Bicycle Accessibility on High-use Corridors

VTrans Response

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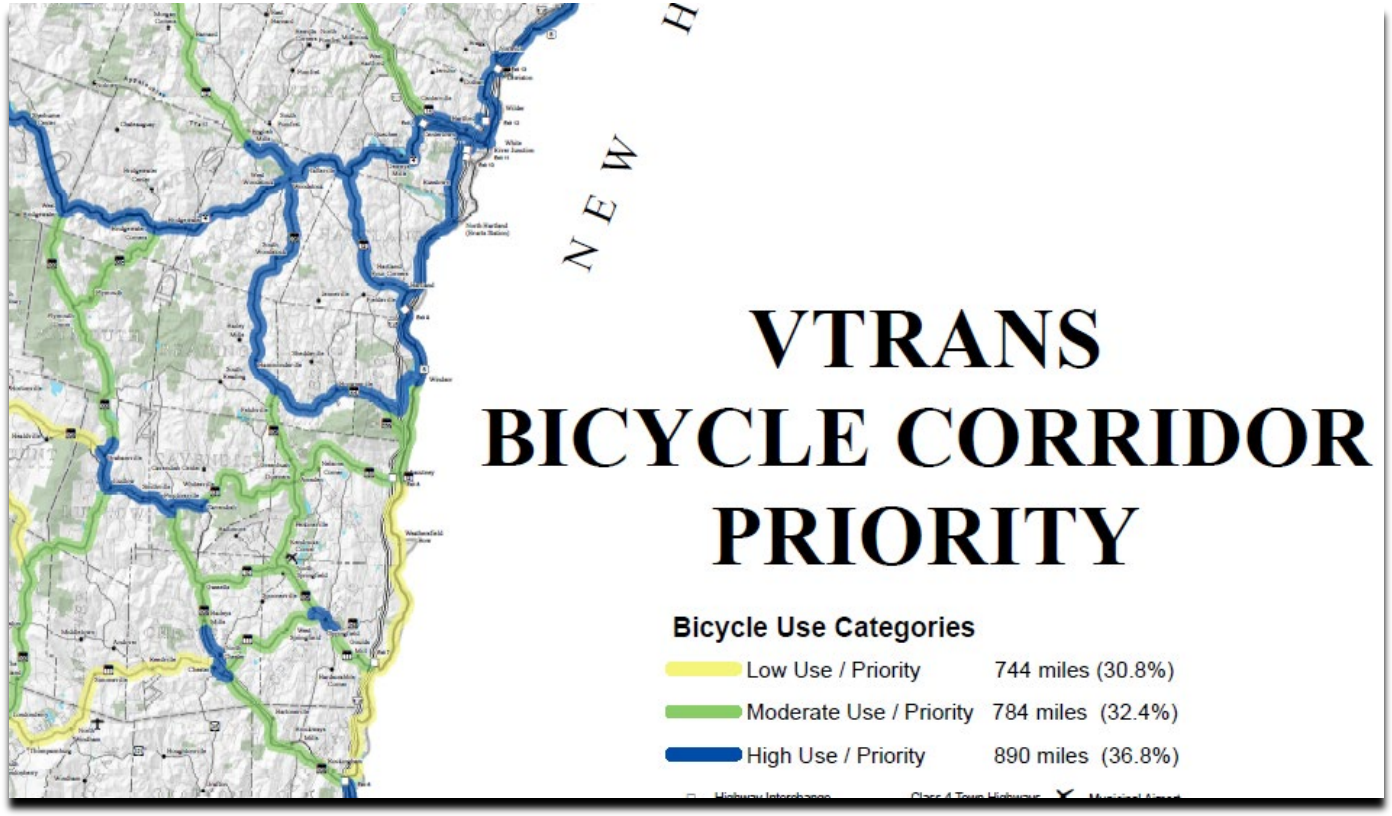
VTrans Bicycle Corridor Priority Map

Based on:

- Current use (public input and Strava data)
- Potential use (land use and likely origins/destinations)



VTrans Bicycle Level of Comfort

1 - Welcoming to most bicyclists.

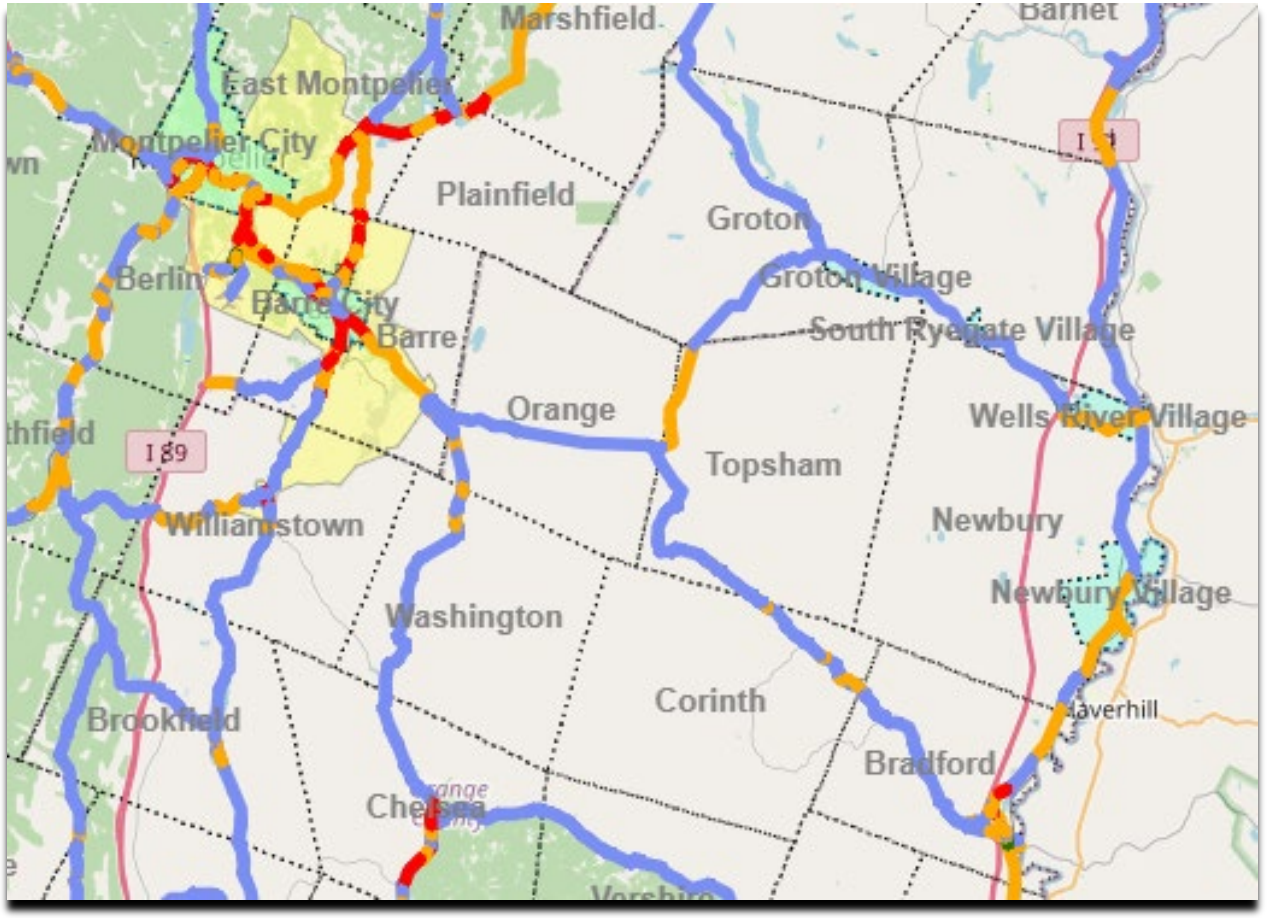
2 - Comfortable for most adult bicyclists.

3 - Comfortable for experienced and confident bicyclists.

4 - Uncomfortable for most bicyclists.

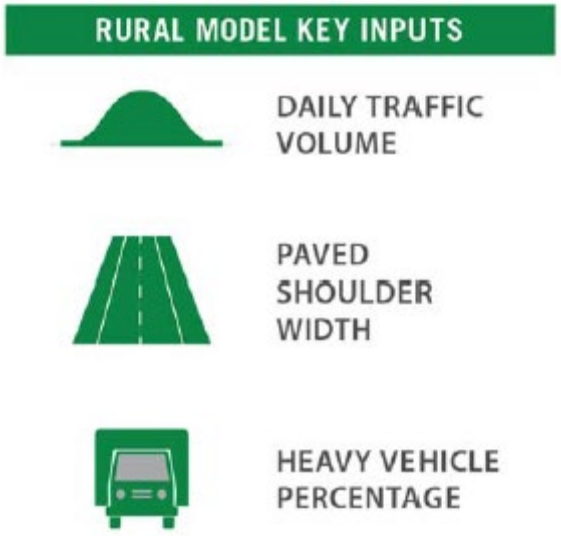
Based on:

- Posted Speed
- Number of Lanes
- Presence of Bike lane
- Traffic volume
- Shoulder Width
- Heavy Vehicle %



Rural BLOC

Based on:

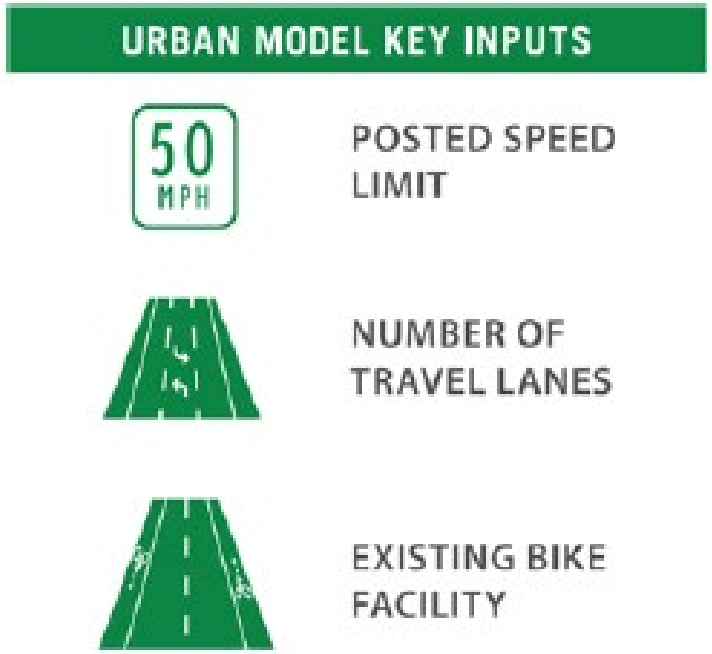


Daily Volume (vpd)	Paved Shoulder Width			
	0 to < 2 ft	2 ft to < 3 ft	3 ft to < 6 ft	6ft or wider
< 500	BLTS 2	BLTS 2	BLTS 2	BLTS 1
500 to 1,500	BLTS 3	BLTS 2	BLTS 2	BLTS 1
1,500 to 5,000	BLTS 4	BLTS 3 – 4*	BLTS 2 – 3*	BLTS 2 – 3*
5,000 to 7,000	BLTS 4	BLTS 4	BLTS 3 – 4*	BLTS 3 – 4*
>7,000	BLTS 4	BLTS 4	BLTS 4	BLTS 3 – 4*

*For roadways where Truck % exceeds 10% of the traffic stream the higher score is assigned

Urban BLOC – Bike Lanes

Based on:



1 Lane per direction				≥2 lanes per direction	
Prevailing or Posted Speed	≥ 15′ travel lane and bike lane + parking	14′ – 14.5′ travel and bike lane + parking	≤ 13′ travel and bike lane or frequent blockage	≥ 15′ travel and bike lane + parking or frequent blockage	≤ 14.5′ travel and bike lane
≤25 mph	LTS 1	LTS 2	LTS 3	LTS 2	LTS 3
30 mph	LTS 1	LTS 2	LTS 3	LTS 2	LTS 3
≥35 mph	LTS 2	LTS 3	LTS 3	LTS 3	LTS 3
≥40 mph	LTS 2	LTS 4	LTS 4	LTS 3	LTS 4

[1]Typically occurs in urban areas (i.e. delivery trucks, parking maneuvers, stopped buses).

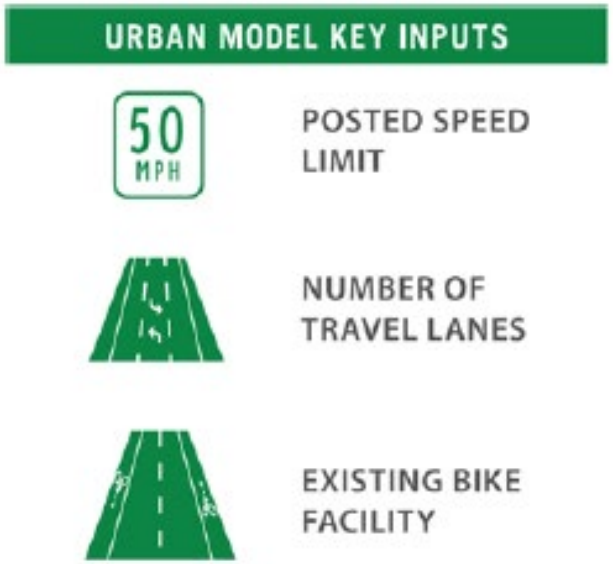
Table 3.3: Urban Roadway Section Methodology – Bike Lane without Adjacent Parking

1 Lane per direction					≥2 lanes per direction	
Prevailing or Posted Speed	≥ 7′ (Buffered bike lane)	5.5′ – 7′ Bike lane	≤ 5.5′ Bike lane	Frequent bike lane blockage1	≥ 7′ (Buffered bike lane)	<7′ bike lane or frequent blockage[1]
≤30 mph	LTS 1	LTS 1	LTS 2	LTS 3	LTS 1	LTS 3
≥35 mph	LTS 2	LTS 3	LTS 3	LTS 3	LTS 2	LTS 3
≥40 mph	LTS 3	LTS 4	LTS 4	LTS 4	LTS 3	LTS 4

[1]Typically occurs in urban areas (i.e. delivery trucks, parking maneuvers, stopped buses).

Urban BLOC – Shared Roadway

Based on:



Apparent Travel Speed	Total Lanes Per Direction			
	Unmarked Centerline	1 lane per direction	2 lanes per direction	3+ lanes per direction
≤ 25 mph	BLTS 1	BLTS 2	BLTS 3	BLTS 4
30	BLTS 2	BLTS 3	BLTS 4	BLTS 4
≥ 35	BLTS 3	BLTS 4	BLTS 4	BLTS 4

Constraints of the BLOC Rubric - Rural

- 833 Miles High Priority
- 276 Miles have AADT > 5000, Max BLOC = 3
- To bring other miles up to BLOC of 1 or 2 = **high cost and/or high environmental/ROW impact**

Constraints of the BLOC Rubric - Urban

- 48 Miles High Priority
- 17 Miles have speed ≥ 35 , Max BLOC = 3
- 12 Miles have speed = 30, Max BLOC 3 with a centerline
- To bring remaining miles from BLOC 3 to 2 means reducing from 2 to 1 lane in each direction, **Cost/Feasibility= ???**

Ability to add Shoulders with Paving Projects

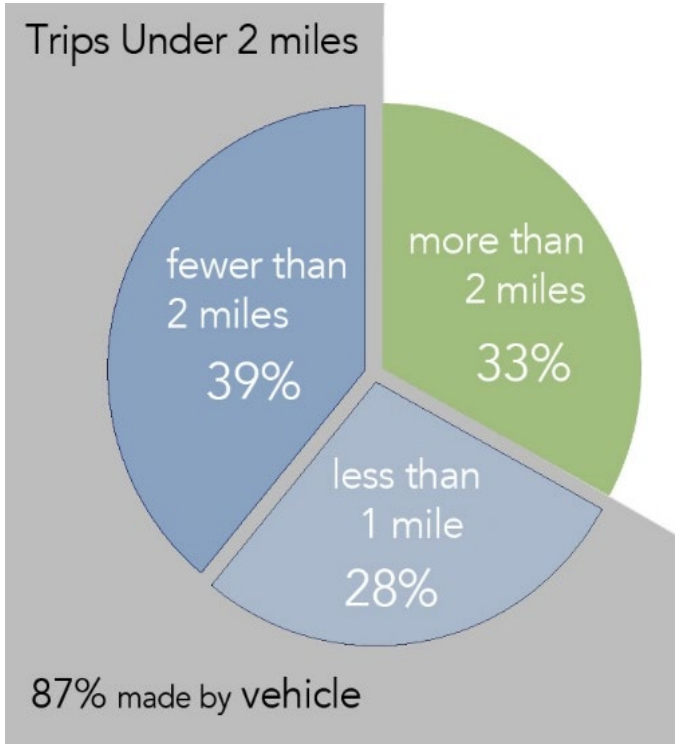
Treatment	Cost (per mile)	Description	Opportunity to improve bicycling conditions
District Leveling/Preventive Maintenance (thin lift overlay)	$150K - $300K	Addition of between 5/8” and 1” of new pavement over existing surface only	Restripe any 12 foot lanes to 11 (gain 1 foot of shoulder). Work within existing paved width
Level and Overlay	$400K - $500K	Level (fill in low spots) with ½” of pavement and then add 1 ½” of pavement over whole surface.	Restripe any 12 foot lanes to 11 (gain 1 foot of shoulder). Work within existing paved width. Possible to add shoulder paving if existing gravel shoulders
Mill and Fill	Rural - $400K - $600K; Class I - $750K - $1.5M	Mill (grind) out 2” of existing paved surface, minor re-grading of shoulders and place back 2” of new pavement	Restripe any 12 foot lanes to 11 (gain 1 foot of shoulder). Work within existing paved width. Possible to add shoulder paving if existing gravel shoulders.
Reclaim	$1.25M - $2M	Mill some of the existing pavement off. Reshape remaining pavement with subbase. Place new pavement structure.	If lanes are currently 12 feet, should be restriped at 11 feet to gain 1 foot of shoulder width. Good opportunity to widen existing shoulders if without changing ditchlines, impacting existing utilities or going outside the existing Right of Way. It is often possible to provide 4’ – 5’ wide shoulders as part of these projects
Full Depth Reconstruction	$7M - $9M	Completely new road with new sub-base and pavement.	New typical would include full width shoulders to meet current standards, even if ROW acquisition is needed.

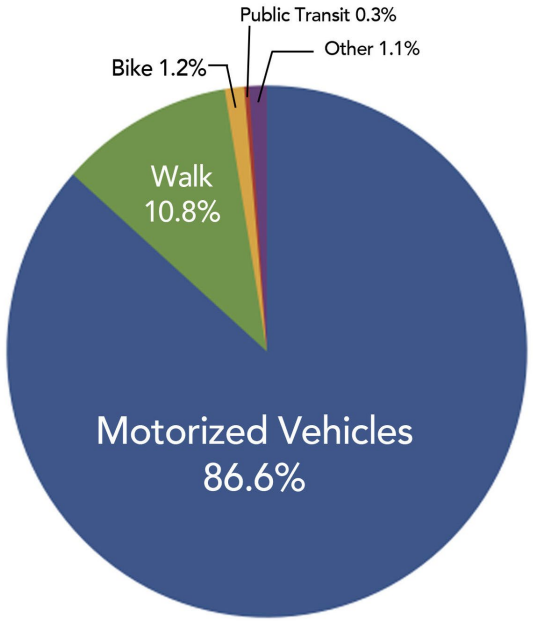
Concerns with Temporary Measures

- Narrow Travel Lanes – remove pavement markings, non-compliance with standards – **Jesse Devlin**
- Lower the Speed Limit – VTrans authority, effectiveness, ramifications for other signs, cost – **Ian Degutis**
- Adding Signage – Effectiveness, cost, MUTCD – **Ian Degutis**

What is the Goal being sought?

- Short Trips = High Potential to Walk/Bike





Source of graphs – 2017 VT Transportation Energy Profile

Converting car trips to bike/walk trips

- Most potential bike/walk trips in downtowns and village centers with dense and varied land use
- VTrans only controls 20% of roads
- Improvements needed on local roads
- Increase in funding from IIJA provides an opportunity across all modes

THANK YOU!!

Contact Jon Kaplan, P.E.

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VTrans Working to Get You There
Vermont Agency of Transportation