



TRAFFIC AND CORRIDOR ANALYSIS STUDY

EAST RAPID CITY, SD

Executive Summary

June 2019



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STUDY BACKGROUND

The *East Rapid City Corridor Analysis* study has been prepared to identify potential transportation improvements to mitigate traffic operations and safety issues in northeast Rapid City, South Dakota. Major study area corridors that were a primary focus for improvements are East North Street, Cambell Street, and Omaha Street/South Dakota Highway 44.

East North Street, Cambell Street, and Omaha Street/Highway 44, form the backbone of Rapid City's existing east side arterial road network. Their ability to carry high levels of traffic is vitally important to the city for reasons of safety, mobility, development potential, and quality of life. Recent and continued growth in Rapid City has brought new development to northeast Rapid City, bringing challenges and opportunities for this portion of the city's transportation network. Increased development has resulted in localized growth, and with it increased traffic, leading to congestion, safety issues, and bicycle, pedestrian, and transit (multimodal) needs along these corridors.

We see these needs as evident whenever we drive these corridors, especially during the traffic peaks. Many of the turn lanes are over capacity, and yet some can be difficult to get to when through lane queues block their access. The reverse is also true, as some turn lane queues have been seen to block through travel lanes. This often leads to a lane use disparity, as people avoid getting stuck behind the overflow from a turn lane.

We've seen pedestrians and bicyclists traveling along these corridors. In some places sidewalk or bicycle facilities are non-existent, and walking paths sometimes operate like an obstacle course. There is significant opportunity to improve functionality for these users, both short and long-term. Corrective measures exist, but they must be balanced against development potential, impacts on existing properties, and environmental and cost constraints.

Increased development and new traffic has resulted in overburdened intersections throughout the study area, especially at the SD 44/Omaha Street and Cambell Street intersection and the East North Street and Cambell Street intersection. It is not uncommon for traffic to have to wait through multiple signal cycles and for long queues to develop at these locations. This results in further long delays for side street and private approach traffic waiting to get onto these arterial roadways. As new development continues in the study area, the congestion will only build.

Planned extensions to Anamosa Street, Valley Drive, Mickelson Drive, and Creek Drive will facilitate new development growth and these roads will carry some of the existing and future traffic in this area of the city. This study examines the impact of these planned roadways and their ability to relieve traffic on existing arterial roads.

Study Process

Methods and Assumptions

The methods and assumptions used for technical analysis and recommendations were vetted through the Study Advisory Team (SAT), with the full *Methods and Assumptions* document available in **Appendix A** of the full report. The Study Advisory Team consisted of representatives from the City of Rapid City, the Rapid City Area Metropolitan Planning Organization (MPO), the Federal Highway Administration (FHWA), and the South Dakota Department of Transportation (SDDOT).

Study Milestones

This study was structured to have several milestones where the Study Advisory Team was given an opportunity to review technical reports that documented study findings. Major milestones for this study included:

- Existing Conditions Report
- Future Conditions Report
- Environmental Scan Report
- Alternatives Development and Assessment

The SAT met six times throughout the study to review analysis findings and to provide guidance for subsequent phases of the study. Detailed summaries from each SAT meeting can be found in **Appendix B** of the full report.

Public Engagement

The study team met with the public three times throughout the study. All public meetings were advertised twice in the Rapid City Journal and in the Native Sun News. Invitations were also sent to landowners along the major corridors.

All public meetings were also advertised on the project website, <http://eastrapidstudy.com/>. Links to the project website were available on the city and SDDOT websites. The website provided information regarding the study purpose, news and articles, background and schedule, interim project reports, responses to frequently asked questions, and places for comments to be made. Twitter and Facebook ads were also used to direct people to the website and to highlight upcoming public meetings.

The first meeting on September 13th, 2018 was held to inform the public about the purpose of the study, to share results from preliminary analyses, and to better understand residents' transportation concerns and visions for the study area. The second meeting on February 28th, 2019 was held to show improvement alternatives to the public and to obtain feedback related to these alternatives.

A third meeting was held on May 15, 2019 to present the draft Report and receive comments on the draft Report and its recommendations. The results of that meeting have been incorporated into the final Report.

Stakeholder meetings were held in conjunction with the public meetings. MPO and Consultant staff also met and/or communicated with landowners who requested additional input opportunities. Detailed information about the public engagement process can be found in **Appendix C** of the full report.

ALTERNATIVES ASSESSMENT SUMMARY

Numerous concepts were developed and evaluated to resolve identified intersection and corridor deficiencies along primary study corridors within the study area. Some concepts were discarded, and those that remain have been advanced as build alternatives to be considered as part of a future National Environmental Policy Act (NEPA) effort.

A summary of the intersection improvement build alternatives that were advanced, as well as concepts that were discarded can be seen in **Table ES.1**. A summary of the corridor improvement build alternatives that were advanced, for a future NEPA effort, as well as concepts that were discarded can be seen in **Table ES.2**.

Build Alternative Layouts and Typical Cross Sections

Layouts and typical cross-sections for each build alternative can be found in **Appendix F** of the full report. Recommendations for which build alternatives should be implemented are provided at the end of this Executive Summary.

Future Roadways

Per feedback from the SAT, this study assumed the following roadways will be extended or added by 2045:

- » Creek Drive is fully connected between SD 44 and Anamosa Street
- » Anamosa Street is extended southeast to Valley Drive
- » Valley Drive is extended north/northwest to East North Street
- » Mickelson Drive is extended to the future Anamosa Street extension

Future roadways were based on identified alignments in the city-approved Major Street Plan, and no changes to these alignments were considered as part of this study. It is recognized that some existing roadways that are part of

a planned expanded network in the study area may require improvements to accommodate increased traffic volumes.

TYPICAL CROSS SECTIONS FOR FUTURE ROADWAYS

Based on 2045 traffic projections, it is expected that the future roadways discussed on the previous page should not require more than one travel lane in each direction. Turn lanes should be considered at major intersections and be in accordance with local design standards, and it is also recommended pedestrian and bicycle facilities are included to best integrate with other multimodal improvements that are being recommended as part of this study

Environmental Scan

An environmental scan was completed for Cambell Street, Omaha Street, East North Street, and future roadways to determine if future projects would impact environmental resources in the study area. The environmental scan evaluated:

- » Environmental Justice
- » Wetlands, Waterways, and Water Quality
- » Bicyclists, Pedestrians, and Recreational Resources
- » Economic Resources
- » Floodplains

The environmental scan did not reveal that future projects would have environmental impacts for the items listed above. Note that additional analysis will need to be completed to evaluate impacts related to cultural resources, Section 4(f) and 6(f) resources, and for noise impacts.

More detailed information related to the Environmental Scan can be found in the Environmental Scan Memorandum in **Appendix G** of the full report.

Table ES.1 – Summary of Intersection Build Alternatives Assessment

Intersection	Alternative	Notes	Key Assumptions	Carry Forward to NEPA
Cambell Street and Saint Patrick Street	No build	Issues: Poor operations without improvements (LOS D in 2045)		✓
	Add second EB left turn lane and a WB right turn lane	Rationale: High EB left turning volumes, intersection LOS D by 2045. Impact: Reduces intersection delay by 25% if EB and WB left turns can be run concurrently. Delay improvement is only 7% if lead/lag left turn phasing is required.		✓
	Expand Cambell Street to six lanes, include turn lane improvements above	Rationale: 34,000 to 37,000 ADT estimated by 2045 on Cambell Street. Impact: Reduces intersection delay by 12% to 17%, depending on signal phasing.		✓
Cambell Street and Omaha Street	No build	Issues: Poor operations without improvements (LOS E in 2045)		✓
	Add second NB and SB left turn lanes + Convert all right turns to dedicated right turn lanes	Rationale: High NB and SB left turning volumes, intersection LOS E by 2045. Impact: Improves intersection to LOS D, reducing intersection delay by 31%.		✓
	Displace NB and SB left turns	Rationale: Intersection LOS D in 2045 even with a six-lane Cambell Street cross section. Impact: Reduces intersection delay by 28% (improves to LOS D) at the main intersection, with LOS B at each crossover intersection.	Assumes a 5-lane typical roadway section on Cambell Street	✓
	Expand Cambell Street to six lanes, add 2nd NB and SB left turn lanes	Rationale: High NB and SB left turning volumes, intersection LOS E by 2045. Impact: Improves intersection to LOS D, reducing intersection delay by 41%. Issues: Significant property impacts		
Cambell Street and East North Street	No build	Issues: Poor operations without improvements (LOS F in 2045)		✓
	Add second WB left turn lane and second NB right turn lane	Rationale: High NB right turning volumes, intersection LOS F remains even with second WB left turn lane. Impact: Reduces intersection delay by 64% (improves to 2045 LOS E)		✓
	Displace WB left turns	Rationale: Turn lane improvements above still operate poorly at LOS E Impact: The main intersection is expected to operate at LOS B in 2045, with LOS A and B at the crossover intersections	Assumes a 5-lane typical roadway section on East North Street	✓
	Add second WB left turn lane	Issues: Poor operations remain (LOS F in 2045)		
Expand East North Street to six lanes	Issues: Limited operational benefits elsewhere on the East North Street corridor			
Omaha Street and LaCrosse Street	None	Rationale: Acceptable operations (LOS C) expected through 2045 with existing configuration		✓
North Street and LaCrosse Street	No Build	Rationale: The intersection is expected to operate at LOS D through 2045. This is however deficient per the assumptions established in this study.		✓
	Add NB and SB right turn lanes	Impact: Reduces intersection delay by 20%, improving operations to LOS C.		✓
North Street and Anamosa Street	None	Rationale: Acceptable operations (LOS C) expected through 2045 with existing configuration		✓
North Street and Eglin Street	No build	Issues: Poor operations without improvements (LOS D in 2045)		✓
	Add second EB left turn lane	Rationale: High EB left turns, intersection LOS D by 2045 Impact: 30% to 33% reduction in intersection delay, depending on the EB/EB left turn phasing used		✓
	Expand East North Street to six lanes	Issues: Minimal improvement compared to adding turn lanes without cross-section expansion		

Table ES.2 – Summary of Corridor Build Alternatives Assessment

Corridor Segment	Alternative	Notes	Carry Forward to NEPA
Cambell Street: St. Patrick Street to East North Street	No build	Issues: Offers no improvements to limited multimodal facilities	✓
	Five-lane section with two-way left turn lane + sidewalk and shared use path	Rationale: No existing bicycle facility and many gaps in existing sidewalk network. Impact: Shared use path and sidewalk improve cycling and walking conditions on the corridor.	✓
	Six-lane median divided section + pedestrian and bicycle facilities	Rationale: No existing multimodal facilities, adds roadway capacity Impact: Shared use path and sidewalk improve multimodal network, added capacity can improve intersection operations at Omaha Street	✓
	Four-lane median divided section + sidewalk and shared use path	Issues: Crash history does not indicate significant issues related to access control	
Omaha Street/SD 44: LaCrosse Street to St. Patrick Street	No build	Issues: Offers no improvements to limited multimodal facilities	✓
	Five-lane section with two-way left turn lane + shared use path	Rationale: No existing bicycle facility and many gaps in existing sidewalk network. Impact: Improves cycling and walking conditions on the corridor.	✓
	Four-lane median divided section + shared use path	Issues: Crash history does not indicate significant issues related to access control	
East North Street: LaCrosse Street to Cambell Street	No build	Rationale: Corridor was recently reconstructed, so no improvements were considered.	✓
East North Street: Cambell Street to Eglin Street	No build	Issues: Offers no improvements to limited multimodal facilities	✓
	Five-lane section with two-way left turn lane + sidewalk and shared use path	Rationale: No existing pedestrian or bicycle facilities Impact: Shared use path and sidewalk improve cycling and walking conditions on the corridor.	✓
	Four-lane median divided section + sidewalk and shared use path	Issues: Crash history does not indicate significant issues related to access control	
	Six-lane median divided section + sidewalk and shared use path	Issues: Limited traffic operations benefit from expanded cross section	

RECOMMENDATIONS AND IMPLEMENTATION

To guide the planning, programming, and implementation of study area improvements, matrices were developed to summarize the benefits and consequences of build alternatives that were carried forward after alternatives analysis. Matrices were developed for both corridor-type improvements and intersection-type improvements.

For various criteria related to traffic operations, safety, and impacts, each alternative was given a rating. The possible ratings are:

- » Good – The build alternative is most favorable and addresses the criteria well. It provides an improvement, or the existing condition does not have any issues
- » Moderate – The build alternative is somewhat effective in addressing the criteria. It does not provide the desired level of improvement, or has some impacts that should be acknowledged
- » Poor – The build alternative is least effective in addressing the criteria and may make a condition worse, or has more considerable impacts

Application of the rating criteria is somewhat subjective. The ratings are intended to be used as a tool to assist in understanding key benefits and consequences, and how the build alternatives compare. The corridor build alternatives matrix can be seen in **Table ES.3** and the intersection build alternatives matrix can be seen in **Table ES.4**.

Table ES.3 – Corridor Build Alternatives Matrix

		Cambell Street: St. Patrick Street to East North Street		Omaha Street/SD 44: LaCrosse Street St. Patrick Street	East North Street: LaCrosse Street to Cambell Street	East North Street: Cambell Street to Eglin Street	
		Five-lane section with added bicycle and pedestrian facilities	Six-lane median divided section with added bicycle and pedestrian facilities	Five-lane section with added shared use path	No Improvements Considered	Five-lane section with added bicycle and pedestrian facilities	
Traffic Operations and Safety	Traffic Flow	Moderate -Intersection operations can be improved with spot improvements	Good -Median reduces midblock conflicts	Moderate -Intersection operations can be improved with spot improvements		No Improvements Considered	Moderate -Intersection operations can be improved with spot improvements
	Crash Potential	Good -Reduces multimodal crash potential -No reduction in vehicle crash potential	Good -Reduces multimodal crash potential -Median reduces midblock access-related crash potential	Good -Reduces multimodal crash potential -No reduction in vehicle crash potential			Good -Reduces multimodal crash potential -No reduction in vehicle crash potential
	Multimodal Accomodations	Good -Adds bicycle and pedestrian facilities	Good -Adds bicycle and pedestrian facilities -Median serves as refuge island	Good -Adds shared bicycle and pedestrian facility			Good -Adds bicycle and pedestrian facilities
Cost and Impacts	Project Cost	Moderate \$3.1 million	Poor \$26.2 million	Good \$600,000			Good \$1.25 million
	Access Impacts	Good -No impact	Poor -Converts 30 to 40 accesses to right-in/right-out accesses	Good -No impact			Good -Minimal impact -Closes one redundant private access
	Property Impacts	Moderate -Some impacts to off- street parking	Poor -Significant impacts to off-street parking	Good -Minimal impacts			Good -Minimal impacts

*All Level of Service (LOS) results shown in this table refer to 2045 PM peak traffic operations
 **Cost estimates are for year 2024 (construction costs only, does not include right-of-way costs)

Table ES.4 – Intersection Build Alternatives Matrix

		Cambell Street and Saint Patrick Street	Cambell Street and Omaha Street			Cambell Street and East North Street		Omaha Street and LaCrosse Street	North Street and LaCrosse Street		North Street and Anamosa Street	North Street and Eglin Street	
		Add second EB left turn lane and a WB right turn lane	Add second NB and SB left turn lanes + Convert all channelized right turns to dedicated right turn lanes	Expand Cambell Street to six lanes + Add second NB and SB left turn lanes	Displace NB and SB left turns	Add second WB left turn lane and convert NB channelized right turn into a double right turn lane	Displace WB left turns		No Build	Add NB and SB right turn lanes		Add second EB left turn lane	
Traffic Operations and Safety	Traffic Flow*	Moderate -25 percent intersection delay reduction -Remains at intersection LOS D (LOS D in no-build condition)	Moderate -31 percent intersection delay reduction -Improves intersection from LOS E to LOS D	Moderate -41 percent intersection delay reduction -Improves intersection from LOS E to LOS D	Moderate -Improves main intersection from LOS E to LOS D -Crossover intersections operate at LOS B	Poor -64 percent intersection delay reduction -Improves intersection from LOS F to LOS E	Good -Main intersection operates at LOS B -Crossover intersection operates at LOS B	No Improvements Considered	Moderate -Operates at intersection LOS D	Good -20 percent intersection delay reduction -Improves intersection from LOS D to LOS C	No Improvements Considered	Moderate -30 percent intersection delay reduction -Remains at intersection LOS D (LOS D in no-build condition)	
	Crash Potential	Good -Rear end crash reduction from delay reduction -Angle crash reduction from protected-only left turn phasing on EB approach	Good -Rear end crash reduction from delay reduction -Angle crash reduction from protected-only left turn phasing on NB and SB approaches	Good -Rear end crash reduction from delay reduction -Angle crash reduction from protected-only left turn phasing on NB and SB approaches	Good -Limited safety data since this is a newer intersection configuration -Reduced delay will reduce rear end crash potential. -NB and SB left turns will not cross opposing through traffic at the main intersection	Good -Rear end crash reduction from delay reduction -Angle crash reduction from protected-only left turn phasing on WB approach	Good -Limited safety data since this is a newer intersection configuration -Reduced delay will reduce rear end crash potential. -WB left turns will not cross opposing through traffic at the main intersection		Good -No improvement, but no existing crash issue	Good -Reduced delay reduces rear end crash potential		Good -Rear end crash reduction from delay reduction -Angle crash reduction from protected-only left turn phasing on EB approach	
	Truck Movements	Good -Proper intersection design can accommodate truck movements on proposed EB double left turn lane	Good -Proper intersection design can accommodate truck movements on proposed double left turn lanes	Good -Proper intersection design can accommodate truck movements on proposed double left turn lanes	Good -Proper intersection design can accommodate truck movements at displaced left turns	Good -Proper intersection design can accommodate truck movements on proposed double left turn lanes	Good -Proper intersection design can accommodate truck movements on proposed double left turn lanes		Good -Proper intersection design can accommodate truck movements on proposed double left turn lanes	Good -No changes to existing truck maneuverability		Good -No changes to existing truck maneuverability	Good -Proper intersection design can accommodate truck movements on proposed EB double left turn lane
	Driver Familiarity	Good -Common intersection configuration	Good -Common intersection configuration	Good -Common intersection configuration	Poor -No similar intersections currently in South Dakota	Good -Common intersection configuration	Poor -No similar intersections currently in South Dakota		Good -Common intersection configuration	Good -Common intersection configuration		Good -Common intersection configuration	Good -Common intersection configuration
	Multimodal Accommodations	Good -Existing pedestrian signal heads -Crossing distance on west approach increases	Good -Existing pedestrian signal heads -Removing channelizing islands reduces pedestrian/bicycle crash potential	Good -Existing pedestrian signal heads -Median serves as pedestrian refuge -Removing channelizing islands reduces pedestrian/bicycle crash potential	Moderate -Medians at intersection could serve as pedestrian refuge -No vehicle conflicts for NB and SB right turning vehicles could increase turning speeds and pedestrian conflict potential	Moderate -Existing pedestrian signal heads -Crossing distances increase on both east and south intersection approaches	Moderate -Medians at intersection could serve as pedestrian refuge -No vehicle conflicts for NB right turning vehicles could increase turning speeds and pedestrian conflict potential		Good -Existing pedestrian signal heads	Moderate -Existing pedestrian signal heads, but crossing distance on north and south approaches		Good -Existing pedestrian signal heads, but crossing distance on west approach increases	
Cost and Impacts	Project Cost**	Good \$1.8 million	Moderate \$6.5 million	Poor \$7.2 million	Poor \$7.4 million	Moderate \$4.2 million	Moderate \$5.4 million	Good No cost	Good \$565,000	Good \$1.3 million			
	Snow Maintenance	Good -No medians to impact snow removal	Good -Removing channelizing islands simplifies snow removal	Moderate -Medians can impact snow removal	Poor -Median-channelized turn lanes can create difficulties in snow removal	Good -Removing channelizing islands simplifies snow removal	Poor -Median-channelized turn lanes can create difficulties in snow removal	Good -No medians to impact snow removal	Good -No medians to impact snow removal	Good -Removing median to accommodate second EB left turn lane simplifies snow removal			
	Property Impacts	Moderate -Some impacts to private parking on NW and NE intersection corners -Potential impacts to four private accesses	Moderate -Some impacts to private parking on corners of intersection -Potential impacts to two private accesses	Poor -Greater impacts to private parking on corners of intersection -Potential impacts to two private accesses	Poor -Greater impacts to private parking on corners of intersection -Potential impacts to five private accesses	Poor -Impacts to intersection corners, especially SE corner -Converts one private access to right-in/right-out -Converts Century Road to right-in/right-out at E. North Street	Good -No impacts	Moderate -Some impacts to NW and SE intersection corners	Good -No significant impacts				

*All Level of Service (LOS) results shown in this table refer to 2045 PM peak traffic operations

**Cost estimates are for year 2024 (construction costs only, does not include right-of-way costs)

Recommended Improvements

Based on the ratings for all considered criteria, the following improvements are recommended:

Corridor-Type Improvements

- » Cambell Street – from Saint Patrick Street to East North Street
 - Add sidewalk and shared use path to existing five-lane roadway section
 - Improves multimodal accessibility and safety
 - Traffic operations with the existing roadway section can be improved with intersection improvements at Omaha Street/SD 44, East North Street, and Saint Patrick Street
 - Expansion to six-lanes would have greater impacts to adjacent properties, with a much higher project cost
- » Omaha Street/SD 44 – from LaCrosse Street to Saint Patrick Street
 - Add shared use path to existing five-lane roadway section
 - Improves multimodal accessibility and safety
 - Traffic operations with the existing roadway section can be improved with intersection improvements at Cambell Street
- » East North Street – from Cambell Street to Eglin Street
 - Add sidewalk and shared use path to existing five-lane roadway section
 - Improves multimodal accessibility and safety
 - Traffic operations with the existing roadway section can be improved with intersection improvements at Cambell Street and Eglin Street

Intersection Improvements

- » Cambell Street and Saint Patrick Street
 - Add second eastbound left turn lane and add westbound right turn lane
- » Cambell Street and Omaha Street/SD 44
 - Add second left turn lane on northbound and southbound approaches and convert channelized right turns to dedicated right turn lanes on all approaches. Include widening to allow north-south left turns to run concurrently
 - Provides similar operations to a the considered displaced left turns configuration, but has fewer impacts and lower cost
 - See **Figure ES.1** for a conceptual layout of this build alternative
- » Cambell Street and East North Street
 - Construct an intersection with displaced left turns on the westbound approach
 - This is the only configuration that provides acceptable traffic flow (expected to operate at LOS B through 2045)
 - Cost and impacts are comparable to other options
 - See **Figure ES.2** for a conceptual layout of this build alternative
- » East North Street and LaCrosse Street
 - Add northbound and southbound right turn lanes
 - Provides a significant traffic flow benefit
- » East North Street and Eglin Street
 - Add a second eastbound left turn lane

- Provides a significant traffic flow benefit

Future Roadways

Based on 2045 traffic projections, it is expected that the future extensions of Creek Drive, Anamosa Street, Valley Drive, and Mickelson will not require more than one through lane in each direction. Turn lanes should be considered at major intersections and be in accordance with local design standards, and it is also recommended pedestrian and bicycle facilities are included to best integrate with other multimodal improvements that are being recommended as part of this study.

Since most traffic on these future routes is expected to be generated by adjacent development and not re-routed traffic from existing roadways, public funding of these future routes is not required.

Phasing of Improvements

Specific construction years for recommended projects have not been identified. However, a general time-frame for improvements based on the expected onset of issues has been identified (i.e. short-term projects, mid-term projects, long-term projects).

Since the need for future routes is based on the timing of new development in the study area, these projects were not included in project phasing.

SHORT-TERM PROJECTS

Short-term projects should be constructed within ten years. These projects should be integrated into the Transportation Improvement Program as soon as funds are available. These improvements have either been already identified as part of previous planning efforts or mitigate existing issues.

- » Intersection Improvements at Cambell Street and East North Street
 - Construct an intersection with displaced left turns on the westbound approach
 - It is recommended that intersection improvements at this location are prioritized since peak hour traffic operations are currently deficient (LOS D in the PM peak hour), and peak hour delays are expected to increase by nearly 50 percent by 2025.
- » Multimodal improvements along Omaha Street/SD 44 – from LaCrosse Street to Saint Patrick Street
 - Add shared use path to existing five-lane roadway section
 - A north side shared use path is already programmed as a 2021 project for the segment between LaCrosse Street to Covington Street. Note that Covington Street is southeast of Saint Patrick Street and is beyond the east side of the study area.

MID-TERM PROJECTS

Mid-term projects should be constructed in the next 11 to 20 years and should be considered in subsequent planning efforts and incorporated into the next Long-Range Transportation Plan. These projects can however be programmed and implemented after the Cambell Street/East North Street intersection improvements.

- » Intersection Improvements at Cambell Street and Omaha Street/SD 44
 - Add second left turn lane on northbound and southbound approaches and convert channelized right turns to dedicated right turn lanes on all approaches. Include widening to allow north-south left turns to run concurrently.
 - A slight deterioration in operations is expected by 2025, with PM peak hour LOS D expected, however more major delays are not expected until later into the future (2045 PM peak LOS E, and AM LOS D).

- » East North Street and Eglin Street
 - Add a second eastbound left turn lane
 - The existing PM peak hour traffic operates at LOS E. This project is not currently in the Transportation Improvement Program, indicating that implementation any sooner may not be realistic.
- » Multimodal improvements along Cambell Street – from Saint Patrick Street to East North Street
 - Add sidewalk and shared use path to existing five-lane roadway section
 - These facilities can connect with short-term multimodal improvements on Omaha Street/SD 44
- » Multimodal improvements along East North Street – from Cambell Street to Eglin Street
 - Add sidewalk and shared use path to existing five-lane roadway section
 - These facilities can be built as development fills in along East North Street in the future

LONG-TERM PROJECTS

The following projects can be considered long-term improvements (20 years or more into the future), since acceptable operations (no worse than LOS C) are expected through at least 2025. These improvements can be carried into future planning documents, and/or also incorporated into larger overall corridor projects.

- » Cambell Street and Saint Patrick Street
 - Add second eastbound left turn lane and add westbound right turn lane
- » East North Street and LaCrosse Street
 - Add northbound and southbound right turn lanes

Figure ES.1 – Intersection of Cambell Street and Omaha Street: Standard Turn Lane Improvements

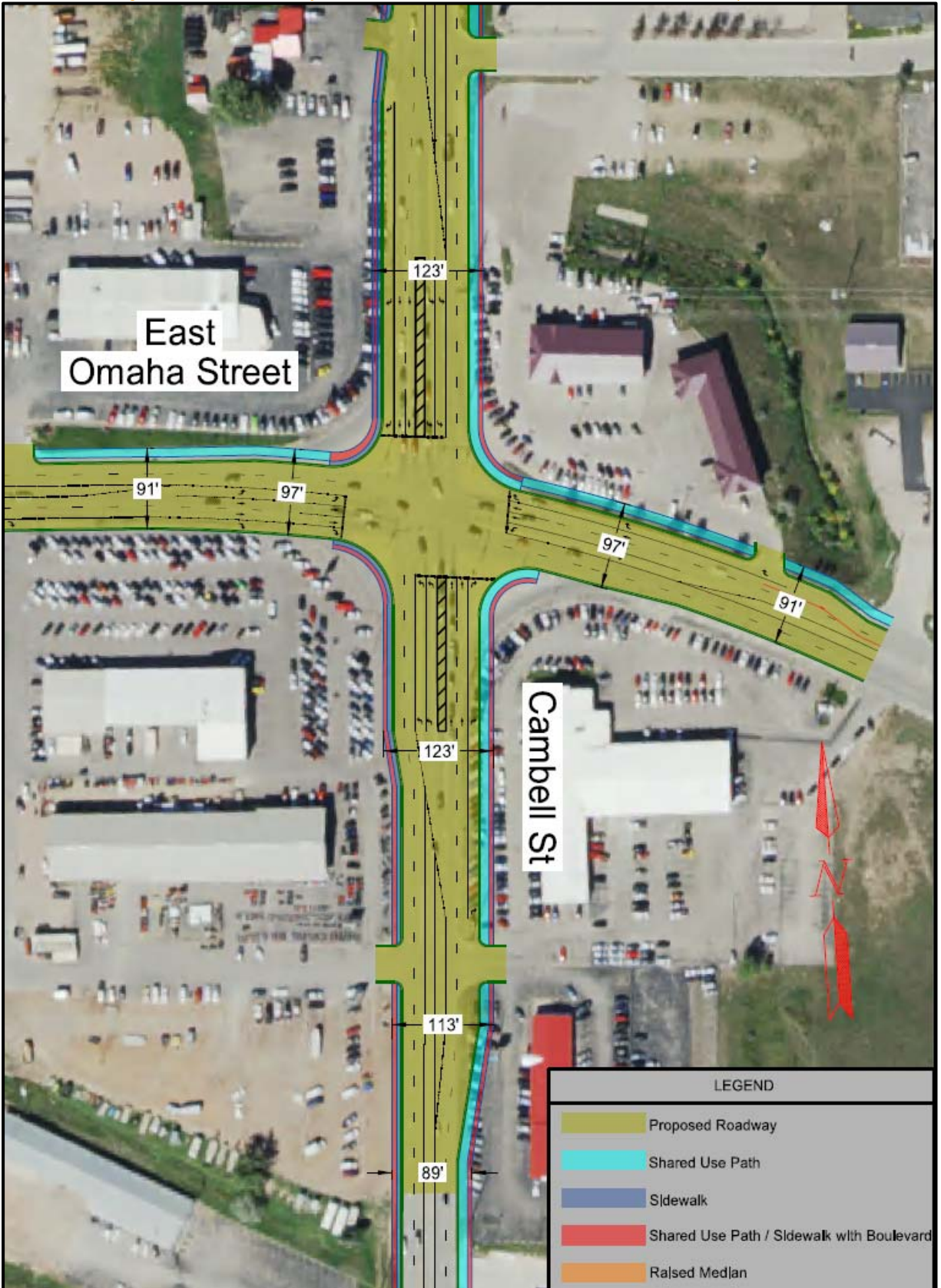


Figure ES.2 – Intersection of Cambell Street East North Street: Displaced Left Turns Configuration

