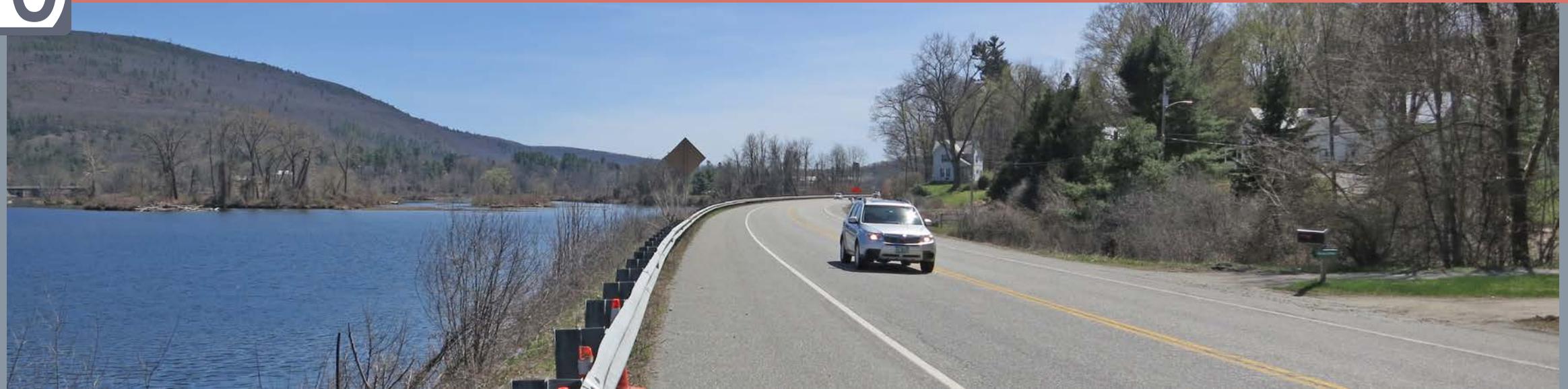




# MULTI-MODAL GATEWAY PLAN for the Town of Brattleboro



30 November 2016

Prepared for the Windham Regional Commission and the Town of Brattleboro by the consultant team of PlaceSense and VHB.

### PHOTO CREDITS

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# executive summary

## THE PROJECT

Visitors' initial perceptions of the character and livability of a community are formed as they travel along major access corridors into a town. These corridors are gateways to the community and should be designed to create a cohesive identity and reflect the desired image of the community.

The goal of this plan is to guide the transformation of Route 30 from West River Park south to Cedar Street into a gateway corridor that encourages compatible economic development, improves public safety, enhances community character and aesthetics, and provides improved multi-modal transportation options to connect the major destinations along this corridor. Establishing gateway corridors into downtown Brattleboro is an objective of the Brattleboro Town Plan and consistent with the goals of the Windham Regional Plan.

The intent of the Route 30 gateway is to reinforce a positive community identity, preserve natural areas, cultural resources and scenic viewsheds, expand recreation opportunities, and promote compatible future development along the corridor. As described in this plan, the gateway can be enhanced through a combination of public realm improvements, private development and conservation efforts.

There were two advisory committees guiding the development of this plan: a technical advisory committee that included representatives from the Vermont Agency of Transportation (VTrans) and the Vermont Department of Environmental Conservation (DEC); and a community advisory committee that included major landowners and residents along the corridor along with representatives of the Brattleboro Conservation Commission and the Friends of the West River. These committees provided valuable input on existing conditions and feedback on the preferred alternatives. There was also a local concerns meeting and a final presentation to the Brattleboro Selectboard at which the broader community had an opportunity to offer comments.

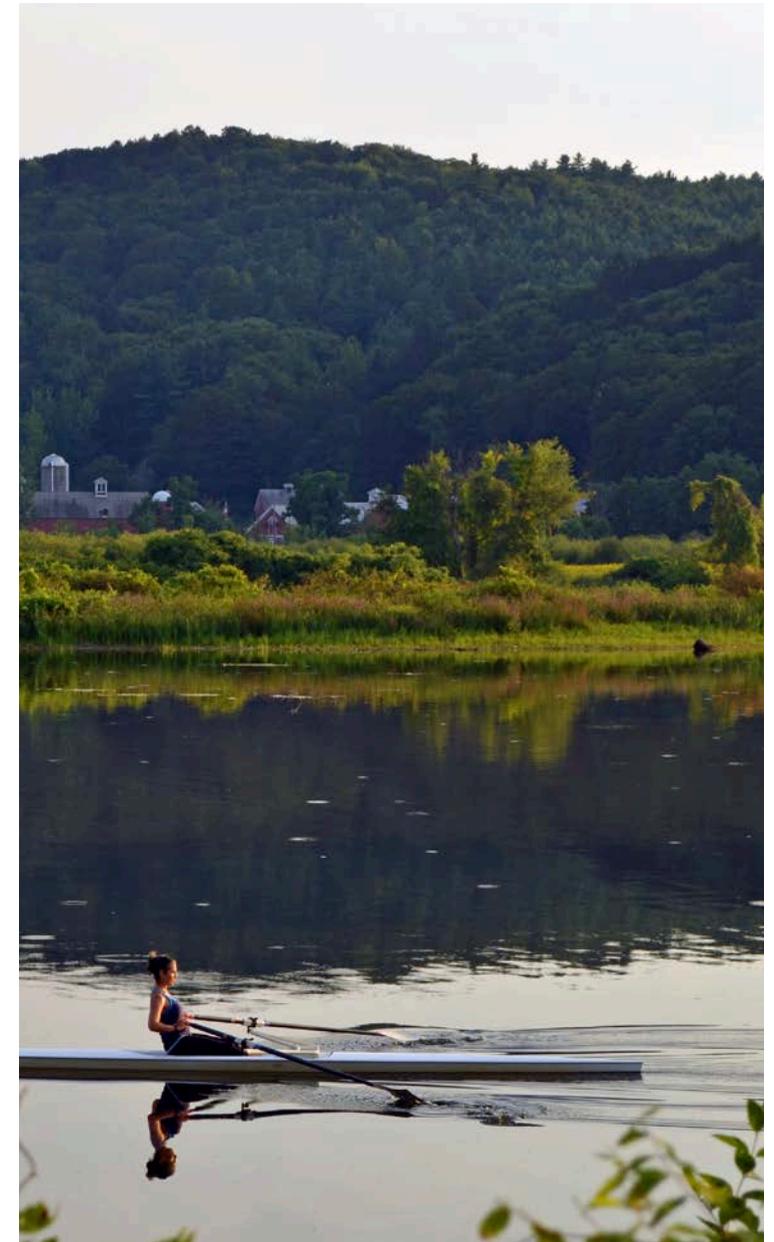
## THE CORRIDOR

The Route 30 Multi-Modal Gateway Plan for the Town of Brattleboro focused on the 1.6-mile segment of Route 30 from the Cedar Street intersection north to 485 West River Road (Fire Arts site), which serves as a gateway into downtown Brattleboro.

This segment of Route 30 is a state highway with a posted speed of 40 miles per hour from Cedar Street past the Retreat Farm and a posted speed of 50 miles per hour from that point to the northern gateway. The AADT (average annual daily traffic) is approximately 6,000 vehicles. Traffic is considerably heavier on Friday evenings and Sunday afternoons during ski season (Route 30 is a principal route for visitors coming from points south to the various ski areas and resorts in southern Vermont).

The highway right-of-way width is in excess of 100 feet throughout the corridor and the paved roadway width is generally 42 feet. The highway is currently configured with 7 to 9-foot shoulders and 12-foot travel lanes. There is informal on-street parking and a boat access within the state right-of-way that service recreation activities on the Retreat Meadows in the vicinity of the Retreat Farm. There is also on-street parking across from the Cedar Street intersection.

The West River and Retreat Meadows directly abut the east side of the highway and the west side of the corridor is generally constrained by terrain and/or drainage swales along portions of the corridor. Major destinations along the corridor include the Retreat Farm (a center for agricultural conservation, education, recreation and enterprise with significant historic and cultural resource value), the Retreat Meadows (a four-season water destination and a major open space amenity for the community), the municipal West River Park, and Brattleboro Professional Center (a small commercial area).





## THE PLAN

This plan is intended to provide a framework and general direction for future actions to improve the Route 30 gateway corridor in Brattleboro. It presents a vision for transforming Route 30 from Cedar Street to the Fire Arts site from a state highway principally designed to serve high-speed through traffic into a multi-modal scenic roadway that allows the community to take full advantage of the natural, cultural, and recreational assets in the corridor and to establish a distinctive and defining gateway into downtown Brattleboro

The partners that worked to develop this plan recognize that it is a long-term strategy that will likely be implemented incrementally over a number of years. While the assessment and analysis is based on conditions, technologies, policies, standards and funding sources as they exist today, those factors will likely change over time, influencing how and when the overall concept presented in this plan will be pursued. Some elements recommended in this plan that are not feasible in the immediate future may become possible at a future time.

This plan includes the following elements:

- An assessment of **existing conditions** that is intended to document the need for transportation improvements to the gateway corridor, the cultural, recreational and natural resources found in the corridor, and the land use and development opportunities available in the corridor.
- An **alternatives analysis** prepared at the request of VTrans to assess the benefits of and current barriers to a range of potential reconfigurations or redesigns of the existing roadway intended to enhance its function as a multi-modal corridor.
- An **implementation strategy** that includes prioritized recommendations for a preferred roadway design and other enhancements in the corridor, as well as estimated costs and suggested timing.

## THE RECOMMENDATIONS

Implementation of the strategies outlined in this plan is dependent on coordinated collaboration officials, departments and committees, property and business owners within the corridor, interested town residents and local organizations, and the Vermont Agency of Transportation. Even with a strong commitment, it will likely take a number of years before many of the recommendations for improvements to the Route 30 gateway corridor will be realized.

The recommended approach to enhancing bicycle and pedestrian facilities in the Route 30 gateway corridor seeks to balance the goals of improved public safety, aesthetics, and multi-modal transportation options with the capacity to construct and maintain such facilities. It includes:

- 4-foot shoulders and 11-foot travel lanes, narrowing and shifting the vehicular use zone to the non-river side of roadway;
- An 8-foot shared use path along the river side of Route 30 that would accommodate two-way bicycle and pedestrian travel and would be separated from motorized traffic by a 4-foot cross-hatch painted buffer strip with delineators; and
- Reduced speed limits through the corridor.

In addition to the roadway improvements, this plan also recommends:

- A bicycle-pedestrian bridge to be located within West River Park linking the Route 30 corridor to the West River Trail on the opposite side of the West River.
- A coordinated signage plan that includes gateway signs at each end of the corridor, destination signs sized and located primarily to direct pedestrians and bicyclists, and interpretive signs to provide information about the natural and cultural resources in the corridor
- Potential strategies and locations to meet peak and increased parking demands for recreational activities in the corridor
- Options for improving or relocating boat access to the Meadows

## existing conditions



### TRANSPORTATION ASSESSMENT

**Summary.** This segment of Route 30 is currently designed to function primarily as a conduit for high-speed, through traffic and is experiencing increased conflicts between pedestrians, bicyclists, local traffic and through travelers. There is a wide highway right-of-way with ample paved width to accommodate multi-modal use and parking.

**Traffic Levels.** The average annual daily traffic (AADT) in the corridor is approximately 6,000 vehicles (see Map 1). Traffic levels on this segment of Route 30 have declined from a peak of approximately 8,000 vehicles in the early 2000s. Trucks account for approximately 5% of the traffic in the corridor.

Traffic is considerably heavier on Friday evenings and Sunday afternoons during ski season when people coming on I-91 from the south or on Route 9 from the east travel through Brattleboro on their way to and from Vermont's southern ski areas and resorts. While winter traffic counts on this segment of Route 30 are not available, the AADT on the Stratton Mountain Access Road was 3,400 vehicles in 2013, and a substantial proportion of those vehicle trips passed through the study area. During peak ski traffic times, some drivers cut through Cedar Street to and from I-91 Exit 2.

**Travel Speed.** The posted speed limit in the corridor is 25 mph coming from downtown past the Brattleboro Retreat. It increases to 40 mph past the Retreat Farm and then increases to 50 mph for the remainder of the study area (see Map 1). VTrans has temporarily lowered the speed limit from the Retreat Farm to north of the I-91 bridge during the bridge construction project. Community feedback received during the advisory and local concerns meetings indicated support for keeping the speed limit at the reduced level permanently, as it has been in place for several years and drivers are accustomed to it.

The available speed data indicates that 15% to 20% of drivers are exceeding the posted speed limits along the corridor. The 85<sup>th</sup> percentile speed is 48 mph at the traffic counter located just north of the Retreat Farm.

Residents along the corridor have expressed concern about traffic speed, perceiving that many drivers routinely exceed the posted speed limit. The town sought to have the speed limit reduced when West River Park was created, but a speed study at that time did not justify lowering the posted speed.

**Crashes.** There have been an average of five crashes per year within the study area in recent years. Approximately 30% of these resulted in injuries and more than 25% occurred at intersections (see Map 1).

While the accidents have been dispersed along this segment of Route 30 there have been clusters of crashes in the vicinity of the Brattleboro Retreat and in front of the Retreat Farm, where there are greater numbers of turning movements, as well as around the I-91 bridge. Looking back further in time, there have been several serious crashes at the Upper Dummerston Road intersection resulting from vehicle turning movements. While there is not a single point along this section of Route 30 that is likely to meet VTrans' definition of a high crash location (HCL), this 1.6-mile segment in its entirety exceeds an average of one crash per year, which is one of the criteria for an HCL classification.

Residents along the corridor have expressed concern about safety, particularly when waiting to turn left into their driveways during peak traffic periods. Additional evaluation would be needed to determine the extent to which access management, limited sight distance and/or travel speeds are contributing to crashes within the corridor.



**Road Width and Configuration.** The right-of-way on this section of Route 30 owned and maintained by VTrans is extremely wide, ranging from 107 to 200 feet, although in places this includes land underwater (see Map 2).

The travel lanes on Route 30 are generally 12 feet wide and the paved shoulders are 7 to 9 feet wide along most of the corridor. The total paved roadway width is generally 42 feet along most of the corridor.

**Parking and Transit.** The width of the paved shoulders accommodates informal on-street parking throughout the corridor (as allowed under state law), except where parking is specifically prohibited (see Map 2). There is a parking area in the highway right-of-way across from the Cedar Street intersection that can accommodate approximately 20 vehicles.

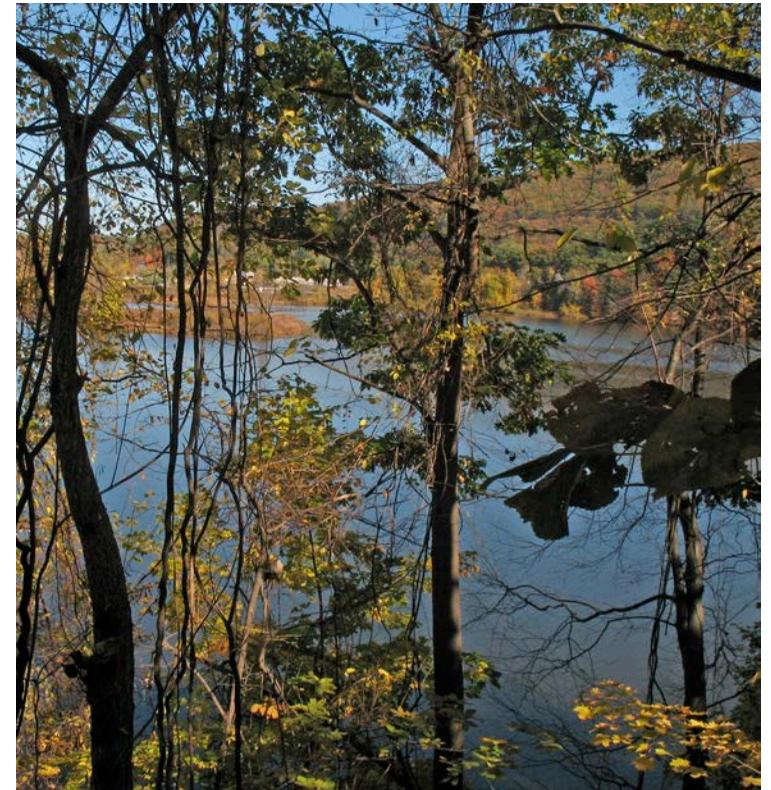
There is informal parking occurring on the paved portion of Route 30 in the vicinity of the Retreat Meadows, which is most heavily used for winter recreation access. It is also used by boaters and paddlers who access the Meadows from the informal boat launch within the highway right-of-way.

There is a marked no parking zone in the vicinity of the West River Town Park. While there are off-street parking lots within the park that can accommodate approximately 80 vehicles, they are currently only available when the gates are open (typically for scheduled practices, games or other events).

Southeast Vermont Transit has been pursuing plans to establish regular bus service on Route 30. Potential stops within the corridor include West River Park and the Retreat Farm.

**Sidewalks and Crosswalks.** The downtown sidewalk network extends along Route 30 beyond the Cedar Street intersection approximately 800 feet to the Retreat Farm on the west (non-river) side of Route 30 (see Map 2).

There are no marked crosswalks within the corridor as there are not pedestrian facilities on both sides of the highway as generally required by VTrans policy. During the advisory committee and local concerns meetings, community members have expressed a desire for marked crosswalks in the vicinity of the Retreat Farm and at West River Park. Anecdotal evidence suggests that people do commonly cross Route 30 in the vicinity of the Retreat Farm currently.



## RESOURCE INVENTORY

**Summary.** The study area benefits from a wealth of cultural, historic, scenic, natural and recreational resources, creating opportunities to support expanded tourism and recreation uses (see Maps 3-6). Some of these resources also pose significant challenges to how the land and transportation infrastructure within the study area may be used or changed in the future due to potential impacts to these important resources.

**Archeological Resources.** The area around the confluence of the West River and the Connecticut River is known to be a location with high potential for archeological resources. Like areas along the Connecticut River, the lands along the West River that were flooded to create the Retreat Meadows contained stone carvings and potentially other evidence of the Native Americans that inhabited the area for centuries prior to European settlement.

**Historic and Cultural Resources.** The lands and buildings associated with the Brattleboro Retreat, including the Retreat Farm and the Retreat Meadows, are listed in the National Register of Historic Places. The complex includes 38 contributing historic structures dating from 1838 to 1939, a number of which are within the study area or at the southern terminus of the corridor.

The historic Retreat Farm, once part of the Brattleboro Retreat's approach to treatment, has been in separate non-profit ownership since 2001, with the purpose of conserving the property's agricultural heritage and use. The Retreat Farm offers access to recreational trails, agricultural education and agritourism activities. A portion of the site is now home to the Grafton Village Cheese facility that includes a retail shop and an opportunity for visitors to view the cheese-making process.

The I-91 Bridge over the West River is being replaced as of the writing of this plan. The new bridge features an innovative balanced cantilever construction. This arching concrete bridge was designed to be complementary to its natural setting and incorporates viewing platforms at the base of each riverside pier. It is likely to become a new scenic and cultural resource within the study area upon its completion.

**Scenic Resources.** The corridor offers scenic views of the Retreat Meadows and the West River. Just east of the I-91 bridge, Route 30 travels directly along the riverbank creating open views of the river in the foreground with the narrow river valley defined by wooded hills on each side. In the vicinity of the Retreat Farm, Route 30 is located close to the shoreline of the Retreat Meadows. The views of the water are partially screened by scrubby vegetation.



**Natural Resources.** The Route 30 corridor parallels the West River, a major tributary of the Connecticut River. Within the study area, the river's elevation and velocity fluctuate in response to storms, ice-out and releases from upstream dams. It is also influenced by the Vernon Dam on the Connecticut River and in some years is subject to heavy ice flows. The result is occasional rapidly rising depths and velocities that have created a large scour zone adjacent to the river, which supports an uncommon rivershore grassland natural community.

The Retreat Meadows, a shallow body of water that functions like a pond although it adjoins the West River, was created at the confluence of West River and the Connecticut River when the Brattleboro Retreat allowed some of its low-lying fields to be flooded in 1918 as part of a hydro-electric project. The result is high-quality habitat for a variety of species, including a diversity of bird species.

There are rare plant species along the banks of the West River, as well as in and around the Retreat Meadows. The Vermont Agency of Natural Resources (ANR) has mapped significant natural communities in these areas. ANR has identified at least one plant species of concern in the vicinity of West River Park, Canada Burney (*Sanguisorba canadensis*). Further environmental assessment would be necessary to document the extent of rare, threatened or endangered plants in these shoreland areas (see Map 5).

ANR has also mapped smaller areas of habitat for rare, threatened or endangered animal species along the shore of the Retreat Meadows (see Map 5). The Meadows are considered an important bird area and serve as a stopover location for many migrating species. The bounty of birds and small mammals that visit or live in and around the West River and Retreat Meadows are readily observable. Environmental assessments have also found evidence of less well-known species that are thriving in the study area.

Most of the land on the river side of Route 30 is within the special flood hazard area. There is a small portion of the commercial area at the northern terminus of the study area that is elevated above the floodplain. The flood hazard area crosses Route 30 in the vicinity of the Retreat Farm. Much of the land on the river side of Route 30 north of the Upper Dummerston Road intersection is also within the mapped river corridor (see Map 4).

Much of the land abutting the northern edge of the Retreat Meadows and the islands within it is a mapped wetland. There are also mapped wetlands along the riverbank in vicinity of the West River Park and south of the Retreat Farm (see Map 5). The Retreat Farm has recently completed a wetland delineation for their land on the river side of Route 30.





**Recreational Resources.** The study area is a popular outdoor recreation corridor and destination throughout the year (see Map 6).

Route 30 is a popular on-road cycling route between Brattleboro and Dummerston and points north. Just across the river is the West River Trail, which starts at the mouth of the West River and currently extends nearly 6 miles to Rice Farm Road in Dummerston. It provides an alternative to Route 30 for hikers, walkers, skiers and bikers. The Friends of the West River Trail are working to open the entire 36 miles of former railbed for recreational use. The Friends sought to have a bicycle-pedestrian bridge constructed underneath the new I-91 bridge to link the trail to the destinations within the study area and to downtown Brattleboro. This recreational bridge ultimately was not included in the final design although the infrastructure necessary to “hang” a such a bridge will be in place. As a result, this project includes assessing an alternative location for a bicycle-pedestrian bridge at West River Park.

The Windham Foundation’s extensive public trail network is accessible from the Retreat Farm and from Cedar Street. The trails link the residential neighborhoods west of downtown and north of Route 9 to destinations in the study area.

The Hogle Wildlife Sanctuary nature trail around the Retreat Meadows, which is open to public use, extends from a starting point off Route 30 near the Cedar Street intersection to Eaton Avenue off Putney Road just south of the bridge over the West River.

West River Park is an 11-acre town park with approximately 1,800 feet of frontage on the West River. It has been developed with a lighted softball field, a soccer field, an all-purpose sports field and play area, a walking trail, public bathrooms and parking, and picnic tables.

There is a public water access point within the Route 30 right-of-way across from the Retreat Farm. This location is used as an informal boat access and provides winter access to the Retreat Meadows for ice skating and fishing. Concerns were expressed about the safety of backing trailered boats to the access during the local concerns and advisory committee meetings.





### LAND USE ANALYSIS

**Summary.** The study area is distinguished by a substantial amount of land owned by one of three institutional landowners, as well as the town and state (see Map 7). There is relatively little private land available for future development within the study area.

**Public Land.** The Town of Brattleboro owns the 11-acre West River Park and two parcels on the Retreat Meadows associated with the town's water system. One of those parcels is tiny (3,850 square feet), but the other is 5.8 acres of which only a portion is currently developed.

The State of Vermont owns the Route 30 right-of-way and the area around the I-91 bridge, which accounts for a significant amount of land and water frontage within the study area.

**Institutional Land.** The land along the southern half of the Route 30 study area was once part of the Brattleboro Retreat. Ownership of that land is now divided between the Brattleboro Retreat, the Windham Foundation and the Retreat Farm. Together, these institutional landowners control the majority of the land within the study area, a large portion of which they make available for public use.

**Residential Properties.** There are 15 single-family residential properties located on the western side of Route 30 from the intersection with Upper Dummerston Road north to the terminus of the study area. Most of these are relatively small, developed lots (1/2 to 2 acres) that are likely to remain in their current use and configuration. There are several larger parcels that have further development potential.

**Commercial Properties.** There are four commercial lots within the study area, including undeveloped land adjacent to the Saxtons River Distillery building that was for sale as of the writing of this report.

**Land Use Regulations.** The Town of Brattleboro adopted revised land use regulations in 2015 that established a Waterfront district encompassing the land between Route 30 and the West River within the study area. The land associated with the Brattleboro Retreat and the Retreat Farm are zoned Institutional and are subject to approvals under the town's prior planned unit development provisions. The remainder of the land on the west (non-river) side of Route 30 is in the Rural Residential District (see Map 8).



**Waterfront District.** The purpose of the Waterfront District is to encourage the management or development of waterfront lands in a manner that takes advantage of their proximity to water through means such as:

- Fostering new or expanded water-dependent and recreation-oriented uses.
- Protecting and enhancing water quality and the ecological function of riparian areas.
- Contributing to a system of pathways and greenways along major streams and rivers.
- Providing visual and/or physical access to surface water resources as a site amenity.

This district permits primarily residential and recreation-related uses. Lodging, dining, small-scale retail, office, services and beverage manufacturing (breweries and distilleries) are allowed with conditional use approval. It has a maximum lot coverage of 40%, a maximum building footprint of 8,000 square feet, and a maximum building height of 35 feet. It requires a minimum 50-foot riparian setback on previously developed sites and a 100-foot riparian setback on greenfield sites. It requires properties that front on the West River to accommodate a 10-foot wide corridor for a pedestrian path within or adjacent to the riparian setback as part of any major site plan application.



**Institutional District.** The purpose of this district is to provide flexibility for the ongoing use and management of the major institutions located in Brattleboro in response to the particular characteristics, mission and needs of each institution. Development in this district may only be permitted in accordance with an approved master plan for the site.

This district permits a variety of governmental, educational, religious, arts and healthcare institutional uses, as well as professional offices and senior housing. Residential, lodging, dining, recreation, small-scale manufacturing, event facilities and personal services are allowed with conditional use approval.



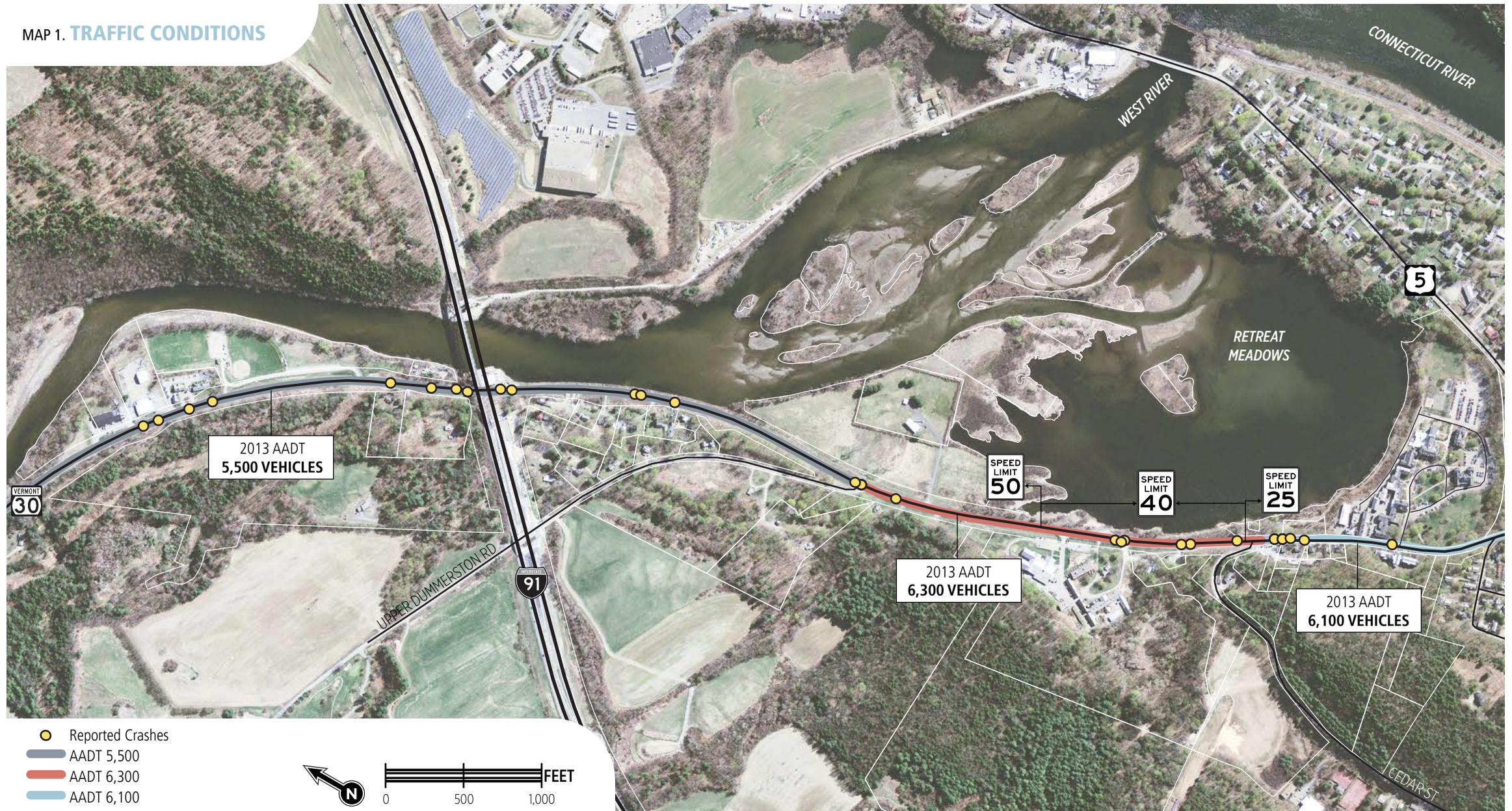
**Rural Residential District.** This district encompasses land that is rural in character, but that is relatively close to the developed areas of town and accessible from improved public roads. The purpose of this district is to provide opportunities for rural housing and to encourage the thoughtful siting of new development in order to protect rural character, farmland, forestland, open space and important natural resources.

This district permits single- and two-family homes, and allows multi-family housing up to four units as a conditional use. It also permits senior housing and a limited number of recreation-oriented uses (golf course, campground, park). Small-scale lodging and retail are allowed with conditional use approval, along with veterinary services, some additional recreation uses and various resource-based uses (stables, greenhouses, extraction, kennels).

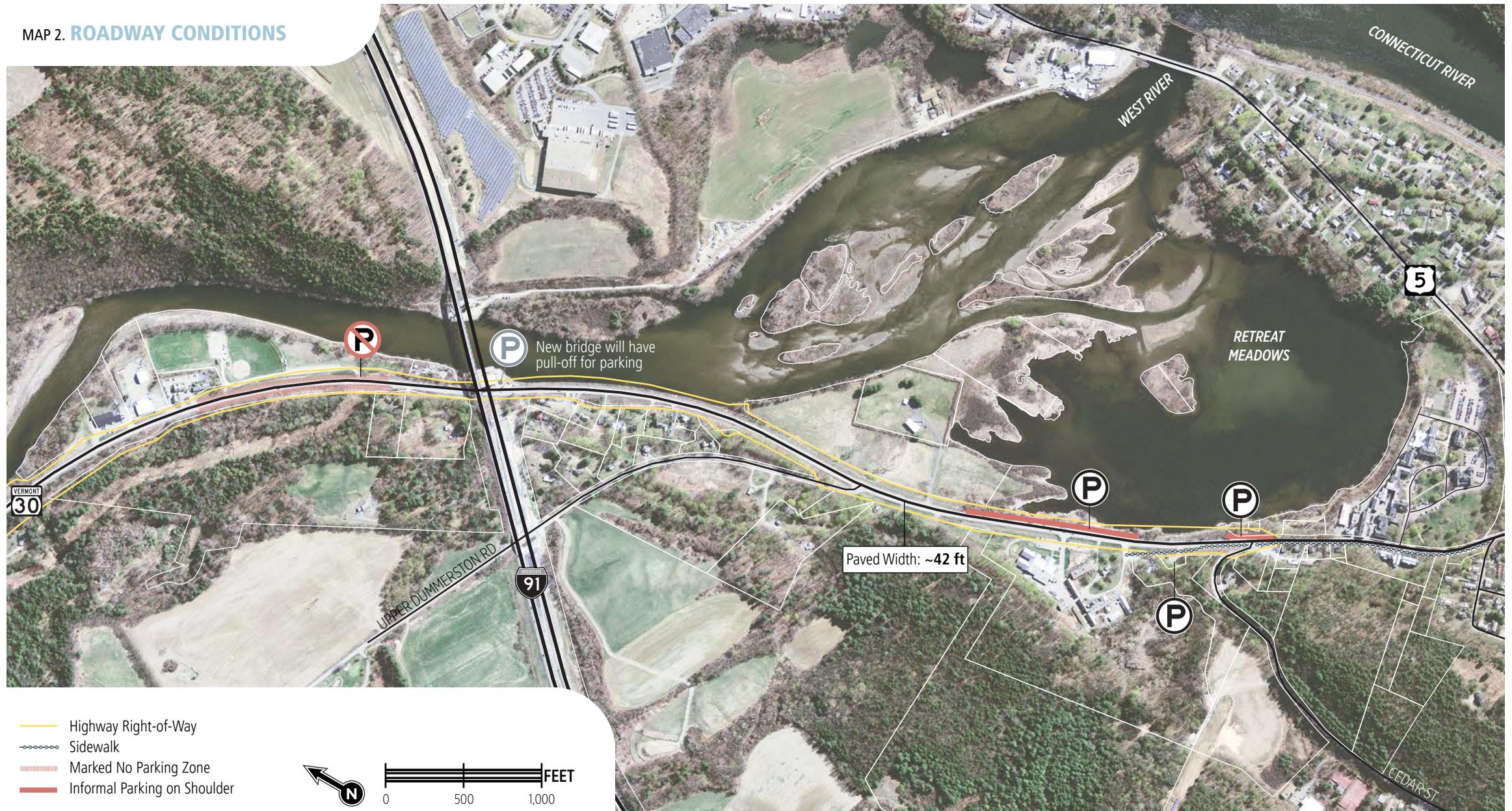
Residential development is allowed at a maximum density of one dwelling unit per 1.5 acres. The maximum lot coverage is 30% and the district requires a minimum 25-foot riparian setback on previously developed sites and 50-foot riparian setback for greenfield sites.

**Infrastructure Availability and Capacity.** The land south of Upper Dummerston Road is served by town water and sewer. The remainder of the study area relies upon private, on-site wells and septic systems.

MAP 1. TRAFFIC CONDITIONS

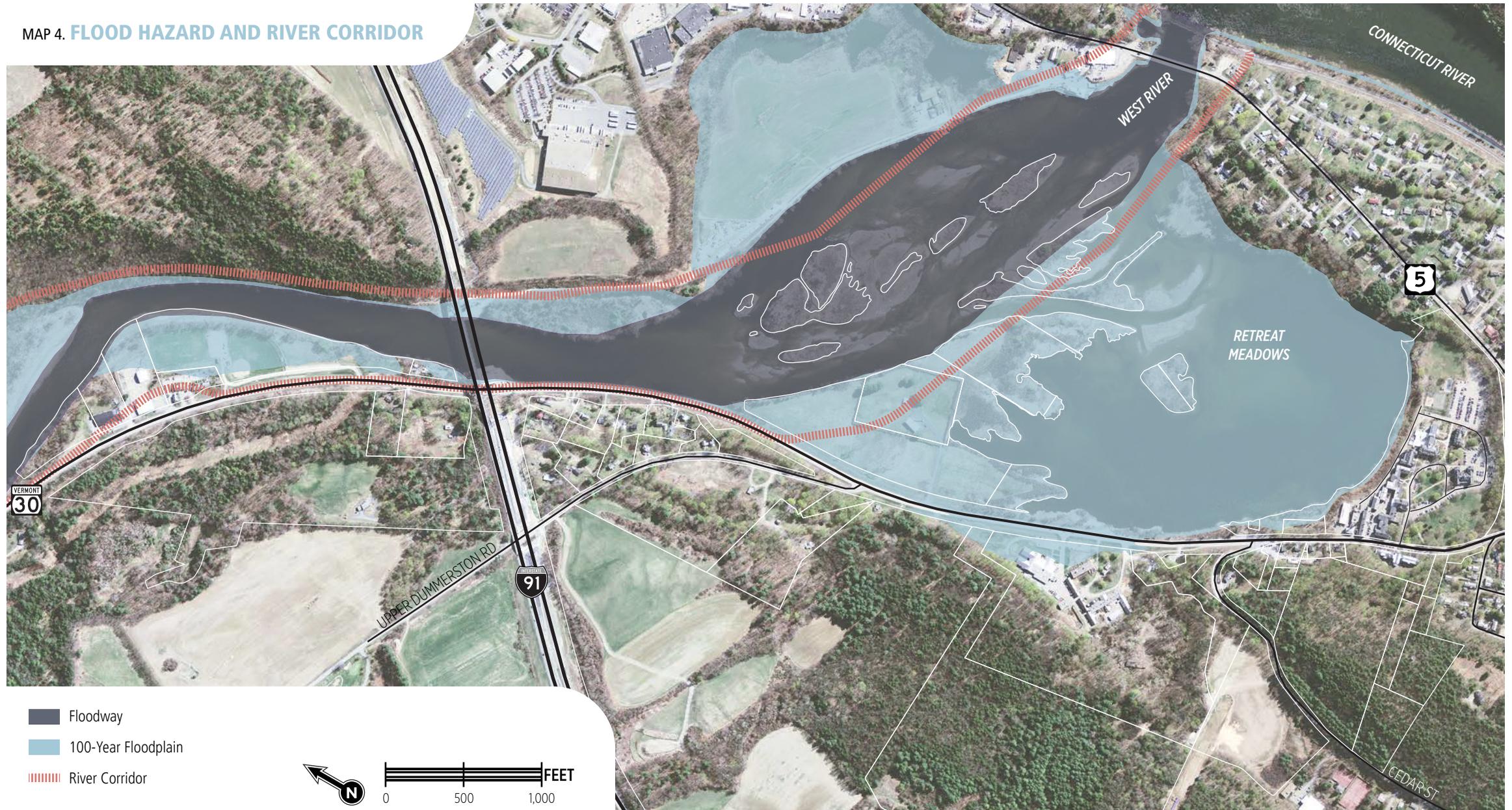


MAP 2. ROADWAY CONDITIONS

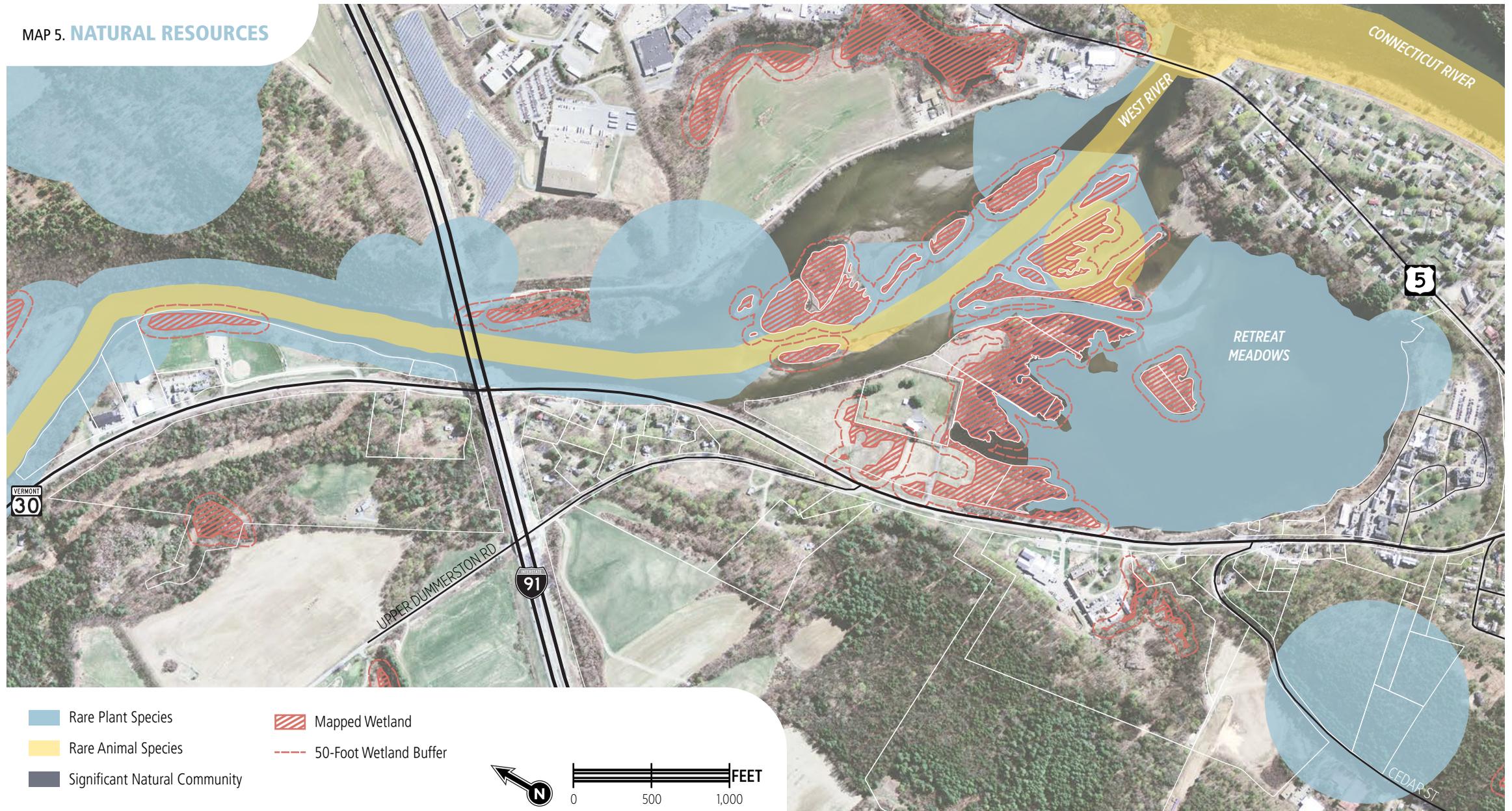




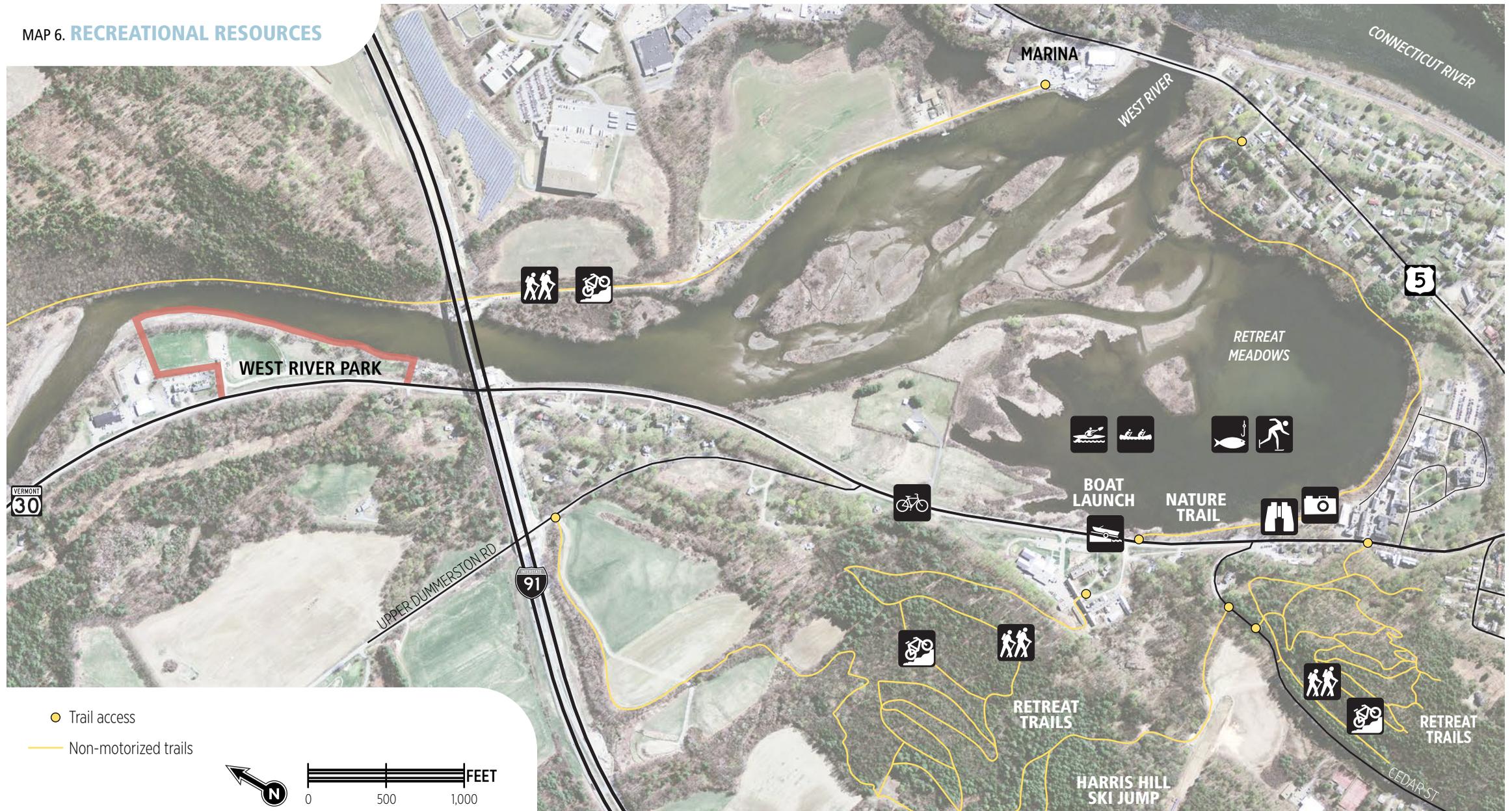
MAP 4. FLOOD HAZARD AND RIVER CORRIDOR



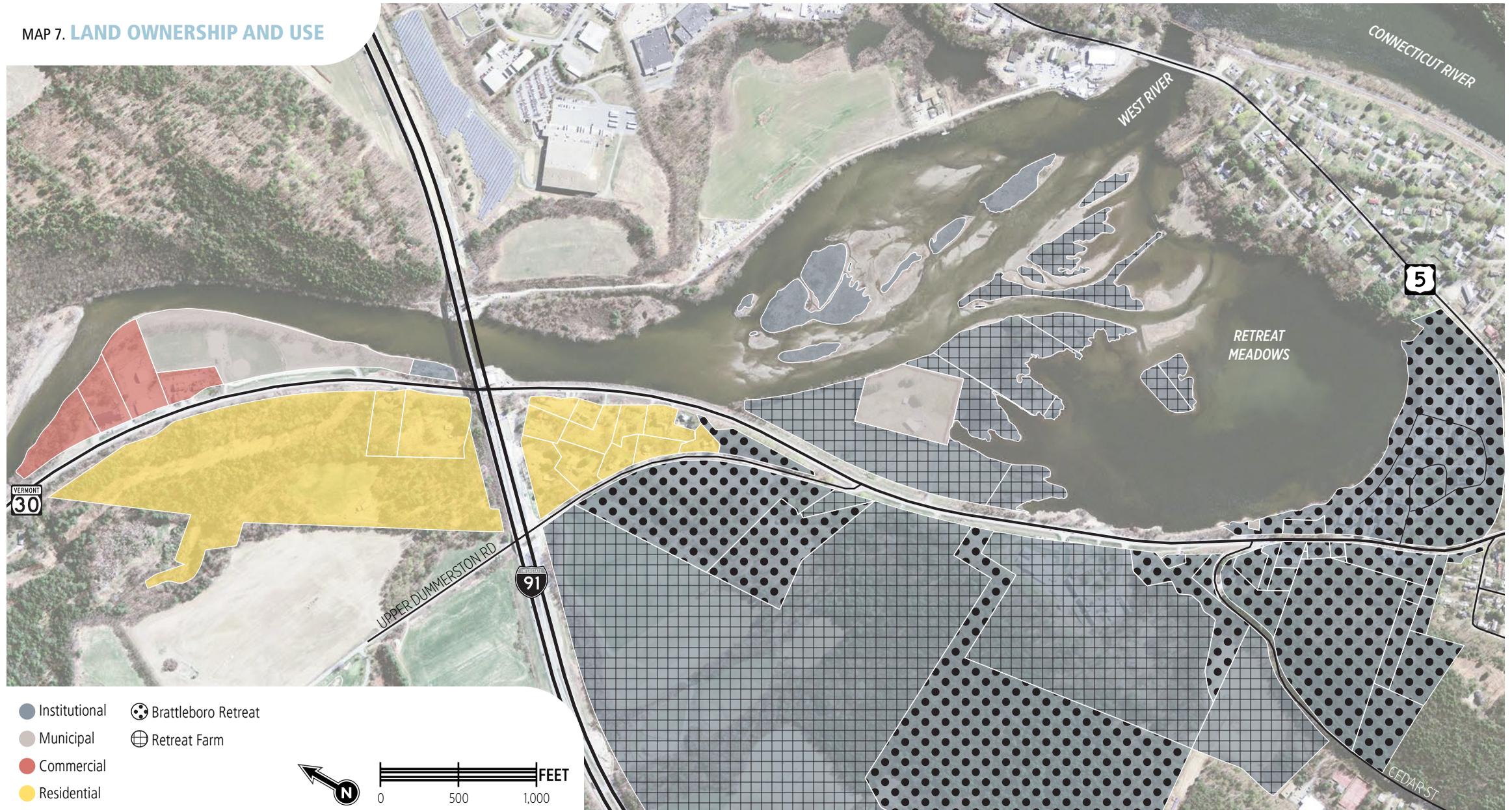
MAP 5. NATURAL RESOURCES



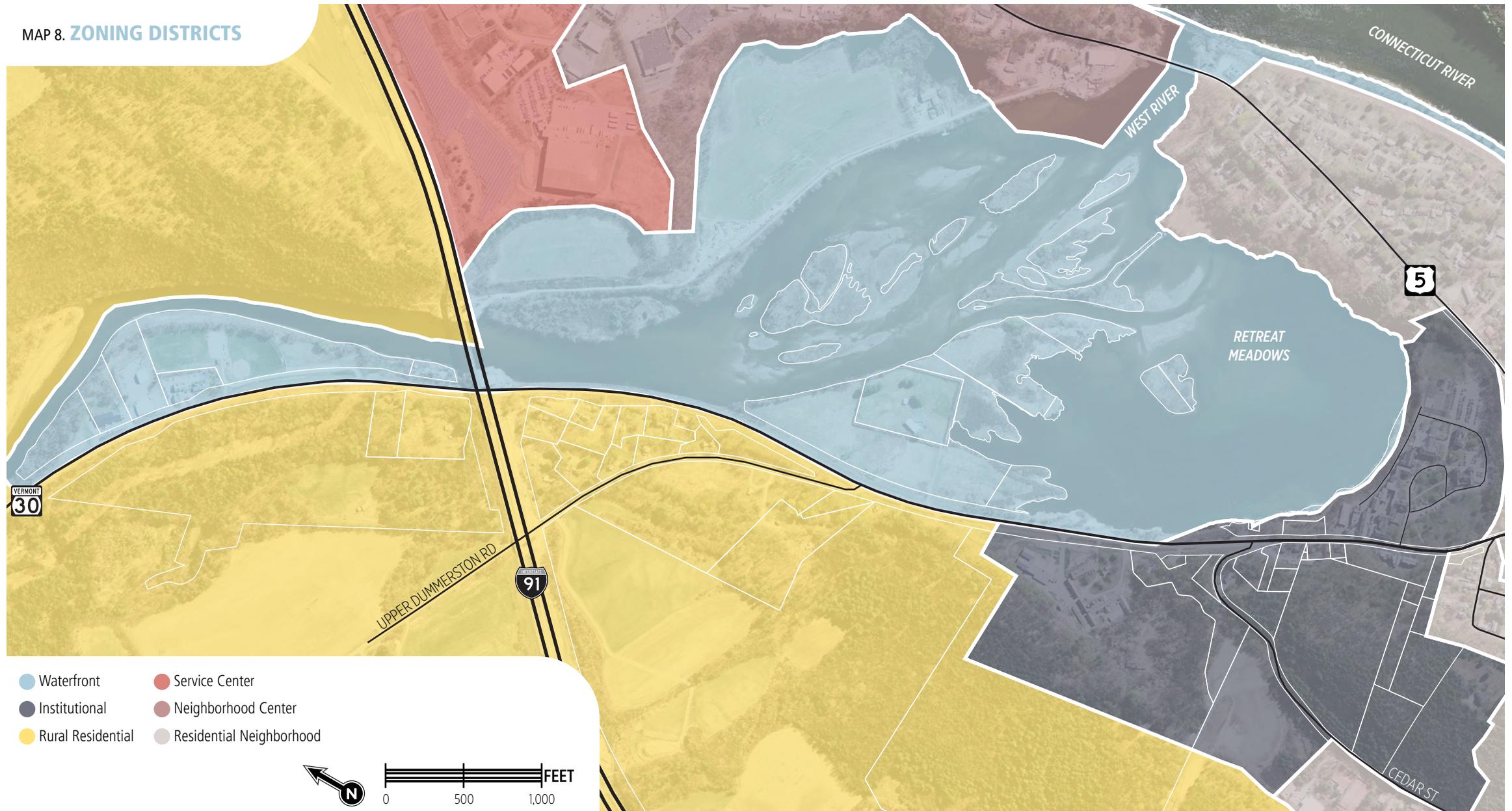
MAP 6. RECREATIONAL RESOURCES



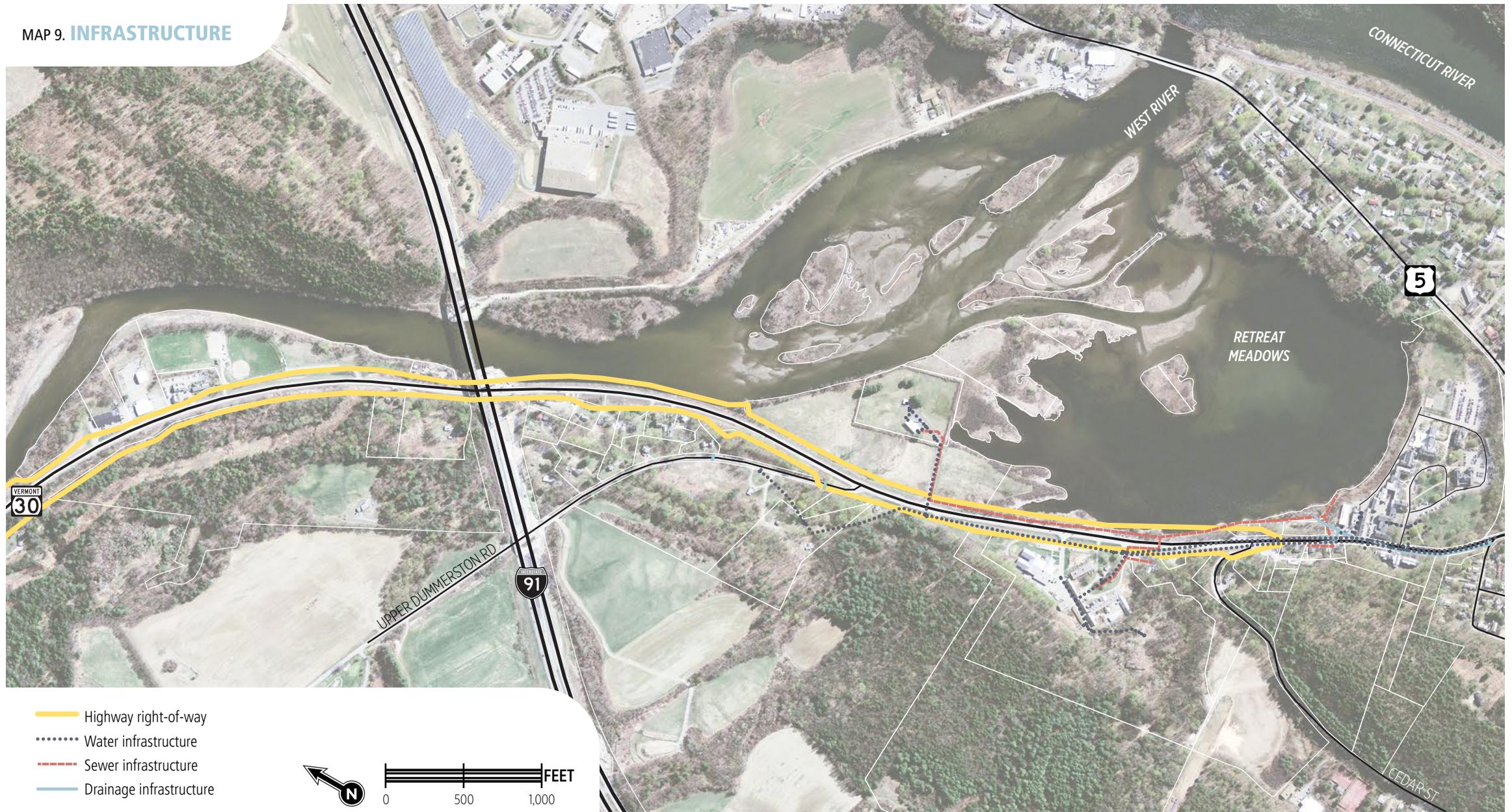
MAP 7. LAND OWNERSHIP AND USE



MAP 8. ZONING DISTRICTS



MAP 9. INFRASTRUCTURE



# alternatives analysis

## ISSUES

**Summary.** The second phase of the Route 30 gateway planning process explored alternative roadway configurations that would address the issues identified through the assessment of existing conditions in light of current VTrans' standards and policies. VTrans requested this analysis to aid in their review of the draft plan.

**Bicyclists and Pedestrians.** Improved facilities for bicyclists and pedestrians in the Route 30 gateway corridor would encourage more people, both residents and visitors, to walk, bike and enjoy the recreational, cultural and scenic resources within the study area.

**Traffic Safety and Calming.** This segment of Route 30 looks, feels and functions like a through highway, resulting in 15-20% of the traffic exceeding the posted speed limit, and there are increased conflicts particularly during peak traffic periods. Traffic calming is needed to enhance traveler safety and for the community to realize the full potential of the area's recreational, cultural and scenic resources.

**Parking.** There is a need for formalized parking to serve recreation activities on the Retreat Meadows. On most days, the demand is relatively small, but it spikes when there are special events or when conditions are conducive for outdoor recreation on the Meadows. The existing informal parking on the shoulder is contributing to traffic safety and erosion/sedimentation concerns.

**Stormwater Management.** There are existing stormwater, erosion and sedimentation issues along the corridor, where the highway directly abuts the West River or Retreat Meadows, particularly in the area near the Retreat Farm currently used for water access and parking.

**Linkages.** Most community residents cannot access West River Park except by driving and do not consider Route 30 a safe place to walk or bike, particularly for children. Providing improved facilities for bicyclists and pedestrians in the Route 30 corridor would create connections between a number of significant trail systems in the community and the region, particularly if a linkage was made to the West River Trail.

## APPROACH

**Summary.** Given the numerous physical and natural constraints within the corridor, it is clear that the most feasible approach to enhance multi-modal accessibility and improve safety was to focus on alternatives that would redesign or reconfigure the existing 42-foot paved roadway to safely accommodate all users.

**Traffic Safety and Calming.** The redesign or reconfiguration alternatives should narrow the width of the travel lanes and reduce the perceived width of the highway to slow traffic. Ideally, these changes would justify a reduction in the speed limit from Cedar Street to Upper Dummerston Road to 30 miles per hour and from Upper Dummerston Road to West River Park to 40 miles per hour.

**Bicyclists and Pedestrians.** The redesign or reconfiguration alternatives should result in a high quality bicycle and pedestrian facility that capitalizes on the scenic, recreational and cultural resources along the corridor. This would achieve multiple community goals including enhancing the quality of life for town residents and attracting visitors to Brattleboro.

**Natural Resource Protection.** The redesign or reconfiguration alternatives should protect water quality and significant natural resources by reducing erosion, sedimentation and other adverse impacts to natural resources as compared to existing conditions. Given the proximity to the West River and Retreat Meadows, nearly all the land within the study area has natural resource values despite, or in some cases as a result of, more than a century of significant and extensive human activity on and modification of the waterways and adjacent land. When assessing the potential impacts on natural resources in the study area, it should be recognized that maintaining the status quo is in itself an action that has adverse impacts on those resources and alternatives should be weighed in terms of their relative improvement over existing conditions.

## OUTCOMES

**Summary.** The purpose of this analysis was to identify which redesign or reconfiguration alternatives for the existing 42-foot paved width could potentially be implemented to safely accommodate all users in accordance with current VTrans standards and policies. As part of the planning process, VTrans staff reviewed the analysis and provided guidance that was used to develop the final recommendations presented in this plan. It should be recognized that this is a long-term plan and that VTrans standards and policies may change over time, thus altering the feasibility of the proposed alternatives.

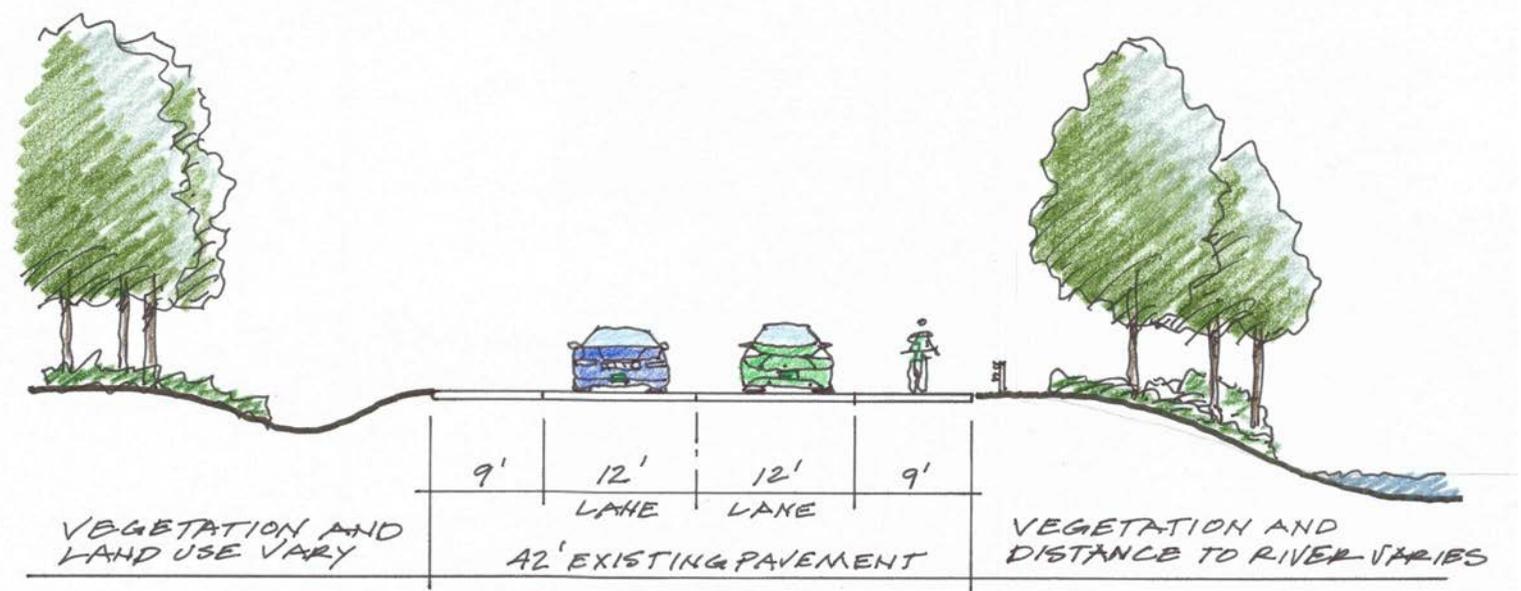
**Bicyclists and Pedestrians.** The alternatives sought to create a multi-use path on the river side of Route 30 that would accommodate two-way bicyclist and pedestrian traffic by reconfiguring the existing roadway. Due to the length of the corridor (approximately 1½ miles) and its classification as a state highway, these alternatives posed policy questions for VTrans that had not been previously resolved.

**Classification and Maintenance.** This analysis sought to clarify which redesign or reconfiguration alternatives would be possible if this segment of Route 30 remained a state highway as compared to what would be possible if the town were to take all or a portion of it as a Class 1 highway. The possibility of a joint maintenance agreement was also considered under which the town would maintain the bike-pedestrian use portion of the roadway and the state would continue to maintain the vehicular use portion of the roadway.

**Access and Parking.** The need to maintain on-street parking and the existing boat access in the vicinity of the Retreat Farm poses a challenge to developing a multi-use path on the river side of Route 30. Discussion with DEC regarding relocating the access and parking out of the highway right-of-way to lands owned by the Retreat Farm suggest that it is not feasible at this time (see discussion on page \*). So any redesign or reconfiguration alternatives will need to include access and parking for the Meadows.

### EXISTING CONDITIONS

**Summary.** The 42-foot paved roadway is currently configured with 9-foot shoulders on each side and two 12-foot travel lanes.



**Commercial Section.** Northern Gateway to West River Park



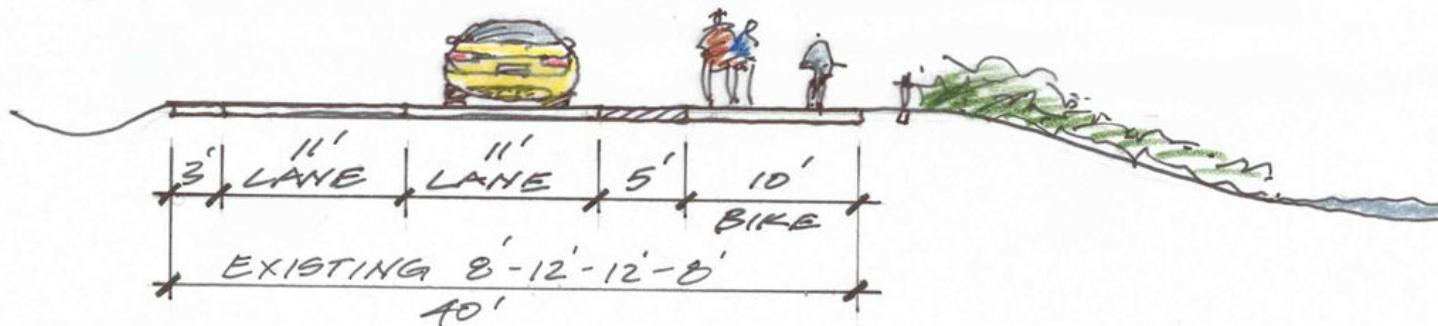
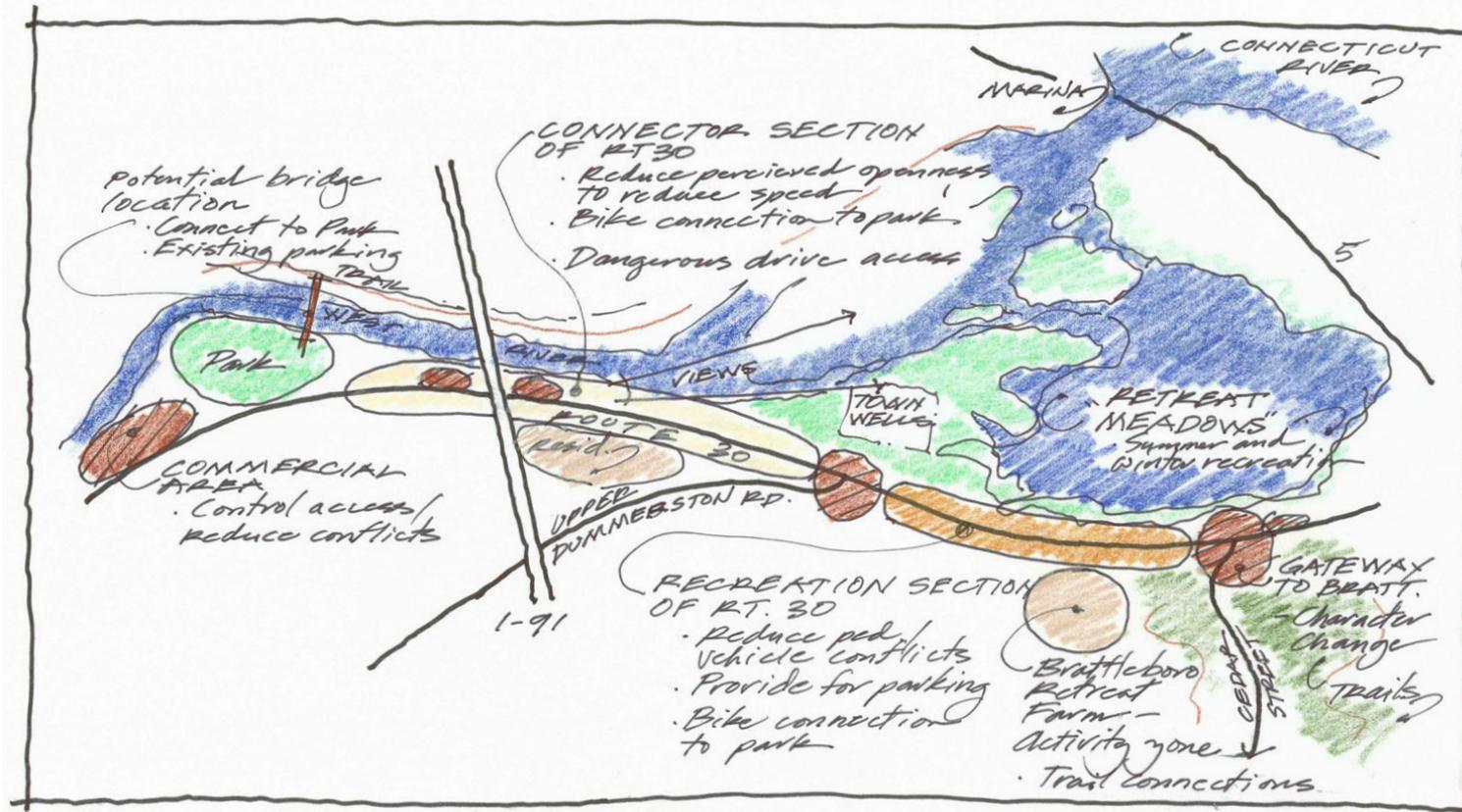
**Connector Section.** West River Park to the Retreat Farm



**Meadows Section.** Retreat Farm to the Southern Gateway



INITIAL CONCEPT DIAGRAM AND CROSS-SECTION DEVELOPED AT LOCAL CONCERNS MEETING



**PREFERRED CONCEPT**

**Summary.** The preferred concept for enhancing the safety and desirability of walking and biking in the corridor that emerged from the initial advisory committee and local concerns meetings was a shared use path on the river side of Route 30 through the corridor.

The *Vermont Pedestrian and Bicycle Facility Planning and Design Manual* defines a shared use path as:

“ a facility for pedestrians, bicyclists and other users that is physically separated from motorized traffic by open space or barrier and either within the highway right-of-way or within an independent right-of-way.”

It also lists a number of characteristics of successful shared use paths that are particularly applicable to the Route 30 gateway:

- **4. Scenic qualities.** Because shared use paths are located away from traffic, often in natural settings, they offer an aesthetic experience that attracts pedestrians and bicyclists. Many communities consider paths as “linear parks” that help define neighborhoods and enhance livability.
- **5. Connectivity to a variety of land uses.** Paths should not be isolated facilities. They should link shopping areas, parks, schools, employment centers and other community facilities with residential neighborhoods.
- **12. Context sensitive design and aesthetics.** Path design should be sensitive to the natural surroundings in which they are located. Preserve and complement natural features to the maximum extent possible, and design path features and amenities to reflect the human scale of the user.
- **14. Potential for making an economic contribution to the community.** Shared use paths can make a significant contribution to local economies by attracting vacationing bicyclists and pedestrians to communities that provide places for bicycling and walking safely removed from busy roads and streets. Investments in shared use paths and rail-trails can also increase adjacent property values and improve the overall livability of a community.

**VTrans Policy Guidance.** The *Vermont Pedestrian and Bicycle Facility Planning and Design Manual* generally recommends against placing shared use paths next to roadways because:

- Experienced bicyclists often find it less convenient to ride such paths compared with the streets, particularly for utilitarian trips where speed and access are high priorities.
- Some bicyclists will be riding against the normal flow of traffic contrary to the rules of the road.
- When the path ends, bicyclists riding against traffic may continue riding on the wrong side of the street. Wrong-way travel by bicyclists is a major cause of bicycle/motor vehicle crashes.

- Barriers used to separate motor vehicle traffic and bicycle and pedestrian traffic can obstruct motorists, bicyclists and pedestrians vision alike, reduce access along the street and path, and complicate maintenance of both facilities.
- Snow plowed from an adjacent roadway can obstruct path use if the path is not simultaneously plowed along with the street.

However, it does allow for shared use paths within or adjacent to a highway right-of-way used by motor vehicles when certain conditions (see table below).

CONDITIONS LISTED IN MANUAL	APPLICABILITY IN THE ROUTE 30 CORRIDOR
No reasonable alternative alignment exists for bicycle and pedestrian facilities on nearby parallel routes or on an independent alignment.	No reasonable alternative alignment exists. As described in the existing conditions section of this plan, most of the Route 30 corridor through the study area is constrained by the river on the east side and steeply rising terrain on the west side. Nearly all of the land east of the paved highway is within the river corridor and flood hazard area. There are also significant areas with high natural resource value such as wetlands, significant natural communities and RTE species east of the highway.
The adjacent roadway is a heavily traveled, high-speed, high volume roadway where on-road bicycle facilities may contribute to unsafe conditions for the design bicyclist.	Route 30 is a heavily traveled, high-speed roadway as documented in the existing conditions section of this plan. Comments received during the advisory committee and local concerns meetings suggest that Route 30 is perceived as an unsafe and unpleasant place to walk or bike.
Bike lanes, wide curb lanes, paved shoulders, or sidewalks are not a feasible alternative.	Wide paved shoulders exist along the entire corridor and the public sidewalk system extends to the Retreat Farm. This does not address the need for a safe route to West River Park for families and does not allow the community to fully capitalize on the potential economic contribution of this scenic corridor.
Increased levels of pedestrian activity and bicycle usage along the corridor are anticipated.	Increased levels of pedestrian activity and bicycle usage are desired and have already been seen with the opening of West River Park, and further increases are anticipated in conjunction with expanded activities at the Retreat Farm, completion of the I-91 Bridge over the West River, and a future linkage with the West River Trail.
The majority of origins and destinations are on one side of the road.	Throughout most of the corridor, Route 30 directly abuts the West River or Retreat Meadows. There would only be three vehicular points of access crossing the proposed shared use path (the boat access across from the Retreat Farm, the lightly used access drive into the town’s water facility, and the future pull-off for the viewing platform under the I-91 Bridge).
There is a commitment to provide a continuous non-motorized system throughout the corridor.	The proposed shared use path is continuous and is envisioned to extend from the parking area near Cedar Street to West River Park.
The total cost of providing the proposed path is proportionate to the need.	As described below, the proposed shared use path could be developed in a series of phases that could link investment in facility improvements to increased use.
The expected users (design bicyclist) for the project are inexperienced bicyclists (Group C) or pedestrians.	One of the principal benefits of the proposed shared use path would be providing a safe, suitable facility for children to bicycle from downtown residential neighborhoods to West River Park. Given its location, the proposed shared use path would primarily serve a recreational rather than a utilitarian transportation purpose.

**VTrans Design Guidelines.** The *Vermont Pedestrian and Bicycle Facility Planning and Design Manual* recommends the following guidelines for shared use paths in highway corridors:

GUIDELINES	PROPOSED CONCEPT
A minimum horizontal separation of 5 feet for uncurbed sections or an appropriate barrier between the shoulder and the shared use path is provided.	All of the alternatives presented below include a horizontal separation of at least 5 feet between the shoulder and the shared use path.
Landscaping or natural vegetation buffer the path from noise and splash of motor vehicles. Alternately, a drainage ditch or swale with maximum side slopes of 1:3 can be provided at the edge of a 2-foot shoulder. (Figure 5-3 shows a minimum 3-foot green strip to separate a shared use path from an uncurbed roadway).	The phased development of the shared use path would allow the striped buffer to be incrementally replaced with a vegetation buffer.
The path can be terminated on streets where bicycle and pedestrian facilities are provided.	The southern start/termination point for the proposed shared use path would be in the vicinity of Cedar Street where there is a sidewalk on the west side of the road, paved shoulders and the speed limit drops to 25 miles per hour.
Potential driveway and intersection conflicts are minimized or mitigated.	There are no intersections on the river side of Route 30 and there are only three vehicle crossing points (the boat access across from the Retreat Farm, the low-traffic drive accessing the town's water facility, and the future pull-off for the I-91 bridge viewing platform).
The path has sufficient width, to accommodate the expected users. (Figure 5-3 shows a minimum 10-foot path).	Most of the alternatives presented below include a 10-foot shared use path.



**VTrans Design Considerations.** The *Vermont Pedestrian and Bicycle Facility Planning and Design Manual* recommends the following widths and clearances for shared use paths:

- The minimum width of a paved, shared use path is 8 feet, but a width of at least 10 feet is preferred because it allows a bicyclist to safely pass two pedestrians walking side-by-side. The 8-foot width is only recommended when: (1) bicycle traffic is expected to be low or pedestrian use is not expected to be more than occasional, (2) there are safe passing opportunities, (3) maintenance vehicles will not cause damage to the edge of the pavement, (4) no practical alternative design exists, and/or (5) for distances of up to 200 feet to bypass a physical barrier. The minimum width of a paved pedestrian-only path is 5 feet but 6 feet is preferred.
- A minimum 2-foot shoulder on either side of the shared use path suitable for use as pull-off, resting or passing space.

- A recovery area on the non-road side of the path that is at least 3 to 5 feet wide (depending on slope), inclusive of the shoulder. A barrier may be needed if there is a vertical drop of more than 4-5 feet, very steep slope or a hazard such as a water body adjacent to the path. If the minimum recovery area cannot be obtained then a suitable barrier should be provided.
- Lateral clearance of 3 feet, inclusive of the shoulder, to any fixed objects such as signs, trees, utility poles, guardrails, etc.
- For uncurbed roadways the minimum separation and buffer zone width between a roadway and a path is 5 feet, at least 3 feet of which should be a green strip. For curbed roadways, the minimum separation and buffer zone is 4 feet. Where adequate physical separation cannot be obtained, physical barriers may be provided.

## RE-STRIPING ONLY ALTERNATIVES

**Summary.** Re-striping the highway was discussed at the project kick-off and local concerns meetings as a simple, low-cost measure that could be implemented in the near-term. Re-striping could be:

- Implemented irrespective of whether the town takes over any portion of the highway.
- The first phase of a longer-term, incremental project to reconfigure and redesign the corridor.
- Provide an opportunity to test the proposed design and whether it achieves the goals of calming traffic, improving safety and encouraging more people to walk or bike in the corridor.

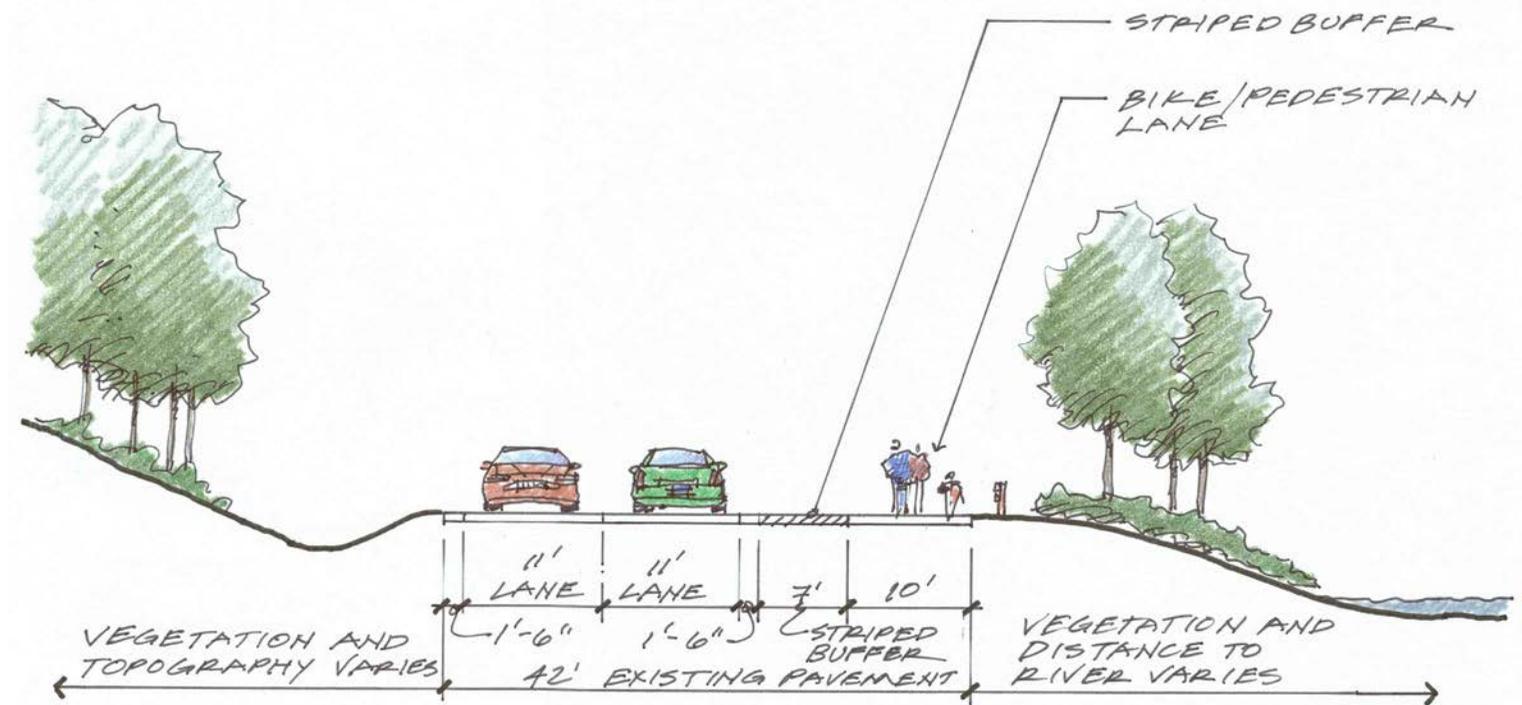
At the start of this project, there was a resurfacing project for this segment of Route 30 planned in 2018. That project has been delayed and no longer appears on VTrans' schedule suggesting that it would not occur until after 2019. The re-striping alternatives should be coordinated with that future resurfacing project. The Town of Brattleboro encourages VTrans to add that project back to the schedule.

**Alternative A.** Alternative A sought to maximize the amount of the existing paved width of the road allocated to bicyclists and pedestrians. It proposed a 10-foot shared use path, which would be separated from motorized traffic by a 7-foot wide, cross-hatch painted buffer strip. The motor vehicle portion of the highway would be reduced to two 11-foot travel lanes with 1½-foot shoulders. This cross-section could be applied throughout the entire corridor and could be the first phase of more substantial changes to the roadway (see alternatives that follow).

VTrans' review raised the following concerns with Alternative A:

- The proposed 1½-foot shoulders would be inadequate to accommodate cyclists who prefer to ride on the road rather than on a shared use path. A minimum shoulder width of 4 feet was recommended.
- There would be no structural barrier or vertical separation between vehicular traffic and bike-ped traffic. Drivers headed north could

## ALTERNATIVE A



pass vehicles waiting to turn left on the right side through the striped buffer. Motorists could pull-off and park in the buffer or on the shared use path, creating an obstruction either to vehicle traffic or bicyclists on the path.

- The crown of the road would need to be altered to fall between the travel lanes and the road base might not be adequate to support the proposed shift in the travel lanes. This would likely require more significant reconstruction of the highway and result in more sheet flow of runoff towards the West River or Retreat Meadows.
- Bicyclists and pedestrians would have to cross Route 30 to enter/exit the shared use path. This would likely require new crosswalks near the start/terminus of the path at both West River Park and Cedar Street.

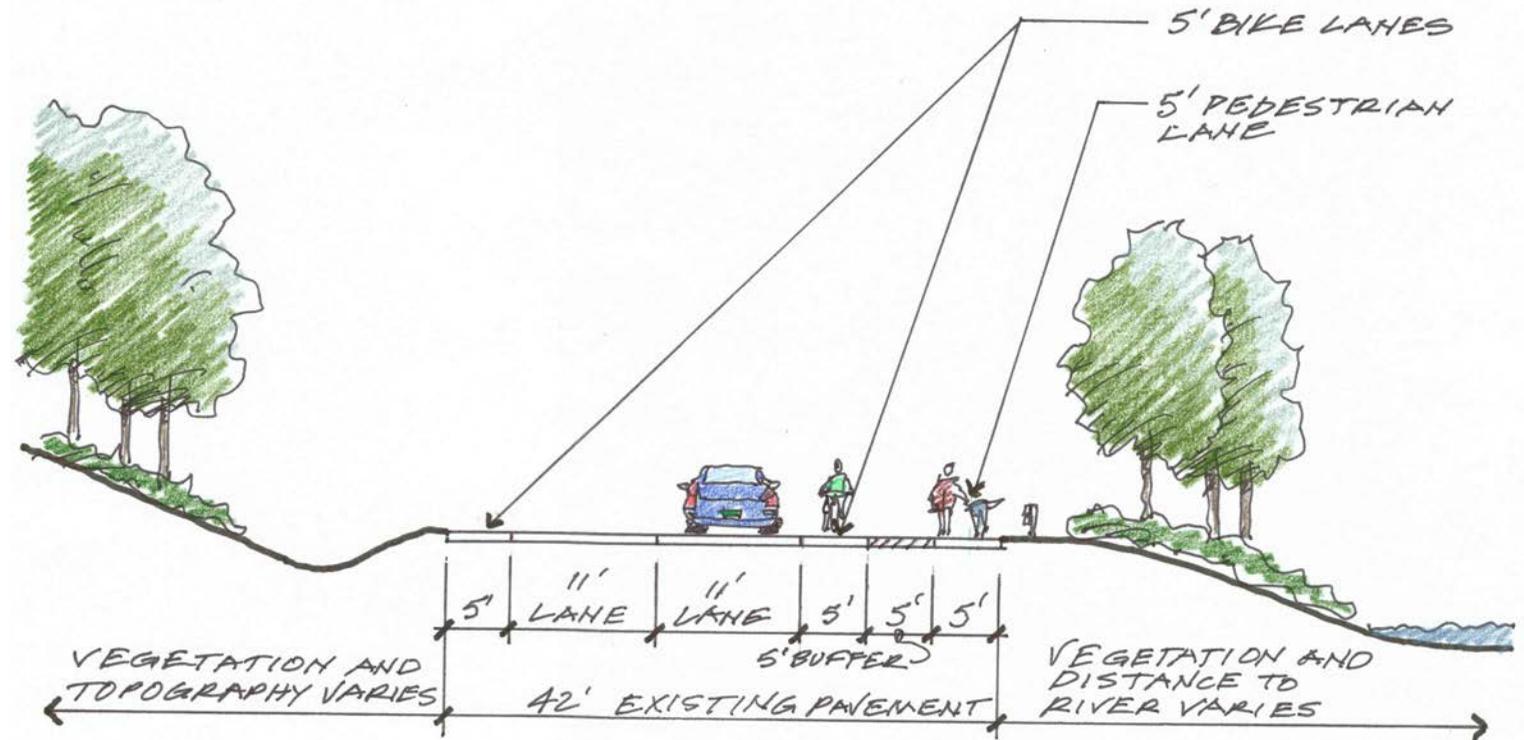


**Alternative B.** Alternative B sought to maintain on-road bicycle lanes while providing a pedestrian path along the river side of Route 30. It proposed reducing the motor vehicle portion of the highway to two 11-foot travel lanes with 5-foot bike lanes/shoulders. On the river side of the highway, there would be a 5-foot pedestrian path which would be separated from motorized traffic by a 5-foot wide, cross-hatch painted buffer strip. This cross-section could be applied throughout the entire corridor and could be the first phase of more substantial changes to the roadway (see alternatives that follow).

VTrans' review raised the following concerns with Alternative B:

- The need for a pedestrian path on the river side of Route 30 would need to be more fully demonstrated. There is an existing sidewalk from Cedar Street to the Retreat Farm on the west side of Route 30. It may be more feasible to extend that sidewalk, at least to Upper Dummerston Road (where the terrain on the west side of the highway becomes considerably steeper).
- This alternative reduces the space available to bicyclists as compared to existing conditions.
- People bicycling with their children to West River Park are likely to choose to cycle in the pedestrian path and/or buffer, which could result in conflicts between pedestrians and bicyclists.
- This alternative does not address the concern about the need for vertical separation between the roadway and the pedestrian path for a corridor of this length.
- This alternative does not address the concern about vehicles pulling off or parking in the buffer and/or path.

**ALTERNATIVE B**



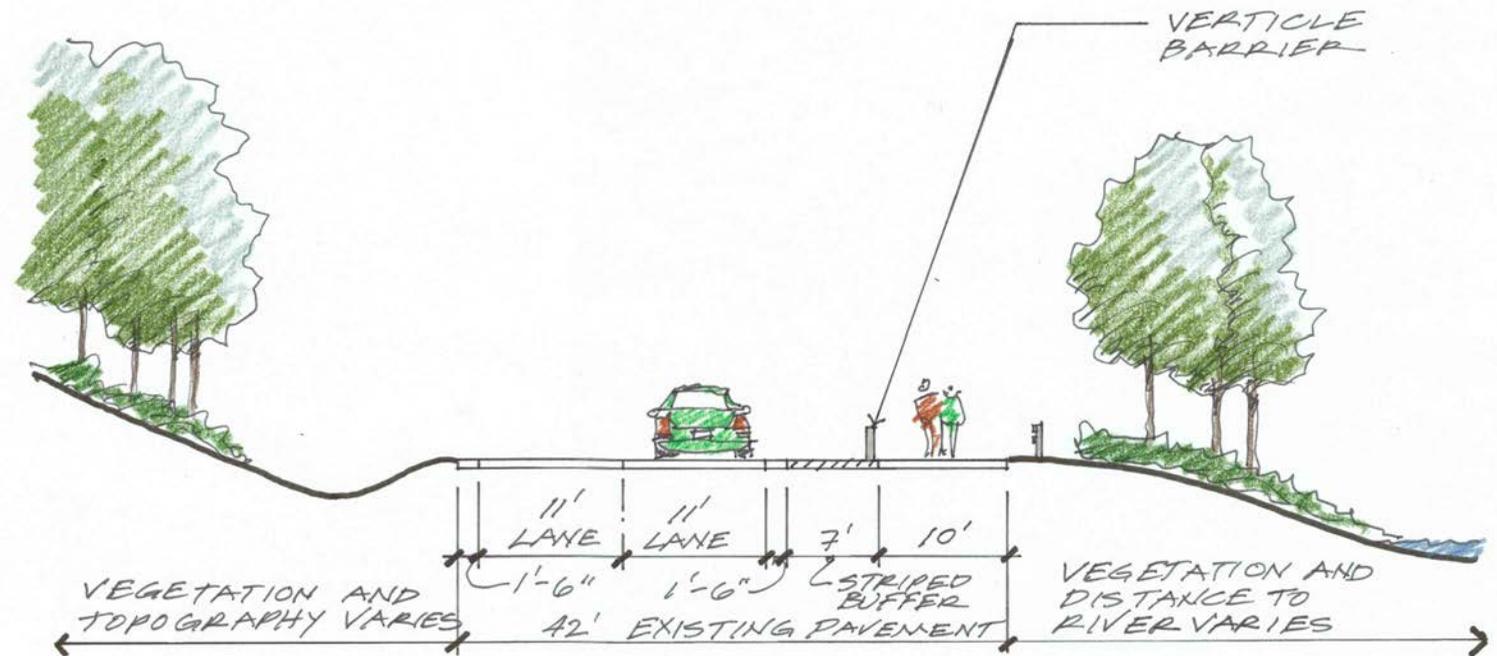
### STRUCTURAL BARRIER ALTERNATIVE

**Alternative C.** Alternative C is dimensionally the same as Alternative A but includes a vertical barrier on each side of the shared use path such as a guardrail, delineators or fencing. Between the roadway and the shared use path, the barrier would be installed within the striped buffer. Between the path and the river, the barrier would be installed beyond the edge of the path. A similar approach could also be used to modify Alternative B.

VTrans' review raised the following concerns with Alternative C:

- The impact of any structural elements installed in the buffer on winter maintenance. VTrans requires a minimum of 15 feet of clearance for their plow trucks. Any design that reduced the roadway width (travel lane + shoulder) below that would only be feasible under current standards if the highway were to become a Class 1 town highway and the town was to become responsible for winter maintenance. There were also concerns about whether/how the path would be maintained in winter. The possibility of removable barriers was discussed.
- Currently the shoulder is being used informally for on-street parking, particularly in the vicinity of the Retreat Meadows on peak days for recreational use. There were concerns that motorists may try to park in the buffer zone and obstruct the travel lane.

### ALTERNATIVE C



## VEGETATED BUFFER ALTERNATIVES

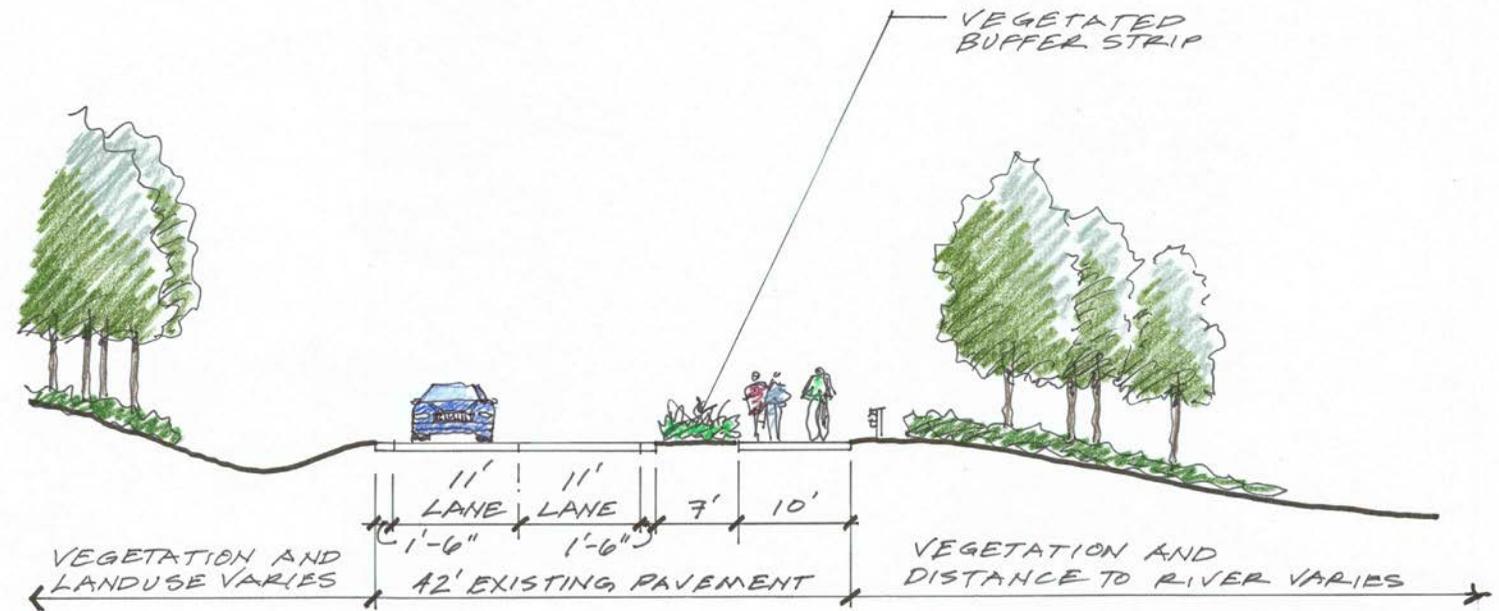
Alternatives A or B could be further enhanced by replacing the striped, painted buffer with a vegetated buffer. This would likely require that the road become a Class 1 town highway. These alternatives would not have to be extended the length of the entire corridor (Cedar Street to West River Park), but could be limited to the section from Cedar Street to Upper Dummerston Road. The painted buffer could be incrementally converted to a vegetated buffer without necessitating any further changes to the shoulders, travel lanes and path.

**Alternative D.** Alternative D replaces the striped, painted buffer with an at-grade or sunken planting strip to either allow stormwater to continue the existing sheet flow pattern towards the river or to be collected and filtered before continuing to flow to the river. The buffer would be planted with grass, groundcovers or low shrubs.

VTrans' review raised the following concerns with Alternative D:

- There would be increased maintenance requirements and costs for the vegetation (mowing, trimming, clean-out if used for stormwater collection, etc.).
- There were concerns about the impacts of road maintenance practices and buffer width on the health/viability of buffer vegetation.

### ALTERNATIVE D



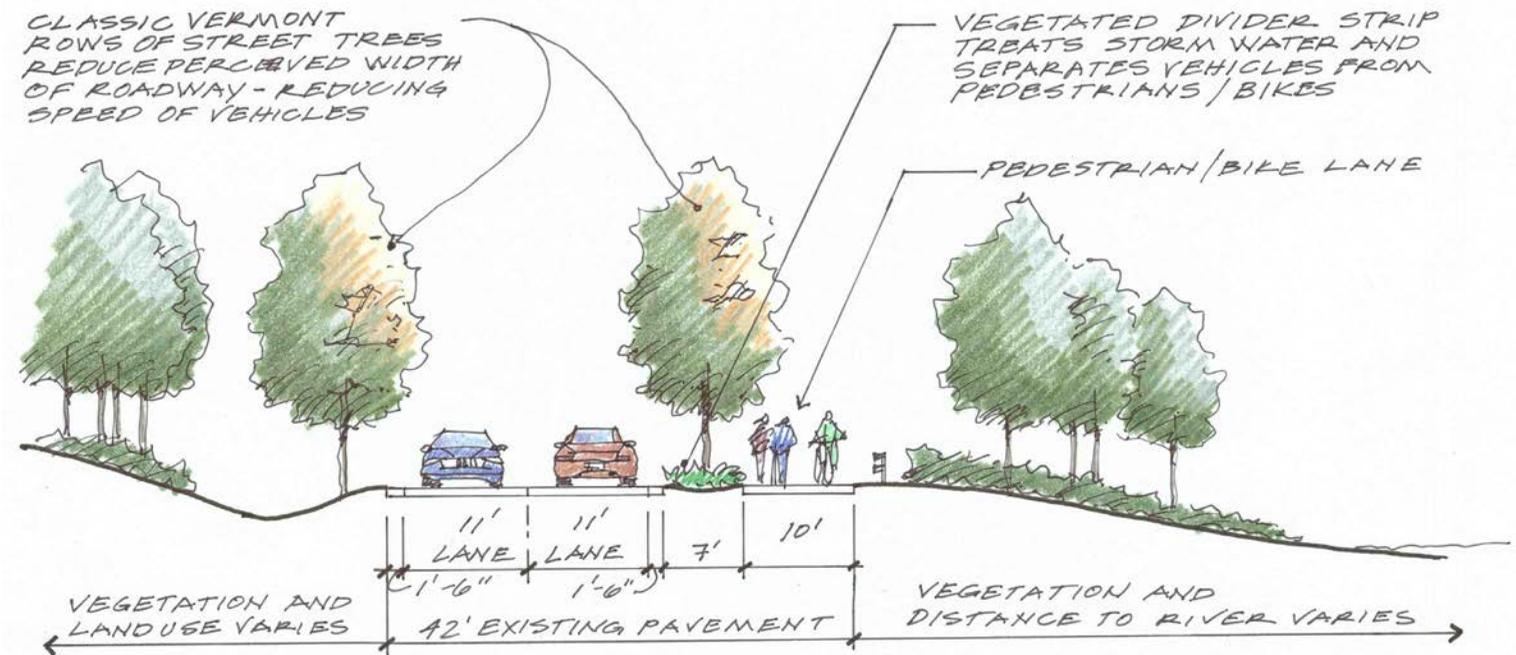
**Alternative E.** Alternative E replaces the striped, painted buffer with an at-grade or sunken planting strip to either allow stormwater to continue the existing sheet flow pattern towards the river or to be collected and filtered before continuing to flow to the river. The buffer would be planted with grass/groundcovers and trees.

This alternative has the greatest potential to enhance the aesthetics of the corridor and narrow the perceived width of the road (calming traffic). Trees would also shade and buffer the shared use or pedestrian path, creating a more pleasant place to walk and/or bike. The concept of introducing street trees into the corridor was strongly supported by the community at the advisory committee and local concerns meetings. This alternative could be used in limited segments to create focal points along the corridor, such as at each gateway, the entrance to West River Park, and near the Retreat Farm / Retreat Meadows access point.

VTrans' review raised the following concerns with Alternative E:

- There would be increased maintenance requirements and costs for the vegetation (mowing, trimming, clean-out if used for stormwater collection, etc.).
- There were concerns about the impacts of road maintenance practices and buffer width on the health/viability of buffer vegetation.
- There were concerns about trees causing damage to roadway and creating additional hazards when vehicles leave the travel lane as a result of a crash or other accident.

**ALTERNATIVE E**

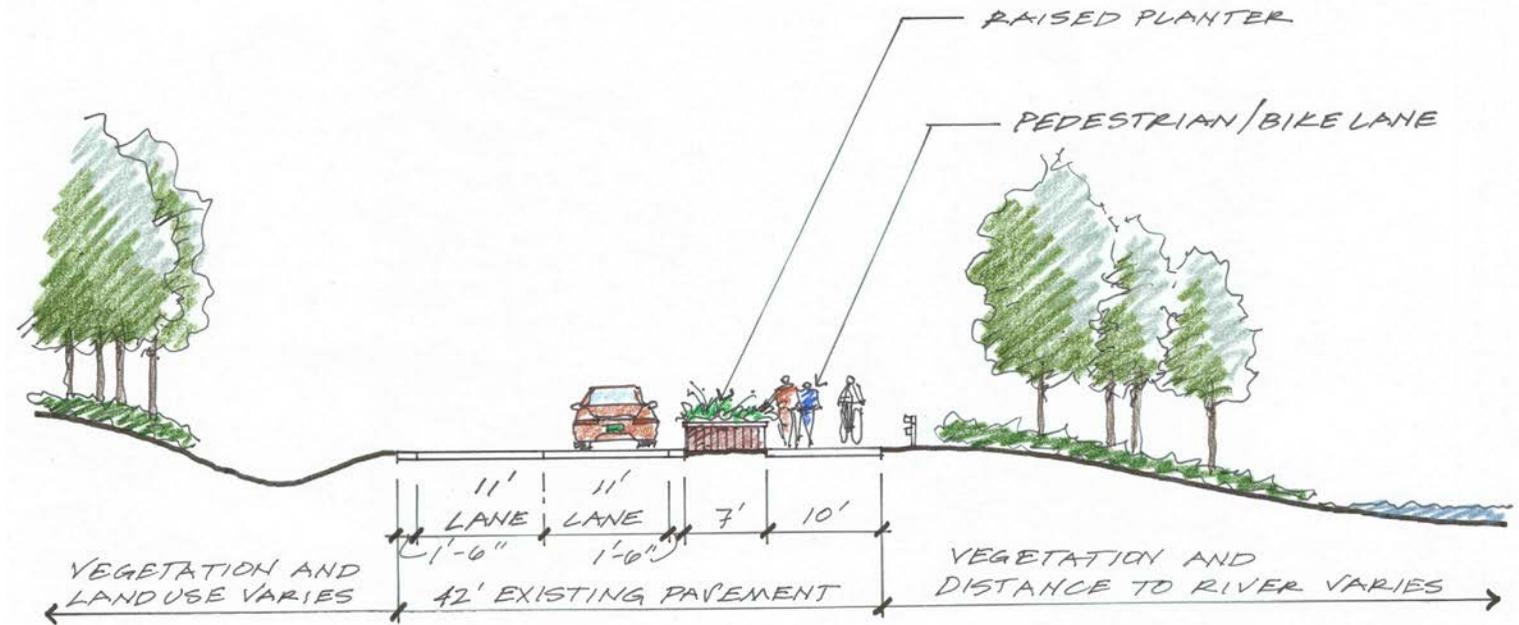


**Alternative F.** Alternative F places planters within the striped, painted buffer. This alternative could be used in targeted locations within the corridor to define features like entrances to destinations, pedestrian crossings or on-street parking areas.

VTrans' review raised the following concerns with Alternative F:

- The planter boxes could interfere with stormwater sheet flow from the roadway.

**ALTERNATIVE F**

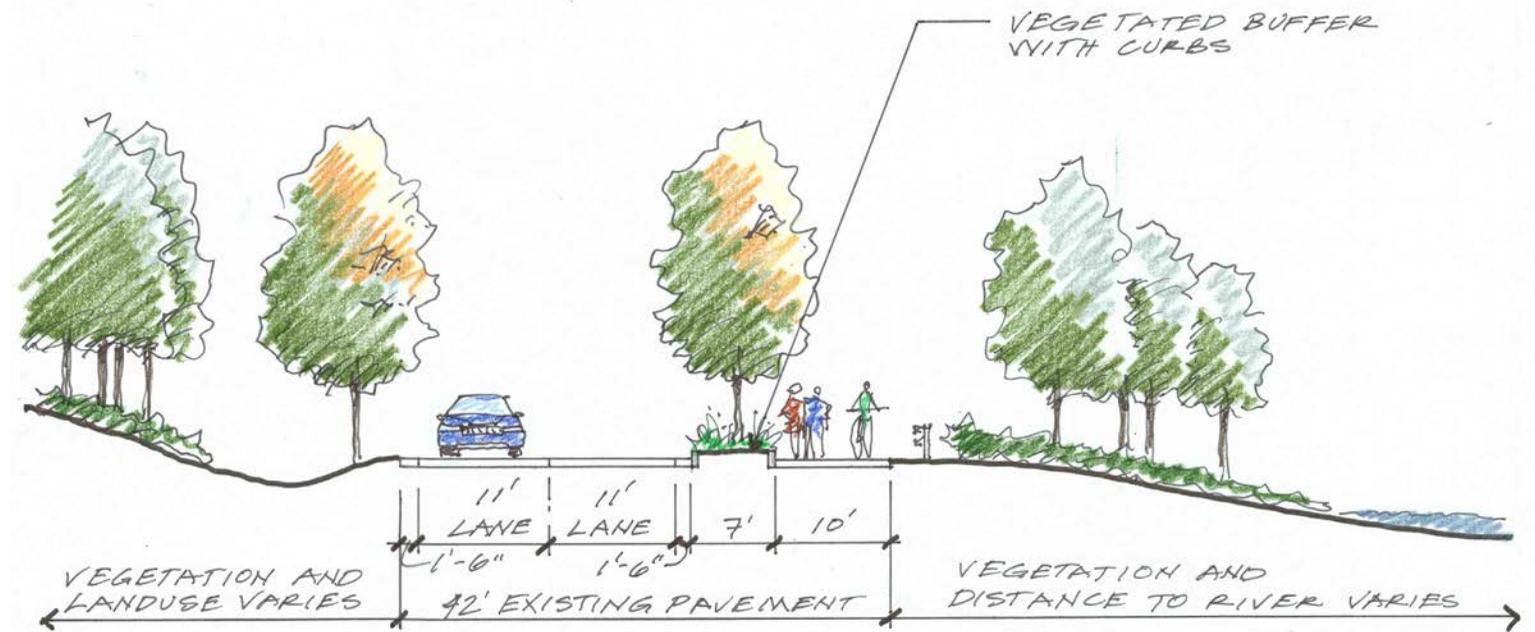


**Alternative G.** Alternative G replaces the striped, painted buffer with a curbed, raised vegetated buffer. The buffer could be planted with grass, groundcovers, shrubs and/or trees.

VTrans' review raised the following concerns with Alternative G:

- While this alternative provides a vertical separation between the roadway and path, it requires the most significant change to the existing infrastructure. Stormwater collection and treatment infrastructure would be required.
- This alternative would require the roadway to become a Class 1 town highway as it does not provide the minimum 15-foot width required under current standards to accommodate state plow trucks.

**ALTERNATIVE G**



## RETREAT FARM ALTERNATIVES

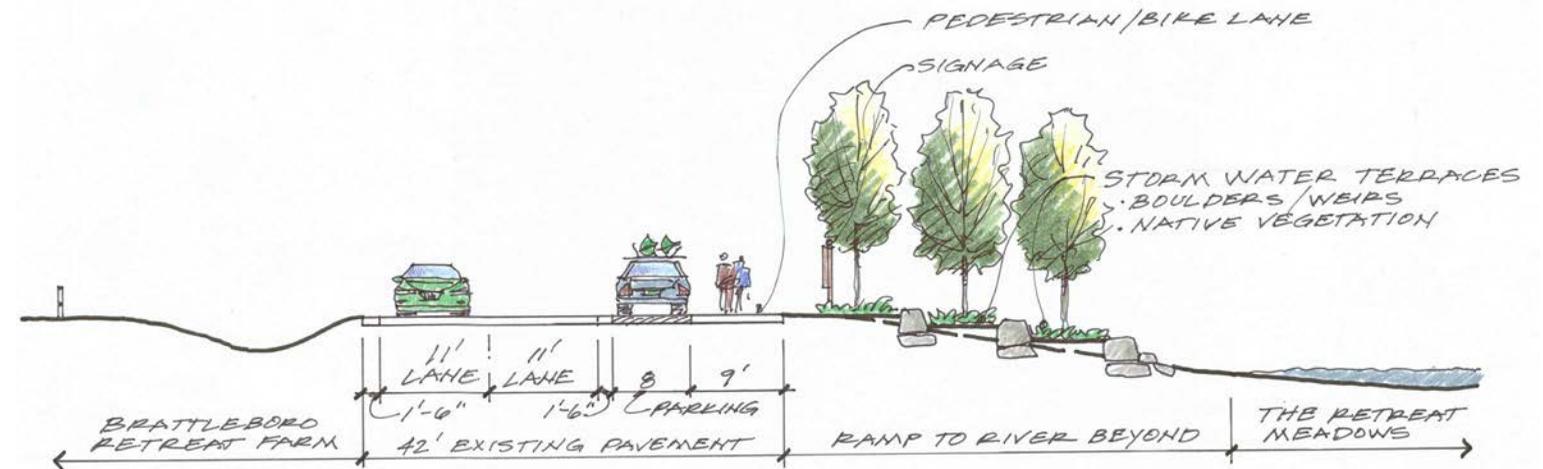
The segment of the corridor directly in front of the Retreat Farm may require some variation to address specific parking, pedestrian crossing and water access needs. Informal parking occurs along an approximately 1,700-foot section of Route 30 during peak days for recreation on the Retreat Meadows across from the Retreat Farm and southward towards the Cedar Street intersection. The existing informal parking currently accommodates 80+ vehicles. There also is an existing informal boat access in the highway right-of-way that will likely need to be maintained.

During the local concerns and advisory committee meetings there was discussion of the potential future need for a left-turn lane at the Retreat Farm entrance to accommodate increased visitor and truck traffic if use of the site intensifies. If the existing on-street parking could be replaced with parking outside the road right-of-way, such as through a shared parking agreement with the Retreat Farm, a left-turn lane could likely be accommodated within the existing paved roadway. If the on-street parking for the Retreat Meadows is to remain, the roadway would have to be widened (on the Retreat Farm side) to accommodate another lane.

The Retreat Farm is also planning on adding a second driveway at the north end of their property, roughly across from the entrance to the town's water facility. This may be adequate to accommodate anticipated turning movements for the near-future and forestall the need for a left-turn lane for some time.

**Alternative H.** Alternative H replaces the striped buffer between the roadway and the shared use path with an on-street parking lane to serve the parking needs of people accessing the Retreat Meadows (the Retreat Farm would have on-site parking to meet its needs). The amount of parking needed will be dependent on whether off-street parking can be provided (such as through some arrangement for public use of some parking on the Retreat Farm property).

## ALTERNATIVE H



VTrans' review raised the following concerns with Alternative H:

- Creating formal, marked on-street parking may require the road to become a Class 1 town highway and at a minimum would likely require the town to plow the parking lane in winter.
- There were concerns about the lack of adequate space for people to safely enter and exit parked vehicles.



# implementation strategy



## INTRODUCTION

Implementation of the strategies outlined in this plan is dependent on coordinated collaboration between Town of Brattleboro officials, departments and committees, property and business owners within the corridor, interested town residents and local organizations, and the Vermont Agency of Transportation. Even with a strong commitment, it will likely take a number of years before many of the recommendations for improvements to the Route 30 gateway corridor will be realized.

A concerted effort was made throughout this gateway planning process to involve stakeholders and engage the community. Property owners, residents, community leaders and regulators have been invited to provide input and guidance. Their participation has improved this plan and their sustained interest and support will be critical to implementing recommended improvements.

## ROADWAY IMPROVEMENTS

The Alternatives Analysis, along with guidance from VTrans and other stakeholders, resulted in a recommended approach to enhancing bicycle and pedestrian facilities in the Route 30 gateway corridor that seeks to balance the goals of improved public safety, aesthetics, and multi-modal transportation options with the capacity to construct and maintain such facilities.

The recommended approach allows this portion of Route 30 to remain a state highway and does not require it to be reclassified as a Class 1 town highway with the associated increased maintenance responsibilities for the town's Public Works Department.

## OTHER IMPROVEMENTS

In addition to the roadway improvements, this plan also recommends:

- A bicycle-pedestrian bridge to be located within West River Park linking the Route 30 corridor to the West River Trail on the opposite side of the West River.
- A coordinated signage plan that includes gateway signs at each end of the corridor, destination signs sized and located primarily to direct pedestrians and bicyclists, and interpretive signs to provide information about the natural and cultural resources in the corridor
- Potential strategies and locations to meet peak and increased parking demands for recreational activities in the corridor
- Options for improving or relocating boat access to the Meadows

## ROADWAY IMPROVEMENTS

The recommended improvements to Route 30 through the gateway corridor reflect a balancing of the community's goal to enhance bicycle and pedestrian facilities with the realities of construction and maintenance costs and include:

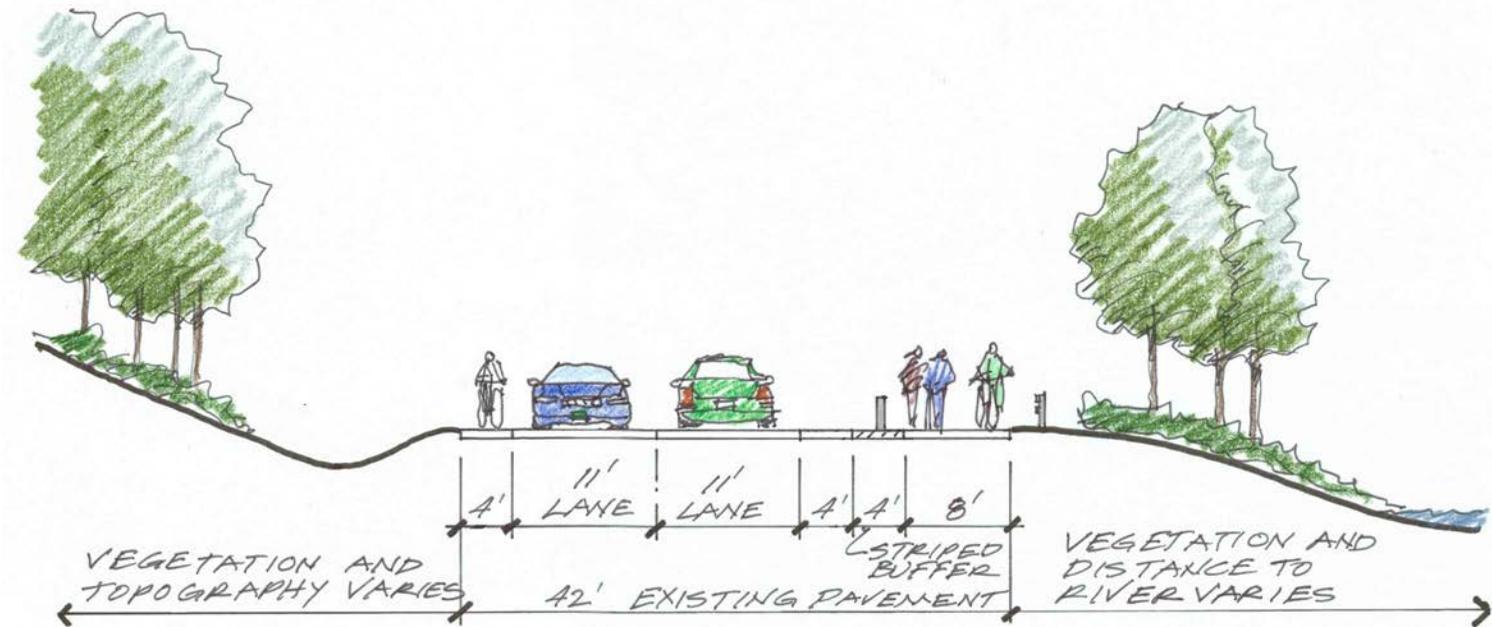
- 4-foot shoulders, reduced from the current 9 feet but which would continue to accommodate on-road cycling for those who prefer it
- 11-foot travel lanes, narrowed from the current 12 feet and shifted to the non-river side of roadway
- A 4-foot cross-hatch painted buffer strip with delineators to separate the shared use path from the motorized traffic
- An 8-foot at-grade shared use path along the river side of Route 30 that would accommodate two-way bicycle and pedestrian travel

This approach allows Route 30 to remain a state highway with VTrans continuing to be responsible for maintaining the travel lanes, shoulders and buffer zone. It is anticipated that the town would be responsible for maintenance of the shared use path.

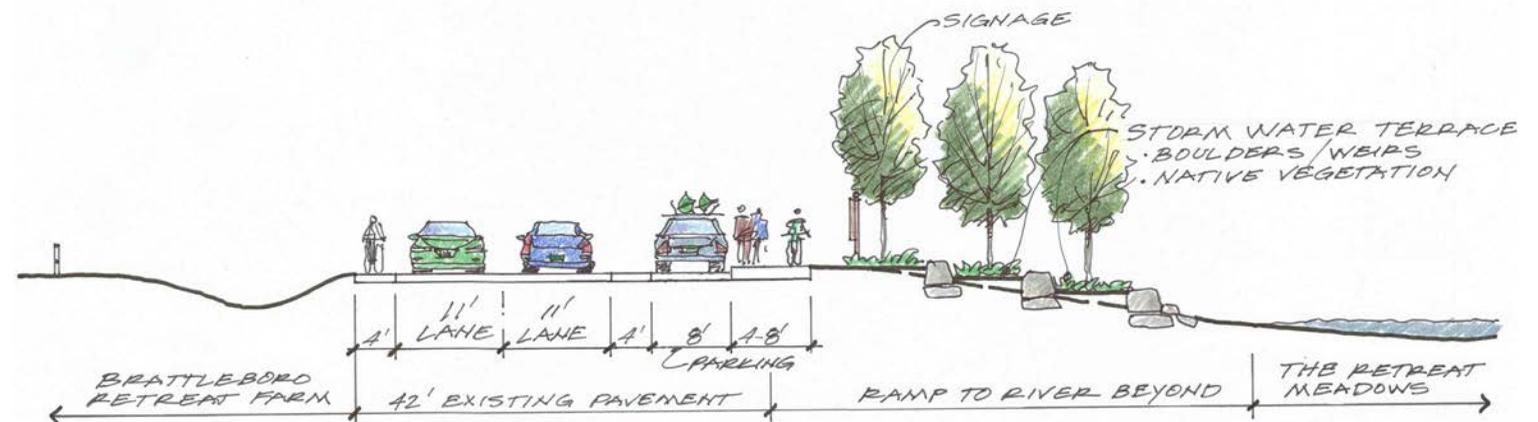
Across from the Retreat Farm, the recommended cross-section would be adjusted to maintain the on-street parking and boat access functions that occur currently as follows:

- The 4-foot shoulders and 11-foot travel lanes would continue as proposed elsewhere in the corridor
- The 4-foot cross-hatch painted buffer strip would be replaced with an 8-foot parking lane for 10 to 20 vehicles, which would meet the needs of those recreating at the Retreat Meadows on a typical day (additional parking will be needed to meet peak demand)
- The 8-foot at-grade shared use path would be replaced with a curbed sidewalk, which would be at least 4 feet wide and could be up to 8 feet wide if the paved width was increased (there is adequate right-of-way to accommodate this)
- A curbed bump-out (on the river side, which would not extend into the 4' shoulder) and a crosswalk with RRFB signs between the Retreat Farm and the boat access
- A redesigned boat access (as described below)

## Recommended Roadway Improvements



## Recommended Roadway Improvements Across from the Retreat Farm



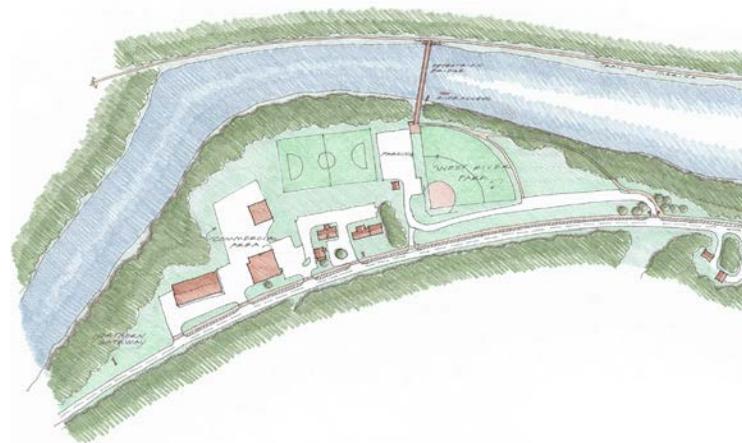
### BICYCLE-PEDESTRIAN BRIDGE

The recommended option for linking the West River Trail with the Route 30 corridor across the West River is a bicycle-pedestrian bridge located at West River Park, consistent with the recommendations of the Friends of the West River Trail's 2012 Feasibility Study. West River Park is a municipal recreation destination with parking, restrooms and picnic facilities that would be available to trail users, making it the most suitable location for a bicycle-pedestrian bridge along the Route 30 corridor.

As described in the 2012 Feasibility Study, the preferred design option is a simple cable suspension design, similar to the recently constructed pedestrian bridge carrying the Long Trail across the Winooski River in Bolton, Vermont (pictured right). This design can span the approximately 300-foot distance across the West River from the trail to the top of the bank in the park without requiring that any piers or other support structures be built within the river.

The bridge would be able to be sited at an elevation that would keep it above the base flood elevation and would mitigate the potential threat of ice damage. The recommended location for the bridge within the park is the same as proposed in the 2012 Feasibility Study so that the bridge would generally follow the same alignment as the existing water access and conveniently terminate at the edge of the existing parking area.

As documented in the Existing Conditions portion of this plan, the entire West River Park is within the mapped special flood hazard area and the state-defined river corridor, which does complicate the permitting requirements for the proposed bridge. Further, the Act 250 permit for West River Park incorporates a Vegetative Management Plan that prohibits further cutting of woody vegetation within a 100-foot shoreland buffer, which would need to be amended to construct the bridge. The project would be consistent with and allowable (as a conditional use) under the town's current Land Use Regulations, including the flood hazard provisions.



## SIGNAGE

A consistent design for gateway, way-finding and interpretative signage is recommended to create a distinct identity and reinforce the desired image of the gateway corridor.

Gateway signs are recommended at the northern and southern gateways to serve as an attractive, defining feature that establishes a theme and sense of place for the corridor. At the southern gateway, these could be dual-sided and combined with existing gateway signage for downtown Brattleboro.

There is existing interpretative signage in West River Park and along the Hogle Nature Trail. The rich natural and cultural history of the corridor makes it an area with excellent opportunities for outdoor education. A consistent template for interpretative signage would

help create a recognizable “brand” for the corridor and simplify the design and installation and replacement of such signs over time. While the Retreat Farm intends to have its own comprehensive and coordinated signage plan, the potential opportunities and benefits of the town, Retreat Farm and Windham Foundation coordinating on signage should be explored.

Way-finding signage is recommended to direct and orient primarily pedestrians and bicyclists to major destinations with the study area. These would be located and sized to orient people traveling on the shared use path and other trail systems in the area.



Gateway Signs



Interpretive Signs



Wayfinding Signs

### PARKING AND BOAT ACCESS

The proposed roadway improvements include better definition of the existing informal on-street parking along the Retreat Meadows. In addition, several alternatives to provide parking to serve recreational use of the Meadows and to improve public access to the Meadows for recreational use were explored during this planning process:

- A new municipal parking lot located off Route 30 on open land owned by the Retreat Farm adjacent to the town's water facility, potentially in conjunction with a new boat access.
- The potential for an agreement to share parking with the Retreat Farm if they move forward with plans to expand the activities occurring on the property and construct additional parking.

- A new water access point associated with the proposed new parking lot.
- Improvements to the existing access to make it easier to launch boats and ensure that vehicle movements associated with the boat access does not conflict with traffic on Route 30.

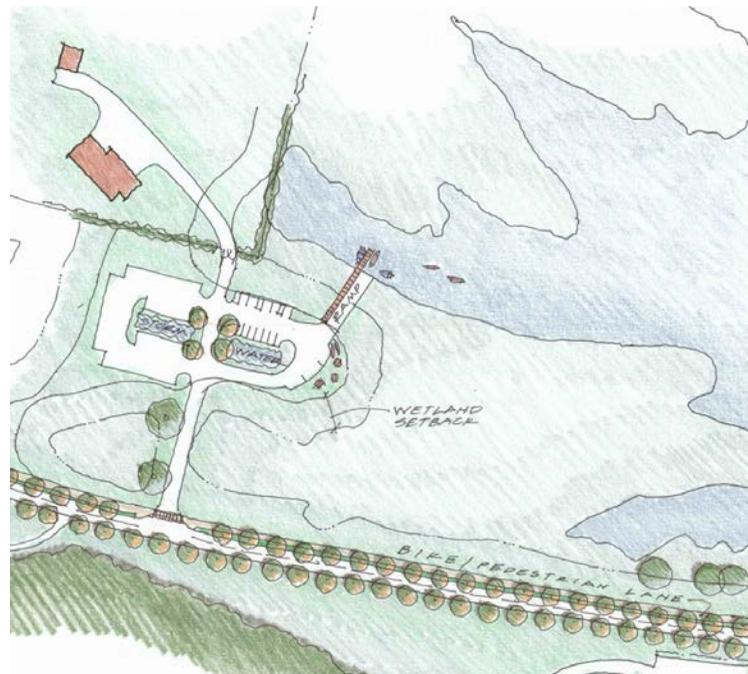
The concept of a municipal parking lot and/or relocated boat access on the river side of Route 30 faces significant regulatory hurdles due to natural resource constraints, and so both should be considered long-range projects. Vermont Department of Environmental Conservation staff reviewed the conceptual plans for the parking lot and boat access, and provided comments, which are summarized below.

The proposed parking lot and boat access site is located within the special flood hazard area. The parking and water access uses could be approved under the town's flood hazard regulations but would require conditional use approval.

While the parking could be sited outside the mapped wetland and associated buffer, any water access would require state and potentially federal wetlands permits. DEC also raised concerns about indirect impacts to the adjacent wetlands resulting from any increased human activity in the vicinity. Fencing would likely be required to limit access to the wetlands. A parking study would also be necessary to demonstrate the need for and justify the proposed number of parking spaces.

There are also rare, threatened and endangered species and significant natural communities in the area. Additional investigation and assessment would be required to determine the extent to which the proposed parking lot and/or water access would impact any of those resources.

DEC staff advised that dredging would likely not be permissible under current rules. Vermont Fish and Wildlife staff indicated that they would be looking for any replacement boat access location to continue to accommodate small trailered boats. So further investigation of the ice conditions and water depth at the proposed new access point would be needed to determine whether it could serve a similar function as the existing location off Route 30.



**IMPLEMENTATION MATRIX**

Description	Parties Involved	Cost	Permits Required	Next Steps	Priority	Complexity	Timing
<b>Speed Limit Reduction.</b> Formally request that VTrans keep the reduced speed limits on Route 30 in place following completion of the I-91 bridge construction project.	VTrans Town of Brattleboro Windham Regional Commission			Send a letter to VTrans’ Traffic Committee and District Transportation Administrator formally requesting the permanent speed limit change and setting forth the reasons for the speed reduction.	High	Low	Short Range
<b>Monitoring Crash Data.</b> Monitor the crash data available from VTrans for this section of Route 30 on an annual basis to determine if there is any change in the severity, number, pattern or cause of accidents.	VTrans Town of Brattleboro Windham Regional Commission			Request that Windham Regional Commission’s transportation planner provide the town with an annual report analyzing the available crash data for the corridor.	High	Low	Ongoing
<b>Roadway Improvements.</b> Shift Route 30 centerline from Cedar Street intersection to the Retreat Farm to provide 4’ shoulders, 11’ travel lanes, 4’ buffer (w/ delineators), 8’ at-grade multi-use path.  This and the other two segments of proposed roadway improvements should be timed to occur during a planned resurfacing project. At the present time, it is not likely that VTrans will be resurfacing this section of Route until 2019 or later.  It is also possible that at a future time, one or more these segments could be taken by the town as a Class 1 Highway, thus making it possible for the 4’ cross-hatched buffer to be replaced with one of the vegetated designs presented in the alternatives analysis.	VTrans Town of Brattleboro	\$110,000	VTrans 1111 permit	Prepare Scoping Study identifying proposed improvements. Following formal acceptance of preferred alternative, proceed with development of engineering plans and securing necessary permits.	High	Medium	Medium Range
<b>Roadway Improvements.</b> Shift Route 30 centerline along the Retreat Farm frontage to provide 4’ shoulders, 11’ travel lanes, 8’ parking lane, and 4-8’ sidewalk with curb. Construct curbed bump-out (east side, not to extend into the 4’ shoulder), crosswalk, and RRFB signs to cross from Retreat Farm to boat launch.	VTrans Town of Brattleboro Retreat Farm	\$410,000	VTrans 1111 permit	Prepare Scoping Study identifying proposed improvements. Following formal acceptance of preferred alternative, proceed with development of engineering plans and securing necessary permits.	High	High	Medium Range
<b>Roadway Improvements.</b> Shift Route 30 centerline from the Retreat Farm to West River Park to provide 4’ shoulders, 11’ travel lanes, 4’ buffer (w/ delineators), 8’ at-grade multi-use path.	VTrans Town of Brattleboro	\$680,000	VTrans 1111 permit	Prepare Scoping Study identifying proposed improvements. Following formal acceptance of preferred alternative, proceed with development of engineering plans and securing necessary permits.	Medium	Medium	Long Range

Description	Parties Involved	Cost	Permits Required	Next Steps	Priority	Complexity	Timing
<b>Bicycle-Pedestrian Bridge.</b> Construct a ±300-foot, cable suspension, bicycle-pedestrian bridge across the West River linking the West River Trail to the West River Park.	Town of Brattleboro Friends of the West River Trail	\$940,000	Act 250 (amendment of existing West River Park permit) ANR Stream Alteration Permit Town of Brattleboro conditional use approval and zoning permit		High	High	Medium Range
<b>Gateway Signs.</b> Install gateway signs at each end of the corridor indicating that travelers are entering a scenic and recreation area.	Town of Brattleboro VTrans	\$23,000	Town of Brattleboro zoning permit VTrans 1111 permit		High	Medium	Short Range
<b>Way-Finding Signs.</b> Develop a consistent design for signs directed to pedestrians and bicyclists indicating destinations such as the West River Trail, West River Park, the Retreat Farm, the Retreat trails, the Hogle Nature Trail, etc.	Town of Brattleboro Retreat Farm Brattleboro Retreat Windham Foundation	\$8,000	Town of Brattleboro zoning permit VTrans 1111 permit		Medium	Low	Medium Range
<b>Interpretive Signs.</b> Develop a consistent template for interpretive signage aimed at educating people walking and/or paddling along the corridor and the Retreat Meadows about the natural, cultural and historic resources of the area.	Town of Brattleboro Retreat Farm Brattleboro Retreat Windham Foundation	\$7,000	Town of Brattleboro zoning permit		Low	Low	Long Range
<b>Shared Parking.</b> Partner with the Retreat Farm to allow public parking within their existing and/or planned parking areas during periods of peak recreational activity on the Retreat Meadows.	Town of Brattleboro Retreat Farm		n/a	Draft an MOU between the Town of Brattleboro and the Retreat Farm regarding parking use.	High	Low	Short Range
<b>Dedicated Parking.</b> Replace existing informal on-street parking serving recreationists at the Retreat Meadows with an off-street public parking area on land owned by the Retreat Farm adjacent to the town's water facility.	Town of Brattleboro Retreat Farm	\$270,000	Act 250 (amendment of existing Retreat Farm permit) Town of Brattleboro conditional use approval and zoning permit	Conduct a study to document parking demand and usage pattern. Draft an MOU between the Town of Brattleboro and the Retreat Farm regarding the ownership, maintenance and use of the proposed parking area.	Low	High	Long Range
<b>Improved Boat Access.</b> Improve the existing informal boat access to the Retreat Meadows that is in the Route 30 right-of-way to enhance safety for vehicle maneuvers and reduce run-off and sediment from directly flowing into the Meadows.	Town of Brattleboro VTrans	\$20,000			High	Medium	Short Range
<b>Relocated Boat Access.</b> Relocate the existing informal boat access that is in the Route 30 right-of-way to an off-street site on land owned by the Retreat Farm.	Town of Brattleboro Retreat Farm	\$30,000	Act 250 (amendment of existing Retreat Farm permit) Town of Brattleboro conditional use approval and zoning permit Wetlands Permit	Collect data on water depth and ice conditions.	Low	High	Long Range

**COST DETAILS**

**Roadway Improvements.** Shift Route 30 centerline from Cedar Street intersection to the Retreat Farm to provide 4' shoulders, 11' travel lanes, 4' buffer (w/ delineators), 8' at-grade multi-use path.  
Segment length = 600 feet

Scoping Study =	\$15,000
Permitting & Engineering =	\$15,000
Pavement Milling (\$3/SY) =	\$8,400
Asphalt (\$140/ton) =	\$28,000
Striping (\$3/lf) =	\$14,000
Delineators (every 20 ft) =	\$1,500
Mobilization (10%) =	\$5,230
Traffic Control (10%) =	\$5,230
Contingency (25%) =	\$13,075
<b>TOTAL:</b>	<b>\$110,000</b>

**Roadway Improvements.** Shift Route 30 centerline along the Retreat Farm frontage to provide 4' shoulders, 11' travel lanes, 8' parking lane, and 4-8' sidewalk with curb.  
Construct curbed bump-out (east side), crosswalk, and RRFB signs to cross from Retreat Farm to boat launch.  
Segment length = 600 feet

Scoping Study =	\$15,000
Permitting & Engineering =	\$35,000
Pavement Milling (\$3/SY) =	\$8,400
Asphalt (\$140/ton) =	\$28,000
Striping (\$3/lf) =	\$10,800
Sidewalk, Granite Curb, Drainage (\$250/lf) =	\$150,000
Bulbout =	\$15,000
Rectangular Rapid Flashing Beacon (x2) =	\$20,000
Landscaping (allowance) =	\$15,000
Mobilization (10%) =	\$24,720
Traffic Control (10%) =	\$24,720
Contingency (25%) =	\$61,800
<b>TOTAL:</b>	<b>\$410,000</b>

**Roadway Improvements.** Shift Route 30 centerline from the Retreat Farm to West River Park to provide 4' shoulders, 11' travel lanes, 4' buffer (w/ delineators), 8' at-grade multi-use path.  
Segment length = 5,000 feet

Scoping Study =	\$15,000
Permitting & Engineering =	\$15,000
Pavement Milling (\$3/SY) =	\$70,000
Asphalt (\$140/ton) =	\$280,000
Striping (\$2/lf) =	\$80,000
Delineators (every 20 ft) =	\$12,500
Mobilization (10%) =	\$44,250
Traffic Control (10%) =	\$44,250
Contingency (25%) =	\$110,625
<b>TOTAL:</b>	<b>\$680,000</b>

**COST DETAILS**

**Bicycle-Pedestrian Bridge.** Construct a ±300-foot, cable suspension, bicycle-pedestrian bridge across the West River linking the West River Trail to the West River Park.

Construction (\$400/SF x (300 FT x 6 FT)) =	\$720,000
Permitting & Engineering (10%) =	\$72,000
Contingency/Misc (20%) =	\$144,000
<b>TOTAL:</b>	<b>\$940,000</b>

**Gateway Signs.** Install gateway signs at each end of the corridor indicating that travelers are entering a scenic and recreation area.

Permitting & Design =	\$4,000
Construction (\$4,000 per sign) =	\$16,000
Contingency (15%) =	\$2,400
<b>TOTAL:</b>	<b>\$23,000</b>

**Way-Finding Signs.** Develop a consistent design for signs directed to pedestrians and bicyclists indicating destinations such as the West River Trail, West River Park, the Retreat Farm, the Retreat trails, the Hogle Nature Trail, etc.

Permitting & Design =	\$4,000
Construction (\$400 per sign) =	\$3,200
Contingency (15%) =	\$480
<b>TOTAL:</b>	<b>\$8,000</b>

**Interpretive Signs.** Develop a consistent template for interpretative signage aimed at educating people walking and/or paddling along the corridor and the Retreat Meadows about the natural, cultural and historic resources of the area.

Permitting & Design =	\$4,000
Construction (\$500 per sign) =	\$2,500
Contingency (15%) =	\$375
<b>TOTAL:</b>	<b>\$7,000</b>

**Dedicated Parking.** Replace existing informal on-street parking serving recreationists at the Retreat Meadows with an off-street public parking area (30,000 square feet in area) on land owned by the Retreat Farm adjacent to the town's water facility.

Study =	\$10,000
Permitting & Engineering =	\$25,000
Excavation (\$10/cy) =	\$22,222
Crushed Stone (\$40/cy) =	\$44,444
Asphalt (\$140/ton) =	\$105,000
Landscaping (allowance) =	\$10,000
Mobilization (10%) =	\$18,167
Contingency (15%) =	\$27,250
<b>TOTAL:</b>	<b>\$270,000</b>

**Relocated Boat Access.** Relocate the existing informal boat access that is in the Route 30 right-of-way to an off-street site on land owned by the Retreat Meadows.

Permitting & Engineering =	\$5,000
Construction =	\$15,000
Contingency (25%) =	\$3,750
<b>TOTAL:</b>	<b>\$30,000</b>

**Improved Boat Access.** Improve the existing informal boat access to the Retreat Meadows that is in the Route 30 right-of-way to enhance safety for vehicle maneuvers and reduce run-off and sediment from directly flowing into the Meadows.

Permitting & Engineering =	\$4,000
Construction =	\$10,000
Contingency (25%) =	\$2,500
<b>TOTAL:</b>	<b>\$20,000</b>