

WELCOME TO PUBLIC INPUT MEETING #3

I-29 AND 40TH AVENUE NORTH INTERCHANGE (EXIT 69)

Tuesday, April 30 | 5PM - 7PM

Presentation at 5:15PM



Leave a Comment

Share feedback via written comments on the forms provided at the meeting or via email. Comments will be collected until May 15, 2024.



Visit the Project Website

Stay up-to-date on meetings, next steps, and opportunities through the project website: www.dot.nd.gov/exit69



Attend a Future Public Meeting

Plan to join us at future public meetings. We will advertise upcoming meetings online and throughout the community.

PROJECT LOGISTICS

About the Project

The interchange at Interstate 29 (I-29) and 40th Avenue North has been experiencing significant traffic growth due to new development along both sides of I-29. This includes development west of I-29 in the Reile's Acres residential subdivision, additional land that will become available following the completion of the Fargo-Moorhead Flood Diversion, and industrial development east of I-29.

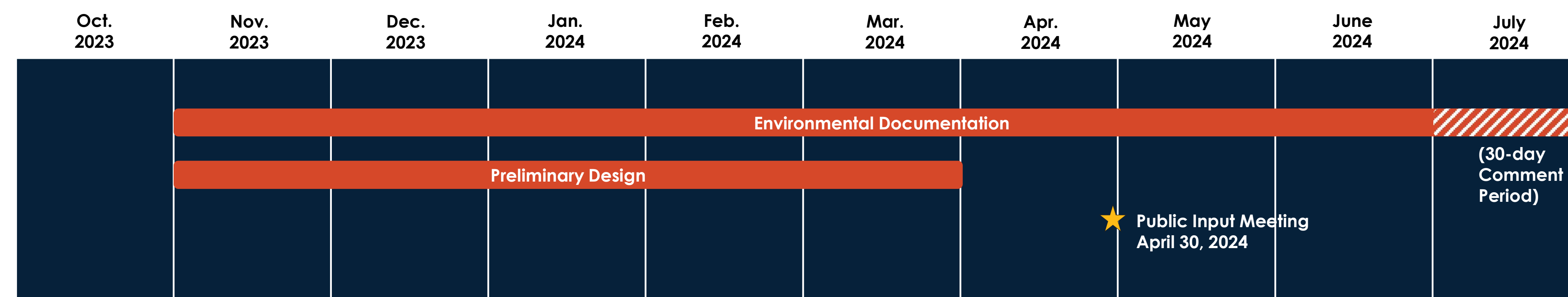
To address increased roadway capacity and safety concerns, NDDOT completed a feasibility study in summer 2023. The recommendation from the study was to reconstruct the interchange with two roundabouts at the ramps as shown to the right. The intersection of 40th Avenue North and Old County Road 81 will also be reconstructed as a roundabout.

The project is now in the preliminary design and environmental documentation phase as shown in the schedule below.



Dumbbell interchange identified as the alternative to advance to the next phase of project development.

Schedule



☑ Feasibility Study completed in August 2023 (Roundabout Interchange Alternative Advanced)

✍ Final Design tentative completion in November 2026 (Construction Plans & Specification)

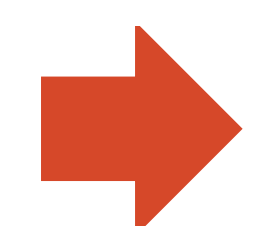
📅 Anticipated Construction 2028 or later (depending on funding availability)

Objectives

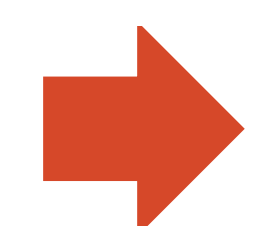
- Identify an alternative to advance to the next phase of project development.
- Prepare preliminary plans for identified alternative.
- Complete federal environmental document (CATEX).
- Identify anticipated utility conflicts.
- Identify property acquisition needs.

Next Steps

Collect comments from the public regarding the chosen alternative. Comment period closes on May 15.



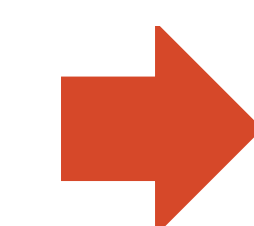
Receive approval of environmental document.



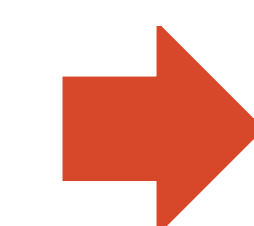
Create a work plan for next project phase - Final Design (Construction Plans, Permitting and Contractor selection).



Complete construction documents and project permits.



Complete necessary property acquisition.



Construct new interchange. See construction staging boards for construction phase details.

PROJECT INPUT AND ENGAGEMENT

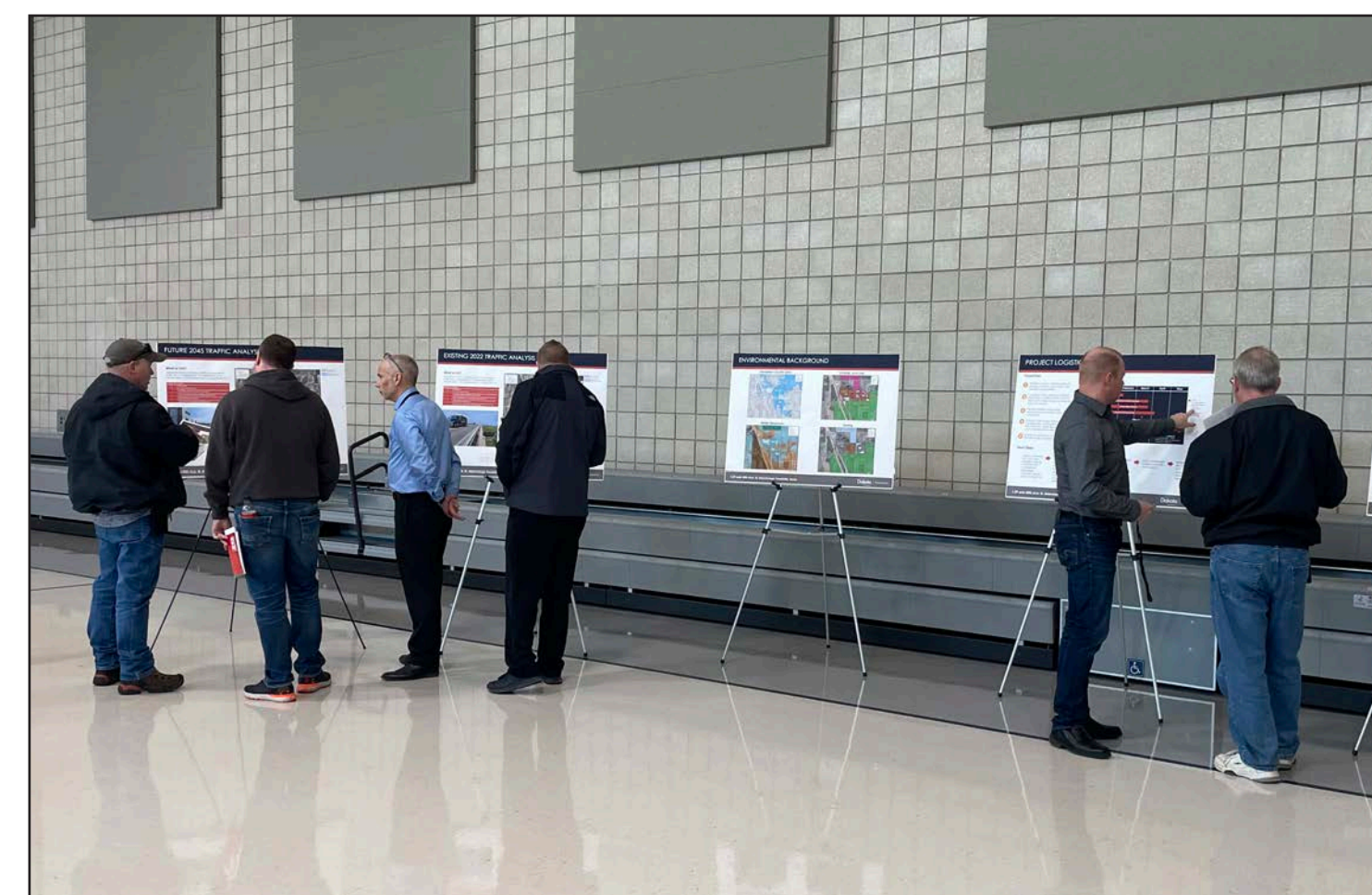
Technical Advisory Committee

A Technical Advisory Committee (TAC) was created to help guide the project in making informed decisions and providing agency direction to the project team as needed. TAC members included representatives from the following organizations:



Public Engagement

The first public input meeting was held on March 14, 2023 at the Fargo Readiness Center where members of the public learned about the project purpose and objectives, and provided input regarding the five potential interchange alternatives being considered.



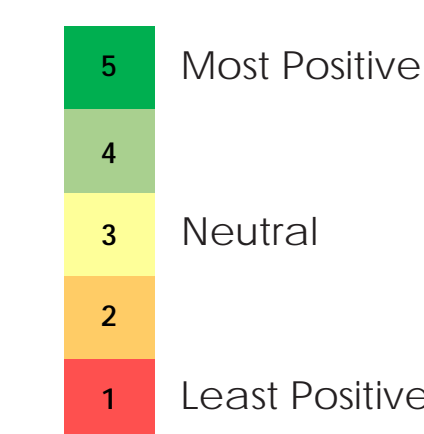
The second public input meeting was held on May 2, 2023 at the Fargo Readiness Center where members of the public learned about the preliminary results of the evaluation and comparison of interchange alternatives. Attendees were encouraged to ask questions and provide their input.



Alternatives Evaluation Matrix

An Alternatives Evaluation Matrix was developed to compare different interchange alternatives and assign a score for each one based on a set of 12 criteria. Each criteria was weighted by the Technical Advisory Committee (TAC) based on how important of a consideration it should be in determining the final interchange scores. A score from 1 (least positive) to 5 (most positive) was assigned to each criteria for each alternative. These scores were then multiplied by the criteria weights and totaled for an overall score. Alternative 2, or Dumbbell Interchange, received the highest score.

Estimated Impact



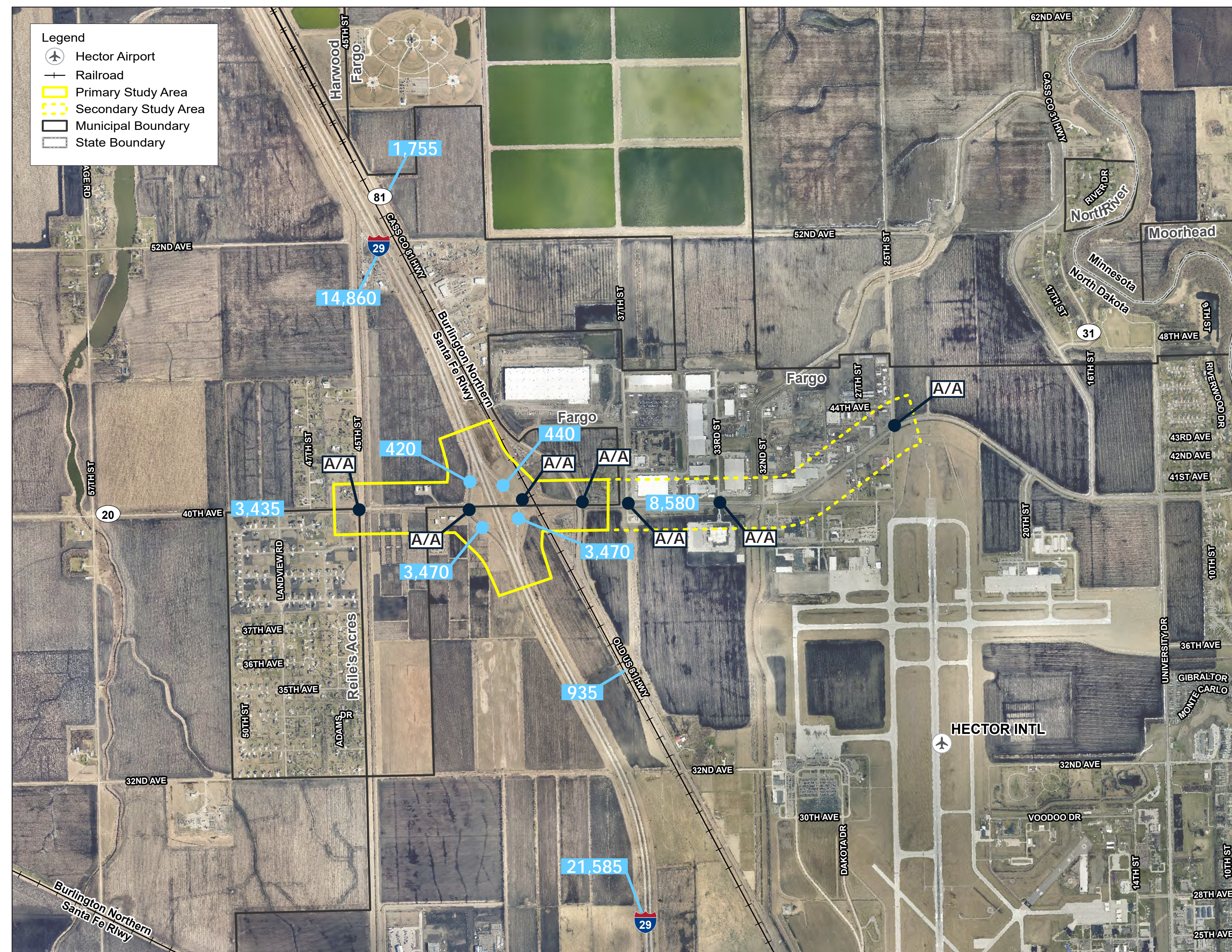
	Alt. 1 Standard Diamond	Alt. 2 Dumbbell	Alt. 3 Diverging Diamond (DDI)	Alt. 4 Roundabout DDI	Alt. 5 Partial Cloverleaf (Parclo)
Traffic and Level of Service (LOS) Weight: 5.0	4	5	5	3	5
Geometric Needs Weight: 4.8	5	5	4	4	5
Safety Improvements Weight: 4.5	2	5	5	3	4
Active Transportation Facility Enhancements Weight: 3.3	4	5	3	4	4
Cost Weight: 3.0	4	5	3	5	4
Impact of existing land use or new development including access Weight: 2.8	4	5	4	4	3
Right of Way Impacts Weight: 2.8	4	5	3	4	2
Utility Impacts Weight: 2.5	3	3	3	3	3
Constructibility Issues Weight: 2.3	4	5	4	4	4
Environmental Impacts Weight: 2.3	3	3	3	3	2
Structural and Geotechnical Impacts Weight: 2.3	1	1	1	1	1
Flexibility to accommodate future improvements or land use changes Weight: 2.0	3	4	5	2	4
Overall Score of Alternative = (Highest Value = Best Score)	131	166	140	127	137

EXISTING 2022 TRAFFIC ANALYSIS

What is LOS?

Intersection Level of Service (LOS) is a measure of traffic flow at intersections. It is dependent upon vehicle delay at the approaches. It ranges from A-F.

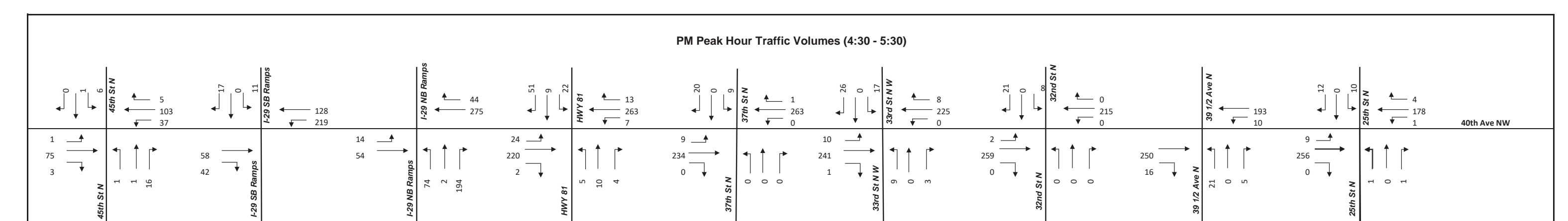
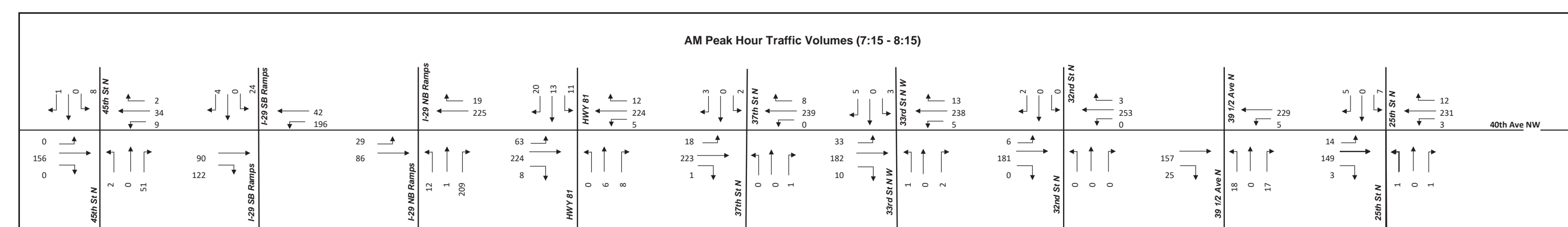
Intersection LOS	Definition
A	Minimal delays.
B	Low levels of delay and queues.
C	Intermittently vehicles wait through more than one signal indication, occasionally backups may develop, traffic flow is still stable and acceptable.
D	Delays at intersections may become extensive, but enough cycles with lower demands occur to permit periodic clearance, preventing excessive backups.
E	Traffic fills intersection capacity, long queues and delays, many vehicles need to wait through more than one green light.
F	Traffic demands exceeds capacity of intersection, very long ques and delays, most vehicles need to wait through more than one green light.



X/X Intersection LOS AM/PM Peak Hours
 #,### Existing Average Daily Traffic Volumes

The figure above shows the average daily traffic as it is today. The LOS at the intersections and interchange is currently operating with an LOS of A.

Existing Peak Hour Turning Movement Counts

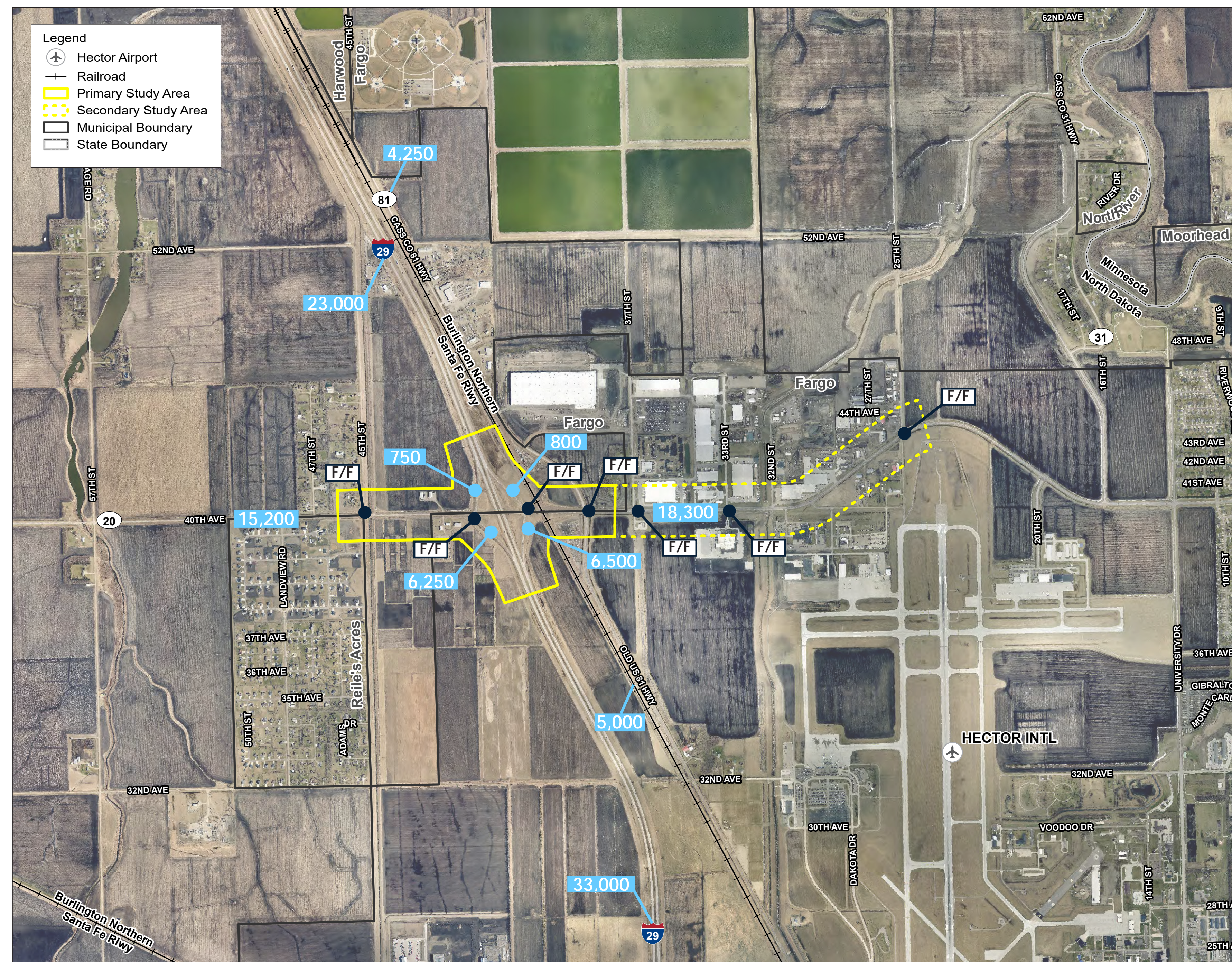


FUTURE 2045 TRAFFIC ANALYSIS

What is LOS?

Intersection Level of Service (LOS) is a measure of traffic flow at intersections. It is dependent upon vehicle delay at the approaches. It ranges from A-F.

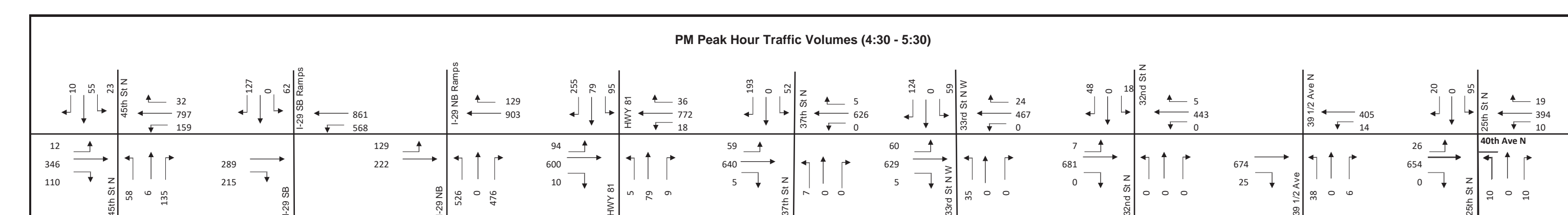
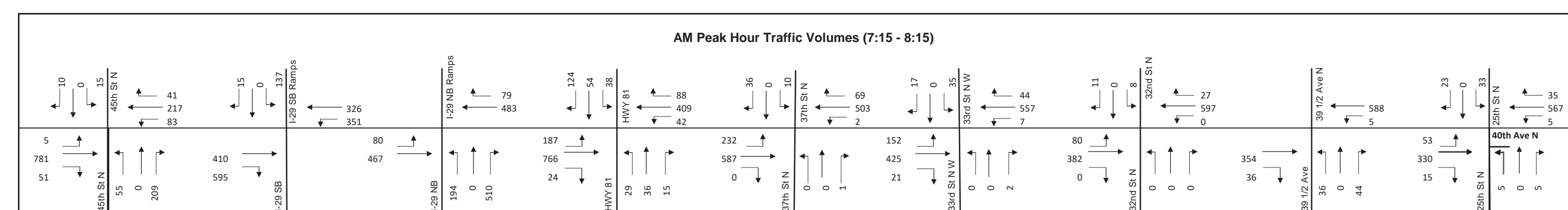
Intersection LOS	Definition
A	Minimal delays.
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C	Intermittently vehicles wait through more than one signal indication, occasionally backups may develop, traffic flow is still stable and acceptable.
D	Delays at intersections may become extensive, but enough cycles with lower demands occur to permit periodic clearance, preventing excessive backups.
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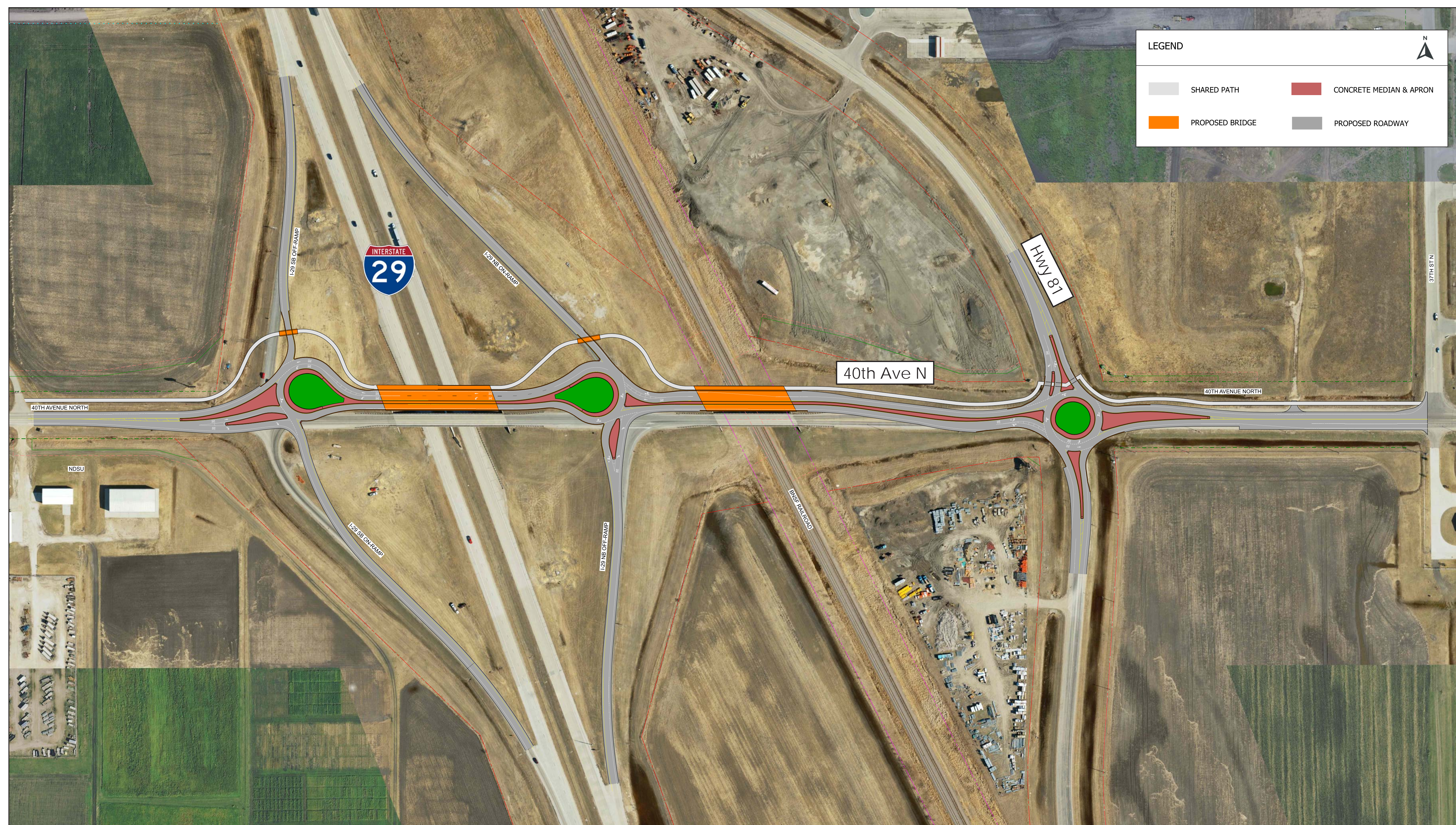
X/X Intersection LOS AM/PM Peak Hours
Existing Average Daily Traffic Volumes

The figure above shows the average daily traffic expected in the year 2045. The LOS is based on if no improvements to the interchange or corridor were made. As you can see, every intersection breaks down with an LOS F.

2045 Forecast Peak Hour Turning Movement Counts



PRELIMINARY DESIGN - DUMBBELL INTERCHANGE



What is a Dumbbell Interchange?

A standard diamond interchange with roundabouts utilized at the ramp terminal intersections is often referred to as a dumbbell interchange due to the resemblance to the shape of a weightlifter's dumbbell. Similarly, such interchange configurations have also been referred to as "dogbone" interchanges.

Benefits Include:

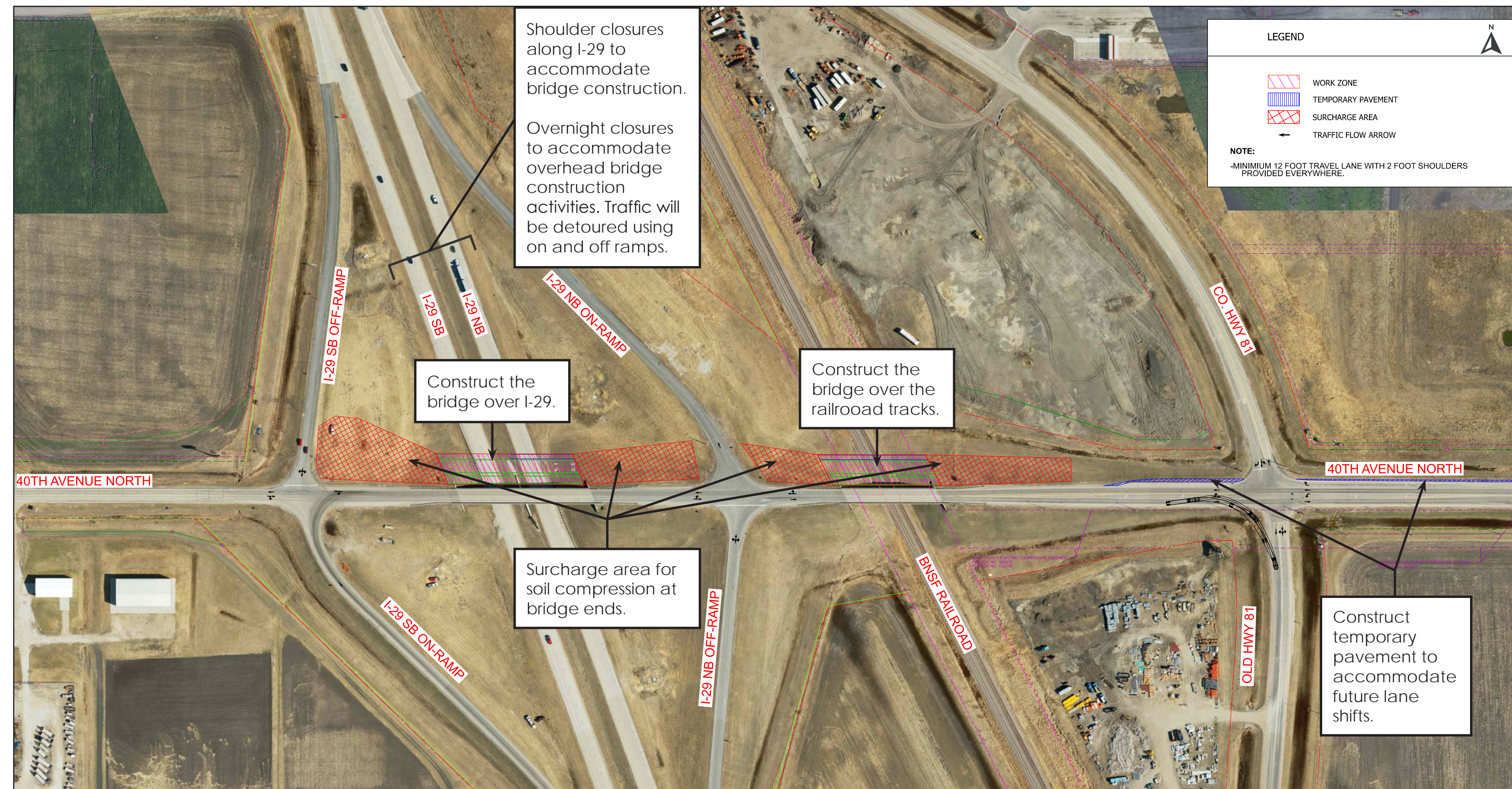
- Reduces potential for wrong-way movements down northbound I-29 exit ramp.
- Significantly reduces potential for severe accidents.
- Accommodates large vehicles.
- Eliminates operations and maintenance costs associated with traffic signals.
- Lesser rights-of-way needs without need to develop turn lanes as would be needed at a traffic signal.
- Increased safety for bicyclists and pedestrians.
- Less impermeable surface (less storm water runoff).
- Lesser carbon footprint without vehicles needing to stop/start at signal.
- Allows for smaller bridge (cost savings).
- Provides opportunity for green space in roundabout central islands.

Traffic and Level of Service (LOS)	Geometric Needs	Safety Improvements	Active Transportation Facility Enhancements	Cost	Impact of existing land use or new development including access	Right of Way Impacts	Utility Impacts	Constructibility Issues	Environmental Impacts	Structural and Geotechnical Impacts	Flexibility to accommodate future improvements or land use changes
<ul style="list-style-type: none"> + Performs adequately for all corridor concepts, slightly better than others 	<ul style="list-style-type: none"> + Brings geometry to current standards + Eliminates vertical curvature concerns near RR bridge + Roundabouts accommodate trucks - Minor alignment shift north 	<ul style="list-style-type: none"> + Reduces number of conflict points + Reduces severity + Eliminates wrong-way movements 	<ul style="list-style-type: none"> + Accommodates grade separated shared-use path + Enhanced crossing at roundabout approach 	<ul style="list-style-type: none"> + Unsignalized, no signal operations and maintenance costs - Roundabouts require increased grading - Higher snow clearing costs due to roundabout 	<ul style="list-style-type: none"> + Maintains businesses and development accesses + Accommodates U-turns at near ramp terminal if access control implemented 	<ul style="list-style-type: none"> + Minimal to no permanent right-of-way needed (3.1 ac) - Temporary easements may be needed 	<ul style="list-style-type: none"> - Potentially moderate impacts to utilities 	<ul style="list-style-type: none"> + New structure can be built while maintaining traffic (I-29 and 40th Avenue North) + West ramp terminal intersection and ramps constructed more easily 	<ul style="list-style-type: none"> + No EJ, 4(f)/6(f), and cultural impacts - Similar T&E species, noise, wetlands, and floodplain impacts 	<ul style="list-style-type: none"> - Settlement can be addressed, but at great detriment to cost and staging 	<ul style="list-style-type: none"> + Bridge can be widened to south - Expansion of roundabout to multi-lane required

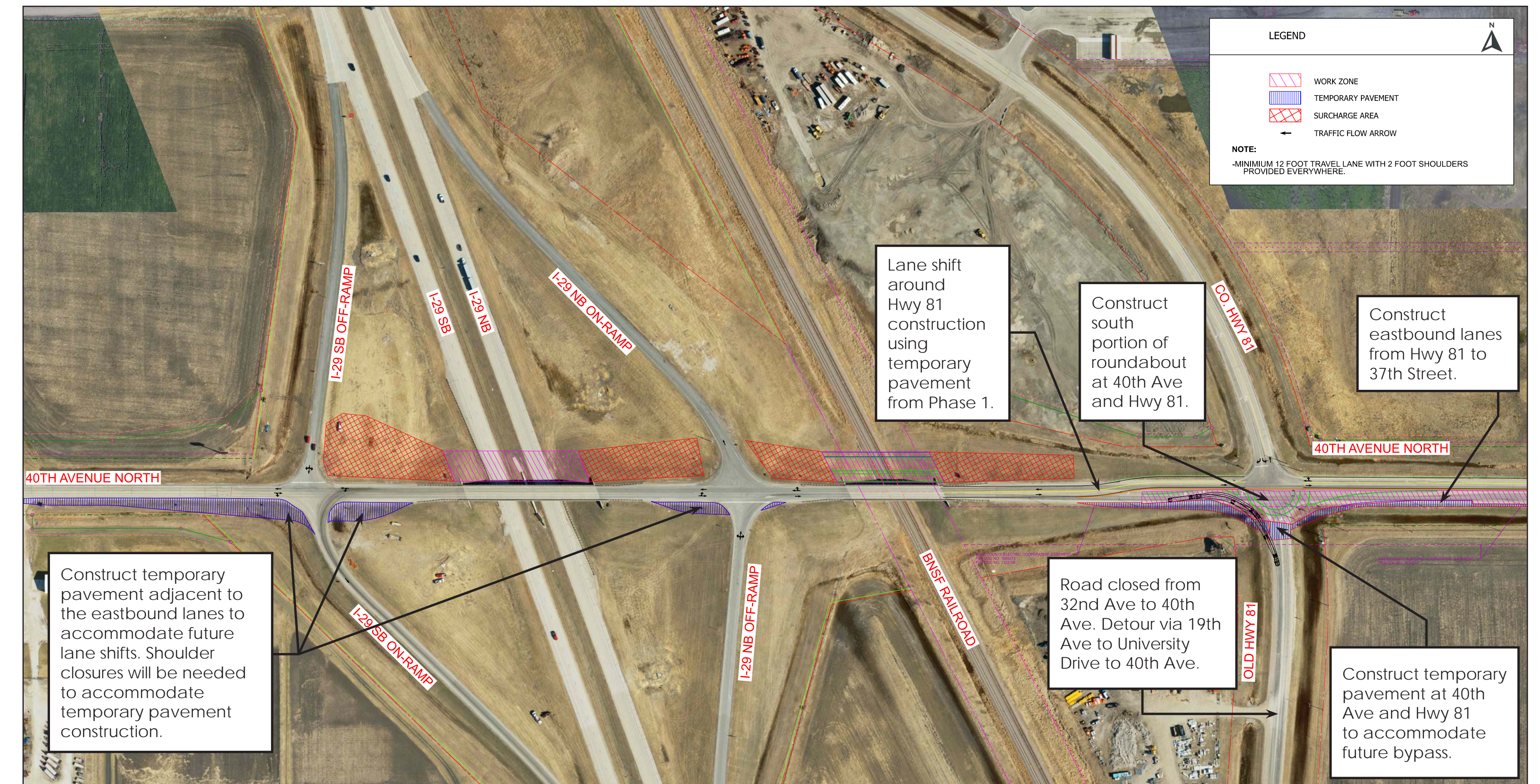
Detailed Alternatives Evaluation: Dumbbell Interchange

ANTICIPATED CONSTRUCTION STAGING*

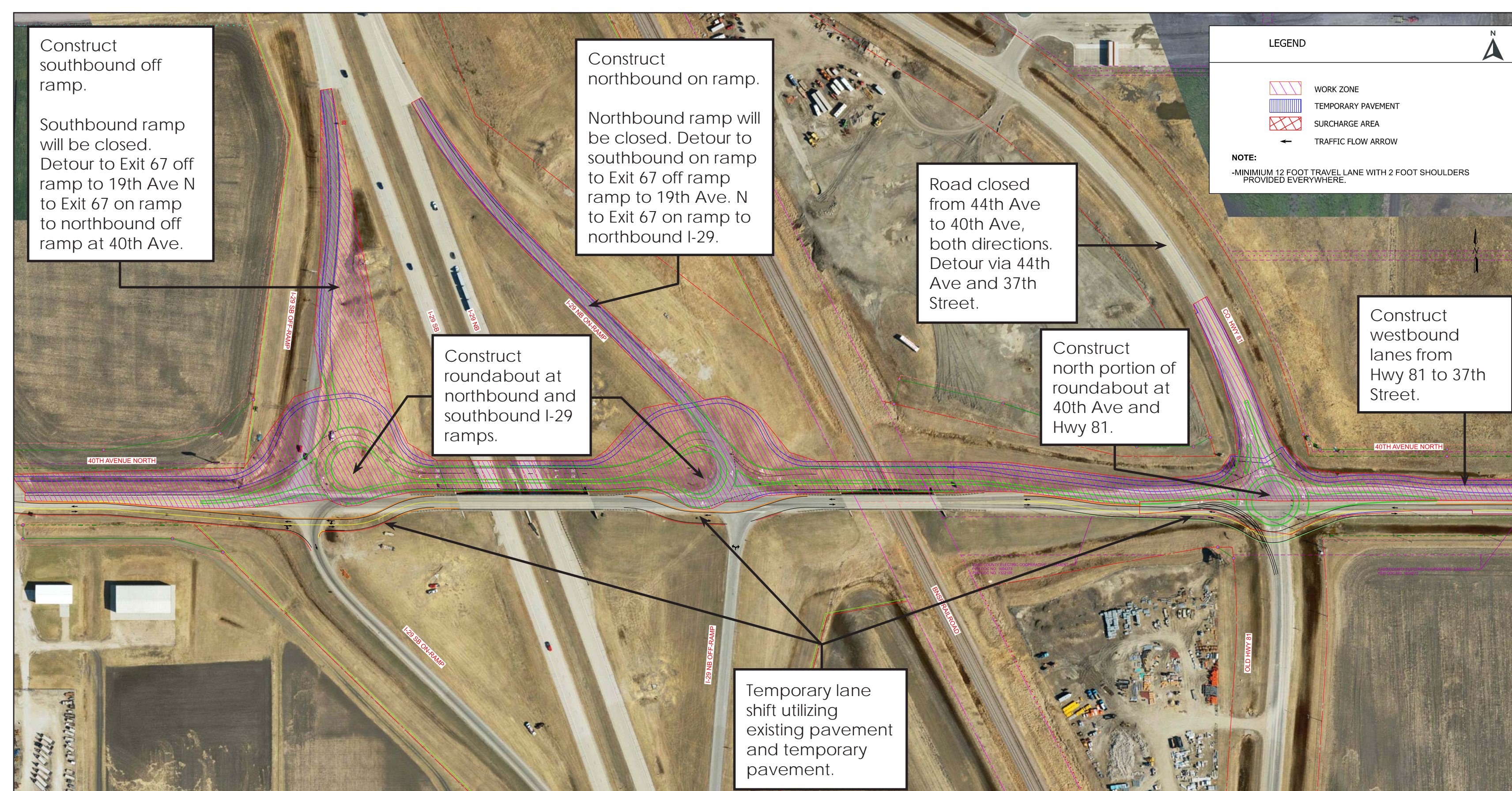
Phase 1



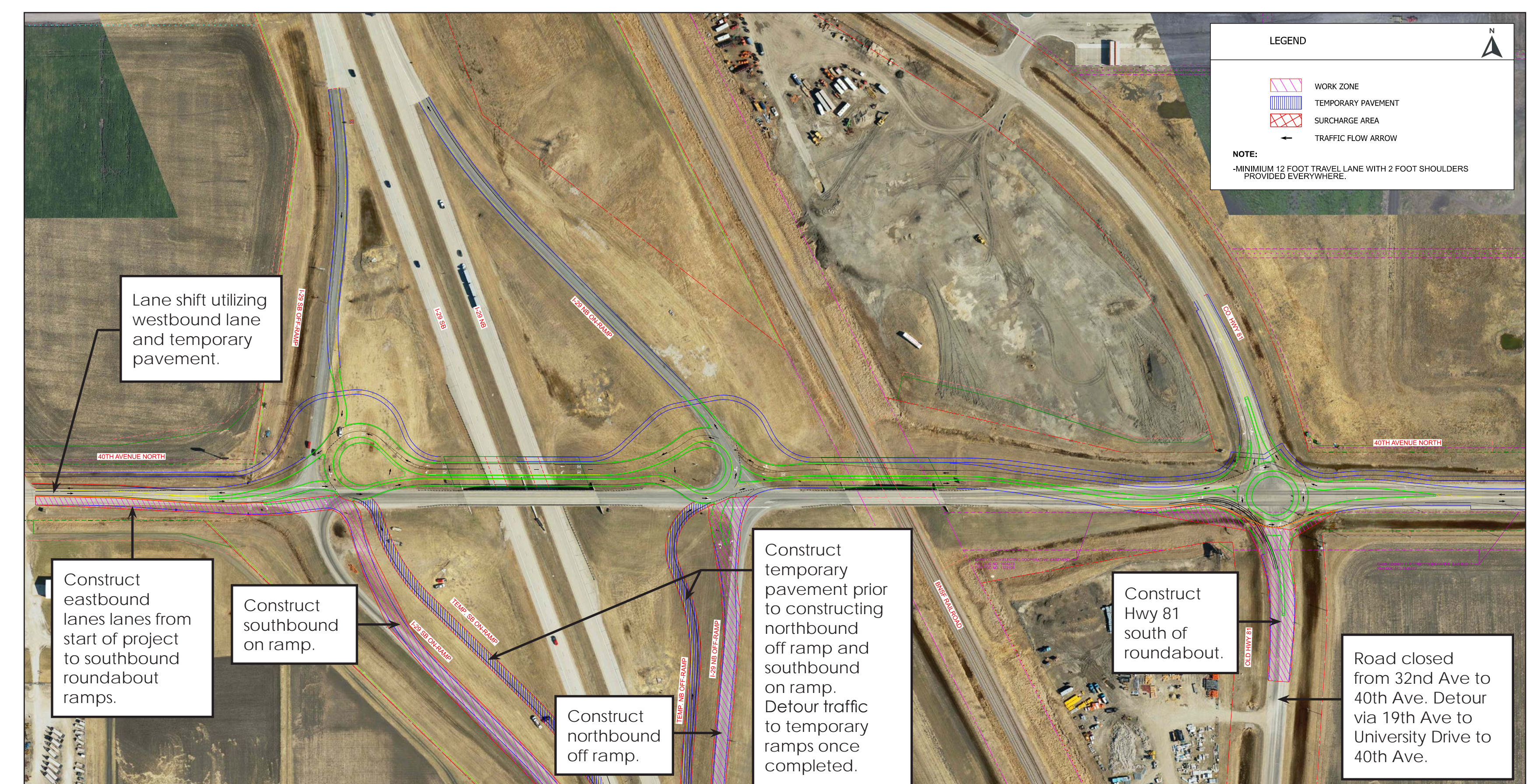
Phase 2



Phase 3



Phase 4



*Construction anticipated to take two years (2028-2029)

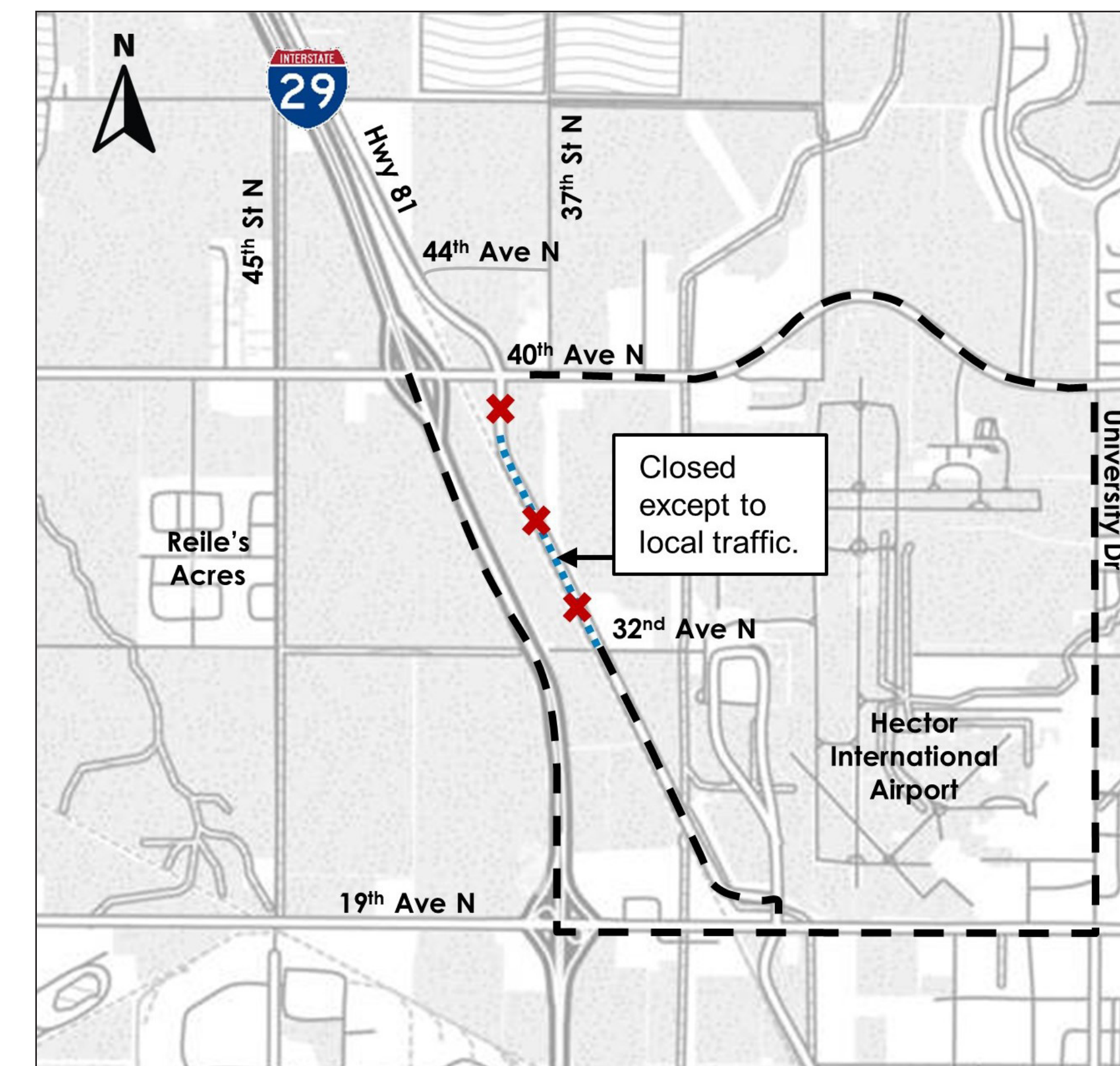
ANTICIPATED DETOUR ROUTES

Phase 1



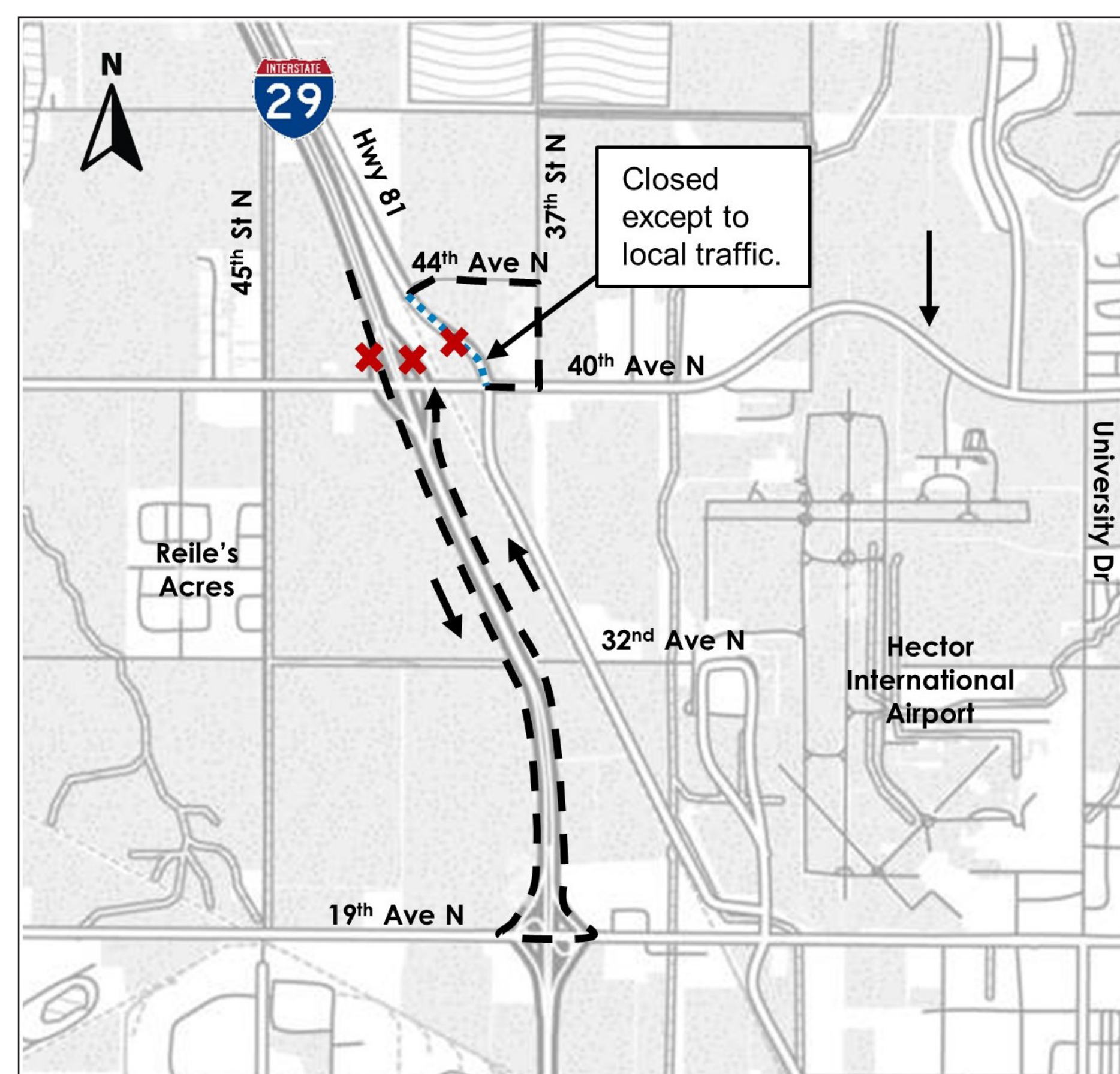
Overnight closures on I-29 for overhead bridge construction. Detour using on and off ramps.

Phase 2



Hwy 81 closed from 40th Avenue North to 32nd Avenue North. Detour via I-29, 19th Avenue North, University Drive, and 40th Avenue North.

Phase 3

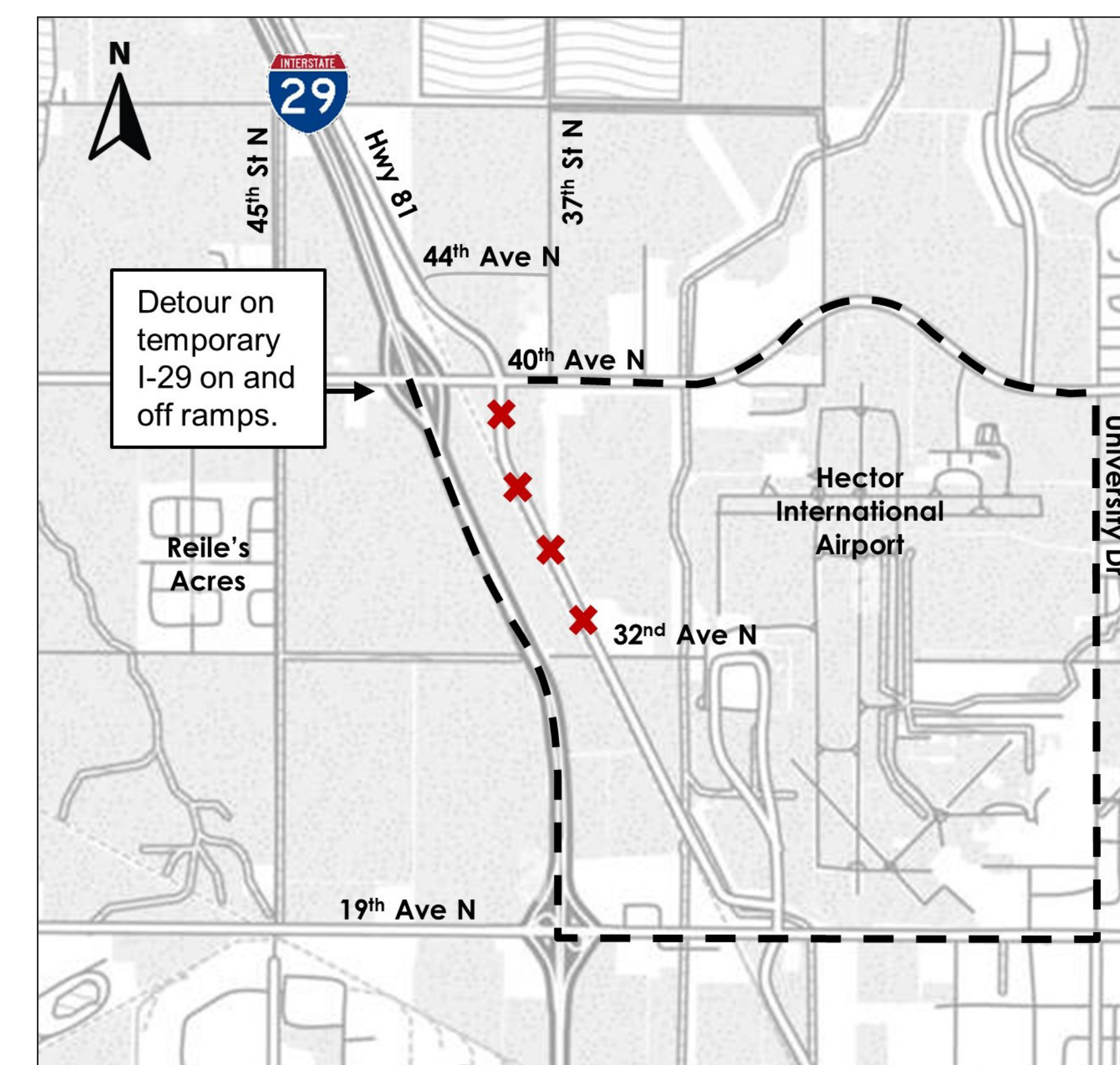


Hwy 81 closed from 40th Avenue North to 44th Avenue North. Detour via 40th Avenue North, 37th Street North, 44th Avenue North.

Southbound I-29 off ramp closed. Detour via I-29 southbound, 19th Avenue North, I-29 northbound to 40th Avenue North off ramp.

Northbound I-29 on ramp closed. Detour via I-29 southbound, 19th Avenue North, I-29 northbound.

Phase 4



Northbound off ramp and southbound on ramp closed. Detour via temporary ramps.

Hwy 81 closed from 40th Avenue North to 32nd Avenue North. Detour via I-29 southbound, 19th Avenue North, University Drive, and 40th Avenue North.