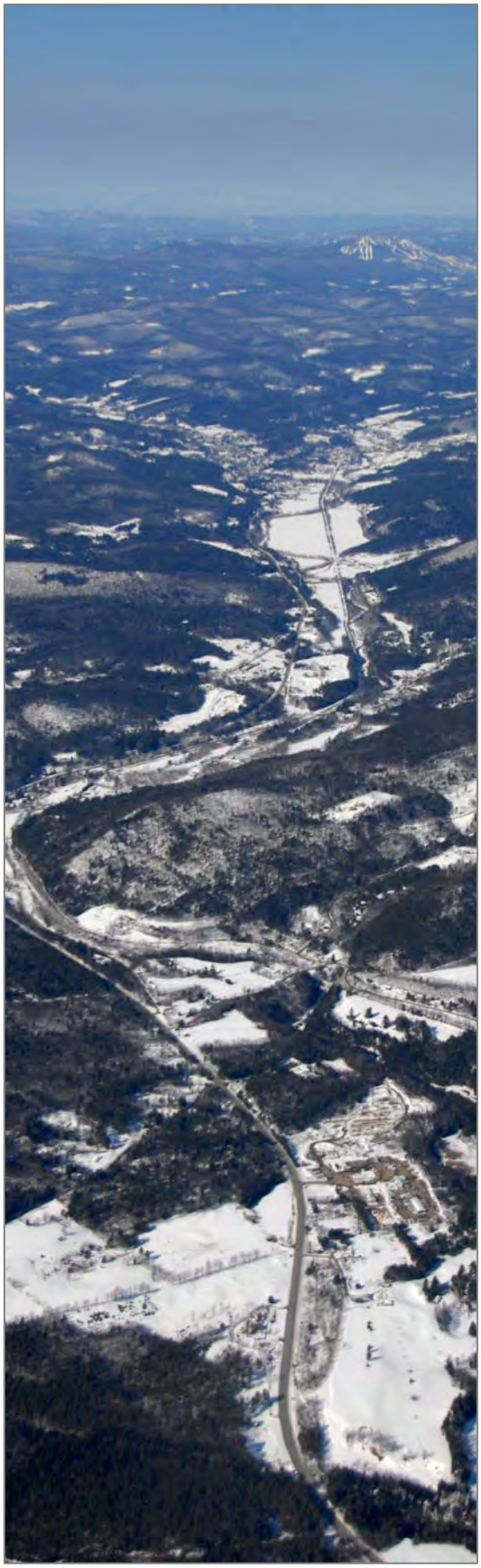
VT 103 Corridor Management Plan:

Chester & Rockingham, VT

September 2009



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1.0 INTRODUCTION

The VT 103 Corridor Management Plan is a joint effort of the Town of Rockingham, the Town of Chester, the Southern Windsor County Regional Planning Commission, the Windham Regional Commission, the Vermont Agency of Transportation (VTrans), and local residents and business owners to develop a comprehensive corridor management plan for the VT 103 corridor between VT Route 10 and the I-91 Exit 6 Interchange (see Figure 1 on next page). The Corridor Management Plan (CMP) is intended to accomplish the following:

- Inform State, Regional, and Town planning efforts
- Town and regional plans may incorporate the entire CMP or certain sections into town plans
- Provide suggestions for possible future local regulatory changes that benefit the VT 103 corridor
- CMP goals & policies inform Regional Planning Commission project prioritization processes and serve as a basis for future regional work programs
- Guide state permitting & project development

VT 103 looking west, with the Rockingham Meeting House near left, and Rockingham's Transport Park in the distance.

This Corridor Management Plan represents the culmination of ten months of strategic planning for the corridor. During this time, extensive investigations into transportation and land use conditions were conducted, and supplemented with input from the project Steering Committee, three public meetings, a meeting with VTrans program staff, and a web-based survey. A compilation of meeting agenda, public input, and meeting materials is included in Appendix A.

The VT 103 Corridor evaluated in this study includes a diverse set of land use characteristics – from rural to light industrial to village – as well as a diverse set of issues – from an expanding village center to concerns over tourist-related traffic congestion. The recommendations developed for the corridor are just as diverse, and include a wide range of transportation and land use related recommendations ranging from suggested zoning changes to intersection reconfigurations.

The VT 103 Corridor Management Plan is a joint plan to collaboratively manage VT 103

It's intended to:

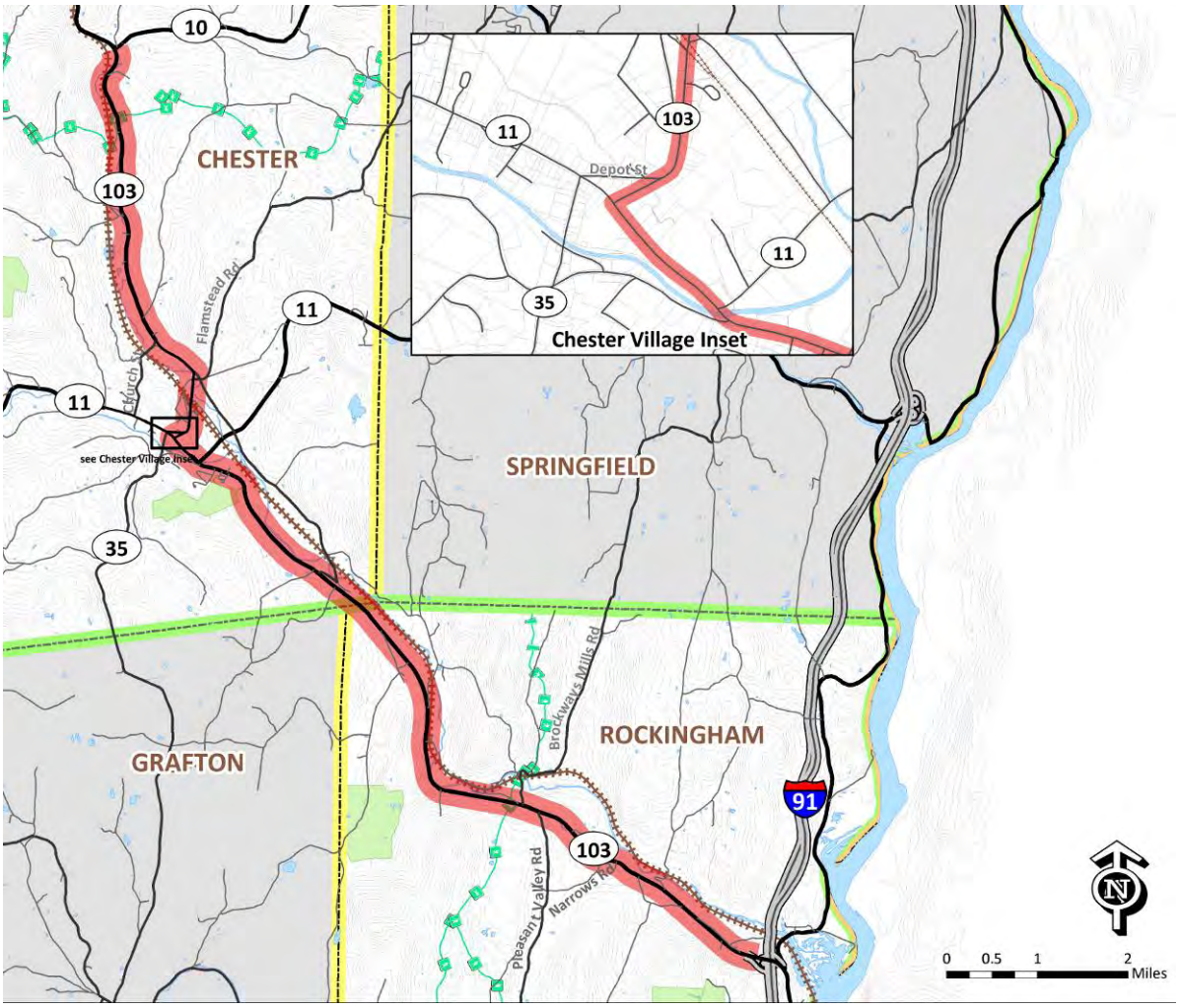
The Corridor Management Plan includes the following sections:

- **Vision and Goals**
  This section presents the Corridor Management Plan's Vision Statement which provides a general insight into the desired future state of the corridor. Following from the Vision Statement are eleven specific goals which provide the framework within which the Plan was developed.

- **Existing Conditions**
  The existing land use assessment provides an overview of the existing land use characteristics found along the corridor, including both the physical land uses as well as the land use policy framework. The existing transportation assessment summarizes various aspects of the corridor, including traffic volumes, safety, and infrastructure assessment.
- **Future Conditions**
  Building from the existing conditions, this section explores the corridor's future based on current policy and growth trends. This section presents the corridor as it would be in 2030 without and significant changes to land use regulations of transportation infrastructure. Comparing this future assessment to the vision and goals for the corridor, one can then begin to articulate a set of recommendations needed to steer the corridor's future in a positive direction.
- **Recommendations**
  The Plan's final section includes a summary of the prioritized recommendations for the corridor followed by a detailed description of each recommendation.

Figure 1 below shows the VT 103 Corridor study area from I-91 north to VT Route 10 in Gassetts.

Figure 1: Project Study Area



2.0 VISION AND GOALS

2.1 Vision Statement

The VT 103 corridor is a critical southeast-northwest travel route across south-central Vermont. People and freight move through and within the corridor on a reliable and efficient multi-modal transportation system, village centers thrive, and rural and scenic areas are protected and enhanced.

2.2 Goals and Policies

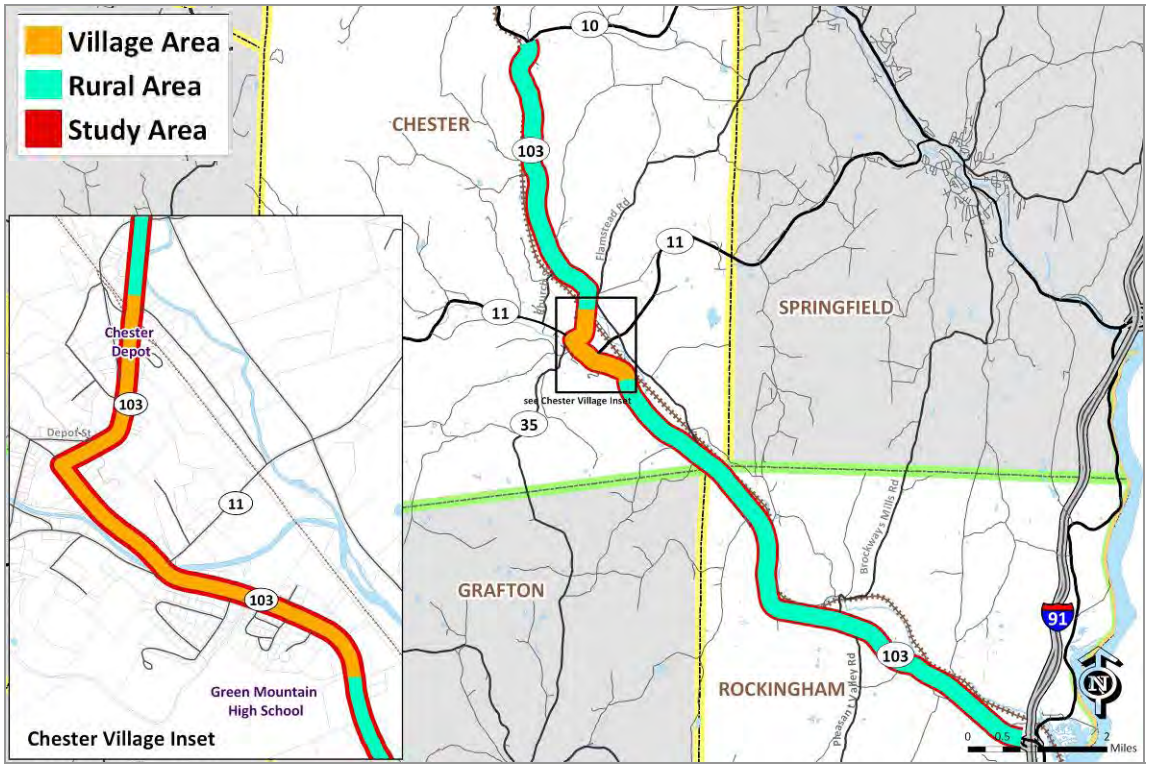
The following goals have been identified to help achieve the corridor vision:

1. Provide an appropriate balance between through vehicle mobility and local access along the corridor.
   - Rural segments of the corridor: preserving mobility is a priority.
     - Maintain overall Level of Service C or better for all signalized and all-way stop controlled intersections along rural sections of VT 103 (see Figure 2)
     - Maintain overall Level of Service D or better for minor approaches to 2-way stop-controlled intersections along rural sections of VT 103
     - Maintain Volume/Capacity (V/C) ratio of 0.7 or less along rural sections of VT 103
   - Village centers and other activity centers: preserving local circulation and access, along with provisions for pedestrians and bicyclists is a priority.
     - Maintain Level of Service D or better for all intersections and approaches within village settings[1] (see map in Figure 2)
     - Maintain Volume/Capacity (V/C) ratio of 0.8 or less along village sections of VT 103
2. Manage congestion caused by peak hour tourist travel.
   - Design roadway improvements for the 30th design hour of traffic[2] to ensure that projects are not over-designed
   - Address ski area traffic and other tourist-peak travel times with transportation demand management strategies
3. Concentrate commercial and dense residential development within defined growth areas along the corridor and ensure that access to VT 103 in these areas is designed in a coherent manner, with appropriately sized driveways and shared- or consolidated access points and local circulation roads where possible.

[1] The intention is to provide LOS D or better conditions during the typical peak hour, not necessarily during peak tourist periods.

[2] In areas like the VT 103 corridor where tourist traffic makes up a significant portion of the traffic stream during certain months of the year, there is precedent for using a 50th or even 80th highest hour as a design hour for traffic analysis and design purposes. These decisions should be made on a case-by-case basis in coordination with the Town, Regional Planning Commission, and VTrans.

Figure 2: Map Showing Rural and Village Sections of the Corridor



4. Provide accommodations for continued freight truck movements that do not adversely impact on the form and function of the VT 103 corridor, adjacent businesses, and abutting properties.

5. Shift freight from truck to rail.

   - Participate and support regional and statewide rail initiatives that seek to upgrade the rail system outside of the corridor
   - Upgrade the rail infrastructure in the VT 103 corridor to accommodate enhanced freight rail service.
   - Evaluate the feasibility of an intermodal transfer facility in the corridor and potential locations.
   - Concentrate future industrial areas near the rail road and provide water, sewer and other infrastructure to those areas to attract industries.

6. Establish a strong and coherent connection between existing Town, Regional, and State development approval processes to ensure adequate and objective vetting of development proposals prior to the granting of approval.

7. Strive to achieve full cellular telephone service along the full corridor.

8. Identify innovative funding mechanisms, and utilize private developer contributions for off-site improvements to finance infrastructure improvements along the corridor.

9. Provide a safe and efficient transportation corridor by addressing areas with known safety deficiencies.

- Reduce the number of major crashes (involving a fatality, serious injury, or moderate injury) along the corridor by 5% between 2009 and 2019
- Address all High Crash Locations within 5 years of identification
- Maintain passenger vehicle and truck speeds at the posted speed limits

10. Improve travel options for pedestrians, cyclists, and transit users.
11. Enhance the natural, historic, and scenic attributes of the corridor through donated and purchased scenic easements, consolidated growth patterns, access management, and transferred development rights within sensitive areas.

3.0 EXISTING CONDITIONS

3.1 Existing Land Use Assessment

The land use assessment includes an overview of both the physical characteristics of the land along the corridor as well as a summary of the current local, regional, and statewide regulatory framework that are relevant to land along the corridor.

3.1.1 Existing Land Use along the Corridor

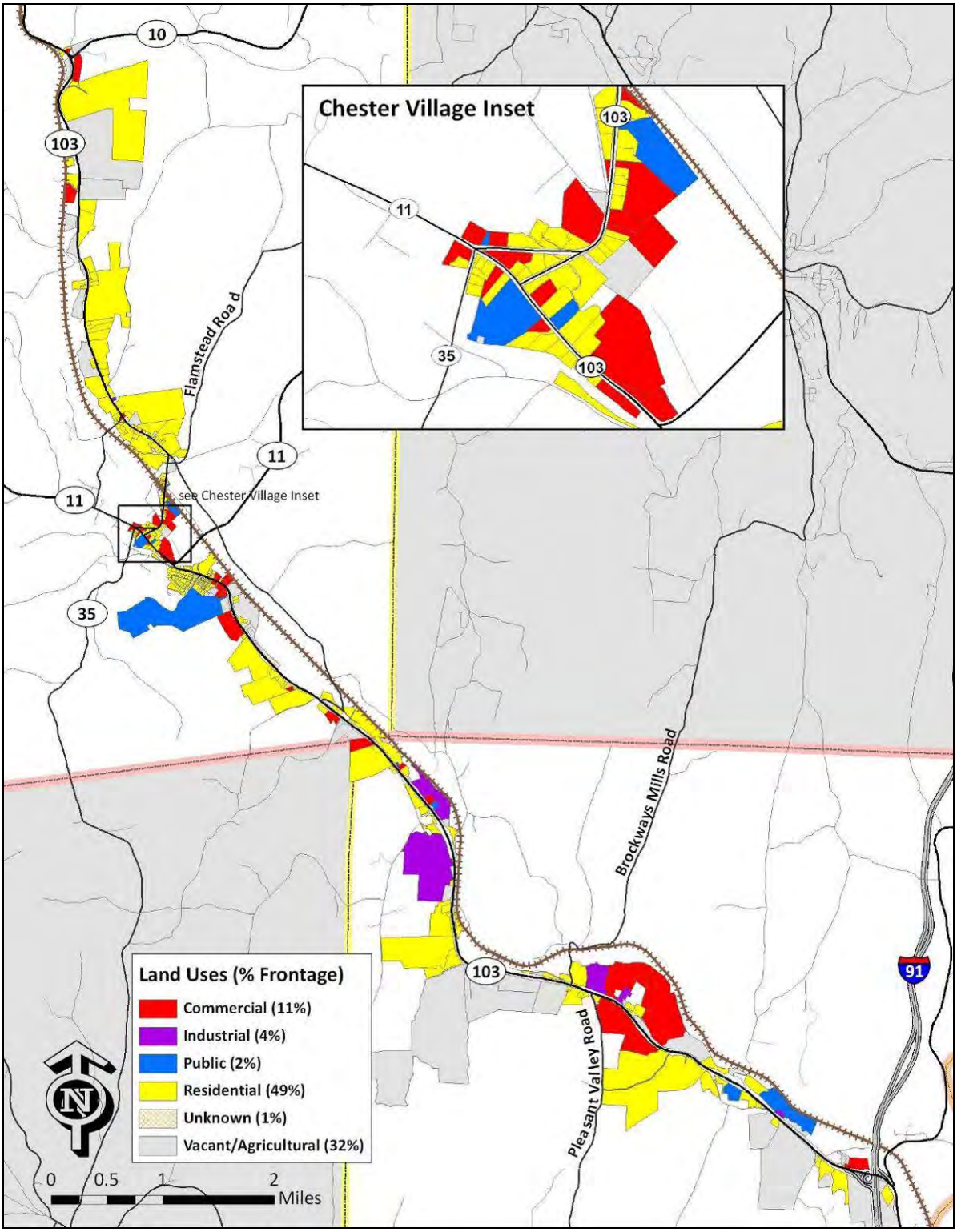
Heading north from I-91 Exit 6, the land uses are generally rural in nature and include a mix of commercial, light industrial and residential uses. Notable uses in this section include the Rockingham Meeting House, the Vermont Country Store, and the Rockingham Transport Park. This general land use pattern continues north to approximately the Green Mountain High School, where the character begins to shift to a denser, mixed-use setting approaching Chester Village. The village scale development continues north to the Chester Stone Village, where it transitions back to a rural setting, with primarily residential uses scattered along VT 103 north to the end of the corridor at VT Route 10 in Gassetts.

Figure 3 shows the existing land use for each parcel that fronts VT 103 in the study area.[1] Based on this assessment, majority of land (81%) along the corridor is either residential or vacant/agricultural. The full break-out of land use types is as follows:

- Residential: 49%
- Vacant/Agricultural: 32%
- Commercial/Retail: 11%
- Industrial: 4%
- Public Use: 2%
- Unknown: 1%

[1] Land use was determined using parcel boundaries, orthophotos, and existing E911 site location data from the Vermont Center for Geographic Information (VCGI). If there were multiple E911 sites of various land uses on one parcel, the land use was designated in the following priority order: Commercial, Industrial, Public, and Residential. Parcels that appeared to have a structure on them from the orthophoto but had no E911 data were identified as Unknown. If no structure was identified, the parcel was identified as vacant or agricultural land.

Figure 3: Existing Land Uses Adjacent to the Corridor



3.1.2 Identification of Environmental Features along the Corridor

Various environmental features can have significant impact on both the built environment and new development along the corridor. For instance, soils that are identified as "prime" or of "statewide" importance are not typically recommended for development because of their potential to be used for farmland. However, prime and statewide soils are not typically recommended for agricultural use when the slopes are greater than 25%. Although prime soils with relatively steep slopes are generally seen as developable land, extreme grade challenges also present a significant obstacle to development.

Other key features that may impact the potential build-out of an area include rivers, streams, and other water bodies, deer wintering areas, wetlands and their buffer zones, designated public lands, rare, threatened and endangered species, and wildlife roadway crossings.

The following environmental features are shown in Figure 4:

- Agricultural soils – prime and statewide
- Slopes 25% and greater

The map shows that much of the land adjacent to VT 103 is classified as valuable agricultural soil, given its location following the Williams River. Steep slopes in excess of 25% are scattered along the entire corridor.

Figure 5 shows the extent of identified and mapped wetlands from the Vermont Significant Wetlands Inventory and the FEMA Flood Zones along the corridor. The graphic shows a large number of wetlands and high risk flood zones along the corridor, given it's proximity to the Williams River. In the area north of Chester Village between the Stone Village and Gassets, VT 103 experiences occasional flooding often resulting from ice jams on the adjacent town bridges leading to flooding of the Williams River which occasionally tops VT 103.

The following environmental features are shown in Figure 6:

- Deer wintering areas
- Public lands
- Rare, Threatened, and Endangered Species

Figure 4: Environmental Features – Agricultural Soils and Steep Slopes

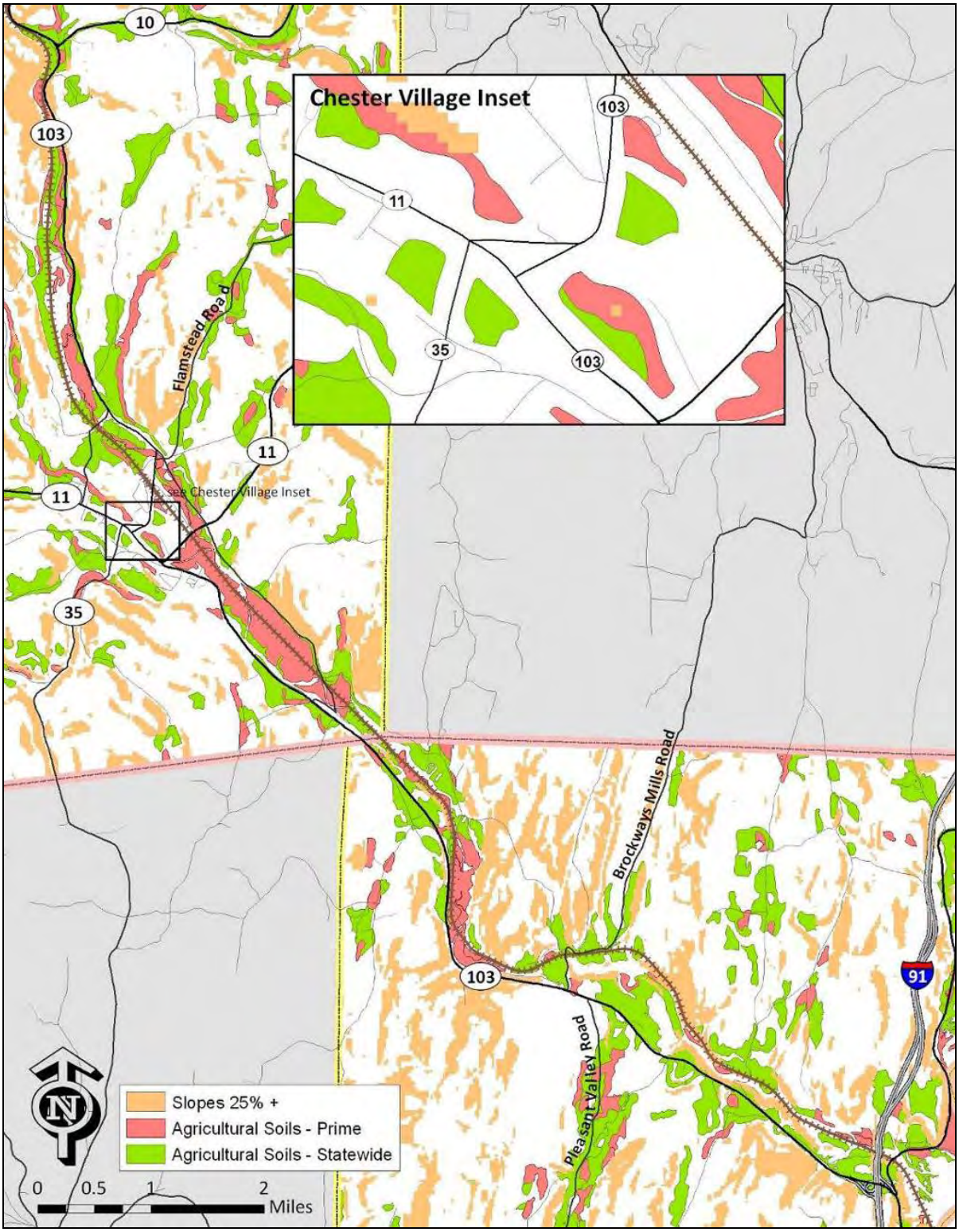


Figure 5: Environmental Features - Wetlands and Flood Zones

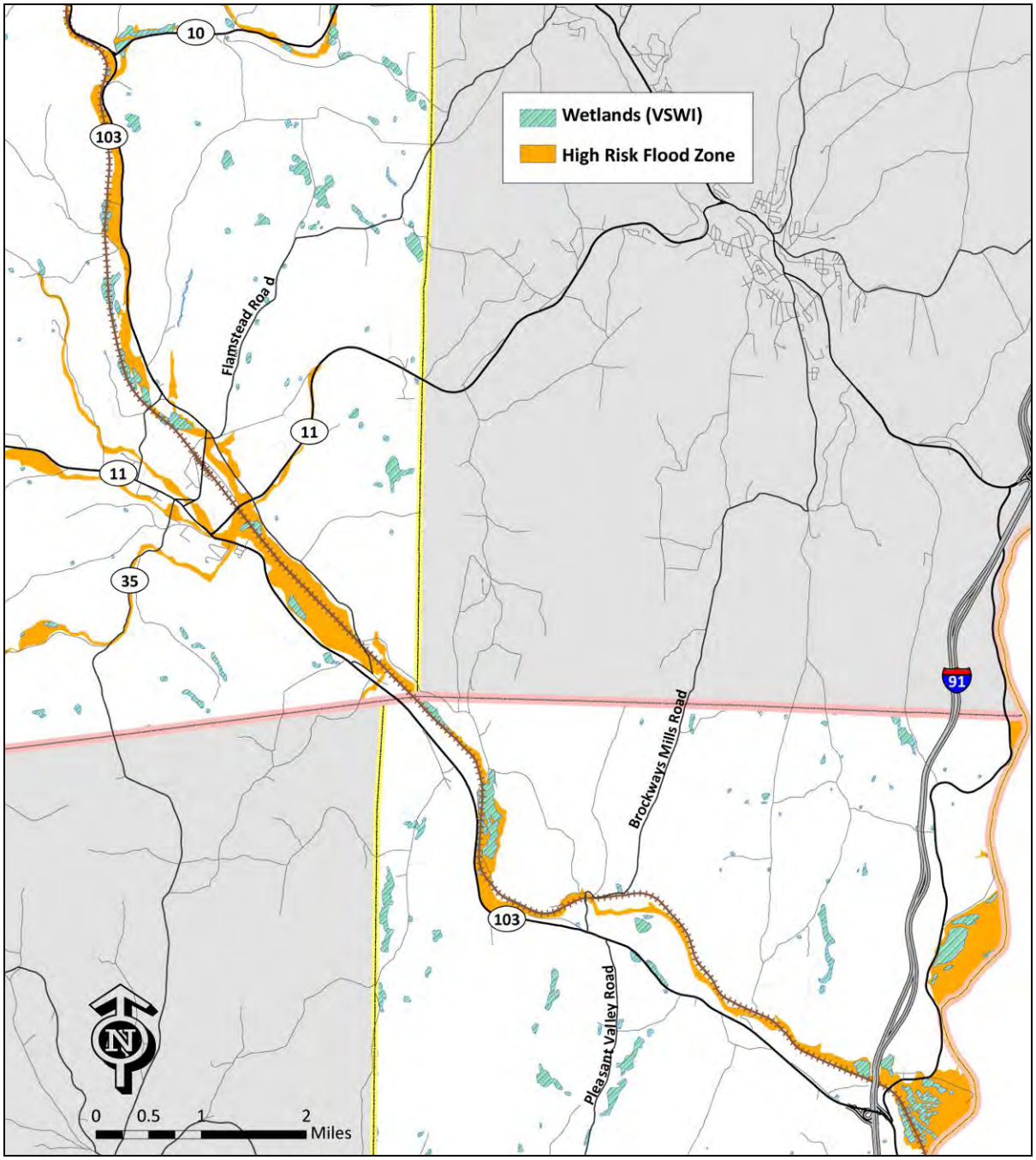


Figure 6: Environmental Features – Rare Species, Deer Wintering Areas, and Public Lands

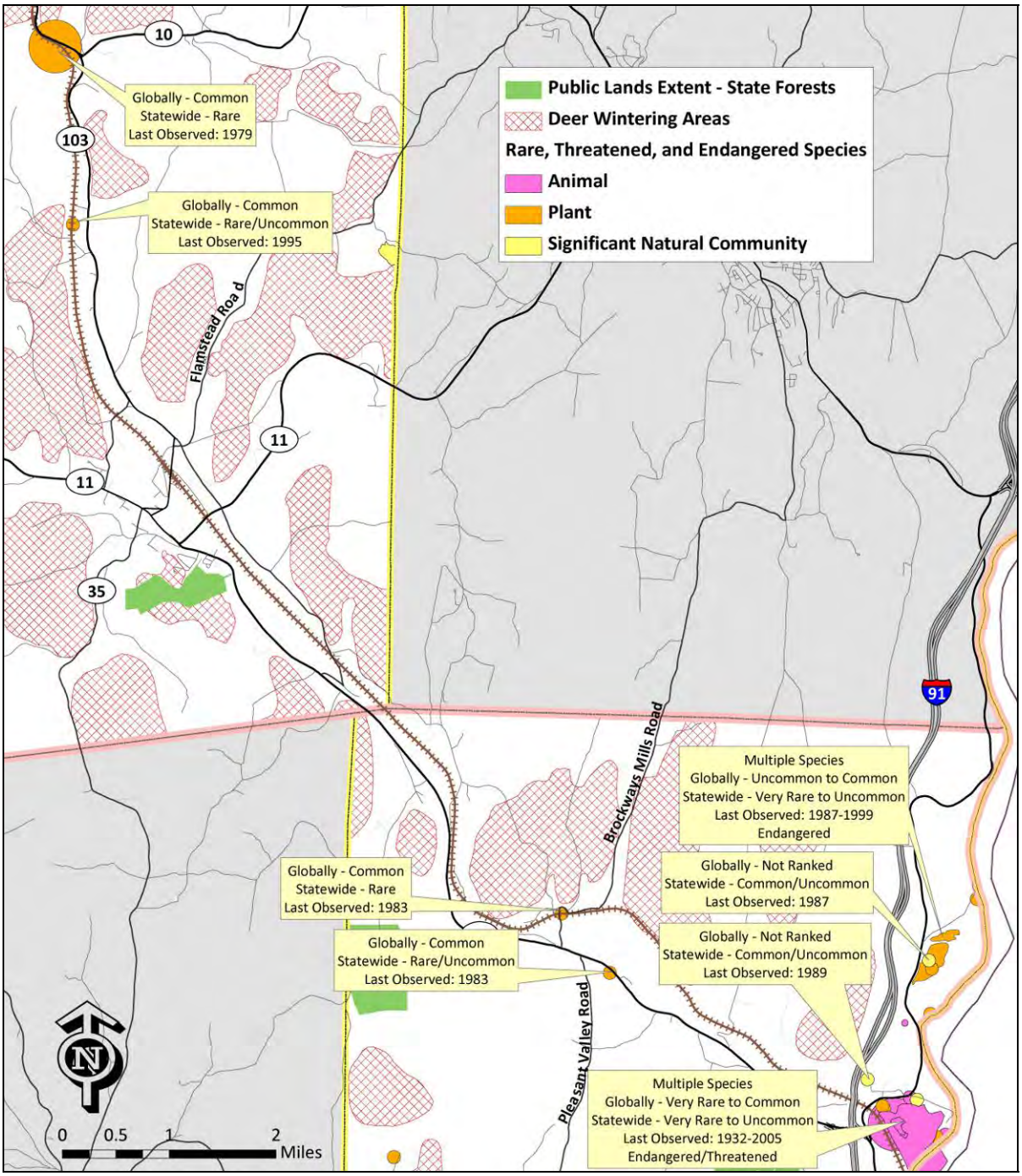
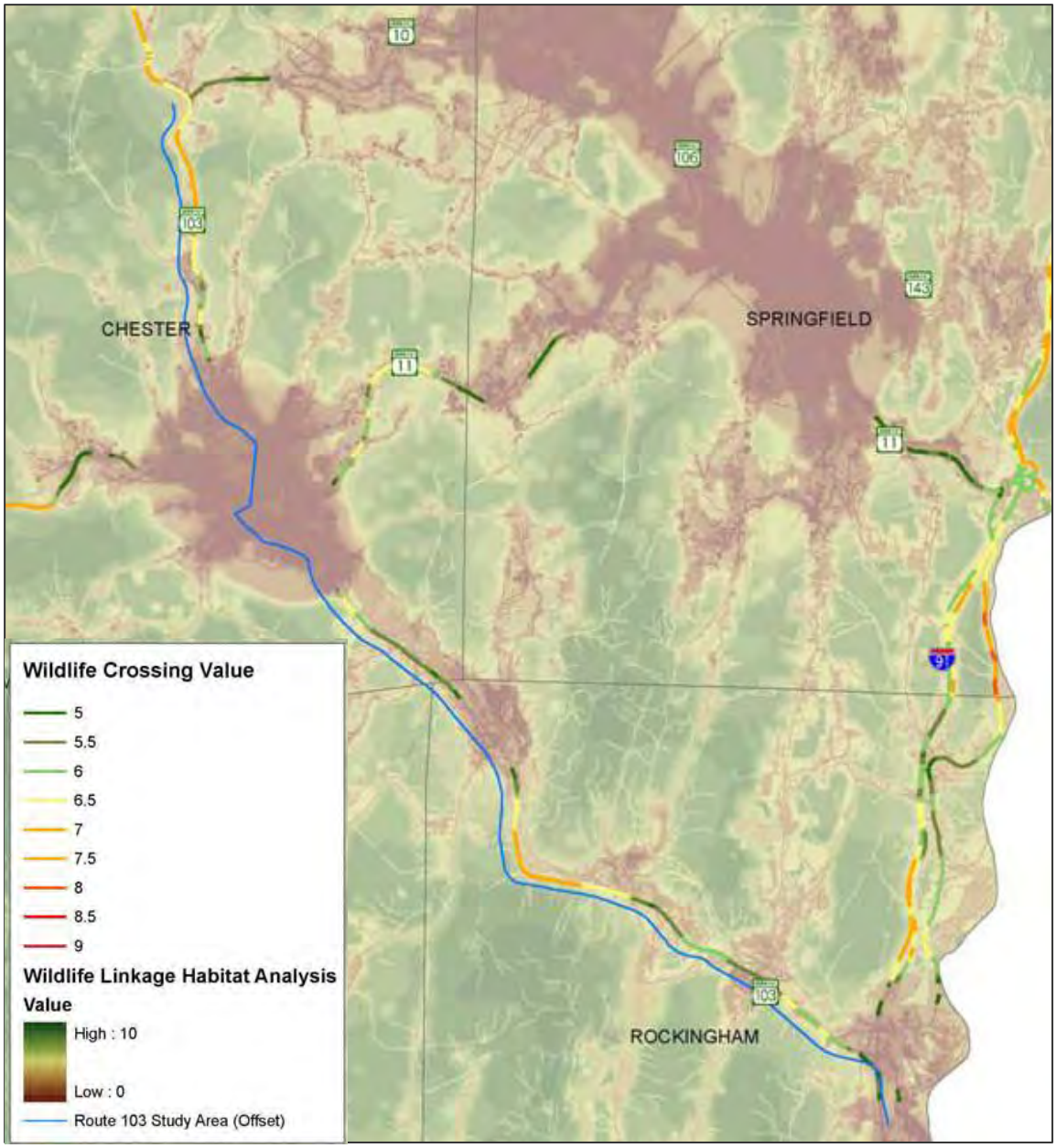


Figure 7 shows the Wildlife Crossing Values and Wildlife Habitat Suitability for each segment of the VT 103 corridor. The crossing value is rated on a scale from 0 to 10, (0 = low and 10 = high), and is based on the number of animals crossing the roadway at various points throughout the corridor.

The two most significant wildlife crossing opportunities in the study area are located at the "elbow" of VT 103 in the vicinity of Stearn Road (Wildlife Crossing Value of 7.0-7.5) and in the vicinity of the VT 10 intersection (Wildlife Crossing Value of 7.0-7.5). These areas are essential to the network of regional wildlife connectivity. Therefore, land use and transportation improvements in these areas should be particularly sensitive to the wildlife habitat and crossing needs.

Figure 7: Environmental Features – Wildlife Crossing



3.1.3 Existing Corridor Management Policies and Practices

This assessment of existing corridor management policies and practices includes the identification of management jurisdictions, and a review of relevant plans, policies and regulations, to gain some insight into the current state of corridor management. This analysis for the VT 103 corridor in the towns of Chester and Rockingham is based in part on an assessment methodology recently developed by the Center for Urban Transportation Research, which includes the use of checklists and matrices to evaluate the current status of inter-jurisdictional coordination, public policies and regulatory standards that apply within a particular corridor.

3.1.3.1 Inter-Jurisdictional Coordination

Figure 8: Current Practice Matrix: Administrative Jurisdiction

Jurisdictions	Yes	Partial	No	Notes
Planning	•			Shared: VTrans, WRC, SWRPC, Rockingham, Chester
Development Regulation	•			Shared: State (Act 250), RPCs (Act 250), Towns (municipal bylaws, ordinances, Act 250)
Access Approval	•			Shared: VTrans (VT 103, I-91 Exit 6), Rockingham (intersecting roads), Chester (Class I, intersecting roads)
Coordination Requirements/ Agreements/ Protocols		•		▪ No intergovernmental memoranda of agreement ▪ Internal application referrals at local level; no application referrals to state for review, comment ▪ New (2007) statutory requirement to refer applications to VTrans for variance requests on state roads ▪ Rockingham, Chester members of RPC planning and project development processes (RPC Boards, Transportation Advisory Committees) ▪ RPCs provide technical assistance (data analyses, studies, draft ordinances, development review) to member communities

It is very common for more than one governmental entity or agency to share responsibilities for corridor management – for the VT 103 corridor, which extends beyond municipal, regional and state boundaries, this is especially true. The following entities have jurisdiction over various, interrelated, aspects of land and transportation planning and development along the VT 103 corridor in Chester and Rockingham:

- **Vermont Agency of Transportation (VTrans)** – for agency transportation planning, state highway access permits, and highway infrastructure maintenance and improvements along the state highway corridor and at the I-91(Exit 6) interchange in Rockingham. VTrans, through interagency review, may participate in Act 250 proceedings, and also may have standing as an "interested person" to participate in local development review hearings.
- **District #2 Environmental Commission (DEC)** – for Act 250 development review, including consideration of a project's potential traffic and transportation infrastructure impacts and its conformance with municipal and regional plans.
- **Windham Regional Commission and Southern Windsor County Regional Planning Commission (RPCs)** – for regional comprehensive and transportation planning programs,

including the adoption of regional plans that include land use and transportation elements, and also regional transportation development plans, studies and improvement programs that are prepared with participation and oversight from the commissions' transportation advisory committees (TACs). Regional planning commissions also review and approve local plans, provide a variety of technical assistance to their member municipalities, and have standing in Act 250 proceedings.

- **Towns of Chester and Rockingham** – for comprehensive municipal planning, land use regulation, and town highway ordinances and access permits, including the adoption of municipal plans that include land use and transportation elements and implementing bylaws, regulations and programs. Local regulatory authority is shared between zoning administrators, a planning commission and zoning board (Rockingham) or a development review board (Chester), highway officials (highway department, public works director, town manager) and local select boards. Both towns are members of their regional planning commissions and have standing in Act 250 proceedings.

Each of these entities has different goals, objectives and responsibilities for corridor management. While the state retains immediate control along and within the highway right-of-way, it has little authority outside of Act 250 to plan for and regulate patterns and densities of development that may affect highway function, safety and efficiency.[1] This largely falls to the towns, under their municipal plans and land use regulations, and through local participation in Act 250 proceedings. The towns, however, have no authority to approve access to state highways, including VT 103 (except for Class 1 segments in Chester), or to independently require improvements within state rights-of-way.

Regional planning commissions serve largely in an advisory capacity to their member municipalities and the state, and as a technical resource to their members. They also, however, are responsible for regional land use and transportation planning, and have a separate role in Act 250 – particularly for projects considered to have a "substantial regional impact" as defined by the commissions. [2]

Efficient and effective corridor management among multiple jurisdictions requires a level of coordination that often is lacking, to the detriment of the highway and the communities and development it serves. Avenues exist for voluntary cooperation, including limited opportunities to participate in planning and project review at all levels, but currently there are few formal mechanisms in place that mandate inter-jurisdictional cooperation – particularly between VTrans and the towns, who shoulder most of the regulatory responsibilities for managing the corridor. Their respective authorities meet, and divide, along the highway right-of-way line. Current state statutes governing both require only that:

- As a condition of highway access approval by the state (or towns for local roads), compliance with all local ordinances and regulations relating to highways and land use is required (19 VSA. §1111).

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1 Under Act 250,a project cannot be denied, rather only conditioned, with respect to its potential impacts on traffic congestion and highway safety under Criterion 5; however it can be denied based on its impacts to public investments, including transportation infrastructure under criterion 9(K) .

2 Both regional plans address substantial regional impact. The Windham plan includes a committee process to identify and assess substantial regional impacts that may include negative effects on regional infrastructure. The Southern Windsor plan, updated in July 2009, identifies specific criteria for determining substantial regional impact, which include projects, "Substantially affecting the safety of the traveling public on highways; Generating peak hour traffic equal or greater than 5% of the peak hour capacity of the transportation network serving the project site; Contributing to a reduction in the peak hour LOS from D to E or from E to F."

- In no case shall "reasonable" access to a property be denied, except as necessary to be consistent with state planning goals, and to be compatible with state agency, regional, or regionally approved municipal plans (19 VSA §1111).
- Applications to the state for a driveway or access permit must include a proposed highway access plan for the entire tract of land, and the agency can condition its approval accordingly, to include limits on accesses, the construction of frontage roads and lanes, traffic control improvements, etc.
- No deed for the subdivision of land abutting a state highway can be recorded by a town unless all subdivided lots meet state access requirements, including but not limited to the requirement to install a frontage road (19 VSA §1111).[1]
- The town must provide notices of public hearing to the agency for any requests for variances from setback requirements along state highways (24 V.S.A. §4464 as amended in 2007).[2]

3.1.3.2 Existing Plan Policies

Regional and municipal plans provide the statutory policy basis for managing growth and development along highway corridors. Current plan goals, policies and objectives that address development and transportation systems along the VT 103 corridor are summarized in Figure 9 below, and are highlighted as follows.

- All regional and municipal plans reviewed recognize the importance of VT 103 as a major east-west arterial serving local communities, the larger region and beyond. All plans note that VT 103 has been designated as part of the National Highway System (a concern of Chester residents) and the Vermont Truck Route Network[3]. It is also a designated Class 1 town highway through Chester Village.
- All plans identify functional conflicts resulting from the fact that VT 103 carries both through traffic from I-91 to ski areas and RT7, and local traffic, especially in villages and hamlets along the corridor.
- VT 103 has experienced steady increases in weekday truck traffic and seasonal ski area traffic, resulting in traffic congestion and safety hazards, especially in village areas. All plans reference recent traffic management planning for ski areas, coordinated through the regional planning commissions, and the need to better address both truck traffic and congestion along the corridor. [4]
- Needed transportation system improvements are identified in regional and local plans – including a bridge replacement (BR4) in Rockingham, sidewalk and intersection improvements in Chester (RT 103,/RT 11/Main Street), shoulder widening for recreational use between Chester Village and Gassetts, and a park-and-ride facility at Exit 6 in Rockingham.

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1 Many municipal clerks, who are responsible for recording deed and subdivision plats, are not aware of or have difficulty administering this requirement – as a result it is often ignored, as noted in a July 9, 2007 letter from the agency to municipal clerks.

2 A previous statutory requirement for municipalities to refer applications for development within 500 feet of an interchange ramp to the agency for review was repealed in 2004.

[3] The State Truck Network was eliminated under the FY 2010 Transportation Bill (H.438)

[4] See *Ski Corridor Traffic Management Study*, RSG, 2004, for reference.

Figure 9: Current Practice Matrix: Plan Policies, Recommendations

	VT 103 Corridor	Growth/Development	System Management
Windham Regional Commission Plans: **Regional Plan (2006)** **Regional Transportation Plan (2006)**	▪ Principal arterial, connects with I-91 ▪ NHS Highway ▪ VT State Truck Route ▪ In fair condition (100%) ▪ Steady traffic increases− both commercial and ski area traffic − traffic, speed particular concerns ▪ Functional conflicts − serves both through and local traffic ▪ Scheduled improvement: BR4 on VT 103 (ranked 6th) ▪ Awareness of connections between land use and transportation have increased − cyclical (feedback loop)	▪ Emerging development pattern −scattered growth on state high-ways, secondary roads ▪ Concentrate develop-ment in Regional Centers (2) and Villages (23) − none on corridor ▪ Direct residential development in rural areas to hamlets to prevent rural sprawl ▪ Minimize effects of strip development, encourage clustering <u>Land Use Designations</u>: ▪ Rural Lands ▪ Rural Residential ▪ Productive Rural Lands ▪ Resource Lands	▪ Develop innovative design programs, including access management programs to provide safe access and mobility ▪ Consider secondary growth that results from transportation infrastructure improvements and its effect on land use in all system decisions ▪ Use access management (in high intensity mixed use areas) to ensure proper function, safety and performance of roadways ▪ Encourage preservation of rights-of-way

Rockingham **Town Plan (2005)**	▪ Major arterial highway connecting to I-91 (Exit 6) ▪ Town subject to heavy through traffic ▪ Truck terminal complex on RT 103−access ▪ Work with state, WRC to reduce truck traffic (RT 103, villages) ▪ Review potential develop-ment, land uses near Exit 6 in view of potential traffic increases− especially truck, seasonal ski area traffic ▪ Evaluate transportation projects w/re to immediate, long-term impacts on growth and development ▪ Support Park & Ride at Exit 6	▪ Develop in an orderly fashion − to maintain viable village and urban centers, sustain character of rural areas ▪ Rockingham− hamlet ▪ Road capacity affects development potential; development impacts highway budgets. ▪ Encourage clustering for residential, commercial, industrial development − amend PUD regulations <u>Land Use Designations</u>: ▪ Commercial-Industrial ▪ Rural (low density) ▪ Historic Hamlet (Meeting House area) ▪ Resource (low density) ▪ Conservation (open)	▪ Adopt road policies (acceptance) ▪ Review all access points along RT 103 for compliance with town and state highway standards ▪ Limit access points, combine driveways when feasible to serve new lots; ▪ Adopt a policy to limit curb cuts (SB)

	VT 103 Corridor	Growth/Development	System Management
Southern Windsor RPC Plans: **Regional Plan (2003)** **Regional Transportation Plan (2005)**	▪ Preserve, maintain and Improve the function of RT 103 – important regional, state, national highway ▪ Major east-west arterial ▪ NHS Highway ▪ VT State Truck Network ▪ Regional "primary road" ▪ Class 1 – Chester (village) ▪ Traffic congestion issues (seasonal, ski area traffic) ▪ Truck traffic issues, especially along VT 103, in villages ▪ VHB Study (1999) – three areas w/ geometrical constraints ▪ VTrans – backlog of scheduled improvements Initiate planning process to: ▪ Inventory traffic volumes annually ▪ Identify geometric constraints ▪ Identify problem intersections ▪ Implement Ski Country Traffic Management Plan ▪ Continue RT 103 corridor planning process w/ towns, state, private interests to maintain integrity of corridor	▪ Strip development, seasonal traffic congestion problems ▪ Recent trend – rural residential development ▪ Chester expected to develop, especially north of village between RT 11 and RT 103 ▪ Support growth center designation, smart growth principles ▪ Concentrate development in Regional Centers (Springfield, Windsor), Town Centers (Chester Depot) ▪ Discourage rural sprawl, strip development Encourage economic growth along RT 103 corridor that does not degrade function <u>Land Use Designations</u>: ▪ Mixed Use (Village) ▪ Forest ▪ Agriculture/Open ▪ Rural ▪ Conservation	▪ Need better coordination between land use, development and transportation enhancements through corridor management ▪ Access management categories 3, 6 (village) ▪ AM preserves carrying capacity of highway ▪ Work with towns to inventory AM constraints ▪ Work with PCs to develop AM regulations ▪ Encourage town participation in issuance of access permits on state highways ▪ Work with large traffic generators to implement TDM options ▪ Traffic calming in villages

Chester Town Plan (2003 – readopted 2008)	▪ Major arterial, I-91 to RT 7 ▪ NHS Highway – designation concerns local residents ▪ VT Truck Network ▪ Class 1 through village ▪ Large increases in weekday truck traffic and seasonal ski area traffic– oversized loads, congestion, reduced safety ▪ Functional conflicts –local road for Chester residents ▪ Bad intersection –RT 103/ RT 11/Maple Street, tight turning radius ▪ Narrow shoulders from Gassetts to Chester Village – widening needed, enhance pedestrian cyclist safety ▪ Ski area traffic mitigation study (WSA) ▪ Sidewalk upgrades needed along VT 103 in village	▪ Excessive strip development on RT 103 discouraged ▪ Allow truck stops on RT 103 between Chester Village and Rockingham w/ shops, services, light industrial uses, freight transfer, tank farms, etc. (Highway Frontage Special Use) <u>Future Land Use Designations</u> ▪ Forest ▪ Agriculture ▪ Recreation ▪ Rural Residential ▪ Residential ▪ Village Residential ▪ Conservation Residential ▪ Mixed Use Village ▪ Highway Frontage Special Use ▪ Aquifer Protection Area ▪ Industrial ▪ Hazardous Materials ▪ Mineral Deposits	▪ Design. locate and maintain transportation systems consistent with planned land use ▪ New roads must meet town highway standards ▪ Widen, realign RT 103/ RT 11/ Maple St. intersection; acquire parcel on northeast corner ▪ Access management to balance access , mobility, avoid strip development ▪ Village parking plan ▪ Expand public and rail transportation to reduce traffic on RT 103 ▪ Work w/other towns along corridor to address truck, ski area traffic ▪ Costs of road improvements to be borne by developers

- All plans discourage strip development and scattered residential development, particularly in rural areas along the corridor, and promote concentrated, mixed use or higher density development within or adjacent to existing regional centers, villages and hamlets – especially within those areas currently served by water and wastewater infrastructure – to minimize sprawl and reduce traffic impacts.
- At the same time, there appear to be conflicts in some proposed land use designations along the corridor – especially between local and regional plans – in part because proposed land use districts tend to be more specifically defined at the municipal level, as the basis for zoning. For example, locally proposed commercial and industrial districts along the corridor in Rockingham (e.g., around Exit 6) and Chester (southeast of the village) do not necessarily correspond to more generally defined rural residential or rural resource districts on regional land use maps. Some of these districts (e.g., Chester's proposed "Highway Frontage Special Use District") are intended to accommodate potentially high traffic generators that could alter existing development patterns and affect system capacity.
- The Exit 6 interchange area is not specifically addressed in local or regional plans, except for a recommendation in the Rockingham Town Plan that potential development and land uses near this exit be reviewed for their impacts on corridor traffic. A "Commercial-Industrial" District is recommended for the northern portion of the

interchange area. There are no recommendations for preparing a more detailed interchange development or access management plan.

- All plans include observations that transportation and land use planning are necessarily interconnected – that highway access can promote development, and development can affect transportation system capacity. Maintaining and enhancing existing system capacity is consistently given priority over building new infrastructure.
- All plans identify the need for better access management along the corridor – especially within higher density, mixed use areas –to balance access and mobility needs and to maintain the route's functional capacity. Local plans recommend the adoption of access management policies and standards under local regulations, and also updated highway standards.
- The Windham Regional Plan cites the need for highway right-of-way preservation. The Southern Windsor Regional Plan also recommends traffic calming in villages, and working with larger traffic generators to implement traffic demand programs. The Chester Town Plan recommends expanded public and rail transportation to reduce traffic on VT 103.
- All regional and local plans support continued efforts, coordinated through the regional planning commissions, to jointly plan for and better manage development, truck and resort traffic congestion, and needed transportation system improvements along the VT 103 corridor.

3.1.3.3 Development Regulations

The regulation of development along the VT 103 corridor is largely the responsibility of the Towns of Chester and Rockingham under their adopted land use regulations and highway ordinances. As noted earlier, VTrans retains jurisdiction over access to the highway right-of-way along most of the corridor (outside of Chester Village), which extends to the subdivision of adjacent land. The agency, regional planning commissions, and towns also have party status in Act 250 proceedings for the review of larger developments along the corridor – including the review of their traffic and highway impacts.[1]

Chester and Rockingham have both adopted zoning bylaws that regulate the type, density and location of development along the VT 103 corridor, and separate subdivision regulations that control land subdivisions and supporting infrastructure – including the layout of new lots and roads. In addition to administrative officers (zoning administrators), Chester's regulations are administered by a single development review board; Rockingham's planning commission reviews site plan and subdivision applications, while the zoning board of adjustment reviews conditional use applications and variance requests. Neither community has adopted a unified (combined) set of development regulations, so the standards under each set of regulations may vary, especially as amended over time. Some regulations also predate and therefore do not incorporate more recent statutory requirements under the Vermont Planning and Development Act (24 VSA Chapter 117), as enacted in 2004.

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1 For purposes of Act 250 jurisdiction, both Chester and Rockingham are classified as "10-acre towns" – Act 250 applies only to commercial or industrial development on more than 10 acres, or residential subdivisions of 10 or more lots. Given this scale of development, traffic studies are generally required for projects subject to Act 250 review.

A summary of local regulatory practices, existing and proposed, that are relevant to corridor management is presented in Figure 10. Key findings include the following:

- Application requirements under zoning bylaws are not specified in any detail – site plans are generally required for site plan and/or conditional use review. Subdivision regulations include more detailed application requirements – including location (vicinity) maps, subdivision plats that show lots, road rights-of-way, intersections, etc., and supporting documentation – including road, bridge and culvert design specifications.
- No bylaws require the submission of trip generation rates, traffic impact studies, infrastructure capacity analyses, or public transit information that could be use to evaluate the impacts of proposed development on highway infrastructure and transit routes.
- Currently there are no application referral requirements in the regulations that allow local and state highway officials to review applications prior to the issuance of development approvals – though at the local level this is now done through staff. Local access permits are commonly issued prior to development approvals in both communities, and in Rockingham are required for subdivision approval.
- None of the bylaws cite the need for state highway permits to access state highways, or refer to VTrans "Access Management Program Guidelines" (2005) that also regulate land subdivision and highway access along VT 103 and other state highways.

Figure 10: Current Practice Matrix: Development Regulations

Bylaw Provisions	Chester	Rockingham
Application Requirements:		
Location (adj. lots, rights-of-way, etc)	SR	SR
Site plan (access, parking, circulation)	ZB (CU	ZB (SP, PUD)
Subdivision plat (lots, rights-of-way, etc.)	SR	SR
Driveway, road, intersection specifications	SR	SR
Bridge, culvert design specifications	SR	SR
Trip generation rates		
Traffic impact/ infrastructure capacity analyses		
Transit information (routes, stops)		
Phasing schedule	SR	SR, ZB (PUD)
Referral/highway, public works – local highways		SR – file copy of application
Referral/VTrans – state highways		
Zoning Districts (area, frontage):		
Highway ribbon/strip districts	C –Commercial (40,000 SF)	C-I(2)–Comm-Industrial (1A)
Compact village/nodal districts	R20–Residential (20,000+ SF)	MHHD – Meeting House (2A)
Rural/low density districts	R80–Residential (80,000 SF)	RR-1– Residential (1A/2A)
Conservation/resource districts	M&M–Mining; APD2–Aquifer	RC – Rec/Conservation (2A)
Interchange districts		C-I(2)–Comm-Industrial (1A)
Access management overlay district		
Access Management Standards:		
Traffic generation, impacts	ZB (CU) – no specific standards	ZB (CU) – no specific standards
Statutory frontage, access requirements	ZB – min width 20'/50'	ZB – min width 20'/50'; PUDs
Lot frontage requirements	ZB– district (100'-200')	ZB– district (none-200')
Access spacing requirements		ZB– from street intersections
Limit number of accesses /lot, frontage		ZB (SP)–no standards
Elimination, consolidation requirements		ZB (SP)–no standards
Access from secondary roads		
Shared access/cross connections		
Driveway/access design standards		ZB– min 30' width, except SF,TF
Curbing, other access control standards		
Reference state access standards		
Reference town, state highway permits		SR– waiver (< 5 lots) w/permit
Site Layout Standards:		
Minimum lot width (nonconforming lots)	ZB – 40' (statutory)	
Maximize internal access, limit external access	ZB (CU, SP?)– no standards	ZB (SP, PUD) – no standards
Allow off-site, shared parking	ZB(CU) – no standards	ZB (SP, PUD) – no standards
Pedestrian sidewalks, paths, connections	ZB (PUD) – no standards	ZB (SP) – no standards
Mid-block pedestrian crossings		
Public transit facilities		

Bicycle facilities, path connections		
Subdivision (Multi-lot) Standards:		
Waiver provision (statutory)	SR− lack of connectivity	SR− lack of connectivity
Merger requirement (nonconforming lots)		ZB− statutory
Master plan for phased development		
PUD/clustering provisions	ZB (PUD)− up to 50% open	ZB (PUD) −no specific standards
Lot layout (e.g., avoid flag, irregular lots)	SR −limited standards	SR − limited standards
Access limits on public highways		
Access limits for re-subdivisions (use existing)		
Internal access/service road requirements	SR −2+ lots	SR−3+ lots
Road, intersection design standards	SR− ref town standards	SR − *and* ref town standards
Road intersection spacing requirements	SR −ref town standards	SR −*and* ref town standards
Road extension/connectivity requirements	SR	SR
Discourage/limit dead-ends, cul-de-sacs	SR − allowed	SR− allowed
Pedestrian sidewalk, path requirements	SR− no standards	SR− no standards
Infrastructure Improvements:		
Reference official map, capital program		SR − if adopted
Threshold (e.g., LOS) standards		
Installation, inspection requirements	SR, ZB (certification)	SR
Bonding requirement	SR	SR, ZB (CU, SP)
Right-of-way reservation requirements		SR
Dedication/acceptance standards	SR	SR

SR− Subdivision Regulations, ZB− Zoning Bylaw, SP− Site Plan Review, CU− Conditional Use Review, PUD − Planned Unit Development

- Zoning district designations in both communities allow for moderate densities of industrial, commercial, and residential development along the highway corridor. A range of uses is allowed in most districts. Minimum required lot sizes range from ½ acre (or 20,000 ft ^{2}) in higher density residential and commercial districts, up to ~4.5 acres (200,000 ft ^{2}) in Chester's Aquifer Protection District. Minimum lot size requirements vary by district, based in part on the availability of water and sewer infrastructure. Current district designations, which predate updated plans, do not always correspond to plan land use designations.
- Highway access also appears to play a role in some district designations − including more linear commercial zoning districts along the route and a commercial-industrial zoning in the vicinity of Exit 6. There are also district designations along the route that allow for concentrated (nodal) mixed use development in areas served by water and sewer. Zoning districts − including allowed uses and densities of development − should be reviewed with regard to potential traffic generation rates, and for potential impacts on available highway infrastructure capacity.
- Frontage requirements affect access spacing. Both zoning bylaws reviewed include basic statutory requirements for access to non-frontage lots, and for the merger of small nonconforming lots that subsequently come under single ownership. Chester's bylaw also specifies that pre-existing nonconforming lots must be at least 40 feet wide for development.

- Both bylaws also include minimum lot frontage requirements for most (but not all) zoning districts that apply district-wide and relate to minimum lot sizes (and the availability of water and sewer) rather than access spacing requirements. These range from 100' to 200' for new lots, in districts where road frontage is required.
- New roads trigger major subdivision review under both sets of subdivision regulations, however minor subdivisions (less than five lots) with frontage on public roads may be reviewed as minor subdivisions without any requirements for shared access. In Rockingham, the planning commission can waive all subdivision regulations if highway access (and health) permits have been obtained. There are separate access requirements for lots that do not have frontage on public highways.
- Zoning bylaw provisions regarding to access and site circulation (under site plan review) and impacts to traffic on highways in the vicinity of a project (under conditional use review) merely restate statutory "considerations." There are few specific access management requirements under local zoning bylaws – and no VT 103-specifc frontage or access requirements.
- Rockingham's bylaw includes minimum driveway standards that apply to all but single and two-family dwellings – a minimum cleared width of 30 feet, and a minimum separation distance of 100' from street intersections. The bylaw also includes specific frontage and access requirements for gas stations.
- On the other hand, the subdivision regulations for both Chester and Rockingham reference local highway ordinances for the design and construction of new roads and intersections. Rochester's subdivision regulations also include specific highway design standards in addition to referenced town highway ordinance requirements.
- Both subdivision regulations include road connectivity requirements for future extensions to adjoining parcels, but also allow for dead-end roads and cul-de-sacs. Neither regulation limits the number of subdivision accesses onto public highways, or access to re-subdivided parcels, as required under VTrans' access management guidelines.
- None of the regulations incorporate clear standards or thresholds (e.g., trip generation rates or levels of service) that trigger the need for highway infrastructure improvements to be paid for by the developer, in proportion to the impacts of development. Rockingham's subdivision regulations reference infrastructure depicted on the town's official map (if adopted) and improvements identified in the town's capital improvement program, to be included in subdivision design. The regulations also include right-of-way reservation requirements to accommodate planned improvements.
- Both sets of subdivision regulations include specific requirements for certifications, municipal inspections, and performance bonding to ensure that roads and other infrastructure are installed as required. Chester's zoning bylaw also allows performance bonding as a condition of approval under site plan or conditional use review.

Local bylaws and highway ordinances should be further reviewed to ensure that standards of review, as applied by the state, by local planning commissions and zoning or development review boards, and by town highway officials are consistent. A full range of access management tools should also be considered in preparing bylaw updates, to more effectively address land use and development impacts on transportation infrastructure capacity.

3.2 Existing Transportation Assessment

3.2.1 VT 103 Highway System Classification

VT 103 is an important northwest to southeast route through southern and central Vermont, connecting I-91 to US Route 7 in Clarendon. As such, the segment of VT 103 passing through the Towns of Rockingham and Chester plays a critical role in both the and regional transportation network for long distance vehicular and freight mobility as well as on the local level for business and residential access. Some of the important classifications for VT 103 are highlighted here and discussed below.

- Functional Classification: Rural Principal Arterial
- Roadway Jurisdiction: Vermont State Route under State jurisdiction for maintenance, except for the Class 1 section in Chester Village
- Access Management Classification:[1]
    - Category 3 north and south of Chester Village[2]
    - Category 6 in Chester Village[3]
- Designated part of the National Highway System

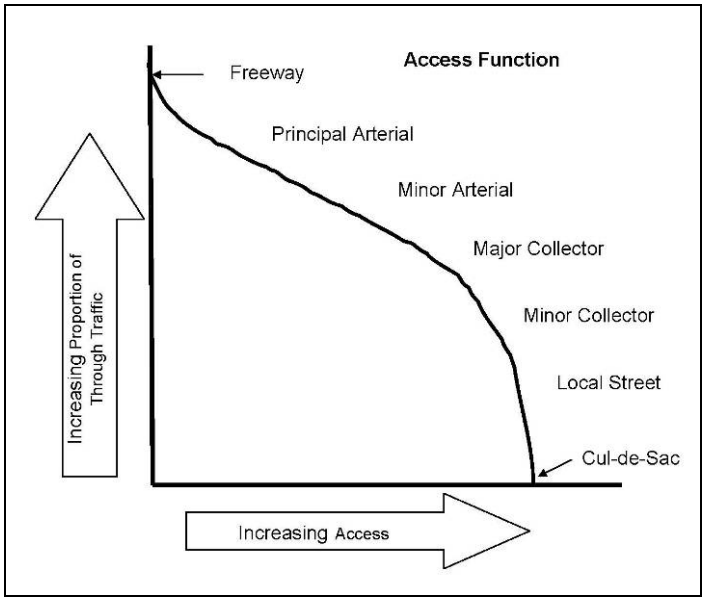
The Federal Highway Administration's roadway functional classification system, depicted in Figure 11, is organized as a hierarchy of facilities, based on the degree to which the roadway serves mobility and access to adjacent land uses. Freeways and interstate highways, at the top of the hierarchy, are devoted exclusively to vehicle mobility, with no direct access to adjacent land. Arterials and Collectors provide both mobility and access to adjacent land uses. The local road system is devoted exclusively to providing local access, with limited capacity and relatively slow speeds.

[1] Note that VTrans cannot deny "reasonable access," and that these classifications are recommended guidance.

[2] Access Management Category 3: Medium to high speed or medium to high volume roadways over medium and long distances that provide interregional, inter-city and intra-city travel needs.

[3] Access Management Category 6: Moderate to low speed roadways with moderate to high traffic volumes over medium and short travel distances providing inter-city, intra-city, and intro-community travel needs.

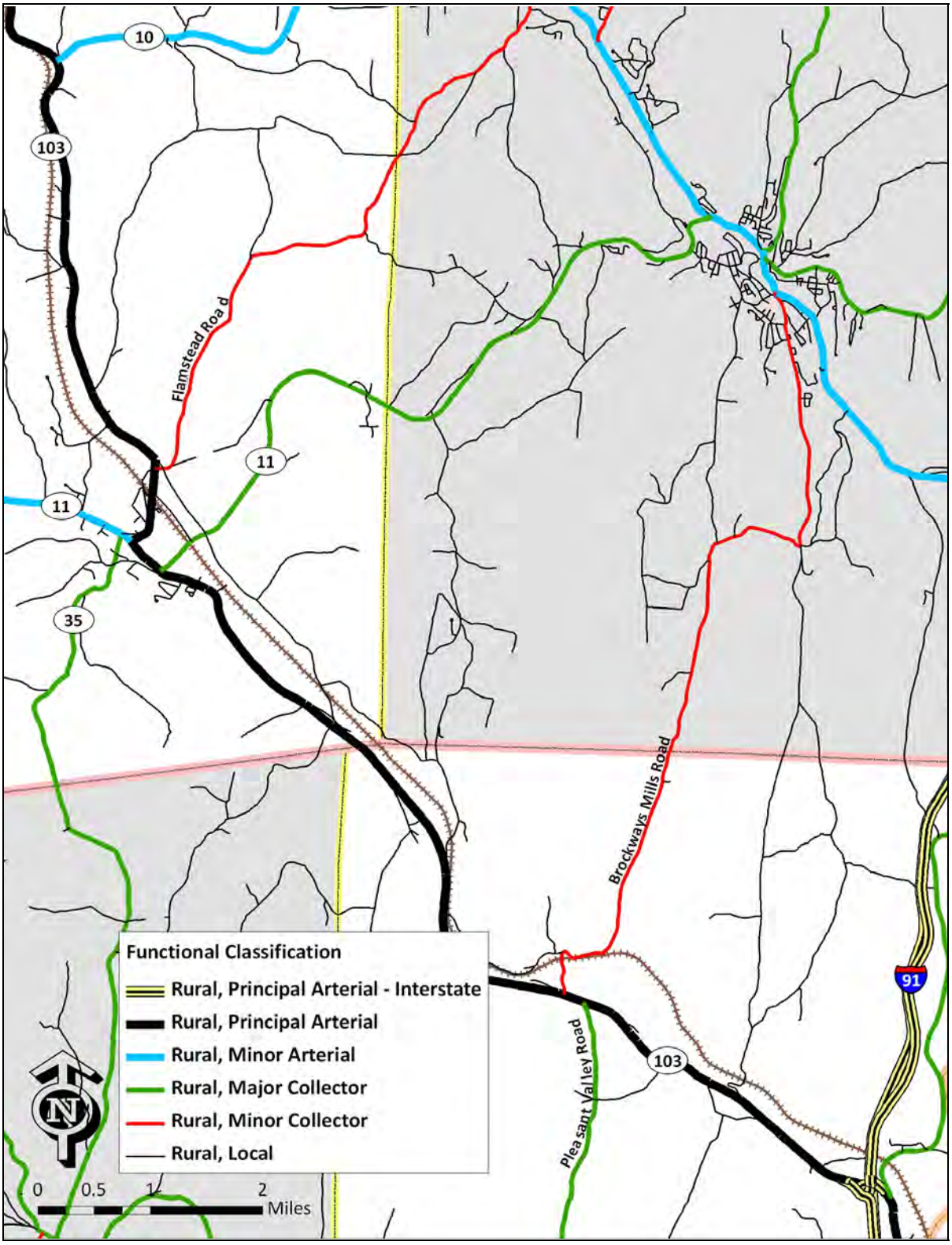
Figure 11: Conceptual Roadway Functional Hierarchy



The functional classification of all roads along and adjacent to the study corridor is shown in Figure 12. The VT 103 study corridor is designated as a rural principal arterial through the study area. The principal arterial designation places a higher priority on mobility than accessibility along the corridor. As a primary northwest-southeast route through southern and central Vermont, the VT 103 corridor serves a regional role to provide adequate mobility for through vehicles. However, the built up nature of Chester Village and the resulting cluster of commercial and retail uses in this section of the corridor indicate that a reasonable priority should be placed on access to abutting parcels.

The function of VT 103 as a rural principal arterial should be taken into consideration in state access permitting and local land use decision-making processes. Exceptions to this functionality should be made to provide access to properties along VT 103 within Chester Village and other areas of concentrated development as designated by town and regional plans. Such flexibility is essential in order to support local, regional and state planning goals.

Figure 12: Functional Classification



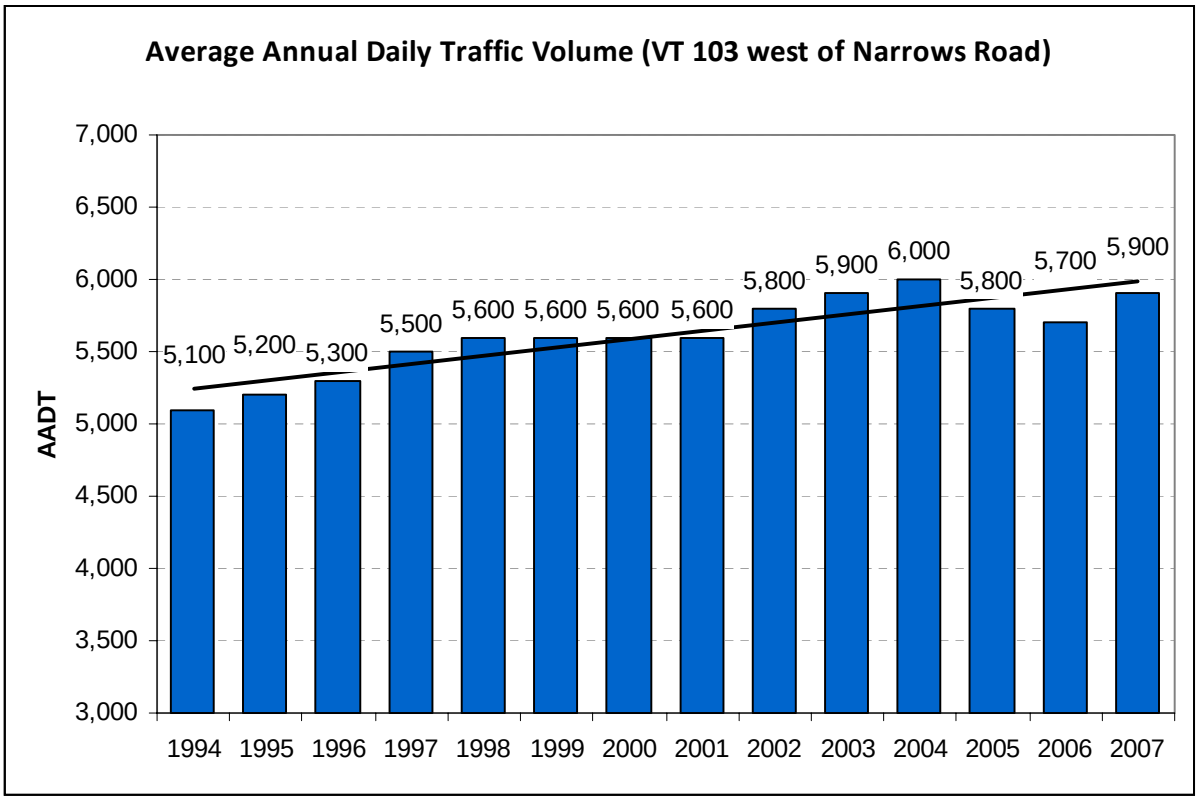
In addition to being classified as a rural principal arterial, VT 103 across the state is designated as part of the National Highway System (NHS). The 160,000-mile National Highway System (NHS) was established in 1995 by Congress, consisting of roadways judged to be important to the nation's economy, defense, and mobility. It consists of the Interstate system, the Strategic Highway Network (STRAHNET), nationally designated intermodal connectors, and principal arterials that serve both Interstate and interregional travel, and provide important intermodal connections. Vermont's NHS consists of 320 miles of Interstate Highways (which coincide with the STRAHNET system), 9.5 miles of intermodal connectors, and 374 miles of principal arterials.[1]

3.2.2 Traffic Volume Assessment

3.2.2.1 Historic Traffic Volume Trends

Since 1994, Average Annual Daily Traffic (AADT) on VT 103 just west of the intersection with Narrows Road has increased on average by 1.2% annually (Figure 13). This is greater than the statewide average for similar roadways which declined -0.2% per year between 2002 and 2007.[2]

Figure 13: Average Annual Daily Traffic Volume on VT 103 west of Narrow Road (1994-2007)[3]



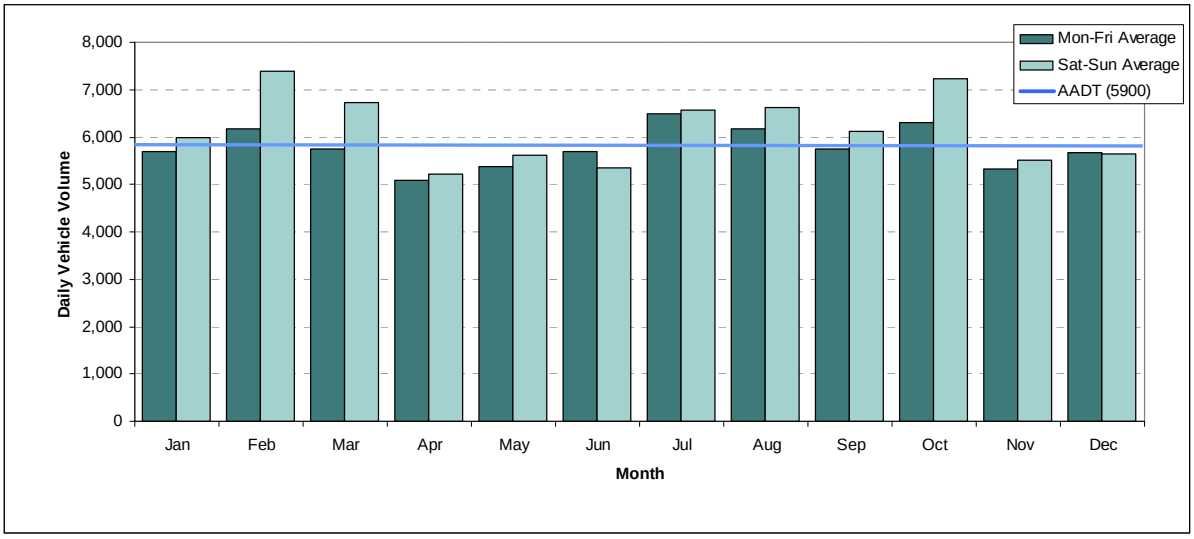
[1] Vermont Highway System Policy Plan, VTrans, 2004.

[2] VTrans, 2007 Continuous Traffic Counter Grouping Study and Regression Analysis Report ("The Red Book"), Short Term Growth Factors for Rural Primary and Secondary Continuous Traffic Counters.

[3] From VTrans CTC P6X249, located on VT 103, 0.35 miles West of Narrows Road.

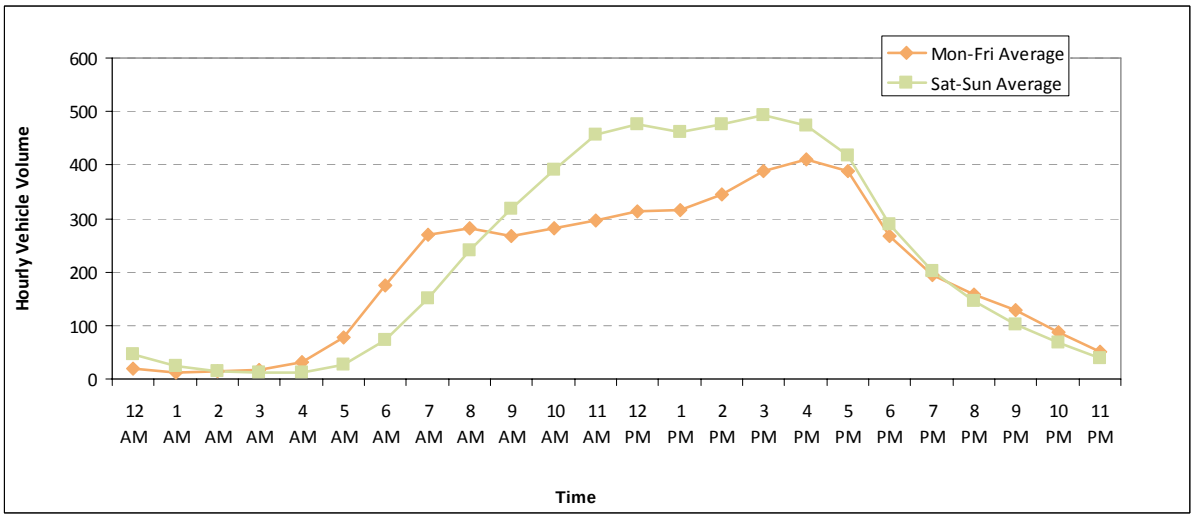
In the study area, traffic volumes tend to be highest in the late winter, summer months and during fall foliage season, which reflects the tourism-based nature of the corridor. With the exceptions of June and December, weekend daily traffic volume is appreciably greater than weekday daily traffic volume, which further demonstrates the tourism-driven character of traffic along the corridor (Figure 14).

Figure 14: 2007 Seasonal Traffic Volume Fluctuations on VT 103 west of Narrows Road Intersection



In 2007, weekday traffic volumes follow a typical workday cycle, with clear AM and PM peak hours. Saturday and Sunday traffic typically peaks during the midday hours (Figure 15).

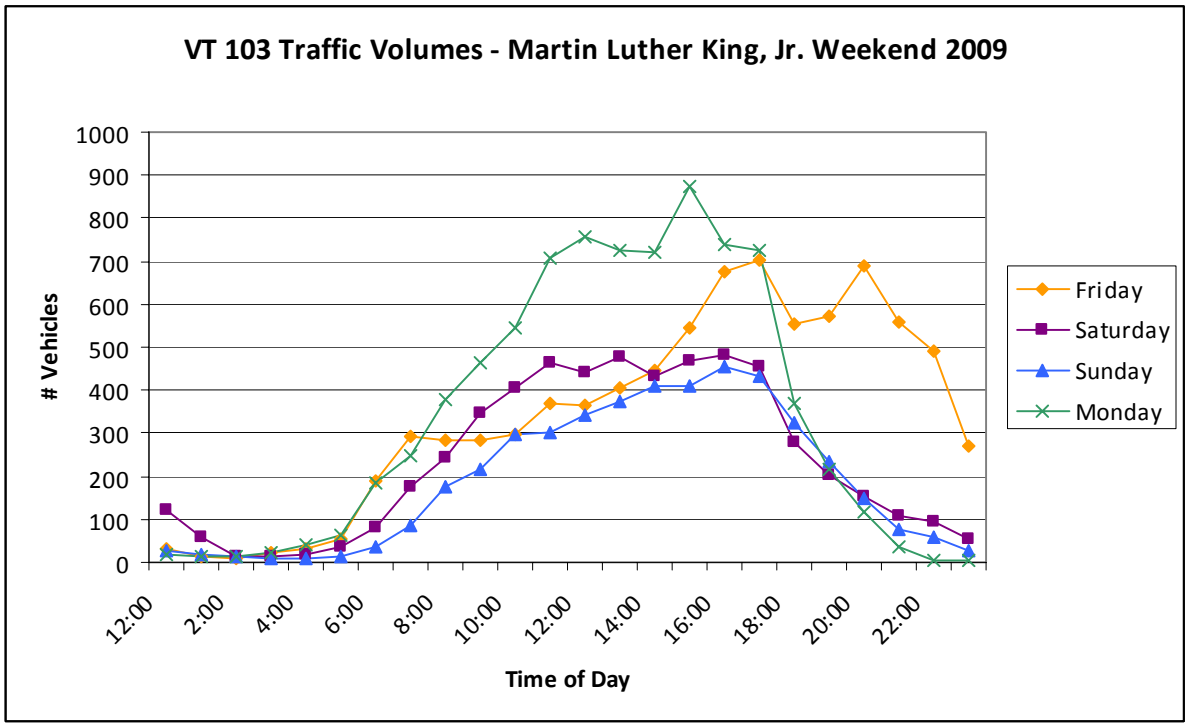
Figure 15: 2007 Daily Fluctuations



On Martin Luther King, Jr. Day Weekend 2009, an automatic traffic recorder was placed on VT 103 just south of Meeting House Road to monitor traffic volumes during a busy ski weekend. The traffic volume during that weekend shows a clear rush-hour peak on Friday afternoon and a second peak on Friday evening. This second peak is indicative of heavy traffic volumes on VT 103 headed towards local winter recreational areas. The highest volumes during this weekend

were recorded on Monday between 3:00 and 4:00 PM, most likely when the majority of ski-related traffic was headed home. These traffic patterns are shown graphically in Figure 16.

Figure 16: 2009 Martin Luther King, Jr. Holiday Weekend Traffic

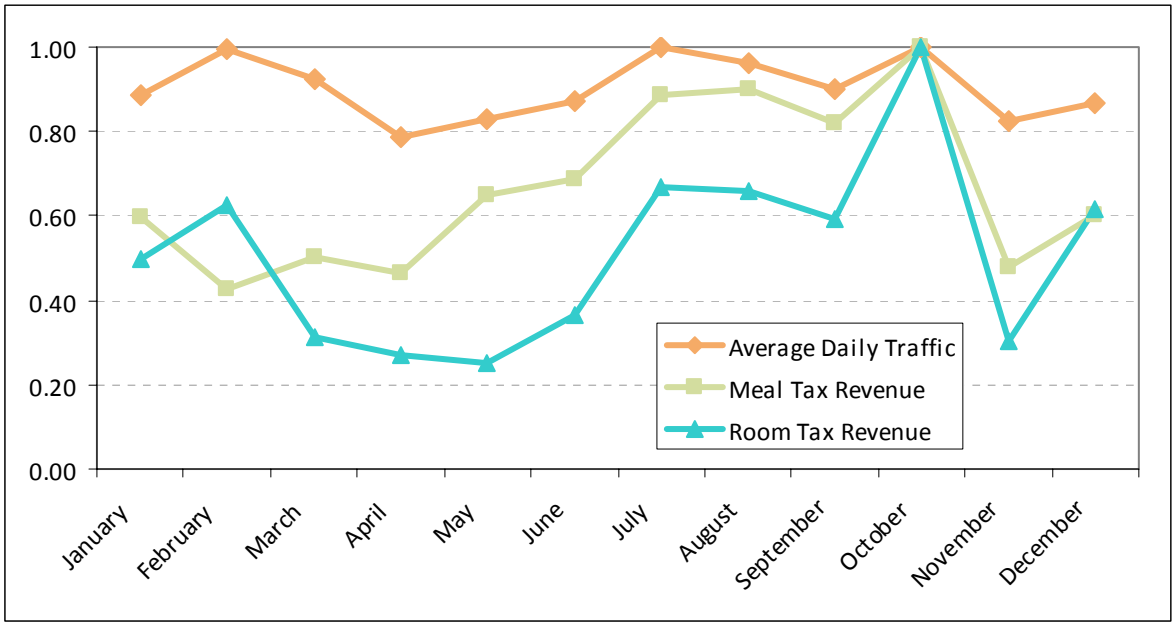


3.2.2.2 Traffic and Business Volume Fluctuations

Business activity in Chester closely mirrors the average daily traffic, which peaks in February, July and October and is driven primarily by tourism throughout the year (see Figure 17).[1] Comparable data for Rockingham was not available.

[1] Based on Room Tax Revenue and Meal Tax Revenue from the Vermont Department of Taxes, *Meals & Rooms Monthly Report*, 2007 Updated, Chester data (Rockingham Rooms revenue N/A).

Figure 17: 2007 Seasonal Traffic and Business Fluctuations in Chester



3.2.2.3 Average Volumes on Secondary Roads

Annual Average Daily Traffic Volumes were obtained from VTrans automated traffic counts for selected secondary roads off of VT 103 in the study area. These volumes are shown below in Table 1.

Table 1: Average Annual Daily Traffic Volumes on Secondary Roads along the Corridor

Secondary Road	AADT	Location	Source
VT 10	3,100	East of VT 103	VTrans, 2006
VT 11	4,600	West of VT 103	VTrans, 2006
VT 11	4,000	East of VT 103	VTrans, 2006
Pleasant Valley Rd	580	VT 103 to Corey Hill Road	VTrans, 2007

3.2.2.4 Intersection Volumes

Turning movement counts were obtained from VTrans at the following intersections with VT 103:

- VT 10 *(15 July 2008)*
- Depot Street *(18 February 2009)*
- VT 11/VT 35/Depot Street *(15 July 2008)*
- Maple Street/VT 11 *(7 August 2007)*
- VT 11 (Pleasant Street) *(28 July 2006)*
- Pleasant Valley Road *(1 June 2007)*
- I – 91 SB Ramp *(16 July 2008)*
- I – 91 NB Ramp *(16 July 2008)*

Intersection traffic volumes were adjusted to represent the Design Hour Volume (DHV) in 2009 using the following two adjustment factors:

- **Design hour adjustment factor**: The Design Hour Volume is the 30th highest hour volume of traffic for a year at a given location. In the study area, the DHV adjustment is based on VTrans Continuous Traffic Counter P6X249, located on VT 103 0.35 miles west of the Rockingham Hill Road intersection. The DHV adjustments by intersection are as follows:
    - VT 10 – 1.74
    - Depot Street – 2.23
    - VT 11/VT 35/Depot Street – 1.95
    - Maple Street/VT 11 – 1.95
    - VT 11 (Pleasant Street) – 1.30
    - Pleasant Valley Road – 1.66
    - I – 91 SB Ramp – 1.70
    - I – 91 NB Ramp – 1.70

  These adjustments are particularly high due to the significantly variable traffic on VT 103 due to the variable nature of traffic resulting from the high tourist-related traffic at various times throughout the year.
- **Annual adjustment factor**: The annual adjustment factor represents general background traffic growth and is based on estimated growth in the area. Based on the 20-year growth factor for VTrans Continuous Traffic Counter P6X249, the base year annual adjustment factors increases volumes as follows:
    - 2006 to 2009: 1.8%
    - 2007 to 2009: 1.2%
    - 2008 to 2009: 0.6%,
- The AM and PM peak hour volumes in Figure 18 and Figure 19, respectively, represent the balanced raw volumes with the application of the DHV and annual adjustment factors during the AM and PM peak hours.

Figure 18: 2009 AM Peak Hour Volumes

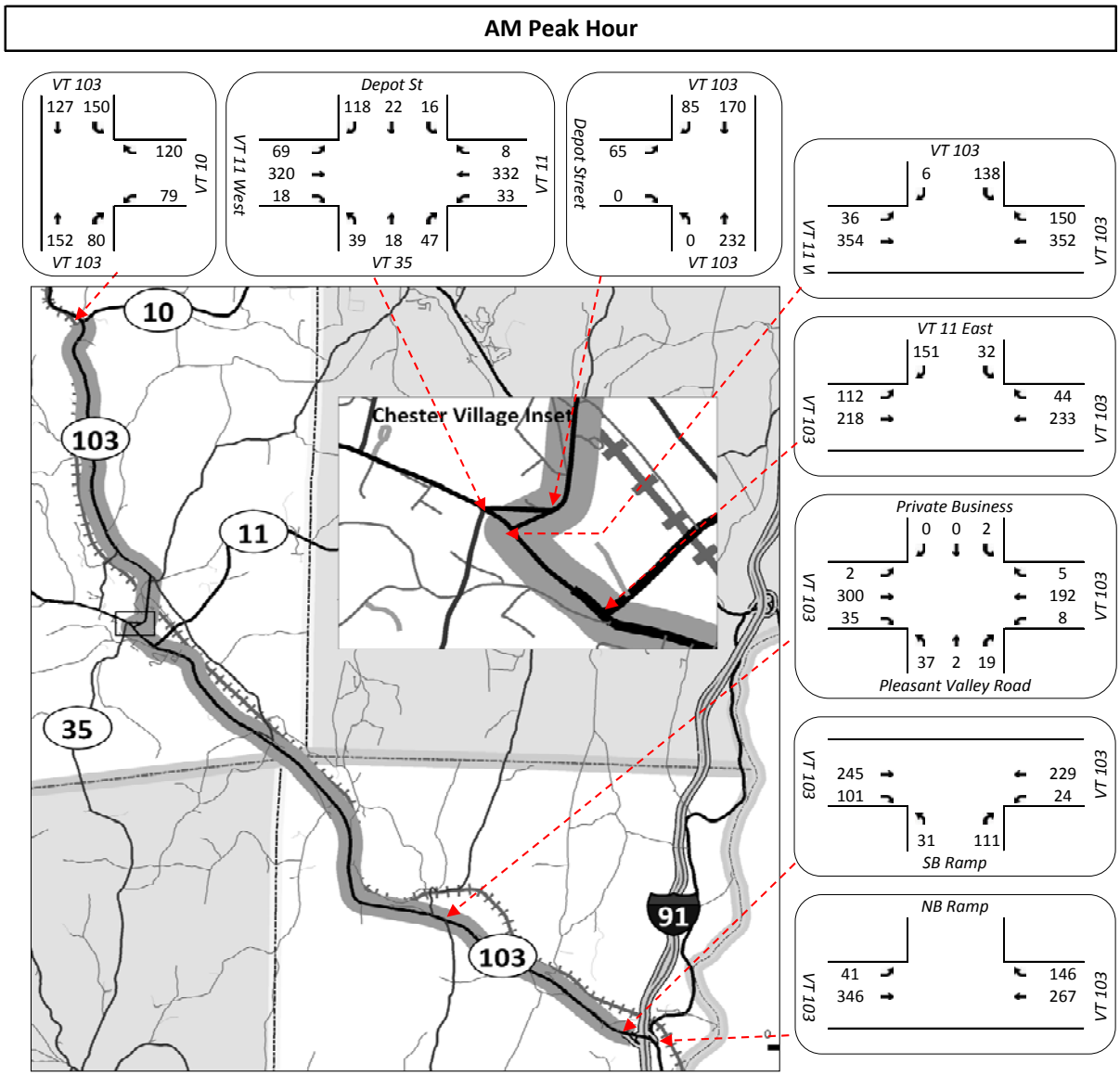
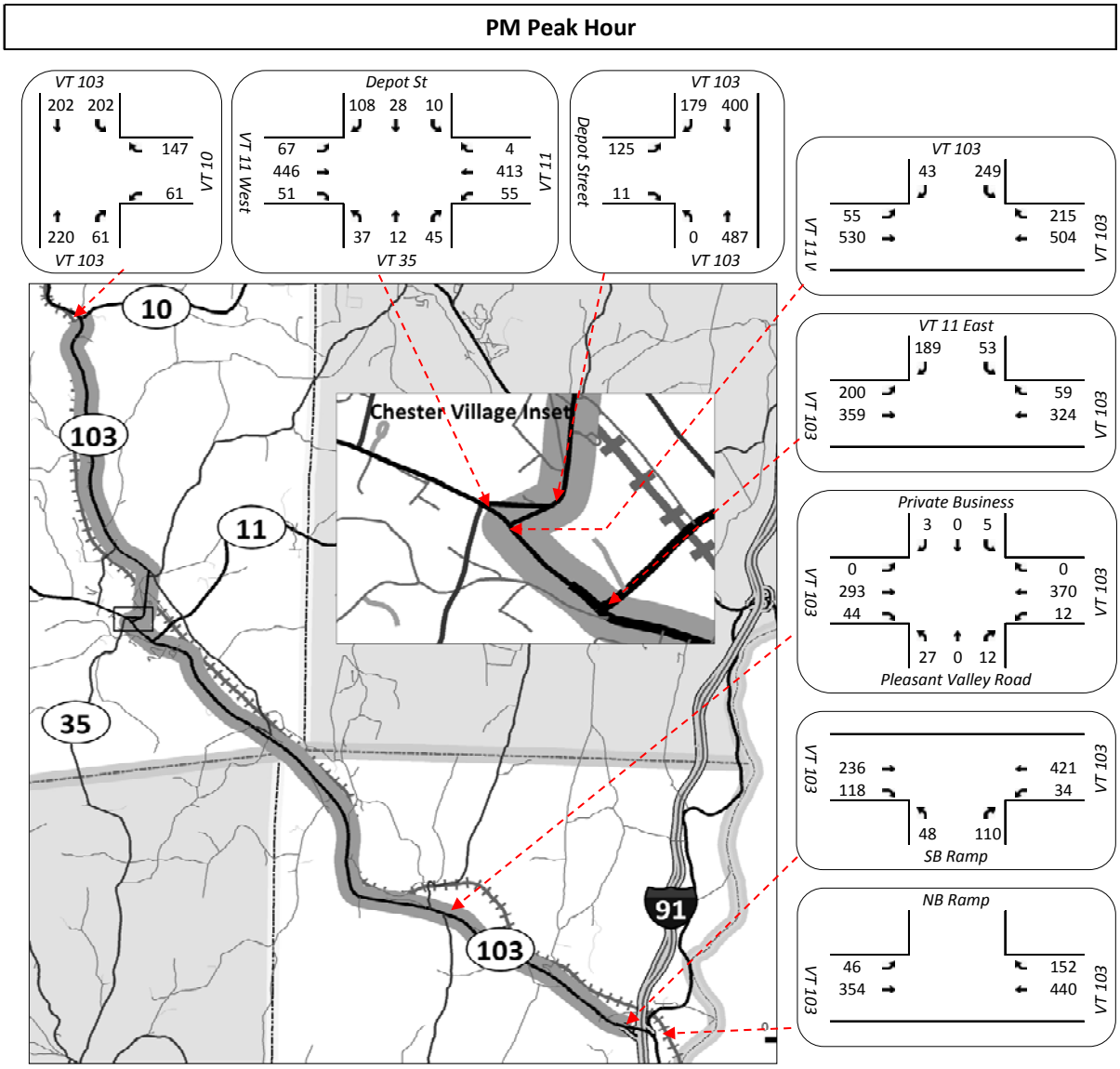


Figure 19: 2009 PM Peak Hour Volumes



3.2.2.5 Congestion Analysis

A Level of Service (LOS) analysis is the analytical tool used to estimate congestion at intersections. LOS is a qualitative measure rating the operating conditions as perceived by motorists driving in a traffic stream. The *Highway Capacity Manual*[1] (HCM) defines six grades of LOS at an intersection based on the control delay per vehicle.

Table 2 shows the various LOS grades, qualitative descriptions, and quantitative definitions for unsignalized and signalized intersections.

[1] Transportation Research Board, National Research Council, *Highway Capacity Manual: Special Report 209,* Washington DC, 2000.

Table 2: LOS Criteria for Signalized and Unsignalized Intersections

LOS	Characteristics	--Unsignalized-- Total Delay (sec)	--Signalized-- Total Delay (sec)
A	Little or no delay	≤ 10.0	≤ 10.0
B	Short delays	10.1-15.0	10.1-20.0
C	Average delays	15.1-25.0	20.1-35.0
D	Long delays	25.1-35.0	35.1-55.0
E	Very long delays	35.1-50.0	55.1-80.0
F	Extreme delays	> 50.1	> 80.1

VT 103 is classified as a rural principal arterial through the study area. The VTrans policy on level of service is:

- Overall LOS C should be maintained for state-maintained highways and other streets accessing the state's facilities
- Reduced LOS may be acceptable on a case-by-case basis when considering, at minimum, current and future traffic volumes, delays, volume to capacity ratios, crash rates, and negative impacts as a result of improvement necessary to achieve LOS C.
- LOS D should be maintained for side roads with volumes exceeding 100 vehicles/hour for a single lane approach (150 vehicles/hour for a two-lane approach) at two-way stop-controlled intersections.

Average delays and queues are calculated for all study intersections during the 2009 PM and Saturday peak hours.[1]

3.2.2.6 Level of Service (LOS) Results

Table 3 presents the average vehicle delay, corresponding Level of Service grade, and the volume to capacity ratio (v/c) at the study intersections under 2009 AM and PM design hour conditions. The following intersection approaches are estimated to operate currently below the VTrans standard during the design hour:

- The eastbound Depot Street approach at VT 103 (PM Only)
- The southbound VT 103 approach at VT 11 West (AM and PM)
- The northbound VT 35 approach at VT 11 West (AM and PM)

These movements are highlighted in yellow in the table below. Also note for the southbound approach at VT 103/VT 11 West, the V/C ratio has a value greater than one in the PM peak hour, which further indicates significant congestion for this approach.

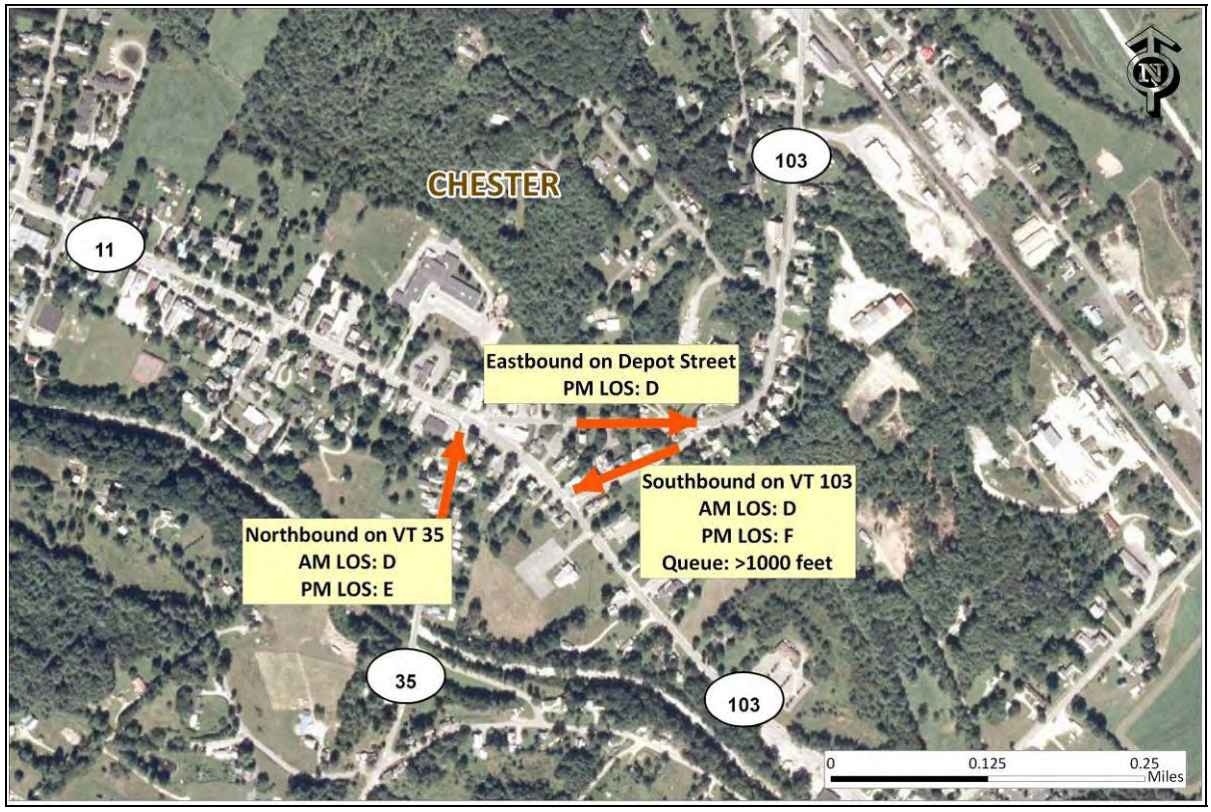
[1] Congestion and queue estimates were calculated using Synchro 7, which applies the 2000 Highway Capacity Manual methodology.

Table 3: AM and PM Peak Hour LOS Grade, Average Delay (seconds) and Queues (feet)

	AM Peak Hour 2009			PM Peak Hour 2009		
	LOS	Delay	v/c	LOS	Delay	v/c
VT 103/VT 10						
Westbound Approach, from VT 10	B	12	0.19	B	14	0.21
Northbound Approach, along VT 103 from Chester	A	<1	0.09	A	<1	0.13
Southbound Approach, along VT 103 from Ludlow	A	4	0.12	A	4	0.16
VT 103/Depot Street						
Eastbound Approach, along Depot Street	B	12	0.47	D	28	0.47
Northbound Approach, along VT 103 from Rockingham	A	<1	<0.01	A	<1	<0.01
Southbound Approach, along VT 103 from Ludlow	A	<1	0.34	A	<1	0.34
VT 11West/VT 35/Depot Street						
Eastbound Approach, along VT 11 from Reedville	A	2	0.06	A	2	0.06
Westbound Approach, along VT 11 from Rockingham	A	1	0.03	A	2	0.05
Northbound Approach, along VT 35	D	26	0.37	E	45	0.51
Southbound Approach, along Depot Street	B	16	0.33	C	22	0.40
VT 103/VT 11West						
Southbound Approach, along VT 103 from Ludlow	D	28	0.48	F	>100	1.62
Westbound Approach, along VT 103 from Rockingham	A	<1	0.30	A	<1	0.42
Eastbound Approach, along VT 11 West from Reedville	A	1	0.04	A	2	0.06
VT 103/VT 11East						
Southbound Approach, along VT 11 East	B	13	0.28	C	23	0.55
Westbound Approach, along VT 103 from Rockingham	A	<1	0.16	A	<1	0.23
Eastbound Approach, along VT 103 from Chester	A	3	0.09	A	4	0.17
VT 103/Pleasant Valley Road						
Eastbound Approach, along VT 103 from Chester	A	<1	0.20	A	<1	0.20
Westbound Approach, along VT 103 from Bellows Falls	A	<1	0.01	A	<1	0.01
Northbound Approach, along Pleasant Valley Road	B	13	0.10	B	14	0.09
VT 103/VT 10						
Eastbound Approach, along VT 103 from Chester	A	<1	0.20	A	<1	0.21
Westbound Approach, along VT 103 from Bellows Falls	A	<1	0.02	A	<1	0.03
Northbound Approach, along I-91 Ramps	B	11	0.15	B	13	0.15
VT 103/VT 10						
Eastbound Approach, along VT 103 from Chester	A	1	0.04	A	2	0.05
Westbound Approach, along VT 103 from Bellows Falls	A	<1	0.16	A	<1	0.26

The locations of the approaches operating below VTrans Los standards are shown in Figure 20.

Figure 20: LOS D, E, or F Approaches



3.2.2.7 Queuing Results

Queues were measured using SimTraffic *(version 7.0)*. Table 4 shows the average maximum queue length *(shown in number of vehicles)* at each approach for each of the study intersections. All approaches indicate that queues are relatively short, with the exception of the southbound approach at the VT 103/VT 11 West intersection, which also backs up through the VT 103/Depot Street intersection. Note that this analysis is for the design hour volume, which is typically during the winter weekend PM, and does not necessarily represent average weekday congestion.

Table 4: Queues (in vehicles) at the Study Intersections

	2009 Queue Length (veh) AM	PM
VT 103/VT 10		
Westbound Approach, from VT 10	2	2
Northbound Approach, along VT 103 from Chester	0	0
Southbound Approach, along VT 103 from Ludlow	1	2
VT 103/Depot Street		
Eastbound Approach, along Depot Street	1	6
Northbound Approach, along VT 103 from Rockingham	0	0
Southbound Approach, along VT 103 from Ludlow	0	30
VT 11West/VT 35/Depot Street		
Eastbound Approach, along VT 11 from Reedville	2	3
Westbound Approach, along VT 11 from Rockingham	1	2
Northbound Approach, along VT 35	2	3
Southbound Approach, along Depot Street	2	2
VT 103/VT 11West		
Southbound Approach, along VT 103 from Ludlow	4	27
Westbound Approach, along VT 103 from Rockingham	0	0
Eastbound Approach, along VT 11 West from Reedville	1	5
VT 103/VT 11East		
Southbound Approach, along VT 11 East	3	5
Westbound Approach, along VT 103 from Rockingham	2	0
Eastbound Approach, along VT 103 from Chester	0	5
VT 103/Pleasant Valley Road		
Eastbound Approach, along VT 103 from Chester	0	0
Westbound Approach, along VT 103 from Bellows Falls	2	0
Northbound Approach, along Pleasant Valley Road	0	1
VT 103/VT 10		
Eastbound Approach, along VT 103 from Chester	0	0
Westbound Approach, along VT 103 from Bellows Falls	1	1
Northbound Approach, along I-91 Ramps	1	1
VT 103/VT 10		
Eastbound Approach, along VT 103 from Chester	1	1
Westbound Approach, along VT 103 from Bellows Falls	0	0

3.2.3 Corridor Safety Assessment

3.2.3.1 Crash Data Analysis

Figure 21 shows the location of all reported vehicular crashes along the study corridor between 2003 and 2007. Reportable crashes generally involve a fatality, injury, and/or property damage in excess of $1,000.

In the period from 2003 to 2007, there were a total of 140 reported crashes along the VT 103 study corridor. These crashes included 56 injuries and no fatalities.

In order to be classified as a High Crash Location (HCL), an intersection or road section (minimum 0.3 mile section) must meet two conditions: 1) it must have at least 5 accidents over a 5-year period; and 2) the actual crash rate must exceed the critical crash rate.

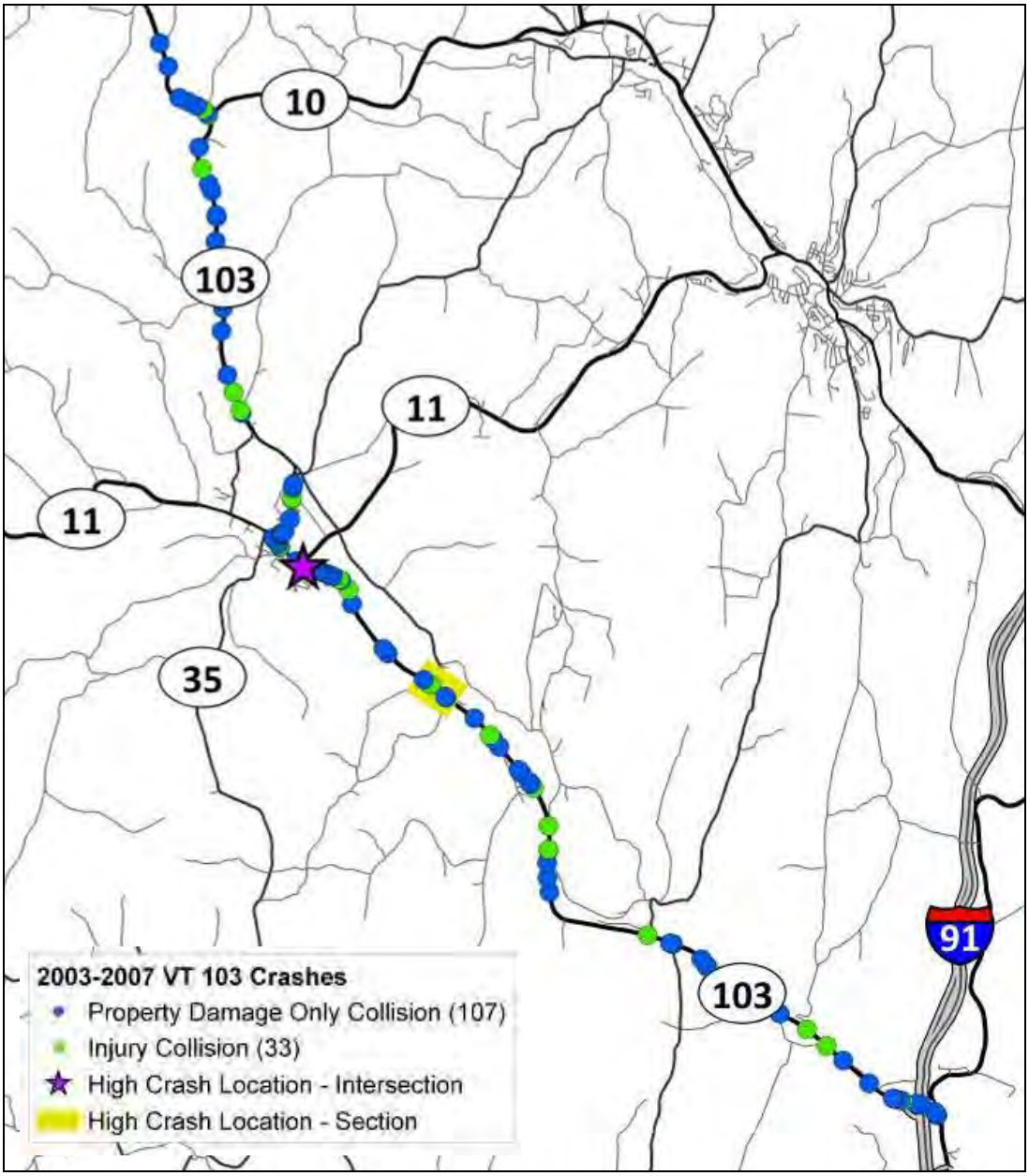
The most recent VTrans High Crash Location Report identifies 616 High Crash Location road segments and 131 High Crash Location intersections statewide. Within the study area, there are two identified High Crash Locations:

- The intersection of VT 103 and VT 11 East

- Mile Marker 0.347-0.647 on VT 103 in Chester

These High Crash Locations are identified in Figure 21.

Figure 21: Crashes and High Crash Sections



For both of the High Crash Locations, the time of day appears to be a significant contributing factor, as 80% of all crashes cluster between 12PM and 6PM at the intersection of VT 103/VT 11 East and 36% and 27% occur between 12PM and 3PM and 9PM and 12AM, respectively, at the section along VT 103.

Figure 22 and Figure 23 compare the percent of crashes by time of day in the study area (in purple) to the percent in Vermont (in red) and the percent in the two towns of Chester and

Rockingham (in yellow). Based on this comparison, it is evident that crashes in the study area are more prone to time-of-day related causes than in the rest of the towns and statewide.

Figure 22: Collisions by Time of Day at HCL Intersection (VT 103/VT 11/Pleasant Street)

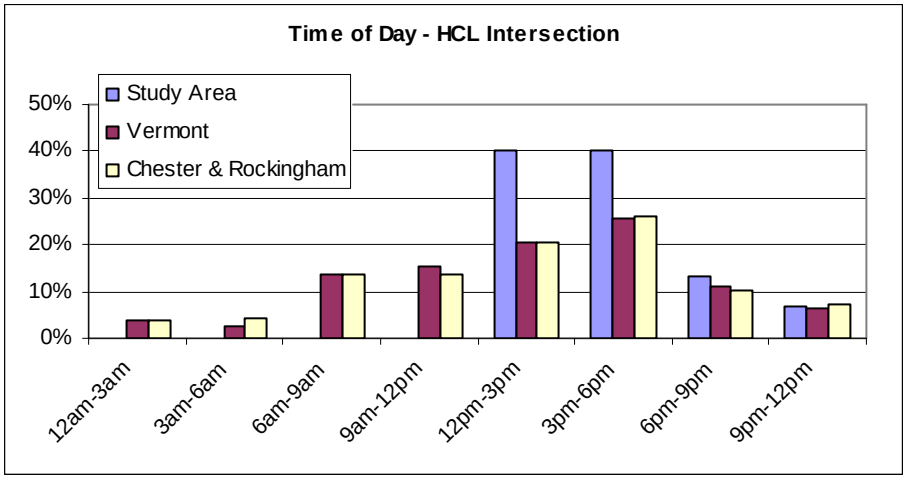
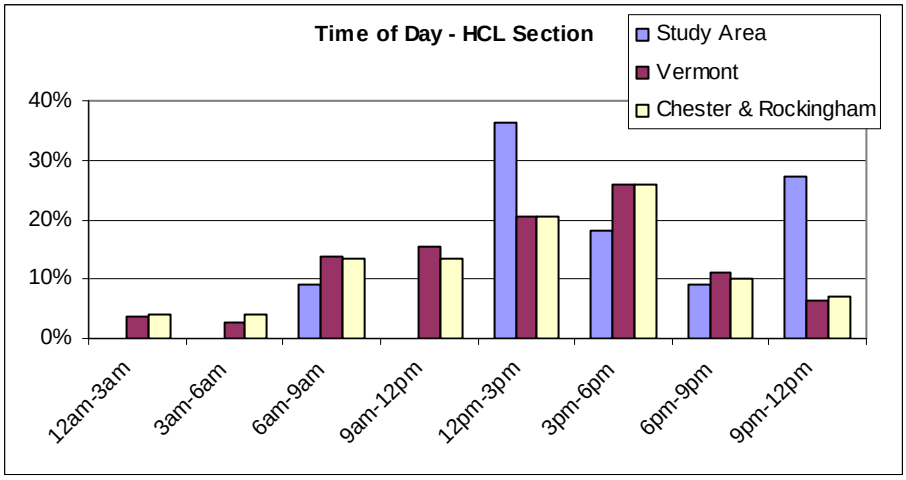


Figure 23: Collisions by Time of Day at HCL Section (VT 103, mile marker 0.347-0.647 in Chester)



At the VT 103/VT 11 East intersection, the most common types of crashes were rear ends (33%) and broadsides (27%). At the HCL section, the most common types of crashes were single vehicle crashes (45%) and rear ends (27%).

Some suggestions for causes of these high crash locations include poor sight distance, inadequate signage, and a large proportion of out-of-state (unfamiliar) drivers.

Other areas of the corridor that have been of interest include VT 103 in the vicinity of the I-91 interchange, the Vermont Country Store, the Chester Triangle,[1] and the intersection with VT 10. Details of these locations are shown in Figure 24 through Figure 27.

[1] The "Chester Triangle" refers to the triangle formed in downtown Chester by the following three intersections: VT 103/VT 11/Maple Street, VT 11/VT 35/Depot Street, VT 103/Maple Street/Depot Street

Figure 24: Crash Details at the I-91 Interchange

Figure 25: Crash Details at the Vermont Country Store

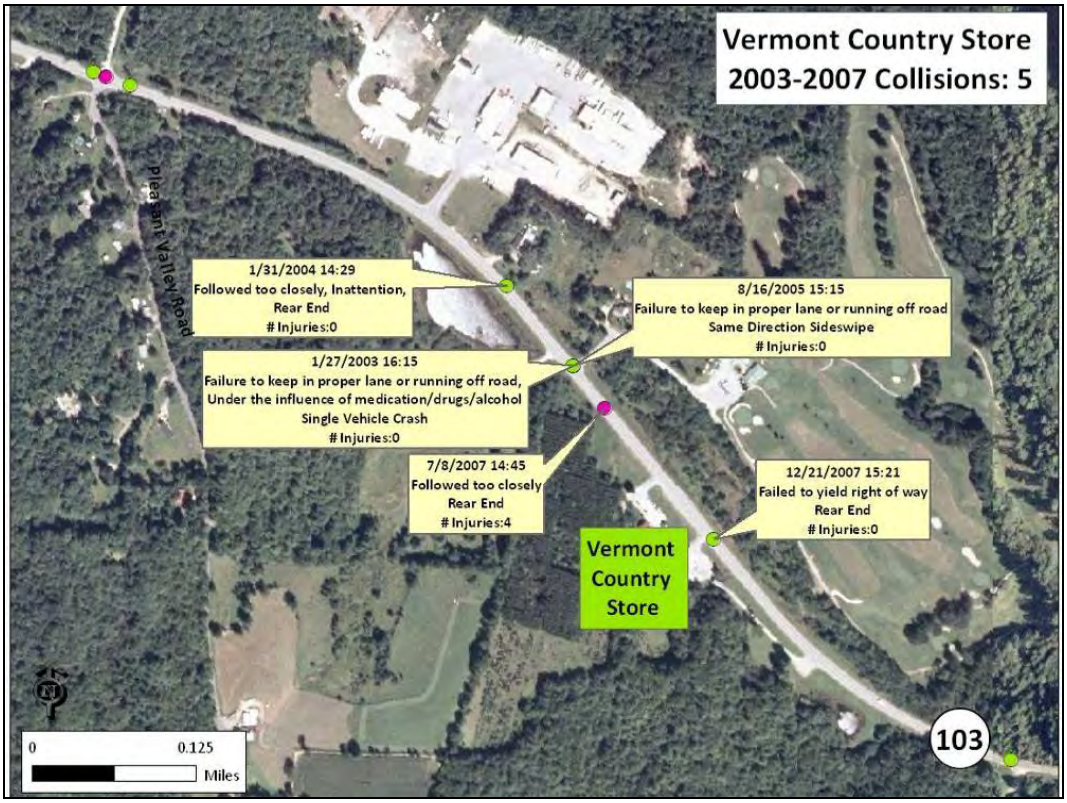


Figure 26: Crash Details at the Chester Triangle

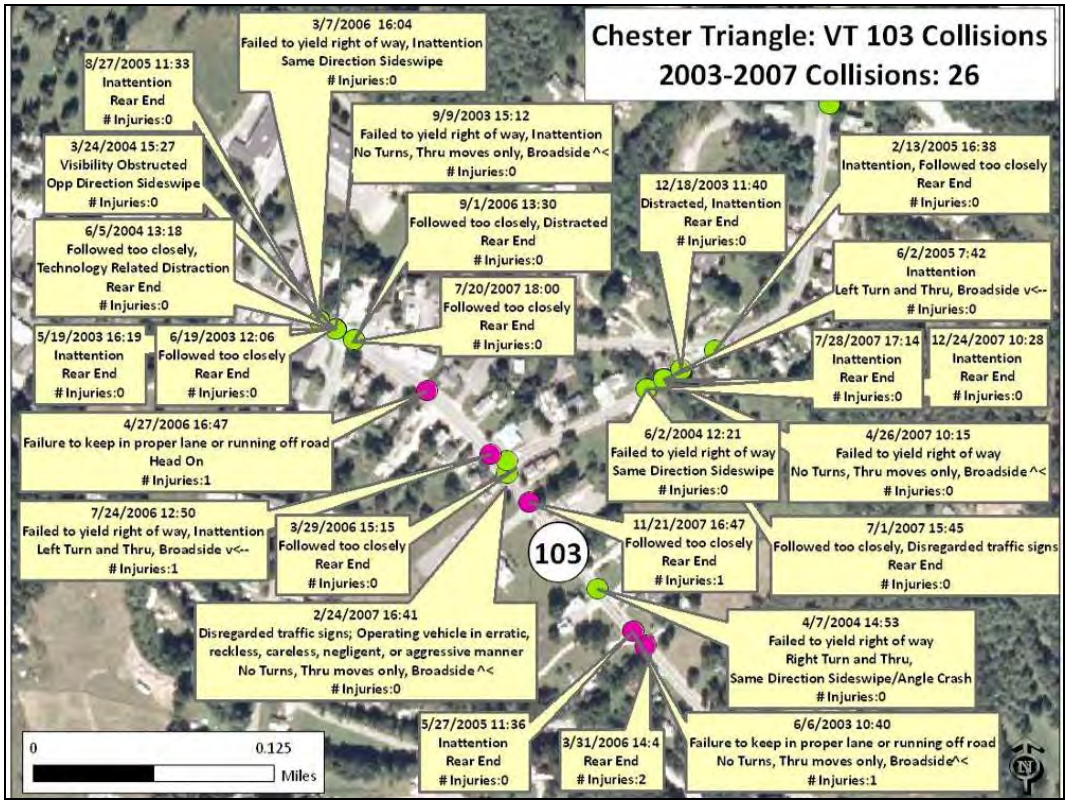
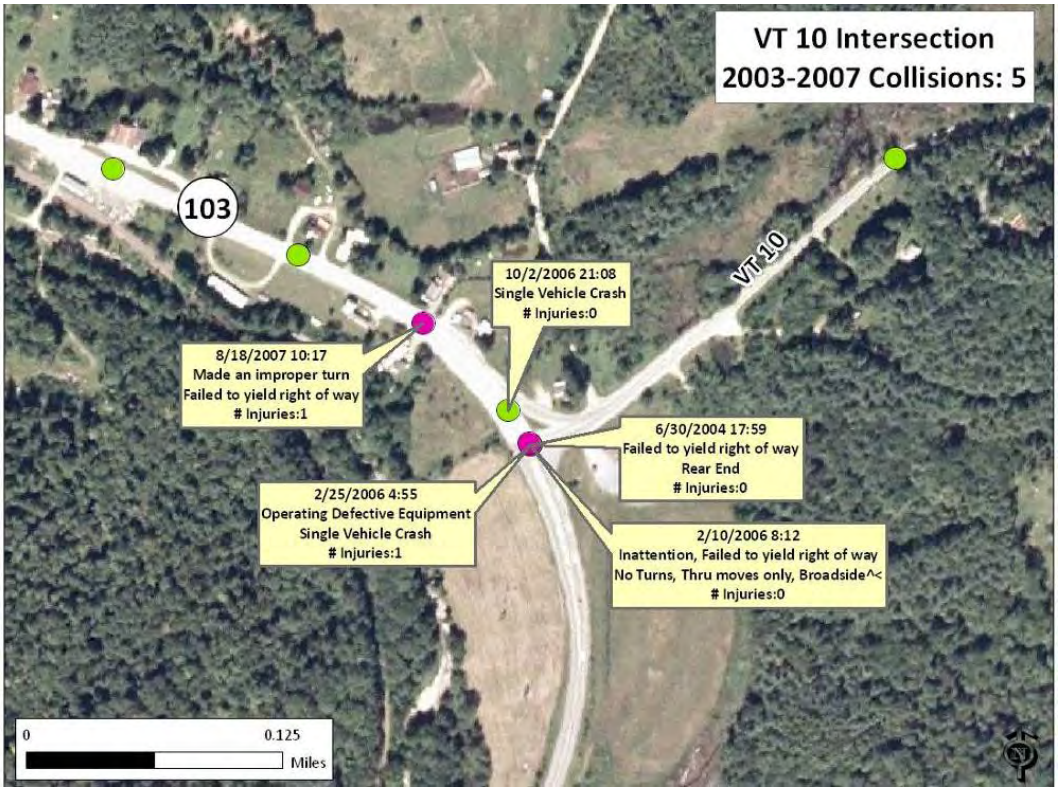


Figure 27: Crash Details at the intersection of VT 10



3.2.4 Corridor Infrastructure Assessment

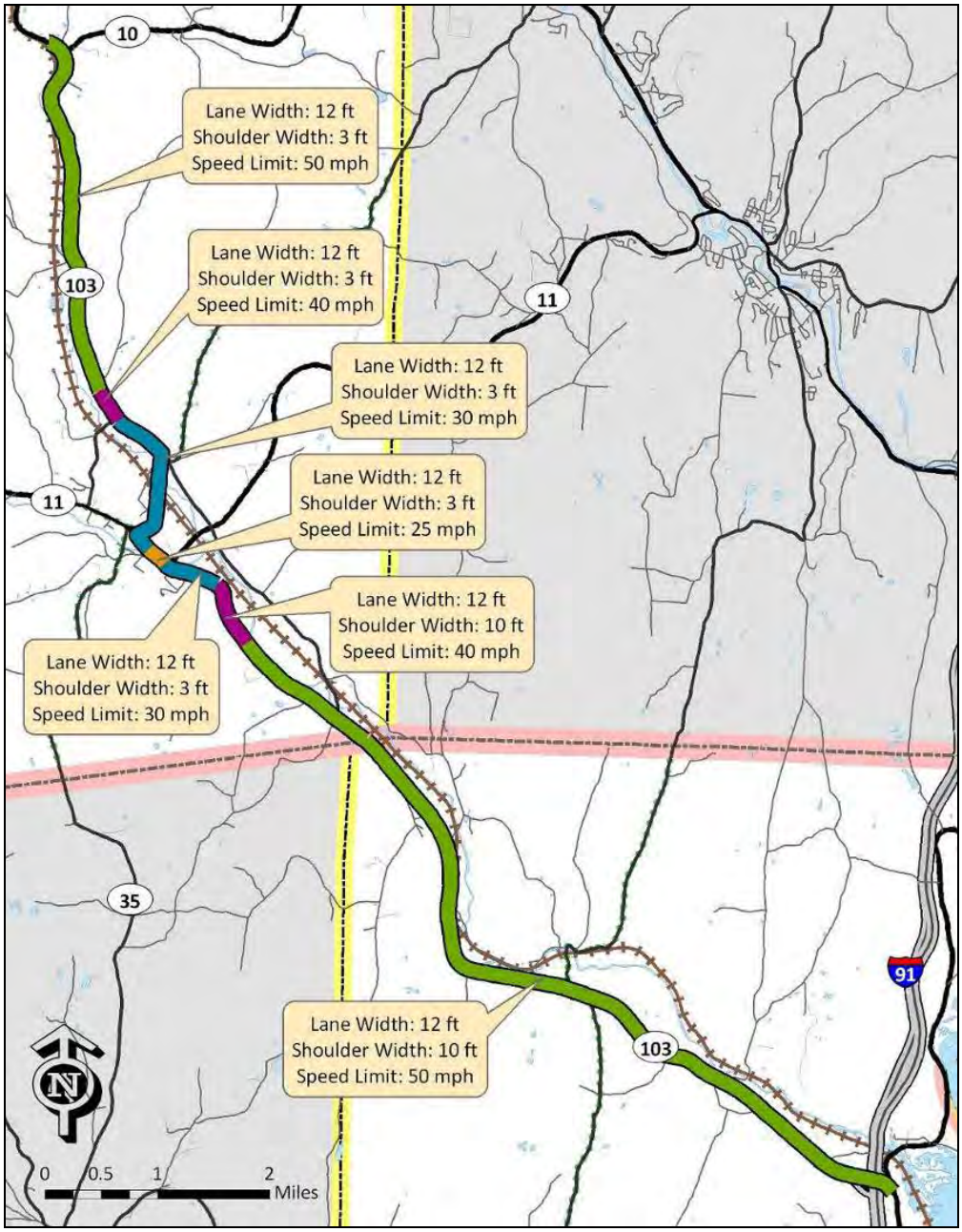
3.2.4.1 Roadway Geometric Assessment

Based on the Vermont State Design Guidelines, rural principal arterials with a Design Hour Volume greater than 400 vehicles should have lanes widths of at least 11 feet in the 35 and 40 mph zones and 12 feet in the 50 mph zone. In rural areas, the State Design Standards call for minimum shoulder widths of 8 feet at all speed zones.[1] It should be noted, however, that many locations along the corridor have natural constraints adjacent to the roadway that make the provision of 8 foot shoulders effectively cost-prohibitive. Within village sections of arterial roads, the State Design Standards allow for much greater flexibility in the provision of shoulders. The maximum grade for rural principal arterials should be 7% for the 35 mph zone, 6% in the 40 mph zone, and 5% in the 50 mph zones.

Typical cross-sections of VT 103 in the study area were defined using the 2006 VTrans Highway Sufficiency Rating reports and supplemented with field verification (Figure 28).

[1] These shoulder widths are considered necessary for adequate safety and service for this class of highway and may exceed the minimum paved widths needed solely to provide bicycle safety.

Figure 28: Typical Roadway Cross-Sections

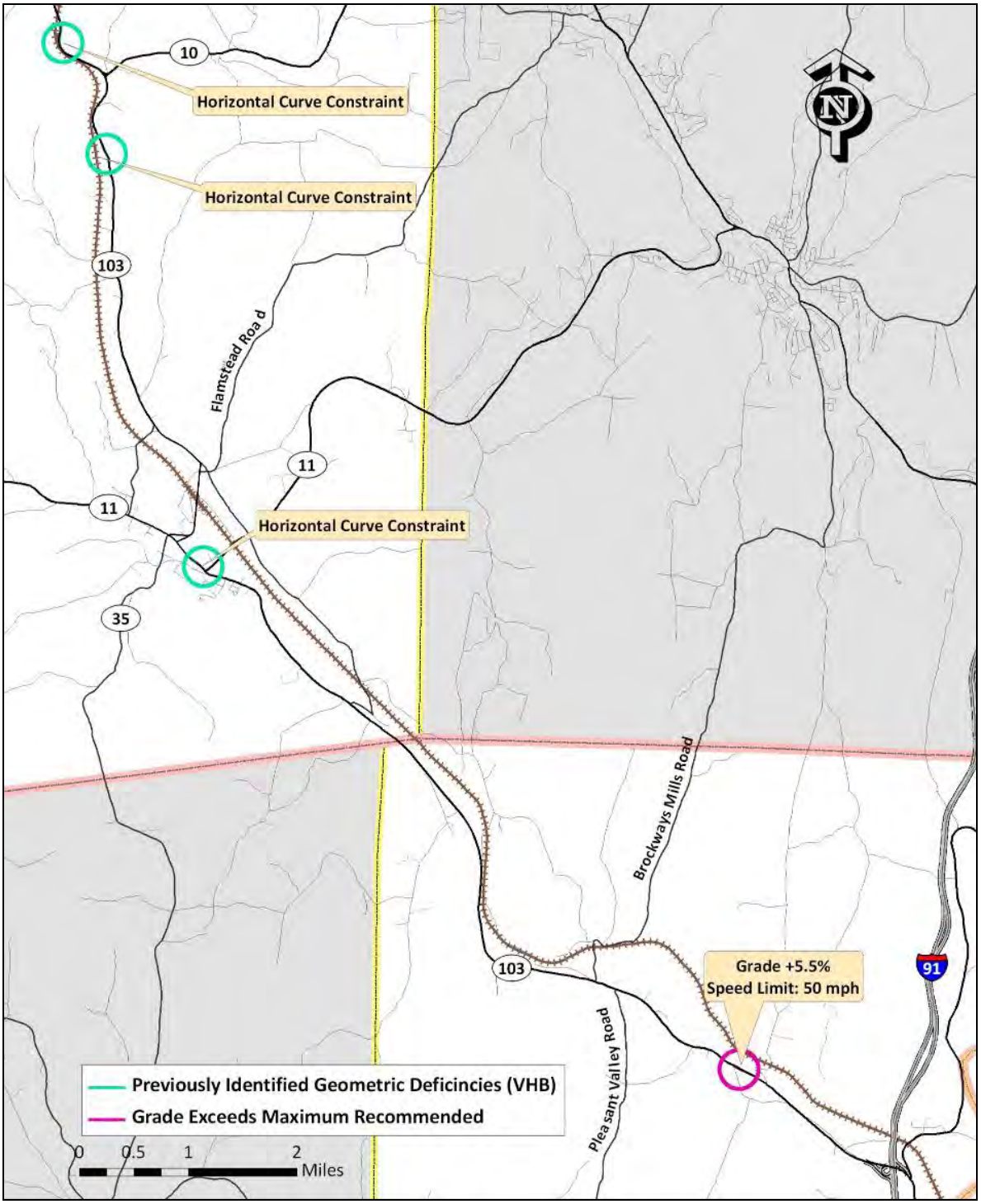


In the study area, lanes along VT 103 are all 12 feet in width. Shoulders are 10 feet in Rockingham and Chester south of Chester Village, but only 3 feet or less in the village and on VT 103 North towards Ludlow, which is below the design standard for new rural principal arterial roadways.

There is one location where the grade exceeds the maximum recommended limit, shown in Figure 29. Three other sections have been previously identified as geometrically deficient, and are also shown in this figure.[1]

[1] *Truck Network Improvements: Constraint Prioritization Study*, Vanasse Hangen Brustlin, Inc., 1999.

Figure 29: Roadway Grade in Excess of Maximum Recommendation



Note that the horizontal curve constraint identified at the intersection of VT 103/VT 11East is a result of the existing bridge (VTrans BR 9), which will be resolved with bridge reconstruction project which is scheduled for 2010-2011 (see 3.2.4.2).

3.2.4.2 Assessment of Bridges & Culverts

Based on the VTrans Bridge Inventory System, there are several bridges and culverts in the study area, some of which are deficient. [1] The first is known as the Benny Sunoco Bridge (VTrans BR 9), a steel stringer/multi-beam girder bridge that was built in 1935 and is located on VT 103 immediately east of the VT 103/VT 11 intersection. This bridge's abutments significantly restrict sight distance for vehicles turning from VT 103 onto VT 11. This bridge is scheduled for reconstruction in 2010-2011.

The second bridge (VTrans BR 8) is located just east of the Benny Sunoco Bridge on VT 103, is a concrete stringer/multi-beam girder bridge that was built in 1924, and is also scheduled for reconstruction in 2010-2011.

The third bridge in the study area is relatively new; constructed in 2004 and spanning 112 feet, it is a steel stringer/multi-beam girder bridge located at the intersection of VT 103 and the Green Mountain Turnpike, just north of the town of Chester.

There is one concrete culvert on VT 103 in Chester just north of the Rockingham town line. This culvert, which was built in 1962, is listed as being in good condition.

There are five steel culverts interspersed on VT 103 in Rockingham throughout the corridor. All are standard steel culverts that were built between 1958 and 1962. These five culverts reportedly range from critical to satisfactory condition. One of these culverts (VTrans BR 4) on VT 103 in Rockingham is a candidate project for reconstruction with no scheduled construction horizon (VTrans project NH 025-1(S)).

Based on information from the Town of Chester, an historic stone-laid culvert for Trebo Brook under VT 103 in the Stone Village is failing. The Town has a Structures program grant to design and reconstruct the structure. However, the Town is seeking other funds to pay for the remaining costs.

According to the Vermont Agency of Natural Resources, many of the town highway bridges over the Williams River along VT 103 north of the Chester Village are undersized, which may contribute to ice jams and related early spring flooding. Due to these limitations, and structural condition as most recently assessed by VTrans, bridges #28, 62 & 72 are eligible for replacement.

3.2.4.3 Pavement Assessment

Pavement condition is identified by multiple indices that assess various aspects of the road condition. Elements that go into this assessment are road roughness, structural crack value, average depth of ruts, and condition of the ride. The indices are based on a scale of 0 to 100, where 0 is very poor and 100 is good. These indices are then compiled to create an Overall Condition Index, which is used to identify pavement condition of the road section.[2]

The VTrans goal is for the pavement condition index based on vehicle miles traveled to be 70, with 25% or fewer of statewide lane miles to be classified in 'very poor' condition. VTrans has estimated that a nearly 100% increase in pavement management funding (from $56 million per year to $100 million per year) is needed to adhere to this goal. In 2002, only 14% of all state

[1] The VTrans Bridge Inventory System (BIS) stores data for all VTrans-owned bridges as well as some information that is supplemented by towns and RPCs.

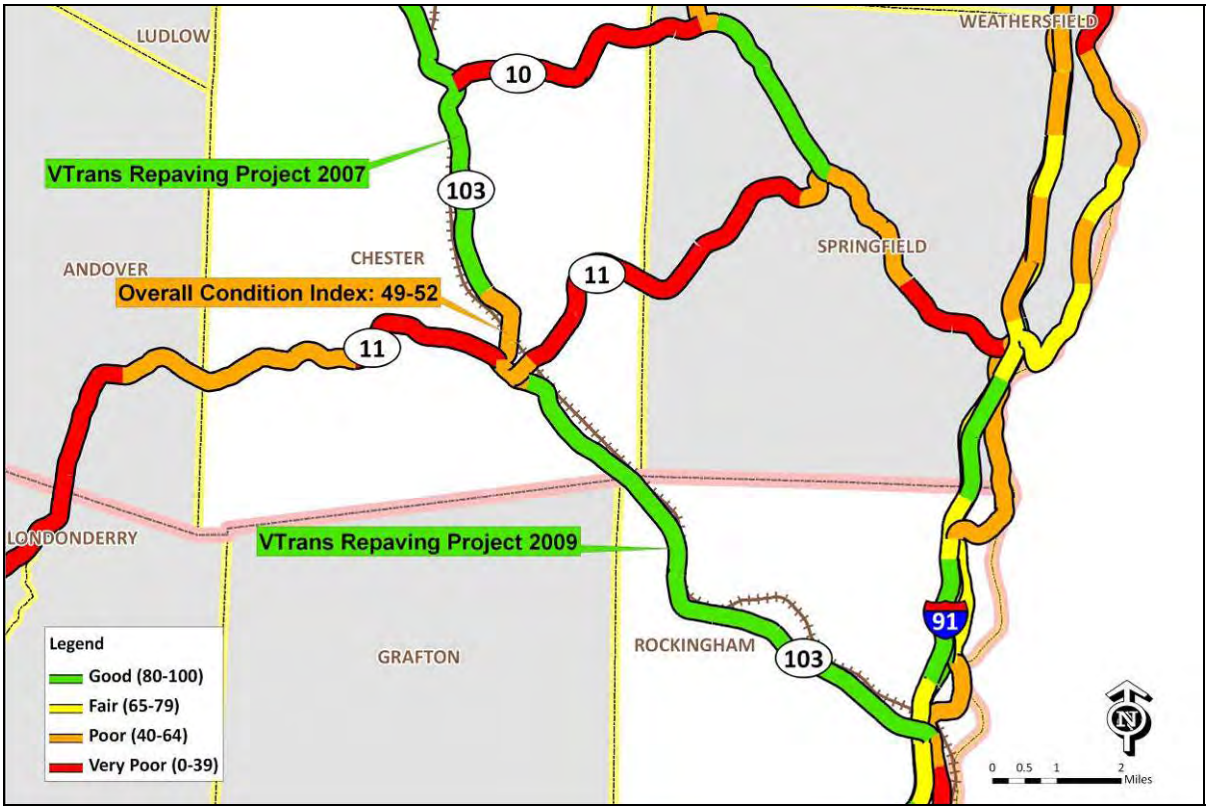
[2] Condition ratings were assessed by VTrans in 2006.

roads were identified to be in 'very poor' condition, with 66% identified as in 'very good' or 'fair' condition.[1]

Pavement conditions are assessed in the study area as shown on Figure 30. The section of VT 103 from I-91 through Chester Village was recently repaved by VTrans in 2009 (VTrans project NH 2628(1)).

Although VT 11 East was paved in 2008 as part of "Operation Smooth Ride," the subbase of the roadway remains deficient and thus is listed as being in "very poor" condition. Further, while VT 10 has had recent overlays at various points along the route, the overall roadway remains in very poor condition.

Figure 30: Pavement Condition on VT 103



3.2.5 Multi-Modal Transportation

3.2.5.1 Bicycle & Pedestrian Access

There are no designated bicycle lanes or paths along the corridor. However, the section of VT 103 south of Chester Village has 8-10 foot shoulders which sufficiently accommodate experienced bicyclists, but due to traffic volumes, speeds, and truck volumes, these shoulders may not be appropriate for beginning cyclists and children. The area through Chester Village and the section of VT 103 from Chester Village to VT 10 has 1-3 foot shoulders, which is below

[1] *Vermont Highway System Policy Plan*, VTrans, 2002.

VTrans recommended standard for bicyclists. Additionally, the relatively high level of truck traffic further inhibits bicycle travel along the corridor.

Sidewalks exist along the corridor in Chester Village, but do not exist elsewhere along the corridor. Interest in having a sidewalk connect the Village network to the Green Mountain High School in Chester has been expressed.

The Regional Bicycle and Walking Plan (RBWP) identified several bicycle/pedestrian deficiencies in the study area. They include:

- The section of VT 103 from Gassett's to Chester Village (mile marker 7.40 – 4.45) has little to no shoulder width and lacks continuity from sections to the north and south. The plan identifies that the shoulders would need to be widened by 1.5 – 3 feet on either side, and that environmental constraints – including the Williams River – may pose difficulties to this project.
- Bridge #8 is a constraint to bicycle travel due to insufficient bicycle lanes. This will be addressed with the scheduled VTrans bridge reconstruction project in 2010-2011.
- Pedestrian access in Chester Depot is inadequate. Needs include:
    - Pedestrian access to the excursion train station and surrounding residential, retail, and governmental areas,
    - Improving pedestrian safety throughout the network, and
    - Providing pedestrian crossing areas.

These elements are depicted in Figure 31 and Figure 33.

Figure 31: Existing Sidewalks in Chester Village

Although there are bicycle tour groups that share the road with vehicular traffic, this section of VT 103 does not experience a large number of daily bicyclists. The Windham Regional Commission's Bicycle Suitability Map (Figure 32) identifies this section of VT103 as having suitable shoulders for bicycle use, but high vehicular traffic volumes.

Figure 32: Bicycle Suitability Map in Rockingham (courtesy Windham Regional Commission, Bicycle Suitability Map, 2004)

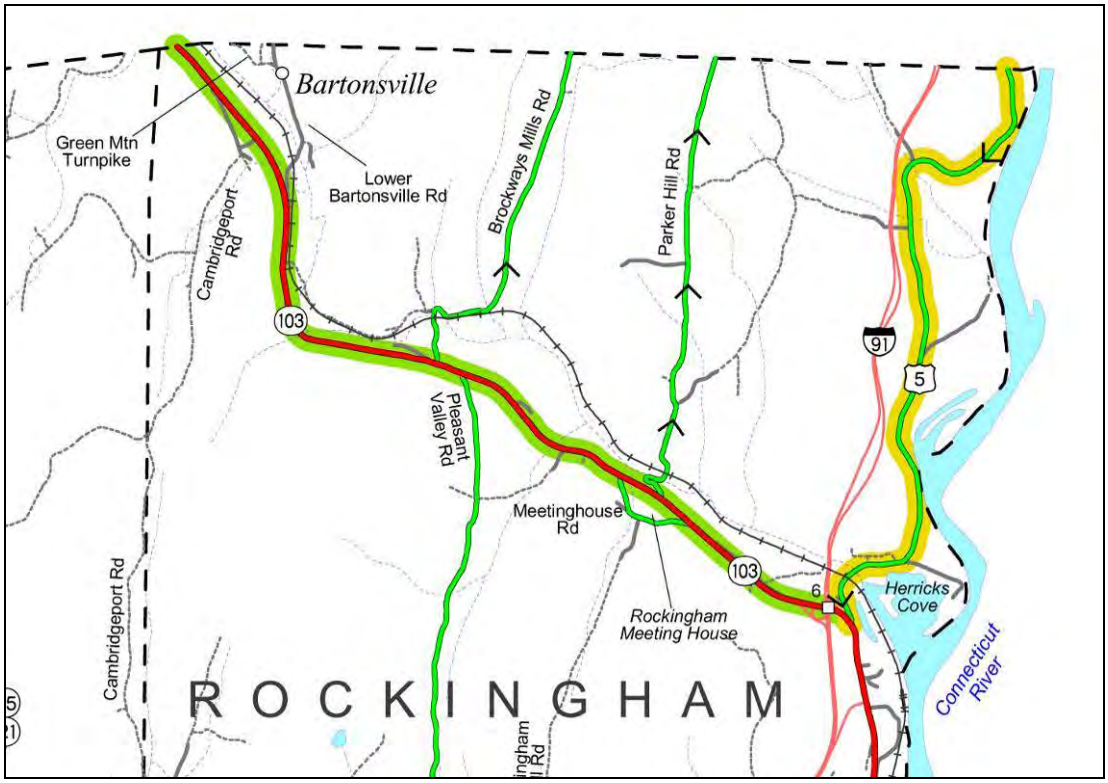
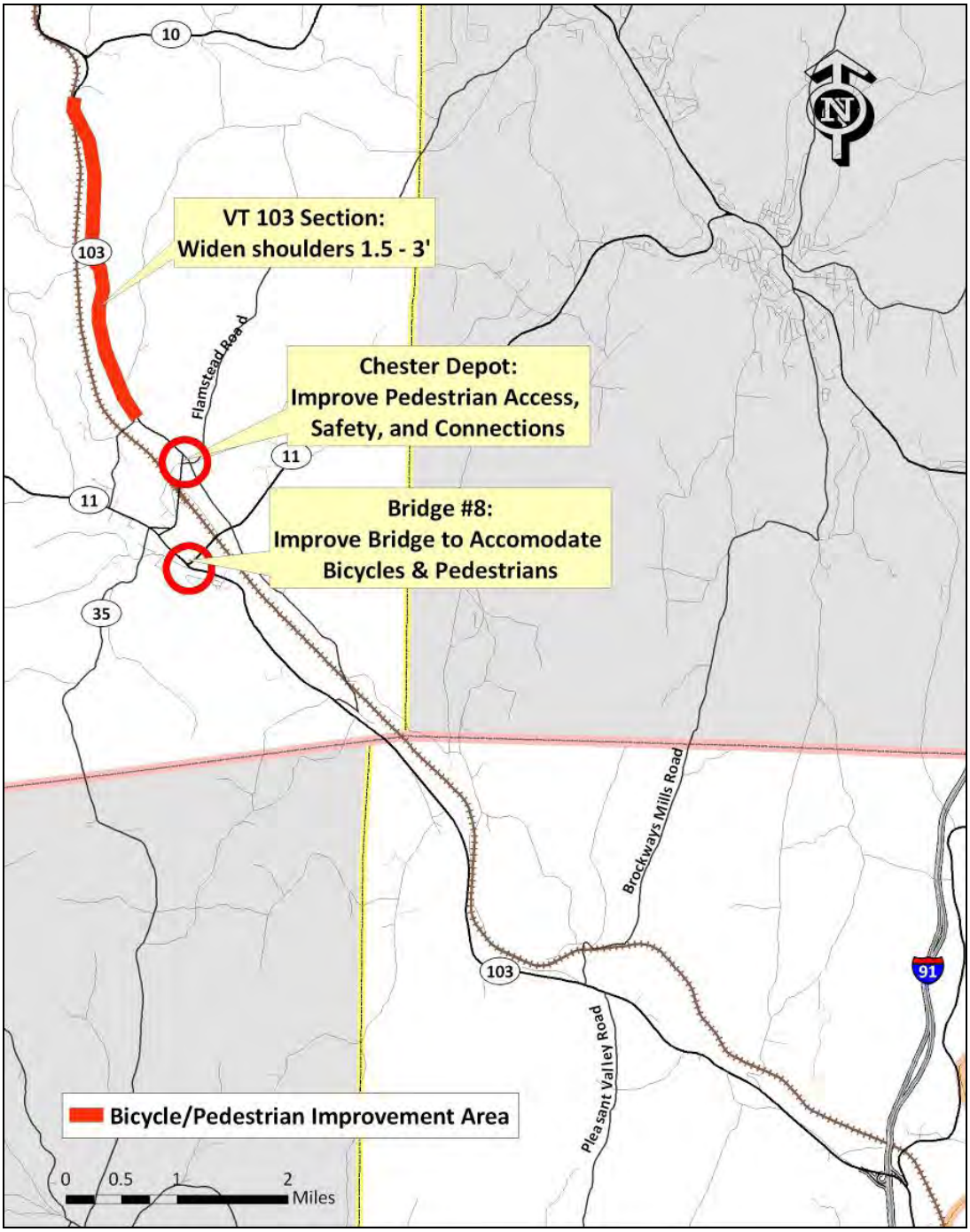


Figure 33 on the following page depicts the identified bicycle and pedestrian improvements along the corridor.

Figure 33: Identified Bicycle/Pedestrian Improvements Needed



3.2.5.2 Public Transit

Public transit along the corridor consists of one seasonal bus route as well as demand-response service and regular shopping trips for Chester seniors provided by Connecticut River Transit (CRT). The seasonal route travels from Bellows Falls to Okemo from November to April and makes two stops in Chester at the Chester Village Green and at the Chester Depot. This route

typically carries about 150 passengers per week, but jumps to 450 passengers per week during holiday weeks.

The CRT recently added a new bus route that connects Rutland to Bellows Falls via VT 10 to Springfield. Although this route does not service the Chester/Rockingham populations, the CRT recognizes that there there is need for service in Chester, as it is the most direct route from Rutland to Bellows Falls.

3.2.5.3 Rail and Freight

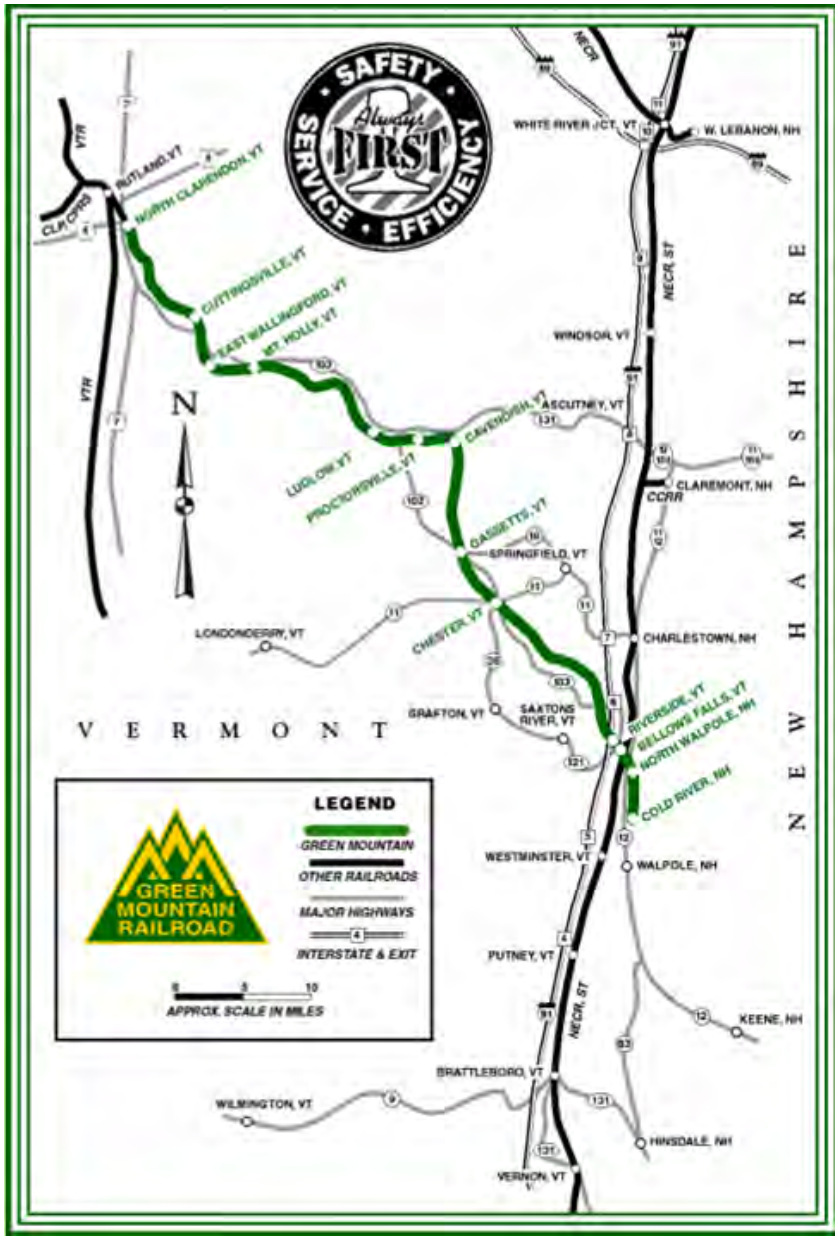
The Green Mountain Railroad (GMRC) is a part of the Vermont Rail System (VRS), which was established in 1997 to maximize rail resources in the state of Vermont. This line spans 50 miles of trackage, providing freight service between Bellows Falls and Rutland (Figure 34). It is state-owned and privately operated, with primary freight connections in Bellows Falls and Rutland. Two through freight trains run per day and the railroad operates on a six-day schedule. The Federal Railroad Administration (FRA) has identified the GMRC as a Class 2 railroad[1], which specifies a maximum allowable operating speed of 25 mph for freight trains and 30 mph for passenger trains.[2] It should be noted that due to the relatively low freight travel speeds, the train crossing of VT 103 in Chester Depot creates substantial vehicle delay and queues throughout the area.

The GMRC also runs special tourist excursion trains via the Green Mountain Flyer, which runs from Bellows Falls to Chester Depot for ten days of the year as well as for private events.

[1] A Class II railroad is a mid-sized freight-hauling railroad, in terms of its operating revenue. As of 2006, a railroad with revenues greater than $20.5 million but less than $277.7 million for at least three consecutive years is considered a Class II railroad. (source: Surface Transportation Board)

[2] *Vermont State Rail & Policy Plan*, VTrans, 2006.

Figure 34: Green Mountain Railroad System Map



The Highway System Policy Plan identifies between 500 and 1,000 trucks per day on the section of VT 103 in the study area. This, coupled with the high seasonal tourist volume throughout the corridor, suggests that the Green Mountain Railroad – which essentially runs parallel to VT 103 – could offer great benefit to the area by providing additional freight and passenger transportation uses.

With regard to planned rail projects in the study area, there is an underpass project on Parker Hill Road in Rockingham that will expand the existing one-lane structure to accommodate two lanes. This project is currently in the permitting and Right of Way stage. If the project stays on schedule, it will likely go out to bid in Fall 2009 with an anticipated construction start date in 2010.

4.0 FUTURE CONDITIONS

4.1 Future Land Use Projections

The SWCRPC and WRC projected the potential for future residential development along and adjacent to the VT103 corridor using the Community Buildout Analysis Program for the towns of Chester and Rockingham, respectively.[1] These projections were based on a number of factors including existing development, future development potential and zoning. Various constraints were also considered, such as wetlands, floodplains, public lands, slopes, and water and sewer service areas.

Figure 35 and Figure 36 show the existing conditions in the two towns, including zoning districts for parcels adjacent to the corridor and the locations of existing structures.

[1] The Community Buildout Analysis Program was developed by the Addison County Regional Planning Commission; http://www.acrpc.org/pages/activities/GIS/buildout.htm

Figure 35: Chester Existing Conditions

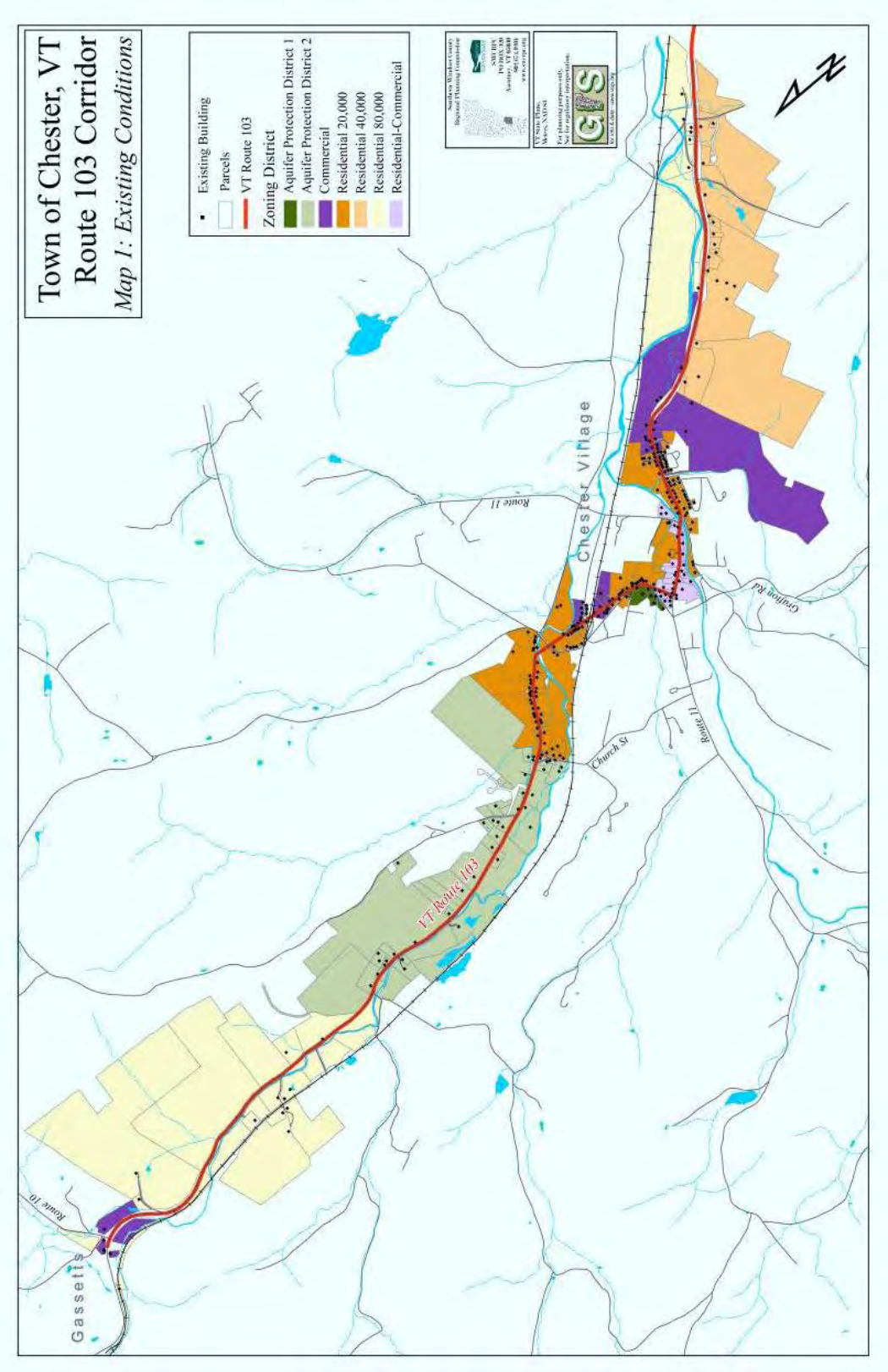


Figure 36: Rockingham Existing Conditions

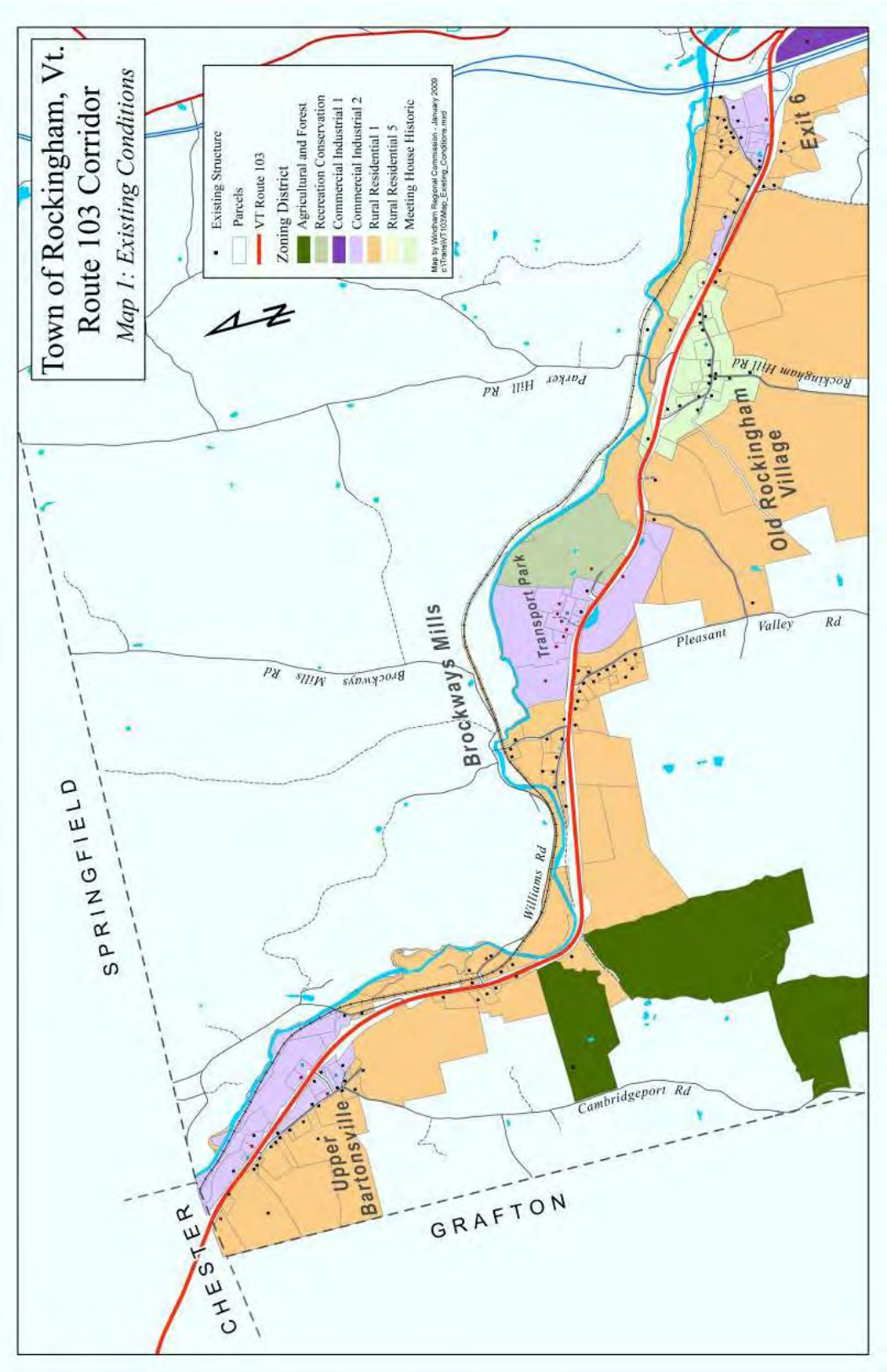


Figure 37 and Figure 38 show the total potential buildout, based on existing municipal land use regulations in the two towns. Red dots indicate the capacity of each parcel for potential new buildings. Note that these dots are representative of potential quantity, but do not indicate the optimal or likely location of those buildings. Existing land use regulations are used as the framework for determining potential buildout; therefore any subsequent modifications to land use regulations are not reflected.

Figure 37: Chester Total Buildout

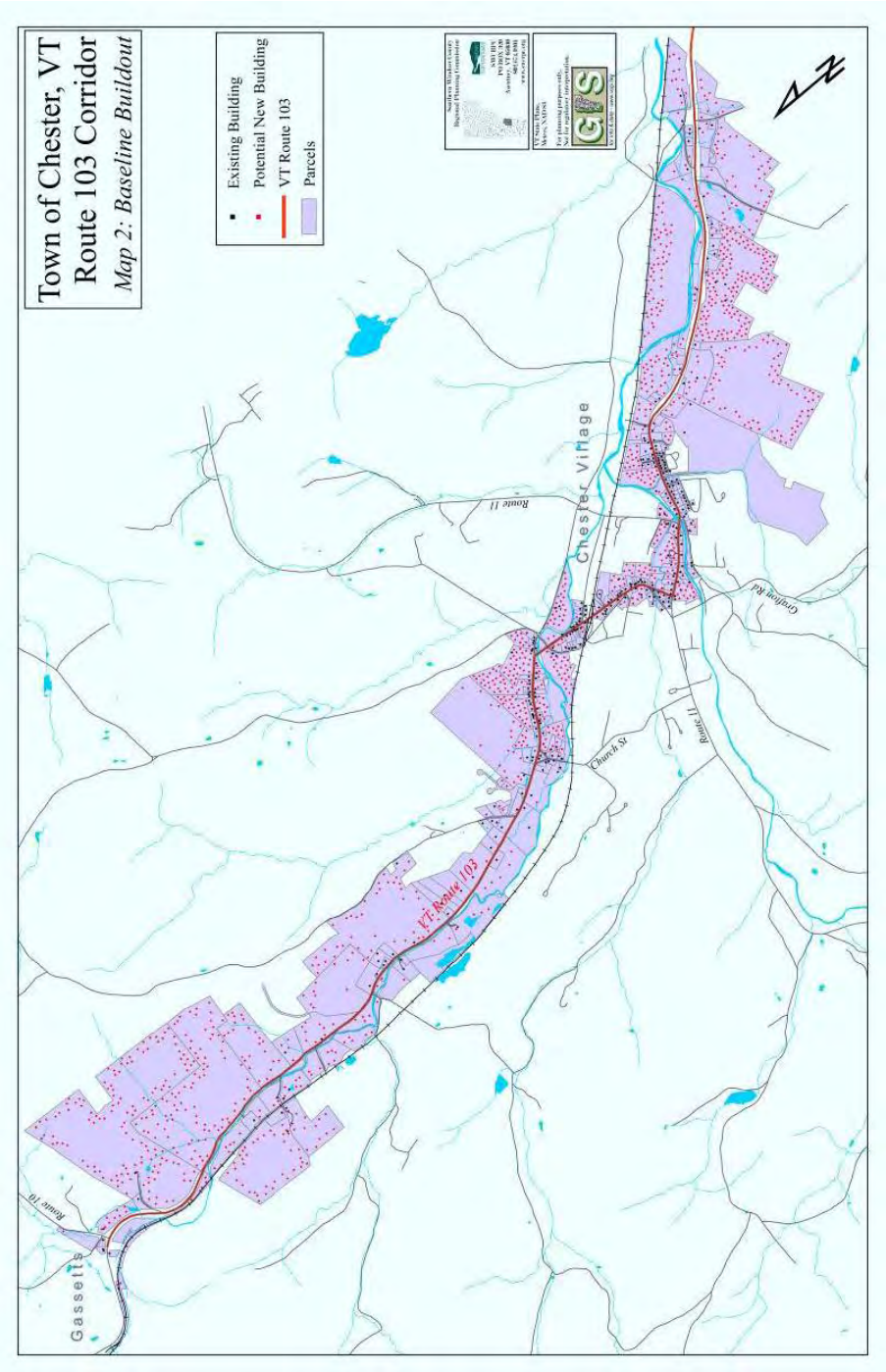


Figure 38: Rockingham Total Buildout

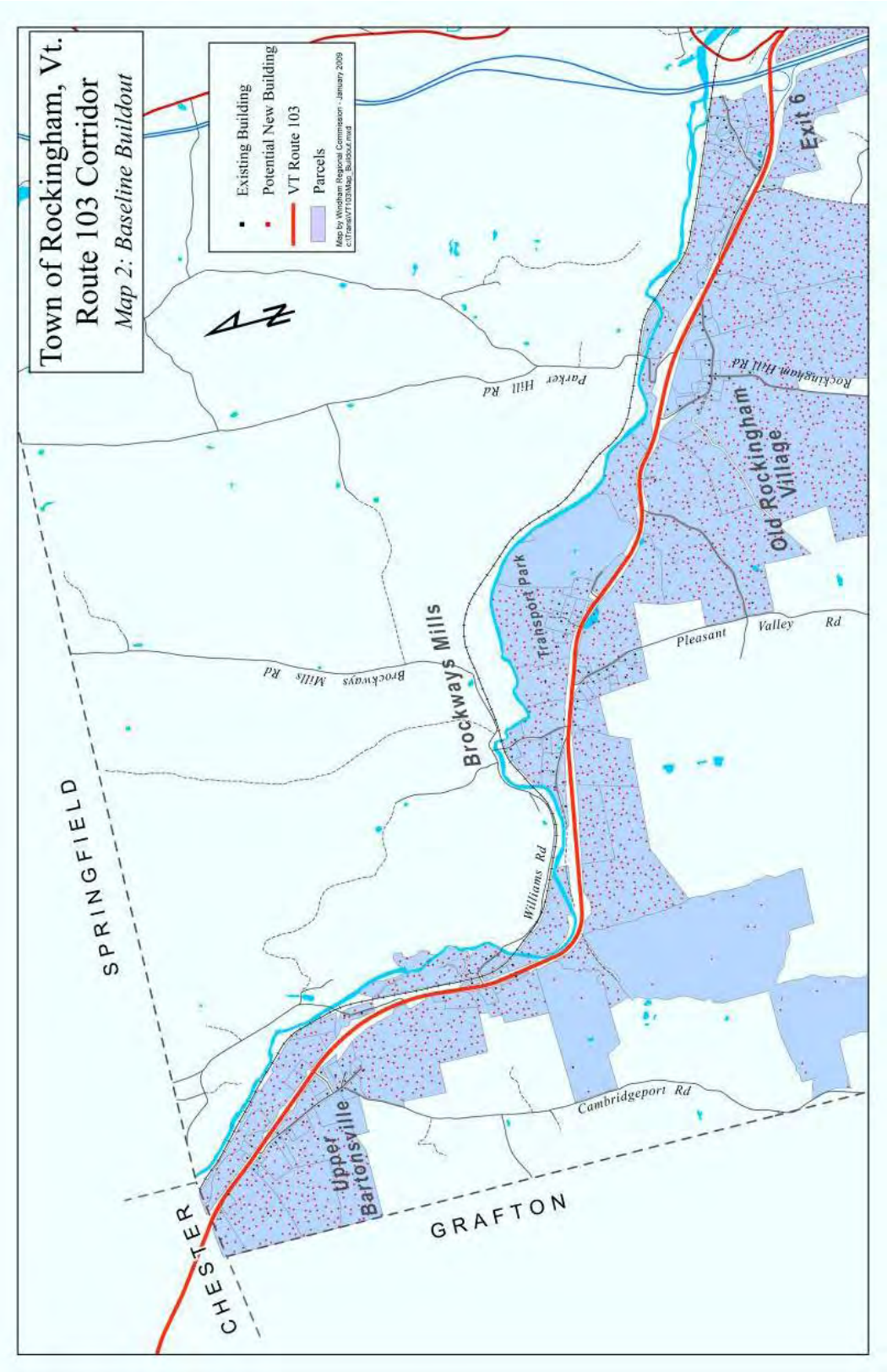


Figure 39 and Figure 40 take the analysis from the baseline buildout (Figure 37 and Figure 38) and subtract projected development due to constraints such as wetlands, floodplains, steep slopes, and other environmental factors. Note that they do not necessarily indicate expected, anticipated, or desired buildout; rather they are a tool for visualization by the community to understand the potential impact of existing land use regulations, and to make changes as determined to be necessary. As they represent the total theoretical potential development under current land use regulations, this buildout analysis is not intended to be a realistic projection. Rather, it is most useful in assessing the impact of proposed regulatory changes.

Figure 39: Chester Potential New Buildings and Natural Constraints

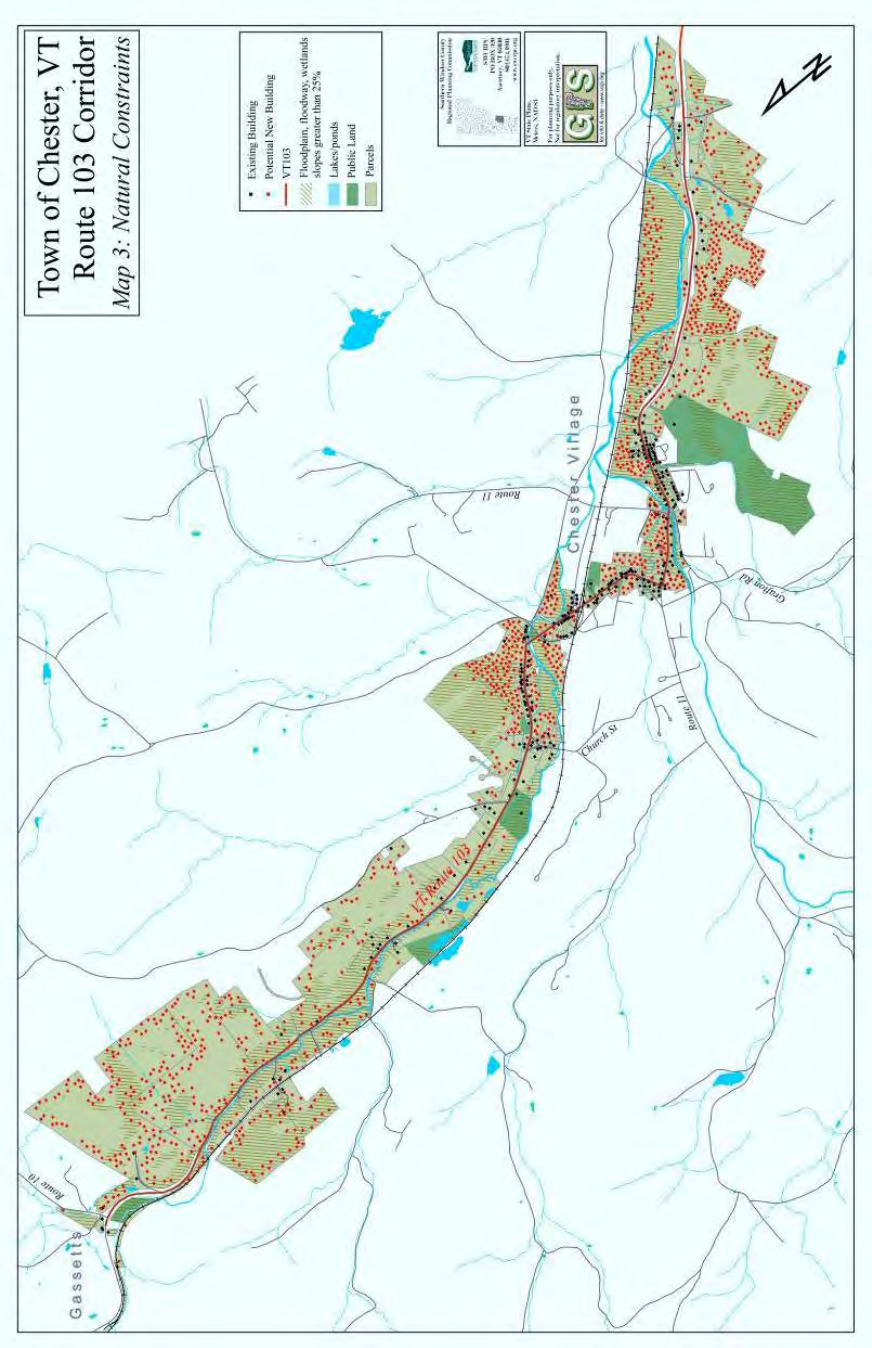
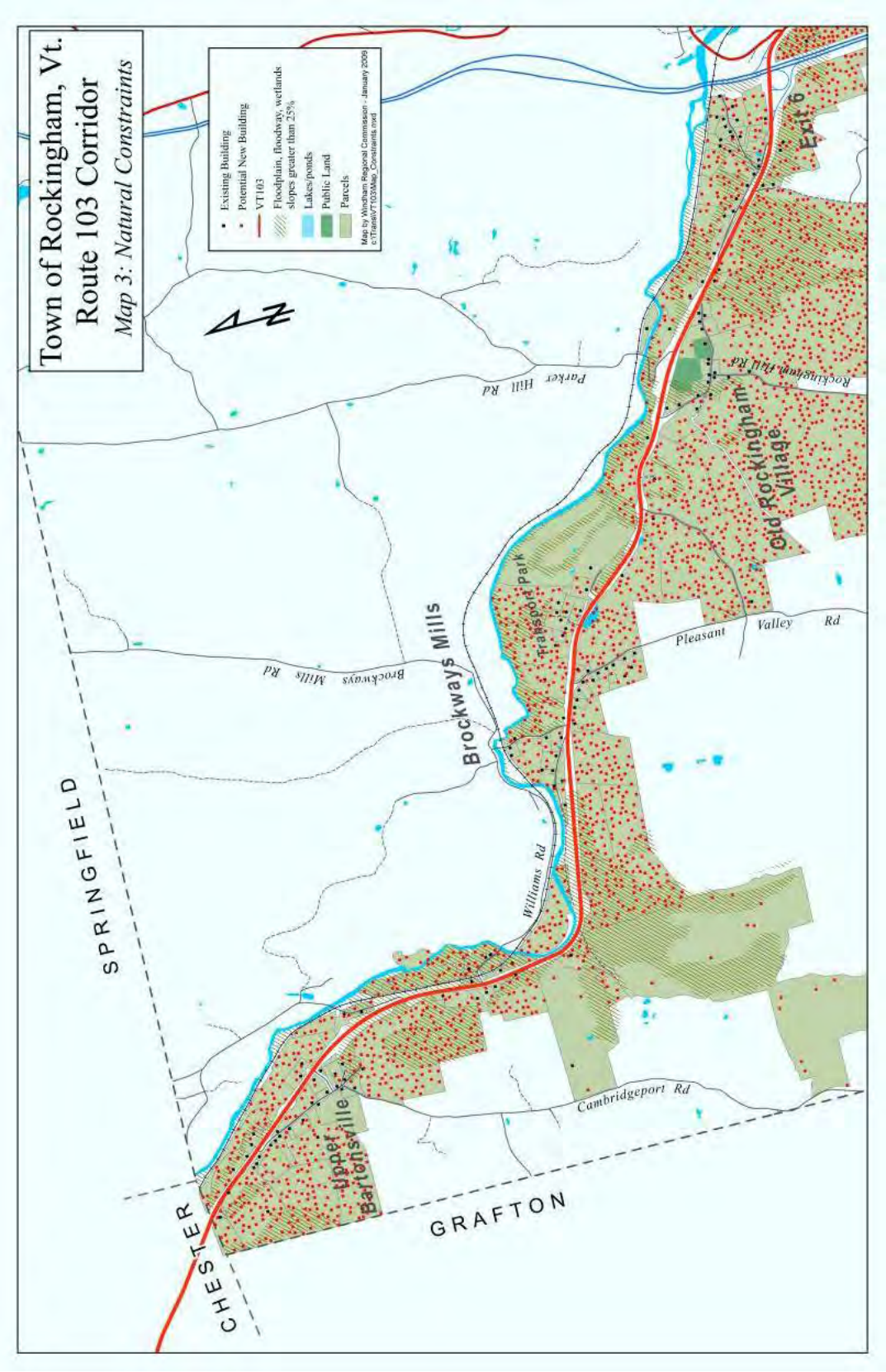


Figure 40: Rockingham Potential New Buildings and Natural Constraints



4.1.1 Summary of Buildout Analysis Results - Chester

Land use regulations in Chester theoretically allow future residential development that is 4.6 times the number of existing units (374 existing units) corridor-wide. Current land use regulations do not have strong natural resource protections, with the exception of flood hazard regulations.

A revised approach was considered, which examined the impact of establishing 50-foot buffers along surface waters and not allowing structures to be built on slopes greater than 25%, but still allowing these areas to contribute to the minimum lot size. These added protections did not meaningfully reduce the number of potential new units, as structures were able to locate outside of those protected natural resource areas.

The most pronounced future growth potential is in the Commercial and Residential 40,000 zoning districts along VT 103 South. A summary of the buildout analysis and scenarios are listed below.

4.1.1.1 Gassetts

The Gassetts area surrounding the intersection of VT Routes 103 and 10 is largely built out; future growth is primarily limited to re-development. This intersection exhibits poor geometrics, access management problems and a history of unsafe driving behaviors. Future growth and redevelopment provides an opportunity to create a more pleasant hamlet environment and improve existing overly-wide accesses.

4.1.1.2 VT 103 North

VT 103 between the Stone Village and Gassetts includes portions of both the Residential 80,000 zoning district and Aquifer Protection District 2. There are significant natural constraints in this area that limit future development, including the Williams River, Green Mountain Railroad, flood hazard areas, prime agricultural soils and steep slopes. Future development is more feasible on the "back lot" portions of the large lots north of VT 103. Individual driveways for each new lot may not be practical in many locations due to steep slopes and ledge. Therefore, shared driveways and access roads should be considered wherever feasible.

4.1.1.3 Stone Village

Historic Stone Village is within the Residential 20,000 zoning district. Most of the existing historic homes are on small lots that cannot be subdivided. However, the large lots with open fields to the north of Stone Village could experience significant future development if subdivided. The Town does not consider this level of development likely. However, if it were to occur even at a small scale it could alter the historic character of Stone Village.

4.1.1.4 Chester Depot

The Chester-Depot area is largely built out, with re-development as the most likely future growth driver.

4.1.1.5 Chester Triangle

The Chester Triangle, which is the area roughly bounded by Main Street, Maple Street and Depot Street, is also largely built out. Re-development is the most likely driver of future growth.

4.1.1.6 Chester Village East

This area is located south of the Chester Triangle area, extending southeast to the Green Mountain Union High School, and is comprised of three distinct sub-areas defined roughly by the existing zoning districts: Residential-Commercial (R-C), Residential 20,000 (R20), and Commercial (C). The Commercial district is where the town currently encourages future commercial and job growth. Public water and sewer is available.

There are 104 existing units in this focus area. Full theoretical future growth would more than double the existing units, and commercial uses are most likely to dominate in the R-C and C districts. The R-C and C zoning districts exhibit emerging strip development and automobile-oriented land use development patterns. Tourist-oriented commercial growth is highly probable.

4.1.1.7 Residential 40,000 South

This area is comprised of the Residential 40,000 zoning district located between the Green Mountain Union High School and the Rockingham Town Line. No water and sewer services are available at this time. The Zoning Bylaws currently allow a mix of residential and commercial uses. This area today is notable for its rural character, which is comprised of very low-density residential uses with a few commercial uses, open fields and forested areas. This rural character helps to form a visual separation between Rockingham and Chester Village.

Future growth in this area could be significant under current land use regulations and only a few streams and areas of steep slope limit development potential. The 40,000 square foot minimum lot size and 120 foot minimum frontage would allow for residential densities that are far denser than the state access management guidelines for this section of road. The Access Management Program Guidelines (VTrans, July 22, 2005) indicate a desired spacing of 425 feet between driveways along a 50 mph speed zone. The resulting future growth densities could diminish rural character, threaten traffic safety and possibly result in a reduced posted speed limit. Furthermore, current regulations allow for a variety of commercial uses that might negatively impact the rural character, businesses in the villages and trip generation. Some of these commercial uses include but are not limited to restaurants, retail stores and motels.

This area includes 30 existing units, mostly residential. Under a full theoretical buildout, a total of 301 new units are possible. While full build out is unlikely, the less than one acre minimum lot size allowed under current zoning allows for densities that are much higher than the current character of the area. A revised land use scenario examined increasing the minimum lot size to 80,000 square feet and increasing the minimum frontage to 200 feet, which resulted in a 29% reduction in total new units under buildout.

4.1.1.8 Residential 80,000 South

The Residential 80,000 (R80) zoning district along VT 103 South is limited in the potential for future development due to the Williams River, floodway and flood plain areas and prime agricultural soils. Similar to the Residential 40,000 South area, current regulations allow for a variety of commercial uses in the R80 district including but not limited to restaurants, retail stores and motels. While more limited in development potential, these uses could negatively impact rural character, existing Village businesses and traffic congestion.

4.1.2 Summary of Buildout Analysis Results - Rockingham

4.1.2.1 Meeting House to Transport Park Zone

This area includes the Meeting House District, the Vermont Country Store, and the Transport Park. There are no natural resources restrictions to development in the Town's land use regulations. Figure 41, Figure 42 and Figure 43 provide an overlay for the existing natural constraints within the focus area, and propose the amount of unconstrained acreage per parcel for the Meeting House, Upper Bartonsville, and Transport Park areas, respectively. The unconstrained acreage in these graphics is the area free from natural constraints and land use regulation restrictions.

As with the preceding graphics, these three figures are not intended to dictate specifically where future development will go, but rather to provide an indication of the currently built out parcels (shown in purple) and the total unconstrained acreage in each area. For example, the Meeting House Historic area, future development could occur along VT103, to the south and north of the Meeting House, and/or along Meeting House Road. Around the Vermont Country Store, potential development could occur on the west side of VT103, close to the Country Store. Around the Transport Park, any potential development would likely occur immediately to the south or north of the industrial park.

Figure 41: Advanced Buildout – Meeting House Area

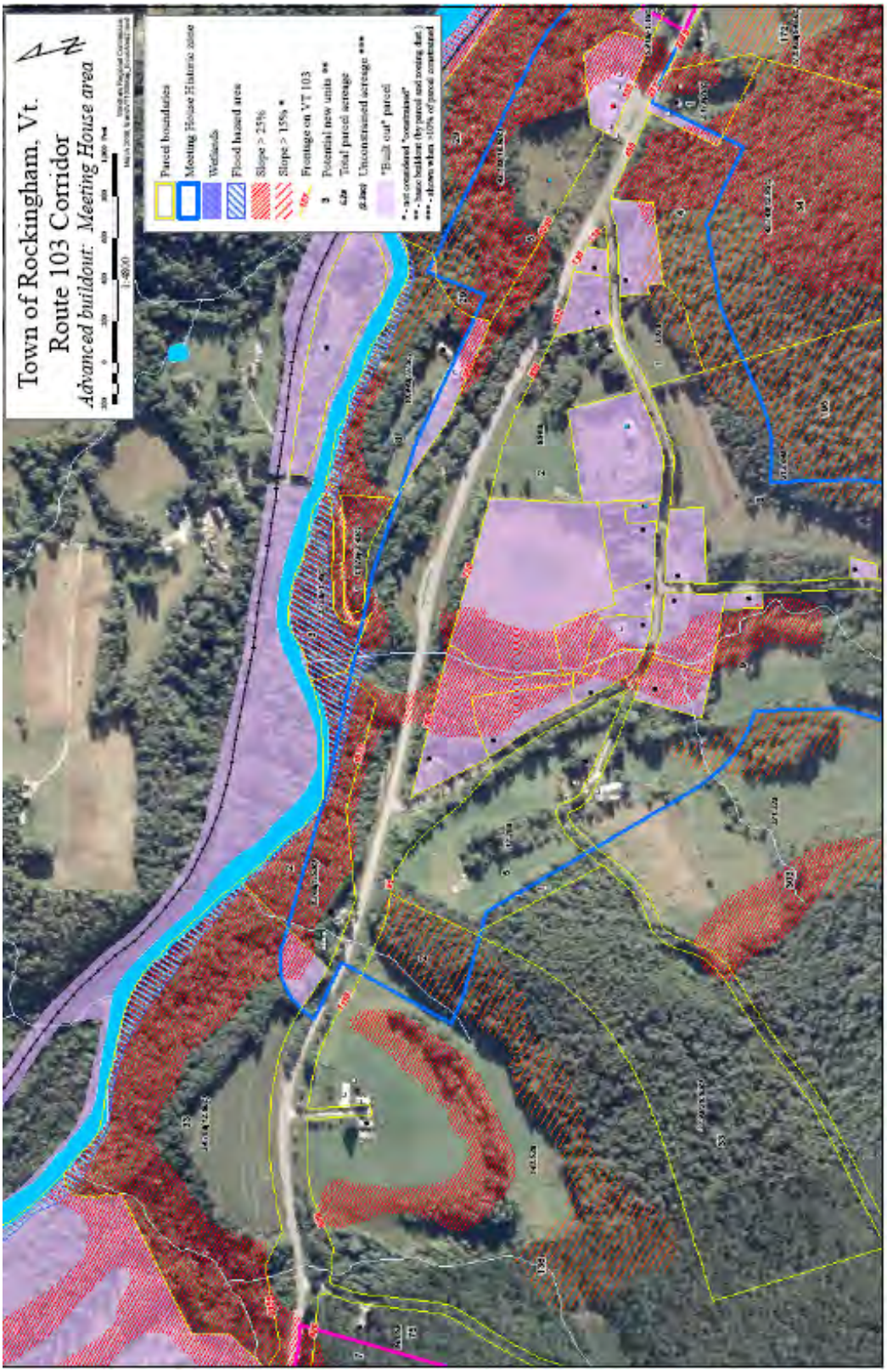


Figure 42: Advanced Buildout – Upper Bartonsville

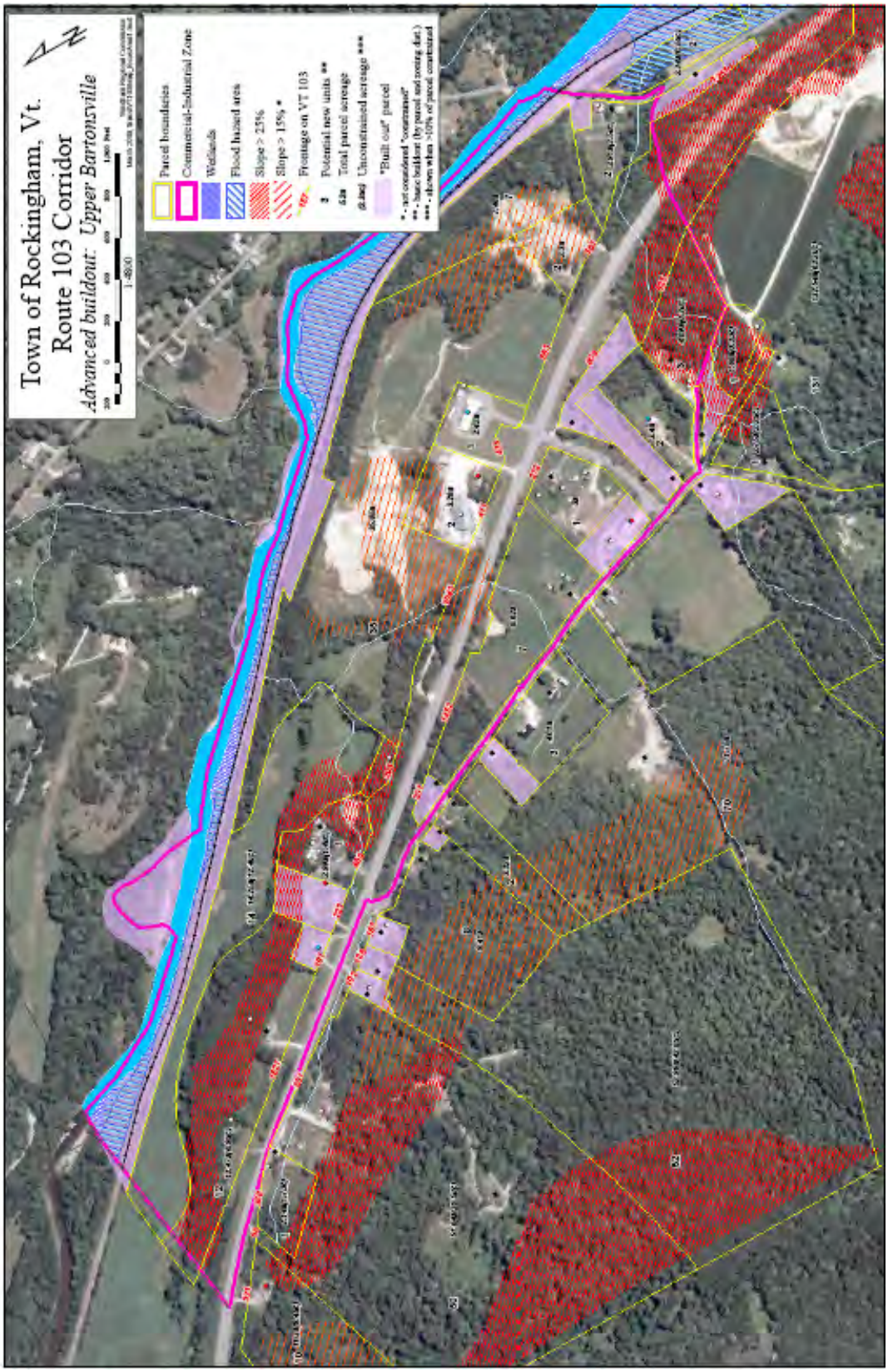
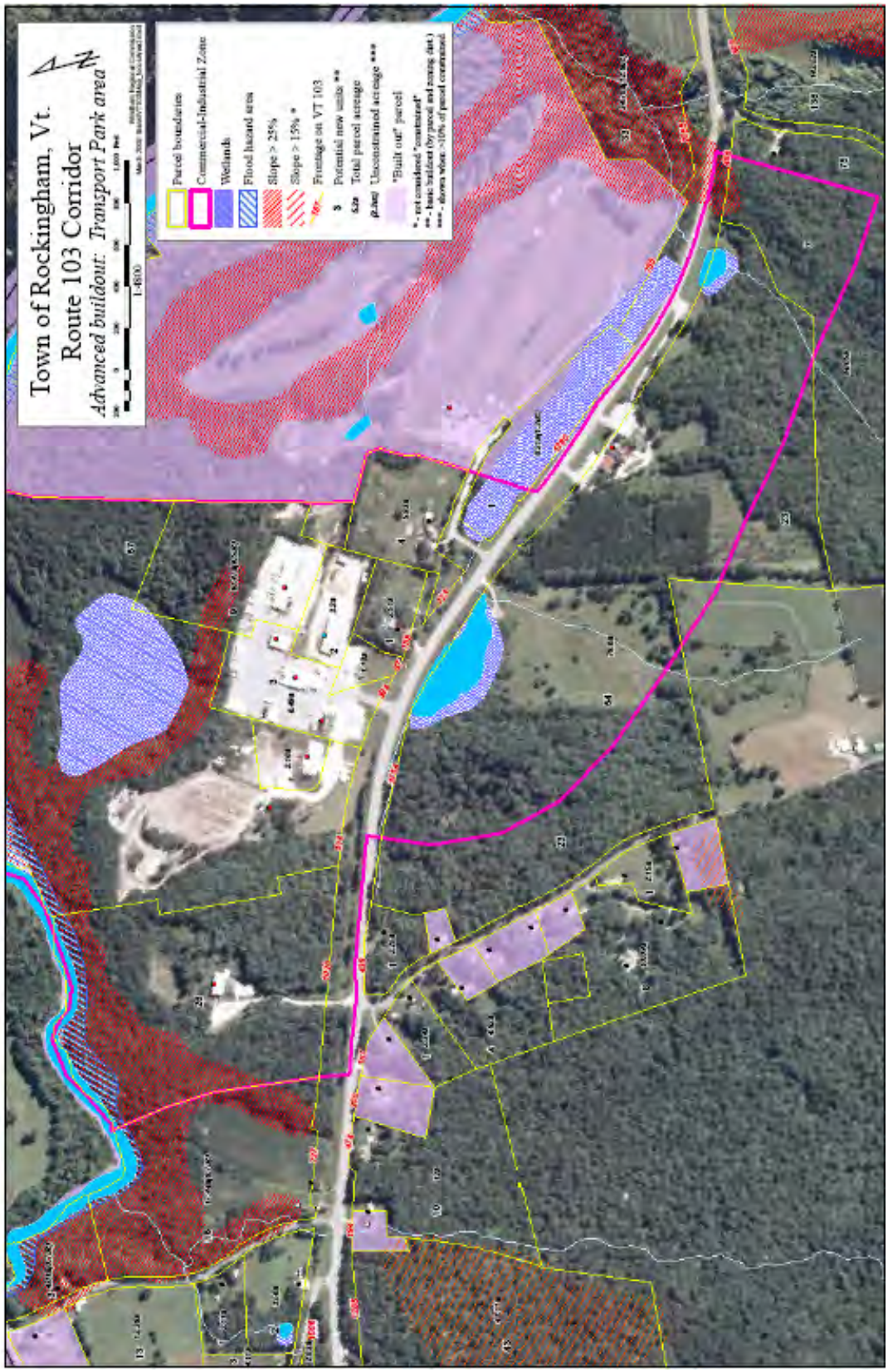


Figure 43: Advanced Buildout –Transport Park



4.1.2.2 Upper and Lower Bartonsville Zone

This area includes Upper and Lower Bartonsville. Based on the acreage of open space, lack of natural constraints and the Industrial/Commercial zoning, this section of VT103 would support future development that might not be able to fit into other areas along the corridor or in the Village of Bellows Falls (e.g. concrete trucking industry). Compared to the Meeting House to Transport Park zone, there are significantly fewer natural constraints in the Bartonsville area. This allows any future development to set back farther from VT103. Any development in this zone should seek to combine and limit the number of new access points onto VT 103.

4.1.3 Land Use Alternatives Analysis

Within the discussion of future land use alternatives, three specific areas were highlighted for a more extensive analysis of future land use pattern. These areas are 1) the section of VT 103 east of Chester Village in the vicinity of the Green Mountain High School, the Residential 40 District in Chester from the Green Mountain High School south to the Rockingham town line, and 3) the Upper Bartonsville area. An overview of the conditions and discussions leading to a preferred recommendation for both areas is provided below.

4.1.3.1 Chester Village East

This area is located south and east of Chester Village, extending to the Green Mountain Union High School, and includes area in two zoning districts: Residential 20,000 (R20), and Commercial (C). The Commercial district is where the town currently encourages future commercial and job growth. Public water and sewer is available.

Concern was raised over the emerging strip development in this area, and a desire to explore alternative land use patterns that could extend the village feel through this area. To facilitate this discussion, a relatively large parcel across from Green Mountain High School was selected to provide the framework for three land use scenarios. The three scenarios are depicted on the following pages and are generally characterized as 1) status-quo development pattern, 2) status-quo development pattern with access management enhancements, 3) more traditional mixed-use, clustered development pattern.

The three scenarios were presented to public meeting attendees and they were asked to rank their choices. On a scale of +3 to -3, the public ranked Scenario #3 first with an average score of 1.1, Scenario #2 second with an average score of -0.1, and Scenario #1 third with an average score of -1.3.

Figure 44: Chester Village East - Land Use Scenario #1

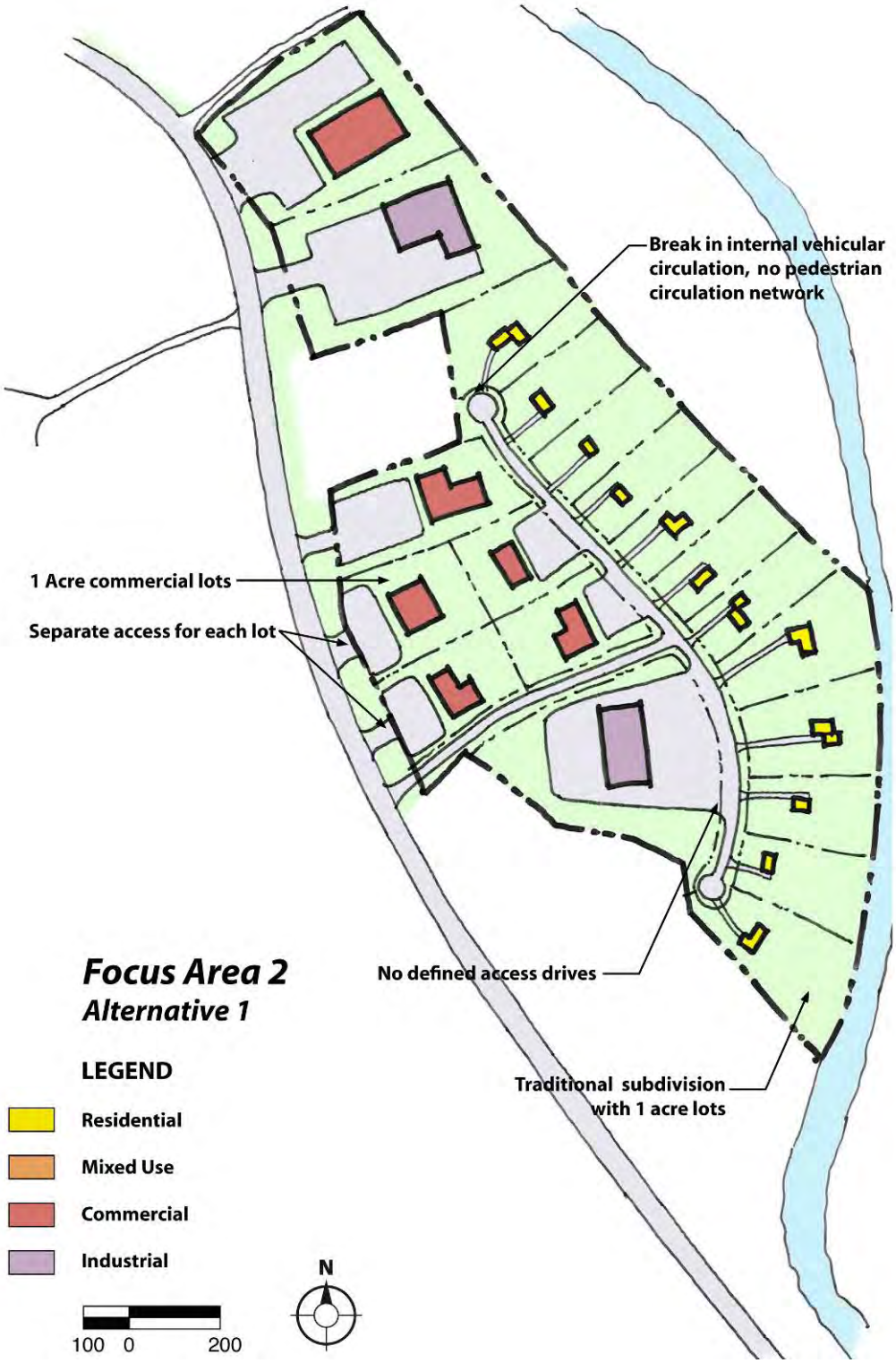


Figure 45: Chester Village East - Land Use Scenario #2

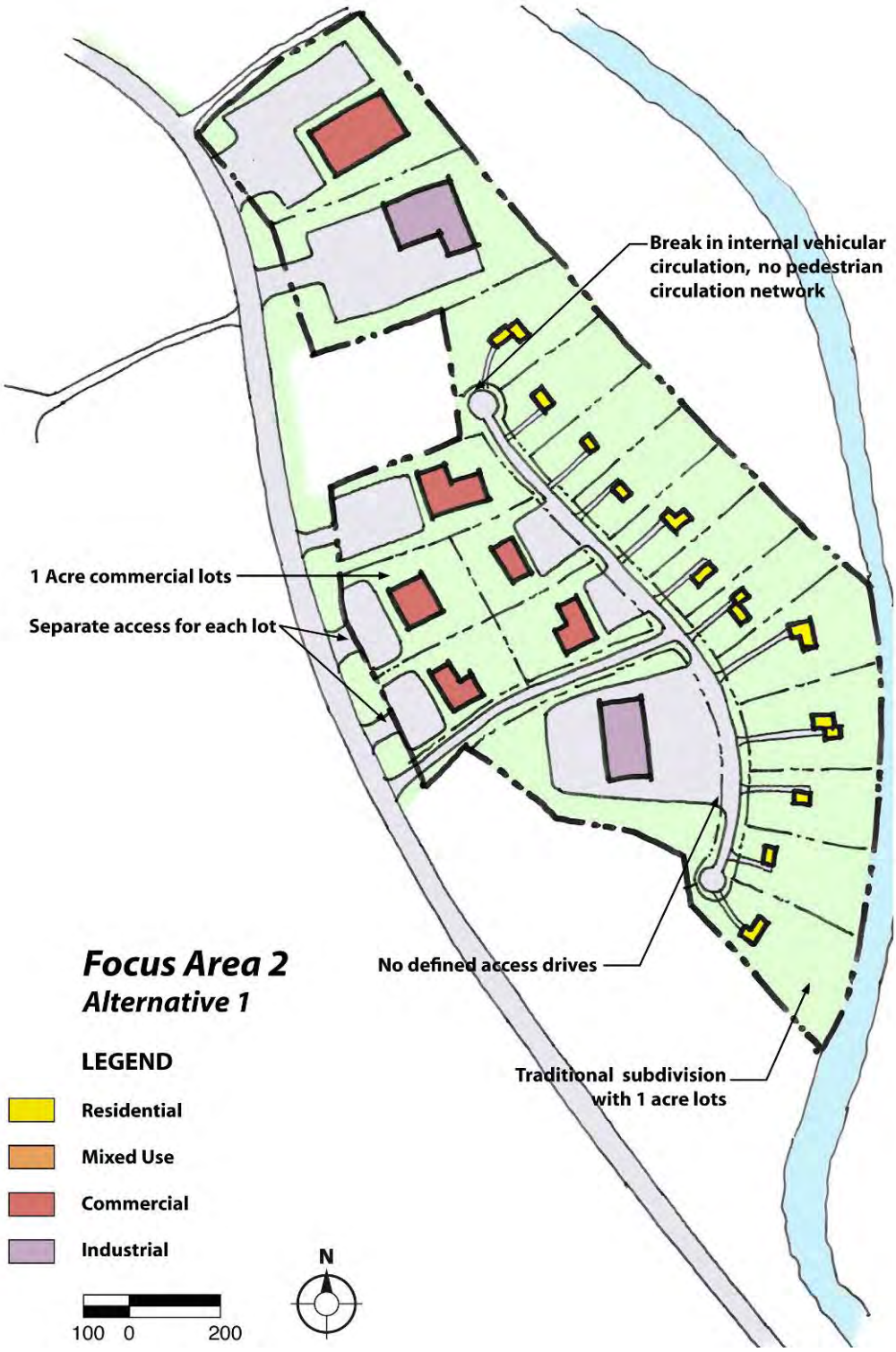
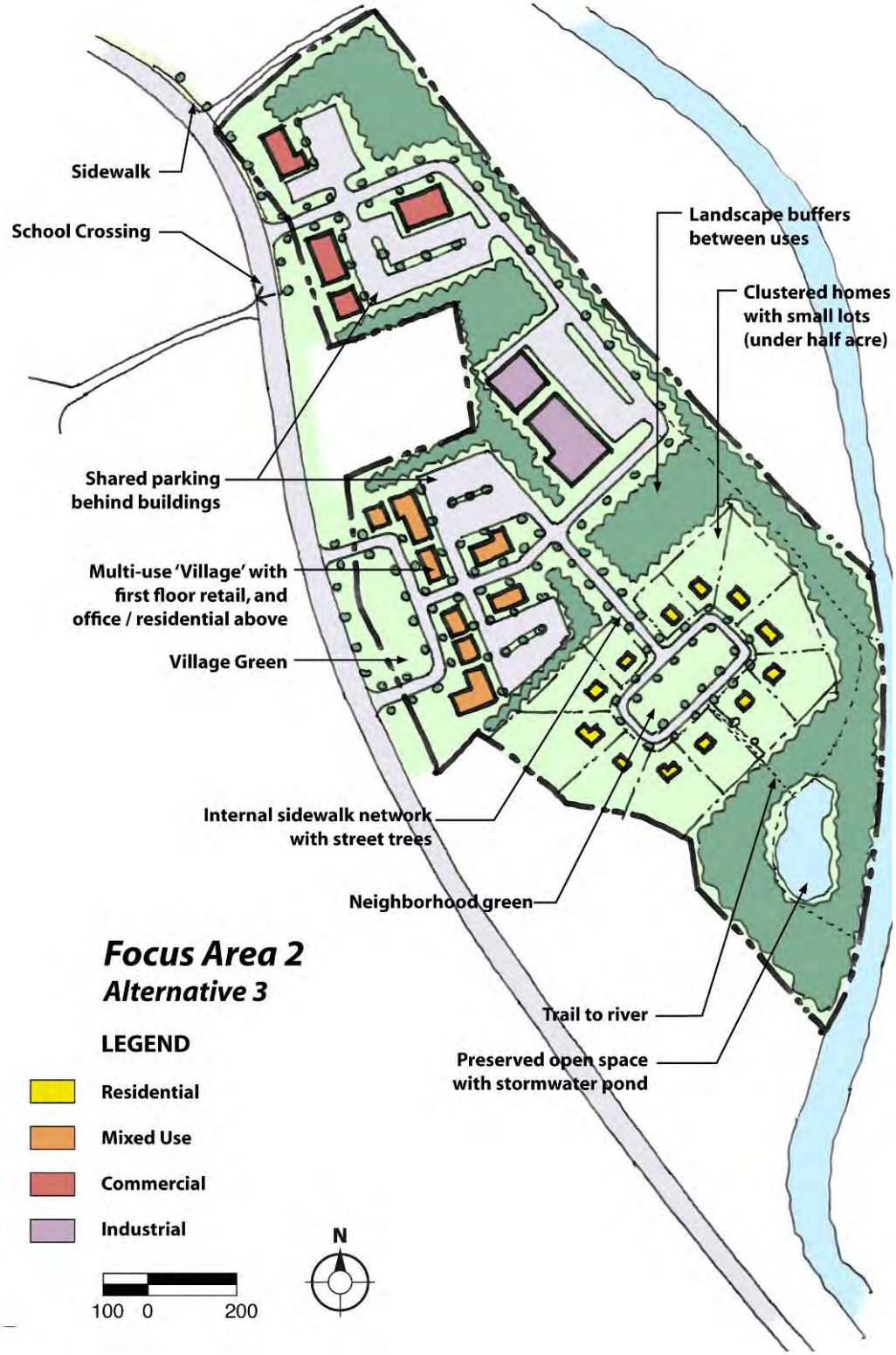


Figure 46: Chester Village East - Land Use Scenario #3



4.1.3.2 Chester Residential 40 District

This area is comprised of the Residential 40,000 zoning district located between the Green Mountain Union High School and the Rockingham Town Line. No water and sewer services are available at this time. The Zoning Bylaws currently allow a mix of residential and commercial uses. This area today is notable for its rural character, which is comprised of very low-density residential uses with a few commercial uses, open fields and forested areas. This rural character helps to form a visual separation between Rockingham and Chester Village.

The concern over the potential for significant future residential and strip commercial uses within this area resulting in future growth densities that could diminish rural character and traffic safety prompted a closer examination of different land use options. Three different scenarios were developed for a small section to help visualize the potential impacts and differences. The three scenarios, which are shown on the following pages can be categorized as: 1) status-quo residential development pattern, 2) status-quo residential and frontage commercial development pattern, and 3) conservation subdivision development pattern.

The three scenarios were presented to public meeting attendees and they were asked to rank their choices. On a scale of +3 to -3, the public ranked Scenario #3 first with an average score of +0.7, Scenario #2 second with an average score of -0.7, and Scenario #1 third with an average score of -1.0.

Figure 47: Chester R40 South District - Land Use Scenario #1

Figure 48: Chester R40 South District - Land Use Scenario #2

Figure 49: Chester R40 South District - Land Use Scenario #3

4.1.3.3 Upper Bartonsville Area

The Upper Bartonsville area of Rockingham is located above the historic hamlet of Bartonsville, in the area of VT 103, Upper Bartonsville Road, and Town Farm Road. This area is described in the Rockingham Town Plan as land adjacent to Route 103 that currently includes a mix of residential and commercial uses, but has been zoned primarily for commercial and industrial development.

Upper Bartonsville is currently zoned Commercial-Industrial (C-I) along much of Route 103 extending to the Chester Town line, and is bordered by the Rural Residential (RR-1) District along a portion of VT103 to the west. These zoning districts allow for a variety of potentially incompatible uses, if developed in close proximity – including large scale, vehicle-oriented commercial and industrial development in the C-I district and residential and limited commercial development across the highway in the RR-1 district.

There is the potential for significant development in Upper Bartonsville, most notably at the Town's spent gravel pits and at the State Police Barracks, which may be closing in the next couple of years.

A couple land use alternatives were examined for the Upper Bartonsville area, as shown in the figures below. These alternatives generally sought to cluster land uses, minimize access points onto VT 103, locate parking behind buildings, and accommodate commercial, industrial and residential development.

Figure 50: Upper Bartonsville - Land Use Scenario #1

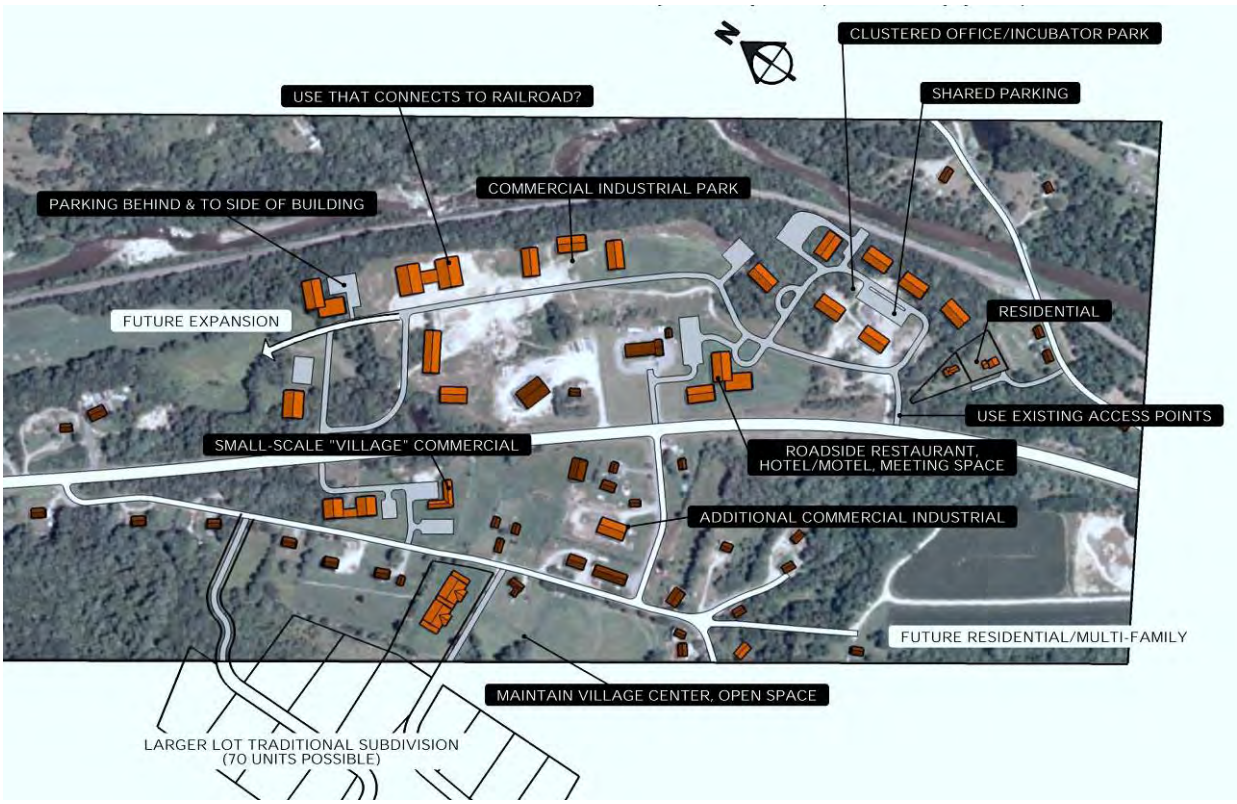
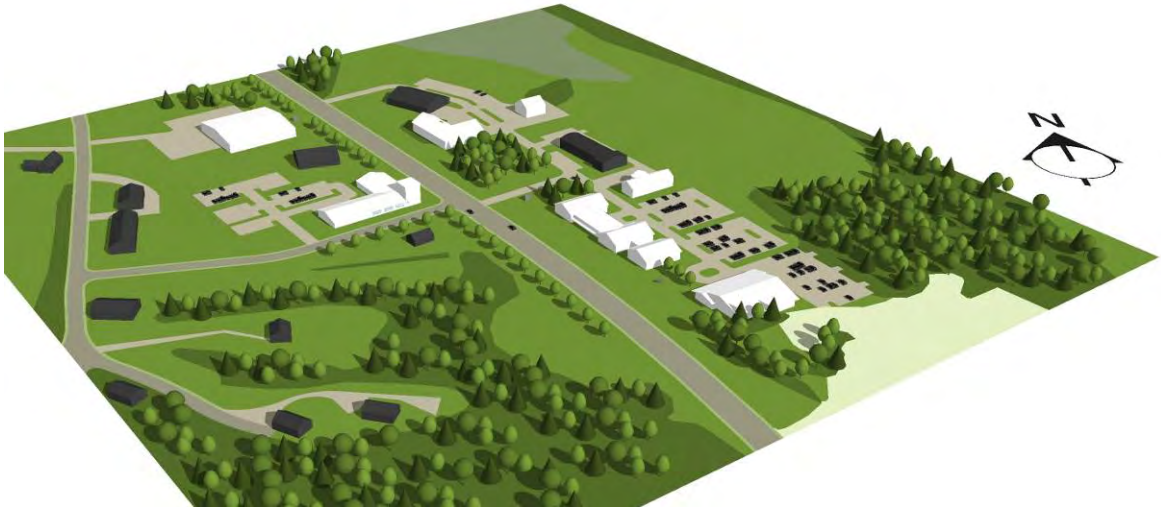


Figure 51: Upper Bartonsville - Land Use Scenario #2

Figure 52: Upper Bartonsville - Land Use Scenario - Perspective View



4.2 Future Traffic Assessment

This section establishes 2030 traffic volumes along the corridor and provides an assessment of congestion, delay, queuing, and safety along the corridor in the future assuming no improvements to the roadway capacity.

4.2.1 Development and Background Traffic Growth

As described in the previous section, background traffic growth is defined as growth related to development in and outside the study area, such as increases to tourist-related traffic; increases to through truck traffic, and development along the corridor. The VTrans Continuous Traffic Counter (P6X249) located on VT 103 near Rockingham Hill Road was used to estimate traffic volume growth for the future growth year. This counter's data results in an annual adjustment factor of 0.95% annually, or a growth of 22.0% between 2009 and 2030.

4.2.2 2030 Volumes

The estimated 2030 AM and PM peak hour turning movement volumes are shown below in Figure 53 and Figure 54, respectively.

Figure 53: 2030 AM Peak Hour Volumes

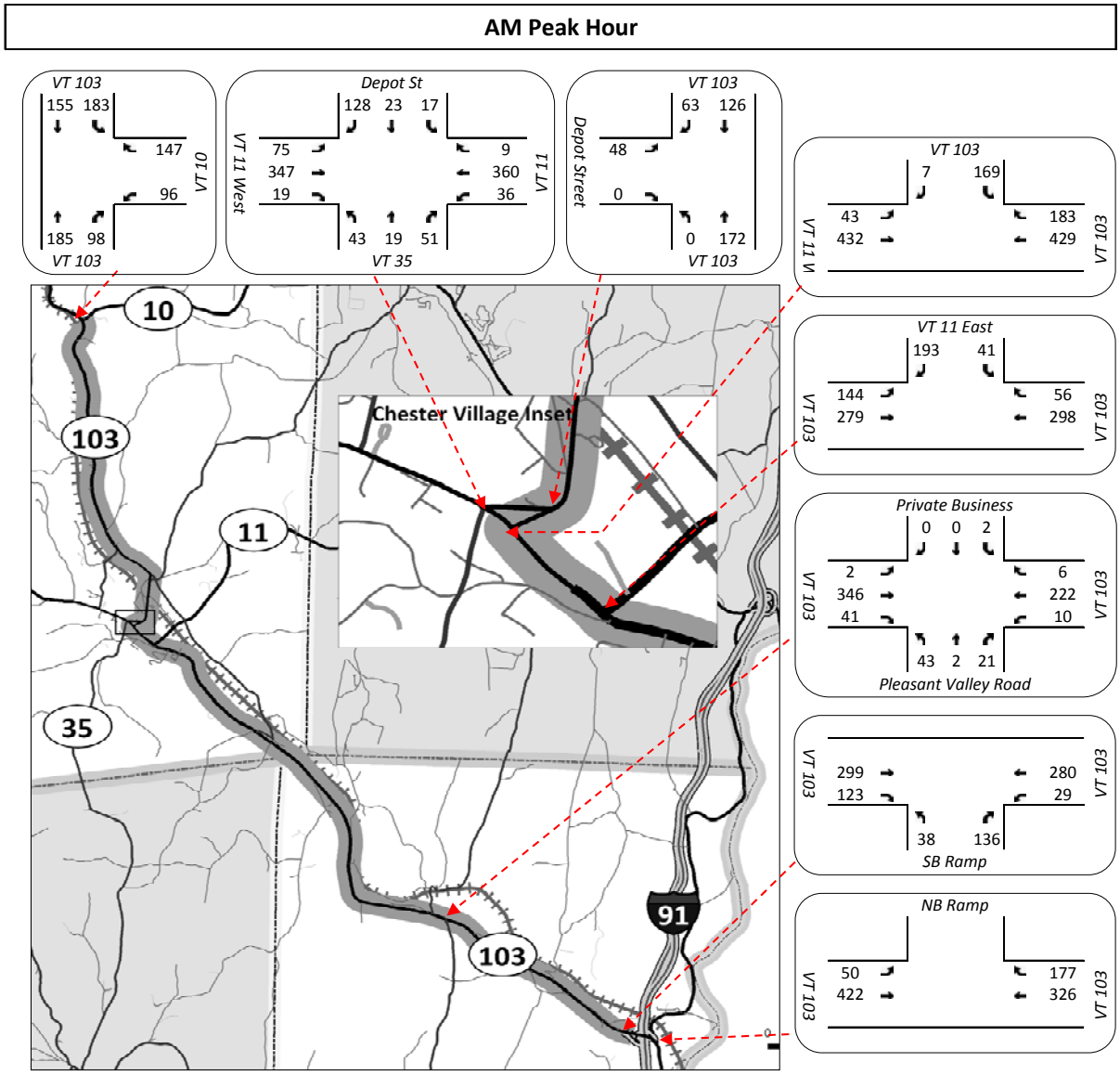
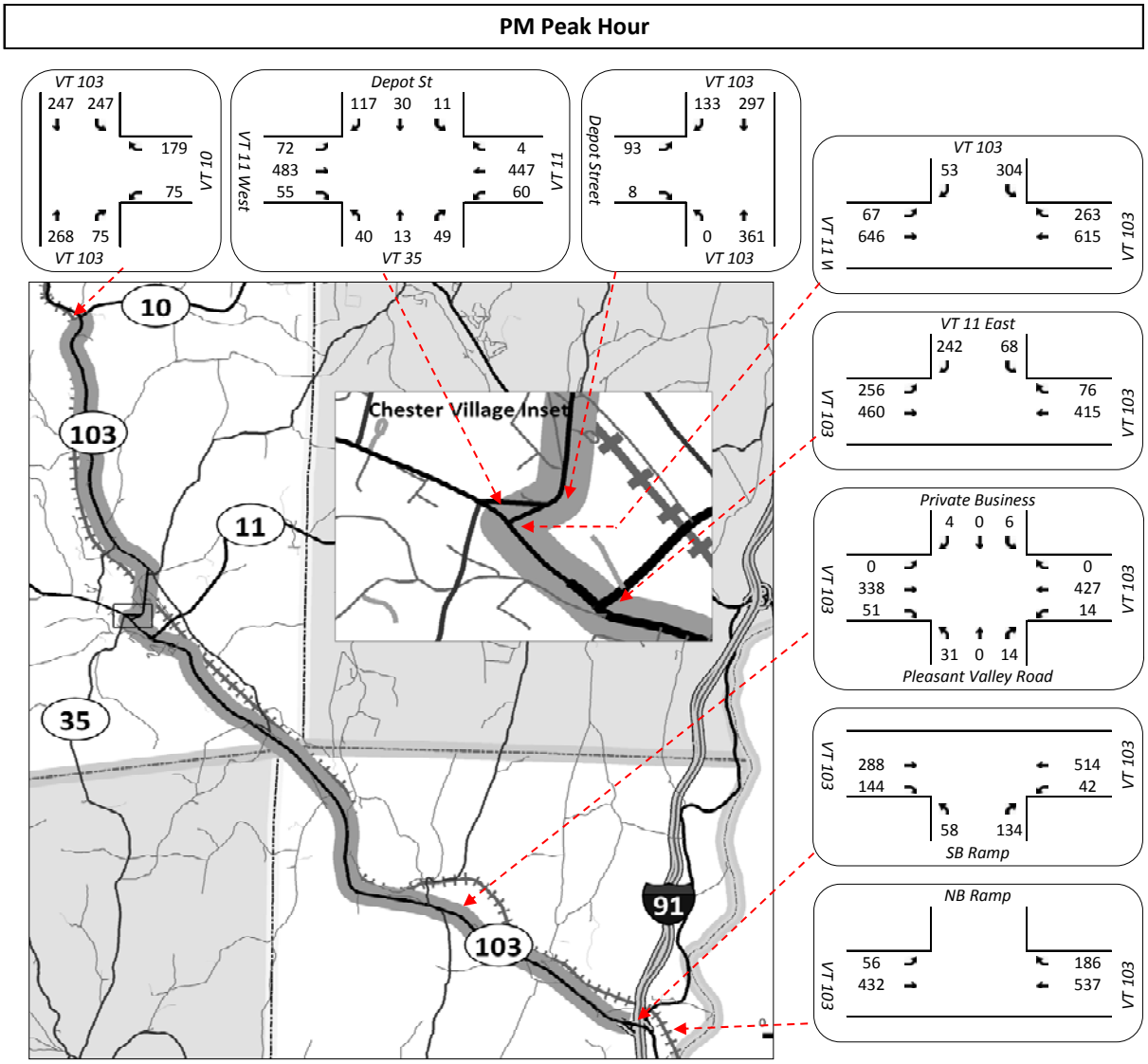


Figure 54: 2030 PM Peak Hour Volumes



4.3 Future Year Traffic Congestion Assessment

The 2030 intersection traffic volumes are analyzed in this section to identify future year capacity and queuing issues along the corridor.

4.3.1 Congestion Analysis

Level of Service (LOS) grades, average delays, and volume-to-capacity (v/c) ratios are calculated for the eight study intersections during the 2009 and 2030 AM and PM peak hours

(Table 5).[1] Approaches that operate at LOS D, E or F, which is below the VTrans standard, are highlighted in yellow in the table.

The key results are as follows:

- VT 11 West/VT 35/Depot Street – The northbound approach at the intersection operates at LOS D/F in the 2030 AM Peak and both PM scenarios.
- VT 103/VT 11 West – The southbound approach at the intersection operates at LOS D/F in all scenarios.
- VT 103/VT 11 East - The southbound approach at the intersection operates at LOS D/F in both PM scenarios.

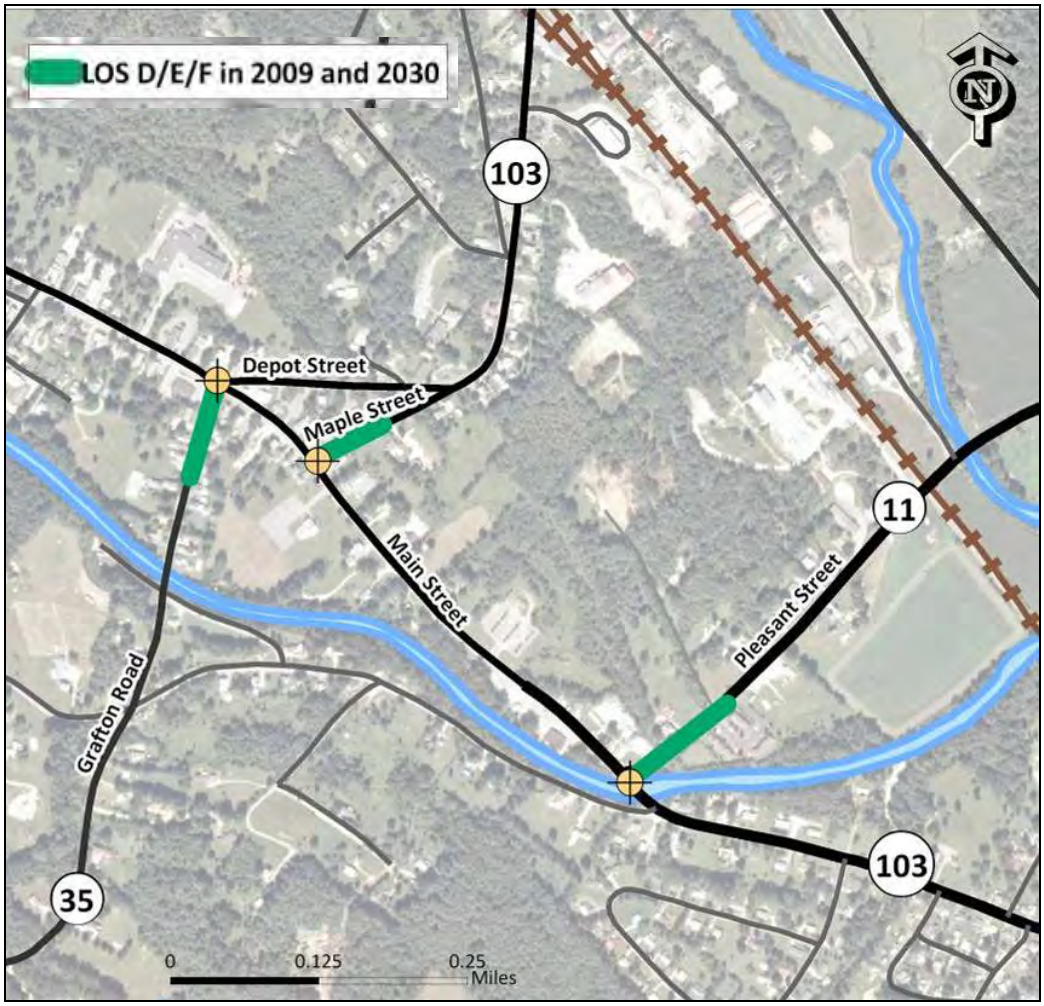
Table 5: AM and PM Peak Hour LOS, Average Delay (seconds) and v/c Ratios

	AM Peak Hour						PM Peak Hour					
	Existing Conditions						Existing Conditions					
	2009			2030			2009			2030		
	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	v/c
VT 103/VT 10												
Westbound Approach, from VT 10	B	12	0.19	B	14	0.28	B	14	0.21	C	17	0.36
Northbound Approach, along VT 103 from Chester	A	<1	0.09	A	<1	0.11	A	<1	0.13	A	<1	0.16
Southbound Approach, along VT 103 from Ludlow	A	4	0.12	A	5	0.15	A	4	0.16	A	5	0.21
VT 103/Depot Street												
Eastbound Approach, along Depot Street	B	10	0.17	B	11	0.25	B	14	0.17	C	17	0.25
Northbound Approach, along VT 103 from Rockingham	A	<1	<0.01	A	<1	<0.01	A	<1	<0.01	A	<1	<0.01
Southbound Approach, along VT 103 from Ludlow	A	<1	0.21	A	<1	0.25	A	<1	0.21	A	<1	0.25
VT 11West/VT 35/Depot Street												
Eastbound Approach, along VT 11 from Reedville	A	2	0.05	A	2	0.06	A	2	0.05	A	2	0.06
Westbound Approach, along VT 11 from Rockingham	A	<1	0.02	A	1	0.03	A	1	0.04	A	2	0.06
Northbound Approach, along VT 35	C	20	0.28	D	33	0.47	D	28	0.35	F	75	0.68
Southbound Approach, along Depot Street	B	14	0.26	B	18	0.38	B	17	0.31	C	27	0.49
VT 103/VT 11West												
Southbound Approach, along VT 103 from Ludlow	D	28	0.48	F	67	0.77	F	>100	1.62	F	>100	2.99
Westbound Approach, along VT 103 from Rockingham	A	<1	0.30	A	<1	0.36	A	<1	0.42	A	<1	0.52
Eastbound Approach, along VT 11 West from Reedville	A	1	0.04	A	1	0.05	A	2	0.06	A	2	0.09
VT 103/VT 11East												
Southbound Approach, along VT 11 East	B	13	0.30	C	16	0.42	D	28	0.62	F	>100	1.01
Westbound Approach, along VT 103 from Rockingham	A	<1	0.17	A	<1	0.21	A	<1	0.24	A	<1	0.29
Eastbound Approach, along VT 103 from Chester	A	3	0.09	A	4	0.12	A	5	0.18	A	5	0.24
VT 103/Pleasant Valley Road												
Eastbound Approach, along VT 103 from Chester	A	<1	0.19	A	<1	0.23	A	<1	0.19	A	<1	0.23
Westbound Approach, along VT 103 from Bellows Falls	A	<1	0.01	A	<1	0.01	A	<1	0.01	A	<1	0.01
Northbound Approach, along Pleasant Valley Road	B	12	0.10	B	14	0.13	B	14	0.08	C	16	0.12
VT 103/I91SB Ramps												
Eastbound Approach, along VT 103 from Chester	A	<1	0.20	A	<1	0.25	A	<1	0.21	A	<1	0.25
Westbound Approach, along VT 103 from Bellows Falls	A	<1	0.02	A	1	0.02	A	<1	0.03	A	1	0.03
Northbound Approach, along I-91 Ramps	B	11	0.15	B	12	0.20	B	13	0.15	B	15	0.21
VT 103/I91 NB Ramps												
Eastbound Approach, along VT 103 from Chester	A	1	0.04	A	1	0.05	A	2	0.05	A	2	0.07
Westbound Approach, along VT 103 from Bellows Falls	A	<1	0.16	A	<1	0.19	A	<1	0.26	A	<1	0.32

The locations of these substandard approaches are shown in Figure 20.

[1] Congestion and queue estimates were calculated using the Highway Capacity Manual reports from Synchro 7.

Figure 55: Level of Service (LOS) D, E or F Intersections and Approaches



4.3.2 Queuing Analysis

The results from five one-hour SimTraffic (v7) simulations of the 2009 and 2030 scenario volumes were averaged in order to project AM and PM peak hour queues.

Projected queues at most of the VT 103 intersections remain relatively minor even in 2030 (Table 6). However, there are two locations where projected future queues are notable:

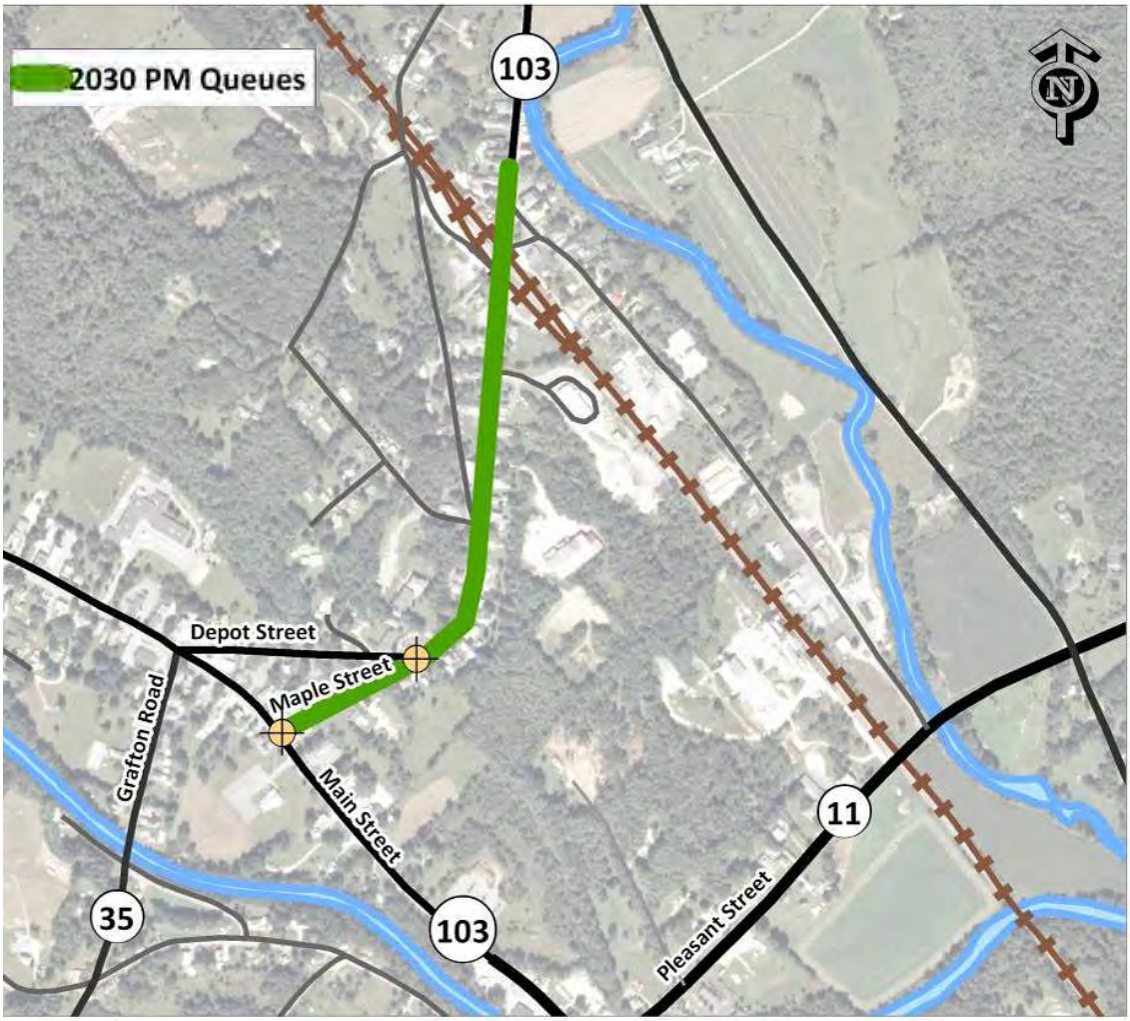
- VT 103/VT 11 West –2009 and 2030 queues are projected to extend northward into the Depot Street intersection.
- VT 103/Depot Street –2030 queues southbound on VT 103 are projected to extend well beyond Chester Depot and the Town Hall. These queues are an extension of queues from the VT 103/VT 11 West intersection.

Table 6: AM and PM Peak Hour Queues (feet)

	AM Peak Hour Queue Length (ft)		PM Peak Hour Queue Length (ft)		Link Distance
	2009	2030	2009	2030	
VT 103/VT 10					
Westbound Approach, from VT 10	36	46	34	39	>1000
Northbound Approach, along VT 103 from Chester	1	1	1	1	250
Southbound Approach, along VT 103 from Ludlow	25	32	36	47	250
VT 103/Depot Street					
Eastbound Approach, along Depot Street	19	20	37	161	1000
Northbound Approach, along VT 103 from Rockingham	0	0	0	0	700
Southbound Approach, along VT 103 from Ludlow	0	0	199	2913	>1000
VT 11West/VT 35/Depot Street					
Eastbound Approach, along VT 11 from Reedville	35	50	41	59	>1000
Westbound Approach, along VT 11 from Rockingham	10	15	25	45	500
Northbound Approach, along VT 35	41	48	39	57	>1000
Southbound Approach, along Depot Street	17	39	20	23	1000
VT 103/VT 11West					
Southbound Approach, along VT 103 from Ludlow	85	138	500	602	>1000
Westbound Approach, along VT 103 from Rockingham	29	2	4	3	>1000
Eastbound Approach, along VT 11 West from Reedville	0	44	86	204	700
VT 103/VT 11East					
Southbound Approach, along VT 11 East	52	69	104	243	>1000
Westbound Approach, along VT 103 from Rockingham	0	1	1	1	>1000
Eastbound Approach, along VT 103 from Chester	1	74	104	147	>1000
VT 103/Pleasant Valley Road					
Eastbound Approach, along VT 103 from Chester	0	0	0	0	>1000
Westbound Approach, along VT 103 from Bellows Falls	0	2	31	2	>1000
Northbound Approach, along Pleasant Valley Road	2	43	0	33	>1000
VT 103/VT 10					
Eastbound Approach, along VT 103 from Chester	1	8	4	5	>1000
Westbound Approach, along VT 103 from Bellows Falls	11	16	21	34	>1000
Northbound Approach, along I-91 Ramps	20	22	28	34	>1000
VT 103/VT 10					
Eastbound Approach, along VT 103 from Chester	12	26	18	30	>1000
Westbound Approach, along VT 103 from Bellows Falls	1	1	0	0	350

The estimated average maximum queue lengths at each of the critical intersection are shown in Figure 56.

Figure 56: Projected 2030 PM Peak Hour Queues



4.3.3 Volume to Capacity Threshold Analysis

Whereas the LOS analysis provides insight into anticipated congestion at intersections, a volume to capacity (v/c) threshold analysis is necessary to understand the level of congestion on a section of the roadway. Some factors that are used to determine the amount of congestion include total traffic volume and proportion of trucks, directional split of traffic, shoulder and lane width, number of access points (driveways and intersections), and length of passing zones.

The *Vermont Highway System Policy Plan* (HSPP)[1] recommends the following V/C thresholds for state highway sections:

- 0.7 for Rural corridors
- 0.8 for Village areas/small towns/suburban corridors/growth areas, etc.
- 0.9 for Urban downtown areas

[1] VTrans, *Vermont Highway System Policy Plan*, June 2004.

These thresholds were used to identify potential problem areas in 2009 and 2030 along the VT 103 corridor.

The segments shown in Table 8 were assessed using HCS 2000 Highway Capacity Software. The roadway type designation and respective V/C threshold is also given.

Table 7: Road Segments and V/C Thresholds

	Area Type	Maximum V/C Threshold
I-91 Ramps to Pleasant Valley Rd	Rural	0.7
Pleasant Valley Rd to VT 11 E	Rural	0.7
VT 11 East to Church St	Village	0.8
Church St to VT 10	Rural	0.7

Table 8 shows the calculated V/C for each road segment in the AM and PM peak hours in 2009 and 2030. Note that none of the road segments exceed the VTrans V/C threshold in any scenario.

Table 8: V/C by Road Segment

		AM V/C		PM V/C	
	Length (mi)	2009	2030	2009	2030
I-91 Ramps to Pleasant Valley Rd	3.3	0.22	0.27	0.29	0.37
Pleasant Valley Rd to VT 11 E	5.7	0.24	0.29	0.31	0.37
VT 11 East to Church St	1.6	0.32	0.39	0.44	0.54
Church St to VT 10	3.4	0.17	0.20	0.24	0.29

4.3.4 Future Traffic Signal Warrants

A signal warrant analysis is a set of tests that are run to determine whether a traffic signal would significantly improve operations, mobility, and safety at an intersection. There are a total of 8 warrants:

1. Eight-Hour Vehicular Traffic Warrant: when a large amount of intersecting traffic occurring over an 8-hour period is the principal reason for installing a traffic signal, or where excessive delays occur on minor approaches to an intersection.
2. Four-Hour Vehicular Traffic Warrant: when a large amount of intersecting traffic occurring over a 4-hour period is the principal reason for installing a traffic signal.
3. Peak Hour Warrant: when the minor-street traffic suffers unduly delay when entering or crossing the major-street during the average peak hour is the principal reason for installing a traffic signal.
4. Pedestrian Volume Warrant: when the traffic volumes on a major street are so heavy that pedestrians experience excessive delays.
5. School Crossing Warrant: when school children crossing a major street are the principal reason for installing a traffic signal.
6. Coordinated Signal System Warrant: when maintaining proper platooning of vehicles is the principal reason for installing a traffic signal.

7. Crash Experience Warrant: when the severity and frequency of accidents is the principal reason for installing a traffic signal.
8. Roadway Network Warrant: when the concentration and organization of traffic flow is the principal reason for installing a traffic signal.

A twelve-hour turning movement count was conducted at the intersection of VT 103/VT 11East (Pleasant St) on 27 and 28 July 2006. Traffic volumes were adjusted to represent average traffic conditions in 2009 and 2030 assuming development growth and background growth. The results of this signal warrant analysis are presented in Table 9.

Table 9: Signal Warrant Summary

	2009	2030
Warrant 1: Eight-Hour Vehicular Volume Warrant	Yes	Yes
Warrant 2: Four-Hour Vehicular Volume Warrant	Yes	Yes
Warrant 3: Peak Hour Warrant	Yes	Yes
Warrant 4: Pedestrian Volume Warrant	No	No
Warrant 5: School Crossing Warrant	n/a	n/a
Warrant 6: Coordinated Signal System Warrant	n/a	n/a
Warrant 7: Crash Experience Warrant	No	No
Warrant 8: Roadway Network Warrant	No	Yes
Total Warrants Met:	**3**	**4**

A signal warrant analysis is considered advisory only. This means that simply meeting any warrant may not be sufficient cause for installing a traffic signal. For example, meeting the peak hour warrant is usually not sufficient in and of itself to warrant installing a traffic signal. The rationale for this is that one hour (or less) of congestion in a day is probably not severe enough to justify the investment in the traffic signal controller and related equipment and software. Experience in Vermont suggests that meeting at least two other warrants is needed to justify investment in a traffic signal. This condition is met at this intersection even under current (2009) traffic volumes.

4.4 Future Transit Service

The Connecticut River Transit (CRT) current provides daily commuter service between Ludlow and Bellows Falls via Springfield. Seasonal service between Okemo Mountain and Bellows Falls is also provided during winter months, but does not extend into the spring/summer/fall seasons.

The CRT has currently identified the need to connect Chester to Bellows Falls and Springfield. The proposed service would potentially be in the form of a tri-town shuttle that would interconnect with the service to Ludlow, thereby also allowing access to Rutland and Brattleboro. As of July 2009, CRT is applying for additional Congestion Mitigation Air Quality (CMAQ) funding to support this potential year-round route.

The US Census Bureau's Worker Flow data, based on the 2000 US Census, captures where residents go to work and where they commute from. The findings from this worker flow data is summarized in Figure 57 for the towns of Chester and Rockingham. Based on these figures, a commuter bus route between Ludlow and Bellows Falls (note that Bellows Falls falls under the category of Rockingham Town in this data) would provide tremendous benefit to those commuting to and from Chester and Rockingham.

Figure 57: Journey to Work Data

Journey to Work Summary

	From Chester, To:		From Rockingham, To:
1	Chester town Windsor Co. VT	1	Rockingham town Windham Co. VT
2	Springfield town Windsor Co. VT	2	Brattleboro town Windham Co. VT
3	Ludlow town Windsor Co. VT	3	Springfield town Windsor Co. VT
4	Rockingham town Windham Co. VT	4	Westminster town Windham Co. VT

Legend
Direct Benefit
Connection Benefit

4.5 Future Safety

There were 147 reported crashes on VT 103 in the study area from 2003 to 2007. Of those crashes, 34 (23%) were major collisions (involving a fatality, serious injury, or moderate injury).

One of the goals of this study is to reduce major crashes by 5% between 2009 and 2030. This would result in a reduction of 2 collisions over the five-year period, or 0.4 crashes per year (Table 10).

Table 10: Crash Reduction Goals

Total Major Crashes 2003-2007	34
-5%	-2
2030 Goal	**32**

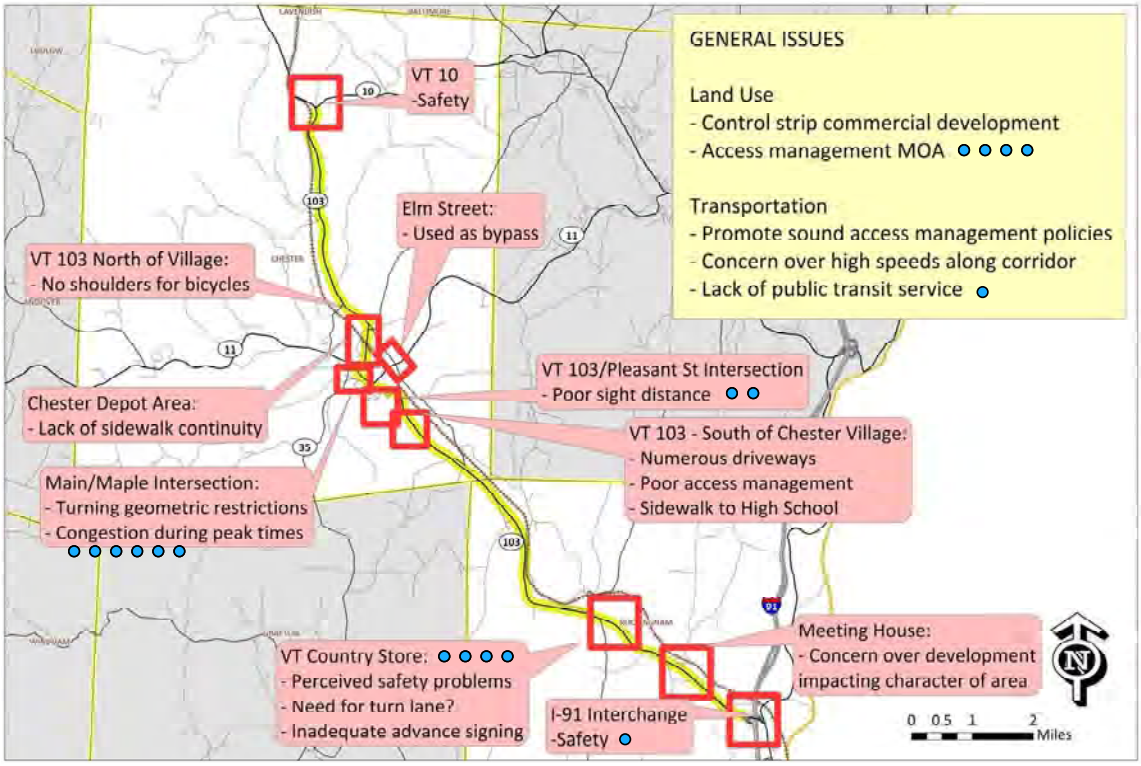
5.0 RECOMMENDATIONS

This section identifies specific issues, concerns, and recommendations that have been identified through our assessment of existing and future conditions, steering committee input, public input, and previous assessments of the corridor.

5.1 Initial Issues and Concerns

During the development of the Corridor Management Plan, various transportation and land use issues were raised both through steering committee and public input, as well as through the assessment of existing and future conditions. The identified issues are presented graphically in Figure 58 below. The blue dots represent a preliminary prioritization based on steering committee input. This initial screening shows that the Chester triangle, access management, and access and safety issues at the Vermont Country Store were identified as areas of concern.

Figure 58: Initial Issues and Concerns



5.2 Summary of Corridor Recommendations

A summary of the recommendations identified for the corridor are presented in Figure 59 (Chester recommendations) and in Figure 60 (Rockingham recommendations). The set of recommendations were divided by Town, to facilitate easier reference by residents and staff from the two towns and the Regional Planning Commissions. In the event that a particular recommendation applied to both towns, the recommendation is listed in both tables.

The tables present the recommendation description, implementation timeline[1] (i.e. estimated timeframe to get recommendation implemented), cost estimate, and potential implementing partners.

Additional details related to the adherence of the recommendations to the project goals can be found in Appendix B. Specific details pertaining to the Land Use – related recommendations can be found in Appendix C - M.

[1] The implementation timeline is the estimated timeframe to get the particular recommendation implemented, taking into account both the complexity and urgency of the project.

Figure 59: Recommendations - Town of Chester

ID	Recommendation	- Implementation - Short-Term (0-5 years)	Mid-Term (5-10 years)	Long-Term (10+ years)	Preliminary Cost Estimate (2009 $)	Potential Implementing Partners
1-C	Chester Triangle - Short Term Improvement	✓			$100,000	VTrans, Town of Chester, SWCRPC
2-C	Improve Access Management Along the Corridor	✓			n/a	Towns of Chester and Rockingham, SWCRPC, WRC
3-C	Encourage Extension of Village to Southern Commercial District	✓	✓		n/a	Town of Chester, SWCRPC
4-C	Revise Land Use Regulations to Enhance Development Pattern	✓			n/a	Towns of Chester and Rockingham, SWCRPC, WRC
5-C	Expand Public Transit Service on the Corridor	✓			$300,000 (new bus) $120,000 (annual operating)	Connecticut River Transit, Towns of Chester and Rockingham, SWCRPC, WRC
6-C	Enforce Speeds on VT 103	✓			n/a	State Police
7-C	Identify Location for Park and Ride	✓			$350,000	VTrans, Towns of Chester and Rockingham, SWCRPC, WRC
8-C	Establish an Access Management Memorandum of Agreement	✓			$5,000	VTrans, Towns of Chester and Rockingham, SWCRPC, WRC
9-C	Access Management Improvements in Gassetts	✓			n/a	Town of Chester, SWCRPC
10-C	Encourage Combined Access in Residential 80 District	✓			n/a	Town of Chester, SWCRPC
11-C	Revise Land Use Regulations in Southern R40 District	✓			n/a	Town of Chester, SWCRPC
12-C	Construct New Sidewalk From VT 11 to Green Mountain High School		✓		$450,000 per side	Town of Chester, SWCRPC, VTrans
13-C	Enhance Sidewalk Network in Chester Village		✓		Varies	Town of Chester, SWCRPC, VTrans
14-C	Construct New Gateway to Chester Village		✓		$15,000	VTrans, Town of Chester
15-C	Access Management Enhancements at Gas Station and Diner		✓		$50,000	Town of Chester, Property Owner, VTrans
16-C	Access Management Enhancements at City Slicker's Diner		✓		$10,000	Town of Chester, Property Owner, VTrans
17-C	Enhance Cell Phone Coverage Along Corridor		✓		Varies	Cellular Phone Providers
18-C	Install New Signal at VT 103/VT 11 East Intersection		✓		$250,000	VTrans, Town of Chester, SWCRPC
19-C	Identify Location for Intermodal Transfer Facility		✓		n/a	Green Mountain RR Freight Companies, VTrans, Chester and Rockingham, RPCs
20-C	Chester Triangle - Long Term Improvement			✓	$750,000	VTrans, Town of Chester, SWCRPC
21-C	Upgrade Rail for Freight & Passenger Service			✓	Varies	Green Mountain RR Freight Companies, VTrans, Chester and Rockingham, RPCs
22-C	Widen Shoulders on VT 103 North			✓	$2,000,000	VTrans, Town of Chester, SWCRPC
23-C	Construct New Footbridge Connector to High School			✓	$123,000	Town of Chester, Property Owners, High School
24-C	Construct New Footbridge Connector to High School			✓	$123,000	Town of Chester, Property Owners
25-C	Construct New Access Road Parallel to VT 103			✓	$3,500,000	VTrans, Town of Chester, SWCRPC

Figure 60: Recommendations - Town of Rockingham

ID	Recommendation	- Implementation - Short-Term (0-5 years)	Mid-Term (5-10 years)	Long-Term (10+ years)	Preliminary Cost Estimate (2009 $)	Potential Implementing Partners
1-R	Improve Access Management Along the Corridor	✓			-	Towns of Chester and Rockingham, SWCRPC, WRC
2-R	Revise Land Use Regulations to Enhance Development Pattern	✓			Varies	Towns of Chester and Rockingham, SWCRPC, WRC
3-R	Expand Public Transit Service on the Corridor	✓			$300,000 (new bus) $120,000 (annual operating)	Connecticut River Transit, Towns of Chester and Rockingham, SWCRPC, WRC
4-R	Enforce Speeds on VT 103	✓			Varies	State Police
5-R	Revise Land Use Regulations in Rockingham Meetinghouse District	✓			Varies	Town of Rockingham, WRC
6-R	Identify Location for Park and Ride	✓			$350,000	VTrans, Towns of Chester and Rockingham, SWCRPC, WRC
7-R	Establish an Access Management Memorandum of Agreement	✓			$5,000	VTrans, Towns of Chester and Rockingham, SWCRPC, WRC
8-R	Revise Land Use Regulations in Upper Bartonsville C/I(2) District	✓			Varies	Town of Rockingham, WRC
9-R	Sign Alternative Bicycle Route Parallel to VT 103	✓			$10,000	Towns of Chester and Rockingham, SWCRPC, WRC, VTrans
10-R	Enhance Cell Phone Coverage Along Corridor		✓		Varies	Cellular Phone Providers
11-R	Identify Location for Intermodal Transfer Facility		✓		Varies	Green Mountain RR Freight Companies, VTrans, Chester and Rockingham, RPCs
12-R	Improve Access into VT Country Store			✓	$75,000	Town of Rockingham, Property Owner, VTrans
13-R	Upgrade Rail for Freight & Passenger Service			✓	Varies	Green Mountain RR Freight Companies, VTrans, Chester and Rockingham, RPCs

5.3 Corridor Recommendation Details

This section presents a more detailed overview of each of the recommendations identified for the corridor. The recommendations presented below are sorted by Town (Chester then Rockingham) and implementation timeframe. For each recommendation, the following information is provided: Town, ID number, cost estimate, implementation timeline, and project overview.

5.3.1 Town of Chester Recommendations

1-C **Chester Triangle - Short Term Improvements**
Timeline: Short Term (1-5 years)
Preliminary Cost (2009 $): $100,000
Overview: Reconfigure the VT 103/VT 11/Maple Street intersection to better accommodate truck turns. The new alignment may expand onto abutting private property or involve a re-alignment of VT 11/VT 103 to take portions of the church property on the south side. A more focused planning effort specific to this intersection is recommended to identify a preferred realignment.

2-C **Improve Access Management Along the Corridor**
Timeline: Short Term (1-5 years)
Preliminary Cost (2009 $): n/a
Overview: The purpose of access management is to provide reasonable access to public highways from adjoining properties without sacrificing highway efficiency, safety or function. The benefits of access management include improved access to adjoining development, reduced accident rates, decreased congestion and travel times, and extended highway life. Better, and coordinated, access management is recommended in both local and regional plans, through the following changes:

- Update permit application requirements to obtain more detailed information about existing and proposed access points, internal circulation and trip generation rates

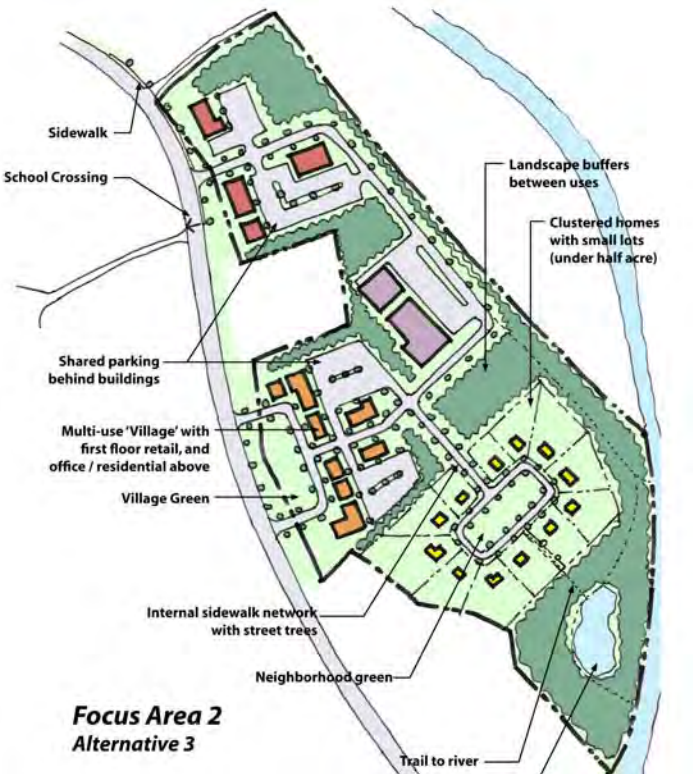
- Include provisions to refer applications for development for review and comment prior to the issuance of municipal land use permits and approvals
- Update local development regulations and highway ordinances to reference Vermont Agency of Transportation Access Management Program Guidelines (rev. 2005) (see Appendix M for an Access Management Bylaw Update Checklist)
- Consider the adoption of a "VT 103 Corridor Management Overlay District" (see Appendix D for sample language)

For more detail, see ***Appendix E***.

3-C **Encourage Extension of Village to Southern Commercial District**

Timeline: Short Term (1-5 years)
Preliminary Cost (2009 $): n/a
Overview: A primary goal of the Chester Town Plan is to "preserve the historical development pattern of mixed-use village areas surrounded by open land, agriculture, forestry and low-density residential use" (p.12). In order to achieve this, the following policy changes are recommended:

- Identify and plan for desired patterns and densities of development
- Rezone the Commercial District in the vicinity of the Green Mountain Union High School and existing neighborhoods as an expanded "Village East" district, with standards and uses that are consistent with the Commercial-Residential and Residential-20 Districts
- Allow commercial uses in this area that fit within a pedestrian context
- Allow mixed use buildings – buildings that house more than one principal use as allowed within the district – as conditional uses (rather than PUDs)
- Establish minimum building height requirements



- Reduce minimum lot size, frontage and setback requirements, and increase residential density and lot coverage requirements to promote traditional settlement patterns and "walkability"
- Limit direct vehicular access onto VT 103 by requiring shared access, parking, and cross-connections
- Support public transit service

- Establish basic site layout and design standards for new commercial development
- Delineate village "gateway" areas in the municipal plan

For more detail, see ***Appendix F***.

4-C **Revise Land Use Regulations to Enhance Development Pattern**

Timeline: Short Term (1-5 years)
Preliminary Cost (2009 $): n/a
Overview: Commercial development is now allowed along the entire length of the VT 103 corridor, in all but one zoning district, creating the potential for commercial strip development that is discouraged in both regional and municipal plans, and under related State planning goals. The visual and functional impacts of commercial (non-residential) development, however, can be mitigated to a certain extent through a combination of good access management and good site design.

The following recommendations are suggested to achieve these changes:

- Clearly define the purpose of each zoning district to establish the "character of the area"
- Re-evaluate basic design considerations inherent in lot size, setback, density and coverage requirements in all districts to reflect traditional or desired patterns of development
- Consider context-sensitive district design standards that apply to commercial development
- Consider the creation of one or more design review overlay districts
- Expand subdivision planning standards to include open spaces, bike/ped connections, etc.
- Expand site plan and/or conditional use criteria to address building and site design, parking layout, pedestrian accesses, landscaping, and other requirements.
- Expand planned unit development standards and requirements

For more detail, see ***Appendix G***.

5-C **Expand Public Transit Service on the Corridor**

Timeline: Short Term (1-5 years)
Preliminary Cost (2009 $): $300,000 (new bus), $120,000 (annual operating)

Overview: The Connecticut River Transit system (CRT) provides bus service to many towns in the lower Connecticut River Valley, but currently only has limited service along VT 103 west of I-91 in Chester or Rockingham. CRT has recently submitted a CMAQ grant application to initiate fixed route service on VT 103. Service could either run between Ludlow and Bellows Falls via Chester or provide a loop running from Chester to Springfield to Bellows Falls. Additional transit routes, services, and connections should be explored as needed. To better facilitate service along VT 103, logical stops should be identified and incorporated into the roadway cross-section as much as possible (e.g. pull-offs, shelter, etc.)

6-C **Enforce Speeds on VT 103**

Timeline: Short Term (1-5 years)
Preliminary Cost (2009 $): n/a
Overview: Vehicle speeds and the resulting noise impacts are an ongoing issue along the corridor. Enforcing posted speed limits is the best way to increase awareness and reduce vehicle speeds. With the State Police currently planning to vacate their barracks on the corridor, there may be reduced speed enforcement in the near future. To accommodate for the loss of the regular State Police presence, the Towns of Chester and Rockingham should discuss options for local police coverage along the corridor. A radar speed feedback sign may be considered as an opportunity to increase enforcement, if warranted by a VTrans speed study.

7-C **Identify Location for Park and Ride**

Timeline: Short Term (1-5 years)
Preliminary Cost (2009 $): $350,000

Overview: Park & Ride lots have been proven to be successful throughout Vermont, providing safe and well-maintained areas that encourage drivers to carpool or use public transit. Further assessment of the corridor should be conducted to determine the optimal location for a Park and Ride lot. The chosen location should provide easy access to high-traffic roadways, and should be safe and efficient to access. Coordination with public transit service (and potentially passenger rail service) as it expands along the corridor should also be taken into consideration.

8-C **Establish an Access Management Memorandum of Agreement**

Timeline: Short Term (1-5 years)
Preliminary Cost (2009 $): $5,000
Overview: Inter-governmental memoranda of understanding (MOUs) between state transportation agencies and local governments are used to coordinate state and local review of development along state highways. The Vermont Agency of Transportation is now considering agreements with municipalities and regional planning commissions for coordinated corridor and access management along state highways.

The following related strategies are recommended for consideration by the state, regional planning commissions and towns, but could also considered separately:

- Incorporate state agency application referral and notification requirements under zoning and subdivision regulations for all land development proposed along state highways
- Update local development regulations and highway ordinances to reference or incorporate applicable state access management standards
- Condition the issuance of state access permits upon the receipt of local permits and approvals
- Conduct joint, ongoing, local, regional and state corridor planning and project development efforts, coordinated through the regional planning commission
- Participate in joint local, regional and state efforts to finance and develop needed infrastructure improvements

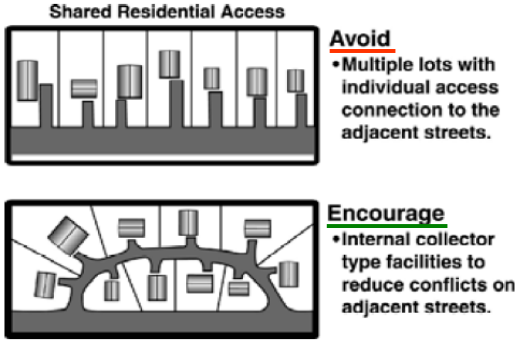
- Participate collectively and individually in state Act 250 proceedings

For a Draft Access Management MOU, see ***Appendix C***.

For more detail, see ***Appendix I***.

9-C **Access Management Improvements in Gassetts**
Timeline: Short Term (1-5 years)
Preliminary Cost (2009 $): n/a
Overview: To address identified safety concerns, VTrans Access Management Program Guidelines should be strictly applied to proposed development adjacent to the VT 10/VT 103 intersection the access plans. These design criteria include provision of a minimum horizontal separation between driveways, design of site driveways no wider than 40 feet, and encouraging shared access between adjacent lots.

10-C **Encourage Combined Access in Residential 80 District**
Timeline: Short Term (1-5 years)
Preliminary Cost (2009 $): n/a
Overview: To address concerns over difficult topographic constraints and limited sight distances, combined or shared driveways should be considered for any new development or redevelopment along VT 103 in the Residential 80 Zoning District north of Chester Village. To achieve this, the following zoning changes should be considered:



- Limit direct access to VT 103
- Consider change to "procedural waiver" provisions (from five-lot developments to two or three)
- Clarify that shared access will be required for subdivided lots
- Limit the type of commercial development allowed in the R-80 District

For more detail, see ***Appendix K***.

11-C **Revise Land Use Regulations in Southern R40 District**

Timeline: Short Term (1-5 years)

Preliminary Cost (2009 $): n/a

Overview: Chester's Residential-40 (R-40) District, which extends south of VT 103 from the High School to the Rockingham town line, sits across from Chester's Residential-80 (R-80) District. Current zoning allows for moderate density residential and commercial development, including commercial strip development fronting along the highway corridor.

Following build-out analyses under current zoning, three alternatives were explored. Of the three alternatives, conservation subdivision was the preferred alternative. Recommendations to achieve this include:

- Inventory and map significant natural, scenic and open space areas along the corridor; consider these areas for coordinated public open space protection
- Increase minimum lot size, frontage and setback requirements
- Limit the type and location of commercial development
- Encourage or require planned unit developments
- Limit direct access to VT 103

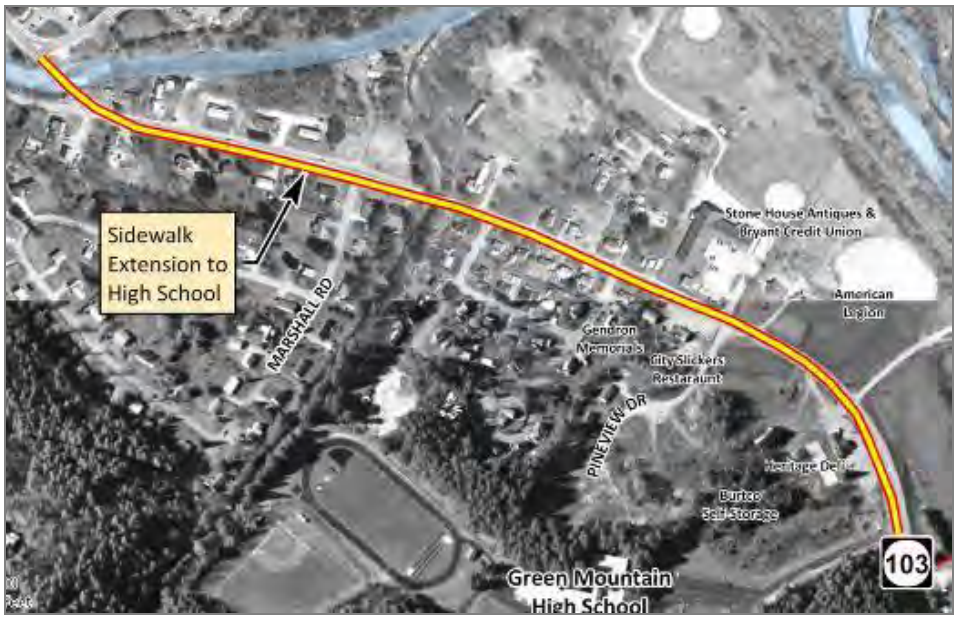
For more detail, see ***Appendix L***.

12-C **Construct New Sidewalk From VT 11 to Green Mountain High School**

Timeline: Medium Term (5-10 years)

Preliminary Cost (2009 $): $450,000 per side

Overview: Construct a new sidewalk from the Green Mountain High School to the VT 103/VT 11 intersection that will tie into the existing sidewalk system east of this intersection. Two VTrans bridge projects on VT 103 are planned to have sidewalks on the north side of the street; therefore this sidewalk extension should be completed first. If only the northern sidewalk is constructed, a crossing of VT103 to the GMHS would be needed (could be accommodated within Recommendation #14-C – Gateway)



13-C **Enhance Sidewalk Network in Chester Village**

Timeline: Medium Term (5-10 years)

Preliminary Cost (2009 $): n/a

Overview: The existing sidewalk network in Chester Village generally connects key areas of the village. However, there are sections of deteriorating sidewalks and curbs, as well as and important connectivity gaps. A thorough assessment of existing conditions should be conducted for the following issues: ADA accessibility compliance, critical gaps, lack of connectivity, condition, materials, and width.

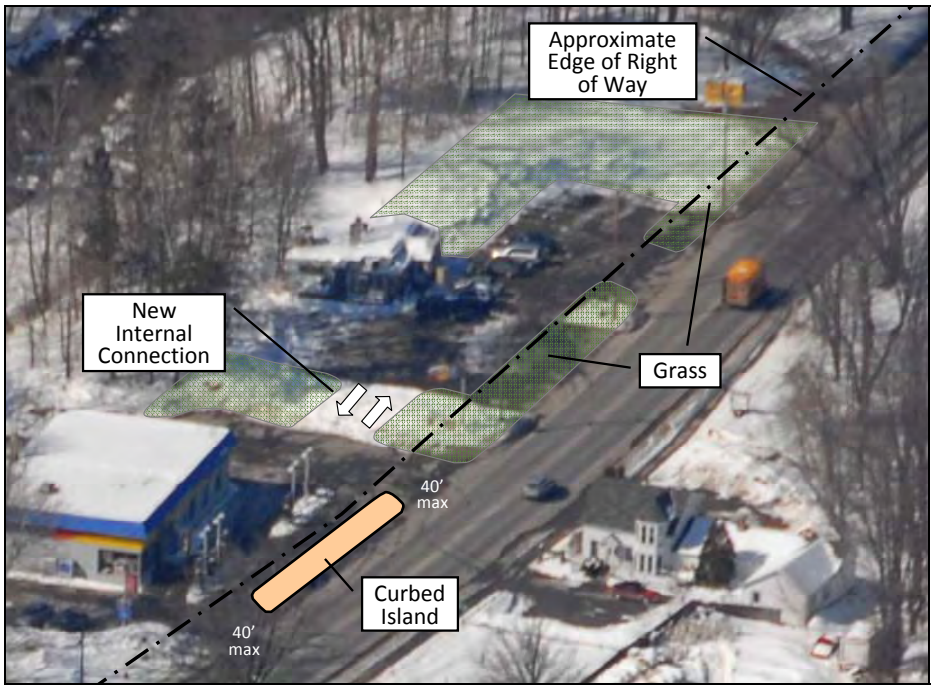
14-C **Construct New Gateways to Chester Village**

Timeline: Medium Term (5-10 years)
Preliminary Cost (2009 $): $15,000 per site
Overview: A gateway, which typically includes a welcome sign and landscaping and occasionally a transition in road cross-section, is an excellent way to inform drivers that they are entering a town or village setting. A primary goal of the gateway is to slow speeds by providing awareness and a transition from a high-speed rural arterial to a lower-speed village center.

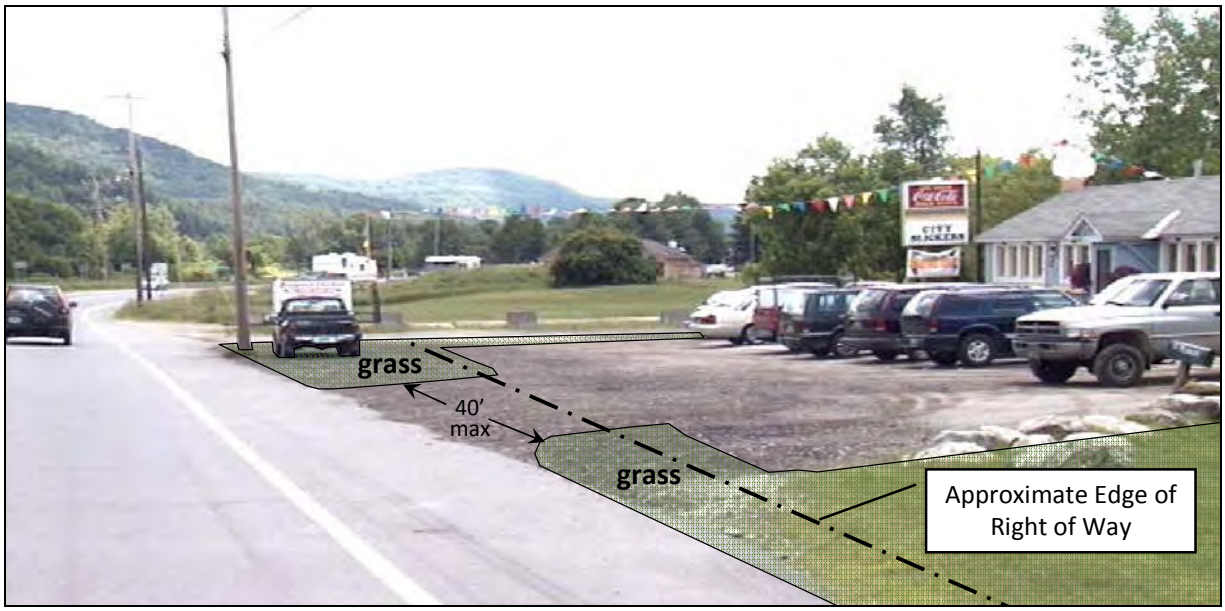
Several potential locations have been identified as potential locations for gateway installations. These sites include: 1) transition from the rural highway to "Village East" area proximate to the Green Mountain High School entrance, 2) transition into Chester Village east of Pleasant Street, and 3) transition from the rural highway into the Stone Village area north of Chester Village. Current VTrans restrictions on signs located within the State right-of-way may restrict the size and messaging that can be used on the gateway sign. An alternative approach would be to locate the gateway outside of the State right-of-way.

15-C **Access Management Enhancements at Gas Station and Diner**

Timeline: Medium Term (5-10 years)
Preliminary Cost (2009 $): $50,000
Overview: Site access at the Sunoco gas station and Country Girl Diner (located adjacent to the VT 103/VT 11 east intersection) is largely undefined, which increases the potential for vehicle conflicts. To enhance access management for these two sites, recommendations include adding curbed islands, creating an internal access between the two businesses, and defining driveways to be no more than 40 feet in width at the edge of the right-of-way (per VTrans access standards). These types of improvements would likely be required as part of an expansion or redevelopment of either site.



16-C **Access Management Enhancements at City Slicker's Diner**
Timeline: Medium Term (5-10 years)
Preliminary Cost (2009 $): $10,000
Overview: Similar to Recommendation #15-C, site access at the City Slicker's Diner in Chester is largely undefined. Narrowing the driveway width to no more than 40 feet at the edge of the right-of-way would help to reduce potential vehicle conflicts. These types of improvements would likely be required as part of an expansion or redevelopment of the site.



17-C **Enhance Cell Phone Coverage Along Corridor**
Timeline: Medium Term (5-10 years)
Preliminary Cost (2009 $): n/a
Overview: Opportunities to enhance cellular phone coverage along the VT 103 corridor should be considered to enhance safety related to disabled vehicles and vehicular collisions.

18-C **Install New Signal at VT 103/VT 11 East Intersection**
Timeline: Medium Term (5-10 years)
Preliminary Cost (2009 $): $250,000
Overview: A new traffic signal is warranted at the VT 103/VT 11 (Pleasant Street) intersection under current traffic volumes. The signal should be timed appropriately to efficiently process both peak- and non-peak traffic periods and should include a pedestrian crossing phase. Based on analysis conducted for this Corridor Management Plan, no additional turn lanes are necessary to efficiently process both current and projected traffic volumes. The signal timings and intersection configuration should be analyzed more closely prior to moving forward with implementation.

19-C **Identify Location for Intermodal Transfer Facility**

Timeline: Medium Term (5-10 years)

Preliminary Cost (2009 $): n/a

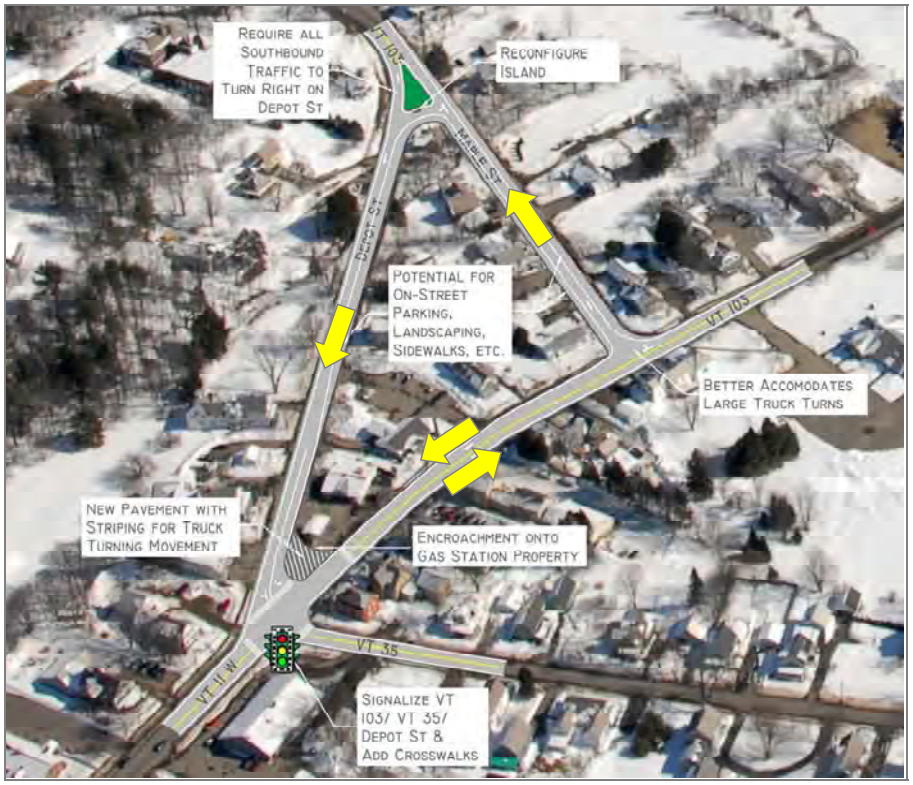
Overview: As an initial step, an assessment should be conducted to determine the need for an intermodal transfer facility along the corridor, given existing and project freight traffic flows. If found to be needed, a comprehensive site assessment should be conducted for a new intermodal transfer facility along the corridor. The transfer facility would serve to shift freight movement from trucks to rail and would foster significant economic development opportunities.

20-C **Chester Triangle - Long Term Improvement**

Timeline: Long Term (10+ years)

Preliminary Cost (2009 $): $750,000

Overview: Traffic signals, roundabouts, all-way stops, and other alternatives were explored to reduce congestion and improve circulation at the Chester Triangle. The best operational results came from an alternative that included a one-way circulation pattern on Maple and Depot Streets and a traffic signal at the VT 103/VT 11/VT 35/Depot Street intersection. This solution includes the opportunity for traffic calming via on-street parking or landscaping, and had the least amount of undesirable impacts. A more detailed assessment of alternatives is recommended as the next step in development. It should be noted that, per Okemo Mountain permitting requirements, a traffic control officer is posted at the VT 103/VT 11/Maple Street intersection during peak times. This operation currently operates effectively. This long-term recommendation should be considered if peak traffic grows to the point where the traffic officer control is no longer effective.



21-C **Upgrade Rail for Freight & Passenger Service**

Timeline: Long Term (10+ years)
Preliminary Cost (2009 $): n/a
Overview: The Green Mountain Railroad line from Bellows Falls to Rutland is classified as a Federal Railroad Administration Class 2 facility with top freight speeds of 25 miles per hour and top passenger train speeds of 30 miles per hour. Given the potential to shift truck traffic onto freight rail and commuter and tourist traffic onto passenger rail, upgrades should be considered to the rail track, bed, and alignment to increase travel speeds. As of the drafting of this report, VTrans is currently updating their State Rail Plan, which will likely include specific recommendations for this section of rail.

22-C **Widen Shoulders on VT 103 North**

Timeline: Long Term (10+ years)
Preliminary Cost (2009 $): $2,000,000
Overview: Shoulder widths on VT 103 north of the Chester Stone Village are 3 feet or less. Ideal shoulder width (based on the Vermont State Standards) is 8 feet, given current traffic volumes, speeds, and roadway functional class. These wider shoulders would also offer more space for bicycle and pedestrian travel. However, there are various constraints in this area, including steep slopes, ledge, and right-of-way. Therefore, narrower shoulders should be considered as part of a more comprehensive assessment of shoulder widening in this area.

23-C **Construct New Footbridge Connector to High School**
Timeline: Long Term (10+ years)
Preliminary Cost (2009 $): $123,000
Overview: A new pedestrian footbridge should be constructed to connect the Marshall Road neighborhood with the Green Mountain High School. This footbridge would provide significantly increased connectivity between the residential neighborhood and the High School. The specific alignment of the footbridge would need to be examined more closely to determine construction costs, and private property impacts.

24-C **Construct New Footbridge Connector to High School**
Timeline: Long Term (10+ years)
Total Score: 9
Preliminary Cost (2009 $): $123,000
Overview: A new pedestrian footbridge should be constructed to connect the Marshall Road neighborhood with the Mountain View neighborhood. The specific alignment of the footbridge would need to be examined more closely to determine construction costs, and private property impacts.

25-C **Construct New Access Road Parallel to VT 103**
Timeline: Long Term (10+ years)
Preliminary Cost (2009 $): $3,500,000
Overview: Due to the significant development potential in the area around Zachary's Pizza in Chester Village, any future development proposals for this area should consider a new access road paralleling VT 103 with potential connections to VT 11 (Pleasant Street) and VT 103 (Maple Street). This secondary access road would increase traffic circulation opportunities and serve to reduce the level of traffic generated directly onto VT 103 west of Pleasant Street.

5.3.2 Town of Rockingham Recommendations

1-R **Improve Access Management Along the Corridor**
Timeline: Short Term (1-5 years)
Preliminary Cost (2009 $): n/a
Overview: The purpose of access management is to provide reasonable access to public highways from adjoining properties without sacrificing highway efficiency, safety or function. The benefits of access management include improved access to adjoining development, reduced accident rates, decreased congestion and travel times, and extended highway life. Better, and coordinated, access management is recommended in both local and regional plans, through the following changes:

- Update permit application requirements to obtain more detailed information about existing and proposed access points, internal circulation and trip generation rates
- Include provisions to refer applications for development for review and comment prior to the issuance of municipal land use permits and approvals
- Update local development regulations and highway ordinances to reference Vermont Agency of Transportation Access Management Program Guidelines (rev. 2005) (see Appendix M for an Access Management Bylaw Update Checklist)
- Consider the adoption of a "VT 103 Corridor Management Overlay District" (see Appendix D for sample language)

For more detail, see ***Appendix E***

2-R **Revise Land Use Regulations to Enhance Development Pattern**
Timeline: Short Term (1-5 years)
Preliminary Cost (2009 $): n/a
Overview: Commercial development is now allowed along the entire length of the VT 103 corridor, in all but one zoning district, creating the potential for commercial strip development that is discouraged in both regional and municipal plans, and under related State planning goals. The visual and functional impacts of commercial (non-residential) development, however, can be mitigated to a certain extent through a combination of good access management and good site design.

The following recommendations are suggested to achieve these changes:

- Clearly define the purpose of each zoning district to establish the "character of the area"

- Re-evaluate basic design considerations inherent in lot size, setback, density and coverage requirements in all districts to reflect traditional or desired patterns of development
- Consider context-sensitive district design standards that apply to commercial development
- Consider the creation of one or more design review overlay districts
- Expand subdivision planning standards to include open spaces, bike/ped connections, etc.
- Expand site plan and/or conditional use criteria to address building and site design, parking layout, pedestrian accesses, landscaping, and other requirements.
- Expand planned unit development standards and requirements

For more detail, see ***Appendix G***.

3-R **Expand Public Transit Service on the Corridor**

Timeline: Short Term (1-5 years)
Preliminary Cost (2009 $): $300,000 (new bus), $120,000 (annual operating)

Overview: The Connecticut River Transit system (CRT) provides bus service to many towns in the lower Connecticut River Valley, but currently only has limited service along VT 103 west of I-91 in Chester or Rockingham. CRT has recently submitted a CMAQ grant application to initiate fixed route service on VT 103. Service could either run between Ludlow and Bellows Falls via Chester or provide a loop running from Chester to Springfield to Bellows Falls. Additional transit routes, services, and connections should be explored as needed. To better facilitate service along VT 103, logical stops should be identified and incorporated into the roadway cross-section as much as possible (e.g. pull-offs, shelter, etc.)

4-R **Enforce Speeds on VT 103**

Timeline: Short Term (1-5 years)
Preliminary Cost (2009 $): n/a
Overview: Vehicle speeds and the resulting noise impacts are an ongoing issue along the corridor. Enforcing posted speed limits is the best way to increase awareness and reduce vehicle speeds. With the State Police currently planning to vacate their barracks on the corridor, there may be reduced speed enforcement in the near future. To accommodate for the loss of the regular State Police presence, the Towns of Chester and Rockingham should discuss options for local police coverage along the corridor. A radar speed feedback sign may be considered as an opportunity to increase enforcement, if warranted by a VTrans speed study.

5-R **Revise Land Use Regulations in Rockingham Meetinghouse District**

Timeline: Short Term (1-5 years)

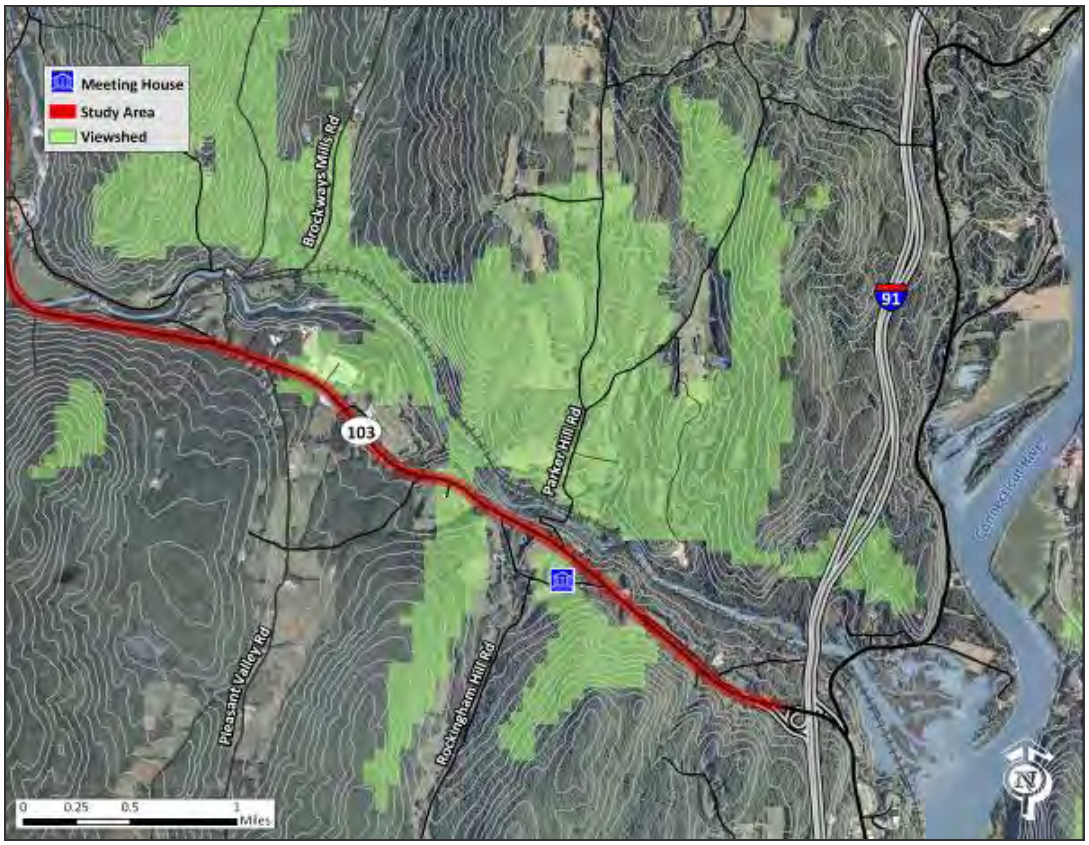
Preliminary Cost (2009 $): n/a

Overview: In order to protect scenic resources, including rural landscape as viewed from the Rockingham Meeting House and the VT 103 corridor, it is recommended that the Town of Rockingham consider the following:

- Conduct an inventory and visual analysis of scenic resources within the overall viewshed area
- Update review criteria to reference and require the protection of designated scenic resources
- Consider the adoption of a "Scenic Resource Overlay District," which could limit or condition development, specify design standards, require utilities to be buried, or other requirements
- A "transfer of development rights" (TDR) program, to provide compensation to affected landowners within a scenic overlay district.

For more detail, see ***Appendix H***.

Figure 61: Preliminary Meeting House Viewshed Assessment (see Appendix H for more detail)



6-R **Identify Location for Park and Ride**

Timeline: Short Term (1-5 years)
Preliminary Cost (2009 $): $350,000

Overview: Park & Ride lots have been proven to be successful throughout Vermont, providing safe and well-maintained areas that encourage drivers to carpool or use public transit. Further assessment of the corridor should be conducted to determine the optimal location for a Park and Ride lot. The chosen location should provide easy access to high-traffic roadways, and should be safe and efficient to access. Coordination with public transit service (and potentially passenger rail service) as it expands along the corridor should also be taken into consideration.

7-R **Establish an Access Management Memorandum of Agreement**

Timeline: Short Term (1-5 years)
Preliminary Cost (2009 $): $5,000
Overview: Inter-governmental memoranda of understanding (MOUs) between state transportation agencies and local governments are used to coordinate state and local review of development along state highways. The Vermont Agency of Transportation is now considering agreements with municipalities and regional planning commissions for coordinated corridor and access management along state highways.

The following related strategies are recommended for consideration by the state, regional planning commissions and towns, but could also considered separately:

- Incorporate state agency application referral and notification requirements under zoning and subdivision regulations for all land development proposed along state highways
- Update local development regulations and highway ordinances to reference or incorporate applicable state access management standards
- Condition the issuance of state access permits upon the receipt of local permits and approvals
- Conduct joint, ongoing, local, regional and state corridor planning and project development efforts, coordinated through the regional planning commission
- Participate in joint local, regional and state efforts to finance and develop needed infrastructure improvements
- Participate collectively and individually in state Act 250 proceedings

For a Draft Access Management MOU, see ***Appendix C***.

For more detail, see ***Appendix I***.

8-R **Revise Land Use Regulations in Upper Bartonsville C/I(2) District**

Timeline: Short Term (1-5 years)

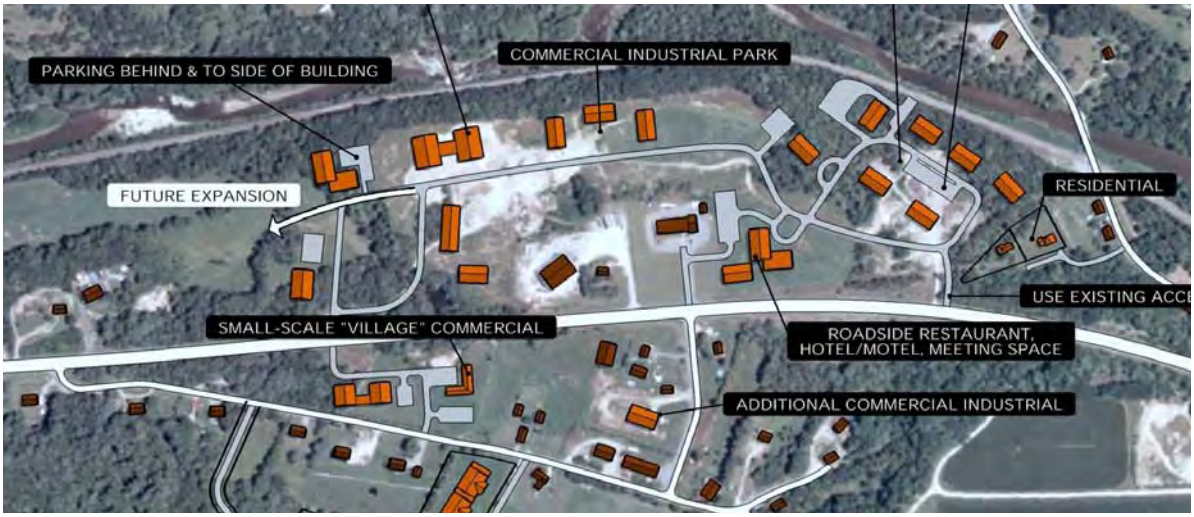
Preliminary Cost (2009 $): n/a

Overview: Upper Bartonsville is currently zoned Commercial-Industrial (C-I) along much of Route 103 extending to the Chester Town line, and is bordered by the Rural Residential (RR-1) District along a portion of VT103 to the west. These zoning districts allow for a variety of potentially incompatible uses, if developed in close proximity – including large scale, vehicle-oriented commercial and industrial development in the C-I district and residential and limited commercial development across the highway in the RR-1 district. Many of the uses in the C-I District are "permitted" uses that require site plan but not conditional use review – limiting the town's ability to evaluate associated traffic and highway impacts. Planned unit developments, including planned residential developments, are allowed in the RR-1 District, but not in the C-I District – in effect precluding planned industrial or business park development. Minimum lot areas and required setbacks also vary between the districts.

The following changes are recommended:

- Promote nodal, clustered highway development
- Prohibit frontage development and limit direct access to VT 103
- Require access improvements associated with the redevelopment of existing parcels
- Require conditional use review and traffic impact studies for large developments
- Specify, define and limit which commercial and industrial uses are allowed
- Allow and develop regulations for planned unit developments (PUDs)

For more detail, see ***Appendix J***.

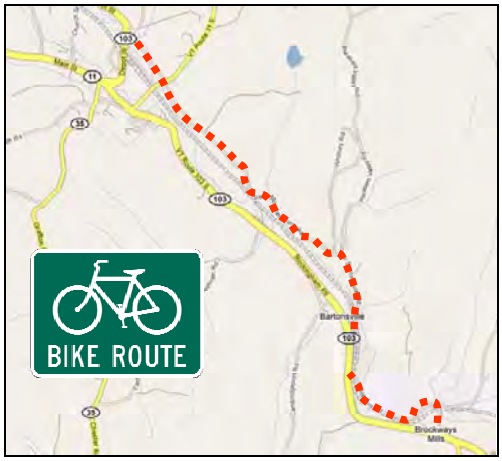


9-R **Sign Alternative Bicycle Route Parallel to VT 103**

Timeline: Short Term (1-5 years)

Preliminary Cost (2009 $): $10,000

Overview: An alternate bicycle route should be designated that runs parallel to VT 103 along portions of Brockway Mills Road, Williams Road, Lower Bartonsville Road, and the Green Mountain Turnpike. This alternate routing would provide an enhanced experience for interested cyclists and allow cyclists an alternative to traveling on VT 103.



10-R **Enhance Cell Phone Coverage Along Corridor**

Timeline: Medium Term (5-10 years)

Preliminary Cost (2009 $): n/a

Overview: Opportunities to enhance cellular phone coverage along the VT 103 corridor should be considered to enhance safety related to disabled vehicles and vehicular collisions.

11-R **Identify Location for Intermodal Transfer Facility**

Timeline: Medium Term (5-10 years)

Preliminary Cost (2009 $): n/a

Overview: As an initial step, an assessment should be conducted to determine the need for an intermodal transfer facility along the corridor, given existing and project freight traffic flows. If found to be needed, a comprehensive site assessment should be conducted for a new intermodal transfer facility along the corridor. The transfer facility would serve to shift freight movement from trucks to rail and would foster significant economic development opportunities.

12-R **Improve Access into VT Country Store**

Timeline: Long Term (10+ years)
Preliminary Cost (2009 $): $75,000
Overview: The location of the Vermont Country Store was identified as a safety concern by the project steering committee. Concerns were expressed over potential conflicts with vehicles stopped on VT 103 waiting to turn left into the site. However, the most recent 5 years of crash data show one reported vehicle crash in the vicinity of the site driveway. Current traffic volumes do not warrant new turn lanes on VT 103. However, as expansion continues at the Vermont Country Store, the need for a turn lane and/or improved advance warning signage on VT 103 should continue to be investigated.

13-R **Upgrade Rail for Freight & Passenger Service**

Timeline: Long Term (10+ years)
Preliminary Cost (2009 $): n/a
Overview: The Green Mountain Railroad line from Bellows Falls to Rutland is classified as a Federal Railroad Administration Class 2 facility with top freight speeds of 25 miles per hour and top passenger train speeds of 30 miles per hour. Given the potential to shift truck traffic onto freight rail and commuter and tourist traffic onto passenger rail, upgrades should be considered to the rail track, bed, and alignment to increase travel speeds. As of the drafting of this report, VTrans is currently updating their State Rail Plan, which will likely include specific recommendations for this section of rail.

APPENDIX A

Meeting Agendas, Public Input, and Meeting Materials

VT Route 103 Corridor Management
Steering Committee
November 3, 2008, 1:00 – 3:00pm
Rockingham Town Offices

I. Introductions

II. Review Scope of Work and Project Timeline

III. Discussion of Project Vision and Goals

IV. Discussion of Transportation and Land Use Issues

V. Next Meeting

<u>Steering Committee Members</u>

Town of Rockingham
Ellen Howard – Planning-Zoning Administrator
Ann DiBernardo – Selectboard member
Alan LaCombe – Planning Commission member
Bill Ackerman – VT Country Store Representative
David Boylan – Woodland Tool
Fred Bullock - WR Transportation Committee Chair, Regional Planning Commissioner

Town of Chester
Julie Hance – Zoning Administrator
Dick Jewett – Selectboard Chair
Tom Bock – Planning Commission Chair, Local Business Owner, Regional Planning Commissioner
Bruce McEnaney – SWC Transportation Advisory Committee, Black River Produce

Matt Mann – Windham Regional Commission
Jason Rasmussen – Southern Windsor County Regional Planning Commission
Costa Pappis – VTrans
Sue Clark – VTrans
David Saladino – Senior Project Manager, Resource Systems Group, Inc.

VT Route 103 Corridor Management Plan (CMP)
Steering Committee Kick-Off Meeting
November 3, 2008

The VT Route 103 CMP kick-off meeting was held on the above date in the Rockingham Town Offices in Bellows Falls. The discussion included the following key points:

- We don't want VT 103 to become a Putney Road (in terms of commercial strip development and poor access management)
- Conflicts as a local road vs. major transportation route
- VT Country Store, country club, industrial park (Rockingham), North Springfield Industrial Park are all major traffic (and truck) generators
- VT Country Store:
    - about 1K visitors/day during peak season
    - considering dvlp a restaurant or bringing a bakery back to this location; also possibly orchard
    - high accident location
    - turning lane or signage improvements might help
    - own land on both sides of the street so ROW not an issue for turning lanes
    - inadequate advance signage
- Rockingham Meeting House – historic landmark in historic village; concern over potential development affecting the character around the historic site
- Sobelesky's Farm (Rockingham) – chance of development
- High speeds - is this a concern throughout the entire corridor or just in certain sections?
- Driver inattention
- During ski season – significantly more traffic, run stop sign at I-91 off-ramps
- Maple Street (Chester) intersection – tight turn is the major bottleneck
    - Ideal solution: buy property and widen intersection
    - ROW issues: 3 unit apartment currently occupied
- Poor sight distances to the left at SB I-91 off-ramp and turning off of VT 11 (Pleasant St) onto VT 103 due to bridge railing
- No cell phone service (for emergencies)
- Limited areas to pass
- State Police barracks are moving in 1-2 years / lack of police presence will encourage more speeding
- Chester narrow bridge (BR 8) is a problem, but is a scheduled project
- Chester – many driveways with the potential for many more
- Access management is needed in commercial district at south end of Chester Village
- Truck traffic is a concern for Chester residents living along the roadway (fearful of future truck traffic)
- Tourist-oriented businesses vs. local anti-truck sentiment
- Elm Street (Chester) is a bypass used by ski tourists

- Seasonal traffic control at intersection of VT 103/11 West helps with winter ski traffic congestion (Friday night, Sunday afternoon)
- Other local bypasses:
    - Lower Bartonsville Rd (Rock.)
    - Parker Hill Rd (Rock.)
    - Church Street (Chester)
- No shoulders for bicycles on VT 103 north of Chester Village
- Consult with the transit provider regarding establishing a public transit route within the corridor.
- Next mtg: Dec 1, 1 PM, Chester

VT Route 103 Corridor Management Plan (CMP)
Steering Committee Kick-Off Meeting
December 1, 2008

Location: Chester Town Offices
Date: December 1, 2008
Attendees: Julie Hance (Town of Chester), Dick Jewett (Town of Chester), Tom Bock (Town of Chester), Matt Mann (WRC), Jason Rasmussen (SWCRPC), Costa Pappis (VTrans), Clay Poitras (VTrans), David Saladino (RSG), Del Thompson (VTrans), Ellen Howard (Town of Rockingham), Ann DiBernardo (Town of Rockingham), Bill Ackerman (VT Country Store), and Fred Bullock(WRTransportationCommittee)

The discussion included the following key points:

- An amendment to the November 3rd meeting notes regarding VTrans' current access management process and how the zoning administrators for each town could receive a copy of each access permit issued. Del Thompson addressed this issue and will discuss this with his boss and see if this is possible.
- Hand-outs: Existing Conditions and Critical Issues
    - Slide 3 - Issues/Concerns – from a land use perspective, control strip development and develop an access management MOA. From a transportation standpoint, promote sound access management policies, slow down traffic, and look into transit needs.
    - Slide 4 – Rockingham Zoning – Regarding the commercial districts, there could be more accesses to VT103 at the Rockingham/Chester town line, around the interstate interchange, and possibly around the VT Country Store. The expectation is not to have a shopping mall developed, rather small commercial projects; including some expansion to the industrial park/truck facility. Currently there is one pending ACT 250 permit, the T/R gravel pit on Brockways Mills Rd. Other discussion included what the future use of the Police barracks might be.
        - Ellen Howard's comments via e-mail, after the meeting:
          The Commercial-Industrial zones nearer to I-91: With the exception of one gasoline station, these areas remain undeveloped. The only other use is a small food cart use. When further development occurs, there may be opportunity to have access points off town highways, rather than Rte. 103, for both C-I areas. The Town and Vtrans will need to work closely to see if this can be done as any developer will more likely want access off Rte. 103.
          The Commercial-Industrial zone near the Chester town line. There is some vacant land in this area also. Some of it is located between old Rte. 103 (now Upper Bartonsville Rd.) and current Rte. 103. Again, access could be off the Town highway. However, one of the property owners I spoke with several years ago said he would want access off Rte. 103 and that an old field access existed already.
          Other C-I land in this area is developed, but the uses, in general, do not generate significant traffic. Different uses may change this.

          Transport Park area Commercial-Industrial zone. The Planning Commission has, in the past, discussed expanding the C-I zone in this

area. It is not clear at this point whether that will be brought up again, soon. The Commission is aware that most of the Rockingham Industrial Park area on Rte. 5 is full - with only one vacant lot left. Any consideration of C-I zone expansion should be done only after access management issues are defined.

- Slide 5 – Chester Zoning – The Town Plan is currently being updated. The Chester Planning Commission is rethinking how growth should occur in Chester, and is considering expanding the R-C zoning district. They anticipate updating the Chester Zoning Bylaws after completing the Town Plan update this spring.

  The current Town Plan designates VT Route 103 south of the village for future commercial development. A proposal to expand the Commercial zoning district in that area was voted down recently. The Planning Commission currently does not want to see that change made.

  A recent proposal to expand the O'Neil quarry (next to the Green Mountain High School) was denied an Act 250 permit.

  VT Route 103 South may experience future commercial growth between VT Route 11 East and Putney Pasta (conversion of residential to commercial uses, expanded commercial uses, limited developing of vacant lands). The rest of the corridor in Chester is likely to experience residential growth. Future development along VT Route 103 North is constrained by the Williams River.

- Slides 7 and 8 – Corridor traffic volumes and speeds – Since 1994 there has been a steady increase in the traffic volumes, which is higher than the states' average for this section of road. Speeding is an issue in both towns. The 85th percentiles were roughly 10mph over the posted speed limits.
- Slides 9 and 10 – Vehicle Crashes – In Rockingham, the state crash data (2003-2007) showed a handful of crashes in front of the VT Country Store and a dozen around the interstate interchange. There is concern that the data shows crashes spread evenly over the entire corridor. Chester has a HCL at the intersections of VT103 and VT11 East as well as VT 103 and VT 11 West. Another intersection of concern, having 9 crashes, is VT103 and VT10. The freight train queuing traffic in Chester-Depot, on a daily basis, was discussed as well.
- Slide 12 – Vision for Corridor - From a land use perspective in Rockingham, small commercial and some residential development. In Chester, incorporating more roadside development and converting homes to commercial use. From a transportation perspective throughout the entire corridor, implementing good access management guidelines and beautifying the corridor with landscaping. Sidewalks that connect the village of Chester with the high school are desirable.

- **Next Meeting: February 2nd at the Rockingham Town Offices, Bellows Falls**

VT Route 103 Corridor Management Plan

Steering Committee

February 2nd, 2009, 1:00 – 3:00pm
Rockingham Town Office Meeting Room

AGENDA

I. Overview of Preliminary Corridor Land Use Build-out Assessment

II. Overview of Land Use & Access Management Regulations

III. Discuss Approach to Future Transportation & Land Use Scenarios

IV. Overview of Detailed Crash Data *[Time Permitting]*

V. Plan for Upcoming Public & Steering Committee Meetings

VI. Next Meeting *[March 2nd]*

Steering Committee Members

Town of Rockingham
Ellen Howard – Planning-Zoning Administrator
Ann DiBernardo – Selectboard member
Alan LaCombe – Planning Commission member
Bill Ackerman – VT Country Store Representative
David Boylan – Woodland Tool
Fred Bullock - WR Transportation Committee Chair, Regional Planning Commissioner

Town of Chester
Julie Hance – Zoning Administrator
Dick Jewett – Selectboard Chair
Tom Bock – Planning Commission Chair, Local Business Owner, Regional Planning Commissioner
Bruce McEnaney – SWC Transportation Advisory Committee, Black River Produce

Technical Staff
Matt Mann – Windham Regional Commission
Jason Rasmussen – Southern Windsor County Regional Planning Commission
Costa Pappis – VTrans
Sue Clark – VTrans
David Saladino – Senior Project Manager, Resource Systems Group, Inc.

VT Route 103 Corridor Management Plan (CMP)
Steering Committee Meeting
February 2, 2009

Location: Rockingham Town Offices
Date: February 2, 2009
Attendees: Julie Hance (Town of Chester), Dick Jewett (Town of Chester), Tom Bock (Town of Chester), Matt Mann (WRC), Jeff Nugent (WRC), Jason Rasmussen (SWCRPC), Costa Pappis (VTrans), Jennifer Royer (VTrans), David Saladino (RSG), Amanda Clancy (RSG), Sharon Murray (Front Porch), Ellen Howard (Town of Rockingham), Bill Ackerman (VT Country Store), Alan LaCombe (Town of Rockingham) and Fred Bullock(WR Transportation Committee)

The discussion included the following key points:

- Amanda Clancy summarized the more detailed crash data along the corridor
- Jeff Nugent discussed the build out analysis methodology and process
    - WRC conducted the build out analysis for Rockingham, SWCRPC for Chester
    - WRC and SWCRPC coordinated together and with RSG
    - Used the Community Build Out Tool developed by Addison County RPC
    - At the most basic level a build out calculates potential future growth based on available GIS data: existing parcels, existing buildings, existing zoning (district boundaries, minimum lot size, allowable uses).
    - The analysis can be refined based on natural resource constraints, minimum frontage requirements, existing water and sewer service areas, etc.
    - A basic build out analysis was conducted in order to give a rough estimate of the total future development potential along the corridor. In addition, the results will also help the steering committee to identify areas along the corridor where future growth is most likely and/or may result in traffic or access management concerns.
- Jason Rasmussen presented the basic build out results for Chester
    - Map 1 depicts existing conditions: parcels, zoning district boundaries & buildings
    - Map 2 shows the results of the basic build out – total potential new units shown in red
    - Map 3 shows natural resource constraints over the potential new units in order to bring some reality to where development is more feasible. The natural resource constraints include ponds, wetlands, floodplains/floodway areas, publicly owned lands, and slopes over 25% grade.
    - The following areas show significant potential growth but are limited by environmental or topographic constraints:
        - village – shows a lot of in-fill development, but unlikely in the intensity shown by the build out

        - VT 103 north – future growth is greatly limited by the Williams River, floodplains and steep slope areas
        - Gassetts is restricted by the Williams River, floodplain, railroad and limited area for new growth
- Jeff Nugent presented the basic build out results for Rockingham
    - <u>Existing Conditions</u>
        - existing structures
        - parcels
        - zoning districts

    Much of the least-developed areas of the corridor are Rural Residential 1 (one acre). These areas contain a good deal of vacant land.

    - <u>Builout Conditions</u>
        - existing structures
        - poentail new buildings (from buildout)
        - parcels

    Buildout analysis is based on acreage requirements only. With the exception of several small parcels (generally below 2 acres; below 4 acres near Old Rockingham Village), zoning lot minimums still permit additional development, on most parcels of many units. Commercial development could be seen on small and medium-sized residential parcels could be converted to commercial uses.

    - <u>Natural Constraints</u>
        - existing structures
        - poentail new buildings (from buildout)
        - parcels
        - public/conservation land
        - Floodplain, wetlands, slopes, greater than 25%

    Many parcels in the corridor do not have direct access to Route 103; for other parcels, access is limited due to severe constraints. Several additional maps were made to show new development access potential based on frontage, constraints, and build-out.
- Sharon Murray presented her analysis of town plans and land use regulations as detailed in her handout
- Small group discussions
    - Chester – the Chester representatives met separately and identified areas upon which to focus the build out next steps and visual analysis efforts
        - Focus Area 1 – "The Triangle" – traffic analysis of the intersection of Main Street/Maple Street, Main Street/Depot Street, Maple Street/Depot Street; identify improvements for intersection performance and truck turning movements, as well as access management options for Jiffy Mart.
        - Focus Area 2 – Chester village east – investigate build out potential, visual analysis of access management options for existing/future conditions

        - Focus Area 3 – R40 District along VT 103 South (high school to town line) – investigate increasing minimum lot sizes and/or frontage, reconsider allowed uses in this district, visual analysis of growth potential under existing conditions, possible zoning changes and/or access management option.
    - Rockingham – the Rockingham representatives met separately and identified areas upon which to focus the build out next steps and visual analysis efforts
        - Focus Area 1 – Meeting House & VT Country Store – potential for development at Country Store & Commerce Park; Preserve historic character around meeting house; potential for residential development on large parcels
        - Focus Area 2 – Upper Bartonsville – potential for residential & commercial development; examine list of permitted uses; potential overlay district for access onto Upper Bartonsville Road; historic village center; development potential at police barracks and town gravel pit.

- **Next Meeting: April 6th at the Chester Town Offices**

VT Route 103 Corridor Management Plan

Steering Committee

April 6th, 2009, 1:00 – 3:00pm
Chester Town Office Meeting Room

AGENDA

I. Comments on Existing Conditions Assessment

II. Discuss Approach to Future Transportation & Land Use Scenarios

III. Present Future Traffic Assessment and Focus Area Graphics

IV. Plan for Upcoming Public Meetings
   a. *Separate meetings in Chester & Rockingham*
   b. *Location & date(s)*
   c. *Potential to combine with DRB, Planning Commission, Selectboard*

Steering Committee Members

Town of Rockingham
Ellen Howard – Planning-Zoning Administrator
Ann DiBernardo – Selectboard member
Alan LaCombe – Planning Commission member
Bill Ackerman – VT Country Store Representative
David Boylan – Woodland Tool
Fred Bullock - WR Transportation Committee Chair, Regional Planning Commissioner

Town of Chester
Julie Hance – Zoning Administrator
Dick Jewett – Selectboard Chair
Tom Bock – Planning Commission Chair, Local Business Owner, Regional Planning Commissioner
Bruce McEnaney – SWC Transportation Advisory Committee, Black River Produce

Technical Staff
Matt Mann – Windham Regional Commission
Jason Rasmussen – Southern Windsor County Regional Planning Commission
Costa Pappis – VTrans
Sue Clark – VTrans
David Saladino – Senior Project Manager, Resource Systems Group, Inc.

VT Route 103 Corridor Management Plan (CMP)
Steering Committee Meeting
April 6, 2009

Location: Chester Town Offices
Date: April 6, 2009
Attendees: Julie Hance (Town of Chester), Dick Jewett (Town of Chester), Tom Bock (Town of Chester), Matt Mann (WRC), Jason Rasmussen (SWCRPC), Costa Pappis (VTrans), Susan Clark (VTrans), Del Thompson (VTrans), Joe Segale (RSG), Amanda Clancy (RSG), Ellen Howard (Town of Rockingham), Alan LaCombe (Town of Rockingham), Lynne Reed (Chester Economic Development Committee), William Lindsay (Chester Economic Development Committee), and Ann DiBernardo (Rockingham Selectboard)

The discussion included the following key points:

- Joe Segale introduced the group and summarized the current project timeline.
- Amanda Clancy discussed the future traffic volume assumptions, LOS and Queues, noting that traffic congestion and queues get significantly worse in 2030 at the three intersections of the Chester Triangle and the VT 103/VT 11East intersection
- Amanda Clancy discussed the first focus area: Chester Triangle. She highlighted difficult truck turning movements, failing LOS intersections, extensive queues, and access management opportunities. Various mitigation strategies that were analyzed were explained, and the partial one-way circulation pattern was presented. Signal Warrants were also discussed.
    - The group wanted to add a second alternative: purchasing the existing house on the Southeast corner of the VT 103/VT 11/Maple St Intersection to create a wider lane for truck turning movements. It was generally believed that this would be a less expensive alternative.
    - Some felt that the one-way solution just shifted the problem from the existing intersection to the VT 103/VT 11W/VT 35/Depot St Intersection.
    - The option of restricting Depot Street access to local traffic only, thereby directing all traffic through the VT 103/Maple St/VT 11 intersection and improving this intersection, was suggested.
    - Re-routing trucks to use the Elm St/VT 11East route was suggested, to eliminate truck traffic in the Chester triangle
    - Truck turning movements were a large concern, at all corners of the triangle. RSG will verify available turning radii for all corners.
    - Some acknowledged that taking the house had been the only solution on the table to date and felt that the one-way circulation pattern was a second viable solution
    - Existing Access Management at the Jiffy Mart was generally acknowledged as confusing and recommendations for fixing this problem were a highly desirable outcome
    - There was some general disapproval for signalization

- Amanda Clancy discussed the second focus area: Chester Village East. She highlighted the potential connector road from VT 11E to Maple Street, and access management opportunities created by this roadway. Also discussed were the signalization of the VT 103/VT 11E intersection, potential sidewalks, bridge projects, and other access management opportunities.
    - The group responded positively to the proposed new access road.
        - The group wanted to see more potential backstreet connections and linkages, including a pedestrian bridge linking the residential neighborhoods south of VT 103 to the High School
    - The group liked the sidewalk to the high school, but felt that since the two bridge designs had the sidewalk on the north side of the street, that either a sidewalk on the north side of the street or sidewalks on both sides of the street would be more useful.
        - The group considered pedestrian sidewalks through the residential neighborhoods to connect to the high school and potential pedestrian bridge
    - Note: City Slickers Restaurant is now called Nick's
- Joe Segale presented the third focus area: High School to Town Line. He reviewed the existing conditions and proposed buildout visualizations under current zoning regulations.
    - Ability for buildout is limited by the sewer line, which runs from the Chester Triangle down to Drew's Salad Dressing (926 Vermont Rt. 103 South, Chester VT)
    - Commercial development is allowed in the residential zoning section, and this is not shown in the buildout graphic.
        - Commercial development is starting to "creep" into this area
        - Some people think that commercial development is appropriate in this area, others do not.
        - The Planning Commission is considering changing their zoning regulations to prohibit commercial development in this area.
        - Graphics should be revised to include commercial development
- Joe Segale presented the fourth focus area: Upper Bartonsville. He reviewed the existing conditions and proposed buildout visualizations under current zoning regulations.
    - There are no water/sewer lines in this area, but lots of sand and gravel (good for septic disposal)
    - This is a commercial/industrial area; however there has been residential development in surrounding areas (such as the lot just over the covered bridge). There were 2-3 houses built and sold in this area in the last year alone.
    - There are many cut-thrus in this area to other towns that are used by knowledgeable seasonal travelers
- Joe Segale presented the fifth focus area: Country Store/Meeting House. He reviewed the existing conditions and proposed buildout visualizations under current zoning regulations.
    - The VT Country Store was not visualized and thus no discussion ensued

    - The largest recent development in Rockingham was 12-14 units. Comment from the group: "Nobody believes this kind of development is going to happen…" in the next 20 years. Most feel that development will be more sporadic and less planned.

Other unspecified comments:

- The real problem on VT 103 is the FHWA restrictions to truck traffic on the interstate, which forces large trucks onto the state and local roads. Traffic signals and circulation pattern changes will not fix the real problem.
- Other locales should be considered in the buildout analysis, i.e. what's going on in Springfield or New Hampshire, especially with regard to truck traffic.
    - Volume growth should consider what is going on at Okemo, Killington, and in other areas.
    - A biomass power plant is proposed in Springfield, which could increase logging trucks on VT 103
    - The corridor study should consider how to manage this increase
- A larger discussion of rail should be considered, including identification of potential transload facility locations, possible rail routes, potential vehicle delays due to increased rail traffic (especially at Chester Depot), and traffic reduction due to increased rail use.
    - Note that truck traffic could potentially increase if a transload facility were to be installed.

Final comments:

- Chester:
    - The buildout is not a bad thing to show at the public meetings
    - Acquisition and removal of the house at the Chester Triangle must be included as a potential option
    - The study should address the consequences of increased truck traffic on VT 103, including issues pertaining to noise, reverberations from trucks, road damage, etc.
- Rockingham:
    - The greatest issues are with the transport park and the VT Country Store
    - Interior roads are required and should be shown
- The most challenging part of the meeting likely will be keeping the public on-task (i.e. focused on VT 103, not other roads and/or issues)
- The public meetings should be made far enough in advance to publish press releases and put notifications on the town websites.

- **Action Items:**
    - Determine Date, Time, and Location for two Public Meetings.
    - Draft Vision & Goals statement – circulate via email
    - Ellen will email Existing Conditions comments to Dave

VT Route 103 Corridor Management Plan

Steering Committee

July 13th, 2009, 1:00 – 3:00pm

Rockingham Town Office – Women's Club Meeting Room *(downstairs)*

AGENDA

I. Summary of May 28th Public Meetings

II. Review and Discuss Preliminary Recommendations

III. Circulate Future Conditions Assessment

IV. Plan for Final Public Meeting
   a. *Location & date*

Steering Committee Members

Town of Rockingham
Ellen Howard – Planning-Zoning Administrator
Ann DiBernardo – Selectboard member
Alan LaCombe – Planning Commission member
Bill Ackerman – VT Country Store Representative
David Boylan – Woodland Tool
Fred Bullock - WR Transportation Committee Chair, Regional Planning Commissioner

Town of Chester
Julie Hance – Zoning Administrator
Dick Jewett – Selectboard Chair
Tom Bock – Planning Commission Chair, Local Business Owner, Regional Planning Commissioner
Bruce McEnaney – SWC Transportation Advisory Committee, Black River Produce

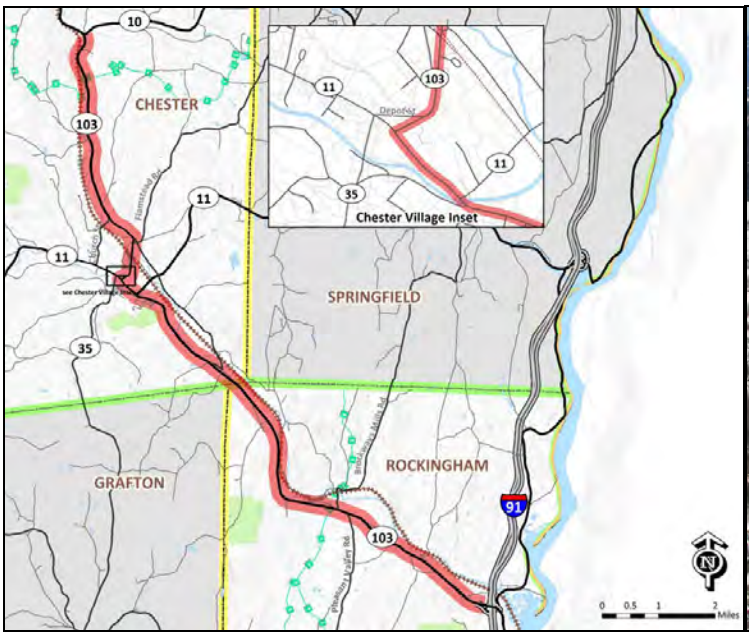
Technical Staff
Matt Mann – Windham Regional Commission
Jason Rasmussen – Southern Windsor County Regional Planning Commission
Costa Pappis – VTrans
Sue Clark – VTrans
David Saladino – Senior Project Manager, Resource Systems Group, Inc.

PUBLIC MEETINGS

VT 103 Corridor Management Plan

What: *The purpose of these public meetings is to gather input on ongoing issues and concerns with traffic on VT Route 103 and how it relates to life and business in Chester and Rockingham. Information from this meeting will assist in the development of a VT Route 103 Corridor Management Plan, as well as in the update of the Chester Town Plan. The Corridor Management Plan is a cooperative effort between the Towns of Chester and Rockingham, in partnership with the Southern Windsor County Regional Planning Commission (SWCRPC), Windham Regional Commission (WRC) and the Vermont Agency of Transportation. The public meetings are free and open to the public.*

When &
Where: Thursday, May 28th
5:00 – 6:30 PM at the Rockingham Town Hall (Women's Club Room)
7:30 – 9:00 PM at the Chester-Andover Elementary School (Library)



For More Information Contact:

Jason Rasmussen – SWCRPC, jrasmussen@swcrpc.org, (802) 674-9201 x112
Matt Mann – WRC, mmann@sover.net, (802) 257-4547 x120

WINDHAM REGIONAL COMMISSION

VTrans Working to Get You There
VERMONT AGENCY OF TRANSPORTATION

SWCRPC
SOUTHERN WINDSOR COUNTY REGIONAL PLANNING COMMISSION

PRESS RELEASE

FOR IMMEDIATE RELEASE

Contacts:
Jason Rasmussen (for Chester)
Southern Windsor County Regional Planning Commission
Ascutney Professional Building, Route 5, Ascutney VT 05030
jrasmussen@swcrpc.org
(802) 674-9201 x112

Matt Mann (for Rockingham)
Windsor Regional Commission
139 Main Street, Suite 505, Brattleboro, Vermont 05301
mmann@sover.net
(802) 257-4547 x120

Public Meeting to Focus on VT 103 Corridor in Chester and Rockingham.

Chester and Rockingham, VT – Residents of the Towns of Chester and Rockingham and neighboring towns are invited to attend two upcoming public meetings (one in each town) to discuss issues and ideas for the VT 103 Corridor from the I-91 Ramps to the intersection with VT 10.

A study currently being conducted by Resource Systems Group for the Southern Windsor County Regional Planning Commission and the Windham Regional Commission is looking at how to plan for future growth and development along the corridor, and how this will affect traffic circulation, delay, and safety for all modes of transportation.

The purpose of these public meetings is to present the corridor vision and potential plans and to collect input from the public on these plans for the VT 103 Corridor.

Two public meetings will be held on Thursday, May 28, in order to focus on plans in both towns along the corridor. The Rockingham focus areas will be discussed at 5:00 PM in the Rockingham Town Hall Women's Club, and the Chester focus areas will be discussed at 7:30 PM in the Andover-Chester Elementary School Library.

The presentation portion of the meeting will include an overview of the project purpose and vision, along with an explanation of the proposed corridor plans. An open discussion session will follow the presentation for each town where interested parties can voice their thoughts about the various plans.

The meeting will include representatives from the Southern Windsor County Regional Planning Commission, the Windham Regional Planning Commission, the Towns of Chester and Rockingham, the Vermont Agency of Transportation, and the project consultant, Resource Systems Group.

# # #

VT 103 Corridor Management Study

May 28, 2009

– Rockingham

SIGN-IN SHEET

	Name	Address/Organization
1	MATT MANN	WRC – 139 Main St, Brattleboro
2	Susan Brace	42 Eldredge Rd (Lower Bartonsville) mail: Chester 05143
3	Andrew & Elizabeth Thompson	13 Windsor Road, Bellows Falls 05101
4	Costa Pappis	1 National Life Dr. Montpelier, 05633
5	Chris Garofalo	62 Black Mountain Rd, Brattleboro
6	Ellen Howard	TOWN OF ROCKINGHAM
7 & 8	Felicia & Donald Cumins	43 Parker Hill Rd, Rockingham
10	Ann DiBernardo	Selectboard Town of Rockingham
11	DENIS JEFFREY	FIRE CHIEF TOWN of ROCKINGHAM
12	Alan LaGombe	Rockingham Planning Commission
13	Fred Bullock	" " "
14	John Leppman	• Rockingham Meeting House Association • Town of Rockingham CLG (Historic Preservation) Commission
	Mike Ghia	2 West St Saxtons River, VT
	Don Taylor	1734 Brookways Mills Rd Rockingham

VT 103 Corridor Management Study

May 28, 2009 – CHESTER

SIGN-IN SHEET

Name	Address/Organization
HARRY GOODELL	CHESTER - DRB & PC.
Sharon Brixby	Ludlow TAC + regional TAC
Bill Ackerman	THE VERMONT COUNTRY STORE. ROCKINGHAM
Jeanette Height	"
Jerilyn Jacobs	529 Horseshoe Rd Chester 2220 VT RT 103 south Chester
Donna Allen	PO Box 282 Chester, VT 05143 billiam@vermontel.net

VT 103 Corridor Management Study

May 28, 2009

-CHESTER

SIGN-IN SHEET

Name	Address/Organization
John Yabemiak	Chester Planning Board
TOM HILDRETH	RESIDENT
KEN WALKER	Chester resident
Bill Dakin	Chester
Christopher Parker	Chester / Business owner
Patricia Budnick	Motel in the Meadow
Georgette Thomas	Hugging Bear Inn
Elizabeth Wilder	North St. Chester
ALAN WILDER	" "
Payne Junker	CHESTER
Erise Junker	CHESTER
Michele Wilcox	Chester
Claire Hosek	Chester
Paul Dexter	Chester - Henry Farm Inn
CHUCK WHEELON	CHESTER
Thomas Bock	Chester

VT 103 Corridor Management Plan

Public Meetings – Chester & Rockingham

May 28, 2009

Meeting Notes – Rockingham Meeting

- Future Development
  - Limit future development along the corridor (2 comments)
  - Do not want to see another Putney Road (i.e. strip development, big box stores) along the corridor
  - Concern over recent spread of commercial (unattractive) growth along VT 103 south of Chester Village
  - Concern that increasing minimum lot sizes would lead to more "sprawling" development on larger parcels and make homes less affordable. Would rather see clustering promoted.
  - The single greatest limitation on future development along the corridor may likely be existing requirements associated with on-site water and septic provision.
- Preserving Scenic & Aesthetic Attributes
  - How can development be regulated such that it enhances the scenic attributes of the corridor?
  - Would like to preserve the aesthetic attributes around the Meeting House District
    - Increase minimum lot sizes in and around the Meeting House District
    - Consider viewshed overlay zoning district to preserve views
    - Potential for properties in Meeting House District to transfer development rights to parcels outside the District
- Upper Bartonsville
  - Encourage development of traditional village center with a mix of uses
  - Current visualization shows more of a strip type development
- Transportation
  - Don't lose sight of potential for passenger rail along the corridor (Bellows Falls to Rutland service)
  - Would like to see bicycle lanes/wider shoulder on VT 103 north of Chester Village
  - Consider alternative bicycle route signing using Brockway Mills Road, Williams Road, Green Mountain Turnpike

Meeting Notes – Chester Meeting

- Traffic Signals
  - Like idea of traffic signal at VT 103/VT 11 (east) intersection (2 comments)
  - No traffic lights in Chester
- Truck Traffic
  - Concern over new development in North Springfield Industrial Park (Winstanley) adding truck trips through Chester Village (2 comments)
  - Legislation recently passed to allow trucks to travel on VT 10 between VT 103 and the North Springfield Industrial Park
  - Consider upgrading geometric conditions along VT 10 between VT 103 and VT 106 to "complete the loop"
- Chester "Triangle"
  - Like 1-way circulation pattern option (1)
  - Like alternative truck route option (1)
  - Like expanded curve radius for trucks at VT 103 corner option (1)
- General Traffic
  - Consider restricting left turns from VT 11 (east) onto VT 103 during peak times, due to limited sight distance
    - Sight distances to be improved with replacement of existing "Benny's Sunoco" bridge
  - VT 103 north of Chester Village – expand shoulders to accommodate bicyclists (ideally stripe as bike lane)
- Sidewalks
  - Like idea of extending sidewalk from Village out to Green Mountain High School

VT 103 Corridor Management Study

May 28, 2009

– Rockingham

SIGN-IN SHEET

	Name	Address/Organization
1	MATT MANN	WRC – 139 Main St, Brattleboro
2	Susan Brace	42 Eldredge Rd (Lower Bartonsville) mail: Chester 05143
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13	Fred Bullock	" " "
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	Don Taylor	1734 Brookways Mills Rd Rockingham

VT 103 Corridor Management Study

May 28, 2009 – CHESTER

SIGN-IN SHEET

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Sharon Brixby	Ludlow TAC + regional TAC
Bill Ackerman	THE VERMONT COUNTRY STORE. ROCKINGHAM
Jeanette Height	"
Jerilyn Jacobs	529 Horseshoe Rd Chester 2220 VT RT 103 south Chester
Donna Allen	PO Box 282 Chester, VT 05143 billiam@vermontel.net

VT 103 Corridor Management Study

May 28, 2009

-CHESTER

SIGN-IN SHEET

Name	Address/Organization
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KEN WALKER	Chester resident
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Georgette Thomas	Hugging Bear Inn
Elizabeth Wilder	North St. Chester
ALAN WILDER	" "
Payne Junker	CHESTER
Erise Junker	CHESTER
Michele Wilcox	Chester
Claire Hosek	Chester
Paul Dexter	Chester - Henry Farm Inn
CHUCK WHEELON	CHESTER
Thomas Bock	Chester

VT 103 Corridor Study
Public Comment Form

I use VT 103 for recreation as well as for personal and business travel. South of Chester VT 103 has wide shoulders and good sight distance. I use this section for bicycling as well as roller skiing. The wide shoulders make such recreation use safe, despite frequent truck traffic.

In contrast, VT 103 north of Chester has minimal shoulders. This makes recreation use such as bicycling dangerous and unattractive. Unfortunately, this closes off mobility options for bicycling towards Ludlow, which is of interest for recreation for residents and tourists.

Compounding my concern is increased truck traffic along VT 103 from the North Springfield industrial park. Directing traffic from the industrial park to I-91 via VT 10 and VT 103 through Chester could significantly increase truck traffic along this route.

I recommend improving VT 103 north of Chester by widening the shoulders, or by providing a separate bike travel lane.

Ken Walker, PO Box 1068, Chester 05143 kwalker@vmec.org

Please leave behind after meeting or send to:

David Saladino
Resource Systems Group
55 Railroad Row
White River Junction, VT 05001
dsaladino@rsginc.com
(f) 802-295-1006

VT 103 Corridor Study
Public Comment Form

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Please leave behind after meeting or send to:

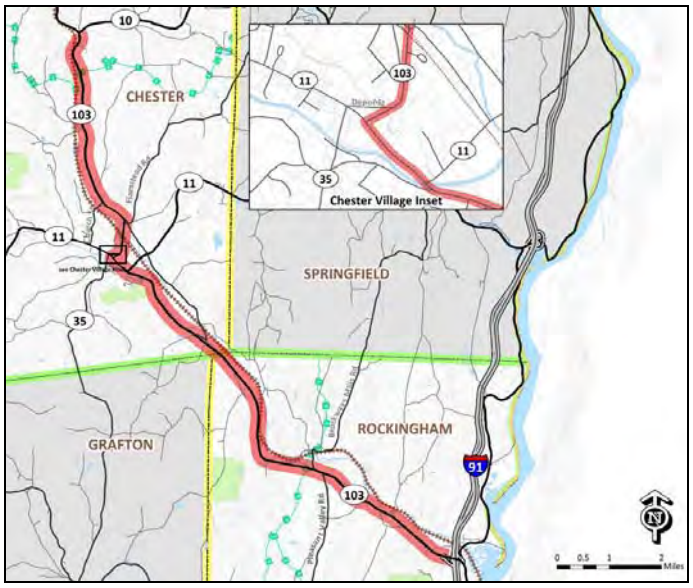
David Saladino
Resource Systems Group
55 Railroad Row
White River Junction, VT 05001
dsaladino@rsginc.com
(f) 802-295-1006

PUBLIC MEETING

VT 103 Corridor Management Plan

What: *The purpose of this final public meeting is to provide a summary of findings and proposed solutions to the identified issues and concerns with transportation and land use along VT 103 and how they relate to life and business in Chester and Rockingham. Information from this meeting will assist in the final stages of development of the VT Route 103 Corridor Management Plan.*

When & Where: *Tuesday, August 25th*
7:00 PM at the Connecticut River Transit offices
700 Rockingham Road (VT 103), south of Exit 6, across from Sonnax



For More Information Contact:

Jason Rasmussen – SWCRPC, jrasmussen@swcrpc.org, (802) 674-9201 x112
Matt Mann – WRC, mmann@sover.net, (802) 257-4547 x120

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PRESS RELEASE

FOR IMMEDIATE RELEASE

Contacts:
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Southern Windsor County Regional Planning Commission
Ascutney Professional Building, Route 5, Ascutney VT 05030
jrasmussen@swcrpc.org
(802) 674-9201 x112

Matt Mann (for Rockingham)
Windsor Regional Commission
139 Main Street, Suite 505, Brattleboro, Vermont 05301
mmann@sover.net
(802) 257-4547 x120

Public Meeting to Focus on VT 103 Corridor in Chester and Rockingham.

Chester and Rockingham, VT – Residents of the Towns of Chester and Rockingham and neighboring towns are invited to attend an upcoming public meeting to discuss issues and solutions related to transportation and land use for the VT 103 Corridor from the I-91 Ramps to the intersection with VT 10.

A study currently being conducted by Resource Systems Group for the Southern Windsor County Regional Planning Commission and the Windham Regional Commission is looking at how to plan for future growth and development along the corridor, and how this will affect traffic circulation, delay, and safety for all modes of transportation. Public meetings were held in May to solicit input and gather information on traffic, congestion, and related issues along the VT 103 Corridor.

The purpose of this public meeting is to present the preliminary findings and recommendations from the study and to collect input from the public on these plans for the VT 103 Corridor.

The meeting will be held on August 25th at 7:00 PM at the Connecticut River Transit Headquarters. This building is located at 700 Rockingham Road (VT 103) just south of Exit 6, across the street from Sonnax.

The presentation portion of the meeting will include an overview of the project's progress to date, along with a review of the draft corridor recommendations. An open discussion session will follow the presentation where interested parties can voice their thoughts about the various plans.

A online survey is currently available for interested residents and business owners to weigh in on the current set of recommendations for the corridor. The survey is located at:
http://www.surveycafe.com/rt103study/

The meeting will include representatives from the Southern Windsor County Regional Planning Commission, the Windham Regional Planning Commission, the Towns of Chester and Rockingham, the Vermont Agency of Transportation, and the project consultant, Resource Systems Group.

# # #

VT 103 Corridor Management Study

August 25, 2009

SIGN-IN SHEET

Name	Address/Organization
Ann DiBernardo	Town of Rockingham Select Board
ALAN FOWLER	ROCKINGHAM PLANNING COMM. FACTTV
Pat Fowler	Village Square Bookseller Bellows Falls
Frank Bedard	374 North Street Chester
John Holme	P.O. Box 494 Chester, VT 05143
TOM HILDRETH	72 MOUNTAIN VIEW CHESTER, VT 05143
DAN FERGUSON	PO BOX 375 CHESTER, VT. CHESTER DRB
DEL THOMPSON	VAOT MONTPELIER
LEE H. POOLE	70 GOLDEN HILL RD 05101
Virginia G. Poole	70 Golden Hill Rd BF 05101
Dick Reynolds	418 First Ave, Chester
John McInerney	PO Box 1084 Chester VT 05143
RICK ROMMER	198 DODGE RD. CHESTER
Charlie Record	64 Maple St. Chester
Ellen Howard	Town of Rockingham
Matthew Trieber	82 Atkinson St, BF

VT 103 Corridor Management Study

August 25, 2009

SIGN-IN SHEET

Name	Address/Organization
FRANK SNARSKI	215 CAMBRIDGEPORT ROAD CHESTER, VT. 05143
Julie Hance	Town of Chester
Thomas Bock	Chair Chester PLANNING
Cynthia Martin	Springfield Rep
L Kathy Pellett	Chester/Baltimore/Andover Representative
TOM Kennedy	SWCRPC
LEW SOKENSON	WRC TRANSPO COMM.
BILL LUNDY	266 MAIN ST. CHESTER CHESTER HOUSE INN

VT 103 Corridor Management Study

August 25, 2009

SIGN-IN SHEET

Name	Address/Organization
GARY KING	408 Depot St. Chester

APPENDIX B

Recommendations Adherence to Project Goals

Recommendation	Category	Town	Recommendation/Improvement	*Balance Mobility & Access*	*Manage Peak Period Congestion*	*Concentrate Development*	*Accommodate Trucks*	*Shift Freight to Rail*	*Connect Approval Processes*	*Address Safety Deficiencies*	*Improve Alternative Travel Modes*	*Enhance Natural, Historic, and Scenic Attributes*	*PROJECT GOALS: Meets the intent of the project's goals*
Chester Triangle - Short Term Improvement	Congestion/Access Management	Chester	CHESTER TRIANGLE - SHORT-TERM: Widen Turning Radius at VT 103/Maple St to Better Accommodate Truck Turns	3	1	0	3	0	0	3	1	1	1
Construct New Sidewalk From VT 11 to Green Mountain High School	Bicycle/Pedestrian	Chester	SIDEWALKS: New sidewalk from Pleasant Street to High School on both sides of VT 103	0	0	1	0	0	0	1	3	1	1
Improve Access Management Along the Corridor	Access Management	Both	ACCESS MANAGEMENT: Promote sound access management policies corridor-wide through appropriate revisions to local land use regulations	3	1	0	0	0	1	1	0	1	1
Encourage Extension of Village to Southern Commercial District	Land Use	Chester	LAND USE - CHESTER: Revisit zoning regulations for Commercial District south of the Village to ensure that regulations promote desirable types of uses, development densities, and site layout	1	0	3	1	0	0	1	1	3	1
Enhance Sidewalk Network in Chester Village	Bicycle/Pedestrian	Chester	SIDEWALKS: Repair/Replace/Install sidewalks in Chester Village to create continuity	0	0	3	0	0	0	1	3	1	1
Chester Triangle - Long Term Improvement	Congestion/Access Management	Chester	CHESTER TRIANGLE - LONG TERM: One-Way Circulation, Signal at VT 11 W/VT 35/Depot St, Sidewalks, Drainage and Landscaping;	3	3	0	3	0	0	3	1	1	2
Revise Land Use Regulations to Enhance Development Pattern	Land Use	Both	LAND USE: Revise land use regulations to improve appearance of commercial strip development (setbacks, specific landscaping guidelines, parking size & location)	0	0	1	0	0	1	0	0	3	1
Expand Public Transit Service on the Corridor	Transit	Both	TRANSIT: Support expansion of CRT bus line between Ludlow and Bellows Falls	3	3	0	0	0	0	0	3	0	1
Enforce Speeds on VT 103	Speeds	Both	SPEEDS: Enforce passenger vehicle and truck speeds at the posted speed limits throughout the corridor	0	1	0	0	0	0	3	0	0	0
Construct New Gateway to Chester Village	Safety	Chester	GATEWAY: Establish new Chester Village gateway near High School entrance to transition vehicles into village setting	0	0	0	0	0	0	3	0	3	1
Access Management Enhancements at Gas Station and Diner	Access Management	Chester	ACCESS MANAGEMENT: Reduce driveway widths and reconfigure parking at Sunoco Gas Station & Diner in Chester	3	1	0	0	0	0	3	0	3	1
Access Management Enhancements at City Slicker's Diner	Access Management	Chester	ACCESS MANAGEMENT: Reduce driveway widths and reconfigure parking at City Slicker's Diner in Chester	3	1	0	0	0	0	3	0	3	1
Identify Location for Park and Ride	Transportation Demand Management	Both	PARK & RIDE: Investigate potential for park & ride lot along the corridor in Rockingham	3	3	0	0	0	0	1	3	-1	1
Establish an Access Management Memorandum of Agreement	Access Management	Both	MEMORANDUM OF AGREEMENT: create access management Memorandum of Agreement for VT 103 corridor	3	1	0	0	0	3	1	0	1	1
Upgrade Rail for Freight & Passenger Service	Freight Movement	Both	UPGRADE RAIL: between Rutland and Bellows Falls to accommodate additional freight and passenger usage parallel to VT 103	0	3	1	1	3	0	1	3	0	1
Widen Shoulders on VT 103 North	Bicycle	Chester	WIDEN SHOULDERS: on VT 103 north of Chester Village from 1-3' to 6-8'. Work includes rehabilitation of subbase (as needed), necessary earthwork, grading, drainage, guardrail, and signage improvements.	3	1	0	1	0	0	3	3	0	1

Recommendation	Category	Town	Recommendation/Improvement	*Balance Mobility & Access*	*Manage Peak Period Congestion*	*Concentrate Development*	*Accommodate Trucks*	*Shift Freight to Rail*	*Connect Approval Processes*	*Address Safety Deficiencies*	*Improve Alternative Travel Modes*	*Enhance Natural, Historic, and Scenic Attributes*	*PROJECT GOALS: Meets the intent of the project's goals*
Revise Land Use Regulations in Rockingham Meetinghouse District	Land Use	Rockingham	MEETING HOUSE: Revise zoning to create a viewshed protection overlay zone for the Rockingham Meeting House area	0	0	0	0	0	0	0	0	3	0
Improve Access into VT Country Store	Safety	Rockingham	NEW TURN LANE: Investigate need for westbound left turn lane into VT Country Store following any future growth or expansion on site	3	3	0	0	0	0	1	-1	-1	1
Revise Land Use Regulations in Rockingham Meetinghouse District	Land Use	Rockingham	MEETING HOUSE: Investigate Transfer of Development Rights opportunities around the Rockingham Meeting House	0	0	3	0	0	0	0	0	3	1
Revise Land Use Regulations in Upper Bartonsville C/I(2) District	Land Use	Rockingham	LAND USE: Promote traditional mixed use village in Upper Bartonsville through revisions to Zoning	0	0	3	0	0	1	0	0	3	1
Sign Alternative Bicycle Route Parallel to VT 103	Bicycle	Rockingham	ALTERNATIVE BICYCLE ROUTE: consider signing alternate bicycle route via Brockway Mills Road, Williams Road, Lower Bartonsville Road, Green Mountain Turnpike	1	0	0	0	0	0	1	3	1	1
Access Management Improvements in Gassetts	Access Management	Chester	GASSETTS: Strictly apply VTrans access management guidelines to future growth adjacent to the intersection of VT 103 and VT 10 in Gassetts.	3	1	0	0	0	0	1	0	1	1
Encourage Combined Access in Residential 80 District	Access Management	Chester	RESIDENTIAL 80 NORTH: Due to steep slopes, ledge and limited sight distances, new accesses should generally be limited to internal access roads (over individual driveways) for subsequent growth in this area. Master plans may be required for developments proposed on large lots.	3	1	1	0	0	0	3	0	3	1
Enhance Cell Phone Coverage Along Corridor	Cellular Telephone	Both	CELL PHONE: Increase cellular telephone service along corridor; welcome new providers; encourage expansion.	0	1	0	0	0	0	1	0	-1	0
Construct New Footbridge Connector to High School	Bicycle/Pedestrian	Chester	FOOTBRIDGE: build footbridge from Marshall Road to High School	1	1	1	0	0	0	0	3	0	1
Construct New Footbridge Connector to High School	Bicycle/Pedestrian	Chester	FOOTBRIDGE: build footbridge from Marshall Road to Mountain View neighborhood to connect neighborhoods	1	1	1	0	0	0	0	3	0	1
Install New Signal at VT 103/VT 11 East Intersection	Congestion/Sight Distance	Chester	SIGNAL: Install traffic signal & crosswalks at VT 103/VT 11 East intersection	1	3	0	0	0	0	3	3	-1	1
Revise Land Use Regulations in Southern R40 District	Land Use	Chester	LAND USE - CHESTER: Revisit zoning regulations for Residential 40 district abutting Rockingham Town Line to ensure that regulations promote desirable residential densities in this area	0	0	3	0	0	0	0	0	3	1
Identify Location for Intermodal Transfer Facility	Freight Movement	Both	TRANSFER FACILITY: Identify location and feasibility of intermodal transfer facility on VT 103	1	0	0	3	3	0	0	1	-1	1
Construct New Access Road Parallel to VT 103	Connectivity	Chester	CONNECTOR ROAD: build parallel to VT 103 from VT 11E to Maple St (or back to VT 103) to serve as an alternate access to future development along VT 103	3	1	3	1	0	0	1	1	-1	1

APPENDIX C

Intergovernmental Corridor Management Agreement (Access Management MOU)

INTERGOVERNMENTAL
VT103 CORRIDOR MANAGEMENT AGREEMENT

BY AND BETWEEN THE
VERMONT AGENCY OF TRANSPORTATION, THE
WINDHAM REGIONAL COMMISSION, THE
SOUTHERN WINDSOR REGIONAL PLANNING COMMISSION,
AND THE TOWNS OF
ROCKINGHAM AND CHESTER, VERMONT

THIS AGREEMENT is entered into this ___ day of _____ 20__, by and between the State of Vermont, Agency of Transportation (hereafter referred to as the "Agency"), the Southern Windsor Regional Planning Commission and the Windham Regional Commission (hereinafter referred to as the "Regions") and the Towns of Rockingham and Chester, Vermont (hereafter referred to as the "Towns").

WHEREAS, VT 103 in the Towns of Rockingham and Chester, extending from the Rockingham Interchange (I-91, Exit 6) northwest to the intersection of VT 103 and VT 10 in Chester (hereafter referred to as "the Corridor") is a state highway that is part of the National Highway System (NHS); and

WHEREAS, the Corridor is designated as a principal arterial (Access Management Categories Three and Six) under the Agency's Access Management Program; and

WHEREAS, the Agency under 19 V.S.A. §1111 is responsible for regulating access to adjoining properties along the Corridor, and for state transportation planning, improvement programming; and project development; and

WHEREAS, the Regions under 24 V.S.A. Chapter 117 (Vermont Planning and Development Act) is responsible for regional land use and transportation planning, regional transportation improvement programming, and for providing technical assistance to the Towns; and

WHEREAS, the Towns under 24 V.S.A. Chapter 117 (Vermont Planning and Development Act) have adopted municipal plans, zoning and subdivision bylaws, and are responsible for regulating land subdivision and development along the Corridor; and

WHEREAS, the Agency, Regions and Towns are parties to Act 250 proceedings for the review of major development along the Corridor; and

WHEREAS, the parties agree that regulation of development and vehicular access along the Corridor, and identified infrastructure improvements, are necessary to promote and provide for the safe flow of traffic, to reduce the potential for traffic accidents, to preserve a reasonable level of service and to protect the highway infrastructure along the Corridor; and

WHEREAS, the parties desire to achieve comprehensive, coordinated and mutually acceptable management of the Corridor for the purposes of meeting current and future capacity demands and public safety criteria while also providing, to the extent feasible, reasonable access for locally planned and approved development;

NOW, THEREFORE, for and in consideration of the mutual promises herein contained, the parties hereto agree as follows:

1. The parties, within their respective jurisdiction, shall plan for and regulate development and access to the VT 103 Corridor in conformance with the 2009 *VT 103 Corridor Management Plan* that is attached hereto and incorporated as Exhibit(s) _____ (hereinafter referred to as the "Management Plan").

2. Actions taken by the parties with regard to land use and transportation planning, infrastructure improvements, and traffic operations and management within and along this Corridor shall be consistent with this Agreement and conform to the Management Plan.

3. Vehicular access to the Corridor shall be permitted only when such access is in compliance with this Agreement and conforms to the attached Management Plan.

    a. Private accesses which were in legal existence prior to the adoption of this Agreement may continue in existence until such time as development, redevelopment or a change of use is proposed through a local bylaw or Act 250 process which triggers review regarding conformance with this Agreement.

    b. When closure, modification, or relocation of a private access is required, appropriate processes of the Towns and State will be followed to provide alternative access, purchase of access rights or other solutions meeting the intent of the Management Plan.

    c. Parcels created after the effective date of this Agreement which adjoin the Corridor shall not be granted direct access to the Corridor, unless the access location, use and design are consistent with the Agency's Access Management Program Guidelines and conform to the Management Plan.

4. The Towns agree to adopt or incorporate by reference in their bylaws and ordinances Agency Access Management Program Guidelines as they apply to development along the Corridor and other state highways in the Town.

5. The Towns agree to refer all applications under municipal bylaws for land subdivision and development that has frontage on or requires access to the Corridor to the Agency and their respective Region for review and comment under the Management Plan and the Agency's Access Management Program Guidelines. No municipal permits or approvals shall be issued until written comments are received from the Agency and Region, or 30 days have elapsed from the date of referral, whichever is sooner. Agency and Region recommendations shall be considered in municipal findings and conditions of approval.

6. The Agency and Regions agree to review applications received from the Towns for proposed development along the Corridor, and to provide written comments within 30 days of receipt, as staffing allows.

7. The Agency agrees to require, prior to the issuance of a state highway access permit, documentation that a proposed development plan has received municipal approval, including a copy of the site development plan or subdivision plat as approved by the Town; and to notify the Town in writing if it will require any modifications of the plan as approved by the Town.

8. The Regions agree to provide technical assistance to their respective member Towns, upon request, to implement Management Plan recommendations, and to assess the potential impacts of proposed development along the Corridor on traffic and highway infrastructure.

9. The parties, though appointed representation, agree to jointly participate in corridor management planning and project development activities, coordinated through the Regions, in conformance with Management Plan recommendations.

10. The parties agree to coordinate their review of development along the Corridor that is subject to Act 250 review for conformance with the Management Plan, but retain separate party status in associated Act 250 proceedings.

11. This Agreement is based upon and is intended to be consistent with Vermont Access Management Program Guidelines, 19 V.S.A §1111 and 24 V.S.A. Chapter 117, all of which may be amended. Any access decision made along the Corridor must be consistent with any amendment to referenced statutes and programs.

12. This Agreement supersedes and controls all prior written and oral agreements and representations of the parties regarding the Corridor and is the complete integrated agreement of the parties regarding the subject matter of this Agreement.

13. This Agreement may not be amended except by written agreement of all parties.

14. By signing the Agreement, the parties acknowledge and represent to one another that all procedures necessary to validly contact and execute this Agreement have been performed and the persons signing for each of the parties have been duly authorized to do so.

IN WITNESS WHEREOF, the parties to this agreement have been executed the same this _____ date of _____ A.D. 20__, the STATE, by its Secretary of Transportation and Duly Authorized Agent, the REGIONS by their Authorized Agents, and the TOWNS by their authorized agents.

TOWN OF CHESTER:

BY: _____
(AUTHORIZED REPRESENTATIVE)

_____
(TITLE)

TOWN OF ROCKINGHAM

BY: _____
(AUTHORIZED REPRESENTATIVE)

_____
(TITLE)

SOUTHERN WINDSOR REGIONAL PLANNING COMMISSION:

BY: _____
(AUTHORIZED REPRESENTATIVE)

_____
(TITLE)

WINDHAM REGIONAL COMMISSION:

BY: _____
(AUTHORIZED REPRESENTATIVE)

_____
(TITLE)

STATE OF VERMONT AGENCY OF TRANSPORTATION

BY: _____
SECRETARY OF TRANSPORTATION

IN WITNESS WHEREOF:

_____

_____

_____

_____

_____

_____

_____

_____

APPROVED AS TO FORM:

Dated: _____

_____
ASSISTANT ATTORNEY GENERAL

Town/City of _____Clerk's Office Received _____ at _____ a.m./p.m. and recorded in Book _____ on Page ____ of the Town land records.

Attest: _____
Assistant Town/City Clerk

APPENDIX D

Sample Corridor Management Overlay District Language

Draft Language: VT 103 Corridor Management Overlay District

This borrows heavily from VTran's Access Management Program Guidelines, state highway permit application requirements, and other references (noted below), and has been drafted as a separate article (or section), to be adapted for incorporation under updated zoning bylaws. Relevant language however, could instead be adapted for inclusion under appropriate sections of municipal zoning or subdivision regulations that address the review of access onto state (or town) highways. Many of the more technical standards included here could be adopted by reference, and/or regulated and applied under the town's highway ordinance for reference in its land use regulations. It's also important to note that, under 24 V.S.A. Chapter 117, an overlay district must conform the municipal plan - as such a proposed management overlay district should be specifically referenced in the adopted town plan.

ARTICLE [SECTION] __
VT 103 CORRIDOR MANAGEMENT OVERLAY DISTRICT

_- 1 OBJECTIVE

To manage the development of and access to properties along VT 103 in a manner that protects public safety, preserves public investment in transportation infrastructure and services, and maintains or enhances the functional capacity and integrity of the highway corridor in accordance with the VT 103 Corridor Management Plan. The VT 103 corridor in [Town] is part of the National Highway System, a state highway and a principal arterial which provides mobility between and access to businesses, residences and other land uses through the town, region, state and beyond. The management objectives and implementation strategies for this transportation network are described in the *VT 103 Corridor Management Plan* (2009) [*adopted as an addendum to the [Town] Town Plan on (date)*].

_-2 APPLICABILITY

The overlay district shall apply to the subdivision, re-subdivision, development or redevelopment of any parcel that has frontage on or requires access to VT 103 within the Town of [Town]. This district overlies other zoning districts. When the requirements of this district differ from those of an underlying zoning district, the more restrictive shall apply.

_-3 PERMITTED USES

As listed for the underlying zoning district.

_-4 AREA AND DIMENSIONAL STANDARDS

As listed for the underlying zoning district, except as specified below.

_- 5 APPLICATION REQUIREMENTS

_-5.1 Application Materials. In addition to other required application materials, applications for land subdivision or development in this district shall include a corridor location map, drawn to scale and to an identified reference point (e.g., a bridge, intersection, mile marker, etc.) that shows the locations of:

_-5.1.1. The VT 103 highway corridor, including all existing and proposed highway rights-of-way, centerlines, travel lanes, turning lanes, shoulders, and highway intersections, interchange ramps and driveway accesses within at least one-quarter mile, in both directions, of the lot(s) to be subdivided or developed.

_-5.1.2. The location of all other existing and planned pathways, utilities, drainage structures, transit stops and infrastructure improvements and associated easements along the corridor, including the location of any planned improvements identified in the VT 103 Corridor Management Plan, the adopted [*Town*] Town Plan and capital improvement program, or the state transportation improvement program.

_-5.1.3. Lot lines for all existing and proposed lots along the specified corridor segment.

_-5.1.4. Road frontage, front setback and access spacing distances along the specified corridor segment.

_-5.1.5. Existing and proposed speed limits, speed zones and traffic control devices.

_-5.1.6. Existing and proposed traffic generation and circulation, including a calculation of existing and proposed traffic generation using available data and current Institute of Transportation Engineers (ITE) standards.

_-5.1.7. Other information as requested to determine conformance with the requirements of this district.

_-5.2 **Referral Requirements.** Access to VT 103 is also subject to the approval of the Vermont Agency of Transportation and, for properties that also front on or access connecting town highways, the [*Town Highway Official*]. Applicants are encouraged to meet with state or local officials to address access management requirements in project design. As a condition of state or town highway access approval, compliance with these regulations also is required. Accordingly:

_-5.2.1. All applications for land subdivision and development within this district shall be referred by the Zoning Administrator, within 30 days of receipt, to the Vermont Agency of Transportation and/or Town [*highway official*] for review and comment. No municipal permits or approvals under these regulations shall be issued until written comments from state and town officials have been received or 30 days have elapsed from the date of referral, whichever is sooner.

_-5.2.2. All highway accesses and corridor improvements shall be designed to meet the requirements of this overlay district, and other applicable state and municipal access management requirements. Where the requirements of this district differ from other applicable requirements, the more restrictive shall apply.

_-5.2.3. A municipal or state highway access permit must be obtained prior to the issuance of a municipal [*zoning permit /certificate of occupancy*]. The Zoning Administrator may consult with town or state officials in determining whether a proposed access meets all applicable access requirements prior to the issuance of a permit.

_-5.2.4.In the event that municipal subdivision, site plan or conditional use review is required, a state or town highway access permit shall be obtained following the issuance of such approval(s) by the appropriate municipal panel, and shall comply with any conditions of approval.

_-6 CORRIDOR PRESERVATION REQUIREMENTS

The preservation and protection of the VT 103 Corridor, and planned corridor improvements as identified in the VT 103 Corridor Management Plan [*and adopted municipal capital or state transportation improvement programs*], are necessary to achieve coordinated land and transportation system development, to provide for future growth, and to ensure that VT 103 is adequate to meet future needs. Accordingly:

_- 6.1 **Conformance**. All development in this district shall conform to and incorporate, to the extent feasible, planned corridor improvements identified in the VT 103 Corridor Management Plan [*and adopted*

[Town] Town Plan]. Municipal approvals shall include related findings regarding project conformance with the management plan and potential impacts to planned corridor improvements, and, where alignments have been established, may require as a condition of approval that the project be modified as necessary to conform to the management plan or associated project engineering studies or designs.

_-6.2 **Dedications**.

_-6.2.1. Proposed projects adjacent to a segment of the VT 103 highway corridor for which right-of-way acquisitions are needed as identified in VT 103 Corridor Management Plan [*and the town's adopted capital improvement program or state transportation improvement program*] shall, as a condition of approval, dedicate land within the project site to accommodate planned corridor improvements. The land to be dedicated shall be only that shown by an engineering study or design to be necessary to accommodate planned improvements and shall not exceed the amount that is roughly proportionate to the transportation impacts to be generated by the proposed development. [*The value of this land shall be credited against any transportation impact fees.*] Such dedication shall occur by recordation on the face of the site development plan, subdivision plat, deed, grant of easement, or other method acceptable to the town.

_6.2.2. The Planning Commission [*Development Review Board*] may allow for the clustering of development and the transfer of density from that portion of the site to be dedicated for planned corridor improvements to another developable portion of the site, or allow an increase in the overall density of development in accordance with Section ___(Planned Development) for the voluntary dedication of land in excess of the minimum required under _-6.2.1 [*or to accommodate planned improvements not yet included in an adopted capital or transportation improvement program*].

***Note**: If the town adopts an official map, the dedication of such improvements also can be required or the approval may be denied, however the town (or state) must then take measures to purchase the land or interests in land (e.g., easements, rights-of-way, development rights) or reconsider the application without the dedication requirement.*

_-6.3 **Encroachments**. The VT 103 corridor through [Town] shall be protected from encroachments by structures, parking areas, and drainage facilities, except as otherwise allowed, in consultation with the Agency of Transportation, under these regulations. Accordingly:

_-6.3.1. The following types of construction and activity are not permitted within existing or planned state highway rights-of-way:

(A) Construction or installation of above ground structures including buildings, fences, and pipelines and excluding poles and repeaters.
(B) Construction or installation of underground structures, including storage tanks and pumping stations. Utility manholes, vaults, pull boxes, pits and appurtenances are permissible if flush with the finished grade and/or can support vehicular loads.
(C) Storage or parking of motor vehicles.
(D) Filling, grading or placing materials in such a way as to obstruct a stream or direct the flow of water onto the highway right-of-way.
(E) Erection of signs or other traffic control devices that do not conform to the MUTCD and any previously approved traffic control plans.
(D) Any utility facility within an area needed for probably highway expansion.
(E) Any other facility as may be prohibited by the Vermont Agency of Transportation.

_-6.3.2. For lots in this district, the Planning Commission or Zoning Board of Adjustment [*Development Review Board*] may require an increase in the minimum front setback distance from the highway right-of-way, as specified for the underlying zoning district, to accommodate planned corridor improvements identified in the VT 103 Corridor Management Plan. Where a proposed alignment has not yet been established, the applicant may propose an approximate alignment, acceptable to the town and state, as the basis for applying underlying district setback requirements. Once a final alignment is established through an engineering study or design, the approved setback may be reduced, subject to administrative review and approval, by no more than 10.0%.

_6.3.3. The Planning Commission [*Development Review Board*] may allow for [*require*] the clustering of development under Section ___ (Planned Development) to avoid encroachments into the corridor that would adversely affect planned corridor improvements.

_6.4 **Infrastructure Improvements.** . A proposed subdivision or development shall not result in an undue adverse impact on the functional capacity of VT 103, connecting roads and intersections in the vicinity, or to existing and planned corridor improvements. Accordingly:

_-6.4.1. A traffic impact assessment shall be required for major subdivisions, for development at intersections or segments of the corridor having a Level of Service D [*C*]or less as identified in the US 4 Corridor Management Plan, or for development that results in an increase of 75 or more peak hour trips. The study will provide sufficient information to assess potential impacts to the highway corridor (including intersections, connecting roads, bridges, and other transportation and pedestrian facilities in the vicinity of the project) and existing and planned levels of service, and to identify infrastructure and traffic control improvements needed to address identified impacts.

_-6.4.2. The Planning Commission or Board of Adjustment [*Development Review Board*] may require the phasing of development in relation to the available capacity of existing or planned corridor infrastructure that is scheduled for improvement under the town's adopted capital improvement program, or the state's transportation improvement program.

_-6.4.3. Corridor infrastructure improvements and traffic control devices specifically required to serve a proposed development shall be installed and paid for by the developer. The applicant also may be required to fund a proportional share of the cost of needed intersection or other corridor improvements identified in the VT 103 Corridor Management Plan affected by the development. In addition:

(A) Where road widening or reconstruction is required, roadway design specifications shall be no less than those necessary to meet either the minimum posted speed limit for, or constructed design speed of that section of highway, whichever is greater.

(B) Where necessary to remove, relocate or repair traffic control devices or public or private utilities for the construction of a permitted access, the relocation or removal shall be the responsibility of the applicant, without cost to the town or state.

(C) Installation of any traffic control device necessary for the safe and proper operation and control of the access shall be required pursuant to the U.S. Department of Transportation's *Manual on Uniform Traffic Control Devices* (as revised). Where the access may warrant signalization in the future, phasing of the installation (turn lane work and signal work) may be required.

_-6.4.4. The town, in consultation with the state, may require a three-year performance bond, or other form of security acceptable to the Select Board, in an amount sufficient to cover the full cost of required improvements, to ensure that such improvements are properly installed and adequately maintained for a

period of two years after installation. The terms of the bond, with the consent of the owner, may be extended for an additional three-year period. If any required improvements have not been installed or maintained as provided in the bond, the bond shall be forfeited to the municipality and, upon receipt of the proceeds, the municipality shall install or maintain covered improvements.

_-7 ACCESS MANAGEMENT REQUIREMENTS

_-7.1 Access Management Categories. For purposes of these regulations, within this overlay district, including intersecting state highways, the following access management categories are established as shown on the accompanying [*VT 103 Corridor Access Management Overlay District*] map:

Note: *This table should be modified as needed to include only mapped access management category corridor segments located in the town.*

Access Category	Corridor Segments	Function/Purpose	Access Control
2 - Limited Access Interchange Area	Rockingham Interchange [I-91, Exit #__]	Carry high volumes of interregional traffic at high speeds; direct access is subordinate to through traffic	No direct access allowed without access rights; access at public highway intersections
3 - Principal Arterial	VT103 Rockingham, Chester	Carry medium to high volumes of interregional traffic at moderate to high speeds.	Direct access may be restricted (e.g., number, spacing, location) or denied if other reasonable access is available
6 - Urban Arterial	VT 103 Chester [Class 1 Hwy]	Carry medium to high volumes of through and local traffic at low to moderate speeds, in an urban setting.	Direct access may be restricted (e.g., number, spacing, location)

_-7.2 Access Management Guidelines. Access to VT 103 and intersecting state highways within the corridor shall be designed and constructed in accordance with applicable Vermont Agency of Transportation *Access Management Program Guidelines* in effect at the time of application, incorporated herein by reference, in relation to the highway segment's assigned functional class, access management category, and projected traffic volumes and conditions; as well as other applicable requirements of these regulations Class I town highway segments, intersecting town highways, development roads and driveways shall be designed and constructed in accordance with the [Town] Highway Ordinance.

Note*: In adopting state and town highway standards by reference (in part for consistency), this assumes that the towns will actively refer to, use and apply state guidelines and town highway standards in their review of proposed development along the corridor.*

_-7.3 Nonconforming Access. Any access to VT 103 or a connecting road within the corridor which is legally in existence as of the effective date of these regulations [*date*] and does not conform to these standards shall be considered a "nonconforming access." A nonconforming access may continue to be used indefinitely, but shall be retrofitted or otherwise brought into conformance with all applicable requirements of these regulations when:

_-7.3.1. The lot is subdivided, re-subdivided, developed, or redeveloped,
_-7.3.2. A new or relocated access is requested,
_-7.3.3. There is a substantial enlargement, improvement, or change in the use of the property,
_-7.3.4. The principal use of the property is discontinued or abandoned for a consecutive period of more than 180 days,

_-7.3.5. Trip generation will increase by 25% or more and at least 100 trips per day [*75 peak hour trips*], as calculated from traffic data or the current Institute of Transportation Engineers (ITE) "Trip Generation Manual," or as VT 103 roadway, intersection and other corridor improvements allow.

_-7.4 **Nonconforming Lot**. Pursuant to the Act [§4412(3)], no development shall be permitted on a lot within the VT 103 Corridor Management Overlay District that does not have the minimum required lot frontage [width], unless access through a permanent easement or right-of-way has been approved by the [Planning Commission [*Development Review Board*] in accordance with Section ___ of these regulations. For purposes of these regulations:

_-7.4.1. No direct access shall be provided to any lot having less than 40 feet of frontage on a state or town highway.

_-7.4.2. Access approval under this section shall be limited to a pre-existing nonconforming lot which does not meet the minimum frontage [width] requirement for the zoning district(s) in which it is located. Lots created after the effective date of these regulations within the VT 103 Corridor Management Overlay District shall meet all applicable access and frontage requirements, unless modified or waived by the [*Planning Commission, Board of Adjustment, Development Review Board*] in consultation with the state, under Section ___ [*Waivers, Planned Unit Development*- as applicable].

_-7.4.3. The decision to approve an access to a nonconforming lot shall be based on written findings and determinations that:

(A) No other reasonable access to the lot is available.

(B) The lot cannot share an existing access to the state or town highway on the same lot or an adjoining lot for reasons of ownership, adequacy, safety, or physical site limitations that require a separate access.

(C) Any permanent easement or right-of-way providing access to the lot shall be at least 20 feet in width. Pursuant to Section ___ [note: section regarding statutory frontage/access requirements], the Planning Commission [*Development Review Board*] may require a wider easement or right-of-way width as necessary to accommodate a driveway that meets access and driveway width standards applicable to the proposed use. No subdivision or further development of the lot shall be allowed unless the access to existing and proposed lots is provided by means of a 50-foot road right-of-way.

(D) The access and driveway or road serving the lot shall meet all other applicable requirements of these regulations.

***Note**: The above section pertaining to nonconformities is intended to reflect existing bylaw requirements for related types of nonconformities, as allowed under Chapter 117, but these subsections could be deleted, if considered adequately covered under 7.5 below.*

_-7.5 **Access Management Standards**:

_-7.5.1. [*All lots legally in existence in separate ownership as of the effective date of these regulations are entitled to one driveway connection to public highways in the district, subject to these regulations, except for limited access sections of VT 103.*] Direct access to state highways in the corridor shall be allowed only if it is determined that the property or development in question has no other reasonable access to the highway network via an adjoining property, an internal development road or a secondary town highway.

Temporary access to a state highway may be permitted until such time that reasonable access to a side street or collector road, or through an adjoining property, becomes available.

_-7.5.2. No additional access rights shall accrue upon the subdivision or re-subdivision of existing parcels in this district, nor for the development or redevelopment of contiguous parcels under common ownership and control.

(A) Notwithstanding district lot frontage [*width*] requirements, the minimum frontage distance for lots created after the effective date of these regulations that front on state highways shall be no less than the minimum connection (access, intersection) spacing distance required for that section of highway under the Vermont Agency of Transportation's *Access Management Program Guidelines*.

_-7.5.3. Where direct access to a state highway is allowed, only one access shall be permitted to serve an individual lot or contiguous lots under common ownership or control unless it is determined, in consultation with the Vermont Agency of Transportation and Town [*highway official*], that:

(A) Because of physical site constraints, traffic circulation patterns, subdivision requirements, or to better accommodate emergency vehicles or transit, pedestrian or bicycle facilities, an additional access is necessary for the safe and efficient use of the property, and

(B) The additional access will meet access spacing requirements, and not be detrimental to the safety and operation of the state highway, and

(C) The additional access will not knowingly result in a hardship to an adjacent or facing property.

(D) The town, in consultation with the state, may further limit the use of secondary accesses, (e.g., to one-way traffic, emergency vehicle access, etc.) as specified in the conditions of approval.

_-7.5.4. For the subdivision, re-subdivision, development or redevelopment of lots within this district, one or more of the following may be required in consultation with the Vermont Agency of Transportation and, for intersecting town highways, the Town [*highway official*] as appropriate:

(A) The elimination, consolidation or relocation of existing, nonconforming accesses and driveways.

(B) The upgrade or redesign of an existing access or driveway as necessary to meet applicable design standards, or as identified in the *VT 103 Corridor Management Plan*.

(C) Shared access or cross connections with adjoining properties which are currently under common ownership or control, or which also are subject to a shared access requirement in accordance with Section _7.5.5 below.

_-7.5.5. Provision shall be made in subdivision and site design wherever feasible for shared (joint) access to state and town highways within the district, and for shared parking and cross connections between adjoining lots. Accordingly:

(A) Shared driveways or access roads and cross connections between adjoining lots shall be established wherever feasible along state and town highways.

(B) For through or corner lots fronting on both a state or town highway and a proposed development road, access and frontage shall be provided along the development road, and access rights along the public highway shall be dedicated to the town or state, and recorded with the deed.

(C) To the extent feasible, parking, loading and service areas shall be located to the side or rear of buildings to allow for cross connections and shared parking between adjoining lots.

(D) Access points to adjoining lots shall be coordinated with existing and planned development on the remainder of the lot and on adjoining lots.

(E) Requirements for shared access, parking and/or cross connections between lots shall be made either at the time of approval if similar provision has been made on adjoining lots, or contingent upon the future subdivision, development or redevelopment of an adjoining lot.

(F) Connections shall be provided through the dedication of easements or rights-of-way as identified on the site plan or subdivision plat and recorded in town land records.

_-7.5.6. In the interest of promoting unified access and circulation systems, access to multiple properties along the VT 103 corridor that are under common ownership or being consolidated for purposes of development, and are to include more than one lot, building or use, shall not be considered separate properties in relation to required access standards. Accordingly:

(A) The number of connections permitted to existing or subdivided lots shall be the minimum necessary to provide reasonable access to the site from the state highway, and not the maximum available based on total road frontage.

(B) Direct connections to state and town highways shall be limited to shared driveways or service roads. The right of direct access to a state or town highway for lots with frontage along the highway shall be dedicated to the town or state, and recorded with the deed(s).

(C) Access shall be provided to all lots, buildings and uses on the proposed development site, including frontage lots (out parcels) through an internal, shared site circulation system, which shall be designed to avoid excessive movement across parking aisles and queuing across surrounding parking areas and driving aisles.

(D) All necessary easements, agreements and stipulations for shared access, parking and cross connections shall be met.

_7.5.7. In order to protect the safety and operational efficiency of interstate interchange and state highway intersection areas, no new connection to either state highway shall be permitted within ¼ *[½]* mile of the interchange or intersection unless it conforms to an access management plan for the intersection, as approved by the town and the Vermont Agency of Transportation. The access management plan shall:

(A) Address access to multiple properties within the intersection area(s) [*under common ownership or control*].

(B) Address existing and anticipated deficiencies and recommended infrastructure improvements identified in the *VT 103 Corridor Management Plan* [*town plan, capital improvement program or state transportation improvement program*], and

(C) Identify existing and proposed connections and openings within ¼ [½] mile of the intersection area which meet minimum access and road intersection spacing requirements.

***Note**: The above section assumes that the state, region and/or town will develop one or more state highway intersection access management plans in association with affected landowners,; or that affected landowner(s) will be required to prepare an access management plan - which reasonably would include only their property(ies), and may otherwise be covered under _-7.5.6 above.*

_-7.6 Site Improvements. The following site improvements may be required as a condition of approval where applicable:

_-7.6.1. Clearly marked travel lanes, pedestrian crossings, and pedestrian paths connecting buildings and parking areas shall be incorporated into subdivision and site and design as necessary to ensure vehicular and pedestrian safety and convenience.

_-7.6.2. An access or connection that crosses or otherwise affects an existing or planned pedestrian, bicycle or handicapped facility shall incorporate necessary modifications to ensure safe crossing and use of those facilities.

_-7.6.3. Bicycle racks or lockers shall be required for all multi-family dwellings and nonresidential uses intended for general public access [that are located along existing or planned bicycle paths].

_-7.6.4. Transit facilities (e.g., turn outs, shelters) may be required for school bussing or for development on existing or proposed transit routes.

APPENDIX E

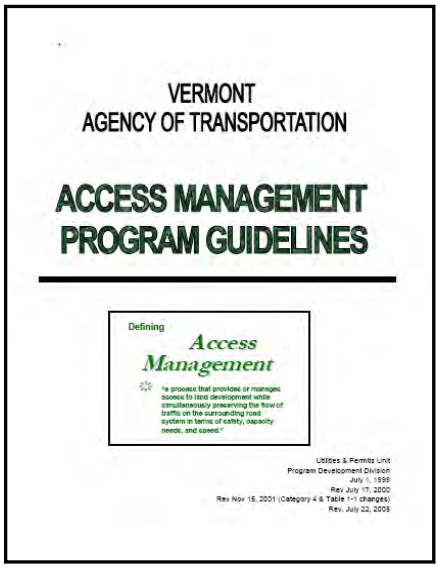
Land Use Recommendation #3 - Improve Access Management along the Corridor

Recommendation #3: Improve Access Management along the Corridor

Overview

The purpose of access management is to provide reasonable access to public highways from adjoining properties without sacrificing highway efficiency, safety or function. The benefits of access management include improved access to adjoining development, reduced accident rates, decreased congestion and travel times, and extended highway life. Better, and coordinated, access management is recommended in both local and regional plans. This involves:

- **Defining functional classifications** – Classifying roads, as part of the planning process, by their primary function (e.g., interstates, arterials, collectors, local roads) based on their function within the extended road network, their geometry, the amount and type of traffic they carry, and adjoining development patterns. To date this has been done for state highways, including VT103, but not for intersecting town highways.
- **Adopting access management standards** – Defining access management standards for each type, or category, of road for consideration under both development review proceedings (e.g., subdivision, site plan, or conditional use review) and municipal or state highway access review. Access management standards typically limit the number of allowed access points, and include requirements for access spacing and design, shared (joint) access and cross connections between parcels, development (service or frontage) roads to serve new subdivisions, and highway improvements (e.g., medians, turning lanes, signalization).


VERMONT
AGENCY OF TRANSPORTATION

ACCESS MANAGEMENT
PROGRAM GUIDELINES

Defining
Access
Management

"a process that provides or manages access to land development while simultaneously preserving the flow of traffic on the surrounding road system in terms of safety, capacity needs, and speed."

Utilities & Permits Unit
Program Development Division
July 1, 1999
Rev July 17, 2000
Rev Nov 16, 2001 (Category 4 & Table 1-1 changes)
Rev. July 22, 2005

VT 103 has been classified by the state – as referenced in local and regional plans – as a "principal arterial" (Access Management Category 3) over most of its length. Principal arterials are intended to carry higher volumes of traffic, at medium to high speeds, between regions. The Class 1 portion of VT103 through Chester Village is classified as an "urban arterial" (Access Management Category 6) which is intended to carry higher volumes of through traffic at low to moderate speeds, and also serve local highway access needs. Recommended access management standards for each access management category are included in the VTrans' **"Access Management Program Guidelines"** (revised 2005), and are considered by VTrans when issuing state highway access permits.

Effective access management on state highways requires coordinated land use and highway corridor management – ideally the same access management considerations and standards should apply in both state (highway) and local (land use) permitting processes. Coordinated review of development along the highway corridor can avoid potentially conflicting municipal and state permit requirements, and thereby expedite the permitting process to the benefit of everyone involved.

Recommendations

In order to better coordinate and expedite the state and municipal review of development along the VT 103 corridor, Chester and Rockingham at minimum should consider the following:

- Enter into a memorandum of agreement with the state that establishes the underlying administrative framework for coordinated corridor management (see Recommendation # 21).

- Update permit application requirements for site plan, conditional use and subdivision review – in the bylaws or in related application materials – to obtain more detailed information about existing and proposed access points, internal subdivision or site layout (including development roads, cross connections between parcels), trip generation rates (type, level) and where appropriate, traffic impact studies, to be paid for by the applicant.
- Update hearing notice requirements under zoning for variance (or waiver) requests to include notification of VTrans – as now required for variances from setback requirements along state highways (24 V.S.A. §4464).
- Include under local zoning and subdivision regulations provisions to refer applications for development[1] along VT 103 (and possibly other state highways) to VTrans – and potentially the regional commission – for review and comment prior to the issuance of municipal land use permits and approvals. For example, local regulations could specify that the zoning administrator refer all applications for development that fronts on or accesses a state highway or is located within 500 feet of an interchange ramp to VTrans for review, and that no local permit or approval may be issued until comments are received from the state, or 30 days have elapsed from the date of referral.[2] State access management recommendations can then be included as appropriate in site plan or subdivision design, and associated conditions of municipal approval.
- Update local development regulations and highway ordinances to reference or incorporate applicable state access management standards, as currently recommended in town and regional plans, to ensure that local, regional and state access management policies and standards for development on state highways are compatible. At minimum these should incorporate or reference *Vermont Agency of Transportation Access Management Program Guidelines* (rev. 2005) as used by the state in issuing state highway access permits and also, where relevant:
    - Vermont State Standards for the Design of Transportation Construction, Reconstruction and Rehabilitation on Freeways, Roads and Streets (1997), and
    - State design and construction standards – e.g., Standard A-76 (Town and Development Roads), Standard B-71 (Residential and Commercial Drives), etc. – to include standards that supplement, or may be more restrictive, than current town highway standards – particularly for town and development roads that intersect state highways.
- Limit direct access to VT 103 (and other state highways) in accordance with applicable VTrans' *Access Management Program Guidelines*.
- Consider the adoption under local zoning bylaws of a "VT 103 Corridor Management Overlay District" that applies application referral and state access management requirements to parcels that front or directly access VT 103.
- Re-evaluate "procedural waiver" provisions under current subdivision regulations (Chester – Section Section 3.3, Rockingham– Section 220.3) that allow waivers for the subdivision of up to five lots, each with individual access onto a public highway – for example, by instead allowing such waivers only for minor subdivisions of two or three lots that are served by a shared access or driveway.
- Clarify, under subdivision regulations, that further subdivisions of land along the highway corridor do not guarantee additional access rights to subdivided parcels – that, wherever

[1] Land development," as defined for this purpose under the Vermont Planning and Development Act (24 V.S.A. §4303) and municipal land use regulations, also includes the subdivision of land into two or more parcels and changes in use.

[2] The Vermont Planning and Development Act included a similar application referral requirement for any proposed development located within 500 feet of an interstate ramp, but this requirement was repealed in a 2004 update of the statutes and no longer applies.

feasible, shared access will be required for subdivided lots and lots in common ownership or control.

Towns have the option to limit associated access management requirements to the VT 103 corridor (and potentially other state highways) – for example through the adoption of a "VT 103 Access management Overlay District" as noted above. Access management, however, can also be applied more broadly to town highways under local bylaws and ordinances – as recommended in both the Chester and Rockingham town plans. Local access management standards – including driveway and road standards – should be consistent with adopted town highway road policies and ordinances. Local access management could include:

- Application referral requirements that require the zoning administer to refer applications for development, including proposed subdivisions, to local highway officials (public works director, town manager) charged with approving access (curb cuts) onto town highways. According to staff, this is already done, though local referrals are not necessarily specified in the regulations, and access permits are sometimes issued prior to municipal land use permits. Under state law (19 VSA §1111) state and local access permits generally are required to be consistent with municipal plans, land use regulations and approvals.
- Basic access management provisions under the general regulations of the zoning bylaws, which apply to all development, in addition to the statutory access and frontage requirements already referenced under the regulations.
- Specific access management requirements under site plan review – e.g., under related traffic and pedestrian circulation requirements – that limit the number of access points, and require shared parking areas, driveways and cross connections between adjoining lots, as they come in for review.
- Traffic impact study requirements, under conditional use and subdivision review, to evaluate traffic and highway infrastructure impacts associated with commercial development and major subdivisions – for example based on existing and proposed trip generation rates (e.g., for uses expected to generate 75 or more peak trips per day), or reduced levels of service at intersections (below an LOS C or D), based on existing levels identified in the corridor management plan.

APPENDIX F

Land Use Recommendation #4 – Encourage Extension of Chester Village to Southern Commercial District

Recommendation #4: Encourage Extension of Chester Village to Southern Commercial District

Overview

A primary goal of the Chester Town Plan is to "preserve the historical development pattern of mixed-use village areas surrounded by open land, agriculture, forestry and low-density residential use" (p.12). In order to achieve this, plan policies specify that higher density residential, commercial and industrial development should be located in the village areas of town, within walking distance of most residents of the village, and that excess commercial strip development along VT 103 should be avoided. The plan also distinguishes between "mixed use village areas" within its historic village centers, "village residential" areas served by municipal infrastructure; and "highway frontage special use" areas (including VT 103 east of the village) for highway-oriented commercial uses that do not fit within a village setting.

Chester Village zoning districts along the VT 103 corridor generally correspond to land use areas described in the current plan, and include the "Commercial-Residential (C-R) District" corresponding to the historic commercial center; the surrounding "Residential-20" (R-20) District" – a moderate density residential district that also allows for some commercial development; and the "Commercial (C) District" which includes the VT 105 corridor southeast of the village proper. At present the Commercial District allows for limited residential and auto-oriented commercial and industrial development. A comparison of selected requirements and uses currently specified for each district is presented in Table 1.

Table 1: Village Zoning District Comparison

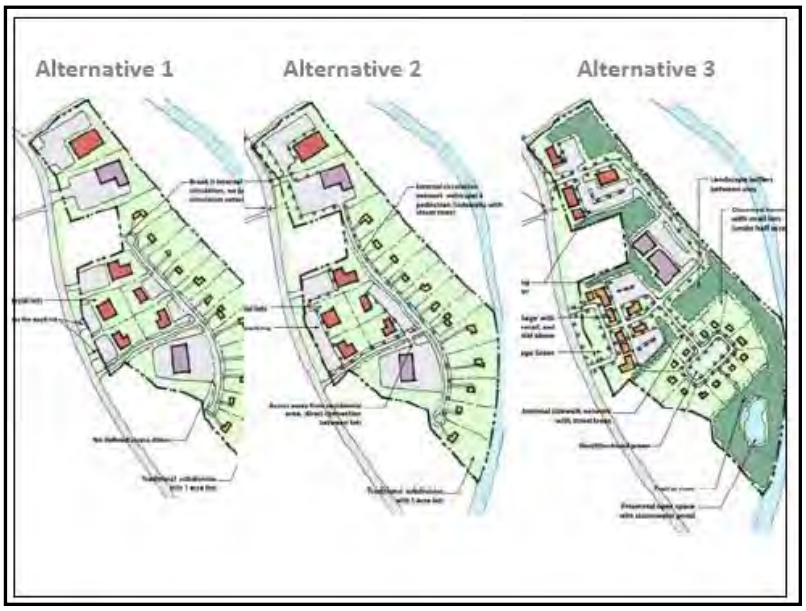
	Residential-Commercial	**Residential-20**	**Commercial**
Dimensions *(for lots served by municipal sewer)*			
Minimum Lot Size	20,000 sf	20,000 sf	40,000 sf
Minimum Density	5,000 sf/dwelling unit	5,000 sf/dwelling unit	10,000 sf/dwelling unit
Minimum Lot Frontage	120 ft	100 ft	120 ft
Minimum Front Setback	40 ft	30 ft	40 ft
Maximum Coverage	35%	35%	35%
Uses (Examples) (*P-permitted use, C-conditional use, X-not allowed in district)*			
Dwelling, One Family	P	P	P
Dwelling, Two Family	P	P	C
Dwelling, Multi-family	C	C	C
Building Trades	C	C	C
Business Office	C	X	C
Commercial Drive-in	X	X	C
Community Care Home	X	C	X
Community Center	C	C	C

Financial Institution	C	X	C
Gas Station	X	X	C
Industry, Manufacturing	X	X	C
Light Industry	C	X	X
Membership Club	C	C	C
Motel, Hotel	C	X	C
Motor Vehicle Sales	X	X	C
Performing Arts	C	C	X
Personal Service	C	C	C
Religious Institution	C	C	X
Restaurant	C	C	C
Retail Store	C	C	C
School	C	C	X
Storage (enclosed)	X	X	C

The Commercial District includes the Green Mountain High School (apparently a nonconforming use in this district), and limited commercial development along the west side of VT 103 south of the village.

Following initial build-out analyses under current regulations, the Commercial District was identified as a focus area for further consideration – in part because of its proximity to neighboring village and residential neighborhoods, and also because much of the land in this district, including land fronting VT 103 to the east, remains undeveloped.

Three possible development scenarios were presented for that portion of the district east of VT 103: development reflecting existing conditions and requirements (Alternative #1 – Status Quo), development under tightened access management requirements (Alternative #2 – Access Management) and a pattern of higher density, pedestrian-oriented mixed use development (Alternative #3–Village East). Of the three, the "Village East" was by far the preferred alternative.



Contrasting Development Patterns	
Auto-Oriented "Strip" Development	**Pedestrian-Oriented "Village" Development**
Single use, single-story structures	Multiple use, multi-story structures
Extended lot frontage along road	Narrow lot frontage
Multiple vehicle access points to street	Common (shared) vehicle access points
Expansive parking in front of buildings	Shared parking to rear or side of buildings
Buildings, entrances facing parking areas	Buildings, entrances facing street – define streetscape
No connections to adjoining lots	Cross connections between adjoining lots
No sidewalks, pedestrian crossings	Interconnected sidewalks, pedestrian crossings
Parking lot lighting (20+ ft)	Pedestrian scale street lighting (12-15 ft)
Large freestanding signs	Small freestanding, wall mounted and projecting signs

Recommendations

The "Village East" alternative extends the historic pattern of higher density, mixed use village development to currently undeveloped land within walking distance of existing neighborhoods and businesses. As envisioned, this area could include a mix of single and multi-family dwellings, civic and mixed use buildings (e.g., residential apartments over commercial storefronts), and new public greens – all interconnected via pedestrian paths or sidewalks. The desired alternative requires a shift from vehicle-oriented development currently allowed within the Commercial District, to a more pedestrian-friendly form of mixed use development. As such it is recommended that the Town of Chester consider the following in association with future plan and bylaw updates:

- Undertake a design charrette process, with the participation of planners, design professionals, municipal officials, and affected property owners, to identify and plan for desired patterns and densities of development in this area to establish the basis for proposed zoning changes.
- Rezone the Commercial District in the vicinity of the high school and existing neighborhoods as an expanded "Village East" district, with standards and uses that, at minimum, are consistent with the Commercial-Residential and Residential-20 Districts.
- Allow commercial uses in this area that fit within a pedestrian context – e.g., smaller retail shops, offices, restaurants, personal services, banks, bed and breakfasts and inns (vs. larger motels). Several uses currently allowed within the Commercial District – e.g., drive-throughs, gas stations, light industry – also could be accommodated in a new village district with suitable site layout and design.
- Allow mixed use buildings – buildings that house more than one principal use as allowed within the district – as conditional uses (rather than PUDs) in all three districts. Also consider vertical zoning for multi-story mixed use structures – e.g., limiting lower stories to commercial or office space, and upper stories to offices or residential uses.
- Establish minimum building height requirements (e.g., 1½ stories) for nonresidential development in the district to promote multi-story development within existing district height limits.
- Reduce minimum lot size, frontage and setback requirements, and increase residential density and lot coverage requirements in all three village districts in areas served by municipal

infrastructure, to promote more traditional patterns and densities of development, including infill development where appropriate. Reduced lot and frontage requirements also promote "walkability" by allowing uses to be located closer together. A *minimum* density of four one-family dwellings per acre is suggested (lot size of 8,000 to 10,000 square feet) for residential neighborhoods served by municipal infrastructure – e.g., as required to qualify for Vermont Neighborhoods Program designation.[1] District dimensional and density requirements at minimum should reflect historic patterns of development in the village, as measured on the ground.

- Limit direct vehicular access onto VT 103 by requiring shared access, parking, and cross-connections between adjoining parcels (see Recommendation #20). Also require that planned recreation paths, and pedestrian walkways (sidewalks, paths), connections and crossings at major intersections be incorporated in subdivision and site design.
- Support public transit service through higher density, clustered, transit-oriented development in this area – require that shared transit facilities (shelters) be incorporated in subdivision and site design, for construction as service become available.
- Establish basic site layout and design standards for new commercial development – in addition to the special conditional use criteria for these districts under Section 9.4.4 of the zoning regulations – to ensure that new commercial development fits within a village context (see Recommendation #24). Consider a more comprehensive design review district, including associated design standards, as appropriate.
- Delineate village "gateway" areas in the municipal plan (e.g., that correspond to Class 1 highway breaks), and under related provisions in the zoning bylaw, to physically and visually define village entrances and to clearly differentiate higher density village areas from surrounding rural areas. Danville, for example, incorporated gateway planning in the proposed upgrade of Route 2 through its village center.

[1] The benefits of state neighborhood designation (under 24 V.S.A. § 2793d) include some financial benefits and Act 250 exemptions and waivers – particularly for neighborhoods that incorporate mixed income housing.

APPENDIX G

Land Use Recommendation #7 - Revise Land Use Regulations to Enhance Development Patterns

Recommendation #7: Revise Land Use Regulations to Enhance Development Patterns

Overview

Commercial development is now allowed along the entire length of the VT 103 corridor, in all but one zoning district, creating the potential for commercial strip development that is discouraged in both regional and municipal plans, and under related state planning goals. The visual and functional impacts of commercial (nonresidential) development, however, can be mitigated to a certain extent through a combination of good access management, as discussed above, and good design.

There are a number of ways under local regulations to encourage or require site layouts and building designs that complement their context and setting. These range from basic dimensional and design standards for particular zoning districts or types of commercial uses; to expanded site plan, conditional use, subdivision and planned unit development standards that apply to all development subject to review, to comprehensive, separately adopted design review districts in which all development within the district must undergo a separate design review process and meet district design criteria.

Bylaws for both communities along the VT 103 corridor currently include some design considerations. Rockingham, for example, regulates the design of new development in its designated historic districts (e.g., the Rockingham Meeting House Historic District), includes requirements specific to retail stores and gas stations, and also generally regulates landscaping, screening, exterior lighting, and signs. Chester's zoning bylaw includes specific design considerations (Special Criteria) that apply to all conditional (commercial) uses in its R-C, C and R-20 districts, and also regulates signs. Both bylaws reference statutory site plan and conditional use criteria (e.g., parking, circulation, landscaping, screening, character of the area, etc.) but, apart from generally listed considerations, do not include specific design standards for commercial uses.

In order to craft context –sensitive design standards the development context needs to be clearly defined – design standards for commercial development in village or historic districts may differ markedly from standards for industrial parks, interchange areas, and other general commercial districts. State law now requires that for zoning purposes the "character of the area" at minimum must be defined and interpreted by the stated purpose(s) of each zoning district and associated municipal plan policies. The development context for more formal design review districts (under 24 V.S.A. §4414(1)(E), – and associated design guidelines or standards – must be described in a separate design report prepared by the planning commission that supports the both the adoption and subsequent administration of district design standards.

Recommendations

Given the variety of options available to regulate the appearance of commercial (or nonresidential) development, the following are recommended for further consideration by the Towns of Chester and Rockingham:

- Clearly define the purpose of each zoning district along the VT 103 corridor in municipal plans and bylaws as needed to establish the design context or "character of the area" for reference in site plan, conditional use and subdivision review. This should include a description in the bylaws of the types, densities and pattern of development planned for each district (which may differ from existing patterns of development).
- Re-evaluate basic design considerations inherent in lot size, setback, density and coverage requirements in all districts to reflect traditional or desired patterns of development. Consider

maximum (or average) front setback and minimum height requirements for commercial development in village districts.

- Consider supplemental, context-sensitive district design standards that apply to commercial development within a particular zoning district; and/or use-specific standards that apply to specific types of commercial development (e.g., gas stations, franchise retail, etc.).
- Consider, where appropriate, the creation of one or more design review overlay districts – e.g., within expanded (new) village mixed use districts, commercial or industrial park districts, or interchange areas. A "VT 103 Corridor Management Overlay District" could, in addition to recommended access management standards, also include comprehensive design standards for nonresidential development along the corridor – but this would preclude underlying district design considerations, including more context-sensitive design.
- Expand subdivision planning standards to include specific design standards inherent in subdivision layout and design – which may also vary by zoning district – e.g., to include additional standards for:
    - Natural, scenic and common open space areas – e.g., for resource protection, parks, community gardens, greens, plazas, courtyards, etc.,
    - Block, lot, and street layouts, including in village areas maximum block lengths and mid-block pedestrian connections,
    - Internal and external vehicle, pedestrian and transit connections, and
    - Development roads – including streetscapes – in relation to development context and highway function.
- Expand site plan and/or conditional use criteria that apply to commercial uses to address:
    - Site layout – e.g., to locate principal buildings and public transit areas be located at the front of the lot, that parking areas be located to the rear of the lot (or to the side behind the building line), that loading, utility and storage areas be located to the rear of the lot, and that drive-throughs and pumping stations be located to the side or rear of the lot.
    - Building orientation – e.g., to orient buildings to the street along established building lines, with facades and entrances facing the street rather than adjoining parking areas.
    - Building design – e.g., to address the scale and massing of commercial buildings and limit or prohibit "franchise architecture."
    - Pedestrian circulation – to include pedestrian connections to adjoining properties and to all buildings and parking areas.
    - Shared access and parking – including parking lot design and lighting requirements,
    - Landscaping and screening requirements for public or main entrances, building facades, parking areas, utility and storage areas, and walkways.
    - Gateway or transition areas – e.g., at village entrances, or between commercial areas and residential neighborhoods.
    - Exterior lighting requirements for entrances, building facades, parking areas and walkways.
- Expand planned unit development standards to include related design criteria for commercial and industrial planned unit developments (e.g., commercial or business parks), e.g., that require
    - Master plans for coordinated park development,
    - Clustering buildings within designated development envelopes that are sited to avoid protected open spaces or scenic views,

- A campus or institutional pattern of development with a common entrance, shared service roads, parking and transit facilities, and interconnecting pedestrian walkways or paths
- Consistent or complementary building styles and signs,
- Landscaping for entrances, building facades, common areas, and walkways,
- Screening for loading, service, utility and storage areas, including warehouses and storage units, and
- Exterior lighting standards for entrances, buildings, parking areas, and walkways.

APPENDIX H

Land Use Recommendation #10 & #19 - Revise Land Use Regulations in Rockingham Meetinghouse District to Preserve Scenic Resources & to Create Transfer of Development Rights Opportunities

Recommendation #10: Revise Land Use Regulations in Rockingham Meetinghouse District to Preserve Scenic Resources;

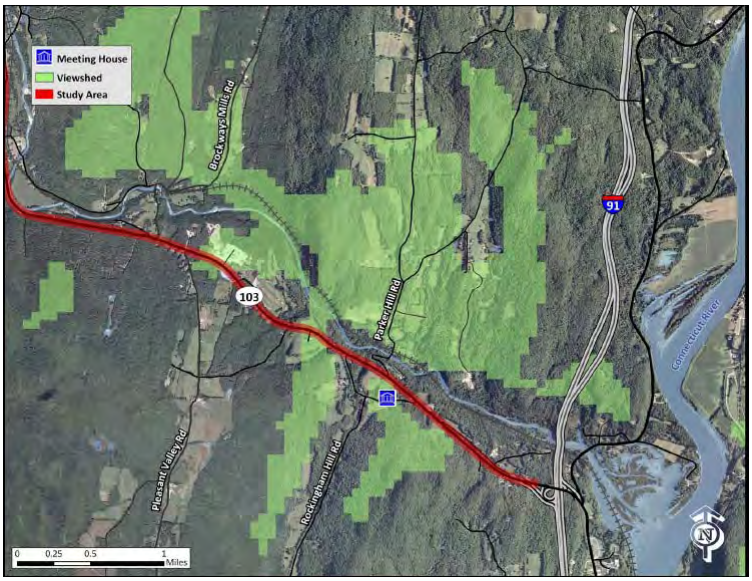
&

Recommendation #19: Revise Land Use Regulations in Rockingham Meetinghouse District to Create Transfer of Development Rights Opportunities

Overview

The visual impact of development along the corridor was identified as a particular concern in the vicinity of the historic Rockingham Meeting House – both as viewed from the Meeting House and from the VT 103 corridor as it passes through this area. The Windham Regional Commission produced an initial map from local topography of the extent of the potential veiwshed in relation to the study area (Figure 1). This area extends beyond the Rockingham Meeting House District, as currently zoned, into surrounding zoning districts.

Figure 1: Meeting House Viewshed



There are a number of options for protecting scenic resources, including both regulatory techniques – for example viewshed protection requirements under zoning and subdivision regulations – and more targeted, and potentially more expensive, nonregulatory techniques, such as the acquisition of scenic easements.

Both strategies require that scenic views be inventoried and mapped. This generally involves:

- A visual analysis that includes GIS mapping, windshield surveys and photographic inventories that document important landscape features – including vantage points, scenic views, historic structures, landscape elements (ridgelines, stone walls, hedgerows, etc.) and the visual character of the highway corridor.
- The identification of potential threats – including the impacts of potential development currently allowed within the areas (zoning districts) surveyed, and

- The identification of specific strategies to protect priority viewsheds.

This type of analysis can then be summarized in a scenic resource protection or open space plan which, if referenced in or appended to the municipal plan, can serve as the basis for related conservation strategies, including bylaw amendments or conservation funding programs.

A number of scenic areas – including scenic views from the Meeting House north towards Parker Hill – are already identified in the Rockingham Town Plan (Chapter 10) as scenic resources designated for possible protection. These areas, however have not yet been inventoried and mapped in sufficient detail to regulate development within them, and are not included in the town's Natural Resources Overlay District as defined under the current zoning regulations.

Recommendations

In order to protect scenic resources, including rural landscape as viewed from the Rockingham Meeting House and the VT 103 corridor, it is recommended that the Town of Rockingham consider the following:

- Conduct, in association with the Windham Regional Commission, an inventory and visual analysis of scenic resources within the overall viewshed area mapped by the Commission, and summarize findings in a "Rockingham Meeting House Scenic Resource Protection Plan" that can be referenced in or appended to the town plan. As part of the planning process, consider both regulatory and nonregulatory resource protection options.
- At minimum update subdivision, site plan and conditional use review criteria under local bylaws to reference and require the protection of designated and mapped scenic resources or viewsheds.
- Given the potential extent of the viewshed, consider the adoption of a "Scenic Resource Overlay District" (similar to the current Natural Resource Overlay District) that, for example:
    - incorporates mapped scenic resources or viewsheds,
    - limits development allowed in viewshed areas to agriculture, forestry and compatible low density development,
    - requires the submission and independent review of visual impact assessments, to be paid for by the applicant,
    - limits the removal of trees and other vegetation that provides natural screening or contributes to the quality of scenic views,
    - requires the delineation of building envelopes that, to the extent feasible, are located outside of scenic viewsheds,
    - encourages (or requires) planned unit (and planned residential) development that clusters development outside of viewshed areas,
    - includes building design, siting, landscaping and screening requirements intended to minimize the visual impacts of development within viewshed areas,
    - requires shared utility and road corridors that follow natural contours and existing linear features (e.g., tree lines, hedgerows, fencelines), to minimize visual impacts, and
    - requires that utilities be buried underground where feasible.
- A "transfer of development rights" (TDR) program, as allowed under state law (24 V.S.A §4423) was also suggested for consideration to provide compensation to affected landowners within a scenic overlay district. TDR provisions would allow landowners within mapped viewshed areas ("sending areas") to sever and transfer their development rights – through market rate sales – to developers planning to build in other areas of the municipality designated for higher density development ("receiving" areas). TDR programs are most effective where the land available for

development is very limited –driving the market for development rights – where infrastructure is available to support higher densities of development in designated receiving areas, and where the capacity to administer a TDR program (e.g., through a local banking program) exists. Given TDR program requirements, most Vermont communities instead use planned unit development (PUD) provisions – as currently included in Rockingham's zoning regulations – to allow landowners to transfer of density from one portion of a site to another (or from one property to another). If the overall development capacity is retained, compensation is unnecessary.

APPENDIX I

Land Use Recommendation #15 - Establish an Access Management Memorandum of Agreement

Recommendation #15: Establish an Access Management Memorandum of Agreement

Overview

Inter-governmental memoranda of understanding (MOUs) between state transportation agencies and local governments have long been used in states such as Florida to coordinate state and local review of development along state highways. New Hampshire recently instituted a formal MOU process that allows municipalities with adopted corridor management plans to be more directly involved in state access permitting. The Vermont Agency of Transportation is now considering similar agreements with municipalities and regional planning commissions for coordinated corridor and access management along state highways. Typically, such agreements specify that:

- The state and regional commissions must provide information and technical assistance to towns in developing acceptable access management standards, and site- or parcel-specific access management plans for parcels along the highway corridor.
- All corridor or site-specific access management plans must be filed with the state.
- Towns must adopt and administer access management standards acceptable to the state for development that accesses state highways.
- Towns must notify the state (e.g., the District Transportation Administrator or Utilities and Permits Unit) when they receive a development proposal that requires a state access permit, and request state input on access location and design.
- Towns must require that all access points comply with adopted access management standards and any applicable site-specific access management plans.
- Towns must inform the state of any waivers or variances from the access management standards or plans prior to local approval and provide appropriate notice for comments and potential participation in the local hearing process.
- The state must hold final action on any driveway access permit until the town has formally approved a development plan.
- The state must notify a town if it intends to issue a driveway permit that does not conform to adopted access management standards and a locally approved development plan.
- The state will not approve driveway permits that do not conform to the local access management standards or plans without the consent of the community.

VTrans is understandably wary of entering into individual management agreements with every municipality in the state but, in the absence of other statutory coordination mechanisms, is reviewing this option for municipalities that regulate development along major state highways and interchange areas. Towns also may be reluctant to adopt state guidelines and associated notification requirements that could compound or extend the local permitting process but, in doing so, may avoid permitting conflicts that could further delay or ultimately supersede locally approved development. There is also a role for regional planning commissions, as the major source of technical planning assistance to towns, and as a statutory party to Act 250 proceedings for major development along the corridor.

Recommendations

The following related strategies, intended to effect the terms of a corridor management agreement, are recommended for consideration by the state, regional planning commissions and towns, but could also considered separately, as noted under other related recommendations:

- Incorporate state agency application referral and notification requirements under zoning and subdivision regulations for all land development proposed along state highways, including VT 103. (see Recommendation #20).
- Update local development regulations and highway ordinances to reference or incorporate applicable state access management standards, as currently recommended in town and regional plans, to ensure that local, regional and state access management policies and standards for development on state highways are compatible (see Recommendation #20).
- Condition the issuance of state access permits upon the receipt of local permits and approvals issued by the town, with supporting documentation. State highway access permit applications should require that a copy of the local permit or approval –including the site plan or subdivision plat as approved by the town – be attached.
- Conduct joint, ongoing, local, regional and state corridor planning and project development efforts, coordinated through the regional planning commission, to ensure that local and regional transportation plans and improvement programs incorporate priority VT 103 road, intersection, and access management improvements.
- Participate in joint local, regional and state efforts to finance and develop needed infrastructure improvements – through existing municipal, regional and state infrastructure transportation improvement and enhancement programs, municipal and state permitting requirements, and through other public/private partnerships.
- Participate collectively and individually in state Act 250 proceedings for development proposed on VT 103 and other highways in the vicinity to ensure that traffic, access and infrastructure impacts and recommended improvements are adequately addressed in the permitting process and conform to the VT 103 Corridor Management Plan.

An example of a draft corridor management agreement is included in Appendix C. This will need to be modified to address local concerns, and be reviewed by the state, towns, and regional planning commissions prior to adoption.

APPENDIX J

Land Use Recommendation #21 - Revise Land Use Regulations in Upper Bartonsville C/I(2) District

Recommendation #21: Revise Land Use Regulations in Upper Bartonsville C/I(2) District

Overview

The Upper Bartonsville area of Rockingham is located above the historic hamlet of Bartonsville, and extends northward along both sides of Route 103 to the Chester town line. This area is described in the Rockingham Town Plan as land adjacent to Route 103 that currently includes a mix of residential and commercial uses, but has been zoned primarily for commercial and industrial development. The plan specifies that development in this area should receive thorough site plan review to avoid strip development; and that new residential development should be undertaken with the clear understanding that commercial and industrial uses allowed in the area may be incompatible with and impact residential uses (p.61).

Upper Bartonsville is currently zoned Commercial-Industrial (C-I) along much of Route 103 extending to the Chester Town line, in conformance with town plan recommendations, and is bordered by the Rural Residential (RR-1) District along a portion of VT103 to the west. These zoning districts allow for a variety of potentially incompatible uses, if developed in close proximity – including large scale, vehicle-oriented commercial and industrial development in the C-I district (e.g., retail, offices, motels, gas stations, auto sales, trucking terminals, manufacturing and "other commercial and industrial uses") – and residential and limited commercial development (e.g., single and multifamily dwellings, retail) across the highway in the RR-1 district. A number of public (institutional) uses also are allowed in both districts. Many of the uses in the C-I District are "permitted" uses that require site plan but not conditional use review – limiting the town's ability to evaluate associated traffic and highway impacts. Planned unit developments, including planned residential developments, are allowed in the RR-1 District, but apparently not in the C-I District – in effect precluding planned industrial or business park development.

Both districts specify a minimum lot area of one acre (43,560 ft^2), though this applies only to single family dwellings in the RR-1 District – all other uses require a minimum of two acres, and one acre per dwelling unit. In the C-I District a 100-foot minimum front side and rear setback (yard) is required if a lot abuts a residential district. Provisions are also included (under Section 2525) to waive C-I district setback requirements from the rail corridor for rail-oriented development.

Dimensional Requirements	**Commercial-Industrial [C-I(2)]**	**Rural Residential [RR-1]**
Minimum lot size(s)	43,560 sf	SFD: 43,560 sf / Other: 87,120 sf
Minimum frontage	None specified	SFD: 150 ft / Other: 200 ft
Minimum front yard setback (from right-of-way)	50 ft (100 ft if abutting RR-1)	50 ft
Maximum Lot Coverage	40 %	SFD: 15% / Other: 10%

Minimum district frontage requirements (150-200 ft) do not, in themselves, provide adequate spacing between access points to individual lots under state access management guidelines.

Recommendations

The partial build-out under current zoning presented for this area assumed that the type and extent of future development will depend in large part on market demand – including the regional viability of commercial and industrial development in this location – as well as access to infrastructure and other

site and cost constraints. A variety of possible development patterns were identified in the build-out scenario – including a mix of traditional residential subdivisions, small scale "village" commercial uses, commercial-industrial parks, and roadside commercial development – all generally allowed under existing zoning. While it is understood that this area has been zoned to promote highway-related commercial and industrial development, concerns were expressed regarding potential conflicts between allowed uses, commercial strip development, traffic impacts, and the effects that higher density commercial and industrial development could have on more rural, residential areas of Upper Bartonsville and across the town line in Chester.

Comments received centered on redefining allowed uses and patterns of development in this area – ranging from limited industrial use (e.g., an industrial park) to dense village development. At minimum, the following are recommended for further consideration by the Town of Rockingham:

- Re-evaluate C-I zoning district boundaries to delineate and promote more nodal, clustered highway development in this area which does not extend along the length of VT 103 to the Chester town line. The current district delineation promotes a pattern of commercial strip development that is incompatible with both regional and town plan recommendations and preferred build-out scenarios.
- Prohibit frontage development and limit direct access to VT 103 in accordance state access management guidelines. Require, under district or separate access management and planned unit development standards, that new residential, commercial and industrial development be located and clustered off the highway corridor, to be served via common access points, internal service roads, and shared parking areas. Allow waivers only where necessary – e.g., as required due to site constraints or as necessary to improve traffic circulation (see Recommendation #20).
- Require, under site plan review, access improvements associated with the redevelopment of existing parcels along the corridor – which may include the elimination, consolidation, relocation, or redesign of existing curb cuts.
- Re-evaluate allowed uses in both the C-I and RR-1 Districts along VT 103 – at minimum to require conditional use review of those uses that generate large amounts of truck and/or automobile traffic so that the highway infrastructure, traffic and visual impacts of development can be evaluated and addressed. Require, under subdivision and conditional use review, traffic impact studies for uses that meet specified thresholds – e.g., that generate 75 or more peak trips per day or reduce existing Levels of Service (as identified in the corridor management plan) below a LOS C or D.
- More narrowly specify and define those types of commercial and industrial uses that may be allowed in the C-I District in relation to community goals and objectives for economic development, prevailing market conditions, available site amenities and needed infrastructure improvements, and the relationship of this district to other commercial areas along the corridor.
- Limit commercial uses in the RR-1 district to those uses that are compatible with and serve low to moderate densities of residential development (e.g., village or neighborhood commercial, personal services, small offices, home-based businesses) – uses that complement rather than compete with commercial uses in traditional downtown and village centers (e.g., Bellows Falls, Chester Village).
- Allow – or require for larger parcels or major subdivisions – planned unit development in the C-I District – particularly to promote planned industrial, commercial or business park development. Consider allowing certain types of development (e.g., large scale manufacturing or warehousing) only within planned business or industrial parks.
- Develop associated PUD master plan submission requirements that establish the overall parameters of development to include, for example,

- the type and location of existing and proposed principal and accessory use(s), including the location of designated building envelopes for initial and subsequent phases of development;
- the location, extent and use of conserved open space areas;
- the overall intensity (level) of use of on-site facilities at build-out, to include total occupants, employees, maximum building capacities, etc.;
- projected trip generation rates at build-out;
- the location of park entrances, internal and connecting access roads, parking areas, and pedestrian paths for the entire parcel
- the location of on-site utilities, including water, wastewater and waste management systems; and
- a development schedule, including a proposed schedule for any phased development.

▪ Develop associated design standards, to include for design standards for planned commercial or industrial park development

APPENDIX K

Land Use Recommendation #23 - Encourage Combined Access in R-80 District

Recommendation #23: Encourage Combined Access in Residential-80 District

Overview

Chester's Residential-80 (R-80) zoning district extends along the northern stretch of VT 103 to the adjoining Commercial District centered on the VT 103 /VT 10 intersection at Gassetts. A number of development constraints were identified along this stretch of corridor in accompanying environmental and build-out analyses – including ledge outcrops and steep slopes that limit access, sight distances and the overall development potential of some adjoining parcels.

Existing uses in this area are predominantly rural residential, however under current zoning a number of commercial uses – including offices, retail stores, restaurants, campgrounds, quarries, and heavy construction trades – are also allowed subject to conditional use review. The Chester Town Plan includes policies to discourage sprawl and commercial strip development, to maintain existing, low-density settlement patterns and to preserve open space where possible by encouraging clustered development within rural residential areas.

Recommendations

Given local goals and objectives for rural residential areas, and identified access and development constraints along the VT103 corridor in this district, the following are recommended for consideration by the Town of Chester:

- Limit direct access to VT 103 within this district – and along the length of the VT 103 corridor – in accordance with applicable *Vermont Access Management Program Guidelines* for state highways. Consider the adoption of a "VT103 Access Management Overlay District" (see Recommendation #20).
- Update conditional use (including site plan) review criteria under Sections 9.3 and 9.4 of Chester's zoning regulations, and subdivision criteria under Section 8 of the subdivision regulations, to include access management considerations and standards as recommended in the Chester Town Plan. Ensure that bylaw access management provisions are consistent with state access management guidelines (for state highways) and Chester's adopted town highway specifications (for town highways). See Recommendation #20.
- Reconsider "procedural waiver" provisions under Section 3.3 of the subdivision regulations that allow waivers for the subdivision of up to five lots, each with individual access onto a public highway – for example, by instead allowing such waivers only for minor subdivisions of two or three lots that are served by a shared access and driveway.
- Clarify, under Section 8 of the subdivision regulations, that further subdivision of land along the highway corridor does not guarantee additional access rights to subdivided parcels – that, wherever feasible, shared access will be required for subdivided lots and lots in common ownership or control.
- Limit the type of commercial development allowed in the R-80 District and other rural residential areas along the corridor – especially commercial uses that are also allowed in nearby village or commercial districts (e.g., retail stores, offices, restaurants) – to further limit the potential for commercial strip development on frontage parcels in accordance with town plan policies and recommendations.
- Under this district and Section 3.25 of the zoning regulations (Planned Unit Development) encourage through density bonuses – or otherwise require for major subdivisions and

nonresidential development along the highway corridor – clustered (nodal), planned unit development that is served by internal road networks or connectors and common access onto VT 103.

APPENDIX L

Land Use Recommendation #28 - Revise Land Use Regulations in Southern R-40 District

Recommendation #28: Revise Land Use Regulations in Southern R40 District

Overview

Chester's Residential-40 (R-40) District extends along VT 103 to the south, from the high school to the Rockingham town line. Land across the highway to the north is included in the lower density Residential-80 (R-80) District. This area is a predominantly rural residential area, with limited commercial development near the town line. The current zoning designation allows for moderate density residential and commercial development, including commercial strip development fronting along the highway corridor. The Chester Town Plan recommends to rezoning this entire area as a commercial "Highway Frontage Special Use" district, to be served by a frontage road or limited access points onto VT103. Commercial uses would be limited to those uses not suitable in a village setting – including uses that generate or serve highway truck traffic.

Following build-out analyses under current zoning, three alternatives were presented for further consideration: a pattern of conventional residential development under current zoning (Alternative #1 – Typical Residential), a mix of commercial and residential development, as allowed under current zoning (Alternative #2–Residential-Commercial) and a "conservation subdivision" design of clustered, low density, predominantly residential development surrounded by conserved open land (Alternative #3 – Conservation Subdivision). Of the three alternatives, conservation subdivision was the preferred alternative.

Recommendations

The preferred pattern of development along VT103 in this area requires rezoning to reduce the overall density of development, to limit the type and amount of commercial development allowed, and to encourage (or potentially require) clustered planned unit development (under Section 3.25 of the zoning regulations) to preserve designated open space areas. In order to achieve this pattern of development the Town of Chester should consider the following:

- Inventory and map significant natural, scenic and open space areas along the corridor (referenced in the current town plan under "Special Considerations") as part of subsequent plan updates – e.g., in the next municipal plan update or a supplemental open space plan. Mapped open space areas can then be considered for coordinated open space protection in the review of site plans and subdivision plats – e.g., as now specified under Section 3.25 of the zoning regulations for planned unit development. Subdivision standards under Section 8 also should be updated to include open space protection provisions (also see Recommendation #19).
- At minimum increase minimum lot size, frontage and setback requirements to reduce the allowed density of development along this stretch of corridor – e.g., to correspond with R-80 zoning across the highway (see related R-80 District recommendations under Recommendation #3).
- Limit the type and location of commercial development allowed – at minimum to exclude commercial uses that also are allowed and encouraged in other districts (e.g., retail stores, offices, community centers) to further avoid potential strip development.
- Provide additional incentives (e.g., density bonuses) to encourage, or otherwise require, clustered, planned unit development in rural residential areas (under Section 3.25) – for both residential and commercial development. This could include, as appropriate under the town's subdivision regulations, a more formal "conservation subdivision design" process for major

subdivisions, which requires that all development, including shared roads and infrastructure, be located outside of mapped conservation or open space areas.

- Limit direct access to VT 103 within this district – and along the length of the entire corridor – in accordance with applicable *Vermont Access Management Program Guidelines*. Consider the adoption of a "VT103 Access Management Overlay District".

APPENDIX M

Access Management Bylaw Update Checklist

Access Management: Bylaw Update Checklist	Addressed In:		
	Current Regulations	Proposed Regulations	Not Applicable
Zoning District Designations			
1. Avoid "ribbon" or "strip" zoning along road corridors – e.g., strip commercial districts			
2. Define compact development districts – e.g., villages, growth centers, industrial parks – in appropriate locations (e.g., adjacent to existing centers, major intersections)			
3. Define "Interchange (Limited Access) Districts" to regulate development, access management within highway interchange areas			
4. Define "Access Management Overlay District(s)" to apply access management criteria to a particular highway corridor or intersection			
Land Uses by Zoning District			
1. Evaluate allowed uses in relation to setting/context, trip generation rates, transit access			
2. Rural Districts: agriculture, forestry, clustered residential uses			
3. Village/Growth Center Districts: mixed commercial, residential, civic uses			
4. Limited Access: limited mixed use (travel, highway-oriented uses)			
Densities of Development by Zoning District			
1. Limit scale, density of development along undeveloped sections of highway			
2. Rural Areas: low overall density, large lots, wide frontage, deep setbacks and/or clustered development off the road			
3. Village/Growth Centers: high density, small lots, reduced frontage and setbacks, increased building height and lot coverage, shared access and parking			
4. Interchange Areas: planned, clustered development, low-moderate overall density			
General Access Standards (e.g., General Regulations)			
1. Limit access (curb cuts) to one per existing lot, or one per specified length of road frontage, consistent with accepted access management guidelines, functional class			
2. Require access from a secondary or development (service) road where feasible			
3. Require that new and relocated driveways be aligned with facing driveways			
4. Allow shared driveway and parking areas within side yard setbacks			
5. Separate curb cuts and road intersections; set minimum separation distances			
6. Require the relocation, consolidation or elimination of non-conforming accesses upon development or redevelopment			
7. Define access and driveway design standards (e.g., width, length, alignment, grade) which may vary by the types of use, vehicle, trip generation rates			
8. Limit access and driveway widths to the design width, require curbing, entrance landscaping or other access control features			
9. Require adequate driveway lengths for storage and stacking			
10. Require driveway turn around areas; prohibit direct parking that requires backing into rights-of-way (except for on-street parking)			
11. Specify access requirements for Class IV roads (e.g., type allowed, required upgrades)			

Access Management: Bylaw Update Checklist	Addressed In:		
	Current Regulations	Proposed Regulations	Not Applicable
Site Layout Standards (e.g., Site Plan, Conditional Use Review)			
1. Rural: minimize the linear density of development along roads, maximize internal site circulation (access to adjoining parcels, out parcels)			
2. Village/Growth Centers: maximize connectivity, create or maintain a pedestrian scale and orientation			
3. Village/Growth Centers: reduce or eliminate on-site parking requirements (e.g., based on the availability of on-street, shared or public parking, or parking or transit credits)			
4. Limit parking to the rear of principal buildings, or to the side behind the building line			
5. Require shared access (joint and cross access) and interconnected or shared parking with adjoining properties where feasible; including access easements that connect to adjoining parcels in the event they are developed or redeveloped.			
6. Require interconnecting pedestrian sidewalks or paths between buildings, parking areas, and adjoining parcels			
7. Require the installation of public transit facilities, where served			
8. Require the installation of bicycle racks for commercial, industrial, civic, multi-family and recreational uses.			
Multiple Property Standards (e.g., Subdivision, PUD Review)			
1. Discourage or prohibit the creation of flag and other irregularly shaped lots that do not meet access or frontage requirements			
2. Require that subdivided parcels and parcels in common ownership share existing or planned access; limit the right to additional access upon re-subdivision of land			
3. Require that subdivision layouts maximize street connections; require that future right-of-way extensions to adjoining parcels be shown on subdivision plats; prohibit dead-end streets (including cul-de-sacs) except as specified (e.g., due to site constraints).			
4. Require access to individual lots from internal development or service roads			
5. Allow or require planned unit development; include requirements for clustering − e.g., for rural residential areas (PRDs) and commercial or industrial parks (PUDs)			
6. Require the submission of a master plan for phased development, showing planned access points, road and pedestrian extensions to serve the entire development.			
7. Require interconnecting pedestrian sidewalks or paths between buildings, parking areas and adjoining parcels			
8. Require the installation of mid-block pedestrian paths where appropriate			
9. Define road, intersection, sidewalk and streetscape standards, by function and context			
Infrastructure Requirements (e.g., Subdivision, Conditional Use Review)			
1. Require traffic impact analyses for larger projects, to be paid for by the developer, to determine traffic and infrastructure impacts associated with a proposed development			
2. Require the installation of on- and/or off-site access, road and/or traffic management improvements necessitated by the development, to be paid for by the developer			