



Smart Growth America
Making Neighborhoods Great Together

Revising the Vermont State Standards

Multimodal Development and Delivery (M2D2)

March 31, 2015

Montpelier VT

Purpose of the project

To initiate a process to **update the Vermont State Standards (VSS)** with input from a broad group of stakeholders.

Revising the VSS will help:

- Keep pace with the national **state of the practice in highway engineering**
- Ensure that Vermont transportation facilities are designed to **meet current state and community needs** and accommodate a variety of users of the transportation network



Background

* * * Vermont Design Standards * * *

2014 Transportation Bill (Act 167)

Sec. 26. RECOMMENDATIONS TO UPDATE VERMONT
STATE DESIGN STANDARDS

(a) establish a **multi-disciplinary Stakeholders Group** consisting of representatives of **public and private sector** entities from **the various modes** of transportation affected by the Vermont State Standards to provide the Agency with critical input in revising the Standards.



Purpose of the Vermont State Standards

1. To provide **clear technical direction** to the designers of transportation projects in Vermont
2. To achieve roadway and bridge designs which provide **access, mobility** and **safety** for users, and which are also sensitive to the social and environmental **context of Vermont**



Legislation (cont.)

(b) Purpose and charge. The Stakeholders Group shall:

(1) Identify areas of the Standards that require modification to be **current with state-of-practice transportation facility design**,

(2) **Identify barriers, gaps, and opportunities** to address the needs of **all transportation modes** in a variety of contexts.

3) **Document the opportunities that exist** to modify the existing Vermont State Standards to meet current state-of-the-industry practices.

(4) **Prepare an implementation plan**

(c) submit a written report of the **Stakeholder Group findings** and recommendations to the **House and Senate Committees on Transportation.**



VT State Standards History

- A driver – public input that projects were “over designed” for their community
- Developed 1994 – 1996 by committee: VTrans, ANR, DHP, RPC, Vermont Council on the Arts, Preservation Trust, FHWA, private citizens
- Implemented as legislative rules in 1997
- Since 1997 has used to design and deliver transportation projects.



Approach: Multimodal Development and Delivery (M2D2)

Developed and piloted through a partnership between Smart Growth America and the Michigan Department of Transportation

A project to support the Vermont Agency of Transportation's vision for a safe, efficient and multimodal transportation system that promotes Vermont's quality of life and economic wellbeing by improving the Agency's institutional capacity to plan, design, construct, operate and maintain Vermont's transportation system for multiple modes.



M2D2 Objectives

- To explore the needs and expectations for each transportation mode and identify ways to **balance those needs and modes collectively.**
- To understand **barriers, gaps,** and **opportunities** that exist in the VSS and other current practices, standards and guidance to address the needs of all modes, as well as other state and community needs and goals.



Project Stakeholder Group

More than 50 stakeholders engaged throughout the process:

- **VTrans** design and planning professionals
- **External partners and customers** including businesses, municipalities, regional planning commissions, trucking, transit and active transportation advocates, and other state agencies



Gap analysis

September 2014:

VTrans engaged Project Stakeholder Group to identify **gaps and barriers** within the **current Vermont State Standards** through discussion between VTrans staff and other partners impacted by the agency's design practices.



Photos: VTrans, via Flickr



Series of workshops led by national experts

Fall, 2014:

Sept. 25	Kick-off PSG meeting: Discussion of gaps and barriers in the current VSS
Sept. 30	Land Use
Oct. 21	Public Transportation
Oct. 28	Freight Logistics
Nov. 18	ITS/TDM
Dec. 4	Active Transportation
Dec. 16-17	Multimodal Integration



Outcomes of the M2D2 workshop series

During the workshops, stakeholders identified:

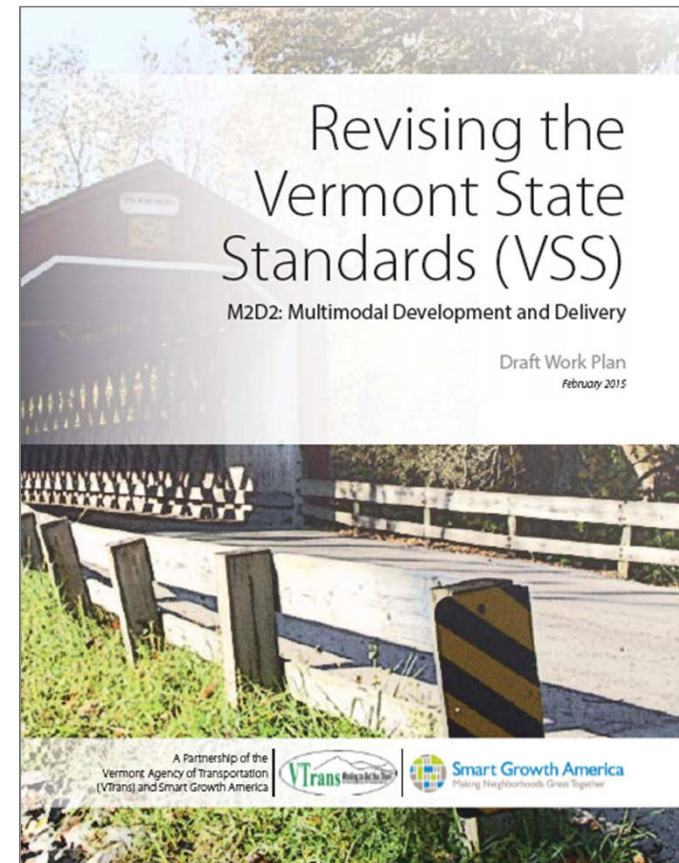
- Issues, opportunities, and considerations **for revising and updating the VSS**
- Additional barriers and opportunities to address **within other VTrans processes**, and the practices of the agency's partners



Product

Work plan providing a detailed framework and process for:

- **Revising** the VSS and other related documents and practices,
- **Communicating** with internal and external partners throughout the revision process, and
- **Providing ongoing training** on the revised VSS to VTrans staff and external partners



Process for developing the work plan

- Compiled the results of the workshop discussions
- Conducted detailed review of VSS and other related VTrans documents
- Developed work plan with a framework and process for revising the VSS and other related documents
- Received feedback from Project Stakeholder Group
- Revised and finalized work plan
- Submitted to legislature on March, 16 2015
- **Next: Implement the work plan**



Overview: Chapters

- Executive Summary
- Introduction
- Background
- M2D2 Workshops
- Issues Identified During the M2D2 Workshops
- Work Plan
- Summary and Next Steps
- Appendices: Detailed recommended revisions and augmentations to the VSS

VTrans – Vermont Agency of Transportation Revising the Vermont State Standards

Chapter 6 – Principal Arterial Roads and Streets (revise/augment)
 Chapter 7 – Minor Arterial Roads and Streets (revise/augment)
 Chapter 8 – Collector Roads and Streets (revise/augment)
 Chapter 9 – Local Roads and Streets (revise/augment)


Geometric design standards and other design guidance for the functional classifications listed above (Chapters 3.0-6.0 in the current VSS). These chapters have been grouped together within this table due to similarity in organization and content of existing VSS subsections within these chapters, as well as similarity in recommended revisions for these chapters and subsections.

VSS Section	Need	Description of Revisions and/or Augmentations Needed	VTrans Documents to Link/Integrate
Basic geometric standards	R	Update these subsections in Chapters 6-9 to reference the latest AASHTO design guidance.	As appropriate, reference and link to:
Level of service	R/A	Consider revising/expanding these subsections in Chapters 6-9 to include additional performance measurement approaches and performance targets beyond Level of Service (LOS), such as those provided in the NACTO Urban Streets Design Guide. Also consider expanding the current discussion of contexts in which it may be appropriate to design for a lower LOS.	<ol style="list-style-type: none"> VTrans documents that provide design-related guidance not currently integrated into the VSS; VTrans documents that outline guidance or contexts in accommodating specific roadway users; and Relevant VTrans policies that impact roadway design decisions and standards: <ul style="list-style-type: none"> Structures Design Manual Engineering Instructions Complete Streets Guidance Evaluation Matrix and Checklists
Design speed	R/A	Consider modifying these subsections in Chapters 6-9 to include a discussion of how to identify and design to a "target speed" – a desired speed-of-travel/baseline goal for the facility and surrounding land uses – rather than designing to operating speed.	

For subsections:
 • Sight distance
 • Lane and shoulder widths
 • Bridge widths
 • Structural cap
 • Vertical clear
 • Horizontal clear
 • Alignment
 • Grades
 • Cross-slope
 • Superlevation
 Transitions
 Considerations

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VSS Section	Need	Description of Revisions and/or Augmentations Needed	VTrans Documents to Link/Integrate
Identifying appropriate design vehicle(s)	N	Provide an overview of a framework for identifying design vehicle(s) for a project, including consideration of: <ul style="list-style-type: none"> Current conditions and travel volumes and vehicle classifications on the corridor Anticipated or desired future conditions along the corridor Adopted plans and identified priority corridors for freight, transit and active transportation 	
Balancing needs and weighing tradeoffs	N	Provide: <ul style="list-style-type: none"> A description of the role of project managers and designers in balancing a variety of needs and goals for each transportation facility An overview of the types of tradeoffs designers frequently make in balancing needs A list of key points to consider in making decisions about tradeoffs Clarification that the VSS provide a framework rather than a formula for making decisions about tradeoffs 	
Internal and external outreach during design	N	Provide a summary of: <ul style="list-style-type: none"> Key phases during the design process when internal and/or external partners should be consulted for feedback or informed of progress, changes to project scope, etc. Key partners to consult during these phases as appropriate This section should reference, link to, and be consistent with the design process outlined in the VTrans Project Development Process Manual and the chart (which is currently being revised). Should also link to the Public Outreach Guidebook, which is currently under development.	
Design exceptions	R/A	<ul style="list-style-type: none"> Move existing "Design Exceptions" subsection to this chapter (currently found within the Introduction section) Add more detailed description of the process designers should follow in obtaining approval for exceptions to the VSS. 	



A-6



Chapters (cont.)

- Executive Summary
- Introduction
- Background
- M2D2 Workshop
- Issues Identified in M2D2 Workshop
- **Work Plan**
 - i. Overview of Recommended Revisions to the VSS
 - ii. Recommended Revisions to Other Documents, Standards, Guidance and Procedures
 - iii. Recommended Revision Process
 - iv. Framework for Future Updates
 - v. Managing Internal and External Communication and Collaboration
 - vi. Conducting Internal and External Training
- Summary and Recommendations
- Appendices: Detailed description of recommended augmentations

RECOMMENDATIONS IN THE WORK PLAN



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Recommended revisions to the VSS

Modifications to VSS format:

- **Develop** a user-friendly online interface
- **Integrate** or more clearly reference other national and VTrans design guidance within the VSS to create a centralized point of entry for accessing design resources.



Recommended revisions to the VSS

Major modifications to VSS content:

- New chapter on the **design decision-making framework** and process
- Introduce a **context-based** roadway classification system to complement the existing functional classification approach
- Provide detailed guidance on **selecting appropriate design vehicles** and balancing the **needs of all users** (trucks, transit, maintenance, bicycles, pedestrians, others)



Recommended revisions to the VSS

Major modifications to VSS content (cont.):

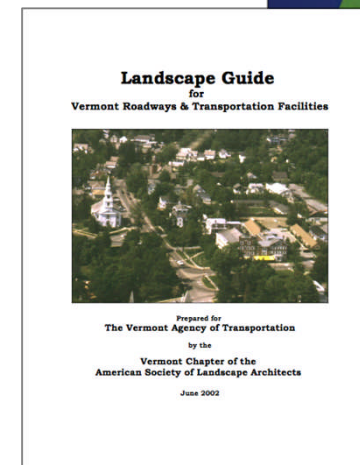
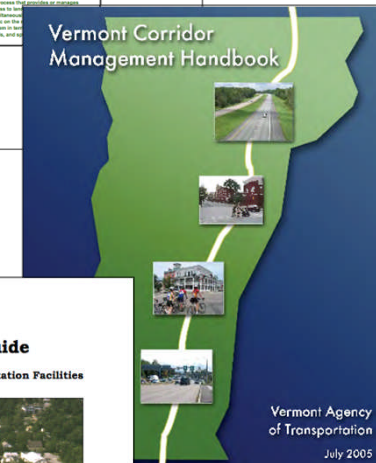
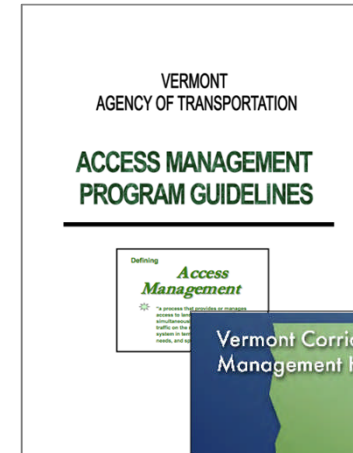
- New chapter on **intersection design** standards and guidance
- Include a **range of design options** for different contexts and provide **illustrations** of design concepts
- New **glossary of key terms and concepts** to improve accessibility for external partners



Revising other related documents, standards, and guidance

Findings from stakeholder discussions:

- Need more explicit consideration of multimodal needs **earlier during planning** and project development
- **Reorganize existing documents** on VTrans website to improve ease of use and clarify the relationships within VTrans processes
- **Integrate or reference other design-related guidelines** and policies within VSS to form “one stop shop” of online design resources.



Recommended list of other documents to revise (14 documents identified as top priority)

Document	Primary need(s)
1. Vermont Corridor Management Handbook (2005)	Revise to expand multimodal considerations and context processes for receiving stakeholder input.
2. Project Development Process Manual and flow chart	Revise to expand multimodal considerations and context processes for receiving stakeholder input. (Note: VTrans is currently revisiting the project development process)
3. Project Scoping Manual (1995)	Revise to expand multimodal considerations, TDM, ITS, and processes for receiving stakeholder input.
4. VTrans Enhancements to Transportation Projects (2007)	Update policy as necessary to support multimodal needs and reference within VSS
5. VTrans Level of Service Policy (2007)	Update policy as necessary to support multimodal needs and reference within VSS
6. VTrans Guidelines for Pedestrian Crossing Treatments (2015)	Integrate or reference within VSS (Note: VTrans recently revised this document)



Recommended list of other documents to revise (cont.)

Document	Primary need(s)
7. Bicycle and Pedestrian Facility Planning and Design Manual (2002)	Integrate or reference within VSS and revise as necessary
8. Structures Design Manual (2010)	Reference within VSS and revise as necessary
9. Engineering Instructions (ongoing)	Integrate or reference within VSS and revise as necessary
10. Design Standard Drawings	Integrate or reference within VSS and revise as necessary
11. Complete Streets Guidance, evaluation matrix and checklists (2012)	Integrate or reference within VSS and revise as necessary
12. Access Management Program Guidelines (2005)	Integrate or reference within VSS and revise as necessary
13. Traffic Calming Guidelines (draft)	Integrate or reference within VSS and revise as necessary
14. Landscape Guidance (2002)	Integrate or reference within VSS and revise as necessary



Recommended revision process and schedule

Timeframe	Phase
By March 2015	Phase 1: Development of implementation plan and associated schedule for revising the VSS
Apr –Nov 2015	Phase 2: Revision process scoping and kick-off
Dec 2015 – Feb 2016	Phase 3: Information collection
March – Nov 2016	Phase 4: Drafting, revising, and finalizing updated VSS text
Dec 2016 – Feb 2017	Phase 5: Development of VSS online interface
Early– Mid 2017	Phase 6: Launch of new VSS



Communication and collaboration: 15 groups of stakeholders to engage

1. **VTrans staff** representing all divisions at a variety of levels
2. **Other impacted state agencies** including ANR, ACCD, DOH, NRB, and others
3. **Federal agencies** such as FHWA, FMCSA, FTA, FRA, etc.
4. **Regional Planning Commissions** throughout the state
5. **Local governments** including public works depts, planning commissions, VT League of Cities and Towns, etc.
6. **Law enforcement, DMV enforcement, and emergency responders** from around the state
7. **Transit agencies** representing communities throughout the state



Photos from top: Green Mountain Transit Authority, and Kim Della-Torre, via Flickr



Recommended stakeholder engagement (cont.)



Photo: Michael G, via Flickr

8. **Railroads** operating in Vermont
9. **Design and engineering consultants and contractors** with whom VTrans works closely
10. **Professional organizations and trade associations** including the Vermont Planners Association, ACEC, ASLA, the Associated General Contractors of America, Vermont Truck and Bus, and others
11. **Real estate developers** in VT communities around the state
12. **Regional Economic Development Corporations** throughout the state
13. **Advocacy groups and non-profits** that work on mobility, the environment, economic development, equity, health, etc.
14. **Land owners, business owners, institutions and schools** in VT communities around the state
15. **Members of the traveling public**



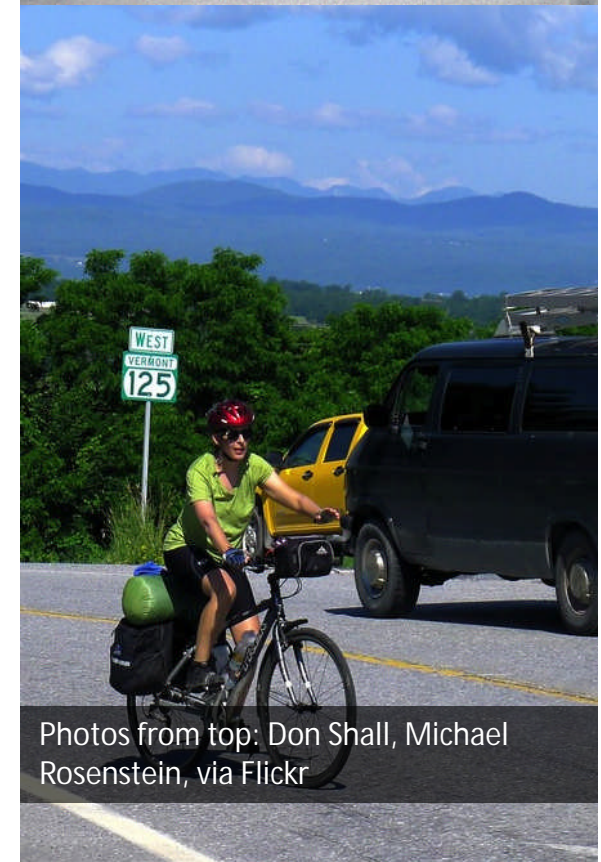
Recommended tiers for stakeholder engagement

Group	Participants	Role
Executive Steering Committee	Division heads, and other leadership as appropriate	<ul style="list-style-type: none"> • Establish guiding vision for the VSS revisions • Provide feedback at major points throughout the revision process • Approve and adopt the revised VSS
VSS Revision Management Team	3-8 VTrans staff representing all agency divisions	<ul style="list-style-type: none"> • Oversee the day-to-day process for revising the VSS, including: <ul style="list-style-type: none"> – Developing a detailed scope of work and schedule – Managing the external consultant team – Communicating about the update to key internal and external partners
Consultant Team	<ul style="list-style-type: none"> • Primary consultant to conduct VSS revisions • Sub-consultant(s) with specific expertise as needed (ex. web developer, technical design experts for specific modes, etc.) 	<ul style="list-style-type: none"> • Draft the updated VSS, working closely with the management team • Develop user-friendly online interface • Develop curriculum for and assist in delivering training
Partner Steering Committee	Small group of internal and external stakeholders who use and reference the VSS regularly or have a significant interest in VTrans design practices, potentially comprised of a subset of the existing PSG who have been actively engaged.	<ul style="list-style-type: none"> • Meet regularly with the management team to discuss direction and provide feedback • Offer diverse perspectives about the challenges of weighing tradeoffs and balancing needs during design
Broad Stakeholder Outreach	Comprehensive group of external stakeholders, expanded from the existing PSG to address gaps in representation. Should include representatives from all of the categories of stakeholders listed above.	<ul style="list-style-type: none"> • Provide feedback on interim versions of the revised VSS at major milestones (VTrans will engage these stakeholders through a combination of group meetings and direct one-on-one outreach) • Represent and communicate back to constituents about the update • Help ensure broad support for the revised VSS

Internal and External Training

Purpose of training:

- Establish **policy framework and culture** for making design decisions
- Prepare staff and consultants to **use the VSS to consider context** and weigh tradeoffs
- Improve **consistency** within the design decision-making process
- Keep staff and consultants **up to date** on design policies and practices as they evolve
- Identify **consistent design challenges** and ways to address them
- Increase **external awareness** of VTrans' decision-making processes and design considerations



Photos from top: Don Shall, Michael Rosenstein, via Flickr



Level, purpose, attendees, and format of training

Level	Purpose	Attendees	Format and Duration
In-Person Training and Presentations			
Tier 1: Executive Overview	Provide a high-level overview of the updated VSS, the VTrans design decision-making framework, and other broad implications of the revisions for VTrans practices and processes.	VTrans leadership, FHWA/FTA/FRA, legislators, leadership from other state agencies (can host separate presentations for different audiences as needed).	1-2 hour presentation with question and answer
Tier 2: In-Depth VSS User Training	Provide regular users of the VSS with a thorough understanding of the revised standards, their relationship to other VTrans documents, and other implications for the design process (including internal and external outreach).	VTrans project managers, engineers, designers, planners, and consultants (could also include specific external partners who use the VSS very regularly and/or engineering students).	8+ hour workshop, repeated frequently
Tier 3: Partner Training	Provide external partners with an understanding of the updated VSS, VTrans design decision-making practices, and processes for coordinating with outside partners during design.	Partners who use/reference the VSS or interact with VTrans during project design, including municipal and RPC staff, state agency staff, transit agencies, etc (can host separate workshops tailored to different audiences as needed).	4-8 hour workshop, repeated somewhat frequently
Tier 4: General Overview	Provide interested stakeholders with a basic overview of the revised VSS, the revision process, and the purpose and role of the VSS in VTrans' decision-making.	Elected officials, NGOs, modal interest groups, and members of the general public.	<ul style="list-style-type: none"> Public meeting: 1-2 hour public presentation with question and answer Webinar: 1.5 hour webinar (with recording and slides available on VTrans website)

Training (cont.)

Level	Purpose	Attendees	Format and Duration
Online Training			
Interactive Training Modules	Provide regular VSS users with in-depth understanding of specific sections/modes/subject areas within the VSS through short interactive modules that can be completed on-demand.	Designed for VTrans staff, consultants, and external partners who use the VSS regularly, but could be made publicly available to anyone.	1-2 hours per module, available for participants to complete on their own schedules (updated as necessary).



Photo: Ken Lund, via Flickr



Next steps

- Develop scope of work and hire consultant
- Engage appropriate internal and external stakeholders
- Begin process to revise the VSS based on the recommendations in the work plan



QUESTIONS?



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Multi Modal Development and Delivery (M2D2) is a project developed in partnership between the Vermont Agency of Transportation and Smart Growth America to support updating the Vermont State Standards and improving VTrans' institutional capacity to plan, design, construct, operate and maintain Vermont's transportation system for multiple modes.

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