

## **Policy for Transportation Construction and Improvements**

This Policy includes the minimum State of Vermont January 23, 2013 “Town Road and Bridge Standards”. The history and template for these standards may be viewed at: [HERE](#).

Projects within the Town and State Highway Right-of-Way may be subject to one or more local or state policies or guidelines, including issuance of a 19 VSA 1111 right-of-way use permit. The town [highway department page](#) has additional information and the permit application form.

For information on State Agency of Transportation projects in Hyde Park go to - [VTransparency](#).

Statewide culvert inventories are maintained by Municipal, regional and state staff and may be viewed here - [VTCulverts](#)



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The Selectboard of the Town of Hyde Park, County of Lamoille, State of Vermont hereby adopts the following town Policy for Transportation Construction and Improvements.

### **Introduction**

This Policy shall be called the “Policy for Transportation Construction and Improvements” or the “Road and Bridge Standards Policy”. The Town recognizes that a Municipal Roads General Permit (MRGP) will require that all Vermont towns follow standard road construction and maintenance practices in order to be supported by town, state and federal investment funds. Additionally, future projects are expected to be prioritized by a road erosion inventory and capital plan. To that end, this Policy’s objective is to establish the methods for sound and cost-effective transportation construction and improvement for the long-term health of the local road network and maintaining the good water quality that currently leaves Hyde Park and enters the Lake Champlain watershed.

This Policy shall apply to the construction, repair, and maintenance of all roadways within the Town of Hyde Park, including within the Village of Hyde Park, whether a public or private roadway, individual or shared driveway, serving any type of land development and including all bridges, culverts and related roadway or driveway drainage systems. Roadways as referred to within this Policy as “Town Roads” and “Local Roads”, and include all municipal and private roadways and related infrastructure, including individual and shared driveways, excluding state and federal properties and roadways. Agricultural and forestry access roads or drives are exempt to the extent the uses being served by the access is exempt from local zoning, however, the access for an agricultural or forestry use at the point it enters a public highway must receive 19 VSA 1111 approval, or an exemption, from the state or town. Applicants for land development and individuals considering offering the municipality roadways or other infrastructure should be provided a copy of this Policy in the project’s planning phase.

If a parcel is proposed for a change of use, then all existing access ways, to and within that parcel or project, and to the primary structure or to the area of primary use, are subject to review under this Policy. For fire protection services, driveways meeting the standards of this Policy must be constructed to within 100 feet of the primary structure, unless waived by the Selectboard and an alternative fire service method or facility is provided by the developer.

### **Definitions**

**Driveways:** If the Roadway definition is not met, then the access must meet driveway standards.

**Land Development:** See current town zoning bylaw.

**Roadways:** Roadways are defined as vehicular transportation routes and associated infrastructure providing frontage or access to four or more residential uses (one residential use means no more than one duplex structure or one single-family on a parcel) or four or more commercial uses (individual businesses), or combination thereof, which generate 40 or more trips – 40 Annual Average Daily Traffic (AADT). For example, the AADT is equal to 10 trips per day for each residential unit. For commercial or mixed uses, the AADT must be determined with the assistance of a traffic consultant, guidance or recommendations from the Vermont Agency of Transportation, the regional planning commission or other source acceptable to the Selectboard.

**Trip:** A trip is defined as one-way travel across a road and the total trips are measured at any point along the roadway that is most representative of the use and impact on that roadway and connecting roads. The existence or proposal to add one 1-bedroom accessory apartment to a parcel shall not increase the single-family use AADT of 10 for the purposes of this Policy.

For standards and terms needing additional clarification or definition, the regional planning commission or Vermont Agency of Transportation shall be utilized as a resource and to provide guidance.

Introduction - continued:

### **Minimum Standards**

The standards listed here are considered minimum and apply to transportation construction projects and roadway repair and maintenance activities. The standards include management practices and are designed to: ensure the safety of the traveling public, minimize damage to road infrastructure during flood events, and enhance water quality protections by minimizing sediment delivery to surface waters and/or wetlands.

Roadway and driveway improvements under this Policy are required when:

- more than 50% of the construction value of the roadway (or a defined significant road segment), bridge, or culvert, is lost following a significant weather event, deterioration or other event;
- new land development is proposed and the new uses will utilize one or more existing roadways and/or roadway structures that do not comply with these minimum standards; or
- a change of use is proposed on a parcel that results in a driveway becoming a roadway or the change of use creates an increase in AADT or potentially negative impact on the roadway or roadways serving the project. The Selectboard determines when requirements for improvements under this Policy will be necessary. Negative impacts include a change of use that will add heavy vehicles, long vehicles or other transportation vehicles to an existing roadway that is not designed to accept the new traffic type.

### **Modifications to Minimum Standards**

The Selectboard reserves the right to modify these standards for a particular project or repair or maintenance activities where, because of unique physical circumstances or conditions, there is no possibility that the project or activities can be completed in strict conformance with these provisions. Any modifications to the standards must be done in a manner that serves the underlying intent of the management practice, be it public safety, flood hazard avoidance, or water quality protection. Fiscal reasons are not a basis for modification of the standards. Questions about modifications to state standards should be directed to the VTrans District Office. For design speeds over 35 mph, contact VTrans, regional planning or traffic consultant.

The Town or project developer shall comply with these Road and Bridge Standards, all applicable state and federal approvals, applicable permits and duly adopted standards when undertaking road and bridge activities and projects.

Any new roadway regulated by and/or to be conveyed to the municipality shall be constructed according to the minimums of these standards. "Regulated by" means any land development project reviewed by the Selectboard, the Town or Village Development Review Board or reviewed under any local ordinance or bylaw. If any federal and/or state funding is involved in a project, the VTrans district office must be notified prior to any field changes taking place that would alter the original scope of work and would not meet the minimum requirements in these Town Standards.

## Exceptions

No roadway improvements are required if the proposed land development (“land development” as defined in the town zoning bylaw) is:

- on a legally existing parcel that is in compliance with local ordinances, town zoning permits, and any applicable state permits, and
- a new seasonal camp, new single-family home or two-family home and the lot is approved for that land use (additions to existing structures are exempt from review under this Policy unless it also creates a change in use, including new units or increased traffic), and
- served by an existing defined roadway or access (meaning visible and travelable in the field) with any width which is currently open to public travel and adequate for fire service as determined by the Fire Chief, and
- the proposed use generates no safety, fire access or environmental concerns as may be determined by the Selectboard or Fire Chief.

Notwithstanding the above, all new land development entering a public or private roadway shall comply with State Standard B-71 for intersections and a 19 VSA 1111 permit may be required.

Example of State 19 VSA 1111 “Letter of Intent” issued prior to local zoning approval:



State of Vermont  
Policy, Planning & Intermodal Development Division  
Policy, Planning and Research Bureau  
Development Review & Permitting Services Section  
One National Life Drive  
Montpelier, VT 05633-5001  
vtrans.vermont.gov

Agency of Transportation

[phone] 802-828-2653  
[fax] 802-828-2456  
[tdd] 800-253-0191

### **! LETTER OF INTENT ! THIS IS NOT A PERMIT**

February 11, 2015

Villejo Ventures, LLC  
David Villeneuve  
PO Box 360  
Underhill, VT 05489

Subject: Jericho, VT15, L.S. 183+20 LT & RT

Dear David:

Your highway permit application to modify an existing access; install an 18" culvert; and bore under VT15 for waterline connection, at the above-referenced location, has been reviewed and found to meet the requirements for work within the highway right-of-way.

Title 19 VSA § 1111 requires that we ensure compliance with all local ordinances and regulations relating to highways. **Your highway permit application will be processed after you provide us with copies of your Act 250 and/or local approvals, including all conditions.** In cases where local zoning does not exist, a letter from the legislative body of the municipality will be acceptable.

The following special conditions will need to be satisfied prior to the permit being issued:

1. The previously approved Letter of Intent, #32147, dated September 10, 2007 for the Village Mill Restaurant and Grill site (see attached) is voided. This Permit will not be issued until a 30-foot access easement across the Jericho Market lot allowing access from the Village Mill Restaurant and Grill site is recorded in the Town of Jericho Land Records. The proposed Jericho Market access onto Vermont Route 15 will be the only direct connection to the State highway system after redevelopment of the earlier Villeneuve three (3) lot subdivision.
2. A left turn lane on Vermont Route 15 into the proposed Jericho Market access shall be designed, submitted and approved by VTrans prior to this Permit being issued. All costs to design and construct the left turn lane are the responsibility of Villejo Ventures, LLC.
3. A pedestrian crosswalk on Vermont Route 15 at the proposed Jericho Market access shall be designed, submitted and approved by VTrans prior to this Permit being issued. A sidewalk connection from Vermont Route 15 to the building entrance needs to be provided.
4. No work on the turn lane shall begin until a surety in the form of a bond or irrevocable letter of credit is provided to the Agency. The surety shall be an amount equal to the estimated construction costs and

## Section 1: Construction and Improvements

Town roadway and road related infrastructure/improvements shall be constructed or installed in accordance with sound engineering practice and Policy. The standard specifications contained as part of this Policy are considered minimum and may be proposed, or required, to be exceeded to meet traffic or other conditions.

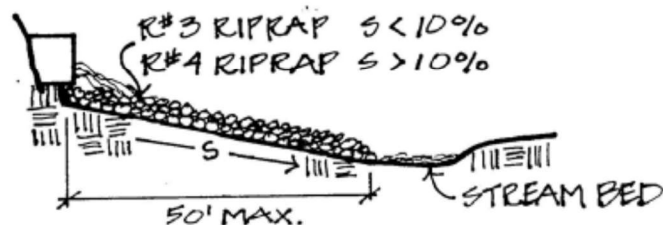
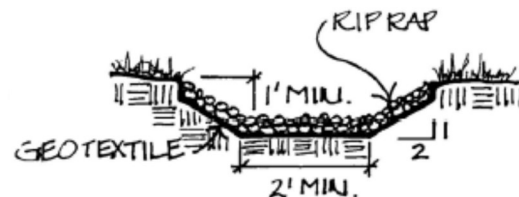
All new road culverts shall be a minimum of eighteen inches (18") in diameter or as directed by the Selectboard. Driveway culverts shall be a minimum of fifteen inches (15") or as directed by the Selectboard. The Road Commissioner and the Selectboard shall specify the diameter of the culvert in the road access permit using:

- All new and replacement bridges and culverts will meet the 50-year event or "Q-50" standard.
- All stone riprap and any other stone used in road, ditch or bridge or any other construction on Town roads shall be of a type and color approved by the Selectboard. The purpose of this standard is to avoid the use of stone that will be functionally inappropriate or aesthetically unpleasing.
- Roadside ditches shall be constructed and treated to minimize erosion and to remove sediments and other pollutants from runoff water by:
  - Seeding and mulching ditches having a slope of less than 2.5%;
  - Placing biodegradable matting and seed in ditches with slopes between 2.5% and 5%;
  - Stone lining ditches having a slope of 5% or greater. Stone riprap shall be at least 12" stone.

Additional guidance is available at the Vermont Local Roads Program website and Better Roads Manual ([available here](#)).

All bridges shall have a minimum two-lane width consistent with the width of the approaching travel lanes. Each travel lane on a bridge or large structure shall have a shoulder width of at least 3-feet or a designated bicycle and pedestrian lane of 5-feet added to at least one side of the bridge deck.

**Note:** Road construction and right-of-ways require review by the Hyde Park Development Review Board. The Town requires a zoning permit for all new roads, driveways, subdivisions and changes of use. Coordination with both the Selectboard and Town Zoning Office are critical to a successful development projects.

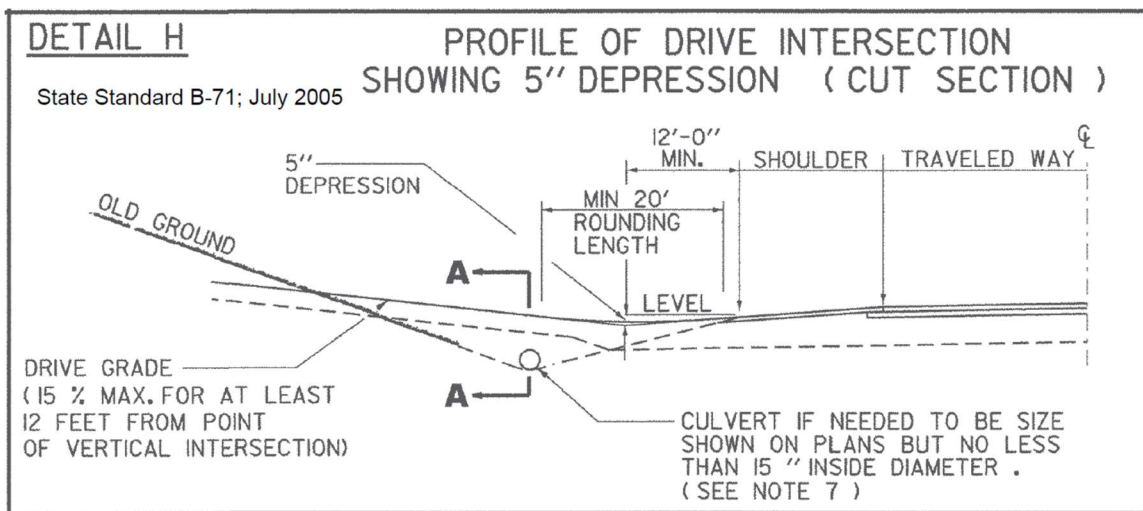


RIPRAP CONVEYANCE CHANNEL

## Section 2: Highway Access Permit

All new land development and changes of use on any parcel require a highway access permit application (under 19 VSA 1111) to be first submitted to the Selectboard, and approved, prior to the issuance of a local zoning permit. The State of Vermont expects all land development proposed to access a state highway, directly or indirectly via a private access, to be reviewed prior to issuance of a local zoning permit application. Driveways shall meet the minimum width requirements in the zoning bylaw as well as this Policy and the B-71 State Standard, including Detail H, below. Applicants before the Hyde Park Development Review Board shall meet with the Selectboard prior to submitting an application for public hearing for any project that:

1. Proposes to offer roadways or other infrastructure to the municipality, and
2. If no offer is being made to the municipality, the proposed project will not strictly comply with these Road and Bridge Standards. In this case, the Selectboard may be asked to modify the standards or request that the proposal be modified as part of the land use application review process.



As authorized under 19 V.S.A. Section 1111, the following activities require the approval of the Selectboard after submission of a complete highway access permit application, including any required fees. Construction costs are borne by the applicant unless shared by formal agreement with the Town or other property owners benefiting by the improvements.

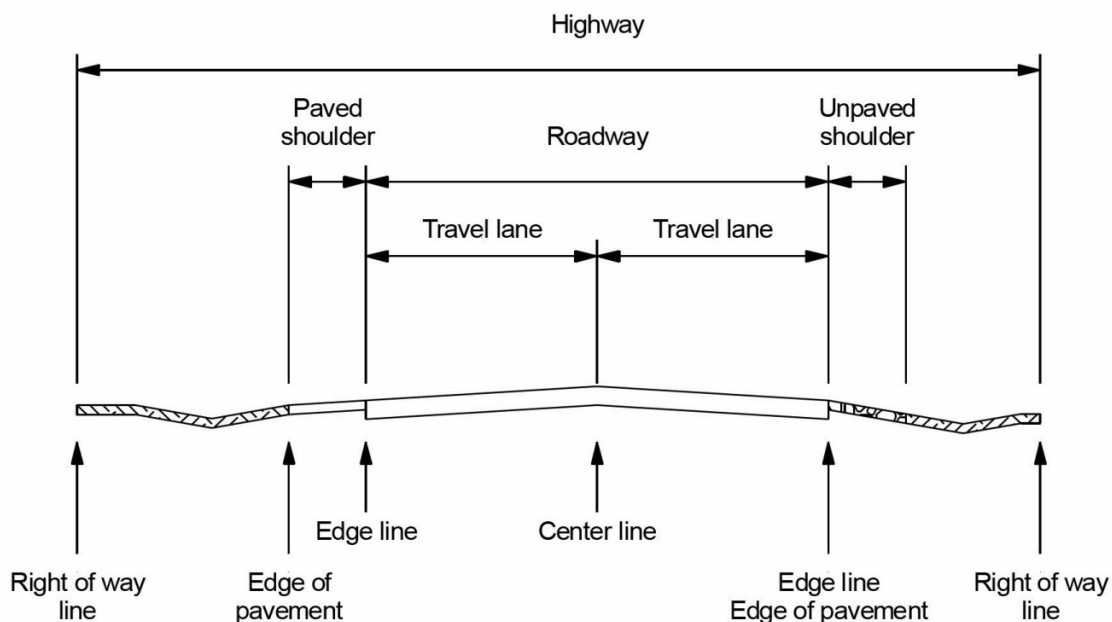
- All proposed drive accesses and development roads where they intersect a town highway (VTrans approval is required for VT100, VT100C and VT15).
- Any change in the use on parcel when the land development is accessed by an existing private roadway or driveway that enters a town highway right-of-way.
- Any change in an existing road or driveway where it intersects a town highway, including any changes within 25-feet outside of the edge of the roadway shoulder.
- Any increase in the volume of traffic or change in type of vehicles entering the town highway.
- Any work within the town highway right-of-way not previously approved by the Selectboard, excepting utility work for electric poles and wires, but including underground cables or pipes, water or wastewater system infrastructure, including stormwater system components; not owned or controlled by the Town of Hyde Park.
- The Town encourages project developers to combine driveways before entering a town highway to reduce the number of access points and related highway maintenance costs.



## Section 3: Roadways & Design Guidelines

The term “roadway” refers to the area of the street right-of-way used for vehicular travel, including cars, trucks, bicycles and transit. The roadway may also include a number of additional uses such as on-street parking, bicycle & pedestrian facilities, curbed structures such as medians and crossing islands, and utility access points, see Typical Roadway U diagram below.

- All new or substantially reconstructed gravel roads shall have at least 12” thick processed gravel sub-base, with an additional 3” (minimum) top course of crushed gravel.
- All new or substantially reconstructed paved roads shall have at least 15 inches in depth of processed gravel sub-base with an additional 3 inches (minimum) of bituminous concrete (paved hot mix).
- All roadways shall be graded so water does not remain on the road surface. For roadways that are not super-elevated, this generally means a 2% to 4% (1/4” – 1/2” per ft) crown for gravel roads and a 1% to 2% (1/8”– 1/4” per ft) crown for paved roads to promote sheeting of water.
- Proper grading techniques for gravel roadways must be used to avoid creating a ridge or berm between the crown and the ditch.
- Any berm along the roadway shoulder that prevents the proper sheeting of water must be removed.
- The town may replace or repair existing structures in undeclared disasters to its prior condition if the replacement or repair costs less than 50% of the cost that would be required to meet these standards. Documentation shall be kept on file for each such repair or replacement. See: [FEMA “50% Rule”](#) for additional guidance.



*Typical Roadway Use within ROW Limits*



## Section 3: Roadways & Design Guidelines - continued

### 3.1 Basic Geometric Standards

Design criteria for Town roads and Private Subdivision Roads are summarized below.

### 3.2 Design Speed

Currently the town traffic ordinance only applies to state highways. There is no town ordinance in place for town roads including the option to set a town-wide speed limit for unpaved roads as provided by 23 V.S.A. 1007:

#### § 1007. Local speed limits

(a)(1) The legislative body of a municipality may establish, on the basis of an engineering and traffic investigation, a speed limit on all or a part of any city, town, or village highway within its jurisdiction, which:

(A) is not more than 50 miles per hour; however, after considering neighborhood character, abutting land use, bicycle and pedestrian use, and physical characteristics of the highways, the legislative body of a municipality may vote to set the maximum speed limit, without an engineering and traffic investigation, at not more than 50 miles per hour nor less than 35 miles per hour, on all or a portion of unpaved town highways within its boundaries, unless otherwise posted in accordance with the provisions of this section;

Generally, design speeds are higher than 35 mph on Class 2 roadways. For other local roads, the design speeds are generally 30 to 35 mph. however, speeds may be posted lower than the design speed to:

- avoid and/or minimize impacts to historical, architectural, scenic, natural or other resources.
- avoid excessive costs of construction.
- better comply with a town or regional plan.

### 3.3 Stopping Sight Distance

Minimum stopping distances on Town roads will adhere to the values in Table 3.3.

<b>Table 3.3</b>			
<b>Minimum Stopping Sight Distance for Local Roads/Streets (Wet Pavement)</b>			
	Rehabilitation, Reconstruction or New Construction		
Design Speed (mph)	Stopping Sight Distance (ft)	K Value for Crest Vertical Curve	K Value for Sag Vertical Curve
25	150	20	30
30	200	30	40
35	225	40	50

For design speeds over 35 mph, contact VTrans, regional planning or traffic consultant.

Section 3: Roadways & Design Guidelines – continued

3.4 Corner Sight Distance

Corner sight distances for Town roads will meet the minimum requirements of Table 3.4.

<b>Table 3.4</b>	
<b>Minimum Corner Sight Distances (a)</b>	
<b>For Local Roads &amp; Streets</b>	
Design Speed (mph) <sup>(b)</sup>	Corner Sight Distance (ft)
25	275
30	330
35	385

(a) Corner sight distance is measured from a point on the intersecting road or driveway, at least 15 feet from the edge of traveled way on the main road.

(b) For design speeds over 35 mph, contact VTrans, regional planning or traffic consultant.

3.5 Land and Shoulder Widths on Local Roads

Lane widths may vary from 7 to 11 feet. The 7 and 8-foot widths may be appropriate in areas having very low traffic volume and little or no truck traffic. Lane and shoulder widths within Historic Districts should be compatible with the historic character of the District. For new construction, lane and shoulder widths will adhere to values in Table 3.5. Note that the shoulder widths in this table are considered necessary for adequate safety and service for this class of highway.

<b>Table 3.5</b>				
<b>Lane and Shoulder Widths on Town Roads (Lane/Shoulder in feet)</b>				
	Design Traffic Volume			
Design Speed (mph)	AADT <sup>(a)</sup> 0 - 25	AADT 26-50	AADT 51-100	AADT Over 100
25	7/0	8/0	9/0	9/2
30	7/0	8/0	9/0	9/2
35	7/0	8/0	9/0	9/2
Over 35	9/0	9/0	10/1	11/1

(a) – Minimum width of 8/0 whenever there is guardrail

For reconstruction and rehabilitation, the median existing roadway lane and shoulder width within a project area shall be the minimum lane and shoulder widths, with additional shoulder width to accommodate bicycles as outlined under “Bicycle and Pedestrian Considerations” in this Section.

### 3.6 Grades and Cross Slopes

For existing Class 2 or Class 3 town highways – these roads will be eligible for land development, including subdivision, with any centerline grade.

For existing Class 4 town highways or unclassified town highways – these roads will not be eligible for reclassification to Class 3 if the road centerline grade is in excess of 15% at any point (measured at intervals of no less than 50 feet and no more than 150 feet).

For private roads – private roads will not be accepted as a town highway or approved for the creation of new lots, if the road centerline grade is:

- 1) more than 8% at any point on a gravel road (measured at intervals of no less than 50 feet and no more than 150 feet) or
- 2) more than 10% for paved roads, or paved sections of a gravel road.

Maximum grades on Local Roads will adhere to the values shown in Table 3.6.

Table 3.6				
Maximum Grades				
Type of Terrain		Design Speed (mph)		
		25	30	35 and over
		Maximum Grade (percent)		
	Level	7	7	7
	Rolling	11	10	10
	Mountainous	15	14	10

For design speeds over 35 mph, contact VTrans, regional planning or traffic consultant.

Grades for Local Roads should be as flat as is consistent with the surrounding terrain. Where grades of 4 percent or steeper are necessary, the drainage design may become critical. On such grades special care must be taken to prevent erosion on slopes and open drainage facilities. To provide for proper drainage, the desirable minimum grade that should be used for streets and bridges with outer curbs is one percent (1.0%).

Two-lane pavements are normally design with a centerline crown and parabolic surface with an average cross slop of 2 percent (2.0%).

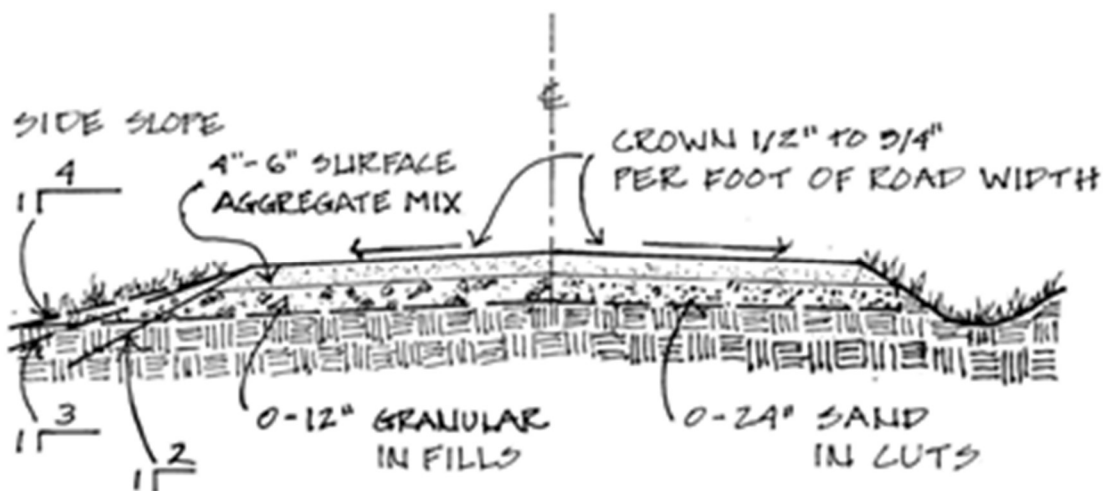
When the use of curves is required, a superelevation rate compatible with the design speed must be used. Superelevation of curves on rural paved roads should not exceed 8 percent and 6 percent on unpaved roads. Where a side road intersects on the outside of a main road curve, superelevation of the main road curve should be limited to 6 percent or less to prevent operational difficulties for vehicles entering the main road under snowy or icy conditions. Super elevation is tilting the roadway to help offset centripetal forces developed as the vehicle goes around a curve. Along with friction, super elevation helps keep a vehicle from going off the road. A super elevated section is proceeded by a transition section. The values of super elevation are determined from the AASHTO Design Guide and are a function of the rate of super elevation and the curve radius.

## Section 4: Ditches & Slopes

Soil exposed during ditch and slope construction, repair or maintenance must be treated immediately following the operation and temporary erosion prevention and sediment control practices must be installed and maintained during construction activities and until the ditch or slope is permanently stabilized.

The following are minimum erosion control measures. Careful attention must be given to areas vulnerable to erosion and immediately adjacent or discharging to surface waters and/or roadway drainage facilities:

- Removal of any public shade tree that is not a hazard nor a safety risk to the traveling public requires prior review of the Town Tree Warden or may be removed in conformance with an agreed upon set of procedures between the highway department and the Town Tree Warden. Notice to neighbors adjacent to the roadside clearing shall be contacted prior to removal of any tree greater than 4" in diameter and the landowner may ask that some or all cut wood greater than 4" in diameter remain for the landowner to move out of the public right-of-way. The Town Highway Road Foreman may order the removal of public shade trees that are impacting sight distances, may create or are creating or safety risk to the travelling public.
- Seed and mulch all ditches with grades less than 5% when undertaking projects or repairs or maintenance activities that result in exposed soil. Vegetation must be established and monitored. If vegetation is not established within 10 days of placement, install biodegradable non-welded matting with seed.
- Stone line all new or reconstructed ditches or whenever soils are disturbed by maintenance activities with grades equal to and greater than 5%; alternatively, install stone check dams. The check dams must meet criteria outlined in the "Standards and Specifications for Check Dams, from the Vermont Standards and Specifications for Erosion Prevention and Sediment Control. Specifically, dams must be placed so that the crest of the downstream check dam is at the same elevation as the base of the upstream dam.



Vermont Better Back Roads Manual, 2009, page 5

#### Section 4 – Ditches and Slopes (Continued)

- Create parabolic (wide "U" shaped) ditches when constructing new or substantially reconstructing ditches, rather than narrow "V" shaped ditches wherever lateral space allows. Ditches with gradual side slopes (maximum of 1:2, vertical to horizontal ratio) and a wide bottom (at least 2 feet) are preferred. Use biodegradable, non-welded matting to stabilize side-slopes where slopes are greater than 1:2; apply seed and mulch to any raw or exposed side-slope if slopes are less than 1:2.
- All ditches must be turned out to avoid direct outlet into surface waters. There must be adequate outlet protection at the end of the turnout, either a structural (rock) or vegetative filtering area.
- If in the best professional engineering judgment of the VTrans Operations Division, there is a cost effective ditch treatment that will meet the intent of the management practices described above, but represents a departure from these standards, the municipality may implement the more cost effective ditch treatment alternative with the professional recommendation submitted in written form by VTrans prior to the municipality executing the work.
- When constructing new or substantially reconstructing side slopes, use appropriately sized stone armament on slopes that are 1:1½ or greater. If perennial streams are affected by the toe of slope the project must conform to the statewide [Stream Alteration standards](#).

#### **Section 5: Culverts & Bridges**

Replacement of existing roadway cross culverts and any new roadway culvert, except driveway culverts, must have a minimum culvert diameter of 18 inches.

Replacement of existing bridges and culverts and any new bridges and culverts must be designed in accordance with the VTrans Hydraulics Manual, and, in the case of perennial streams, conform to the statewide Stream Alteration standards.

All new driveway culverts must have a minimum diameter of 15 inches, or as directed by the town. When installing or replacing culverts, use appropriate techniques such as headwalls and wingwalls, where there is erosion or undermining or where it is expected to occur. Installation of a splash pad or plunge pool at the outlet of new or repaired drainage culverts may be required where there is erosion or where erosion may occur. Splash pads and plunge pools are not appropriate for use in streams supporting aquatic life.

The Town favors reconstruction of bridges within existing footprints, in order to ensure compatibility with the historic setting and to reduce costs and environmental impacts. Where reconstruction within the existing footprint is not feasible, the full width of approach roadways as shown in Table 4.5 should be provided across all new bridges on Local Roads. New bridges should be designed to HS-25 loading capacity. Where an existing road is to be reconstructed, an existing bridge which fits the proposed alignment and profile may remain in place when its structural capacity in terms of design loading and roadway width area at least equal to H-12 for AADT up to 50 and H-15 for AADT exceeding 50.

1 Town highway bridges will be designed to pass the 50-year frequency flood with a minimum  
2 clearance of 1 foot between water surface elevation and the low chord of the bridge.  
3 Consideration shall also be given to the potential effects of the 100-year flood on upstream  
4 property, the environment, hazards to human life and floodplain management criteria. A local  
5 zoning permit for any new or reconstructed structure within a flood hazard area shall be required,  
6 whether on a state highway, local highway or private road.

7 All new roadway culverts, private or public, will have a minimum diameter of 18 inches and shall  
8 be located as follows: - one cross culvert every 500 feet for roads with a discernable slope or;  
9 every 400 feet on roads with slopes of 1-2%; every 300 feet on roads with slopes of 3-5%; every  
10 200 feet on roads with slopes of 5-10%; every 100 feet on roads with slopes over 10%. Culverts  
11 are to be installed in accordance with standard generally recognized construction practices and  
12 manufacturer's recommendations – see also VTrans standard details "D" series.

13 Replacement of existing bridges and culverts and any new bridges and culverts must be  
14 designed accordance with the [VTrans Hydraulics Manual](#). In the case of perennial streams,  
15 conformance with the statewide Stream Alteration Standards is required. The Road  
16 Commissioner may also require that a stormwater management plan be prepared as part of a  
17 site plan review (see also the Hyde Park Land Use and Development Regulations – zoning  
18 bylaw), when, in his/her judgment, potential risk to private or public infrastructure warrants a  
19 higher margin of safety.

20 Culverts are to be new or like new and of a material approved by the Town; either sixteen (16)  
21 gauge galvanized steel or corrugated polyethylene, silt tight, to meet ASTM standards and will  
22 have guideposts at each edge of the traveled way if required by the Town.

23 The culvert length and lateral separation from the road shoulder shall be sufficient to achieve  
24 3:1 front slopes to the extent feasible. Soil cover over the culvert shall be at least the minimum  
25 recommended by the culvert manufacturer; squash (pipe arch) culverts may be used when  
26 inadequate cover conditions exist, provided the necessary carrying capacity of the culvert is not  
27 compromised.

28 When installing or replacing culverts, use appropriate inlet and outlet flow control techniques  
29 such as headwalls, wing walls or manufactured culvert aprons of a traversable design, where  
30 there is erosion or undermining or where it may occur. Inlet and outlet devices shall be sufficiently  
31 separated from the edge of the road so as not to be a hazard, or shielded if the foregoing is not  
32 practical, as approved by the Town.

33 Install a splash pad (energy dissipater) or plunge pool at the outlet of drainage culverts where  
34 there is erosion or where erosion may occur. Splash pads and plunge pools are not appropriate  
35 for use in streams supporting aquatic life. — Culverts shall be placed in alignment with the flow  
36 to the extent possible and not at right angles to the channel.

## **Section 6: State Design Standards**

### **Class 2 Town Highways**

All new Class 2 town highways, including major reconstruction of existing Class 2 town highways, or any roadway being offered for acceptance as a Class 2 town highway, shall strictly comply with or exceed the minimum requirements in this Policy and VTrans A-76 Standards for Town & Development Roads, B-71 Standards for Residential and Commercial Drives; and shall also comply with the VTrans Access Management Program Guidelines for other design standards and specifications.

A-76 Design Standard for Town and Development Roads

B-11 Design Standards for Under-Drain

B-71 Design Standards for Residential and Commercial Drives

D-2 Design Standards for Headwalls and other reinforcements

D-3 Design Standards for Treated Gutters

Applicants for land development projects will generally not be required to improve existing Class 2 roads, unless the proposed activity will generate excessive weights, safety concerns or traffic volumes sufficient to require improvements to the Class 2 road, such as bridge weight capacity, road or bridge width, and intersection upgrades, as determined necessary by the Selectboard, a local zoning review process or a state governmental agency.

The width of travel lanes and shoulders on Class 2 roadways are determined by Table 4.3 in the State Design Standards manual. Class 2 roads shall be paved.

### **Class 3 Town Highways and Private Roads**

All new Class 3 town highways and private roads, including major reconstruction and significant repairs from major weather events or from deterioration, or any road being offered for acceptance as a Class 3 town highway shall comply with the below State Standards and this Policy. Where conflicts exist between this Policy and State standards, the Selectboard shall work with VTrans to resolve the conflict:

A-21 Class 3 Town Highway guidelines for Average Daily Traffic (ADT) of 0-250

A-22 Class 3 Town Highway guidelines for Average Daily Traffic (ADT) of 250-400

A-23 Other than class 3 Town Highway guidelines for ADT of 0-400

A-24 Guidelines for all ADT Highways 400-750

A-76 Design Standard for Town and Development Roads

B-11 Design Standards for Under-Drain

B-71 Design Standards for Residential and Commercial Drives

D-2 Design Standards for Headwalls and other reinforcements

D-3 Design Standards for Treated Gutters

### **Class 4 Town Highways and Public Trails**

Class 4 town highways proposed to be utilized for access to new land development shall meet the minimum access requirements in this Policy, in particular for fire service access, but are exempt from the strict compliance with the State Design Standards. The Selectboard shall determine, as part of the 19 VSA 1111 permit process, the extent of town road improvements.

Existing public trails may not be utilized for land development purposes other than primitive camps and non-structural uses. Upgrades to trails can be extensive in order to meet the needs of most new land development, thus interested parties are advised to being discussions with the Selectboard very early in their land development process to determine the feasibility of the project in regard to minimum standards to be required for access.



## Section 7: Guardrails and Horizontal Clearance

When a roadway, culvert, bridge, or retaining wall construction or reconstruction project results in hazards such as foreslopes, drop offs, or fixed obstacles within the designated clear-zone, a roadside barrier such as guardrail must be installed. For example, and subject to review by a professional engineer, roadways with a 25 MPH speed limit that include a shoulder with a slope of 1 on 4 or flatter, and being at least 9 feet in width, will generally not require installation of guardrail. Each location should include a review of the most current version of the AASHTO Roadside Design Guide which will govern the analysis of the hazard and the subsequent treatment of that hazard.

A clear unobstructed roadside is highly desirable for motorist safety along Local Roads. Clear zone distances for new construction and reconstruction projects will normally be based on the values shown in Table 7.1. The placement of poles or other non-crashworthy features in the shoulder or ditch is not desirable, as errant vehicles are likely to travel to the bottom of the ditch.

Table 7.1				
Minimum Clear Zone Distance (in feet from edge of traveled lane)				
Design Speed (mph)	Design AADT	Design Traffic Volume		
		Fill Slopes		Cut Slopes
		1:4 or flatter	1:3	1:3 or flatter
Any	Under 750	7	(a)	7
	750 and over	12	(a)	10

(a) Since recovery is less likely on unshielded, traversable 1:3 slopes, fixed objects should not be presented from the edge of the traveled lane to the toe of these slopes.

Despite the recommendations in Table 7.1, clear zones as narrow as 5 feet may be used on Local Roads, without design exception, where necessary to avoid or minimize disturbance of significant historic archaeological, scenic, natural or other resources.

## **Section 8: Modifying Minimum Roadway Widths**

Considerations for modifying the minimum roadway dimensions of Class 2, Class 3 and private roadways should be made within the context of how the entire right-of-way will be developed over time. This includes public safety; available right-of-way; land use and zoning, current and projected roadway capacity; pedestrian facilities, landscaping (including natural drainage where allowable), bicycle facilities, freight and transit needs, and other intended uses of the public realm. The Selectboard may also require that the width of the travel lane or shoulder for private or public roads be increased above these minimum standards, depending on topography, grade of the roadway, fire safety and access needs, vehicular safety, drainage needs or other factors on a case-by-case basis. In no case shall the minimum widths be waived. Considerations for establishing lane widths, including length and width of fire lanes, turnaround locations and one-way travel, should be influenced by street type designations, street classifications, and the need to have a reasonable balance among competing uses in the right-of-way. They are as follows:

- Lane widths that need to support large vehicle movements such as trucks and transit. Wider lanes should be considered for commercial and industrial access roads.
- Areas where high pedestrian is occurring, consider options that keep travel lanes as narrow as possible. On streets with transit service or that accommodate high volumes of trucks and transit vehicles, consider options that have wider lane widths.
- Narrow lanes support slower vehicle speeds, and minimize overall roadway width which supports pedestrian activity. Narrower lanes can be challenging for larger vehicles to navigate, especially on roadways that carry high volumes of trucks and transit vehicles.

## **Section 9: Land Development Projects & Existing Roads**

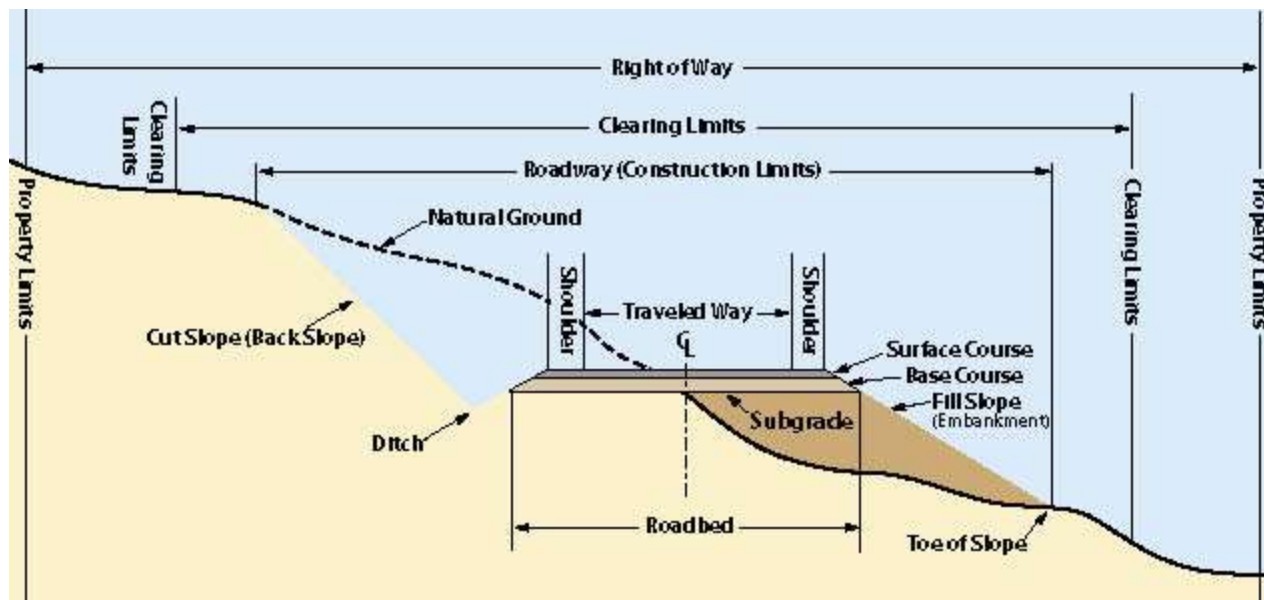
If any parcel is proposed for subdivision, or road submitted for reclassification or town acceptance, or there is a change of use or creation of additional units on a parcel then the proposed access (public or private) whether within or not within the project site, may need to be improved at the applicant's cost. The length of the section(s) of any roadway to be improved outside the development parcel and extending away from the project site shall be proportionate to the proposed land development project as determined by the Selectboard. The improvements shall be based on providing adequate access by fire, ambulance and other private or public services and the costs of improvements shall be the responsibility of the applicant and/or landowners utilizing the road. The Town may enter into written agreements to facilitate the work or share in the cost of road improvement projects, but is not required to do so. If town funds are to be utilized for road improvements that primarily benefit a private entity, a public vote authorizing the expenditure of public funds may be requested by the Selectboard. The Selectboard or Development Review Board may, in any matter, utilize the adopted State Design Standards when the specific issue is not adequately addressed by these Town Standards, such as A-76 and B-71. Example of proportionate share include how infrastructure costs are shared by multiple parties in an electric line extension, or the town managing the costs of an upgrade based on each lot's road frontage.

## Section 10: Class 4 Town Highways & Public Trails

Class 4 highways may be maintained to the extent required by the necessity of the town, the public good and the convenience of the inhabitants of the town, or may be reclassified using the same procedures as for laying out highways and meeting the standards set forth in 19 V.S.A. § 302. The town provides only minimal maintenance on Class 4 roads, if any, and there are no minimum standards for Class 4 roads or trails. Any work on these roads, whether by the town highway department or others, shall first be reviewed and approved by the Selectboard. A 19 VSA 1111 permit may be required in addition to insurance certificates provided by the individuals performing the work that identify the Town of Hyde Park as certificate holder. According to 19 V.S.A. § 302 (c) (5): "Trails shall not be considered highways and the town shall not be responsible for any maintenance including culverts and bridges." In cases where land development is proposed on Class 4 town highways or public trails, the extent of any roadway improvements will be determined by the Selectboard through the 19 VSA 1111 review process to address any safety, fire access or environmental concerns.

## Section 11: Minimum Depths for Materials

All gravel roads serving 4 or more units shall have a minimum of 12" of compacted gravel subbase (or base) and 3" of crushed gravel top course. Paved roads shall have a minimum of 15" of subbase compacted gravel & 3" of top course hot mix bituminous concrete pavement. Driveways serving 3 or less units must have a minimum of 3" crushed gravel top course with 6" well-drained compacted subbase material.



[http://www.nativevegetation.org/learn/manual/ch\\_3.aspx](http://www.nativevegetation.org/learn/manual/ch_3.aspx)

## **Section 12: Complete Streets – Paved Roadways Only**

1 The Town recognizes the value of designing roadways for all users. For grant funded projects  
2 or projects requiring consideration of complete streets objectives, the town will incorporate those  
3 objectives, if financially and practically feasible, including typical elements that make up a  
4 complete street include sidewalks, bicycle lanes (or wide, paved shoulders), shared-use paths,  
5 safe and accessible transit stops, and frequent and safe crossings for pedestrians, accessible  
6 pedestrian signals, and curb extensions. In rural areas examples could be the striping of  
7 shoulders on paved roads to accommodate bicyclists and others or the development of a  
8 separate multiuse path. Balancing safety and convenience for all users is the common  
9 denominator. The state law regarding Complete Streets is not a mandate to retrofit existing  
10 roads.



### **12.1 Bicycles on Bridges**

12  
13 Wherever bicycles are to be accommodated on newly constructed bridges or large structures,  
14 shoulders with a minimum dimension as shown in Table 3.5 should be provided between the  
15 parapet, rail or barrier and the edge of the nearest travel lane, and if no shoulder required, then  
16 shared use signs shall be installed on each approach to the bridge.

### **12.2 Designated Bicycle Routes and Lanes**

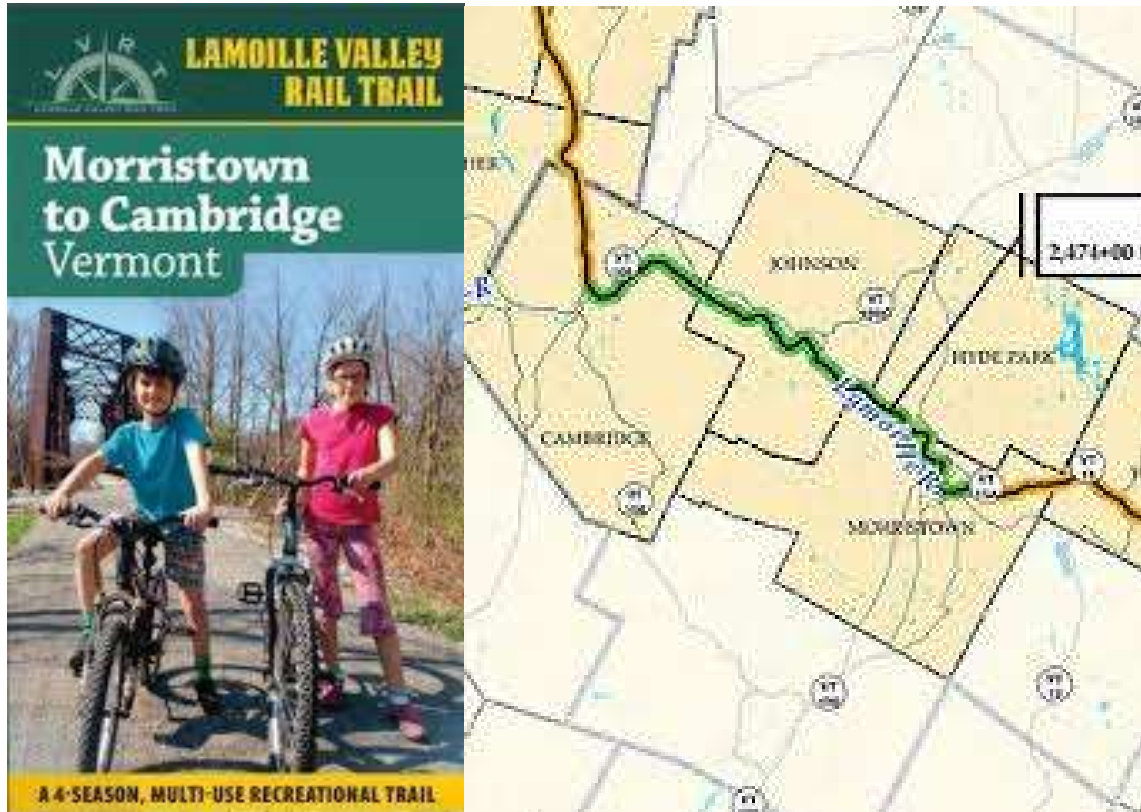
18  
19 Designated bicycle routes or lanes may be appropriate along Town Roads. Because designated  
20 routes and lanes will attract bicyclists encompassing a wide range of abilities, special care must  
21 be taken to ensure adequate widths. Principal concerns for designated bicycle routes and lanes  
22 are rider safety and comfort. Because of these concerns, some high speed and/or high volume  
23 routes may not be appropriate for designated routes and lanes. In such cases, alternate routes  
24 or separate paths for bicycles may be desirable.

25

## 12.3 Pedestrian Facilities

Adequate accommodation of pedestrians must be designed for all roadway projects. Depending on the locality and expected frequency of pedestrians, adequate accommodation may range from a graded space alongside a rural road to a sidewalk in a village. Projects in village areas shall include consideration of sidewalks and crossing locations. In addition, sidewalks should be considered in other areas of expected pedestrian use such as near schools and recreation areas.

Where pedestrians are accommodated on sidewalks, the design must observe, to the extent possible, current Americans with Disabilities Act Accessibility Guidelines (ADAAG). These guidelines establish acceptable grades, cross-slopes, widths, ramps, surface textures and other facets of pedestrian facility design. Pedestrian accommodation on combined bicycle/pedestrian paths must also respect the ADAAG to the extent feasible. Pedestrian accommodation along the shoulders of roadways do not need to comply with ADAAG. However, to the extent that those guidelines can reasonably be achieved, the designer is urged to do so.





## **SECTION 13: SPECIAL DESIGN GUIDELINES**

These Special Design Guidelines are presented to assist the designer in avoiding, minimizing, or mitigating negative impacts upon the environment and other sensitive resources as well as to enhance the design to fit the context of the project site. These Special Design Guidelines note the importance of the individual resources and suggest tools which may be used in the development of a design which recognizes the resource at the proper level of importance. Under this Functional Classification there are guidelines for:

- Historic/Archaeological Resources
- Natural Resources
- Recreational Resources
- Scenic Resources

When such resources are present within a project site and the use of the tools suggested do not provide an adequate protection of the resources then the design may be eligible for reductions in geometric values. The decision to pursue reductions in the standards is subject to approval by the funding or governmental agency and in accordance with the "VAOT Design Exception Policy". The primary strategy for Town Road projects on new alignment should be to use alternative roadway alignments to avoid the impact on the resource. When the project must remain on existing alignment such as roadway reconstruction, "Preservation" or "3R" project, bridge repair or replacement, design solutions should be pursued that minimize the extent of the impact. Town Road projects are intended to provide land access with minimal emphasis on mobility and as such should be treated with the most flexibility when considering design solutions for avoidance of impact to sensitive resources. Reduction in the size/area of impact and the utilization of creative design and engineering solutions should be pursued to the maximum extent possible. The following "common tools" should be used to reduce impacts to the natural and built environment.

### **13.1 Common Tools**

- One lane (two-way) low volume, low speed roadways
- Alignment modification including: adjustment of horizontal and vertical curves to avoid sensitive areas and to fit with topographical features
- Reduction in posted speed
- Reduction/minimization of lane and shoulder widths
- Reduction/minimization clear zones
- Sharpening of horizontal curves with advisory speed postings
- Alterations to typical cross sections including:
  - Roadside ditches shallower than normal
  - Sideslopes steeper than normal (in combination with additional guardrail)
  - Use of curb and closed drainage systems, elimination of roadside ditching
  - Retaining walls
- Other traffic calming techniques, such as intersection diverters, roundabouts, channelization, speed humps, speed tables, angle points, and gateways
- Wetland and wetland buffer restoration/creation
- Wildlife habitat restoration/creation
- Water quality/stream bank vegetation creation, restoration, and enhancement
- On Site and Off site mitigation
- View/scenic enhancement through vegetation management and grading of sideslopes

Common tools to reduce impacts – continued

- Selection of appropriate guard rail or other roadside barriers to accomplish visibility through to views or to blend in with the foreground views
- Use of guard rail to allow steeper than 1:4 graded slopes, retaining walls or cribbing
- Use of guard rail to allow preservation of significant features including native and planted vegetation
- Use of grade separation/bridging/elevated structures etc.
- Separation of vehicular/pedestrian facilities
- Fencing or landscaping for screening or earth berm buffers
- Retrofitting of historical bridges for alternative uses off-site
- Integration of historical features in interpretive facilities, overlooks, etc.
- Light poles and fixtures with down shielded luminaires.
- Architectural/Landscape design:
  - Street trees
  - Use of native materials
  - Use of architectural design details
  - Pedestrian facilities
  - Signage
  - Historical design elements

## 13.2 Historic/Archaeological Considerations

Town Road construction projects on new locations should be designed to avoid historic or archaeological resources wherever possible. This may be in the form of avoiding disturbance of specific sites and structures as well as historic districts or areas where the presence of the road is disturbing to the historic land use and development pattern. Reduction in lane and shoulder widths may be considered where appropriate to avoid the imposition of wider road sections through historically sensitive areas. Additionally, decisions regarding measures to accomplish “speed management” should be considered. Where avoidance proves unfeasible, every effort should be made to minimize impacts and pursue mitigation strategies and design enhancements to enable the maximum integration of the Local road with the historic area.

The following additional design techniques address the potential tools available to designers for Town roads:

- Alignment modification including horizontal and vertical curves to avoid sensitive areas and blend into topographical features
- Alterations to typical cross section including:
  - Roadside ditches shallower than normal
  - Sideslopes steeper than normal
  - Use of curb, and elimination of the roadside ditch
  - Retaining walls
  - Selection of appropriate guard rail or other roadside barriers
  - Landscaping for screening or earth berm buffers
- Retrofitting of historical bridges should be considered
- When existing bridges are structurally deficient, and replacement the only solution, new bridge and approach designs should consider aesthetic treatments consistent with the historical context
- The inclusion of design features which enhance integration of the design into the historical setting



### 13.3 Natural Resources

Local road construction projects should be designed to avoid natural resources to the greatest extent possible. This may be in the form of avoiding disturbance of specific sites or areas where the presence of the road conflicts with important natural resources. Where avoidance proves unfeasible, every effort should be made to minimize impacts or pursue mitigation strategies and design enhancements to enable maximum integration of the Local Road with the resource, including:

- Wetland, rivers, and streams and their shorelines
- Water supplies
- Groundwater protection areas
- Watershed protection areas
- Agricultural districts and farmland
- Floodplains/ways
- Critical wildlife habitat and natural areas
- Rare and endangered species
- Designated "Wild and Scenic Rivers"
- Local Conservation districts or zones
- State and Federal forests and wildlife management areas

### 13.4 Recreational Resources

Town Road projects should be designed to avoid public recreational facilities to the maximum extent possible. Where avoidance proves unfeasible, every effort should be made to minimize impacts including mitigation strategies and design enhancements to enable the maximum integration of the Local Roads with the resource.

- Federally owned, funded, or managed property
- State owned, funded, or managed property
- Locally owned parks and recreational areas
- Privately owned recreational facilities open to the public
- Trails and Greenways

### 13.5 Scenic Roads or Views Considerations

All Town road projects should consider scenic and aesthetic issues for projects that are either designated Scenic Roads, Byways or other roads with scenic attributes. Techniques for preservation of scenic resources should be employed for both scenic resources seen from the road, as well as views of the road from surrounding areas. The following techniques should be considered where scenic views from the highway are identified:

- Selection of guardrail type, where required, should be determined based upon visual assessment and the need for visibility through the guardrail vs. blending of the guardrail with the foreground
- Tree removal or trimming to preserve or enhance views
- Vegetation management in areas where preservation of existing trees serves to provide visual buffer, frame views, or provide other visual context for the roadway
- Treatment of bridges, abutments, retaining walls should de-emphasize structures
- Consider appropriate sign size and placement to prevent blocking of views and to minimize clutter
- Preservation of old stone walls

1 **Section 14: Training**

- 2 Town highway maintenance crews must collectively attend a minimum total of 6 hours of training  
3 per year on best road management practices. The town must keep documentation of their  
4 attendance for a period of three years.

**Adopted:**

Selectboard of the Town of Hyde Park, Vermont on the 9<sup>th</sup> day of January, 2017 and effective immediately. Policy to be filed in the Hyde Park Town Clerk's Office.

*This Policy for Transportation Construction and Improvements was filed for record in the Hyde Park Town Clerk's Office on the 12<sup>th</sup> day of January, 2017.*

**SS Kimberly J. Moulton**

**January 12, 2017**

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*Hyde Park Town Clerk*

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*Date Received*

**Acknowledgments:**

*In addition to the work of the Selectboard, public comments used in the preparation of this Policy were received from Dick Grogan (Town of Stowe standards), Jim Fontaine (consistency, min fire access standards to a structure and width), Fire Chief Ed Webster (emergency responder accessibility), Ron Rodjenski (minor & major roads and grade restrictions), Paul Gillies, Esq. (proportionate costs under 19 VSA 1111 for future improvements shared by multiple owners with the recommendation that the town also consider adoption as a town ordinance as an alternate to a town Policy to clarify enforcement procedures).*