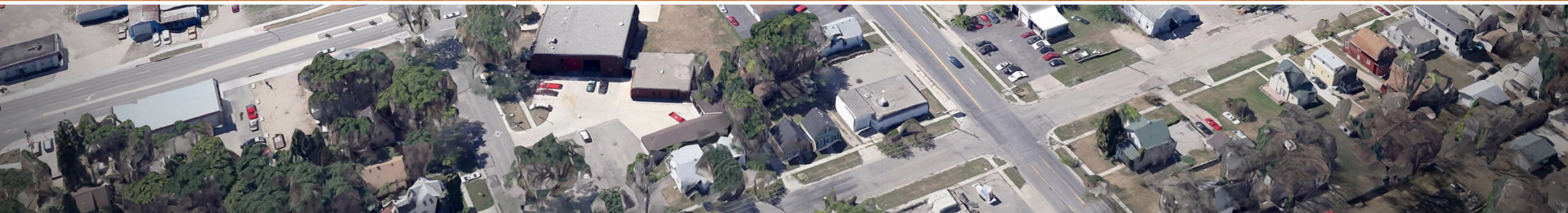




# Public Input Meeting #1

October 28<sup>th</sup>, 2014



# Transportation Issues



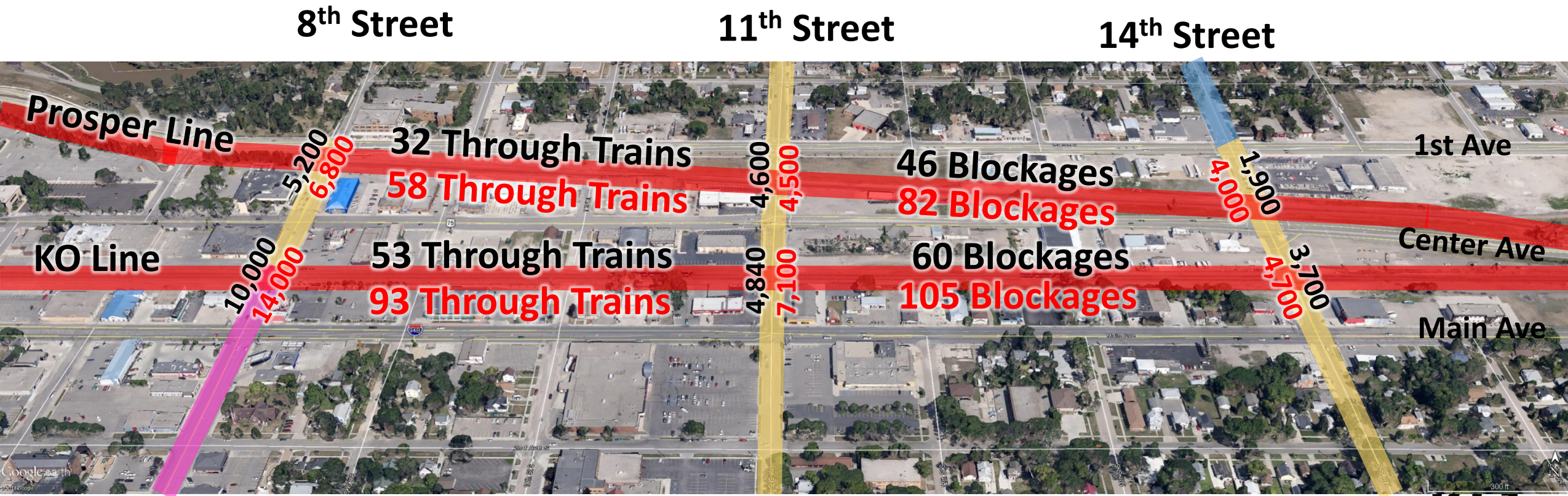
# Study Area

## Legend

- # 2014 Daily Traffic
- # 2040 Daily Traffic

KO Line = 3.9 Min/Train  
 Closed 16% (2014) to 28% (2040) of Day

Prosper Line = 5.9 Min/Train  
 Closed 19% (2014) to 34% (2040) of Day



Principal Arterial

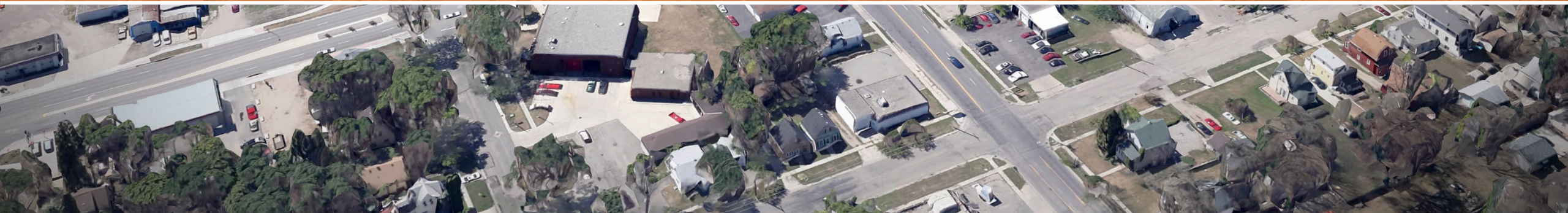
Minor Arterial

Collector

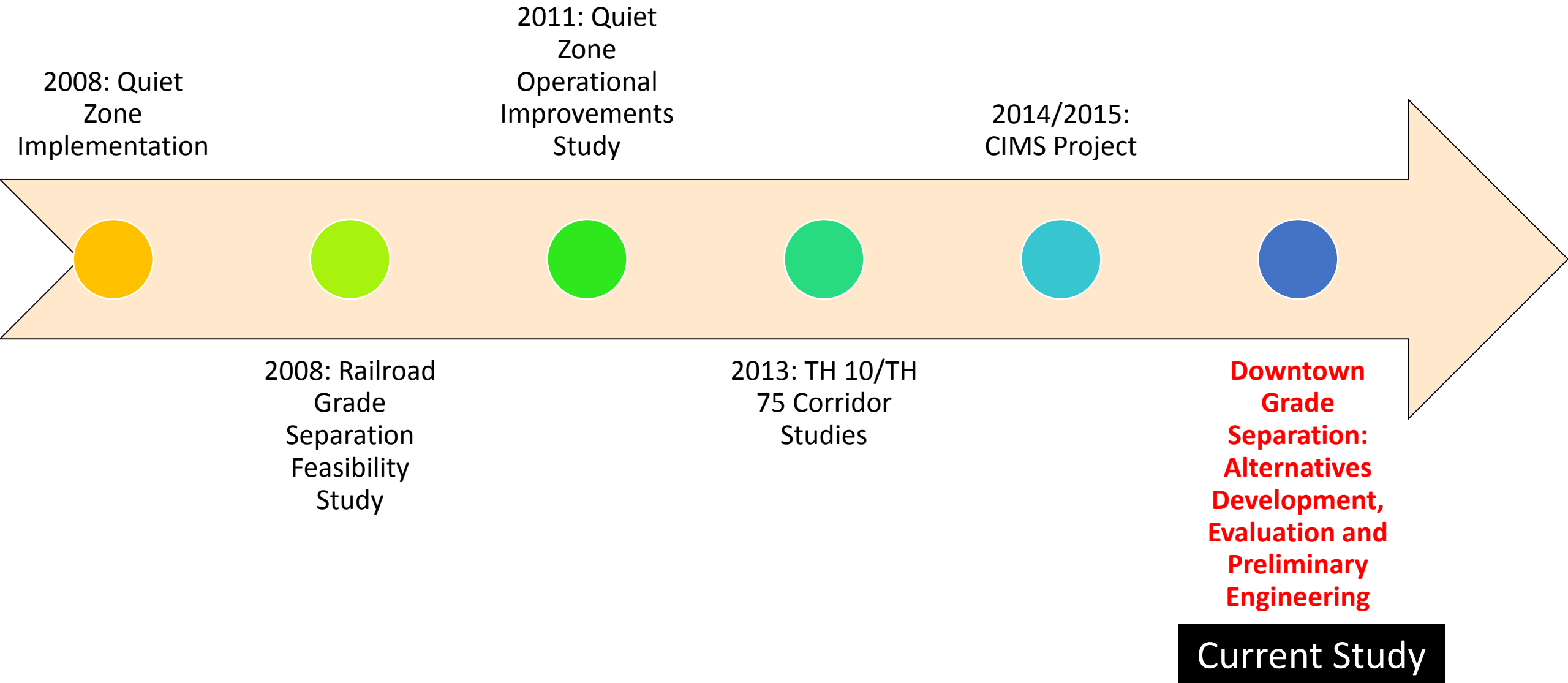




# Past Studies

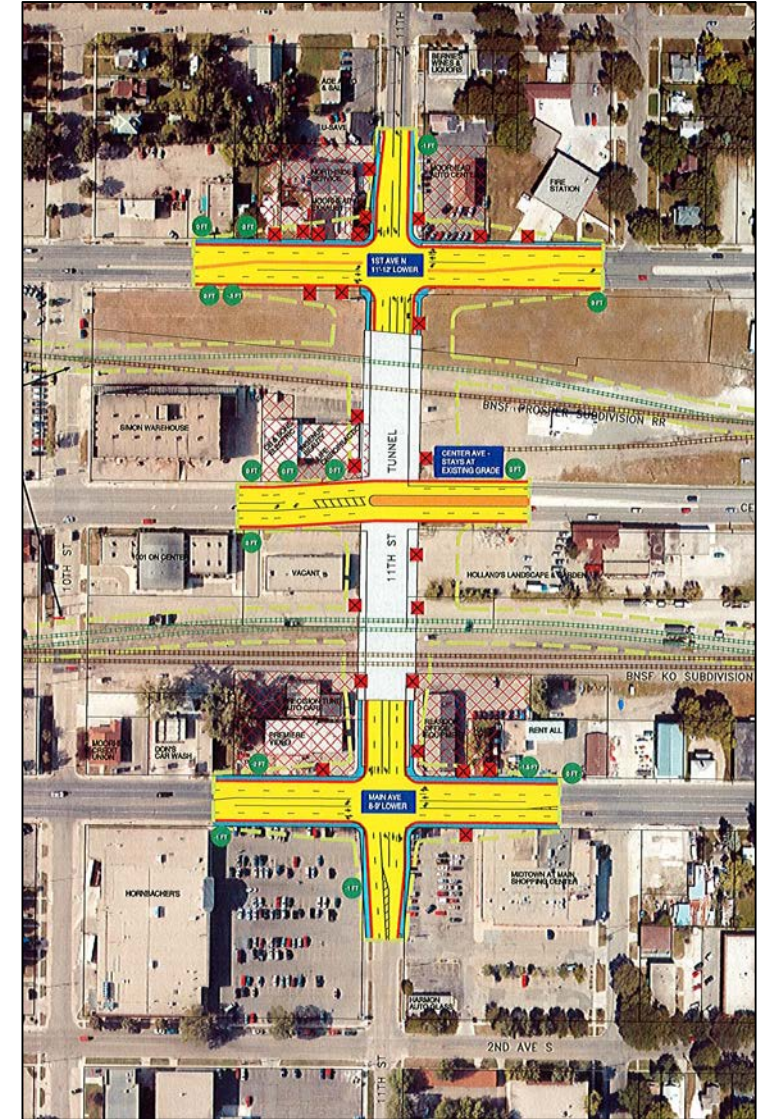
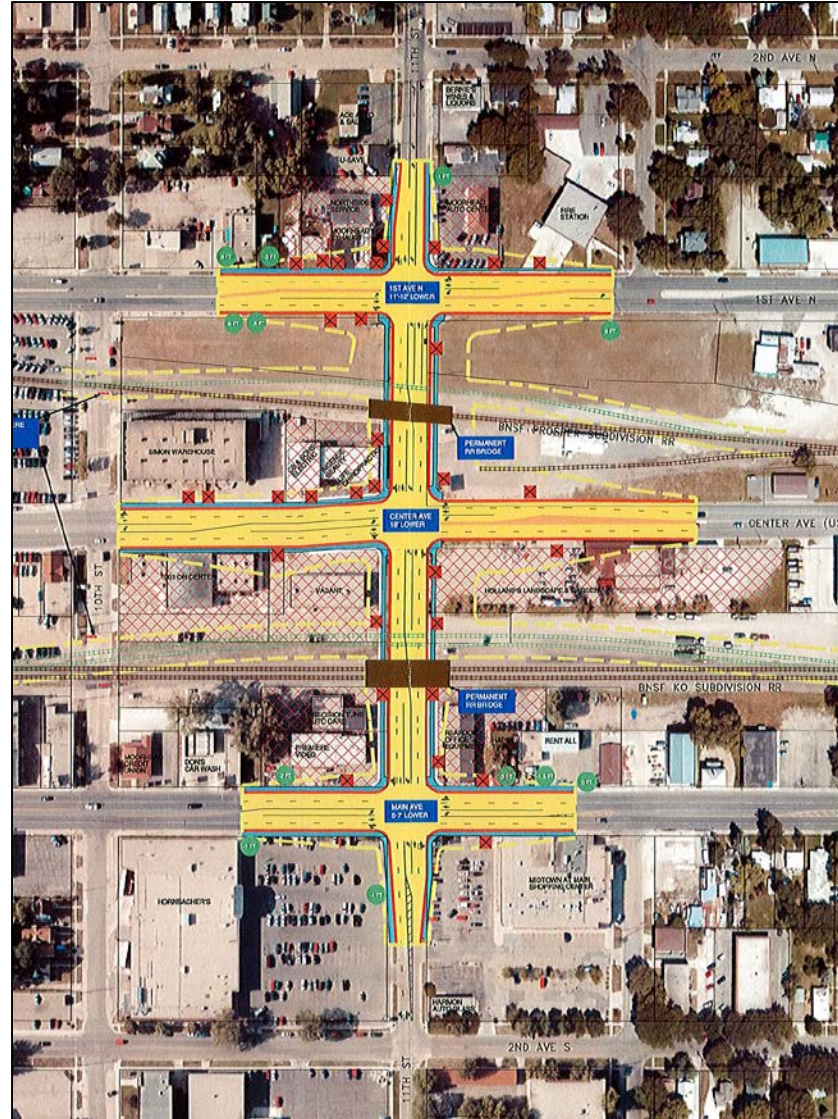


# Previous Studies



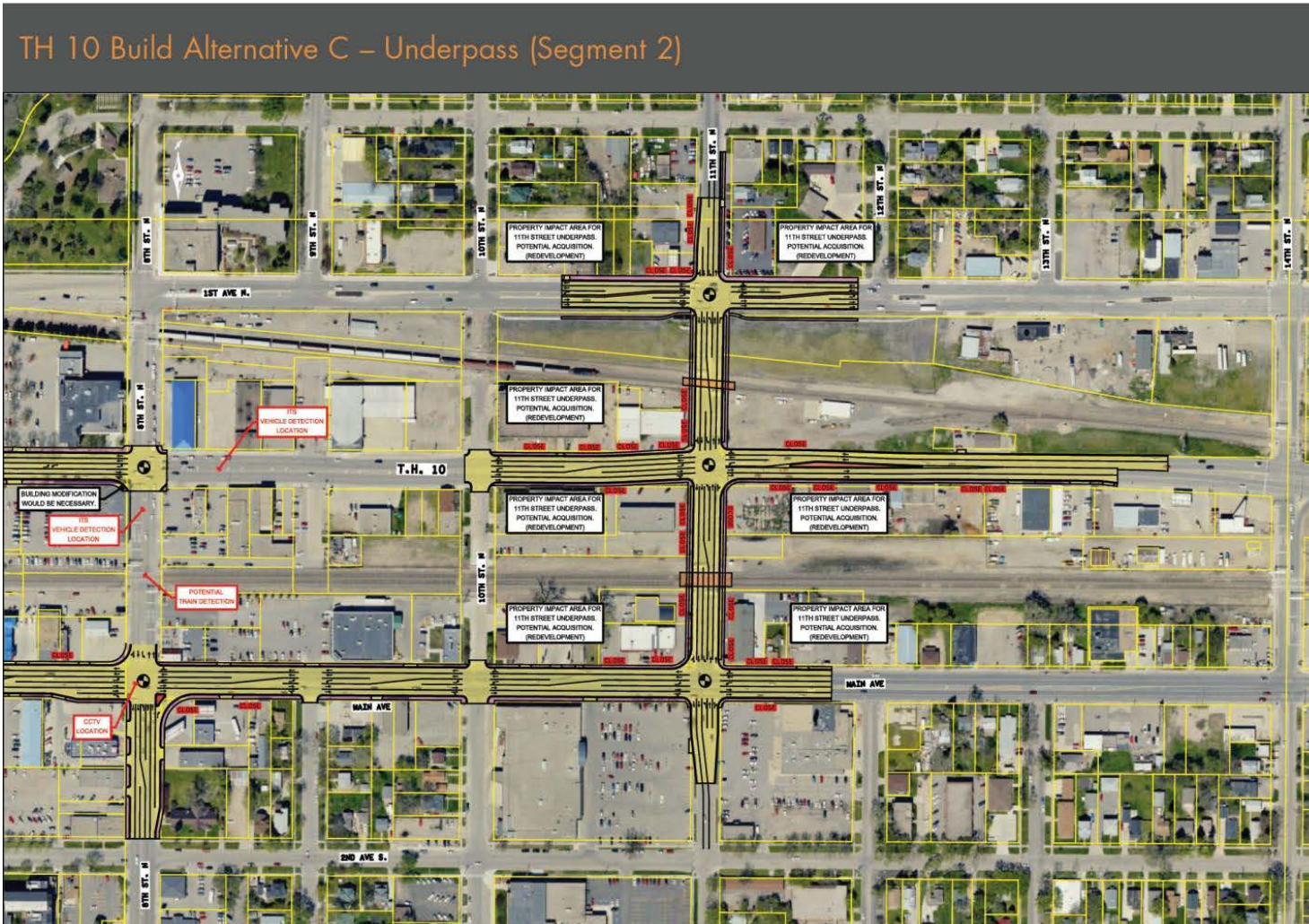
# Grade Separation Feasibility Study

- » Fatal flaws at local road crossings:
  - » 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup> and 10<sup>th</sup> Streets
- » Studied 8<sup>th</sup>, 11<sup>th</sup> and 14<sup>th</sup> Streets in Detail
- » 11<sup>th</sup> Street was Most Favorable Location

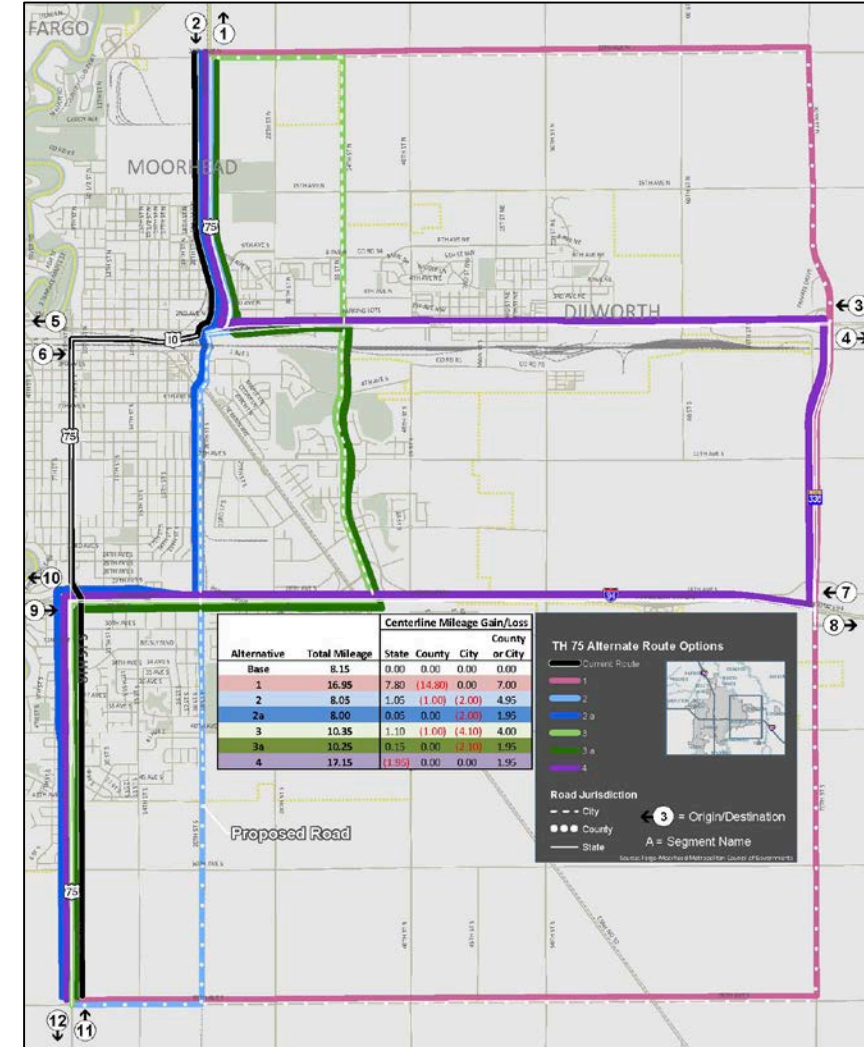


# TH 10 and 75 Corridor Studies

## Capacity Improvements

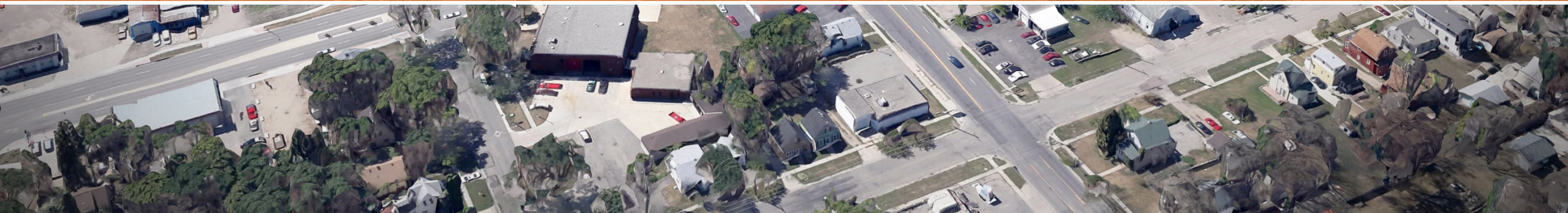


## TH 75 Reroute Analysis





# Grade Separation Demand





# FHWA Grade Separation Criteria

I. Roadway Designation

II. Access Control

III. Highway Speeds

IV. Average Annual Daily Traffic

V. Train Speed

VI. Train Traffic or Gross Tonnage

VII. Passenger Train Traffic

VIII. Crossing Exposure

IX. Passenger Train Crossing Exposure

X. Expected Accident Frequency

XI. Vehicle Delay

XII. Engineering Study of Level of Service



Tier 2

Tier 1

Criteria Met

Train Volume

- » Tier 1  $\geq$  150 Trains/Day
- » Tier 2  $\geq$  75 Trains/Day

**Future**

8<sup>th</sup> Street

11<sup>th</sup> Street

14<sup>th</sup> Street



**Tier 2 (Lower)**



**Tier 1 (Higher)**



Criteria Met

Crossing Exposure

*Daily Traffic X Train Traffic*

» Tier 1 > 1,000,000

» Tier 2 > 500,000

**Today**

8<sup>th</sup> Street

11<sup>th</sup> Street

14<sup>th</sup> Street



**Tier 2 (Lower)**



**Tier 1 (Higher)**



Criteria Met

Crossing Exposure

*Daily Traffic X Train Traffic*

» Tier 1 > 1,000,000

» Tier 2 > 500,000

**Future**

8<sup>th</sup> Street

11<sup>th</sup> Street

14<sup>th</sup> Street



**Tier 2 (Lower)**



**Tier 1 (Higher)**



Criteria Met

Vehicle Delay

- » Tier 1 > 40 Hours of Delay/Day
- » Tier 2 > 30 Hours of Delay/Day

Today

8<sup>th</sup> Street

11<sup>th</sup> Street

14<sup>th</sup> Street



Tier 2 (Lower)



Tier 1 (Higher)



# Criteria Met

## Vehicle Delay

- » Tier 1 > 40 Hours of Delay/Day
- » Tier 2 > 30 Hours of Delay/Day

# Future

8<sup>th</sup> Street

11<sup>th</sup> Street

14<sup>th</sup> Street



Tier 2 (Lower)



Tier 1 (Higher)



# Summary



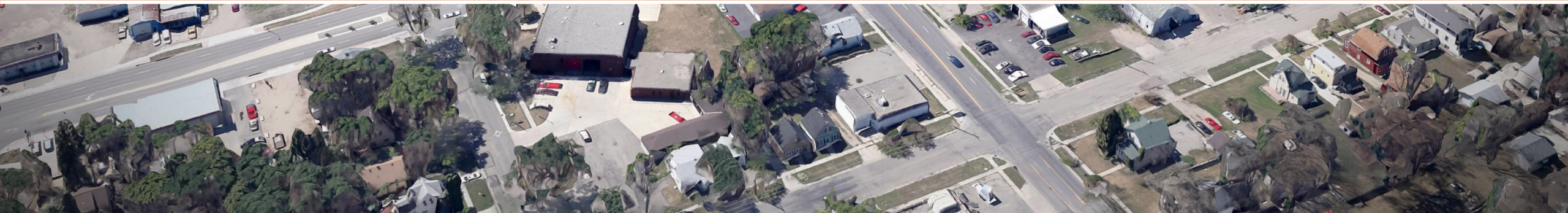
» Out of...

» 11 Tier 1 Criteria

» 12 Tier 2 Criteria



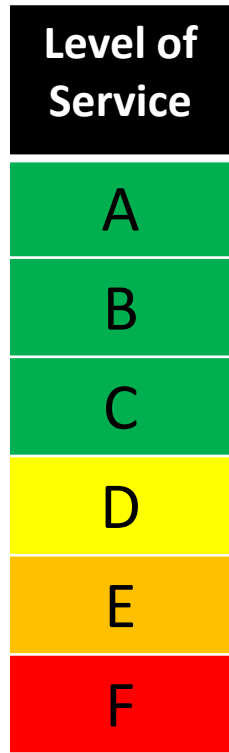
# Other Deficiencies





# Traffic Operations

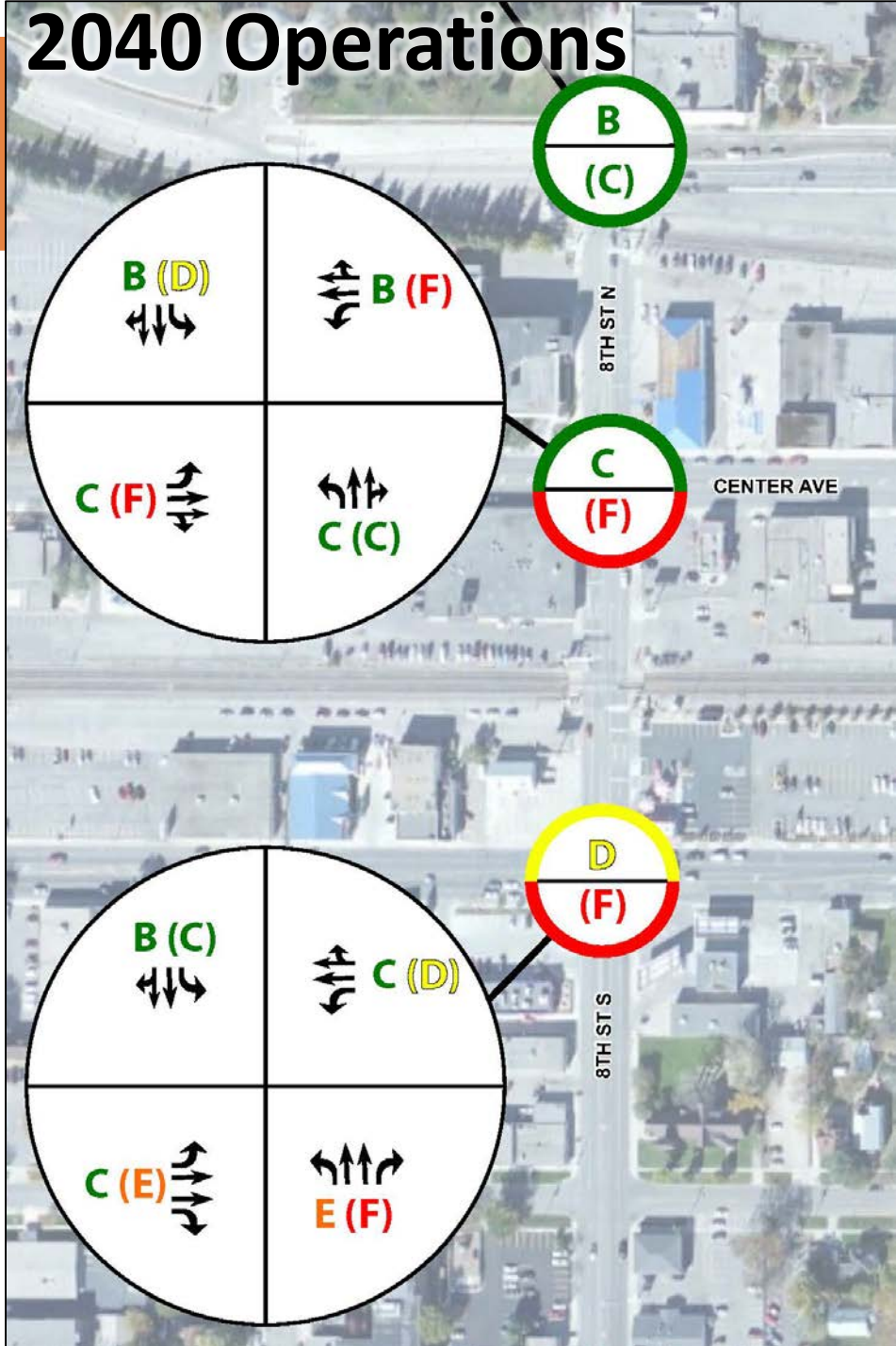
» Train Delays and Queues Affect Adjacent Intersections



Increasing Delays →



## 2040 Operations



# Safety

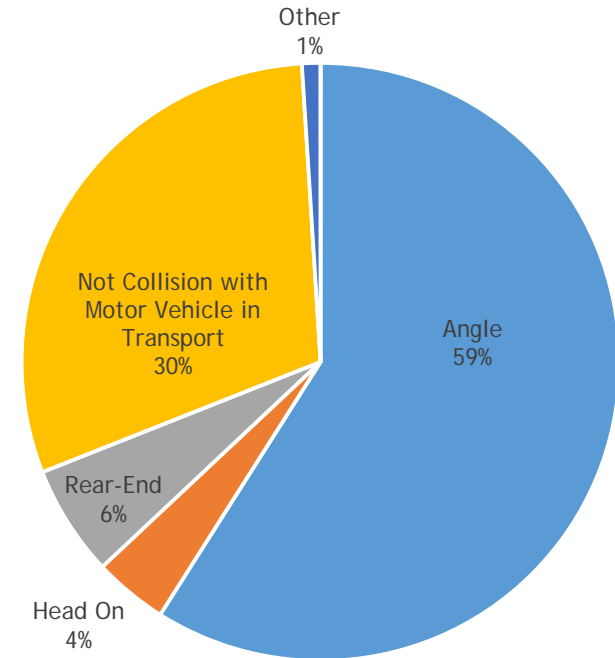
## » Train Related Crashes

- » 1976-2008: 1 Crash Per Year
- » 2008: Quiet Zone Study
- » 2008-2014: 0 Crashes



## » Vehicle Crashes:

- » >30 Crashes/Year Along Study Corridors
- » 26% Rear-End Crashes **-50% State Average**
- » 44% Right-Angle Crashes **+250% State Average**



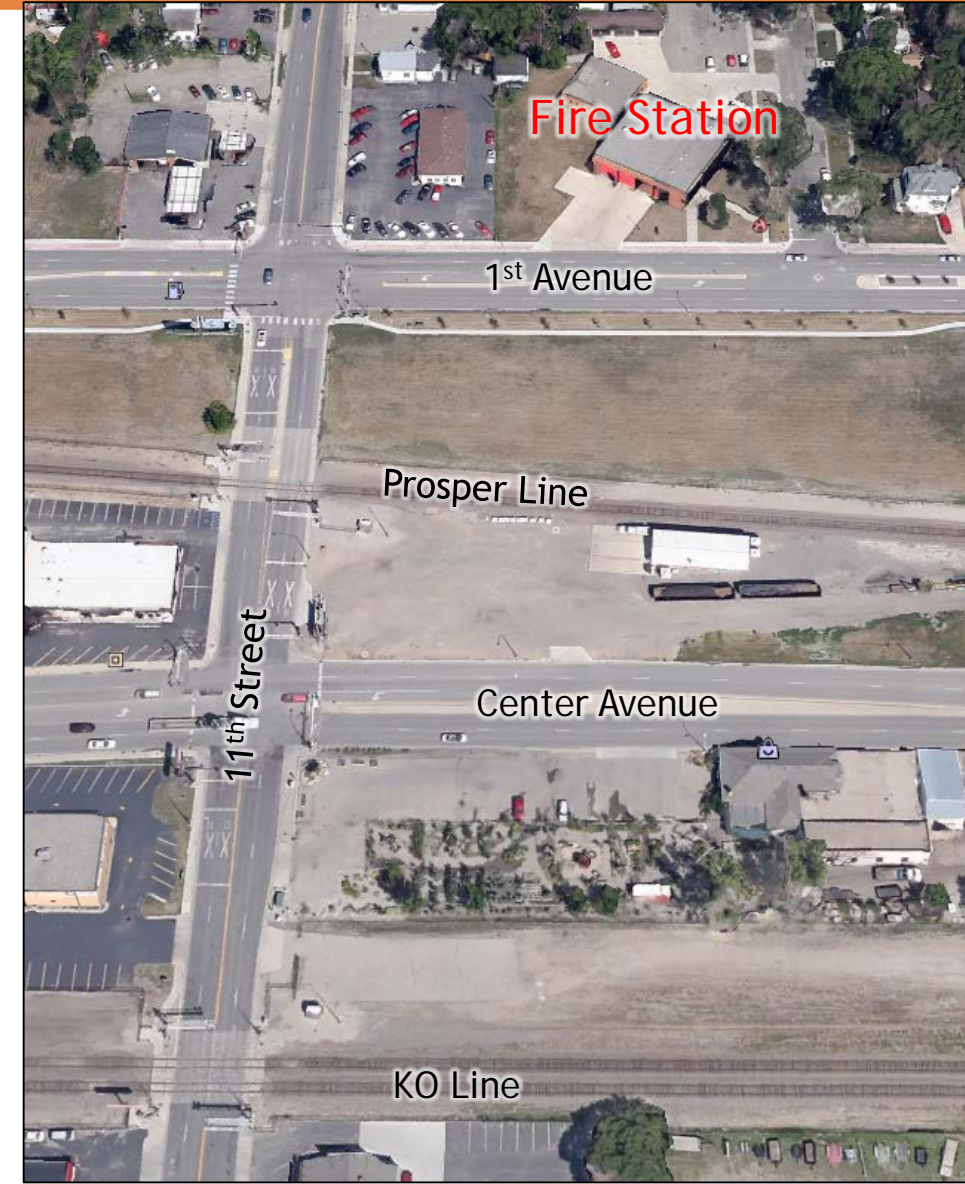
*Manner of Collision for Fatal Crashes  
at Signalized Intersections*

# Emergency Response

- » 9 Calls/Month Delayed by Trains (4-23 to 10-1)
  - » 2/3 Medical Assist
- » KO Line = 3.9 Minutes/Train
- » Prosper Line = 5.9 Minutes/Train

“The size of a fire is thought to double every 60 seconds” – Firetactics.com

“When a heart stops, brain damage can occur within four to six minutes” – American Heart Association



# Pedestrians and Bicycles

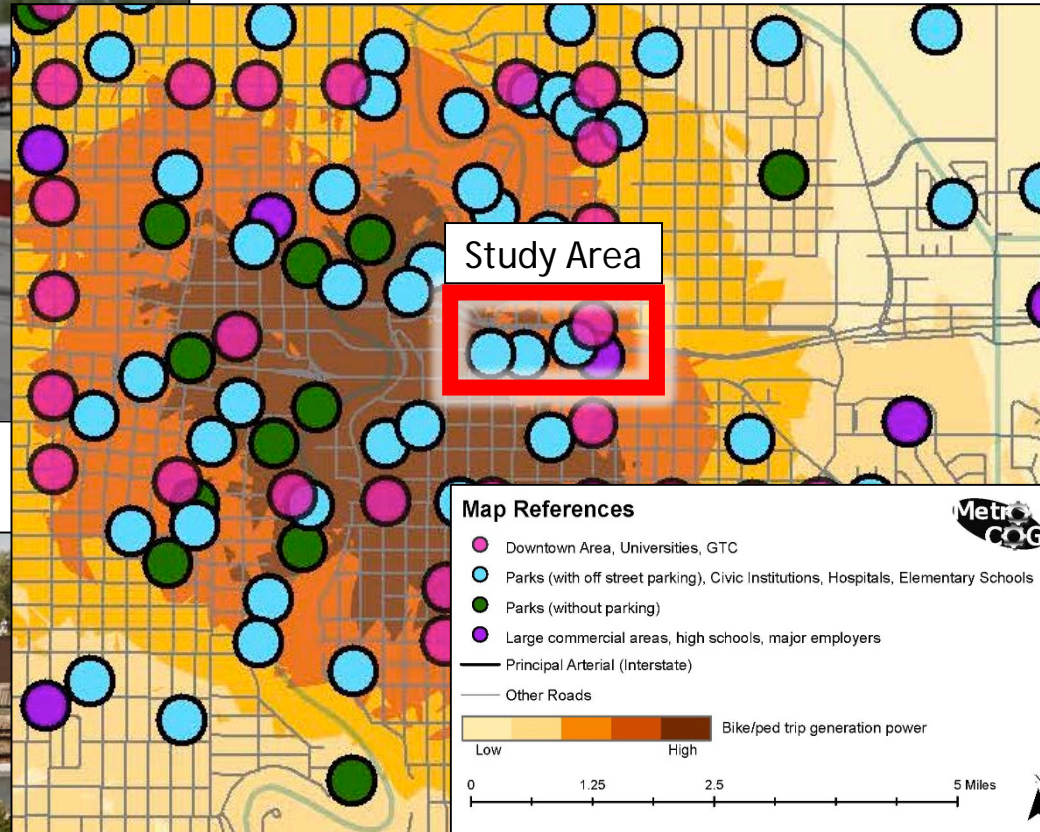
## » Delays at Crossings



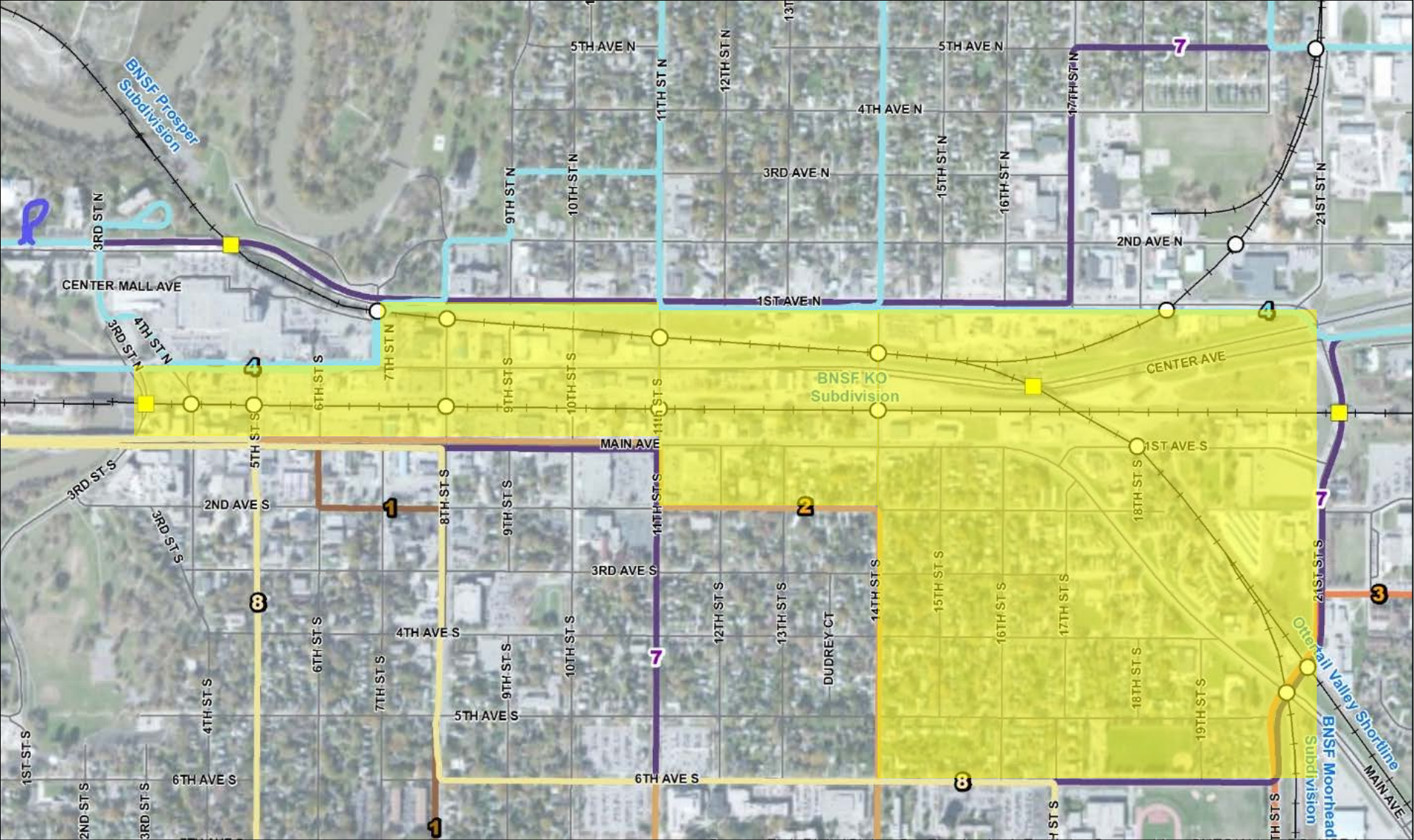
## » Blocked Crossings for Peds



## » Few Bike Specific Facilities

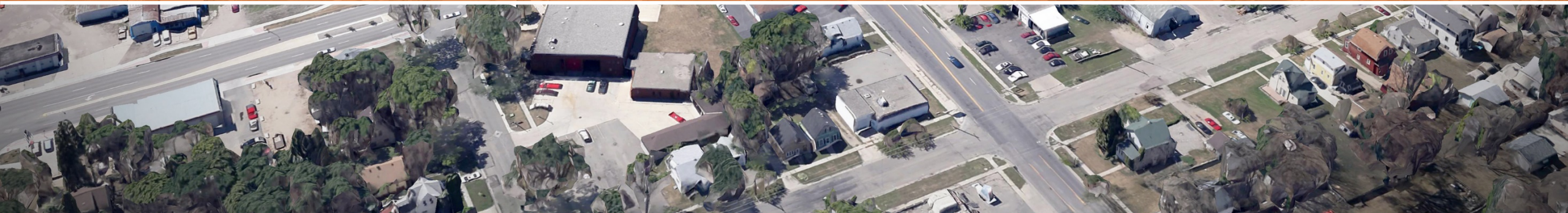


# Transit





# Review of Previously Considered Alternatives

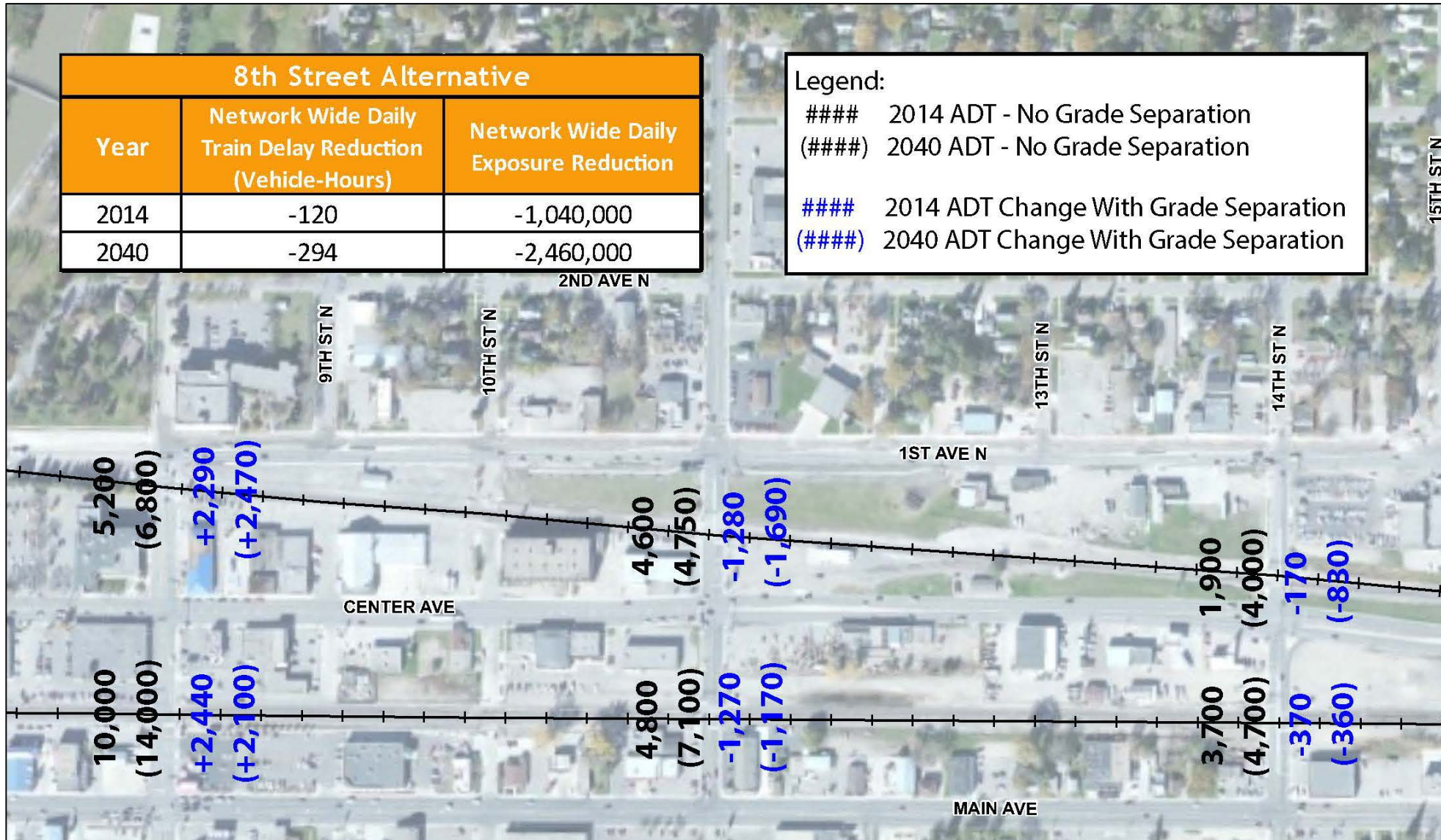


# 8th Street Grade Separation

| 8th Street Alternative |  |                                       |
|------------------------|--|---------------------------------------|
| Year                   | Network Wide Daily Train Delay Reduction (Vehicle-Hours) | Network Wide Daily Exposure Reduction |
| 2014                   | -120   | -1,040,000                            |
| 2040                   | -294   | -2,460,000                            |

**Legend:**

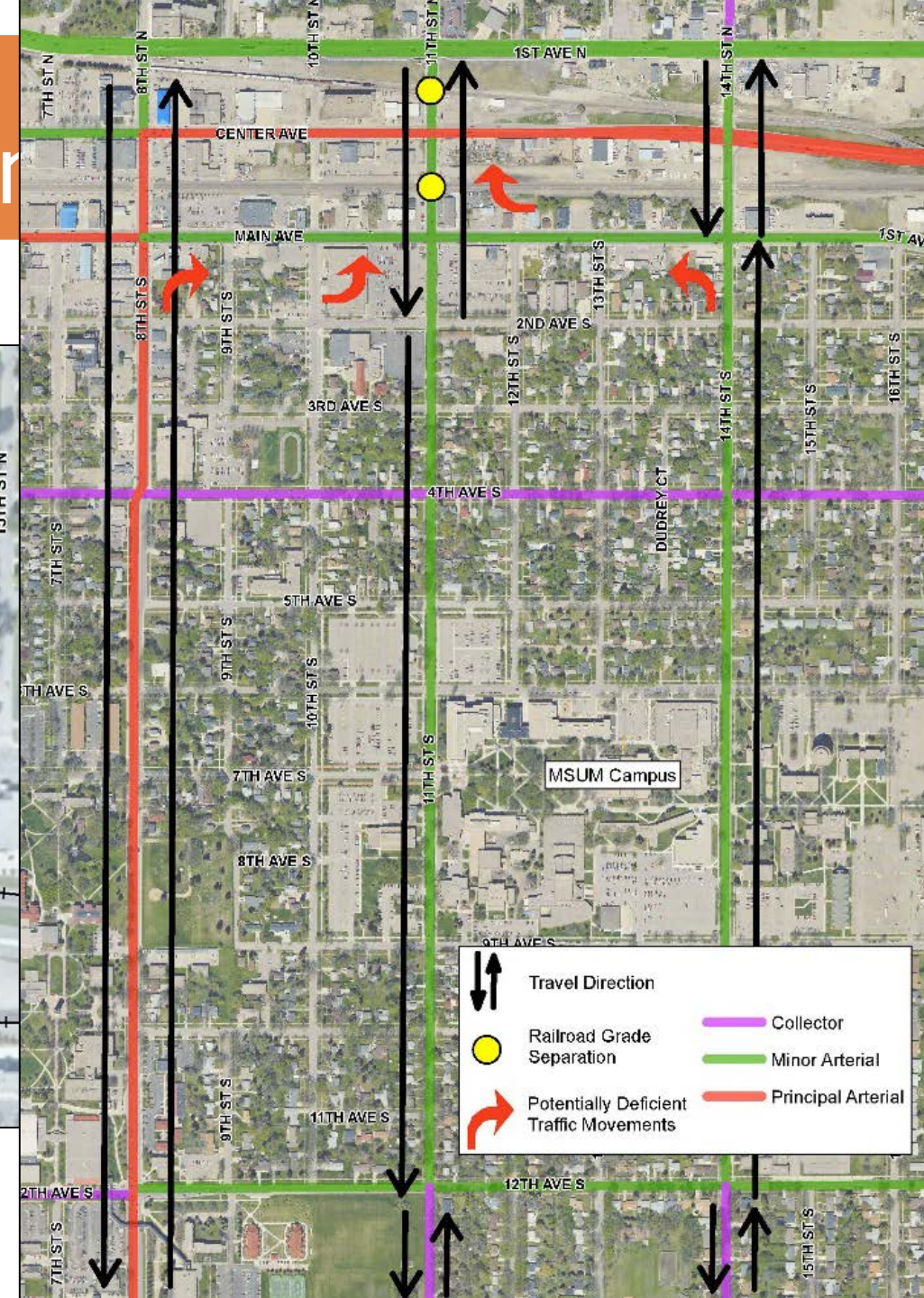
- #### 2014 ADT - No Grade Separation
- (####) 2040 ADT - No Grade Separation
- #### 2014 ADT Change With Grade Separation
- (####) 2040 ADT Change With Grade Separation



# 11th Street Grade Separation

| 11th Street Alternative |  |                                       |
|-------------------------|--|---------------------------------------|
| Year                    | Network Wide Daily Train Delay Reduction (Vehicle-Hours) | Network Wide Daily Exposure Reduction |
| 2014                    | -92  | -640,000                              |
| 2040                    | -218   | -1,800,000                            |

Legend:  
 ##### 2014 ADT - No Grade Separation  
 (#####) 2040 ADT - No Grade Separation  
 ##### 2014 ADT Change With Grade Separation  
 (#####) 2040 ADT Change With Grade Separation



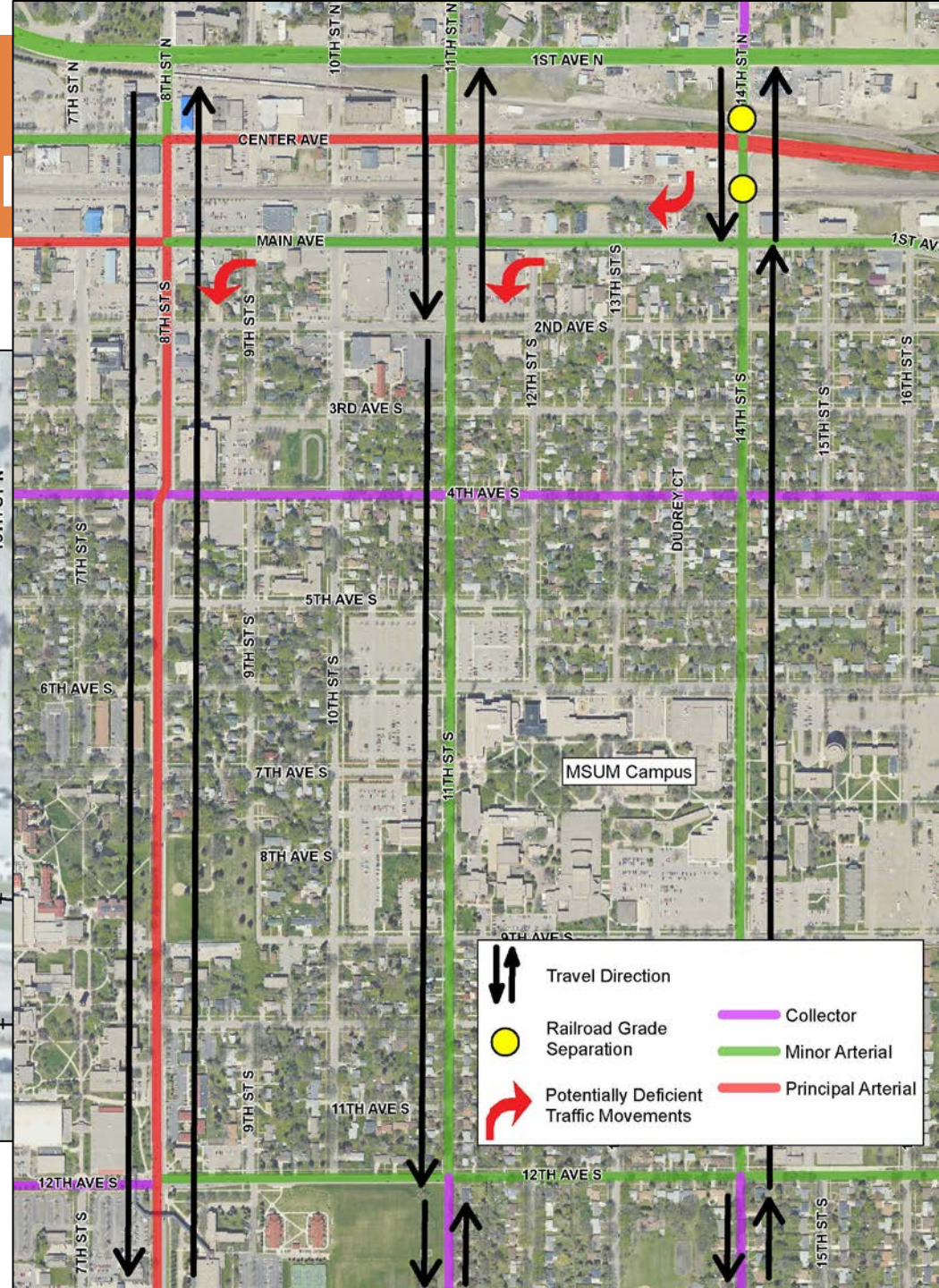
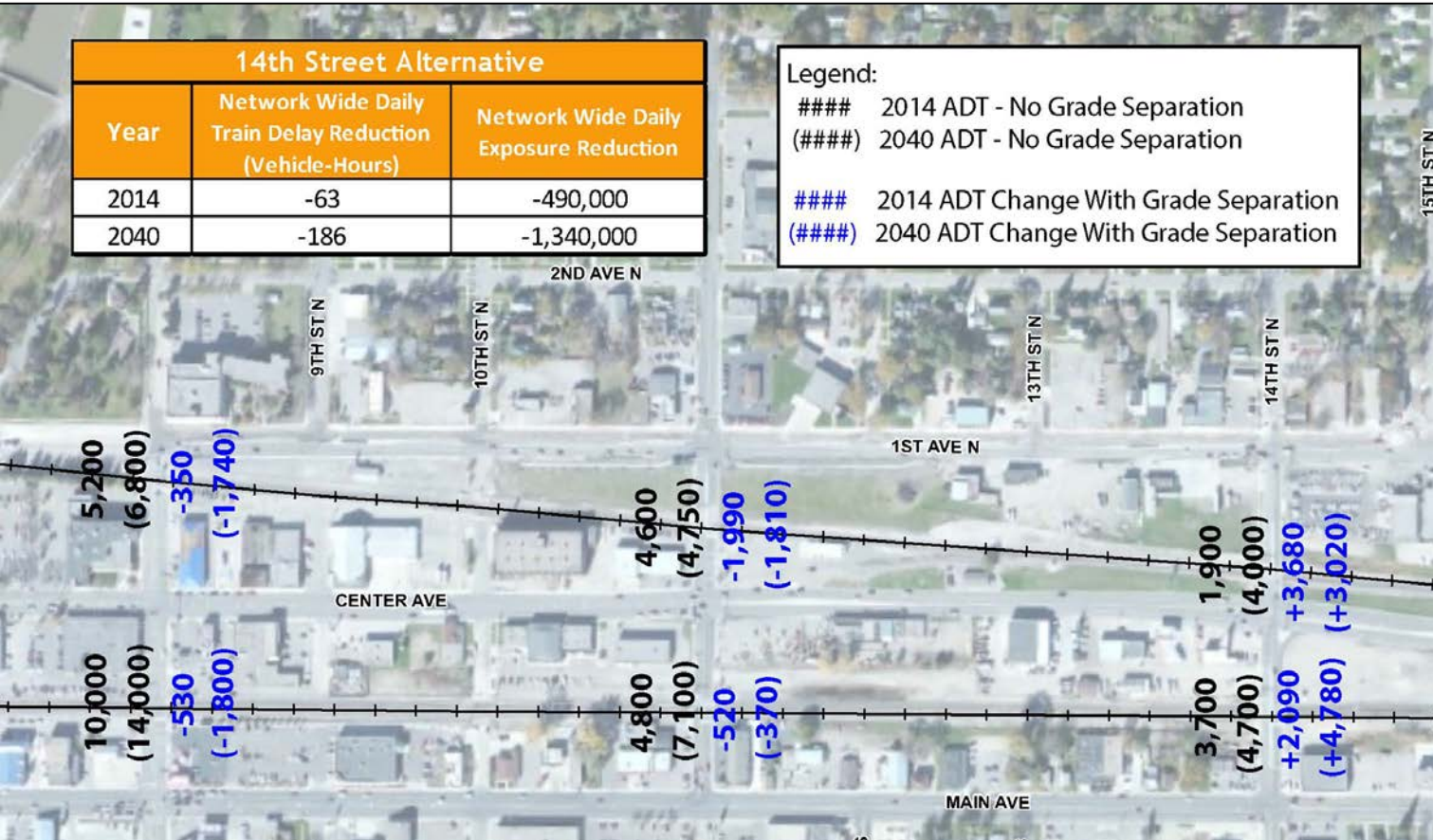
|  |   |  |                    |
|--|---|--|--------------------|
|  | Travel Direction                        |  | Collector          |
|  | Railroad Grade Separation               |  | Minor Arterial     |
|  | Potentially Deficient Traffic Movements |  | Principal Arterial |



# 14<sup>th</sup> Street Grade Separation

| 14th Street Alternative |  |                                       |
|-------------------------|--|---------------------------------------|
| Year                    | Network Wide Daily Train Delay Reduction (Vehicle-Hours) | Network Wide Daily Exposure Reduction |
| 2014                    | -63  | -490,000                              |
| 2040                    | -186   | -1,340,000                            |

Legend:  
 ##### 2014 ADT - No Grade Separation  
 (#####) 2040 ADT - No Grade Separation  
 ##### 2014 ADT Change With Grade Separation  
 (#####) 2040 ADT Change With Grade Separation

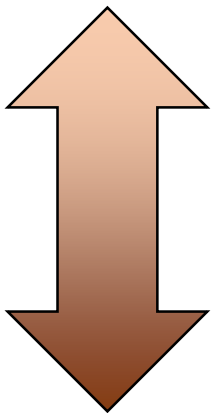


# Alternative Comparison

» Preliminary Ranking:

1. 11<sup>th</sup> Street
2. 14<sup>th</sup> Street
3. 8<sup>th</sup> Street

1 Fewer Benefits



5 Greater Benefits

| Screening Criteria                        | Grade Separation Alternatives |             |             |
|---|-------------------------------|-------------|-------------|
|   | 8th Street                    | 11th Street | 14th Street |
| <b>Property Impacts</b>                   |                               |             |             |
| Potential Property Impacts                | ●○○○○                         | ●●●○○       | ●●○○○       |
| Category Ranking                          | 1                             | 3           | 2           |
| <b>Safety</b>                             |                               |             |             |
| Crash History (2008-2013)                 | ●○○○○                         | ●○○○○       | ●○○○○       |
| Conflict Potential (Crossing Exposure)    | ●●●●●                         | ●●●●○       | ●●●○○       |
| Category Ranking                          | 3                             | 2.5         | 2           |
| <b>Emergency Vehicle Access</b>           |                               |             |             |
| Unrestricted Access and Optimized Routes  | ●●●○○                         | ●●●●●       | ●●●●○       |
| Category Ranking                          | 3                             | 5           | 4           |
| <b>Traffic Delay and Mobility</b>         |                               |             |             |
| Train Delay Reduction                     | ●●●●●                         | ●●●●○       | ●●●○○       |
| Network-Wide Connectivity                 | ●○○○○                         | ●●●●●       | ●●●○○       |
| Proximity to Downtown                     | ●●●●●                         | ●●●●○       | ●●○○○       |
| Category Ranking                          | 3.5                           | 4.5         | 2.5         |
| <b>Constructability and Design</b>        |                               |             |             |
| Grade Separation                          | ●○○○○                         | ●●●○○       | ●●●○○       |
| Utilities                                 | ●○○○○                         | ●●●○○       | ●●●●○       |
| Intersecting Streets                      | ●○○○○                         | ●●●●●       | ●●○○○       |
| Category Ranking                          | 1                             | 4           | 3           |
| <b>Cost</b>                               |                               |             |             |
| ROW Costs                                 | ●○○○○                         | ●●●○○       | ●●●○○       |
| Construction, Engineering and Admin Costs | ●○○○○                         | ●●●○○       | ●●○○○       |
| Category Ranking                          | 1                             | 3           | 2.5         |
| <b>Railroad Issues</b>                    |                               |             |             |
| Shoofly Construction                      | ●○○○○                         | ●●●●○       | ●●●○○       |
| Category Ranking                          | 3                             | 4           | 3           |
| Overall Ranking                           | -48%                          | 26          | -27%        |

# Disadvantages

Poor Connectivity



Construction  
Conflicts



Property Impacts  
(Potentially Historic)

Property  
Impacts

Property  
Impacts

1<sup>st</sup> Ave

Prosper Line

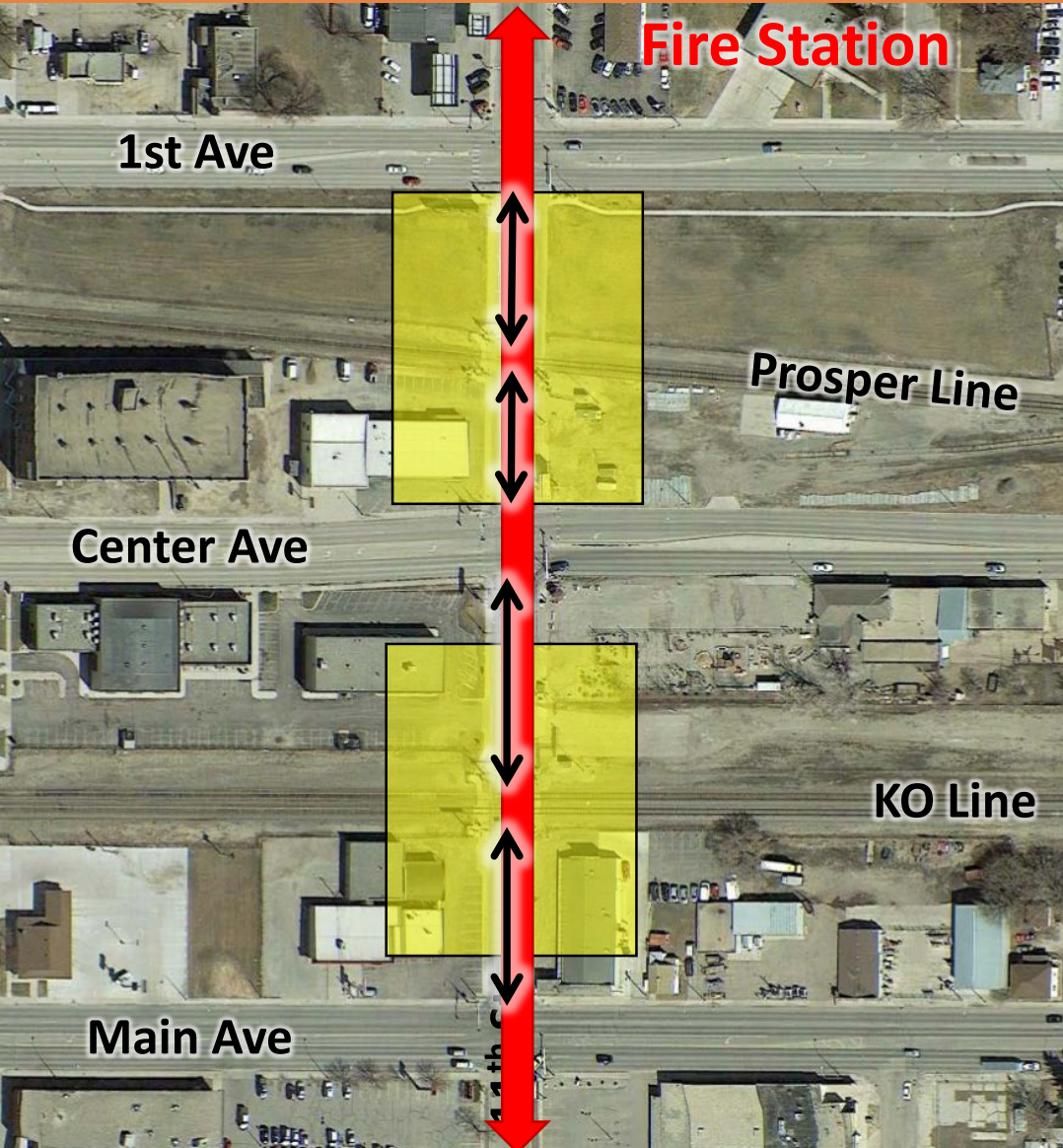
Center Ave

# 8<sup>th</sup> Street Alternative

## Advantages

- » Highest Traffic Volumes
- » In Heart of Downtown

# 11<sup>th</sup> Street Alternative



## Disadvantages

- » Not Directly in Downtown
- » Property Impacts

## Advantages

- » Fewest Property Impacts
- » Greatest N-S Connectivity
- » Greatest Roadway-Track Separation
- » Closest to Fire Station

# 14<sup>th</sup> Street Alternatives

## Disadvantages

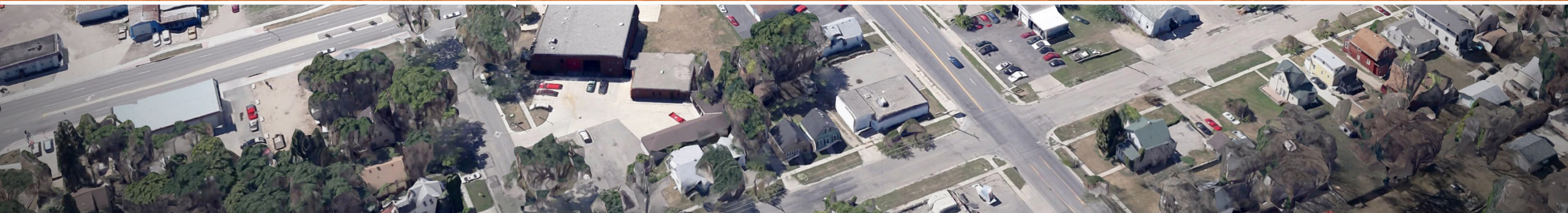


## Advantages

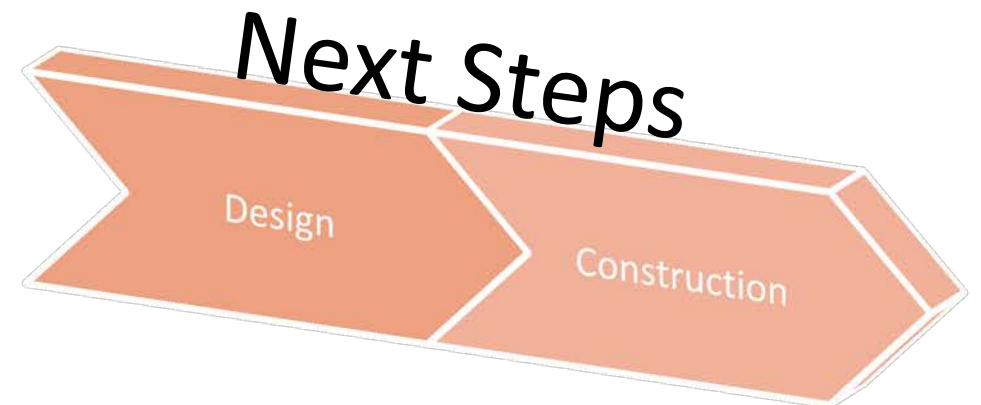
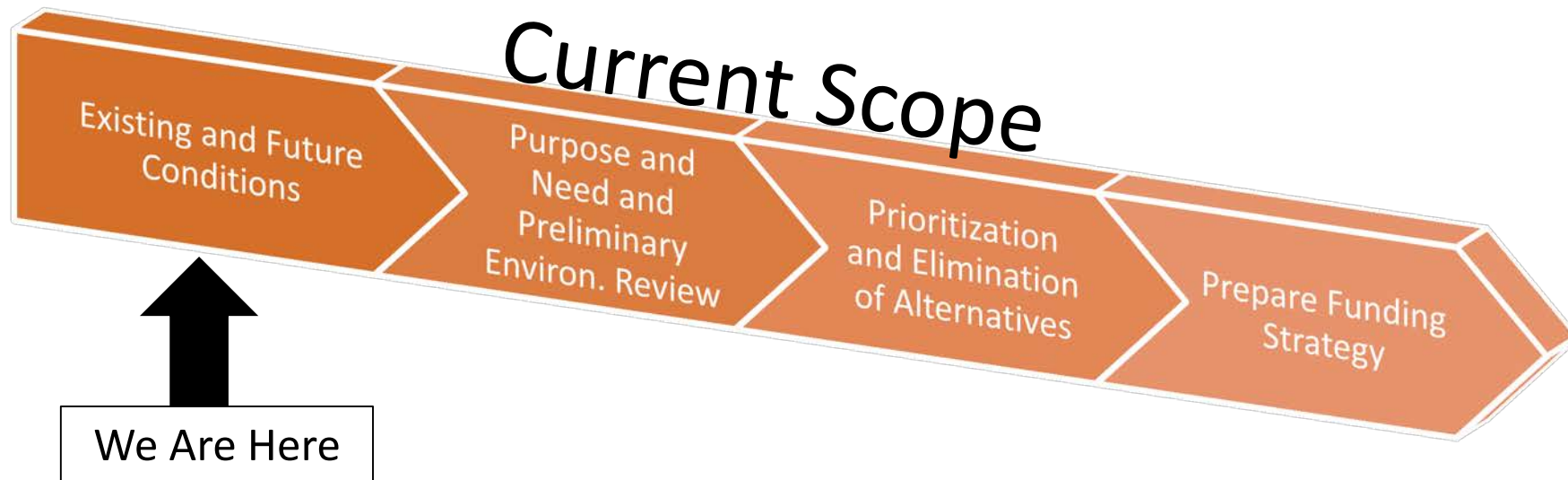
- » Fewest Utility Impacts
- » Improved Connectivity vs. 8<sup>th</sup> Street



# Next Steps



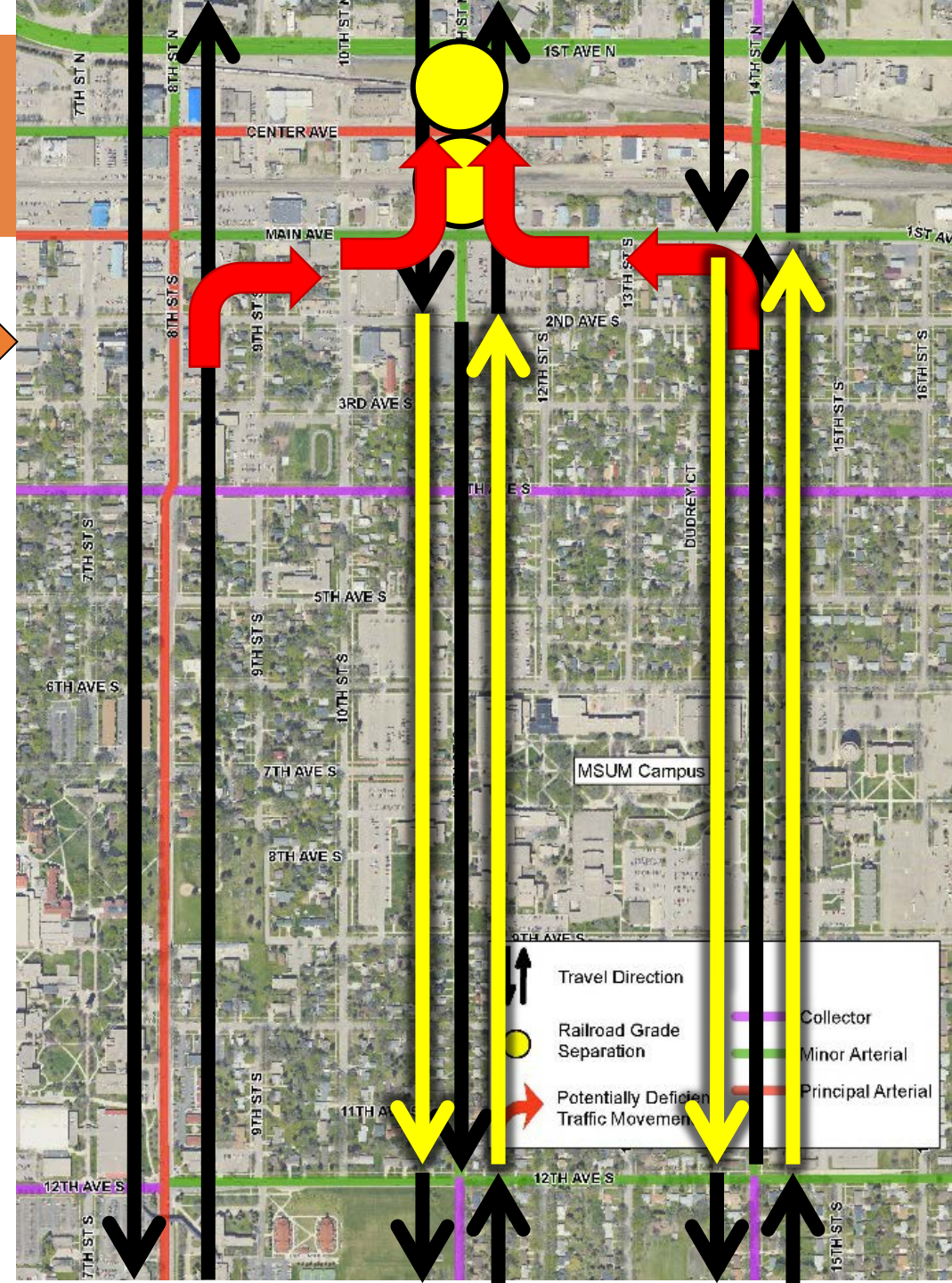
# Study Process



# Future Traffic Studies

One-Way Conversion Study

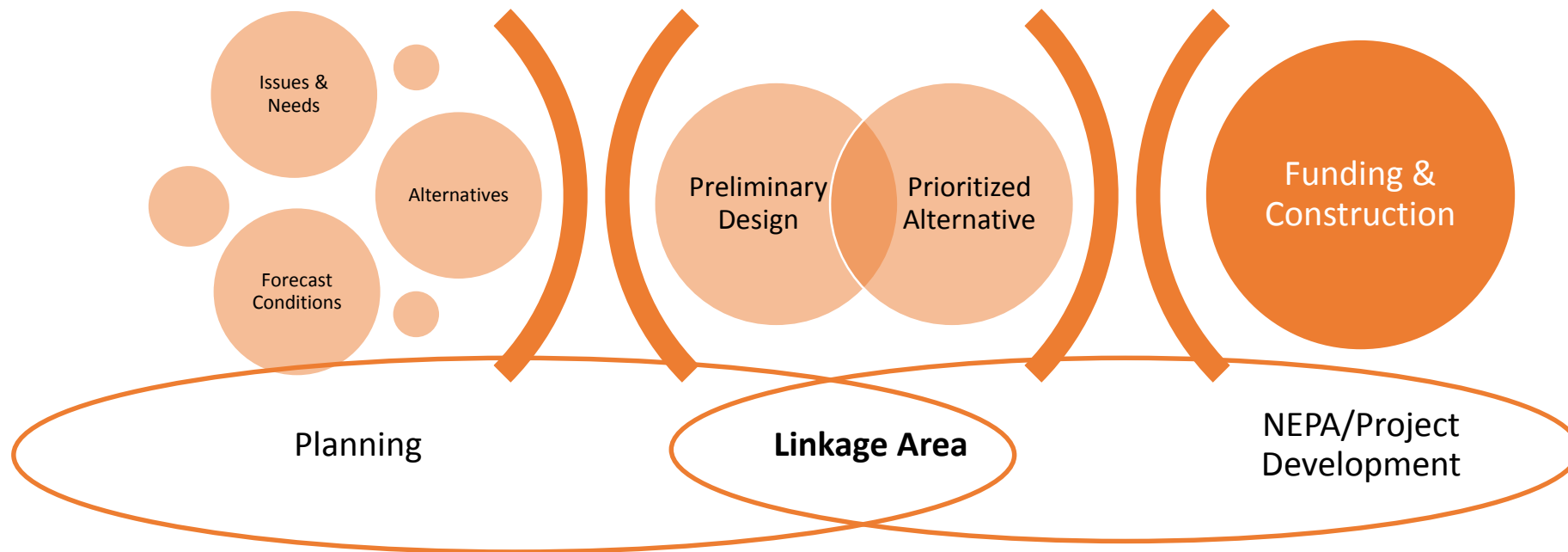
## Downtown Multimodal Plan





# Purpose and Need & Environmental Review

» Linking Planning Phase with Design & Permitting (NEPA)

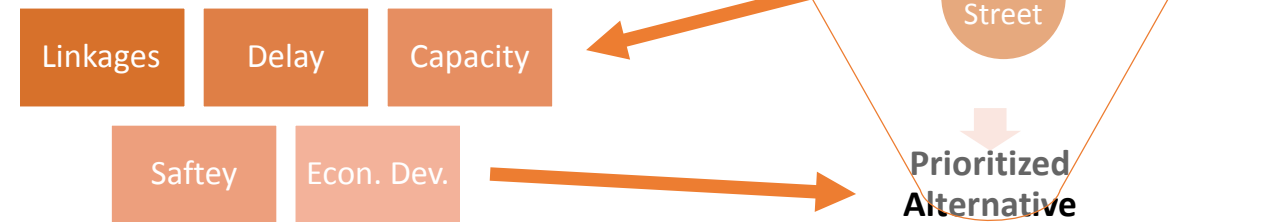


# Alternative Evaluation

» 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup> and 10<sup>th</sup> Street already dismissed;

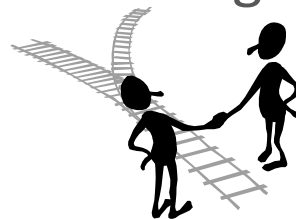
» 8<sup>th</sup>, 11<sup>th</sup>, 14, and No Build

» How do they address Purpose & Need



» Decision Document/Memorandum

» Catalyze Local, State, and Federal Agencies around a technically feasible alternative;



# Funding Assessment



## » Federal Funding – *Limited*

» TIGER, NHPP, STP

Small amount  
annually available

Pursued for SE  
Main 20/21 Grade  
Separation

Only TH 10/75



## » State Funding - *Most Likely*

- » Legislatively mandated report due in early November
  - » Trunk Highway Funds;
  - » State Bonding (2016 Session);
  - » State General Fund;



## » Local Funding - *Limited*

- » Capital Improvement Program (CIP)
  - » Assessments/City-wide Property Tax Levy (inclusive of bonding)
  - » Municipal State Aid (MSAS)

As Study Proceeds funding options will be refined/developed into a more detailed “strategy”

# Schedule

- » Your comments on tonight's information due 11/13/2014
- » Purpose & Need – November
- » Alternatives & Functional Design Plans – January
- » PIM #2 – January/February
- » Alternatives Analysis – April/May
- » Cost Benefit Analysis – May
- » Decisions Document – June

| Project Development<br>(Major Milestones)                             | 2014 |                     |             |                        |                     |              |                      |                          | 2015                |             |                          |             |                     |                     |               |                  |           |         |          |  |
|---|------|---------------------|-------------|------------------------|---------------------|--------------|----------------------|--------------------------|---------------------|-------------|--------------------------|-------------|---------------------|---------------------|---------------|------------------|-----------|---------|----------|--|
|   | May  | June                | July        | August                 | September           | October      | November             | December                 | January             | February    | March                    | April       | May                 | June                | July          | August           | September | October | November |  |
| Notice to Proceed   |      |                     | ● 6-19-2014 |                        |                     |              |                      |                          |                     |             |                          |             |                     |                     |               |                  |           |         |          |  |
| Project Start-Up  |      | ● week of 6-24-2014 |             |                        |                     |              |                      |                          |                     |             |                          |             |                     |                     |               |                  |           |         |          |  |
| SRC Meeting #1 - Kickoff Meeting                                      |      |                     | ◆ 7-15-2014 |                        |                     |              |                      |                          |                     |             |                          |             |                     |                     |               |                  |           |         |          |  |
| Task 1: Data Collection, Traffic Forecasting and Issue Identification |      |                     |             | ■ 7-1-2014 to 9-1-2014 |                     |              |                      |                          |                     |             |                          |             |                     |                     |               |                  |           |         |          |  |
| Tech Memo #1: Existing and Projected Conditions                       |      |                     |             |                        | ■ 9-3-2014          |              |                      |                          |                     |             |                          |             |                     |                     |               |                  |           |         |          |  |
| SRC Meeting #2  |      |                     |             |                        | ◆ week of 9-9-2014  |              |                      |                          |                     |             |                          |             |                     |                     |               |                  |           |         |          |  |
| Public Input Meeting #1   |      |                     |             |                        | ◆ week of 9-16-2014 |              |                      |                          |                     |             |                          |             |                     |                     |               |                  |           |         |          |  |
| Tech Memo #2: Purpose and Need  |      |                     |             |                        |                     | ■ 10-16-2014 |                      |                          |                     |             |                          |             |                     |                     |               |                  |           |         |          |  |
| SRC Meeting #3  |      |                     |             |                        |                     |              | ◆ week of 10-21-2014 |                          |                     |             |                          |             |                     |                     |               |                  |           |         |          |  |
| Task 4: Alternative Development and Functional Design Plans           |      |                     |             |                        |                     |              |                      | ■ 10-21-2014 to 1-9-2015 |                     |             |                          |             |                     |                     |               |                  |           |         |          |  |
| SRC Meeting #4  |      |                     |             |                        |                     |              |                      |                          | ◆ week of 1-13-2015 |             |                          |             |                     |                     |               |                  |           |         |          |  |
| PIM #2: Alternatives Public Workshop                                  |      |                     |             |                        |                     |              |                      |                          | ◆ week of 1-19-2015 |             |                          |             |                     |                     |               |                  |           |         |          |  |
| TechMemo #3: Public Involvement Summary                               |      |                     |             |                        |                     |              |                      |                          |                     | ■ 2-28-2015 |                          |             |                     |                     |               |                  |           |         |          |  |
| Task 6: Alternative Analysis/Review                                   |      |                     |             |                        |                     |              |                      |                          |                     |             | ■ 1-26-2015 to 4-17-2015 |             |                     |                     |               |                  |           |         |          |  |
| TechMemo #4: Alternatives Analysis                                    |      |                     |             |                        |                     |              |                      |                          |                     |             |                          | ● 4-17-2015 |                     |                     |               |                  |           |         |          |  |
| SRC Meeting #5  |      |                     |             |                        |                     |              |                      |                          |                     |             |                          |             | ◆ week of 4-21-2015 |                     |               |                  |           |         |          |  |
| Tech Memo #5: Cost-Benefit Analysis                                   |      |                     |             |                        |                     |              |                      |                          |                     |             |                          | ■ 5-15-2015 |                     |                     |               |                  |           |         |          |  |
| Project Decisions Document/Memorandum                                 |      |                     |             |                        |                     |              |                      |                          |                     |             |                          |             | ■ 6-15-2015         |                     |               |                  |           |         |          |  |
| SRC Meeting #6 – Presentation of Draft Report                         |      |                     |             |                        |                     |              |                      |                          |                     |             |                          |             |                     | ◆ week of 6-22-2015 |               |                  |           |         |          |  |
| Approvals on Products from Tasks 1-7                                  |      |                     |             |                        |                     |              |                      |                          |                     |             |                          |             |                     |                     | ● August 2015 |                  |           |         |          |  |
| Project Closeout/Wrap up of FM COG Component of Contract              |      |                     |             |                        |                     |              |                      |                          |                     |             |                          |             |                     |                     |               | ● September 2015 |           |         |          |  |

- ◆ Meeting
- Deliverable
- Milestone

# How to Comment

- » Informally at the meeting
- » Written Comment Sheet
- » E-mail:
  - » [Wade.Frank@kljeng.com](mailto:Wade.Frank@kljeng.com)
  - » Subject line: “Moorhead Grade Separation”

