



Bismarck Moves

Active Transportation Demonstration Project

Summary and Evaluation



OCTOBER 19, 2018

ACKNOWLEDGMENTS

Thanks to the City of Bismarck, North Dakota Department of Transportation, Downtowners of Bismarck, Bis-Man Public Transit, Bismarck-Burleigh Public Health, GO! Bismarck-Mandan Coalition, Bis-Man MPO, and other project partners for contributing your time, energy, creativity, and expertise to this project. From the initial workshop and project planning and design, to installation, stewardship, evaluation, and removal, this work would not have been possible without your support.



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Introduction

Demonstration projects use short-term, low-cost materials to spark long-term safety improvements for people walking, bicycling, and driving. The demonstration projects helped communities save money by testing new designs proposed within ND Moves, the statewide active transportation and transit plan.

The demonstration projects are a partnership between the North Dakota Department of Transportation, North Dakota Department of Public Health, and participating communities. Bismarck was one of nine communities who participated in the effort.

Installing the project during a short-term trial period allowed Bismarck to accomplish the following:

- Test aspects of a project using a much shorter timeline than projects intended for permanent installation.
- Inspire action and build support for how the project or similar projects could be installed over time.
- Widen public engagement by allowing residents to experience new infrastructure first-hand.
- Deepen understanding of active transportation needs and resources through a planning and design workshop held in Spring 2018.
- Encourage people to work together in new ways, strengthening relationships between residents, local businesses, and government agencies.
- Gather data from the real-world use of streets before and during when the project was installed.



Project Overview

Bismarck decided to use this opportunity to test curb extensions at Main Avenue and 5th Street from July 10 to August 10. Curb extensions shortened pedestrian crossing distances and drew attention to crosswalks.

The project also gave the City a chance to repaint the existing brick red crosswalks at this intersection. The project was also selected because of its highly visible location. City staff and volunteers brought the project to life using paint and vertical delineators.

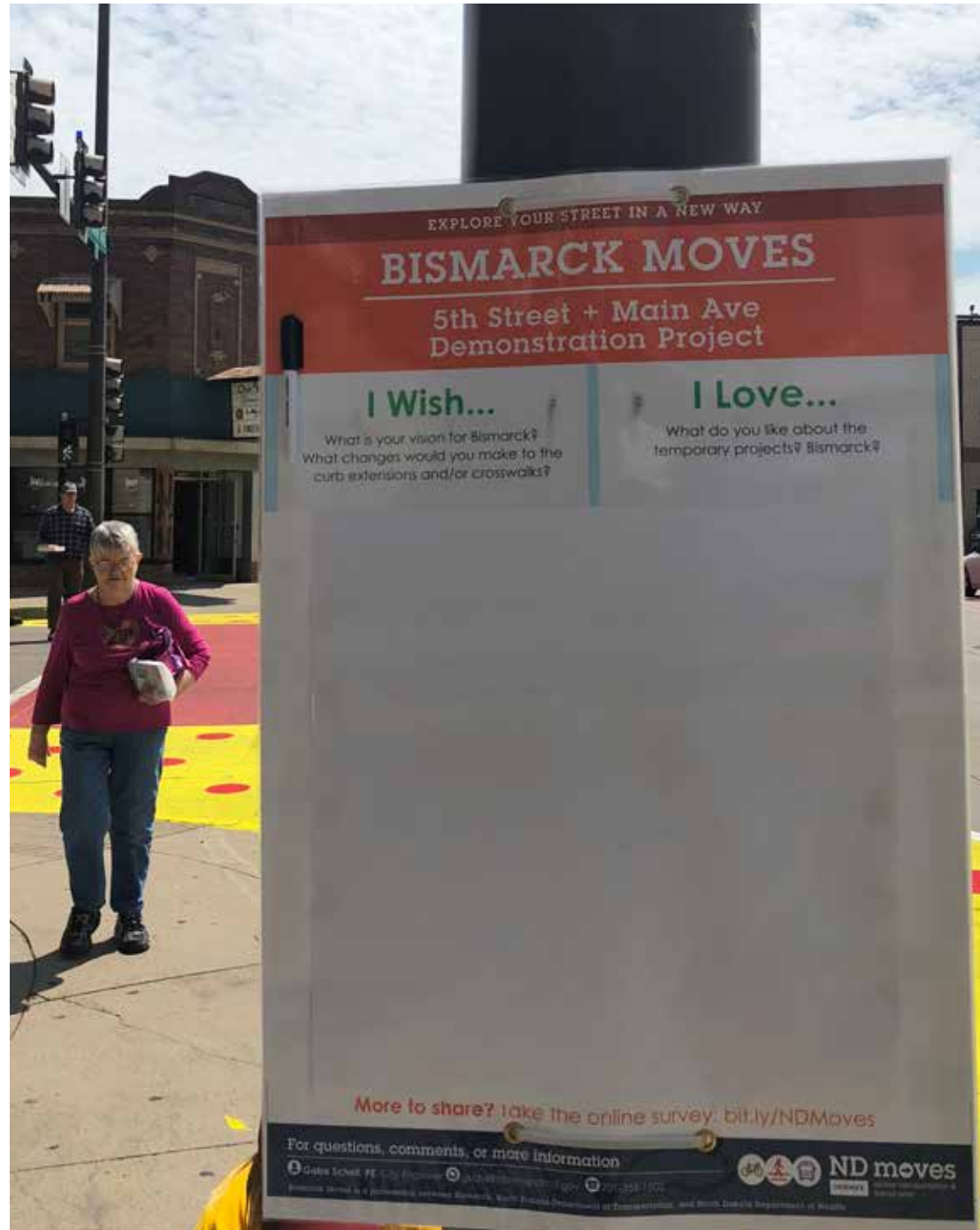


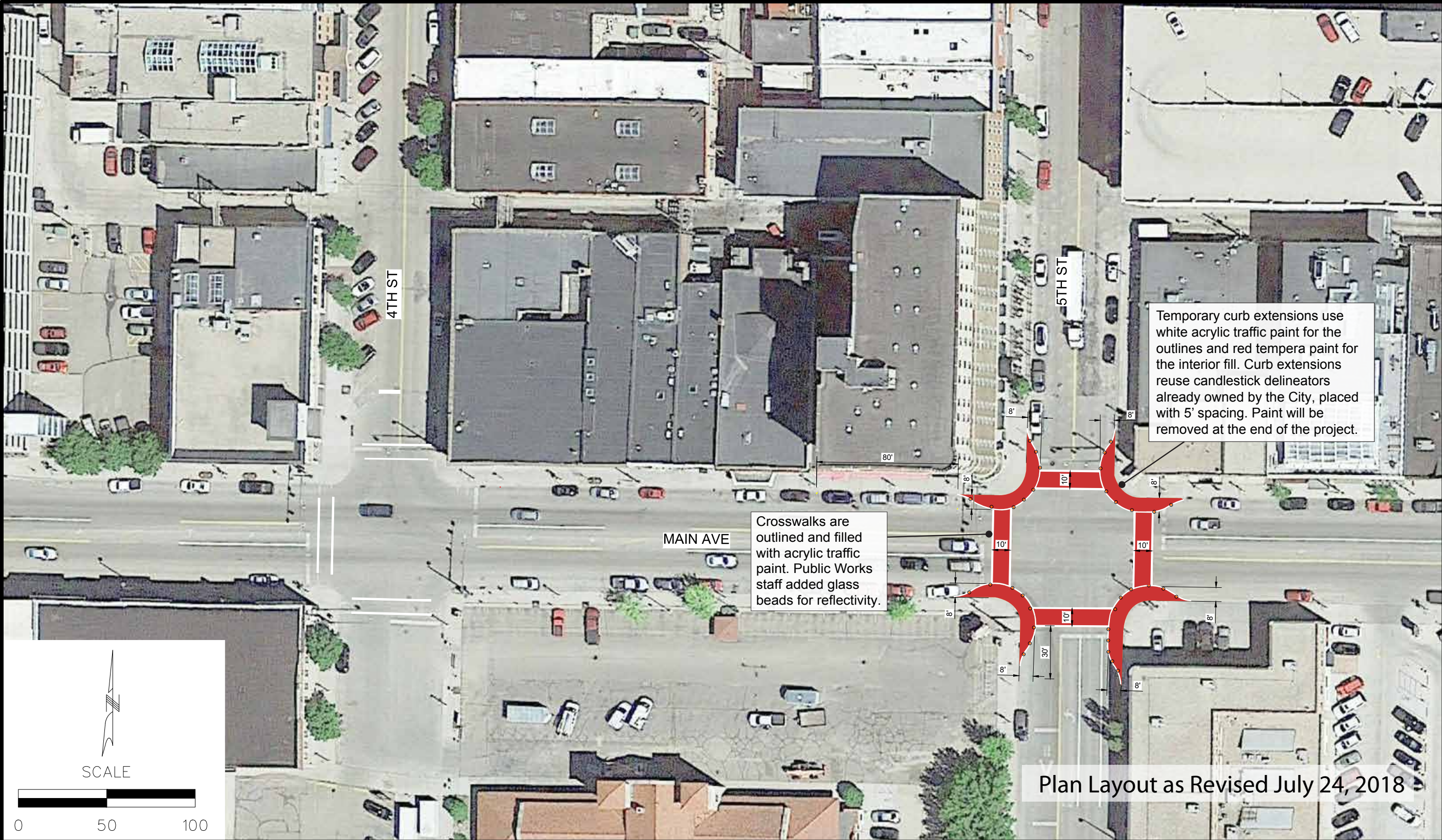
Making it Happen

SPRING: Projects began with a one to one and a half day workshop per community. After, Bismarck worked with the project team to design the project, create evaluation tools, collect data about the streets' existing conditions, and spread the word about the project.

SUMMER: Fourteen City staff, volunteers, and members of the consultant team helped install the project on July 10. Page 6 illustrates the temporary demonstration project.

City staff collected data while the project was installed. These data are summarized in the following section. Community members shared their opinions about the project and thoughts about the project location's future design opportunities. An online survey and a comment board next to the project captured these opinions. Press releases and other communications spread the word for residents to share feedback. Residents also shared feedback through social media comments and calls and emails to the local project leader. **Appendix A** contains communication materials created for the project. After receiving resident feedback related to the curb extension colors, City staff repainted the temporary curb extensions from yellow with red polka dots, to solid red fill. Both designs used tempera paint. City staff continued to collect resident opinions after this aesthetic change. The curb extension and crosswalk dimensions remained the same following the change.





Temporary curb extensions use white acrylic traffic paint for the outlines and red tempera paint for the interior fill. Curb extensions reuse candlestick delineators already owned by the City, placed with 5' spacing. Paint will be removed at the end of the project.

Crosswalks are outlined and filled with acrylic traffic paint. Public Works staff added glass beads for reflectivity.

Plan Layout as Revised July 24, 2018

ND MOVES DEMONSTRATION PROJECT
BISMARCK - MAIN AVENUE
AT 5TH STREET PLAN LAYOUT





NDDOT is leading the development of temporary demonstration projects throughout North Dakota as part of the ND Moves Statewide Active and Public Transportation Plan. The project uses temporary materials and is intended for an installation period of up to one month. Local communities will install the projects with assistance from the consultant team in summer of 2018.



Evaluation Methodology and Results

EVALUATION METRICS AND TOOLS











Curb extensions and artistic crosswalks were installed on July 10th, 2018. Baseline driver behavior observations and pedestrian and bicycle counts were collected on July 5th. During the demonstration project, data for these metrics were collected on July 12th and 26th. Public comment boards and surveys were made available throughout the project duration to gather public input on the demonstration project.

METRIC	METHODOLOGY*
<p>Pedestrian and Bicycle Counts</p> 	<p>DESCRIPTION: City staff conducted pedestrian and bicycle counts in the project area, controlling for time of day, day of week, weather, and special events.</p> <p>TOOLS: Pedestrian and Bicycle Count Forms (see Appendix B for sample forms)</p>
<p>Pedestrian Crossing Reduction</p> 	<p>DESCRIPTION: Pedestrian crossing improvements were evaluated based on reduction in pedestrian crossing distances.</p> <p>TOOL: Measurements collected before and during the installation.</p>
<p>Driver Behavior</p> 	<p>DESCRIPTION: City staff observed vehicles approaching the intersection to document driver stop compliance relative to the stop bar and the crosswalk.</p> <p>TOOL: Driver Stop Compliance Form (see Appendix B for sample forms)</p>
<p>Public Perception</p> 	<p>DESCRIPTION: Residents were invited to comment and share ideas with City staff.</p> <p>TOOLS:</p> <ul style="list-style-type: none">• In-person and online public perception surveys• Public comment boards and open comments on social media

*Detailed evaluation methodology is included in **Appendix B**

EVALUATION RESULTS

The table below summarizes results for each of the evaluation metrics.

METRIC	RESULT	DETAILS
Pedestrian Counts 		Intersection wide, pedestrian counts increased by 43 percent. Pedestrian activity on the west leg of the intersection increased by 75 percent. Although German Days occurred on July 12, evaluators are not aware of any events on July 26 that would have resulted in increased pedestrian activity in the area.
Bicycle Counts 		Overall the number of bicyclists stayed constant, with a slight shift from riding on the sidewalk to riding in the street
Pedestrian Crossing Reduction 		The demonstration project reduced pedestrian crossing distance by 16 feet. Pedestrian crossing times were reduced by about 4 seconds.
Driver Behavior 		Intersection-wide, during the project: <ul style="list-style-type: none"> • Nine percent more drivers stopped behind the stop bar • Six percent fewer drivers stopped past the stop bar • Four percent fewer drivers stopped in the crosswalk
Public Perception 		Public perception was mixed. 55 percent of survey respondents who walked or took transit described the experience as positive. Responses from people walking indicate feelings of increased visibility. 62 percent of participants who drove past the project described the experience as negative. Survey results from drivers reinforce the project's ability to slow motor vehicle turning movements and pay more attention to pedestrian crossings. Participants liked the traffic calming effects but reported mixed opinions on the aesthetics. <p>It is important to note that a newspaper article was published on the morning of project installation, before the project was fully installed, which triggered some survey responses before complete installation.</p>

*Detailed public perception results are included in **Appendix C**



Curb extensions with decorative brick, stormwater features, and a low ledge that doubles as seating (image: Induced.info).

Recommendations for Long-term Change

Bismarck is dedicated to improving active transportation safety and connectivity in the near- and long-term. This demonstration project is one step in this direction. Long-term, the designs tested during the demonstration project could offer several benefits:

- Shorter pedestrian crossing distances
- Better pedestrian visibility at corners
- Slower driver turning movements
- Increased space for landscaping
- Improved ADA compliant curb ramps
- Clarified pavement markings regarding right turns at the intersection
- Refreshed brick-colored crosswalks

The long-term concept drawing on page 11 shows the intersection with concrete curb extensions. Corners include space for landscaping or stormwater management

features, which are called bioswales. Crosswalks are shown in a brick red color. A long-term project would use more durable materials including concrete curb extensions and longer-lasting crosswalk markings instead of bright paint and vertical delineators.

WHAT ASPECTS OF THE DEMONSTRATION PROJECT WORKED WELL?

- The project was a chance to quickly and efficiently plan, design, install, and evaluate a high priority project.
- The project shortened pedestrian crossing distances and increased the visibility of pedestrians crossing the street.
- Motorists made turns without impeding into temporary curb extensions. Data indicates stop bar compliance increased.

- On-street parking was maintained. The curb extensions stopped at the City's existing parking restrictions.
- Residents were able to provide immediate feedback about the project on an input sign located on the project's northwest corner.
- The City responded to residents' preference for an alternate project color scheme.
- The project was located in a very visible area with high pedestrian traffic.
- The project was in place during German Days. This event benefited the project by bringing heavy pedestrian traffic to the area. This meant that more people could experience the temporary improvements.

WHAT LESSONS LEARNED COULD BE APPLIED FOR FUTURE DEMONSTRATION PROJECTS?

- If future demonstration projects are pursued, the City could produce and distribute concept drawings and example images to show members of the public options for long-term change earlier in the project process. This could help avoid confusion by showing residents what permanent changes to the site could look like and could better communicate the project's intent.
- Future projects may use a shorter duration. Staff could be on site to communicate the project purpose and its benefits.
- Future demonstration projects should follow Manual on Uniform Traffic Control Devices (MUTCD) standards for pavement markings, paint color, and roadway geometry.

Paint in earth tones such as tan or brick should be used for treatments like curb extensions, and vertical delineator colors should be consistent with lane line striping.

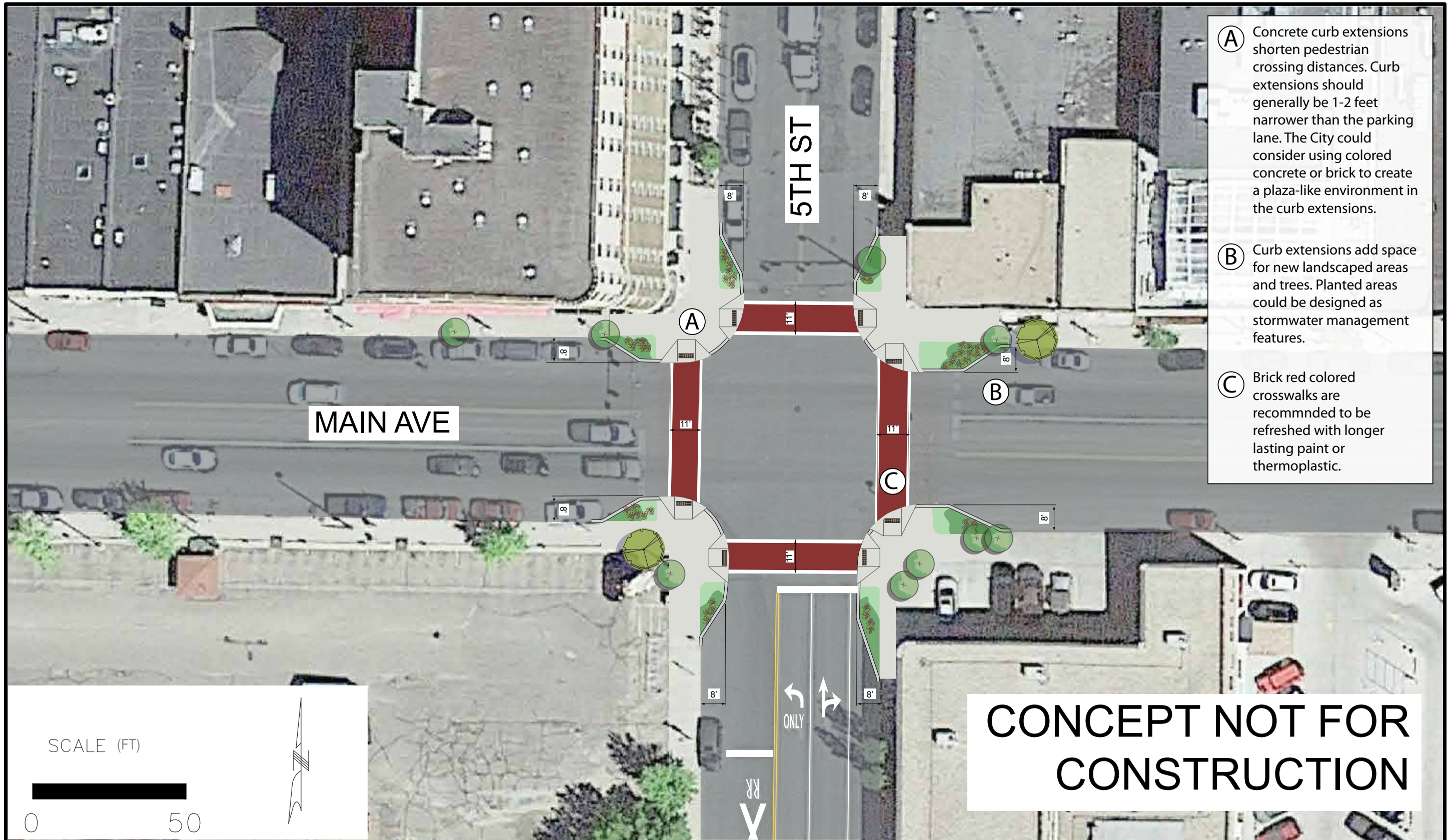
WHAT ASPECTS OF THE PROJECT COULD BE REFINED FOR LONG-TERM CHANGE?

- Add thicker white lines (12 inches wide) to outline the red crosswalks.
- Consider reallocating space from two parking spaces per corner (one each side of a curb extension) to create longer curb extensions with more space for furnishings.
- Consider using thermoplastic markings to create crosswalks. Although the crosswalks are brick red in color, the use of actual brick is discouraged within pedestrian routes. Pavers can disrupt wheelchair, walker, and stroller movement.

- Continue outreach to residents about the purpose of curb extensions and other traffic calming features when walking, bicycling, and driving.
- Share illustrative options for long-term change with the public. As stated in the previous section, this could help avoid express one option for long-term changes.
- Many downtown areas include curb extensions at multiple intersections. Continue exploring options to add curb extensions to other intersections in downtown Bismarck and other areas of the city.

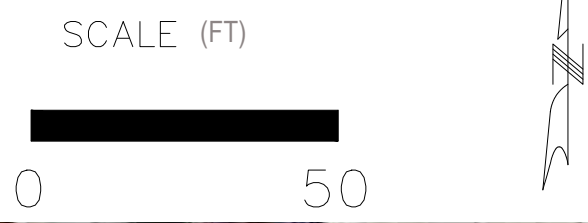


Curb extension in a downtown area with brick colored crosswalks.



- (A) Concrete curb extensions shorten pedestrian crossing distances. Curb extensions should generally be 1-2 feet narrower than the parking lane. The City could consider using colored concrete or brick to create a plaza-like environment in the curb extensions.
- (B) Curb extensions add space for new landscaped areas and trees. Planted areas could be designed as stormwater management features.
- (C) Brick red colored crosswalks are recommended to be refreshed with longer lasting paint or thermoplastic.

CONCEPT NOT FOR CONSTRUCTION



ND MOVES DEMONSTRATION PROJECT
 BISMARCK - MAIN AVENUE
 POTENTIAL CONCEPT FOR LONG-TERM
 CHANGES

In the summer of 2018, NDDOT led the development of temporary demonstration projects throughout North Dakota as part of the ND Moves Statewide Active and Public Transportation Plan. The drawing above shows a potential design for long-term changes to the project area, based on the temporary demonstration project. **This concept is not intended as a construction document. This is not in place of NEPA or other design and environmental processes.**





This curb extension doubles as a bioswale to filter stormwater (Image: Alta Planning + Design).



Curb extension with drainage inlet, artistic stamped concrete, brick paving, and planter (Image: Eric Fidler, <https://www.flickr.com/photos/greatphotographicon/5996098479>).

WHAT OTHER CHANGES COULD BE CONSIDERED LONG-TERM?

- **DRAINAGE:** Installing curb extensions as retrofit projects requires careful consideration of drainage needs. The City could choose among a number of options:
 - Avoid drainage impacts by leaving inlets in place. Install the extensions as islands in front of the gutter line.
 - Maintain the existing drainage structures and provide access to the inlets through the curb extensions.
 - Convert the existing inlets to manholes and provide a new inlet on the new curb line, connecting those to the newly converted manholes. This would require more design and higher cost than maintaining the drainage structures.
 - Configure the curb extensions as bioswales so that the existing inlets serve as overflow structures.

- **WINTER MAINTENANCE:** Design is important to allow snow plows to navigate around curb extensions. Curb extensions should be designed approximately one to two feet less than the full width of adjacent on-street parking. Snow plows will be able to plow parallel to parked cars without hitting and potentially damaging the curb extensions. Reflective markers on poles and painted curbs serve as additional reminders. Snow plow operators should be briefed on proper clearance techniques. Snow plow “rodeo” competitions have been used in New York State, for example, to educate snow plow operators.
- **STORMWATER MANAGEMENT:** Curb extensions offer the possibility of installing stormwater management features. Cities are increasingly using features such as bioswales to manage stormwater. Bioswales concentrate and/or remove pollution and debris from runoff water.

Recommended Next Steps

- Coordinate with NDDOT and Bismarck leadership to discuss permanent changes to Main Avenue
- Use the findings presented here and other data to develop additional design documents from the recommended long-term concept
- Gather public and stakeholder input regarding the proposed long-term project
- Estimate project cost
- Identify funding sources, including grant funds

The channeled depression or trench can double as an attractive landscaping area with low maintenance, native plants.

- **PUBLIC SPACE IMPROVEMENTS:** Long-term aesthetic choices should match the historic feel of downtown Bismarck. Coordination with the State Historic Preservation Office is needed.
- **INTERPRETIVE SIGNAGE:** Interpretive signage describes stories and facts about the area’s history.
- **WAYFINDING SIGNAGE:** More durable pedestrian wayfinding signage could offer a long-term version of the Walk Your City signs currently used in downtown Bismarck. One Walk Your City sign is located at the project site.

ND Moves Pop-up Demonstrations Lessons Learned

Introduction

This document summarizes successes and lessons learned during the nine ND Moves pop-up demonstrations installed during June and July 2018. NDDOT is one of the few State DOTs that have led demonstration projects in the United States. This record will help NDDOT staff and others learn from the innovative process. The pop-up demonstrations intended to obtain public input for active transportation-focused infrastructure features and potential future projects. This type of public input gathering tool may be appropriate for other locally or state sponsored projects that include active transportation design features that are new to the community.

Pop-up demonstration successes and lessons learned were summarized based on feedback from FHWA, NDDOT, participating communities, and the consultant team.

Pop-up Demonstration Successes: NDDOT and Consultant Team

General

- This demonstration effort was precedent setting. Only a few State DOTs have completed demonstration projects.
- The approach allowed concepts to be tested at a relatively low cost rather than investing significant resources on a permanent project that may or may not work
- The demonstrations initiated community conversations about concepts that may have been new to the participating community
- A broad cross-section of communities were represented from a population and geographic stand point
 - Communities with fewer than 5,000 residents enthusiastically accepted NDDOT's invitation to participate in the program. Smaller community participation is particularly innovative for pop-up demonstration.
 - NDDOT / consultant team technical assistance was especially valuable for smaller communities that may not otherwise have much access to active transportation planning and design resources.
- No injuries occurred as a result of the pop-up demonstrations.
- The number of public comments received was much larger than for most previous planning efforts, especially for a strategic planning effort. Therefore, the demonstrations appear to be an effective tool for engaging the public. Most projects were installed for about four weeks. This timeframe is

considered “longer-term” for demonstration projects, which typically are installed from one day to one month.

Process, administration, and communication

- NDDOT refined internal processes related to managing the development and installation of pop-up demonstration projects.
- Communities that hired summer interns were better equipped to perform data collection, outreach, design of additional demonstrations outside the ND Moves scope, and other tasks.

Materials

- Materials were easily and quickly installed. Most materials lasted through the recommended length of the demonstration, with tempura paint being the lone exception and refreshing that paint following rain events was not difficult.
- Communities used the opportunity to add beautification elements, in addition to safety improvements.

Project design

- Community workshops were very productive. Workshops efficiently used community leader, NDDOT, and consultant time to make decisions.
- Community leaders completed short worksheets before the community planning workshops. These forms helped consultant team staff learn about local ideas in advance to kickstart pop-up demonstration project planning efforts.
- Pop-up demonstration project sites located near community leaders’ places of employment were easy to monitor.

Public outreach and input

- The demonstrations generated significant public feedback with more than 1,500 people taking the online survey. Residents who used active and public transportation generally responded that they felt safer as a result. Motorists noticed the demonstrations’ visually narrowing effects. This was consistent with the project’s traffic calming goals.
- Survey responses were sortable based on certain answer choices (i.e., mode of transportation, community). The pop-up demonstrations helped communities and NDDOT understand differing desires for comfort and safety, based on survey respondents’ indicated forms of transportation.
 - In general, survey respondents walking, biking, and using public transportation generally had positive responses about the demonstrations while respondents driving generally had negative responses about the demonstrations. This is likely due to the traffic-calming intent of most the demonstrations, which tended to slow vehicular traffic.
- Approximately 83 volunteers and City staff helped install the temporary demonstrations. The sufficient number of volunteers per community contributed to efficient installation. Other residents and City staff helped conduct evaluations before and during the demonstrations.
- Issuing a call for volunteers to local engineering firms proved useful for more technically challenging installations.
- The demonstrations allowed for enhanced collaboration with other state agency partners such as the ND Department of Health, as well as, local jurisdictions.

Project results

- Communities completed standardized before and during evaluations to understand the impacts of the pop-up demonstrations.
- The pop-up demonstrations have spurred conversations for local safety and beautification projects among community leaders.
 - Communities have learned about planning and designing for people walking and bicycling.
 - Participating communities have had the opportunity to try out street designs with innovative ideas.
- ND Moves pop-up demonstrations have resulted in residents talking about active transportation and telling community decision makers about a desire for more opportunities to walk and bike safely.
 - In Williston and Hazen, residents have expressed a desire for more bike lanes. They would like the buffered bike lanes extended. Residents would also like new routes to other destinations.
 - Due to efficiently accomplishing meeting goals during the community workshops, there were many instances in which community leaders, residents, NDDOT staff, and members of the consultant team used extra meeting time to discuss related ideas for potential active transportation network improvements.

Lessons Learned: NDDOT and Consultant Team

Materials

- For any future pop-up demonstration organized by local or state partners, it is recommended to have one organization (lead agency or Consultant) responsible for procuring materials. Centrally procuring materials would have resulted in more uniform material choices across communities (e.g., white bollards). NDDOT should consider including material costs in future pop-up demonstration funding.
- Federal requirements, such as, but not necessarily limited to, the MUTCD and PROWAG, still apply for temporary demonstrations, regardless of their duration. Pop-up demonstration pavement marking and delineator colors must follow the MUTCD. Transportation law does not allow flexibility for short-term demonstrations.
 - Future pop-up demonstrations should determine a color palette in advance. This topic should be discussed with communities during the planning workshops and must be consistent with the MUTCD.
 - Consideration must be provided as to how visually and mobility impaired individuals will navigate through the demonstration
- Determine clear zone requirements in advance.
- Material selection should emphasize materials that are easy to install and remove. This requires more maintenance to refresh the materials throughout the demonstration. However, less durable materials more easily allow changes during the demonstration. Acrylic traffic paint is not recommended for temporary installations.
 - The more durable paints used in some of these demonstrations reduced the interim maintenance efforts, but significantly increased the end-of-demonstration removal work. In general, the use of tempura paint seems preferable for any demonstration scheduled for the length of time used in this planning effort.
- Bold color choice, even if consistent with the MUTCD, can have both a positive and negative impact. From a positive perspective, it may draw attention to the project. From a negative perspective, if an individual doesn't like the color choice they may indicate they don't like the concept (the pop-up demonstration is trying to represent) entirely.

Pop-up demonstration design

- Mini-roundabouts may be better suited for a one-day installation. Vertical elements on the outside of the circles increased driver compliance.
- Pop-up demonstrations that require alteration for ADA compliance are not recommended as long-term demonstration projects. If selected for a pop-up demonstration, communities should plan for these alterations in advance.
- Further develop the detailed concept or plan review process, especially for pop-up demonstrations longer than one week. Some issues were noted only after installation (i.e., MUTCD pavement color non-compliance, ADA issues). Plan documents should clearly specify pop-up demonstration colors and patterns in advance of plan approval.
- Representatives from the ND FHWA Division Office and FHWA Headquarters interpreted the MUTCD definition of "Traveled Way" (as it relates to pop-up demonstrations) to be any location on the roadway between permanent curb faces. Based on this interpretation a solid white barrier line painted to demonstrate a temporary curb extension, for instance, is not sufficient to delineate the

“traveled way” associated with a pop-up demonstration if painted on the roadway between permanent curb faces. In other words, even if a solid white barrier line is painted on a roadway surface between permanent curb faces to demonstrate a curb extension, all associated colors to fill in the pop-up demonstration curb extension need to be consistent with the MUTCD.

- Patterns associated with the pavement markings need to be consistent with the MUTCD particularly with the following: [Interpretation Letter 3\(09\)-24\(l\) – Application of Colored Pavement](#). Several participating communities expressed interest in artful cross-walk treatments which were not consistent with the preceding referenced MUTCD document. The ND FHWA Division Office and FHWA Headquarters has also interpreted that painted curb extensions which incorporate patterns utilizing pictographs are also not consistent with the MUTCD.

Public outreach and input

- FHWA and other agencies such as the State Historic Preservation Office (depending on location of the demonstration) should be included as early as possible in the planning of the pop-up demonstration including color palette, pattern, and material choice, to avoid potential issues following installation.
- Pop-up demonstrations focused on local communities leading public outreach. NDDOT may want to consider assisting with this work for any future demonstrations. The pop-up demonstration team should ensure that local jurisdictions clearly understand outreach needs before and during the pop-up demonstration.
- Show examples of permanent features, the pop-up is attempting to demonstrate, to the public early and throughout the pop-up demonstration. A variety of individuals were confused about what was meant by “permanent”. For example, some assumed that their community intended to permanently paint curb extensions, as opposed to constructing concrete curb extensions.
- Communities would benefit from earlier sharing of educational materials related to walking, bicycling, driving, and parking near the pop-up demonstrations. Community leads shared these materials, but they require time to reach a broad segment of the population.
- Some residents who took the survey felt the pop-up demonstration planning process should have included public input.
- Some pop-up demonstrations received an overwhelming volunteer response from local residents. Although residents were enthusiastic, a few communities had too many volunteers on installation day.
- Work with local community leads to publicize pop-up demonstration successes and lessons learned from public feedback soon after removal.

Process, administration, and communication

- As previously stated, the NDDOT had no experience with similar types of demonstrations so it was unaware of what it was unaware of. Participating in this process helped NDDOT understand where previously unknown issues pose challenges.
- Required community agreements and the signature collecting process should occur at the beginning of the pop-up demonstration process. Add additional time to the signing process, given communities’ need for Commission / Council approval.
- The project team should be sure that community leads understand the estimated cost and potential challenges related to long-term temporary installations (i.e., 4 weeks or more).
- Similarly, providing a time commitment estimate for pop-up demonstration installation to community leaders could help manage expectations.

- A debrief meeting or workshop at the end of the pop-up demonstration could continue momentum toward long-term changes. This time could also be structured as technical assistance related to other active transportation improvement projects.
- Additional coordination of demonstration development activities should be considered with a variety of other State agencies, for example: State Historic Preservation Office, and North Dakota Parks and Recreation.
- Notify internal NDDOT stakeholders about the pop-up demonstrations. Consider forming an internal pop-up demonstration team with decision-making authority to answer questions and unexpected issues as they arise during planning and installation phases. The team may be composed of NDDOT experts from Planning, Local Government, Design, and Programming. Including the latter two divisions would handle ADA and MUTCD compliance questions, respectively. The team would ensure that all roadway users are considered in the pop-up demonstrations, including people with limited mobility and low vision.

Lessons Learned: Federal Highway Administration

Overall, the project showed a need for FHWA and NDDOT staff to collaborate early in the project planning stages.

ADA Access

Demonstration projects must still consider ADA access requirements. The implementing agency would be liable for any risk associated with the project. A project that is installed for one day will generally face lower risk than projects meant for longer installation.

Color / Pattern

- MUTCD requirements still apply for temporary demonstrations, regardless of their duration. Demonstration pavement marking and delineator colors must follow the MUTCD. FHWA does not allow flexibility for short-term demonstrations.
- Refer to [Interpretation Letter 3\(09\)-24\(I\) – Application of Colored Pavement](#). The letter rules that subdued, earth tone colors such as brick and tan be used for aesthetic treatments. Curb extensions, mini roundabouts, crosswalks, and other features must, by law, follow this guidance, regardless of funding source. For example, the interior of a curb extension is considered an aesthetic treatment or “island”.

Project Successes: Participating Communities

- Overall, communities were satisfied with the planning process, pop-up demonstration installation, and installation period.
- Communities felt like the workshops were efficient and helped bring the right decision makers together.
- The number of phone meetings was appropriate for the pop-up demonstrations. One biweekly call was held per community. Check-in calls began in late April / May after each community's pop-up demonstration planning workshop. Approximately eight calls were held per community, or seventy-two total check-in calls.
- The pop-up demonstrations were a great way to gather public input and were seen as more effective than other strategies, such as community meetings.
- Deliverables were useful and easy to use. Some communities are interested in future, locally led pop-up demonstrations and learned a lot from this effort.
- The pop-up demonstrations have started conversations about how to build walking and bicycling infrastructure throughout the community and to connect to more destinations.

Lessons Learned: Participating Communities

- In the future, communities would like expectations for pop-up demonstration parameters (i.e., colors, materials within ROW, etc.) established before the workshops.
- Communities were frustrated by the need to change pop-up demonstration colors shortly before pop-up demonstration installation.
- Communities were confused by the need for an agreement for pop-up demonstrations on local roadways.
- Some smaller communities faced challenges with volunteer recruitment for the installation.
- Community leaders would have liked more information about their role in and expected level of effort for demonstration coordination.
- Some community leaders represent the local Chamber of Commerce or similar organizations. This sometimes led to some tension between staff and business owners who may have been opposed to certain elements of the pop-up demonstration. Future demonstrations should identify others from the City to help discuss pop-up demonstration design choices and safety benefits with business owners. Outreach to some business owners was challenging.
- Acrylic paint removal was more challenging than expected.