

Greensboro Pedestrian Safety Pop-Up Demonstration Project Report

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About Local Motion

Local Motion is Vermont's statewide advocate for active transportation, vibrant communities, and safe streets. Our mission is simple: to bring walking and biking within reach for all Vermonters.

Through our Complete Streets program, we provide technical assistance to communities like Greensboro to help them improve on-street infrastructure for walking and biking. Pop-Up Demonstration Projects allow communities to experiment with new street configurations without committing to permanent construction.



Background

Greensboro community members identified improving community walkability and bikeability as one of four priority areas in The Greater Greensboro Report compiled by VCRD in November 2019. The Greater Greensboro Walk/Bike/Rec/Trails Taskforce, which was established to work towards this goal, contacted Local Motion in April of 2020 to discuss walk/bike improvements.

Through meetings with the Taskforce, Local Motion, and VTrans, the project partners identified potential traffic calming and pedestrian safety enhancements that could be made in the village center. A Local Motion Pop-Up Infrastructure Demonstration Project was identified as an appropriate next step to test the proposed enhancements and maintain momentum for walk/bike improvements in Greensboro.



Project Description

The project included three basic elements:

- Striping parking stalls along Breezy Ave., in order to encourage efficient utilization of the spaces, narrow the travel lanes to 11', and discourage parking on the sidewalks.
- Installing curb extensions to calm traffic and improve pedestrian visibility.
- Adding delineators in front of Willey's Store to discourage drivers from pulling forward over the sidewalk.



Implementation

Local Motion staff and community volunteers installed the project on May 27, 2021. It remained in place through Memorial Day weekend. Two minor deviations from the original project plan were made during installation:

- Due to high utilization during installation, the parking spaces in front of Willey's were not painted
- Additional curb extensions identified by Taskforce members were installed at the corners on either side of the Miller's Thumb building.



Pop-Up Project Photos and Details



Above: The curb extensions at the crosswalk in front of the Historical Society served as a gateway to the village. Planter boxes and bollards were used in the absence of curbing.



Above: A permanent version of these curb extensions could use a low, mountable curb, such as the one above in Wallingford, VT, to maintain delivery access to Willey's while still yielding a traffic calming effect.

Pop-Up Project Photos and Details



Above: Bollards were placed along the sidewalk in front of Wiley's to simulate wheelstops and keep drivers from blocking the sidewalk.



Above: Concrete wheelstops placed at least two feet from the curb would be a suitable permanent solution.

Pop-Up Project Photos and Details



Parking stalls along Breezy Avenue Were painted at a standard 8'x20' size. They were set away from the curb to provide door clearance, discourage parking on the sidewalk, and to narrow the travel lanes to an 11' width. These could be painted permanently, potentially with longer dimensions to accommodate longer vehicles.

Pop-Up Project Photos and Details



A curb extension was added at the corner of Willey's. This feature shortens crossing distances for people walking, increases pedestrian visibility, and maintains clear crosswalk and sidewalk access. It also improves sightlines for drivers pulling up to and leaving the gas pumps. A permanent version could use mountable curbs.

Pop-Up Project Photos and Details



Alternate view from Willey's corner.

Pop-Up Project Photos and Details



The crosswalks were realigned to create more space around the gas pumps, and make better use of the parking in front of Willey's while ensuring that drivers did not park on top of the crosswalks. Sightlines were improved by moving the Miller's Thumb crosswalk closer to the apex of the turn on Breezy Avenue.

Community Feedback

A feedback survey created by the Greater Greensboro Walk/Bike/Rec/Trails Taskforce and Local Motion was used to collect feedback on the Pop-Up Project. The survey received 107 total responses between 5/27/21 and 6/10/21.

Numerical community ratings and a sample of both positive and critical feedback is included in this section.



Community Ratings (1 = Very unsafe, 5 = Very safe)

How safe did you feel walking in the village BEFORE the Demonstration Project?

Average = 3.8

Median = 4

How safe did you feel walking in the village DURING the Demonstration Project?

Average = 3.6

Median = 4

How safe did you feel driving in the village BEFORE the Demonstration Project?

Average = 3.6

Median = 4

How safe did you feel driving in the village DURING the Demonstration Project?

Average = 3.2

Median = 3

What did you like about the demonstration project?

- “Better at gas pumps, wider sidewalk area in front of Willey's.”
- “I loved the welcoming feeling of the new set-up, and even saw people stopping and visiting more frequently.”
- “It’s very clear and inviting to use. I mostly drive into and around Greensboro, but also walk around the town with my young children and the markings have been great! As a driver I love the clarity as that junction is tricky to negotiate even with courteous drivers.”
- “Gave pedestrians much needed clearance to see cars”
- “The prioritization of walking/biking. Crosswalk visibility was great, sidewalk access along Willey's was wonderful. The sense of community vibrancy and the buzz in town that existed by making space for pedestrians and people to linger safely not just pass through quickly.”

What did you like about the demonstration project?

- “We like the new location of the crosswalk to Miller's Thumb. It keeps folks from parking there and makes it safer to not have the crosswalk in the middle of the parking area.”
- “It made everyone focus and be aware and more thoughtful of the entire scene.”
- “I liked that car speeds seemed to be significantly reduced. I felt that I was more mindful as I drove through the village, and I suppose others may have been, too.”
- “Improves the look of the intersection and slows down drivers. I have difficulty walking and appreciate anything that makes an intersection safer for me to cross the road.”
- “I liked the placement of the cross walks and the elimination of the parking spot at the corner of Willey's.”



What did you not like about the demonstration project?

- “Worried about proximity to flow of traffic in front of Willey's. Worried about loss of space for unloading at hardware area of Willey's. Trust winter snow and ice removal might not be affected. Space for parking with barriers might be tricky.”
- “Road was very narrow, no room for anything bigger than a car to make the corners.”
- “Crosswalk too close to the gas pumps. I felt like the narrower road was distracting for driving.”
- “Makes the lanes too narrow for big trucks/tractors/trailers which frequently travel our agricultural community. Seems like a royal nightmare for plowing. I really don't feel that the concrete bump outs make any difference for public safety. Repairing and maintaining the actual sidewalks which are heaved and uneven seems like a much better area to focus time, money on.”
- “Cars can still go through too quickly and they don't have full visibility until out in the intersection and around the corner of Miller's Thumb.”

What did you not like about the demonstration project?

- “It appears to eliminate some parking spaces. It makes it more crowded. It has the feel of a one lane road due to the spaces encompassed by the flower boxes. Both us agree we feel less safe and that the driving space is constricted.”
- “Seems like it will be really inconvenient for snow plowing in the winter.”
- “Driving I had to cross the centerline while passing the parked cars in front of Willey’s. I was concerned about the traffic coming from the library. Felt really narrow through the intersection.”
- “Decreased parking in front of Willey's, and GHS.”
- “I need to face the PO to get gas and it was difficult getting to the gas pumps at Willey's. It, also, takes up parking spaces at the store which is hard to find during the summer months especially.”

Summary of additional comments

- Strong desire for reduced vehicle speeds through the village. Interventions such as lower speed limits, flashing signs, speed bumps, and raised crosswalks all recommended
- Consider stop signs at intersections, especially to replace yield signs on East St.
- Install crosswalk signs
- Remove snow from sidewalks in the winter

Summary of additional comments

- Repair existing sidewalks and install sidewalks, multiuse paths to community destinations like Highland Center for the Arts, and around the Lake
- Install/repair curbing in front of Willey's and Miller's Thumb
- Shift centerline towards Miller's Thumb
- Repaint crosswalks annually by Memorial Day



Local Motion Perspective & Responses to Feedback

- The ratings indicate minor decreases in perception of comfort during the demonstration project. This is not surprising given the changes made and the need to adjust to them.
- Expressions of discomfort or “distraction” on behalf of drivers may indicate that the changes made required them to be more attentive while travelling through the village—something that will likely result in lower speeds and safer behavior.
- Many comments noted the narrow travel lane width on the east side of Breezy Ave. in front of Willey’s. With wheel stops installed, the centerline could be eliminated or shifted several feet towards the west side of the road. The parking stalls in front of Willey’s should be striped at an appropriate angle to maintain a sufficient lane width.

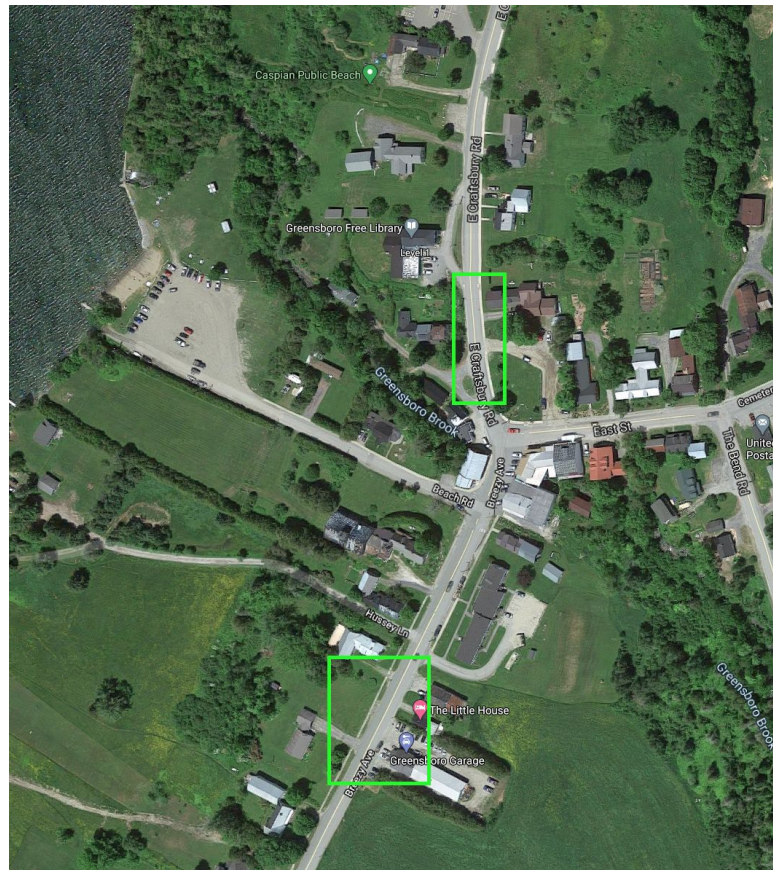
Local Motion Perspective & Responses to Feedback

- Regarding winter maintenance of curb extensions: Communities all over the state have installed curb extensions and road crews are able to plow around them in the winter.
- Regarding parking availability: Elimination of one or two potential parking spots in front of Willey's is necessary in order to maintain a clear crosswalk without cars parked on it. Striping the existing parking will make for more efficient utilization, and visitors as well as employees could be directed to park along Beach Rd. or at the parking lot at the end of Beach Rd.
- While a speed limit under 25 MPH would be preferable, 25 MPH is the minimum speed currently allowed under state law.

Speed Data

NVDA collected traffic speed data during the pop-up project. Speed monitoring devices were set up in the zones shown to the right.

At the time of this report, speed data is still being processed and will be provided by NVDA separately.



Recommendations



About Lane Widths

Lane width is a primary factor in determining travel speeds. Wider lanes encourage faster driving, while narrower ones encourage lower speeds that are safer and more appropriate for a village context.

On state highways, the [standard maximum lane width is 11 feet](#). For town roads, the following guideline applies from [VTrans' Vermont State Design Standards](#):

On urban and village Principal Arterials, lane widths may vary from 10 to 12 feet, and there should be appropriate offsets to curb. The 10-foot widths are appropriate in highly restricted areas having little or no truck traffic. The 11-foot lanes are used extensively for urban and village Principal Arterial street designs. The 12-foot lane widths are generally used on all higher speed, free-flowing Principal Arterials. Under interrupted-flow conditions at low speeds (up to 45 mph), the narrower lane widths are normally adequate and have some advantages. Reduced lane widths allow greater numbers of lanes in restricted right-of-way and facilitate pedestrian crossings because of reduced distance. They are also more economical to construct. An 11-foot lane width is adequate for through lanes, continuous two-way left-turn lanes and a lane adjacent to a painted median. A 10-foot left-turn lane, or a combination lane used for parking, with traffic during peak hours, is also acceptable.



Low-cost/short-term recommendations

- INSTITUTIONAL SUPPORT: Ensure the continued functioning of the Greater Greensboro Walk/Bike/Rec/Trails Taskforce
- CROSSWALK REORIENTATION: Reorient the Breezy Ave. and East St. crosswalks to the northwestern corner of Willey's as demonstrated during the Pop-Up Demonstration Project.
- INTERSECTION CONTROL: Consider replacing the YIELD sign on East St. at the Breezy Avenue intersection with a STOP sign.
- TEMPORARY SPEED BUMPS: Consider seasonally installing temporary speed bumps on Breezy Ave.

Low-cost/short-term Recommendations

- **SIGNAGE:** Install MUTCD-compliant crosswalk signs at all crossings in accordance with VTrans guidelines.
- **DELINEATE PARKING:** Paint parking spaces along Breezy Ave. to maintain travel lane widths of 11-12' and maintain clear sidewalks. Parking stalls during the demonstration project were painted at 8'x20'. Stall length dimensions could be increased to ~24' to accommodate longer vehicles. If parking spaces are painted without curb extensions installed, 20' clear zones with no parking should be maintained at crosswalks for visibility.
- **CLEAR SIDEWALKS:** Excavate soil and grass where it is overgrowing the sidewalk on the west side of Breezy Avenue (possible volunteer opportunity).

Low-cost/short-term Recommendations

- **WALKING SPACE AT WILLEY'S:** Install wheel stops in front of Willey's to keep sidewalks clear (should be installed at least 24' from curb and angled to match parking). Consider relocating the "Open" flag at Willey's so that it doesn't overhang the sidewalk.
- **CENTERLINE STRIPING:** Cease centerline striping through the village center. Centerline removals in other locations have yielded speed reductions of about 7 MPH. MUTCD does not require centerlines on rural arterials or collectors with AADT below 3,000, and on urban arterials and collectors with AADT below 6,000. Breezy Avenue through the village center has an AADT of 1591 (2019 VTrans data).
- **ADA ACCESSIBLE PARKING:** Designate and stripe the northernmost parking spot in front of Willey's as ADA accessible parking.

Medium cost/mid-term Recommendations

- STREET TREES: Plant street trees wherever possible on the greenbelt along Breezy Avenue, to calm traffic and provide shade.
- INTERIM CURB EXTENSIONS: Install “Quick Build” curb extensions using durable, movable interim materials like large planters and traffic paint at the crosswalk between Beach Rd. and the Historical Society and on Willey’s Corner while fundraising and designing the permanent infrastructure. These could be removed in the winter.
- PARKING UTILIZATION: If parking capacity becomes a concern, signage directing visitors to utilize the Public Beach parking lot could be added, and stalls could be painted along the south side of Beach Rd.

Right: A Quick Build curb extension utilizing paint, planters, and bollards in Burlington, VT. Quick Build curb extensions as seen here on Loomis St. are kept in place year-round and are currently slated for permanent construction.



Higher cost/long-term Recommendations

- **SIDEWALK MAINTENANCE:** Continue to repair and replace existing sidewalks, especially on the West side of Breezy Avenue.
- **PERMANENT CURB EXTENSIONS:** Design and install floating curb extensions with mountable curbs on the crosswalk between the Historical Society and Willey's. A floating design should eliminate the need for additional drainage and a mountable curb will allow continued delivery access at Willey's.
- **PLANNING:** Work with NVDA to study comprehensive street improvements in the village such as curbed sidewalks, curb extensions, greenbelt restoration, green stormwater collection, and intersection tightening at East St./Breezy Ave. and Beach Rd./Breezy Ave.



Left: Floating curb extensions yield the same safety and traffic calming benefits as curb extensions that are connected to the sidewalk curb, but don't present drainage issues.

Resources

Funding & Assistance: [VTrans Bike & Pedestrian Program](#)

Funding: [ACCD Better Places Program](#)

Funding: [AARP Community Challenge](#)

Design: [FHWA Small Town and Rural Design Guide](#)

Design: [VTrans Guidelines for Pedestrian Crossing Treatments](#)



Thank you!

Questions/comments? Contact
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