

City of Hamilton State Street Traffic Calming Project
Final Report

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16. Abstract The Western Transportation Institute (WTI), in collaboration with Bike Walk Montana and the Montana Department of Commerce's Main Street Program, coordinated a pop-up traffic calming project along State Street in Hamilton, Montana. The project aimed to enhance safety by reducing vehicle speeds and improving pedestrian and cyclist visibility on a busy corridor. Key activities included a community walk audit, development of traffic calming designs, and installation of curb extensions, pedestrian refuge islands, and in-road yield signs. Vehicle speed and traffic volume data were collected before and after the installations to assess effectiveness. Results showed a reduction in speeds and the percentage of speeders, particularly in the 400-500 blocks of State Street. Based on these outcomes, recommendations include expanding traffic calming along the entire corridor, integrating placemaking elements, and creating an annual budget for traffic calming.					
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City of Hamilton State Street Traffic Calming Project

July 19–October 15, 2024

Background

The Western Transportation Institute (WTI) has been coordinating with Bike Walk Montana and the Montana Department of Commerce's Main Street Program to help small towns with pop-up projects aimed at slowing traffic to create safer streets. The Department of Commerce suggested opportunities for pop-up traffic calming in Hamilton, Montana, where City staff had already been discussing traffic calming on State Street. WTI worked with Hamilton's city staff to provide technical assistance on the planning, engagement, installation, and evaluation of the project.

WTI first met with staff from the City of Hamilton in the spring of 2023 to discuss their proposed AARP grant, neighborhood traffic calming projects, and interest in partnering on traffic calming projects along the State St. corridor. Once a contract was drafted and signed, work on the project began. Figure 1 shows the locations of pop-up installations along State St: yellow stars indicate traffic calming and the yellow pedestrians indicate in-road yield signs.

Pop-up traffic calming is a quick and inexpensive way to modify the roadway environment and test interim-style pop-up installations to effectively achieve project goals. It is an iterative process that allows the community to engage and provide input on perceptions of safety, usability, and aesthetics.

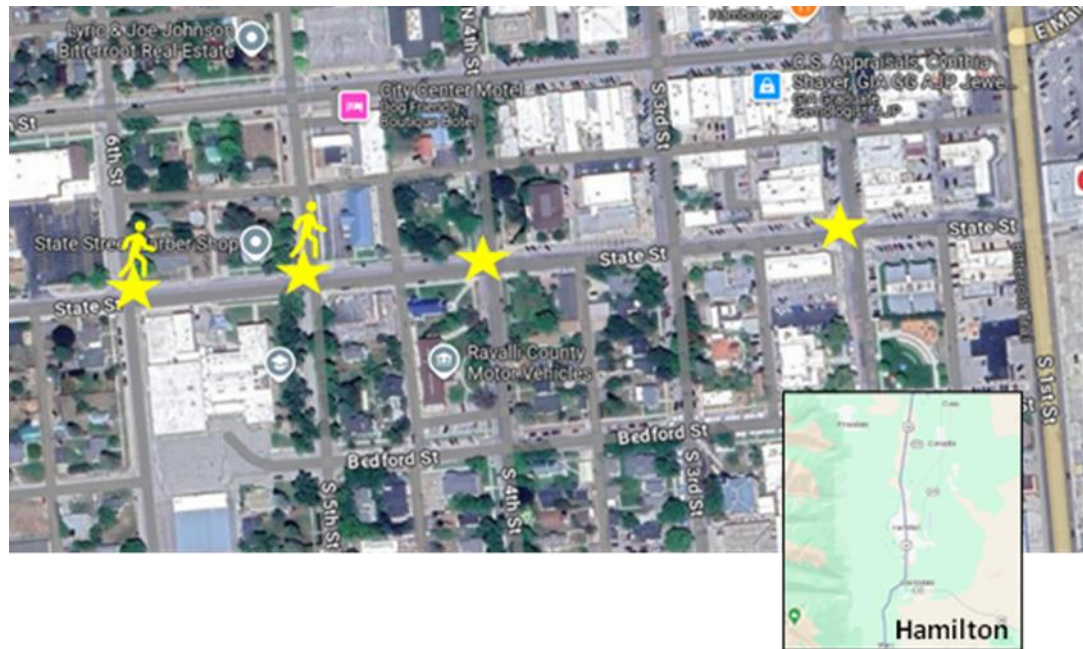


Figure 1 Map of Hamilton with locations for traffic calming.

History & Process

The traffic calming process typically starts with neighbors, businesses, and community leaders bringing traffic-related issues to staff at WTI. Then, an engagement process begins, which includes walk audits, community meetings, and/or additional data collection to identify traffic issues. If a traffic safety issue is present, the project will move forward. At the next stage, project goals are defined (as determined by community and staff), data collection methods outlined, and a project implementation timeline is defined. A temporary traffic calming treatment is then installed with help from either city staff or neighbors. After the traffic calming has been installed, data is collected to evaluate the installations' impact on vehicle speed, volume, and safety. Finally, results and recommendations are reported by WTI staff.

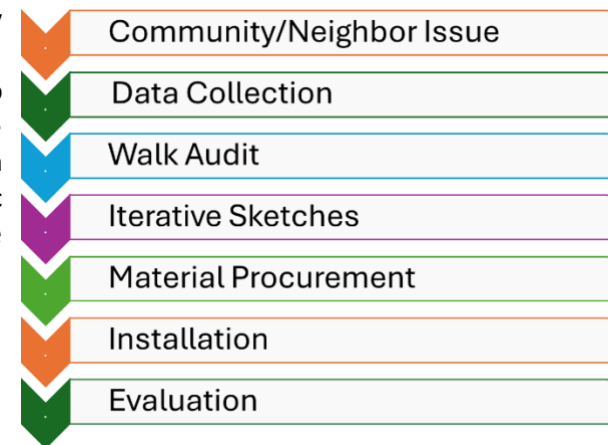


Figure 2 The WTI traffic calming process.

Walk Audit

A walk audit provided an opportunity for WTI and city staff to engage with residents and hear their perspectives on the State St. corridor. Discussions ranged from how safe the corridor is to use to community perceptions. The walk audit was conducted with 10 participants and started at the intersection of State St. & 2nd St., and finished near the middle school at State St. & 5th St. The group stopped at intersections to discuss those specific locations, as well as areas adjacent to State St. (Figure 3). In addition, the group shared their thoughts on possible solutions. WTI staff took notes and documented the process in a walk audit report that is a part of the planning process for the project. The full State St. walk audit report is included in Appendix A State Street Walk Audit Summary of this report.



Figure 3 Hamilton walk audit at the 3rd & State St intersection.

Figure 4 shows some of the walk audit participants. A list of the main themes that were discussed throughout the walk audit follows.

- **Traffic speeds** are a concern for some residents
- **Visibility** issues are a concern at multiple crossings along State St.
- **Parked vehicles** that obstruct views are a concern
- **Safety for pedestrians and cyclists** was identified as a priority
- **Creating space for children** to walk safely is also a priority
- **The fire department and middle school** pose unique issues for managing safety
- **Noise is a concern** the closer you get to 1st St/Hwy 93
- **Place making and improving livability** was a key component of the discussions
- **Engaging with businesses, community members, commission, and the Rocky Mountain Labs** are important to the successful implementation of any future projects
- **Hamilton is a bicycle destination** in the summertime because it is a part of multiple well-known bicycle routes
- **There was apprehension** from a community member about the idea of using roundabouts as traffic calming tools
- **Hamilton is a community that relies on biking and walking** as form of transportation
- **The speed of vehicles** turning off State St. is a concern for pedestrians, particularly at the 2nd and 3rd St. intersections.

Some of the walk audit participants' ideas for traffic calming included:

- More stop signs
- Buffered bike lane
- Wider and more bulb outs (to narrow traffic lanes)
- Change the angled parking to parallel parking to improve visibility and provide space for bike lanes
- Speed tables, bumps, or dips to slow traffic
- Create compact car-only parking spaces (to increase visibility)
- Drivers' education campaigns with signs



Figure 4 Hamilton walk audit strolling along State St.

Community Presentations

WTI staff, in partnership with City of Hamilton planning department staff, presented to the Hamilton City Council three times throughout the course of the project. All the meetings were properly noticed, open to the public, and provided an opportunity for staff to inform the community about the project process, proposed installations, and goals. Presentations were conducted in-person as well as virtually and were recorded.

Meeting dates were June 1st, 2023, July 25th, 2023, and March 19th, 2024.

At the meetings, there was consensus amongst councilors that issues identified from the walk audit, community meetings, and data collection showed a need for traffic calming of some sort. During this process, City and WTI staff also worked with Hamilton Emergency Services to test large vehicle turning movements in relation to the proposed traffic calming treatments (Figure 5).



Figure 5 A traffic calming test with emergency services at State St & 2nd.

During the March 2024 presentation, staff talked through the iterative traffic calming sketches with the council and community. They also reviewed what types of traffic calming would be installed, the proposed budget for the project, and the installation timing, evaluation, and final reporting. Each installation type will be discussed in detail in the Plans & Installation section of this report.

Project Goals and Next Steps

After completing the walk audits, initial data collection, community meetings, and iterative design testing with emergency services, project goals were developed (Figure 6).

1. Slow drivers' speeds

2. Improve pedestrian safety/visibility

3. Pilot corridor-style traffic calming

4. Receive community input for future traffic calming projects

Figure 6 Traffic calming project goals.

Plans & Installation

Once goals were identified, WTI staff drafted sketches of curb extensions and pedestrian refuge islands, including bollards and planters, and presented them back to City of Hamilton Staff, City Council, Emergency Services, and the community for feedback and initial approval. The traffic-calmed intersections at 2nd, 4th, 5th, and 6th Streets have 2-way stops, while there are no stop signs on State St. through this corridor. Figure 7 shows the proposed curb extension sketch at South 2nd Street, which narrows the State St. crosswalks from 35 to 22 feet.

Figure 8 shows the proposed pedestrian refuge islands sketch at State St. and 4th St. These pedestrian refuge islands give people a protected place to stop in the middle of the street and the ability to navigate one direction of traffic at a time. These islands also break up the sight lines, as drivers look ahead at the road corridor, and provide visual cues that tend to slow vehicle speeds.

State St. at 2nd St traffic calming sketch

Curb extensions

- Shorten crossing distance
- Make pedestrians more visible to motorists
- Maintain 11' travel lanes

High visibility crosswalks on State St.

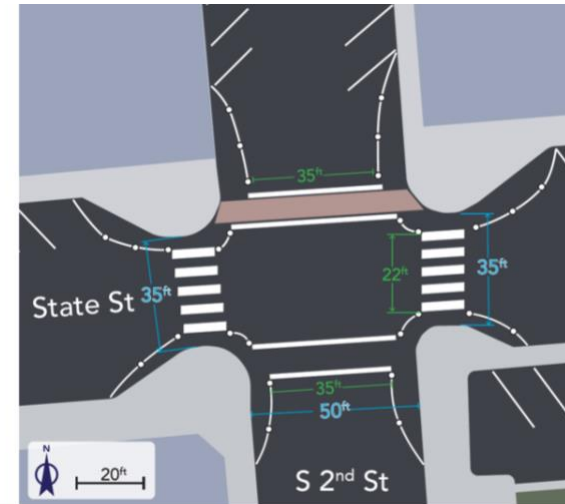


Figure 7 Proposed curb extensions at State St and 2nd.

State St. at 4th St traffic calming sketch

Pedestrian refuge islands

- Slow motor vehicle speeds
- Pedestrians can navigate one lane of traffic at a time
- Maintain 11'-12' travel lanes

High visibility crosswalks on State St.
Self watering planters

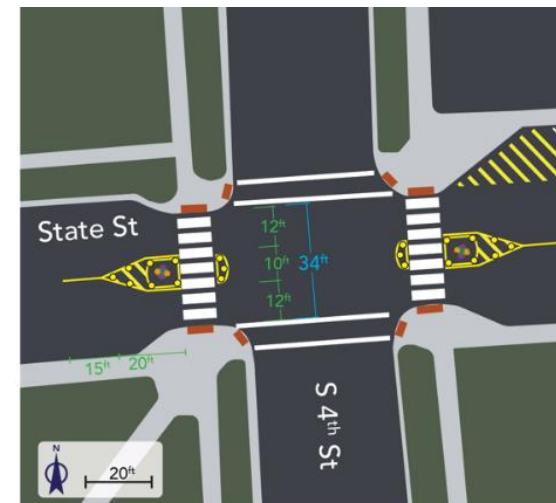


Figure 8 Proposed pedestrian islands at State St and 4th.

Figure 9 shows the proposed curb extensions sketch at State St. and S. 5th St. In-road yield-to-pedestrians signs are shown as a yellow square in the center of the road to alert drivers as they approach Hamilton’s middle school crosswalks.

State St. at 5th St (at middle school) traffic calming sketch

Curb extensions & in-road yield sign

- Shorten crossing distance
- Students more visible to motorists
- Self enforcing no-park zone near corners
- Maintain 11’ travel lane
- MUTCD compliant
- High visibility crosswalks on State St.



Figure 9 Proposed curb extensions at State St and 5th.

After approval of the design sketches, staff from both WTI and the City of Hamilton worked together to order materials and supplies. The materials for this project included 36-inch-high bollard-style delineators, Sybertech self-watering planters, and traffic paint in both white and yellow. In addition, staff and the police chief recommended the installation of R1-6 in-road yield signs near the school at the intersections of State St. & 5th and the State St. & 6th crosswalks. Materials and supplies used in the traffic calming projects are consistent with requirements set forth in the Manual on Uniform Traffic Control Devices (MUTCD; FHWA 2023). Once material and supplies were ordered, WTI staff worked with City of Hamilton staff to set installation dates.



Figure 10 Traffic calming materials and guide.

Installations for traffic calming projects may be different depending on the scope of the project, partner engagement, and process development. The different approaches for installation include:

1. Installation with neighbors, students, or other community volunteer partners
2. Installation with WTI staff and Public Works, Planning, Streets staff
3. Installation led by municipality staff with some technical assistance from WTI

The State Street traffic calming installations took the 3rd approach, led by the municipality.



Figure 11 Traffic calming installations along State St at 2nd (left), 4th (center), and 5th (right).

Figure 11 shows photos of the State St. traffic calming installations.

The initial installation date for the project was set for Friday, May 17th. WTI staff worked with City of Hamilton staff to prep the installation but, due to weather conditions, the installations had to be pushed back. They started on July 9th and extended over a 3-day period.

Data collection

To evaluate the effectiveness of the installations, staff collected vehicle speed and volume data before installation. They collected the same data once the installation was in place and after waiting 28 days for driver behavior to normalize.

Vehicle Speed and Traffic Volume

Vehicle speed and traffic volume data were collected at four locations near the intersections where installation occurred. Figure 12 shows yellow stars at the four intersections (2nd, 4th, 5th, and 6th) where traffic calming was installed and three red circles where the radar collected traffic speed and volume data. The radar was also placed at the corner of State and S. 8th St. to the west, which is not shown on the map below.

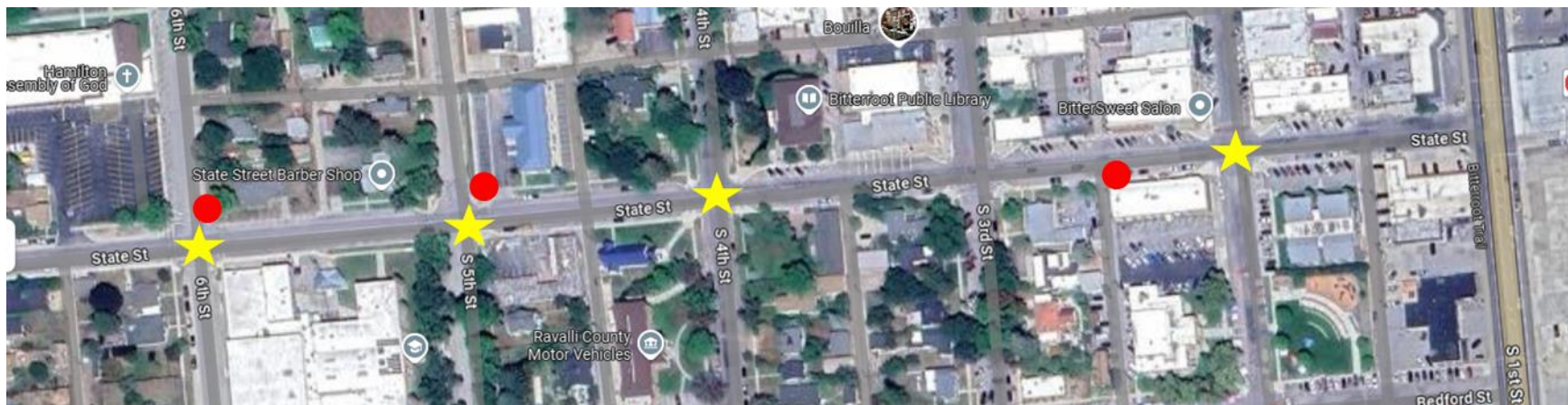


Figure 12 Hamilton State St with traffic calming locations (stars) and data collection locations (circles).

Preinstallation data collection occurred during June and November of 2023. Postinstallation (during the installation) data collection occurred during September and October of 2024. Speed and volume data were collected with a Houston Radar unit and analyzed with the Houston Radar Software. The main data points analyzed were average speed, 85th percentile speed, max speed, average daily traffic volume, and percentage of drivers speeding. The study area has a posted speed limit of 25 miles per hour (mph). Key data points with change indicated from the project include the following:

Data collected along the 200 block of State St. showed minor or no change in the average speeds, 85th percentile speeds, max speed, and percentage of drivers speeding for traffic travelling in both directions along State St. (Table 1).

Table 1 State St vehicle speed and traffic volume data at midblock 200 block.

Incoming – (Eastbound)	Before Installation	During Installation	Change		Outgoing – (Westbound)	Before Installation	During Installation	Change
Average Speed	21.3 mph	21.2 mph	-0.1 mph		Average Speed	20.7 mph	20.9 mph	+0.2 mph
85 th Percentile Speed	25 mph	25 mph	0 mph		85 th Percentile Speed	25 mph	25 mph	0 mph
Max Speed	49 mph	46 mph	-3 mph		Max Speed	50 mph	51 mph	+1 mph
% Over Speed Limit	15.3 %	13.3 %	-2.0 %		% Over Speed Limit	10.6 %	12.4 %	+1.8 %
Average Daily Vehicle Volume	1048	960	-88		Average Daily Vehicle Volume	1505	1566	+61

Data collected along the 400 block of State St. showed a reduction in average speed, 85th percentile speeds, max speed, and percentage of drivers speeding in both directions for traffic travelling along State St. (Table 2).

Table 2 State St vehicle speed and traffic volume data at 400 block.

Incoming – (Eastbound)	Before Installation	During Installation	Change		Outgoing – (Westbound)	Before Installation	During Installation	Change
Average Speed	23.3 mph	22.0 mph	-1.3 mph		Average Speed	23.9 mph	22.1 mph	-1.8 mph
85 th Percentile Speed	27 mph	26 mph	-1 mph		85 th Percentile Speed	28 mph	26 mph	-2 mph
Max Speed	44 mph	43 mph	-1 mph		Max Speed	62 mph	44 mph	-18 mph
% Over Speed Limit	29.5 %	16.8 %	-12.7 %		% Over Speed Limit	31.5 %	18.6 %	-12.9 %
Average Daily Vehicle Volume	699	995	+296		Average Daily Vehicle Volume	760	755	-5

Data collected along the 500 block of State St. showed a reduction in average speed, 85th percentile speed, and percentage of drivers speeding in both directions. There was a slight increase in max speed for eastbound traffic travelling along State St. (Table 3).

Table 3 State St vehicle speed and traffic volume data at 500 block.

Incoming – (Eastbound)	Before Installation	During Installation	Change		Outgoing – (Westbound)	Before Installation	During Installation	Change
Average Speed	24.9 mph	22.9 mph	-2.0 mph		Average Speed	24.1 mph	22.0 mph	-2.1 mph
85 th Percentile Speed	29 mph	26 mph	-3 mph		85 th Percentile Speed	28 mph	26 mph	-2 mph
Max Speed	42 mph	44 mph	+2 mph		Max Speed	47 mph	46 mph	-1 mph
% Over Speed Limit	46.0 %	23.1 %	-22.9 %		% Over Speed Limit	36.6 %	19.0 %	-17.6 %
Average Daily Vehicle Volume	812	592	-220		Average Daily Vehicle Volume	601	630	+29

Data collected along the 800 block of State St showed no change to 85th percentile and average speeds, with an increase in max speed and percentage of drivers speeding in both directions for traffic travelling along State St. (Table 4 State St vehicle speed & traffic volume data at 800 block).

Table 4 State St vehicle speed & traffic volume data at 800 block.

Incoming – (Eastbound)	Before Installation	During Installation	Change		Outgoing – (Westbound)	Before Installation	During Installation	Change
Average Speed	24.6 mph	24.1 mph	-0.5 mph		Average Speed	25.0 mph	25.0 mph	0 mph
85 th Percentile Speed	28 mph	28 mph	0 mph		85 th Percentile Speed	31 mph	31 mph	0 mph
Max Speed	43 mph	54 mph	+11 mph		Max Speed	49 mph	54 mph	+6 mph
% Over Speed Limit	41.5 %	34.8 %	+6.7 %		% Over Speed Limit	38.0 %	40.2 %	+2.2 %
Average Daily Vehicle Volume	514	551	+37		Average Daily Vehicle Volume	472	494	+18

A key goal of this pop-up traffic calming project was to increase safety by lowering traffic speeds along the busy State St. corridor where vehicles, pedestrians, and cyclists are present. Traffic speed plays a large part in survival when a crash occurs in areas where pedestrians are present, such as residents visiting local businesses and students crossing State St. to reach the middle school. Also, with the proximity to Hamilton's middle school, State St. experiences an increase in pedestrian traffic at different times of the day making speed an important factor in safety.



Figure 13 Likelihood of Fatality at Different Speeds of Pedestrian & Vehicle Crashes. Source: National Roadway Safety Strategy <https://www.transportation.gov/NRSS/SaferSpeeds>

Budgeted Costs for Traffic Calming Installations

The materials and supplies used for the installation of the City of Hamilton State St. traffic calming project were purchased by the City of Hamilton with assistance from grants from the Rapp Family Foundation and AARP. Technical assistance for the project was paid for with funds from an AARP Community Challenge grant. The total cost for materials and supplies for all four installations was approximately \$7,214.00 (Table 5, Table 6, Table 7, Table 8).

Table 5 2nd & State curb extension material and supply costs.

Materials/Supplies	Cost Per Unit	Units	Total
White delineator w/ base	\$41.00	26	\$1066.00
White Paint (cans)	\$6.00	3	\$18.00
Misc supplies	\$50.00	—	\$50.00
Total			\$1,134.00

Table 6 4th & State St pedestrian refuge island material and supply costs.

Materials/Supplies	Cost Per Unit	Units	Total
Yellow delineator w/ base	\$41.00	20	\$820.00
Yellow Paint (cans)	\$6.00	2	\$12.00
Misc supplies	\$50.00	–	\$50.00
Planter	\$550.00	2	\$1,100.00
Soil (cu. ft.)	\$5.00	18	\$90.00
Plants	\$90.00		\$90.00
Total			\$2,112.00

Table 7 5th & State St curb extension material and supply costs.

Materials/Supplies	Cost Per Unit	Units	Total
White delineator w/ base	\$41.00	26	\$1,066.00
White Paint	\$6.00	3	\$18.00
R1-6 in-road yield sign w/base	\$425.00	2	\$850.00
Misc supplies	\$50.00	–	\$50.00
Total			\$1,984.00

Table 8 6th & State St curb extension material and supply costs.

Materials/Supplies	Cost Per Unit	Units	Total
White delineator w/ base	\$41.00	26	\$1,066.00
White Paint (cans)	\$6.00	3	\$18.00
R1-6 – in-road yield sign w/base	\$425.00	2	\$850.00
Misc supplies	\$50.00	--	\$50.00
Total			\$1,984.00

Outcomes and Recommendations

This traffic calming project provided neighbors, WTI, and the City of Hamilton the opportunity to install temporary projects along the State St. corridor to test the effectiveness of different installation types. The installation included curb extensions (2nd & State), curb extensions with R1-6 in-road yield signs (5th & State, 6th & State), and pedestrian refuge islands (4th & State). The data collected, materials and supplies that were procured, and the community engagement and public input gained during this project lay an important foundation for continued traffic calming efforts in Hamilton. Quantitative data collected with radars also provide the foundation to evaluate the project's impact.

Project partners had identified the following goals:

1. Slow drivers' speeds along State St
2. Improve pedestrian safety/visibility
3. Pilot corridor style traffic calming
4. Receive community input for future traffic calming projects

Based on the speed and volume data, the area within the traffic calming project (State St from the 300–500 block) showed positive change with the reduction of 85th percentile speeds, average speeds, percentage of speeders, and max speeds. Data collected outside of the traffic calmed area (west of the State St. & 6th intersection) showed no change or an increase in all the measured points. This points to the effectiveness of the installations as well as the importance of considering traffic calming as a solution that should be planned for and installed along the entire corridor.

Following data collection and evaluation, WTI staff make the following recommendations for the City of Hamilton State St. traffic calming project:

1. Reinstall the traffic calming installation at State & 2nd, with some adjusted dimensions that narrow the curb extensions and slow traffic more, and apply a seasonal installation of R1-6 signs at both State St crossings.
2. Install traffic calming at the State St. and S. 3rd intersection now that the fire station has moved. Pedestrian refuge islands that slow vehicle traffic on State St. are recommended, as well as curb extensions on S. 3rd to improve the visibility of pedestrians.

LOCAL PERSPECTIVE

"As someone who has been a pedestrian—on foot and bike—along State Street for a decade, the recent traffic calming measures have been a huge improvement. Although Hamilton has a "small town" feel, State Street can be surprisingly busy. Between the library, the middle school, and nearby businesses there is a lot of foot and vehicle traffic.

When events are going on—like library story times on the lawn or the Farmer's Market at O'Hara Commons—it can become somewhat congested. The recent traffic calming installations take a lot of the stress away from trying to navigate crossing the street as a pedestrian. Vehicles slow down and the intersections are much more distinct (...)"

Quote from Hamilton Library Director

3. Reinstall the traffic calming installations along the State St. corridor at the intersections with 4th, 5th, & 6th using similar dimensions and materials.
4. Explore the possibility of additional installations further west on State St. to help reduce speeds through the entire State St. corridor.
5. Begin conversations around the placemaking component of the projects to see if additional planters, street art, or other parklet improvements would help with the installation aesthetics, as well as create more community engagement opportunities for the school, businesses, partner organizations, and other groups.
6. Work with MDT on a similar traffic calming corridor project on Hamilton's Main St.
7. Create an annual budget for a traffic calming program that allows for reinstallation of existing traffic calming features, as well as the addition of a certain number of new projects each year.

References

Federal Highways Administration (FHWA), 2023. The Manual on Uniform Traffic Control Devices (MUTCD) 11th Edition.
https://mutcd.fhwa.dot.gov/kno_11th_Edition.htm

Taylor, Lynam and Baruya, 2000. The effects of drivers' speed on the frequency of road accidents.
<https://trl.co.uk/uploads/trl/documents/TRL421.pdf>

Project final report prepared and distributed in October 2024 by:



Appendix A State Street Walk Audit Summary

City of Hamilton State Street Project Walk Audit Summary

The City of Hamilton, partnered with the Western Transportation Institute (WTI), to collect bicycle, pedestrian, and vehicular usage data and develop pop-up traffic calming solutions for the State St. area of downtown Hamilton. A walk audit was conducted on Thursday June 1st from 6:00–7:30pm as one part of the data collection process. Hamilton residents, business owners, and local employees participated in the walk audit to observe traffic and share their perspectives on safety along the State St. corridor (Appendix A Figure 1).



Appendix A Figure 1 The State St corridor.

Walk Audit Attendees and Affiliations

Facilitators: Matthew Madsen & Rebecca Gleason—Western Transportation Institute

Participants: Matthew Rohrbach, Mark Rud, Amy Fox—City of Hamilton; Olivia Soller—concerned citizen; Nancy Valk—museum educator; Nathan Boddy—Bitterroot Star; Dan Mitchell—citizen, Ward 2 Councilor; Tony Neaves—Business owner; Amy Monteith—Concerned citizen; Steve Fullerton—KLYQ radio.

Background

The Western Transportation Institute (WTI) has been coordinating with Bike Walk Montana and the Montana Department of Commerce's Main Street Program to help small towns with pop-up projects aimed at slowing traffic to create safer streets. The Department of Commerce suggested

opportunities for pop-up traffic calming in Hamilton, Montana, where City staff had already been discussing traffic calming on neighborhood streets near the Rocky Mountain Lab and on State St. Based on these conversations, WTI is providing technical assistance on the implementation of traffic calming projects in Hamilton funded through grants, not city funds. WTI Research Associate Matt Madsen led a walk audit on Thursday, June 1st to hear Hamilton residents' concerns about State Street. The tour started at the corner of State St. and 2nd Street.

State St. – 2nd St to 6th St

- State St. runs east west from Highway 93/S 1st St to S 9th St. It is a locally controlled street that sees heavy traffic at peak volume times when roadway users look to avoid Main St. to the north. Other features of State St. include:
 - The Hamilton Middle School that fronts State St between 5th & 6th St.
 - The Hamilton Fire Station on the Northwest corner of the 3rd & State St. intersection
 - The Hamilton Public Library on the Northeast corner of the 4th & State St. Intersection
- The roadway surface width (including gutter) of State St. is:

Location	Surface width (ft)
2 nd & State Intersection	35
Midblock 2 nd -3 rd	57
3 rd & State Intersection	36
Midblock 3 rd -4 th	57
4 th & State Intersection	34
Midblock 4 th – 5 th	50
5 th & State Intersection	34
Midblock 5 th – 6 th	50
6 th & State Intersection	50

- The speed limit along this stretch of road is 25 mph.
- On Hamilton's west side, State Street is one of two east-west streets without stop control between 1st and 9th Streets. This factor contributes to the heavier vehicle traffic.
- The City of Hamilton will be collecting midblock traffic speed and volume data between 2nd & 3rd and between 5th & 6th.
- There are currently curb extensions at State Street and the intersections with 2nd, 3rd, and 4th St.

Criteria to Consider During a Walk Audit (adapted from Mark Fenton's "Tips on Leading a Walk Audit" and Dan Burden)

- 1 **Land use/destinations:** Mixed use areas create a variety of amenities and attractions that allow pedestrians to make multiple stops for multiple purposes during an outing.
- 2 **Network connectivity:** Pedestrian facilities (sidewalks, crosswalks, paths) are continuous and consistent, which allows people to get where they need and want to go without having to alter their route.
- 3 **Safety and accessibility:** Travel by any mode is safe, comfortable, and inclusive of people of all ages and abilities.
- 4 **Design:** Pedestrian facilities are functional and inviting. Human-scale design rewards pedestrians by incorporating:
 - a. **Transparency** at ground level, which creates a sense of being seen, watched over (storefronts optimally are 70-90% glass at ground level in more urban areas)
 - b. **Sense of enclosure** that comes from separation from traffic by parking lane, greenspace, street trees, as well as from vertical boundaries such as awnings, string lights, hanging baskets, banners on light posts etc.
 - c. **Visual complexity** (as well as auditory and olfactory) and viewsheds that reward those moving at slower speeds and create a unique sense of place.



Appendix A Figure 2 The fire station on the corner of State St & 3rd



Appendix A Figure 3 State St & 2nd intersection looking north towards Main St.

Walk Audit Overview & Analysis

The walk audit was an opportunity for WTI and City of Hamilton staff to engage with residents and hear from them about their perspectives on the State St corridor. Discussions ranged from safety to use to community perceptions. The walk audit was conducted with 10 participants and started at the intersection of State St & 2nd St and finished near the middle school at State St & 5th St. The group stopped at intersections to discuss the specific location as well as areas adjacent. WTI staff took notes throughout the process to assist with this walk audit report.

The walk audit is an important component to community engagement and data collection that happens as part of pop-up style traffic calming projects. Below is a list of some of the common themes that were discussed throughout the walk audit. In addition, all the observations are put together with images following this section.



Appendix A Figure 4 Walk audit participants at the State St & 3rd intersection.

Main themes from the walk audit:

- **Traffic speeds** are a concern for some residents
- **Visibility issues** are of concern at multiple crossings along State St
- Parked vehicles that obstruct views are a concern
- **Safety for pedestrian and cyclists** was identified as a priority
- **Creating the space for children** to be able to safely walk is also a priority
- **The fire department and middle school** pose unique issues for managing safety
- **Noise** is a concern the closer you get to 1st St/Hwy 93
- **Place making and improving livability** was a key component to the discussions
- **Engaging with businesses, community members, commission, and the Rocky Mountain Labs** are important to the successful implementation of any future projects
- **Hamilton is a bicycle destination in the summertime** as it is a part of multiple well-known bicycle routes
- **There was apprehension** from a community member to the idea of roundabouts as a traffic calming tool
- **Hamilton is a community that relies on biking and walking** as form of transportation
- **The speed of vehicles** turning off State Street is a concern for pedestrians, particularly at the 2nd and 3rd Street intersections.

Walk Audit Participants' Observations & Discussions

State and 2nd St. Observations (stop signs on 2nd)

- High speeds on State St. It is hard to see at this intersection until you are part way out
- People are focused on cars, not pedestrians
- There are pretty good yielding rates of cars to pedestrians
- Where are roundabouts appropriate? (Verses traffic circles?)
- There is a farmers market nearby on Saturdays from May to October
- There is a school bus stop at 2nd and State St.
- This is one of the busiest intersections in Hamilton
- A lot of touring cyclists come through here. There is no wayfinding for cyclists yet but there will be soon
- The current bike route is along 2nd street
- There was concern about driving fire trucks through roundabouts
- This intersection is especially dangerous around 3–4 pm when kids are walking to the donut shop or to get ice cream.
- This intersection contains bulb outs. The red tactile warning strips (truncated domes), that provide direction for vision impaired pedestrians, are directed toward the center of the intersection, rather than toward crosswalks
- This intersection is busy with middle schoolers heading to Mine Shaft (for cookies!)



Appendix A Figure 5 State St 7 2nd intersection looking west.

State and 3rd St. Observations (stop signs on 3rd)

- More pedestrians than 2nd
- Feels safer because it is further from Hwy 93
- It is dangerous walking from the northwest corner because cars make a fast right turn from State St.
- Has largest crossing distances of the State St. intersections
- There is a lack of visibility when driving—can't see until in intersection. Parked cars block view
- Is there a speed limit sign?
- Large trucks are loud and drivers can't see (i.e.. blind spots in front of and surrounding truck due to large size/height of—make it hard to see pedestrians—especially children).
- Lilacs cover the sidewalk on the southwest side, pushing pedestrians toward street.
- People park in the yellow zone near fire station (fire station moving to NW side of town in November)
- People cut the NE corner fast from State St.
- This intersection has curb bulb outs with long curved sections of truncated domes (that may direct vision impaired people to center of intersection, rather than cross walk)
- BW Bitterroot conducted a survey, where middle school parents said they would let their child bike/walk to school if it were safer
- There is often non-stop truck/lawnmowing business along 3rd street in summer afternoons—which is very noisy
- Between State and Ravalli Streets there is no stop control



Appendix A Figure 6 A walk audit discussion at State St and 3rd

State and 4th Observations

- Better visibility than other intersections. Tony uses this crossing the most. Going north you can see, but not heading south
- Cars speed up heading west
- Road opens up here (larger setbacks for buildings from street)
- Tends to be busiest before 8 am and after 3:15 pm (Hamilton Middle school is block to west)
- Busy around lunch to the point where it is uncomfortable walking with kids
- 4–6 pm Wednesday Farmers Market from June through mid-September, so busy then
- 4th is the other bike route (wayfinding signs coming next week!)
- Tours for Adventure Cycling run through here on a nice quiet route on 4th though wayfinding can be confusing for touring cyclists on Trans Am and other routes that come through town
- 4th acts as a collector street for the south side of Hamilton (so likely sees higher traffic volumes)
- Lots of destinations near here—post office, library, O'Hara commons, County administrative offices
- Noise seems to be less as you head west from Hwy 93 (discussed how traffic noise can exceed recommended decibel levels leading to higher stress and other negative impacts)



Appendix A Figure 7 The intersection of State St & 4th looking towards the public library.

State and 5th Street Observations

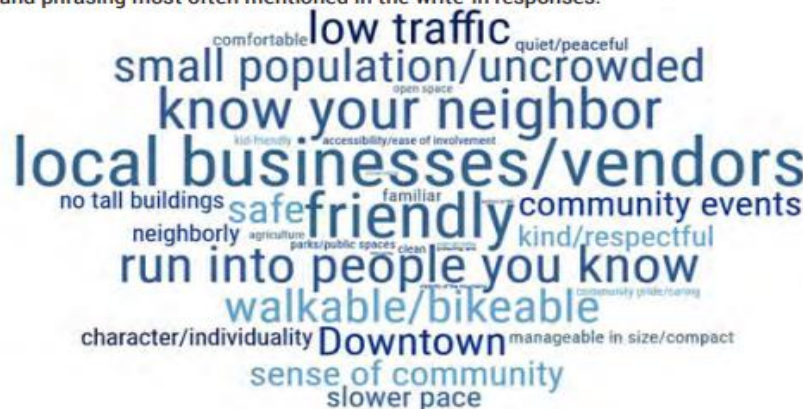
- Quieter although people are also driving fast
- One participant hasn't had problems here when on bike. Though she is not here at school drop off/pick up times
- Angled parking on 5th across from Middle School makes it feel more congested
- Stop signs seem to be more like yield signs at night in this school zone (people roll through them)
- Matt and Rebecca observed the middle school drop off that morning. It appeared that most kids were dropped off in a vehicle or school bus, a few walked, and none were observed biking (though 2 seen arriving on scooters).

Participants' Suggested Solutions

- More stop signs
- Find a way to move big vehicles off street
- Buffered bike lane
- Wider bulb outs (to narrow traffic lanes)
- Discussed how there are two sections of State St. (4th to Hwy 93 and 4th to 9th)
- Change the angled parking to parallel parking to improve visibility and provide space for bike lanes
- Speed tables, bumps, or dips to slow traffic
- Create compact-car-only parking spaces (to increase visibility)
- Drivers' education campaigns with signs—discussed campaigns aimed at slowing drivers and that infrastructure/street design (like narrowing traffic lanes, adding vertical elements like trees...) is more effective and may be paired w/ education.
- Dedicated truck parking areas to direct trucks to places that don't block drivers' views
- Bulb outs on cross streets between 2nd and 4th Streets

Culture of Hamilton as a Community

For those respondents who selected "small town feeling", this follow up question was asked. The word cloud below highlights words and phrasing most often mentioned in the write-in responses.



Appendix A Figure 8 A word cloud from the City of Hamilton Comprehensive Plan 2022 Appendices

Next Steps

- The participants will receive the walk audit report and after final approval, it will be made public for the community and other partner organizations. The report will become a part of the data plan for the project.
- Data will continue to be collected and analyzed by the City of Hamilton and WTI, including:
 - Traffic Volume & Speed—utilizing a Houston Radar unit and analysis software.
 - Driver Yielding Rates—collected via a count cam and analyzed through video analysis (if deemed necessary)
 - Community perception—utilizing SurveyMonkey online survey and data tools.
- Community conversation and dialogue will continue facilitated by WTI & the City of Hamilton.
- Traffic calming sketches will be provided to partners for planning and iteration between city staff, the commission, and the community.
- If approved, the procurement and installation of interim traffic calming measures will occur in mid-summer 2023 and will remain in place through early fall for initial data collection.
- Removal will occur before winter maintenance in the fall of 2023
- A final report and presentation will be put together to be shared with the City of Hamilton



Appendix A Figure 9 Pop-up bike lanes on Annie St in Bozeman, MT



Appendix A Figure 10 Curb extensions with street art on Church St in Bozeman, MT



Appendix A Figure 11 A pedestrian refuge island on Ravalli St in Bozeman, MT