



NORTH  
**Dakota** | Transportation  
Be Legendary.

# I-29 & 40th Avenue North Interchange (Exit 69) Preliminary Design



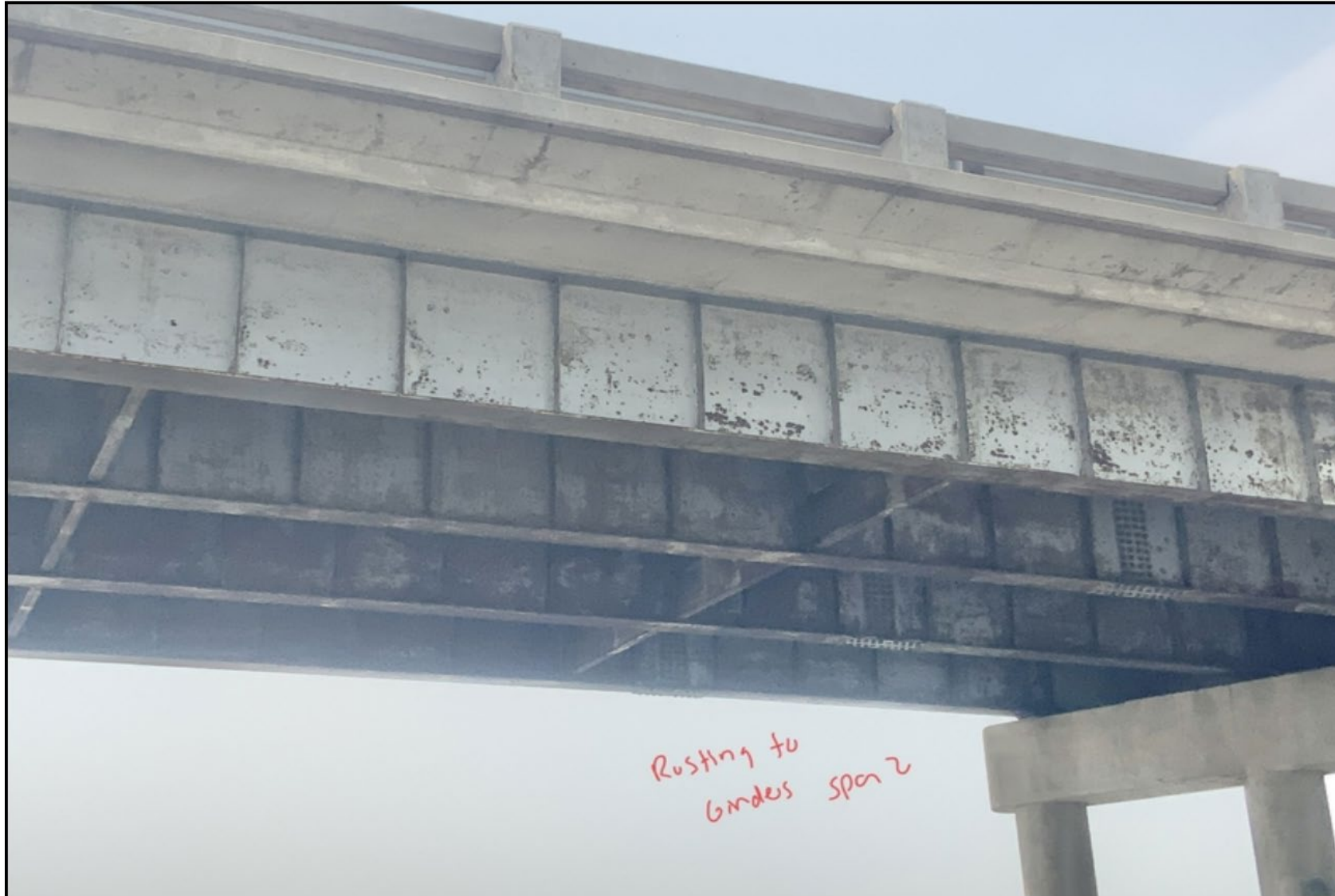
# Agenda

- Project Overview
- Alternatives Considered
- Evaluation Matrix
- Selected Alternative
- Receive Feedback
- Answer Questions



# Project Overview

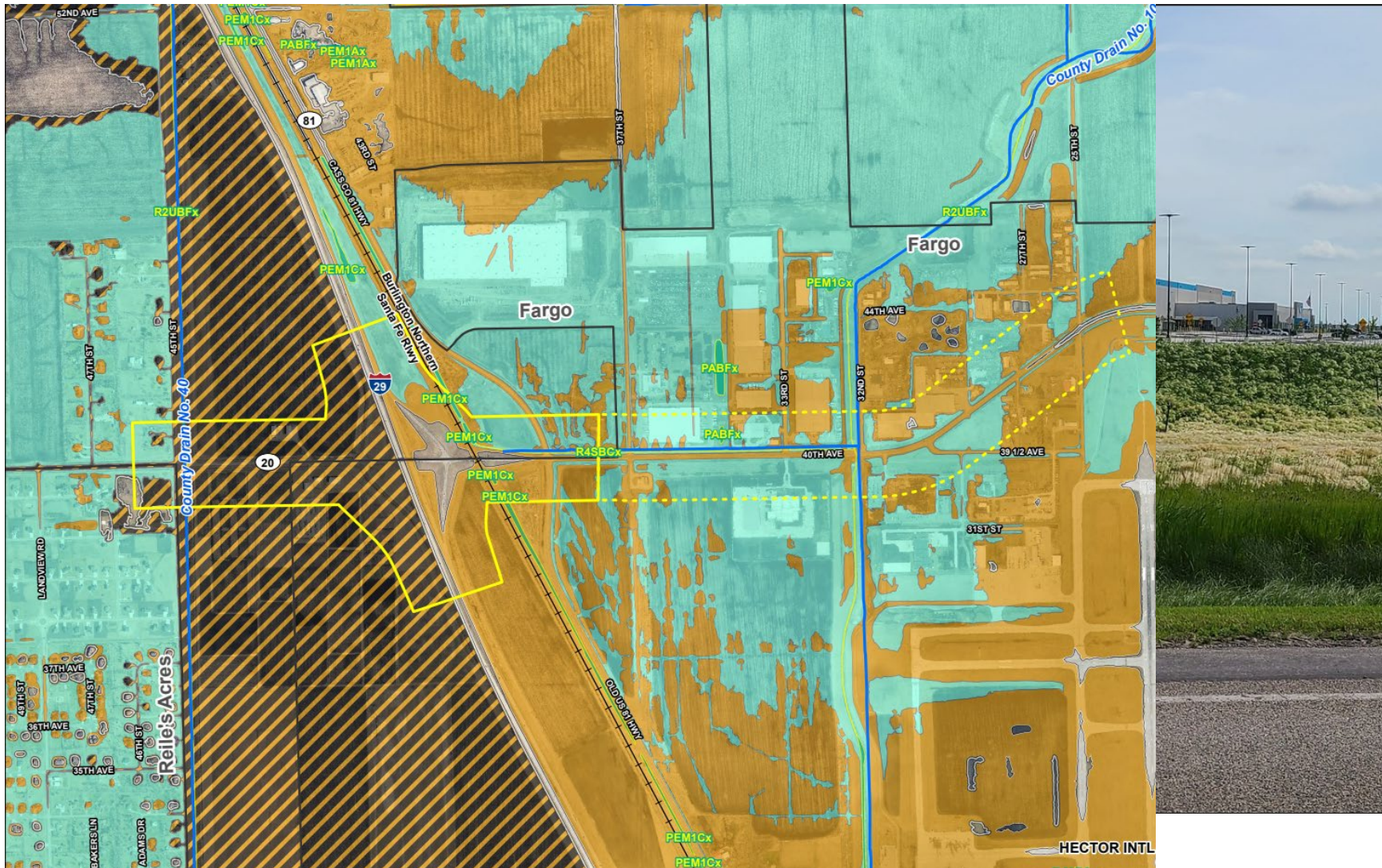
## Project Need/Purpose:



- **Aging Infrastructure**
- Increasing Traffic Volumes
- Safety
- Mobility

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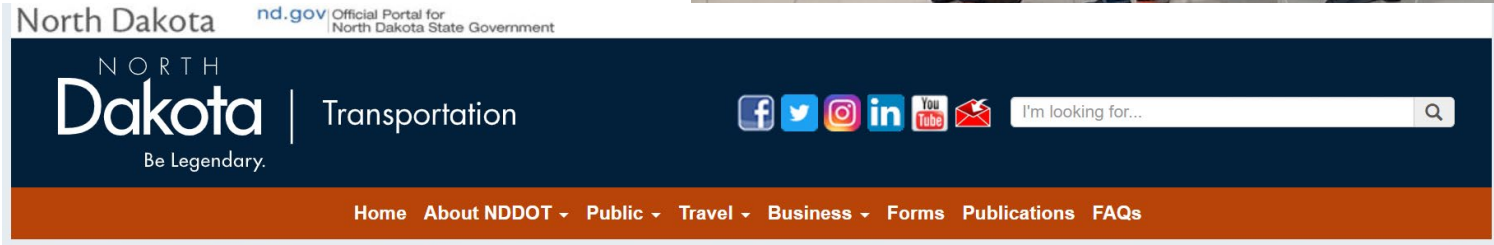
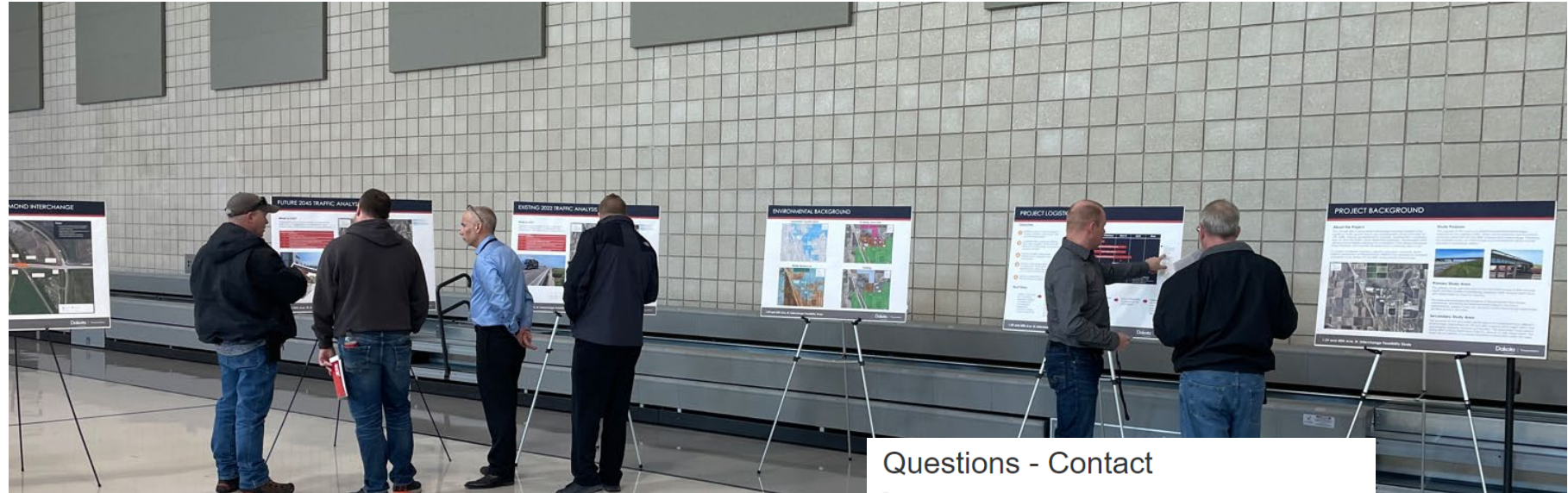
## Technical Advisory Committee (TAC):

- NDDOT Fargo District
- NDDOT Design Division
- NDDOT Environmental & Technical Services
- NDDOT Traffic Operations
- NDDOT Local Government
- NDDOT Bridge Division
- NDDOT Materials & Research
- NDDOT Planning
- FHWA
- City of Fargo
- Fargo-Moorhead Metro Council of Governments
- Cass County



### Public Stakeholders:

- Open Houses
- Open Doors Policy
- Website
- Focus Groups



### Questions - Contact

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 Fargo, ND 58103  
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or

Jennifer Kern, Design Division  
 North Dakota Department of Transportation  
 DOT Support Center  
 NDSU Dept 2880  
 P.O. Box 6050  
 Fargo, ND 58108-6050  
 Address emails to jennifer.kern@nd.gov



**I-29 and 40th Avenue North Interchange Feasibility Study**





# Corridor Traffic Forecast Comparisons

**Table 9. Existing Intersection Configuration 2045 Average Delay and LOS**

Intersection	AM Peak Hour			PM Peak Hour		
	Vehicles	Avg Delay (sec.)	LOS	Vehicles	Avg Delay	LOS
45th Street North	1,081	57	F	998	10	F
Southbound I-29 Ramps	1,121	83	F	1,033	155	F
Northbound I-29 Ramps	815	251	F	890	252	F
County Route 81 (CR 81)*	904	169	F	925	223	F
37th Street North	696	163	F	655	331	F
33rd Street North	662	79	F	653	183	F
25th Street North	648	63	F	665	53	F

\*Intersection with Traffic Signal

**Table 10. 2045 Average Intersection Delay and LOS for Signalized Corridor**

Intersection	AM Peak Hour			PM Peak Hour		
	Vehicles	Avg Delay (sec.)	LOS	Vehicles	Avg Delay	LOS
45 <sup>th</sup> Street North	1,241	15	B	1,056	85	F
Southbound I-29 Ramps	1,335	88	F	1,073	189	F
Northbound I-29 Ramps	987	196	F	1,099	278	F
County Route 81 (CR 81)	1,061	154	F	1,000	232	F
37 <sup>th</sup> Street North	786	122	F	703	308	F
33 <sup>rd</sup> Street North	718	63	E	725	165	F
25 <sup>th</sup> Street North	689	35	D	719	59	E

**Table 11. 2045 Average Delay and LOS for Roundabout Corridor**

Roundabout	AM Peak Hour			PM Peak Hour		
	Vehicles	Avg Delay (sec.)	LOS	Vehicles	Avg Delay	LOS
45 <sup>th</sup> Street North	1,330	37	E	1,643	5	A
Southbound I-29 Ramps	1,661	50	E	1,797	13	B
Northbound I-29 Ramps	1,692	10	A	2,019	86	F
County Route 81 (CR 81)	1,792	9	A	1,545	81	F
37 <sup>th</sup> Street North	1,333	5	A	1,359	62	F
33 <sup>rd</sup> Street North	1,192	5	A	1,303	4	A
25 <sup>th</sup> Street North	1,025	3	A	1,111	2	A



## Primary Activities:

- ✓ Evaluation of Existing Conditions
- ✓ Interchange Identification and Screening
- ✓ Open House 1
- ✓ Interchange Alternatives Models
- ✓ Conceptual Designs
- ✓ Environmental Screening
- ✓ Draft Interchange Selection & Decision Document
- ✓ Open House 2



## Primary Activities (Cont.):

- ✓ Select Interchange Alternative for Further Study
- ✓ Preliminary Roadway and Bridget Designs
- **Open House 3**
  - **Environmental Documentation and Permitting**
  - **Right-of-Way Acquisition**
  - **Construction Documents**
  - **Construct Project**





# Evaluation Matrix

**Estimated Impact**



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

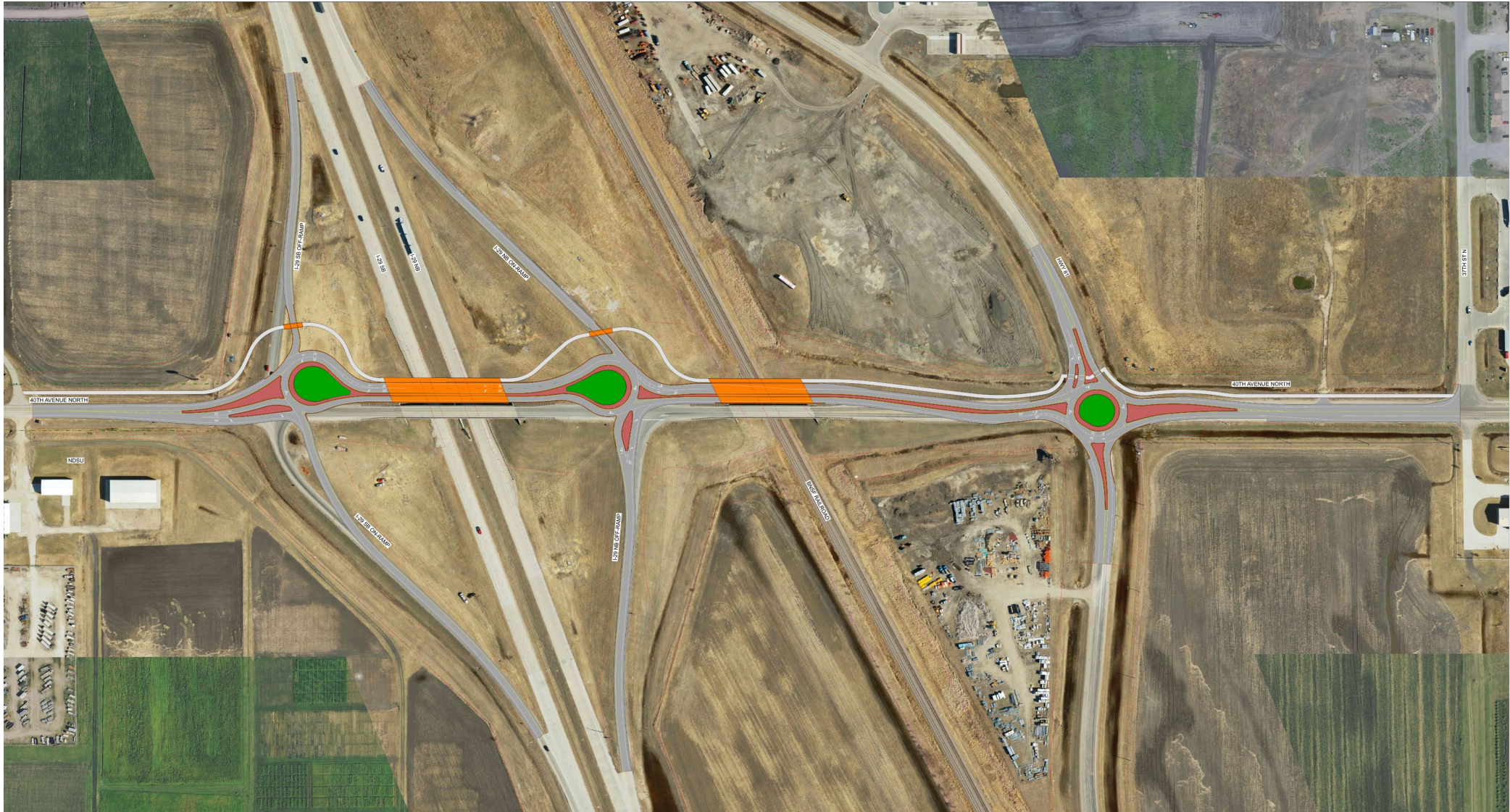
More important

Less important



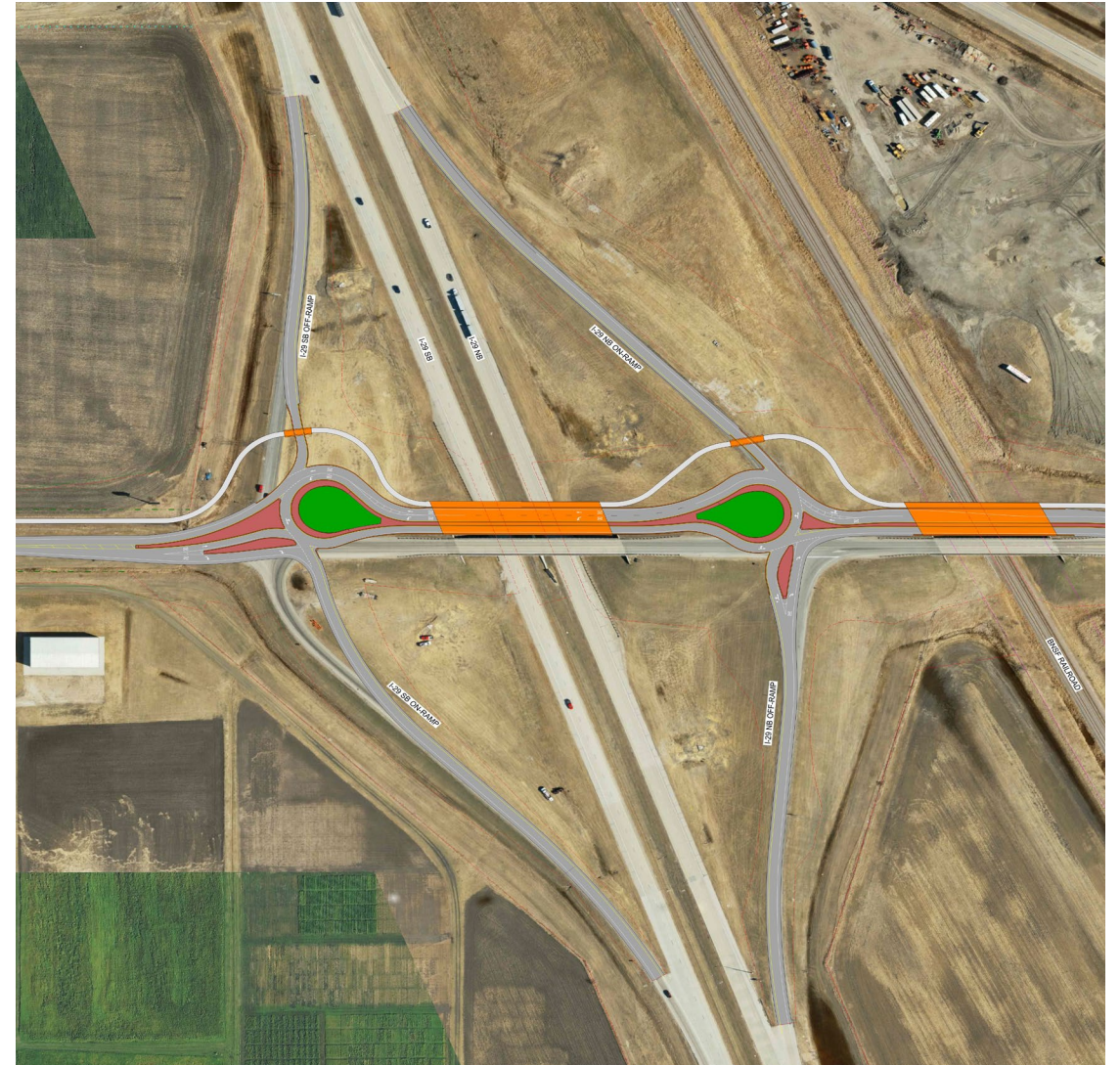


# Selected Alternative

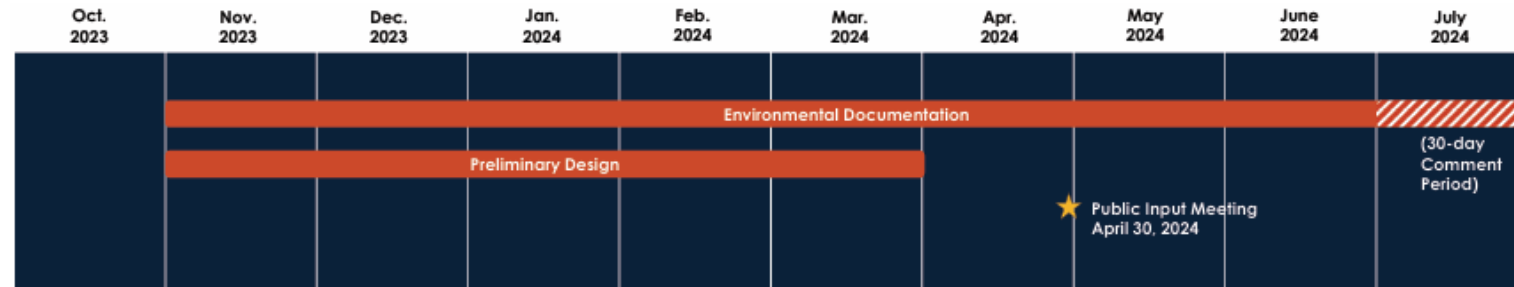


## Benefits Include:

- 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.



## Schedule

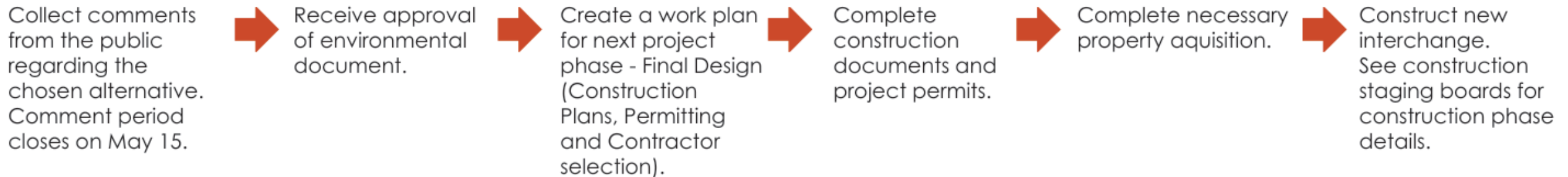


- Feasibility Study completed in August 2023 (Roundabout Interchange Alternative Advanced)
- Final Design tentative completion in November 2026 (Construction Plans & Specification)
- Construction in 2027

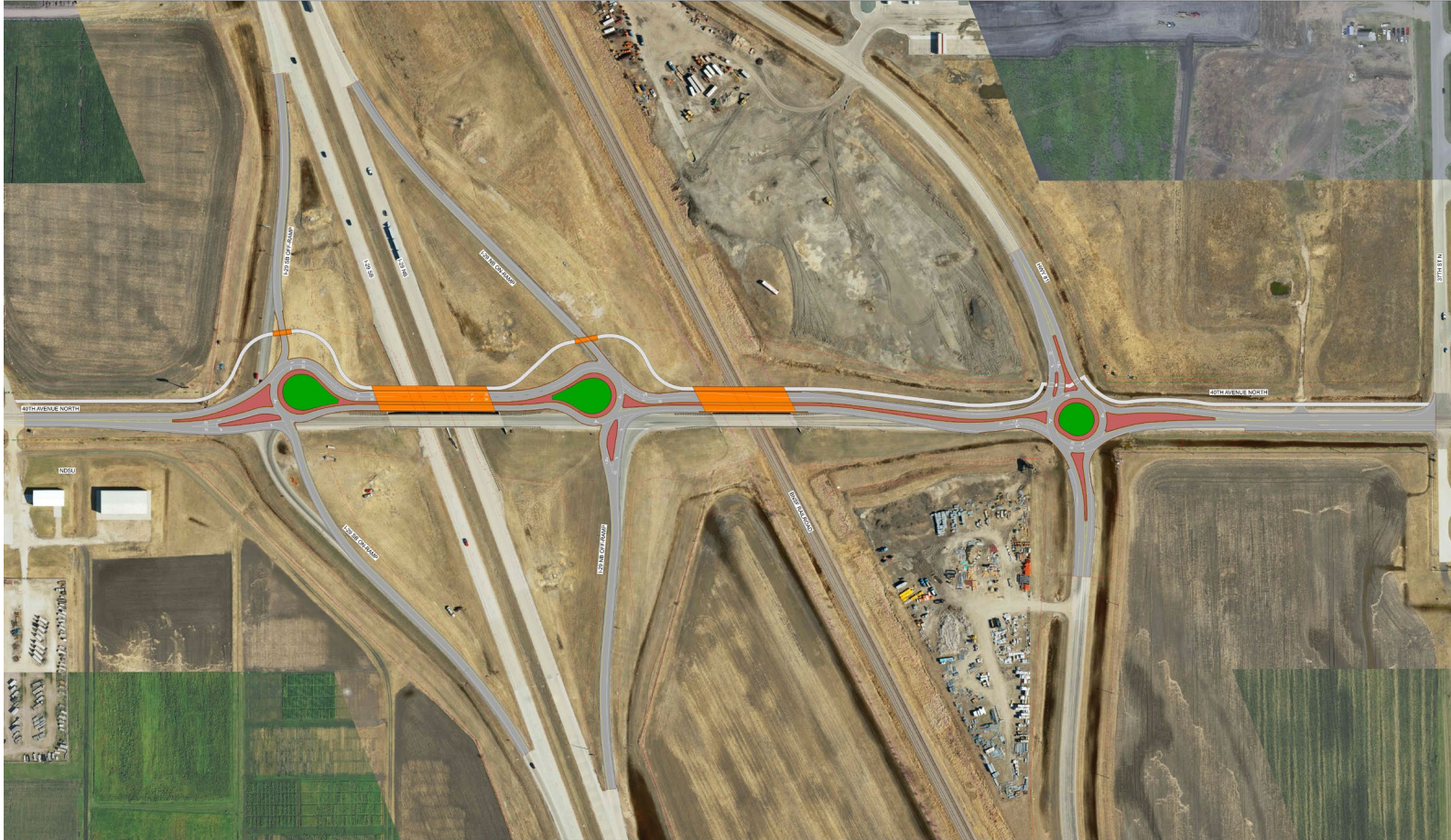
## Objectives

- 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







# Thank You