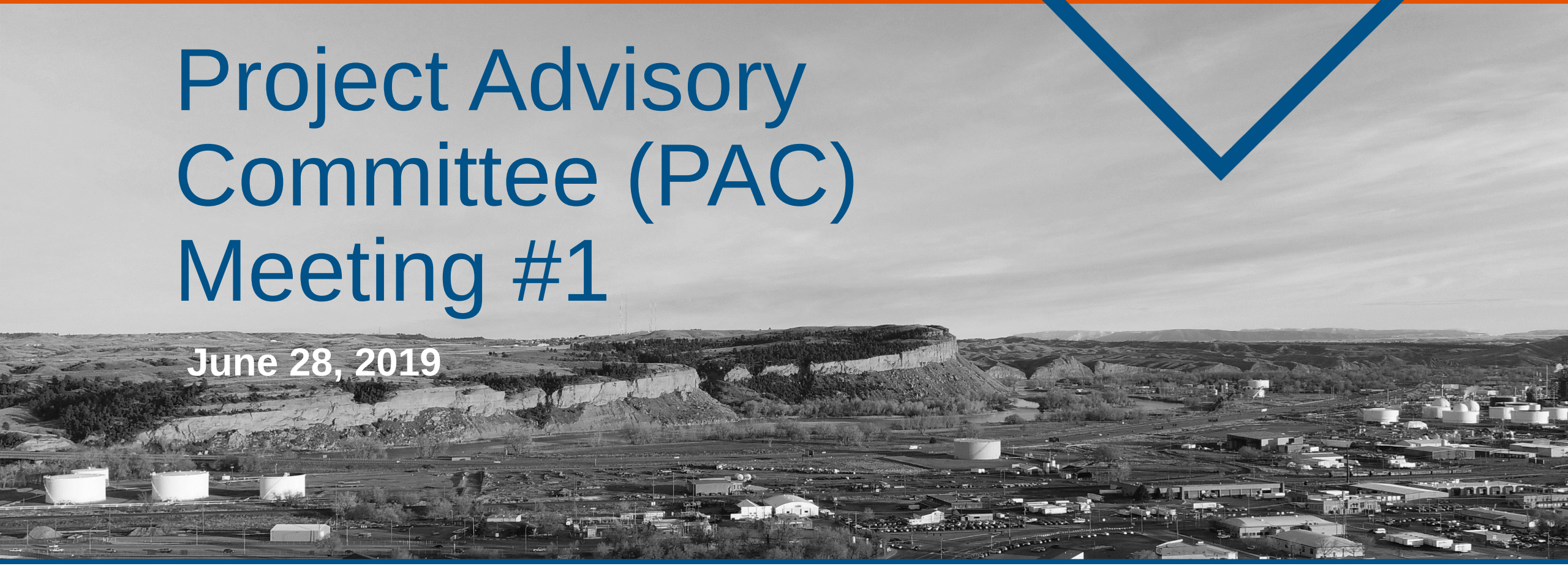
Project Advisory Committee (PAC) Meeting #1



June 28, 2019

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Meeting Purpose & Agenda

- Purpose
  - Identify areas of need and opportunities for improvement at the Exposition Drive & 1st Avenue N intersection
  - Provide feedback on the initial intersection alternatives
- Agenda
  - Welcome
  - Introduction to the Study
    - Let's hear from you
  - Tier 1 alternatives
    - Let's hear from you
  - Next steps and meeting close

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PAC Roles & Responsibilities

- Roles
  - Serve as a liaison for your organization
  - Provide input on the development and evaluation of possible transportation infrastructure alternatives
  - Potential to continue advisory role into design phase
- Responsibilities
  - Review materials
  - Attend three PAC meetings

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Introductions

- Name
- Who you represent?
- What you would like to learn at today's meeting?

Introduction to Study

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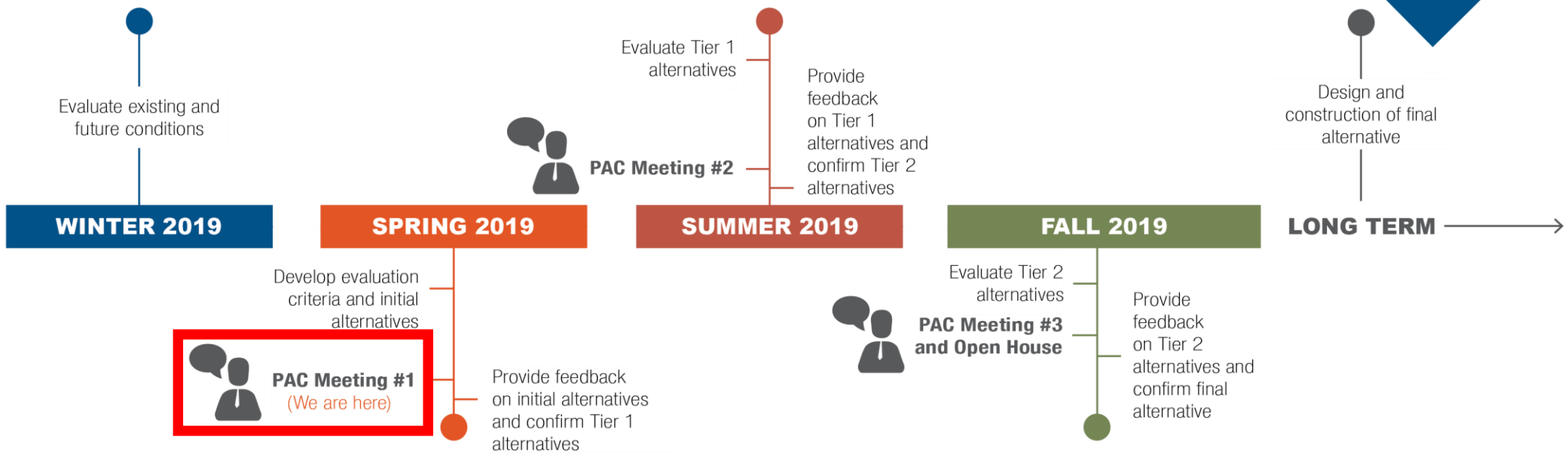
Study Objectives

- Facilitate an open, honest, and transparent decision-making process with two-way communication between the project team, stakeholders, and the public
- Improve traffic operations at the intersection and the pedestrian and bicycle environment
- Improve pavement and area drainage

Schedule



Other Activities
- Survey
- Geotechnical
- Hydraulics
- Environmental
- Utilities

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Study Area

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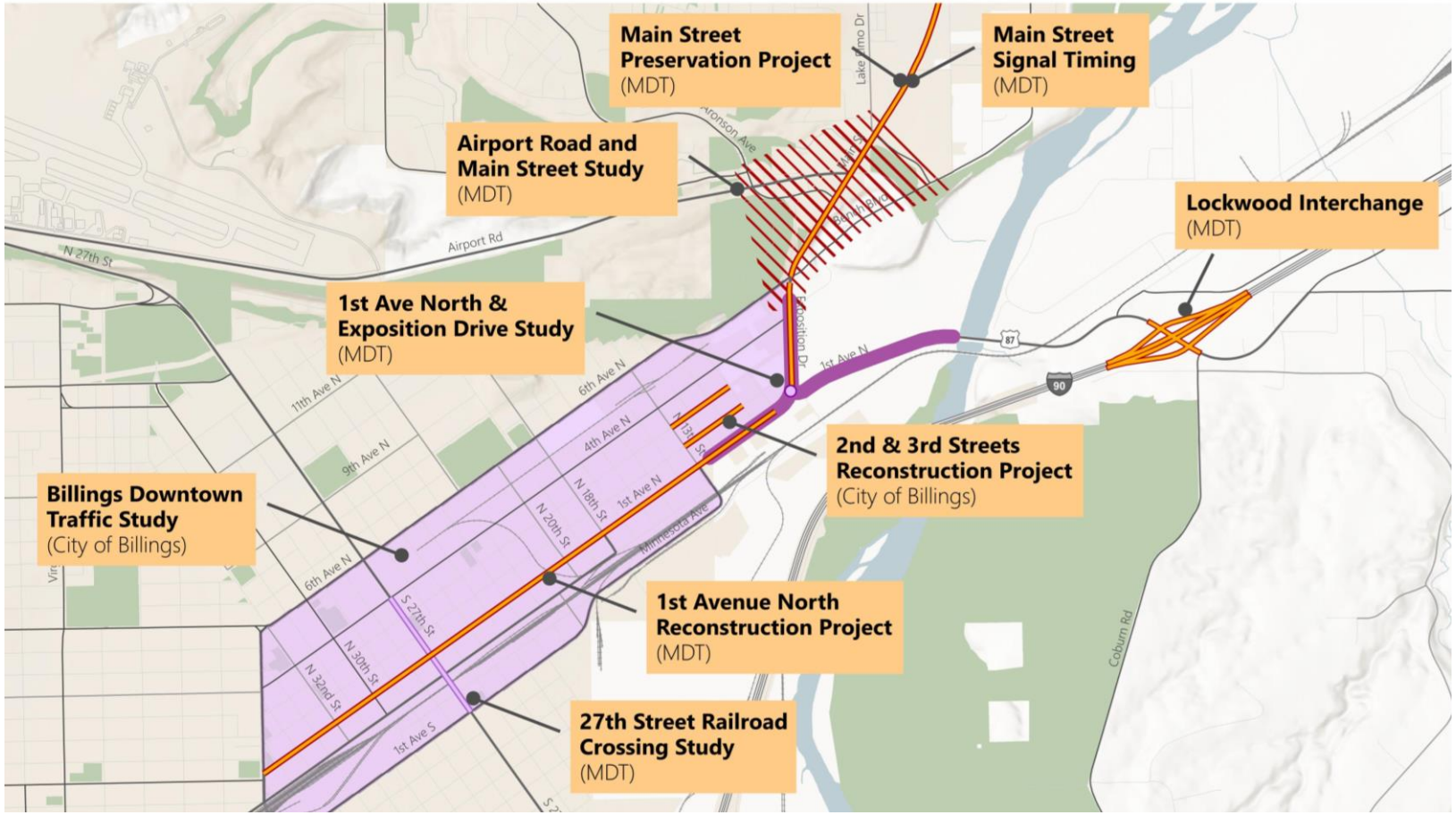
Projects



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Roadway Characteristics

Figure 3

- Junction between downtown Billings, US 87, Hwy 3, and I-90

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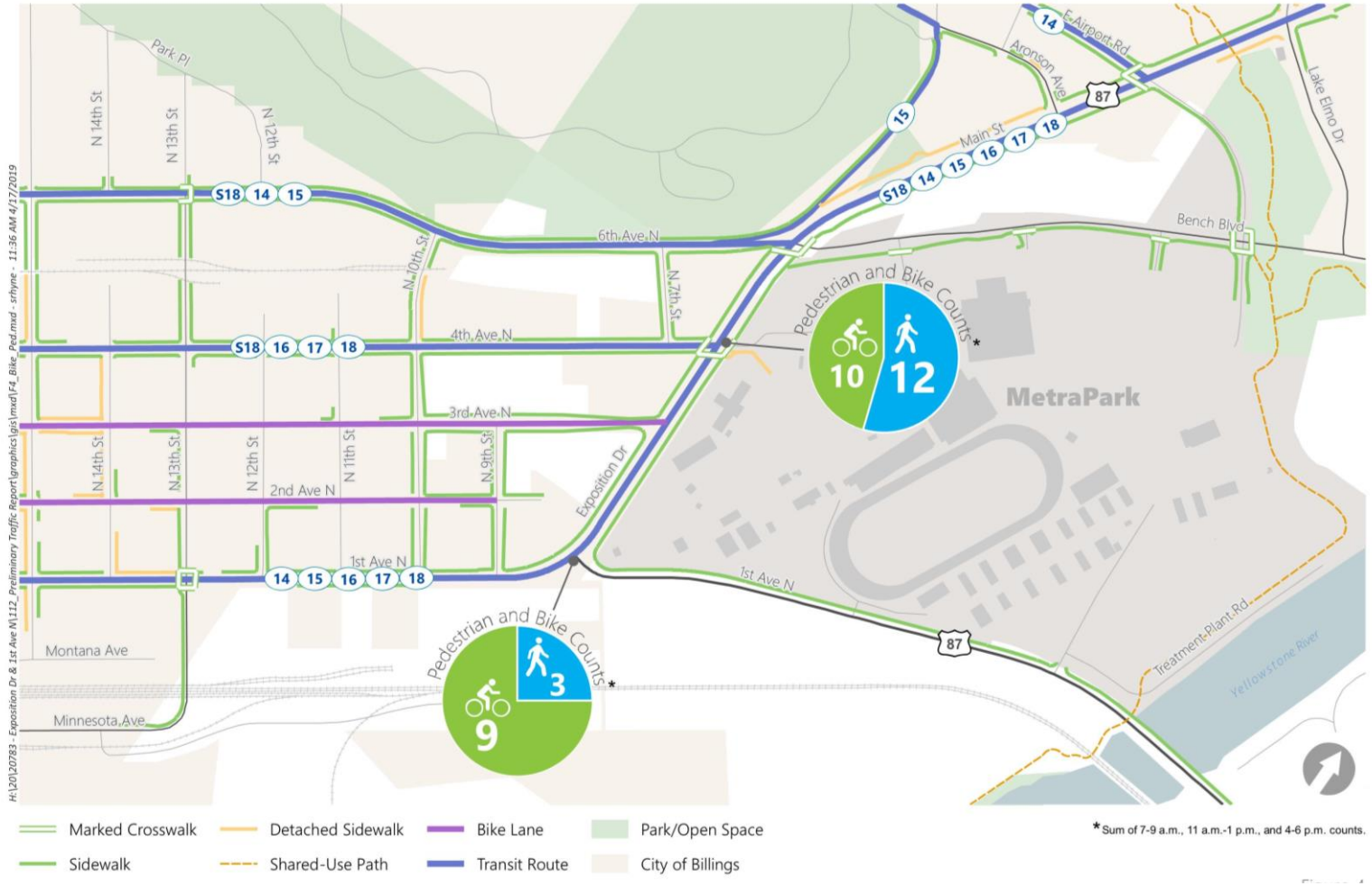
Pedestrian, Bicycle, and Transit Considerations



- No marked crossing locations between N 13th St and 4th Ave N (~3,000 feet)
- Gaps in sidewalks
- Limited connectivity to trail system

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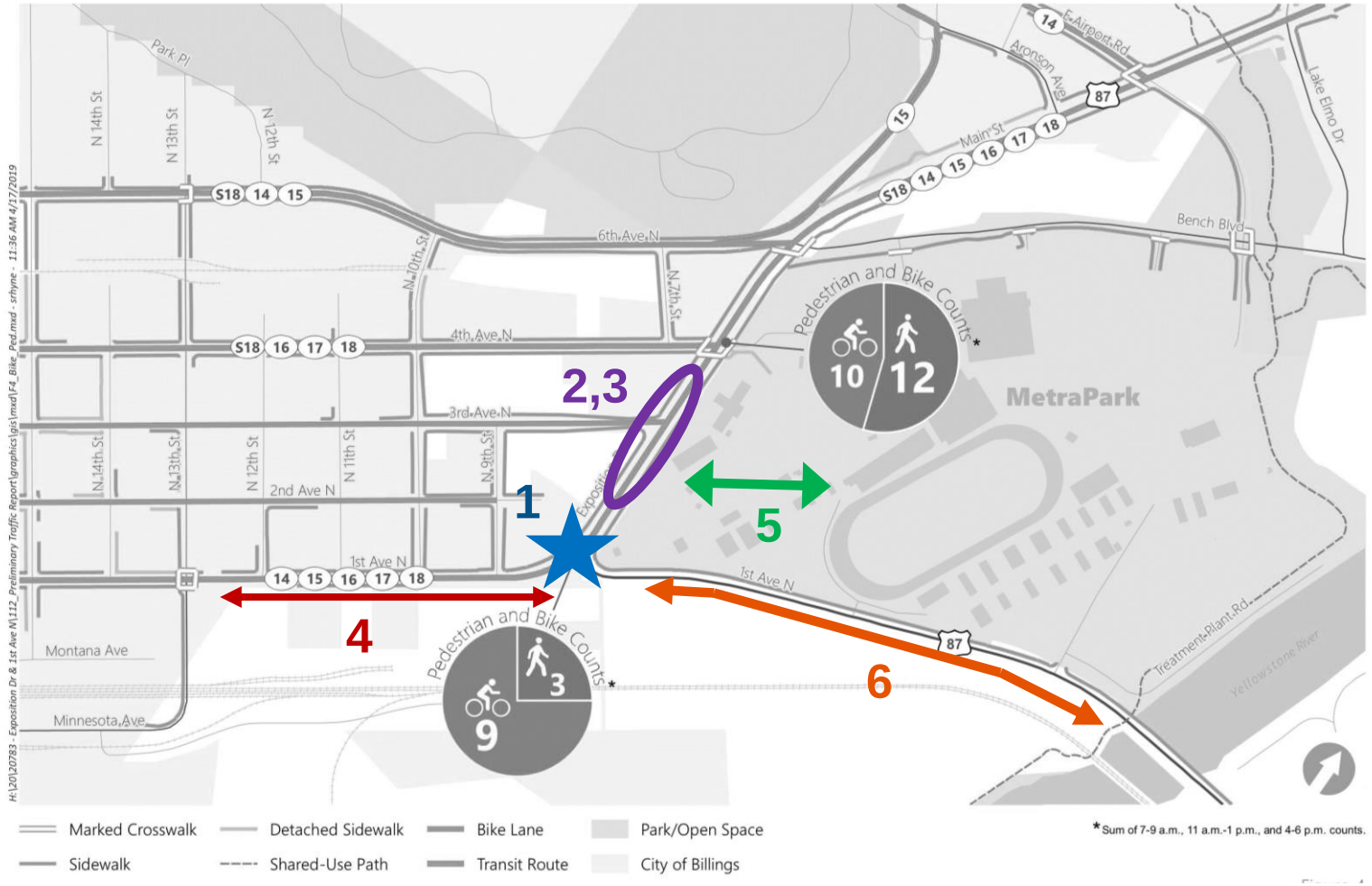
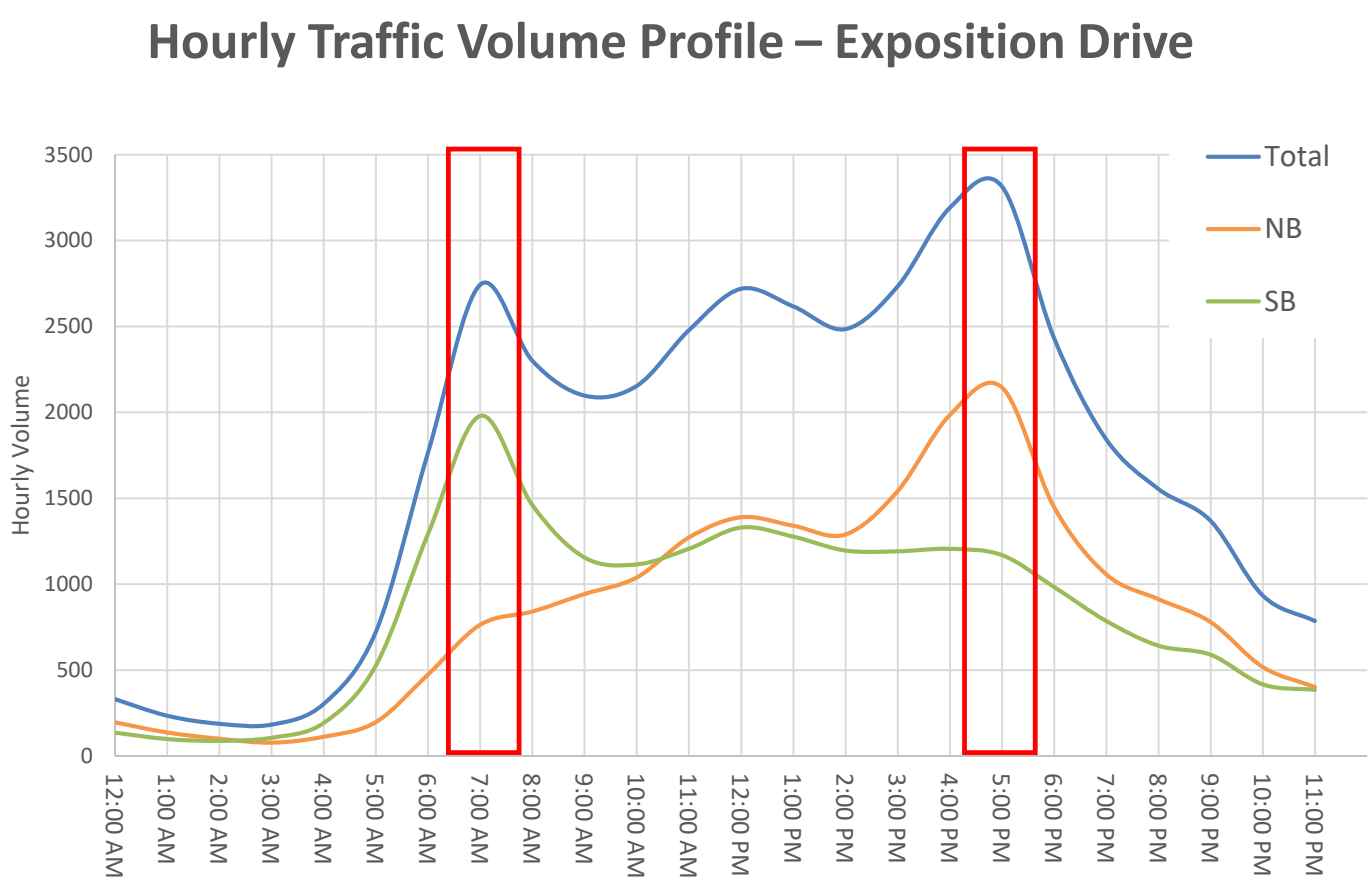
Pedestrian, Bicycle, and Transit Opportunities for Improvement



1. Add crossings at Exposition Dr/1st Ave N
2. Consider mid-block rectangular rapid flashing beacon (RRFB) or pedestrian hybrid beacon (PHB) crossing near 3rd Ave N
3. Grade-separated crossing proposed in 2017 Exposition Drive Pedestrian Crossing Study
4. Fill-in gaps in sidewalks
5. Explore connectivity to Jim Dutcher Trail through MetraPark
6. Explore connectivity to Jim Dutcher Trail parallel, but separated from US 87

Existing Traffic Volumes



- 43,000 vehicles per day
- Morning peak occurs at 7 AM
  - 72% southbound traffic
- Afternoon/evening peak occurs at 4:45 PM
  - 65% northbound traffic

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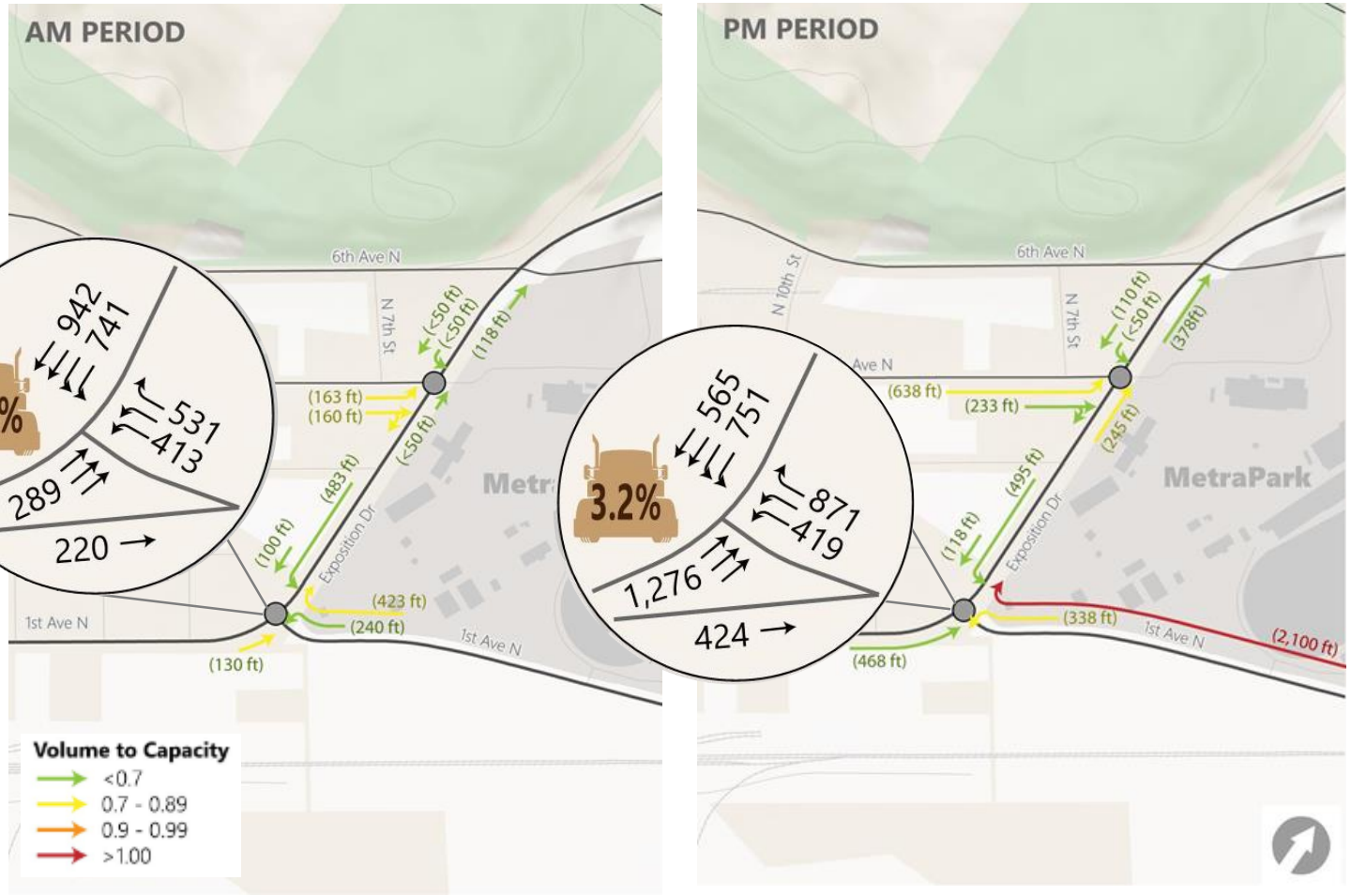
Existing Traffic Operations

- Videos of AM and PM traffic flow

Existing Traffic Operations



- Under capacity during AM peak
- At capacity during PM peak
  - Westbound right-turn
- Long queues
  - Westbound right-turn (1st Ave N)
  - Eastbound left-turn (4th Ave N)
  - Northbound through on Expo

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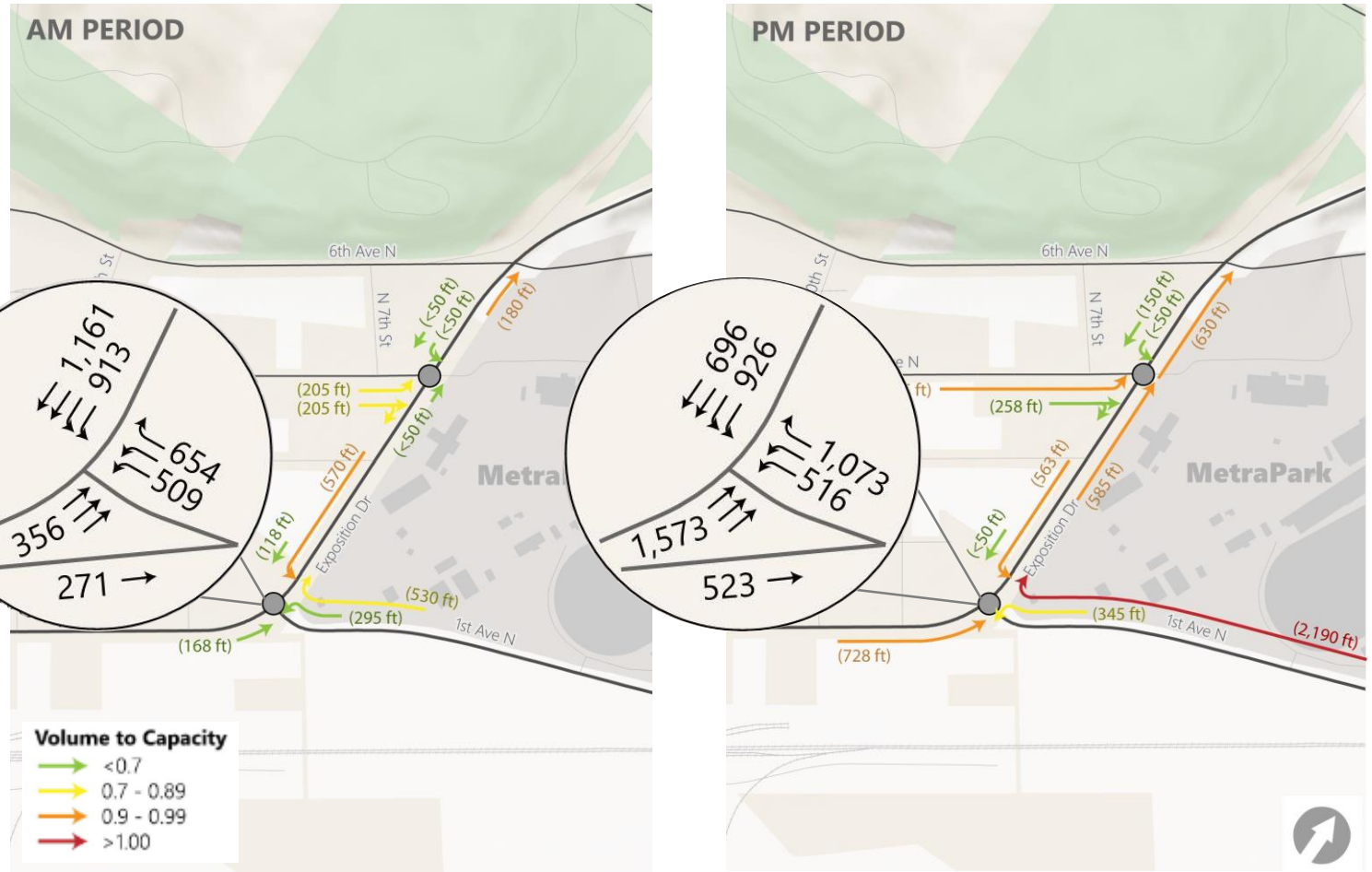
Future Year 2040 Traffic Operations



- Annual growth rate of 1%
- Existing deficiencies worsen

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Summary of Existing and Future Conditions

- Improve connectivity for people walking and biking
- Improve congested conditions during the PM peak hour

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Let’s Here From You!

- Comment Sheet (~10 min)
  - Do you live or own a business/property along the study corridor?
  - How do you use the intersection?
  - What challenges exist at the intersection?

- Any questions or comments?

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Tier 1 Alternatives

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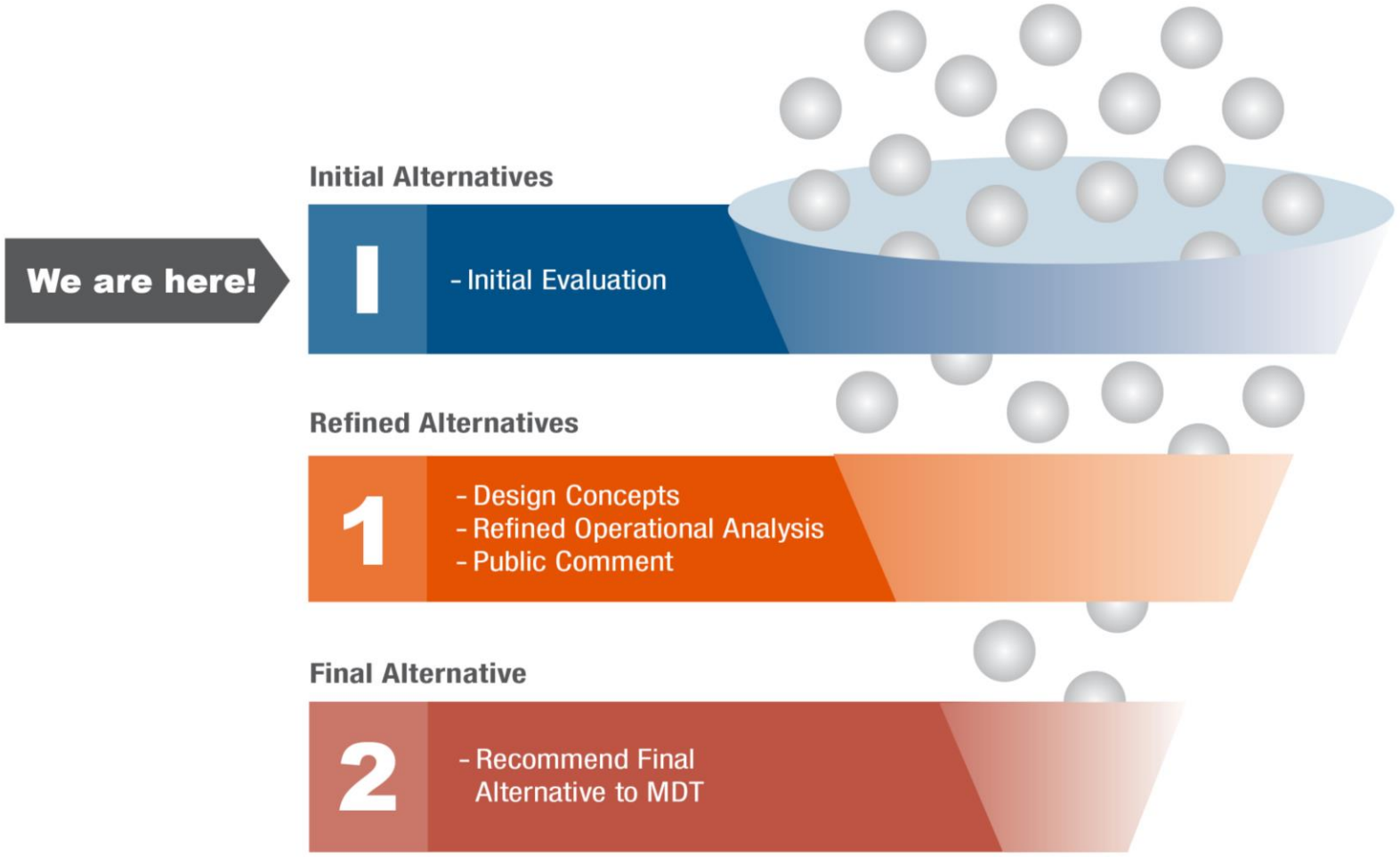
Tiered Approach



- Started with a range of options (~16)
- Tier 1
  - Evaluate five alternatives
  - Select two alternatives for Tier 2 evaluation

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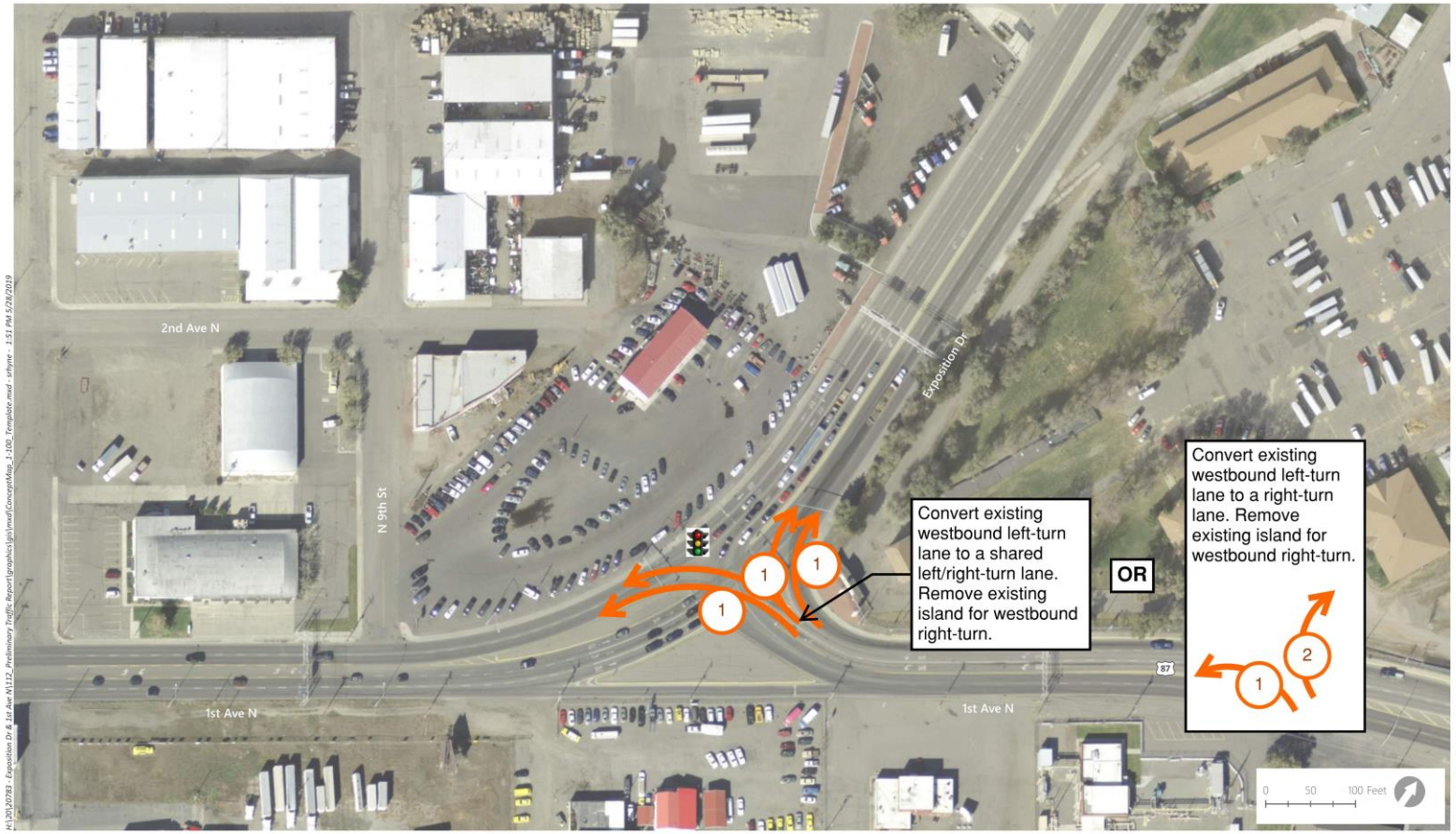
1A - No-Build

- Does not fix the problem
- Used to compare alternatives

1B - Westbound Shared Left/Right-Turn Lane or Single Westbound Left-Turn Lane and Dual Westbound Right-Turn Lanes



- Improves operations, but still above capacity
- Low-cost improvement

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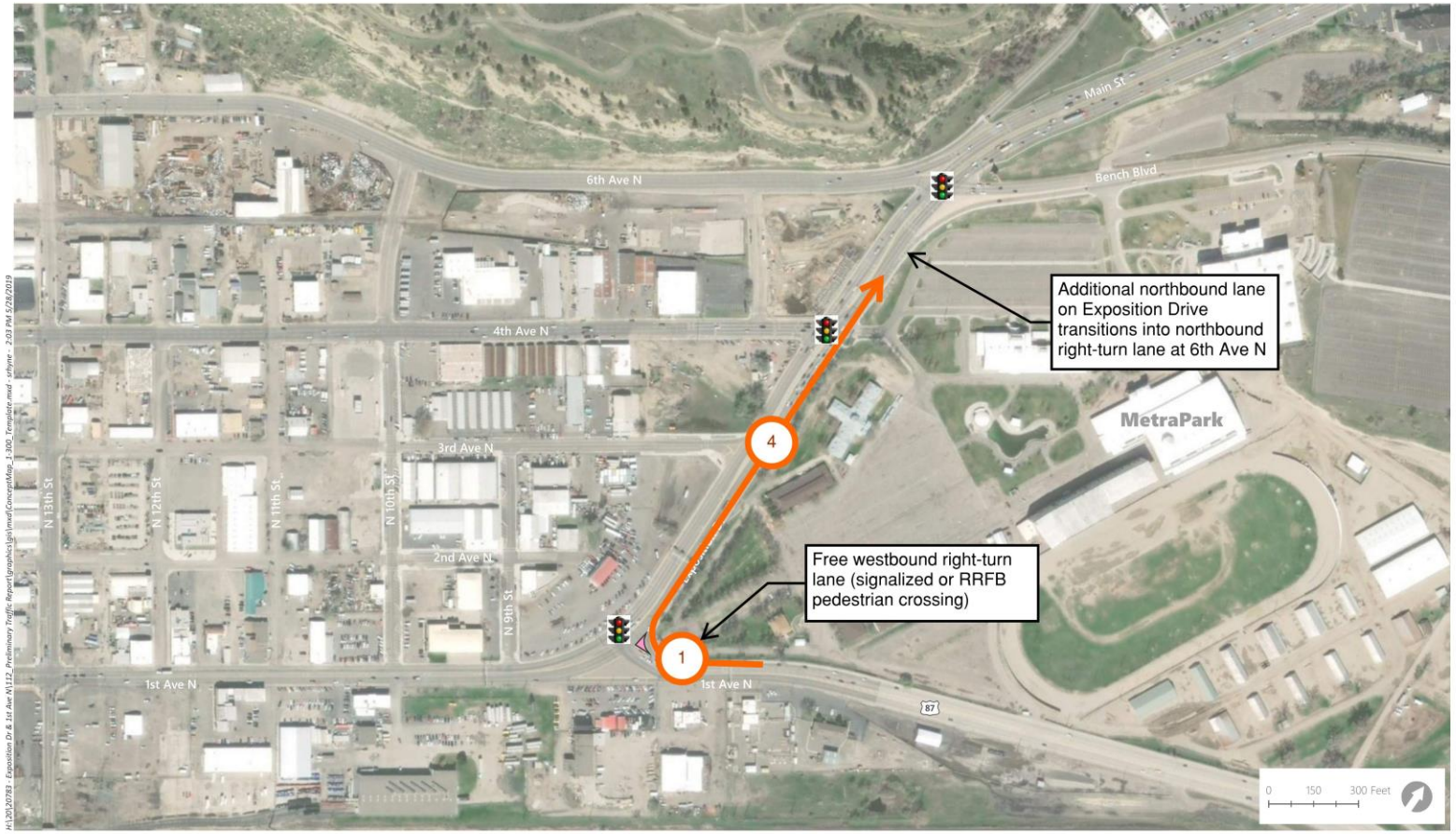
1C - Free Westbound Right-Turn Lane Plus 4th Northbound Through Lane

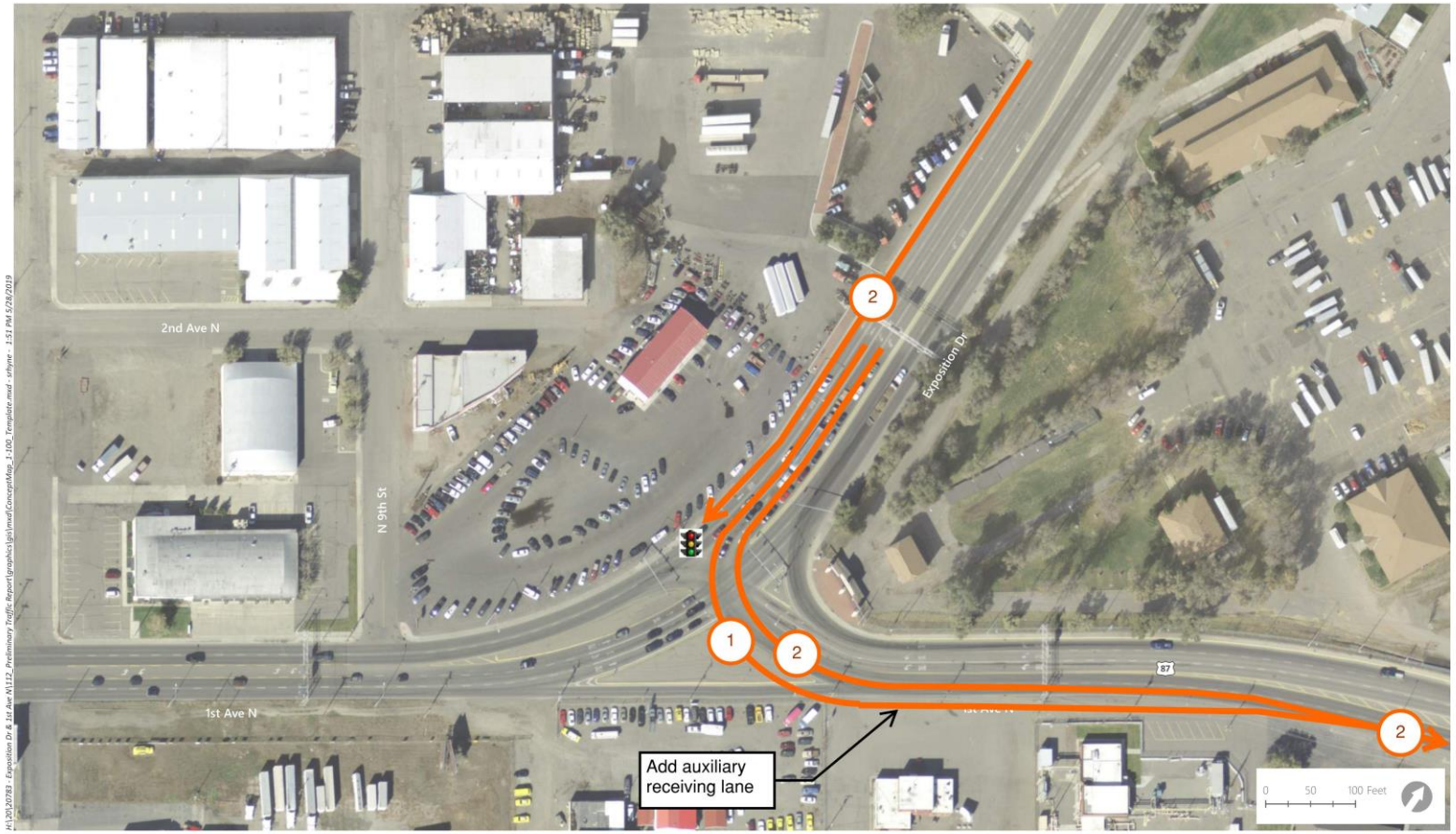


- Improves operations
- Simple capacity improvement

1D - Dual Westbound Right-Turn Lanes

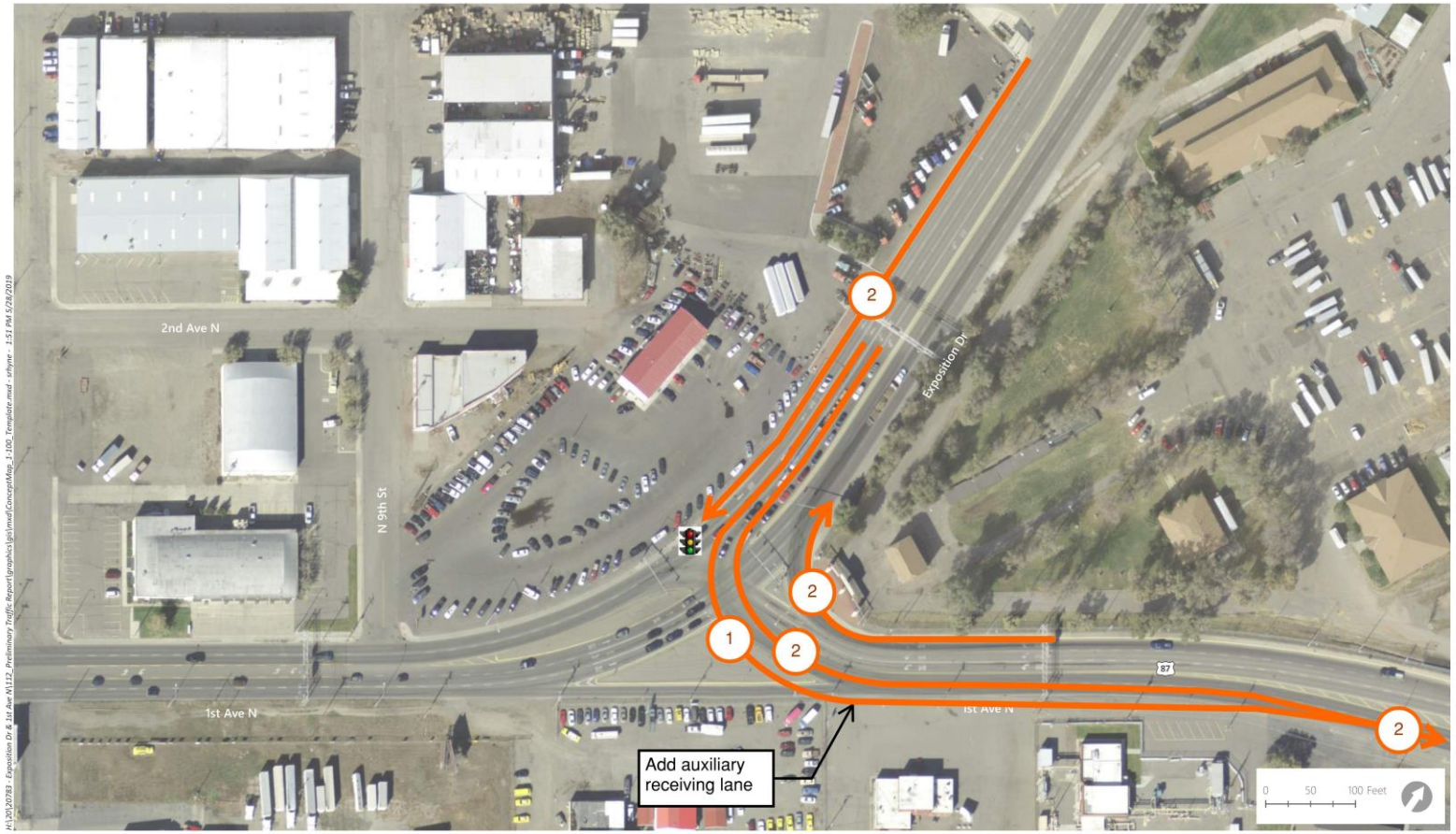
- Improves operations
- Simple capacity improvement

1E – Triple Southbound Left-Turn Lanes



- Minimal operational benefit – still above capacity
- Lane utilization concerns due to 3rd through lane on 1st Avenue N not extending across bridge

1F – Triple Southbound Left-Turn Lanes and Dual Westbound Right-Turn Lanes

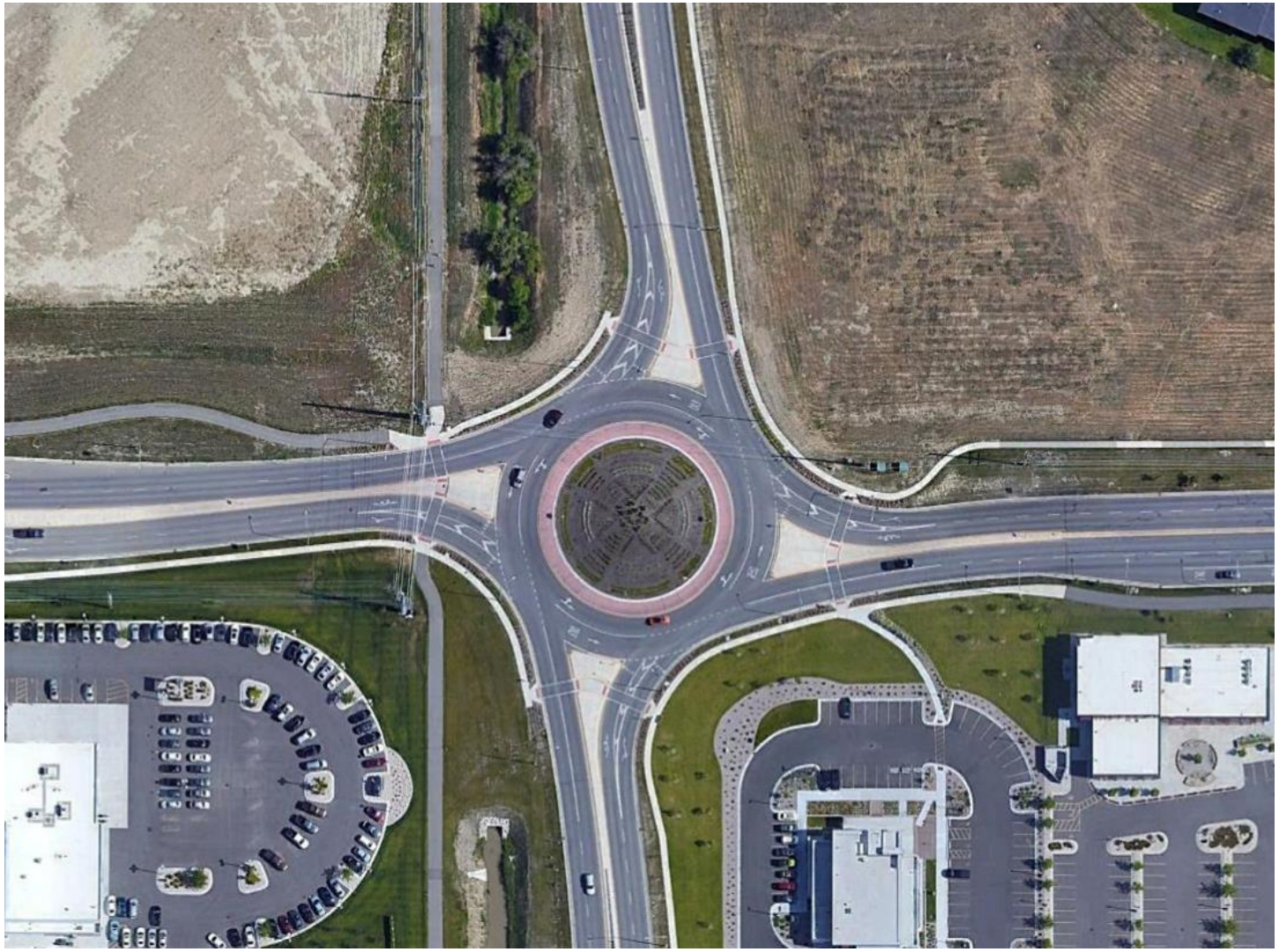


- Improves operations
- Minimal benefit from third southbound left-turn lane
- Lane utilization concerns due to 3rd through lane on 1st Avenue N not extending across bridge

2A – Multilane Roundabout (Three Circulatory Lanes)

- Does not improve operations

Multilane Roundabout Example



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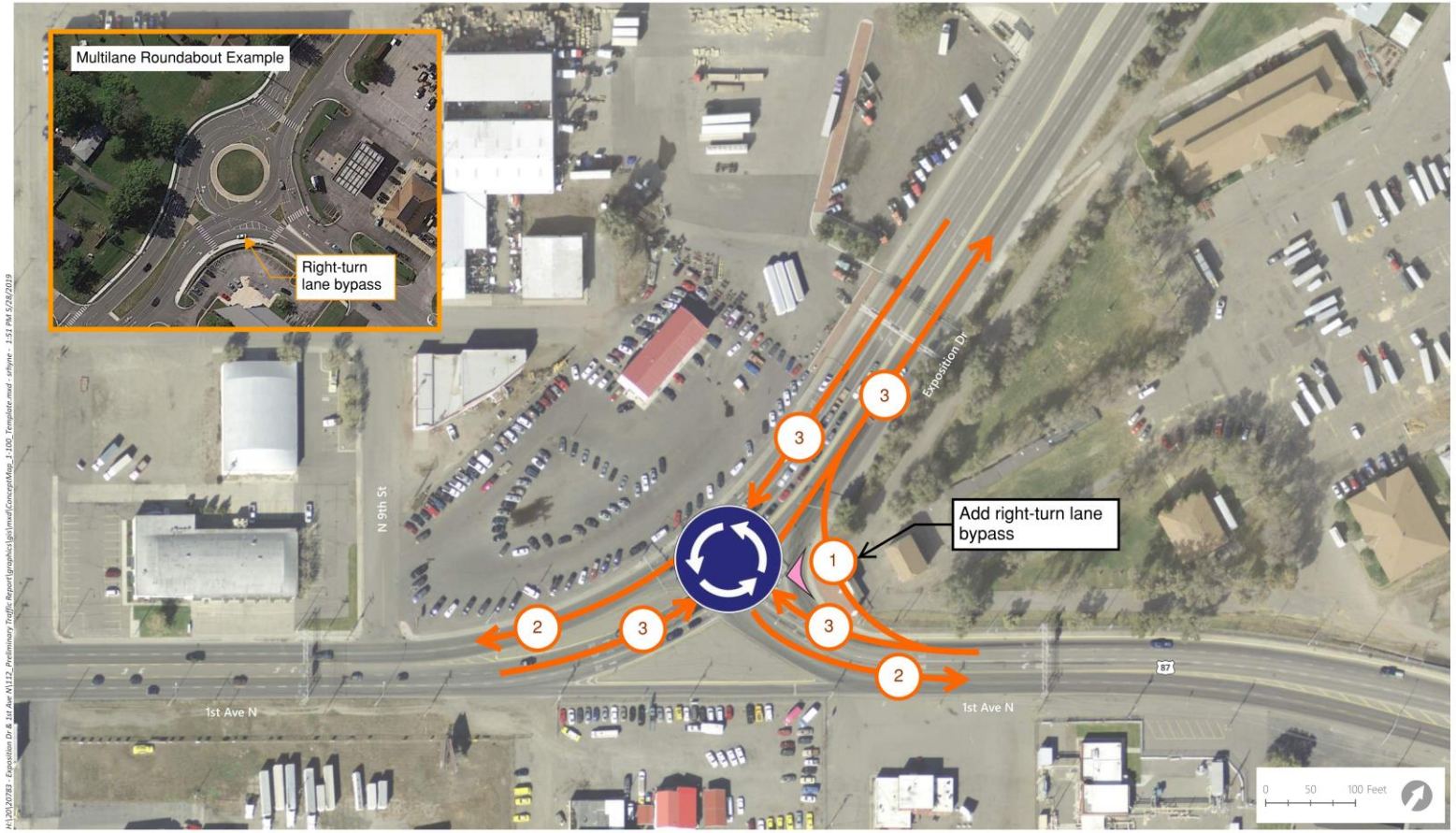
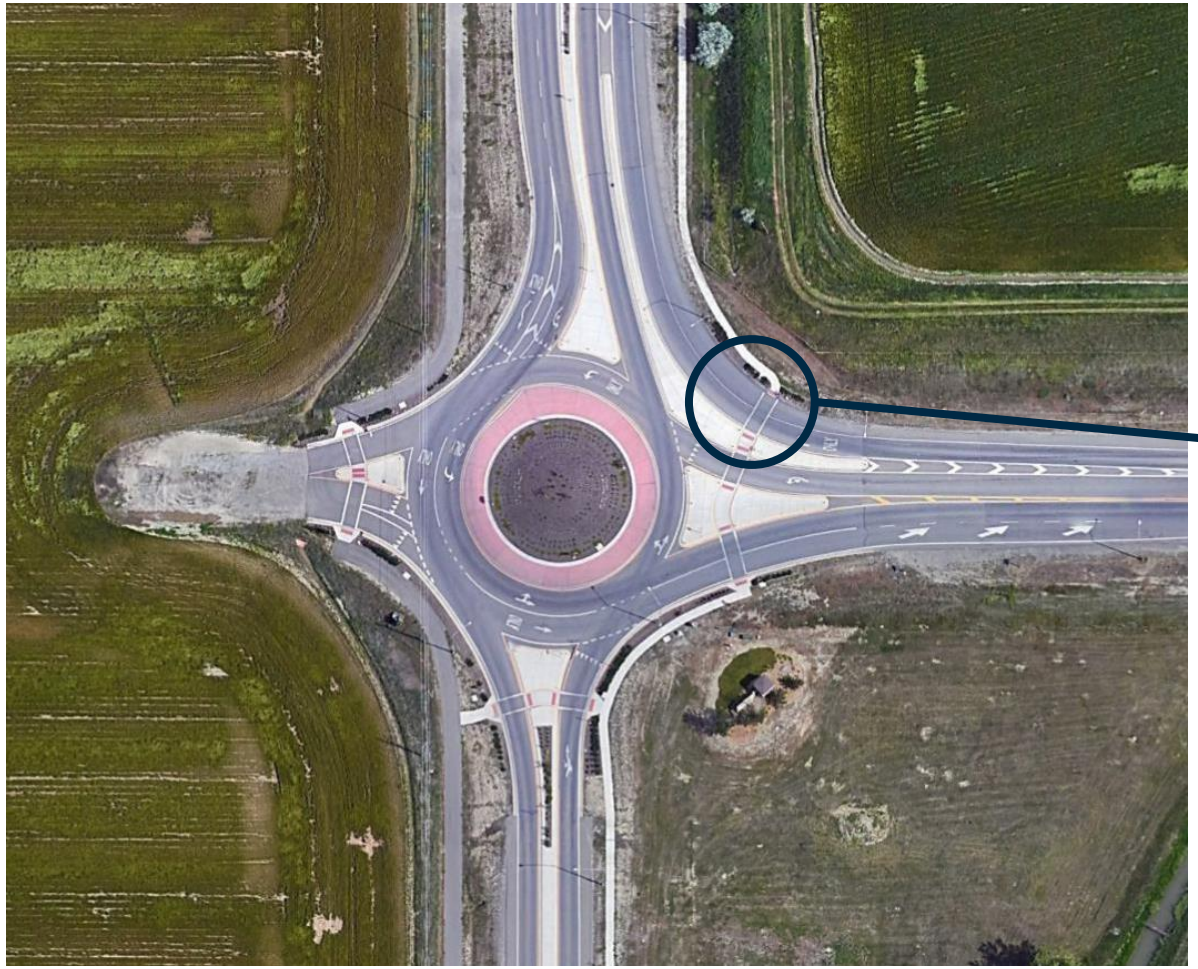
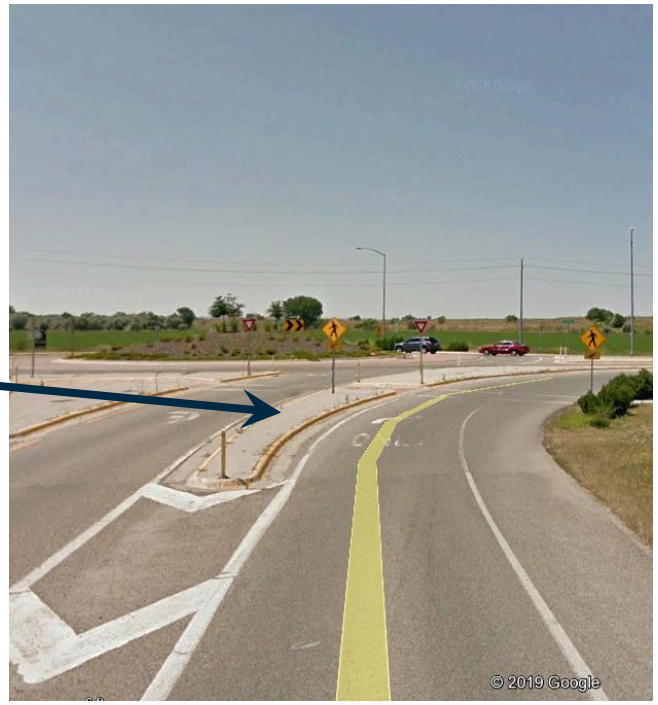
2B – Multilane Roundabout With Westbound Right-Turn Bypass (Three Circulatory Lanes)



- Does not improve operations

Multilane Roundabout With Right-Turn Bypass Example





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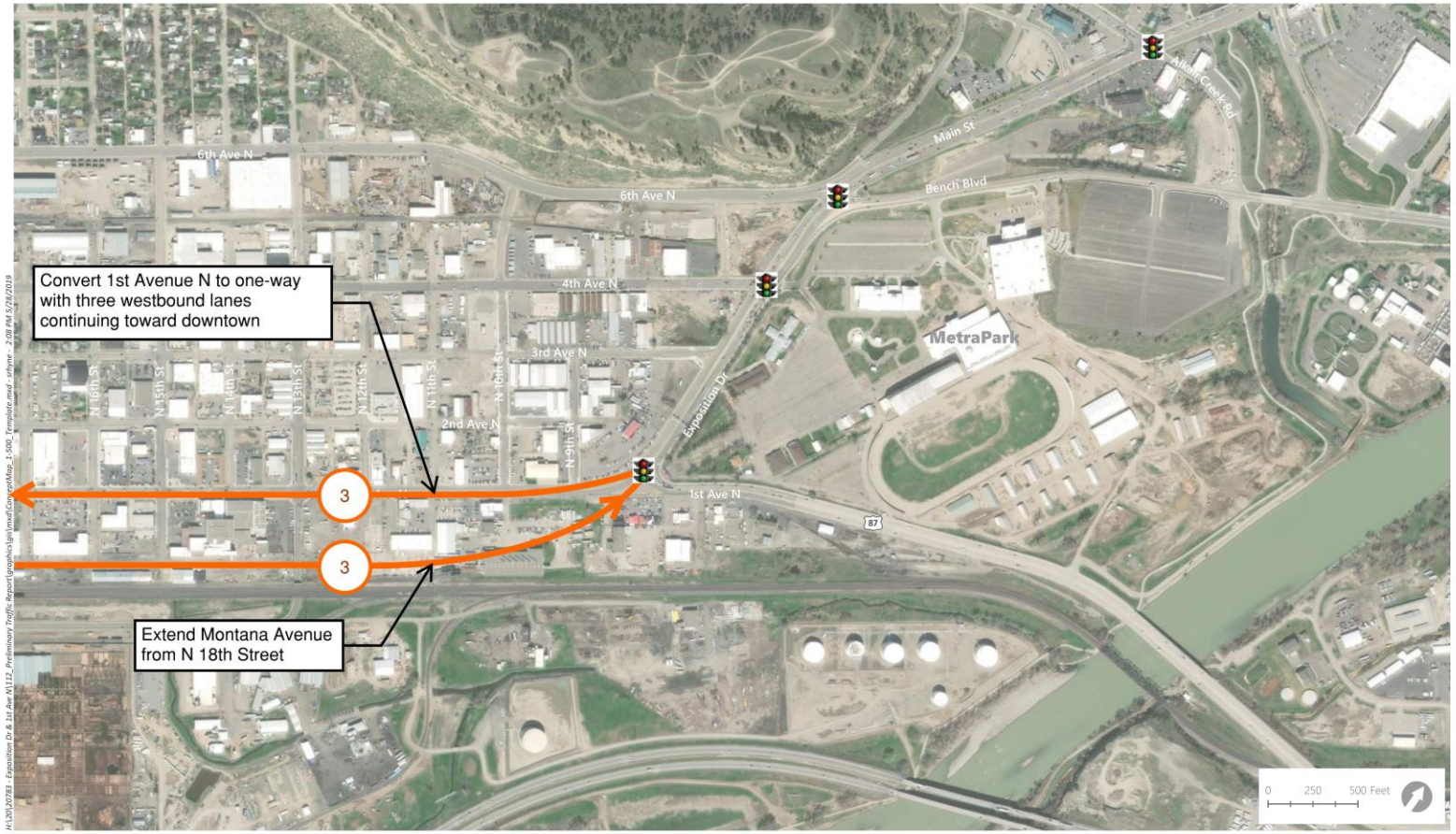
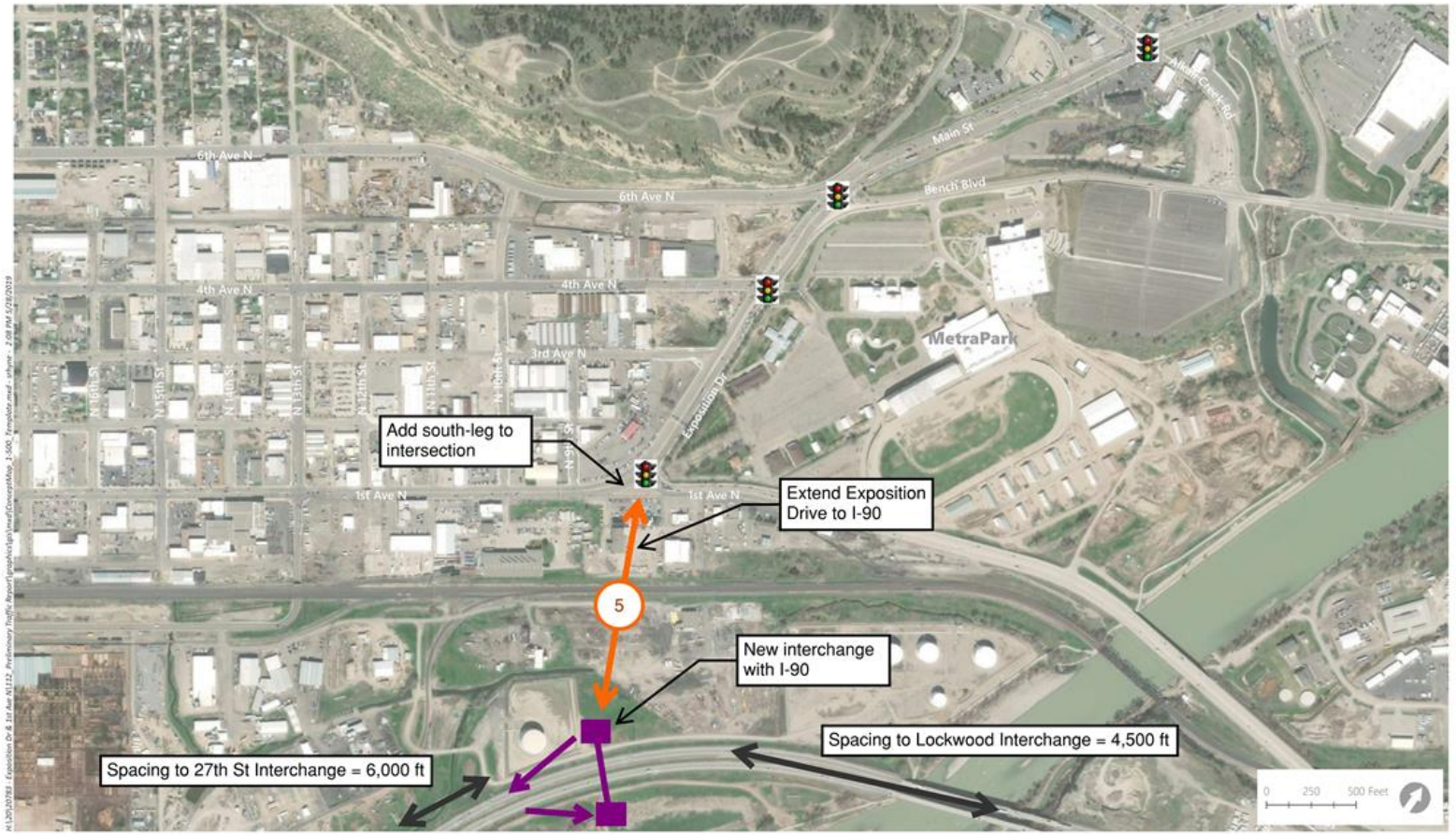
3A – Extend Montana Avenue/1st Avenue North One-Way Couplet



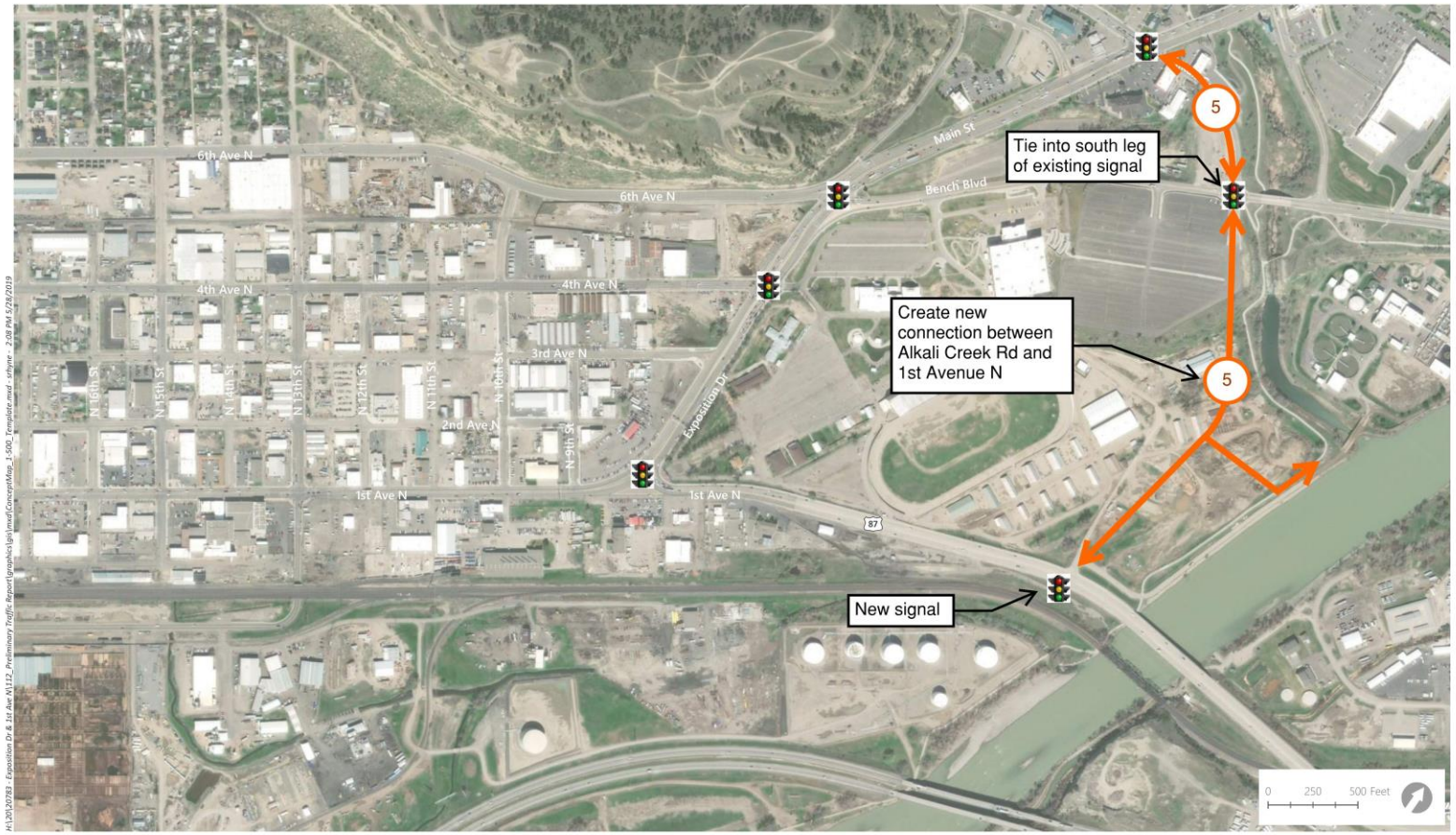
- Does not improve operations

3B – Extend Exposition Drive to I-90 With New Interchange



- Does not improve operations

3C – New Connection Through MetraPark



EXPO&1ST Signal Control (X) Movement Number of Lanes

Figure 3C
New Connection through MetraPark

- Improves operations
- High-cost and impacts to MetraPark

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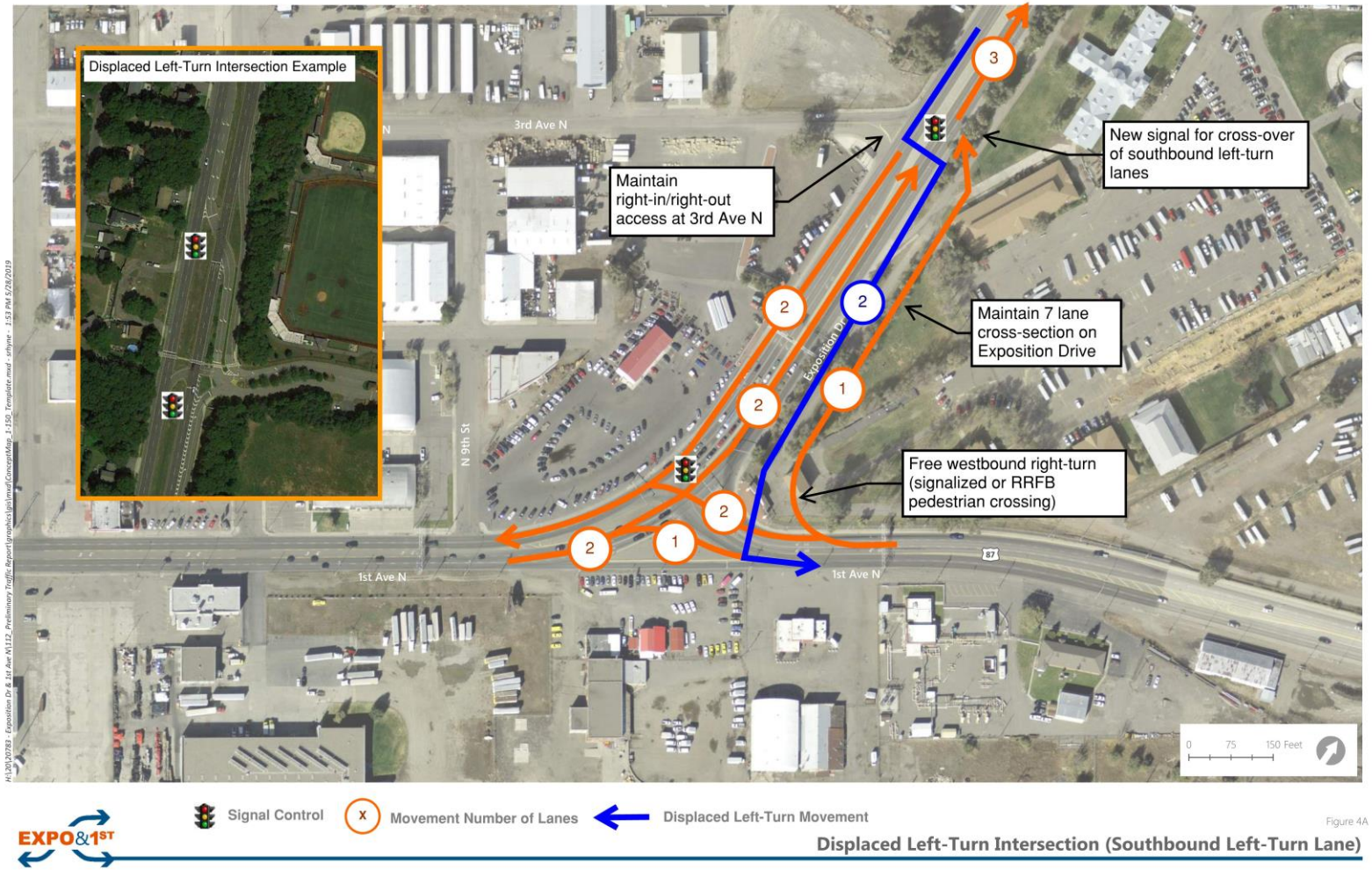
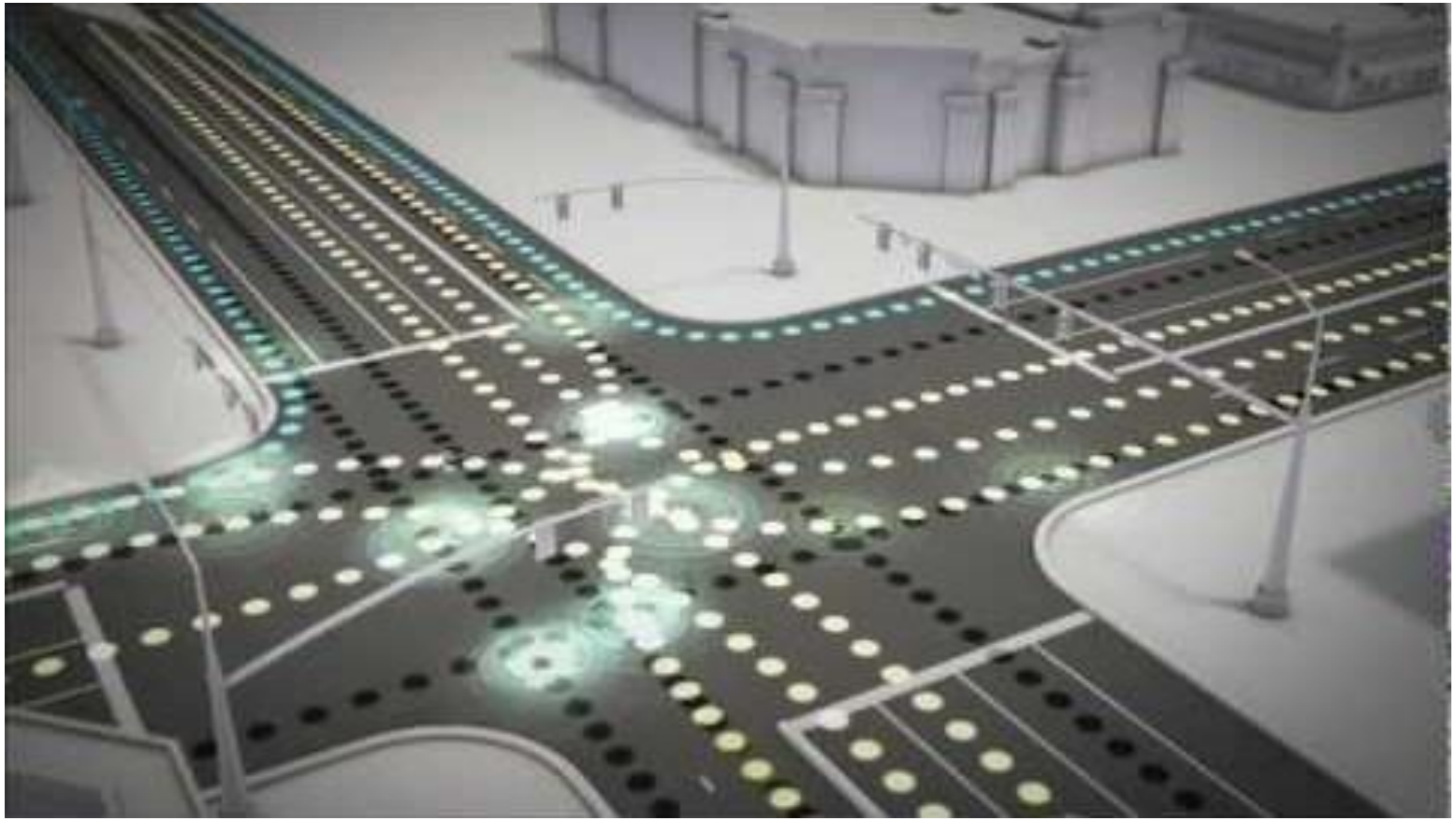
4A – Displaced Left-Turn Intersection (Southbound Left-Turn Lane)



- Improves operations
- Managing queues is critical with this option due to short spacing of signals at Expo/1st, new signal, Expo/4th

Displaced Left-Turn Intersection Video



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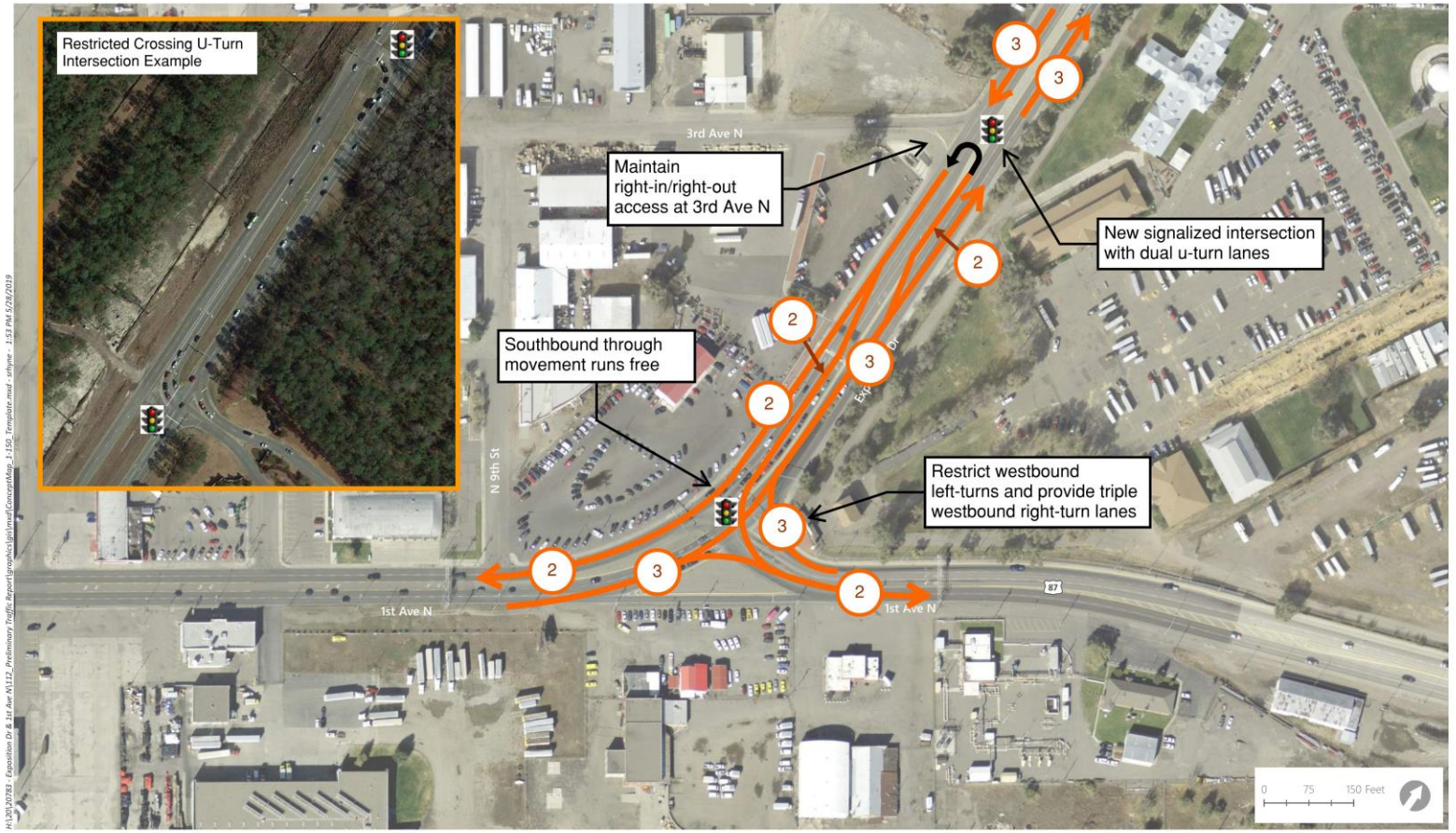
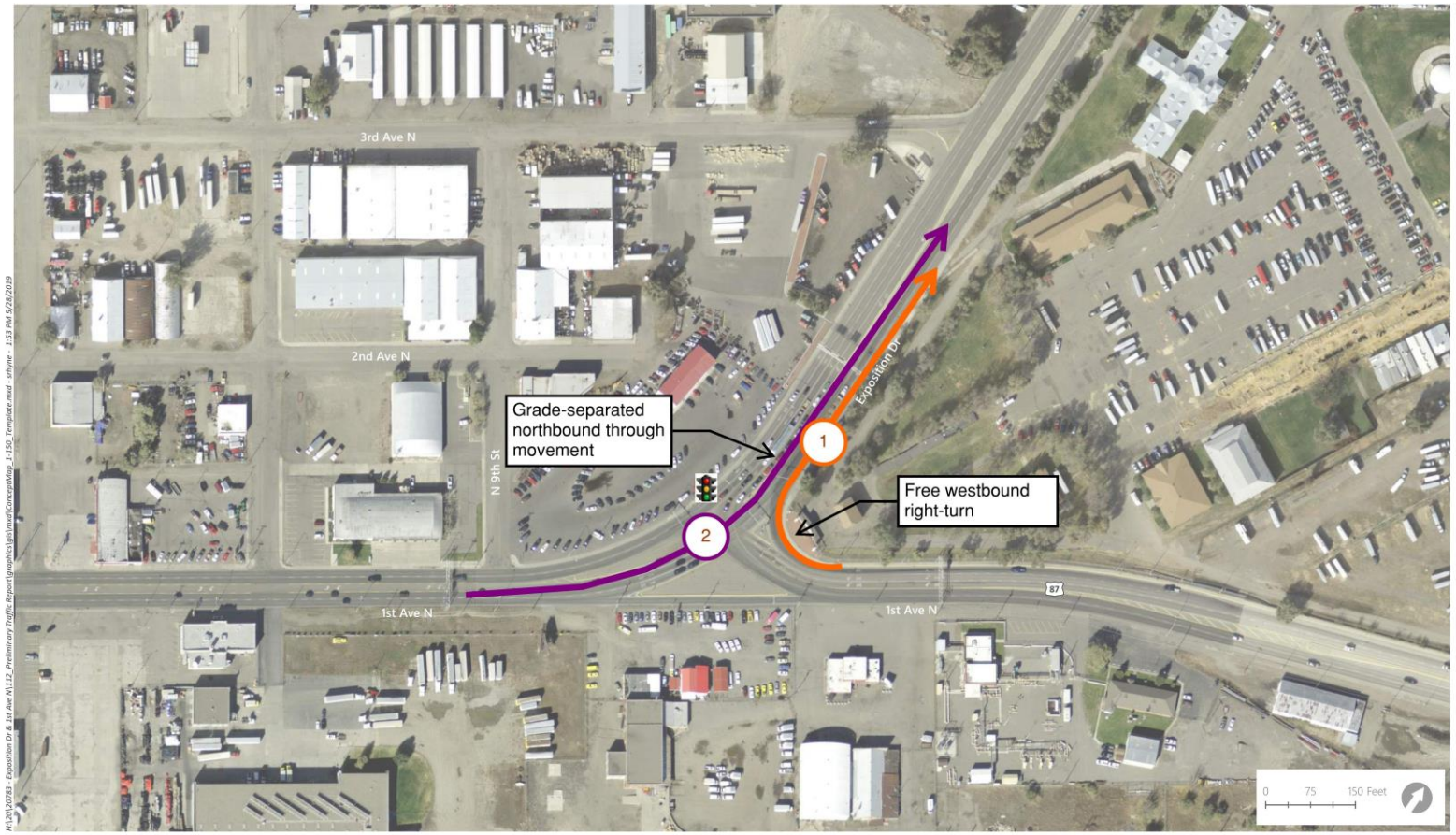
4B – Restricted Crossing U-Turn Intersection (Westbound Left-Turn Lane)



- Improves operations
- U-turn movement can be difficult for trucks

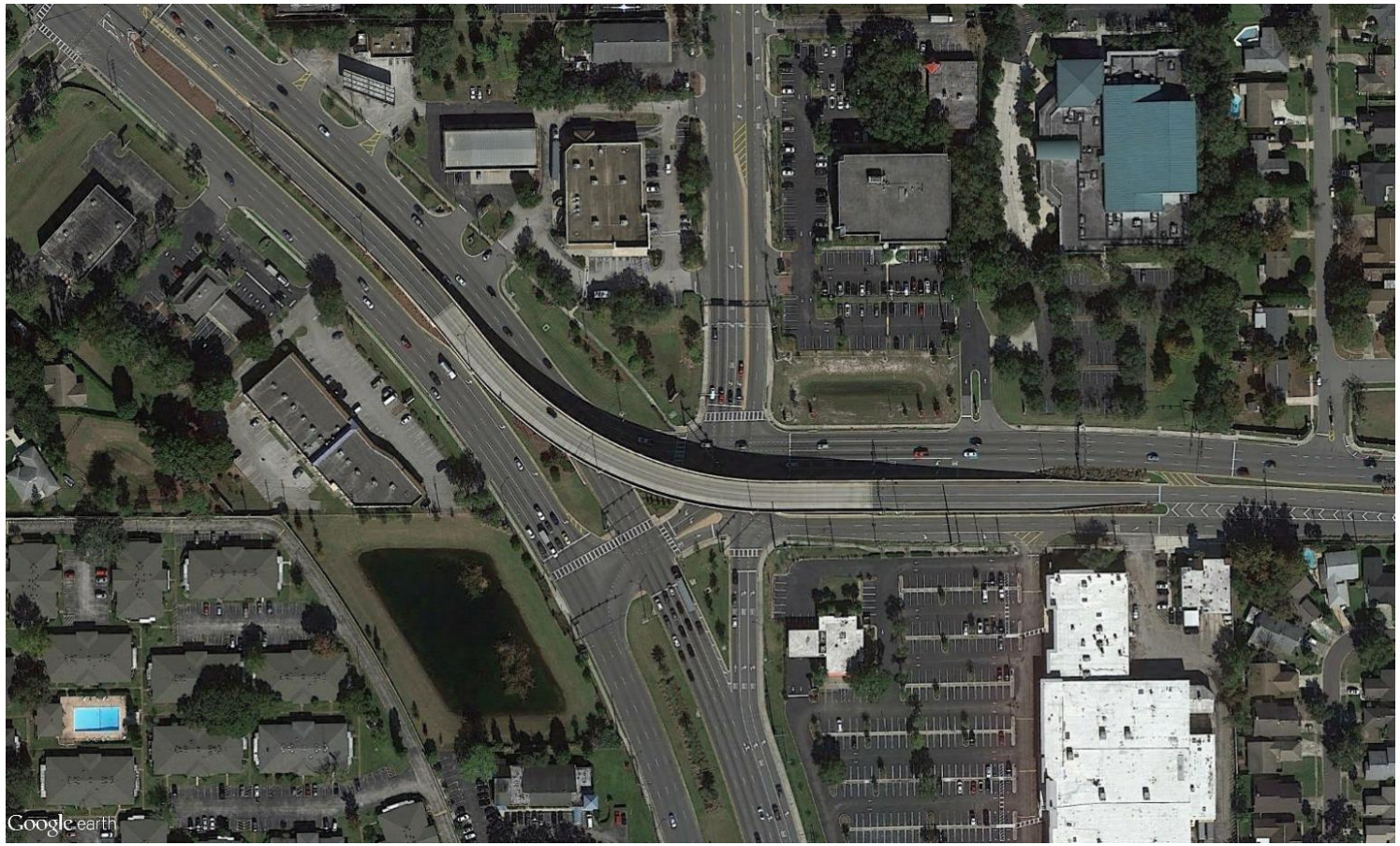
Restricted Crossing U-Turn Intersection Example

4C – Grade Separated Overpass for Northbound-Through Lanes



- Improves operations
- High cost and other potential impacts (e.g. noise, visual) due to grade-separation

Grade-Separated Overpass Example



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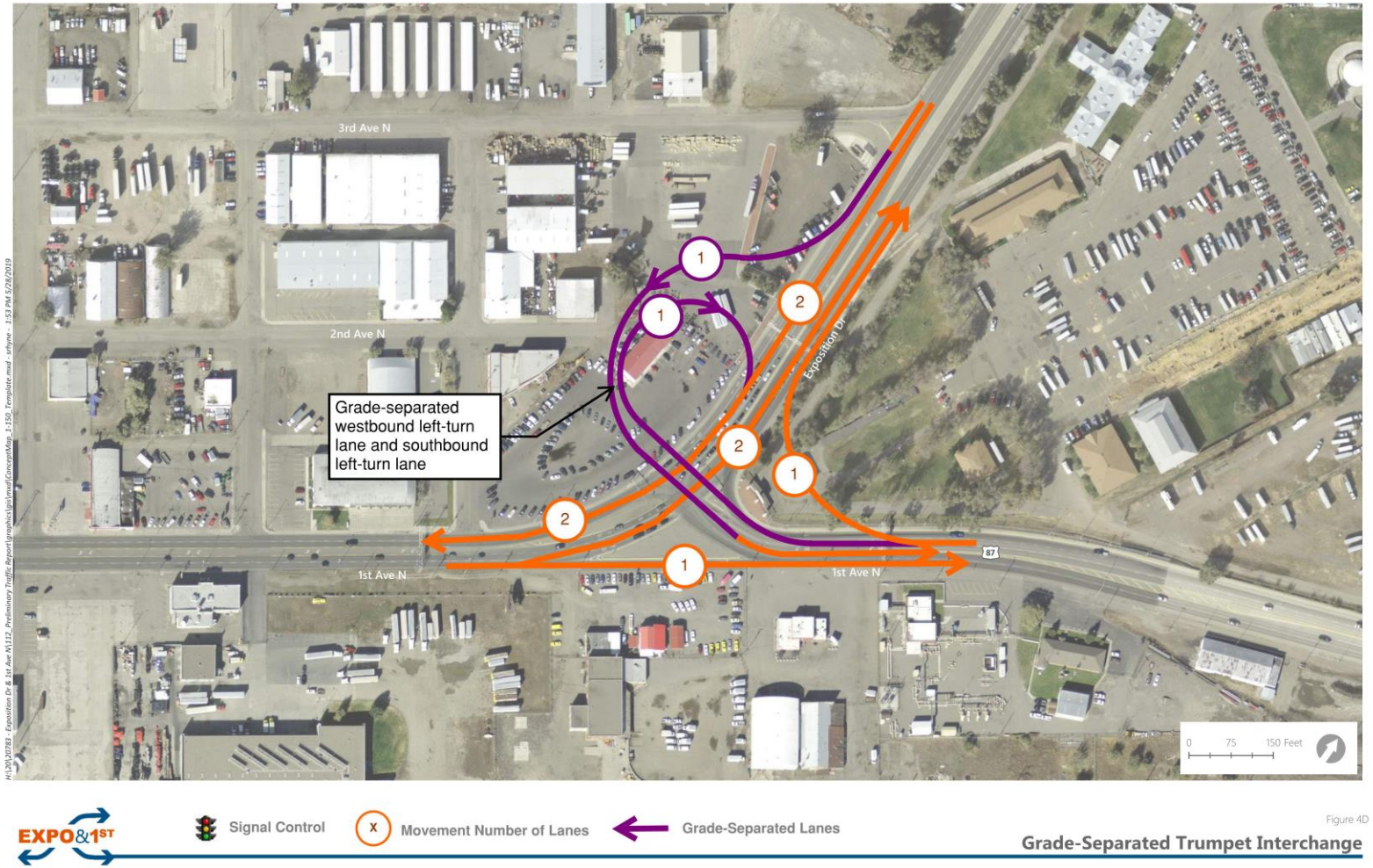
4D – Grade Separated Trumpet Interchange



- Improves operations
- High cost and other potential impacts (e.g. noise, visual, right-of-way) due to grade-separation

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Trumpet Interchange Example

Summary of Initial Alternatives

Figure #	Configuration	2040 PM Peak Hour Intersection V/C (LOS)	Preliminary Recommendation by Consultant Team
1A	No-Build	1.2 (E)	✓
1B	WB Shared Left/Right Turn Lane OR Dual WB Right-Turn Lanes and Single Left-Turn Lane	1.06 (E) / 1.07 (E)	✓
1C	Free WB Right-Turn Lane Plus 4th NB Through Lane	0.90 (D)	✓
1D	Dual WB Right-Turn Lanes	0.90 (D)	✓
1E	Triple SB Left-Turn Lanes	1.20 (E)	X
1F	Triple SB Left-Turn Lanes and Dual WB Right-Turn Lanes	0.84 (D)	X
2A	Multilane Roundabout (3 Circulatory Lanes)	1.43 (F)	X
2B	Multilane Roundabout with WB Right-Turn Bypass (3 Circulatory Lanes)	1.43 (F)	X
3A	Extend Montana Ave/1st Avenue North One-Way Couplet	1.26 (F)	X
3B	Extend Exposition Drive to I-90 with New Interchange	1.20 (F)	X
3C	New Connection Through MetraPark	0.62 (C)	X
4A	Displaced Left-Turn Intersection (SB Left-Turn)	0.82 (B)	✓
4B	Restricted Crossing U-Turn Intersection (WB Left-Turn)	0.80 (B)	X
4C	Grade Separated Overpass for NB Through Lanes	0.51 (B)	X
4D	Grade Separated Trumpet Interchange	0.29 (B)	X

Recommended Initial Alternatives for Tier 1 (Consultant Team)

- No-Build (1A)
- WB Shared Left/Right-Turn Lane or Single Left-Turn/Dual Right-Turn Lanes (1B)
- Free WB Right-Turn Lane (1C)
- Dual WB Right-Turn Lanes (1D)
- Displaced Left-Turn Intersection (4A)

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Let’s Hear From You!

- Comment Sheet
  - Any comments or concerns on the initial alternatives?
  - What would be a successful outcome of the project?

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Next Steps

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Next Steps

- PAC action—Return comment sheet by July 3rd
- Technical team will post materials to project website
  - https://www.mdt.mt.gov/pubinvolve/expofirst/
- Technical team will evaluate Tier 1 Alternatives
- Next PAC Meetings:
  - September 18-20 (Exact Date/Time TBD)
    - Results from Tier 1 Analysis
    - Confirm Tier 2 Alternatives
  - November 20-22 (Exact Date/Time TBD)
    - Results from Tier 2 Analysis
    - Confirm Final Alternative
    - Open House

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