



MEMORANDUM

TO: Mayor and City Council
FROM: Tom Crawford, City Administrator
DATE: December 4, 2020
SUBJECT: Healthy Streets Pilot Projects – Findings Memo

This memorandum is provided in response to approved Council Resolutions [R-20-261 “Resolution to Advance Healthy Streets in Downtown Ann Arbor to Promote Safe Social Distancing Outdoors”](#) and [R-20-262 “Resolution to Advance Healthy Streets Outside of Downtown Ann Arbor to Promote Save Social Distancing Outdoors.”](#) These two resolutions approved street reconfigurations on major streets in downtown and the surrounding area to allow for safe social distancing during the pandemic. In addition to establishing the pilot project, the resolutions set a reporting requirement and this memo is provided to City Council to fulfill those requirements. The attached memo and summary matrix provide findings for pilots in both the downtown and outside of downtown areas.

As always, please do not hesitate to contact me if I can be of further assistance.

Attachments

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ANN ARBOR
**HEALTHY STREET
PILOT PROJECTS**

Memo to City Council

December 4, 2020

Prepared by SmithGroup

(Note: this memo is an executive summary of a larger Summary of Findings report. The Summary of Findings report includes more in-depth analysis and supports the conclusions in this memo. The larger report can be found here: <https://www.peoplefriendlystreets.org/healthy-streets-project/>)

HEALTHY STREET PILOT PROJECTS

On August 27th the Ann Arbor DDA and the City of Ann Arbor began installing a series of healthy street pilot projects in the downtown area to provide space for safe physical distancing for bicycle and pedestrian travel. These projects, with the approval of City Council, reconfigured traffic lanes to accommodate temporary pedestrian and bicycle facilities, such as non-motorized travel lanes, two-way bikeways, and separated bike lanes.

The pilot projects discussed in this report include the following locations:

- Miller/Catherine Bikeway (from 1st Street to Division)
- Division Street/Broadway Bikeway (from Packard to Maiden Lane)
- S. Main Separated Bike Lanes (from William to Stadium)
- State & North University Bikeway (from William Street to Thayer)
- Packard Bike Lanes (from State to Hill)
- East Packard Project (from Platt to Eisenhower)

The pilot projects were designed and implemented in alignment with national guidance, City policies and plans, and the DDA's adopted values for the People-Friendly Streets program. These values both shaped the design of the pilot projects and provided a basis for their evaluation.

Specific goals of the pilot projects included the following:

- **Increase physical distancing and COVID-19 safety** – Provide additional space for pedestrians and bicyclists to maintain safe physical distancing and access for essential travel.
- **Reinforce the DDAs core values** – Increase equitable **access** to and connectivity between downtown destinations to support commercial activity and a healthy and vibrant downtown for all people.
- **Inform Future Projects** – The pilot projects are an opportunity to inform the design of future projects, whether on the pilot project streets or others, and better understand potential challenges and needs to meet core values. Most notably, a better understanding of how improvements can:
 - **Improve safety for all users** – Support the City's Vision Zero policy to eliminate severe injury and fatal crashes.
 - **Improve bicycle connectivity and comfort** – Support the City's A2Zero carbon-neutrality plan and Non-Motorized Plan by increasing active transportation options and thereby reducing vehicle miles traveled (VMT).

The pilot projects were approved for up to 90-days from the date of installation, with the City and DDA staff and their consultants providing on-going monitoring, review, adjustment, and opportunity for public feedback. This memo provides key findings after reviewing the performance and success of the pilot projects.

Portions of the Healthy Streets pilots were removed in mid-October at the direction of City Council. The remainder of the pilot projects were removed starting in the first week of November to ensure restoration of the pre-install condition prior to snow events and cold temperatures.

DATA COLLECTION & FEEDBACK

A variety of evaluation tools were used during pilot implementation to inform this memo. This included direct data collection, video footage, and field observation to measure speed, traffic counts, compliance, and crashes. In addition, an online mapping tool and public survey with 695 responses helped generate suggestions and assess goals and behaviors that are hard to measure, like physical distancing and access.

KEY RESULTS & FINDINGS

Overall, the pilot projects fulfilled the key objectives – improving physical distancing space, safety, and access during the installation period. In addition, they provided valuable insight for future design, outreach, and education. Over the course of several months, these pilot projects demonstrated how infrastructure can have a direct impact on access, safety, and increased non-motorized use, representing national trends and studies in the local context. More detailed observations and lessons learned are detailed below.

Non-Motorized Network Findings

The pilot projects improved non-motorized connectivity and comfort and supported short-term opportunities for mode shift. A strong majority of survey respondents who used the pilot projects said that it improved their biking experience and access. This finding was matched by bicycle count data, which showed bicycle trip increases in all locations where comparisons could be made. As with any pilot, some locations and approaches were more successful than others in achieving this goal.

- 67% of survey respondents (425 out of 695) reported that they had used at least one of the pilot projects for walking and biking.
- 73-81% of respondents who used a specific pilot project reported that it improved their experience biking downtown.
- 76% of respondents who used any of the pilot projects reported that the pilot projects collectively increased their sense of comfort, security, and safety when bicycling downtown.
- During a 3-day collection period, over 4,649 bicycle trips were recorded at 13 different locations.
- Bicycle traffic increased dramatically among all sites after deployment. Thursday / Friday / Saturday average change was +54% / +60% / +93% increase, respectively.
- 23% of survey respondents reported that all the pilot projects collectively best met their needs navigating the downtown. 37% identified a specific project, with the Division Street project mentioned the most, followed by South Main, Miller/Catherine, Packard (Platt & Eisenhower), State/North University, and Packard (Hill & State).

Long-term considerations

The pilot projects worked to fill in critical gaps in the downtown bicycle network. The most successful pilots served a higher volume of users, connected key home, work, and commercial destinations, and linked directly to other lower stress bicycle facilities. The Division Street Pilot Project was notable for these reasons. However, other locations, such as Miller/Catherine and South Main, play an important role in building a complete low-stress bicycle network, demonstrating high levels of usership as well.

Traffic Operations Findings

The pilot projects did not result in significant impacts to motorized traffic operations in the downtown, particularly after field adjustments were made to improve operations. Through the survey, many respondents who were not pilot project users expressed concern with perceived traffic delays. However, based on direct observation and video footage review, back-ups were not pervasive and were typically limited to specific intersections at certain timeframes. Pilot treatments often rely on infrastructure-lite approaches to manage safety and access, such as all-way stops. More significant and long-term changes to signal timing and intersection infrastructure can help meet these same safety needs while moving vehicle traffic more efficiently.

- **Traffic volumes:**
 - The decrease in volumes from pre-pandemic counts varied significantly between sites, ranging from -1% to -64%.
 - The total average of all site traffic volumes comparing pre-pandemic to mid-pandemic showed a decrease of approximately -40% (not including Broadway).
- **General traffic operations:** No significant impacts to traffic operations were observed with vehicle lanes converted to bicycle lanes.
- **Traffic backups and delays:** Few significant backups (defined as 10+ vehicles) were observed outside of certain peak hour times at certain intersections (see *Pilot Project Result Summary Chart*). Based on video footage review and direct observations, most delays cleared within 30-90 seconds, and significant instances of backups affecting adjacent intersections were not observed consistently. Afternoon rush hour delays observed on South Main and East Packard were mitigated with adjustments to signal timing and project endpoints.

Long-term considerations

While traffic volumes are slowly increasing again, the long-term impacts to transportation patterns are not well-understood or predictable. Traffic patterns may return to pre-pandemic levels, or they may see a long-term reduction due to changing work patterns (i.e. increased remote work). What is known is the impact that infrastructure has on mode choice and access. A robust low-stress bicycle network has been shown to accelerate the rate of mode shift (people walking or biking instead of driving), which helps keep long-term traffic volumes lower. This trend can help reach carbon-neutrality and safety goals.

Safety Findings

Crash and speed data show that overall, the pilot projects improved safety and were successful in helping address pandemic needs for additional physical distancing space downtown. Most notably, the reduction of vehicle speeds is one of the most effective tools for reducing the severity of crashes and for helping the City to reach its Vision Zero objective.

- **Physical distancing:** Overall, 76% of survey responses from pilot project users indicated that the pilot projects contributed to their ability to maintain an appropriate physical distance while walking or biking.
- **Vehicle speeds:** The temporary street changes reduced speed at nearly all pilot locations by 1-6 mph; reducing the likelihood of a severe/fatal crash.
 - The speed decreased by 7% across all sites after pilot projects were installed. The range of speeds was reduced as well, with top speeds reduced from 39 mph to 35 mph.
 - Speed reduction is especially important where speeding occurred prior to deployment (Main Street, Division, Miller/Catherine, East Packard, and Broadway).
 - The Miller/Catherine pilot resulted in a significant speed reduction (6mph). The other locations needed to be reduced further still to fall within the legal and safe speed limits.
 - Speed data puts concerns raised about traffic delays into context, as slower and safer speeds will, by definition, increase travel time.
 - The measured speed reductions can likely be attributed to the pilot projects, which help to counteract speeding that is due, in part, to pandemic-related traffic volume reductions.
- **Crash data:** Crashes during the pilot deployment (October – November 2020) were compared to historical data during the same two-month period over the past five years (2014-2019).
 - Historical data generally show rear end and sideswipe as predominant crash types, with a lower percentage of pedestrian and bicycle crashes.
 - Across all the crashes recorded during deployment, the frequency of crashes was lower (although in part expected given the overall decrease in traffic volumes).

Long-term considerations

Based on user comments and survey results, people who used the pilot projects found that they made it easier, safer, and more comfortable to navigate the downtown area. These results are nearly the opposite for people who reported that they have not used the pilot projects for walking or biking. This difference may highlight a broader community polarization about how streets are designed and used. As with all transportation projects, the relative tradeoffs that are made in street design are a matter of community values, and it is of the utmost importance for leadership, staff, and others involved to clearly articulate these values and how potential projects might reinforce or work against those values.

Lessons Learned:

- **Education & outreach:** Public awareness and education about pilot projects is critical to establish well in advance of implementation so that the public is aware of the intended purpose, timeline, and usage of the pilot projects. This is made especially difficult during the COVID-19 pandemic where engagement can be more challenging.
- **Design:** Pilot projects present people with new and unexpected situations. Strive to keep the designs as simple and intuitive as possible. Some temporary materials and treatments appear to have worked better than others, such as tightly spaced glued-down delineators (which can't easily be moved) versus construction barrels (which create a messier look and are prone to being moved and pushed around).
- **Implementation:** An existing City contract was used to implement quickly. Contractor responsiveness to addressing issues and monitoring the layout was an ongoing challenge, and future projects should consider a contract specific to pilot project implementation. Despite these challenges, City staff, contractors, and consultants collaborated to make field adjustments and changes to improve the operations and safety of the pilot projects throughout their deployment.

Lastly, measures should be taken to ensure undesirable or unsafe behaviors are discouraged. Specifically, bikeway encroachments by delivery vehicles, illegal parking, illegal loading, waste container placement and other obstructions which inhibit bikeway use should be addressed through design considerations, enforcement, and education. Illegal parking and loading in the pilot lanes was the most consistent issue throughout the pilot deployment

PILOT PROJECT DATA SUMMARY

	Miller / Catherine	Division Street	South Main	State & N. University	Packard (State-Hill)	E Packard (Platt-Eisenhower)
Safety						
Vehicle Speeds <i>(85th percentile)</i>	Significant reduction: 6 mph reduction and below posted speed limit (1 location)	Moderate speed reduction in all locations: 1-5 mph reduction (4 locations)	Moderate reduction in all locations: 1-3 mph reduction (3 locations)	Minor reductions in all locations: 1 mph reduction (2 locations)	No speed data collected at this location	Average speed dropped 6-7 mph in the afternoon
Crash Comparison <i>(Sept/October 2020 vs. historic average)</i>	No crashes recorded. Typically 2-3 during	Crashes were lower (5) than typical (6-8)	Crashes were lower (8-9) than typical (10-14)	Typical number of crashes (2) were observed (2)	Typical number of crashes (2-3) were observed (3)	Crashes were lower (5) than typical (6-8)
Crashes - Pedestrians / Bikes / Pilot Project	No known crashes involving bikes/peds	No known crashes involving bikes/peds	No known crashes involving bikes/peds	No known crashes involving bikes/peds	No known crashes involving bikes/peds	2 known crashes involving bikes/peds but was not attributable to pilot
Conflicts / Issues Affecting Operations	Loading and deliveries between 4th Ave & 5th Ave	Confusion and slow speed in compliance at Division & Catherine	Construction at former DTE office site. Misplaced barricades. Loading and deliveries between Mosley and Madison	Construction vehicles frequently parked in N. University bikeway.	Cars using buffered lane as a turn lane - adjusted cones to block vehicles.	No major conflicts observed
Supports Vision Zero	Overall safety improvement	Overall safety improvement	Overall safety improvement	Overall safety improvement	Anticipated to support safety improvements	Overall safety improvement
COVID-19 Response						
Survey - Supports Physical Distancing for COVID-19	76% of pilot project users (those that walked/bike in corridor) said that the projects (collectively) contributed to their ability to maintain physical distancing.					
Bicycle Connectivity & Access						
Bicycle Volumes <i>(* Pre-deployment bike counts only collected where dedicated bike facilities present)</i>	No Pre-install volumes available* Post-install: 153/day (1 location)	Significant increase in bicycle volumes. Pre-install avg: 95/day Post-install avg: 189/day (4 locations)	No Pre-install volumes available * Post-install: average 92 per location per day (3 locations)	No Pre-install volumes available * Post-install: average 98 per location per day (1 location)	No volume information collected at this location	No Pre-install volumes available * Post-install: average 111 per location per day (1 location)
Survey - Usership	217 respondents used facility	285 respondents used facility	203 respondents used facility	209 respondents used facility	189 respondents used facility	152 respondents used facility
Survey - Experience	78% positive user experience	81% positive user experience	73% positive user experience	77% positive user experience	80% positive user experience	80% positive user experience
Traffic Operations						
Traffic Volumes	Volumes decreased during the pilot	Traffic volumes slightly lower in 2 locations, about the same in 1 location, and higher in 1 location	South of William volumes 70% of Pre-CV19. South of Madison volumes 50% of Pre-CV19	Traffic slightly lower on State Street. Counts impacted by weekend commercial street closures	No volume information collected at this location.	Traffic volumes: Historic: ~29,000 Post-Install: ~17,250
Video Review Location <i>(location selected based on comments and field observations)</i>	Miller & N. Main	Division & Catherine	S. Main & William	State & N. University	No video review	No video review
Backups - AM Peak	No AM backups observed	Infrequent AM backups observed at 1 of 11 intersections	No AM backups observed	1 backup observed (cleared in 60 seconds)	No AM backups observed	No AM backups observed
Backups - PM Peak <i>Backups: Typically 10+ cars in length</i>	Infrequent backups observed at only 1 of 6 intersections: North Main & Miller - typically cleared within 30-seconds.	Backups observed at only 1 of 11 intersections: Occasional Division & Catherine PM backups (at stop sign). Typically clears between light cycles.	Infrequent backups observed at only 1 intersection, Typically cleared within 10-90-seconds. Lack of left turning lane caused intermittent backups. Some PM delay at Stadium was mitigated with adjustments .	No PM backups observed	No PM backups observed	PM Peak backups moderate initially. Platt intersection modified and backups reduced subsequently.
Turning & Behaviors	S. Main & Miller confusion with no left turn. Signage modified.	Stop sign compliance for drivers running stop-signs	Lack of additional lanes for left-turns caused some confusion. Some observed vehicles passing in the bike lane if vehicle was stopped in the travel lane	Bus turning was initially tight. Adjusted stop bars during the pilot	No significant turning or behavior issues	No significant turning or behavior issues. Some observed cut-through traffic to local streets

KEY:

Benefits realized

Limited impact / Positive outcome

Neutral

Minor impact / Mitigatable

Moderate impact

Informational