Make your town safe for walking and bicycling

Addison County RPC TAC – 3/17/21
Agenda

• Top 10 low-cost improvements to make streets safe for walking and bicycling.

• What does Complete Streets really mean and how can you take steps to “complete” local roads.

• Sidewalk design basics including a primer on how to make them accessible to people with disabilities.

• An overview of design resources for street improvements to result in safer bicycling and walking.
Top 10 (or so) Low Cost Ideas
Narrow Travel Lanes

- When roads are re-striped, mark travel lanes at 10 or 11 feet to gain shoulder width. Research shows that 10 or 11 foot lanes are the safest width (for all users) on roads posted at 40 MPH or less.

- Cost - $0 (assuming that an edgeline would be marked anyway)

Moving the edgeline in creates more shoulder for other uses
Mark shoulders as bike lanes

- Mark shoulders as bike lanes where appropriate – 4 foot minimum width, 5 foot adjacent to parking
- Cost - $65 - $100 per bike symbol. Approximately 10 per mile
- 35% Reduction in crashes
Maintain existing shoulders

• Sweep shoulders so they are useable

Gravel forces bicyclist into travel lane
Enhance Sign Visibility

- Use fluorescent yellow-green (FYG) for pedestrian warning and crossing signs (required for School-related signs)
- Minimal added cost
Enhance Sign Visibility

- Add appropriate color strip to sign posts to enhance visibility (same as sign background)
- Cost - $25 per sign post treated
Enhance Sign Visibility

- Make sure signs are visible by clearing brush, tree limbs, etc. that may be obscuring them
Provide Crosswalks

• Mark crosswalks using the block pattern – highest visibility

• Cost - $500 for typical two lane crossing

• 40% reduction in pedestrian crashes
Make Crosswalks Visible

• Locate parking relative to crosswalks, driveways and intersections to provide clear sight lines. **State statute prohibits parking within 20 feet of crosswalks at intersections.** This is good guidance for mid-block crosswalks.

Crossing pedestrian hidden by parked vehicle
Enhance Crosswalks

- Add an in-street pedestrian sign at existing crosswalks
- Cost – Approximately $300 per sign
- Need a permit to install on state highways
Enhance Crosswalks

- Provide pedestrian refuges at crossings
- Especially useful for multi-lane or excessively long crossings
- Cost - $1500 to $2500 depending on size
- 46% reduction in crashes
Enhance Crosswalks

- Add bulbouts to existing crosswalks to make them more visible (can do a trial with hay wattles, temporary paint or other materials)

- Benefit – Better sight lines for pedestrians and drivers. Shorter crossing distance

- Cost - $13,000 per corner

Northfield, VT
Enhance Crosswalks

- Install Rectangular Rapid Flashing Beacons (RRFB)
- Use for vulnerable pedestrian populations or high pedestrian volume crossings or at crossings with known compliance problems
- Cost - $10,000 to $15,000 per crosswalk
Provide Sidewalks

- Fill in small gaps in the sidewalk network.
- Address “goat trails” by providing sidewalks.
- Cost - $35/FT uncurbed to $150/FT curbed.
Winter Maintenance

• Have a policy about clearing sidewalks of snow in the winter – Prioritize access to schools, transit stops, public buildings

• Winter maintenance is an accessibility (ADA) issue

• Cost - varies
Provide Secure Bicycle Parking

• Provide bike racks at key locations – schools, public buildings, shopping destinations, large employers

• Covered parking for long-term locations

• Cost - $160 per rack
Benefits of Pop-up Projects

- Try out a design before making it permanent
- Quick implementation
- Can be seasonal
- Low Cost
- Gather data
- Public input
Understanding and implementing Complete Streets
What are Complete Streets?

Complete Streets are streets for everyone, no matter who they are or how they travel.
Some streets are unsafe for walking

- No sidewalks
- Too dangerous to cross on foot
Some streets are unsafe for bicycling

- No space on the roadway
Complete Streets:

- Is a high-level policy direction
- Changes the everyday decision-making processes and systems
- Represents an incremental approach
- Has long-term results
Complete Streets is **not**:

- One “special” street project
- A design prescription
- A mandate for immediate retrofit
- A silver bullet; other issues must be addressed:
  - Land use (proximity, mixed-use)
  - Environmental concerns
  - Transportation Demand Management
Look for opportunities to make incremental improvements

- Water and sewer line work
- Repaving
- Line striping
- Redevelopment
- Bridge work
- New development
May require developers to provide infrastructure

- Sidewalk connections
- Bike parking
- Pedestrian access within site
- Transit stops
How to create Complete Streets?

Complete Streets: A Guide for Vermont Communities

- Cycletrack in Montreal
- Bicycle Lane in Montpelier

Pedestrian Realm extends beyond right-of-way

VT Guide funded by VT Department of Health
How to create Complete Streets?

FHWA “STAR” Guide

Advisory bike lanes in NH
Designing Pedestrian Facilities for Accessibility

Sidewalk Design
Sidewalk Width Minimums

• 5x5 ft. passing area required every 200 ft. (ADAAG and PROWAG) results in **min 5 ft. wide pedestrian zone**

• 4 ft. minimum pedestrian access route width in right-of-way (PROWAG)
  ○ 3 ft. minimum accessible route width on sites (ADAAG)
4 ft. for user with dog guide or sighted guide

5 ft. for turning a wheelchair
Obstacles in Pedestrian Zone

Three alternative ways to provide access:

1. Plan/design to limit objects in pedestrian zone
2. Eliminate or move objects (Poles, utility boxes, signal cabinets)
3. Provide access route around objects
Sidewalk alignment adjusted around tree
Running Slope Guidelines

- R302.5.1 Within Street or Highway Right-of-Way. Except as provided in R302.5.3, where pedestrian access routes are contained within a street or highway right-of-way, the grade of pedestrian access routes shall not exceed the general grade established for the adjacent street or highway.

- R302.5.2 Not Within Street or Highway Right-of-Way. Where pedestrian access routes are not contained within a street or highway right-of-way, the grade of pedestrian access routes shall be 5 percent maximum (but...
Cross Slope Guidelines

- 0% best for wheelchair users
- Some slope needed for drainage
- Max cross slope 2%
- “Level” means 2% max

2% cross slope max
Maintaining cross-slope across driveways

Single grade across driveway results in inaccessible cross-slope.
Det. Warning placement
ADA Summary

• Sidewalk width – 5 ft (can reduce to 4 ft for up to 200 ft)

• No obstacles in, or protruding into, the sidewalk

• Smooth, stable surface – no textures within walkway

• Cross-slope – 2% max., especially at driveways

• Running slope – 5% max., but can be the same as the street

• Curb ramps – 8.33% (1:12) max. slope and need detectable warning at streets
Overview of Design Resources Web page

- VTrans Bike/Ped Design Resources page is at https://vtrans.vermont.gov/highway/local-projects/bike-ped/resources
VTrans Bike/Ped Grant Program

• 3 Categories of grants
  • Large-scale construction – Federal Aid - 80% Federal/20% Local
  • Scoping (feasibility study) - 80% Federal/20% Local
  • Small-scale construction – State funds – 50% State/50% Local

• Timeline
  • April - Application materials available
  • June – Applications due
  • August – Project selection complete
  • Fall 2021 – Grant Agreement
  • Early 2022 – Start project work
Small-scale Grants

- Eligible projects include:
  - crosswalk enhancements
  - bicycle lane markings/signs
  - edgeline markings
  - addressing ADA compliance issues
  - critical gaps in sidewalk networks
  - reconstructing important sidewalk links
THANK YOU!!
Questions?

- Contact Jon Kaplan, P.E.

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