US 2/US 81 SKEWED INTERSECTION STUDY

Public Input Meeting #1

Grand Forks, ND
April 2019

Overcoming Barriers — Strengthening Connections

M.P.O. M.P.O. M.P.O.

Grand Forks - East Grand Forks Metropolitan Planning Organization

Ensuring Opportunities — Planning One Community

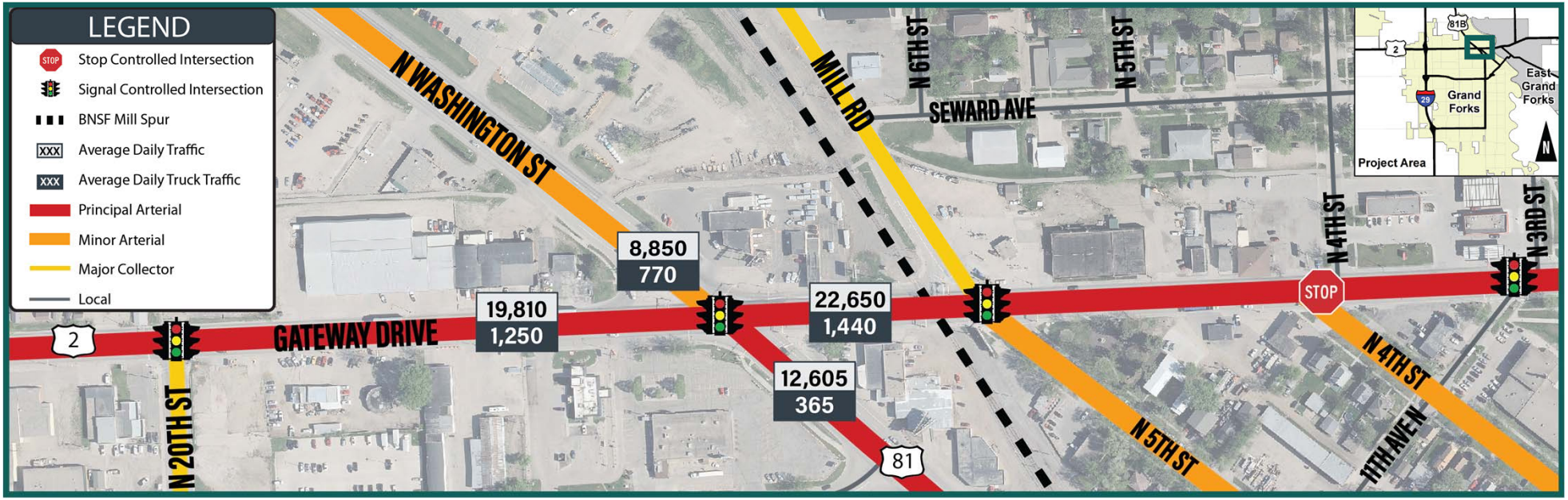
KLJ

ENGINEERING, REIMAGINED

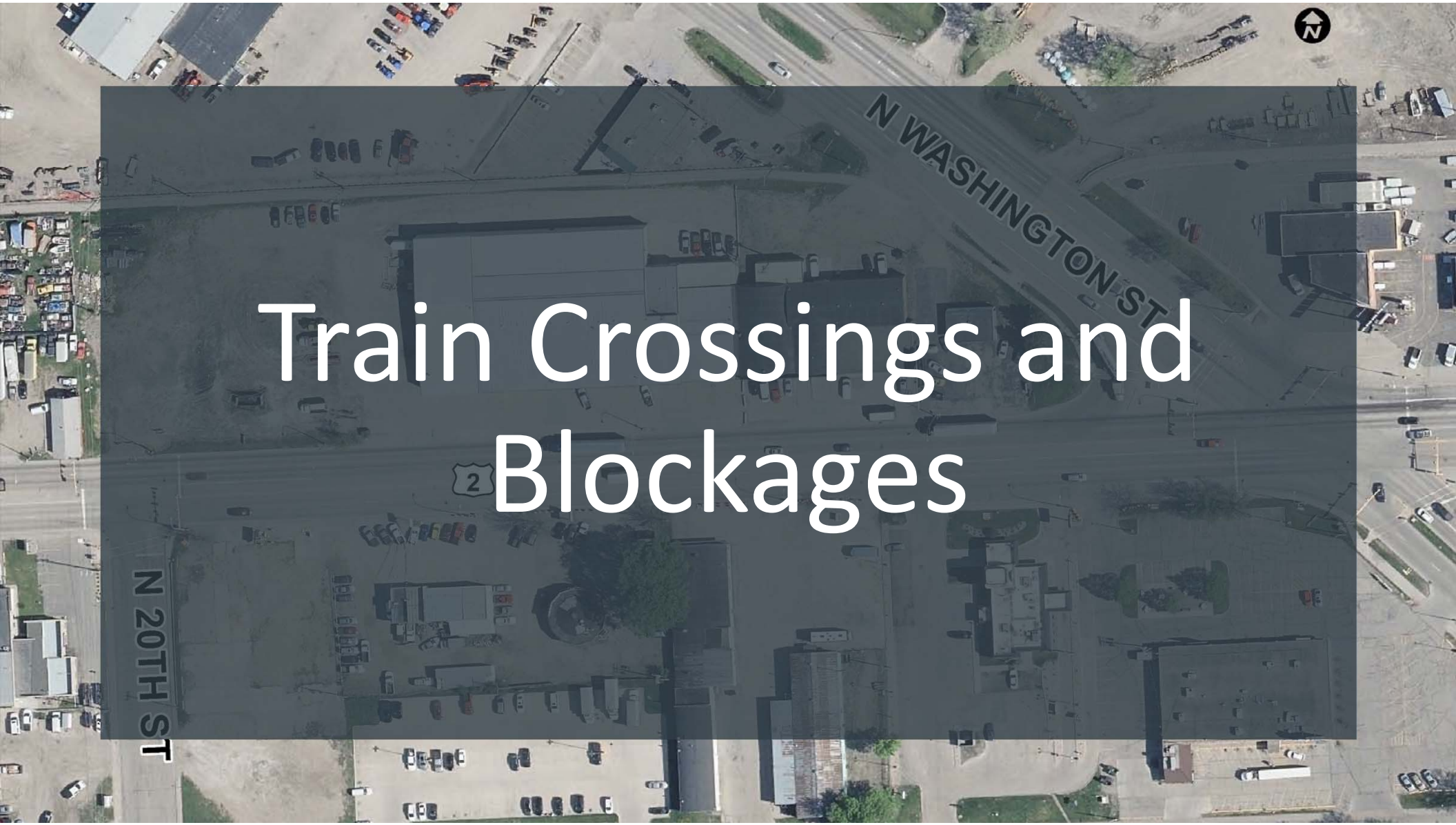
AGENDA

- Study Area
- Train Crossings and Blockages
- Vehicular Traffic and Reliability
- Safety
- Pedestrian, Bicycle and Transit
- Environmental Conditions
- Alternatives Brainstorming
- Next Steps

Study Area



- Known Issues and Conflicts;
  - Mill spur railroad crossing creates traffic blockages and queueing issues.
  - Intersection skew makes turning movements for trucks difficult.
  - Opportunities for improved pedestrian, bicycle and transit conditions.



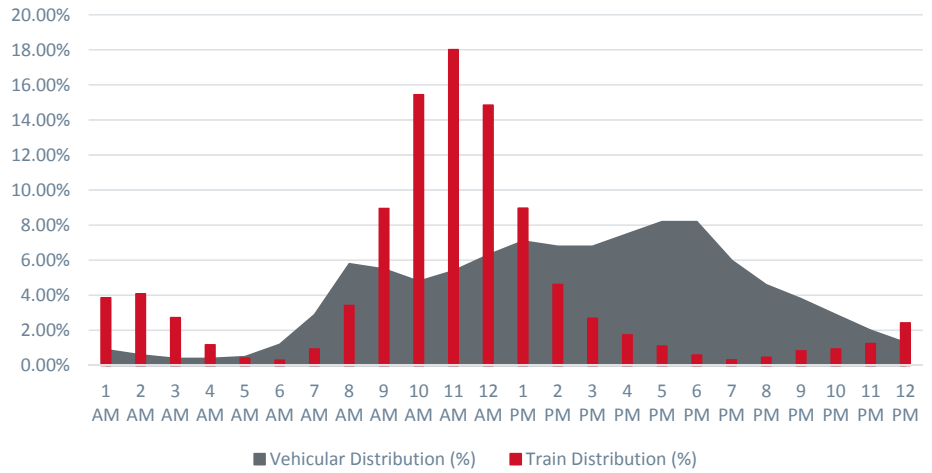
Train Crossings and Blockages

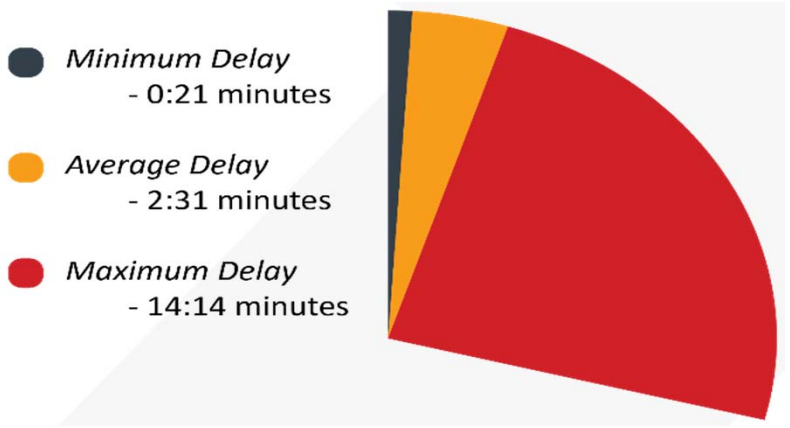
Mill Spur Crossing

- Safety
  - 12 crashes between 1975-1994
  - No crashes since 1994
- Crash Prediction
  - 0.028 crashes per year (FRA)
  - 5th highest rate in City
  - 7th highest rate in County

Train Blockages

- 4 to 5 blockages per day
- 10 MPH or Less
- Rail Delay Estimates
  - 89 Hours/Day
  - 2,670 Hours/Month
  - 32,396 Hours/Year





Unit Trains

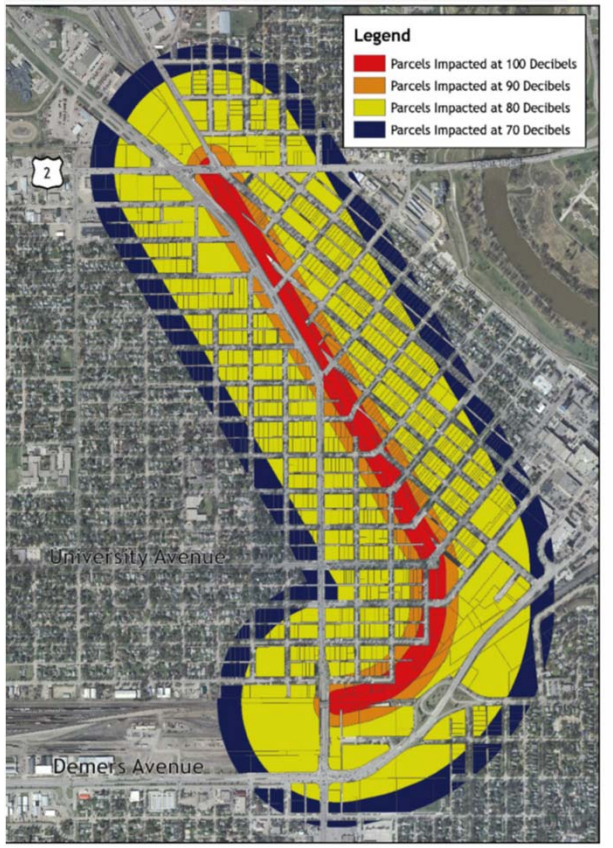
- ND Mill Working to Accommodate Unit Trains
- All crossings will be blocked at the same time.

4x Longer than Current Trains

10-17 Minutes of Delay at Mill Spur Crossings

4-6 Blockages per Month

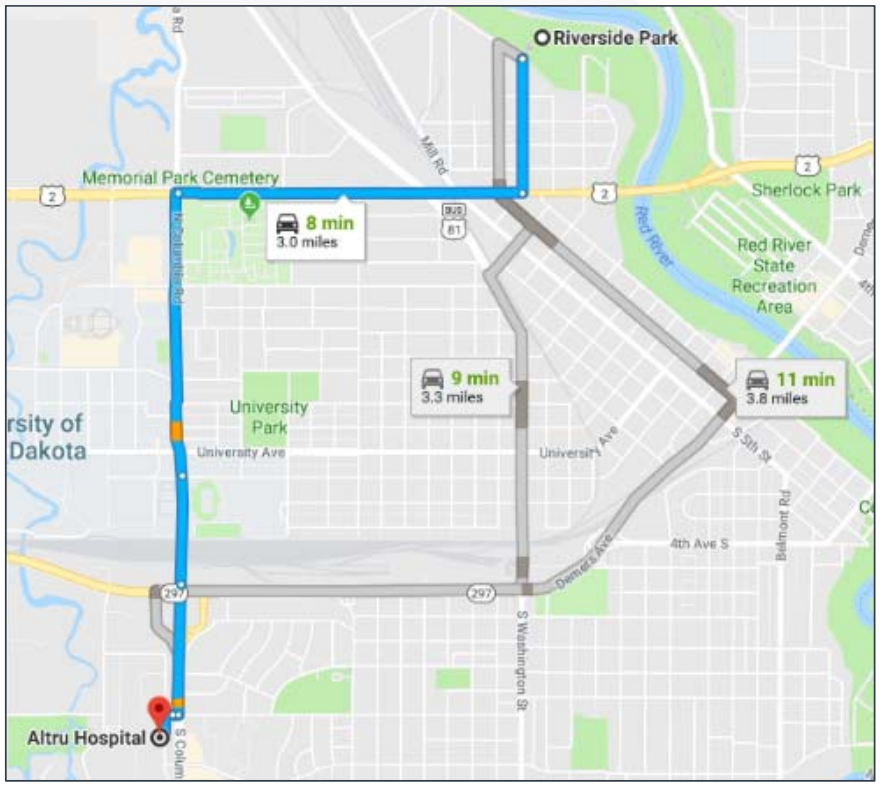
Potential to Occur at Night



Emergency Responders

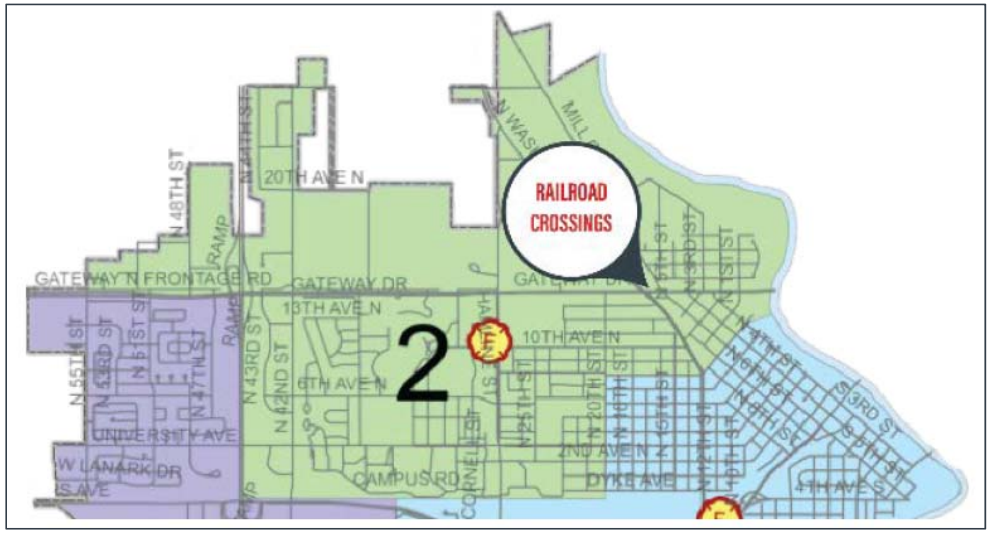
Pg. 8

- Average train blockage is 2:31
  - Brain damage in four to six minutes when heart stops
  - Altru Hospital provides emergency service to East Grand Forks and surrounding area
- Train blockage duration will increase with Unit Trains



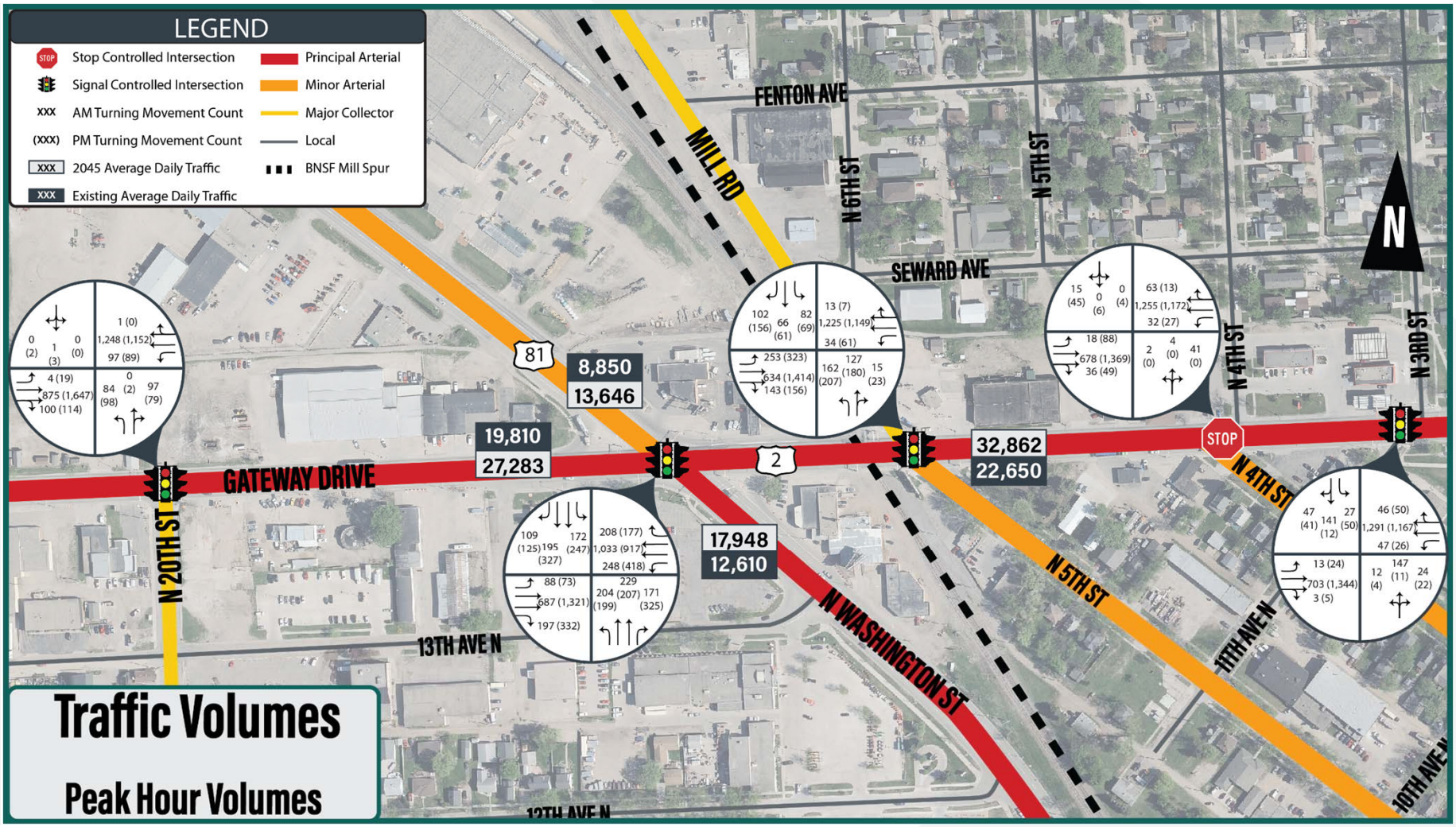
Emergency Responders

- Average train blockage is 2:31
  - Fires can double every 60 seconds
  - Goal to reach every address within four minutes
- Train blockage duration will increase with Unit Trains



Vehicular Traffic and Reliability

Existing and Future Traffic Volumes

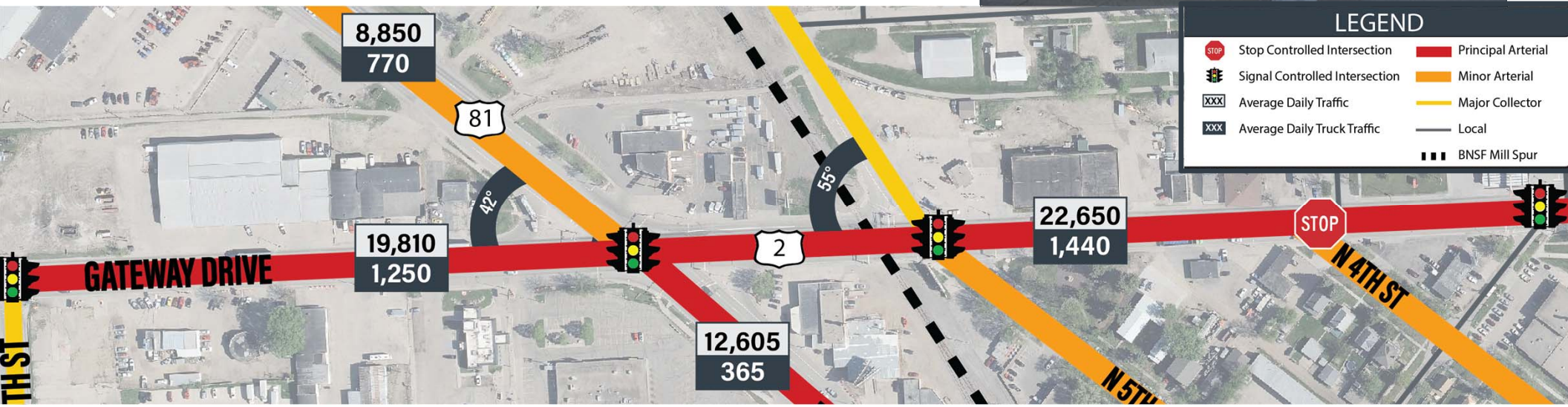


Traffic Volumes

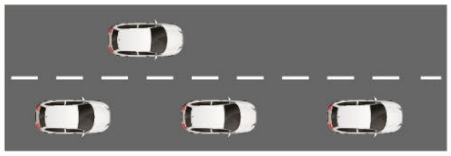
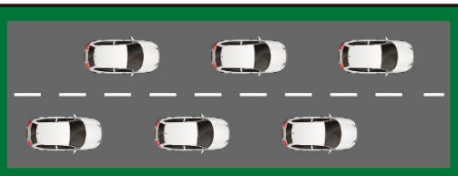
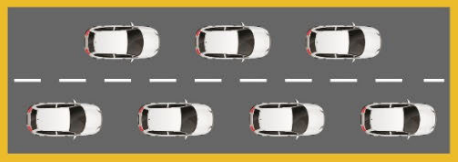
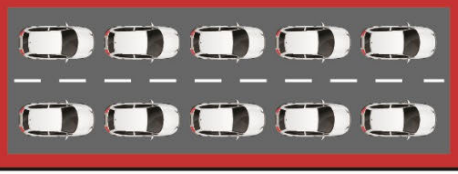
Peak Hour Volumes

Truck Traffic

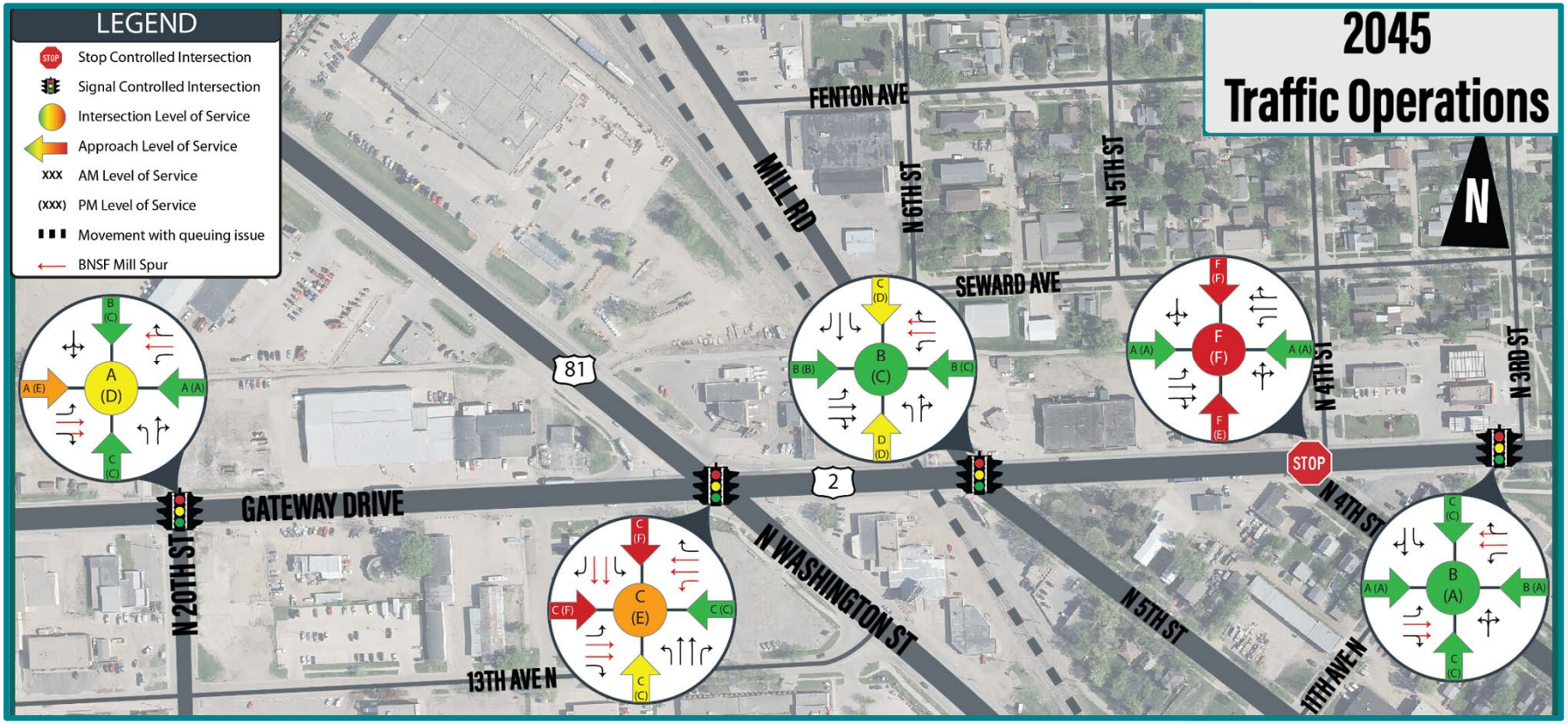
- Level One Freight System with international connections
- 1,200-1,500 trucks per day
- Trucks per day > 1,500 during sugar beet harvest season
- In 2016, NDSM increased capacity 33%, looking to expand another 22% in 5 years



Traffic Operations

CAPACITY	TRAFFIC FLOW	DESCRIPTION
Under		**LOS A - FREE FLOW** Low volumes and no delays.
		**LOS B - STABLE FLOW** Low volumes and speeds dictated by travel conditions.
		**LOS C - STABLE FLOW** Speeds and maneuverability closely controlled due to higher volumes.
Approaching		**LOS D - RESTRICTED FLOW** Higher density traffic restricts maneuverability and volumes approaching capacity.
At		**LOS E - UNSTABLE FLOW** Low speeds, considerable delays, and volumes at or slightly over capacity.
Over		**LOS F - FORCED FLOW** Very low speeds, volumes exceed capacity, and long delays with stop-and-go traffic.

Intersection Traffic Operations



- LOS acceptable at all intersections today, except N 4th Street.
- Congestion Builds at Washington Street, causing unacceptable LOS in the future
- Queuing an Issues in All Scenarios
- Travel Time a Concern with Trains and Multiple Signals

2045 Queuing Issues

PM Peak

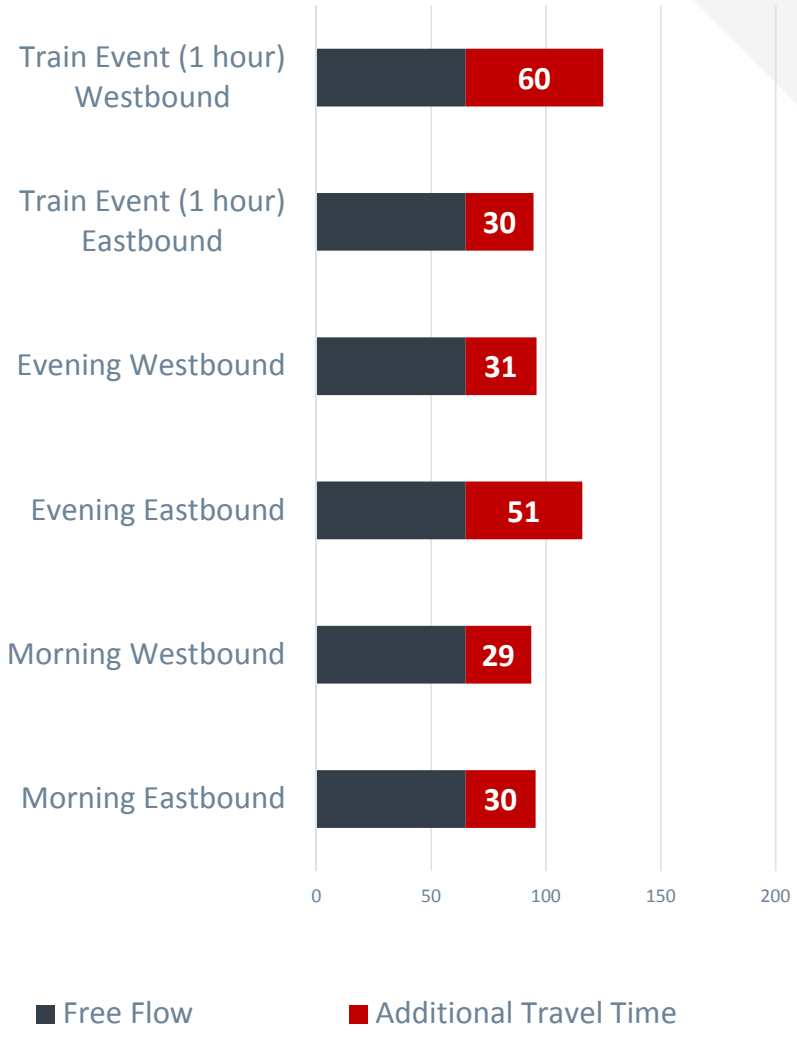
Train Event (non-unit train)

2045 Train Event Operations

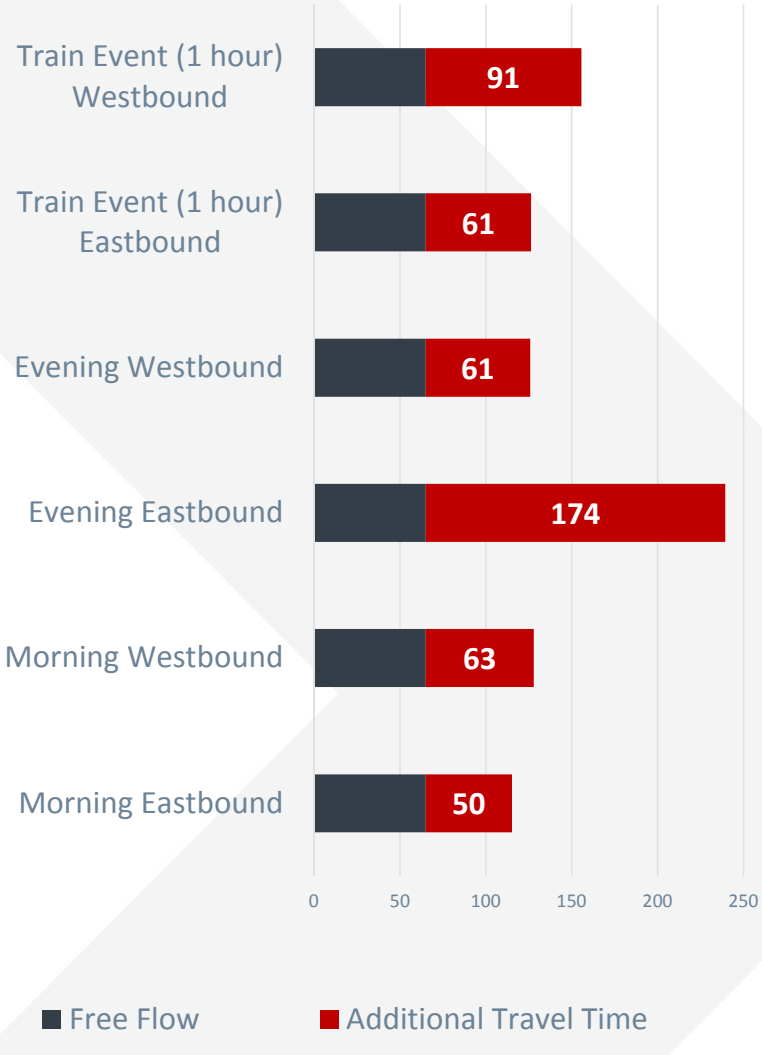
- One train event:
  - 4 hours of vehicle delay today
  - 7 hours by 2045
- Future unit trains

Travel Time

Existing

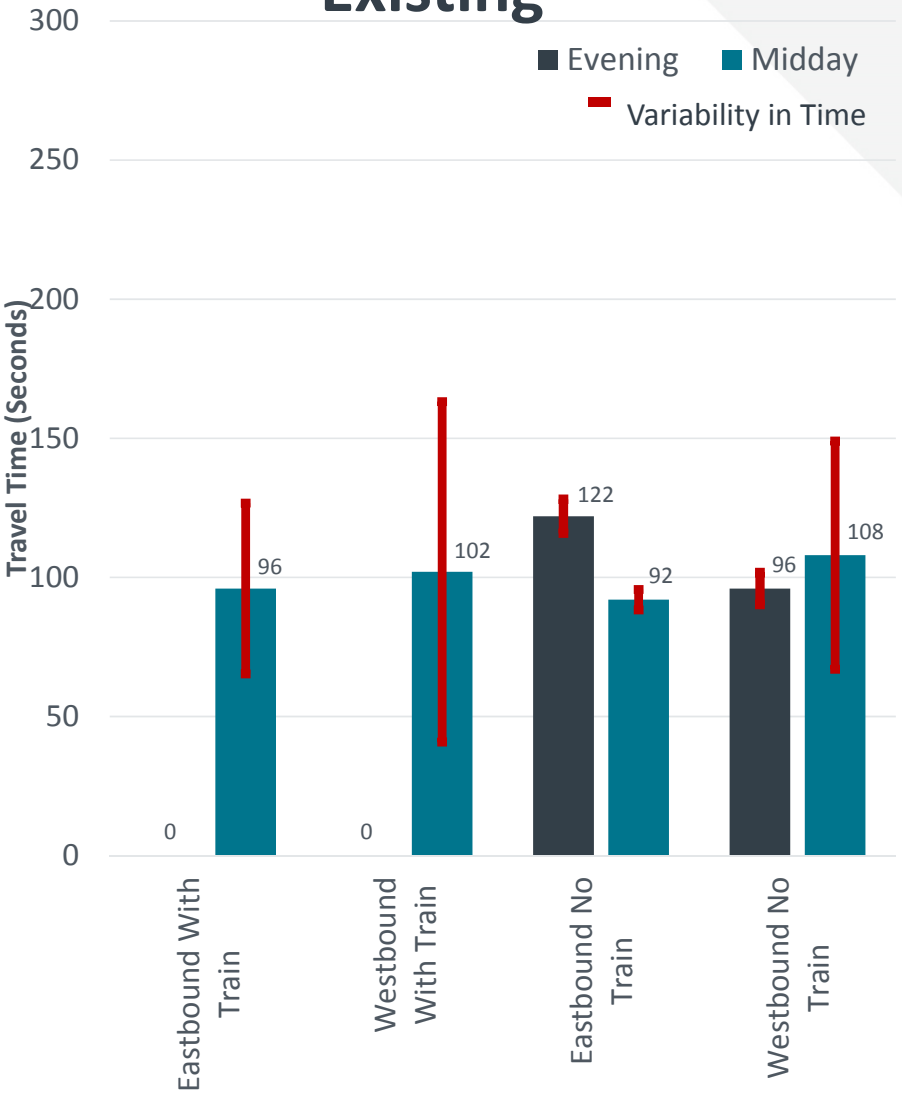


2045

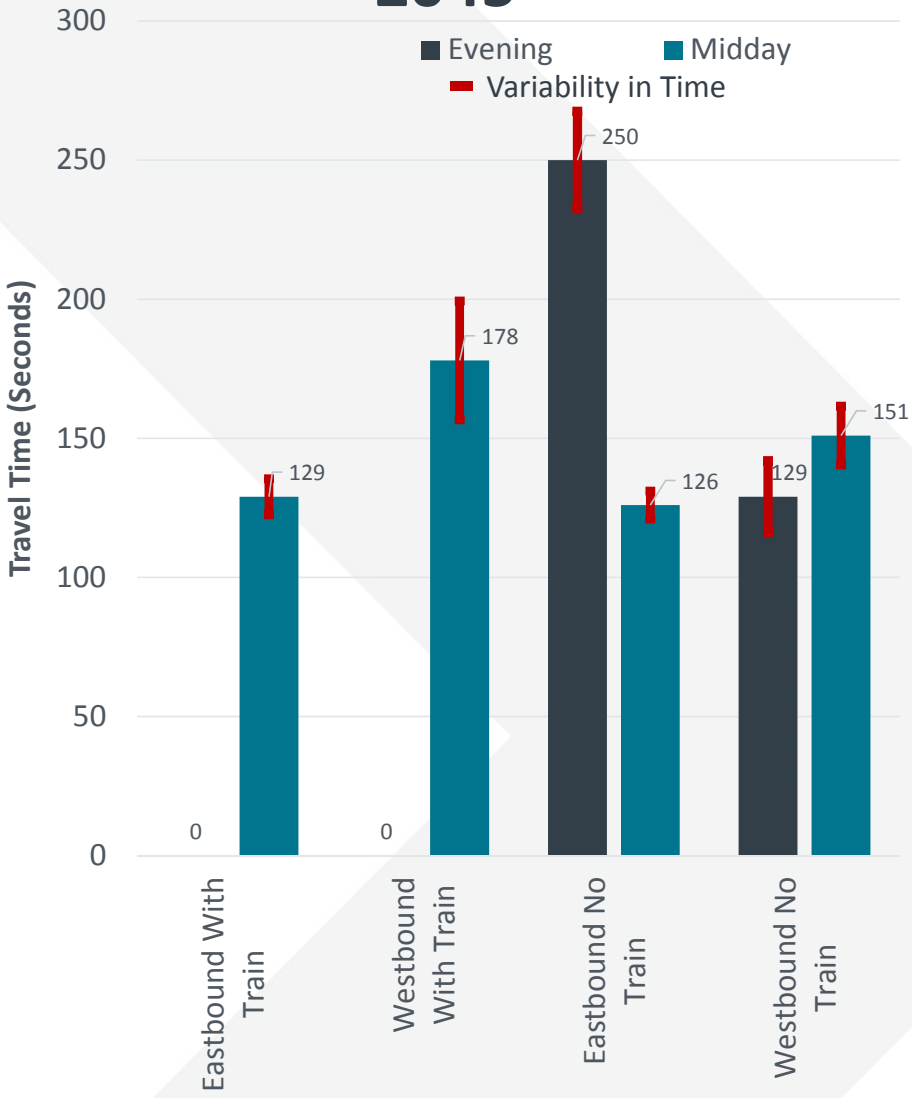


Reliability

Existing



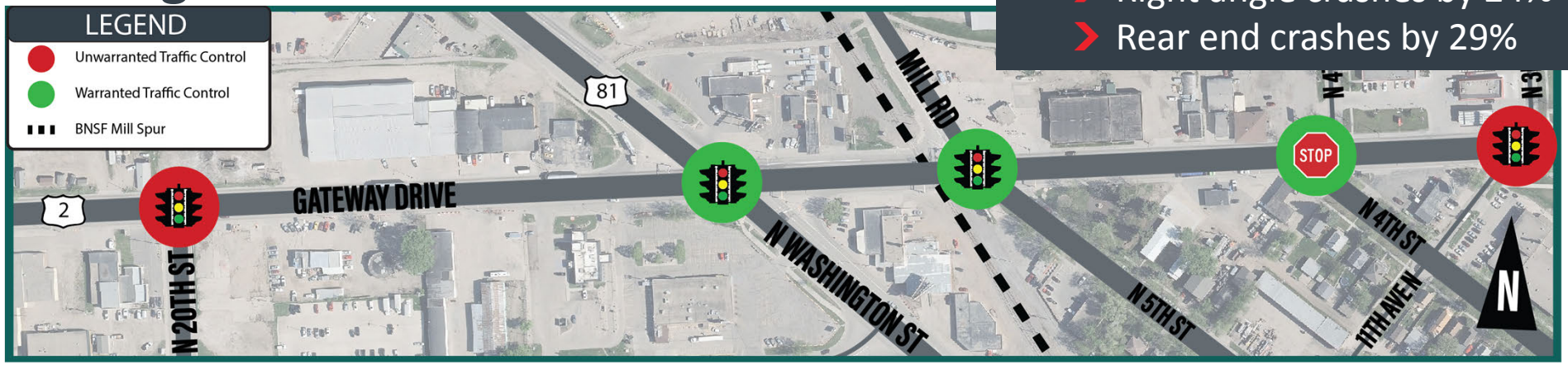
2045



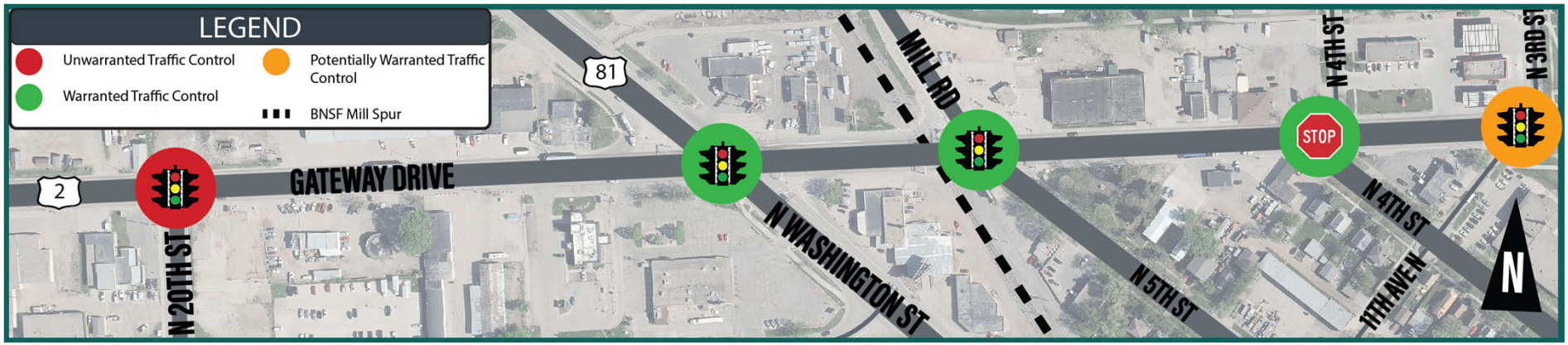
Existing Traffic Control Analysis

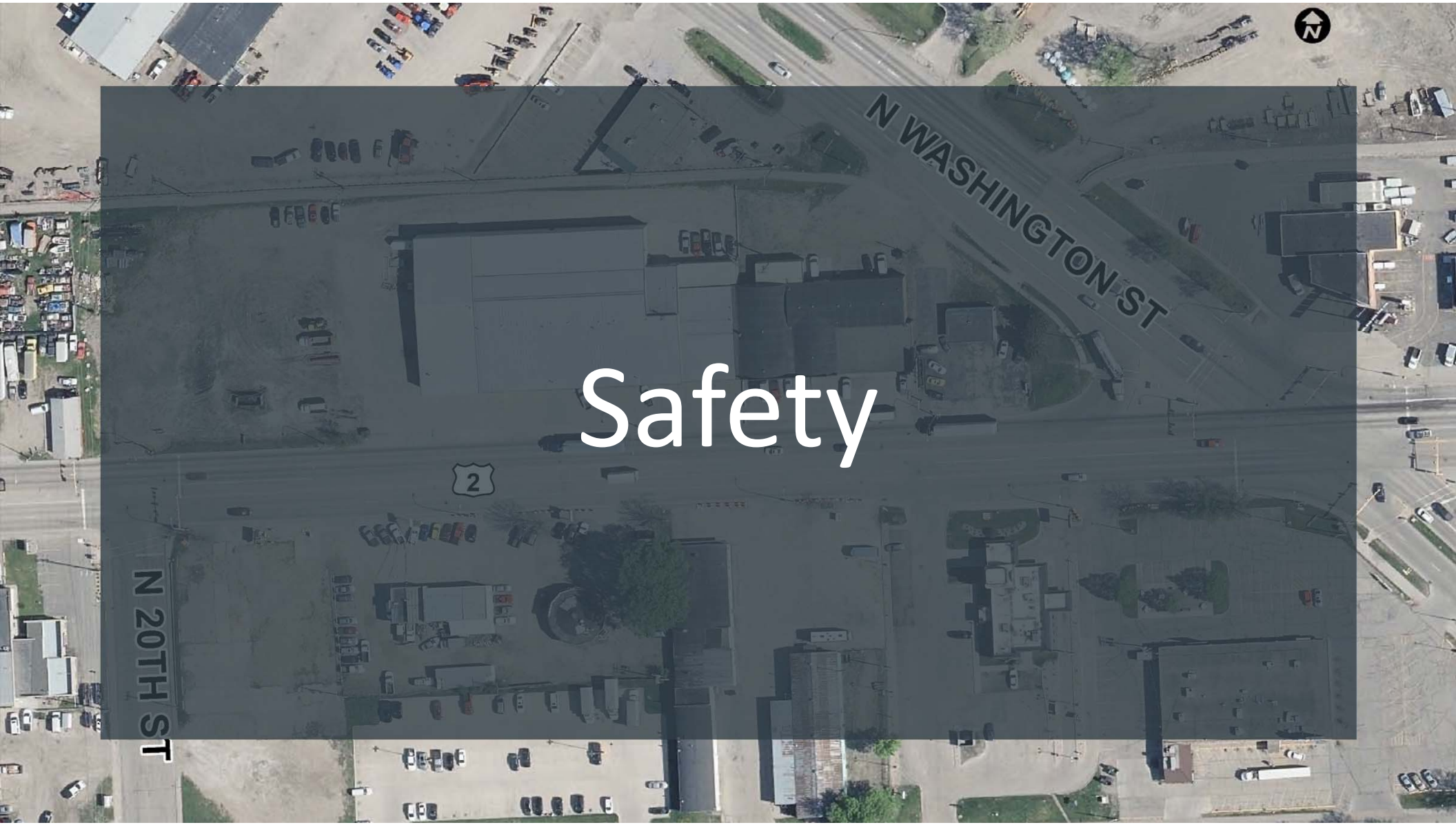
- Removal of unwarranted signals reduces
  - All crashes by 24%
  - Injury crashes by 54%
  - Right angle crashes by 24%
  - Rear end crashes by 29%

Existing



2030 and 2045





Safety

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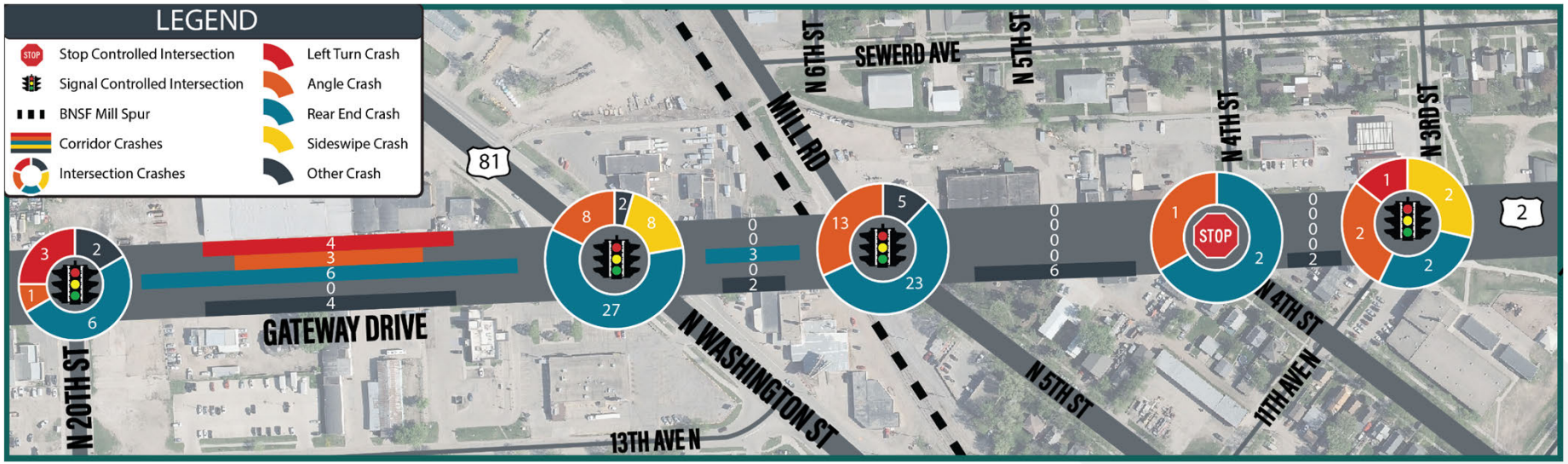
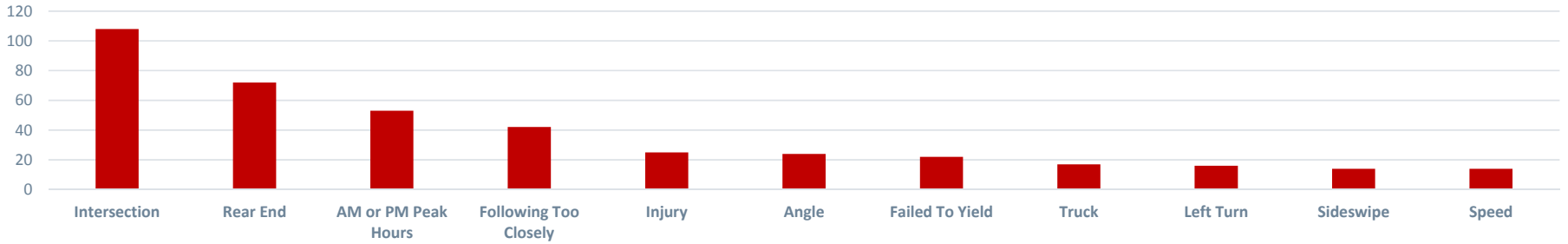
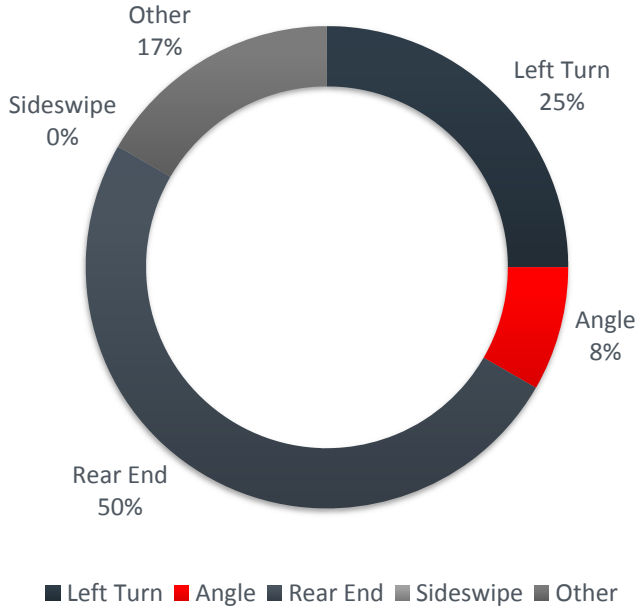
Crash History





- 28 Crashes/Year
- 78% Intersection Crashes
- 52% Rear-End Crashes
- 38% Peak Hour Crashes

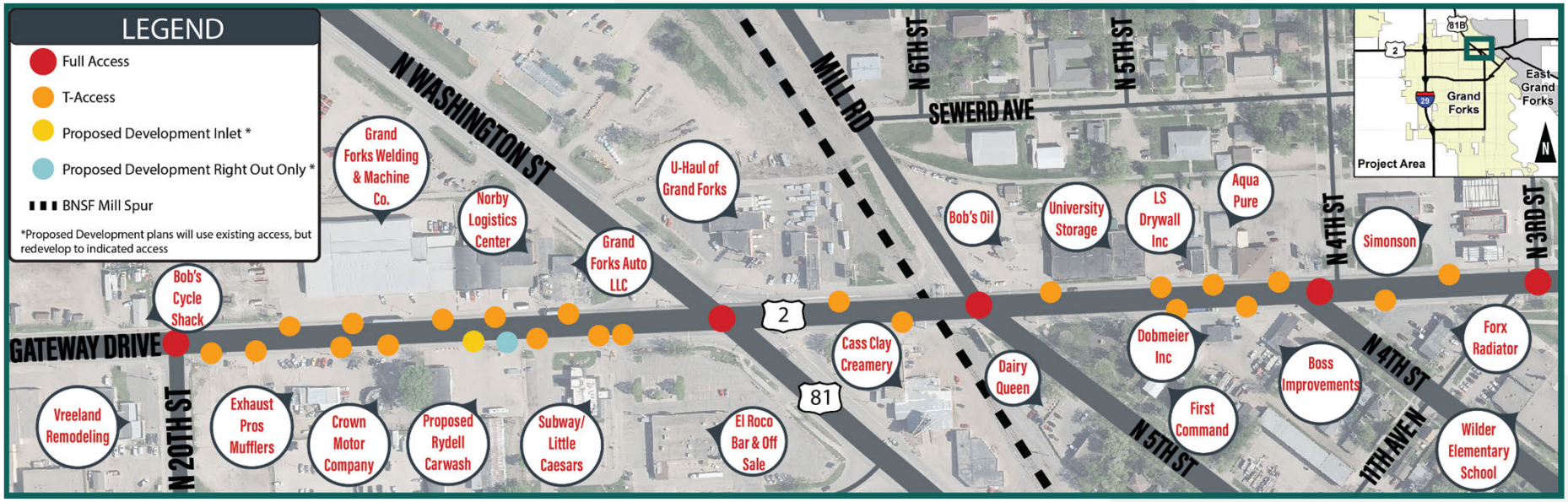
20th Street Intersection



- 12 crashes in last five years
- 33% rear end crashes on east approach
- 25% westbound left-turn crashes (Protected/Permitted)

- Unwarranted signal control increases
  - All crashes by 24%
  - Injury crashes by 53%
  - Right angle crashes by 24%
  - Rear end crashes by 29%

Access Management



- Unsignalized driveways
  - Increase crash rate by 2%
  - Reduces corridor travel speed by 0.25 MPH
- Desired Access Spacing
  - 660 feet
  - 8 access/mile
- Existing Access Spacing
  - 33 accesses
  - 66 access/mile (8x Standard)

20th Street to Washington Street

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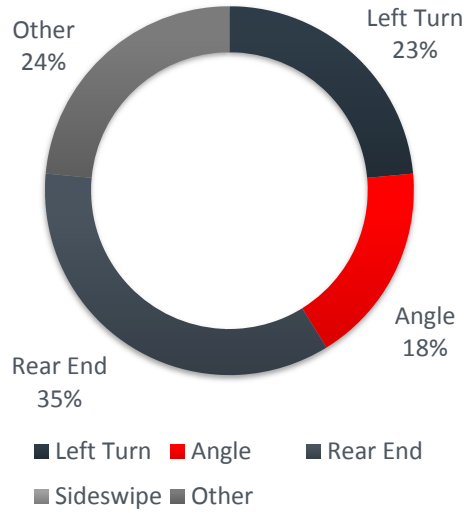
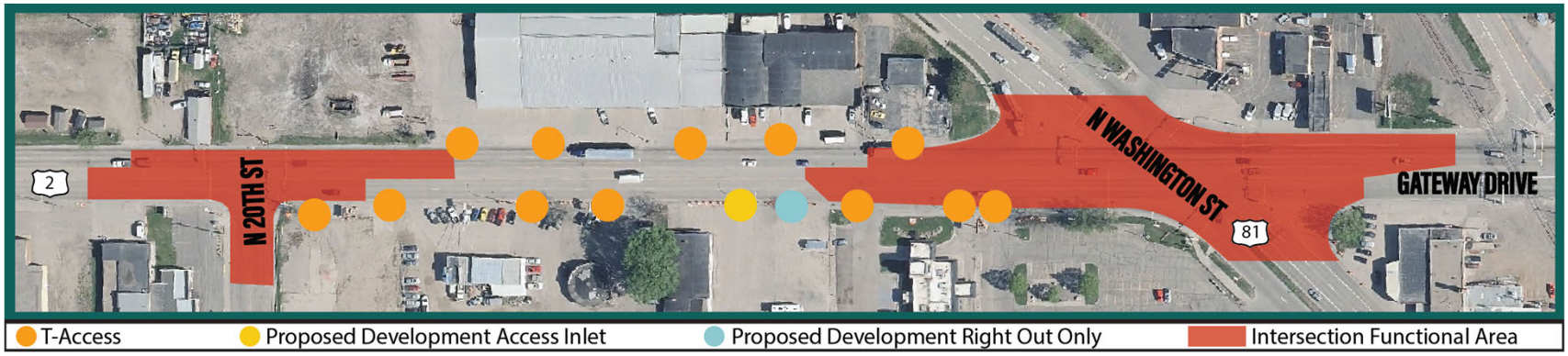
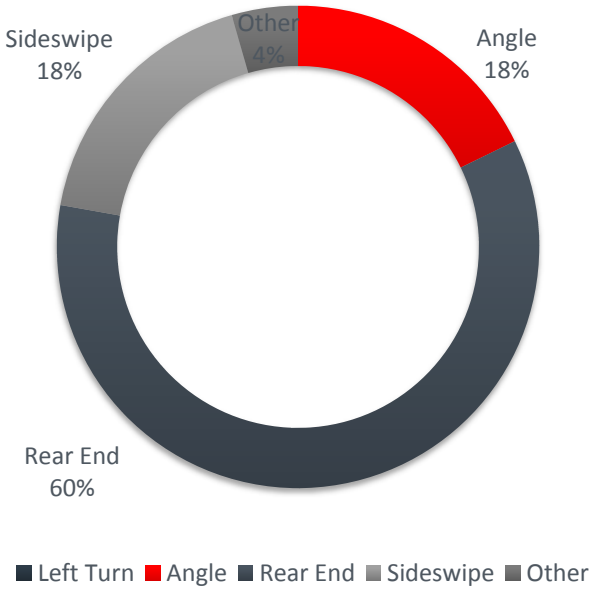


- 17 crashes in last five years
- Above critical crash rate
- 41% during AM/PM peak hours
- Long queues and dense access spacings
- Queues block sight lines

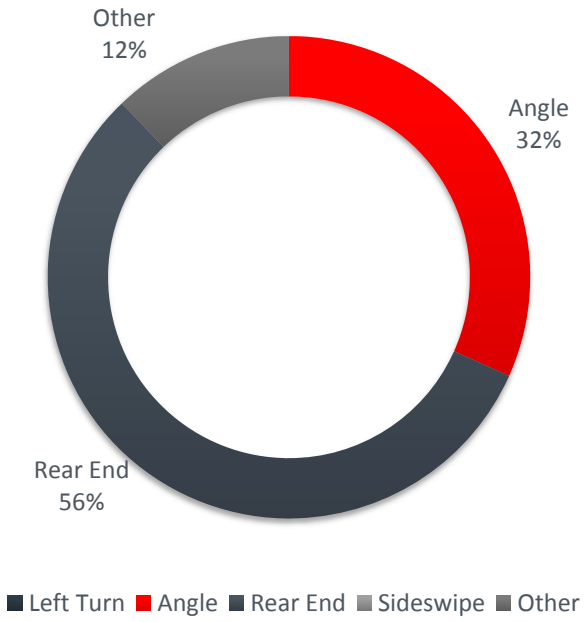


US 81/Washington Street Intersection



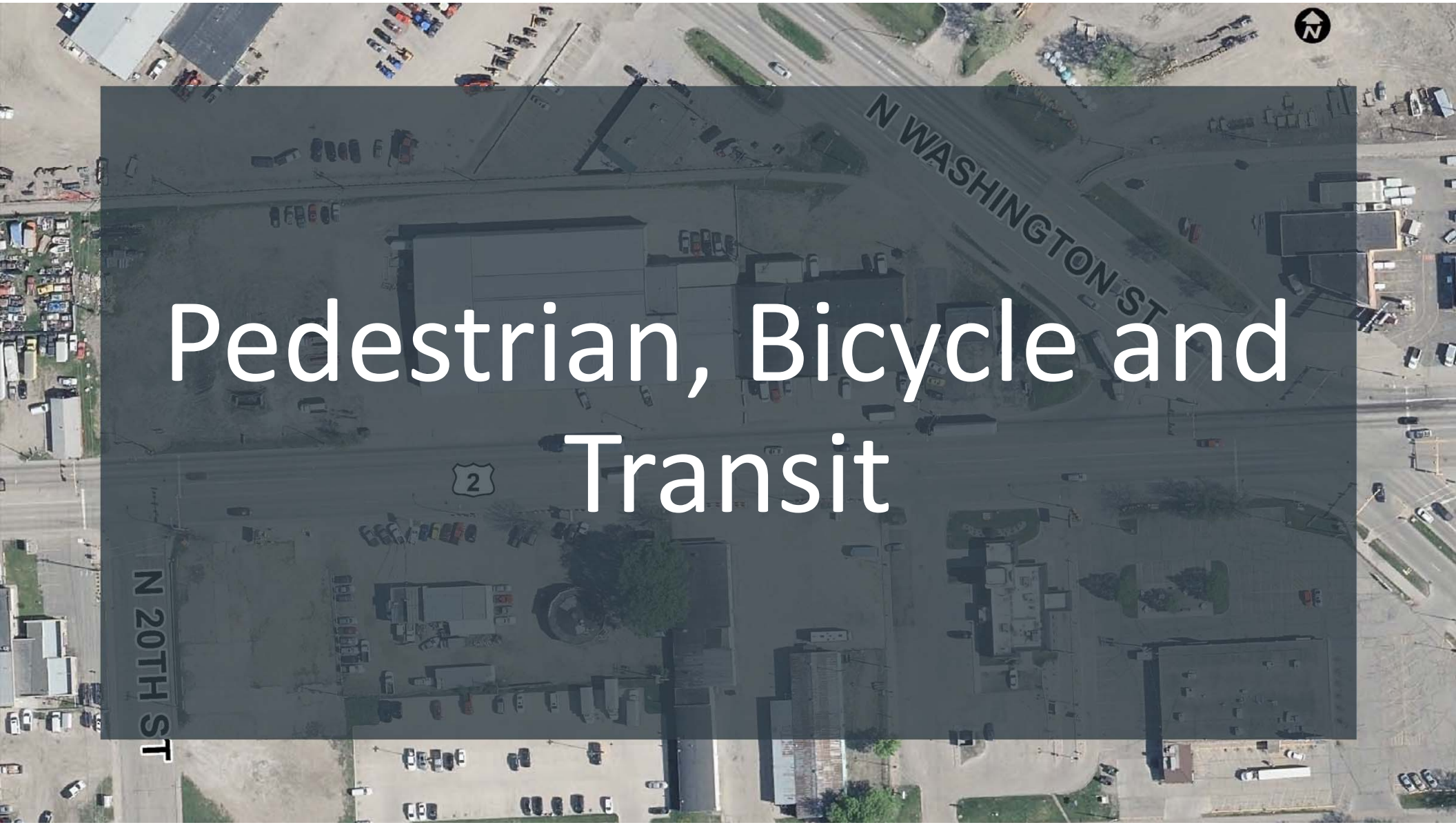
- 45 crashes in last five years
- 60% rear end crashes
  - 30% during AM or PM peak hour
  - 30% between 11 AM to 1 PM
- 8 crashes involving trucks
- 0 Crashes involving Pedestrians or Bikes
- Long queues and dense access spacings
- 30% rear end crashes during peak hours

Mill Road/5th Street Intersection



- 41 crashes in last five years
- Above critical crash rate

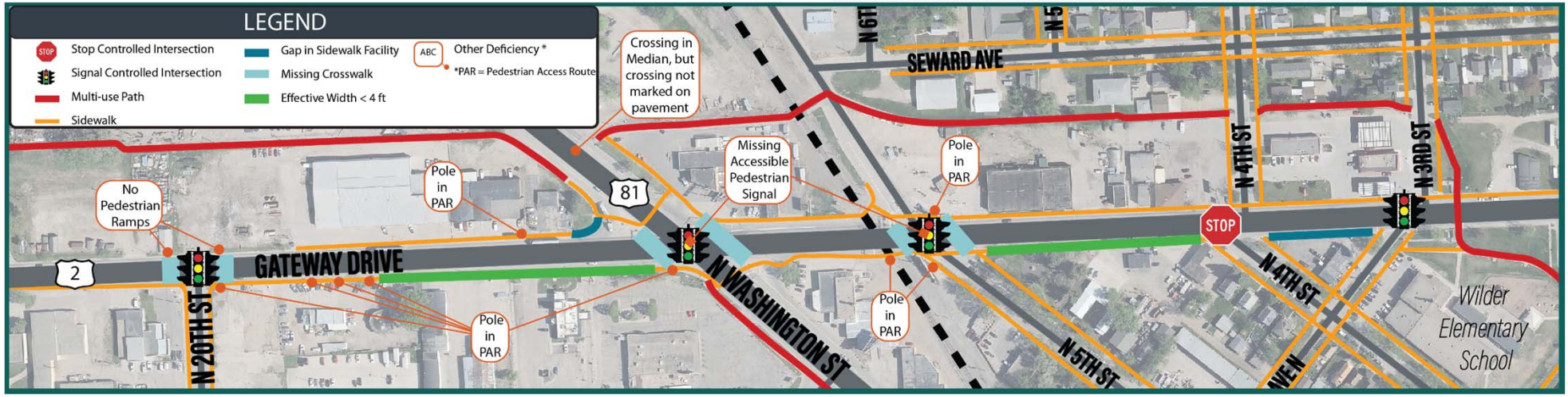
- 50% rear end crashes
  - 65% During AM or PM peak hours
  - 52% occurred on east approach



Pedestrian, Bicycle and Transit

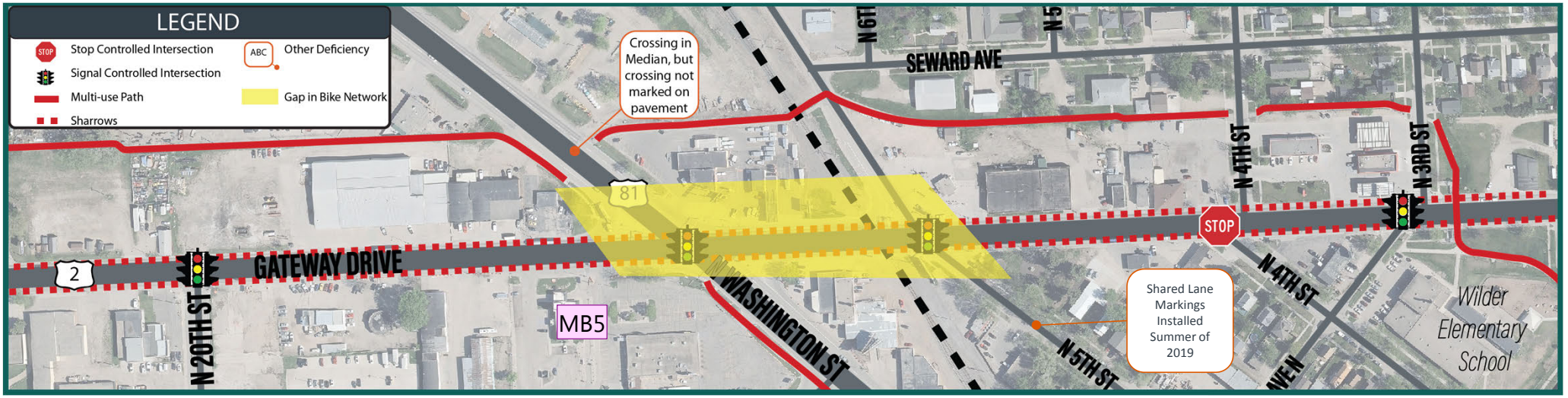
Pedestrian Network

Pg. 9,10



- Only controlled crossing at 3rd Street underpass
- ADA conflicts at crosswalks, utilities and driveways
- Minimal to no buffer

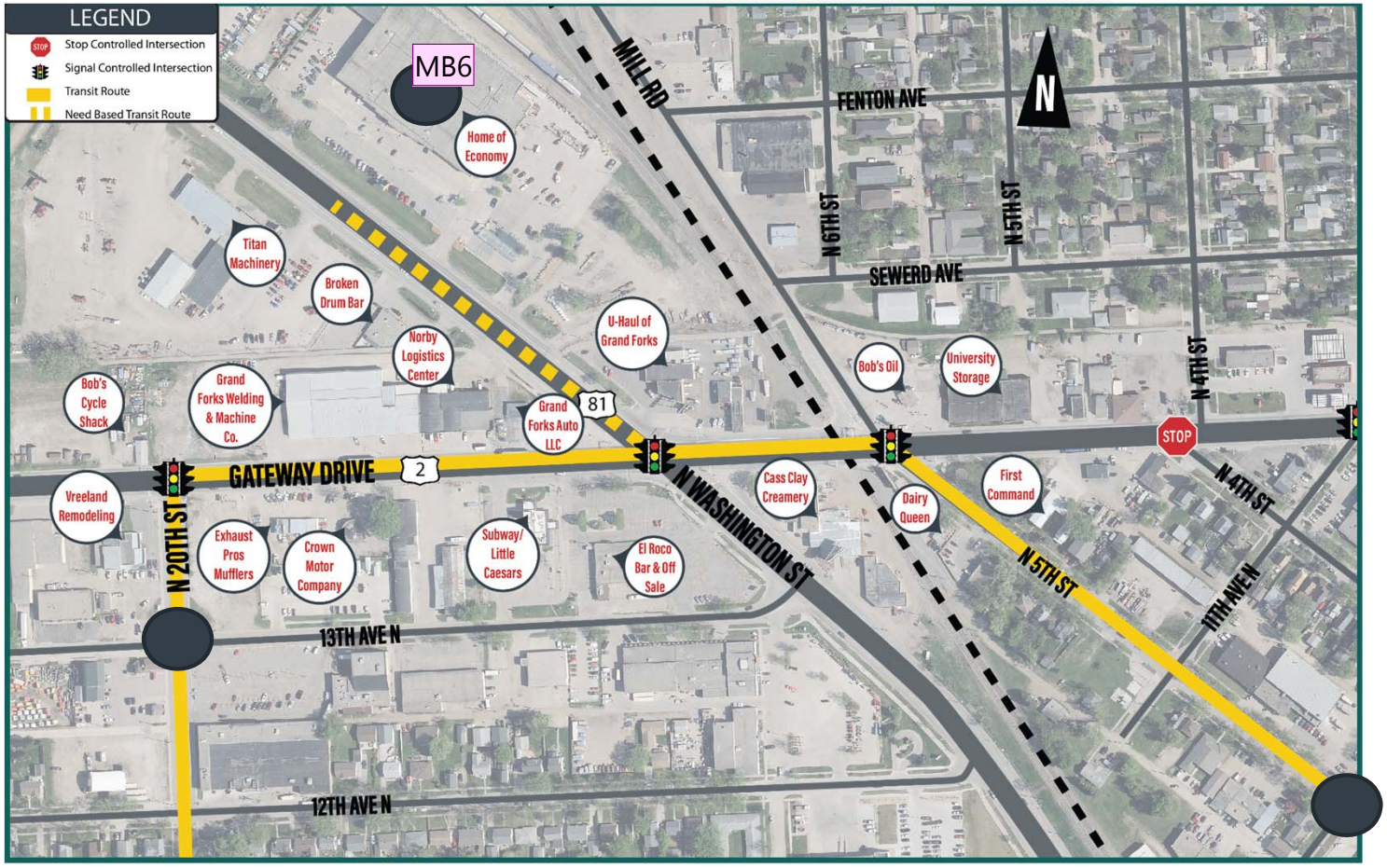
Bicycle Network

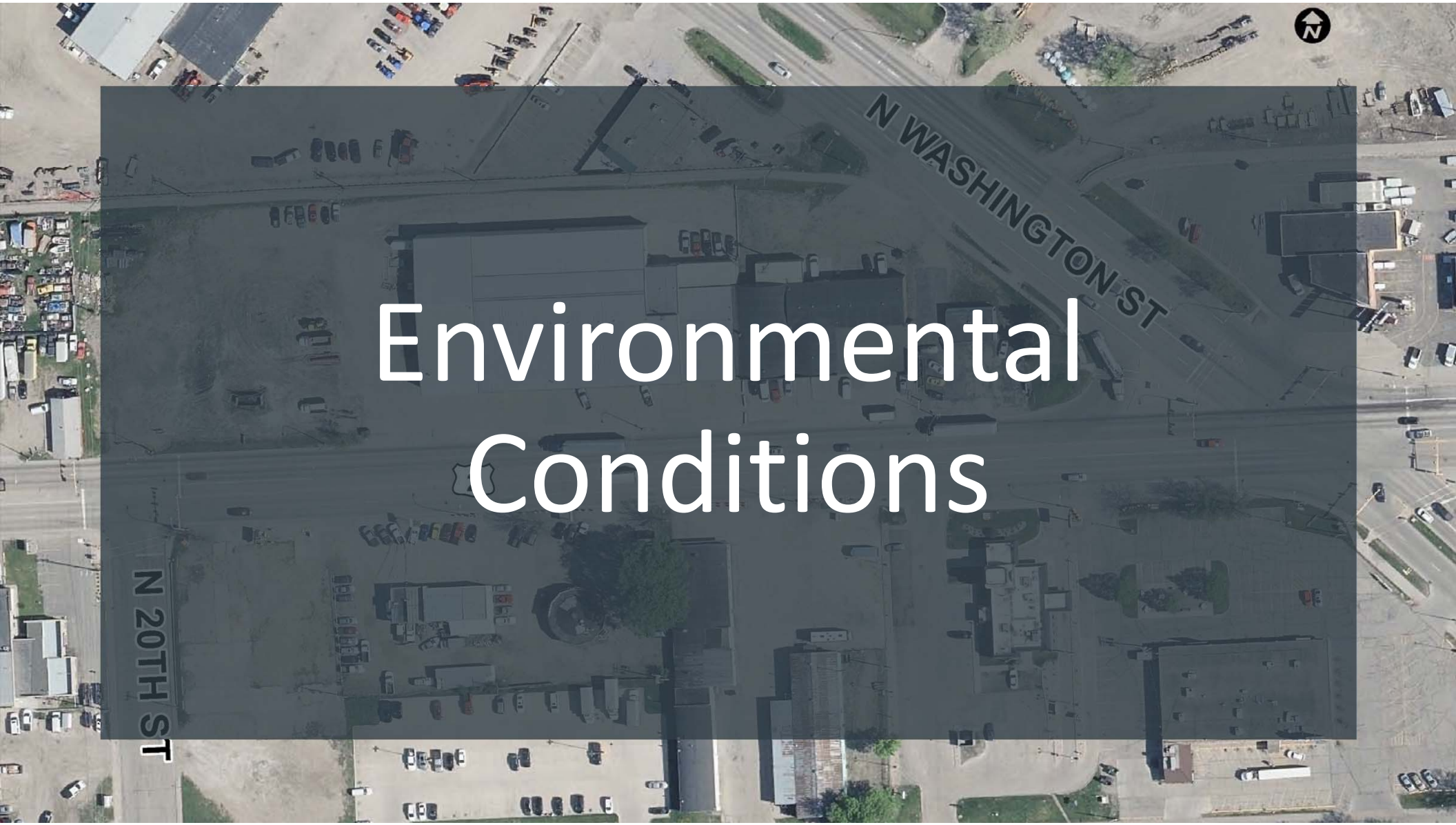


- Connections
  - 3rd Street and Red River Greenway to the east
  - Columbia Road to the west
- No traffic control to cross US 2/Washington Street
- Underpass at 3rd Street
- Bikes allowed on all streets

Transit Network

- CAT Route 2
  - Hourly service
- CAT Route 13
  - Night Route
- Stops
  - 5th Street/10th Ave
  - Hugo's on 20th St
  - Home of Economy when scheduled in advance



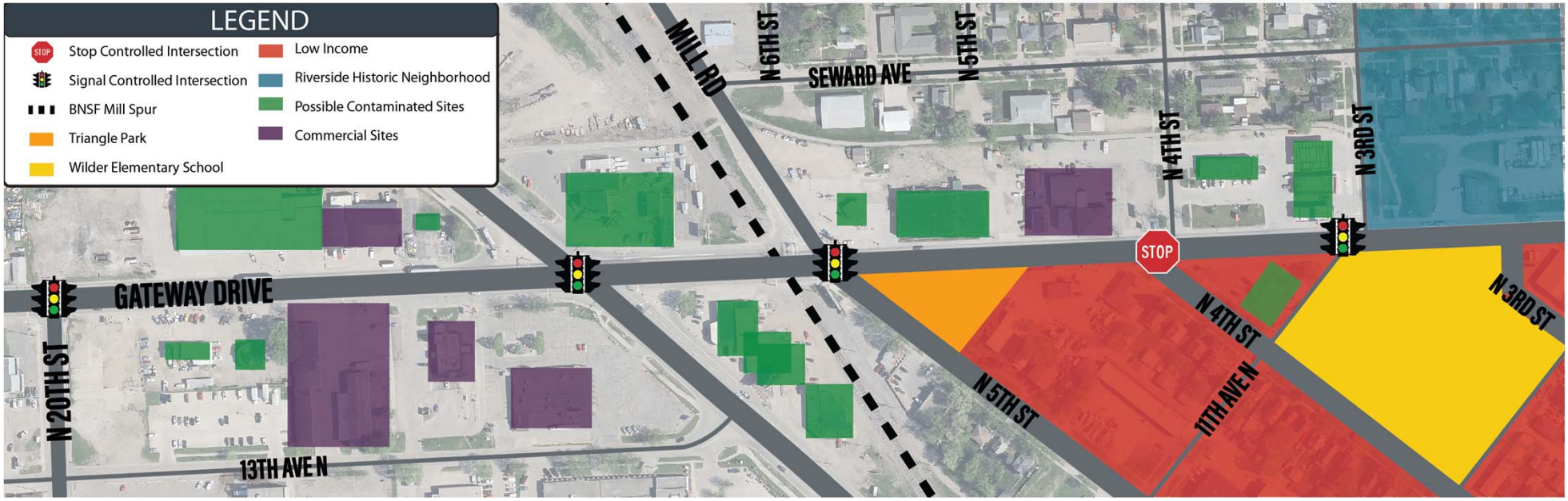


Environmental Conditions

Right-Of-Way

- US2/Gateway Drive : 70 feet
- US 81/Washington Street : 20 feet on east side, 60 feet of west side

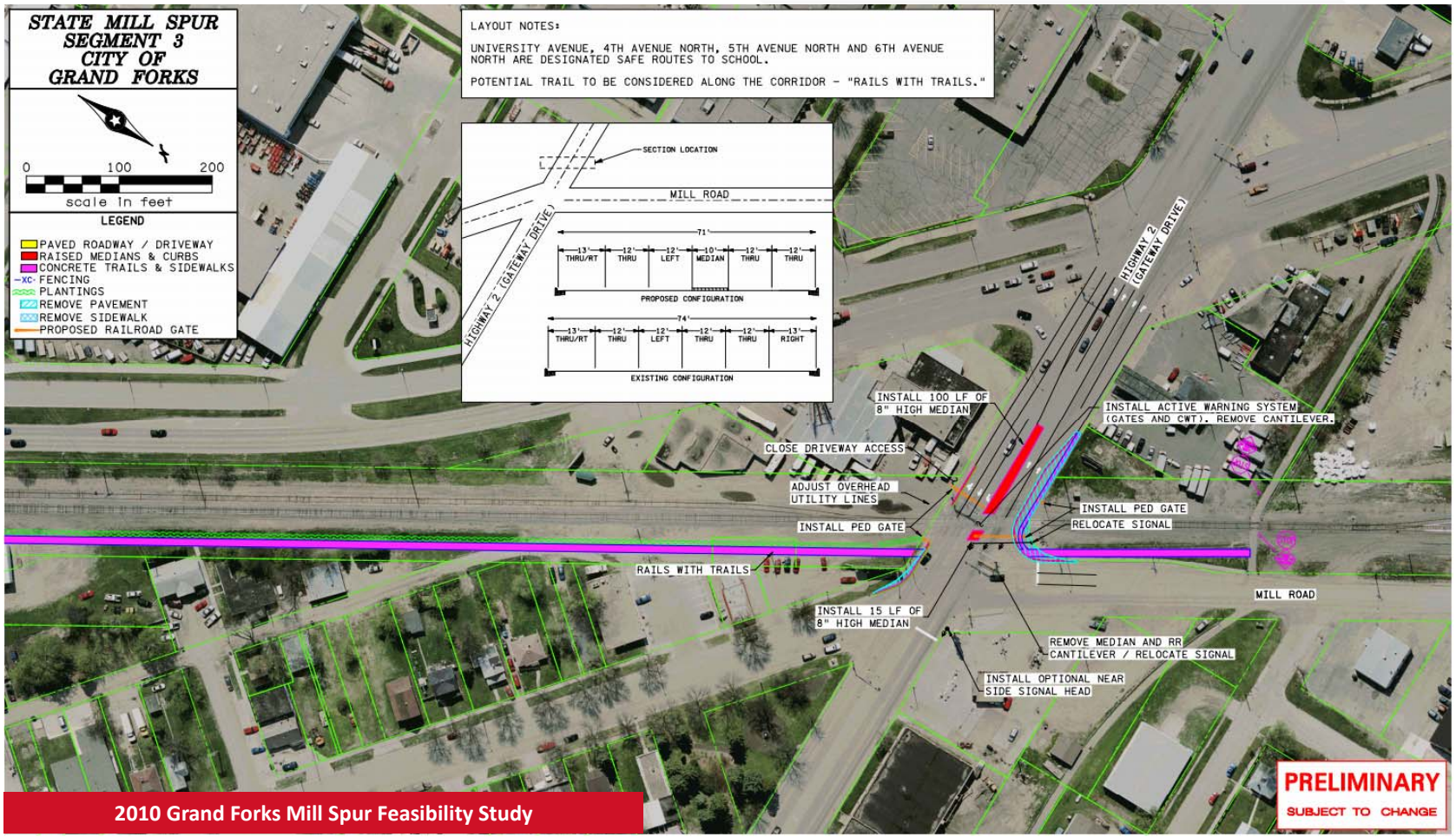
Affected Environment



- Potential Impacts
  - Hazardous Waste Sites
  - Social and Economic Impacts
  - Noise
  - Pedestrians and Bicyclists
  - Environmental Justice
  - Historic and Archaeological Preservation
  - Section 4f

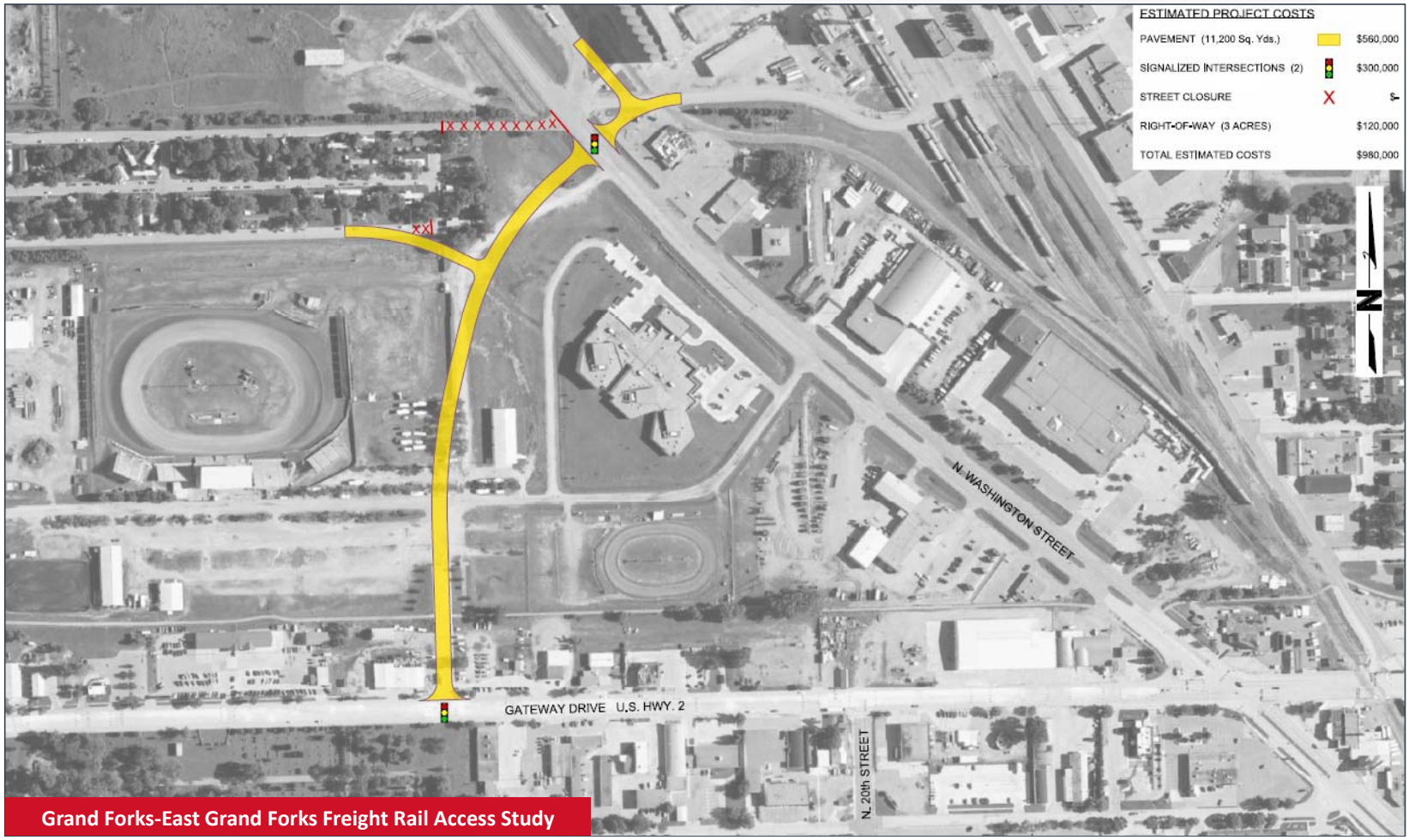
Alternative Brainstorming

At-Grade Improvements



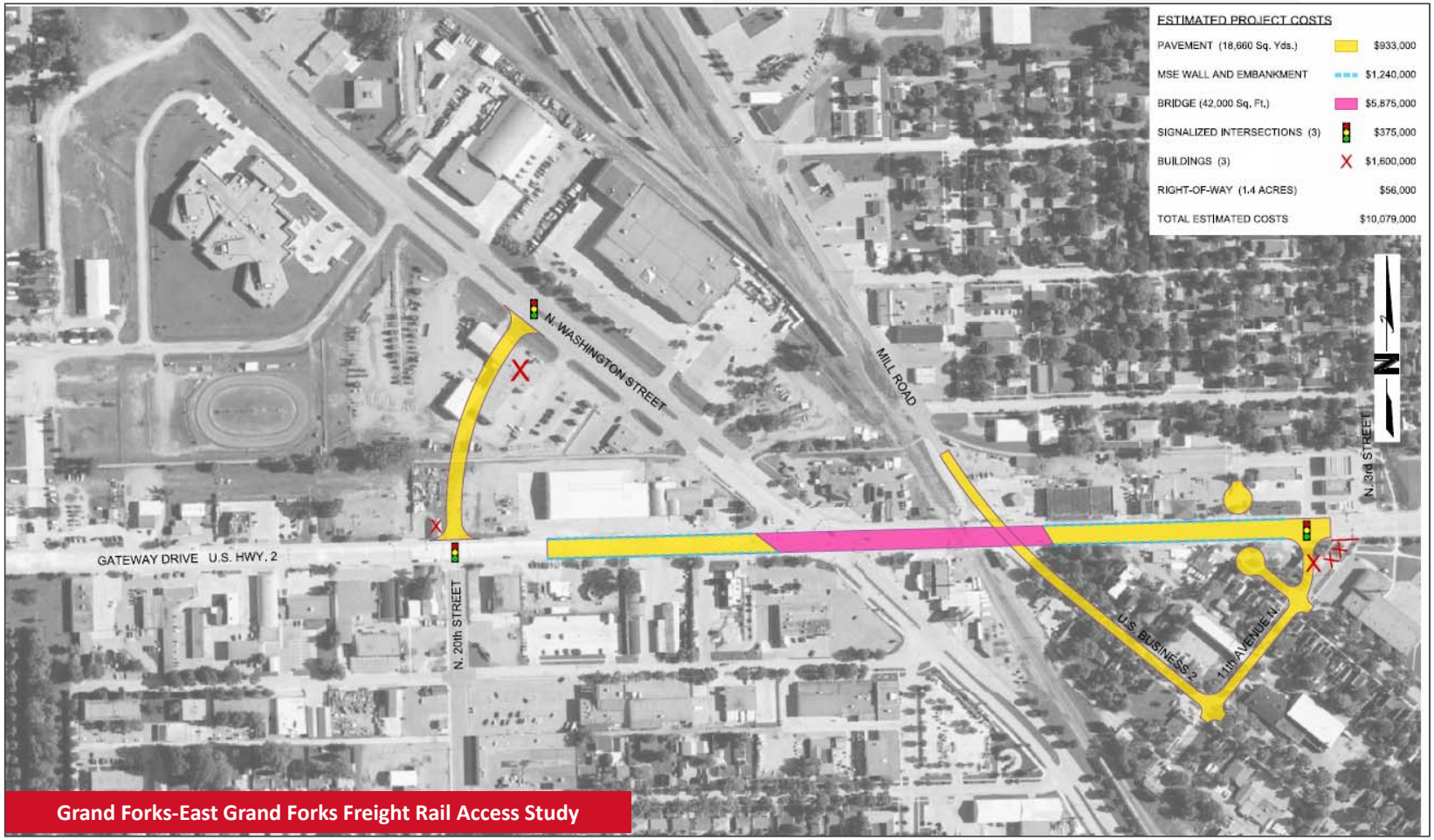
2010 Grand Forks Mill Spur Feasibility Study

Rerouting Skewed Movements



Reroute the Mill Spur

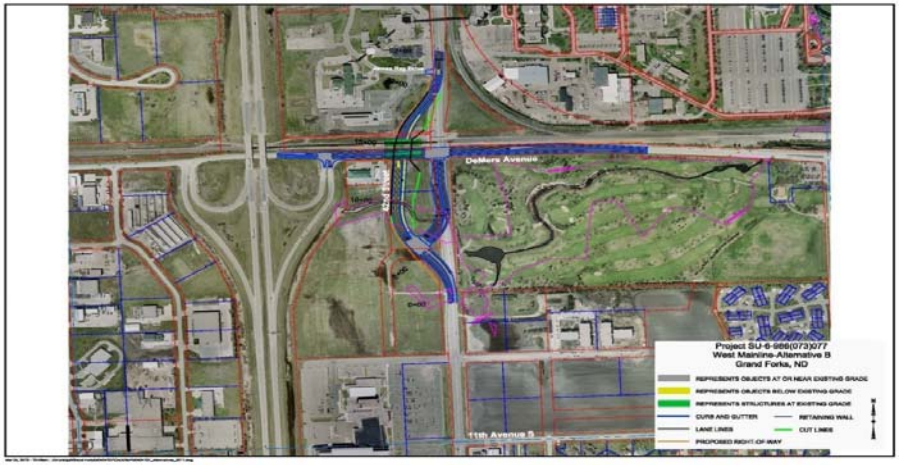
Grade Separated Crossing

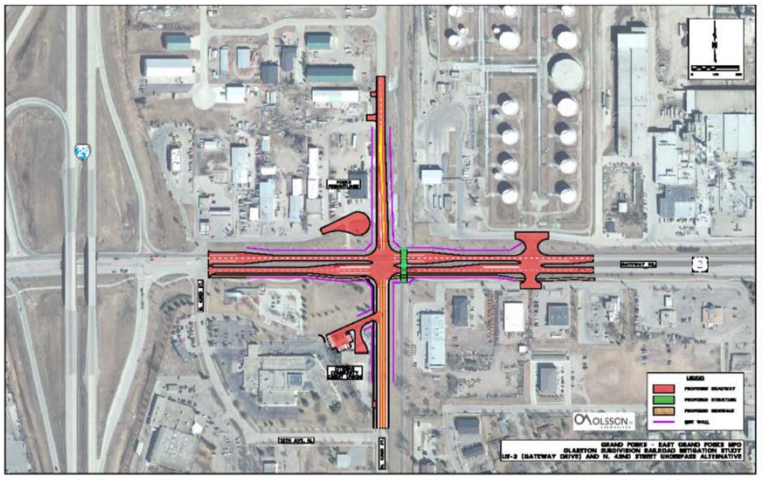


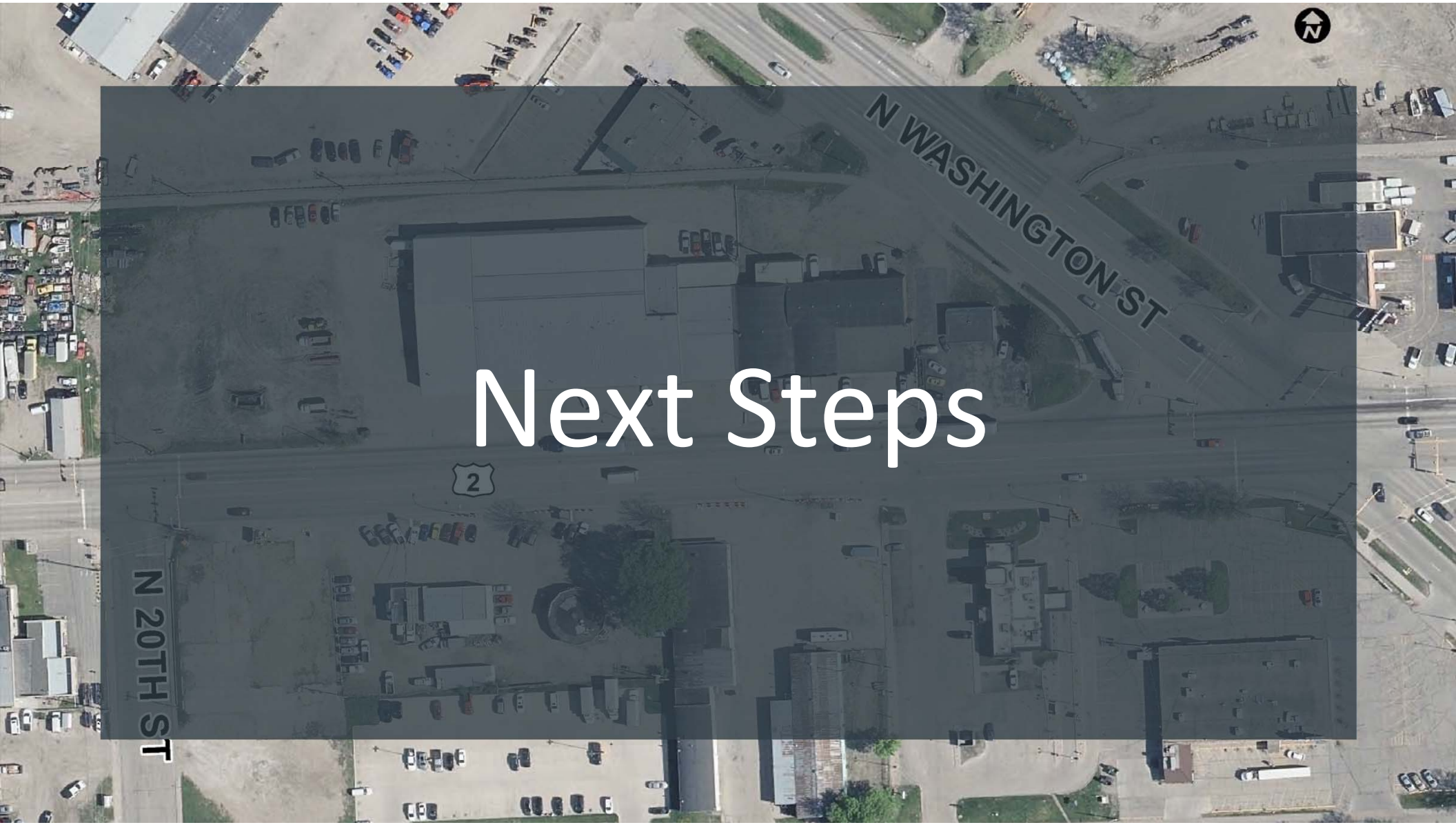
Grand Forks-East Grand Forks Freight Rail Access Study

Funding Availability

- >$150,000,000 in Unfunded Grand Forks Projects
- 42nd Street and DeMers Avenue (~$25-30M)
- Gateway Drive/US 2 and Glasston (~$28M)
- Part of the NHS and Freight System

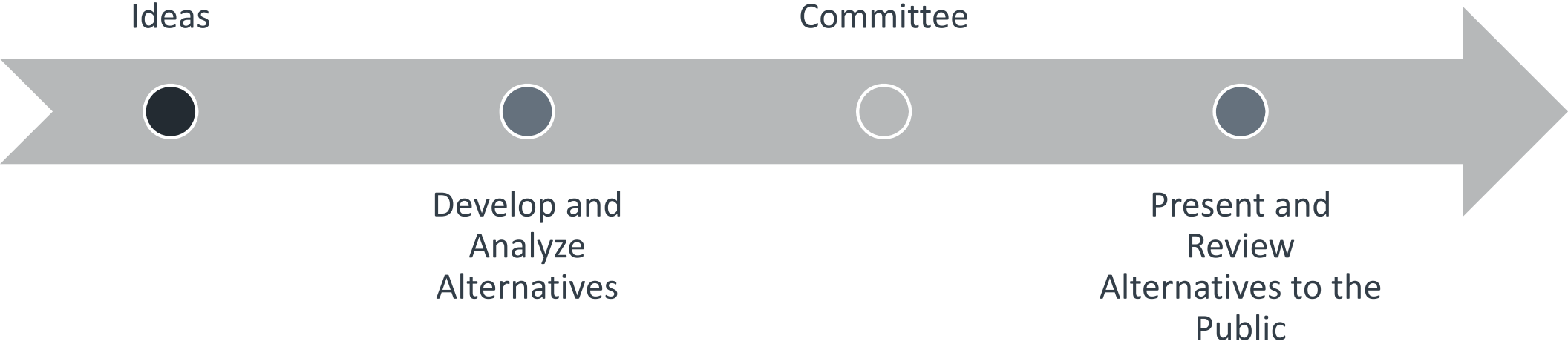






Next Steps

Next Steps


Review Public Comments and Ideas
Develop and Analyze Alternatives
Review Alternatives with Steering Committee
Present and Review Alternatives to the Public

How to Get Involved

- Share Your Ideas at the Meeting!
- Fill Out Brainstorming Worksheet
- E-mail: mike.bittner@kljeng.com
- Fill Out Comment Card
- Visit website: https://theforksmpo.com/the-forks-mpo/