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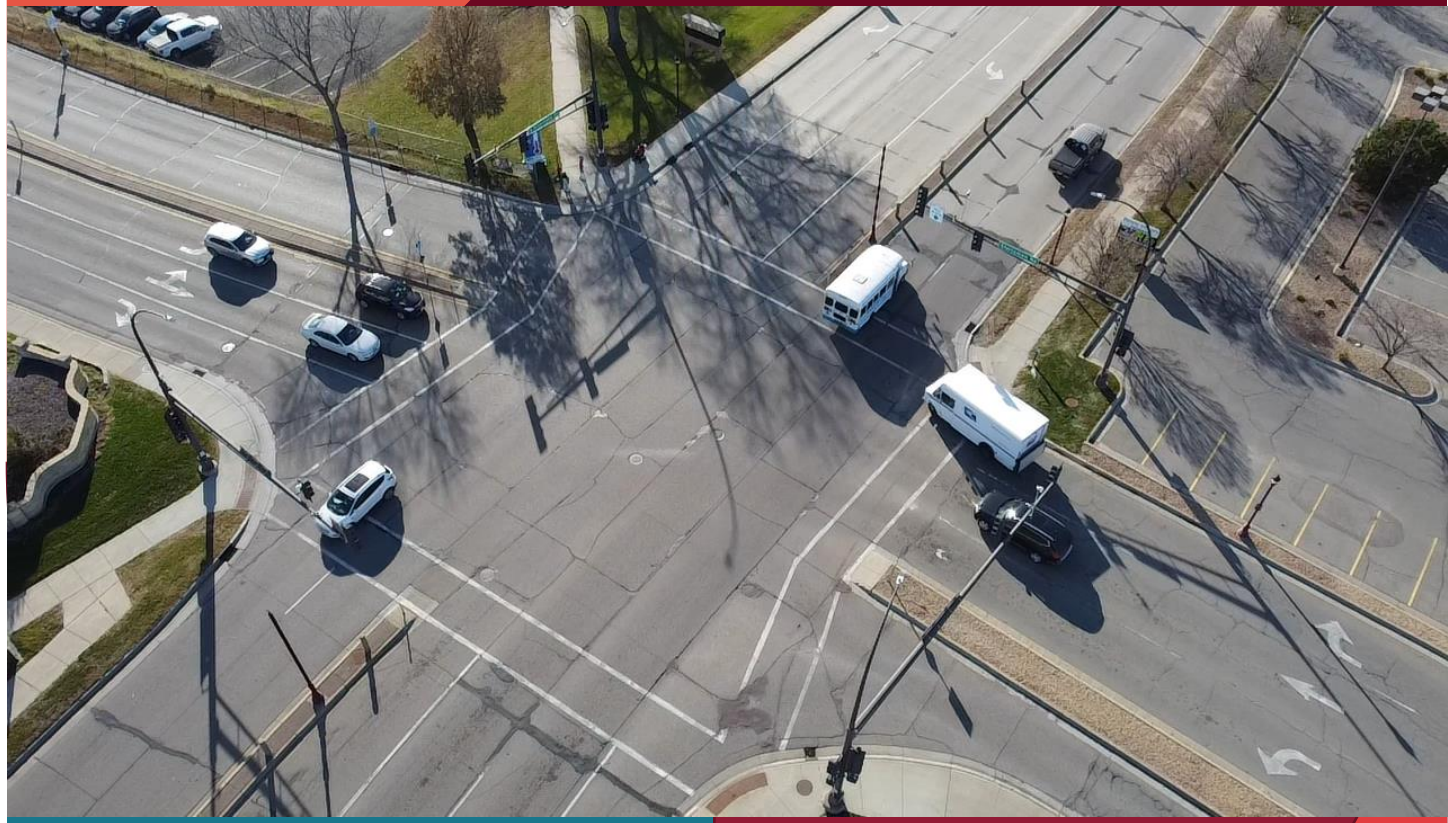
Riverfront Drive & Stoltzman Road

Intersection Control Evaluation



Mankato City Council
November 4, 2024

Agenda

- Study Background and Purpose
- ICE Process
- Study Results
  - Baseline Conditions
  - Alternatives Analysis
- Public Engagement

Background and Purpose

- 2017 Riverfront Drive Corridor Study recommended ICE Study
- Study Purpose:
  - Identify existing intersection deficiencies and select long term traffic control
- Preferred Alternative will be in line with community goals:
  - Provide a safe, efficient, accessible, cost effective, and aesthetically pleasing transportation system
  - Improve the multimodal circulation of people and goods using motorized/non motorized transportation modes and facilities
  - Balanced approach to selection of access strategies and intersection controls

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ICE Study Process

1. Existing Conditions
   - Data Collection
   - Traffic and Safety Analysis
2. Forecast No Build Conditions
   - 20-year Traffic Forecasts
   - Traffic Analysis
3. Alternatives Development and Analysis
   - Develop Viable Alternatives
   - Traffic and Safety Analysis
   - Other Considerations
   - Alternative Comparison Matrix
4. Preferred Alternative
5. Documentation

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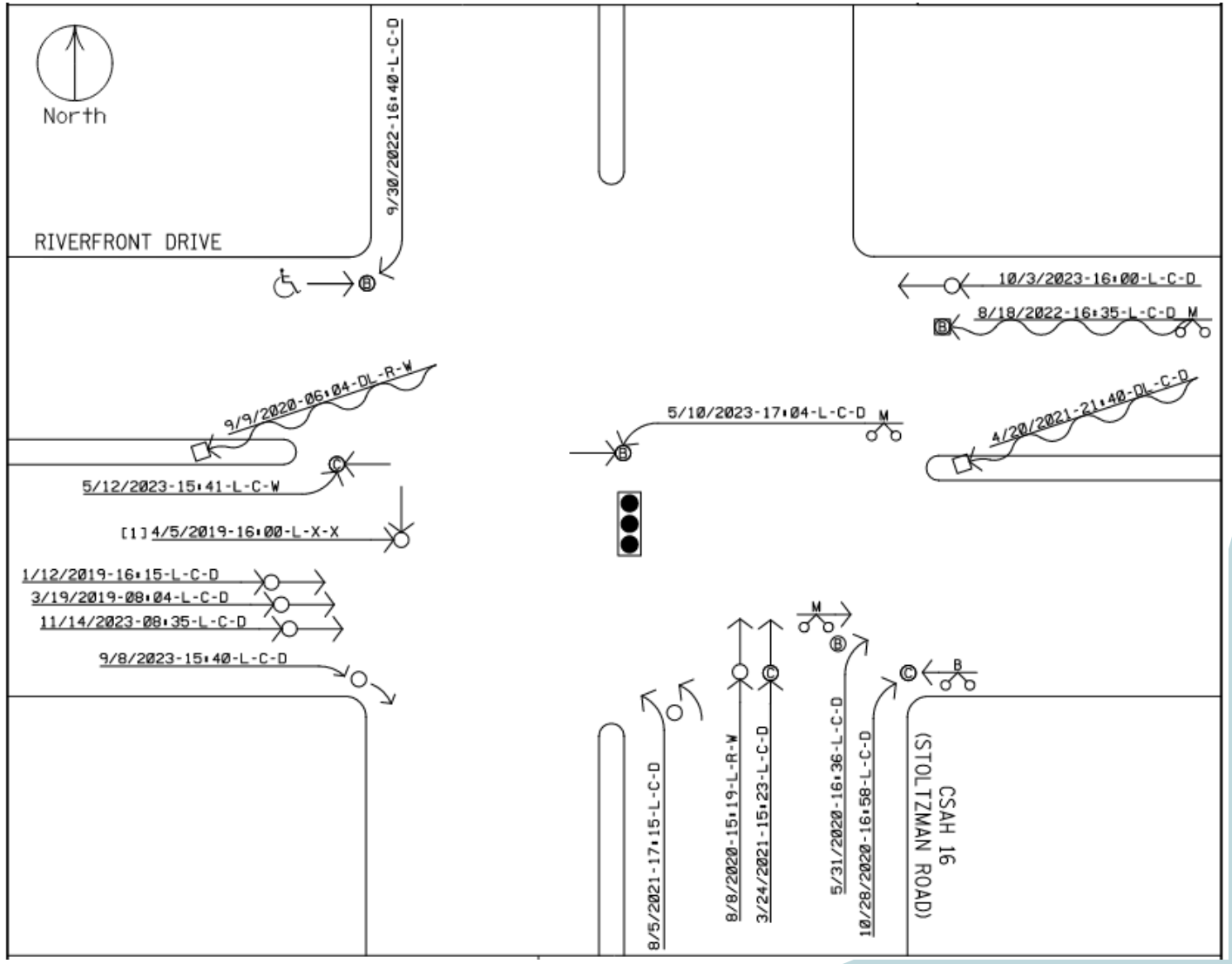
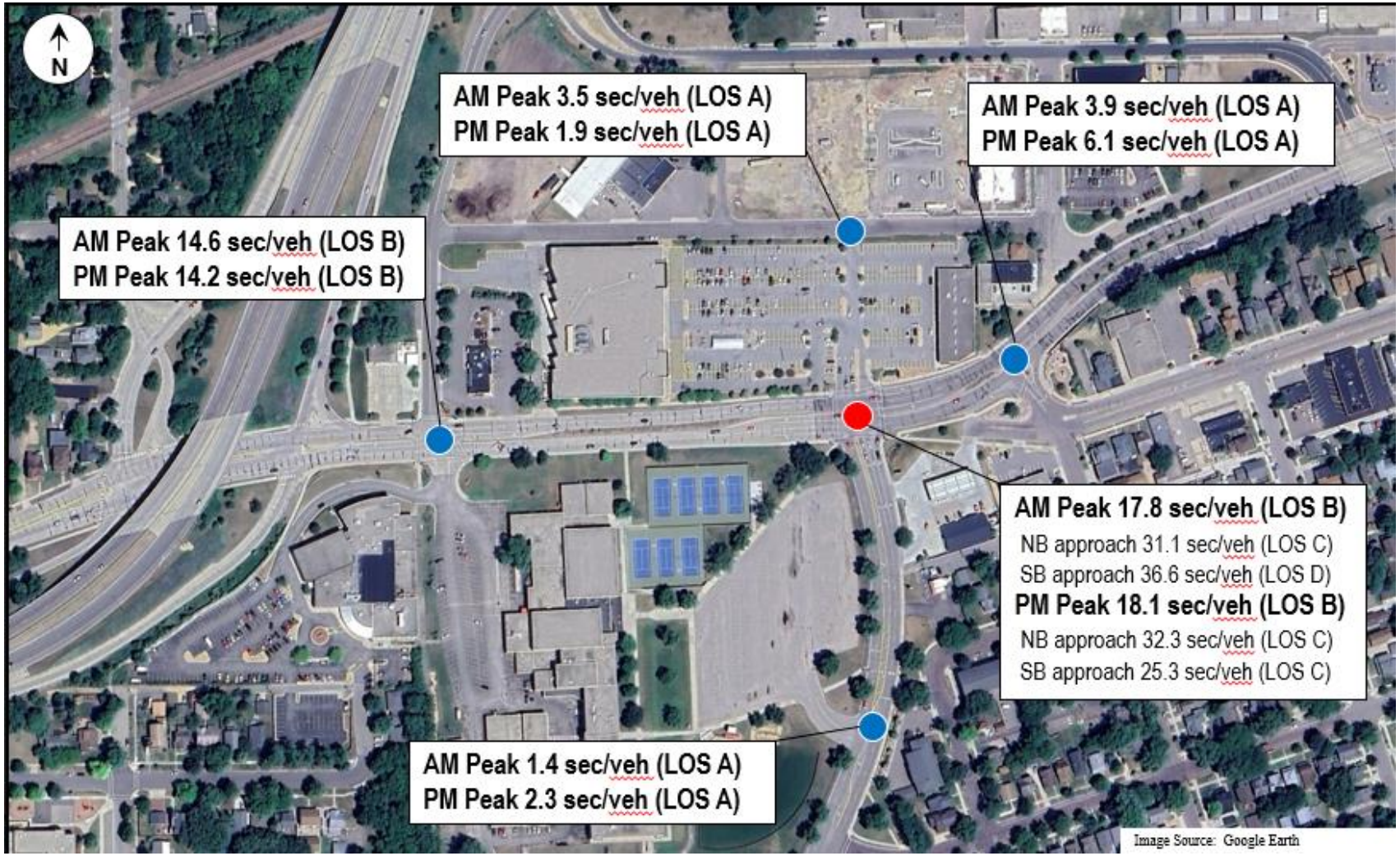
Baseline Conditions

- 17 Crashes in 5 years
  - 0 K/A Crashes
- 0.39 Crashes/MEV
  - State Avg is 0.61
- 7 rear end
- 3 angle



Baseline Conditions



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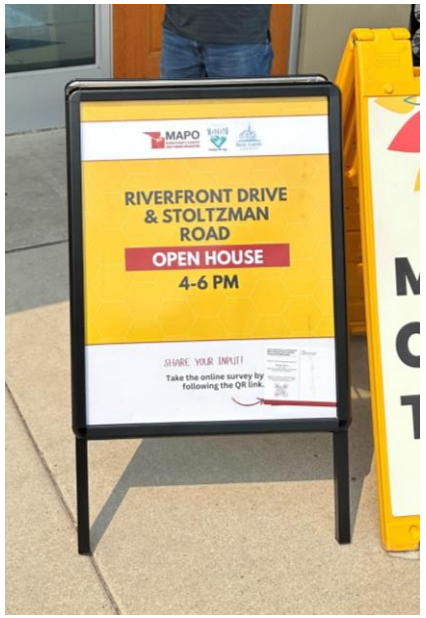
Public Engagement Opportunities

- Online Survey
  - Feedback on issues and functionality
- Open House - July 22
  - Supplemental feedback on issues and functionality
- Pop-Up – October 1
  - Feedback on the alternatives



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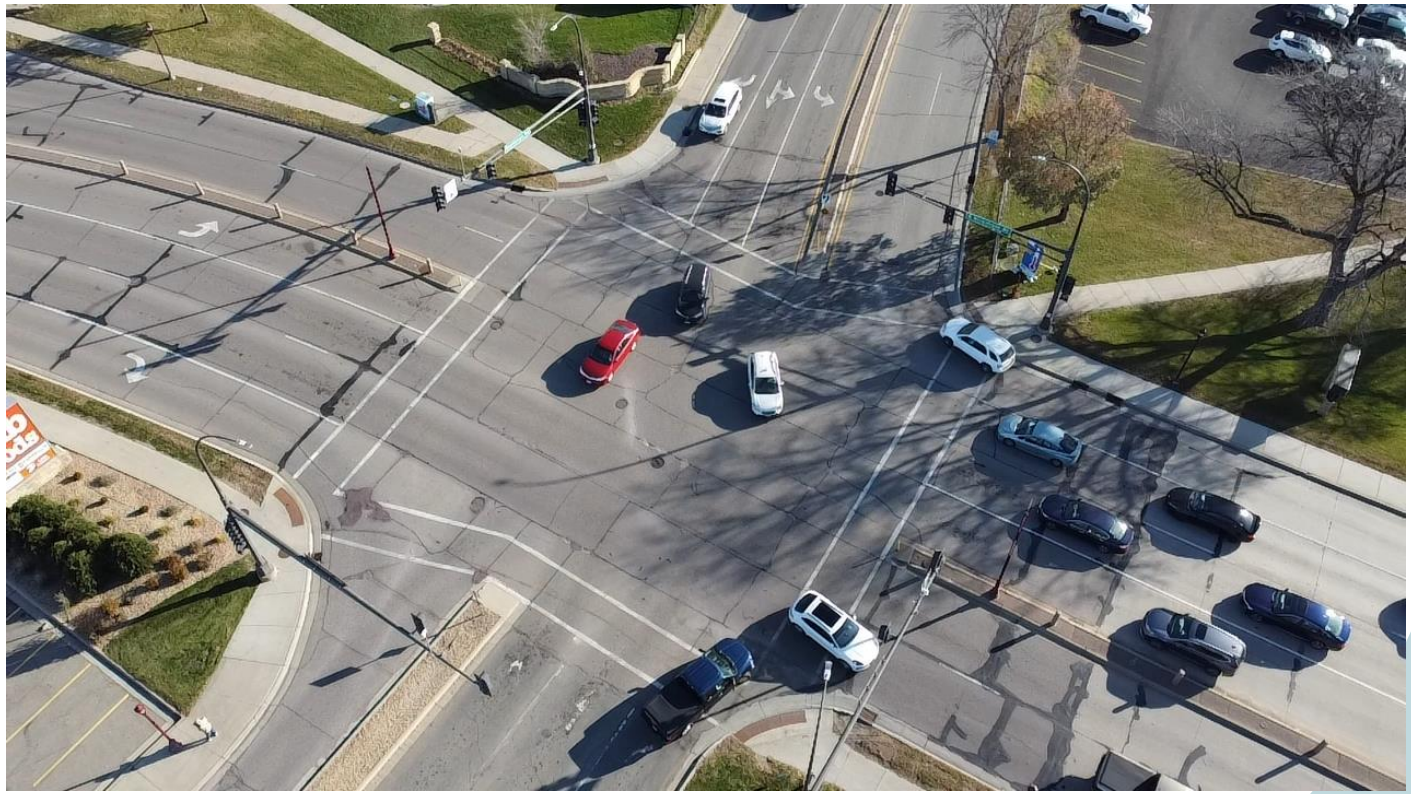
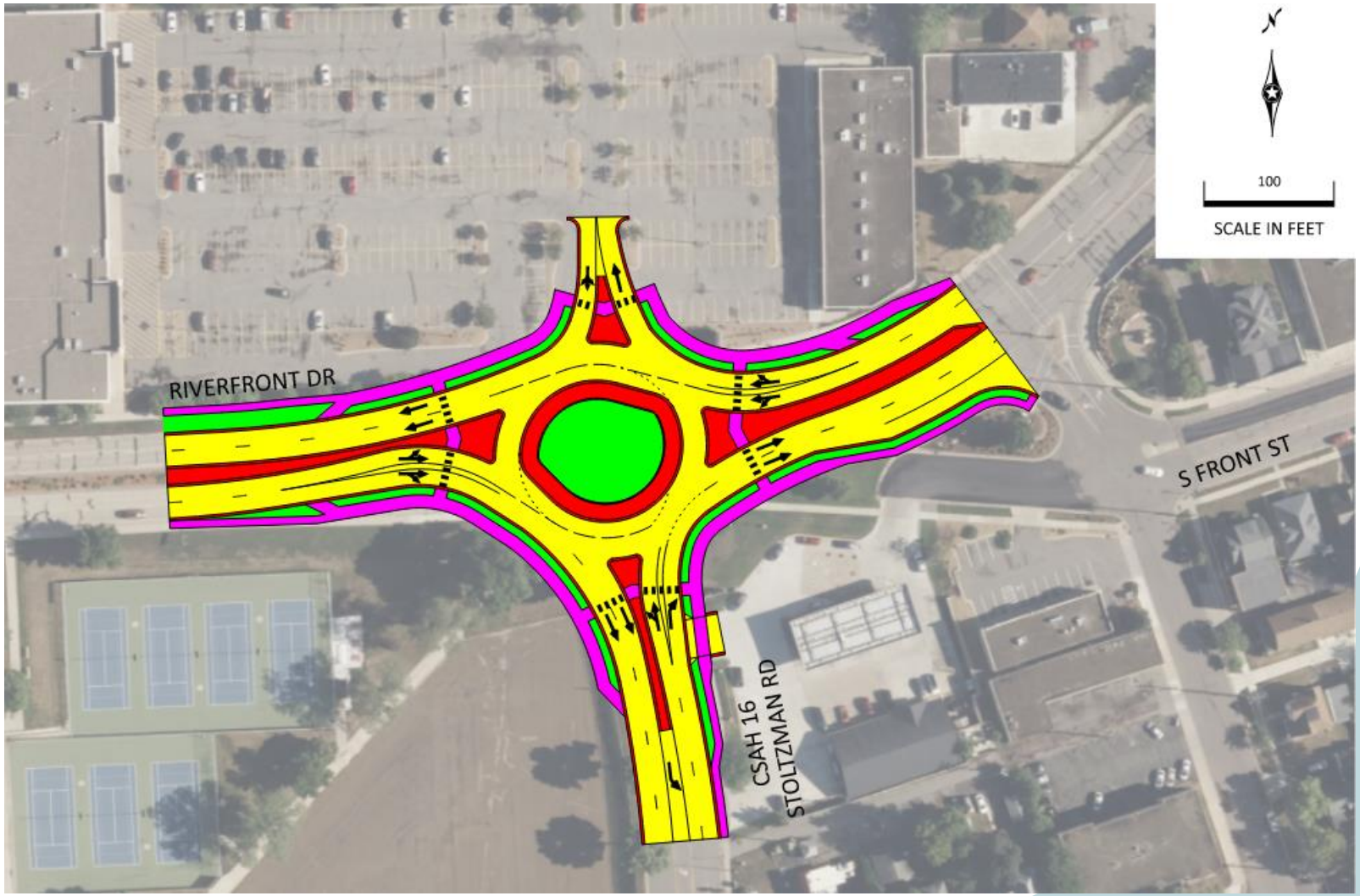
Alternative 0: No Build

- Pros
  - No cost
- Cons
  - No safety improvements
  - No delay improvements



Alternative 1: Roundabout

- Cost ~$2,650,000
- Pros
  - Angle and left-turn crashes are eliminated
  - Greatest reduction in crash severity
  - Decreases intersection delay (-11.2s AM, -6.3s PM)
- Cons
  - Initial cost
  - Right-of-way acquisition
  - Design may increase rear-end and sideswipe crashes



Alternative 2: Single NB Left Turn Lane

- Cost ~$80,000
- Pros
  - Elimination of split phasing improves operational efficiency
  - No reconstruction or ROW needed
  - Flashing yellow arrow left-turn phasing by time of day
- Cons
  - Increased overall intersection delay (+1.9s AM, -0.5s PM)
  - No improvements to multimodal safety or usability
  - Ongoing operation, maintenance, and electricity costs

Alternative 3: Dual NB Left Turn Lanes

- Cost ~$185,000
- Pros
  - Elimination of split phasing improves operational efficiency
  - Dual North Bound left turn lanes maximizes left turn capacity
  - Flashing yellow arrow left-turn phasing by time of day
  - Straighten southern crosswalk
- Cons
  - Ongoing operation, maintenance, and electricity costs
  - No change to overall intersection delay (+0.3s AM, 0.0s PM)

Alternatives Comparison

	Alternative 0	Alternative 1	Alternative 2	Alternative 3
Traffic Operations	-	+	-	=
Bike/Ped Accommodations	=	+	=	+
Safety	-	+	=	=
Benefit/Cost Ratio	0	8.6	-9.5	8.0
Cost	0	$ x 26	$	$ x 2

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Study Next Steps

- MAPO Policy Board Presentation 11/7
- Identify a Preferred Alternative (early November)
- Final ICE Report (early December)