WELCOME!

The Lower Town Area Mobility Study Meeting Will Begin Soon.

Technology Overview – Things to Know

- To help prevent "Zoombombing," (when an unauthorized person or stranger joins a Zoom event and says offensive comments or shows offensive images), the video, speaking, and screen sharing functions are available to presenters, but disabled for participants.
- You can communicate through the Chat feature.
- You can leave and rejoin the meeting at any time (unless the meeting is at capacity or you are removed for inappropriate behavior).
- Multiple opportunities for questions will be provided throughout the presentation.
- Presentation and additional materials are available at www.a2gov.org/lowertown

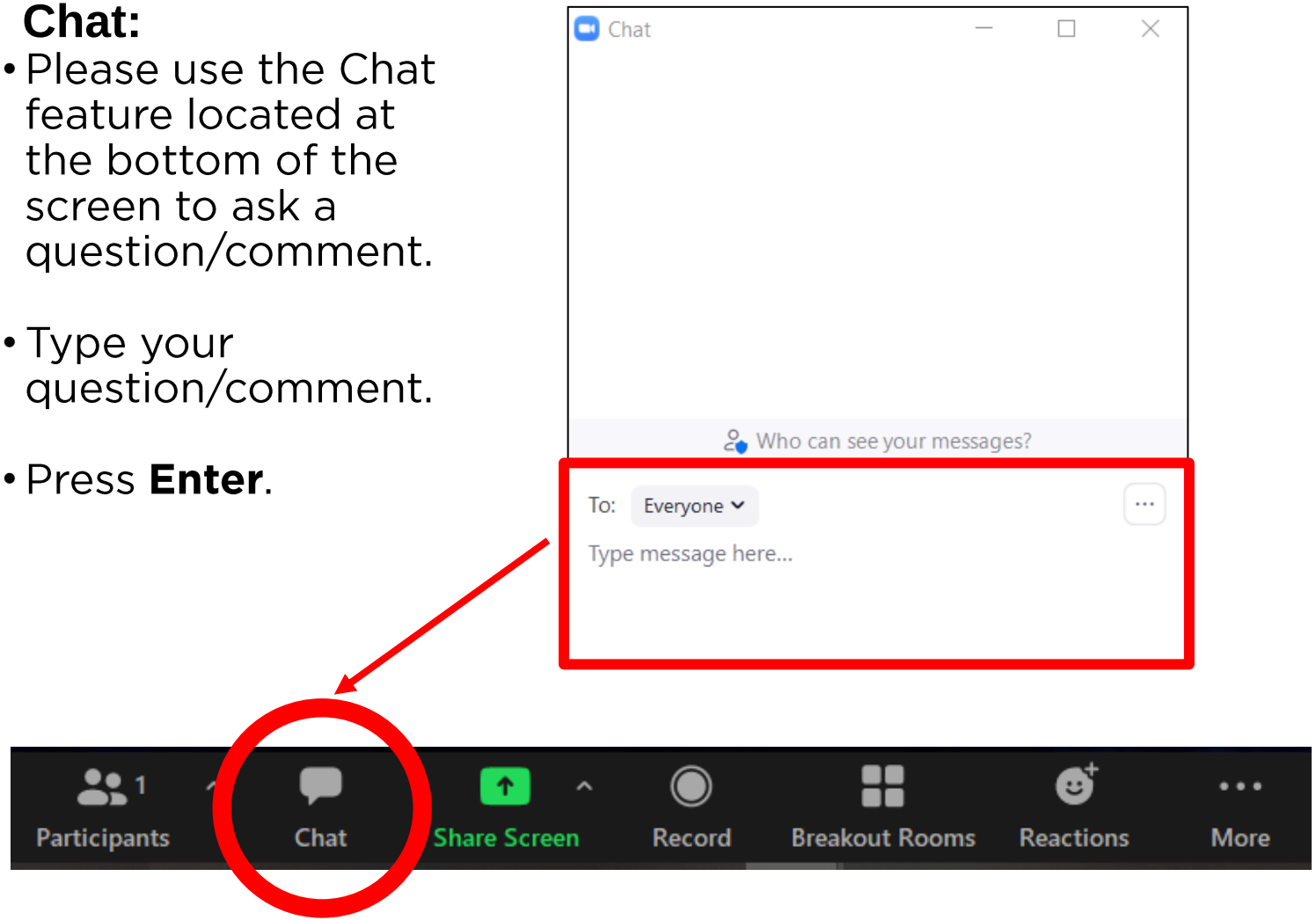
Technology Overview – Ask a question/share a comment

We will be using the Q&A feature for those using a computer and the Raise Hand feature for those who are on the phone.

Computer

Chat:

- Please use the Chat feature located at the bottom of the screen to ask a question/comment.
- Type your question/comment.
- Press **Enter**.



Phone

Raise Hand:

- Select *9 to raise your hand
- You will be identified by the last 3 digits of your phone number

Zoom Meeting Norms

- Commit to learning and avoid speculation – we encourage you to ask questions through the chat feature so we can explore the issue together.
- When speaking over the phone, please move to a quiet area and silence any background sounds. We want to be sure that we hear what you are saying.
- Please remember the importance of rights and the dignity of others. With that, we ask that you:
  - Critique ideas, not people.
  - Are thoughtful about your language so this can be a comfortable and respectful forum for all participants - inappropriate written and/or verbal comment or language, including personal attacks and accusations, will result in the attendee being removed from the meeting.

Follow-up Expectations

- Meeting summaries will be posted by Monday, June 14 on the project website.
- Your feedback will be considered in addition to technical and cost considerations for the recommendations of this study.

OHM Advancing Communities℠

Public Meeting #3

Solutions and Alternatives

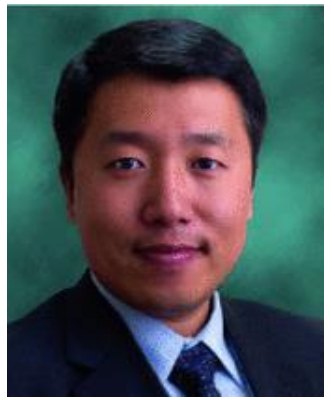
Lower Town Area Mobility Study

City of Ann Arbor

YOUR PROJECT TEAM

Eric Dryer
Transportation Planner

Lauren Hood
Facilitator



Luke Liu
City Project Manager

Stephen Dearing
Traffic Engineer

Heather Seyfarth
City Planner

Steven Loveland
OHM Project Manager

Why Do a Mobility Study?

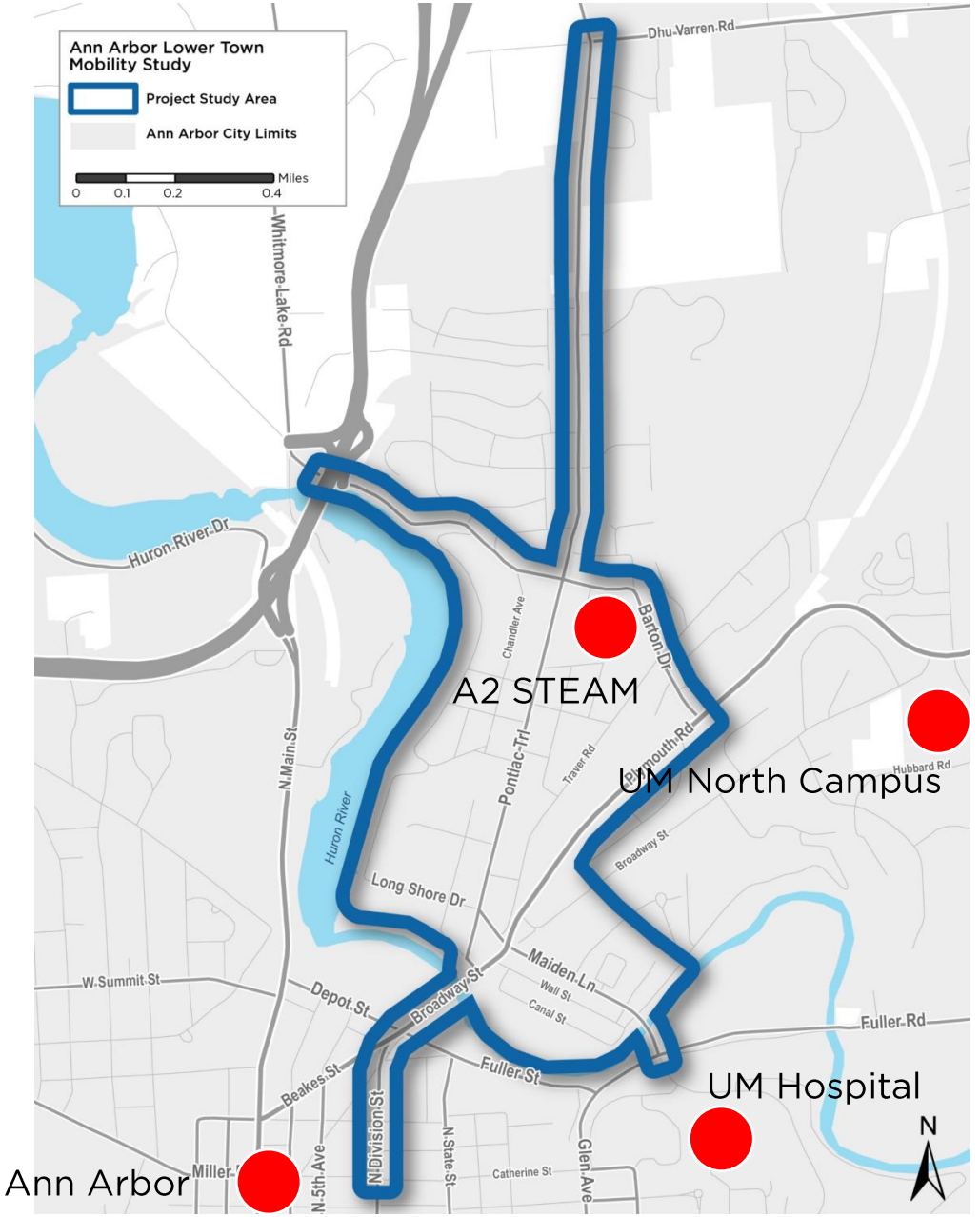
- Need a holistic view of transportation conditions in the Lower Town area
- Consider all travelers in the area
- Overall goal is to make traveling around the Lower Town Area easier, safer, and more efficient

What We're Studying

Purpose is to identify opportunities to make traveling easier within Lower Town.

Looking Specifically at:

- Traffic Congestion
- Bicycle Travel and Connections
- Pedestrian Movements
- Public Transit
- Roadway Safety
- Intersection Designs



Study Process

- Two Year Timeline
- Approximately 75% complete

Outcomes of the Study

- Identify ways to improve mobility for all users
  - Drivers, cyclists, pedestrians, transit riders, etc.
- Explore opportunities to change travel habits
  - Changing travel habits and patterns can help limit congestion issues
- Innovative solutions that improve efficiency of the system

Today's Public Meeting

- Identification of recommended mitigations, and alternatives being considered

- Looking for Further Input

What We've Heard

Stakeholder Concerns

- Gaps in non-motorized facilities
- Few walkable businesses
- Growing population in area
- Peak hour congestion from commuters
- Inadequate public transit frequency
- Traffic safety discourages walking/biking
- New development parking is inadequate
- Limited crossing opportunities of Huron River

What We've Heard

Concerns from Virtual Office Hours

- Specific areas in Study Area in need of safety improvements
- Residents don't feel comfortable walking and biking
- Transit is not frequent enough to use
- Heavy traffic from M-14 coming through area
- Bike infrastructure is disconnected
- Safety concerns around A2 STEAM school
- New development is adding to traffic
- Safety conflicts between bikes and pedestrians

What We've Heard

Opportunities

- More frequency and more visibility to transit
- Improve walking connection to Hospital
- Easier access to Border-to-Border trail
- Add more mixed-use retail to new developments
- Improve snow clearance in winter for bikes and peds
- Add safe crossing infrastructure
- Create a cultural shift to more walking and biking
- Educate public on safely using streets

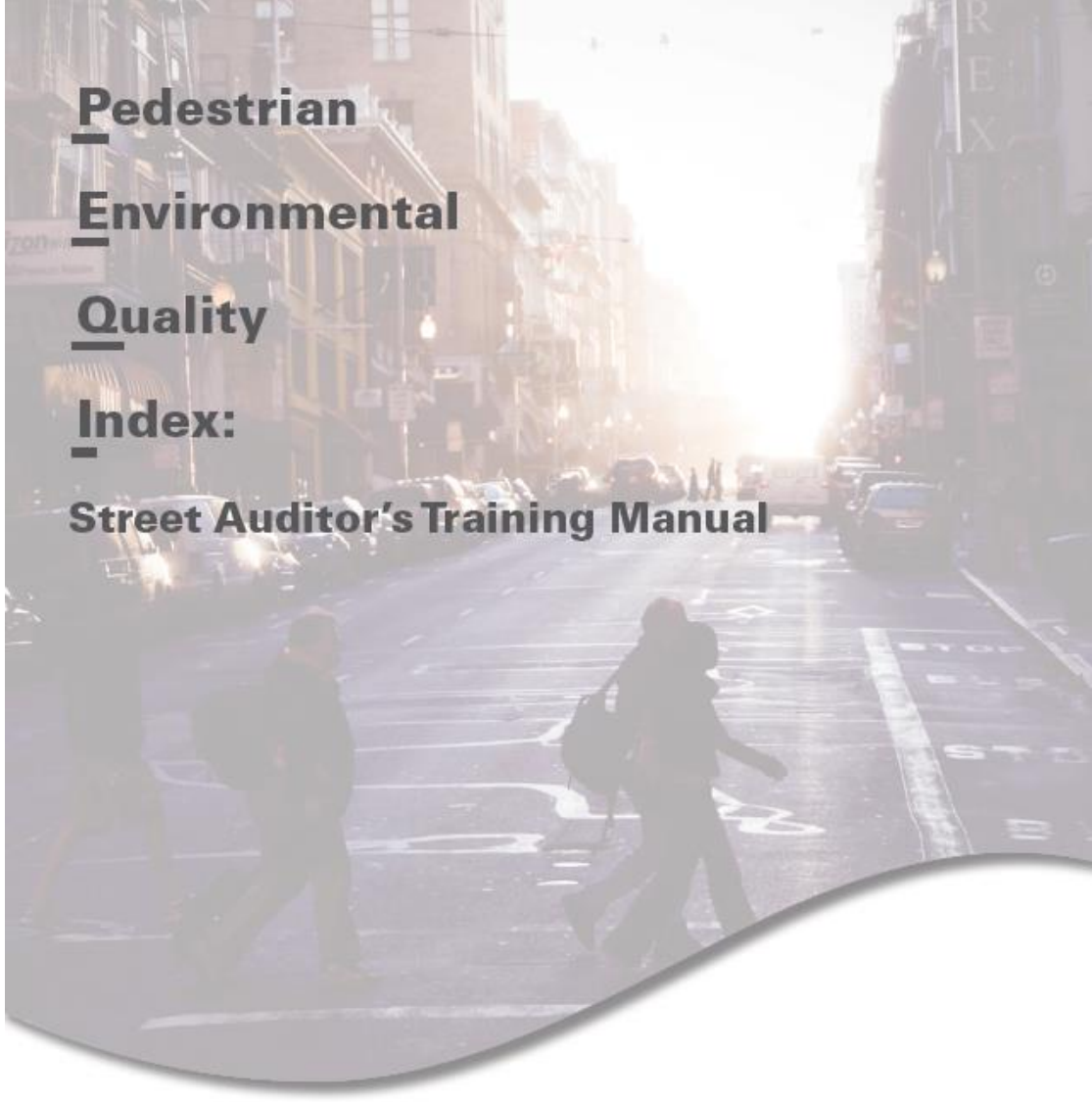
Pedestrian Analysis Approach

Team used multiple tools:

- Pedestrian Environmental Quality Index (PEQI)
- RSA
- NCHRP 562
- Public and Stakeholder Engagement

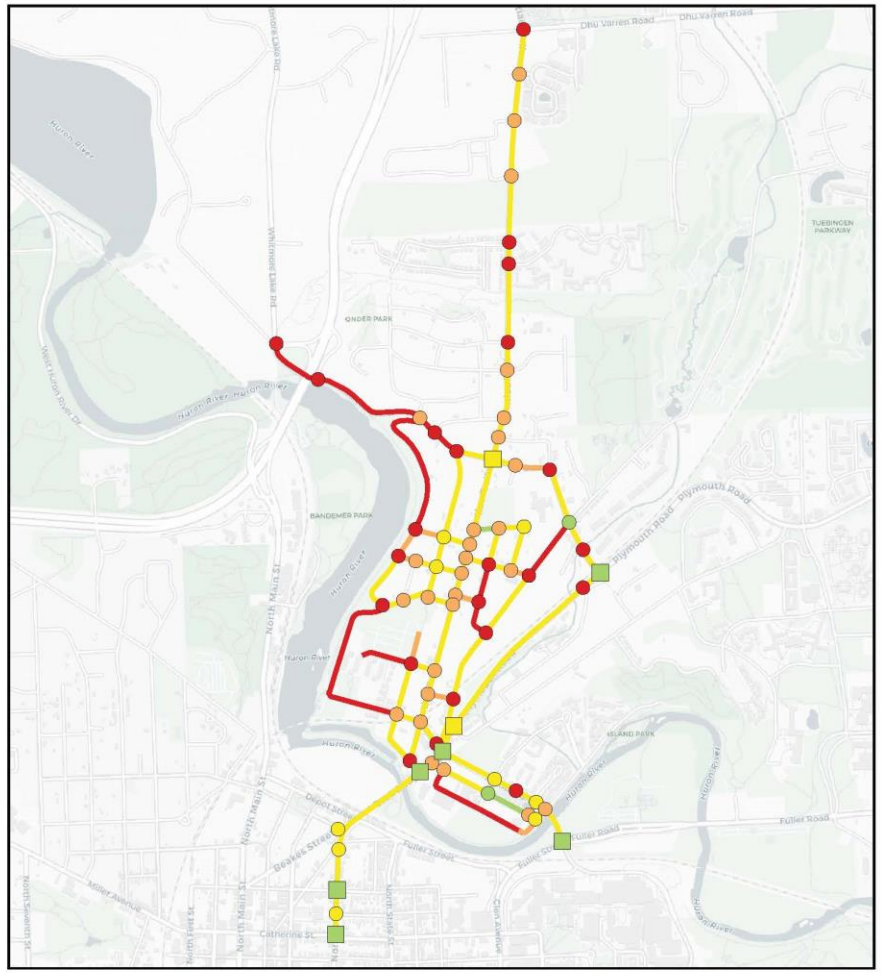
Benefits of these tools:

- Based on feedback from national experts
- Comprehensive
- Customizable
- Observational field survey

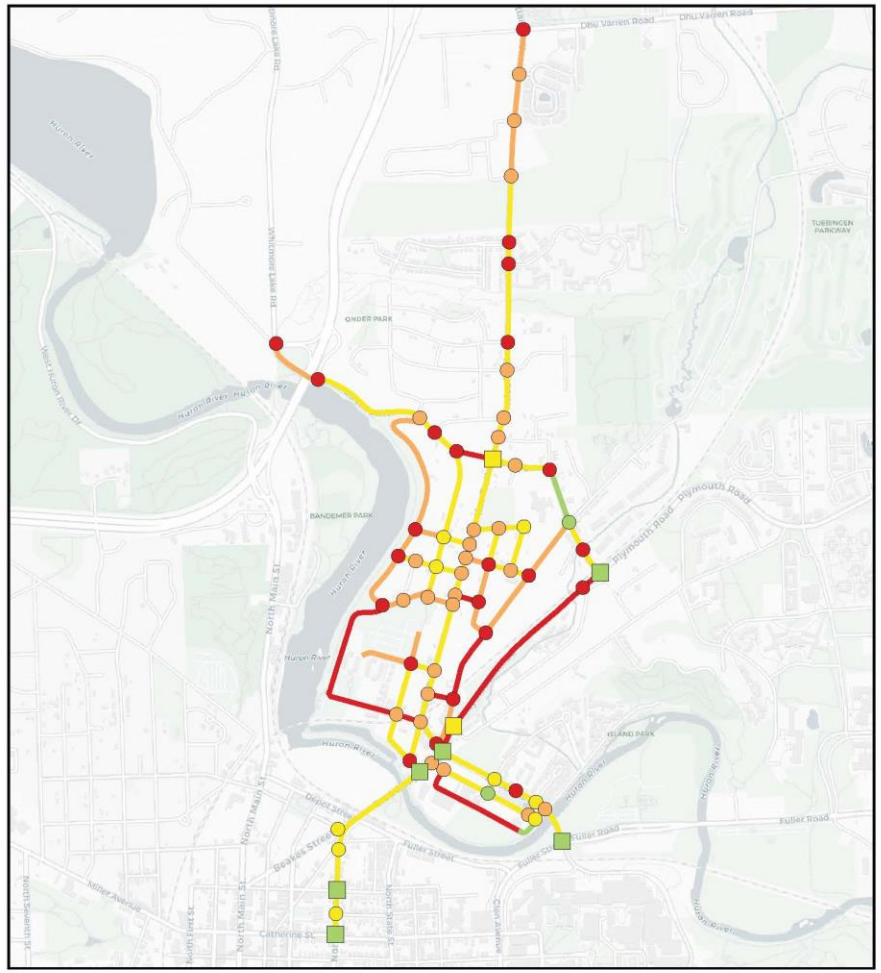


Pedestrian Environmental Quality Index (PEQI)

N / E Side



S / W Side



PEQI Score

0 - 20	Unsuitable for pedestrians	41 - 60	Basic pedestrian conditions exist
21 - 40	Poor pedestrian conditions exist	61 - 80	Reasonable pedestrian conditions exist
		80 - 100	Ideal pedestrian conditions exist

Intersections
- Signalized
- Non-Signalized

0 0.5 1 mi

Street & Intersection BEQI Scores calculated based on San Francisco Department of Public Health Methodology.

Pedestrian Findings

- Need for pedestrian crossing improvements
  - Rectangular Rapid Flashing Beacons (RRFBs)
  - High emphasis crossings
  - Ramp upgrades
  - Countdown signal heads
  - Install pedestrian warning signs

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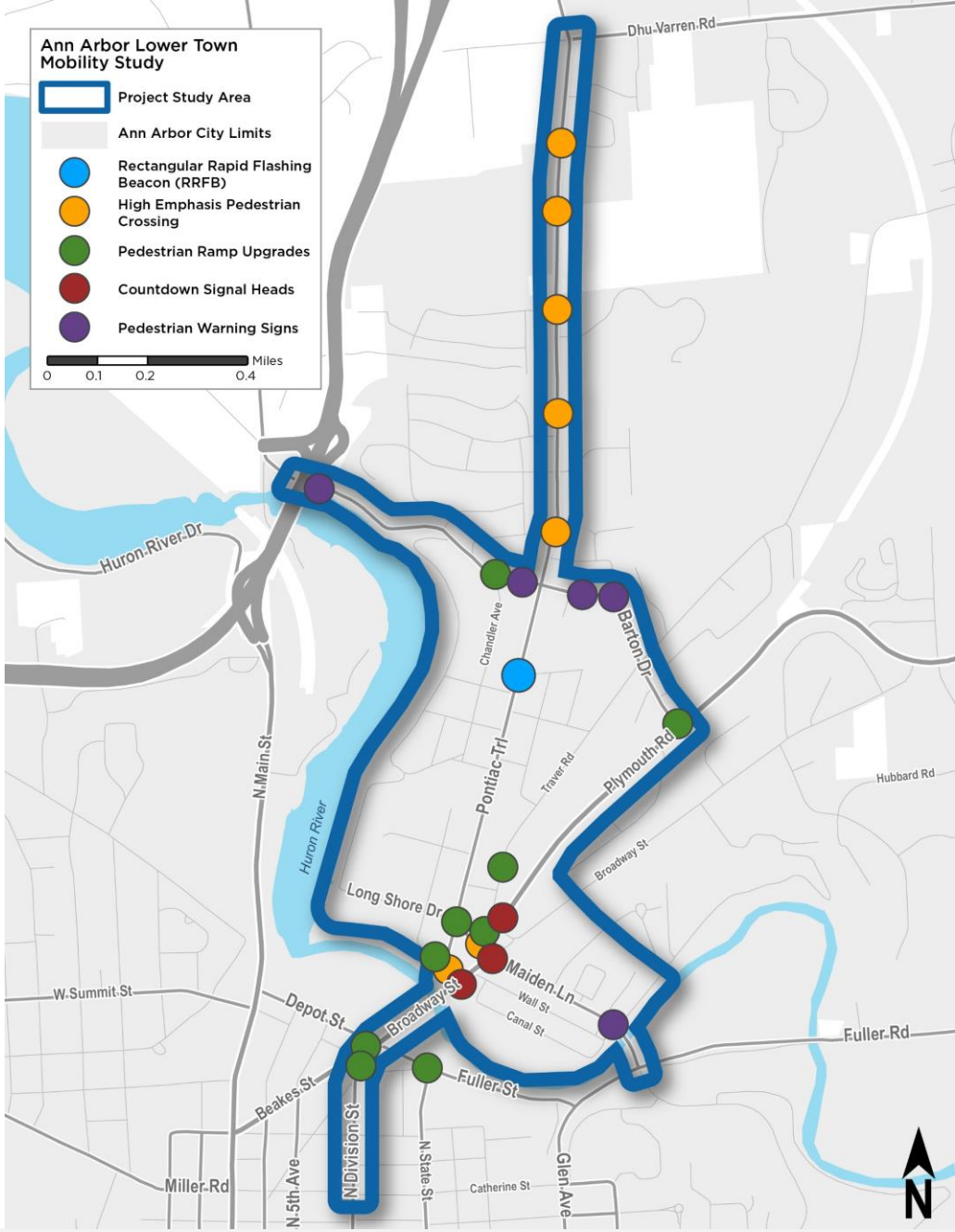
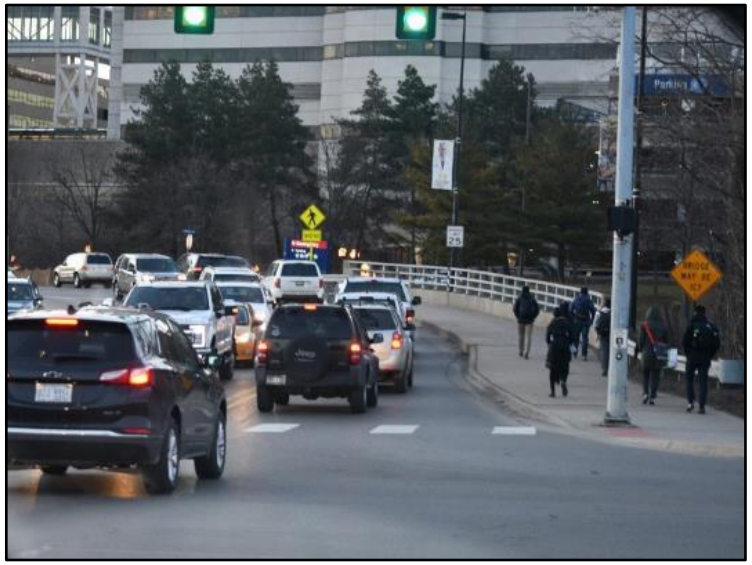


Pedestrian Findings

- Improve the Pedestrian Experience
  - Street trees and increased greenbelt
  - Fill in system gaps (sidewalk, fence, etc.)
  - Lighting
  - School improvements
  - Traffic reductions
  - Speed management



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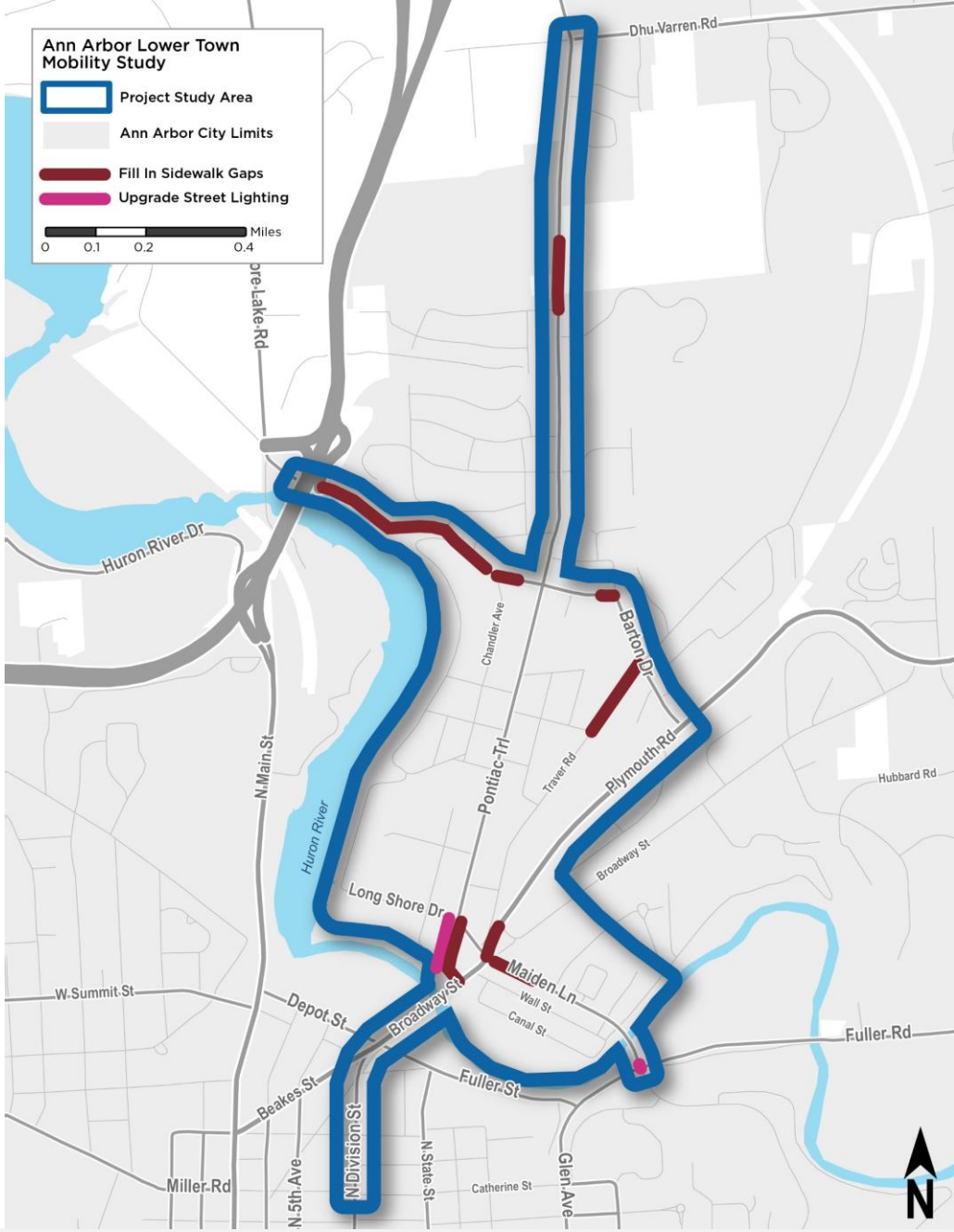


Questions and Answers Break

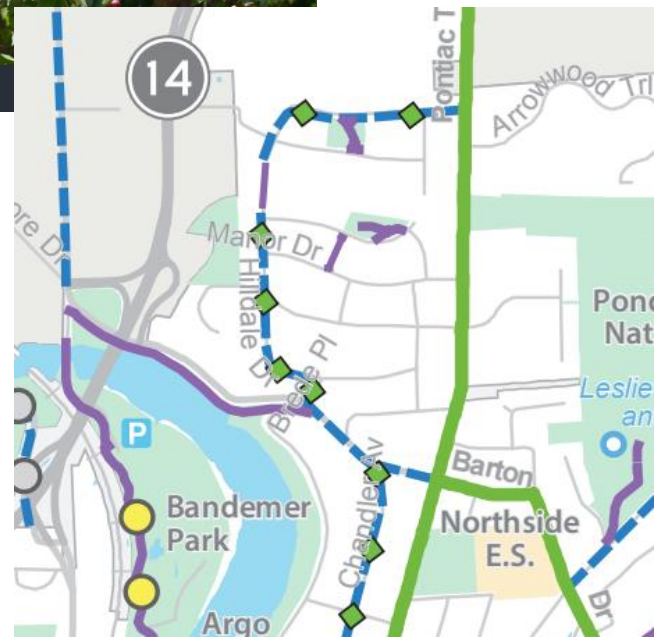
Bicycle Analysis Approach

Team used multiple tools:

- Bicycle Environmental Quality Index (BEQI)
- Road Safety Audit
- Public and Stakeholder Engagement

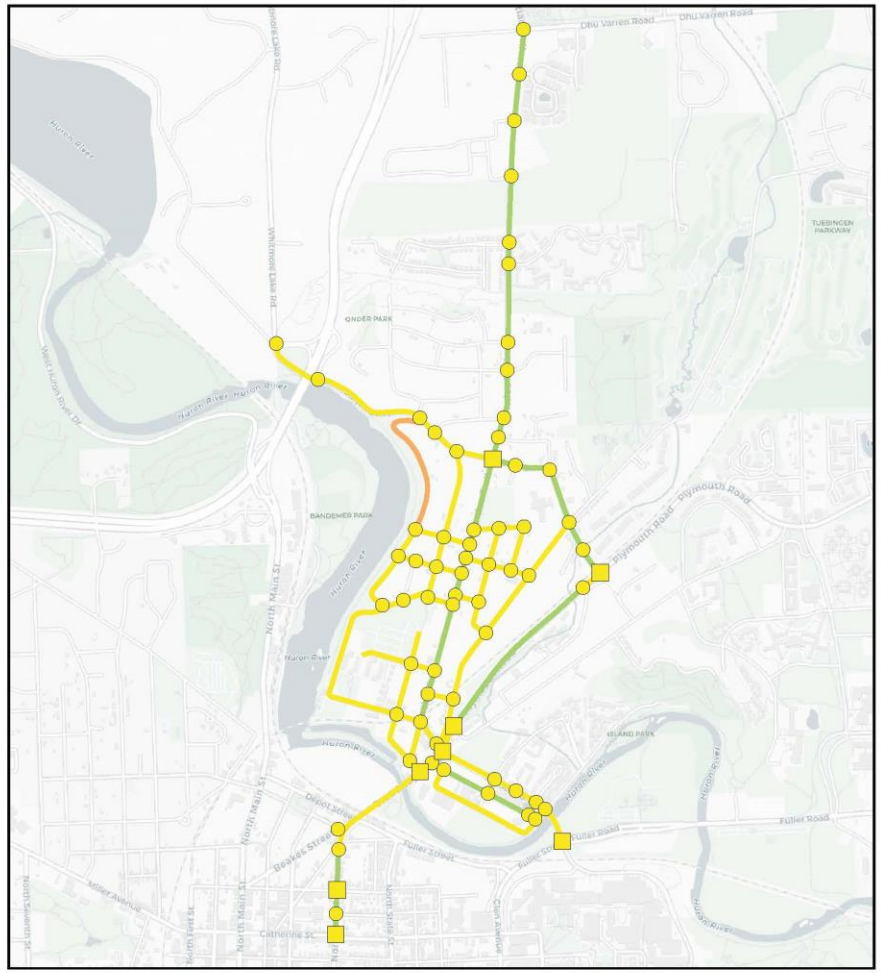
Benefits of these tools:

- Based on feedback from national experts
- Comprehensive
- Customizable
- Observational field survey



Bicycle Environmental Quality Index (BEQI)

N / E Side



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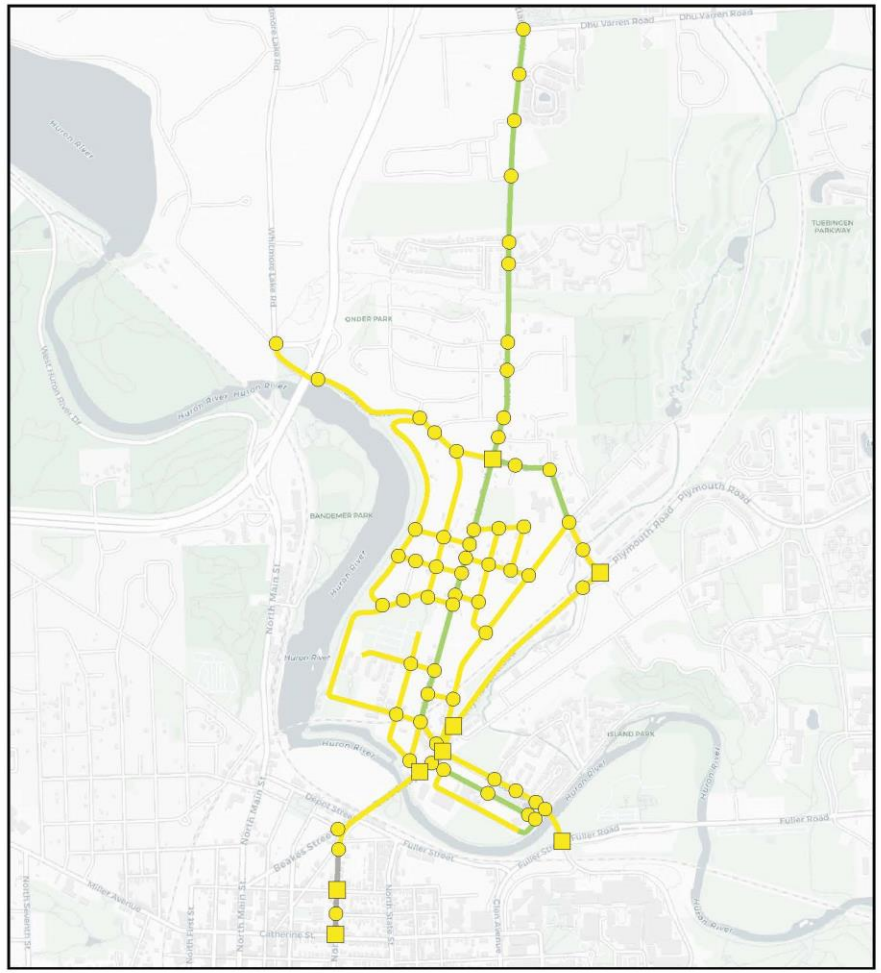


BEQI Score

N / A	One-Way Street	21 - 40	Poor bicyclists conditions exist
0 - 20	Unsuitable for bicyclists	41 - 60	Basic bicyclists conditions exist
		61 - 80	Reasonable bicyclists conditions exist
		81 - 100	Ideal bicyclists conditions exist

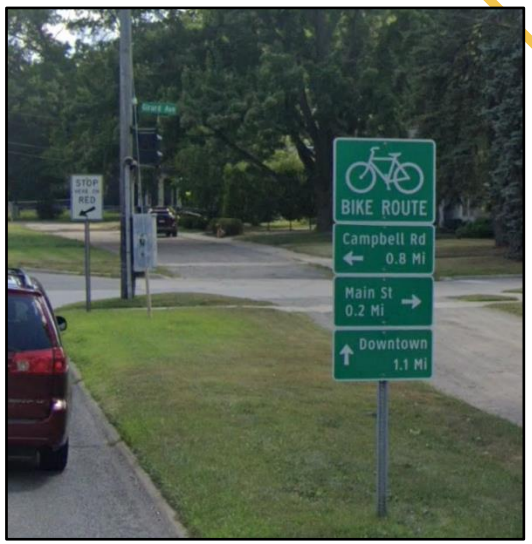
Intersections
- Signalized
- Non-Signalized

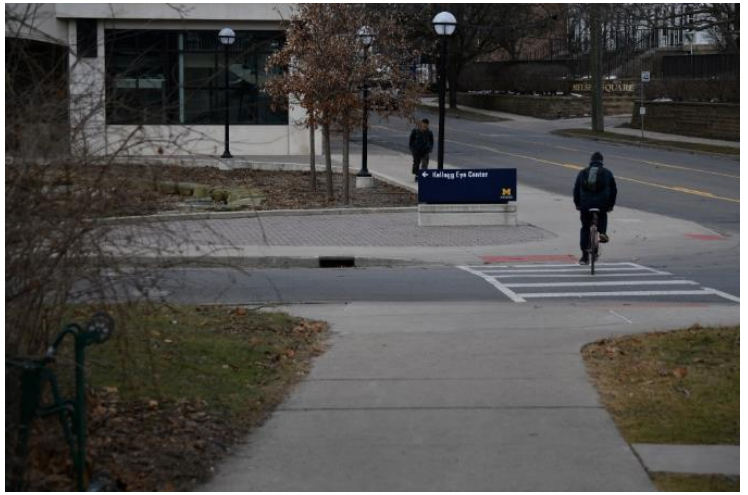
0 0.5 1 mi

Street & Intersection BEQI Scores calculated based on San Francisco Department of Public Health Methodology.

Bicycle Findings

- Cyclist Amenities
  - Wayfinding signage
  - Beginning and end of routes
  - On street bike lanes





Bicycle Findings

- Safety Features
  - Bike lanes blocked
  - Obstructions
  - Boardwalk
  - Bike boulevard
  - Lanes adjacent to parking

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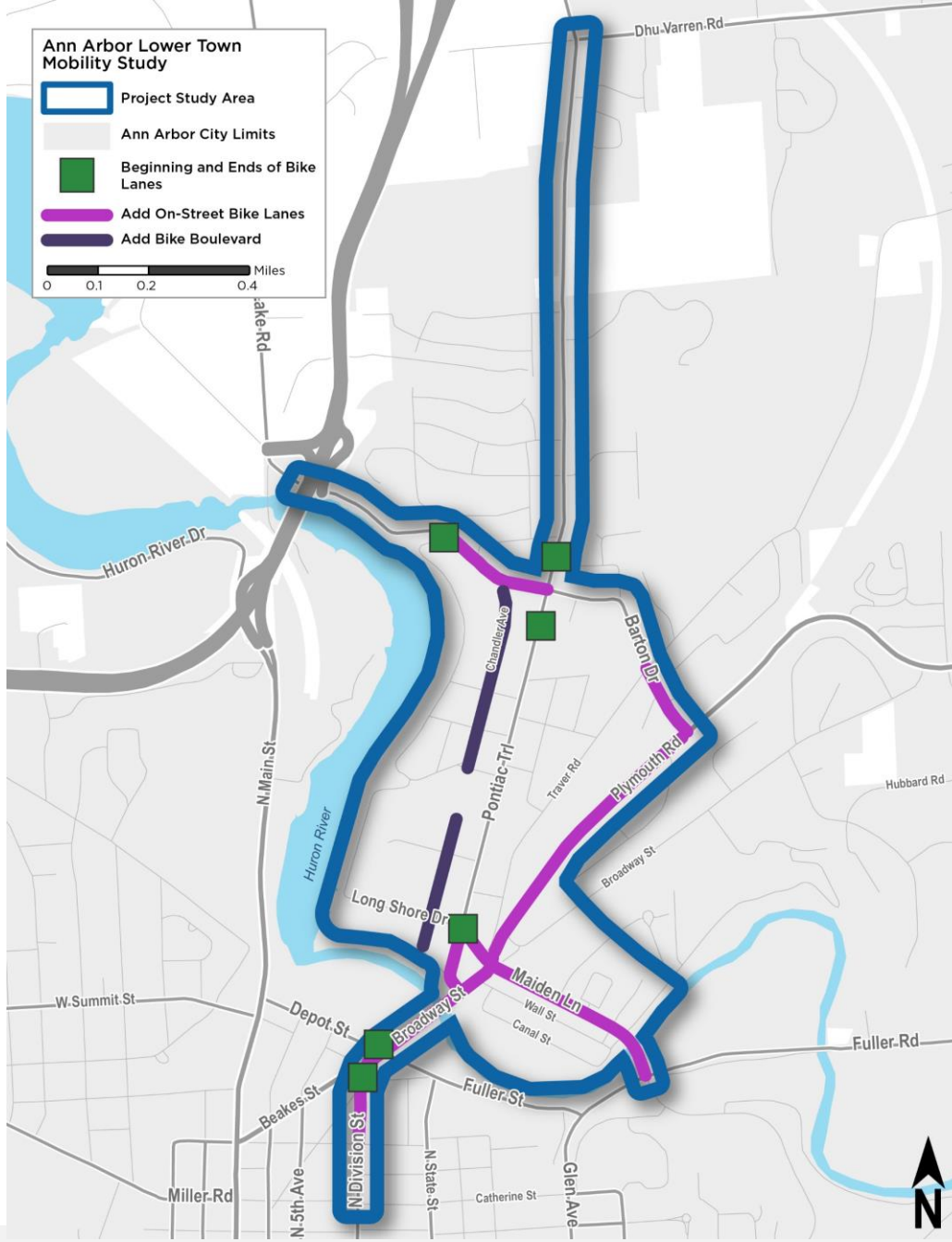

Questions and Answers Break

Transit

Team used multiple tools:

- Road Safety Audit
- Public and Stakeholder Engagement
- Brainstorming Session

Benefits of these tools:

- Observational field survey

Transit Findings

- Rider Amenities
  - Increase frequency and reliability
  - Upgrade bus stops for ADA compliance
  - Additional park and ride opportunities
  - Eliminate bus stop conflicts
  - Transit Signal Priority

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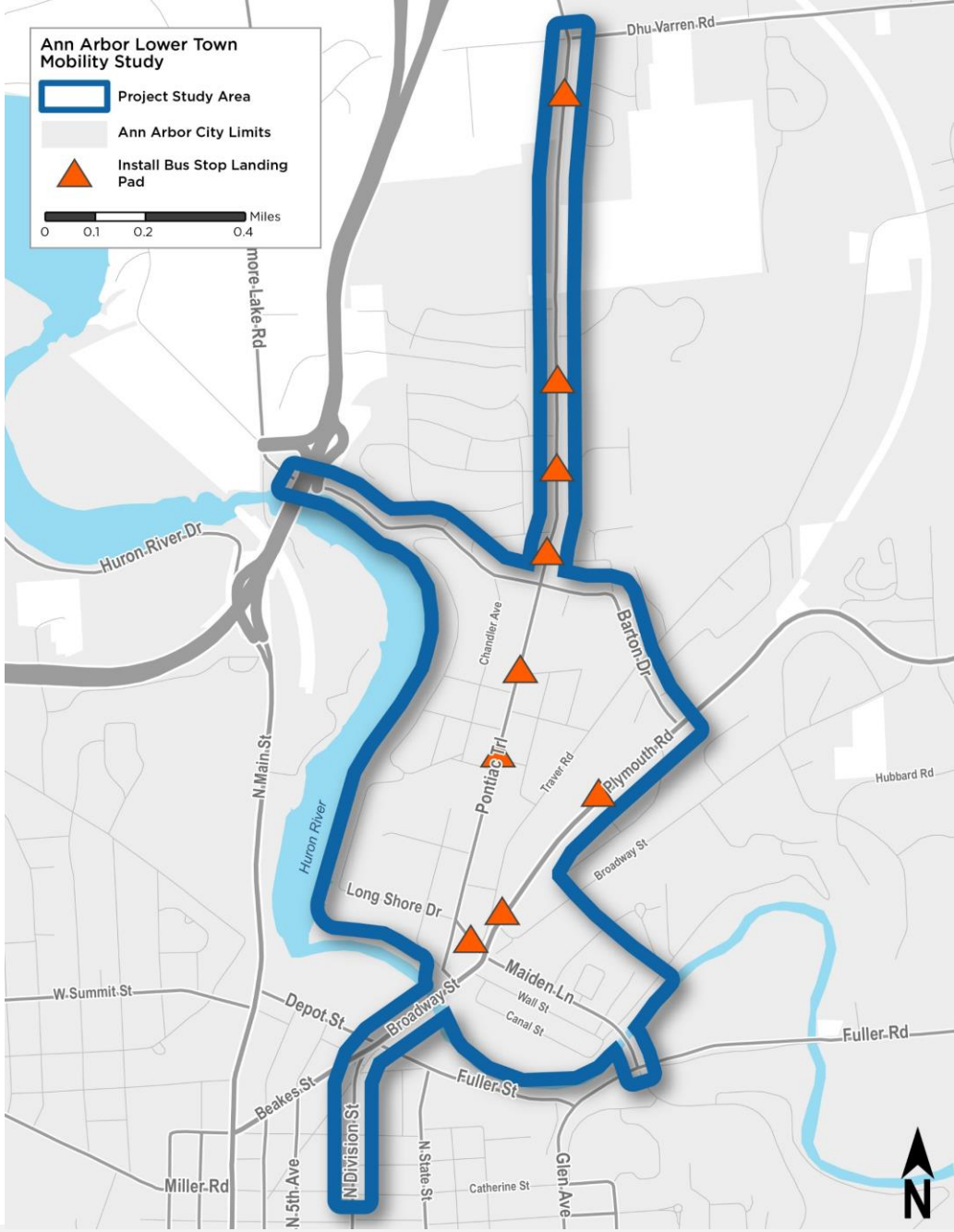


Questions and Answers Break

Motor Vehicles

Team used multiple tools:

- Public and Stakeholder Engagement
- Road Safety Audit
- Traffic Modeling
- Brainstorming Session
- Crash analysis

Benefits of these tools:

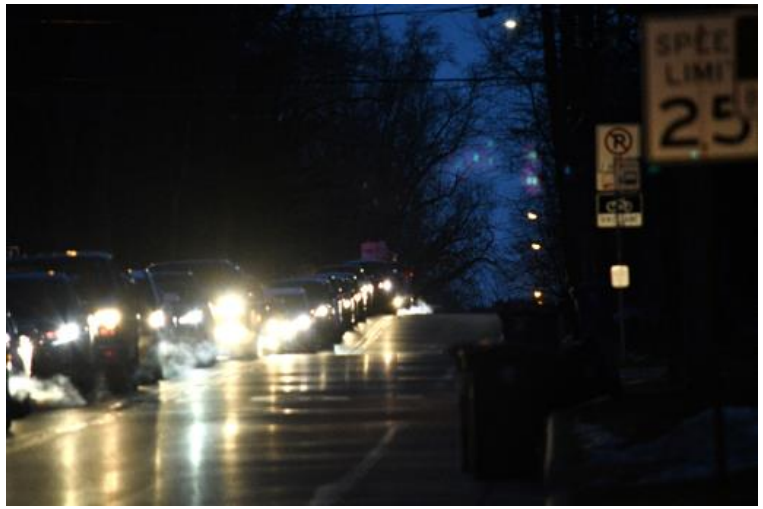
- Data driven analysis
- Observational field survey

MV Findings

- Infrastructure Improvements
  - Pavement Markings
  - Sign Upgrades
  - Pavement Condition
  - Guardrail
  - Signal Modernization
  - EV Charging Stations
  - Intersection Specific

MV Findings

- Driver Technologies
  - Changeable Message Signs
  - Speed Management & Warning Systems
  - Trans System/Demand Management (TSM/TDM)



Questions and Answers Break

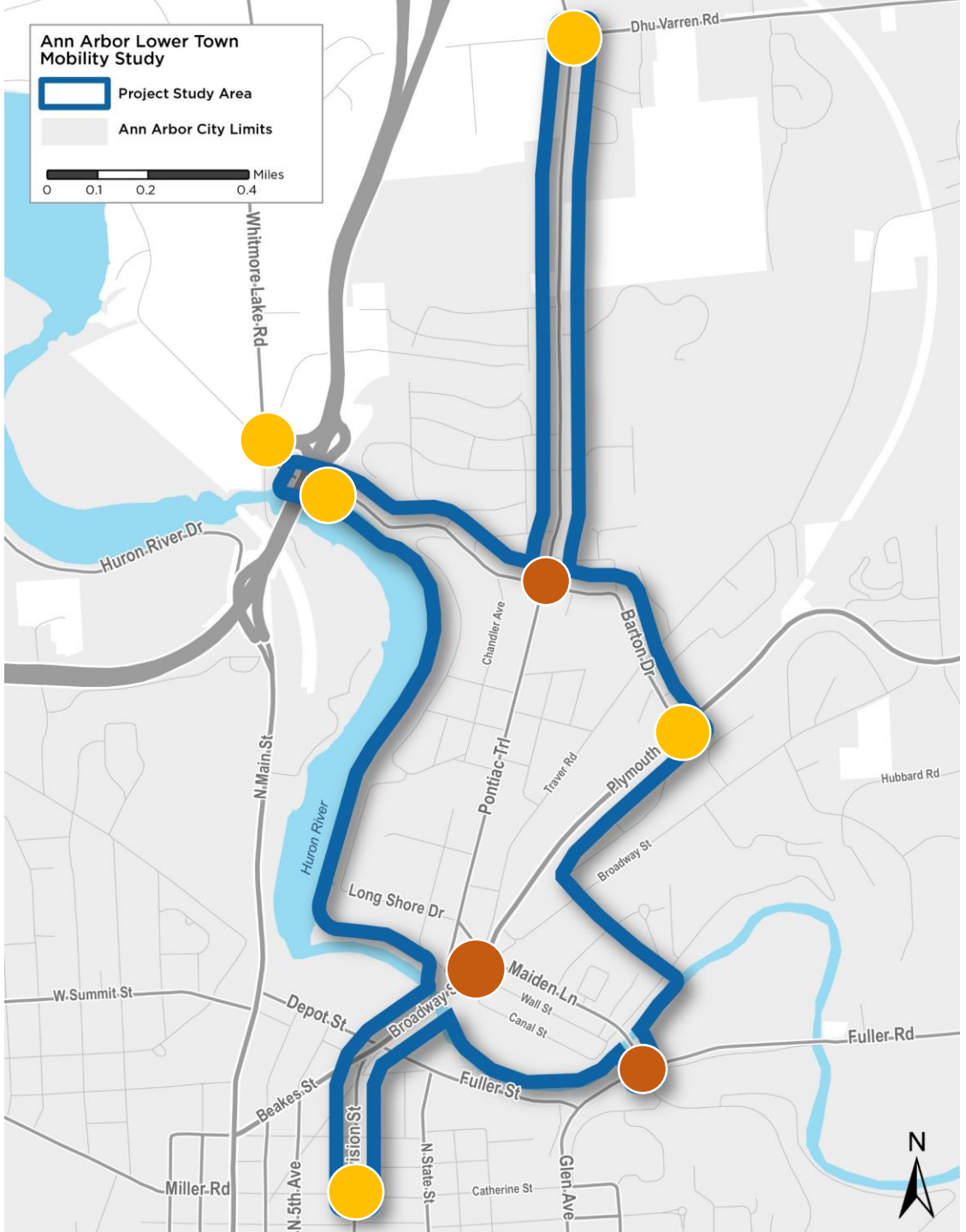
High Congestion Intersections

Based on Model

- Plymouth Rd at Barton Dr
- M-14 at Barton Dr
- Dhu Varren Rd at Pontiac Trail
- Division St at Catherine St

Based on Observation

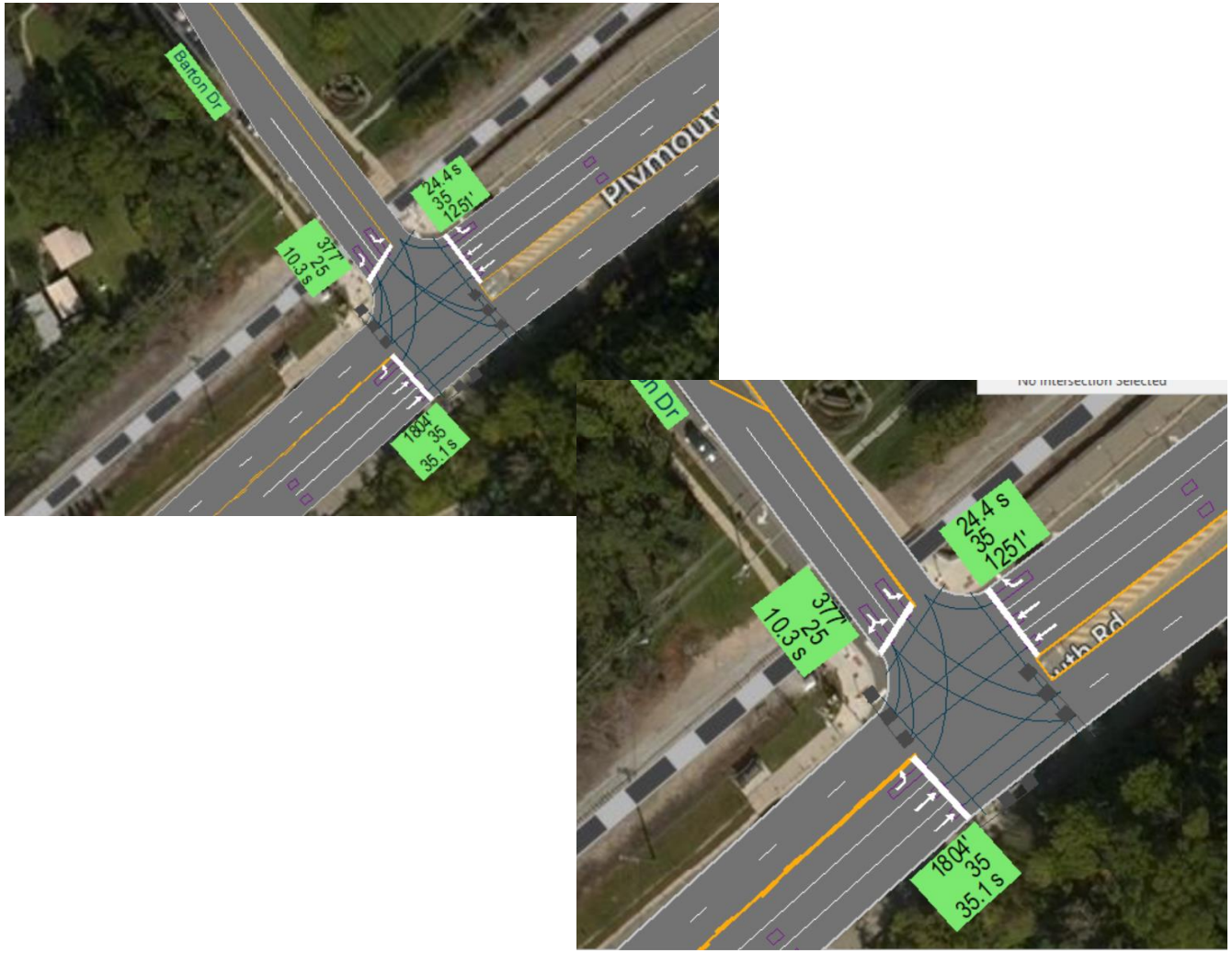
- Barton Dr at Pontiac Trail
- Maiden Ln/Broadway St/Moore St
- Maiden Ln at Fuller Rd



Barton at Plymouth Alternatives

- Operational Deficiencies
  - SEB Barton left-turn movement failing in AM peak hour
  - 70+ seconds of delay

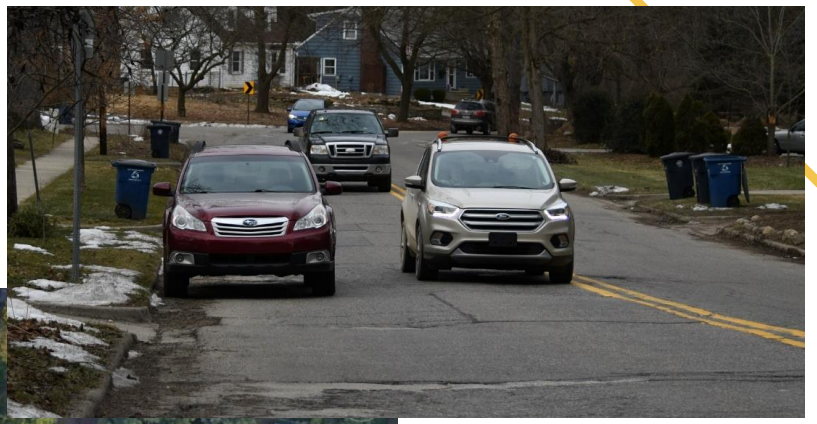
- Improvement Alternatives
  - Add a 2nd left-turn as a shared left/right turn lane
  - Reduces delay by 20+ seconds



Barton at Pontiac Alternatives

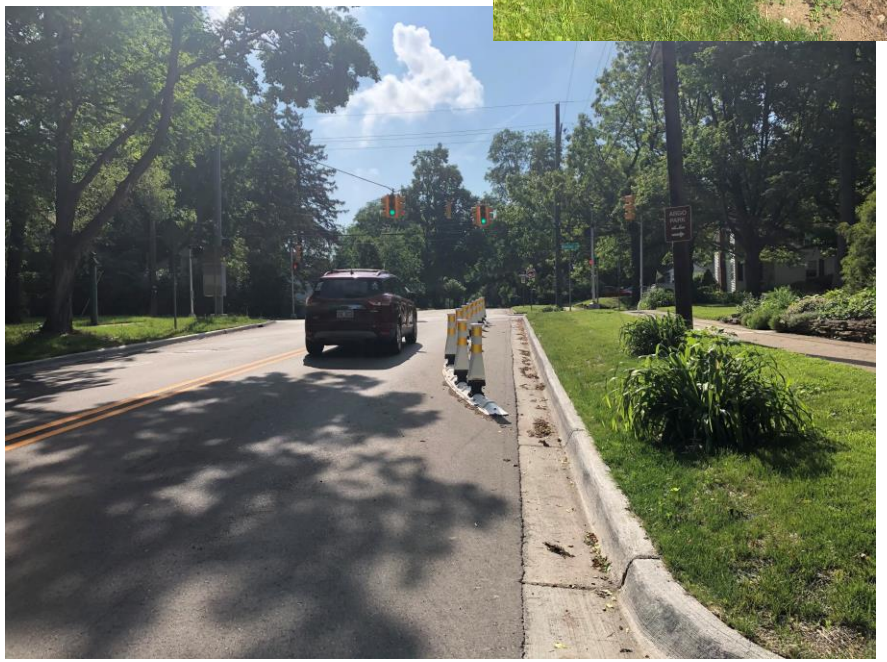
- Operational Deficiencies
  - ➢ On-street parking at intersection
  - ➢ EB approach in AM peak (35 seconds of delay)

- Improvement Alternatives
  - ➢ Add dedicated EB right-turn lane (cut delays in half)
  - ➢ Modern Roundabout (cut delays by more than 50%)



Barton at Pontiac Alternatives

- Improvement Alternatives
  - Restrict on-street parking on EB approach
  - Temporary bump-out with option to make permanent



Broadway / Division / Beakes Alternatives

- Operational Deficiencies
  - High number of crashes [73 in 5 years, including 10 with injuries]
  - High number of conflict points [39, of which 14 are with pedestrian crossings]
  - High speeds coming down Division
  - Many streets coming together [7]
  - Pedestrian crossing on curve
  - On-street bike lane abruptly terminates 350’ south of Carey

- Improvement Alternatives
  - Options to reduce number of conflict points [from 41% to 64% fewer conflicts]

^ 16 Conflict Points (59% fewer than existing)

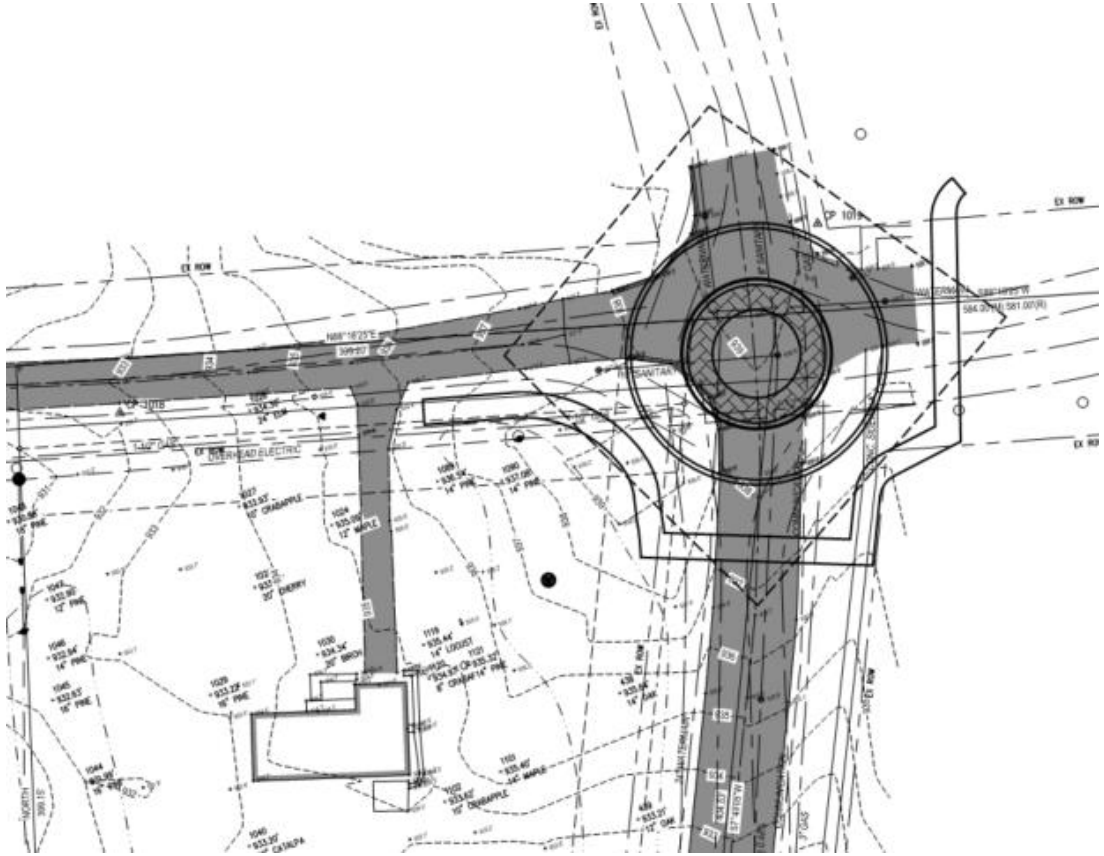
< 23 Conflict Points (41% fewer)

v 14 Conflict Points (64% fewer)

Pontiac at Dhu Varren Alternatives

- Operational Deficiencies
  - EB/WB under stop control
  - High speeds on Pontiac Tr
  - WB Dhu Varren delays in AM peak (LOS E, 36+ seconds of delay)

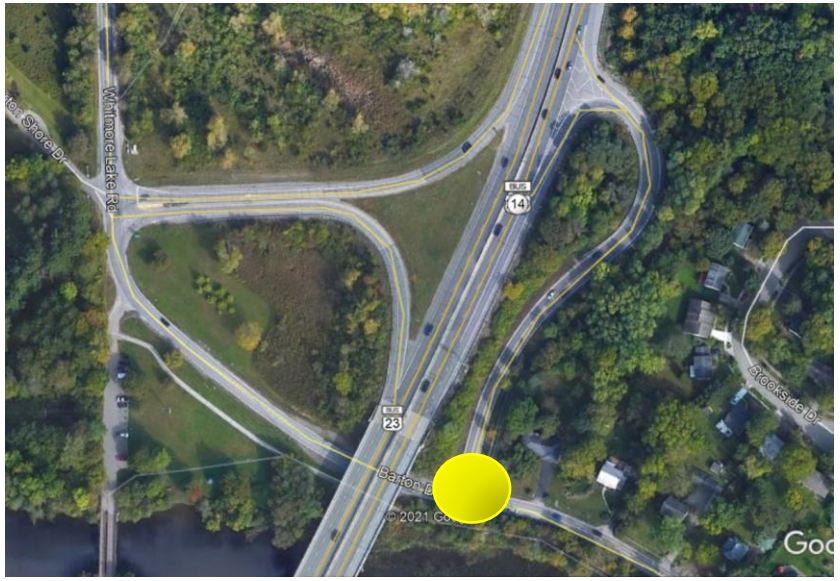
- Improvement Alternatives
  - Analyzed for signal (all approaches 20 seconds or less delay)
  - Analyzed for roundabout (LOS A, less than 8 seconds of delay per approach)
    - Reduces Speeds



Barton at EB M-14 Ramp Alternatives

- Operational Deficiencies
  - All way stop intersection under MDOT jurisdiction
  - Off ramp approach failing in AM (55+ seconds of delay)
  - WB Barton fails in PM (59+ seconds of delay)

- Improvement Alternatives
  - Performed signal warrant analysis
  - Signal option could reduce delays (needs to be reviewed as part of an MDOT interchange treatment)

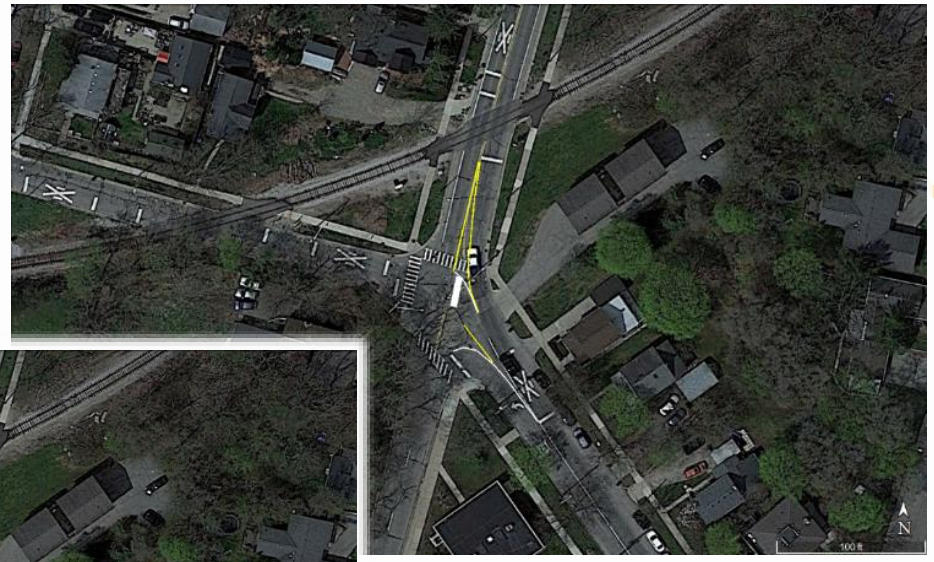


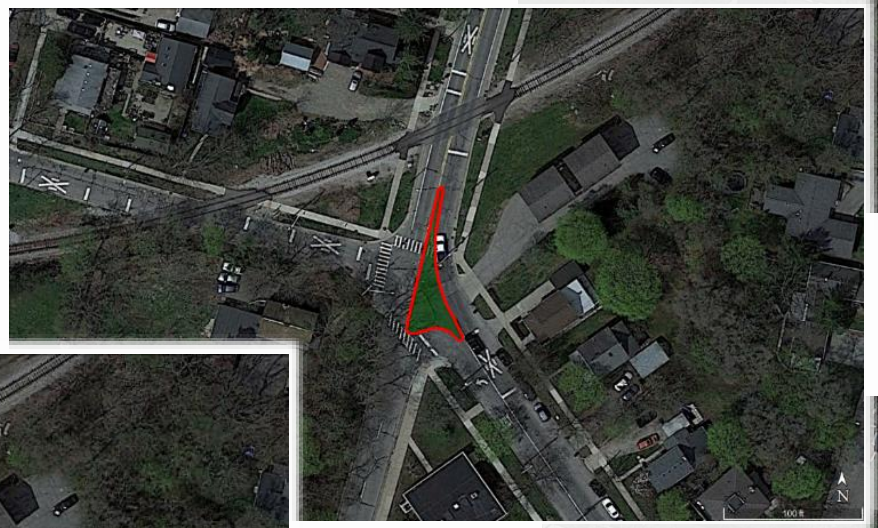
Moore / Pontiac / Longshore Alternatives

- Operational Deficiencies
  - One-way pair south of intersection
  - Pedestrian crossing issues – north leg
  - Confusing geometry
  - Speeds
  - Train track near intersection
  - Bike lanes north of intersection

Moore / Pontiac / Longshore Alternatives

- Improvement Alternatives
  - Options to simplify intersection
  - Reduce conflict points [from no change to 44% fewer conflicts]
  - Roundabout





Broadway at Maiden/Moore Alternatives

- Operational Deficiencies
  - Congestion on Broadway (overall LOS C, 25 and 32 avg delays for AM and PM)
    - AM SBL 50+ seconds of delay
    - PM NBL and NWL fail (68 and 56 seconds delay)
  - Speeds on Broadway
  - Discontinuity of ped/bike facilities

- Improvement Alternatives
  - Modern Roundabout (reduces approach delays to 12 seconds or less)
  - Hawk Signals for multi-lane ped/bike crossings

Transportation Demand & System Management Alternatives (TDM & TSM)

- Operational Deficiencies
  - Congested peak periods of travel
  - Vehicle emissions

- Improvement Alternatives
  - Improved non-motorized conditions
  - Improve public transit, more Park & Ride options
  - Ridesharing programs
  - Incentives to give up parking
  - Flexible work times
  - Transit supportive development
  - Signal retiming and coordination

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Speed Management Alternatives

- Operational Deficiencies
  - Corridors with noted high speeds (Broadway, Pontiac Tr, Division, Plymouth)
  - Pedestrian and Bike Safety

- Improvement Alternatives
  - Roundabouts
  - Median islands
  - Neckdowns
  - On street parking
  - Speed actuated signing
  - Gateway treatments
  - Bike Lanes

Questions and Answers Break

Next Steps

- Summary of Public Meeting #3
- Further Consolidation and Refinement of Alternatives
- Analysis and Evaluation of Alternatives
- Report Development
- “Office Hours” – Public Engagement Opportunities
- Public Meeting #4 – Overall Findings and Recommendations