

CHAPTER V

TRANSPORTATION

Introduction

The Transportation element of the Abington Master Plan seeks to identify inadequacies and shortcomings of the present transportation system and to make recommendations concerning the changes that are needed to support the proposed future land use pattern and necessary to achieve the Plan's goals and objectives. Once the shortcomings of the present transportation system have been identified and the changes and improvements necessary to serve future needs are quantified; the recommendations in the form of a Transportation Plan are presented showing the location of proposed improvements.

The street and highway system that developed in New England and in the cities and towns of Massachusetts is a result of changes that have occurred over time as the area developed from an agrarian economy, to cottage industries, to centers of manufacturing, shipping and financial activity. As these changes occurred in the region's economy, there were also improvements and new developments in the modes of transportation that were available. Most of the existing major streets and roadway system result from the pre-colonial, colonial network of footpaths, wagon trails, and waterways that tied the major centers of the region together. During the 1800's, housing, commercial and industrial activity in Abington developed in the clustered, mixed-use villages of Abington Center and North Abington. Mills and factories were located near water bodies or the railroad for easy transportation of raw materials and finished products. Housing for workers was built within walking distance of the mills and factories. Merchants, craftsmen and tradesmen located in the village centers to provide goods and services. The early dominance of Boston and the other port cities of Fall River, New Bedford and Plymouth are in large part responsible for the roadway network that evolved to serve these important economic centers. The development of the railroad system during 19th century became an important element of the transportation network and complemented the regional transportation system.

In the 20th century and particularly in the period immediately following World War II, there was a tremendous increase in the number of automobiles available to families and made the population extremely mobile. The pent up demand resulting from the harsh economic years of the Great Depression and the sacrifices of the war years spurred many returning veterans and others to seek the "American Dream" of owning a new home in the suburbs away from the congestion of the city. This movement was facilitated by new highway construction, mass produced housing and guaranteed mortgage financing by the government that made it easy for young working families to own their own home. The development of the National System of Interstate and Defense Highways in the 1950's helped foster the suburbanization trend.

Our present street and highway network represents a large local, state and federal infrastructure investment that was necessitated by the widespread use of the automobile

for commuting from home to work that continues to this day. Increased mobility in our society has led to the widespread dispersal of development and changed commuting and life style patterns that has shaped and is still shaping the development of our metropolitan areas. The increased use of the automobile for business and pleasure and trucking to serve consumer demands has placed a heavy burden on the transportation infrastructure. Continuing planning is needed to keep up with the needs and demands of the present and future transportation system. Effective maintenance and management of transportation facilities is vital to ensure that Massachusetts and its communities remain economically competitive with other states, as this infrastructure facilitates the movement of goods, services and people between and within communities.

Street and Roadway Classification

The Federal-Aid Highway Act of 1973 required the use of a functional highway classification system (Highway Functional Classification System) as a mechanism to update the Federal-Aid highway system and to identify the National Highway System (NHS). Both of these systems are used as inventory mechanisms and funding eligibility criteria for our nation's roadway network. Functional classification can be applied in highway planning system development, jurisdiction responsibility determination and fiscal planning. For purposes of administration, funding and planning, all roads within a community are placed in a functional classification system. The functional classification of roadways provides a determination to what degree access functions are emphasized at the cost of the mobility or the efficiency of movement. In this hierarchy, freeways, expressways and major arterials constitute the major highway system while collectors and local roads make up the local street system.

The following is a description of each of the functional classifications:

- ***Interstate***
Limited access facilities that serve as principal arterials providing service to substantial statewide and interstate travel.
- ***Rural Principal Arterials and Urban Extensions***
Major divided highways that serve corridor movements having trip lengths and travel densities characteristic of interstates.
- ***Urban Principle Arterial or Rural Minor Arterial***
Roadways with statewide significance that link cities and large towns, forming an integrated network on the county level.
- ***Urban Minor Arterial or Rural Major Collector***
Roadways that provide service to cities, towns, and other traffic generators not being served by the arterial system; roads that link these places with the arterial system; and roads that serve the inter-county travel corridors.
- ***Urban Collector or Rural Minor Collector***

Roadways that bring traffic from local roads to collectors and roads that provide service to small communities and link local traffic generators to the rural areas.

- ***Local Roads***

Roadways that provide access to adjacent land, and roads that provide service for relatively short distances. Local roads include all roads not classified as part of the principal arterial, minor arterial, or collector system.

The highest functionally classified roadways in Abington are **Urban Principal Arterials** and include: Route 18 (Bedford Street) for its entire length through town; Route 139 (Randolph Street) from the Weymouth town line to the intersection with Bedford Street; and, Route 123 (Brockton Avenue) from the Brockton City line to Bedford Street. The next highest classified roads are **Urban Minor Arterials** and include: Route 58 (Plymouth Street) for its entire length; Route 139 (North Avenue) from Bedford Street to the Rockland town line; Route 123 (Centre Avenue) from Bedford Street to the Rockland town line; and Groveland Street. **Urban Collectors** include Chestnut Street; Hancock Street; Washington Street; and, Summer Street. All other streets and roadways in the Town of Abington are functionally classified as **Local Roads in** accordance with the foregoing functional classification system.

Existing Street System

Abington's four state numbered highway routes allow reasonably good circulation through and within town and enable residents to gain access to the region's major limited access highway system. Routes 139 and 123 traverse the town in an east-west direction; while Routes 18 and 58 carry traffic in a north-south direction. All of the state highway routes carry substantial amounts of traffic in a typical 24 hour period as will be noted in the traffic volumes section. In addition to the state numbered routes, the town has a number of collector streets such as Groveland, Rockland, Birch, Lincoln, Chestnut, Hancock, Ashland, Washington, Summer and Central Streets that complement the state routes and for the most part, provide reasonable ready access from neighborhoods and the local street system.

There are, however, some shortcomings in the existing street system that need attention. A present difficulty is that there is no second means of access for vehicles to enter and/or exit from the Town Hall/Library/High School complex to or from the west in an emergency. The lack of an alternative means of access could conceivably pose a public safety issue if large numbers of people had to rapidly vacate the area in a short space of time. Another traffic flow issue is the limited number of street connections between the formerly rural part of town in the Linwood/Hancock Street area and Bedford Street (Route 18), the major north-south artery through town. Recent efforts to permit better traffic flow between Hancock Street and Bedford Street were met with strong protests from affected residents not wanting additional traffic through their neighborhoods. The strong opposition has resulted in a rather awkward solution on Crabtree Lane where two cul-de-sacs meet and are connected, but are signed to deny all but emergency vehicle access to travel between the Shaw Avenue area and Hancock Street. Another obstacle to

through traffic flow was put in place by the installation of a gate at Mountain Laurel Road where it meets with Summit Road to prevent all but emergency vehicle access to or from Bedford Street. These are the most notable examples of how neighborhood opposition to through traffic has stifled improved traffic flow in the community.

Other serious circulation problems in Abington involve intersections in town where congestion, poor intersection alignment or the physical configuration of the intersection contribute to vehicular accidents. Shown in Table V-1 is the Crash Data for the top 25 accident prone Abington Intersections for the five year period 2002-2007. As can be seen from the table, the two most hazardous intersections are Bedford Street (Route 18) and Randolph Street (Route 139) and Bedford Street and Brockton Avenue (Route 123). Traffic signals at these intersections have recently been upgraded and improved and the intersection reconfigured, but they continue to be the major accident locations in town. The next most hazardous intersections are along Plymouth Street at its intersection with

Table V-1 Crash Data for Abington Intersections 2003-2007

<u>Rank</u>	<u>Intersection</u>	<u>Total Crashes</u>	<u>Ave. # Crashes</u>	<u>*Signal</u>
1	Bedford Street (Route 18) / Randolph Street (Route 139)	83	16.60	S
2	Bedford Street (Route 18) / Brockton Avenue (Route 123)	69	13.80	S
3	Plymouth Street (Route 58) / Centre Avenue (Route 123)	37	7.40	S
4	Plymouth Street ((Route 58)) / Central Street	36	7.20	S
5	Brockton Avenue (Route 123) / Rockland Street	36	7.20	S
6	Chestnut Street / Hancock Street	33	6.60	FB
7	Bedford Street (Route 18) / Washington Street / Niles Street / Elm Street	31	6.20	
8	Adams Street (Route 58) / North Avenue (Route 139)	29	5.80	S
9	Brockton Avenue (Route 123) / Mill Street	28	5.60	
10	Groveland Street / Linwood Street	27	5.40	
11	Washington Street (Route 18) / Vernon Street	24	4.80	
12	Plymouth Street (Route 58) / Summer Street	24	4.80	S
13	Randolph Street (Route 139) / Temple Street	24	4.80	
14	Adams Street (Route 58) / Wales Street	23	4.60	
15	Centre Avenue (Route 123) / Washington Street (Route 123) / Orange Street	23	4.60	S
16	Plymouth Street (Route 58) / Birch Street	21	4.20	
17	Randolph Street (Route 139) / Chestnut Street	21	4.20	
18	Brockton Avenue (Route 123) / Groveland Street	20	4.00	S
19	Brockton Avenue (Route 123) / Green Street	20	4.00	SS
20	Randolph Street (Route 139) / Hancock Street	19	3.80	
21	Bedford Street (Route 18) / Shaw Avenue	19	3.80	
22	Bedford Street (Route 18) / Lincoln Boulevard	18	3.60	S
23	Brockton Avenue (Route 123) / High Street	16	3.20	SS
24	Washington Street (Route 18) / Summer Street	19	3.80	
25	Adams Street / Washington Street / Shaw Avenue	10	2.00	
	Source: MassHighway and Abington Police Departments.			

Centre Avenue and at Central Street and the intersection of Brockton Avenue and Rockland Street. Chestnut Street at its intersection with Hancock Street is the next most accident prone location in Abington with 33 accidents occurring over the five year period. Here the difficult sight distances and the configuration of the intersection contribute to the making the intersection difficult for motorists.

The Old Colony Planning Council is the transportation planning agency for the Town of Abington and through the Congestion Management Process has identified six intersections in town as being “congested” and functioning at a level of service (LOS) “C” or worse during peak hour travel periods of the day. LOS range from A to F and reflects factors such as delay and travel speed. LOS A represents the best operating conditions and a LOS of “F” the worst. A level of service of “D” or worse during peak travel periods means that the motorist will experience delays at these intersections.

Table V-2 Congested Intersections in Abington

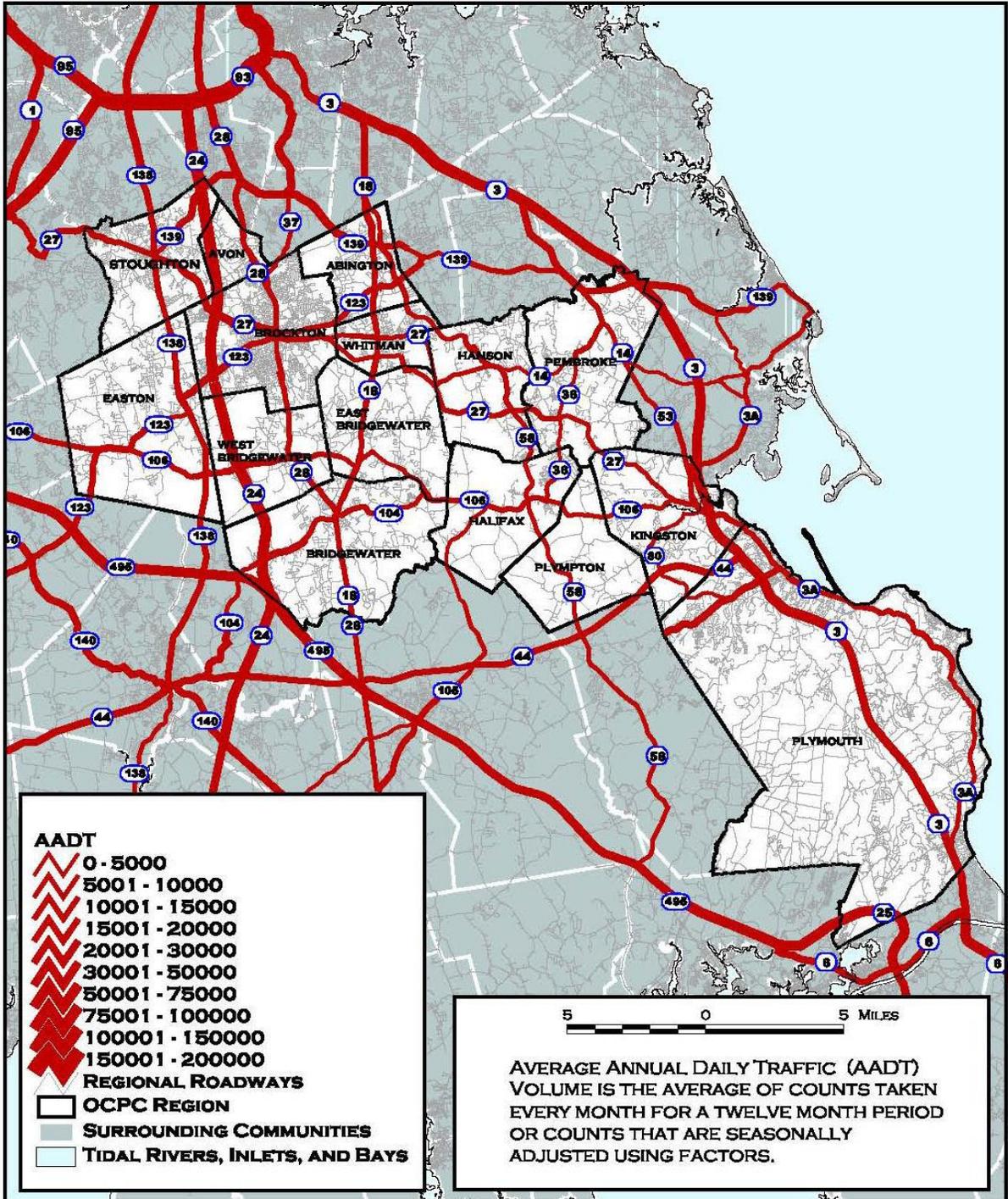
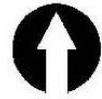
Intersection	Traffic Control	Congestion
Route 18 at Route 123	signal	LOS D AM and PM peak hours
Route 58 at Route 123	signal	LOS C AM and LOS C PM
Route 58 at Central Street	signal	LOS D AM peak hours
Route 58 at Summer Street	signal	LOS D AM peak hours
Route 139 at Lincoln Street	stop sign	LOS F AM peak LOS D PM peak
Route 139 at Hancock Street	stop sign	LOS F AM peak LOS F PM peak

Source: 2007 Old Colony Regional Transportation Plan

Traffic Volumes

Recent traffic volumes collected by the Old Colony Planning Council (OCPC), the metropolitan transportation planning organization for Abington, and shown on the accompanying Map V-1 Average Daily Traffic In The Region indicate that Route 18, Bedford Street is and continues to be the most heavily traveled state route within the town with an average annual daily traffic (AADT) volume of over 20,000 vehicles per day on sections of the roadway. Route 123, Brockton Avenue with AADT volumes ranging as high as 20,000 vehicles per day and Route 139, Randolph Street with AADT volumes slightly above 15,000 vehicles per day are the next

MAP V - 1 AADT IN THE REGION



OLD COLONY PLANNING COUNCIL, 70 SCHOOL STREET, BROCKTON, MA 02301
GIS SOURCES: MASSGIS, EOTPW, OCPC

NOVEMBER 2008

most heavily traveled routes in town. Plymouth Street, Route 58 has slightly lower AADT volumes in a range of between 10,000 and 12,000 vehicles per day.

The volume of traffic to the peak hour capacity of these state routes is measured by OCPC and expressed as the vehicle to capacity or “V/C Ratio” where 1.0 represents full capacity and a lower number indicates that it is functioning below full capacity. The V/C ratio for sections of Route 18 show that it is functioning as high as .68 in the sections north of Route 139 to the Weymouth town line and for the section immediately north of Route 123 Brockton Avenue. Traffic forecasts by OCPC contained in the 2007 Old Colony Regional Transportation Plan indicate that the average annual traffic based on historic trends is expected to increase an average of 1.02 percent per year for these state routes. In applying this growth rate to the current traffic volumes on Route 18 OCPC projects that traffic volumes will increase from approximately 20,000 vehicles per day to over 25,000 vehicles per day by the year 2030, a 25 percent increase. At that time, Route 18 is expected to operate at a level of “F” LOS or level of service.

Route 18 north of Route 139 is scheduled to be widened with the development of “Southfield” on the site of the former South Weymouth Naval Air Station to four lanes and further improvements are necessary at this intersection. However, the projected future increases in traffic volumes on Route 18 and the gradually lowering of the level of service on this important circulation artery calls for the widening and improvement of Route 18 south of Route 139 from two to four lanes to the Whitman town line and the further up-grading of the intersection with Route 123.

The current level of service (LOS) “E” for the Route 18 section north of Route 139 meaning that there will be delays and the widening and improvements that are projected cannot be done fast enough to ease the congestion.

With traffic forecasts by OCPC that indicate an increase in traffic volumes on Route 123 of 22,642 AADT vehicles per day by the year 2030, this route will need further improvements. Route 123, Brockton Avenue, currently has vehicle to capacity V/C’s levels as high as .57 for the section west of Route 18 and at Groveland Street during peak travel hours. With the additional traffic forecast, the improvements to Route 123 should include re-alignment and signalization of high hazard intersections. Route 123 through Abington is the location of some of the most hazardous intersections in town. These include Route 123 intersection with: Rockland Street; Mill Street; Washington Street; Groveland Street; Green Street; and, High Street.

Traffic volumes on Route 139 are expected to increase by the average growth factor of 1.02 percent per year and will significantly increase volumes on the roadway by the year 2030 and reach levels above 21,000 vehicles per day. In addition, expected developments along Route 139 will generate more local traffic, thereby reducing the efficiency of the roadway’s level of service to a LOS of “E.” Improvements will have to be made to insure the safe, efficient and convenient movement of traffic. Route 139 also has a number of

hazardous intersections that are in need of attention including the intersections with: Temple Street; Chestnut Street; and, Hancock Street.

Commuter Rail, Bus, Bicycle and Pedestrian Transportation

Recent gasoline price increases that have risen to historic levels in this country are not expected to subside as the worldwide demand for oil competes with the United States for limited production levels. Increased costs of fuel have made it more expensive for Americans to commute to work by car, deliver goods and services or make other essential trips. Public transportation provides an alternative means of transportation that is less expensive and more popular as a means of travel for commuting to work and for other trips. In 1997 the MBTA restored commuter rail service to Abington on the Plymouth Branch of the Old Colony Line after an absence of almost forty years. Commuter rail service has proven to have been a major stimulus to growth and development in Abington and has made the town a popular community for persons working in the Boston area. With a station located just south of Centre Avenue (Route 123) people living in town and working in the Boston have a convenient and easy means of commuting to work. The Abington commuter rail station has 385 vehicle parking spaces and there is additional private parking nearby. A commuter rail station is also available in South Weymouth and some Abington residents find it more convenient and less expensive to board the train to Boston in Weymouth rather than in Abington.

The MBTA operates seven inbound and four outbound trains in the morning hours on the Kingston/Plymouth Branch on their Monday-Friday schedule. In the afternoon and evening the Monday-Friday schedule provides for eight inbound trains and twelve outbound trains. The weekend schedule is limited and provides for four morning and four afternoon trains inbound and two morning and six afternoon outbound trains.

Abington residents may also find it is convenient to use the commuter rail stations in Holbrook or Downtown Brockton for travel to Boston on the Middleboro Branch of the Old Colony line. Service on the Middleboro Branch is comparable to that of the Plymouth/Kingston Branch and parking availability and/or traffic may be deciding factors.

Abington is part of the Brockton Area Transit (BAT) System Service Area but has no fixed route bus service other than a Route 5, BAT bus that travels to the Wal-Mart Department Store near the Brockton line. BAT runs 32 bus trips on Route 5 at 20 minute intervals in the morning hours and less frequent intervals in the afternoon and evening from Monday through Saturday. Sunday service on Route 5 is reduced to 15 trips during the day. Abington residents may access the BAT bus system at this location and could conceivably travel throughout the greater Brockton area on the BAT system or use the BAT Ashmont line bus to travel to Boston and access the MBTA Red Line.

The Town of Abington should closely monitor changes in the public's needs and requirements for transportation, including travel demands and patterns that could lead to an expansion of public transportation service to Abington in the future. Fixed route bus

service could make it more convenient for persons living in the community to use public transportation for travel to work, recreation and shopping trips.

Bicycling and pedestrian travel are often overlooked as a healthy and economical alternative means of transportation for other than recreational purposes. Certainly, age, health and fitness weigh heavily on persons ability to walk or ride, but it should not be readily dismissed for certain types of trips. Walking or cycling to the store for convenience items or for groceries is certainly not out of the question. Generally, persons living in Abington and using a bicycle as transportation are within 3 miles from most convenience shopping venues or the commuter rail station. A growing emphasis and concern on the degradation of the environment through automobile emissions and the interest in leading healthy lifestyles has peaked interest in walking and cycling as a way of accomplishing both ends. But much needs to be done to make walking and cycling a safe means of travel in Abington.

Sidewalks need to be provided in some locations to encourage walking and jogging. Bike paths, bike lanes, and bike routes need to be identified in town that provide safe and protected means of travel to and from points of interest, shopping and transportation nodes including commuter rail. Toward this end, the Town of Abington is participating on a OCPC steering committee formed to develop a Regional Bicycle and Pedestrian Transportation Plan. Through this effort, it is expected that Abington will be able to identify, lay-out and develop bicycle and pedestrian routes that are conducive to safe and secure travel. In addition, Abington along with the Towns of Rockland and Hanover have encouraged the state to fund the development of the “Trail to the Sea” pedestrian/bike trail along the abandoned right-of-way of the Hanover Branch of the New York, New Haven and Hartford Railroad. This pedestrian/bike path would begin in North Abington Center and follow the abandoned rail right-of-way through Rockland to Hanover. In addition, the Open Space and Recreation Plan’s Five Year Action Plan calls for providing access to and a nature trail within the Beaver Brook conservation land so that residents might enjoy conservation and ‘green space’ resources in the community. It also suggests laying out pedestrian and bicycle routes in Town to tie together the recreational assets of the Town and in the area.

Transportation Goal and Objectives

The Town of Abington’s Overall Goal for Transportation is:

To provide for a safe and efficient network of streets and roadways that provides easy and convenient access for its residents to all locations within and outside of the community and to develop and maintain a balanced multi-modal transportation system that assures the efficient and safe movement of people, goods and services.

The objectives for Transportation draw upon the needs identified in this Master Plan update and include the following:

Encourage MassHighway to widen and improve Route 18 to four lanes from Route 139 south to the Whitman town line to accommodate future traffic flows.

Projected future increases in traffic volumes on Route 18 and the gradually lowering of the level of service on this important circulation artery calls for its widening and improvement south of Route 139 from two to four lanes to the Whitman town line and the further up-grading of the intersection with Route 123.

Encourage MassHighway to improve high hazard intersections along Route 139 and Route 123 in Abington.

Serious circulation problems in Abington involve intersections along Routes 139 and 123 in town where congestion, poor intersection alignment or the physical configuration of the intersection contribute to vehicular accidents.

Provide a second means of access for vehicles to enter and/or exit from the Town Hall/Library/High School complex to the west in an emergency.

The lack of an alternative means of access could pose a public safety issue if large numbers of people had to rapidly vacate the area in a short space of time. At a minimum provide a bike/pedestrian connection through to Hancock Street.

Monitor changing traffic conditions on major routes due to the development of “Southfield” on the site of the former South Weymouth Naval Air Station.

The Town of Abington has assurance from the South Shore Tri-Town Development Corporation and Lennar Partners/LNR South Shore LLC., the Southfield Developer that they will develop a traffic management plan for the construction phase of the project and provide for the development of the East-West Parkway through the former base from Route 18 to Route 3 within Phase I of the development.

Monitor changing public needs and requirements for transportation, including travel demands and patterns that could lead to an expansion of public transportation service to Abington.

The Town of Abington should work with Old Colony Planning Council and the Brockton Area Transit Authority to have these agencies survey the need and feasibility of extending fixed route bus service to additional areas of Abington and to develop a cost estimate of providing such service.

Work with Old Colony Planning Council to identify, lay-out and develop bicycle and pedestrian routes that are conducive to safe and secure travel in Abington for residents.

The Town of Abington has committed to working with the steering committee sponsored by Old Colony Planning Council toward the objective of laying out and developing bicycle and pedestrian routes within the town and region.

Continue to support efforts for the State to develop the “Trail to the Sea” pedestrian/bike trail along the abandoned Hanover Branch of the New York, New Haven and Hartford Rail Line.

The “Trail to the Sea” pedestrian/bike path would begin in North Abington Center and follow the abandoned rail right-of-way through Rockland to Hanover.