

CHAPTER 7—Getting Around

The principal mode of transportation in Warren is the private automobile. During tourist seasons, buses, vans, and taxi service are available. Bicycling is popular during the warm months. Walking, running and horseback riding occur throughout the year, primarily for recreation: they are limited as a means of transportation by the widely dispersed pattern of development in the rural areas, the great distances between growth centers, and the lack of sidewalks, paths or adequate shoulders along the main roads.

Due to the terrain and roadway capacity, most of the automobile trips to and from the Valley are made via Route 100 and 100B to Interstate 89, although East Warren residents frequently access I-89 via the Roxbury Mountain Road. The closest rail service is provided by Amtrak in Waterbury and Randolph. Vermont Transit offers bus service in Waterbury to points north and south on I-89.

Green Mountain Transit Agency, which runs the Mad Bus in the Valley, is a Montpelier-based public bus service that provides transportation for commuters, tourists and local residents. Commercial air travel is available at the Burlington International Airport. Small private planes can land year-round at the Barre-Montpelier Airport in Berlin and during the spring, summer, and fall at Sugarbush Airport in Warren. Charter buses and taxi/shuttle services are offered as well, particularly during tourist periods.

Road Network

There are approximately 85 51 miles of roads in Warren. Currently, Warren owns and maintains approximately 44 miles of those roads. They vary from heavily used regional collectors, to lightly used roads serving primarily residents, to roads that no longer serve automobile traffic. Half of the town's roads are paved (22 miles) and the remainder (22 miles) are gravel. The State maintains Route 100 (six miles). The remaining 35 miles of road are privately owned and maintained (see Map #6).

The town maintains an extensive network of collector and local roads, each of which is assigned a town highway number. Table 7.1 describes the town highways by class. These roads are designated as Class 2, 3, 4, or trail. Class 2 and 3 roads are defined for purposes of determining state aid and must be negotiable year-round, under normal conditions, by a standard passenger car. A Class 4 road is generally little traveled and used on a seasonal basis. They are usually the most marginal town highways, frequently narrower and more poorly drained than other highways in town. According to 19 V.S.A. 302, Class 4 roads and trails are defined as all highways not defined as Class 1, Class 2 and Class 3.

The state designates Class 2 roads, which typically provide access to neighboring towns; the Selectboard designates Class 3 and 4 roads. State aid per mile decreases from Class 2 to Class 4; total aid depends on the number of highway miles a town has in each class.

The major traffic network in the Mad River Valley includes Route 100, Route 17, German Flats Road, and the Sugarbush Access Road and is referred to as “the loop”. The growth centers in the valley and in Warren are all served by these minor arterials (Route 100 and 17) and major collectors (German Flats & Access Road). By limiting the

location of growth centers to areas served by this network, the town maximizes the use of the existing public investment and avoids the need to duplicate or enlarge upon the loop.

Traffic volumes have been monitored in the Valley by the Vermont Agency of Transportation, since 1975. Data collection has been sporadic, but counts clearly show a steady increase in traffic during the past 28 years. The average daily traffic in ~~2002~~ 2009 on Route 100 north of Warren Village and south of Irasville is about 4,900 trips per day, a 75% increase since 1977. Route 100 south of Warren Village has seen a 65% increase from 910 trips per day in 1980 to 1,500 in 2002.

Appendix B provides average daily traffic counts at Vermont Agency of Transportation (AOT) counters for the Mad River Valley from 1975 to 2002. As traffic volumes have increased, the ability of the loop to accommodate traffic has been strained. If, in the future, the existing road network is not sufficient to accommodate the traffic in Warren, the following options could be considered:

- road and intersection capacity can be expanded, either by physically enlarging the traveled way, adding turn lanes, or adding traffic controls or lights;
- the growth in traffic volume can be slowed through the introduction of alternative modes and/or restrictions on the use of motor vehicles;
- the speed of the traffic can be reduced using traffic calming measures; and,
- new roads or intersections can be added.

There are five minor collectors that carry the largest volume of traffic within town and provide links to state roads. These Class 2 roads include Roxbury Mountain/Brook Road, Main Street, part of Lincoln Gap Road, Sugarbush Access Road and German Flats Road. The traffic on the Class 2 roads has remained fairly constant. The only road designated as a major collector in Warren is Route 100.

There are over eight miles of Class 4 roads in Warren. Their current status, function and character are valuable resources to the community. They provide access to scenic views, historic sites and structures, and rivers and streams. They also provide critical trail and access opportunities and are a crucial link in many recreational corridors. Class 4 roads are a finite resource that offers opportunities for biking, running, walking, horseback riding, skiing and snowmobiling. They also have historic significance in that they reflect the Valley's early settlement and transportation patterns. Reclassification of Class 4 roads would result in increased road maintenance costs. Trails are rights-of-way retained by the town for limited- or non-vehicular use and are not available for upgrading.

Paying for Repairs and Maintenance

The federal and state governments pay for all of the costs of maintaining federal and state highways (Route 100). The town, with some federal and state financial assistance, is responsible for the repair and maintenance of Class 2 and 3 town roads.

According to the ~~2003~~ 2009 Annual Town Report, Highway Department expenses were budgeted at ~~\$568,169~~ \$813,047.20 or ~~35~~ 37% of the Town's general expenses (excluding school budget) in FY 2003~~9~~. The Highway Department budget does not include ~~\$65,000~~ \$34,908 allocated for bridges. In 2003~~9~~, ~~21~~ 13% of the Highway Department's cost was covered by state aid for highways. The remaining ~~79~~ 87% was raised from local property taxes. Although the Highway Department budget has

increased over the past five years, it has remained approximately one third of the Town's General Expenses. This data indicates that the Highway Department budget has increased at approximately the same rate as the rest of the Town's General Expenses. The demand for increased highway capacity resulting from large scale development can have a dramatic impact on the town's budget. Additional challenges arise from the incremental increase in traffic and highway capacity resulting from many small developments over time. By maintaining a capital budget and active transportation planning program, in conjunction with neighboring towns, the town can anticipate highway needs and plan for them in an efficient and cost effective manner.

Bridges

In the past residents have requested that the town and state "celebrate the bridges" and help "make cool bridges" when reconstructing, rehabilitating or building new ones. As the character of Warren is closely tied to its geographic features, residents would like to see the bridges maintained or built to enhance, rather than detract from, the town's rural integrity.

State-Owned

Table 7.2 lists the bridges in Warren that are owned and maintained by the State of Vermont Agency of Transportation (AOT). The data indicates that two of the five bridges have structural deficiencies.

Bridge # 172 - Route 100/Access Road Bridge: AOT replaced the curbing, railing and deck of the bridge during the fall and winter of 2004. The bridge marks an important entrance to Warren and the resort area, providing an opportunity to define an attractive look for the Valley's roadway system. As a result of the flood in June 1998, the town bought approximately two acres of floodplain on the southwest corner of the confluence of the Mad River and Clay Brook. This property is adjacent to the bridge and offers an ideal opportunity to create a gateway for public recreation and river access.

Bridge # 173 over Mad River - Kingsbury Iron Bridge: According to state officials, the iron bridge crossing the Mad River on Route 100 just south of Mac's convenience store needs to be reconstructed due to safety issues and technical deficiencies. Some maintenance work was completed on the bridge in 2001. AOT **has secured all required permits for replacement of this bridge, which is scheduled for 2011 / 2012.** ~~is not currently working on this bridge design or replacement and do not plan to through the year 2007.~~

Bridge # 169 over the Mad River on VT Route 100 just South from the Lincoln Gap Road: Bridge rehabilitation was completed during the fall of 2001, which replaced the deteriorated steel and repainted the bridge.

Bridge # 166 over Mad River on VT Route 100 near the Granville town line: The southern most bridge on Route 100 in Warren **was rehabilitated in 2008.** ~~is considered structurally deficient by state officials. The concrete deck and bridge seat are in poor~~

~~condition and require extensive rehab or preferably full replacement. The AOT is currently in the very preliminary design phase and does not plan to replace the bridge through the year 2007.~~

Bridge # 7 over Freeman Brook in Warren Village: The bridge on Brook Road just West of School Street **was rehabilitated in 2008.** ~~needs to be replaced due to the deteriorated concrete deck and guardrails. Assuming the AOT gets the funding, the AOT will replace the bridge in 2005.~~ Then the majority of the approximately \$710,000 project **was** ~~will be~~ funded by AOT, with the town contributing the 20% matching funds.

Bridge # 6 over Mad River in Warren Village - Warren Village Covered Bridge: Some repairs were completed on the Warren Village Covered Bridge after it was damaged in the 1998 flood. The 2002 Bridge Study indicates additional repairs to the guardrail and replacement of the western abutment are required.

The AOT has also served as project manager for the repairs to the Blueberry Lake Dam which were completed in 2004. The repairs, which began in the Spring of 2004, involved adding a new overflow culvert and 3 emergency spillway culverts. During construction the lake was drained and traffic was rerouted via the old location of Plunkton Road through what was the center of the lake. The project was made feasible with a \$500,000 grant from the Federal Highways grant program. A contractor was hired to design and repair the dam.

Town-Owned

In 2002 the town hired an engineering firm to conduct an inventory of all town-owned and maintained bridges as well as culverts greater than six feet in diameter. Each bridge or culvert was given a priority number for repair (1 through 4) and an estimate of the cost to repair. The priority number is based on the time frame for repairs or replacement as follows:

Priority Number = Years until recommended replacement

1 = 0 to 1 year

2 = 2 to 5 years

3 = 5 to 10 years

4 = > 10 years

Table 7.3 outlines the results of the bridge and culvert inventory report. The report indicates that ten of the seventeen bridges and culverts inventoried need to be repaired or replaced within the next five years.

Scenic Roads

In 2002, the Warren Planning Commission conducted an inventory of the scenic qualities of all the town highways. The study was prompted by concern from Warren residents about the maintenance of gravel roads. Guided by the Vermont Field Guide titled “Designating Scenic Roads” prepared in 1979 by the Vermont Transportation Board, the Planning Commission determined that 23 roads in Warren were eligible for

the scenic designation. The Selectboard held a number of public meetings regarding the maintenance of roads and the Planning Commission's Scenic Road Inventory. At the strong recommendation of the public at the meeting, the Selectboard elected to amend the current road ordinance to include a public notification process when any major change to a Town highway is contemplated.

Road Access Management

The efficiency and safety of all town roads are directly affected by the frequency and location of points of access or curb cuts. The design of curb cuts also is important in terms of drainage and road maintenance. Some access management methods are appropriate to residential development, some to non-residential development, some equally to both. Some specific standards cited in the 2003 Central Vermont Regional Transportation Plan for improving access management include:

- minimum sight distance at a driveway or street intersection;
- maximum number of driveways per lot;
- minimum distance between driveways and minimum distance between driveways and nearest intersection;
- mandatory access to a minor road, such as frontage/service road or a common internal street
- mandatory location of access on corner lots;
- mandatory shared driveways;
- mandatory connections (immediate or future) to adjacent properties;
- minimum and maximum driveway width;
- minimum driveway (throat) lengths;
- minimum corner turning radius;
- left turn or right turn ingress lane;
- driveway turnaround area (for small existing lots fronting the corridor);
- minimum or maximum on-site parking, shared parking, and parking design;
- minimum area and/or bays for loading and unloading; and,
- landscaping and buffers to visually define and enhance access points.

Many of these requirements have been incorporated into the Land Use and Development Regulations and the standards for curb cut permits. Consistent and comprehensive access management policies are necessary to balance the needs of motorists, pedestrians, bicyclists, and other users of the roadways system to travel in safety and with sufficient mobility.

Traffic Calming

Techniques to better control traffic speeds, enhance pedestrian safety, and improve the overall environment are commonly referred to as traffic calming measures. These measures include narrow vehicle traffic lanes, wider sidewalks, medians, on-street parking, roundabouts, gateways, splitter islands, plantings, ~~and~~ street furniture **and radar feedback signs**.

Traffic calming in Warren Village has been studied numerous times, most recently in 2001 **2009 with the Safe Roads to School initiative**. ~~when the Selectboard requested the Planning Commission study the feasibility of a Sidewalk and Traffic Calming plan in Warren Village. With grant money received from the Department of Housing and Community Development AOT, the Planning Commission hired LandWorks, a landscape architecture firm, to consult on the project. Phase I of the feasibility study determined the location of town owned right of ways throughout the village and recommend the best alternative for the location of sidewalks, traffic calming devices, lighting, signage and streetscape. Phase II expanded on Phase I with more specific designs for traffic calming, signage and lighting as well as a report explaining the planning process, feasibility analysis, archaeological study, estimate for construction, and recommendations.~~ **The Warren Village Pedestrian Enhancement Plan, is the result of Phase II (traffic calming), written in 2001, were incorporated into the SRTS grant application.**

The Warren Village triangle, where Brook Road, Flat Iron Road and Main Street come together, offers unique challenges for speed control. The Brook and Flat Iron Roads present a challenge to road fronting properties located in close proximity to the right of way with insufficient lines of sight. East bound Brook Road traffic accelerates from the left turn off of Main Street; this seems to be especially true with delivery vehicles and departing weekend guests heading to the Roxbury Mountain Road. Installation of a stop sign at Flat Iron Road and Brook Road has helped alleviate some problems. Brook Road traffic heading westbound does not reach the legal limit until it passes the intersection with School Road. Main Street traffic requires more controlled speed from the Bridge Road to the intersection of Route 100. The parking access for the Post Office further complicates traffic flow.

~~Support for any~~ **Although there has been limited support to implement the entire pedestrian plan and companion,** the traffic calming **measures** aspect has remained a high priority by both the **Planning Commission** ~~Selectboard~~ and village residents. Should the Selectboard decide to implement any part of the plan, the State of Vermont Bicycle and Pedestrian Enhancement Grant Program should be pursued as a funding source.

Traffic speed has also been a concern at the entrance to Sugarbush at Lincoln Peak. As a result ~~the recent Lincoln Peak base area parking lot expansion permitted in 1997, Sugarbush is~~ **has constructed a gravel path from the intersection of Inferno Road, Village Road and the Sugarbush Access Road to the former Warren House Restaurant and a paved path along the Village Road to the intersection of Green Mountain Drive. While** required to maintain 100 to 150-foot wooded buffers to help maintain the forested gateway to the ski resort, Sugarbush Village and National Forest, **Sugarbush should be encouraged to continue this network of paths in each phase of its base area development.** Signage and reduced speed limits have also been included in these plans.

Safe Roads to School

The Warren School location serves Warren town residents in several capacities-- school, home to the town recreation fields, tennis courts, basketball court, skateboard-park, and hiking trails. It is also the end of the proposed Mad River Path which, in its

totality, will connect Moretown with Warren by way of a bicycle / pedestrian pathway. The school and Brooks Field is a year round community hub for town residents.

Recognizing the desire of students to walk and bike to school and the need for safer travel for walking and bicycling in the village, a VTrans Safe Routes to School grant was applied for and granted in 2008. In 2008-09 the school received grant funds to purchase safety, educational, and promotional materials/supplies in support of the program. The School also hired a consultant to assist in the development of the School Travel Plan.

In May 2010, The Town of Warren submitted an application for a Safe Routes to School Infrastructure Grant. The town was notified in July 2010 of its awarded funding. The grant addresses three goals:

- overall speed reduction throughout Warren Village,
- mitigating hazardous travel zones and;
- connecting safe pathways of travel to and from the school.

The application includes three radar feedback signs at the entrances to Warren Village and new reflective, school area signs that comply with the Manual of Uniform Traffic Control Devices (MUTCD).

The application also includes a feasibility study for a sidewalk/pathway on Main Street, Brook Road (approximately 1,700 ft.) and School Road (approximately 1,500 ft.). The feasibility study will include review of pathway connectivity to an existing sidewalk on Main Street, a public right of way (path) off Brook Road to the school, Flat Iron Road and a path along School Road.

Pedestrian and Bicycle Travel

The existing road network, especially VT Route 100, serves as an important bicycle corridor. Cyclists enjoy the Mad River corridor for recreational as well as racing pursuits.

The bicycle lane was created on VT Route 100 between Warren Village and Irasville. This network is intended to serve the travel and recreational needs of pedestrian, bicycle, and other non-motorized modes of movement. The path network was most recently extended around the snowmaking pond and to the Riverside Park. The objectives of the network are:

- to promote health and safety;
- to encourage alternatives to vehicular travel;
- to improve pedestrian and bicyclist safety;
- to afford access to open spaces;
- to enhance recreational amenities; and,
- to link the Valley's growth centers.

Trails linking the Warren elementary school with the Waitsfield and Fayston elementary schools have been investigated by the Mad River Path Association using money granted by the Agency of Transportation, Conservation Fund, Agency of Natural Resources, National Parks Service and the Vermont Youth Conservation Corp.

Another area of town frequently used by pedestrians and cyclists is the Golf Course, West Hill, Inferno, and Access Road 3 mile loop as well as travel from the

Lincoln Peak base area to the Sugarbush Inn and condos. This poses a safety concern since none of these roads have sidewalks or paths and some are narrow and windy. To help alleviate the safety issue, the permit for the Lodge at Lincoln Peak, which is being redesigned, requires Sugarbush Resort to install paths on property owned by the resort linking the base area to the Sugarbush Inn.

Since Sugarbush Resort does not own all of the property between the base area and the Sugarbush Inn there will be gaps in the path. To help remedy this situation, any permit issued at Lincoln Peak will probably require that Sugarbush encourage adjacent property owners to link onto the path at their own expense.

Parking

Warren Village: To augment the lack of parking in Warren Village, the Town applied for and received a Municipal Park & Ride grant in conjunction with the Vermont Agency of Transportation in 2006. This resulted in the conversion of a Town owned parcel to a municipal lot for fourteen spaces. The additional spaces also serve commuters, carpoolers, hikers, and cyclists who use the Village as a base. As the commission continues to refine its plan for municipal facilities, it will continue to analyze the parking needs and opportunities in Warren Village.

~~A lack of parking has been cited as a problem in Warren Village. It is expected that a thorough analysis of parking needs and opportunities in Warren Village will be undertaken by the Planning Commission in the near future.~~

The Town also received a 2009 Municipal Park & Ride grant to create 21 spaces at the East Warren Schoolhouse.

~~Lincoln Peak Base Area: Residents have also expressed concern about parking at the base of Lincoln Peak. Some of these concerns should be addressed through~~ **In conjunction with the Lincoln Peak permitting process, Sugarbush received an air quality permit for approximately 2200 spaces of which 1625 have been constructed. The resort continues to emphasize the use of the Mad Bus for inner mountain transit and its own intra parking lot shuttle system to limit traffic congestion at the Lincoln Peak base area. for as it continues. As a condition of the previously issued permit, Sugarbush is required to increase the number of parking spaces to 1650, which is an increase of 282 spaces.**

Travel Demand Management

Traffic congestion is greatest during the peak ski season and several peak holiday events (4th of July, Labor Day and Columbus Day weekend). Not surprisingly there is a direct correlation between the annual number of skier visits and the annual number of vehicular trips. During the peak events it may be appropriate to implement a travel demand management program. A program could include public transit, ride share facilities, flexible-time for employees and skiers (i.e. promote morning skiing with a half day A.M. ticket), pedestrian and bicycle facilities.

Public Transit

Because of the high price of fuel, the awareness of energy use, the importance of tourism to the local Warren's economy and the number of young people needing rides, public transit in the Valley has become a viable option in the last several years. designed to alleviate the high volume of tourist and ski related traffic is important to the Town of Warren. The Mad River Valley Transportation Advisory Committee (TAC), formed under the auspices of the Central Vermont Regional Planning Committee, continues to work to bring public transit year round transit services to the Valley, including Warren Village, Sugarbush ski area and the condos there, and Harwood Union High School. Resort, Route 100 in Warren, and the Sugarbush Access Road.

There have been several different entities have served Warren's transit needs since 1999. Wheels, Alpha Transit, and finally Chittenden County Transit Agency (CCTA), which now has Green Mountain Transit Agency Transportation Service provided public transportation services in the Mad River Valley between 1999 and the summer of 2002. Their successor, Alpha Transit, managed the service for the 2002-2003 season. In the summer of 2003 transportation service in the Valley was absorbed by Chittenden County Transportation Authority. It is now part of the Green Mountain Transit Agency, CCTA's as Washington County's provider. public transportation provider. GMTA is also provides services operating in Waterbury and Montpelier, both of which connect with the Valley. See Map. should facilitate adding connections as the service grows.

The "Mad Bus" as the local service is known, operates five eight routes in the Valley during the winter months. The Valley Floor, The Saturday Evening Special, Mount Ellen, the Warren Shuttle, Mountain Condos, Access Road, The SnowCap Commuter, and the Harwood Freerider all have posted schedules on the GMTA website <http://www.gmtaride.org/madriver/routes-schedules-mr.html>. serving Sugarbush Ski Resort, Mad River Glen, Warren Village, Waitsfield Village and Irasville. The MadBus stops at regular locations along the routes, and will stop anywhere along the established routes by request. During the ski season eight buses operate daily beginning as early as 7AM at with service extending to 4:30 PM on most routes. On Saturday nights one bus remains in service until to 2AM for the convenience of locals and tourists who choose to visit the Valley floor for entertainment. The bus operates at reduced hours during the off season. Schedules providing details of all routes are distributed throughout the Valley in November for the winter season and in April for summer service.

The state provides funding for this service through the AOT. As with many public transit systems, the success is measured by the number of riders. The preference for the individual automobile is a continuing challenge to any public system.

Besides this service there are several other initiatives involving alternatives to the one person, one car paradigm. Valley Moves, a spin off from the VFN, has a mission statement that cites three main objectives:

- to conserve energy resources;
- to reduce emissions; and
- to unite the Valley by an awareness of shared transportation issues.

They are actively working on car and van pooling, Mad Bikes, a bicycle sharing program, Valley Walk and Roll, and Safe Routes to School, all of which propose alternative transportation ideas.

~~The annual operating budget for the Mad Bus is approximately \$310,000. The State provides 80% of the funding through the AOT. The majority of the required 20% local match comes from Sugarbush and contributions from several other local businesses. In November 2002, the AOT arranged for the acquisition of buses to establish a new transportation service. The cost of purchasing the vehicles was covered 80% by Federal funds, 10% by State funds, and a local match of 10%. The local match was raised by contributions from Sugarbush, each of the three towns and the Mad River Valley Chamber of Commerce business community.~~

~~The Central Vermont Regional Transportation Plan recommends expanding the Mad Bus service to Harwood Union Middle and High School, Moretown Village as well as developing a connector shuttle to Montpelier, Waterbury and Burlington.~~

~~In 2002, a Short Range Transit Plan for Mad River Valley was prepared to determine the feasibility of public transit. The plan includes survey results of residents, visitors and business executives; alternative service concepts; financial and ownership analysis; and recommendations for implementation. Under the proposed transit system set forth in the transit plan, Warren would be served primarily by year round service from Sugarbush Village to Waitsfield Village/Irasville along the Access Road and Route 100.~~

~~Linking the Valley's key growth centers is an important component of the transit system, especially with plans for more four season resort development at Sugarbush. There also would be hourly connections between Sugarbush Village and Warren Village throughout the ski season (November through April). The Warren Village service was included in the Transit Plan in large part because it offers a connection from the Warren School to Sugarbush Village, Mad River Glen and Waitsfield Village/Irasville.~~

Air Travel

The Sugarbush Airport in Warren is privately owned by Granite Intersection, Inc. but is open to the public. The facility was built in 1963 by local flying enthusiasts. During the six warm months of the year, it is leased and operated by the Sugarbush Soaring Association, Inc. The Association is a nonprofit corporation that provides glider flight instruction and scenic rides to the public as well as soaring services (tows, rental and flight instruction) to its club members. The airport is leased to Ole's Cross Country ski operation during the winter half of the year.

The airport is located on the East Warren plateau at an elevation of 1470 feet above sea level. It has a single paved 2700 foot runway with grass areas suitable for landing on either side. Aviation fuel is available for piston aircraft only. No jet fuel is available. A few outside tie downs are available for local and visiting small aircraft. A limited number of privately owned hangars house local aircraft. A larger hangar provides limited storage and occasional maintenance services to other aircraft. This is also the home of an air show business that puts on air shows periodically all over the New England and New York area. A small, popular restaurant in the airport administration building offers breakfast and lunch on weekends and a limited lunch during the week.

The peak use period is from July 4 to September 15. The off-peak period accounts for approximately one-third of the total traffic.

Interstate and international flights are available within an hour of Warren at the Burlington International Airport. Small private planes can also land year-round at the Barre-Montpelier Airport in Berlin and the Burlington International Airport.

Regional Coordination

It is important that local land use and transportation decisions are considered in the context of the regional transportation network that serves Warren. In addition to working with neighboring communities to plan for alternative transportation modes, such as public transit, it is important to consider local highway matters in a regional context.

The town has attempted this through ongoing participation and support for the Mad River Valley Planning District's and Central Vermont Regional Planning Commission's (CVRPC) transportation planning efforts, including consideration of the traffic impacts of ski area development at critical Valley intersections, such as Routes 100 and 17 in Waitsfield. CVRPC also organizes the Transportation Advisory Committee for the region. Other attempts to consider regional impacts of local decisions include warning signs and other means of directing heavy traffic to use paved roads, for example Sugarbush Access Road and Route 100, rather than high maintenance cost gravel roads, Lincoln Gap or Roxbury Gap Roads.

Skier and other tourist traffic visiting Warren may adversely affect residential properties in nearby Moretown, Waitsfield and Middlesex Villages and the Town of Duxbury, and may encourage commercial strip development along Routes 100 and 100B. Supporting the transportation planning efforts of the Central Vermont Regional Planning Commission is an important means of addressing regional concerns.

Transportation Goals

Goal 7.A Maintain and improve a transportation system that is safe and efficient.

Goal 7.B Minimize transportation energy consumption and trips.

Goal 7.C Support regional efforts to provide and maintain systems that meet the needs of all segments of the population.

Objective 7.1 To direct growth to specified centers served by the existing main road network and limit growth in the remainder of town.

Implementation Strategies

- a) Reinforce existing centers at Warren Village and Lincoln Peak/Sugarbush Village.

- b) Continue to promote the principal use of minor arterial highways, specifically Route 100, and major collectors, specifically the Sugarbush Access Road and the German Flats Road, for recreation-related traffic.
- c) Upgrade roads in relation to the desired scale and capacity of growth centers and limit large scale development outside of designated village centers.
- d) Maintain the scale, rural quality, and capacity of secondary roads during improvement and maintenance procedures.
- e) Develop and carry out a program for roadway and intersection improvements, as needed, along the network of major collector roads. Fund necessary improvements in part through developers' contributions in the event that existing capacity is inadequate to accommodate additional development (e.g. level of service 'D' or less).
- f) Evaluate parking needs and opportunities in Warren Village and Sugarbush Village. Require the examination of underground or structured parking as part of any expansion at Lincoln Peak.

Objective 7.2. To manage roads and bridges to meet community-level demand and maintain rural character.

Implementation Strategies

- a) Develop a long-term roadway improvement program that assesses the town's transportation system's current conditions, desired conditions, deferred maintenance needs and levels of routine maintenance needed to sustain desired conditions.
- b) Through the Land Use and Development Regulations restrict curb cuts where alternative access is possible.
- c) Through the Land Use and Development Regulations, ensure that land use activities do not result in an undue adverse impact to traffic safety and the condition of town roads.
- d) Through curb cut permits and the Land Use and Development Regulations require that all new roads and all private road and driveway intersections with town roads meet minimum safety and design standards. Coordinate curb cut permits with Development Review Board decisions and long range planning.
- e) Work with the Vermont Agency of Transportation and legislature to ensure that all road and bridge construction shall balance capacity requirements with scenic

impacts to ensure that rural residential roads and bridges are not over-built to urban standards.

- f) ~~Working with VAOT during the rehabilitation of the Route 100 and Access Road bridge, enhance the bridge to create an attractive, safe entrance to Warren and Sugarbush Resort.~~ Ensure adequate and attractive provisions are made for pedestrians and cyclists **including support of the Mad River Path and a planned and permitted pedestrian bridge over the Clay Brook.**
- g) Require the Kingsbury iron bridge be replaced with a bridge with adequate safety provisions for cyclists and pedestrians. Ensure adequate and attractive provisions are made for pedestrians and cyclists possibly including a pathway or pedestrian crossing underneath the replacement bridge. Investigate the possible re-use of the iron truss.
- h) Ensure that the historic integrity of the Covered Bridge in Warren Village is maintained when it is repaired.
- i) To improve traffic flows during peak ski periods, encourage travel demand management techniques such as but not limited to satellite parking, use of public transit, or other options.
- j) Evaluate proposed bridge improvement projects and develop a purpose and needs statement for each bridge. Submit the town's proposals to Vermont Agency of Transportation and work toward implementation of the Town's desires.
- k) Encourage the use of Route 100 and the Sugarbush Access Road as primary means to access the ski resort at Lincoln Peak, specifically discourage the use of Roxbury Mountain Road, Lincoln Gap Road, West Hill Road and Golf Course Road.
- l) Preserve Class 4 roads for recreational use or downgrade status to that of a trail. Do not relinquish the public's interest in Class 4 roads.
- m) Adopt "Better Back Roads" and the Vermont Agency of Transportation 1996 Design Standards.
- n) Seek innovative funding sources to improve safety, congestion, erosion, and aesthetic problems on state and town highways and bridges (i.e., Public Lands Highways Program Discretionary Grants, Vermont Agency of Transportation Enhancements Program, Lake Champlain Basin Program.)

Objective 7.3. Provide alternatives to the heavy reliance on individual automobiles.

Implementation Strategies

- a) Require provisions for bicycles on any new or improvements to Class 2 or 3 roads and bridges.
- b) Coordinate and develop a path system with sidewalks **where appropriate** to insure an integrated pedestrian network.
- c) Develop an **active and comprehensive** ~~aggressive~~ ride sharing program.
- d) Support Vermont Agency of Transportation's striping and signage efforts to establish a dedicated bicycle lane on Route 100.
- e) Encourage the dedication of easements to permanently protect pathways through the subdivision and site plan review process.
- f) Support the continued operation of the Mad Bus. ~~or its equivalent and help implement the Short Range Transit Plan for the Mad River Valley (2002).~~
- g) Maintain the gateway for public recreation and river access at the property adjacent to the Route 100 and Access Road bridge with specific attention to pedestrians and cyclists. (Riverside Park)

Objective 7.4. Coordinate with local, regional and state entities to plan for Warren's transportation needs in a comprehensive manner.

Implementation Strategies

- a) Continue regional transportation planning through the Mad River Valley Planning District, Mad River Valley Transportation Advisory Committee and Central Vermont Regional Planning Commission.
- b) Continue to support the efforts of the Mad River Path Association.
- c) Coordinate with others to facilitate and implement a regional public transportation system.
- d) Explore ways to coordinate transportation planning, road maintenance and improvements with neighboring towns.
- e) Work with neighboring towns to ensure that proposed developments in those towns will not overburden Warren's transportation system.

Road (s)	Mileage	Class	Function	Aid
Route 100	6.348	State	Major Arterial	Federal, primary
THs 1, 3, 4, 5 & 6	20.22	Class 2	Minor Collector	Federal, secondary
THs 7, 10, 18, 24, 29, 31-35, 44, 49 & 50	8.41	Class 4	Access	None
THs Remaining	23.94	Class 3	Minor Collector	Local & State

Source: Road Name Map prepared by MicroData, St. Johnsbury, VT 9/1997.

Route & Bridge #	Location	Description	Bridge Type	Deficiency	Status	Historic Registry?
VT 100 -173	3.1 MI S JCT VT17	Kingsbury Bridge	Steel Thru Truss	Structural	Under Design Recon	None
VT100 -172	3.5 MI S JCT VT17	Route 100/Access Road	Steel Beam	Not Deficient	Repaired Deck and Rail	None
VT100 -169	5.7 MI S JCT VT 17	South of Lincoln Gap Road	3-Span Rolled Beam	Not Deficient	Rehabilitated in 2001	None
VT100 -167	7.4 MI S JCT VT17	Stetson Brook & Mad River in Granville Gulf	Steel Beam	Not Deficient	Rehabilitated and Painted	None
VT100 -166	8.3 MI S JCT VT17	Mad River near Granville Line	Steel Beam	Structural	Rehabilitate	None

Source: Central Vermont Regional Transportation Plan, 2003 and confirmed with AOT personnel

Bridge # (See map #6)	Description	Problems	Priority Group	Estimated Repair Costs
B21	Culvert on West Hill Road over Bradley Brook.	Need a guardrail, slope stabilization on upstream side, headwalls and a wing walls upstream. Some rust.	1	\$50,000
B29	Culvert on Inferno road over Clay Brook.	Downstream headwall completely undermined by vertical drop.	1	\$25,000
CB6	Bridge on Covered Bridge Road over Mad River.	West abutment needs surface repair. Approach guard rails need replacing.	2	\$20,000
B7	Bridge on Brook Road over Freeman Brook.	Rebuilt and with Steel and Cement Wingwalls	4	Done
B14	Culvert under Access Road over tributary to Clay Brook.	Crack in pavement from settling, washout at outlet, erosion upstream, drop at outlet, bulge in culvert.	2	\$22,000
B24	Bridge on West Hill Road over Bradley Brook.	Undermining of wingwall. Inadequate size and needs replacing.	2	\$168,000
B26	Culvert on Sugarbush Access Road over tributary to Clay Brook.	Bulge in culvert, mastic coating deteriorated, undermining downstream from drop off	2	\$11,500
B27	Culvert on Sugarbush Access Road over tributary to Clay Brook.	Bulge in culvert, mastic coating deteriorated, and needs guardrail, some rust.	2	\$16,000
B30	Bridge on Main Street over the Mad River.	Rehabilitated Deck	3	Done
B32	Bridge on Main Street over Freeman Brook.	Deck in poor condition, exposed footings, abutments and wingwall leaning outward.	2	\$216,550
B5	Bridge on Brook Road over Freeman Brook.	Removal of upstream sand bar. Remove and replace bridge rail and approach rail.	3	\$5,500
B11	Culvert on Senor Road over Freeman Brook.	Clear Vegetation and Add Guard Rail	3	\$5,550
B15	Bridge on Plunkton Road over Freeman Brook.	Remove gravel bar upstream. Monitor wingwall and abutments.	3	\$1,000