Acknowledgements

Updating and improving a document like the Windham Regional Transportation Plan is a time-consuming and complicated task. The Transportation Plan covers a wide array of transportation, planning and development topics, and addresses a broad range of local, state and federal concerns in an ever-changing legal backdrop. Drafting and maintaining such a comprehensive document requires significant contributions of time by local and state officials, community organizations, business owners and operators, and dedicated citizens from across the 27-town region. These people took time from their busy schedules to review drafts, attend meetings, discuss and comment on chapter language, and help ensure that the final document was responsive to their concerns and suggestions. They made a significant contribution to the welfare of their towns and neighboring communities. Our sincere thanks to all who helped update the Windham Regional Transportation Plan.

Especially involved were the members of the Transportation Committee, which met to review drafts in great detail. A special thank you is extended to those individuals:

Jodie French, Newfane                Jane Morano Purdy, Rockingham
Dick Clark, Guilford                Lew Sorenson, Dummerston
Mary Alice Herbert, Putney           Nicolas Wallaert, Dover
Alice Maes, Putney                   Lou Bruso, Jamaica
Priscilla Margola, Readsboro         Mary Habig, CRT

We would also like to thank VTrans staff for their support through review of various chapters of the Plan: Sue Clark, Gina Campoli, Jon Kaplan, Costa Pappis, Mary Spicer, and Pam Thurber

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TRANSPORTATION PLAN
Synopsis and Policies

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GOALS & OBJECTIVES

INTRODUCTION

Efficient travel is essential to individual and family economic and social well-being, as well as the economic, social and environmental health of the region. Most traditional transportation plans attempt to project traffic volumes and predict their impacts for a 20 year period. This plan does likewise, but it attempts to find strategies that will allow people's travel needs to be met efficiently while strengthening our communities and reducing transportation-related environmental impacts.

There are many transportation planning challenges in the Windham Region. They include the financial difficulty of developing public transportation systems to serve small, rural populations; the poor fit between the long term schedules required to implement many transportation decisions – especially for major items like bridges and key intersections – and the often short duration of public support for a given decision; and the challenge facing government agencies that are called upon to reduce overall transportation demand in a culture that tends to view transportation as an unlimited and free resource. This plan attempts to alleviate some of the difficulty posed by those challenges by providing a clear direction for the Region’s transportation decisions.

Demographic and economic trends are important contributors to the analytical basis for this plan and the policies contained herein. In the last fifteen years we have changed our travel patterns significantly. More two-worker households, more licensed drivers per household and more residential development in outlying areas all contribute to significantly increased travel per person. Gains made in vehicle gas mileage over the last fifteen years have been more than offset by increased per capita travel. We need to accommodate this increased mobility more effectively now and in anticipation of additional demographic changes in the future.

The Windham Regional Transportation Plan calls for transportation systems and programs that serve people's needs, while minimizing negative impacts on communities and the environment. It also calls for a coordinated approach from town, regional, State, and Federal stakeholders. This approach to transportation planning broadens the scope to include not only traditional traffic issues, but also to include other modes of transportation and to deal with far reaching land use and economic development issues that affect the Region in the long term. This plan is intended to be a living document that is flexible and is changed as appropriate to deal with changing needs and concerns.
REGIONAL CONTEXT

The way in which the American public views transportation planning has changed dramatically, and those changes are reflected in legislation and policies at both the State and Federal levels. That is not to say that the public is of one opinion, for regional differences will continue both in terms of what are the major issues and how to implement preferred solutions. However, the basic approach to solving those problems has changed in two important ways.

COMMUNITY COMMITMENT

First, it has become widely acknowledged that transportation systems have a marked effect on the quality and pace of life, and therefore the people affected must take more responsibility for the decisions regarding those systems. Transportation plans and reports at all levels of government have come to include many terms like "bottom-up planning," "sustained public participation," "local control," etc. These are important principles, and the aim of Windham Regional Transportation Plan is to accurately reflect the will of the communities that it serves.

In making this commitment, the Windham Regional Commission (WRC) and its member Towns are addressing another question that has long been at the center of transportation planning: Should transportation planning follow land use and development, serving the travel and traffic demands that accompany it, or should planning lead development, simultaneously enabling community growth and protecting community character? Others have noted that broad regional development is driven by three forces: employment opportunity, transportation infrastructure and lifestyle choice. The strong interrelationship between these three factors is apparent, as is the difficulty of trying to identify any one as the true "leader" that drives development.

Nationwide, state and local governments are transitioning away from making transportation system decisions based on reactions to prior development and resultant traffic demands. Instead, they are trying to use those transportation system decisions to influence development and thereby exert more control over demand. However, in the course of making this transition, the importance of maintaining the existing system and implementing needed highway and bridge repairs should not go overlooked.

MULTIMODAL SYSTEM

The second way in which the approach to transportation planning has changed is what might be called the maturing of America’s relationship to the automobile. In July 2012, Moving Ahead for Progress in the 21st Century (MAP-21) was passed by Congress. MAP-21 is the first long-term highway authorization enacted since 2005 and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) era. MAP-21 creates a streamlined, performance-based, and multimodal program to address the many challenges facing the U.S. transportation system. These challenges include improving safety, maintaining infrastructure condition, reducing traffic congestion, improving efficiency of the system and freight movement, protecting the environment, and reducing delays in project delivery.
Goals & Objectives

Preceding MAP-21, SAFETEA-LU represented the largest surface transportation investment in our Nation's history. SAFETEA-LU addressed many of the challenges facing our transportation system – challenges such as improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment – as well as laying the groundwork for addressing future challenges. SAFETEA-LU built upon the goals of two previous acts, the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21). SAFETEA-LU promoted more efficient and effective Federal surface transportation programs by focusing on transportation issues of national significance, while giving State and local transportation decision makers more flexibility for solving transportation problems in their communities.

LESSONS LEARNED FROM TROPICAL STORM IRENE

Hurricane Irene impacted all of the Towns in the Windham Region, some more than others. With bridges washed out, roads gone, homes taken down stream, and culverts squashed, the region's transportation infrastructure was turned upside down. Post-Irene efforts to repair the infrastructure directly relate to mitigating damages when the next disaster hits. Some hazard mitigation techniques have included upsizing culverts and lengthening bridges based on stream hydraulic studies; as well as improved bank stabilization. Planning for not only the next federally declared disaster but for any upcoming extreme weather event, will include continued coordination between the Towns, Windham Regional, State and Federal Agencies.

A TRANSPORTATION PLAN FOR THE WINDHAM REGION

This regional transportation plan takes direction from the trends outlined above, and directly builds on the policies and prescribed actions in the Windham Regional Plan that was adopted in October 2006. It is consistent with the requirements of Vermont's Municipal Regional Planning and Development Act and with State initiatives regarding the establishment of regional transportation planning capacity. Furthermore, it is compatible with policies and programs of the approved plans of member towns.

As has been the case traditionally, State and regional transportation planning is heavily influenced by Federal programs, both in terms of the activities that are pursued and the problems that must be addressed. For example, the development of the interstate highway system (initially envisioned before World War II and in progress since the mid 1950s), brought needed commerce to rural areas like the Windham Region. It was accompanied by the building and improvement of many collectors and arterial highways, the development of faster and safer vehicles, and the creation of many supporting facilities (service stations, restaurants, motels, tourist attractions, etc.). Unfortunately in many cases, the development that followed the construction of major highway systems, and their impact on secondary traffic congestion, were not adequately anticipated. Those secondary impacts reflect the fact that transportation and land use intrinsically linked in a cyclical loop in which:
1. Traffic volumes increase, due to outside influences and/or local growth; after which
2. Subsequent traffic conflicts increase and levels of service decrease; requiring that
3. Transportation system improvements are made to address those problems; with the result that
4. Increased traffic capacity and greater accessibility lead to increased development and additional land use changes; and
5. Those changes bring a new cycle of traffic increases and conflicts, producing a call for yet more system improvements.

In the past, responses have been largely limited to increasing highway capacity, with perhaps inadequate attention paid at the State or regional levels to more efficient use of available transportation resources. More recent Federal and State legislation has shifted the focus away from a primarily highway improvement focus to address the larger picture of an integrated transportation network. MAP-21 and the recently enacted Vermont “Complete Streets” legislation include imperatives for inclusion of all modes of transportation and all transportation system users. In this way, the interstate highway system becomes just one piece in the many overlapping networks that comprise the entire transportation system.

The following regional goals outline changes that are perceived as necessary for the Region’s future transportation system, and they propose some specific steps toward realizing those changes. In general, they move the Windham Region in the direction of a transportation system that is both economically efficient and environmentally sound. These goals place transportation decision-making at the most local level appropriate, respect community character and approved Town Plans, promote needed transportation system improvements, and recognize the significant environmental impacts of many transportation decisions.

**REGIONAL GOALS:**

- Direct the development of transportation infrastructure that is compatible with regional settlement patterns, community character, approved Town Plans and other elements of the Windham Regional Plan.

- Promote transportation infrastructure decisions that foster economic growth and diversity, consistent with local and regional economic development policies.

- Support transportation decisions that avoid negative environmental impacts, understanding that health and prosperity decline in a deteriorating environment.
Goals & Objectives

- Promote the development and maintenance of an intermodal transportation system that is economically efficient and environmentally sound, and that enables the movement of people and goods in an energy efficient manner.

- Encourage the development of an effective mix of travel modes, not limited to highways and motor vehicles.

- Encourage the placement of transportation decision-making at the most local level appropriate and with optimal local public involvement, while recognizing that by their nature many transportation decisions are regional and statewide in scope.

TRANSPORTATION PLAN ORGANIZATION

This Regional Transportation Plan is laid out such that the major themes and policies are presented first and foremost in this document. This section presented the overarching themes and goals that influence all other elements of the Plan. Section Two puts forth the specific transportation policies that direct the work of the Windham Regional Commission in their efforts to support and improve transportation networks throughout the Region. Each group of policies corresponds with a particular transportation topic, for which a summary and conclusions statement is provided. These topics include Land Use and Development, Energy and Air Quality, Freight, Highway Systems, Public Transportation, and Bicycle and Pedestrian Networks. Following Section Two several regional maps are provided that show existing and proposed transportation systems, existing highway networks, existing functional classifications of highways, and bike route suitability of existing transportation systems. Section Three of this plan provides more detailed data and information on each of the transportation topics presented in Section Two. Additionally, embedded hyperlinks are found throughout the plan to direct readers to the proper authoritative websites and documents for further reference.

The Regional Transportation Plan, following a review period and incorporation of changes that result from that review, was accepted by the Windham Regional Transportation Committee at the June 10th, 2013 meeting. The Regional Transportation Plan will guide the Windham Regional Commission’s transportation work program over the life of this Plan.
Each of the identified land use designations functions differently and has its own specific transportation needs and constraints. Transportation systems and land use patterns are intrinsically linked elements, affecting each other in a cyclical loop where developing land use requires increased access, which in turn attracts more development. This cyclical loop must be understood and respected such that both development and transportation systems are focused in areas where increased access is desirable from both an economic and environmental standpoint. This means maintaining a reliable and safe transportation infrastructure that provides the needed connections, is attractive for economic development, is convenient for commuters, and can handle the burdens created by dense development.

The downtown areas of Brattleboro and Bellows Falls already serve as transportation hubs for the Region. This distinction should be encouraged and fostered. The downtowns are ideal places in the Windham Region to develop strong intermodal transportation systems. To relieve traffic congestion and give commuters, residents, and visitor’s convenient access to the downtown areas, alternative means of travel should be incorporated into the transportation system. This should include paved bicycle lanes or shoulders on certain roadways, separated bike/pedestrian paths where appropriate, busses and paratransit systems, rail and intercity bus service. Park and ride lots should be conveniently located to allow drivers to park their cars and car pool, walk, bike, or take the bus or rail. These areas would receive the greatest benefit from the incorporation of all aspects of Complete Streets guidelines.

Villages are secondary hubs along the transportation corridors. These areas should serve as minor hubs for elements...
such as public transportation connections and park and ride transfers. Functional conflicts in villages between motor vehicles and pedestrians should be reduced through the use of appropriate traffic calming techniques and road standards. The scale and design of these areas should enhance the human and economic functions of the village, and not simply increase the efficiency with which a vehicle may pass through the village.

Resort centers are a unique entity in the Region, creating their own microcosms of commerce and connections. The Region has an interest in making the resort centers and their recreational facilities attractive and accessible to as many visitors as possible, while balancing the concerns of safety issues and functional conflicts that often arise as a result of the seasonal influxes of people. Resort centers should continue to develop better modal links and connection points to enable effective use of alternative transportation modes for accessing the areas. Efficient, reliable transportation systems for accessing the resort areas will reduce congestion and improve the seasonal experience of visiting these areas.

The transportation corridors of the rural lands in the Windham Region allow users to travel within the Region between downtowns, villages, and resort centers, while also accessing the broader New England Region. Care must be taken when reconstructing or redesigning roads and bridges to prevent the loss of rural character and the inducement of unnecessarily increased traffic volumes and speed. Because of the dispersed nature of development in these regions, alternative mode options must be located purposefully and with an understanding of the entire transportation system. Park and ride lots should be placed in convenient locations in rural lands, both to serve local uses and to enable more ride-sharing by residents. These locations will be used for people to meet and car pool as well as to park for recreational purposes, such as bicycling, swimming, walking, cross country skiing, etc. Bicycling facilities should be enhanced and consider not only roadway shoulders, but also connections to regional trail networks that combine separated paths, road shoulders, Class 4 Town Highways and Legal Town Trails.

Finally, the transportation system should also take into consideration the problems of the transit dependent populations of rural areas, who do not have access to a car, are elderly or disabled, are low income, are youth, or for some other reason, cannot drive. Lower population densities in the Region make full scale public transportation difficult, but some creative public transportation options have been developed and have potential for expansion in the future.
LAND USE POLICIES

1. Weigh the secondary growth effects that often result from transportation infrastructure improvements and determine if the benefits of the improvements outweigh the costs to existing historical, cultural, and environmental assets.

2. Minimize functional conflicts and require that developers be responsible for relieving new traffic impacts generated by their developments.

3. Avoid strip development and minimize the negative effects of existing strip development.

4. Preserve village character through appropriate design and scale of commercial, industrial, residential, transportation infrastructure and community structures and uses.

5. Preserve and create Right-of-Ways for future transportation linkages between communities, neighborhood services, and other destinations.

6. Avoid extension of roads into and through Resource Lands.
ENERGY AND AIR QUALITY SUMMARY & POLICIES

Nationwide both the total number of miles traveled and the total number of trips taken are overwhelmingly accomplished by private vehicle. This is no different for the State of Vermont, which in 2009 was sixth in the nation for per capita vehicle miles traveled, and in 2008, devoted 34% of its total energy use to the transportation sector. This intensive use of transportation is mainly due to the rural nature of the State, which is mirrored within the Windham Region. Dispersed populations require significant travel time to access services that are regularly needed, and as such, devote much more time and energy to transportation.

There are many factors contributing to the high energy consumption of the transportation sector in Vermont, but of these, fuel efficiency is a major contributing factor. The majority of the vehicle fleet in Vermont falls within the range of 21-30 miles per gallon. Within the Windham Region, the highest average fuel efficiencies are found around Bellows Falls and Brattleboro, and drop off substantially in the western and northern regions. It should be noted that in a study conducted by the University of Vermont Transportation Research Center, Windham County was second only to Windsor county in the for the highest estimated gasoline usage by county in 2009. Vehicle preference has much to do with the fuel efficiency of the fleet, and in recent years Vermonter have shown a preference for larger, less fuel efficient vehicles. In 2009, 40% of the new vehicles purchased in Vermont were SUVs, pick-up trucks, and vans. The combination of high numbers of low fuel-efficiency vehicles coupled with the quickening pace of residential sprawl has had a major impact on the amount of energy consumed by the transportation sector.

Recently, trends have been developing that may help mitigate the rate of energy consumption in the transportation sector. First, with the passing of new Federal fuel efficiency standards of 35.5 mpg by 2016, the fuel efficiency of the overall fleet will increase in the coming decades. As the majority of the Vermont fleet of cars falls below this level, these new standards will have a positive impact on the transportation sector’s energy use. Additionally, trends throughout the nation are showing an increase in passenger miles in both bus and rail transit, and an increase from 7.2% to 10.4% in the number of person trips completed on foot. While these statistics are nationwide figures, it may depict a shift in attitudes towards alternative
Transportation Policies

forms of transportation and an opportunity to make a significant push in their direction. Finally, the sharp increase in oil prices in the past years has also seen a corresponding drop in oil sales. Higher fuel efficiency standards coupled with both shifting attitudes and higher costs for traditional fuels may help the State and the Region reduce their energy use in the transportation sector.

In addition to energy concerns, air quality is also heavily affected by the transportation sector. Automobiles are categorized as mobile sources of air pollutants, and the four pollutants monitored by the EPA for meeting National Ambient Air Quality Standards (NAAQS) are carbon monoxide, hydrocarbons, nitrogen oxides, and particulate matter. If the State does not meet one or all of the criteria pollutant standards set by NAAQS, they are considered in “non-attainment.” Vermont, and correspondingly the Windham Region, is in attainment currently. However, it should be noted that both Massachusetts and New Hampshire have counties that are in non-attainment, and given the close proximity to the Windham Region, could have a negative effect on the Region’s air quality.

The transportation sector’s contribution to green house gas (GHG) emissions must also be considered when evaluating air quality because of climate change concerns. The transportation sector accounts for 74% of Vermont’s GHG emissions, and since 1990, the carbon dioxide emissions from the transportation sector have increased by 21.4% in Vermont, as compared to 16.8% nationwide. Suggested measures for reducing mobile source emissions have been recommended by the Federal Highway Administration (FHWA) and are included in Chapter 2 Energy and Air Quality. These same recommendations would also help reduce the GHG emissions released by the transportation sector, and should be considered in development of strategies for improving air quality in the Region. Among the suggested improvements, the most relevant to this Region are the following:

- Improved public transit
- Park and ride/fringe parking
- Ride-sharing programs
- Pedestrian and bicycle facilities
- Programs to promote non-automobile travel to major activity centers such as shopping centers, special events and other centers of vehicle activity; and
- Programs for new construction and major reconstruction of paths or areas solely for use of pedestrian or other non-motorized means of transportation

Local and regional strategies include providing more public transportation, managing regional transportation demand, locating industrial parks where future links to the rail network would be feasible and encouraging land use patterns that reduce the need for individual private transportation. Additionally, with the passing of high fuel efficiency standards and increased pressure to develop alternative fuels for vehicles, the Region needs to be mindful of the developments taking place in vehicle
design, and prepare for the energy source infrastructure these alternative fuel vehicles will require. Electric and natural gas vehicles in particular have different range and refueling requirements than typical gasoline vehicles, and these needs must be met in order to support their inclusion into the fleet of Vermont vehicles. Finally, given the new requirements of Complete Streets, transportation design should more adequately address the needs of transit dependent populations, pedestrians and cyclists as well as other traditional forms of transport.

POLICIES

1. Support emissions standards that reduce regionally generated air pollutants from transportation related activities.

2. Promote alternative fuel vehicles and the infrastructure necessary to fuel those vehicles.

3. Require all development projects to incorporate elements that reduce reliance on single occupancy vehicles, such as providing access to public transit, installing pedestrian and bicycle network links, or providing access to ride-sharing programs.

4. Support efforts to minimize energy consumption, especially non-renewable energy resources, and explore expanded use of alternative fuels.

5. Integrate traffic designs in designated downtowns and village centers that limit idling and calm traffic.
While in the past, the Windham Region has experienced a rapidly increasing volume of freight traffic, this high rate of increase is expected to slow in coming decades. This is mainly due to the slackening of the population growth rate and the shifting demographic to a larger proportion of residents 65 and older. These two factors mean relatively less consumption of housing, food, clothing, and retail merchandise. In addition, there is a growing shift in the industry of Vermont to more service base industries, which do not demand as much freight volume. In 2007, inbound freight accounted for 36% of freight flows while outbound freight accounted for only 15% of freight flows. This split is expected to not only continue, but also increase in coming years with the State’s shift away from manufacturing industries.

Vermont’s statewide mode share by weight for all freight movement consists of 83.4% by truck, 16.53% by rail, and .01% by air, which indicates a 6% shift from truck freight to rail freight from the modes shares reported in the 2005 Transportation Plan. Truck freight still accounts for the majority of freight transportation, both through the State and through the Region. The 2012 Vermont Freight Plan shows projected freight traffic increases of between 40%-60% on VT9 and I-91 by 2035, with these routes also currently handling the highest volumes of truck traffic. The Freight Plan does go on to state that current road capacities are sufficient to accommodate these increases.

The Region should be aware of these projections and the impact these increases will have not only on these routes, but also on the turn-off routes that freight traffic may take as detours or to reach their final destination. Trucks are increasing in both size and weight, and these increases will have a significant impact on road maintenance needs. As indicated in Chapter 3 Freight, several town highways reported some of the highest truck traffic as a percentage of their total volume of traffic. These locations should be monitored and assessed for standard upgrades and maintenance needs. Appropriateness of truck travel should also be assessed along these corridors.

The Region will continue to promote rail freight as a favored alternative to truck freight when possible. Ongoing challenges in Vermont’s rail network center on weight limits, tunnel clearance improvements, and rail bridge rehabilitation and upgrade. The rail lines throughout the Windham Region, and in
most of Vermont, can accommodate a rail car weighing 263,000 pounds. More and more rail companies have been moving rail freight more efficiently by moving double stack rail cars over an infrastructure that can hold up to 286,000 pounds.

Vermont recently received $51 million in American Reinvestment and Recovery Act (ARRA) funding for high-speed and intercity passenger rail improvements. The grant will fund track and bridge improvements on the New England Central Railroad line between St. Albans and the Massachusetts state line and increase the weight limit to 286,000 pounds. Another improvement that was recently completed along the NERC rail line was the lowering of the Bellows Falls tunnel foundation to allow first-generation double-stack and auto-rack cars to pass through the tunnel. Additional improvements are still necessary to allow full double-stack height cars to pass through the tunnel.

While these improvements are promising, more work still needs to be done in order to allow rail freight to effectively compete with truck freight. High priorities for the Region include continuing to improve the track and bridges along NECR and Green Mountain Railroad Corporation (GMRC) lines to achieve 286,000 pound weight capacity fully along the line, better coordination of economic development activities in proximity to the rail lines, and preservation of rail siding access to existing and future industrial sites.

POLICIES

1. Maintain, improve, and expand passenger and freight rail services.

2. Encourage businesses and industries with high freight demands to locate within the rail corridor, improving mobility of goods by rail.
HIGHWAY SUMMARY & POLICIES

The 1,703 miles of roadway located within the Windham Region are broken down by town highway classification. Town highways are classified from Class 1 Town Highway to Class 4 Town Highway depending on use and condition. The most common classification of town highway for almost all of the towns within the Region is Class 3 Town Highway. The Town of Brattleboro contains the highest number of Class 1 highway miles, which are mostly absent from the other towns in the Region. Also located within the Region are 42 miles of Legal Town Trail, which are mainly located within the towns of Jamaica, Dover, and Readsboro. A formal definition of each classification can be found in Chapter 4 Highways.

Nearly 60% of the roads within the Windham Region are unpaved. Generally, Class 3 and 4 Town Highways are unpaved. These gravel and dirt roads contribute to the picturesque charm of the Region’s rural character, but can also become challenging to traverse during winter and mud season. It is always a difficult decision for Selectboards whether or not to pave a road in their town. Gravel roads can be significantly less expensive to maintain, but factors such as volume and type of traffic, and existence of steep grades may outweigh the lower maintenance costs. It is an issue that must be carefully weighed and addressed in both the context of the specific needs of the town and the greater character and atmosphere of the Region.

The condition and safety of Windham Region roads and bridges continues to be a concern, and maintaining the existing infrastructure will continue to be a major funding priority. Currently, the distribution of town highway financial assistance is based on miles for each class of road. This system of distribution may not serve the towns that have high daily volumes of traffic, as these roads will tend to deteriorate at a faster rate. Additionally, the availability of aggregate, in the form of gravel, sand, and stone, has drawn attention as rising costs and the future prospect of decreasing availability become apparent. In coming years, a significant issue in land use planning may be standards, regulations, and community acceptance of aggregate facilities for maintenance and upkeep of roads.
Reconstruction of roads and bridges may be a solution to some of the existing problems within the Region. Care should be taken so that reconstruction does not result in new facilities that do not fit into the character of the community. In Vermont, the design for reconstruction of roads and bridges is based on the American Association of State Highway Officials (AASHTO) standards. As implemented, these standards may not always reflect the character of Windham Region and its member towns. Wherever possible the use of AASHTO standards should be flexible.

POLICIES

1. Preserve and promote esthetic values particularly along state and federal highways and within scenic byway corridors.

2. Screen new development from I-91 and other scenic roads using vernacular perimeter plantings of hedges, hedgerows, and street trees.

3. Design and build new roads so that emergency vehicles can readily maneuver and access all proposed structures.

4. Improve existing roads and design culverts and bridges to carry a 50-year flood event without damage.

5. Construct all new public and private roads and driveways to VTrans A-71 and B-76 Driveway Standards, so that they do not contribute to the damage of town roads from runoff.

6. Use existing transportation corridors, as an alternative to building new infrastructure, to accommodate new transportation services, facilities, and utilities.

7. Develop and use innovative transportation design programs, including access management and the High Risk Rural Roads program, to provide safer access and mobility for users.

8. Work with local and regional entities to designate Vermont Byways or to otherwise protect travel corridors that exhibit special scenic, historic, recreational, cultural, archeological and/or natural qualities.

9. Work with local and regional entities and VTrans to implement appropriate traffic calming techniques.

10. Require appropriate scale and re-design of streets, highways and transportation facilities, to serve local traffic, destination traffic and through traffic.

11. Support appropriate efforts to access aggregate supplies for use on Town Highways.

12. Promote high quality design for all transportation projects, including roads, bridges, train stations, bus stops, etc.
Developing and maintaining a robust public transportation system within a sparsely populated rural area can be challenging, and as such, any new construction or improvements to the system must be carefully considered and weighed to provide the most efficient service to the broadest possible population. Those especially dependent on public transportation should be given special consideration. This includes individuals without transportation, individuals over age 65, individuals under age 18, and those below poverty or median income levels. Based on 2010 Census Data, over a third of the regional population falls either within the elderly or youth categories of transit dependent populations. All of the towns in this region displaying the highest dependent population characteristics have some form public transit bus service provided (Rockingham, Brattleboro, Vernon, Westminster, Putney, Readsboro, Marlboro, Athens, Jamaica, Wardsboro, Stratton).

However, provision of service does not necessarily equate to sufficiency of service. One suggested improvement to service could include extending the Dial-A-Ride service further west in the Region. Expanding more regular public transportation service to Vernon with a connection hub in Brattleboro is another option. The town of Vernon is among the top five towns for percentage of households without a vehicle, total population under 18 years old, and total population 65 years and older. Vernon also has the third highest density of population in the Region.

The Region currently is served by two public transit bus providers, Connecticut River Transit (CRT) and the Deerfield Valley Transit Association (DVTA). The Brattleboro Bee Line, which was previously independently run, is now operated by CRT. CRT operates on both fixed routes and rural demand service areas while DVTA operates fully in a rural demand service area, with fixed destinations. All of the routes operating in the Region are performing above the adequate service markers as defined by the 2010 Public Transit Route Performance Review Report, and the majority of the routes are performing above successful levels. In terms of private bus service providers, Greyhound is the only inter-city bus provider in the region. The Greyhound route operates a single daily round-trip from White River Junction to Springfield, MA. This route has stops in the Region in Bellows Falls and Brattleboro. The only other private bus service is offered by the Stratton Mountain Ski resort, and it
mainly serves as a shuttle for resort visitors.

Presently VTrans and the Federal government, with a local match, are allocating $13 million to the public transit program. Most of this includes operating assistance to each provider, JARC, capital assistance, CMAQ projects, carpooling, and elderly and disabled transportation assistance. In the coming years, funding will need to keep pace with the increase in demand of public transportation. What might help alleviate some lack of funding is coordinating services between transit providers on a more systematic level and continuing to solidify the partnerships between each of the stakeholders. The Public Transit Committee has proven to be successful in getting stakeholders around a table to discuss spending priorities on transit and coming to a consensus.

Passenger rail service in the Region is provided by Amtrak’s Vermonter route along the New England Central Railroad (NECR) line. It operates seven days a week with one northbound and one southbound train. This daytime service is geared more to the needs of tourists rather than business travelers. Southeastern Vermonters can access the Amtrak train in Brattleboro or Bellows Falls and reach their destination of New York City, Washington DC (and points in-between) or Montpelier, St. Albans (and points in-between). While the previous transportation plan had reported decreased ridership on the Amtrak route in the region, the Vermonter has seen a rebound in ridership, reporting a 3.5% increase in ridership in 2009 over the previous year. In 2010, the Vermonter had reached a total of 78,461 boardings/alightings, putting ridership at near year 2000 levels.

Vermont recently received $51 million in American Reinvestment and Recovery Act (ARRA) funding for high-speed and intercity passenger rail improvements. The grant will fund track and bridge improvements on the NECR line between St. Albans and the Massachusetts state line. This corridor was among eleven congressionally designated High Speed Rail Corridors that would be eligible for funding. The primary aim of these improvements is to decrease travel times and improve the reliability of passenger services between Boston and Montreal. The estimated reduction in travel time is thirty minutes.

Residents and visitors to the Windham Region have five major airports to choose from: Albany International, Albany, NY; Bradley International, Hartford, CT; Logan International, Boston, MA; Burlington International, Burlington, VT, and Manchester Airport, Manchester, NH. Windham Region residents and visitors currently have limited public transit options when traveling to and from the major airports. Presently, there are privately run transportation options in a range of cost rates. A possible alternative would be to create a partnership with public and local private providers to schedule regular service from the Brattleboro Transportation Center and the Bellows Falls Intermodal Transportation Center to Bradley International and Manchester Airport.

As an alternative to coordinated public transit service to the airport, taxi service is available in some parts of the Region. A number of private companies currently offer service to the surrounding airports, as well as around town transportation. These companies include Brattleboro Taxi, Bellows Falls Taxi,
Buzzy’s Taxi, and Valley Cab Service. A private company providing airport service is Thompson Transportation, located in Troy, NH.

Carpooling in the Region has seen a steady decline since the 1980 Census. It is expected that the number of commuters carpooling will begin to increase again through the installation of a number of municipal park and ride lots, including a proposed Town of Rockingham/CRT lot, and another State park and ride lot. The Region currently has four park and ride lots located in Brattleboro, Westminster, Dummerston and Jacksonville. Six more park and ride lots are proposed throughout the Region, with two specifically located near Mount Snow and Stratton ski areas.

Intermodal facilities serve as hubs for integrated service between two or more transportation methods. This allows users of a bus service to expand their destination access by linking their bus trip with a coordinated train route, or beginning their trip with a bike ride. The Brattleboro Transportation Center is currently the only intermodal facility in the Region. This facility provides parking spaces for downtown Brattleboro, while also creating an intermodal facility for the two bus transit providers, taxis, and Amtrak service. The facility also provides bike racks and lockers for cyclists to park their bikes for either short or extended stays.

Efficient use and planning of intermodal facilities should be a focus in the coming years. Currently, Greyhound service is not linked with this Brattleboro Transportation Center, and this creates a missed opportunity for coordinated inter-city services. Additionally, while DVTA’s schedule coincides with the northbound Amtrak train arriving in Brattleboro, this is not true of most of the bus schedules servicing Brattleboro and reduces the effectiveness of this facility to serve its function. Finally, another layer of coordination needs to exist during the peak winter sport season, when large numbers of visitors are accessing the resorts around the area. Coordinated public transportation routes should be able to take visitors at least the last portion of their trip, from Brattleboro, Wilmington or Jamaica, if not all the way in from their origin point.

Another key element for focus is coordinated communication of services. The Go Vermont webpage begins to bring together public transit information in one place. However, this information needs to be presented in a more integrated fashion and searchable such that an individual can easily find a dependable public transportation route to their destination. Equally as important, this site needs to be marketed widely such that users of public transportation in Vermont have a widely known, central hub of information. With growing communications technologies, individuals are more and more demanding information in a central, coordinated, user friendly format. Provision of this information will not only meet this demand, but also promote higher use levels on public transportation routes.
POLICIES

1. Implement an integrated, multi-modal transportation system in the urban centers; providing connections between rail, air, bus, car, bike, and pedestrian.

2. Integrate the use of energy efficient and alternative modes of transportation into community plans and development.

3. Establish effective and efficient public transit services to meet the needs of transit dependent populations and to better serve the general public.

4. Establish a safe and convenient regional system of park & ride lots to encourage ride-sharing.

5. Include transit orientated development in any proposed project.

6. Incorporate public transportation into planned transportation improvements for resort centers.

7. Create new and expand existing public transit services to fulfill intercity and intra-regional demand.
While in past decades the land use and development within Vermont and the Region has been heavily influenced by the automobile, a shift in attitude towards other forms of transportation is taking hold. There is an increasing amount of discussion, both nationally and locally, of how to restore the social aspects to communities and develop healthy, livable communities. A key component of the transportation portion of “livable” communities is having “compact, transit-oriented, walkable, bicycle-friendly land use.” A 2009 study conducted by the Bureau of Transportation Statistics found that 85% of respondents ranked “pedestrian friendly streets in downtowns” and “safe sidewalks or paths” of high importance for a livable community. This high percentage of important votes placed these categories just under categories for major roads and adequate parking in terms of importance to respondents.

Fortunately for the Windham Region, many of our historic downtowns and villages developed around a pedestrian lifestyle, with compactly settled centers for easy access to needs. The essential pieces of mixed uses and concentrated municipal services are already found in many of the village areas. Now it is simply a matter of refocusing the public infrastructure in such a way to give pedestrians and bicyclists a priority equal to the automobile. Part of this will be supported by the recent passing of the Complete Streets Legislature. The other part of this will be a continuing shift in attitude of residents towards the acceptance of these other forms as respected and encouraged forms of travel.

Several recent projects are either completed or under construction in the Region that focus on the bicycle and pedestrian networks. These projects include the Putney Road bike lane, the Newfane sidewalk reconstruction on West and Court Streets, improvements to the pedestrian signals in Brattleboro, Safe Routes to School Program improvements for Readsboro, and the completion of the bicycle suitability map for the eastern portion of the Region. These developments and improvements should continue to be built upon, and network connections should be recognized and encouraged throughout the Region. The Windham Regional Commission can be especially helpful in this process by identifying parallel projects in adjacent towns that have future potential for connection.
Future improvements should also consider more than just connecting networks. Part of developing a robust bicycle and pedestrian network for a region or town is providing other benefits and amenities. Developing inter-modal links is an important part of this idea. All public transit or private vehicle trips begin and end with a pedestrian trip and many could include a bicycle trip as well. Including bike racks on buses, at train stations, and at intermodal facilities will encourage users to bike to these locations rather than drive. Providing safe, direct pedestrian links is also a crucial component of their success. Other amenities should also be considered, such as shelters and bike racks at bus stops, bike lockers at commuter destinations like parking garages and park and ride lots, and comfort elements along networks such as landscape elements, benches, painted crosswalks, and street lighting.

Finally, the Region has a vast array of trail networks made up of multi-use trails, Legal Town Trails, and conservation rights of way. These networks should be promoted as the excellent resource they are, and connections should be strengthened between these networks and the traditional roadway networks associated with bicycle and pedestrian systems. These opportunities would allow a seamless cross-over between recreational and utilitarian use for these systems, and allow the Region to take advantage of opportunities that already exist.

The Region has an excellent framework for developing safe and comfortable pedestrian and bicycle networks through and between each of its town centers. One of the biggest challenges faced pertains to the high speed roads which simultaneously connect and cut through these town centers. Solutions to this issue were somewhat addressed in the Land Use and Development section of this chapter. Traffic calming measures are valuable tools for reducing the speed of cars once they reach a village center. The surface material, roadway layout, and road width also all have an effect on the perceived speed a driver will deem safe for passing through a stretch of roadway. All of these tools can be used to help negotiate the interaction between bicycle and pedestrian traffic and vehicle traffic, providing safer and more pleasant downtown and village centers.

Rural lands present a slightly more difficult challenge for integrating bicycle and pedestrian traffic with vehicle traffic. As settlement of rural lands has outpaced growth in town centers, vehicle traffic has increased. There is also the perception that vehicle speed has increased. A first step for towns is promoting the routes depicted as suitable on the bike suitability map. Increased awareness will help cyclists feel more comfortable choosing their routes. A next step may be “Share the Road” signage on some of the more popular routes within towns. Also, towns can develop their own bike suitability maps, and perhaps include recommended pedestrian routes as well, highlighting known trails and pleasant rights of way that may be underutilized because of lack of publicity. All of these steps can help better integrate bicycle and pedestrian traffic with vehicle traffic in these areas.
POLICIES

1. Incorporate ADA regulations and guidelines into all pedestrian projects.

2. Require provision of appropriate pedestrian and bicycle facilities in new development projects.

3. Review and accommodate for non-motorized transportation, such as bicycle lanes, wider shoulders and sidewalks in roadway and bridge projects.

4. Preserve and encourage creation of Rights of Way for future linkages between communities, neighborhoods services and other destinations.
WINDHAM REGION LAND USE DESIGNATIONS IMAGE
Downtown Image taken by C. Meves
Village Image taken by C. Meves
Resort Image
Rural Image

TRANSPORTATION SECTOR ENERGY OPTIONS IMAGE
Compressed Natural Gas Image
Fuel Efficiency Image
Electric Charging Stations
Hybrid Vehicle Image

FREIGHT TRANSPORTATION METHODS IMAGE
Rail Freight Image
Truck Freight Image
Dairy Freight Image
Lumber Freight Image taken by C. Meves

HIGHWAY SYSTEM COMPONENTS
Priority Intersection Image
Highway Bridges Image taken by C. Campany
Dirt Roads Image
Flickr: Kidder Covered Bridge

REGIONAL PUBLIC TRANSPORTATION ELEMENTS
CRT Bus Transit
Amtrak Passenger Rail
DVTA Bus Transit
Brattleboro Transportation Center WRC Stock Photo

REGIONAL BIKE/PED IMPROVEMENTS
Brattleboro Signal Improvements taken by C. Meves
Putney Road Bike Lane taken by C. Meves
Putney Sidewalk Improvements taken by C. Meves
Bike Suitability Map
TRANSPORTATION MAPS

- EXISTING TRANSPORTATION NETWORK
- FUTURE TRANSPORTATION NETWORK
- HIGHWAY NETWORK
- FUNCTIONAL CLASS OF HIGHWAYS
- BICYCLE SUITABILITY MAP 1
- BICYCLE SUITABILITY MAP 2
Existing Transportation Network

This map displays the major features of the transportation network of the Windham Region. The proximity and connection between these features is represented, but the true locations are approximate. Features and locations outside the Region are not exactly located and simply shown to illustrate their connection to features within the region.
This map displays the major features of the transportation network of the Windham Region. The proximity and connection between these features is represented, but the true locations are approximate. Features and locations outside the Region are not exactly located and simply shown to illustrate their connection to features within the region.
Southeastern Vermont Bicycle Suitability Map

This four section map provides information of interest to cyclists about roads in Southeastern Vermont. This information should help cyclists understand the types of conditions they may encounter on these roads and choose appropriate cycling routes through the region.

Map Series Legend

Information about roads on the bicycle network:

Traffic volumes:
- Traffic volumes are based on Average Annual Daily Traffic (AADT) data from the Vermont Agency of Transportation. In general, low traffic volumes coincide with AADTs of less than 2000 vehicles per day; high traffic volumes coincide with AADTs of over 5500 vehicles per day.

Traffic speed:
- State and federal highways (indicated on the map with a highway route shield) usually have higher traffic speeds. Town highways often have lower posted speeds and slower traffic.

Shoulder suitability:
- Shoulders with a width of greater than three feet in good condition are considered suitable. Shoulders with a width of between one and three feet in good condition and with adequate sight distance are considered moderately suitable.

Unpaved road on system:
- For most of the summer months, most of these roads can be negotiated with a standard road ("skinnier bike") with a moderate amount of care. These roads offer great riding for those with a hybrid or mountain bike (though they’re often hilly).

Significant grade:
- Information on significant grades is highly subjective. You will encounter hills on nearly every road in Southeastern Vermont. These cyclists with marginal fitness levels, or those looking for a more relaxing ride may want to avoid roads marked with a significant grade.

Urban riding conditions:
- In these areas, cyclists may encounter vehicles moving at slower speeds, but also cyclist may have to contend with higher traffic volumes, frequently turning vehicles, parked cars, pedestrians, storm drains, rough pavement, and other hazards.

Cycling hazards and opportunities:
- Hazard, caution needed.
- Angled railroad crossing; use caution.
- Cylcling opportunity.

Road information for Map 1

Putney Village or hamlet with a store
West Hinsdale Village or hamlet without a store
- Store outside village
- School outside village
- Bike shop
- Parking area outside village
- Paved road, not on bicycle network
- Unpaved road, not on bicycle network
- Intermittent (cycling prohibited)
- Railroad
- Town boundary
- Stream
- Lake, pond, or river

The bicycle network:
These roads form the backbone of the bicycling system in Southeastern Vermont. They provide routes for cyclists traveling through the region, though some roads on the network might not be the preferred choice for the recreational rider. The network includes all federal and state roads, many primary town highways (Class 2 town highways), and other roads that either allow for enjoyable cycling, map produced July 2001.

For more information:
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Transportation Plan

Adopted June 10, 2013

Map 2 - Southeastern Vermont Bicycle Suitability Map
July 2004

This is one map in a four-map series showing bicycle suitability for roads in Southeastern Vermont. The legend for this map series, as well as an index map, are found on a separate sheet. The legend and the other maps in this series are available at the following web page: www.spc.windham.vt.us/315emap.

For more information about this map series, contact:

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Southeastern Vermont Bicycle Suitability Map

This four-section map provides information of interest to cyclists about roads in Southeastern Vermont. This information should help cyclists understand the types of conditions they may encounter on these roads and choose appropriate cycling routes through the region.

Suitability Map Legend

Traffic volumes:
- low
- moderate
- high
Traffic volumes are based on Average Annual Daily Traffic (AADT) data from the Vermont Agency of Transportation. In general, low traffic volumes coincide with AADTs of less than 3000 vehicles per day; high traffic volumes coincide with AADTs of over 5500 vehicles per day.

Shoulder suitability:
- unsuitable
- moderately suitable
- suitable
Shoulder suitability measures how well suited a shoulder is for accommodating cyclists. In general, shoulders with a width of three feet or lesser are unsuitable. Shoulders with a width of between one and three feet, in good condition and with adequate sight distance are considered moderately suitable.

Unpaved road on system:
- Riding on unpaved roads requires caution. For much of the summer months, most of these roads can be negotiated with a standard road (“skinny tire”) bike with a moderate amount of care.

Significant grade (arrow points uphill):
- Information on significant grades is highly subjective! You will encounter hills on nearly every road in Southwestern Vermont. These roads are generally steep on hills; however, a rider on a touring route may want to avoid roads marked with a significant grade.

Urban riding conditions:
- In these areas, cyclists may encounter vehicles moving at slower speeds, but also cyclists may have to contend with higher traffic volumes, frequently turning vehicles, parked cars, pedestrians, storm drains, rough pavement, and other hazards.

Cycling opportunities:
1. Vermont - These roads have very few hills, low traffic volumes, and pass through farm land, which opens both scenic routes and good visibility for motorists to see cyclists.
2. Route 30, Brattleboro, Tunbridge, and Newfane - From Brattleboro, just south of Newfane Village, Route 30 has very wide shoulders, and, especially northbound, very little turning traffic and great views of the West River. In addition, there are no hills beyond Brattleboro.

Bicycle shops:
1. Burrows Specialized Sports, 165 Main Street, Brattleboro, 802-257-1977; sales, repairs
2. Brattleboro Bicycle Shop, 167 Main Street, Brattleboro, 802-254-8644; 800-BRATBH; sales, repairs, rentals
3. West Hill Shop, 49 Brickyard Lane (off Putney Landing Road, next to Interstate 91), Putney, 802-387-5711; sales, repairs

The bicycle network:
These roads form the backbone of the bicycling system in Southeastern Vermont. They provide routes for cyclists traveling through the region, though some roads on the network might not be the preferred choice for the recreational rider.

The network includes all federal and state roads, many primary town highways (Class II town highways), and other roads that either allow for enjoyable cycling, complete a loop, or provide an alternative to another road on the network.

Cycling hazards:
1. Putney Road (U.S. Route 5), Brattleboro - Between the West River and the Exit 3 downtown, Putney Road has very high traffic volumes, many vehicles turning, and, just north of the West River, unsuitable shoulders.
2. Railroad crossings on Route 142, Brattleboro and Vernon - These two crossings are hazardous. Cyclists should cross the tracks perpendicular (that is, at right angles) to the rail.
3. Route 9, Brattleboro, Madbury, and Wilmington - Route 9 has high amounts of truck traffic, narrow shoulders, and many curves and hills with limited sight distance.
4. Route 30, Newfane - North of Newfane Village to the Townshend line, Route 30 has narrow shoulders, sharp curves, and limited sight distance.
5. Route 121, Rockingham - Between Saxton's River and Cambridgeport, Route 121 is undergoing major reconstruction in 2003 and 2004. Some sections may be difficult to negotiate on a bicycle.

map produced July 2004
For more information about this map, contact:
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