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Daniel Brenner

A2DDA PEOPLE-FRIENDLY STREETS

STATE STREET & KEY STREETS PROJECTS

DDA CIC

December 2020

SMITHGROUP

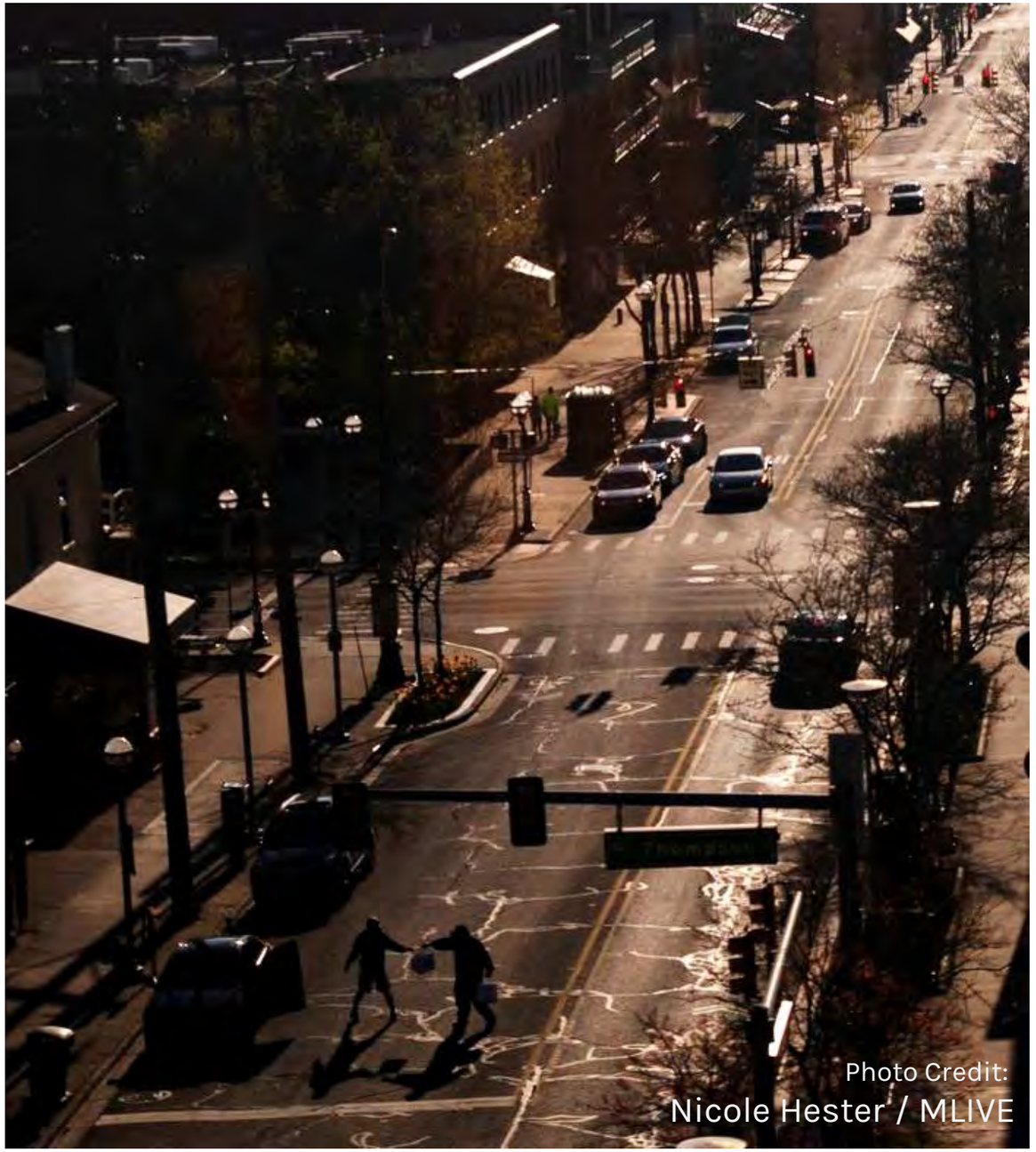
TOOLE DESIGN

WADE TRIM

AGENDA

KEY STREETS & STATE STREET PROJECTS

- Pilot Project Review
- Project Specific Findings
- Overall Findings and Lessons Learned
- Next Steps



KEY GOALS FOR THE PILOT PROJECTS

- **Increase physical distancing and COVID-19 safety**

- **Reinforce the DDAs core values for street projects:**
  - Safety & Vision Zero alignment
  - Connectivity & Equitable Access for vulnerable users
  - Supporting carbon neutrality (A2Zero)

- **Inform future design and project work**
  - Understand what worked
  - Understand issues and challenges
  - Lessons learned

PILOT PROJECTS

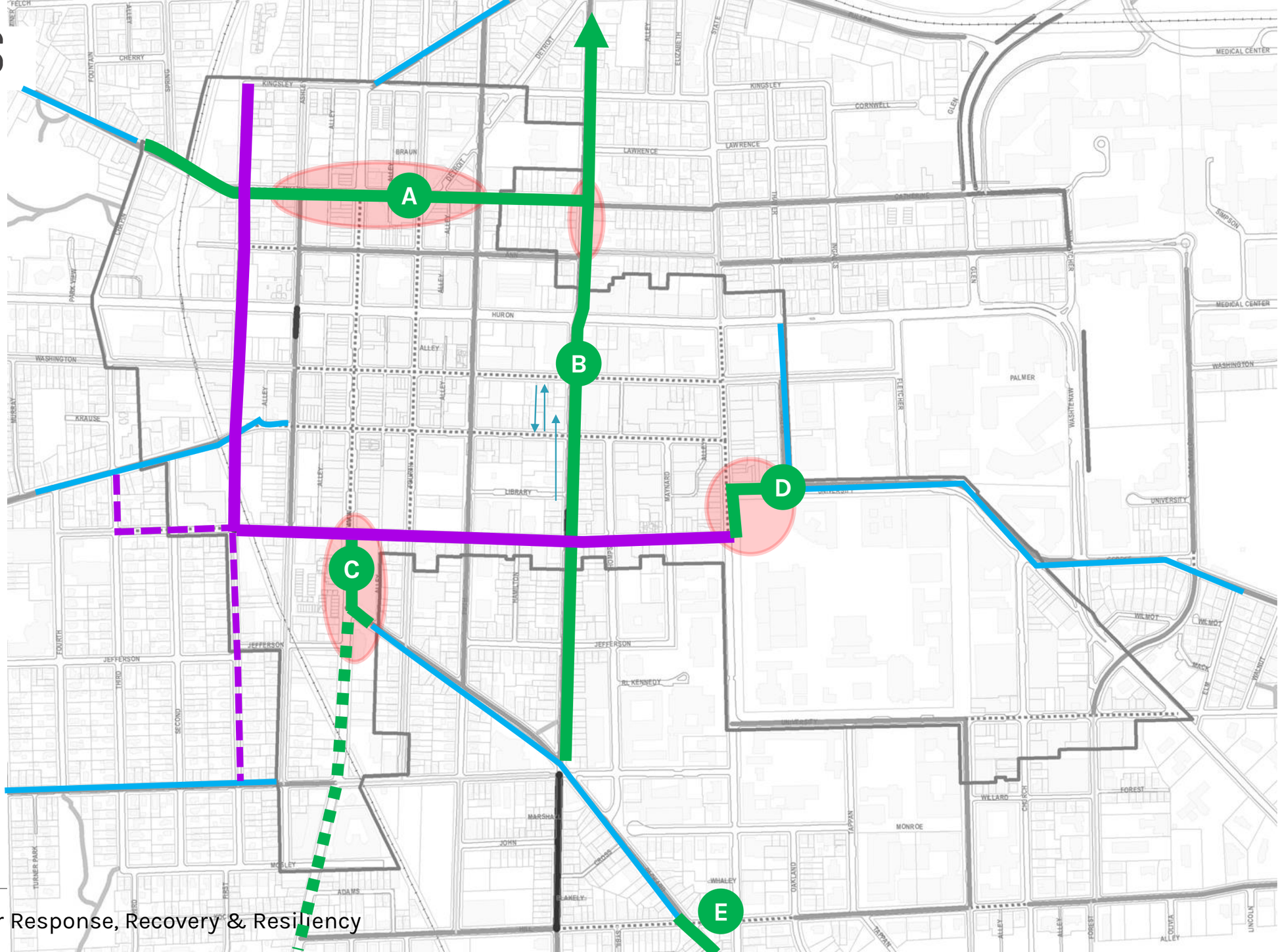
DDA INITIATED

- **A** **Miller/Catherine Bikeway**
- **B** **Division St. Bikeway**
- **C** **S. Main Bike Lane Connection (with city extension)**
- **D** **State St / N. University Link**
- **E** **Packard Triangle**

Existing bike lanes

Existing / Under construction separated bikeway

Planned advisory bike lanes



OVERALL OUTCOMES

BIG PICTURE

- **Successes**
  - Measurably improved safety
  - Measurably improved access and non-motorized use

- **Challenges:**
  - Community polarization
    - Need to be talking about values & how we make decisions
    - A longer engagement period + more value-based conversations
    - Engagement at leadership and staff level with community will help

KEY FINDINGS

PEOPLE-FRIENDLY STREETS

KEY FINDING: NON-MOTORIZED NETWORK

- **67% of survey respondents** had **used at least one of the pilot projects** for walking and biking (425 out of 695) .
- **73-81% of respondents** who used a specific pilot project reported that **it improved their experience biking downtown**.
- **76% of respondents** who used the projects reported that they **increased their sense of comfort, security, and safety** when bicycling downtown.
- **Over 4,649 bicycle trips** were recorded at 13 different locations over a 3-day period.
- **Bicycle traffic increased dramatically** upon installation of the temporary bike lanes on average among all sites after deployment.

KEY FINDING: SAFETY

- **Physical distancing: 76% of survey respondents** that used the projects said they 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.
- **Crashes:** The frequency of crashes was lower (although in partially expected given the overall decrease in traffic volumes).

KEY FINDING: TRAFFIC & OPERATIONS

- **Traffic volumes:** Varied between sites, ranging from -1% to -64% compared to pre-pandemic counts.
  - A total average decrease of -40% (not including Broadway).

- **General traffic operations:** No significant impacts to traffic operations were observed.
  - Some driver confusion occurred related to lane signage where turn lanes were removed (this was corrected during the deployment)

- **Traffic backups and delays:** Few significant backups (defined as 10+ vehicles) were observed outside of certain peak hour times and at certain intersections.
  - Most backups cleared within 30-90 seconds
  - Significant backups affecting adjacent intersections were not observed consistently in the DDA pilot projects.

INDIVIDUAL PROJECT FINDINGS

PEOPLE-FRIENDLY STREETS

MILLER/CATHERINE

MILLER/CATHERINE

KEY FINDINGS

Overall met the goals :

Access:

- **78%** of users said the pilot improved their experience walking or biking downtown.
- Non-motorized use increased; with the bikeway serving **134-170 trips per day**.

Safety:

- Significant speed reduction - 6mph (from above the speed limit to within the speed limit).
- **No crashes occurred** during the pilot period, which is below the average for the reporting months

MILLER/CATHERINE

KEY FINDINGS & FUTURE CONSIDERATIONS

- Well-used and well supported by non-motorized users.
- Minimal traffic impacts based on observation & analysis.
- Long-term solutions provide opportunity to further improve safety and clarify vehicle operations (especially west of N. Main Street)

MILLER/CATHERINE

PROJECT FINDINGS

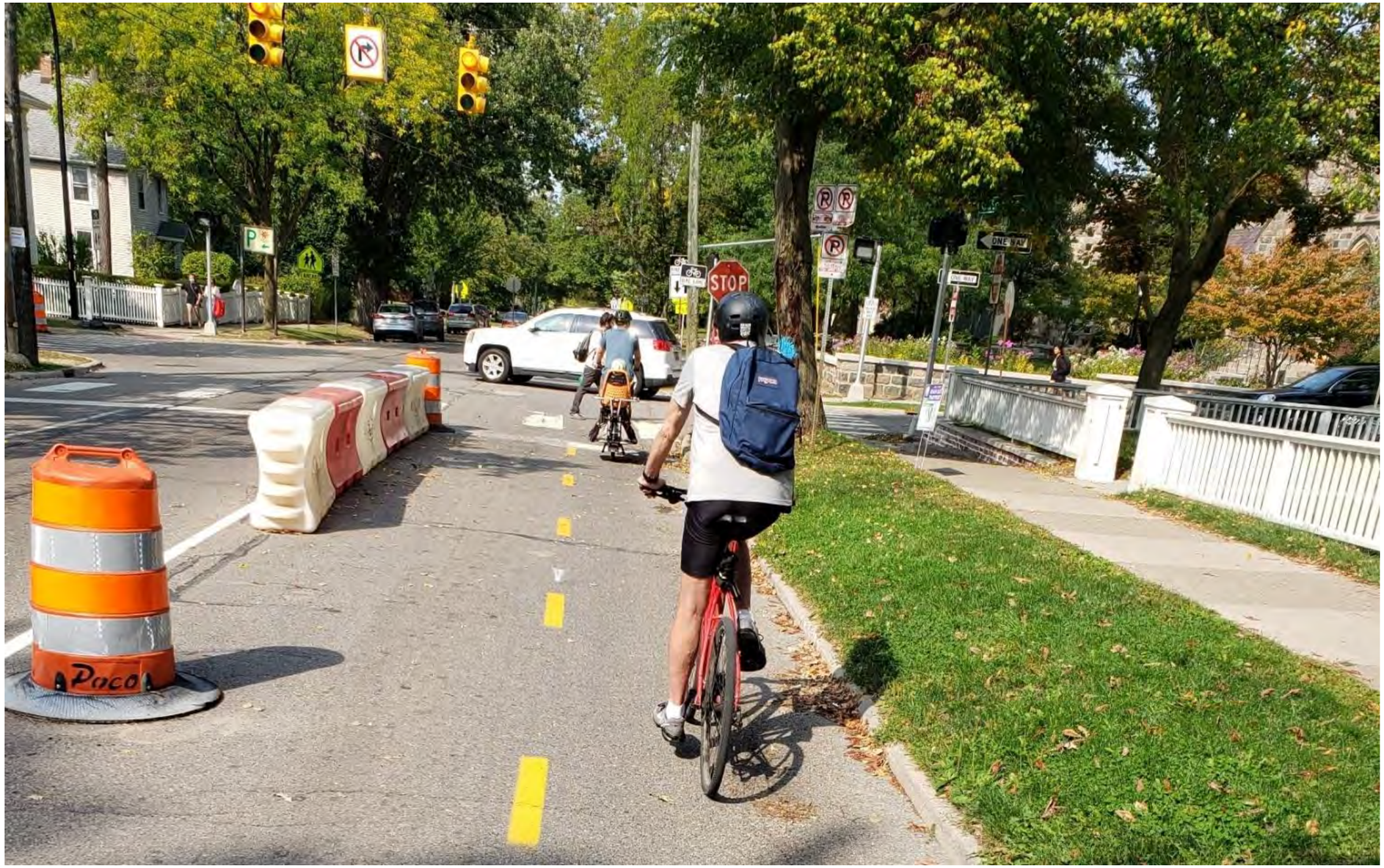
Safety	
Vehicle Speeds *(85th percentile)*	Significant reduction: 6 mph reduction and below posted speed limit (1 location)
Crash Comparison *(Sept/October 2020 vs. historic average)*	No crashes recorded. Typically 2-3 during
Crashes - Pedestrians / Bikes / Pilot Project	No known crashes involving bikes/peds
Conflicts / Issues Affecting Operations	Loading and deliveries between 4th Ave & 5th Ave
Supports Vision Zero	Overall safety improvement

Bicycle Connectivity & Access	
Bicycle Volumes *(* Pre-deployment bike counts only collected where dedicated bike facilities present)*	*No Pre-install volumes available** Post-install: 153/day (1 location)
Survey - Usership	217 respondents used facility
Survey - Experience	78% positive user experience

Traffic Operations	
Traffic Volumes	Volumes decreased during the pilot
Video Review Location	Miller & N. Main
(location selected based on comments and field observations	
Backups - AM Peak	No AM backups observed
Backups - PM Peak *Backups: Typically 10+ cars in length*	Infrequent backups observed at only 1 of 6 intersections: *North Main & Miller - typically cleared within 30-seconds.*
Turning & Behaviors	S. Main & Miller confusion with no left turn. Signage modified.

KEY: Benefits realized | Limited impact / Positive outcome | Neutral | Minor impact / Mitigatable | Moderate impact | Informational

DIVISION STREET/BROADWAY



DIVISION STREET/BROADWAY

KEY FINDINGS

Overall met the goals:

Access:

- **81%** of users said the pilot improved their experience walking or biking downtown
- Bicycle trips increased **2-3 times** over the pre-install volumes.

Safety:

- Moderate speed reductions – 5mph. **More work is needed here to bring speeds within the speed limit.**
- No crashes involving people walking or biking occurred.
- Below average vehicle crashes for the reporting months.

- Traffic impacts along most of the corridor appeared minimal
  - Division & Catherine intersection is complex

DIVISION STREET/BROADWAY

KEY FINDINGS & FUTURE CONSIDERATIONS

- The most well-used and supported of the temporary bicycle improvements.
- Based on counts and survey feedback, Division may be the most critical low stress link to improve access downtown and serve a variety of users.
- Division & Catherine intersection is complex – long-term solutions can include signalization changes to further minimize conflicts and improve traffic flow

DIVISION STREET/BROADWAY

PROJECT FINDINGS

Safety	
Vehicle Speeds *(85th percentile)*	Moderate speed reduction in all locations: 1-5 mph reduction (4 locations)
Crash Comparison *(Sept/October 2020 vs. historic average)*	Crashes were lower (5) than typical (6-8)
Crashes - Pedestrians / Bikes / Pilot Project	No known crashes involving bikes/peds
Conflicts / Issues Affecting Operations	Confusion and slow speed incompliance at Division & Catherine
Supports Vision Zero	Overall safety improvement

Bicycle Connectivity & Access	
Bicycle Volumes *(* Pre-deployment bike counts only collected where dedicated bike facilities present)*	Significant increase in bicycle volumes. Pre-install avg: 95/day Post-install avg: 189/day (4 locations)
Survey - Usership	285 respondents used facility
Survey - Experience	81% positive user experience

Traffic Operations	
Traffic Volumes	Traffic volumes slightly lower in 2 locations, about the same in 1 location, and higher in 1 location
Video Review Location *(location selected based o*	Division &Catherine
Backups - AM Peak	Infrequent AM backups observed at 1 of 11 intersections
Backups - PM Peak *Backups: Typically 10+ cars in length*	Backups observed at only 1 of 11 intersections: *Occasional Division & Catherine PM backups (at stop sign). Typically clears between light cycles.*
Turning & Behaviors	Stop sign compliance for drivers running stop-signs

KEY: Benefits realized; Limited impact / Positive outcome; Neutral; Minor impact / Mitigatable; Moderate impact; Informational

SOUTH MAIN

SOUTH MAIN

KEY FINDINGS

Overall met the goals:

Access:

- **73%** of users said the pilot improved their experience walking or biking downtown.
- Bicycle trips averaged 92 trips per location per day across the project area.

Safety:

- Moderate vehicle speed reductions - 1-3 mph. **More work is needed to bring speeds down to within the speed limit.**
- No crashes involving people walking or biking.
- Vehicle crashes were below the average for the reporting months.

SOUTH MAIN

KEY FINDINGS & FUTURE CONSIDERATIONS

- Filled a gap in the non-motorized network
- Future facilities can support the goal of reducing vehicle miles traveled (VMT).
- Traffic impacts in the DDA portion of the project (William to Packard) appeared relatively minimal.
  - Some PM backups occurred, typically clearing in 20-90 seconds.
- *South Main corridor is changing – how do we begin to rethink this portion of the street as a people-friendly corridor and gateway into the downtown.*

SOUTH MAIN

PROJECT FINDINGS

Safety	
Vehicle Speeds *(85th percentile)*	Moderate reduction in all locations: 1-3 mph reduction (3 locations)
Crash Comparison *(Sept/October 2020 vs. historic average)*	Crashes were lower (8-9) than typical (10-14)
Crashes - Pedestrians / Bikes / Pilot Project	No known crashes involving bikes/peds
Conflicts / Issues Affecting Operations	Construction at former DTE office site. Misplaced barricades. Loading and deliveries between Mosley and Madison
Supports Vision Zero	Overall safety improvement

Bicycle Connectivity & Access	
Bicycle Volumes *(* Pre-deployment bike counts only collected where dedicated bike facilities present)*	*No Pre-install volumes available ** Post-install: average 92 per location per day (3 locations)
Survey - Usership	203 respondents used facility
Survey - Experience	73% positive user experience

Traffic Operations	
Traffic Volumes	South of William volumes 70% of Pre-CV19. South of Madison volumes 50% of Pre-CV19
Video Review Location	S. Main & William
(location selected based o	
Backups - AM Peak	No AM backups observed
Backups - PM Peak *Backups: Typically 10+ cars in length*	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 .*
Turning & Behaviors	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

KEY: Benefits realized | Limited impact / Positive outcome | Neutral | Minor impact / Mitigatable | Moderate impact | Informational

STATE & NORTH UNIVERSITY

STATE & NORTH UNIVERSITY

KEY FINDINGS

Overall met the goals:

Access:

- **77%** of users said the pilot improved their experience walking or biking downtown.
- Bicycle trips averaged 98 trips per location per day across the project area.

Safety:

- Minor reductions of vehicle speeds by 1 mph. 85th percentile speeds in this area recorded below the posted limit already.
- No crashes involving people walking or biking.
- Typical number of vehicle crashes were recorded for the reporting months.

STATE & NORTH UNIVERSITY

KEY FINDINGS & FUTURE CONSIDERATIONS

- Well-used and effectively extended the William Street Bikeway to the existing bike lanes on North University.
- Minimal traffic impacts, despite traffic volumes on State Street being closer to historic volumes than other locations.
- A critical consideration for future designs will be understanding and accommodating transit and bus turning movements in this area, given the presence of AAATA and UM buses.

STATE & NORTH UNIVERSITY

PROJECT FINDINGS

Safety	
Vehicle Speeds *(85th percentile)*	Minor reductions in all locations: 1 mph reduction (2 locations)
Crash Comparison *(Sept/October 2020 vs. historic average)*	Typical number of crashes (2) were observed (2)
Crashes - Pedestrians / Bikes / Pilot Project	No known crashes involving bikes/peds
Conflicts / Issues Affecting Operations	Construction vehicles frequently parked in N. University bikeway.
Supports Vision Zero	Overall safety improvement

Bicycle Connectivity & Access	
Bicycle Volumes *(* Pre-deployment bike counts only collected where dedicated bike facilities present)*	*No Pre-install volumes available** Post-install: average 98 per location per day (1 location)
Survey - Usership	209 respondents used facility
Survey - Experience	77% positive user experience

Traffic Operations	
Traffic Volumes	Traffic slightly lower on State Street. Counts impacted by weekend commercial street closures
Video Review Location	State & N. University
(location selected based o	
Backups - AM Peak	1 backup observed (cleared in 60 seconds)
Backups - PM Peak *Backups: Typically 10+ cars in length*	No PM backups observed
Turning & Behaviors	Bus turning was initially tight. Adjusted stop bars during the pilot

KEY: Benefits realized; Limited impact / Positive outcome; Neutral; Minor impact / Mitigatable; Moderate impact; Informational

PACKARD (HILL & STATE)

PACKARD (HILL & STATE)

KEY FINDINGS & FUTURE CONSIDERATIONS

- **Overall met the goals:**

Access:

  - **80%** of users said the pilot improved their experience walking or biking downtown.

Safety:

  - No crashes involving people walking or biking.
  - Typical number of vehicle crashes were recorded for the reporting months.

- Opportunity to restore Packard a prior configuration (before a construction detour made “permanent” changes)
- Critical link to DDA, but project is outside of the DDA

PACKARD (HILL & STATE)

PROJECT FINDINGS

Safety	
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LESSONS LEARNED

PEOPLE-FRIENDLY STREETS

LESSONS LEARNED

1. Some temporary measures are not as effective as the real thing (e.g. temporary all-way stops vs. more long-term infrastructure changes)
2. Construction barrels can look messy and are not as intuitive/clear as proper delineators. Can lead to compliance issues.
3. Speeds needed to be reduced further to fall within posted speed limits.

LESSONS LEARNED

4. Notable community consensus/polarization. Need to focus community conversation on shared values and managing change. Put criticisms into appropriate context.
5. Where site-specific issues arose, they were often a result of pilot project limitations. Long-term improvements can mitigate many of these impacts.
6. Engagement remains critical but challenging. Connecting with a diverse range of users, especially vulnerable and hard to reach users, essential.

OVERALL FINDINGS

- Projects met the goals – improved safety + access
  - Showed what a more complete low-stress bike network could be like
- Comments from bikeway users supportive and appreciative
- High level of use (67% of respondents used a project) of the pilot projects
- Most complaints were from non-users regarding traffic slow downs
  - Increases in travel time expected with slower travel speeds and reduction of lanes
  - Slowdowns typically 30-90 seconds - and at only certain locations at certain times of day. Future designs can work to minimize these impacts.
  - Other healthy street projects often magnet for criticism.

NEXT STEPS – INFORMING KEY STREETS

- Pilot Projects identified based on key streets analysis, city's Transportation Plan update, street design manual

- **Pilot projects can inform key street projects where they overlap**
  - Big picture informing network, routing
  - Informs the detail and design of potential projects

- **Implementation in post-pandemic era**
  - Respond to uncertainty around traffic patterns and volumes
  - Emphasize flexibility and adaptability

KEY STREETS

POTENTIAL PROJECTS

MOBILITY NETWORK

- *Complete the hub and spoke network centered on the downtown core*

BALANCED / SLOW STREETS

- *Calm vehicular traffic to increase pedestrian space and encourage cycling*

AFFORDABLE HOUSING

- *Investing in street and utility infrastructure to encourage affordable housing downtown*