Martha's Vineyard
Regional Transportation Plan

2003 Update

Prepared by the Martha's Vineyard Commission
on behalf of the Martha's Vineyard MPO

This Regional Transportation Plan was prepared by the Martha's Vineyard Commission on behalf of the Martha's Vineyard MPO, made up of:

- The Massachusetts Highway Department,
- The Executive Office of Transportation and Construction,
- The Martha's Vineyard Commission, and
- The Vineyard Transit Authority.

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Preface

The Martha's Vineyard Regional Transportation Plan is updated every three years. It outlines the Vineyard's transportation issues and outlines proposals to deal with them.

The Martha's Vineyard Commission serves as one of the Commonwealth of Massachusetts' thirteen Regional Planning Agencies. Ten of these thirteen regional planning agencies are federally designated Metropolitan Planning Organizations (MPO). The federal regulations require that an MPO be formed in urbanized areas with a population of 50,000 or more. While Martha's Vineyard as well the Franklin County and Nantucket regions do not meet these criteria, the Executive Office of Transportation and Construction and the Massachusetts Highway Department provide planning funds for transportation planning in these regions, and essentially treat them as MPOs.

A MPO consists of a Committee of Signatories, who together make decisions about transportation planning goals, projects, priorities, and funding. Martha's Vineyard Committee of Signatories' members are The Executive Office of Transportation and Construction, the Massachusetts Highway Department, the Martha's Vineyard Commission and the Martha's Vineyard Transit Authority. For the purpose of this document the Committee of Signatories with be referred to as the Martha's Vineyard MPO.

In its role as a MPO member, the Martha's Vineyard Commission follows federal transportation planning regulations, including the establishment of a citizen advisory group, known as the Joint Transportation Committee, to participate in transportation planning activities.

1. Introduction

Transportation on Martha's Vineyard[1] faces special challenges:

- As an island, it is only accessible by boat or air;
- As a summer resort, there is a nearly five-fold fluctuation in the number of people on the Island with seasonal patterns leading to congestion, safety problems and straining of infrastructure capacities;
- As a predominantly rural or semi-rural area, the land use pattern makes it more challenging to offer alternative means of transportation to the car.
- As a locality of unique environmental, scenic, and historic qualities, there is ongoing concern about the impact of transportation on these important features of the Vineyard.

The Island's explosion in popularity over the past generation has resulted in rapid growth that threatens the very qualities that many find so attractive. Transportation deficiencies have been one of the most readily apparent symptoms of rapid Island growth. Our economy depends heavily on people who are drawn to the Island's scenic beauty; but the Island's burgeoning popularity could threaten the very attributes that make it attractive. Without good transportation planning, future population growth holds the specter of increasing congestion or inappropriate engineering solutions.

In 1995, a special task force on transportation outlined a vision for major improvements. There has been a lot of progress since then.

- Since 1997, the Steamship Authority (SSA) has limited the summer car capacity to the 1995 level by limiting vessel capacity and number of trips, turning the "lifeline" into a control valve.[2] Although this led more seasonal residents to keep cars here permanently, it appears to have discouraged shorter-term visitors from bringing cars across.
- The Vineyard Transit Authority (VTA) has been a success, going from a limited, seasonal service transporting 65,000 people in 1997 to an Island-wide, year-round, service that carried 789,000 people in Fiscal Year 2002, largely due to the acquisition of private services.
- Last year, almost 30,000 people used the Tisbury's and Edgartown's Park-and-Ride lots, although they have a potential for a lot more use.
- Thanks to public pressure and the efforts of the Town of Oak Bluffs, the number of mopeds available for rental on the Island has been reduced from 539 to 308.

[1] *Note that this Regional Transportation Plan update, as did those in the past, deals only with the Island of Martha's Vineyard. It would be desirable to include the town of Gosnold in future plans. Part of Dukes County and represented by the Martha's Vineyard Commission, Gosnold has its own transportation concerns. Presently, the village of Cuttyhunk, with a population of about 100 people, is served by daily ferry service from New Bedford aboard the Alert. The village has about three or four miles of roads, used mainly by golf carts.*

[2] *Although an additional freight boat has been added, the elimination of guaranteed standby has maintained the overall limit on capacity.*

Combined with required safety orientation of renters, associated traffic conflicts and accidents have been reduced.

- This year, the Town of West Tisbury and the County of Dukes County created 2,200 feet of roadside pedestrian paths in North Tisbury (using, in part, easements that had been established by the MVC in reviewing several Developments of Regional Impact).
- The network of bike paths continues to grow and there have been improvements to pedestrian facilities.

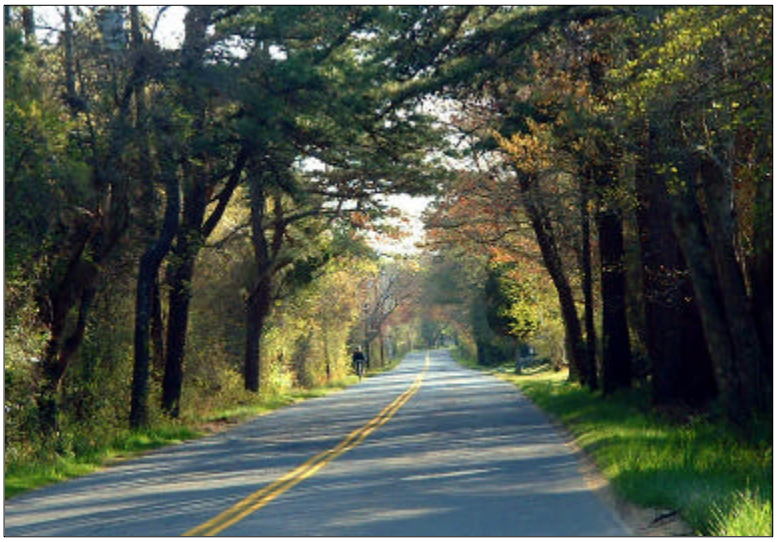
This update of the *Regional Transportation Plan* considers regional transportation needs in a continuing, cooperative and comprehensive manner. Based on analyses of travel, demographic and land use data, combined with the opinions of Island residents and property and business owners, it outlines the current status of transportation issues on the Island and provides a framework for the upcoming transportation and related planning work. A fundamental purpose of the *Regional Transportation Plan* is to promote the development of intermodal transportation facilities including roads, public transit routes, terminals, bicycle and pedestrian paths, and parking.

This Plan is organized as follows:

- Chapter 2 describes the administrative and planning context for the preparation of the plan including previous transportation planning efforts on the Island;
- Chapter 3 gives an overview of the Island and its people including estimates of present and future population and employment;
- Chapter 4 outlines the principle components of the transportation network and as well as the ten main goals of the Plan;
- Chapters 5 and 6 describe the ways to get to the Island, by water and by air; each chapter is in four sections: a description of the present situation, trends and analysis, objectives and proposed projects and actions;
- Chapters 7, 8, and 9 describe various modes for getting around on the Island, dealing with the road network and traffic, buses/taxis and bicycles/pedestrians;
- Chapters 10 and 11 deal with issues that cut across several modes of transportation, namely freight and intermodality/information;
- Chapter 12 discusses implementation of the plan and includes a preliminary list of Transportation Improvement Projects;
- Chapter 13 is the conclusion.

2. The RTP Update Process

2.1 Guiding Legislation



- Identifying needs and allocating resources are basic aspects of the Transportation Equity Act for the 21st Century (TEA-21), a federal statute intended to facilitate the development, management and operation of an integrated, intermodal transportation system that enables the safe, efficient, and economic movement of people and goods.
- TEA-21 mandates consideration of the following planning factors:
  - Support a region's economic vitality;
  - Increase the transportation system's safety and security for motorized and non-motorized users;
  - Increase the accessibility and mobility options available to people and for freight;
  - Protect and enhance the environment, promote energy conservation and improve quality of life;
  - Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
  - Promote efficient system management and operation; and
  - Emphasize the efficient preservation of the existing transportation system.
- Of these, federal and state transportation planning agencies have selected 2 key themes – safety and congestion management, for the 2003 update. The *Plan Update* recommends improvement at high accident locations and congested intersections.
- The Clean Air Act Amendments (CAAA) of 1990 governs the *Plan Update*. Eastern Massachusetts exceeds national ambient air quality standards and is classified as a "serious non-attainment ozone area". Ozone levels are highest during the summer when the weather is warmest, sunlight most intense and motor vehicle activity highest.
- In part, the 1990 Americans with Disabilities Act (ADA) guarantees "equal and equivalent" access to transportation facilities and services funded by federal government agencies. The ADA, in effect, is a civil rights law for which Congress found that:

- The number of Americans having one or more physical disability is growing and is expected to increase as the population ages.
- Discrimination against individuals with disabilities continues to be a "serious and pervasive social problem".
- The Nation's proper goals regarding individuals with disabilities are to "assure equality of opportunity, full participation, independent living and economic self-sufficiency".

The Act's scope pertains to the design and construction of roads, traffic controls, sidewalks and crosswalks and parking lots – to list a few subjects. And just as importantly, the Act has influenced fixed-route and demand-responsive transit services, such as bus routes, taxis and shuttles.

- With respect to environmental justice, a 1994 Presidential Executive Order directed all federal agencies to identify and address, "as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations". Applying the principles of environmental justice, regional planning opportunities include:
  - Identifying residential, employment and transportation patterns of minority and low-income individuals and households.
  - Improving public participation processes in order to involve minority and low-income populations in transportation decision-making.
  - Providing essential transportation services to minority and low-income populations who do not have transportation to work, shops, childcare centers, recreation areas and other destinations.
  - Ensuring that transit facilities and services deliver equitable levels of service and benefits to minority and low-income populations.

- In 2003, the Romney Administration issued a Statewide Road and Bridge Policy. The policy stated that "in all programs involving work on streets, roads and bridges to Fix it First and use Community Friendly Solutions (Communities First)." Fix it First, gives "priority to the repair of existing roads and bridges." Community-Friendly Solutions means "Wherever a street, road or bridge needs to be redesigned and reconstructed, to plan and undertake, in collaboration with the affected community, a *context-sensitive* project—one that fully protects and enhances the surrounding community and landscape while addressing mobility for all transportation modes." In keeping with the Statewide Road and Bridge Policy, the Administration encourages Smart Growth strategies when developing long range plans. The Martha's Vineyard MPO supports the principles of the Statewide Road and Bridge Policy. (See also section 7.2 and appendix A1.)

2.2 The 3-C Process

- In the early 1970's Massachusetts adopted the federal government's comprehensive, cooperative, continuing (3-C) transportation planning process.

- The intent of the 3-C process is to decentralize transportation decision-making by insuring that "all reasonable and prudent alternatives to transportation problems are considered and analyzed adequately." Decisions must give full consideration to all impacts, emphasize physical, economic and social consequences and include the "participation of elected officials, public and private groups and individual citizens."
- Establishing an "open and participatory planning" process led to a Memorandum of Understanding (MOU) between state and regional representatives in 1980. The MOU resulted in the Joint Transportation Committee (JTC). Its purposes and responsibilities are to:
    - Guide regional transportation decision-making,
    - Serve as a forum for discussing all transportation issues and
    - Advise the Committee of Signatories – the Commonwealth's Secretary of Transportation and Construction, The Massachusetts Highway Department Department, The Martha's Vineyard Commission and Martha's Vineyard Regional Transit Authority.

2.3 Roles of the Martha's Vineyard Commission and Martha's Vineyard Regional Transit Authority

- The Martha's Vineyard Commission as the "lead transportation planning agency for the region…shall be principally responsible for the maintenance of the transportation planning process and for the support and operation of the JTC".
- The Martha's Vineyard Transit Authority assists "in obtaining and ensuring input and participation in multi-modal transportation from local elected officials and the public". As well, it is to "represent the region's concerns for public transportation needs and solutions to transportation problems".
- Working with the JTC, the Commission and the Transit Authority, as members of the MPO:
    - Develop regional goals and objectives,
    - Adopt the regional transportation plan, and
    - Formulate regional transportation improvement priorities in partnership with Island towns.

2.4 Previous Planning Efforts

- The Donaher Report (1995): The sixteen-person Martha's Vineyard Special Task Force on Transportation carried out an extensive community-based reflection on Island transportation. It set, as its long-range goal, the creation of "a radically different transportation system that is a model for minimizing the impact of the automobile and is designed for the special qualities of Martha's Vineyard." The main thrust was to propose an integrated system of transportation to greatly expand the use of transit and discourage the use of the automobile. Action items included:

- creation of an Integrated Transit System, limiting the vehicular capacity on the ferry, and a campaign to encourage visitors to "leave their cars and cares at home"
- setting up water taxi service between Vineyard Haven, Oak Bluffs and Edgartown harbors,
- creating a seamless express bus service from parking lots on the mainland to the ferry and thence to a parking/service lot on the Vineyard; the aim is to allow relocation of pick-up and drop-off as well as other services needed by arriving passengers away from congested ferry terminal areas.

A large number of the recommendations, particularly related to transit improvements, have been implemented. Others are included in this document.

- The 2000 Regional Transportation Plan: The last update of the RTP inventoried the Island's transportation modes, defined relationships "common to the Island's people, patterns of land use development and the region's infrastructure", and identified existing and future needs. It presented a transportation demand management strategy based on 3 elements: managing growth, promoting the efficient use of the regional transportation system and reducing the number of vehicle trips. It incorporated the transportation planning recommendations of previous regional transportation plans and, in turn, the 2003 Plan incorporates the pertinent recommendations from the 2000 Plan.
- State Forest Bicycle Path Connector Plan: This plan outlined paths for the eastern side of the forest. (circa 1999-2000)
- Port Areas Infrastructure Capacity Study: (2000) Sponsored by the Steamship Authority, this study examined the infrastructure at and around the seven ferry terminals serving the Island in the summer of 1999, observed how people used the infrastructure, and made recommendations for improvements.
- The 2002 Build-out Study: Estimates were made of the ultimate potential development based on available land and current zoning, as a basis for future land use and transportation planning.

2.5 Purposes of the 2003 Update

- Incorporate changes in the last three years particularly with respect to population information, modifications to the Island's transportation system and newly defined objectives or possible actions.
- Serve as basis for defining the Transportation Improvement Program projects.
- Be consistent with the state's overall plan for air quality, being prepared by the Massachusetts Highway Department, for the benchmarks years of 2007, 2015, and 2025.

- Outline the framework for upcoming transportation planning to be carried out over the next few years as part of an anticipated Island-wide community-based planning effort.

2.6 Process for Preparing the 2003 Update

The 2003 update of the Regional Transportation Plan was carried out between the fall of 2002 and the summer of 2003, and involved the participation of many Island individuals and groups.

- Martha's Vineyard MPO (Committee of Signatories): This committee, made up of The Massachusetts Highway Department, Executive Office of Transportation and Construction, the Martha's Vineyard Commission, and the Vineyard Transit Authority, named the members of the Joint Transportation Committee (JTC) and endorsed the final plan in September 2003.
- Joint Transportation Committee: The Joint Transportation Committee is responsible for coordinating the plan update process and recommending the draft version of the final plan. It operates by consensus (see JTC Public Participation Plan). It met throughout the course of the planning process, in order to review the results of that phase and plan the work of the next phase. In addition, there were other working sessions involving some or all of the JTC members as well as other participants. A Plan Update Steering Committee met as required to help move the process forward.
- Plan Update Advisory Committee: The Plan Update Advisory Committee is made up of 12 individuals or representatives of groups that will be invited to participate actively in the process. This includes representatives of user groups, technical staff from the VTA and SSA, transportation experts and members of the general public. The committee is being called on for meetings on specific topics and to give feedback on various draft documents.
- Martha's Vineyard Commission: After approval by the Martha's Vineyard Commission, the Transportation Plan will be incorporated into the MVC's Regional Island Plan.
- Public Participation: Town boards, the county and the general public were invited to participate in various ways. They were informed of the process in introductory articles that appeared in both Island newspapers. They were invited to send in comments and suggestions using a survey form (see summary of results in box below; other suggestions are incorporated into their respective sections). Several public forums and other working sessions were held to elicit preliminary comments and suggestions, to comment on the preliminary outline plan, and to comment on the final plan. (See appendix A3.)
- Formal review process: This draft version of the plan has been reviewed by the Martha's Vineyard MPO and is now subject to a 30-day public review period.

This Regional Transportation Plan update includes some goals, objectives and proposed actions that are carried forward from the previous plan, some that were identified in the other planning studies described above, and others that were suggested in the course of the various planning and public participation activities.

Table 1: ***Summary of the Results of the Informal Opinion Survey Conducted as Part of the RTP Update***

- *Road and traffic improvements included identification of the Island's most congested and least safe roads and intersections and possible solutions (see additional comments on roads and traffic in section 7.2).*
- *Transit improvements suggested included access to commercial, recreation and conservation areas as well as better coordinated schedules.*
- *Other suggested improvements dealt with linked networks of bike paths, lanes and routes, of foot and "hoof" trails, the availability of parking in commercial areas and roadside aesthetics.*
- *Comments on air and water travel dealt with accommodating/managing travel demand via supply-side policies, New Bedford's role in ferry access, safety and security improvements as well as ferry traffic and the Island and Falmouth's ability to absorb it.*

2.7 Ongoing Studies

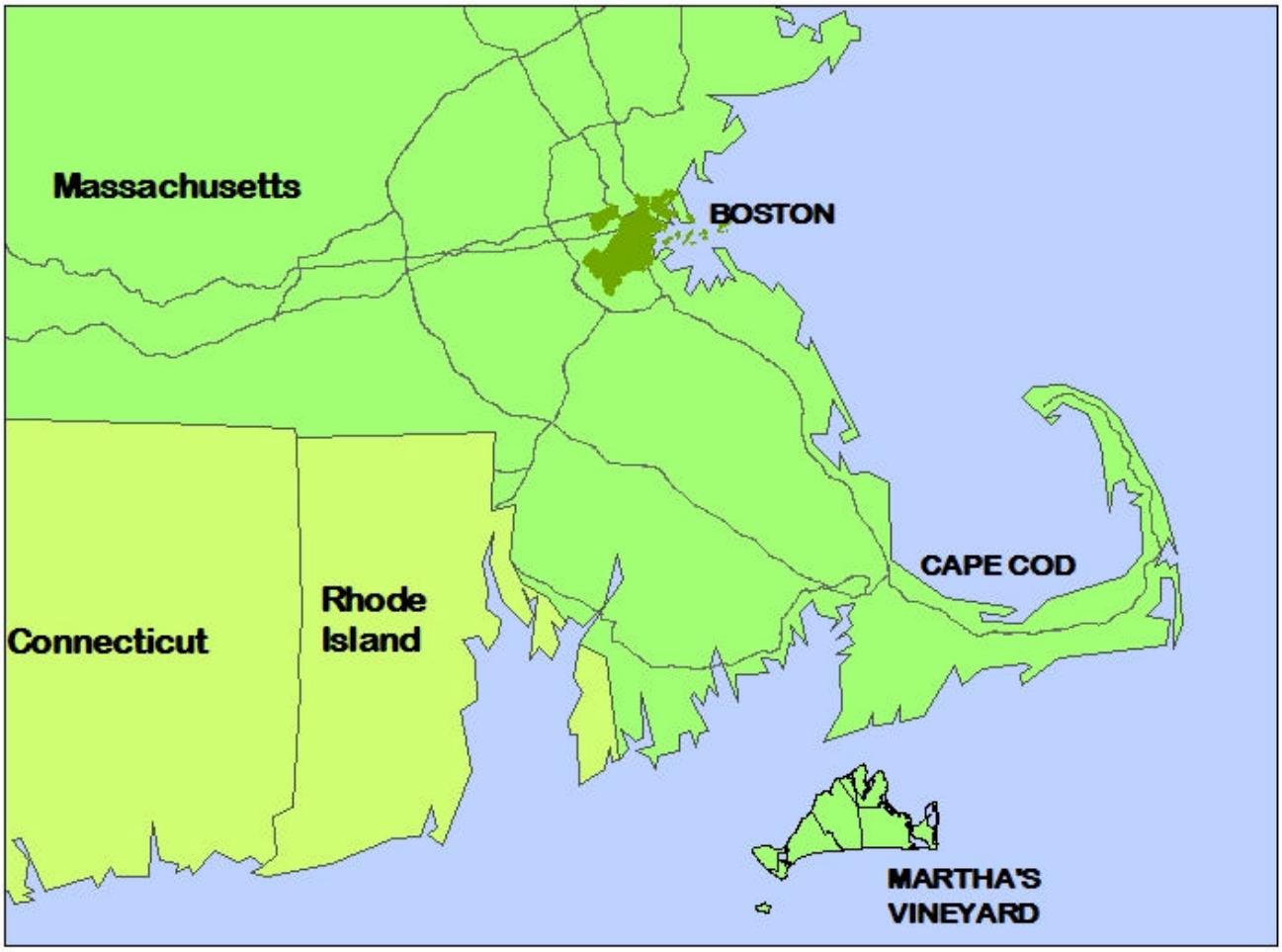
The Martha's Vineyard Commission, on behalf of the Martha's Vineyard MPO, has also undertaken three initiatives to strengthen transportation planning on the Island. Their primary purpose is to help in the transportation planning in upcoming years.

- Data Collection – Several surveys are to be carried out in the summer and fall of 2003 – visitors/residents, traffic origin-destination, ferry, and buses. Information to be sought includes the origin and destination of drivers vehicular trips on the Island, population, household and employment information at various times of the year, opinions about various growth and transportation options, etc (details to be confirmed).
- Travel Demand Model – A model is being prepared by Louis Berger Group based on available year-round average population, economic and land use data. Additional data will make it possible to create of a summer peak model. The model will allow projection of future traffic levels, identification of future congestion points based on various growth scenarios (see sections 3.2 and 3.3), and testing of possible solutions.
- Freight - As an outgrowth of the preparation of this plan update, a freight task force is working on defining issues related to freight traffic on ferries and barges as well as local delivery on-island and rubbish disposal.

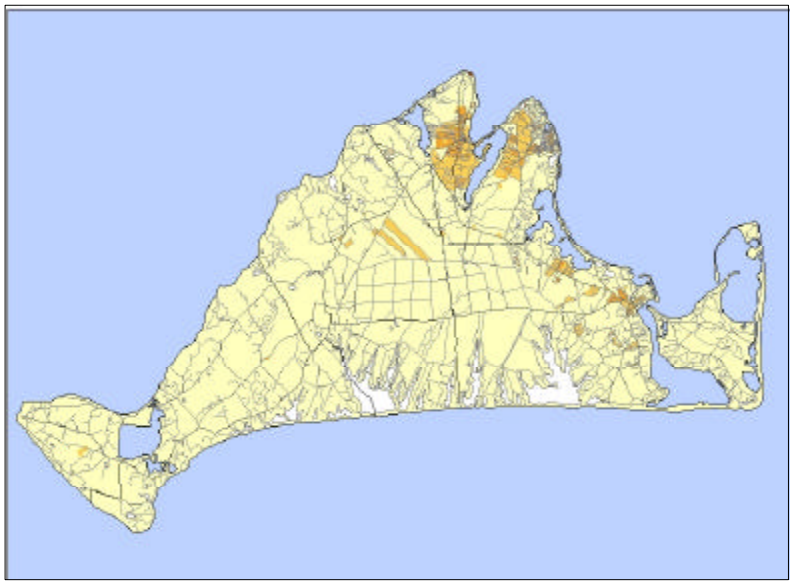
3. The Island and its People

3.1 Description of the Island

Martha's Vineyard is a 100-square-mile island located seven miles off the coast of Cape Cod. Its topography, in fact its very existence, results from its location at the southern extremity, or terminal moraine, of the part of North America covered by ice during the last Ice Age. Home to the Wampanoag Tribe, it was settled by Europeans in the mid 17th century.



Today, year-round residents, seasonal residents – many of whom own second homes – and hundreds of thousands of short-term visitors live on or come to the Island, attracted by the unique natural, ecological, historical, cultural and scientific values that define the beauty and character of Martha's Vineyard. .



Population density is highest in Down-Island towns.

Each of the Island's towns reflects its origins: Edgartown as the home of master seamen and the seat of County government; Tisbury as the Island's gateway and market town, West Tisbury and Chilmark as agricultural villages, Aquinnah (Gay Head) as the Wampanoag tribal settlement and a fishing village, and Oak Bluffs as the first summer resort. Three-quarters of the Island's population is concentrated in the three "Down-Island" towns: Tisbury, Oak Bluffs and Edgartown, each with a busy commercial town center. Vineyard Haven in Tisbury serves as the Island's main port, seconded by Oak Bluffs in the summertime. The three "Up-Island" towns, West Tisbury, Chilmark and Aquinnah (formerly called Gay Head) are more rural in character.

3.2 Population and Households

Past Trends

The population of the Vineyard remained relatively stable for the first half of the 20th century with a population growing from 4,397 in 1900 to 5,763 in 1960. The population began to grow dramatically in the 1970's and doubled in the last quarter of the 20th century. In the past decade, the year-round population surged by 29% compared to an average increase of only 6% in all of Massachusetts. From 1970 to 1990 the population of Martha's Vineyard has increase by over 30% each decade.

As a resort area, the population changes dramatically from one season to the next. It is made up of several distinct groups: year-round residents, seasonal residents who have second homes here, visitors who come for the season, a month, a week or perhaps only a day. Table 3 gives an estimate of the peak-season population. In future planning, it would be desirable to further break down the population categories, such as retired, semi-retired and working population and differentiating between seasonal residents and visitors since they have different travel characteristics.

Table 2: **Year-round Population - 1900 to 2000**							
	1900	*1950*	*1960*	*1970*	*1980*	*1990*	*2000*
Aquinnah	*173*	*88*	*103*	*118*	*220*	*201*	*344*
Chilmark	*324*	*183*	*238*	*340*	*489*	*650*	*843*
Edgartown	*1,209*	*1,508*	*1,474*	*1,481*	*2,204*	*3,062*	*3,779*
Oak Bluffs	*1,100*	*1,521*	*1,419*	*1,385*	*1,984*	*2,804*	*3,713*
Tisbury	*1,149*	*1,966*	*2,169*	*2,257*	*2,971*	*3,120*	*3,755*
West Tisbury	*442*	*260*	*360*	*453*	*1,010*	*1,704*	*2,467*
Total	***4,397***	***5,526***	***5,763***	***6,034***	***8,879***	***11,541***	***14,901***

Table 3: **Estimated Peak Season Population - 2000**							
	Aquinnah	***Chilmark***	***Edgartown***	***Oak Bluffs***	***Tisbury***	***West Tisbury***	***Total***
Year-Round	*344*	*843*	*3,779*	*3,713*	*3,755*	*2,467*	***14,901***
Guests of Year-Round	*141*	*382*	*1,582*	*1,590*	*1,646*	*1,034*	***6,375***
Seasonal / Vacationers	*1,288*	*4,104*	*11,112*	*8,920*	*4,296*	*3,260*	***32,964***
Transients							
lodging rooms	*28*	*146*	*1,326*	*926*	*454*	*112*	*2,992*
on boats			*408*	*504*	*600*		*1,512*
camping					*432*		*432*
Total Transients	*28*	*146*	*1734*	*1430*	*1486*	*112*	***4,936***
Day Trippers			*500*	*5000*	*2500*		***8,000***
Cruise Passengers				*1,000*			***1,000***
Total	***1,801***	***5,475***	***18,707***	***21,655***	***13,683***	***6,873***	***68,194***

- *Year-round population as reported by 2000 US Census. Some people have estimated that there are as many as 1,000 additional year-round residents and a total of 3,000 additional summer residents who are undocumented aliens. In the absence of clear data, they are not included.*
- *Guests of Year-round residents estimated as an average of 1 person for each of the 6,375 year-round households*
- *Seasonal Residents / Vacationers include second homeowners and renters. They are estimated as an average of 4 people for each of the 8,246 seasonal housing units. The estimate of 4 is based on an informal survey of real estate agents specializing in rentals. If the estimate were to be based on 5 people per housing unit, the result would be 41,230 seasonal residents and vacationers resulting in a total Vineyard population of 76,460 . It is estimated that about two-thirds of these are seasonal residents.*
- *"Transients" assumes two people per room and 100% occupancy for July and August in the Island's 2,200 lodging rooms, hotels, inns and B&Bs. [see next table]. The Edgartown, Oak Bluffs and Tisbury Harbor Masters estimated 3 or 4 people per boat and occupancy rates between 80% and 100% for the 468 boats that can be accommodated on slips and moorings in these three harbors. Camping is based on an average of 3 people per tent and 80% summer occupancy for the Island's 180 campsites in the MV Family Campground.*
- *Day Trippers assumes two-thirds of the peak passenger ferry ridership of 12,000 on peak summer days are day-trippers and the others stay for a longer period.*
- *Cruise Passengers assumes one cruise ship with a capacity of 1,000 people in harbor on a peak day; in the past year, most cruise ships have come in the spring and fall.*

Estimates of Future Growth

- It is difficult to predict how the Island's population will grow in the next quarter century since the impact of the limited amount of land available for development will play an increasingly important role in mitigating the natural growth tendencies (births, deaths and migration).

Table 4: ***Public Lodgings*** *(number of bedrooms)*

	Seasonal	*Year-Round*	*Total*
Aquinnah	*7*	*14*	*21*
Chilmark	*73*	*6*	*79*
Edgartown	*663*	*309*	*972*
Oak Bluffs	*463*	*133*	*596*
Tisbury	*227*	*203*	*430*
West Tisbury	*56*	*39*	*95*
Total	***1512***	***697***	***2209***

Source: Chamber of Commerce

- To illustrate the range of growth possibilities, the year-round population growth was estimated at low, medium and high rates based on three different assumptions of possible rates. These projections can be used in future land use and transportation planning.
    - The low rate assumes that population growth will taper off at a rate such that in 2025, the Island will achieve 80% of the ultimate "build-out" capacity i.e. 20,000 people.
    - The medium rate assumes a steady annual growth at about the present rate of 400 people per year.
    - The high rate assumes a continuation of the 1990's growth rate of 3% per year.

  Note that achievement of the medium and high rates would imply that one or more factors would come into play to allow exceeding the "build-out" study targets, namely: that there be an increase in the number of guest houses, that the proportion of all houses that are occupied year-round would increase beyond the present 45%, and/or that there be zoning changes or exceptions (such as 40B projects) over the next 25 years allowing higher density than presently allowed.
- It will be useful to identify the growth trends by income, age and number of people per household since different groups have different transportation demands. This will allow, for example, clarification of the apparent trend of younger families leaving the Island and being replaced by retirees.

Table 5: **Year-Round Population Projections**				
	2000	*2007*	*2015*	*2025*
Low Projection	*15,000*	*17,000*	*19,000*	*20,000*
Middle Projection	*15,000*	*18,000*	*21,000*	*25,000*
High Projection	*15,000*	*18,500*	*23,500*	*31,500*

Note: figures are rounded from the original calculations

- The Massachusetts Highway Department is using the middle projection estimates to model the impact on air quality in the Commonwealth and they will be used for the rest of this document.
- Since transportation capacities of roads, ferries, and transit are based on the summer peak and most problems occur during this period, most of the transportation planning is based on this period. Off-season and shoulder-season figures are also important, especially for working out appropriate ferry, air and transit services for these time periods. Population during the shoulder season is growing as result of the increasing number of year-round residents, and, apparently, the number of seasonal visitors (possibly second home owners) coming in the spring and fall. Some transportation proposals that address short-term visitors (e.g. encouraging them to leave their cars behind) will do little to deal with the growing demands in the shoulder season and in the winter.

Table 6: **Summer Population Projections (Middle Projection - rounded)**				
	2000	*2007*	*2015*	*2025*
Year-Round Residents	*15,000*	*18,000*	*21,000*	*25,000*
Seasonal Residents / Vacationers / Guests	*39,300*	*44,800*	*50,000*	*57,100*
Transients	*4,900*	*5,400*	*5,900*	*6,600*
Day Trippers and Cruise Passengers	*9,000*	*10,900*	*12,700*	*15,100*
Total Summer Population	***68,200***	***70,100***	***89,600***	***103,800***

Seasonal Residents / Vacationers / Guests - assumes that growth will be two-thirds of rate of growth in permanent residents as more houses are occupied year-round and thus, the proportion of seasonal residents and vacationers decreases.

Transients - assumes growth of half the rate of permanent residents due to limits in the increase in temporary lodging.

Day Trippers and Cruise Passengers - assumes the same rate of growth as permanent residents.

- The summer population has been estimated for different categories of people, each of which would have different travel patterns.

Households

- The number of year-round persons per household is expected to decline slightly from 2.3 in 2000 to 2.23 in 2025) in keeping with national trends. The causes are a result of smaller families, more single-parent families and more single-person households.
- This translates into a growth rate of year-round households from 6,400 in 2000 that is slightly faster than the population, namely 790 in 2007, 9,288 in 2015 and 11,206 in 2025.

Table 7: ***Year-Round Population and Peak Employment Projections by Town (Middle Projection)***

	2000		***2007***		***2015***		***2025***	
	Pop.	*Jobs*	Pop.	*Jobs*	Pop.	*Jobs*	Pop.	*Jobs*
Aquinnah	344	*77*	411	*100*	484	*115*	576	*140*
Chilmark	843	*317*	1,008	*340*	1,186	*365*	1,411	*405*
Edgartown	3,779	*2,004*	4,520	*2,165*	5,532	*2,370*	7,026	*2,620*
Oak Bluffs	3,713	*1,849*	4,389	*2,035*	5,056	*2,270*	5,814	*2,620*
Tisbury	3,755	*2,327*	3,491	*2,500*	5,174	*2,725*	5,950	*3,025*
West Tisbury	2,467	*568*	2,951	*605*	3,541	*670*	4,213	*720*
Total	**14,901**	***7,142***	**17,770**	***7,745***	**20,973**	***8,515***	**24,990**	***9,585***

3.3 Economy and Employment

- The cornerstone of the Island's economy is providing services to seasonal residents and visitors. The service, retail trade, construction, and finance, insurance and real estate sectors – mainly seasonal industries – account 54% of Island jobs. A large majority of the businesses on the Island employ four or fewer workers each. The tourism and service industry is highly image-conscious, seasonal and labor intensive.
- Average annual employment expected to grow at an average annual rate of 1.75% from 2000 to 2025 with 12,600 jobs in 2025, up from 8,200 in 2000.
- Note that employment statistics quoted here undercount the actual number of workers since only those workers who are covered by unemployment insurance are

represented; self-employed and seasonal workers hired on an informal basis are excluded since reliable information is not presently available.

3.4 Land Use and Development Patterns

- Most people on the Vineyard live in single-family homes in an increasingly dispersed pattern over the Island. This results in considerable demand for transportation for trips to work, to shopping, and to services, especially in the commercial districts of the three Down-Island towns. Residents and visitors are also attracted to other recreational and cultural destinations throughout the Island such as beaches.
- To outline several possible futures, development scenarios are being developed with respect to possible growth rates and patterns. The low, medium and high growth rates are the basis of projections in the next sections. The possible patterns of growth are: dispersed (continuation of present trends), compact (concentration of future development in already built-up areas, mostly Down-Island) and compact/Island-wide (concentrations Down-Island and in other Island locations.) These scenarios will be used primarily in the next phase of transportation planning in the coming years, and are described here as a basis for this future planning effort. This will allow evaluating, for example, the relative merits, from a transportation point of view, of having retail dispersed at various locations around the Island compared to reinforcing existing centers.

4. The Regional Transportation Network

4.1 Overview of the Island's Transportation Network

The characteristics of the regional transportation network, travel patterns and an inventory of the network's components are reviewed in this section. Essentially, the network consists of various means of transport to and from the Island by water and air, and various modes for movement around the Island, both on roads (private vehicles, public transit, tour and school buses, taxis) and off road (bicycles, pedestrians). Each of these modes is discussed in the upcoming sections of this plan, as are issues of intermodality (transfers from one mode to another) and information as well as freight.

As an island, the only means of access is by water (Steamship Authority and private ferries, barges, smaller boats) and air (commercial and general aviation). Travel on the Island is by car, bus, bike, moped, and foot. Travel flows to and on the Island vary considerably throughout the year, from the relative ease during the winter with the 15,000-person, year-round community, to the summer intensity with an additional 55,000 seasonal residents and short-term visitors. The spring and fall shoulder seasons are in between, and increasingly active.

A survey conducted in 1990 indicated that of trips to work – largely to the Island's main employment centers of Edgartown, Oak Bluffs and Tisbury – about 90% were by car or truck (not surprising given the low residential density on the Island; about 8% said they carpooled), about 9% on foot or by bike (essentially people living in down-Island towns), and only about 1% by public transit. A new survey would indicate the extent to which the expansion of the public transit has impacted these choices.

4.2 Overall Goals

1) Establish and maintain a transportation system that is safe, convenient, accessible, economical, and is consistent with the Vineyard's scenic, historic and natural resources.

2) Promote a variety of transportation options that meet the needs of the Island's residents and visitors, to more efficiently use the Vineyard's existing transportation infrastructure and to minimize the necessity for creating more roads, wider roads, or inappropriate traffic controls that would degrade the character of the Island.

3) Reduce dependence on private automobiles by encouraging visitors – especially day-trippers and other short-term visitors – to come to the Vineyard without their cars and by promoting alternate modes of travel (bus, bicycle, shuttles to town centers from park-and-rides, etc.); promote the Vineyard as a node in a network allowing visits to Nantucket and various locations on Cape Cod, without a car.

4) Favor the seamless integration of various transportation systems, with respect to physical installations, scheduling and baggage handling, in order to increase the efficiency of alternate modes and to increase their convenience to people.

5) Ensure that the road network is designed and traffic is managed in order to minimize traffic, congestion and pollution, to reduce safety problems, and to preserve scenic roadside views and the character of rural roads.

6) Expand and enhance a safe and efficient network of bicycle paths, walking trails, and in-town pedestrian accommodations.

7) Consolidate the recent expansion of the year-round, Island-wide bus system in order to reduce car dependence as well as to enhance the mobility of residents and visitors that have limited mobility (disabled, elderly, young people and others without car access).

8) Integrate port improvements (harbors and airport) with economic development strategies.

9) Coordinate regional land use and transportation planning policies in order to encourage development patterns that complement these transportation goals.

10) Promote cooperation among the Vineyard's various transportation agencies and the public and private providers.

4.3 Relation Between Transportation and Land Use

- A rapidly increasing population and changing patterns of development have a great impact on the nature of transportation on the Island. A generation ago, most residents lived in the small, village centers of the three Down-Island towns. Their everyday destinations, from grocery store to post office, were a short walk away, so car use was limited.
- In the past 25 years, much of Martha's Vineyard's enormous residential and commercial growth took place on the outskirts of Down-Island towns and Up-Island. The car became the only way to reach an increasing number of homes, jobs, businesses, and services (such as post offices) many of which relocated outside traditional town centers. This led to a significant increase in car traffic. With the

potential for even more growth, traffic problems could get considerably worse, especially if development continues to take place in a dispersed pattern. The increasingly dispersed development means that people increasingly live in locations that are inaccessible by public transit.

- Land use decisions that would reinforce the Regional Transportation Plan's objectives are:
  - Favor the consolidation of mixed-use, pedestrian friendly, village areas within the limits of already developed areas, where people can meet many of their daily needs by walking or biking, rather than taking a car.
  - For development outside village areas, favor development within walking distance of bus stops. Also, the creation of convenience stores in outlying residential areas could reduce the need for many routine trips.

5. Water Transportation

Note: see also section 10 for a discussion of water transportation issues dealing with freight.

5.1 Description

Most Island residents and visitors travel to and from the Island on scheduled ferries. The dominant carrier of passengers, vehicles and freight is the Woods Hole, Martha's Vineyard and Nantucket Steamship Authority (SSA), which furnishes year-round service. The Island is also served by several passenger-only ferry services, almost all seasonal, as well as tugs and barges for freight

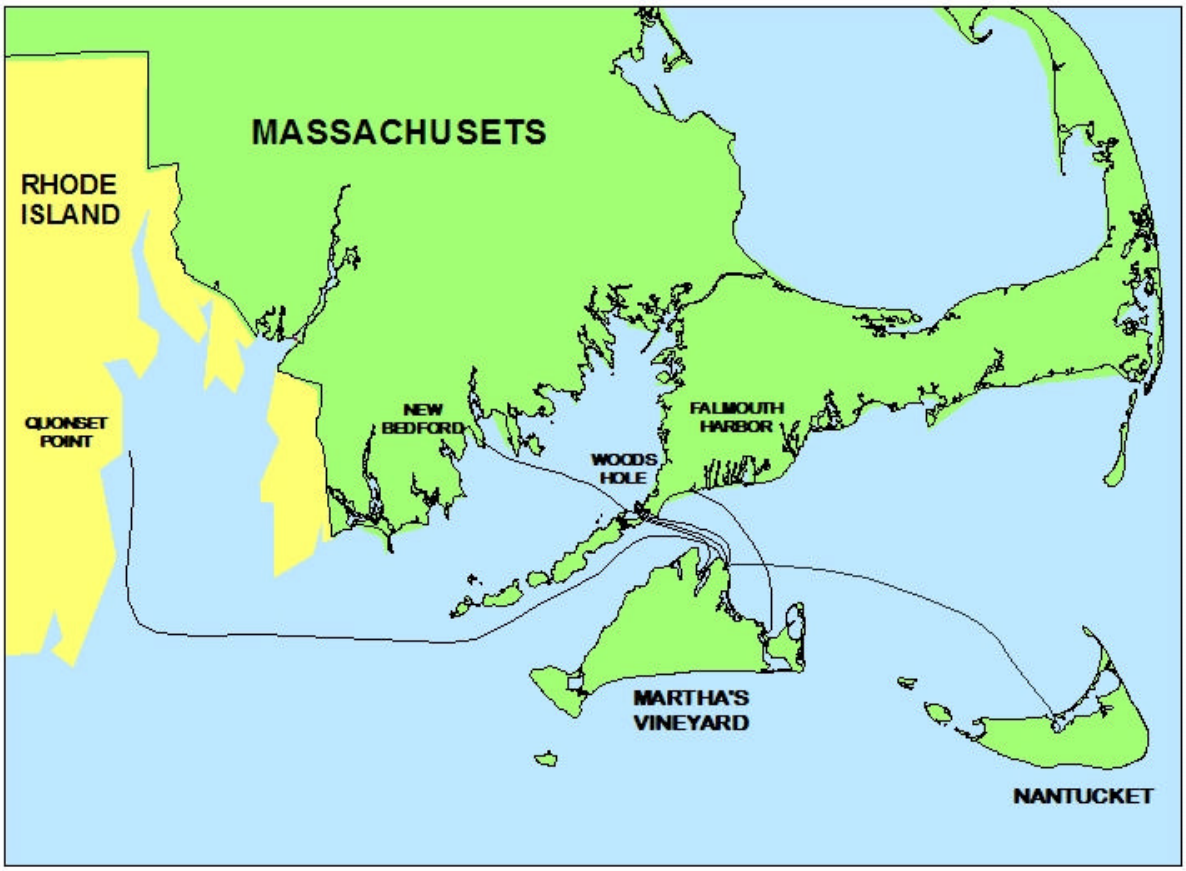
The *Port Infrastructure Capacity Study* found that, on a typical sunny day in August 1999, seven ferry carriers ran approximately 50 ferry trips to the Island with a total vessel capacity to bring 28,000 people each way. It was estimated that nearly 12,000 people, 43 percent of capacity, were actually ferried. About 9,400 passengers traveled without a motor vehicle, roughly split between Vineyard Haven and Oak Bluffs; Edgartown received less than 2% of the Island's ferry passengers.

- Steamship Authority: Often described as "the Island's lifeline", the SSA provides year-round service from Woods Hole to Vineyard Haven and summer-only service from Woods Hole to Oak Bluffs. Eight of the Steamship Authority's nine vessels

Table 8: ***Steamship Authority Vessels***

Vessel	*Length*	*Width*	*Passenger Capacity*	*Vehicle Capacity (car equivalents)*
Martha's Vineyard	*230'*	*60'*	*1246*	*54*
Islander	*201'*	*58'*	*768*	*50*
Governor	*242'*	*46'*	*248*	*48*
Sankaty	*197'*	*40'*	*250*	*24*
Nantucket	*230'*	*60'*	*1246*	*50*
Katama	*235'*	*40'*	*148*	*30*
Gay Head	*235'*	*40'*	*148*	*30*
Schamonchi	*135'*	*29'*	*600*	*0*

operate on the Martha's Vineyard routes. The MV *Islander*, the MV *Governor* and the *MV Martha's Vineyard* serve the Vineyard exclusively. The freight vessel MV *Katama* normally works the Nantucket route, but occasionally fills in on the Vineyard routes. Vessel sizes and carrying capacities are shown in table 8. A new terminal in Vineyard Haven was built in 1994-5. The Steamship Authority has begun design studies and funding has been authorized for the reconstruction of the Oak Bluffs Terminal. The Steamship Authority also operates the passenger-only S*chamonchi* (capacity 600), sailing between New Bedford and Vineyard Haven on a seasonal basis.



- Island Queen: Island Commuter Corporation operates the *Island Queen* between Oak Bluffs and Falmouth. The passenger capacity limit for this vessel is 594 passengers. The passenger fare is $10 round trip per adult and $5 round trip per child (1999-2000). During their summer operating season of mid-June to mid-September, the Island Queen operates seven daily round trips, with additional sailings on the weekends. Limited service is provided into the shoulder season months of May and October.

- Hy-Line: Hy-Line Cruises operates two vessels between Hyannis and Martha's Vineyard. The NI/V East Chop has a capacity of 520 passengers and the NI/V Point

Gammon has a capacity of 450 passengers. The schedule varies from spring to summer to fall. During the peak season, Hy-Line makes four round trips between Hyannis and Oak Bluffs.

- The Patriot: Patriot Party Boats owns four boats that serve the Island and connects Oak Bluffs and Falmouth (Patriot Too, Minuteman, Quickwater, T.G.). These boats are much smaller than the other passenger ferries that dock in Oak Bluffs with a capacity limited to 40 passengers (avoiding the need to obtain a license from the Steamship Authority). The ferry runs six round trips per day Monday through Friday, largely serving work commuters.
- The Millennium: A new, high-speed passenger-only catamaran service started seasonal service between Quonset Point, Rhode Island and Oak Bluffs. The boat has a 500-passenger capacity.
- Pied Piper: This 120-passenger ferry offers seasonal service between Falmouth and Edgartown.
- Cruise Ships: There have been up to 30,000 annual visitors brought to the Vineyard by cruise ships anchored off of Oak Bluffs, and up to 1,000 on cruise ships berthed at Vineyard Haven in recent years. Passengers on cruise ships at anchor off of Oak Bluffs are brought to the Oak Bluffs harbor by ferries.
- In addition to the ferries providing access to the Island, there are also two ferries that serve movement on the Vineyard. The *On-Time* ferry provides the only vehicular access to the Island of Chappaquidick (other than sporadic four-wheel drive access along the beach), operating year-round from the Edgartown Harbor. A seasonal bike ferry allows cyclists to travel from the village of Menemsha to Lobsterville Road in Aquinnah.
- The three Down-Island towns have harbors with anchorage or marina facilities for transient recreational boats (Edgartown: 102; Oak Bluffs: 216; Tisbury: 150) in addition to hundreds more marina dockages, harbor moorings and anchorages used by residents). In addition, Menemsha has a smaller harbor with facilities for commercial fishing boats, as well as for recreational boats.

5.2 Trends and Analysis of Issues

- Ferry traffic has grown considerably over the past generation. Steamship Authority consultants have concluded that in the last 25 years, ferry traffic growth rate has exceeded the growth rate of the Island's year-round population.
- Increasing concern about ferry traffic growth came to a head in the late 1990's. At that time, SSA consultants estimated that "August demand in 2005 will be 22 percent higher than 1995 volumes requiring an additional 700 parking spaces daily and 25-40% more passenger capacity unless constrained in some way by SSA carrying capacity or growth management policies on the Islands". (KJS Associates and FXM Associates, 1996.)

- A proposal to limit summer automobile capacity on ferries, on the ballot of all Island towns in 1997, was approved by all towns. Subsequently, the SSA Board of Governors has constrained this capacity to the Island from June to August.
- The number of passengers increased 11% from 1995 to 2002 for an average annual growth of 1.6% and the average annual growth in cars was 1.8%. The increase in car trips has been dominated by an increase in Islanders traveling on excursion rates, while the number of automobiles traveling on a regular rate has actually decreased.
- However, the limit on ferry automobile capacity would appear to have led to an increase in the number of people that keep one car on the Island and another one on the mainland so the reduction in traffic generated by this group is perhaps not as great as hoped. The number of permit-holders in the SSA's Falmouth lots has doubled in recent years whereas the number of transients has remained about the same. The number of automobiles registered on the Island has also doubled although it is not clear exactly how many cars are physically on the Island at a given point in time. Thus, the limit on ferry automobile capacity might have had a dampening effect on short-term visitors choosing to bring a car across.

Table 9: ***Passenger Arrivals & Departures by Ferry***

	SSA	*Private Ferries*	*Total*
1960	*233,828*	*N.A.*	
1965	*442,853*	*N.A.*	
1970	*736,067*	*N.A.*	
1975	*989,761*	*N.A.*	
1980	*1,197,852*	*219,209*	***1,417,061***
1985	*1,347,467*	*227,706*	***1,575,173***
1990	*1,717,241*	*240,308*	***1,957,549***
1995	*2,139,599*	*278,648*	***2,418,247***
2000	*2,401,286*	*266,770*	***2,668,056***

Source: SSA for their ferries and Arthur Flathers for private ferries (note that the figure in the 2000 row is actually from 1999)

- About 75% of SSA ferry trips to the Island are for a period of 8 days or less and 35% are for 4 days or fewer, many consisting of weekend visitors
- Steamship Authority planners now anticipate an average annual ferry traffic growth rate slipping below 2% per year.
- <u>Traffic on the Cape and in Falmouth:</u> An issue directly related to ferry operations is traffic on Cape Cod. Concern has been expressed, especially by residents of Falmouth, that traffic headed to the ferries, particularly the SSA ferry in Woods Hole, is a major cause of traffic problems in Falmouth. Studies by the Cape Cod Commission indicate that less than 3% of traffic on the Bourne Bridge is headed to the ferry. Within Falmouth, the main cause of traffic would appear to be the considerable growth that has taken place within Falmouth itself. Even on Woods Hole Road, about 82% of the traffic is local and only 18% is ferry traffic. This road is uncongested (level of service of C or better) virtually all the time, with the exception of brief periods (averaging 4 to 10 minutes) after a boat discharges vehicles and passengers. Nevertheless, an agreement was reached between

representatives from the Vineyard and Falmouth that they would work together to limit traffic in Falmouth and especially the transportation of hazardous materials. The subsequent elimination of the guaranteed standby line during peak times has had a significant effect on reducing traffic and congestion in Wood's Hole.

- Port areas: The 2002 *Martha's Vineyard Port Areas Infrastructure Capacity Study*, indicated that high levels of congestion – cars immobilized in parking lots, brief and not so brief street backups, pedestrians weaving among stopped vehicles – were repeatedly observed with the arrival of most of the ferries. Each of the terminals had some elements that appeared not to function in an effective way. Typical shortcomings involved the inadequate management of pedestrian movement: narrow or non-existent pedestrian ways, a scarcity of direction signs, and problems with crosswalk design, location or use. Most terminals had insufficient room for cars picking up or dropping off passengers.

  Significantly, the congestion accompanying the dispersal of arriving passengers was of relatively short duration – usually less than 30 minutes for the larger SSA vessels, and less than 15 minutes for the private carriers. After these periods, activity returned to, or was slightly elevated from, background activity levels that existed prior to the ferries' arrival. Some terminals experienced very little activity between ferry arrivals. The fact that groups of a few hundred ferry passengers can disperse into or beyond the background so quickly suggests that capacity may exist to accommodate larger groups, or increase the frequency that the groups are received.

  Suggestions for improving the infrastructure focus on:
  - completing pedestrian ways and upgrading their width or condition;
  - obtaining better control of pedestrians crossing streets through a combination of improved or additional crosswalk locations, physical barriers, and education and enforcement efforts;
  - a way-finding system of signs or symbols at the terminals and the village centers; and
  - reevaluation of vehicular circulation patterns as they affect the three terminals in Oak Bluffs;.

  Also suggested is the need for current information regarding the characteristics of ferry passengers that may lead to a better understanding of their movements and characteristics.

5.3 Objectives

- Maintain the summer capacity of vehicular access to the Island at the 1995 levels, based on the results of the 1997 Island-wide referendum on the subject.
- Encourage visitors to come to the Island without their cars.
- Reduce vehicular traffic to the ferry passing through Vineyard Haven and Oak Bluffs in addition to Falmouth, the Cape Cod Canal bridges and on the Cape, particularly

cars (and for the Cape side, buses) that are dropping passengers off at the ferry (as well as freight as discussed in section 10).

- Improve vehicular and passenger access to and from ferry terminals including better remote parking-ferry connection, drop-off, queuing and better distribution between the two Island ferry terminals.
- Seek to achieve a seamless experience whereby passengers can check in at mainland SSA parking lots, including leaving their baggage, and be brought from bus, to ferry, to bus and then to a parking/service center on the Vineyard where they would have all transportation opportunities available (bus, taxi, car rental).

5.4 Proposed Projects and Actions

Capital Projects (SSA)

- Reconstruct the Oak Bluffs ferry terminal.
- Replace the aging vessel, the MV Islander, with a new vessel of optimum capacity that would allow reducing the number of trips.
- Renovate the MV Sankaty.

Actions

- Explore the possibility of establishing additional, fast ferry service between a non-Cape-Cod location and Martha's Vineyard in order to reduce the number of cars and buses traveling through Falmouth. Consider the advantages of making the service year-round and serving passengers only.
- Increase the proportion of SSA vessels that arrive in Oak Bluffs off-season (subject to wharf orientation/terminal reconstruction).
- Encourage passenger drop-off and pick up at Park-and-Ride facilities, to reduce traffic congestion in town and especially near terminals. Consider setting up remote check-in facilities.
- Improve the reservations system and queuing for passenger convenience and to reduce unnecessary traffic.
- Identify performance measures to improve the operating performance of marine transportation services.
- Coordinate the capacities of the boat lines with the capacities of the region's roads and public surface transportation services.

6. Air Transportation

Note: see also section 10 for a discussion of air transportation issues dealing with freight.

6.1 Description

Martha's Vineyard Airport (MVY): This is an FAA certificated non-hub commercial service airport, which provides general aviation, air carrier, and freight service to the Island. Located in the towns of Edgartown and West Tisbury, the airport is near the Island's geographic center. The airport has two runways, an airline passenger terminal, air traffic control tower, aircraft parking areas, fueling facilities and aircraft rescue/firefighting and maintenance facilities. A business park adjacent to the airport offers industrial and commercially zoned lots for non-aviation use.

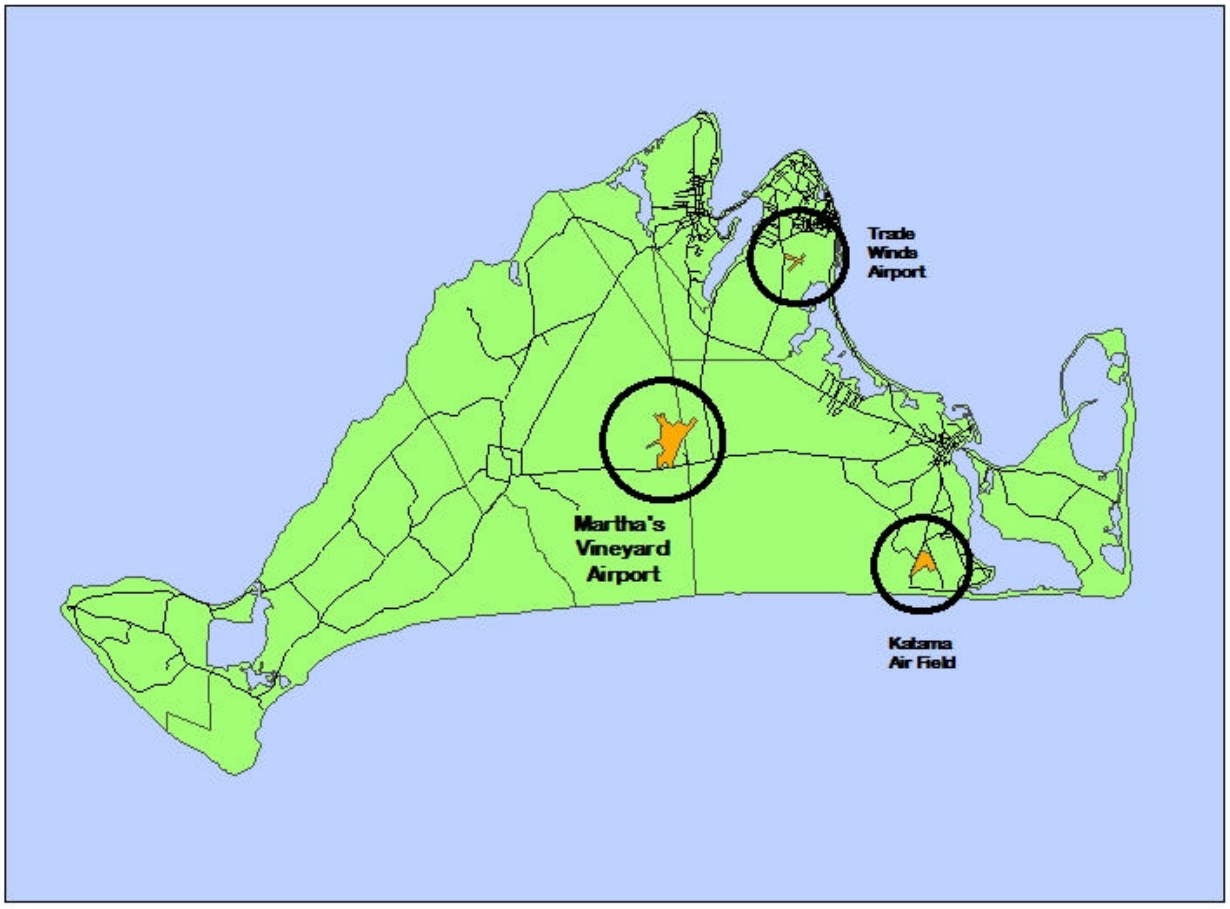
- Runway 6-24 is 5500 feet long, 100 feet wide, and is equipped with a precision instrument approach. Its high intensity runway lighting can be pilot controlled. The runway was reconstructed and grooved in 1993. The Airport Reference Code is B-III, which designates the aircraft size and speeds for which the area is designed
- Runway 15-33 is 3297 feet long, 75 feet wide, and is a visual runway with medium intensity runway lighting that can be pilot controlled. The runway was reconstructed in 1992. The Airport Reference Code for this runway is currently B-II.

The Airport Commission adopted the Martha's Vineyard Airport Master Plan Phase II in December 2002 and this is presently undergoing an environmental review process. MVY has revised the Airport Reference Code to C-III, to accommodate the aircraft now using the airport generally having greater wingspans and faster approach speeds. Redesignation of the Airport Reference Code is the basis for many changes proposed in the Airport's Master Plan that are described below, ensuring that future construction provides an adequate and safe facility.

Table 10: ***All MVY Passengers Departing by Air***

1970	*33,550*
1975	*45,305*
1980	*58,540*
1985	*105,194*
1990	*82,408*
1995	*108,836*
1999	*152,710*

Note: These figures would have to be doubled to compare with the total trips listed for ferries.



Katama Airfield: This visual flight rules grass strip airfield, is open to recreational aircraft from May to October. Sited in an environmentally sensitive sandplain grassland, any expansion must conform to the Katama Plains Management Agreement, which is administered jointly by the Nature Conservancy and the Town of Edgartown's Conservation and Airfield Commissions. Development must also conform to the regulations for the Katama Airport District of Critical Planning Concern.

Trade Winds Airstrip: An airstrip is maintained at Trade Wind Fields Preserve in Oak Bluffs by the Martha's Vineyard Land Bank Commission. There are few operations because pilots must receive advance permission.

6.2 Trends and Analysis of Issues

- Air travel has accounted for a proportion that has fluctuated between 3% (in 1992) and 11% (in 1985) of passenger travel to the Island. In the past 15 years, it has varied between 4¼% and 5½%.
- The number of commercial enplanements was about 60,000 in the mid 1980's, dropped to under 40,000 in the early 1990's, rose to 74,077 in 1999, and dropped back to 61,769 in 2002.

- The recently adopted Master Plan for the Martha's Vineyard Airport foresees airline enplanements (one passenger departing on a scheduled airline flight) increasing at an average annual rate of 5.5% through 2005, and then slowing to an average annual rate of 2.1% through 2020.
- General Aviation includes all non-airline activity such as military, charter and private aircraft regardless of aircraft size and accounts for about 50% of passenger trips. The General Aviation market segment growth is expected to be moderate, while exceeding that of the air carrier traffic.
- Airline traffic is likely to be affected by an uncertain economy, changes in patterns of leisure activities, and terrorism fears. Many airports have experienced a significant decrease in traffic since the events of September 11, 2001; however the island's popularity has remained strong during the recent period, and in turn the airport has actually seen airline travel level, while growth in the General Aviation segment has continued.

6.3 Objectives

- Improve the safety, efficiency and reliability of the airport facility as a transportation resource for the community.
- Improve the airport facilities in response to present needs and growing demand with a priority on increasing ramp areas and hangars for airplane parking, and ensuring adequate facilities to accommodate aviation activity.

6.4 Proposed Projects and Actions

Short-Term Projects (2003-2009)

- Construct Airline and Connector Roads, to reduce vehicle traffic at the intersection of West Tisbury Road and Barnes Road, and complete the inter-airport roadway system associated with the development of the airport business park and the terminal areas.
- Construct infrastructure improvements adequate to meet current and future fire protection needs as relates to water supply and pressure for fire protection systems.
- Re-construct taxiways and construct additional parking aprons to ensure modern design standards, and continued eligibility for funding..
- Construct General Aviation Terminal facilities, including vehicle parking areas and access roads.
- Acquire/relocate existing hangars to provide increased apron space adjacent to terminal complex.

Long Term Projects (2009-2025)

- Air safety improvements
- Airfield maintenance and snow removal equipment acquisition and replacement

- Re-construct taxiways
- Construct taxiways
- Construct sewage treatment plant improvements
- Construct access roads, parking areas and utilities
- Extend secondary runway and install runway safety areas
- Construct airport maintenance and snow removal equipment building
- Expand existing airline terminal building

Other Actions

- Enhance year round air service to hub airports
- Identity performance measures to improve the operating performance of air transportation facilities.
- Coordinate the capacities of the air carriers with the capacities of the region's roads and public surface transportation services.
- Monitor operating policies at "hub" airports that affect Island air carriers.
- Monitor the operation of the newly renovated Martha's Vineyard Airport Terminal.

7. Road Network and Traffic

Note: see also section 10 for a discussion of road network and traffic issues dealing with freight.

7.1 Description

Martha's Vineyard has a rural road network created when the population was less than 5,000 people that, during the peak summer months, must now accommodate the travel demands of 70,000 people.

There are 177.4 miles of public, paved roads classified into four functional road types with varying widths, lengths and access features on Martha's Vineyard. *Minor arterial roads* which link the "down-Island" towns are designed to carry high volumes of traffic at relatively high travel speeds. *Major and minor collector* (or secondary) roads constitute routes between towns and to shops, schools, parks and beaches on which travel distances and speeds are, relative to arterials, shorter and slower. The remaining roads, which provide access to homes and places of businesses, are referred to as *local roads*. The paved roads are never more than two lanes wide, limiting capacity to about 1,500 vehicles per hour in each direction.

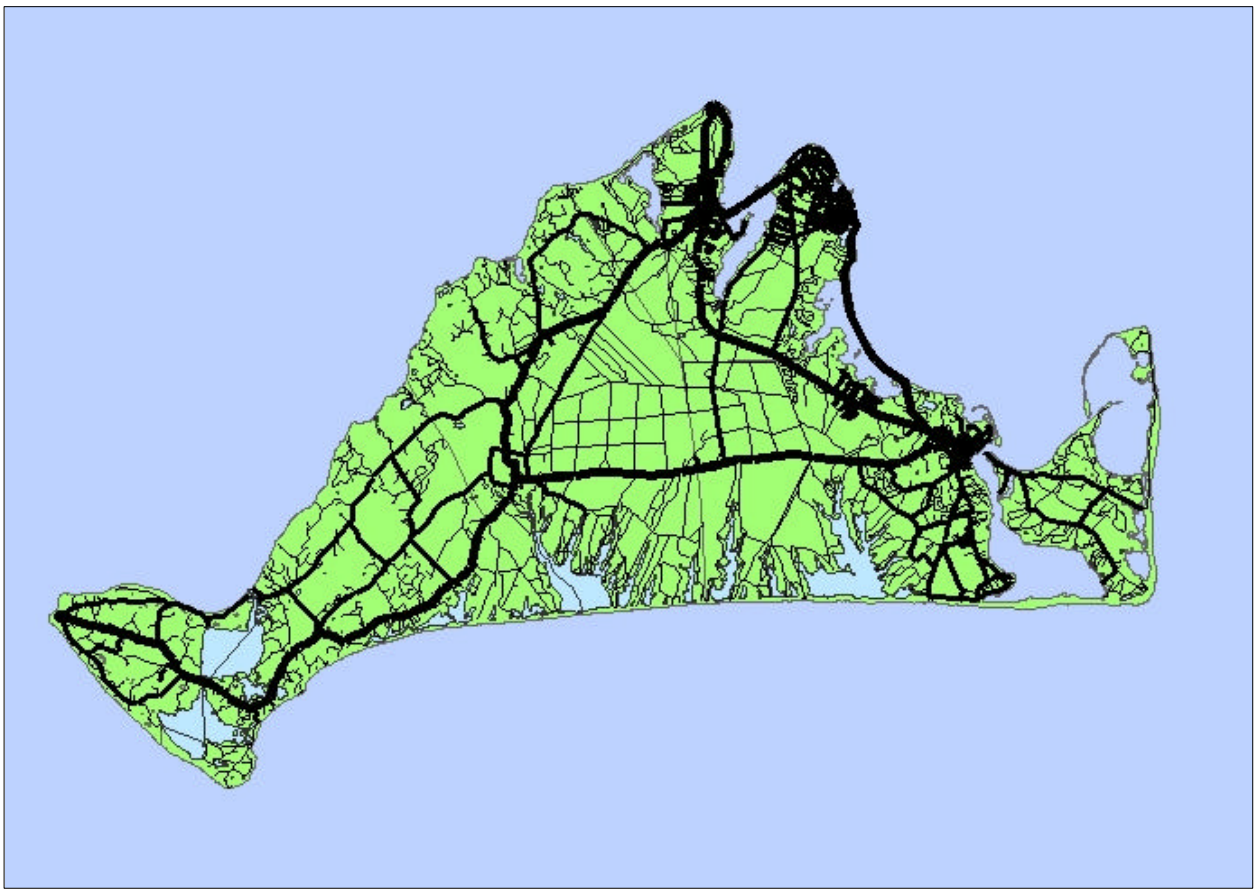
Ferry routes from Woods Hole to Vineyard Haven and from Hyannis to Oak Bluffs are classified as regional arterials making them eligible for federal and state transportation funding.

7.2 Trends and Analysis of Issues

For most of the year, the regional transportation network performs satisfactorily. However, during July and August, and increasingly during the "shoulder" season months of June and September, congestion and a relatively high incidence of accidents occur at several down-Island intersections and stretches of road.

Vehicles on the Island

For year-round households, there were about 11,630 vehicles or 1.82 vehicles per household in 2000, up from 1.66 vehicles 1990 (US Census); the current rate is typical of other communities in the United States with similar population densities.



Vehicle availability is influenced by: population size, household size, workers per household, household incomes, land use patterns, age and gender of heads of households and lifestyles.

There is a total of about 25,000 vehicles registered on the Vineyard (Registry of Motor Vehicles) although it is not clear how many are physically on the Island at any given point in time (some might be registered here for insurance or other reasons, but kept elsewhere most of the time). Nor is it clear how many are registered off-Island are on the Island.

Short-term visitors, particularly those staying in town centers (hotels, inns, bed & breakfasts) should be the easiest to accommodate without having a vehicle on the Island, since bus service is more accessible and they are most impacted by the inconvenience of bringing a car on the ferry for only a few days.

There are approximately 300 mopeds and 400 to 500 rental cars, perhaps more, available during the summer season.

Table 11: ***Functional Classification of Roads***		
	Mileage	*%*
Minor Arterial	*14.9*	*8.4%*
Major Collector	*33.9*	*19.1%*
Minor Collector	*18.9*	*10.6%*
Local	*109.7*	*61.9%*
Total	***177.4***	*100.0%*

Increase in Traffic

Although there has been a generally steady increase in traffic across the Island, roads and intersections already close to or at capacity experience less growth.

The peak season traffic levels have held relatively steady over the late 1990's. However, mid-winter traffic has steadily increased each year. The winter trend reflects the dramatic increase in second homeowners traveling to the Island year-round and an increase in the number of Island residents who commute to work or school on the mainland.

Similar trends are evident in the automobile statistics. The leveling of mid-summer traffic seen in these trends is the direct result of deliberate capacity constraints imposed by the Steamship Authority management. Such a restriction was voted by the residents of both Martha's Vineyard and Nantucket by non-binding referendum votes. It is estimated that only seven percent of the short term (less than one week) visitors take cars with them to the Island, and that about half of the short-term visitors who take cars to the Island are traveling on business.

Previously, the Commission analyzed traffic volume trends at several "down-Island" locations. From 1981 to 1996, traffic volumes increased 1.7% annually. The study locations were: Main Street in Edgartown; Edgartown/Vineyard Haven Road in Edgartown, Oak Bluffs and Tisbury; New York Avenue in Oak Bluffs; and Beach Road in Edgartown, Oak Bluffs and Tisbury.

While traffic volumes have trended upward since 1996 on most Island roads, up-Island traffic volumes have generally outpaced traffic growth in Edgartown, Oak Bluffs and Tisbury. Two examples show the differences. As measured at New York Avenue in Oak Bluffs, August weekend travel in 2003 was little changed from comparable activity in August 1997. Traffic crossing the Tiasaquam River at the Chilmark/West Tisbury town line grew at a 7% annual rate (as recorded May 1996 and May 2003).

Travel activity is locally influenced by factors as diverse as weather conditions and time of day as well as by more general factors such as economic conditions and motor vehicle availability. It is also affected by the purpose of trip; work trucks go to a succession of destinations throughout the day.

As might be expected, traffic volumes peak in July and August. They are at their lowest yearly level during February, again as might be expected. As analyzed by the Martha's Vineyard Commission, July and August traffic volumes are typically 3 times greater than February traffic volumes.

Historically, summer traffic volumes have been nearly twice shoulder season traffic volumes though the trend is subsiding as the number of non-resident property owners increases.

Congestion

- During the summer, there are several intersections and roads that have been highly congested for a long time and are only getting worse (level of service of F). Although the level of service is presently less problematic off-season, traffic growth in the shoulder season threatens to negatively impact congestion then too.
- An increase in traffic in critical locations will have an impact on congestion far out of proportion to the increase in traffic. For example, a relatively small increase in traffic at an intersection that is close to capacity could lead to an increase in delay time of ten or twenty minutes. In reality, many drivers would take other routes, avoid driving during peak hours, or some visitors might simply stop coming to the Vineyard because of the unpleasantness of traffic problems.
- Although some congestion-related delays are merely an inconvenience – requiring people to wait a bit longer, to choose another route or to travel at another time – congestion can be especially problematic for unavoidable trips such as cars and trucks taking the ferry where there is no real alternative.

List of Most Congested Roads and Intersections (from west to east)

1. Upper State Road Corridor (Tisbury)
2. Intersection of Edgartown / Vineyard Haven Road and Upper State Road (Tisbury)
3. Five Corners and vicinity of Vineyard Haven ferry terminals (Tisbury)
4. Vicinity of Oak Bluffs ferry terminal / Harbor / Circuit Avenue (Oak Bluffs)
5. The "Blinker" intersection (Oak Bluffs)
6. Intersection of Edgartown / Vineyard Haven Road at Triangle (Edgartown)
7. Upper Main Street (Edgartown)

Two of the most heavily traveled major roads are the State / Beach Road corridor in Vineyard Haven and Upper Main Street in Edgartown. *The Edgartown Transit / Traffic / Parking Study* and the *Upper Main Street Traffic Study* were aimed at improving access to and the flow of traffic on the business areas congested roads. The following recommendations were made in the first report to ensure that proposed improvements would enhance Edgartown's town character, maximize safety, promote public transportation and adapt to the seasonal nature of traffic problems: support MVTA and SSA efforts to develop a better coordinated Island-wide public transportation services, obtain a right-of-way and construct a roadway at the end of the "Triangle", and develop a park-and-ride lot for use by riders of the Edgartown shuttle.

As traffic volumes on main roads approach their design limits at peak hour, more and more traffic is being channeled onto local roads in order to avoid congested intersections. Five such areas that were identified in the MVC's *1991 Traffic Counting Report* are: local roads in the vicinity of the State Road corridor; Menemsha Road and

Middle Road in Chilmark; Old County Road in West Tisbury; and Katama Road in Edgartown.

The fact that certain roads and intersections are congested for several months of the year does not necessarily mean that there should be physical changes. In cases where expanding a road's capacity would result in a significant detriment to the surrounding environment, the decision should be against the expansion. Those who choose to live on the Island year-round or seasonally do so for a unique experience, and should be willing to accept necessary restrictions. Alternatives to road improvements that should be considered where roads are chronically being used to capacity include:

- the use of bus, taxi, bicycle and foot;
- limitations on use, such as restricting oversize vehicle traffic or restricting vehicle traffic in certain areas;
- converting two-way roads into one-way systems;
- traffic management techniques

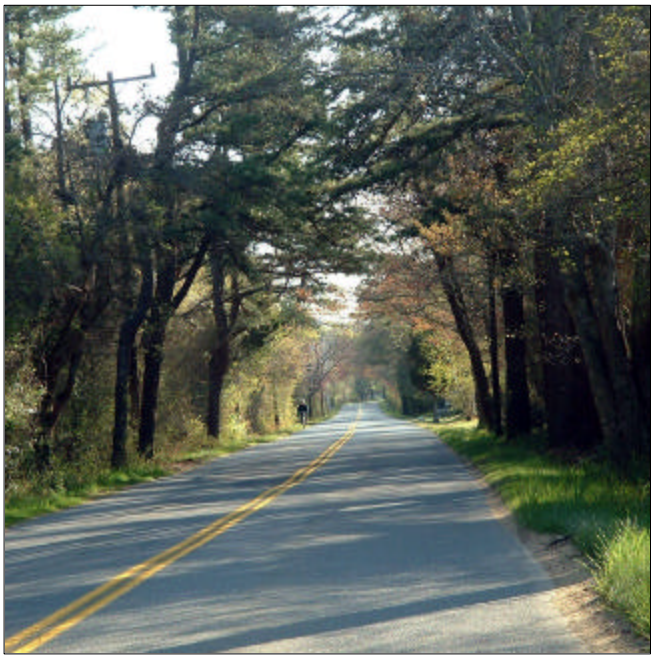
Safety

- There are several roads and intersection that are responsible for more than their fair share of accidents (see list below).
- The speed limit signs posted on the Island do not necessarily reflect the appropriate limits.
- Mopeds pose a considerable safety risk since moped renters may be inexperienced with riding the vehicles and unfamiliar with the terrain on Martha's Vineyard.
- List of Least Safe Roads and Intersections:
  1) The "Blinker" intersection (Oak Bluffs)
  2) Intersection of Edgartown / Vineyard Haven Road and Upper State Road (Tisbury)
  3) Intersection of Edgartown / Vineyard Haven Road at Triangle (Edgartown)
  4) Upper State Road Corridor (Tisbury)
  5) Upper Main Street (Edgartown)

Scenic Values

In addition to facilitating the movement of people and goods between places, roads have cultural, historic, economic and aesthetic values. This is especially true on Martha's Vineyard where the Island's distinct character and unique sense of place are perceived largely by traveling along Island roads. The preservation of the traditional quality of rural and village roads is critical to residents' and visitors' perception of the Vineyard. It is an important basis of the Island's character, to its quality, the environment and to its visitor-based economy.

The 1973 study by renowned urban designer Kevin Lynch – *Looking at the Vineyard* – paints an image of the Island as "a set of interconnecting journeys" through diverse landscapes. Roads fitting the land were "built for rural purposes, and for the most part



not drastically modified since then, it is their very narrowness, their shifting alignment and rural detail that constantly remind us that we are in an unusual locality. The passing views of ocean or pond, marsh, moor or pasture delight us."

In the past generation, there have been great efforts to preserve the scenic values of Island roads. Several of the Martha's Vineyard Commission's first Districts of Critical Planning Concern – including the Island Roads District – are corridors along visually significant main roads. Several towns' master plans call for the preservation of scenic roads and trails in order to maintain the rural character of the individual towns. There has been a resistance to road widening and other road "improvements" associated with road design on the mainland although standard features, such as corrugated metal guardrails, have made inroads into the Vineyard landscape. Some citizens have expressed the desire for greater ongoing informal exchange about upcoming road and bridge projects with town highway departments and the Massachusetts Highway Department, in addition to the formal hearing processes in place.

The Commonwealth's Fix-It-First/Communities First policy prioritizes the preservation of existing infrastructure rather than new transportation initiatives and should help the Vineyard achieve its goal of ensuring that roadway improvements integrate into the Island's special character and environment. One aspect of this policy is the Footprint Roads Program that allows using federal and The Massachusetts Highway Department funding for road and bridge preservation and reconstruction without changing their dimensions or design, provided the road or bridge does not have a higher accident rate than the average of others of similar design in the Commonwealth.

The Cape and Islands Rural Roads Initiative is an effort initiated by the Cape Cod, Martha's Vineyard and Nantucket Regional planning

commissions as well as the National Park Service (National Seashore Park) to favor the preservation of the historic, cultural, natural and environmental values of the Island road system in roadway design. It originally aimed to prepare a special highway design manual for the Cape and Islands that would allow for more context-sensitive design better suited to the special character of the areas. The Romney administration has set up a task force (including the directors of the Cape Cod and Nantucket commissions) to revise the highway design manual statewide.

Also, a "Footprints Roads Program" has been set up that allows certain roads to be rebuilt in their present configuration using federal funding, provided the road does not have a higher than average accident rate. The three regional planning agencies are now preparing a new proposal for the use of the earmarked funds, essentially to design prototype demonstration projects in the three counties that illustrate the principles of community and context-sensitive design. The Vineyard is a particularly appropriate location to use for prototypes of innovative roadway design solutions, in that it does not have major highways or the traffic levels found on the mainland. Also, the Vineyard's unique character justifies special solutions that may or may not be exportable to the rest of the Commonwealth.

Table 12: ***Comments from Opinion Survey About Roads and Traffic*** *- conducted as part of the RTP update (see also 2.6)*

- *People feel that there are too many motor vehicles and too many drivers on the roads in the summer as a result of the Island's surging population.*
- *Suggested general improvements include street widening, sidewalks, signage and pavement markings.*
- *Suggestions for easing congestion include: redirection of traffic flows, automobile use disincentives, limits on the number of motor vehicles, increasing roadway capacity/turning lanes, left-turn limits and rescheduling ferry boats.*

Parking

- Since so much of the Vineyard is rural or semi-rural, a large number of people have no alternative but to travel by car or truck for at least part of their trip. This makes the availability of parking, either near the destination, or outside of town and linked to town with an efficient transit system, of primary importance.
- There is great difficulty in finding parking in town centers during the summer season. Physical constraints related to existing buildings or natural conservation areas make it difficult to add parking areas, particularly in town so the need to provide parking outside of town – either on the outskirts or in more rural areas – with an efficient shuttle into towns will become increasingly important.
- There are two Park-and-Ride lots on the Vineyard. They are primarily intended to serve employees, (freeing up in-town spaces for shoppers and other visitors) although they are also intended to serve visitors. The Edgartown lot has a capacity of 150 and is free of charge. The Tisbury lot has a capacity of 420; it is free for

parking up to seven days (on a trial basis) and has a charge for longer-term parking. The Vineyard Transit Authority links these lots to town centers with buses approximately fifteen to twenty minutes in Edgartown and at least two trips an hour in Tisbury based upon the SSA boat schedule. The Tisbury lot, serviced year round, is operating well under capacity. The Edgartown lot, serviced five months a year, uses less than half its capacity in the shoulder months, but operates three-quarters to full in July and August. Many residents and visitors are unaware of the existence of Park-and-Ride lots, or are unclear how they operate. There have been concerns about how user-friendly they are and about vandalism. It should be noted that the some Towns have relaxed enforcement of in-town parking regulations in the shoulder seasons, which promotes parking in the Town centers.

- The SSA leased a property at the airport for possible use in the longer term as an off-site parking/service center.

7.3 Objectives

- Improve road congestion and safety with improvements to the quality of the infrastructure, traffic slowing and calming, new or improved sidewalks and signage and possibly installing traffic controls devices. Make or plan for improvements to the least safe locations.
- Ensure the maintenance of the road network while preserving the character of rural roads by maintaining and repairing them while respecting their existing "footprints" and designs. To maintain the Island's historic character, avoid street widening, new turning lanes, or traffic lights. Put in place a process whereby a thoughtful commitment to rural road design creates the opportunity for the roads to become a resource themselves, rather than being generally considered an adverse impact on the Island's scenic resources.
- Consider the effects of additional park-and-ride programs, pedestrian zones, new loop roads and rerouting of traffic as means to improve the flow of traffic.
- Reduce vehicular traffic to the ferry passing through Vineyard Haven, Oak Bluffs and Falmouth by eliminating non-essential trips, such as cars dropping passengers off at the ferry. Offer alternate ferry departure points on the mainland.
- Adopt traffic management strategies in regionally significant corridors.
- Explore methods to limit summer auto traffic so as not to exceed the capacity of the Island's roads and parking.
- Support programs promoting energy conservation that discourage car use by using alternative means of transportation and that encourage use of energy-efficiency cars and buses. This will help achieve air quality objectives and reduce traffic congestion.

7.4 Proposed Projects and Actions

- For each highly congested or unsafe road or intersection, the diagrams on the next page list proposed actions – either specific projects or possible actions to study. Obtaining up-to-date data on travel patterns and traffic will assist in developing actions.
- In the framework of the Cape and Island Rural Roads Initiative, carry out a series of demonstration projects that illustrate context-sensitive solutions to specific issues related to roadway design including: guardrails, road shoulders (width, materials, maintenance), roadway edges (vegetation, signage, reflectors, curbs, utility poles, etc.), roadside bicycle and pedestrian paths, bridge design, and dirt roads.

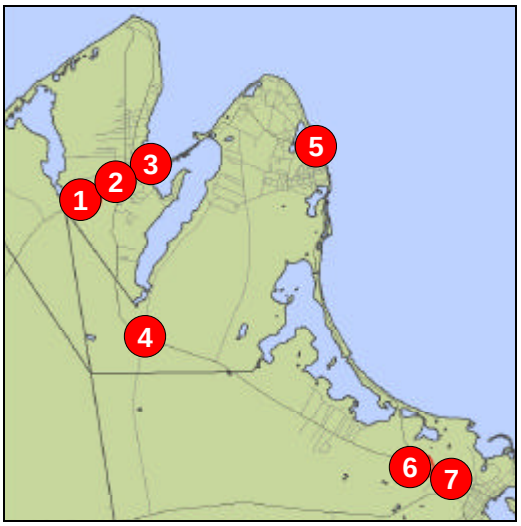
Roundabout at Marstons Mills. Cape Cod

- Increase promotion of Park-and-Ride lots and make them more user-friendly. Examine the possibility of creating new Park-and-Ride lots, especially in Oak Bluffs and in a mid-Island location that could serve Up-Island drivers. In the longer term, consider means to ensure that in-town parking during the summer is used primarily for short-term parking (e.g. time limits, meters) and that Park-and-Ride lots are an attractive and convenient alternative.

<u>Short-Term Projects (2003-2009)</u>

- Franklin Street, (Tisbury)
- Blinker Roundabout (Oak Bluffs) (subject to confirmation of the assumption that a four-way stop is not adequate permanent solution, based on the temporary installation planned for the summer of 2003)
- Bicycle paths (Edgartown and Oak Bluffs)
- County Road (Oak Bluffs)
- "Tourist District" enhancements (Tisbury)
- Town parking lot reconstruction (Tisbury)
- Sengekontacket Pond Bridges "Big" and "Little" bridges (Edgartown and Oak Bluffs)
- Drawbridge

Critical Intersections and Roads



1. Upper State Road Corridor, Tisbury

Proposed and Possible Solutions

- *Limit new high traffic-intensity uses (MVC DRIs and possibly town zoning)*
- *Analyze the possibility of a commercial road, parallel to State Road*
- *Carry out a study and prepare a plan for the area.*

2. Edgartown /State Road, Tisbury

Proposed and Possible Solutions

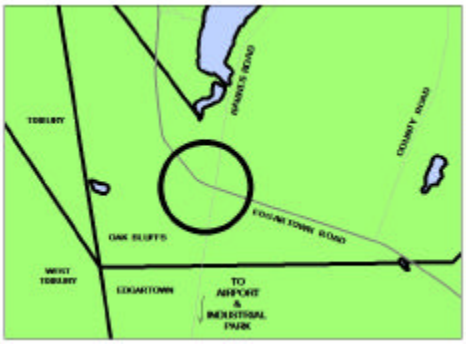
- *Analyze the possibility of building connector from Ed.-VH Road to Tisbury park-and-ride, via Sanborn Way*
- *Analyze the possibility of connector via Carroll's Way to Homes Hole Road*
- *Analyze the possibility of connector via Andrews Road and Cooke Road*
- *Analyze the possibility of making Look Street one-way exiting the intersection*

3. Five Corners & VH Ferry Terminal, Tisbury

Proposed and Possible Solutions

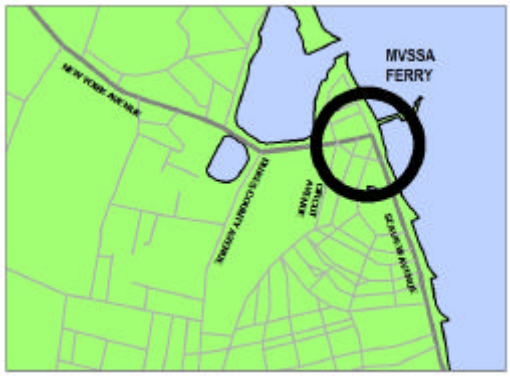
- *Reduce passenger drop-off traffic at ferry with off-site check-in at park-and-ride*
- *Carry out a study and prepare a plan for the area.*

4. Blinker Intersection
Oak Bluffs
Proposed and Possible Solutions



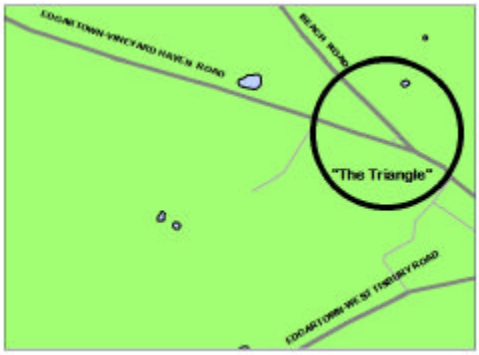
- *Install a four-way stop as an interim measure.*
- *Construct a roundabout*

5. Vicinity Ferry / Harbor / Circuit Avenue,
Oak Bluffs
Proposed and Possible Solutions



- *Carry out a study and prepare a plan for the area proposing a revised layout*

6. Edgartown-VH Road / Triangle
Proposed and Possible Solutions



- *Carry out a study and prepare a plan for the area.*

7. Upper Main Street, Edgartown
Proposed and Possible Solutions

- *Carry out a study and prepare a plan for the area.*
- *Investigate the possibility of prohibiting left turns from Main Street onto Edgartown – West Tisbury Road*

Actions – General

- Investigate the possibility of limiting the number of rental cars available and encouraging or requiring the use of alternative fuel vehicles.
- Investigate the possibility of limiting the total number of vehicles on the island (refer to initiatives in Bermuda, Nantucket, Catalina Island).

Actions - Road Safety

- Ensure that Island accident-reporting information is compiled and readily available in order to monitor problem areas. Analyze areas with clusters of accidents to see whether there are problems related to road design (e.g. presence of utility poles, lack of reflective roadside markings).
- Establish a "road-sharing" awareness program for pedestrians, bicycling and motor vehicle operators.
- Expand efforts to make people considering renting mopeds aware of the dangers and alternatives.
- Ensure that there is adequate trimming of vegetation, especially at obscured vision intersections, and that white lines at the side of the road are well maintained. Also, ensure that there is regular sweeping of sand from shoulders to minimize the potential for two-wheeled vehicle accidents (installing asphalt berms in area where sand has a propensity to accumulate).
- Examine the possibility of creating occasional pull-off areas along narrow roads, where bikes and mopeds can pull over and let cars pass.
- Establish a regional hazardous goods movement policy.
- Establish "mobility and safety" guidelines for DRIs.

Actions - Traffic Mitigation

- Expand the MVC's traffic data collection program to systematically compile information from all sources. Evaluate the capacity of Island roads and bridges to carry traffic.
- Establish a level of service (LOS) monitoring program.
- In reviewing Developments of Regional Impact (MVC) or other projects (towns), establish pedestrian amenity design guidelines. When appropriate, require transportation management associations (TMA). Require proper driveway location, spacing and frequency. Specify proper turn restrictions and access controls. Coordinate local land use permitting with The Massachusetts Highway Department curb cut applications.
- Investigate the feasibility of auto-restricted zones, "road pricing" strategies and alternative work hours.
- Develop car and van pooling programs.
- Investigate the feasibility of traffic-reduction ordinances.
- Coordinate traffic regulations.

Actions - Roads and Bridges

- Put in place a Pavement Management System for state and local roads in conjunction the Massachusetts Highway Department and the towns that would include the information on the history of construction and repair, the physical design (e.g. thickness and composition of pavement and roadbed as a result of borings, drainage), their current condition, the priority for repair or improvement. Establish a regional road and bridge monitoring and information-sharing program. Conduct pavement-monitoring workshops.
- Enhance road vistas by identifying important viewsheds and by establishing a vegetation planting and maintenance program.
- Develop a comprehensive and coordinated road signage program intended to clearly deliver essential messages while eliminating the roadside clutter from unnecessary repetitive signage.
- Establish uniform "best management practices" in order to minimize the effects of stormwater runoff on environmentally sensitive areas.
- Experiment with prototype road and bridge design features that reconcile safety concerns with preservation of Vineyard character. These could include road guardrails (e.g. the use of steel-backed timber or Corten steel), bridge guardrails (e.g. the use of stone-covered concrete), shoulder design and maintenance (e.g. presence of paving, parking, bus pull-off zones, trees and other vegetation), etc.
- Examine the process by which The Massachusetts Highway Department and town highway departments consider aesthetic, historic and environmental issues in road and bridge decisions and how they solicit and respond to community involvement in order to design projects that respond to the particular needs and circumstances of each community. Make recommendations about how these processes could be improved to ensure that public input into design decisions is equivalent to the participation and public review of other facets of the Vineyard environment.

Actions – Parking

- Increase promotion of Park-and-Ride facilities. Explore the possibility of increasing the frequency of shuttles between the lots and town centers. Make it easier to purchase tickets without having to go into town, and consider the possibility of having full-time attendants during the summer, especially if a charge for parking less than seven days is re-instituted in the Tisbury lot.
- Explore the possibility of creating other Park-and-Ride lots for the peak season located further from congested areas. This could include a location in Oak Bluffs as well as Up-Island locations that would allow people living too far from bus routes, to leave their cars and take the bus when heading to Down-Island locations.
- Investigate the feasibility of parking management programs in town centers (in conjunction with public transport improvements), such as limiting the supply and availability of parking; creating preferential parking for car and van pooling vehicles; and substituting off-street parking requirements for transportation demand management (TDM) actions. Promote sharing of parking facilities by businesses with different peak activity times.

- Encourage the MVC and towns to develop project design guidelines concerning the location, size, landscaping and use of parking areas for developments of regional impact (DRI) and for other developments regulated solely by towns

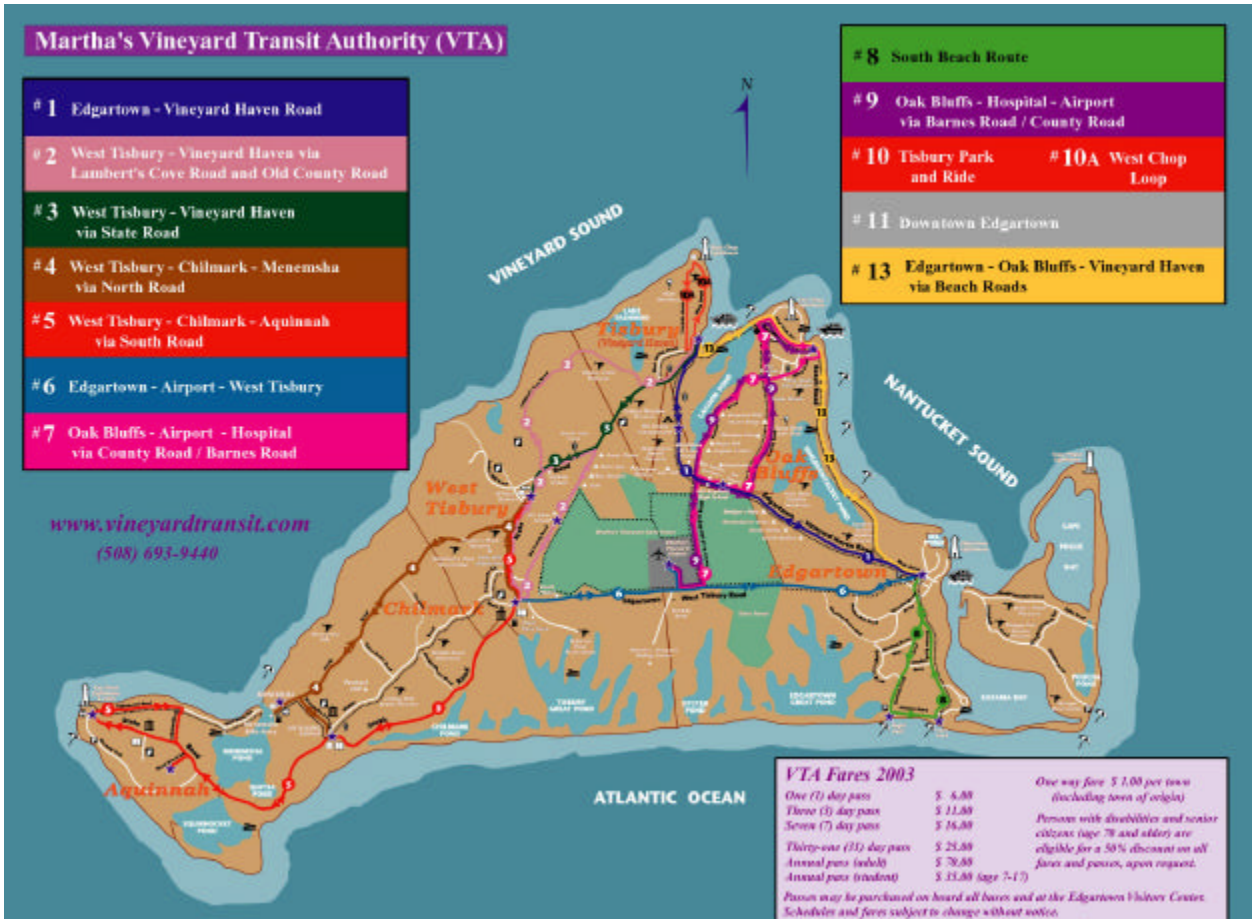
8 Buses and Taxis

8.1 Description

- Public buses: The Martha's Vineyard Transit Authority (VTA) is the Island's regional transit authority. It operates a fleet of 24 fully handicapped-accessible vehicles, with seating capacities ranging from 18 to 37 passengers, providing service on 13 fixed routes from mid-May through mid-October, and on 6 routes in the off-season. These routes now cover all major roads and all parts of the Island including links to the Tisbury and Edgartown park-and-ride lots and to major beaches. Timed transfers at various locations on the Island allow passengers to plan efficient longer trips. (Single one-way fares are $1 per town, or $2 to $4 for most trips. The cost of passes ranges from $6 for one day to $70 for an annual pass. All buses are equipped with two bike racks.)

  The VTA operates an elderly and disabled transportation system – "The Lift". It is accessed by an advanced reservation dial-a-ride system, with in-house dispatching and billing. The Lift also serves as a Paratransit service, demand responsive services provided to individuals with disabilities that reside within a ¾ mile corridor of the fixed route bus service who are unable to use the fixed route bus service. The VTA owns 7 vehicles dedicated to the Lift and serving an unduplicated client base of approximately 500 people. Five of these vehicles can carry 10 passengers, or 6 passengers with one or two wheelchairs. Two of the vehicles can carry 12 passengers, or ten passengers with one wheelchair, or eight passengers with two wheelchairs. There is also a medical van service to Cape Cod and to Boston.

  The construction of a new VTA maintenance facility in the airport business park, opened in October 2002, marked the end of a major expansion phase for the regional transit authority.



In 1998, the VTA created the VTA Consumer Advisory Group. The group had its first meeting in December 1998 and meets quarterly. The group consists of local social service agency members, business community members, transit consumers, , VTA staff, and members from the general public. The purpose of this group is to meet and discuss various transportation issues and receive input to help the VTA better plan their transportation system.

- Tour buses: Three on-Island companies, all owned by the same individuals provide tour bus service. They generally offer two-and-a-half-hour tours, usually originating at the Vineyard Haven and Oak Bluff ferry docks. These companies also provide three-and-a-half-hour charters as well as transfers for weddings and other large groups. In addition, there are organized charter tour groups from the mainland that bring large coach buses on Island, especially in the spring and fall (estimated at 25,000 or more passengers each year).
- School buses: The Martha's Vineyard Regional School Districts contract with a private company, Island Transport, Inc. to provide the majority of school pupil transportation on the Island. The school purchases the buses and leases them to Island Transport, Inc. Currently, the school districts lease twenty-one buses to provide service to six schools. The High School also provides Special Education minibus transportation with two minibuses. In addition the districts have three buses 'off-Island' for field trips and sports runs for Vineyard students traveling away.

The Edgartown Elementary School provides bus service to its students. They have four buses and one minibus for their service.

- Taxis: There are about 18 taxi companies on the Island operating a total of about 70 taxis. Companies are licensed by individual towns and only have a right to pick up customers in the towns where they are licensed.

8.2 Trends and Analysis of Issues

Public Buses: Since the consolidation and expansion of the Regional Transit Authority's routes, annual ridership has grown from 71,500 in 1997 to 787,600 in 2002. This increase is due, in part, to the acquisition of private bus companies. When first established, the VTA was oriented to beach-goers and workers, as a complement to the privately owned, tourist-oriented service. The growth in transit use and consolidation of the year-round, Island-wide public transit service has eliminated the need for an large number of automobile trips and has improved the quality of life for residents and visitors. For example, it has provided increased mobility for children, teenagers and others without access to a car, to say nothing of the time saved by parents who no longer have to 'chauffeur' their kids around. Paratransit and human services transport services –The Lift – carried 22,900 passengers in 1997 and 21,825 in 2002. The operating cost of this service was roughly $518,576, of which 72% of the net cost is funded by the Massachusetts Executive Office of Transportation and Construction, through State Contract Assistance and the remaining 28% is divided among the six Island towns. The decrease in the number of Lift passenger trips can be attributed to the expansion of the fixed route system. The increased coverage and frequencies of the fixed route system met the needs of many previously Lift-dependent individuals, fostering greater mobility and independence.

- Taxis: The fact that each town licenses taxis has resulted in different fares and policies in each town, which creates confusion for customers. The fact that taxis taking people from one town to another are not allowed to pick up fares in the second town, results in less efficiency and in empty taxis traveling unnecessarily. The growth in the public transit system has undercut part of the market for taxis so the sightseeing part of their business has become more important. There is a concern that there are too many taxis to allow companies to operate profitably. There have been complaints about cleanliness and surprises at fares charged. Island-wide licensing would allow better coordination and efficiency, but raises concerns that it could threaten the investments of those companies that have more lucrative licenses.

- Charter Tour Buses: Over the last several years a greater number of large charter coaches have decided to bring their bus over on the ferry for the day. This issue is of concern because many of these coaches are very long and wide given the Vineyard's road structure.

8.3 Objectives

- Improve coordination of service and promotion of all means of "collective" transportation, as an alternative to the use of private automobiles.
- Continue to optimize passenger facilities, scheduling, routing and maintenance as well as promotion and information of public transit to present or potential riders.
- Improve the attractiveness of using taxis and help the taxi industry adjust to the presence of the bus system.

8.4 Proposed Projects and Actions

Short-Term Actions (2003-09)

- Operating assistance to the VTA from the Executive Office of Transportation and Construction.
- Bus acquisition and replacement, favoring use of alternative fuel (propane[3])
- Improve the locations and physical installation of bus stops including the construction of shelters, in harmony with the scenic character of Island roads.
- Install intelligent transportation systems (ITS), automatic vehicle locators (AVL) and on-board cameras.

Other actions

- Investigate the possibility of creating transit-only road links into town centers so that buses can bypass congested roads, thereby increasing the incentive to use transit and park-and-ride facilities.
- Examine possible means to improve the appeal of using transit for tourists with means such as: promoting routes leading to tourist destinations and establishing a special visitors' loop linking main tourist destinations (beaches, Menemsha, Gay Head Cliffs, etc.).
- Make bus riding more appealing and fun for visitors. Consider repainting or redesigning buses to give them more eye appeal, provided the solution is original to the Vineyard (not copies of San Francisco streetcars), they do not stand out too

[3] *Noting that presently, propane must be shipped aboard Steamship Authority freight vessels.*

much in the scenic environment ("they should put a smile on people's faces without being goofy") and the cost of maintenance is not prohibitive.

- Identify performance measures to improve the operating performance of public transportation services. Establish a coordinated information base with respect to the physical, operational and passenger utilization data that are needed to support the performance measures. Monitor and assess the usefulness of the off-season public transportation services.
- Publicize the availability of public transportation services by improving signage, coordinated scheduling, use of printed material and web sites, and other marketing techniques.
- Make greater use of surveys of users and non-users to help tailor transit service and promotion to best serve their needs.
- Investigate the possibility of establishing or re-establishing holding areas for tour buses near town centers.
- Give off-Island tour bus drivers an information pamphlet on the ferry that explains the particularities of driving on the Vineyard and includes a map showing what roads can accommodate them as well as the location of public restrooms.
- Work with surrounding regions, especially Cape Cod and Nantucket, on coordination of multi-modal services and to lobby for changes to current methodology for distribution of federal and state capital and operating funds to take greater consideration of seasonal demands.
- Work with local zoning, approval and licensing boards to make transit considerations part of the permitting process.
- Investigate the possibility of establishing water-taxi service between the Vineyard Haven, Oak Bluffs and Edgartown harbors (noting that this was attempted in the 90's and was not successful, largely because of the distance that boats must travel to get from one town to another).
- Look at the possibility of having uniform taxi fares and regulations – including driver testing (driving ability, Island knowledge, visitor courtesy, drugs), vehicle inspections (safety, cleanliness)– either through coordination among the towns or with Island-wide taxi licensing (taxi board, county). Examine the possibility of posting fares at main stands (ferry and airport) and/or on vehicles.
- Promote the complete network of non-automobile transportation facilities – buses, tour buses, taxis – as offering a complete and viable alternative to car use. Improve the information provided to arriving visitors about their travel options so they quickly understand the relative merits of bus, taxi and tour bus – for example in a flyer sent with ferry tickets, in a brochure available in tourist information booths, and in signage at ferry terminals and at the airport.

9 Bicycles and Pedestrians

9.1 Description

A large number of trips on the Island are pedestrian. The majority of visitors to the Island come on foot. The town centers and rural areas are attractive environments that encourage walking.

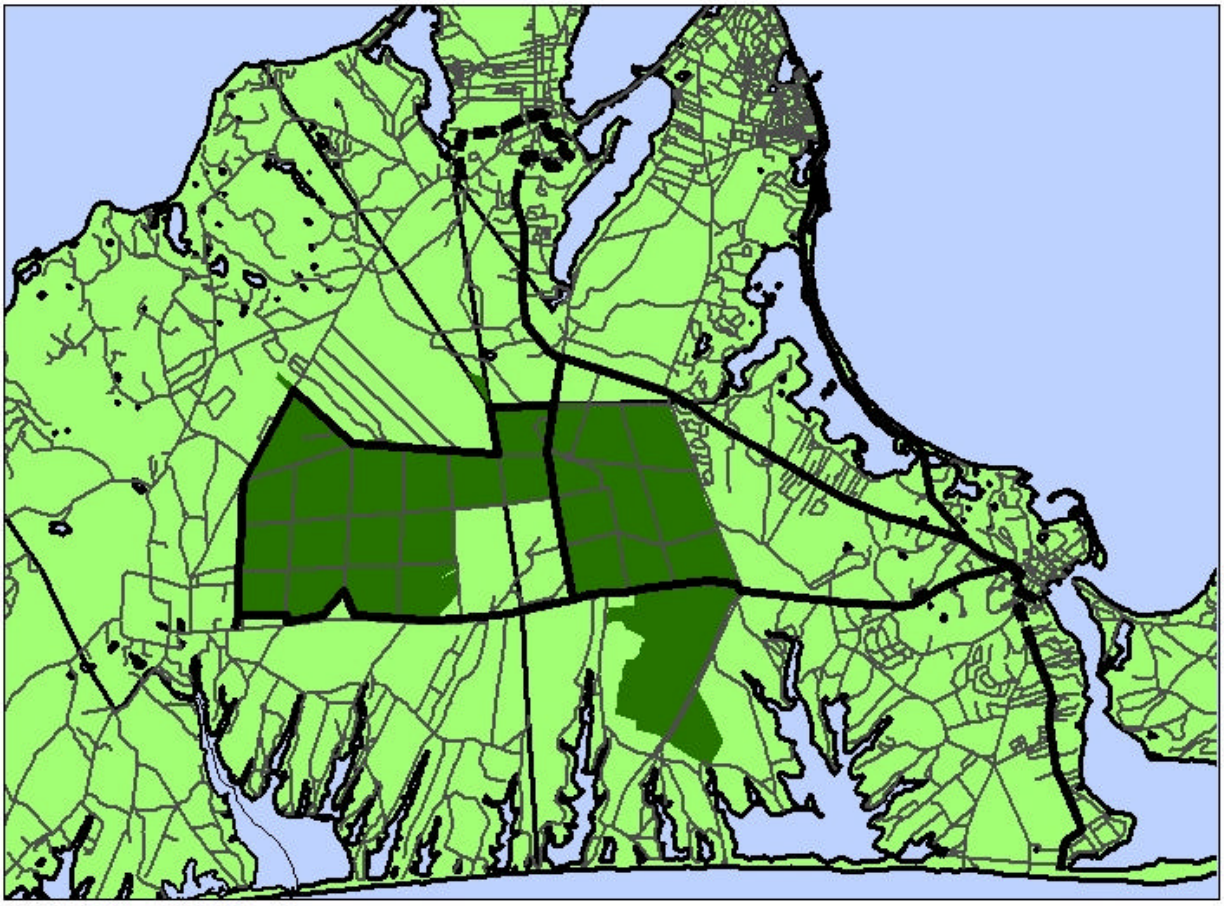
Bicycling on Martha's Vineyard is regarded by many residents and visitors as one of the best ways of experiencing the Island environment. The slower pace and quiet nature of bicycling are well matched with the Vineyard's rural characteristics.

As the number of bicyclists has grown, so has the demand for safe cycling facilities. The development of bicycle paths also contributes to limiting the growth in automobile traffic. Island towns, often with state and federal aid, have invested in building, over two phases (in the 1980's and the late 1990's) an extensive system of bicycle paths designed to accommodate busy summer recreational activity as well as the transportation needs of year-round residents.

The bikeway system on the Island combines both on-road and off-road elements, including bicycle routes, wide shoulders, and bicycle paths. The bicycle paths on Martha's Vineyard are classified as Class I "exclusive bikeways", defined as a specific right-of-way for the exclusive use of bicycles. While this type of facility can accommodate pedestrians, motorized vehicles are prohibited. The Island's bicycle paths are physically separated from the roadways by a vegetated buffer zone, ranging from two feet to more than twenty feet. In some areas, the bicycle paths follow a completely independent alignment and are not associated with any roadway. There are 1000 to 1200 bicycles available to rent on the Vineyard.

9.2 Trends and Analysis of Issues

Although the Island's narrow and winding roadways are a key defining feature of the Vineyard's character, competition for limited roadway width by various transportation modes during the busy summer season reduces the level of comfort and safety, particularly for the non-motorized modes.



As the use of bicycles for transportation and recreation has increased, thanks largely to the availability of safe bicycling facilities, the public demand for more bicycle path mileage has also increased. Now that two phases of bicycle path construction have been completed on Martha's Vineyard, bicycle facility planning can focus on filling in gaps in the system.

Town Centers: Town centers, particularly those of the three down-island towns, are magnets for pedestrians shopping and sightseeing as well as for cyclists, especially during the summer. The dense, 19th-century layouts of the downtowns of Vineyard Haven, Oak Bluffs and Edgartown make it especially difficult to accommodate motor vehicles as well as bicycles and pedestrians. While there are many attractive brick sidewalks and other pedestrian amenities, the narrow public street rights-of-way can leave little room for sidewalks; sometimes, pedestrian ways are merely indicated with lines painted on the asphalt.

Even where sidewalks exist, pedestrian volumes often surpass what can be effectively accommodated. The volume of pedestrians is a significant contributor to the traffic congestion endemic to several locations in the three downtowns, particularly when associated with the arrivals and sailings of the ferries in Vineyard Haven and Oak Bluffs.

In towns and town areas of less concentrated activity, the lack of a continuous pedestrian pathway network is a safety concern. In some areas, such as Upper State Road in Tisbury and Upper Main Street in Edgartown, although there are sidewalks, the suburban-style development – with isolated stores set behind large parking lots – is not as conducive to walking as are traditional town centers.

Also, while the bike paths provide direct links between the down-Island towns, they only get the cyclist to the perimeter of the downtowns and, notably, the ferries.

Types of Cycling: The majority of summertime bicycle riders do not fall neatly into classifications of "commuters" or "recreational riders". While there are numerous individuals who rely on the bicycle as their most accessible form of transportation, the majority of riders are including their bicycling activity with any number of other recreational activities: beach-going, visiting friends, shopping, water sports, hiking, antiquing, picnicking, bird watching, visiting local farms, and a host of other Island offerings. This form of bicycling can most accurately be described as "recreational transportation". While transportation is a key purpose for riding, it is not the sole purpose like it is for typical commuters. These riders are often unfamiliar with the local roads and are uncomfortable being in close proximity to high volume traffic and ill-prepared to deal with roadside hazards, such as sand on the road shoulders.

Bicycle Paths vs. Shoulders: The Island's bicycle paths are founded on the concept of creating a physical separation between motorized vehicles and non-motorized transportation modes. The Island community has embraced this bicycle path solution over conventional wide shoulders for a number of reasons. The conventional widening of shoulders would degrade the rural roads' scenic values; would conflict with the preservation of historic structures, stone walls, mature trees); would likely promote increased vehicle speeds while inadequately protecting cyclists; and is unpalatable to many Island residents. The proliferation of mopeds and the volume of slower moving bicycle traffic support the bicycle path solution. It is important to have physical barriers dividing roadside paths from the roadways to prevent the paths from being used for parking of cars and heavy equipment as well as being used as passing lanes and turning lanes.

In many parts of the Island, however, bicycles must share the roadway with cars, trucks and buses, and even where there is a separate bike path, cyclists are often required to share the roadway at bridge crossings. It should be noted that in sections of West Tisbury and Aquinnah, where separated bicycle paths do not exist, the roads have been widened to accommodate all traffic modes within the pavement surface. This degree of compromise has led to a practical level of use in most locations. However, due to relatively narrow roadways and heavy vehicle traffic, the cyclists are largely discouraged from riding in much of the Up-Island towns.

Ancient Ways: There is a network of dirt trails that lace most of the island. Many are the remnants of old cart paths from before the 20th century that have remained or been

reclaimed for foot, bike and horse traffic. These ways serve both recreational and transportation functions. They often run through undeveloped or conserved areas and they connect directly to many subdivisions and neighborhoods. One of the first Districts of Critical Planning Concern the MVC established at its inception in 1975 included provisions enabling towns to create regulations to protect these cart paths. All but one town has at least one such protected path.

Other Pedestrian Paths: The MV Land Bank Commission, created by the island's citizens in 1986 to purchase open space to protect important areas of the island in the face of accelerating development, also has as a primary objective to protect the existing informal network of trails and to expand upon them to connect conservation properties throughout the island. To accomplish this, the Land Bank has encouraged towns to appoint trails and byways committees and provides technical support to the committees. The Island's bike paths also function as sidewalks for pedestrians, allowing many residents and visitors to walk to town or to beaches.

9.3 Objectives

- Promote and facilitate the safe use of the bicycle as a way to relieve congestion, contribute to the visitor experience, save energy and improve air quality.
- Expand and enhance the network of bicycle paths, walking trails, and in-town pedestrian walkways, carefully planning new facilities to ensure proper integration with existing networks and to meet growing needs.

9.4 Proposed Projects and Actions

Short-Term Projects (2003-2009)

- Create bicycle paths along the eastern and north-eastern perimeter of the Manuel Correllus State Forest that would connect with existing sections of the bicycle path system and complete a loop around the perimeter of the State Forest (primarily Edgartown with the remainder Oak Bluffs).
- Create bicycle paths along Herring Creek Road (Edgartown).
- Expand the network of Special Ways designated by the towns
- Continue to support activities of town Trails and Byways committees

Actions - Bicycles

- Promote cycling by:
    - informing visitors of the existence of trails and bicycle paths, as well as the many natural, cultural and historic attractions available to touring bicyclists;
    - providing information to individuals and organizations about bicycle commuting options.
    - involving the private sector in promoting and providing for the bicycle mode.

- Provide ancillary services (bicycle storage areas easements, grade separations) in new projects through the town or MVC project review process.
- Set up a bicycle path working group with the mandate to analyze the present network of cycle paths with respect to safety and convenience (especially for the novice rider who is inclined to ride a bike on the Vineyard), and prepare a program for upgrading them. Look particularly at:
    - The design of intersections with roads and driveways including the presence of stop or warning signs, the lines of sight, and the presence of vegetation;
    - The presence of barriers (with low shrubs or with low wooden barriers) dividing the paths from adjacent roadways to protect cyclists by preventing use of paths for parking of cars and heavy equipment or use as an unofficial passing lane or turning lane, as well as to reduce the visual scale of the roadway;
    - The presence of signage too close to the paths that narrow the effective width;
    - The identification of dangerous stretches of bicycle path (e.g. it has been suggested that the Eastville Avenue path is problematic).
- Set up a campaign in schools and for the general public promoting bike safety and the idea of drivers sharing the road.
- Consider the possibility of setting up community bike rental whereby bikes can be picked up from a rack in one location and be dropped off at another one.
- Improve bicycle access to transit, bus, air, and ferry terminals and park and ride lots, and provide bicycle-parking facilities at these locations.
- Address bicycle safety and access in the planning, design, construction, operation and maintenance of transit, airport, highway and bridge projects.

<u>Actions - Pedestrian Facilities</u>

- Encourage walkers by increasing the appeal of the pedestrian environment, particularly in village and commercial areas, providing continuous and adequately-dimensioned sidewalks and well-marked crosswalks as well as services such as shelter and weather protection, comfortable places to sit, signage, information centers, water, restrooms, plantings, lighting and trash receptacles.
- Create and upgrade walking routes – including off-street, low-maintenance footpaths –connecting residences, parks, workplaces, tourist and shopping attractions and public transit stops
- Encourage supplemental activities, such as business district improvements and fitness programs by the private sector, that help promote a suitable and effective environment for walking

10 Freight

Note: The freight working group set up for the Regional Transportation Plan update has begun to explore freight issues in greater depth than can be indicated here. This initiative can continue in order to more fully analyze and deal with issues related to freight.

10.1 Description

Most freight is shipped to the Island by truck using SSA ferries and freight boats linking Woods Hole to Vineyard Haven or Oak Bluffs. In addition, some freight is brought in by barge to the Island's only barge docks (Packer) in Vineyard Haven. Air freight is used for smaller, time-sensitive shipments.

The main on-Island companies that handle primarily general freight are Cape Express, Carroll's and Sun Transportation although off-Island companies sometimes make deliveries to the Vineyard. The main companies concentrating on express deliveries are FedEx and UPS.

General freight is brought in large trailers (50-70' long, 18-wheel, 5 axles, 80,000 lbs loaded weight) and is transferred to smaller trucks for deliver to Island destinations (30-35' straight trucks, 2 axles, 20-25,000 loaded weight; or 25' cube trucks, 2 axles, 10,000 lb. loaded weight).

10.2 Trends and Analysis of Issues

- The concerns of the town of Falmouth in dealing with traffic heading for the Vineyard passing through Falmouth has focused on trucking and particularly the transportation of hazardous materials (hazmats). Trucking and especially hazmats is also a concern with respect to the ferry. Hazmats may only be shipped on open freight boats that do not carry private vehicles or passengers.
- In the past decade, the SSA changed its pricing and reservation policies, charging for truck length rather than weight and penalizing for unused reservations. In general, these policies seem to be working well and appear to have been effective in inducing freight companies to make every effort to ensure that trucks are fully loaded and that the smallest possible truck is used for a ferry trip. However, shippers complain that it is difficult to obtain additional reservations when needed, especially for time-

sensitive deliveries such as perishables and express. Although ferries have a theoretical capacity to carry many more trucks than actually needed, there is a shortage of capacity early in the day and much of the rest of this capacity is used by cars.

- It has been argued that the relatively low cost for an Islander excursion ferry ticket as compared to the cost for trucks has the effect of subsidizing Islanders to shop on the Cape, thereby undermining Vineyard businesses.
- The presence of oversized vehicles attempting to navigate our narrow roads poses many problems.
- Daytime in-town delivery leads to congestion on village streets. Very few stores have off-street truck docks. It would be desirable to favor more off-peak delivery; however, attempts by freight companies to deliver early are often stymied by the fact that there is no one in smaller businesses early in the morning to receive shipments, forcing the companies to come during the prime shopping and visitor hours. Shippers of perishables tend to deliver to larger establishments, many with better docking facilities; however they are often limited from making early deliveries because of noise restrictions.

*Table 13: **Scheduled Truck Trips** (per week on SSA ferry)*

Mail	*14*	*3%*
Fuel	*55*	*14%*
Trash	*55*	*14%*
Food	*122*	*30%*
Freight & Express	*67*	*16%*
Services	*94*	*23%*
Total	*407*	*100%*

Note: Preliminary compilation by Arthur Flathers

- In-town loading zones are often unavailable for deliveries since they are used for long periods by commercial vehicles parked for other reasons (e.g. meetings, getting lunch).
- Shippers point out that the cost of "logistics" (transportation, inventory and warehousing) is 10-15% of a final retail product's cost, with transportation representing 3%. In the 1960's, the New England Motor Rate Bureau concluded that the additional transportation cost of shipping to the Vineyard was about 23%, a figure that is probably still valid today. Thus, the average additional cost of product costing $100 as result of the extra cost of shipping to the Island is probably less than a dollar. However, In the case of the Vineyard where there is a ferry operation just prior to the retail level or in some cases beyond retail to a purchaser or consumer the relation breaks down dramatically. Incremental cost of ferry from a mainland port includes tariff, time of driver and equipment (at least 3 hours of dead time accounting for ferry schedules that cause need for more equipment and drivers) is large. Beyond this are the additional administrative costs of scheduling and dispatching to handle ferry operations with very little flexibility. On top of the transportation costs, there are personnel and operating costs associated with Island living, particularly as driven by real estate costs that impact island transportation multiple times as they do all retail prices.

- Limits on overnight freight service reflect concerns about the impact on port communities. It has been pointed out that are industrial facilities such as WHOI, MBL, NOAA, USCG, Dept of Marine Fisheries and other commercial businesses in Falmouth and Woods Hole that are not required to adhere to midnight to 6AM limitations on delivery.
- The need for many people to go the post office to pick up mail generates a large number of trips that could be avoided with more delivery to destinations, either individual rural delivery or neighborhood cluster mailboxes.

10.3 Objectives

- Ensure that freight is brought to the Island and distributed to its destinations in a timely and efficient way, with minimal negative impact on traffic, on safety and on the environment.
- Reduce vehicular traffic to the ferry passing through Island towns as well as through Falmouth, on Cape Cod Canal bridges and on the Cape, particularly trucks and especially hazardous materials (see also section 5).

10.4 Proposed Projects and Actions

- Explore how a greater proportion of freight, and particularly low value and less time-sensitive commodities (e.g. lumber) and hazardous materials (e.g. oil, propane), could be brought to the Island by barge instead of by ferry. Explore the possibility of using containerization.
- Look at the possibility of establishing truck routes in order to limit the presence of trucks on roads that pose particular traffic or public safety problems.
- Review the SSA freight policy with respect to its impact on the amount and cost of goods brought to the Island by ferry. Consider the possibility of offering discounts for off-peak travel and for giving priority to time-sensitive freight. Consider the possibility of running more freight boats to facilitate truck access to the Island, particularly early in the morning (e.g. there could be two shifts, early morning and late afternoon).
- Look at the possibility of limiting the maximum size of trucks and buses on the roads, or at least discouraging very large vehicles either all the time or at certain hours.
- Explore the possibility of delivery to people's homes so shoppers don't need to take their cars when going shopping. Explore the possibility of expanding mail delivery with increased door-to-door mail delivery in town centers and by encouraging eligible people in other areas to use rural delivery; consider the possibility of satellite summer service at the airport.

- Explore the possibility of reducing the need for transporting waste by treating liquid waste on the Island and by reducing the volume of solid waste through community composting. Examine the possibility of limiting which vessels are used to transport garbage and septic and the possibility of using only barges. .

11 Intermodality and Information

11.1 Description

The various individual components of the Vineyard's transportation network were described above. There are many points of interconnectivity between systems, the most notable being at formal transfer points such as ferry terminals and airports although systems interface in more dispersed ways such as wherever someone parks a car and takes out a bike, or simply walks to a destination.

11.2 Trends and Analysis of Issues

The connectivity between modes is often the weakest part of a transportation system. Trips to the Island are especially complex in that they invariably involve more than one mode of transportation.

Also, the success of a transportation network can depend to a great extent on the awareness of users of available choices, both in a general way and at specific moments in time.

11.3 Objectives

- Improve coordination of operations and promotion of various transportation modes and especially alternatives to the use of private automobiles.
- Make the network of non-car transportation systems (bus, taxi, bike) so effective and well promoted that more visitors will be willing to make their visit to the Vineyard without a car.
- Investigate the possibility, in conjunction with other federal, state and local agencies, of establishing an intermodal transportation hub at the airport including a bus hub, a major reserve area for car rentals, and a Park-and-Ride area for town centers and for ferry passengers (possibly including ferry ticket purchase and check-in facilities).

11.4 Proposed Projects and Actions

Actions - Intermodality

- Complete plans for intermodal transportation facilities in the Oak Bluffs harbor/ferry area dealing with the various ferry services (staging, pick up, drop off, waiting areas), cruise ships, marina, bike and car rental facilities, public transit and tour buses, taxi, parking, etc.
- Update plans for the Vineyard Haven ferry dock area including adjacent streets and parking areas dealing with the SSA ferry dock (staging, pick up, drop off, waiting areas), marina, bike and car rental facilities, public transit and tour buses, taxi, parking, etc.
- Increase the range of the bicycle by facilitating the transport of bicycles on public transportation vehicles. Consider developing and promoting a special shuttle from West Tisbury to the Gay Head Cliffs.
- Analyze the possibility of establishing a major parking/service center at the airport that would include long-term park-and-ride for the ferry, ticket sales, baggage services, parking of rental car fleets, bus connections to key locations and other services offering a seamless experience for visitors. Such a facility could substantially reduce the number of vehicles, especially from Edgartown or Up-Island, which would go to the ferry terminals to pick up or drop off passengers.
- Investigate the feasibility of "joint" ticketing and inter-service marketing programs.
- Participate actively in the *Cape and Islands Passenger Transportation Coordinating Council* to establish roles and responsibilities pertaining to development, marketing and financing of enhanced and coordinated public transportation services between Martha's Vineyard and Cape Cod.
- Develop ADA compatible design guidelines to integrate pedestrian areas, bikeways and public transportation routes and facilities.

Actions - Transportation Information

- Make complete, timely and coordinated regional transportation information available on Internet websites including ferry and bus routes and schedules, the availability of taxis, bicycle route and rental information.
- Cooperate with local business associations or other private organizations to distribute transportation information at strategically located visitor centers.
- Review and improve Martha's Vineyard publicity material to ensure it clearly explains the Island's transportation environment and prepares visitors to make good transportation choices.
- Promote the idea of "Martha's Vineyard – a different way of life" with emphasis on use of transit, courteous driving. Use in advertising, tourist brochures, and flyer in SSA ticket envelopes.
- Research the applicability of advisory signage and radio.
- Improve the flow of information to the news media.

12. Implementation

12.1 Funding Programs and Requirements

The Massachusetts Highway Department sets out, on an annual basis, a summary of available funds that serves as a financial constraint for projects to be funded from a Federal Aid Program.

Other potential alternative transportation funding sources might include ferry surcharge, car rental surcharges, and development impact fees.

12.2 Setting Priorities – Criteria for Project Selection

Possible projects were evaluated and prioritized according the following set of criteria.

1. Promotes greater roadway, bicycle and pedestrian safety.
2. Favors the use of alternate modes of transportation, other than the private automobile.
3. Reduces traffic congestion with physical improvements, particularly at the most problematic locations.
4. Respects and reinforces the scenic, historic and natural values of the Vineyard.
5. Preserves existing road and bridge infrastructure.
6. Promotes or conforms to other goals of this Regional Transportation Plan.

Table 14: ***Transportation Improvement Projects***
Summary of Recommended Short-Term Improvements 2003-2009

Project	*Town*	*Description*	*Cost*	*Responsibility /Funding Eligibility*			*Priority*
				MHD	*STP*	*Other*	
Road Improvements							
Franklin Street	*Tisbury*	*Resurfacing*	*160k*		***4***		*2003*
Blinker Roundabout	*Oak Bluffs*	*Construction*	*210k*		***4***		*2004*
Old County / State Roads Intersection	*West Tisbury*	*Reconfiguration*	*110k*		***4***		*2004*
Historic District Sidewalks	*Tisbury*	*Reconstruction - enhancement*	*199k*		***4***		*2005*
Herring Creek Bike Path	*Edgartown*	*Construction - enhancement*	*220K*		***4***		*2006*
Lake Avenue	*Oak Bluffs*	*Resurfacing and sidewalks*	*120K*		***4***		*2006*
County Road	*Oak Bluffs*	*Resurfacing and bicycle path*			***4***		*2007-9*
Upper Main Street	*Edgartown*	*Resurfacing and new sidewalks*			***4***		*2007-9*
Streets near ferry and harbor	*Oak Bluffs*	*Redesign*			***4***		*2007-9*
Streets near ferry, Five Corners	*Tisbury*	*Redesign*			***4***		*2007-9*
Transit Authority Improvements	*all*	*Vehicle tracking, bus stops and shelters, etc.*			***4***		*2007-9*
Sengekontacket Pond Bridges	*Edgartown and Oak Bluffs*	*Replacement*		***4***			*2005*
Drawbridge	*Tisbury*	*Temporary replacement*		***4***			*2005*
Culvert	*West Tisbury*	*Replacement*		***4***			*2007*

Bicycle and Pedestrian							
Bicycle Paths	*Edgartown and Oak Bluffs*	*Construction*			***4***		*2005-08*
Transit and Taxi							
Operations	*All*	*Ongoing Assistance from EOTC*				***4***	*2004-09*
Buses	*All*	*Acquisition and Replacement*				***4***	*2004-9*
Water Transportation							
Oak Bluffs ferry terminal	*Oak Bluffs*	*Reconstruction*	*$10M*			***4***	*2005*
MV Islander	*All*	*Replacement*	*$25M*			***4***	*2006*
MV Sankaty	*All*	*Renovation*	*$2M*			***4***	
Air Transportation							
Airline and Connector Roads	*Edgartown and West Tisbury*	*Construction*				***4***	
Construct infrastructure improvements to meet fire protection needs	*Edgartown and West Tisbury*	*Construction*				***4***	
Taxiways and ramps	*Edgartown and West Tisbury*	*Reconstruction*				***4***	
General Aviation Terminal, parking areas and access roads	*Edgartown and West Tisbury*	*Construction*				***4***	
Hangars	*Edgartown and West Tisbury*	*Acquisition/Relocation*				***4***	

MHD refers to The Massachusetts Highway Department projects for State roads and bridges

STP refers to projects eligible for federal aid (the major roads of the Island)

Other refers to other federal aid programs for which projects are, or may be eligible

In the coming months, the Joint Transportation Committee will prepare a summary of the key priority actions and identify the agency or agencies in the best position to take on implementation.

13 Conclusion

This Regional Transportation Plan update summarizes the current consensus about transportation issues on the Vineyard and outlines how to deal with them. In many cases, the Plan does not propose specific solutions, but identifies additional studies

In summary, the main recommendations are:

- Deal with specific areas of traffic congestion and safety problems by installing a roundabout at the Blinker intersection and by carrying out studies to look at how six other problem areas can be improved, particularly the areas around the two ferry docks (stretching to Five Corners in Vineyard Haven and to the harbor area and Circuit Avenue in Oak Bluffs) and the State Road Corridor in Vineyard Haven.

- Improve the coordination, the improvement of services, and the promotion of alternatives to the private automobile in terms of offering a viable and complete option for visitors. This includes public and tour buses, taxis, bikes and walking, particularly for trips to and from the ferry or airport, places of lodging, beaches and other tourist destinations, restaurants, and shopping areas.

- Improve coordination of transportation planning, delivery of services and promotion among the various Island entities including the towns, the county, the Steamship Authority, the Vineyard Transit Authority and the Martha's Vineyard Commission, in order to overcome previous difficulties related to fragmented decision-making that increased the difficulty of implementing improvements or even developing common goals and objectives.

Transportation planning on Martha's Vineyard, as elsewhere, is done in a context where we know that all problems cannot be solved. It is also clear that if we want to keep the Vineyard what makes it such a special place, we do not want to cover the Island with wide highways, just to smooth the flow of traffic. So even in a generation from now, people might still be wondering how to deal with the traffic at Five Corners when the ferry arrives.

Ultimately, transportation issues are just one manifestation of the results of growth. It is essential that they be looked at as part of a greater community reflection on the amount, rate and type of development that Vineyarders want for their Island.

APPENDIX A1

Commonwealth of Massachusetts Statewide Road and Bridge Policy

Governor Mitt Romney, January 27, 2003

Statement of Policy. It shall be the policy of the Commonwealth of Massachusetts, in all programs involving work on streets, roads and bridges, to:

1. ***Fix It First***: To give priority to the repair of existing streets, roads and bridges; and
2. Use ***Community-Friendly Solutions (Communities First)***: Wherever a street, road or bridge needs to be re-designed and reconstructed, to plan and undertake, in collaboration with the affected community, a "context-sensitive" project -- one that fully protects and enhances the surrounding community and landscape while addressing mobility for all transportation modes.

Purposes. The purposes of this policy are to

- Prevent sprawl;
- Recognize all the Commonwealth's citizens and communities as its transportation agencies' customers;
- Avoid the costs associated with unnecessary road widenings and the conflicts they entail, and thereby use available funding to complete more projects in more communities and to produce more construction jobs; and
- Provide enhanced mobility for sustainable transportation modes (walking, bicycling, and public transportation).

Actions. The Chief of Commonwealth Development and Secretary of Transportation and Construction are hereby directed to take the following actions to implement this policy.

1. The *Highway Design Manual* and any other relevant standards, guidelines and policies of The Massachusetts Highway Department shall be reviewed and revised to incorporate the principles of context-sensitive design, traffic calming, and multi-modal accommodation. An advisory committee consisting of representatives of municipalities, regional planning councils, and other affected interests shall be formed to help guide this process, and ample opportunity for input from the general public shall be provided. The process of revising the manual and any other standards, guidelines and policies shall be completed by October 1, 2003.

2. Projects with community-friendly design that can be undertaken immediately using existing funds shall be identified by The Massachusetts Highway Department as quickly as possible, and no later thirty days from this date, and implemented immediately thereafter.

3. An ombudsman shall be appointed in the Executive Office of Transportation and Construction and have responsibility for hearing and facilitating the resolution of citizen and community concerns regarding project design. In addition, a process for

expediting project review and requests for waivers from current design standards and guidelines, and requests for exercise of flexibility in applying current design standards and guidelines, shall be established within The Massachusetts Highway Department and overseen by the Secretary of Transportation and Construction. All documentation regarding waivers shall be made available for public review.

4. All actions taken pursuant to this policy shall fully honor the letter and spirit of provisions in the Massachusetts General Laws requiring the accommodation of bicycle and pedestrian traffic, including chapter 90E, section 2A. Where there are differences of opinion concerning the necessity or desirability of widening pavement, eliminating curbside parking, or taking other measures to accommodate bicyclists and/or pedestrians, full use shall be made of creative design expertise and public involvement, facilitation or dispute resolution processes.

5. A plan for repairing or reconstructing the state's structurally deficient bridges shall be developed and finalized, in consultation with the Commonwealth's municipalities and metropolitan planning organizations, by July 1, 2003. This plan shall address all the state's bridges, including in particular those owned or controlled by the Metropolitan District Commission, Department of Environmental Management, and Massachusetts Bay Transportation Authority as well as other agencies. It shall include a budget and a schedule for completing the bridge repair and reconstruction process.

   The statewide bridge plan shall include a maintenance and management program designed to protect our assets, make them function better for motorists and other users, and minimize the need for future reconstruction or expansion projects. This maintenance and management program shall address basic maintenance issues (painting, de-icing practices, and so on). It shall also include (1) an improved pavement management system and (2) strategies for optimizing the operation of the system to avoid more costly capacity expansion projects. Such strategies shall include: (a) Improving signage so that travelers can more easily tell where they are and where they are going; (b) Scheduling of construction to avoid peak travel periods on key roads whenever feasible; (c) Improving incident response systems; and (d) Using multimodal transportation strategies to the maximum extent feasible both to reduce traffic congestion and to enable more travelers to bypass congestion by using non-highway modes.

APPENDIX A2
Determination of Air Quality Conformity Documentation

A2.1 Background

Introduction

The 1990 Clean Air Act Amendments (CAAA) require Metropolitan Planning Organizations within nonattainment areas to perform air quality conformity determinations prior to the approval of Transportation Plans and Transportation Improvement Programs. Conformity is a way to ensure that federal funding and approval goes to those transportation activities that are consistent with air quality goals. This section presents information and analyses for the air quality conformity determination for the 2003 Regional Transportation Plan of the Martha's Vineyard MPO, as required by Federal Regulations 40 CFR Part 93, and the Massachusetts Conformity Regulations (310 CMR 60.03). This information and analyses include: regulatory framework, conformity requirements, planning assumptions, mobile source emissions budgets, and conformity consultation procedures.

Legislative Background

Eastern Massachusetts has been classified as a "serious" ozone nonattainment area. This area includes all of Barnstable, Bristol, Dukes, Essex, Middlesex, Nantucket, Norfolk, Suffolk, and Worcester counties. With this nonattainment classification, the CAAA require the Commonwealth to reduce its emissions of volatile organic compounds (VOCs) and nitrogen oxides (NOx), the two major precursors to ozone formation, to achieve attainment of the ozone standard by 1999 and beyond.

The CAAA and the Commonwealth acknowledge that mobile sources are among the major sources of emissions of VOCs, NOx and CO. Prior to the 1990 amendments, the majority of pollution control measures focused on stationary industrial sources. The Massachusetts 1993 Emissions Inventory indicated that on-road mobile sources emit approximately 28% of the total VOCs, 43% of the total NOx and 56% of the total CO emissions (summer day) in the state. Mobile source CO emissions on a winter day are approximately 78% of the total statewide CO emissions.

The Commonwealth revised its State Implementation Plan (SIP), which was submitted to the United States Environmental Protection Agency (EPA) on November 15, 1993. This SIP revision is a strategy of programs to show Reasonable Further Progress of a 15% reduction of VOCs in 1996 toward attainment of the National Ambient Air Quality Standards (NAAQS) for ozone in 1999. A large number of the programs target mobile sources, including an enhanced inspection and maintenance program, reformulated gasoline, and California Low Emissions Vehicle Program. It also included a VOC mobile source emission budget for 1996.

A second major revision to the SIP was submitted to EPA in December 1994. This submission included programs to provide a further reduction of 9% in NOx emissions. NOx reduction credits will be taken from stationary sources through NOx Reasonably Available Control Technology (RACT), and from mobile sources through the Enhanced Inspection and Maintenance Program, the California Low Emission Vehicle Program, and the Tier I Federal Vehicle Standards. A NOx

emission budget for 1999 and each year thereafter and a VOC emission budget for 1999 and each year thereafter were included in this submission. In addition, the 1996 VOC budget was revised.

In March of 1997, DEP submitted a 1996 Rate of Progress Report describing the progress to date on the SIP commitments that were submitted to EPA in 1993 and 1994. At that time they had the opportunity to make any revisions and corrections to programs that were submitted to ensure that the ozone air quality standards would be achieved by 1999. As part of the 1996 Progress Report, DEP revised the mobile source emission budget. Previously, the mobile source budget was developed using the Highway Performance Monitoring System which uses traffic count data from spot locations along different functional classes of roadway to determine vehicle miles of travel in the region. The new mobile source emission budget was calculated using transportation demand models maintained by the regional planning agencies. In addition, some inputs to the emissions model were changed.

On October 1, 1998, DEP submitted to EPA a technical correction to the Massachusetts SIP for Ozone, which included a 2003 mobile source emission budget. This budget was found adequate for conformity purposes by EPA on February 19, 1999, and was used in conformity determinations that were approved by FHWA on January 12, 2001, and again on June 18, 2002 (in March 2002, the Boston MPO had completed another RTP update).

On September 6, 2002, DEP submitted to EPA a revision to the Massachusetts SIP that included a revised one-hour ozone attainment demonstration for Eastern Massachusetts. This SIP revision included a 2007 mobile source emission budget for the Eastern Massachusetts Non-Attainment Area. This budget was found adequate for conformity purposes by EPA on December 6, 2002.

Conformity Regulations

The CAAA revised the requirements for designated MPOs to perform conformity determinations by ozone non-attainment area for their Transportation Plans and Transportation Improvement Programs (TIPs). Section 176 of the CAAA defines conformity to a State Implementation Plan to mean conformity to the plan's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of the standards. The Martha's Vineyard MPO must certify that all activities outlined in the 2003 Martha's Vineyard Regional Transportation Plan:

- will not cause or contribute to any new violation of any standard in any area;
- will not increase the frequency or severity of any existing violation of any standard in any area; and
- will not delay the timely attainment of any standard or any required interim emission reductions or other milestones in any area.

The EPA issued final conformity regulations in the November 24, 1993 Federal Register and Massachusetts DEP issued new conformity regulations effective December 30, 1994. They set forth requirements for determining conformity of Transportation Plans, Transportation Improvement Programs, and individual projects. The federal conformity regulations were amended on August 15, 1997. The requirements of the conformity analysis are summarized below and will be explained in detail in this conformity determination:

- Conformity Criteria
  - Horizon Years
  - Latest planning assumptions

- Latest emission model used
- Timely implementation of transportation control measures (TCMs)
- Conformity in accordance with the consultation procedures and SIP revisions
- Public Participation Procedures
- Financially Constrained Document

- Procedures for Determining Regional Transportation Emissions

- The Conformity Test
  - Consistent with emission budgets set forth in SIP
  - Contribute to reductions in CO nonattainment areas

In addition, the regulations set specific requirements for different time periods depending on the timeframe of the Commonwealth's SIP submittals to EPA. These periods are defined below:

- *Control Strategy Period:* Once a control strategy SIP has been submitted to EPA, EPA has to make a positive adequacy determination of the mobile source emission budget before such budget can be used for conformity purposes. The conformity test in this period is consistency with the mobile source emission budget.
- *Maintenance Period* is the period of time beginning when the Commonwealth submits and EPA approves a request for redesignation to an attainment area, and lasting for 20 years. The conformity test in this period is consistency with the mobile source emission budget.

The baseline vs. action test, and the "less than 1990" emission test were required under the November 1993 conformity regulations. The 1997 Conformity Amendments have eliminated the emission reduction test once a Control Strategy SIP's mobile source emission budget has been deemed adequate by EPA. Conformity of this amendment will be showing consistency with the mobile source emission budget in the Eastern Massachusetts Ozone Nonattainment Area.

A2.2 Conformity Determination Criteria

This conformity determination has been prepared in accordance with 40 CFR Part 93 - Transportation Conformity Rule Amendments: Flexibility and Streamlining; Final Rule. It shows that 2003 Martha's Vineyard Regional Transportation Plan has been prepared following all the guidelines and requirements of the rule.

Horizon Year Requirements

Horizon years for regional model analysis have been established following 40 CFR 93.106(a) of the Federal Conformity Regulations. The years for which the model was run are shown below.

- 1990 - Milestone Year - This year was established as the original base year in SIP for calculation of emission reductions of VOCs, NOx and CO (This year has become outdated and is no longer represented in the modeling).
- 1997 - Milestone Year – A former base year for the regional travel demand models.
- 2000 - Milestone Year – This year is currently being used by the statewide travel demand model as the new base year for calculation of emission reductions of VOCs and NOx.

- 2007 - Milestone Year – Attainment year
- 2015 - Analysis Year
- 2025 - Horizon Year – last forecast year of transportation plan

Latest Planning Assumptions

Population, Households, Employment and Traffic Assumptions

Section 93.110 of the Federal Conformity Regulations outlines the requirements for the most recent planning assumptions that must be in place at the time of the conformity determination. Assumptions must be derived from the estimates of current and future population, households, employment, travel, and congestion most recently developed by the MPO. For the 2003 Martha's Vineyard Regional Transportation Plan and other regional plans, the Massachusetts Highway Department (MassHighway) developed a series of forecasts – in cooperation with all the MPOs – that represent the most recent planning assumptions for most of Massachusetts (the Boston MPO retained certain planning assumptions that differed somewhat from the final MassHighway series, so the forecast results from that MPO are used in the conformity analysis).

Assumptions are based on U.S. Census data, data from the Massachusetts Department of Employment and Training (DET), the MassHighway forecasts, and other sources of information (used directly or indirectly), including from the Massachusetts Institute of Social and Economic Research (MISER), Woods & Poole Economics, and the U.S. Bureau of Labor Statistics (BLS). The following is a list of the major sources of data used for the 2003 Martha's Vineyard Regional Transportation Plan analysis (further explanation of forecast methods used can be found in Section 3 of the Plan):

- **Population:** Summary File 1 Data for Massachusetts from the 2000 U.S. Census of Population and Housing. Statewide and regional historical data for 1970, 1980, and 1990.
- **Population Forecasts:** MassHighway Statewide and Regional Population Forecasts 2007-2025, June 2003. Subsequent municipal forecasts developed (MVC), June 2003.
- **Households:** Summary File 1 data for Massachusetts from the 2000 U.S. Census for Population and Housing. Statewide and regional historical data for 1970, 1980, and 1990.
- **Household Forecasts:** MassHighway Statewide and Regional Household Forecasts 2007-2025, June 2003. Subsequent municipal forecasts developed (MVC), June 2003.
- **Household Sizes:** Calculated using Households and "Population in Households" data from Summary File 1 for Massachusetts and regions from the 2000 U.S. Census of Population and Housing. Similar calculations from historical data (1970, 1980, 1990).
- **Employment:** Town-level total employment from Massachusetts Department of Employment and Training (DET ES-202 data), historical data by town, 1980, 1990, and 2000, plus employment by industry sector for 2000 by town.
- **Employment Forecasts:** MassHighway Statewide and Regional Employment Forecasts 2007-2025, June 2003. Subsequent municipal forecasts developed (MVC), June 2003.
- **Vehicle Ownership:** Summary File 3 data for Massachusetts from the 2000 U.S. Census of Population and Housing.

- **Traffic Volumes:** Massachusetts Highway Department, "2001 Traffic Volumes for the Commonwealth of Massachusetts" (contains data from 1992 – 2001), June, 2002.

  Additional traffic counts taken by MassHighway and MVC.

- **Project-Level Data:** Obtained from the responsible implementing agency.

Transit Operating Policy Assumptions

The operating policies and assumed transit ridership have not changed since the conformity determination prepared for the 2000 Regional Transportation Plan.

Emission Inventory Assumptions

For this regional transportation plan, conformity is determined against the Massachusetts State Implementation Plan (SIP) mobile source emission budgets submitted in September 2002 (approved in December 2002) for VOC and NOx. The VOC mobile source emission budget for 2007 for the Massachusetts Eastern Nonattainment Area has been set at 86.700 tons per summer day and the 2007 mobile source budget for NOx is 226.363 tons per summer day.

The Martha's Vineyard MPO* VOC and NOx emissions are included with the following MPOs to show conformity with the SIP in the Eastern Massachusetts Ozone Nonattainment Area:

- Cape Cod MPO
- Central Massachusetts MPO
- Merrimack Valley MPO
- Boston MPO
- Montachusett Region MPO
- Northern Middlesex MPO
- Old Colony MPO
- Southeastern Region MPO
- Nantucket Planning and Economical Development Commission*

* These regions are considered to be MPOs for planning purposes.

MassHighway's Bureau of Transportation Planning and Development, on behalf of the Executive Office of Transportation and Construction (EOTC), estimated the results for all the MPOs in the Eastern Massachusetts Ozone Nonattainment Area using a statewide travel demand model (the Boston MPO model results were substituted as the latest planning assumptions for the conformity analysis). The air quality analysis has been finalized for all of the MPOs and the EOTC has made the final conformity determination for this ozone nonattainment area.

Latest Emission Model

Emission factors used for calculating emission changes were determined using MOBILE 6, the model used by DEP in determining the mobile source budget. Emission factors for motor vehicles are specific to each model year, pollutant type, temperature, and travel speed. MOBILE 6 requires a wide range of input parameters including inspection and maintenance program information and other data such as anti-tampering rates, hot/cold start mix, emission failure rates, vehicle fleet mix, fleet age distribution, etc.

The input variables used in this conformity determination were received from DEP. The inputs used for the 2000 base case existing network were the same as those used in determining the latest Emissions Inventory for the Commonwealth of Massachusetts. The inputs used for the years 2000 through 2025 were also received from DEP and include information on programs that were submitted to EPA in 1993, 1994, 1997, 1998 and 1999 as the control strategy for the Commonwealth to obtain ambient air quality standards for 1999 and beyond.

Timely Implementation of Transportation Control Measures

Transportation control measures (TCMs) have been required in the SIP in revisions submitted to EPA in 1979 and 1982. All SIP TCMs have been accomplished through construction or through implementation of ongoing programs. All of the projects have been included in the Region's Transportation Plan as recommended projects or projects requiring further study. A list of those projects includes:

- Construction of a roundabout at the Blinker intersection to reduce congestion
- Additional construction of bicycle paths in Edgartown and Oak Bluffs
- Bus acquisition and replacement as well as bus stop improvements for the Martha's Vineyard Transit Authority
- Replacement of the MV Islander and MV Sankaty ferries
- Reconstruction of the Oak Bluffs Ferry Terminal
- Airport improvements

DEP submitted to EPA their strategy of programs to show Reasonable Further Progress of a 15% reduction of VOCs in 1996 and the further 9% reduction of NOx toward attainment of the National Ambient Air Quality Standards (NAAQS) for ozone in 1999 and beyond. Within that strategy, there are no specific TCM projects. Traffic flow improvements to reduce congestion and, therefore, improve air quality are encouraged. Other transportation-related projects that have been included in the SIP control strategy are listed below:

- Enhanced Inspection and Maintenance Program
- California Low Emission Vehicle Program
- Reformulated Gasoline for On and Off-Road Vehicles
- Stage II Vapor Recovery at Gasoline Refueling Stations
- Tier I Federal Vehicle Standards

Consultation Procedures

The final conformity regulations require that the MPO must make a conformity determination according to consultation procedures set out in the federal and state regulations and it must also follow public involvement procedures established by the MPO under federal metropolitan transportation planning regulations.

The consultation requirements of both the state and federal regulations require that the Martha's Vineyard MPO, EOTC/MassHighway, Mass. DEP, EPA - Region 1 and FHWA - Region 1 consult on the following issues:

- Selection of regional emissions analysis models including model development and assessing project design factors for modeling.
- Selection of inputs to the most recent EPA-approved emissions factor model.

- Selection of CO hotspot modeling procedures, as necessary.
- Identification of regionally significant projects to be included in the regional emissions analysis.
- Identification of projects which have changed in design and scope.
- Identification of exempt projects.
- Identification of exempt projects that should be treated as non-exempt because of adverse air quality impacts.
- Identification of the latest planning assumptions and determination of consistency with SIP assumptions.

These issues have all been addressed through consultation of the agencies listed above.

Public Participation Procedures

Title 23 CFR Sections 450.324 and 40 CFR 90.105(e) require that the development of the Plan, TIP, and related certification documents provide an adequate opportunity for public review and comment.

Section 450.316(b) establishes the outline for MPO public participation programs. The Martha's Vineyard MPO's public participation program was formally adopted in July 1994. The development and adoption of this program conforms to the requirements of the section. It guarantees public access to the 2003 Regional Transportation Plan and all supporting documentation, provides for public notification of the availability of the 2003 Regional Transportation Plan and the public's right to review the document and comment thereon, and provides a 35-day public review and comment period prior to the adoption of the 2003 Regional Transportation Plan and related certification documents by the MPO.

On July 17 and 18, 2003, public notices were advertised in the Martha's Vineyard Times and Gazette respectively informing the public of its right to comment on the document. On September 15, the Martha's Vineyard MPO voted to approve the 2003 Regional Transportation Plan and its conformity determination. This allowed ample opportunity for public comment and MPO review of the draft document. These procedures comply with the associated federal requirements.

Financial Consistency

Title 23 CFR Section 450.324 and 40 CFR 93.108 require the 2003 Martha's Vineyard Regional Transportation Plan to "be financially constrained by year and include a financial plan that demonstrates which projects can be implemented using current revenue sources and which projects are to be implemented using proposed revenue sources."

The 2003 Martha's Vineyard Regional Transportation Plan and its latest conformity determination is financially constrained to projections of federal and state resources reasonably expected to be available during the appropriate time-frame. Projections of federal resources are based upon the estimated apportionment of the federal authorizations contained in TEA-21, as allocated to the region by the state or as allocated among the various MPOs according to federal formulas or MPO agreement. Projections of state resources are based upon the allocations contained in the current Transportation Bond Bill and historic trends. Therefore, the 2003 Martha's Vineyard Regional

Transportation Plan substantially complies with federal requirements relating to financial planning.

A2.3 Procedures For Determining Regional Transportation Emissions

The federal conformity regulations set forth specific requirements for determining transportation emissions. A summary of these requirements and the procedures used for this plan are summarized below:

Demographic, Employment and Transportation Demand

Specific sources of population, households, employment and traffic information used in the Transportation Plan have been listed above. Chapter 3 of the Plan presents conditions and characteristics of the existing regional transportation system.

Chapters 4 - 11 of the 2003 Transportation Plan discusses trends and changing demands that various components of the transportation system will serve in the future years. It discusses the future roles of the highways, transit, pedestrian and bicycle travel and water travel. It also describes the development and evaluation of alternative scenarios that were analyzed to help determine the final recommendations of the 2003 Transportation Plan.

Chapters 4-11 of the 2003 Transportation Plan outlines the specific project recommendations that are set forth in the Transportation Plan for the Martha's Vineyard MPO Region through the year 2025. The recommended projects have been included in the Base and Action networks for the analyses performed for the latest conformity determination of this transportation plan amendment.

Only regionally significant projects are required to be included in the travel demand modeling efforts. The final federal conformity regulations define regionally significant as follows:

> ***Regionally significant:*** a transportation project (other than an exempt project) that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sport complexes, etc., or transportation terminals as well as most terminals themselves) and would be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel.

In addition, specific projects have been exempt from regional modeling emissions analysis. The categories of projects include:

- Intersection channelization projects,
- Intersection signalization projects at individual intersections,
- Interchange reconfiguration projects,
- Changes in vertical and horizontal alignment,
- Truck size and weight inspection stations, and
- Bus terminals and transfer points.

Previous conformity amendments now allow traffic signal synchronization projects to be exempt from conformity determinations prior to their funding, approval or implementation. However, once they are implemented, they must be included in conformity determinations for future plans and TIPs.

The Baseline and Action Networks are composed of projects proposed in the approved Transportation Improvement Programs, and the 2003 Transportation Plan. Projects in the Baseline networks consist of all in-place regionally significant and transportation demand management projects plus all projects where one of the following steps has occurred within the last three years:

- Comes from first year of the previously conforming TIP,
- Completed the NEPA process, or
- Currently under construction or are undergoing right-of-way acquisition.

A listing of the projects that meet these criteria and are included as part of the Baseline and Action networks is shown in Table 15 of the Plan.

Changes in Project Design Since the Last Conformity Determination Analysis

The Commonwealth requires that any changes in project design from the previous conformity determination for the region be identified. The last conformity determination was performed on the 2000 Transportation Plan. Changes which have occurred since this last conformity determination are as follows:

- Conformity must be performed using the newly submitted 2007 mobile source emission budget.
- Conformity must be performed using new emission factors submitted by DEP, which reflect the latest assumptions (i.e., progress of the I/M program, etc.).

Model Specific Information

40 CFR Part 93.111 of the federal regulations outlines requirements to be used in the network-based transportation demand models. These requirements include modeling methods and functional relationships to be used in accordance with acceptable professional practice and reasonable for purposes of emission estimation. The Martha's Vineyard MPO has used the methods described in the conformity regulations in the analysis of this 2003 Martha's Vineyard Regional Transportation Plan.

Highway Performance Monitoring System Adjustment

As stated in guidance by EPA, all areas of serious ozone and carbon monoxide nonattainment must use the Federal Highway Administration's Highway Performance Monitoring System (HPMS) to track daily vehicle miles of travel (VMT) prior to attainment to ensure that the state is on line with commitments made in reaching attainment of the ambient air quality standards by the required attainment dates. MassHighway provides HPMS information to DEP. DEP used this information in setting mobile source budgets for VOCs, NOx, and CO in all SIP revisions prior to 1997. DEP has since revised its VOC and NOx budgets using transportation demand model runs. However, the models must still be compared to HPMS data since HPMS is at present the accepted tracking procedure as outlined in the regulations.

The conformity regulations require that all model based VMT be compared with the HPMS VMT to ensure that the region is in line with VMT and emission projections made by DEP. An adjustment factor has been developed which compares the 2000 HPMS VMT to the 2000 transportation model VMT. This adjustment factor is then applied to all modeled VOC and NOx emissions for years 2007 through 2025 to ensure consistency with EPA accepted procedures.

$$\frac{\text{2000 HPMS VMT}}{\text{2000 Modeled VMT}} = \text{Adjustment Factor for VOC and NOx}$$

HPMS adjustment factors, calculated on a regional basis, are applied to model output of future scenarios, and occasionally change as base year models are updated or improved.

The latest factors for the Eastern Massachusetts Ozone Nonattainment Area are as follows:

Table 15: **HPMS Factors for the Eastern Massachusetts Ozone Nonattainment Area**

REGION	*2000 HPMS VMT (miles)*	*2000 Travel Demand Model VMT (miles)*	*HPMS/Model Conversion Factor*
Cape Cod	6,204,000	5,303,767	1.170
Central Mass.	12,920,000	16,756,961	0.771
Martha's Vineyard	219,000	173,899	1.259
Merrimack Valley	8,920,000	9,809,870	0.909
Boston	59,139,000	79,040,650	0.748
Montachusett	5,366,000	5,723,531	0.938
Nantucket	108,000	59,786	1.806
Northern Middlesex	7,261,000	7,509,222	0.967
Old Colony	6,058,000	7,079,932	0.856
Southeastern Mass.	14,007,000	15,012,861	0.933
Eastern MA	**120,202,000**	**146,470,479**	**0.821**

A2.4 The Conformity Test

Consistency with Emission Budgets Set Forth in SIP

The Martha's Vineyard MPO has conducted an air quality analysis of the 2003 Martha's Vineyard Regional Transportation Plan. The purpose of the analysis is to evaluate the plan's air quality impacts on the State Implementation Plan (SIP). The analysis evaluates the change in ozone precursor (VOCs and NOx) emissions and carbon monoxide emissions due to implementation of the 2003 Martha's Vineyard Regional Transportation Plan. The modeling procedures and assumptions used in this air quality analysis follow the EPA's final conformity regulations issued on August 15, 1997. They are also consistent with procedures used by the Massachusetts Department of Environmental Protection to develop Massachusetts' 1990 Base Year Emission Inventory, 1996 Reasonable Further Progress Plan, the Post-1996 Reasonable Further Progress Plan, 1996 Rate of Progress Report, and the Ozone Attainment Demonstration for the SIP. All

consultation procedures were followed to ensure that a complete analysis of the 2003 Martha's Vineyard Regional Transportation Plan was performed with consistency with the SIP.

The primary test to show conformity with the SIP is to show that the Air Quality Conformity of the 2003 Martha's Vineyard Regional Transportation Plan is consistent with the emission budgets set forth in the SIP. The Massachusetts Reasonable Further Progress Plan (RFP) was deemed complete by EPA on June 5, 1997. EPA determined that the 15% RFP SIP submittal contained an adequate mobile source emissions budget to conduct conformity determinations using the conformity criteria. In addition, the 2007 mobile source emission budget for Eastern Massachusetts was found adequate for conformity purposes by EPA on December 6, 2002.

On behalf of the Executive Office of Transportation and Construction, the Bureau of Transportation Planning and Development estimated the emissions for VOC and NOx for all areas and all MPOs (emissions for the Boston Region were also estimated by MPO staff and were included in the final totals). The VOC mobile source emission budget for 2007 for the Eastern Massachusetts Nonattainment Area has been set at 86.700 tons per summer day and the 2007 mobile source budget for NOx is 226.363 tons per summer day. As shown in Tables 1 and 2, the results of the air quality analysis demonstrate that the VOC and NOx emissions from all Action scenarios are less than the VOC and NOx emissions budgets for the Eastern Massachusetts Nonattainment Area:

Table 16: **Total Mobile Source Emission Budgets for Massachusetts Conformity Determinations**
all emissions in tons per summer day; *Includes emissions for commuter rail and boat*

Year	***2003***		***2007***		***2015***		***2025***	
Pollutant	***VOC***	***NOx***	***VOC***	***NOx***	***VOC***	***NOx***	***VOC***	***NOx***
Eastern Mass.	*n/a*	*n/a*	*86.700*	*226.363*	*86.700*	*226.363*	*86.700*	*226.363*
Western Mass.	*23.770*	*49.110*	*23.770*	*49.110*	*23.770*	*49.110*	*23.770*	*49.110*

Table 17: **VOC Emissions Estimates for the Eastern Massachusetts Ozone Nonattainment Area**
all emissions in tons per summer day

Year	***Martha's Vineyard Action Emissions***	***Eastern MA Action Emissions***	***Budget***	***Difference (Action – Budget)***
2000	*n/a*	*166.545*	*n/a*	*n/a*
2007	*0.2133*	*80.516*	*86.700*	*-6.184*
2015	*0.0807*	*41.403*	*86.700*	*-45.297*
2025	*0.0704*	*31.647*	*86.700*	*-55.053*

Table 18: **NOx Emissions Estimates for the Eastern Massachusetts Ozone Nonattainment Area** all emissions in tons per summer day				
Year	**Martha's Vineyard Action Emissions**	**Eastern MA Action Emissions**	**Budget**	**Difference (Action – Budget)**
2000	n/a	287.877	n/a	n/a
2007	0.4809	207.567	226.363	-18.796
2015	0.1320	81.380	226.363	-144.983
2025	0.0664	38.974	226.363	-187.389

A2.4 Conclusion

The Clean Air Act Amendments of 1990 established new requirements for transportation plans, programs, and projects. EPA published a final rule in the November 24, 1993 Federal Register which was last amended on August 15, 1997 providing procedures to be followed by the United States Department of Transportation in determining conformity of transportation plans, programs, and projects with the SIP. Eastern Massachusetts has been designated as a Serious ozone nonattainment area. Federal conformity regulations require that transportation plans, programs, and projects evaluate their impact on nonattainment areas.

The Martha's Vineyard MPO has conducted an air quality analysis of the 2003 Martha's Vineyard Regional Transportation Plan and its latest conformity determination. The purpose of the analysis is to evaluate the plan amendment's air quality impacts on the SIP. The analysis evaluates the change in ozone precursor emissions (VOCs, and NOx) due to the implementation of the 2003 Martha's Vineyard Regional Transportation Plan. The modeling procedures and assumptions used in this air quality analysis follow EPA's and the Commonwealth's guidance and are consistent with all present and past procedures used by the Massachusetts DEP to develop and amend the SIP.

The EOTC has found the emission levels from all areas and all MPOs in Eastern Massachusetts – including from the 2003 Martha's Vineyard Regional Transportation Plan – to be in conformance with the SIP according to conformity criteria. Specifically, the following conditions are met:

- The VOC emissions for the Action (build) scenarios are less than the 2007 VOC mobile source emission budget for analysis years 2007 through 2025.
- The NOx emissions for the Action (build) scenario are less than the 2007 NOx mobile source emission budget for analysis years 2007 through 2025.

In accordance with Section 176(c)(4) of the Clean Air Act as amended in 1990, the MPO for the Martha's Vineyard Region has completed its review and hereby certifies that the 2003 Martha's Vineyard Regional Transportation Plan and its latest conformity determination conditionally conforms with 40 CFR Part 93, and 310 CMR 60.03, and is consistent with the air quality goals in the Massachusetts State Implementation Plan.

APPENDIX A3
Participants and Meetings

Joint Transportation Committee

Members
- Richard Combra Jr. (Town of Oak Bluffs)
- Kieth Emin (Town of Chilmark)
- Stuart Fuller (Town of Edgartown)
- Fred Lapiana (Town of Tisbury)
- Theodore Leslie (Town of Aquinnah)
- Dennis Luttrell (Town of Tisbury)
- Woody Vanderhoop (Wampanoag Tribe of Gay Head / Aquinnah)
- Michael Wallace
- David Whitmon

Ex-Officio Members
- Beth Toomey, Chair (Town of West Tisbury)
- William J. Weibrecht, Vice-Chair (Martha's Vineyard Airport)
- Forest Alley (Town of Aquinnah)
- Sarah Bradbury (The Massachusetts Highway Department)
- Steve Berlucchi (County of Dukes County)
- Angela Gompert (MVTA)
- Mark London (MVC)
- Mary Snyder
- Bridget Tobin (Steamship Authority)
- David Wessling, AICP (MVC)

Meetings
- December 4, 2002
- January 15,2003
- February 6, 2003
- March 18, 2003
- April 29, 2003
- June 25, 2003
- July 23, 2003
- September 2, 2003

RTP Update Advisory Committee

Note that this committee worked primarily by providing giving input on an individual basis, by providing initial input and comment on various preliminary documents, and through participation in meetings of forums, working groups and the JTC.

Members
- Robert E. Clermont (Thrifty Car Rental)
- John Clese
- E. B. Collins
- Marc R. Cutler
- Arthur Flathers
- Daniel Greenbaum
- Larry Mercier
- Al Scott (Cape Cod Express)
- Doug Siple (Marlene's Taxi)
- Christopher Smith
- Craig Whittaker

Meetings
- June 25, 2003 (with JTC)

Taxi Working Group

Members
- Doug Siple (Marlene's Taxi)
- Adam Wilson (Adamcab)
- Diane Haberkost (Your Taxi)

Meeting
- June 5, 2003 (separate meeting with Doug Siple on May 28, 2003)

Freight Working Group

Members
- Art Flathers
- Leigh Carroll (Carroll's Trucking)
- Al Scott (Cape Cod Express)
- Jack Law
- Brian Flanders (Sysco)
- John Roberts (IFP)

Meetings
- June 10, 2003
- June 17, 2003
- June 30, 2003

Ad-Hoc RTP Brainstorming Group

Members
- John Abrams
- Renee Balter
- Marie Laursen
- Ralph Packer
- Susan Wasserman

Meeting
- June 13, 2003

MVC Planning Economic Development Committee

Participants
- Richard Toole, Chair
- Megan Ottens-Sargent, Co-Chair
- James A. Athearn
- John Best
- Christina Brown
- Linda DeWitt
- Tristan Israel
- Katherine Newman
- Douglas Sederholm
- Linda Sibley
- Andrew Woodruff

Meetings
- April 3, 2003 – dealing mainly with proposed fast ferry from New Bedford (with Cassie Roessel, MV SSA Governor)
- June 9, 2003
- June 16, 2003

Public Forums

- January 27, 2003
- July 23, 2003

This plan was written primarily by Mark London, Executive Director of the Martha's Vineyard Commission in collaboration with David Wessling (AICP) MVC Transportation Planner, and with the participation of other members of the MVC staff, notably William Veno (AICP) and Christine Flynn. The willing and active assistance of Arthur Flathers and Daniel Greenbaum is gratefully acknowledged.

Printed on September 5, 2003

APPENDIX A4
Endorsement

We, the undersigned members of the Committee of Signatories for the Martha's Vineyard Region, do hereby endorse the 2003 Regional Transportation Plan.

Daniel A. Grabauskas, Secretary
Executive Office of Transportation and Construction

Date

John Cogliano, Commissioner
Massachusetts Highway Department

Date

James A. Athearn, Chairman
Martha's Vineyard Commission

Date

Alice R. Butler, Chairman
Vineyard Transit Authority

Date