Center team in fall 2000 through spring 2001, with an interim assessment presented to the Task Force in preparation for Transit Summit II. They represent easily deployable action items only, and could eventually become components of the long-term comprehensive marketing strategy that has been outlined above.

TABLE 5.1 Near-Term Implementation Actions

Implementation Action	Description
The Public Transportation Vehicle	Encourage CCRTA, Bonanza Bus, P&B, the Cape Cod Central Railroad, SSA, Hy-Line, bicycle organizations, and other ferries to contribute to the development of a bus, van, or RV that would visit public events to inform visitors and residents aware of public transportation options.
Local Cable, TV, and the Web	Develop Web site, radio public service announcements, and local cable public service television segments devoted to improving access and knowledge of all transportation modes. Include schedule, fare, and route information, real-time information on next buses, parking availability at National Seashore, and delays (e.g. at the bridges).
Public Transportation Displays	Develop displays, such as a stand-up poster with pockets containing bus, ferry, train schedules, bike path maps, etc., to be placed in strategic locations around the Cape.
CCRTA Branding	Develop a consistent theme - new logo, color scheme, and identity for CCRTA service that conveys the attributes of the transit services to be applied to physical assets, such as buses and bus stops, used in print, electronic and broadcast media advertising, and route maps and schedules.
Private Bus Emphasis on Off-Cape Activities	Develop flyers, displays, and posters for bus services to the Cape from Boston, New York, and Providence. Advertise via radio, commercial and local cable television, and newspapers. Distribute information packages to travel agencies, P&B and Bonanza bus depots, train stations, universities, tourist information centers, and public transit centers.
National Seashore	Install variable message signs in key places to inform visitors of parking lot conditions. Develop and distribute new brochures describing parking facilities, shuttles, bus connections, and bike facilities.
Ferries	Conduct an information dissemination blitz and piggyback on CCRTA public information activities. Develop extensive marketing and awareness of the Provincetown to Boston ferry, and the Plymouth to Provincetown ferry.
Aviation	Conduct an information dissemination campaign and piggyback on CCRTA public information activities.
Bicycles	Develop bicycle path maps highlighting CCRTA bike racks on buses, safety tips for riding in traffic, facilities along bike paths, such as restrooms, restaurants, bike shops, rentals, etc.

6. PLANNING CONSIDERATIONS

The success of this five-year plan goes beyond identifying projects and associated costs as proposed in Chapter 4. This section describes the steps to be considered that could ensure the development of an environment that sustains the momentum generated by recommendations from Transit Summit I and II, and produces results. The steps are:

- Adopt a performance evaluation process for monitoring the effects of existing projects/services, and standards for measuring the impacts of proposed projects/services and routes;
- Devote resources for a transportation planner;
- Identify and coordinate stakeholders;
- Identify, monitor, and assess funding and legislative opportunities, and
- Establish an appropriate institutional backdrop for implementing projects and managing operations.

These steps must recognize the important role the private sector plays as part of a "public-private" partnership in providing air, water, land and rail transportation services to the public through an integrated "seamless" transportation network serving Cape Cod and the Islands.

6.1 PERFORMANCE EVALUATIONS

The evaluation process serves as a means to monitor and measure the impact of *existing* and *planned* projects and services. It also provides a basis for understanding how to fine-tune projects and services, determine their system-wide effects, apply lessons learned to other locations, and guide future investments. Evaluation performance measures are statistics that describe characteristics of a proposed new service or improvement to existing service that relates to its performance. There are two basic types of measures:

- *Quantitative* -- a measure expressed in terms of counts, dollars, measurements, or other physical units.
- *Qualitative* -- a measure expressed in terms of people's attitudes, perceptions, or observations.

Certain issues such as land use and urban design may be difficult to measure in quantitative or qualitative performance measures, and may best be addressed in descriptive terms. It is possible to measure many of the evaluation criteria from two vantage points: the actual and perceived attributes of the service. For example, it might be appropriate to measure the *actual* travel time saved as well as people's *perceptions* of time saved. No accepted rule exists for determining when to examine both measures. Clearly, it may be prohibitively expensive to employ both for each area of interest. On the other hand, mere reliance on

quantitative measures may result in overlooking what is in fact the major behavioral determinant of the ultimate acceptance by the public. For example, providing enhanced health and human services transportation versus using those same resources to decrease seasonal automobile traffic may be difficult to justify on a pure cost basis, but can be justified qualitatively as a desirable social benefit. These issues should be addressed in the Evaluation Plan.
The Evaluation Plan needs to be well thought out so that it can be applied to a range of existing and planned projects and services. In doing so, it must:

- **Develop a Frame of Reference** for the project/service whether it is existing or planned. This includes describing the scope of the transportation improvement, determining whether or not the Cape Cod Transit Task Force and Cape Cod Commission objectives and those of other participants have been considered, and accounting for external influences that could impact the evolution of the project or whether it is existing or planned.

- **Establish Benchmarks** for measuring the system-wide effects of any of the projects – planned or existing. If the evaluation process is being applied to an existing bus route, then a "before/after" sampling scheme will allow a comparison between performance measures taken before the project and during and/or after the implementation of the project.

- **Determine Performance Measures,** which will provide a relative indication of the success of the existing project/service or proposed alternatives in terms of meeting system-wide, route, or corridor level objectives. This becomes increasingly complex depending on the number of alternatives presented during planning, and the number of project components that are implemented simultaneously. Screening criteria and associated performance measures and standards listed in Table 6.1,[33] can serve as guidance on determining acceptable or unacceptable performance of projects or designated routes, depending on what specific goals and objectives are promulgated by the CCRTA, regional or local governments or other bodies.

[33] Exact performance measures can only be derived with exact knowledge of quantitative or qualitative goals and objectives. For example, measures derived for health and human services objectives are likely to be different than measures derived for congestion management.

TABLE 6.1 Examples of Typical Criteria Associated with Work and Recreational Trips

Screening Criteria	Performance Measures and Standards
Reliability	Mean miles before breakdowns. Actual miles traveled in revenue service as a percent of scheduled miles.
Coverage, Frequency, and Span of Service	Percent of population within walking distance of transit. Minimum time between arrival of first trip and departure of last trip. Provide basic mobility for the highly transit dependent populations. Maintain the economic viability of businesses throughout the Cape.
Financial concerns	Cost of the ride. Net cost per rider. Net cost per added rider. Operating fare recovery ratio (i.e. revenue/cost 40-50%).
System Utilization Effectiveness	Passenger/Seat capacity at peak load point. Average number of households in a given mile of a route, adjusted for season.
Population Density	Minimum 2000 people / sq. mile.
Employment Density	Number of jobs (variable) / sq. mile.
Serve Major Attraction Destinations	Stop's proximity to attractor destinations.
Comfort, Safety, and Image	How often are vehicles cleaned? Number of stops with shelters. Personal safety from crime.
Route Directness	Shouldn't be more than 20% longer than a car trip.
Spacing between Routes	Minimum of 1 mile between routes in low-density areas.
Route Length	Shouldn't exceed 25 miles or 2 hours.
Loading Limits	Shouldn't exceed 150% in peak 30 minutes.
Service Reliability	During Peak: 80% of arrivals less than 8 minutes late.
Stop Frequency	Average 2 to 6 stops per mile for buses.

Source: Transportation Planning Handbook, Institute of Transportation Engineers (ITE): 1992, and MBTA Service Quality Report, June 1997.
(The criteria for screening demand are dependent on the type of trip purpose that is being served. Work, recreational, and shopping trips can use the criteria in Table 6.1, but the health and human services need more demographic detail from census data to establish routes that can serve this market.)

- **Data Collection** depends on manual and automated data collection (for example, passenger counts), surveys, focus groups, and interviews for existing projects, as well as planned projects. Data collection should also be a critical activity during project planning stages to screen alternatives.

- **Implementation and Final Report** consists of digesting the analysis resulting from applying the performance measures. Special attention must be given to problems or changes that occurred during implementation that might have influenced findings and the project's performance. The final report must document the history and effects of a project, as well as providing a basis for comparing the effects of a particular project component with those of other similar projects. This should lead to

suggestions on possible modifications, and predicting the effectiveness and utility of the project components in other localities.

This phase not only generates information on which the final assessment of the demonstration is based, but also provides feedback relative to ongoing public transportation/transit operations. The ongoing evaluation activities, while adding to the cumulative body of quantitative and qualitative information regarding project impacts, provide interim indications of costs and functions, and the preliminary effects of these components on system performance. These interim findings may be useful to the local agency responsible for implementing and operating the demonstration by suggesting the need for operational modifications.[34]

6.2 STAFFING

A full-time transportation planner could oversee the design and implementation of an evaluation plan. This individual would be charged with coordinating stakeholders, evaluating projects and services, developing planning policies, and identifying and programming projects. This service could be secured through a consultant contract with an individual or firm, or by hiring a planner directly (possibly as a Cape Cod Commission employee[35]).

6.3 COORDINATION OF STAKEHOLDERS

The success of the full-time transportation planner will depend greatly on an ability to work closely with the public, Cape Cod institutions, state agencies/offices, such as the Executive Office of Transportation and Construction, the Massachusetts Highway Department, and state and congressional delegations.

Given the importance of public transportation on Cape Cod, many organizations need to be involved in the planning process – many of which are critical to project programming and funding. Stakeholders include: the federal government, state government, regional authorities, local governments, and public groups or organizations. The list below identifies many of the agencies and private transportation providers that are key to sustaining the planning process.

Federal Government

- Amtrak
- Environmental Protection Agency (EPA)

[34] It is also recommended that an annual 'report card' be developed that addresses in a time-series manner how well projects and services have been implemented, and recommendations on how to further improve them.

[35] Other Massachusetts regional planning agencies perform planning work for the RTA operating in their geographic area of responsibility.

- Federal Transit Administration (FTA)
- Federal Aviation Administration (FAA)
- Federal Highway Administration (FHWA)
- Federal Railroad Administration (FRA)
- Joint Program Office (JPO)
- U.S. Army Corps of Engineers

Commonwealth of Massachusetts

- Executive Office of Transportation and Construction
- Department of Environmental Protection/MEPA
- Massachusetts Highway Department (MassHighway)
- Massachusetts Port Authority (MassPort)
- Massachusetts Office of Tourism
- Massachusetts Aeronautics Commission
- Woods Hole, Martha's Vineyard and Nantucket Steamship Authority

Regional Authorities

- Cape Cod Commission
- Massachusetts Bay Transportation Authority (MBTA)
- Cape Cod Regional Transit Authority (CCRTA)
- Old Colony Planning Council
- Southeastern Regional Planning and Economic Development District
- Nantucket Planning and Economic Development Commission
- Martha's Vineyard Commission

Local

- All municipalities of Cape Cod
- Local airport commissions
- Municipalities in Southeastern Massachusetts
- Private Ferry operators
- Local Demand Response Providers, including many nonprofit's
- Various Private Bus Carriers, including P&B and Bonanza
- Cape Cod Central Railroad/Bay Colony Railroad
- Air service providers
- Martha's Vineyard Transit Authority
- Nantucket Regional Transit Authority

6.4 INSTITUTIONAL BACKDROP

6.4.1 Current Structure

Oversight of current regional public transportation issues for Cape Cod and the Islands is the responsibility of three Regional Transportation Authorities: the Cape Cod Regional Transit Authority (CCRTA), the Nantucket Regional Transit

Authority (NRTA), and the Martha's Vineyard Transit Authority (VTA). The Cape Cod Commission provides planning input to these RTA's. These RTA's are the outcome of Chapter 161 B of the General Laws of the Commonwealth of Massachusetts passed in 1973 and made effective in early 1974.

The law allows for towns within a certain defined geographic region to join together to address public transportation issues and to administer transit. Towns vote on a ballot measure to join the RTA and can consequently vote, via a ballot measure in either a regular or special election, to be removed from the RTA. Towns cannot vote against the creation of the RTA, only whether to join it or not.

An administrator, deputy administrator and several professional staff staff RTA's. Oversight is provided by an Advisory Board made up of town managers, selectmen or their designees of the member towns. Each member town has a weighted vote derived from its U.S. Census population data.

Communities which are RTA members must make a conscious decision to support the provision of public transportation, recognizing the fact that public transportation is a service that is provided to the community, and that it cannot be supported solely by fare-box revenues. The creation of an RTA (such as the CCRTA) is also an attempt by communities to band together to solve a regional problem at a regional level.[36]

The goal of the RTA law was to create a simple bureaucratic structure with the administrator overseeing day-to-day operations and the advisory board overseeing budget matters. Administrators were expected to be the transit planners or public administrators already involved in local government. By law (Ch. 161 B), the administrator is the sole decision-maker and the advisory board approves or disapproves his or her plans.

The power of a RTA's is its contracting for transit services. It cannot provide services directly as an owner/operator, but it can award exclusive contract rights to private providers. Additionally, a RTA cannot enter into negotiations with employees of the provider of the service, as that is a matter between the contractor and its labor force. The law further stipulates that bonds can be issued equal to the cost of service and can be used for capital improvements. Should the RTA derive income in excess of the cost of providing services, the surplus must either be disbursed back to the towns or placed in a reserve fund, which is not to exceed 3 percent of the prior year's reserve.

A RTA is also enabled under Chapter 161 to act on behalf of the region to take all necessary action to secure federal funding and assistance for transit operations. It is therefore incumbent upon the RTA to be aware of what sources

[36] Glacel, Barbara Pate, Regional Transit Authorities: A Policy Analysis of Massachusetts, New York, Praeger Scientific, 1983, pp 124.

of funds and assistance are available from budget cycle to budget cycle, and to act apply for these funds. If received, the RTA's must also comply with all program-reporting requirements.

Funding for RTA's come from three distinct sources, the federal government, state government, and the member towns. Funds from the federal government are administrated as program grants and formula based operating assistance. State funds match all but roughly 25 percent of the operating costs incurred by the CCRTA. The state in turn pays the net cost of services minus Federal funds and the town assessment. Town assessments are calculated using a formula based on route and population. The assessment is not separated from the total assessment levied on the towns by the state for state services; it is part of the State's "cherry sheet". This makes it very difficult to determine what part of the overall assessment is actually for transit.

The CCRTA receives input from the Cape Cod Commission (CCC) on an informal basis. Part of the charter of the CCC is to oversee public transportation and transit issues. The CCC was established as a regional planning and regulatory agency to prepare and implement a regional land use policy plan for all of Cape Cod, excluding the Islands. The Commission is a department of the county government, Barnstable County, and is funded through a variety of sources.

The Commission is made up of volunteer members, representing each of the Cape's 15 towns and minority populations along with an appointee by the Governor (this seat is currently vacant). In turn, a professional staff with specific area expertise supports the Commission, including public transportation. The role of the Commission is to direct professional staff assignments and as such to represent the views and concerns of the constituencies they represent.

While conducting research on public transit, popular journalists Mssrs. Alan Lupo and Edmund Fowler found that although public transportation decisions are unquestionably political, there is strong speculation that the political process works well in making them. Public transportation decision-making in metropolitan areas is characterized by:

1) Absence of public or private leaders concerned with the whole urban area,
2) Consideration of issues only when they reach a crisis, and do not directly threaten the loss of autonomy by municipalities,
3) A tendency of individual units to compete rather than to cooperate, and
4) A tendency of suburbs to hold the central city in suspicion, increased by differences in political parties, ethnicity and other divisive factors.[37]

[37] Lupo, et. al., Rites of Way: The Politics of Transportation Policy in Boston and the U.S. City, Boston, Little Brown, 1971.

Despite the fact that Cape Cod is generally considered to be a rural area, the challenges found by Mssrs. Lupo and Fowler in metropolitan areas are certainly applicable to the Cape today. In several analyses of the Cape, and the challenges to the region as it deals with its explosive growth, the issue of conflicting or absent central decision-making and who should ultimately take responsibility, continues to be a central issue.[38]

6.4.2 Funding Opportunities for Transportation Improvements on Cape Cod

The Task Force can take advantage of multiple funding and financing options available to help pay for the capital and operating expenses associated with the public transportation system. The three main funding sources are federal funding, state funding and direct income, which can be supplemented by innovative financing mechanisms through public-private partnerships.

6.4.2.1 Federal Funding

The Commonwealth receives federal appropriations for public transportation purposes principally from the Federal Highway Administration, the Federal Transit Administration, the Federal Aviation Administration and the Federal Railroad Administration. Some of this funding is flexible and can be used to meet whatever public transportation needs state and regional decision-makers identify, and the remainder earmarked for particular public transportation modes and projects. A portion of the federal gas tax, currently set at 18.4 cents, is the primary source of this funding. In FY 1997 $939.6 million was collected in Massachusetts and the state received $991.9 million in public transportation funding. This funding is not project specific.

6.4.2.2 Discretionary Programs

To implement many of the recommendations for improved public transportation services mentioned in this plan, the Task Force will need to investigate a variety of Federal discretionary funding sources. The process of obtaining a Congressional budget earmark is beyond the scope of this report. It should be noted, however, that there would need to be a high degree of coordination between local interests and Congressional representation in seeking federal funding. Other sources of federal funds will be available through various policies adopted by public transportation agencies, such as Federal Highway Administration or the Federal Transit Administration. These organizations work closely with the Commonwealth on programming and disbursing funds for projects that meet various policy goals. To secure these funds, the RTA's must

[38] Most recently, this absence of central decision-making appeared in the 2001updated Draft Regional Policy Plan.

pay close attention to agency goals and to work closely with the Commonwealth of Massachusetts EOTC.

6.4.2.3 State Funding

State public transportation funding is derived from several sources: gasoline taxes, fees, bond proceeds, annual appropriations, sales tax and local assessments.

The gasoline tax is the principal source of public transportation revenue in Massachusetts. The revenue from this tax is distributed to the Highway Fund, the General Fund and a variety of environmental funds. Fees include charges to drivers for licenses, registrations, and plates. The revenues created by fees are credited to the Massachusetts Highway Fund.

Proceeds from bonds issued by the Commonwealth, MassPort, Massachusetts Turnpike and MBTA are how Massachusetts finances most of its share of the capital improvement program. The Commonwealth also has the option of providing an annual appropriation through the general operating budget to finance capital improvements.

6.4.2.4 Forward Funding

Prior to July 2000, the share of expenses paid by the Commonwealth for the operations (and in some cases fixed capital charges) of the MBTA and the 14 Regional Transit Authorities expenses, was reimbursed through the legislature up to 18 months after the close of that particular accounting year. This meant that the legislature had little control over actual authority spending, but was responsible for paying expenses long after they occurred. As of July 2000, the MBTA became the first transit authority in the Commonwealth required to submit a budget that would accurately convey the scope and breadth of the operations for the fiscal year, and be held accountable for any overages that may occur. To help pay down the backlog of prior expenses and to 'forward fund' budgeted expenses for the 2001 fiscal year, a dedicated funding source of one-fifth of sales tax revenue or 1 percent of sales of taxable goods is now earmarked for the MBTA State and Local Contribution Fund.

At the present time, negotiations are ongoing to require the fourteen (14) RTA's to forward fund their operations as well. Although it is not clear at the present time what the ramifications are for CCRTA, it would appear that this contribution fund could be a stable funding source for future CCRTA operations. Whether this funding environment will help or hinder the implementation of the recommendations from this plan is an issue that needs to be addressed before forward funding mechanisms are put in place. The effect of RTA "Forward Funding" upon RTA operations remains to be defined and addressed.

6.4.2.5 Direct Income

Direct Income revenue consists of several sources including fares, parking fees, advertising, concessions, rent and non-operating revenues. Fares generated by ferries, planes and buses help pay for their operation. Parking fees can be collected at park-and-ride lots that serve transit stations or highway locations are another possibility. Concessions and rental fees at transit stations and park-and-ride lots can help defray some of the costs of operating them. Non-operating revenue is income earned on investments or the sale of property.

6.4.2.6 Financing Opportunities

There are several methods used by the Commonwealth and by local/regional entities to form partnerships between government and the private sector to help share the costs associated with maintaining or improving the public transportation system. Some examples of these are Lease-to-Own options by the local public transportation agency, Design-Build-Operate[39], Incentive Zoning, Impact Fees, and Regional Tax Base Sharing. The Lease-to-Own approach is feasible when a new facility is being built and is projected to generate enough revenue to provide investors with a competitive return. Design-Build-Operate allows for the design, construction, and operation of a public transportation project to be handled by one entity. This would translate into a time and cost savings. Incentive Zoning allows the communities to relax their zoning policies to induce in-kind benefits on the infrastructure. Impact fees allow municipalities to charge developers a fee to help mitigate any transportation-related impacts. Regional Tax Base Sharing grants the right for all of the communities within a public transportation agency to share in a percentage of the proceeds generated by the regional tax base.

Unfortunately, much of the CCRTA's Federal operating funds are derived from formulas that are based on the region's year round population. This does not take into account the influx of the seasonal population and the associated transportation needs. At the present time, it is recommended that the federal and state funding formulas be modified to include seasonal population increases to provide equitable and realistic funding to implement many of the recommendations contained in this plan. Moreover, it will help relieve the inequitable funding and congestion burdens imposed on year round residents during tourist season.

The National Park Service Cape Cod National Seashore is interested in leveraging NPS Alternative Transportation Systems into tangible transportation related improvements that benefit both the Park and the region. Presently, the Seashore has earmarked $100,000 for a Cape Cod Long-range Regional Plan,

[39] Design-Build and Design-Build-Operate require Massachusetts Legislature exemption from Chapter 30B, which currently restrict these methods.

provided other entities at least match this amount. In 2000, the Seashore allowed the CCRTA the use of 5 propane buses worth approximately $500,000 to operate on the Provincetown-Truro Shuttle. Based on recommendations in this plan, as well as other planning currently being conducted by the Volpe Center, the NPS may be able to provide targeted funding for designated capital projects that can benefit both the Park and the region.

Barnstable County is a "donor" county to the state in terms of the Motel/Hotel room tax. The per capita Motel/Hotel tax collected on Cape Cod is 177 percent higher than the per capita tax collected Commonwealth-wide (the portion of this tax for 2001 that went to the state from Barnstable County was $12 million). The per capita share of gasoline and sales tax collected in Barnstable County is approximately 120 percent as compared to the Commonwealth-wide per capita rate. The Task Force has proposed that some of these revenues that flow from Barnstable County to the state be considered as funding that could be made available for transit, rail and roadway needs. The Task Force has started the process of looking at these inequities, and the potential for capturing some of these revenues to fund the suggested improvements and make effective public transportation for Cape Cod sustainable into the future.

6.5 PRIVATE/PUBLIC SERVICE DELIVERY INNOVATIONS

In some areas of the United States, transportation planners have created and implemented Transportation Demand Management measures that focus on ways to make better use of existing transportation infrastructure without constructing new roads through public/private partnerships. By developing alternate methods of transportation, fewer vehicles are needed to transport the same number of people. Public and private parties have organized through a proven approach to addressing and managing transportation needs through the formation of Transportation Management Associations (TMAs). The rationale behind the formation of a TMA lies in the synergy of collective actions, i.e., multiple businesses and the public sector accomplishing together what one business, or public entity could not do alone. TMAs can help solve transportation problems by providing services directly to members, or providing a means for organized private sector involvement in decision-making, public sector planning, and projects. While there is no precise blueprint for forming a TMA, the funding mechanisms, purpose, membership, and size of proposed Cape Cod TMAs would need to be tailored to local Cape needs. TMAs can provide a wide array of service delivery innovations to its members, including but not limited to:

Information and Assistance

- Carpooling/Ride matching
- Transit Route Information
- Transit Scheduling information
- Computerized Matching Assistance

- Personalized Matching Assistance
- Professional Transportation Coordinators

Program Operations

- Vanpool Programs
- Bus pool Programs
- Guaranteed Ride Home
- Fleet-pool Programs
- Commuter Choice Tax Benefits

Alternative Work Schedules

- Flexible Work Hours
- Staggered Work Shifts
- Adjustable Hours for Ridesharing
- Compressed Work Weeks

Convenience Incentives

- Carpool Preferential Parking
- Vanpool Preferential Parking
- On-site Transit Pass Sales
- Shuttle Buses for midday use
- Fleet vehicles for midday use

An important consideration is the role of tax benefits that benefit both commuters and employers. Section 132(f) of the Federal tax code allows employers to increase their benefits package and reduce payroll taxes by offering Commuter Choice benefits. Commuter Choice benefits can be paid for by the employer, by the employee (through a pre-tax salary deduction), or can be paid for by a combination of both employer and the employee. Employers may give their employees up to $100 per month ($1,200 a year) in tax-free benefits, to commute to work by transit or be eligible vanpools. The employer pays for the benefit and receives an equivalent deduction from the employer's income taxes. Employees receive the benefit completely free of all payroll and income taxes, in addition to their current compensation.

Employers can also offer the transit or vanpool benefit using the Commuter Check voucher program. In Massachusetts, Commuter Check vouchers are currently available in $20, $21, $22, $25, $35, and $45 denominations. With the Commuter Check program, the employer orders the Commuter Check vouchers from the Commuter Check Corporation, and then distributes the vouchers to employees. Employees use the vouchers to purchase transit passes. Employees who use either a private or a public transit service can use this program. With this program, employers can purchase Commuter Check vouchers from the Commuter Check Corporation using money from these sources: pre-tax dollars (in lieu of compensation); company funds to offer a subsidy (in addition to

compensation); or a combination of both methods (up to the total monthly of $100 per month, per person).

It is proposed that three TMAs be formed throughout Cape Cod around the corridors of Hyannis/Barnstable, Falmouth/Woods Hole, and Orleans/Outer Cape. The area around the county government offices and judicial facilities in Barnstable Village would be a likely candidate to commence a larger Hyannis/Barnstable TMA. This would demonstrate the county's willingness to tackle transportation problems created at county facilities, and plant the seed for the larger TMA encompassing the Hyannis/Barnstable area. All proposed TMAs could facilitate ways to efficiently and effectively transport seasonal and year-round workers to the various tourist, business, and health and human service entities in their area. The Hyannis/Barnstable, Falmouth/Woods Hole and Orleans/Outer Cape TMAs would ultimately have to be supported through substantial private sector management and financial support to be successful.

In Massachusetts, the statewide commuter services organization is CARAVAN for Commuters, Inc., a private non-profit organization affiliated with the Massachusetts Highway Department and the USDOT. CARAVAN provides assistance to commuters, companies, and transportation management associations throughout the Commonwealth, CARAVAN works with corporate leaders considering formation of TMAs to focus on business benefits (including employer and employee tax advantages), and to develop recommendations for employers and business groups on transportation demand management initiatives and TMA organizational alternatives. CARAVAN provides training, guidance, and technical assistance in operating a TMA, including program and financial management, board participation, and providing direct commuter services to employees of TMA member companies.

Also, CARAVAN administers the TMA Assistance Program, which provides Congestion Management and Air Quality (CMAQ) funds to develop value-added, pilot transportation projects at the worksite for TMA member companies. Funds granted to a TMA are generally for administrative, planning, marketing and operational purposes only. To be eligible for funding, a TMA must provide a detailed action plan that includes articles of incorporation as a private, non-profit corporation, bylaws, geographic boundaries, trip management goals, a financing plan, institutional structure, and potential membership estimates. Working together with CARAVAN, the Cape Cod Chamber of Commerce, Massachusetts Department of Environmental Protection, County of Barnstable, and major employers are the likely entities to initiate TMAs around Cape Cod.

In the near term, the following TMA work plan activities should be pursued in each of the three corridors:

1. Mission Statement Development, which is a concise statement stating the reason for the TMAs existence and outlining the general goals of the organization.

2. Goals and Objectives, which define measurable targets or goals for the first year of operation.
3. Detailed Marketing Plan, as the means for promoting the TMAs services and activities to the commuting public.
4. Detailed Budget, identifying sources and uses of funds necessary to accomplish the goals and objectives.
5. TMA Services, identifying what the TMA will be providing.
6. Monitoring/Evaluation, to establish performance measures and a means to evaluate the effectiveness of the TMAs activities.
7. Membership and Dues Structure, to ensure the viability and sustainability of the organization.

7. NEXT STEPS

7.1 KEYS TO SUCCESS

This Cape Cod Five-Year Public Transportation Plan provides a foundation for limiting congestion, improving public transportation services, and achieving greater integration among public transportation modes. Implementation of the recommendations contained in this plan is an important tactical step in shaping the overall direction of public transportation strategy on the Cape. Capturing public feedback is also critical to reaching a consensus and maintaining momentum for continued improvements in public transportation services. Evaluation of the recommendations contained in this report, as well as maintaining the dialogue for continual improvements of Cape public transportation strategy, should be a basis for staging future Transit Summits. The proposed private/public Coordinating Council will be responsible for facilitating the coordination of all of the elements of public transportation to ensure a truly unified, regional public transportation system. In this way, the actions and impacts of one transportation provider will have efficient, effective and equitable benefits with the other transportation modes, and the traveling public at large.

Besides considering the numerous improvements identified in the plan, important implementation elements include: developing and adopting a comprehensive marketing plan, hiring staff to coordinate and advocate for Cape Cod public transportation services and improvements, and considering the institutional changes that are needed to provide an "acceptable level" of public transportation services. This includes developing funding and implementation strategies to make the recommendations included in this report sustainable over the long-term.

While this plan is the seminal product of the Cape Cod Transit Task Force, its work should not end here. Finding ways to ensure the ongoing viability of the Task Force should be a key policy objective of senior officials at every level of government, and in the private sector. This can lead the way to the important next step of initiating and assembling substantial funding for the commencement of a long-range Cape Cod public transportation plan.

7.2 DEVELOPMENT OF A LONG RANGE CAPE COD PUBLIC TRANSPORTATION PLAN

The development of a long-range plan will be based on a 10-20 year horizon and build upon the recommendations contained in, and developed concurrent with the implementation of this 5-year plan. It is expected to address: demographic trends already in evidence; an increasingly transit-dependent population; expectations of increasing traffic congestion; development of alternate modes of travel, and implementation of a dedicated, reliable funding source for transportation improvements in the region.

It is necessary to develop new and better tools to make informed choices. At the present time, the process for developing and implementing the long-range plan should include the following elements:

- **Development of population and demographic projections,** with a focus on the more transit dependant segments of the Cape. This will include coordination with the efforts to update the existing regional transportation model, and identification of target environmental justice communities. A revised transportation model will be developed using this data. At the present time, it is difficult to estimate transit ridership on Cape Cod, especially for proposed new routes. A "mode split" feature to determine transit market share unique to Cape Cod and the Islands will be incorporated into the regional transportation model, which will better predict success of new and/or enhanced transit route improvements.

- **Identification of future needs,** based on these projections.

- **Development of an identification and prioritization process for potential major public transportation projects and initiatives.** The identification of potential elements is expected to include the use of existing public rights of way, definition of new routes and services, improvement of service through technology, and continued development of Human Service transportation. Recognizing that priorities change over time, flexibility will be incorporated in the planning process as to which studies and projects are to advance. Development of safety and security elements will be incorporated into the process.

  The recommendations of the Plan should include Intelligent Transportation Systems (ITS) technologies. Both vehicle on-board and wayside systems are now or will be available to enable efficient operations; this is especially important in the light of the dramatic seasonal variations in ridership. With a regional plan, up-to-the-minute information can be input into a database that is then posted on a web site. Visitors and residents alike could then access this information and use it to plan their travel.

  The plan must address the ingress/egress of visitors and residents on the Cape. Automobile access to the Cape is restricted to the Bourne and Sagamore Bridges, both of which experience significant traffic delays during peak times, and a single rail line, which is restricted by a drawbridge over the Cape Cod Canal. Visitor surveys can identify those visitors to the Cape who would be able to leave their vehicles at home and experience the Cape completely, without fear that their experience would be unsatisfactory due to an inefficient or ineffective public transportation system.

  Year-round service for residents should include elderly, medical, dial-a-ride and other on-demand service. This provision of service must be tailored to be

effective during the widely disparate seasonal operations imposed by Cape Cod visitors. The plan will be designed and operated to provide access to jobs that support the Cape businesses those visitors and residents access.

- **Evaluation of potential projects.** Long-range goals and objectives to address the trends identified for the Cape and Islands need to be developed through a public process. Subjective and objective measures that assess the proposals in terms of their effectiveness in meeting the goals and objectives will then be applied to the proposals.

- **Establish a regional action agenda for transportation using a broad-based consensus of public and private interests**. The agenda will reflect the collective direction of policy makers and concerned parties representing diverse interests. The highly successful Cape Cod Transit Task Force format should be considered and built upon. A concerted public relations approach to disseminate vital information in timely, efficient and effective ways will be pursued.

- **Identification and development of preferred projects with an implementation timeline.** The goal is to develop a long-range public transportation plan that reduces the need for single occupant vehicle transportation and demonstrates environmental sensitivity. Based on the project evaluations and the expected evolution of public transportation needs, a 25-year plan of projects will be derived. This plan will be unconstrained with respect to funding; however, it is expected that the evaluation criteria will include cost/benefit elements.

- **Development of a long-range fleet plan.** Based on the needs identified by the 25-year plan, a detailed fleet plan that will project capital, maintenance, and operating needs will be developed. The recommendations must take advantage of new vehicle technologies that will attract riders**.** Such amenities as low-floor bus access and vehicle and station designs amenable to a "typical" Cape Cod visitor with picnic basket, bicycle and other encumbrances will ensure increased ridership. The Plan recommendations should include alternative fuel vehicle designs as appropriate. Any long-range solution will of necessity include these new technologies in a sustainable transportation system. Environmental benefits to be gained by the use of these new technologies will be numerous. Reductions in criteria pollutants and greenhouse gases are of paramount importance.

- **Exploration of funding potential.** Traditional sources will be evaluated and, if appropriate, extended into the future on a level-funding basis. Required operating and capital costs will be developed based on the 25-year plan. Additional funding requirements will be identified and a sustainable source of funding will be proposed and steps to secure this funding identified.

Potentially, this may include sales, gasoline, and room tax revenues collected on the Cape but not used to address Cape transportation needs.

A process will be initiated to secure the necessary funding to support the 25-year plan and begin implementation. Projects that can be funded will be incorporated into the fiscally constrained Regional Transportation Plan, which identifies public transportation and highway needs for the region. The plan will be revisited every three years as part of the Regional Transportation Plan MPO process and priorities re-evaluated based on changes in the trends and demographic projections and identification of new needs. The annual process of reviewing Cape public transportation needs and coordination by the Cape Cod Public Transportation Coordinating Council will supplement these three-year updates.

A planning effort is a journey. Conditions change, priorities shift, and opportunities arise during the development of any long-range planning effort. Given this dynamic environment, it is critical that we maintain our momentum. This vigilance will help us make our vision a reality: **a comprehensive, accessible, and integrated public transportation system that allows the traveler to say *"I CAN get there from here…WHEN I want to go!"***

APPENDIX A

SUMMARY OF ISSUES AND COSTS ASSOCIATED WITH RAIL SERVICE FOR CAPE COD

Summary of Issues and Costs Associated with Rail Service for Cape Cod

Introduction

The Cape Cod Transit Task Force and EOTC enlisted the aid of Transit Safety Management, Inc. of Georgetown, MA to evaluate three concepts for rail service. The evaluations were intended to develop the issues and a range of costs associated with potential rail service to Cape Cod. The following summary includes a brief description of the concepts evaluated, the issues that need to be explored further and conceptual costs to upgrade tracks on and off-Cape.

The Cape Cod Transit Task Force believes that rail will become an essential element in transportation for Cape Cod and recommends that proposals for passenger rail service be sought for Cape Cod that address the issues identified by the evaluation. The Task Force also recognizes that the Commonwealth is unable due to its enabling legislation, at this time, to subsidize service any proposed passenger rail service to Cape Cod.

Concepts evaluated

Cape Cod Feeder Rail Passenger Access:

"A four-stage proposal for public-private cooperation to conduct trial railroad passenger service between Middleboro/Lakeville, Hyannis and Falmouth, Massachusetts, with connecting service to Boston and an optional extension to Attleboro". This proposal was presented to the Cape Cod Transit Task Force (CCTTF) by George C. Betke, Jr., John F. Kennedy, and Alfred E. Michon. The proposal describes the implementation of a multi-phase rail passenger service between Boston and Cape Cod over a 36-month period, operating a daily, year-round service.

Cape Cod – Acela Express Connector

The Cape Cod Regional Transit Authority (CCRTA) and the Greater Attleboro-Taunton Regional Transit Authority (GATRA) have submitted a proposal to the Cape Cod Commission entitled, "A Locally Initiated High Quality Passenger Rail Connection from Cape Cod, the Islands, and Capeway Communities to Amtrak's Hi-Speed Acela Express Service – A CMAQ Proposal". The two Authorities have proposed to launch a Congestion Management/Air Quality (CMAQ) project to operate a seasonal rail connection between Cape Cod, the islands of Nantucket and Martha's Vineyard, "Capeway" communities, and the urban regions of Attleboro and Taunton with Amtrak's Northeast corridor high-speed Acela trains.

This proposal was withdrawn but the concept was felt to be worthy of further evaluation by EOTC and the Task Force.

Cape Cod – New York Direct Service on Amtrak

There is no proposal or plan for this service, which is essentially a re-creation of the direct New York/Cape Cod service that Amtrak operated between 1986 and 1996. The state-subsidized Amtrak trains included destinations to Hyannis in a seasonal, weekend-only service. This service was operated to Attleboro on the Northeast Corridor, then on to the Middleboro and Buzzards Bay secondary tracks from Attleboro to Buzzards Bay. Just south of Buzzards Bay, at Canal Junction, the trains continued to Hyannis.

Amtrak has not expressed any interest in operating or subsidizing this service. Amtrak has also expressed concerns over their ability to operate through Connecticut, which restricts the number of trains Amtrak can operate. Restoring the Cape Codder it may affect the number of trains Amtrak can run to Boston.

Implementation issues

A number of issues were identified, some germane to the concept being evaluated and some universal among the concepts. Any proposal for rail service will require a comprehensive public process to identify impacts on a number of levels. The major impacts will include; affects on abutters, potential safety issues, and impacts to marine traffic at the Canal crossing, environmental concerns, and impacts to the character of Cape Cod.

Freight Coordination

Concerns were expressed by the current freight operator, Bay Colony Railroad, that the nature of the single track and the limited number of sidings would create problems for the existing freight service. It has been pointed out that the current scenic rail service has not encountered any freight coordination problems, though it should be understood that the scenic rail service is a seasonal, limited service. However, in the 1980's, when there was more freight traffic, with Amtrak service and 5 round trips a day between Braintree and Hyannis, freight coordination was not a problem.

Any proposal for passenger rail service must address this issue and provide assurances that existing freight providers will not be significantly impacted. In addition to the actual operating constraints, it should be noted that any potential passenger service operator will also be required to enter into a operating agreement with Bay Colony Railroad to address dispatching costs, track inspection, road maintenance charges, and signal maintenance charges.

Equipment

The concepts all had different equipment associated with service. The costs of obtaining, leasing, maintaining, and/or refurbishing this equipment and its availability must be developed in sufficient detail by any proposed service to assure that it is available, appropriate, reliable, and can be accommodated by the proposed budget. The Commonwealth would like to see providers propose the use of equipment that is in compliance with the Americans with Disability Act and will address this issue in any Request for Response that it issues.

Station Capacity

Concerns were raised about the capacities at Middleboro and Providence stations for transfers between trains. Proposals must be clear on the operations at any station shared with another provider and include details on the proposed dispatching and coordination between rail service providers. Accommodations to make stations compliant with the Americans with Disability Act will need to be addressed by the provider and EOTC.

Schedule

The running times included in the concepts were non-existent or inconsistent with historic service in the same corridors. Proposed service should include a detailed operating plan, including schedules and schedule assumptions.

Institutional Issues

Coordination with Amtrak, the Massachusetts Bay Transportation Authority, local Regional Transit Authorities, and freight providers must also be included in any rail proposal as appropriate.

Track Costs

The following summary of track costs was prepared to provide a “ballpark” cost estimate of the required improvements for various routes and, in some cases, various operating speeds. The public comments received on the rail issue and the opinion of EOTC and the Cape Cod Transit Task Force is to have restricted maximum operating speeds east of the Canal crossing to FRA Class 2 (30 mph). This is reflected in the following summary. Proposals for passenger service for Cape Cod must respect this restriction. Further detailed engineering evaluations of rail infrastructure will need to be conducted to obtain a firm figure on actual costs of the reinstitution of passenger rail service. Funding sources for all improvements will also need to be identified.

Summary of Cost Estimates for Various Track Improvements

On Cape Improvements	Maximum Speed	Miles	Cost
Buzzards Bay to Hyannis			
No change in current operating speeds	30 mph	25	$0.00
Buzzards Bay to N. Falmouth (end of track)			
No change in operating Speeds to MP 6.8	30 mph	6.8	$0.00
N. Falmouth to Falmouth (MP 6.8 to 13.8)			
Rehabilitate track and structural section	30 mph	7.0	$4.1 million*
Canal Wye			$0.9 million
"Off-Cape" Improvements			
Buzzards Bay to Middleboro			
Restore to Class 3 - 60 MPH	60 mph	18	$1.4 million**
Modifications to Middleboro Station			$1.0 million***
Middleboro to Attleboro			
Class 2 - minor track work	30 mph	22	$1.4 million**
Class 3 upgrade	60 mph	22	$14.5 million**
Bridge Repairs			$1.5 million

*$110/ft average cost, a more detailed estimate is required
**Transit Safety Management
***EOTC/MBTA

Conceptual Track Costs Compared

(based on the costs and operating speeds presented above)

	Maximum Speed	Cost
Cape Cod Feeder Rail Passenger Access		
Stage 1 - Middleboro to Buzzards Bay	60 mph	$2.4 million
Stage 2 - Buzzards Bay to Hyannis	30 mph	$0.00
Stage 3 - Buzzards Bay to Falmouth	30 mph	$5.0 million
Stage 4 - Middleboro to Attleboro	30 mph	$1.4 million
"Stage 5" - Middleboro to Attleboro	60 mph	$16 million
Acela Connector (no Falmouth service)	30/60 mph	$19.8 million
Restore Cape Codder Service (includes Falmouth service)	30/60 mph	$24.8 million