

# 8. TRANSPORTATION

---

The quick, energy-efficient, and safe movement of people, goods and services both within and between towns is needed to maintain the vitality of the community. Public highways will continue to be the primary method of transportation for the foreseeable future in Essex. The primary challenges facing the community are:

1. To adequately fund the maintenance of existing roads, paths and trails;
2. To improve and increase the availability of alternative transportation modes such as paths, sidewalks, trails and public transportation;
3. To provide incentives for residents and non-resident commuters to use transportation modes that produce fewer greenhouse gases; and
4. To accommodate the regional traffic impacts through transportation improvements that do not significantly alter the character of the community.

## 8.1 Existing Conditions

### Highways

The Town of Essex is a regional transportation hub with four state highways (Routes 2A, 15, 117, 128) – and a fifth partially completed one (Route 289) – running through the community. As a result, a significant amount of traffic volume is due to commuters traveling from outlying areas through Essex to Burlington, South Burlington, Winooski, Colchester and Williston. The lack of services and places of employment in the more rural communities of Jericho, Underhill, Cambridge and Westford also cause Essex to become a destination to many people for many purposes. Major trip generators located in Essex include IBM, the Saxon Hill Industrial Park, the Town Center and Eurowest developments, the Essex Community Educational Center, Essex Town School District schools, the Village Central Business District, businesses and industries in the Susie Wilson Road area and the Essex Square Shopping Center (Center Road).

The increase in traffic volume has been incremental in nature with no one development or source having a major impact on the system, thereby making the allocation of improvement costs difficult. The Town has implemented and revised a Highway Transportation Management Plan (August 2009), which includes a description of the function of each road in the network, an inventory of road conditions, and recommended improvements. Improvements are being made according to this plan as funding allows. This plan is incorporated into the 2011 Town Plan by reference.

### Functional Classification

A proven method to accomplish better allocation of scarce resources and to provide for improved road transportation services is the development and use of a functional road classification system. Road travel can be separated into a hierarchy of movement, with access being at one end of the scale and movement at the other. One example of a road meant principally for access would be a cul-de-sac. Conversely, a limited access highway or expressway represents a facility built primarily for movement with little or no local access. Conflicts and congestion occur when roads and intersections designed for one function are used for other functions. Therefore, future land use

decisions should take into consideration the function of nearby roads so that development is not inconsistent with same.

Map 5, *Existing Transportation by Road Classification*, and Table 8-1 show functional classifications for existing and proposed Town roads. The map also includes the state's classification of the Town road network. Each road in Essex has a dual designation – a functional class for planning and design purposes and a state aid class for funding. A general description of the functional classifications follows.

<b>Town Roadway Classification</b>	<b>Total Miles</b>	<b>Percent of Total Town Roadway Miles</b>
Limited Access Expressways	8.233	8.21%
Primary Arterial Roads	14.849	14.8%
Secondary Arterial Roads (Paved)	10.43	10.40%
Class 3 Collector Roads (Paved)	16.54	16.49%
Class 3 Collector Roads (Gravel Sections)	15.95	15.90%
Class 3 Minor Roads (Paved)	23.49	23.41%
Class 3 Minor Roads (Gravel Sections)	7.44	7.42%
Unimproved Class 4 Roads	3.4	3.37%
<b>Total</b>	<b>100.332</b>	<b>100%</b>

Source: Essex Town Highway Transportation Management Plan-2009

### Limited Access (Expressway) Roads

The primary purpose of a limited access road is movement of traffic through the community to major destinations in the region. The design emphasis is on higher speeds (generally 45 to 55 mph), prohibition of parking, substantial distance between intersections and limited or no access rights by individuals. Designated limited access roads in Essex are the Circumferential Highway and the Susie Wilson Connector Road, extending from Kellogg Road to VT Route 2A (see Table 8-2).

<b>Road Name</b>	<b>Length (miles)</b>
VT Rte. 289 (Circumferential Highway) (state)	7.463 (including all ramps)
Susie Wilson Bypass (Town)	.77 (classified as Class 2 for state aid)
<b>Total miles</b>	<b>8.2% of total*</b>

Source: Essex Town Highway Transportation Management Plan-2009  
\*In 1990, the percentage was 3 percent

### Major (Arterial) Roads

These roads are used primarily as connections between communities and carry a heavy volume of traffic. Major roads also connect traffic from the expressways to neighborhoods, shopping centers and employment centers. Their characteristics include higher operating speeds (40 to 45 mph in the

off-peak and 30 to 35 mph in the peak hour) and good levels of service. Movement is the primary function with a secondary function of land access. Major roads are not, however, intended to be used as access into identifiable residential neighborhoods. Access management is an essential component to preserve capacity. Signalized intersections should be spaced far enough apart (1/4 to 1/2 mile) to permit efficient two-way movement of traffic between intersections. Traffic lights should be synchronized, or “smart” wherever possible, so that traffic isn’t unnecessarily stopped or idled. Park and ride opportunities should be provided on the major roads within close proximity of Town boundaries. The Town has further refined the definition of major arterials by designating state highways as primary arterials and Town highways as secondary arterials (see Tables 8-3 and 8-4).

<b>TABLE 8-3 TOWN PRIMARY ARTERIAL ROADS</b>	
<b>Road Name</b>	<b>Length (miles)</b>
VT Route 15 (State Highway)	5.436
VT Route 2A (State Highway)	1.807
VT Route 117 (State Highway)	3.204
VT Route 128 (State Highway)	4.402
<b>Total miles</b>	<b>14.8 percent of total</b>
Source: Essex Town Highway Transportation Management Plan-2009 *In 1990, primary arterials were 17 percent of the total	

<b>TABLE 8-4 TOWN SECONDARY ARTERIAL ROADS (PAVED)</b>			
<b>Road Name</b>	<b>Town Highway Number</b>	<b>Class</b>	<b>Length (miles)</b>
Allen Martin Dr.	8	2	.93
Allen Martin Parkway	735	3	.37
Essex Way (VT Rte 15 to Circ Hwy.)	7	2	.46
Kellogg Road	5	2	.55
No. Williston Road	1	2	.34
Old Stage Road	2	2	4.0
Pinecrest Drive	6	2	1.00
Sandhill Road	4	2	2.29
Susie Wilson Rd (VT Rte 15 to Kellogg)	3	2	.49
<b>Total miles</b>			<b>10.4 percent of total*</b>
Source: Essex Town Highway Transportation Management Plan-2009 *In 1990, the percentage was 12 percent			

**Collector Roads**

The primary function of a collector road is to distribute traffic between minor (local) streets and the major (arterial) road system. A secondary function is land access and a tertiary function is to handle inter-neighborhood traffic movement. In general, collectors should penetrate but should not have continuity through residential areas (i.e., through traffic should be discouraged). Operating speeds should be between 25 and 30 mph. With slower speeds and more expected turning movements, closer spacing for driveways and intersections can be used than on major streets.

Essex has a number of rural paved and unpaved roads which function primarily as interconnections with neighboring communities but which are classified as collectors instead of arterials because they do not carry high traffic volumes (see Tables 8-5 and 8-6).

<b>TABLE 8-5 TOWN CLASS 3 COLLECTOR ROADS (GRAVEL SECTIONS)</b>		
<b>Road Name</b>	<b>Town Highway Number</b>	<b>Length (miles)</b>
Brigham Hill Road	36	2.06
Curve Hill Road	26	.20
Chapin Road	26	2.53
Discovery Road	21	.50
Indian Brook Road	30	1.25
Lost Nation Road	27	2.80
Lamore Road	23	1.15
Old Pump Road	59	1.04
Osgood Hill Road	51	2.46
Pettingill Road	44	.76
Sleepy Hollow Road	60	1.20
<b>Total miles</b>		<b>15.95- 15.9% of Total</b>
Source: Essex Town Highway Transportation Management Plan-2009		

<b>TABLE 8-6 TOWN CLASS 3 COLLECTOR ROADS (PAVED)</b>		
<b>Road Name</b>	<b>Town Highway Number</b>	<b>Length (miles)</b>
Abare Avenue	9	.21
Billie Butler Drive	772	.07
Bixby Hill Road (paved section)	714	.20
Blair Road	6	.15
Brigham Hill Road (paved section)	36	.89
Cabot Drive	749	.27
Carmichael Street	796	.12
Chapin Road	42	1.00
Clover Drive	754	.57
Craftsbury Court	751	.29
Essex Way (p)	731	.54
Ethan Allen Avenue	3	.25
Foster Road	742	.55
Gauthier Drive	121	.60
Gentes Road	24	.91
Greenbriar Drive	776	.72
Greenfield Road-part	717	.54
Greenfield Road Ext	779	.05
Hickory Lane	737	.07
Irene Avenue	798	.43
Iris Street	715	.08
Lamore Road	23	.07
LaSalle Road	736	.06
Laurel Drive	Private	.06
Londonderry Road	702	.20
Old Colchester Road	20	.50
Partridge Drive	797	.04
Pinewood Drive	757	.44
Pioneer Street	11	.43
Richard Street	724	.10
Saxon Hill Road (paved section)	66	.17
Saxon Hollow Road	756	.42
Saybrook Road	753	.31
Suffolk Lane	105	.23
Susie Wilson Road-part	132	.22
Tanglewood Drive	744	.58
Thompson Drive	777	.29
Towers Road	710 +41	1.57
Valleyview Drive	765	.65
Weed Road	63	1.5
Willoughby Road	758	.19
<b>Total miles</b>		<b>16.0- 16.5% of total</b>
Source: Essex Town Highway Transportation Management Plan-2009		

### Minor (Local) Roads

A minor road is commonly referred to as a local road, because its principal purpose is land access. The speed limit is low, usually 25 mph. Movement is not a primary function of this class of road and, therefore, trip ends are short and volumes low. On-street residential parking is permitted, where streets are sufficiently wide to allow it. Greater protection needs to be afforded to vulnerable users, including children, the disabled, and the elderly. The streets also have to be designed to accommodate convenient and efficient deliveries, emergency access, maintenance services and where densities justify, public transit services.

Because there are a significant number of minor roads, a complete list has not been provided. Expressways, Major, Collector, and Unimproved roads have been identified and, therefore, by exclusion all other existing roads are considered minor. The length of the minor roads (paved) is 23.49 miles (23.4 percent of the total) and the length of minor roads is 7.4 miles (7.4 percent of total).

### Unimproved Roads

This is the only functional category that is consistent with the state Aid Classification System (Class 4). A Class 4 Town highway receives no state aid and the Town is not required to keep it in good and sufficient repair year round. A Class IV Town highway “may be maintained to the extent required by the necessity of the Town, the public good and the convenience of the inhabitants” (see Table 8-7).

Road Name	Town Highway Number	Length (miles)
Extension of Landfill Access Road	18	0.22
Extension of McGee Road	29	0.2
Extension of Brigham Hill Lane	33	0.15
Extension of Hanley Lane	53	0.55
West Sleepy Hollow Road	60	1.95
Extension of Saxon Hill Road	66	0.08
Water Tank Road off Bixby Hill	716	0.2
Extension of Fern Hollow	748	0.05
Total miles		3.4 miles- (3.4% of total)

Source: Essex Town Highway Transportation Management Plan-2009

### Conflicts in Functional Classification

Many of the existing transportation problems occur because of conflicts within or between functional classes of roads:

1. An arterial being used to provide direct access to residences via driveways, numerous residential streets or curb cuts for business. This conflict occurs along most of the Town’s arterials with the exception of those most recently constructed, Allen Martin Drive and Essex Way. As an example, VT Route 15 in the Essex Center area has residential and business uses with driveways every 75 to 100 feet. Numerous complaints about street access and the volume of traffic are received from residents and businesses along VT Route 15.

2. A collector road or local street being used by through traffic. This conflict occurs along Pinecrest Drive, Brigham Hill Road and Weed Road. Pinecrest Drive is being used by through traffic trying to avoid congestion at the Five Corners in the Village. Weed Road provides a short cut by running parallel to other more heavily traveled roads.
3. Roads that are inadequate structurally being used to meet a higher functional requirement (gravel roads acting as collectors). Some examples of this conflict included Osgood Hill, Brigham Hill, Indian Brook, Lost Nation, Discovery, Lamore, Old Stage and Sand Hill Roads.
4. Existing roads, which have not been designed to meet functional requirements but have principally evolved from older routes of travel (poor sight distances, sharp curves). The fourth type of problem is evidenced by Old Stage Road, Lamore Road, Lost Nation Road and Weed Road.
5. Intersections that have become choke points because of inadequate designs to accommodate the movement needs mandated by the functional classes of intersecting roads. There are a number of intersections that clearly fail to meet the movement needs, including pedestrian, in Essex. Much progress has been made in the past five years resolving intersection problems as outlined in the 2009 Transportation Management Plan. However, many intersections are still in need of improvement for both local access and to move the regional traffic more quickly through the corridors during peak hours. Several intersections that are in need of improvement are presently in the design phase for future construction. These include:
  - a. VT Route 15/Sand Hill Road (signalization needed)
  - b. VT Route 117/Sand Hill Road

### **2006 Town Plan Areas of Concern**

- The Susie Wilson corridor from VT Route 15 to Kellogg Road, due to high peak hour traffic, limited pedestrian crossings and busier access points with peak hour level-of-service F.
- The VT Route 15 corridor in Essex Center due to high peak hour traffic volumes, limited pedestrian paths, walks and crossings, and peak hour access problems at non-signalized locations.
- The Sand Hill Road/VT Route 117 intersection due to poor level-of-service during peak hours and steep approach grades. A signal is scheduled for installation for the summer of 2011.
- Lack of neighborhood pedestrian interconnectivity and pedestrian/bicycle facilities interconnecting with adjacent communities, businesses and recreation areas.
- Increased traffic and demands on the Town's 23 miles of gravel roads due to land use changes within and outside the community.
- More rapid deterioration of existing road infrastructure due to higher traffic volumes and loads; the deterioration is occurring more quickly than the Town's resources can correct the deficiencies.
- Delays in completion of other segments of the Circumferential Highway, creating demands on local roads that would be reduced significantly with the construction of this expressway.

The 2006 Town Plan, in addition to the specific problem areas identified above, raised several concerns affecting a significant portion of the entire road network:

1. Due to heavy loads, high traffic volumes and insufficient repair monies, it is estimated that 19 percent of existing paved roads need total reconstruction, 20 percent some form of rehabilitation and another 20 percent preventive maintenance to forestall the need for reconstruction.
2. Gravel roads account for approximately one-third of the Town's total highway mileage and many roads need repairs and some roads may ultimately need paving.

### Current Areas of Concern

Based on the January 2009 Transportation Management Plan for Essex, the 2006 areas of concern have been reduced significantly. Some new ones have arisen. These additional concerns include several intersection improvements which will likely be costly, and will require a long lead time and coordination and approval from the Vermont Agency of Transportation. These include:

- Construction of a new traffic signal at the VT Route 15/Sand Hill Road intersection to include a pedestrian crossing of VT Route 15 (presently in project scoping); and
- Installation of a bypass lane in VT Route 117 and a new traffic signal at the VT Route 117/Sand Hill intersection (scheduled for 2010 construction);
- Structural improvements to the Gentes Road Bridge (in scoping); and
- Further changes to the Susie Wilson Road/Kellogg Road intersection to improve levels of service.

All of the above problems require a significant infusion of dollars to bring the existing road network up to a reasonable standard of performance. This is a major element of the Town's capital construction program.

### Public Transit

The primary means of public transportation serving the Town outside the Village is bus transit provided by the Chittenden County Transportation Authority (CCTA). The CCTA operates a network of transit routes in Burlington, Winooski, South Burlington, Shelburne, Essex, Williston and Milton. Additionally, commuter routes are operated between Burlington and Montpelier, Middlebury, and St. Albans. The CCTA FY09 system-wide ridership was 2,514,462, an increase of 12.6 percent over the previous year. Downtown Burlington, where most CCTA bus routes begin and end,, is the heart of the CCTA system.

CCTA currently operates three routes in Essex – the Essex Junction route, the Essex Center route, and the Williston route. These are shown on Map 6, *Existing Transportation by Alternative Modes*. On the average weekday in FY09, these routes accounted for 379 boardings and 290 de-boardings in Essex/Essex Junction.

*Essex Junction Route* – The Essex Junction route operates between Essex and Burlington, including service through Winooski, Monday through Saturday. In February 2008, CCTA implemented 15-minute peak hour weekday service on the Essex Junction route. The service expansion provides a bus every 15 minutes between 6:00-9:00 AM and 3:00-6:00 PM on weekdays along the entire length of the route and represents a doubling of service frequency during the peak commuting times. Since implementing the 15-minute peak hour service, the Essex Junction route has become CCTA's highest ridership route, carrying 444,782 passengers in FY09, a 27 percent increase from the previous year. Riders coming from or going to Essex constitute 23 percent of the weekday and 35 percent of the Saturday ridership on the Essex Junction route.

*Essex Center Route* – The Essex Center route is a local route, which circulates between the Village and Essex Center along VT Routes 15 and 117, beginning and ending at the Amtrak station. The route operates every half hour from approximately 6:00 – 9:30 AM and 1:00 – 6:00 PM, Monday through Friday. In FY09, the Essex Center route carried 27,611 passengers, an increase of 14 percent from the previous year.

*Williston Route* – The Williston route operates between South Burlington and Essex via Taft Corners in Williston. The route alternates between running every 30 and 60 minutes, Monday through Saturday. In FY09, the Williston route carried 81,878 passengers, an increase of 3.5 percent over the previous year. Riders coming from or going to Essex on the Williston route constitute 30 percent of the weekday ridership on the route.

CCTA maintains a 64-bus fleet to support its transit operations, including buses ranging in size from 29-feet to 41-feet. All CCTA buses are equipped with bicycle racks that can accommodate two bikes at a time. As of March, 2010, CCTA has five shelters in Essex and Essex Junction in order to offer passengers a more comfortable waiting area.

A second means of public transportation in the Town is the Senior Bus. The Senior Bus, funded by the Town as part of the Parks and Recreation Department budget, provides free transportation to senior citizens. In 1984, the Town acquired a van specifically for use within the Senior Bus program. A second van was put into service in 2005. This has been an extremely popular and successful service and should be provided with continuing support.

### **Sidewalks**

Sidewalks serve the very important function of minimizing conflict between pedestrian and vehicular traffic. Sidewalks provide maximum safety for children playing on their block and protect children walking to and from school bus pick up locations and neighborhood parks. They also provide a place for residents to walk to and from shopping centers, jobs, parks and bus stops. Map 6 includes an inventory of all sidewalks in Essex.

The Town requires all developers to install sidewalks. Generally the Subdivision Regulations call for sidewalks on both sides of arterial streets, on one or both sides of collector streets and on one side of minor roads.

### **Trails and Paths**

Sidewalks and multi-use paths provide for movement between local destinations without use of the automobile or public transit. Five-foot wide sidewalks are appropriate for pedestrian use, but paved eight-foot or 10-foot wide multi-use paths provide use by bicyclists and pedestrians.

To facilitate the construction of trails in appropriate locations, the Planning Commission should require that a 20-foot right of way along property frontages be deeded to the Town as part of the subdivision and site plan approval process. Paths constructed along Allen Martin Parkway, Allen Martin Drive and Sand Hill Road were deeded in the development process. In some instances, the Planning Commission requires a deeded 20-foot right of way to establish a trail network that does not follow the roadways. Federal funding requirements for multi-use trails accept a minimum 15-foot width for a right-of-way but recommend 20 feet. Federal funding for paths designated for bicycle traffic requires grades of less than 8 percent.

## Regional Transportation Facilities

Essex is located within five miles of the Burlington International Airport. The airport is a U.S. Customs Port of Entry for airplanes entering the U.S. from abroad and is also an approved foreign trade zone.

Daily freight and passenger service is provided by New England Central Railroad, Vermont Railway and Amtrak. The train station, located in the Village of Essex Junction, is a twice a day stop for Amtrak's "Vermont" with service from St. Albans to New York City.

Four Lake Champlain ports offer ferry service which carries autos and passengers between Vermont and New York.

Greyhound – Vermont Transit bus lines connect from Burlington to New York, Massachusetts, New Hampshire and Canada.

## 8.2 Proposed Improvements

The Town of Essex has several major transportation improvement and construction projects which are depicted on Map 7, *Proposed Transportation Improvements*. A general description follows.

### Circumferential Highway (Vermont 289)

The Circumferential Highway has been proposed as a solution to traffic problems in the Greater Burlington area for more than 30 years. This regional highway will connect to Interstate 89 and VT Route 127 in Colchester and will follow an easterly route through Colchester, Essex and will eventually connect to Interstate 89 in Williston. The major objectives of this highway are to:

1. Relieve the necessity for all traffic to pass through Five Corners in Essex Junction by offering an alternate arterial route to circumvent this busy intersection.
2. Reduce traffic congestion on most arterials and collector streets.
3. Improve existing air quality problems.
4. Provide better accessibility by providing alternative routes, which in turn will enhance the delivery of public safety services and contribute to the economic vitality of the community.
5. Improve safety for pedestrians and bicyclists by reducing traffic volumes on arterial, collector and local roads.
6. Direct and focus development in a manner that promotes designated growth centers and furthers local, regional and state land use plans and policies.

The CCMPO Metropolitan Transportation Plan demonstrates that completion of the Circumferential Highway to I-89 on both ends and eventually to VT Route 127 is a critical link within the county's transportation network. It will provide traffic congestion relief not only within the immediately affected Towns of Essex, Williston, and Colchester, but also in the Winooski and Burlington area. The opportunity for decreased transit time and direct transit service (Burlington to Essex Center and return) is greatly enhanced with the completion of the Circumferential Highway. Construction of the remaining portion will redistribute traffic within the county and provide better access opportunities for commercial and industrial areas. Therefore, the Town should work with state officials to complete the entire highway.

For the Circumferential Highway to better achieve its objectives, other transportation improvements will need to be instituted simultaneously. These include:

1. Completion of the remaining segments of the Circumferential Highway in Williston and Colchester.
2. Park and ride access on VT Route 15 (completed) and VT Route 2A (in progress).
3. Extension of public transportation to serve the park and ride lots.
4. Pedestrian and bicycle access along or across portions of the highway.
5. Controls on land development at major intersections with VT Route 15, VT Route 117 and VT Route 2A.

### **Allen Martin Parkway**

The Allen Martin Parkway is a limited access roadway planned to connect Sand Hill Road near the intersection of Allen Martin Drive to the Circumferential Highway at some future date. Together with the Circumferential Highway, Allen Martin Parkway will provide access to VT Route 117 and IBM for Jericho, Underhill and Cambridge residents and alleviate congestion and associated air quality problems at Sand Hill Road, River Road and the four corners intersection in Essex Center. In addition, the relocation of VT Route 15 traffic onto the Circumferential Highway and Allen Martin Parkway will allow the Town's road network to return to its proper functional classification and reduce traffic and land use conflicts.

The Allen Martin Parkway may also serve as a secondary public access to the Essex Town School system (located on Founders Road) to facilitate the efficient handling of school traffic and to reduce Sand Hill Road, River Road and VT Route 15 traffic congestion.

The Allen Martin Parkway will remain a part of the Town's long range transportation plan, but no further action will be taken at this time to move the project into design or construction. Plans may proceed for construction of a trail within the existing right-of-way with sufficient room left available for possible future road construction.

### **Susie Wilson Road**

Significant progress has been made during the past five years in the Susie Wilson Road corridor. This includes:

- Improvements to the Susie Wilson Road/VT Route 15 intersection including revising the lane configuration to two right turns and one left turn off Susie Wilson Road.
- Installation of new signals and pedestrian controls at Susie Wilson Road and Lowe's/Susie Wilson Road and Pine Crest Drive and Susie Wilson Road and David Drive.
- Construction of new turn lanes in the corridor.
- Changes in signal timing to optimize traffic movement.

Future work may include:

- Conversion of the traffic signal at VT Route 15 and Susie Wilson Road to a variable-turn middle lane on the Susie Wilson Road approach. This will enable the AM peak hour traffic flow to utilize two right turns and the PM peak hour traffic flow to use two left lanes.

- Construction of an access lane from the Bagel Store parking lot to David Drive so existing left turns from the complex can utilize the new David Drive signal. This will reduce or eliminate many accidents at this location.
- Potential future changes to the Susie Wilson Road/David Drive intersection.
- Future changes to the Susie Wilson Road/Kellogg Road intersection, including changes to the geometry, additional detectors, and creating a jug-handle turnaround onto Blair Road.
- A potential future connector to the new traffic signal under construction at the East Gate of Fort Ethan Allen Avenue in order to provide alternative access for local businesses.
- A potential future connector between Ewing Drive and the Lowe's parking lot.

### **Town Center Roads**

The Town Center Master Plan (Humstone Squires Assoc. et.al, 1991) set forth a proposed conceptual street network for specific areas such as Butlers Corners/Lang Farm, an area identified in the Town Center Master Plan as being bound on three sides by Old Stage Road, Towers Road and VT Route 15, and historic Essex Center. More detailed maps of this network are included in that plan. Actual development plans may result in some deviation from the specific recommendations made in the Town Center Master Plan.

### **Saxon Hill Road**

The extension of Saxon Hill Road would provide an important connection from VT Route 15 to VT Route 117 as well as access to several industrial areas and the Saxon Hill Forest. There are no active plans to do this at the present time.

### **Village Connector Road**

To the extent practicable, the Town and Village should work toward connecting their road systems. These connections would relieve congestion on major arterials by providing alternative routes, in addition to improving traffic mobility, emergency vehicle response times, and maintenance efficiency. The connection of neighborhoods such as Countryside and the Lang Farm developments would also have the effect of increasing ridership on the Chittenden County Transportation Authority's bus route. Presently, the bus route has a low volume to Essex Center because of the lack of population base along VT Route 15.

### **Development Connector Roads**

Multiple accesses to subdivisions epitomize the concept of transportation alternatives and greatly influence the efficiency of the subdivision layout as well as the major road network for all of the same reasons given in the above section. The Planning Commission encourages the provision of alternatives by requiring residential developments to provide a second access in addition to dedicating rights-of-way for future road connections to adjoining parcels. Dead-end roads and cul-de-sacs are discouraged due to their high cost of maintenance and inefficient traffic movements.

### **Sidewalks/Bicycle Paths/Trails**

Adequate pedestrian and bicycle access to existing business districts enhances marketability, encourages use of public transit, reduces vehicular traffic and ensures greater safety. Sidewalks, multi-use paths, and trails that connect neighborhoods to shopping, schools, and recreation areas encourage usage because they are safe and convenient.

Sidewalks, bicycle paths, and trails are designed to:

- Promote a sense of community.
- Link neighborhoods to schools, jobs, shopping centers, and parks.
- Provide safe commuter routes for the purpose of reducing traffic on the road system, thereby reducing fossil use and reducing greenhouse gas emissions.
- Use historic corridors, such as old railroad beds.
- Offer scenic cross-country routes.
- Facilitate fitness, recreation, and motorless transportation opportunities.
- Coordinate usage among various trail users.
- Connect Essex to a regional greenway system that links Chittenden County municipalities to important destination points.

In 2000, the Selectboard chartered a Trails Committee with the mission to identify and oversee the development of sidewalks, bicycle paths, and trails. The maps of this proposed network are included on Maps 7, 8, 9, 10, and 11.

Recreation & Leisure Services Consultants, with help from the Vermont Center for Rural Studies, published in September 2004 the *Recreation Needs Assessment 2004-10* for the Town. Among its findings was a strong community desire to create more bicycle/pedestrian paths and walking/hiking/X-C ski trails. More than 70 percent of survey respondents approve of trails creation and ranked it number 1 and number 2 priorities for new recreation facilities in Essex. The report recommends the building of 11 new bicycle and pedestrian paths, and includes a description of the proposed path, including its route and detailed cost estimates. Table 8-9 lists these recommendations and the initial cost estimates.

Path Segment	Length	Estimated Cost
VT Route 15 (near McDonald's to connect two existing segments)	52 feet	\$9,500
Butlers Corner/Old Stage Road	670 feet	Completed
VT Route 15 (Sand Hill Road to VT Route 128/Towers Road)	1,450 feet	Completed
Old Stage Village/Heritage Estates trail	1,800 feet	Abandoned due to wetlands
VT Route 15 (Circ to Family Fun/Entertainment Center)	300 feet	\$56,000
VT Route 15 (Saybrook to VT Route 128)	3,050 feet	Partially completed, \$300,000 to finish
VT Route 2A (Old Colchester Road to Pinecrest)	1,250 feet	\$250,500
Pinecrest Road (VT Route 2A to Suffolk Lane)	850 feet	\$158,000
Essex Way to Foster Road/Essex Middle School	6,000/8,300 feet	\$1,245,000
Foster Rd to Allen Martin Parkway	3,600/4,200 feet	\$630,000
VT Route 15 from 5 Corners to St. Michaels College	2.9 miles	\$3,136,000

Improving pedestrian and bicycle use through the construction of sidewalks and bicycle paths for access to the Susie Wilson Road area and Essex Center, Butlers Corner, and Lang Farm area continues to be a priority. The Town should actively acquire sufficient rights-of-way and construct a multi-use trail network along or near VT Route 2A, VT Route 15, Old Stage Road/Towers Road, VT Route 117, Susie Wilson Road, Pinecrest Drive, and the Circumferential Highway.

Future trail development is envisioned within the less populated areas of the Town. Examples are land areas in the northwest and northeast areas of Essex, in the Mathieu Town Forest, and in the RPD-I District (Saxon Hill area).

Maps 7, 8, 9, 10, and 11 provide an overview of Horseback, Cross Country Ski, Footpath, Bicycle, and Snowmobile networks. These maps are conceptual maps of a proposed public trail system for Essex.

Sidewalk, bicycle path, and trail development is dependent on land availability, ownership, and public rights-of-way. The Planning Commission captures rights-of-way for transportation and recreation trails as opportunities arise during the land development review process. In this way, the proposed network of trails is developed in Essex.

Several path projects are planned for construction in the near future. Approximately 1,100 feet of a six-foot wide concrete walkway between Sunset Drive and Towers Road is under construction in 2010. This path will provide an important link between the library, schools, recreational facilities and residential areas. The ultimate goal is for this path to link the Circumferential Highway at VT Route 15 to Sand Hill Road on the south side of VT Route 15. It is anticipated that the path will be funded through a combination of private developer improvements, municipal funds and state and federal grants.

### **8.3 Goals, Objectives and Strategies**

**Goal 8.1: Provide multiple modes of transportation that are safe, economical, convenient and sustainable.**

**Objective 8.1.1:** Conduct studies that view all modes in a consistent, cost-appropriate manner.

**Strategy 8.1.1.1:** Promote energy-saving, emission-reducing modes of transport.

**Goal 8.2: Existing transportation systems shall be appropriately maintained and managed.**

**Objective 8.2.1:** Ensure that management plans and financial expenditures for road reconstruction or improvements are consistent with the functional class system.

**Strategy 8.2.1.1:** Give priority for funds to resolve structural infrastructure problems to the higher class of roads, such as majors or collectors.

**Strategy 8.2.1.2:** Repair minor roads to reasonably accommodate local access.

**Strategy 8.2.1.3:** Establish minimum structural and physical standards for each class of road. The higher movement classes, because of loads and speeds, will require greater depths of base and sub-base, thicker wearing surfaces, greater curve radii, lesser slopes, greater sight distances (speed consideration) and the like. Through the Town's inventory and analysis, existing roads which do not meet the functional class standards can now be identified and programmed for upgrade.

**Objective 8.2.2:** Regularly update the Highway Transportation Management Plan to prioritize and phase road reconstruction and improvements.

**Strategy 8.2.2.1:** Inventory and analyze all existing roads and identify upgrades in accordance with the road's functional classification.

**Strategy 8.2.2.2:** Coordinate the Highway Transportation Management Plan with the Town's Capital Budget and Program.

**Strategy 8.2.2.3:** Use a combination of public funds, developer contributions and road impact fees in funding roadway improvements (including amending the Town's Impact Fee Ordinance to incorporate a transportation impact fee).

**Objective 8.2.3:** Choose recommendations from the Susie Wilson Road Capacity Study, Access Management Study and Corridor Improvement Plan for improving traffic flow and safety and begin steps to implement those recommendations.

**Objective 8.2.4:** Maintain commitments to existing public transit services.

**Strategy 8.2.4.1:** Maintain CCTA service with regular schedules on long-established routes. Continuity of this service will provide transportation assurances to people without cars- as well as those who seek to save energy and reduce emissions- whether existing residents or those seeking to live in Essex. However, alternative funding mechanisms from the local property tax should be examined.

**Strategy 8.2.4.2:** Continue provision of existing services such as the Senior Bus.

**Strategy 8.2.4.3:** Encourage combined use of CCTA, Senior Bus, school buses and other transit services as part of an integrated, all ages, all access bus system and work to ensure schedules are appropriate for a majority of residents.

**Objective 8.2.5:** Maintain a minimum acceptable level of service across the spectrum of transportation modes – vehicular, public transit, bicycle and pedestrian.

**Goal 8.3: Provide a variety of additions to the transportation system in accordance with demands placed by additional residential and non-residential growth.**

**Objective 8.3.1:** Undertake aggressive efforts to ensure the construction of the Circumferential Highway from end to end. Completion of the Circumferential Highway will provide traffic congestion relief not only within the immediately affected Towns of Essex, Williston, and Colchester, but also in the Winooski and Burlington areas. Benefits include the opportunity for direct transit service from Essex Center to Burlington, and better access opportunities for commercial and industrial uses.

**Strategy 8.3.1.1:** Work with Town legislators, the CCMPO, and state officials to finalize funding for the next phase of the highway connecting to I-89 in Williston.

**Strategy 8.3.1.2:** Continue to focus on the long-range benefits of the highway, as identified in the CCMPO Metropolitan Transportation Plan.

**Objective 8.3.2:** Provide only new roadways and upgrades to existing roadways that improve safety, alleviate traffic congestion, reduce air pollution, and eliminate conflicts in roadway functions and increase accessibility.

**Strategy 8.3.2.1:** Include priorities and funding sources for new roadways and upgrades as part of the Highway Transportation Management Plan.

**Strategy 8.3.2.2:** Evaluate all new and existing intersections for modern roundabout design.

**Strategy 8.3.2.3:** Review the Town's Public Works specifications to ensure that standards for new and upgraded road construction are consistent with the functional classes.

**Strategy 8.3.2.4:** Evaluate Town requirements for residential streets to determine if the widths of rights-of-way and traveled surfaces are appropriate.

**Strategy 8.3.2.5:** Do not allow new privately owned and maintained roads, unless such roads are built to Town specifications.

**Objective 8.3.3:** Encourage a variety of public transportation alternatives.

**Strategy 8.3.3.1:** Explore options with CCMPO and CCTA for improving service from existing transit providers. Explore connections to the main CCTA bus routes including use of school buses and a feeder system of smaller buses. Pursue improvements to the existing bus service including better signage with schedules, construction of shelters, bus pull-offs, more reliable and shorter transit times, and linkages between neighborhoods that would enhance access to public transit routes.

**Strategy 8.3.3.2:** Develop incentives to ride-share, van pool, or car pool. Some ways to enhance their use are:

- Increase the movement capability on those routes designated for these services through intersection improvements, signal optimization, etc.;
- Provide adequate new parking facilities at key locations (see Map 6, *Proposed Transportation Improvements*) and make use of unused parking spaces at under-utilized shopping centers and other commercial locations for car and van pools;
- Co-locate multi-modal transportation hubs, so bus and possibly rail service meet at a common location, with adequate parking and safe bicycle and pedestrian access. The location should be adjacent to either a limited access or major roadway, such as the intersections of Circumferential Highway with VT Route 2A and VT Route 117, with good capability to move high volumes of vehicles to and from the location;
- Satellite parking areas on major roads should tie into the common hub and have smaller vans and/or buses to move people along the links;
- Identify sites for park and ride facilities and obtain funds for purchase of land in anticipation of future need;
- Provide financial incentive to encourage use.

**Strategy 8.3.3.3:** Require the installation of bicycle racks as a condition of approval of new commercial and multi-family residential developments.

**Strategy 8.3.3.4:** Seek state and federal grant funding for trail and pathway projects, including the Transportation Enhancement program, the Vermont Recreation Trails grant program, the Vermont Youth Conservation Corps, and others.

**Objective 8.3.4:** Create a network of non-motorized, multi-use trails to connect residences to schools, work places, shopping centers and recreational areas.

**Strategy 8.3.4.1:** Aggressively seek implementation of its non-motorized, multi-use trail priorities, as identified on Maps 6, 7, 8, 9, 10, and 11.

**Strategy 8.3.4.2:** Integrate the Town's non-motorized, multi-use trail plan with similar plans prepared by CCMPO (Pedestrian Policy and Sidewalk Plan), CCRPC and by abutting towns. The Town's trail system should be linked to other Chittenden County towns through a system of linear parks.

**Strategy 8.3.4.3:** Encourage new construction or major reconstruction of roads and highways to include provision of non-motorized, multi-use trails or areas solely for use by pedestrian or other non-motorized means of transportation.

**Strategy 8.3.4.4:** Encourage future development projects, roadway improvements and new roads to include non-motorized, multi-use trails, crosswalks and crossing signals.

**Strategy 8.3.4.5:** The Trails Committee should oversee development and maintenance of the trail system. The Trails Committee can assist in:

- solving problems of financing, support, and maintenance of trails,
- reviewing development applications,
- working with landowners to secure trail easements, and
- identifying trail corridors to be integrated in a public trail network.

**Strategy 8.3.4.6:** Implement, through the Planning Commission, policies that allow a formal review process for sidewalk, bicycle path, and trail development as it may pertain to new land development.

**Goal 8.4: Transportation systems shall be integrated with land use policy.**

**Objective 8.4.1:** Maintain and enhance the character of Essex by discouraging strip development and improving roadside aesthetics.

**Strategy 8.4.1.1:** Improve the aesthetics of the state and local street network by encouraging planting of street trees, placing utilities underground and limiting strip development via an access management plan and design review methods.

**Strategy 8.4.1.2:** Locate parking lots behind buildings or ensure that they are screened from view from public roadways.

**Strategy 8.4.1.3:** Ensure that walkways are separated from roadways by green strips except in the Town Center where walkways abutting curbs are appropriate.

**Strategy 8.4.1.4:** Implement special features and scenic road designations for unique road settings such as those identified in Appendix F, Scenic Resources.

**Objective 8.4.2:** Control secondary-impacts resulting from the Circumferential Highway.

**Strategy 8.4.2.1:** Enact zoning provisions that will control the type and extent of development permitted at highway interchanges.

**Strategy 8.4.2.2:** The existing Circumferential Highway corridor in Essex has wide scenic vistas and limited development. New development on abutting properties should minimize adverse visual impacts to this corridor.

**Objective 8.4.3:** Integrate consideration of transit service and facilities with the land use planning and review process.

**Strategy 8.4.3.1:** Adopt zoning amendments that allow multiple use development in areas that can support the increased infrastructure use and limit development in areas with limited access to multiple transportation modes.

**Strategy 8.4.3.2:** Encourage mixed uses and more intensive development of the areas designated for growth which, in turn, should be designed to be pedestrian-friendly and serviced easily by public transit.

**Strategy 8.4.3.3:** Integrate transit considerations in street design, timing of traffic lights, location of stop signs, and parking policies.

**Strategy 8.4.3.4:** Provide appropriately located pickup and drop-off facilities for buses and pedestrians.

**Objective 8.4.4:** Control development in rural areas on lots without minimum required public road frontage or on newly created public roads. As development pressures increase and the more densely settled areas of the Town reach capacity, the demand for lots in the rural portions of the Town will escalate. New lots should be permitted only on existing public roads or on new roads that are compatible with the Town's land use objectives for rural areas.

**Strategy 8.4.4.1:** Continue the existing Town restriction against the subdivision of lots without public frontage.

**Strategy 8.4.4.2:** Permit the development of new roads in rural districts only when designed as part of a Planned Unit Development – Residential. Such roads must be found to be part of a subdivision layout that will do more to enhance rural character and protect significant features.

**Objective 8.4.5:** Encourage the development of shared parking facilities between various land uses.

**Objective 8.4.6:** Ensure that land use, zoning and the functional classes of roads are correctly matched so that permitted development does not overwhelm available or proposed transportation facilities.

**Strategy 8.4.6.1:** Evaluate road classifications and land use so both elements are consistent.

**Strategy 8.4.6.2:** Check accuracy of trip generation estimates by observing actual traffic volumes of completed projects. Require developers of phased projects to do interim traffic counts and to adjust traffic impact reports if volumes differ significantly from original estimates.

**Strategy 8.4.6.3:** Identify traffic improvements required not only at affected intersections, but on approach roads to the planned development. Pursue allocation of improvement costs to the responsible parties.

**Objective 8.4.7:** Continue to require alternative accesses and connections between developments. Second accesses to residential subdivisions provide for transportation alternatives, less congestion on major roads, emergency access, more efficient maintenance, and busing of school children.

**Strategy 8.4.7.1:** Continue to require the provision of a second access for residential subdivisions consisting of 50 dwellings or more as a condition of subdivision approval.

**Strategy 8.4.7.2:** Continue to require developers whose property is adjacent to developable land to dedicate rights-of-way for future road and trail connections to these vacant

parcels as a condition of subdivision or site plan approval. Connections between developments should be designed to protect the character of the neighborhood.

**Goal 8.5: Determine appropriate financing methods for transportation improvements.**

**Objective 8.5.1:** Continue to adopt a Capital Plan that includes a life-cycle analysis for each capital project.

**Strategy 8.5.1.1:** Explore reasonable funding streams and devise a system plan and project program that fits the fiscal constraint.

**Strategy 8.5.1.2:** Include forecasts of system depreciation in the plan.

**Objective 8.5.2:** Ensure that new development contributes its proportionate share of costs for transportation improvements and maintenance.

**Strategy 8.5.2.1:** Require, as part of the subdivision review process, developers to analyze their on-site and off-site transportation impacts and to construct all improvements required as a result of those impacts.

**Strategy 8.5.2.2:** Establish a transportation impact fee based on traffic improvement zones and a transportation system analysis.

**Objective 8.5.3:** Promote the efficient expenditure of public funds on transportation improvements through regular update to the capital budget and program.

**Objective 8.5.4:** Adopt an official map which includes the proposed roadway and trail network and examine funding opportunities to construct same.

**Goal 8.6: Monitor, evaluate and implement transportation management practices.**

**Objective 8.6.1:** Establish a system to obtain annual reports of key traffic counts and accident data.

**Objective 8.6.2:** Create an overall Town traffic model in order to assess the impacts of development proposals and to determine the percent of contribution to traffic improvements.

**Objective 8.6.3:** Monitor impacts resulting from the Circumferential Highway.

**Objective 8.6.4:** Monitor transportation systems' environmental impacts.

**Goal 8.7: Continue collaboration with CCMPO, CCTA, SSTA, VTTrans and other entities impacting Essex's transportation system.**

**Objective 8.7.1:** Take measures to implement the goals of Act 200 which call for a coordinated, comprehensive planning process and policy framework to guide decisions by local governments, regional planning commissions and state agencies. Develop common goals with respect to energy efficient transportation systems and work to implement them at all levels.