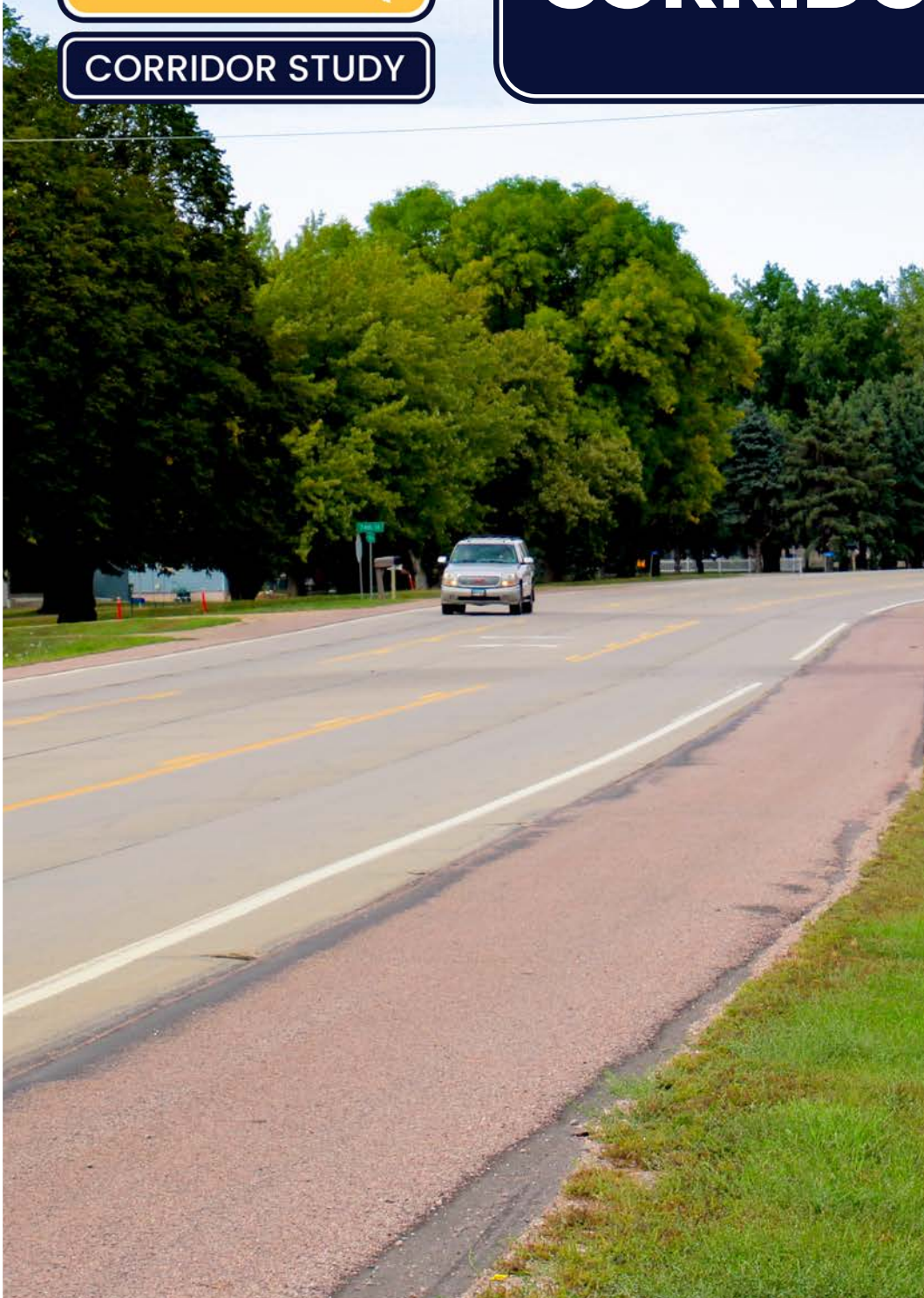




# SOUTH DAKOTA HIGHWAY 115 CORRIDOR STUDY

APRIL 2026



# South Dakota Highway 115 Corridor Study Technical Report

Minnehaha County, SD

April 2026

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## Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
AWSC	All-Way Stop-Control
EB, WB	Eastbound, Westbound
F&I	Fatal and Injury
FHWA	Federal Highway Administration
HCM	Highway Capacity Manual
HCS	Highway Capacity Software
HMEV	Hundred Million Entering Vehicles
HSM	Highway Safety Manual
IHSDM	Interactive Highway Safety Design Model
ITE	Institute of Transportation Engineers
ITS	Intelligent Transportation System
LOS	Level of Service
LT, T, RT	Left Turn, Through, Right Turn
M&A	Methods and Assumptions
M.C.	Minnehaha County
MEV	Million Entering Vehicles
MPO	Metropolitan Planning Organization
MUTCD	Manual on Uniform Traffic Control Devices
MVMT	Million Vehicle Miles Traveled
NB, SB	Northbound, Southbound
NEPA	National Environmental Policy Act
PCN	(SDDOT) Project Control Number
PDO	Property Damage Only
RIRO	Right-in Right-out
S.D.	South Dakota
SDDOT	South Dakota Department of Transportation
SHSP	Strategic Highway Safety Plan
SECOG	South Eastern Council of Governments
STIP	Statewide Transportation Improvement Program
TDM	Travel Demand Model
TWSC	Two-way Stop-control
WCSC	Worst-case Stop-control

# 1. Executive Summary

## 1.1 Background and Study Area

In 2024, the South Dakota Department of Transportation (SDDOT) initiated a study with the City of Dell Rapids, City of Baltic, City of Sioux Falls, Minnehaha County, South Eastern Council of Governments (SECOG), and Federal Highway Administration (FHWA) to develop a long-range plan for over 15 miles of the South Dakota Highway 115 corridor. The study limits entail the following:

- **S.D. Highway 115** from the East Dike Place/Drive intersection in Sioux Falls to the West 4<sup>th</sup> Street intersection in Dell Rapids

The SDDOT's pavement management system has begun to show the need for pavement replacement or reconstruction along the S.D. Highway 115 corridor. Based on the corridor's function as a major commuter route between Sioux Falls and Dell Rapids and the anticipated traffic growth as these communities continue to grow, future needs and potential improvements were identified along S.D. Highway 115 to ensure the appropriate roadway typical section was selected to provide the greatest life cycle benefit of the pavement surface.

The objectives of the study are to:

1. Determine the appropriate corridor typical section for the life cycle of the new pavement
2. Determine potential configurations for identified intersections along the corridor
3. Determine the need for additional through, turning, and/or passing lanes along the S.D. Highway 115 mainline while developing an access management plan along the entire corridor
4. Create environmental scan documentation for the entire S.D. Highway 115 corridor within the study limits
5. Create final products for use by the City of Sioux Falls, the City of Baltic, the City of Dell Rapids, Minnehaha County, SECOG, and the SDDOT which will provide guidance to implement recommended improvements for future construction

Currently, the SDDOT has project PCN 08LM planned along the S.D. Highway 115 from East Dike Place/Drive in Sioux Falls to M.C. Highway 114 (Baltic Corner) in the 2030-2033 developmental Statewide Transportation Improvement Program (STIP).

## 1.2 Findings and Recommendations

This report documents the four-step process to support long-range corridor recommendations contained herein. The following presents a summary of short-term, development driven, and long-range recommended capital improvements, generalized timeline, and planning-level costs as identified by this corridor study. Overarching S.D. Highway 115 segment reconstruction projects are noted with **Bold Blue** in **Table ES-1** and shown in **Figure ES-1**.

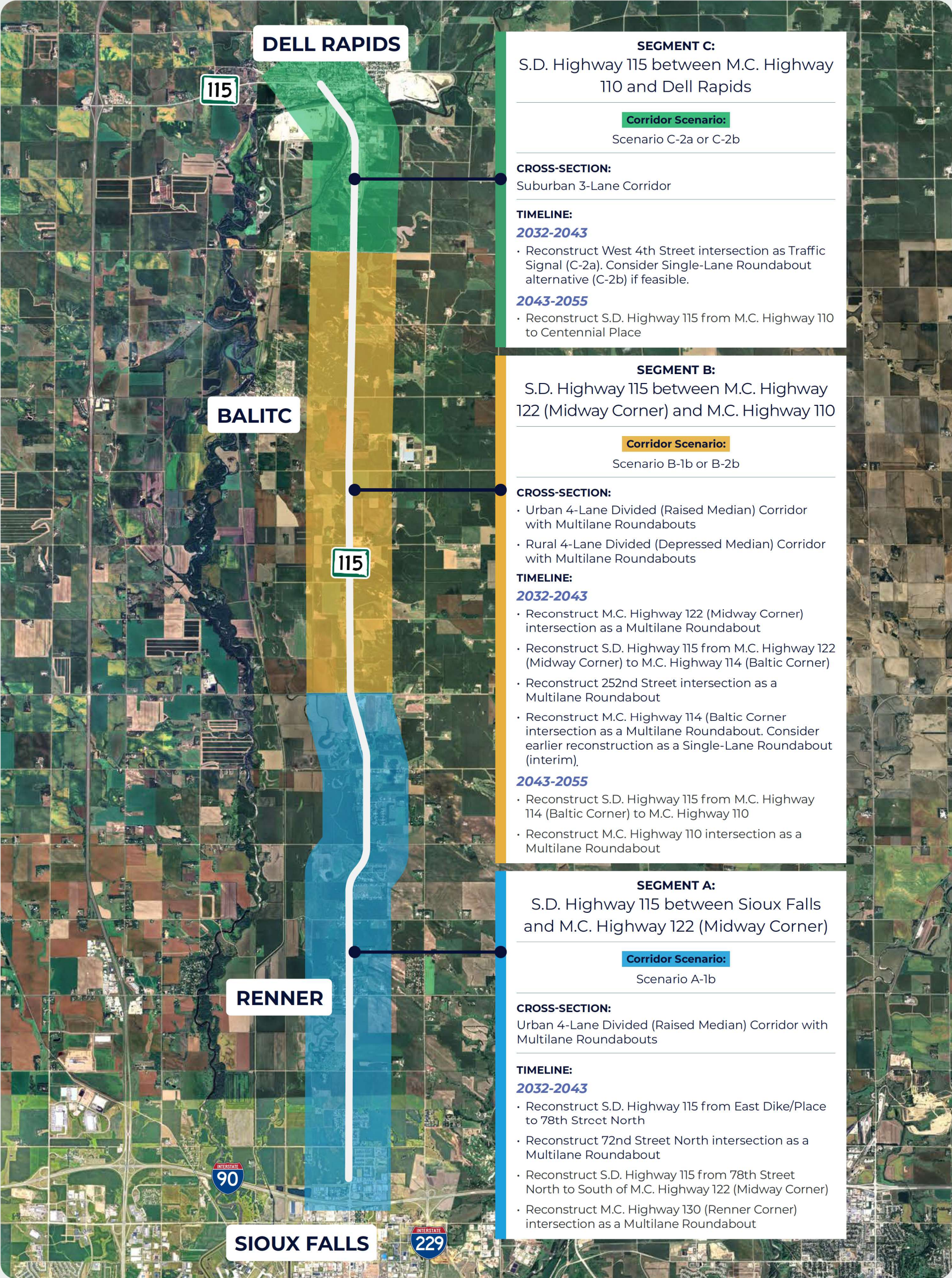
**Table ES-1: Recommendations and Planning Timelines**

Planning Timeline	Corridor Segment or Intersection Reconstruction	S.D. Highway 115 Corridor Segment	Long-Range Segment Scenario	Construction & ROW Cost (\$mil)
2032 – 2043	<b>Segment: East Dike Place/Drive to 78<sup>th</sup> Street North</b>	Sioux Falls to South of Midway Corner	A-1	\$16.0*
	72 <sup>nd</sup> Street North intersection: multilane roundabout	Sioux Falls to South of Midway Corner	A-1b	\$5.5
	<b>Segment: 78<sup>th</sup> Street North to South of M.C. Highway 122 (Midway Corner)</b>	Sioux Falls to South of Midway Corner	A-1	\$70.0*
	M.C. Highway 130 (Renner Corner) intersection: multilane roundabout	Sioux Falls to South of Midway Corner	A-1b	\$5.4
	M.C. Highway 122 (Midway Corner) intersection: multilane roundabout	Midway Corner to M.C. Highway 110	B-1/2b	\$5.4
	West 4th Street intersection: traffic signal (consider single-lane roundabout alternative if feasible)	M.C. Highway 110 to West 4 <sup>th</sup> Street	C-2a (Alt: C-2b)	\$4.1 (\$4.6)
	<b>Segment: M.C. Highway 122 (Midway Corner) to M.C. Highway 114 (Baltic Corner)</b>	Midway Corner to M.C. Highway 110	B-1 or B-2	\$61.3* \$57.1*
	252 <sup>nd</sup> Street intersection: multilane roundabout	Midway Corner to M.C. Highway 110	B-1/2b	\$5.4
	M.C. Highway 114 (Baltic Corner) intersection: multilane roundabout (consider earlier interim reconstruction single-lane roundabout)	Midway Corner to M.C. Highway 110	B-2b (Int: B-3b)	\$5.4 (Int: \$4.2)
	2043 – 2055	<b>Segment: M.C. Highway 114 (Baltic Corner) to M.C. Highway 110</b>	Midway Corner to M.C. Highway 110	B-1 or B-2
M.C. Highway 110 intersection: multilane roundabout		Midway Corner to M.C. Highway 110	B-1/2b	\$5.4
<b>Segment: M.C. Highway 110 to Centennial Place</b>		M.C. Highway 110 to West 4 <sup>th</sup> Street	C-2	\$23.5*

\*Project construction & Right of Way (ROW) costs include major study intersection projects

Additional considerations and recommendations in conjunction with the identified capital improvements involve the following elements as presented in this study:

- ITS recommendations
- Blowing snow recommendations
- Bicycle and Pedestrian Plan
- Access Plan



**SEGMENT C:**  
S.D. Highway 115 between M.C. Highway 110 and Dell Rapids

**Corridor Scenario:**

Scenario C-2a or C-2b

**CROSS-SECTION:**  
Suburban 3-Lane Corridor

**TIMELINE:**  
**2032-2043**

- Reconstruct West 4th Street intersection as Traffic Signal (C-2a). Consider Single-Lane Roundabout alternative (C-2b) if feasible.

**2043-2055**

- Reconstruct S.D. Highway 115 from M.C. Highway 110 to Centennial Place

**SEGMENT B:**  
S.D. Highway 115 between M.C. Highway 122 (Midway Corner) and M.C. Highway 110

**Corridor Scenario:**

Scenario B-1b or B-2b

**CROSS-SECTION:**  
• Urban 4-Lane Divided (Raised Median) Corridor with Multilane Roundabouts  
• Rural 4-Lane Divided (Depressed Median) Corridor with Multilane Roundabouts

**TIMELINE:**  
**2032-2043**

- Reconstruct M.C. Highway 122 (Midway Corner) intersection as a Multilane Roundabout
- Reconstruct S.D. Highway 115 from M.C. Highway 122 (Midway Corner) to M.C. Highway 114 (Baltic Corner)
- Reconstruct 252nd Street intersection as a Multilane Roundabout
- Reconstruct M.C. Highway 114 (Baltic Corner) intersection as a Multilane Roundabout. Consider earlier reconstruction as a Single-Lane Roundabout (interim).

**2043-2055**

- Reconstruct S.D. Highway 115 from M.C. Highway 114 (Baltic Corner) to M.C. Highway 110
- Reconstruct M.C. Highway 110 intersection as a Multilane Roundabout

**SEGMENT A:**  
S.D. Highway 115 between Sioux Falls and M.C. Highway 122 (Midway Corner)

**Corridor Scenario:**

Scenario A-1b

**CROSS-SECTION:**  
Urban 4-Lane Divided (Raised Median) Corridor with Multilane Roundabouts

**TIMELINE:**  
**2032-2043**

- Reconstruct S.D. Highway 115 from East Dike/Place to 78th Street North
- Reconstruct 72nd Street North intersection as a Multilane Roundabout
- Reconstruct S.D. Highway 115 from 78th Street North to South of M.C. Highway 122 (Midway Corner)
- Reconstruct M.C. Highway 130 (Renner Corner) intersection as a Multilane Roundabout

## 2. Introduction

### 2.1 Background and Study Area

In 2024, the South Dakota Department of Transportation (SDDOT) initiated a study with the City of Dell Rapids, City of Baltic, City of Sioux Falls, Minnehaha County, South Eastern Council of Governments (SECOG), and Federal Highway Administration (FHWA) to develop a long-range plan for over 15 miles of the South Dakota Highway 115 corridor. The study limits entail the following (**Figure 1**):

- **S.D. Highway 115** from the East Dike Place/Drive intersection in Sioux Falls to the West 4<sup>th</sup> Street intersection in Dell Rapids

The SDDOT's pavement management system has begun to show the need for pavement replacement or reconstruction along the S.D. Highway 115 corridor. Based on the corridor's function as a major commuter route between Sioux Falls and Dell Rapids and the anticipated traffic increases from continued community growth, future needs and potential improvements were identified along S.D. Highway 115 to ensure the appropriate roadway typical section was selected to provide the greatest life cycle benefit of the pavement surface.

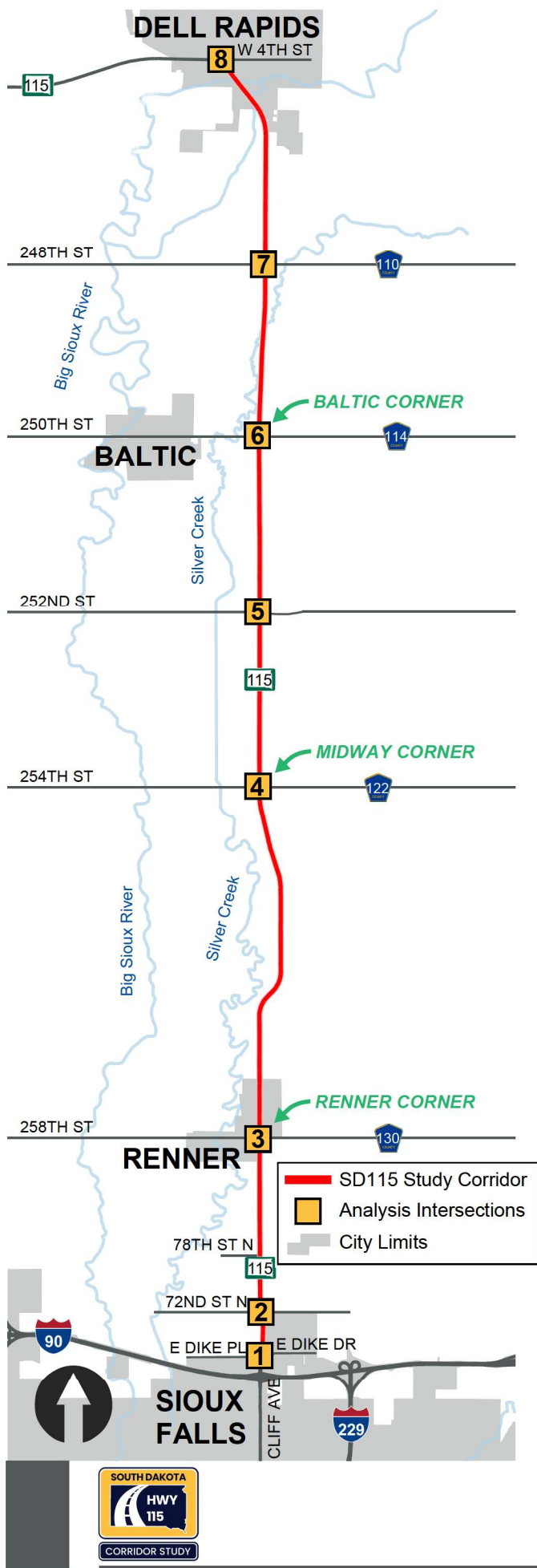
The objectives of the study are to:

1. Determine the appropriate corridor typical section for the life cycle of the new pavement
2. Determine potential configurations for identified intersections along the corridor
3. Determine the need for additional through, turning, and/or passing lanes along the S.D. Highway 115 mainline while developing an access management plan along the entire corridor
4. Create environmental scan documentation for the entire S.D. Highway 115 corridor within the study limits
5. Create final products for use by the City of Sioux Falls, the City of Baltic, the City of Dell Rapids, Minnehaha County, SECOG, and the SDDOT which will provide guidance to implement recommended improvements for future construction

Currently, the SDDOT has project PCN 08LM planned along S.D. Highway 115 from East Dike Place/Drive in Sioux Falls to M.C. Highway 114 (Baltic Corner) in the 2030-2033 developmental Statewide Transportation Improvement Program (STIP).

### 2.2 Study Methods and Assumptions

A methods and assumptions (M&A) document was prepared at the onset of this study to serve as a historical record of study process, analysis methodology, dates, and decisions made by the study team representatives for the corridor study. The most recent version of the M&A document is provided in **Appendix A**.



Ref. #	Street #1	Street #2
8	S.D. Highway 115	246 <sup>th</sup> Street / West 4 <sup>th</sup> Street
7	S.D. Highway 115	248 <sup>th</sup> Street / M.C. Highway 110
6	S.D. Highway 115	250 <sup>th</sup> Street / M.C. Highway 114 (Baltic Corner)
5	S.D. Highway 115	252 <sup>nd</sup> Street
4	S.D. Highway 115	254 <sup>th</sup> Street / M.C. Highway 122 (Midway Corner)
3	S.D. Highway 115	258 <sup>th</sup> Street / M.C. Highway 130 (Renner Corner)
2	S.D. Highway 115 / Cliff Avenue	72 <sup>nd</sup> Street North
1	S.D. Highway 115 / Cliff Avenue	East Dike Place/Drive

**STUDY AREA**

**FIGURE 1**

## 2.3 Prior Studies and Planning

The following historical planning documents were referenced to support efforts completed to date and regional transportation goals throughout the corridor's various jurisdictions.

- *Go Sioux Falls 2045 MPO Long Range Transportation Plan*
- *Sioux Falls NE Sewer Plan*
- *2021 Granite Valley Traffic Impact Study (72<sup>nd</sup> Street North)*
- *2021 Sioux Falls Pedestrian Plan*
- *2021 Baltic Housing Plan*
- *2019 Dell Rapids Comprehensive Plan*
- *2019 Dell Rapids Master Transportation Plan*
- *2022-26 Minnehaha County 5-Year Projects Plan*
- *Silver Creek Existing Conditions Technical Memorandum*
- *SDDOT Project NH 0115()89, PCN 08LM Scoping Document and Preliminary Plans*
- *South Dakota Strategic Highway Safety Plan*
- *Sioux Falls Traffic Counts*
- *Sioux Falls MPO Bicycle Plan*

## 3. Study Process

This study used the following four-step process to develop long-range planning recommendations. Study Advisory Team, public, and stakeholder involvement were all instrumental in a process that included a series of SAT workshops and meetings and two full sets of stakeholder and public meetings. A summary of the four steps and the relationship to chapters in this report is provided in **Table 1**.

**Table 1: Study Process**

Step	Components	Applicable Chapters
1	<p><b><u>Identify Transportation Issues and Needs</u></b></p> <ul style="list-style-type: none"> <li>• Data collection</li> <li>• Analysis of existing and future No Build conditions</li> <li>• Begin environmental review of corridor</li> <li>• Public/stakeholder meetings #1 – gather feedback on issues and needs</li> </ul>	Chapters 4 - 10
2	<p><b><u>Develop Concepts</u></b></p> <ul style="list-style-type: none"> <li>• SAT initial workshop – concept brainstorming</li> <li>• Develop, analyze, and refine concepts</li> </ul>	Chapter 11
3	<p><b><u>Develop Feasible Solutions for Potential Projects</u></b></p> <ul style="list-style-type: none"> <li>• SAT follow-up workshops – corridor scenario development</li> <li>• Develop, analyze, and refine corridor scenarios</li> <li>• Develop supporting corridor plans</li> <li>• Public meeting #2 – present corridor scenarios for feedback</li> </ul>	Chapters 12 - 22
4	<p><b><u>Develop Recommendations</u></b></p> <ul style="list-style-type: none"> <li>• Identify future project recommendations and timelines for implementation</li> <li>• Develop corridor study report</li> <li>• Develop environmental overview report</li> </ul>	Chapters 12 - 22

## 4. Existing Conditions

### 4.1 Existing Road Conditions and Structures

Existing roadway segment and structure information is shown in **Figure 2**. Existing lane configurations and intersection traffic control are shown in **Figure 3**.

### 4.2 Existing Access

The SDDOT has established access classification criteria, shown in **Table 2**, to help guide access management along state highway corridors. Current SDDOT access classification varies throughout the study corridor and is summarized in **Figure 2**. These criteria were used throughout the study to identify access management needs and potential improvements.

**Table 2: SDDOT Access Classification Criteria**

Access Classification	Signal Spacing Distance (mile)	Median Opening Spacing (mile)	Minimum Unsignalized Access Spacing (feet)	Access Density	Denial of Direct Access When Other Available
Interstate	N/A	N/A	N/A	N/A	Yes
Expressway	½	1/2 F, 1/2 D	2640	At half-mile increments	Yes
Free Flow Urban	1/2	1/2 F, 1/4 D	1320	At quarter-mile increments	Yes
Intermediate Urban	1/2	1/2 F, 1/4 D	660	1 access/block face, right in/right out preferred	Yes
Urban Developed	1/4	1/4	100	2 access/block face	Yes
Urban Fringe	1/4	1/4	1000	5 access/side/mile	Yes
Rural	N/A	N/A	1000	5 access/side/mile	Yes

Notes:

1. Access to the Interstate system is governed by SDDOT interchange policy. No access shall be provided on non-interstate routes within the following distance of interstate ramp terminals: 1/8 mile directional access, 1/4 mile full access.
2. N/A = Not Applicable, F = Full Movement – all turns and through movements provided, D = Directional Only – certain turning and through movements not provided.
3. SDDOT may defer to stricter local standards.
4. SDDOT will seek opportunities to reduce access density wherever possible.
5. Rural class minimum unsignalized access spacing may be reduced to 660 feet by the Area Engineer, based on results of an engineering study as described in 70:09:01:02.
6. Unsignalized access spacing also is subject to corner clearance analysis.

Source: Figure 17-4, SDDOT Road Design Manual – Chapter 17

In addition, the City of Sioux Falls has also established access spacing criteria based on functional classification, as shown in **Table 3**. These guidelines are applicable to the S.D. Highway 115 corridor, also known as North Cliff Avenue, between East Dike Place/Drive and 257<sup>th</sup> Street. Similar to SDDOT standards, the criteria were utilized to identify access management needs and potential improvements.

**Table 3: City of Sioux Falls Access Spacing Criteria**

Classification	Signal Spacing	Median Opening	Unsignalized Intersection Spacing
Regional Arterial/Expressway	½ mile	½ mile	2640
Arterial I	¼ mile	¼ mile	1320
Arterial II	¼ mile	¼ mile	varies
Arterial III	¼ mile	660	varies

Source: Table 8.0 Access Spacing, City of Sioux Falls Engineering Design Standards – Chapter 8

### 4.3 Existing Traffic Volumes

Existing Condition (2024) traffic volumes, shown in **Figure 4**, were based on the following daily and peak hour traffic counts collected as part of the corridor study.

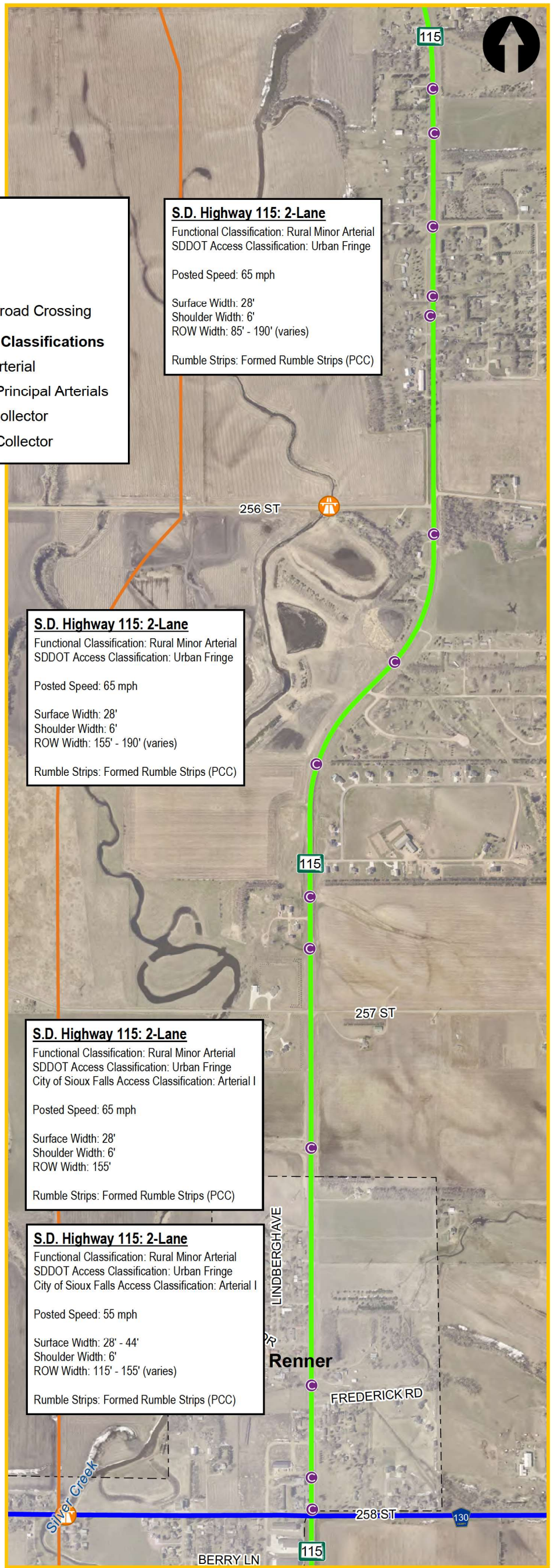
#### 24-hour Peak hour intersection turning movement counts

- Collected on Thursday, May 2, 2024
- Provides peak hour intersection turning movement volumes, peak hour factors, bicycle and pedestrian volumes, and heavy vehicle percentages
- Reflects morning and afternoon/evening commute periods

#### 24-hour mainline segment counts

- Collected from April 30 through May 2 or May 7 through May 9, 2024
- Provides daily segment volumes, heavy vehicle percentages, and speeds

All volumes were adjusted to reflect a September ‘design season’ to account for higher corridor traffic volumes occurring in the later summer and early fall months.

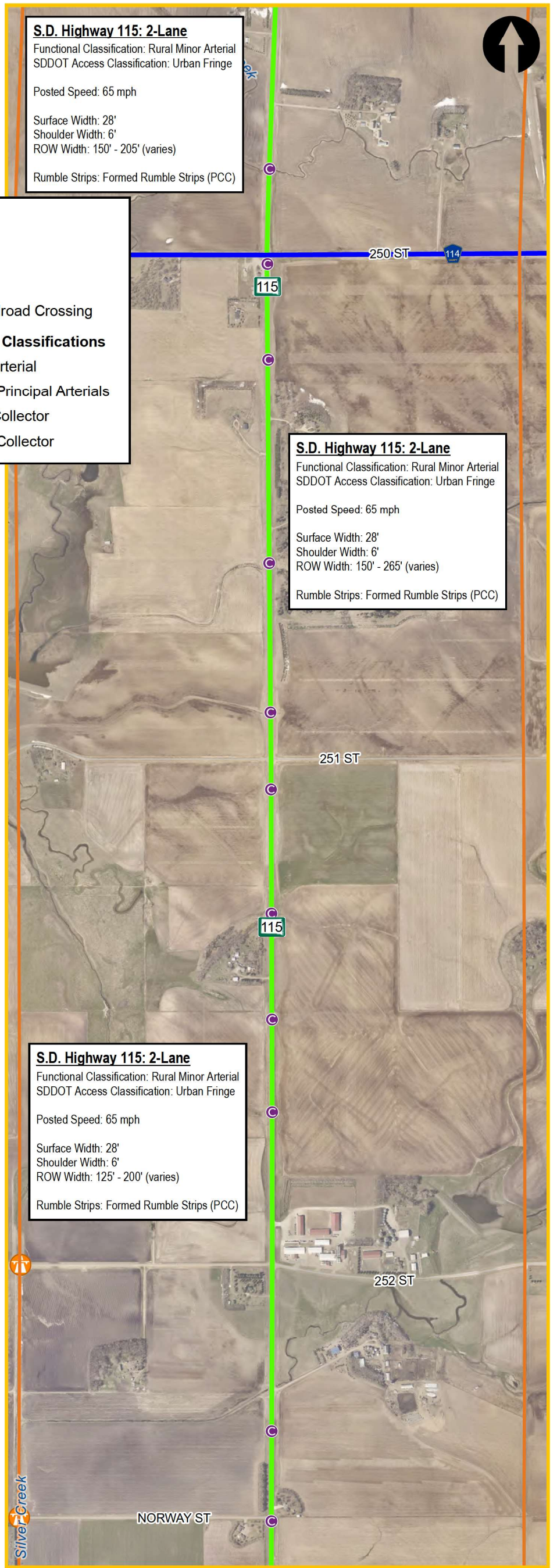
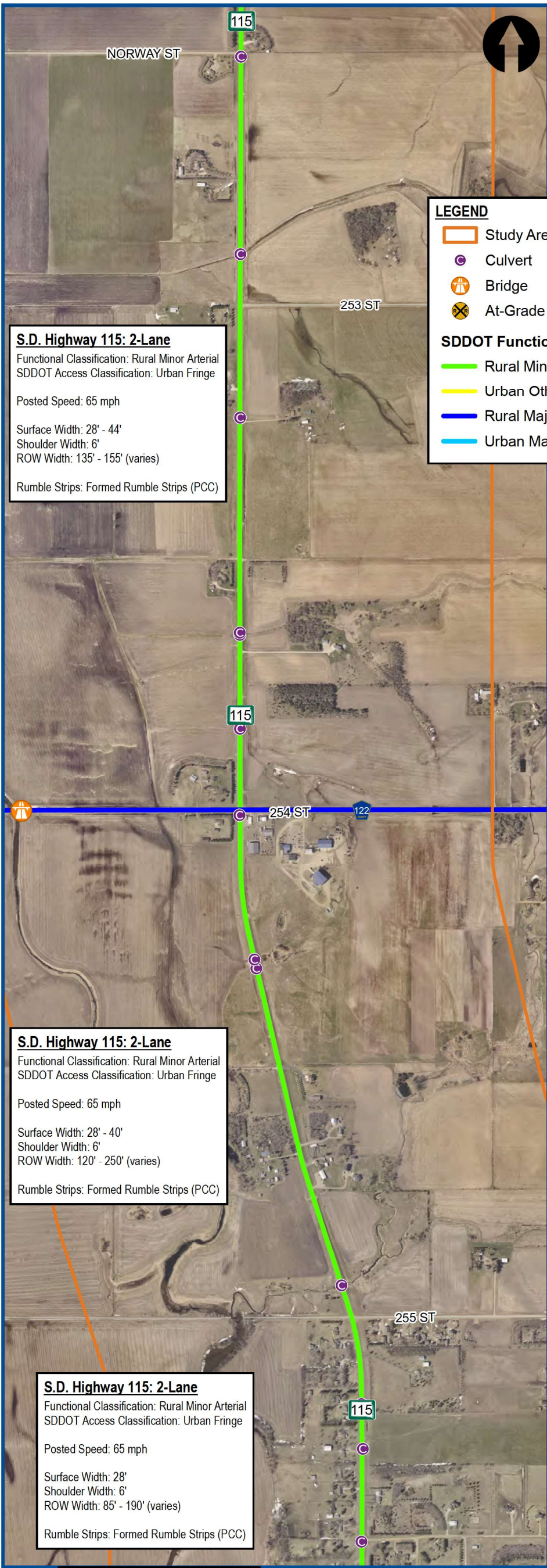


**EXISTING ROAD AND STRUCTURE CONDITIONS**

FIGURE 2-A

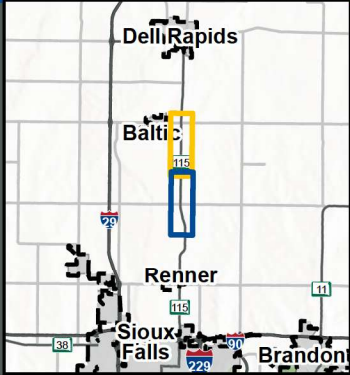
**Notes:**  
 Roadway geometrics often vary within an individual segment.  
 Noted dimensions represent a typical value.





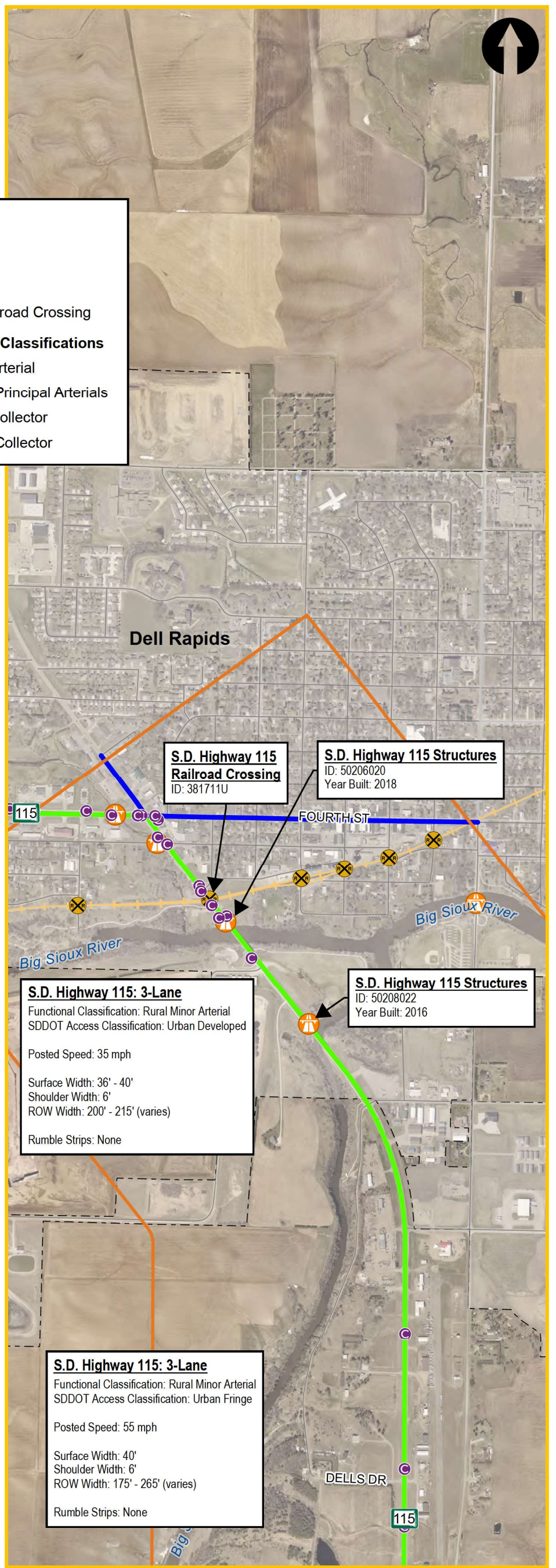
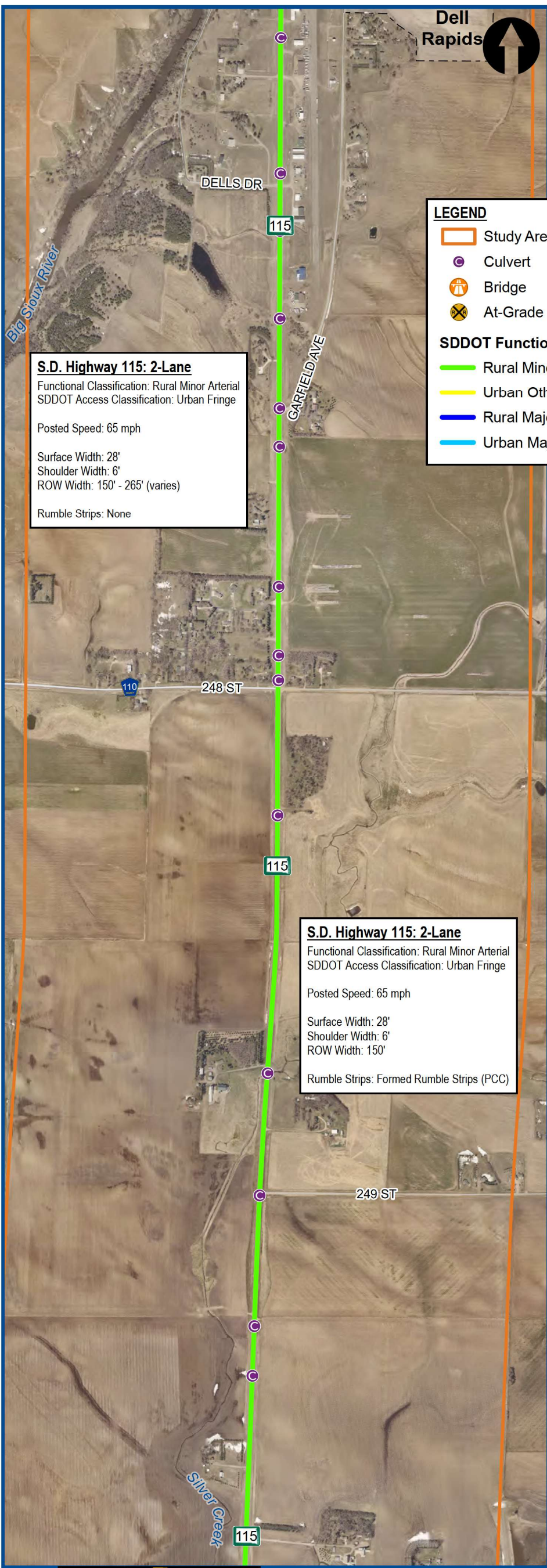
**EXISTING ROAD AND STRUCTURE CONDITIONS**

FIGURE 2-B



**Notes:**  
 Roadway geometrics often vary within an individual segment.  
 Noted dimensions represent a typical value.



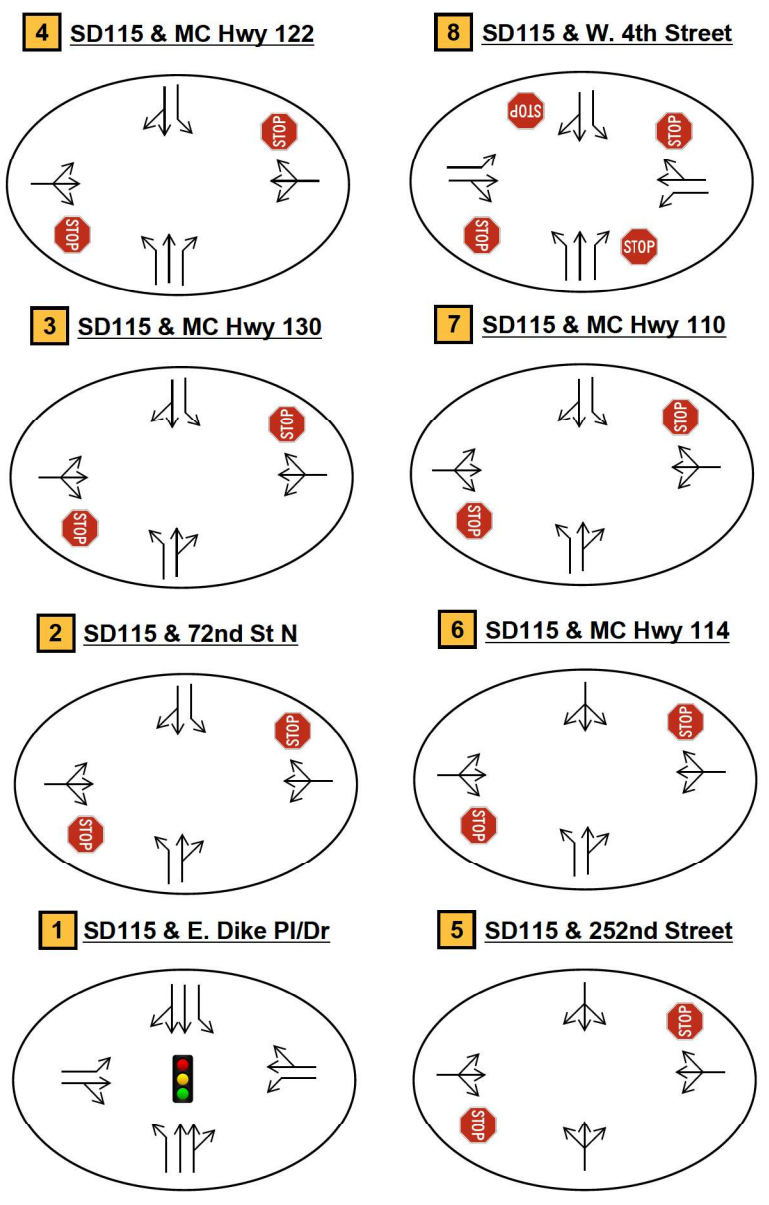
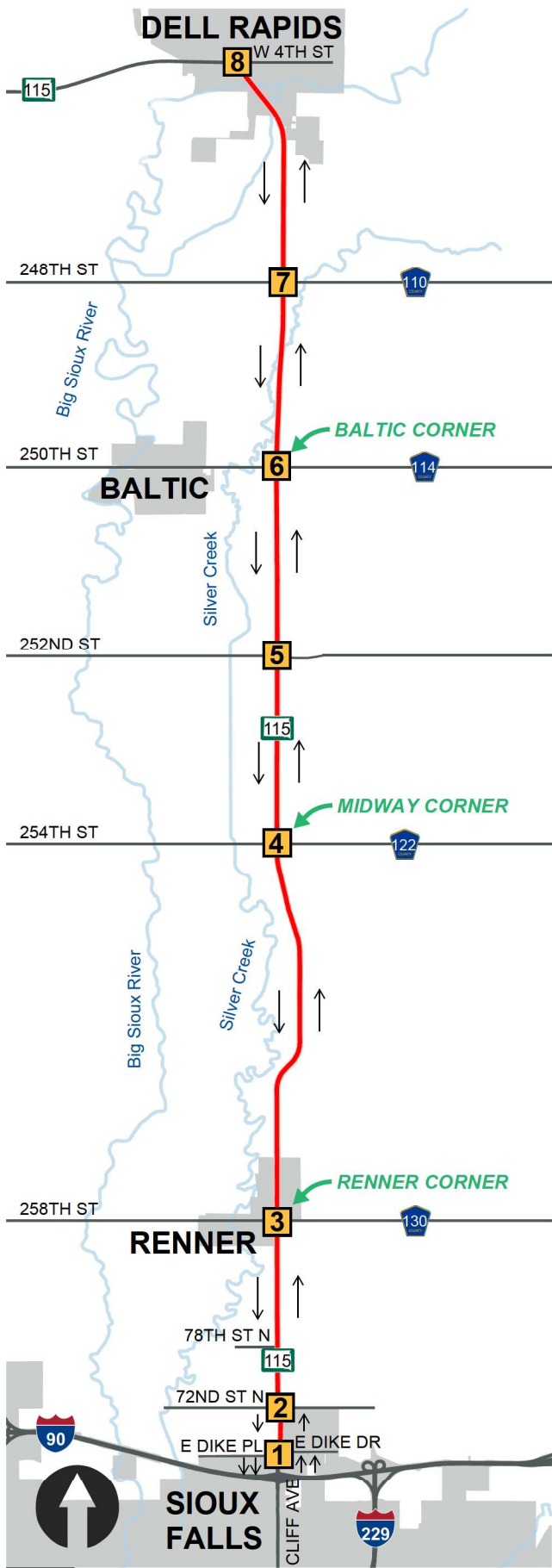


**EXISTING ROAD AND STRUCTURE CONDITIONS**

FIGURE 2-C

**Notes:**  
 Roadway geometrics often vary within an individual segment.  
 Noted dimensions represent a typical value.





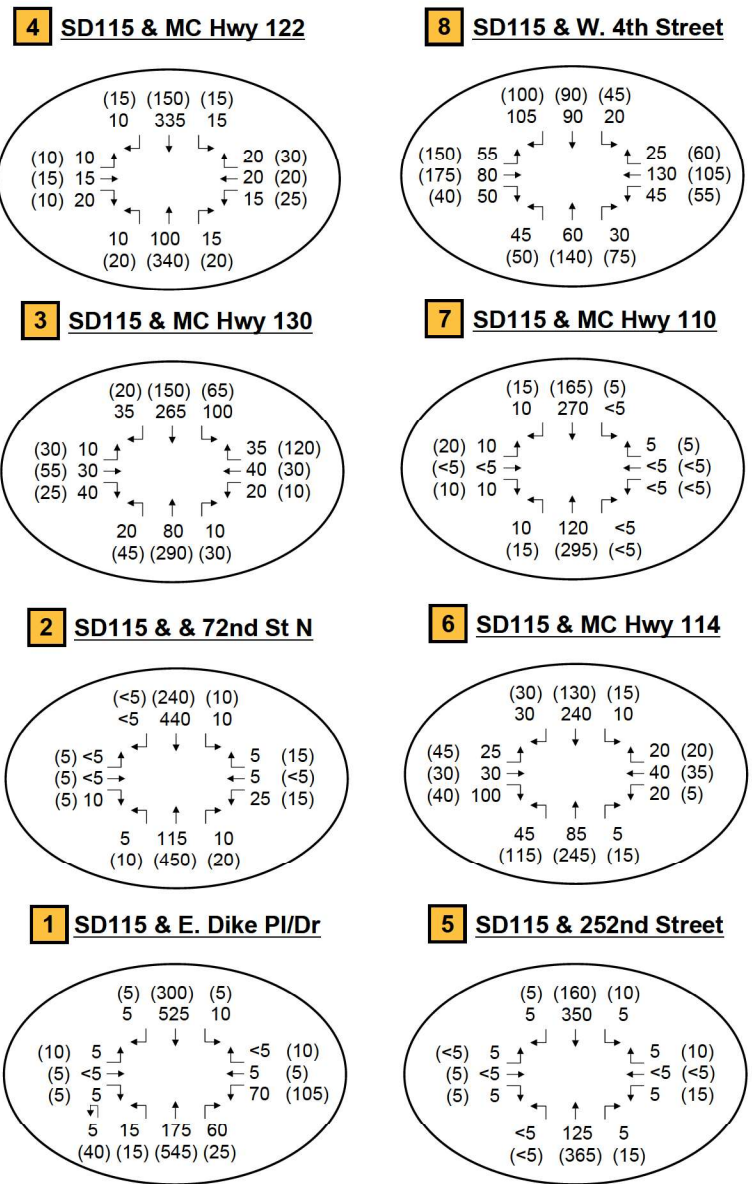
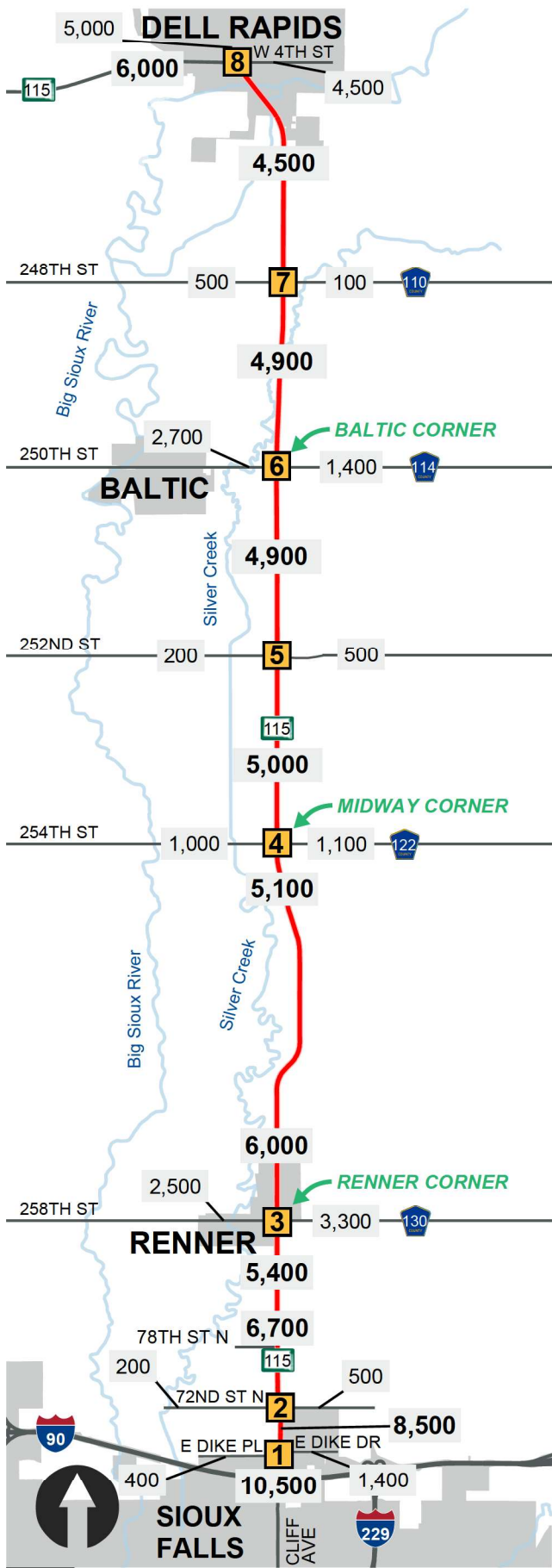
**LEGEND**

- 1** Study Intersection
- Intersection Control
  - Stop Sign
  - Traffic Signal
- Lane Configuration
  - Existing Lane Configuration

**EXISTING LANE CONFIGURATIONS & INTERSECTION TRAFFIC CONTROL**

**FIGURE 3**





**LEGEND**

- 1** Study Intersection
- 10,000** Daily Traffic Volumes
- AM (PM)** Peak Hour Traffic Volumes

**EXISTING (2024)  
TRAFFIC VOLUMES**

**FIGURE 4**

## 4.4 Crash History

Study area crash data for the years 2019 through 2023 were provided by the SDDOT through a GIS geodatabase. The following summarizes relevant crash characteristics for the S.D. Highway 115 study intersections and corridor segments. Additional details and crash location maps are provided in the *Crash History Review* technical memo (**Appendix B**).

### Crash Review Methodology

Study area crashes were sorted into the following categories:

- S.D. Highway 115 intersections
- S.D. Highway 115 corridor segments

Crash rates and critical crash rates were determined for both intersections and roadway segments. Intersection crash rates were calculated in terms of crashes per million entering vehicles (crashes/MEV). Roadway segment crash rates were calculated in terms of million vehicle miles traveled (crashes/MVMT).

Critical crash rates were calculated based on the statistical populations of each crash location (intersection or segment), using methods presented in the *Highway Safety Manual* (HSM, American Association of State Highway and Transportation Officials (AASHTO), 2010). A critical crash rate accounts for a desired level of confidence, vehicle exposure, and similar facility types. Intersections and segments where the crash rate meets or exceeds 90 percent of the critical rate were noted for further investigation.

Weighted crash rates were also calculated for corridor segments by weighing each type of crash in accordance with its property damage only equivalences: fatal crash (12), injury crash (3), and property damage only (PDO) crash (1). These Equivalent Property Damage Only (EPDO) rates had been developed as outlined in the Highway Safety Manual (HSM) and were assigned to each crash in accordance with methodology used by the SDDOT in determining statewide average crash rates. This method differs from the calculation of an average crash rate in that the weighted crash rate accounts for injury and fatal crashes through the weighting process. An average crash rate calculation reflects total crash frequency, regardless of injury severity, resulting in an equitable comparison between all intersections or segments.

### S.D. Highway 115 Corridor Summary

285 total crashes and 36 injury crashes were reported along the study corridor between 2019 and 2023. Of those, 37 were identified as intersection crashes and the remaining 248 were segment crashes. Corridor-wide crash frequency, shown in **Figure 5**, reflects a downward trend with a roughly 46 percent decrease amongst segment crashes across the five years of data. Conversely, injury crashes and intersection crashes rose during this period.

A breakdown of corridor-wide crashes by injury severity and manner of collision are shown in **Table 4** and **Table 5**. Overall, nearly 12 percent of all crashes result in injury along the corridor. Specific to intersection crashes, nearly 38 percent resulted in injury. Individual crash records for total crashes and injury crashes are depicted in **Figure 6** and **Figure 7**, respectively.

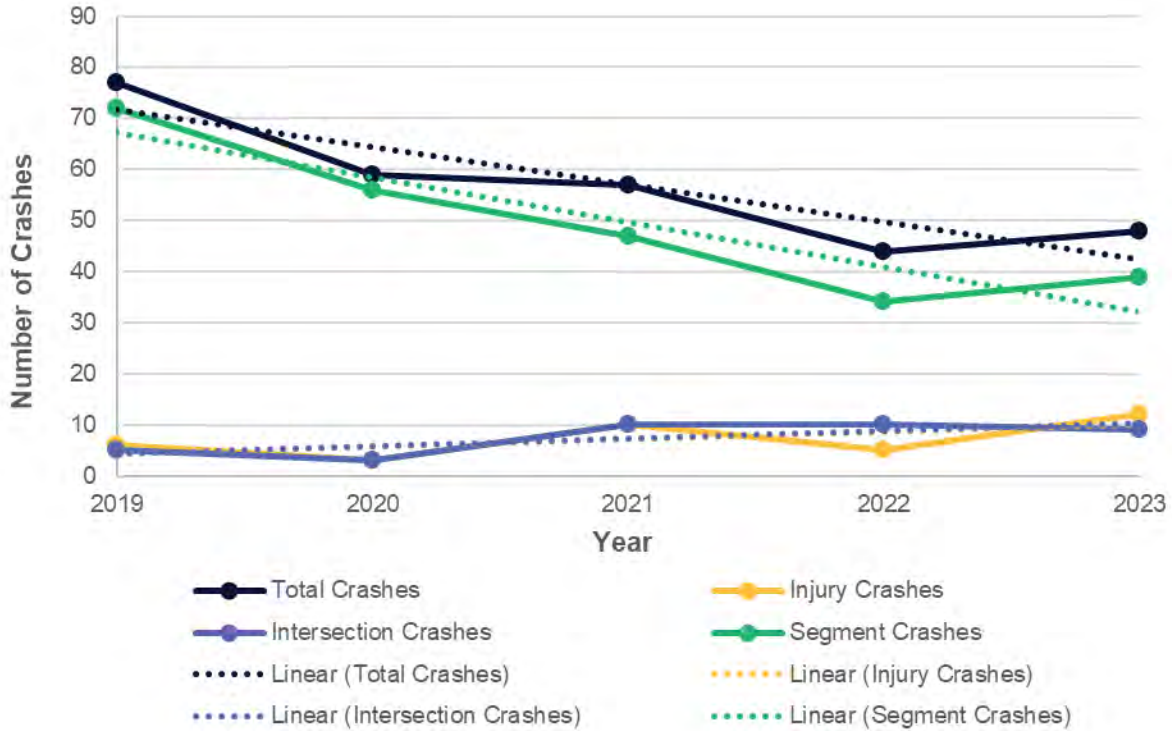


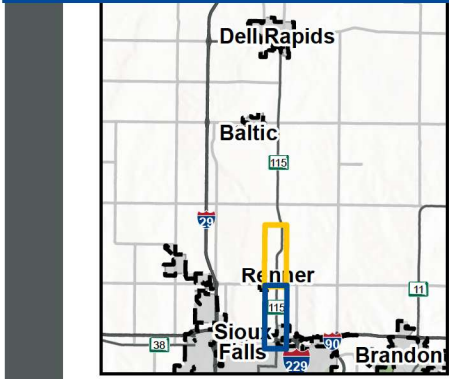
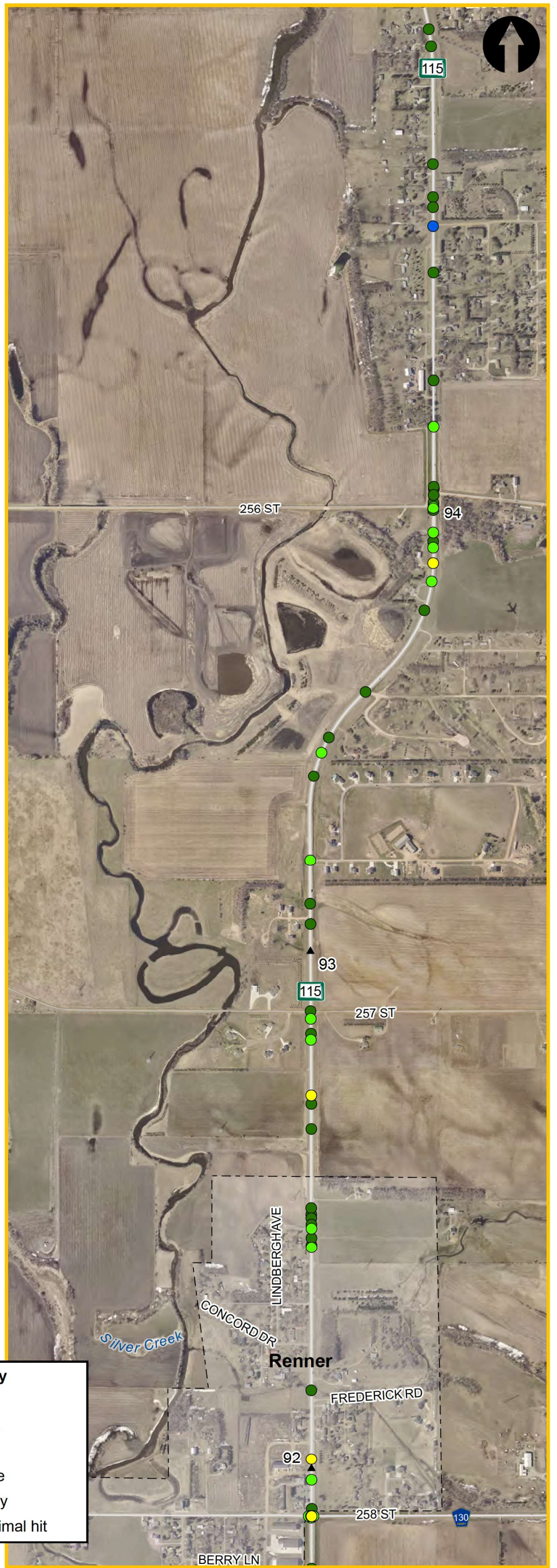
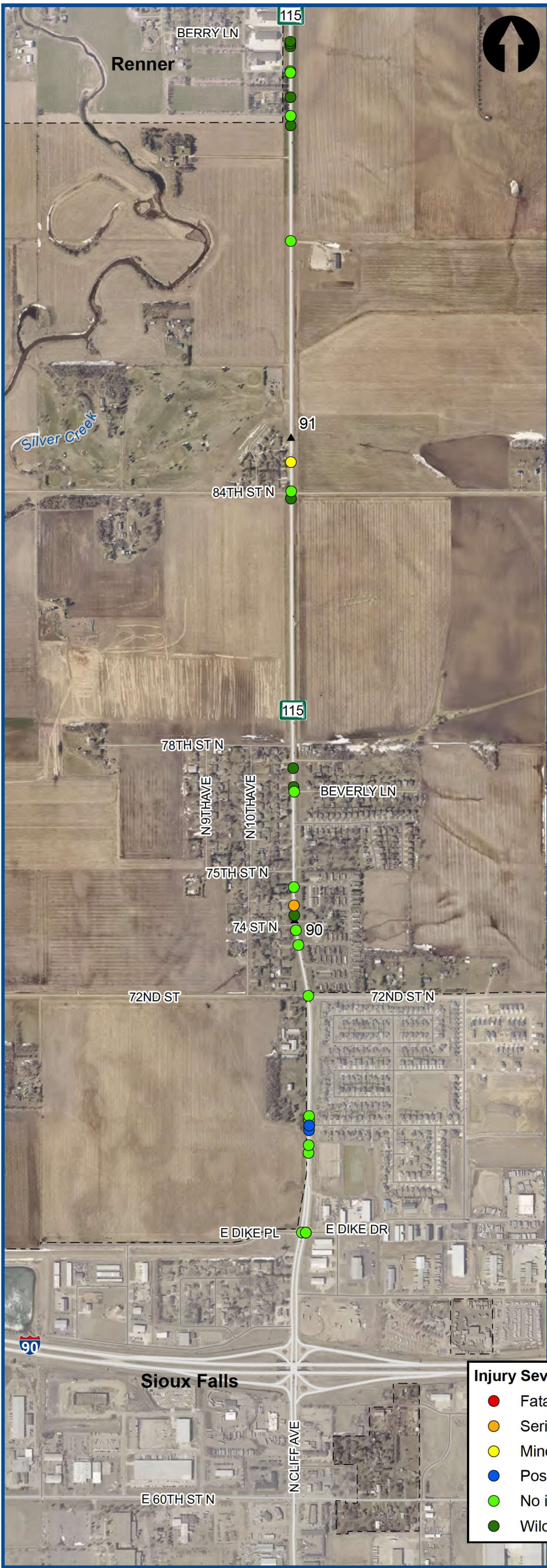
Figure 5: South Dakota Highway 115 Corridor Segment and Intersection Crashes by Year (2019-2023)

Table 4: Corridor Crash Summary – Injury Severity (2019-2023)

Injury Severity	Number of Crashes	Percent
Fatal Injury (K)	0	0%
Serious Injury (A)	7	3%
Minor Injury (B)	16	5%
Possible Injury (C)	13	5%
No Injury (O)	73	26%
Wild Animal Hit	176	61%
<b>Total</b>	<b>285</b>	<b>100%</b>

Table 5: Corridor Crash Summary – Manner of Collision (2019-2023)

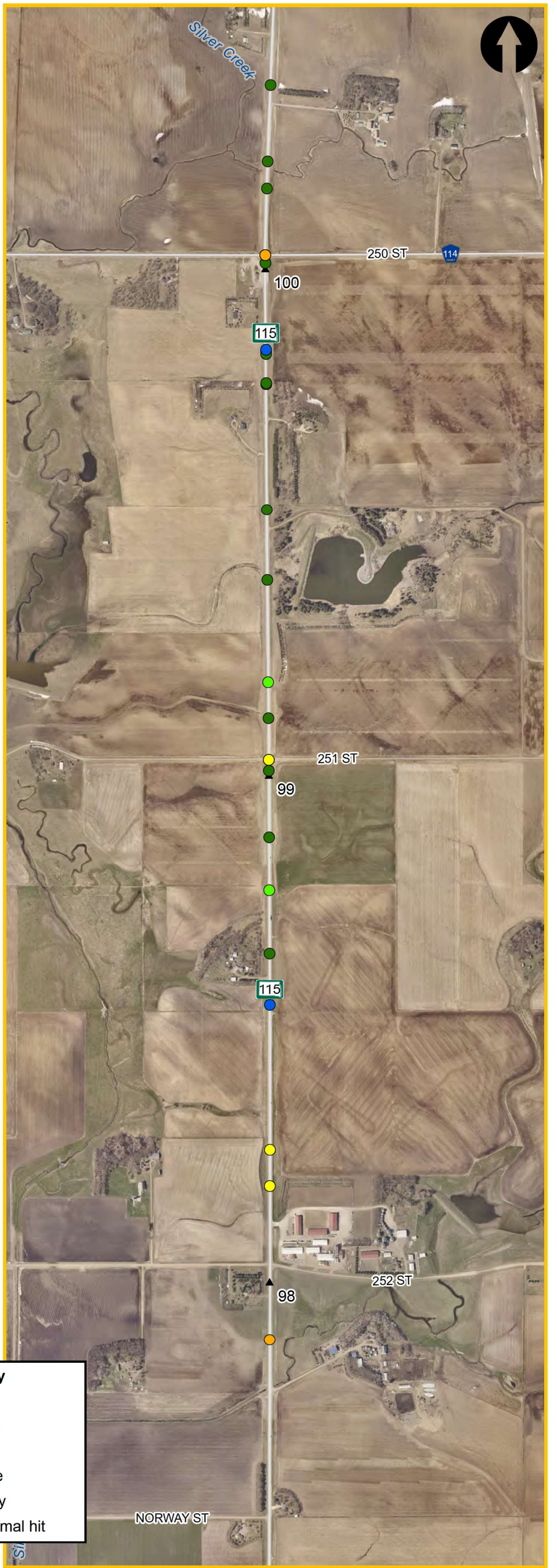
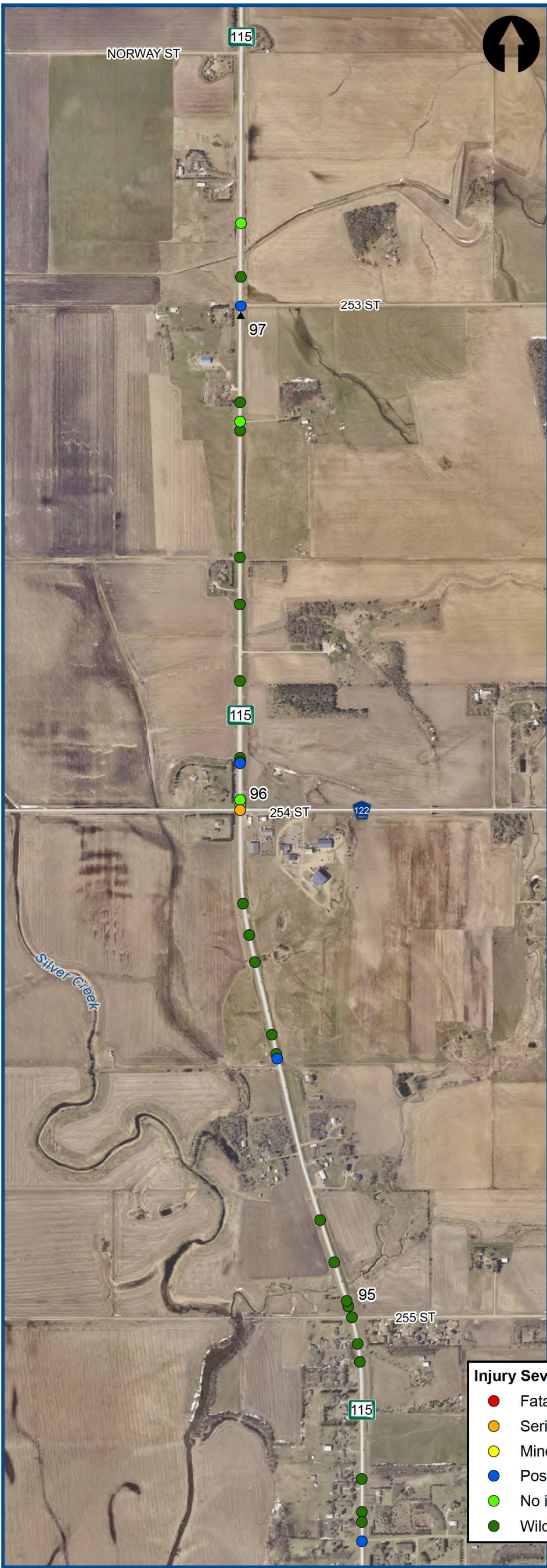
Manner of Collision	Crashes	Percent
Single Vehicle	170	60%
Angle	42	15%
Wild Animal Hit	42	15%
Rear-end	21	7%
Sideswipe	7	2%
Head-on	3	1%
<b>Total</b>	<b>285</b>	<b>100%</b>



**CRASH HISTORY (2019-2023)**

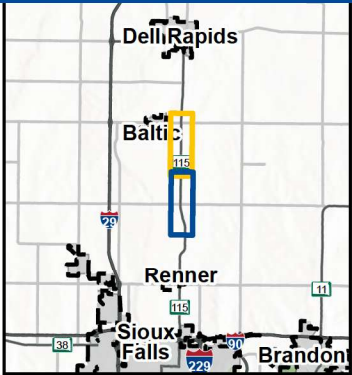
FIGURE 6-A





**Injury Severity**

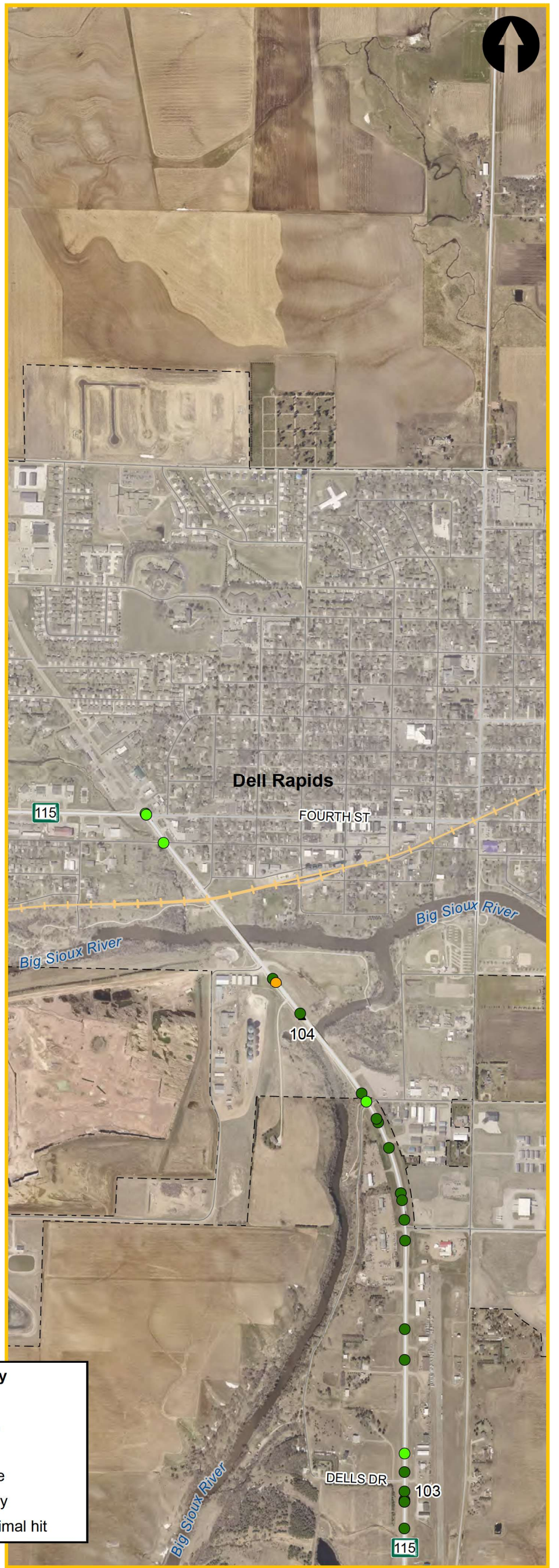
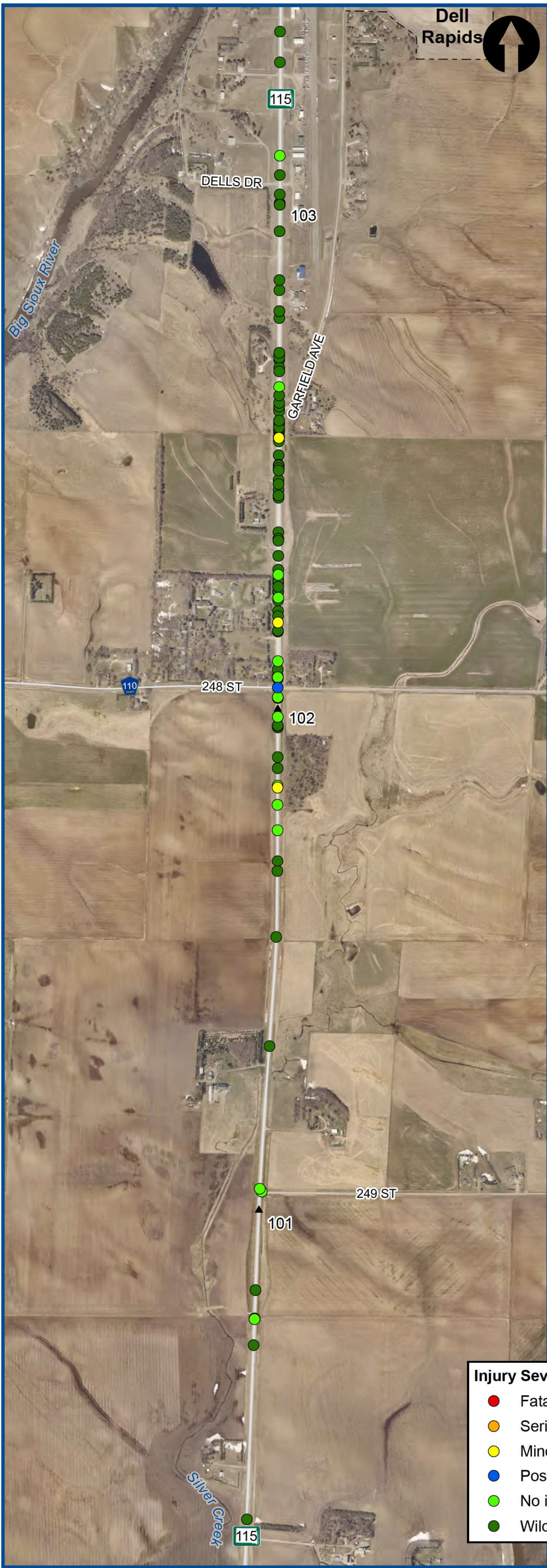
- Fatal
- Serious
- Minor
- Possible
- No injury
- Wild animal hit



**CRASH HISTORY (2019-2023)**

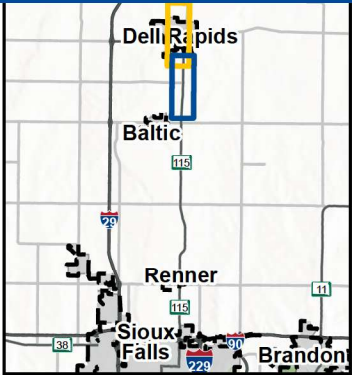
FIGURE 6-B





**Injury Severity**

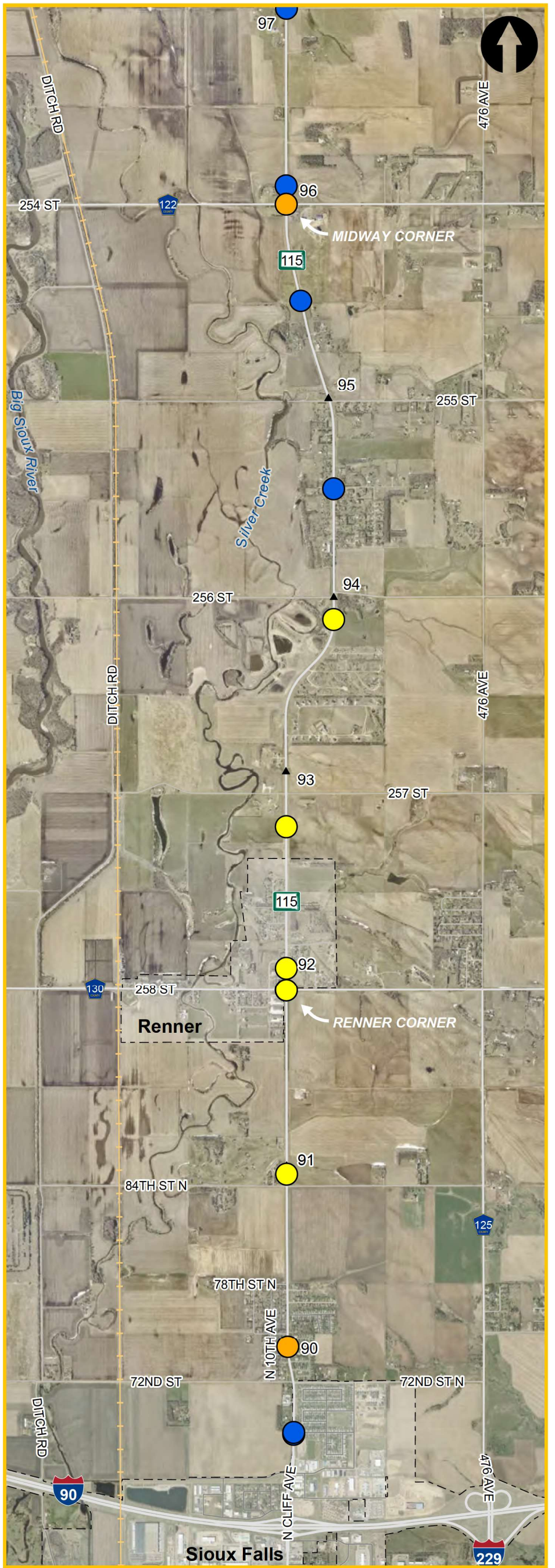
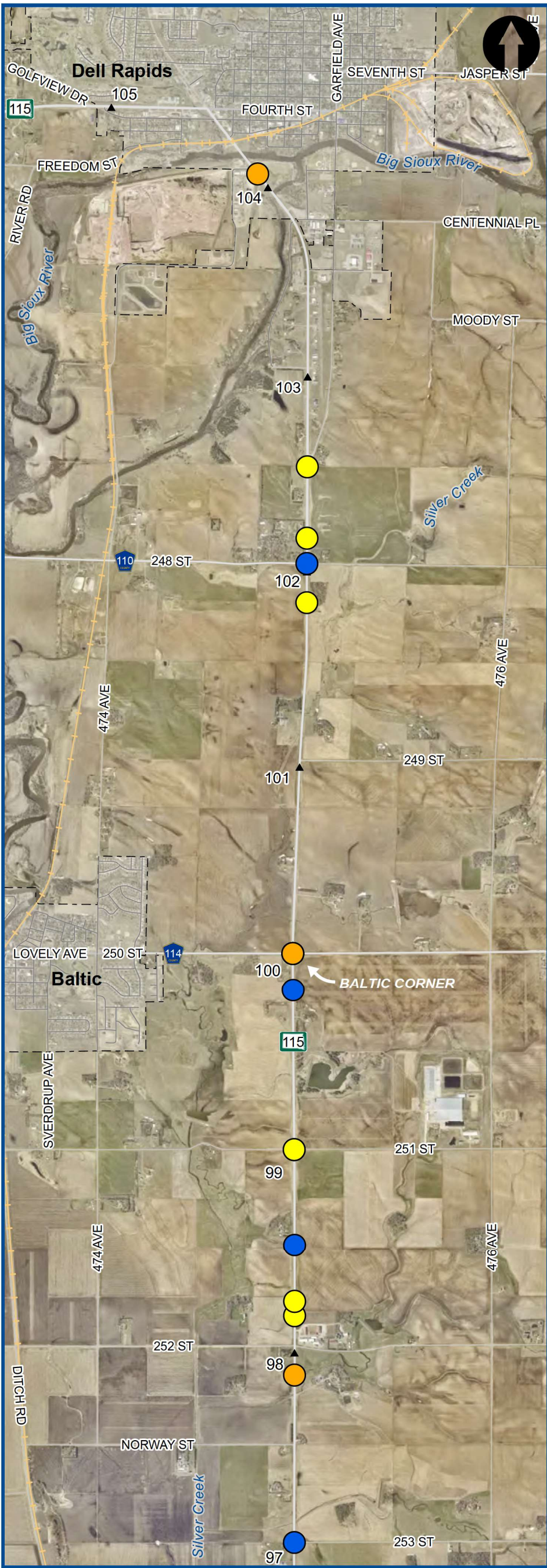
- Fatal
- Serious
- Minor
- Possible
- No injury
- Wild animal hit



**CRASH HISTORY (2019-2023)**

FIGURE 6-C



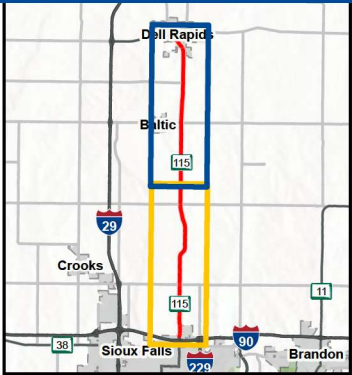


**INJURY CRASH HISTORY (2019-2023)**

FIGURE 7

**Injury Severity**

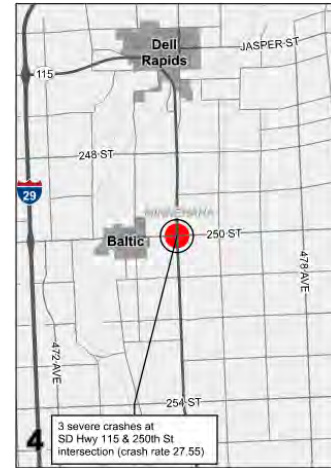
- Fatal (0)
- Serious (7)
- Minor (16)
- Possible (13)



2024 South Dakota Strategic Highway Safety Plan (SHSP) Emphasis Areas

Corridor crashes were reviewed with respect to the nine safety emphasis areas identified as statewide priorities in the 2024 South Dakota Strategic Highway Safety Plan (SHSP)<sup>1</sup>. Along the corridor, common safety emphasis areas included intersection-related crashes (18 percent), lane departures (11 percent), and aggressive and speed-related driving (10 percent).

In addition, the 2024 South Dakota SHSP identified intersections and corridor segments throughout the state with the top 10 highest severe crash rates (involving 3 or more fatal and serious injury crashes). The S.D. Highway 115 & M.C. Highway 114 (Baltic Corner) was identified as the number four intersection on that list based on 3 severe crashes and a crash rate of 27.55 HMEV for years 2018 to 2022.



**Figure 8: S.D. Highway 115 & M.C. Highway 114 (Baltic Corner) Intersection Severity Ranking (2024 South Dakota SHSP)<sup>1</sup>**

Highway 115 Intersections

A summary of S.D. Highway 115 Corridor Study intersection-related crashes occurring within the study area is presented in **Table 6**. **\*Bold\*** text signifies intersections with a weighted crash rate exceeding 90 percent of the weighted critical crash rate and the weighted crash rate rankings amongst intersections.

**Table 6: S.D. Highway 115 Corridor Intersections – Weighted Crash Rates (2019-2023)**

Mainline	Crossroad	Total # of Crashes	Weighted Crash Rate			
			Weighted Crash Rate	Weighted Critical Crash Rate	Index Ratio	Rank
S.D. Highway 115	West 4 <sup>th</sup> Street	3	0.30	1.36	0.22	5
S.D. Highway 115	M.C. Highway 110	2	0.52	1.43	0.36	4
S.D. Highway 115	M.C. Highway 114 (Baltic Corner)	11	<b>*2.50*</b>	1.33	<b>*1.87*</b>	<b>*1*</b>
S.D. Highway 115	252 <sup>nd</sup> Street	0	0.00	1.43	0.00	8
S.D. Highway 115	M.C. Highway 122 (Midway Corner)	5	0.91	1.36	0.67	3
S.D. Highway 115	M.C. Highway 130 (Renner Corner)	11	<b>*1.24*</b>	1.27	<b>*0.97*</b>	<b>*2*</b>
S.D. Highway 115 / Cliff Avenue	72 <sup>nd</sup> Street North	1	0.07	1.28	0.06	7
S.D. Highway 115 / Cliff Avenue	East Dike Place/Drive	4	0.22	0.43	0.51	6

Weighted crash rates that exceeded 90 percent of the weighted critical crash rate are noted in **\*Bold\*** text.

<sup>1</sup> [2024 South Dakota Strategic Highway Safety Plan](#). SDDOT, 2024.

Injury crashes occurred at the following four intersections:

- S.D. Highway 115 & M.C. Highway 114 (Baltic Corner) (8 total, 3 serious injury)
- S.D. Highway 115 & M.C. Highway 130 (Renner Corner) (3 total)
- S.D. Highway 115 & M.C. Highway 122 (Midway Corner) (2 total)
- S.D. Highway 115 & M.C. Highway 110 (1 total)

The following two intersections exhibit a weighted crash rate exceeding 90 percent of the weighted critical crash rate:

- S.D. Highway 115 & M.C. Highway 114 (Baltic Corner)
- S.D. Highway 115 & M.C. Highway 130 (Renner Corner)

S.D. Highway 115 Corridor Segments

**Table 7** summarizes S.D. Highway 115 corridor segment crash rates in terms of weighted crash rates. **\*Bold\*** text signifies segments with a weighted crash rate exceeding 90 percent of the weighted critical crash rate and the weighted crash rate rankings amongst segments.

Serious injury crashes occurred along the following three segments:

- M.C. Highway 110 to West 4<sup>th</sup> Street
- M.C. Highway 122 (Midway Corner) to 252<sup>nd</sup> Street
- 72<sup>nd</sup> Street North to M.C. Highway 130 (Renner Corner)

**Table 7: S.D. Highway 115 Corridor Segments – Weighted Crash Rates (2019-2023)**

From	To	Total # of Crashes	Weighted Crash Rate			
			Weighted Crash Rate	Weighted Critical Crash Rate	Index Ratio	Rank
M.C. Highway 110	West 4 <sup>th</sup> Street	99	<b>*2.73*</b>	2.65	<b>*1.03*</b>	<b>*2*</b>
M.C. Highway 114 (Baltic Corner)	M.C. Highway 110	26	1.83	2.68	0.68	4
252 <sup>nd</sup> Street	M.C. Highway 114 (Baltic Corner)	20	1.83	2.68	0.68	5
M.C. Highway 122 (Midway Corner)	252 <sup>nd</sup> Street	14	1.76	2.68	0.66	6
M.C. Highway 130 (Renner Corner)	M.C. Highway 122 (Midway Corner)	61	1.60	2.44	0.65	7
72 <sup>nd</sup> Street North	M.C. Highway 130 (Renner Corner)	21	<b>*2.46*</b>	2.62	<b>*0.94*</b>	<b>*3*</b>
East Dike Place/Drive	72 <sup>nd</sup> Street North	7	<b>*3.36*</b>	3.02	<b>*1.11*</b>	<b>*1*</b>

Weighted crash rates that exceeded 90 percent of the weighted critical crash rate are noted in **\*Bold\*** text.

The following three segments exhibit a weighted crash rate exceeding 90 percent of the weighted critical crash rate:

- East Dike Place/Drive to 72<sup>nd</sup> Street North
- M.C. Highway 110 to West 4<sup>th</sup> Street
- 72<sup>nd</sup> Street North to M.C. Highway 130 (Renner Corner)

#### Wild Animal Crash Summary

176 crashes involving wild animals occurred along the corridor (62 percent). Wild animal crashes were more prevalent towards the northern extent of the corridor. Corridor weighted severity crash density maps including and excluding wild animal crashes are shown in **Figure 9** and **Figure 10**, respectively.

Corridor segments with a 60 percent or greater proportion of wild animal crashes included:

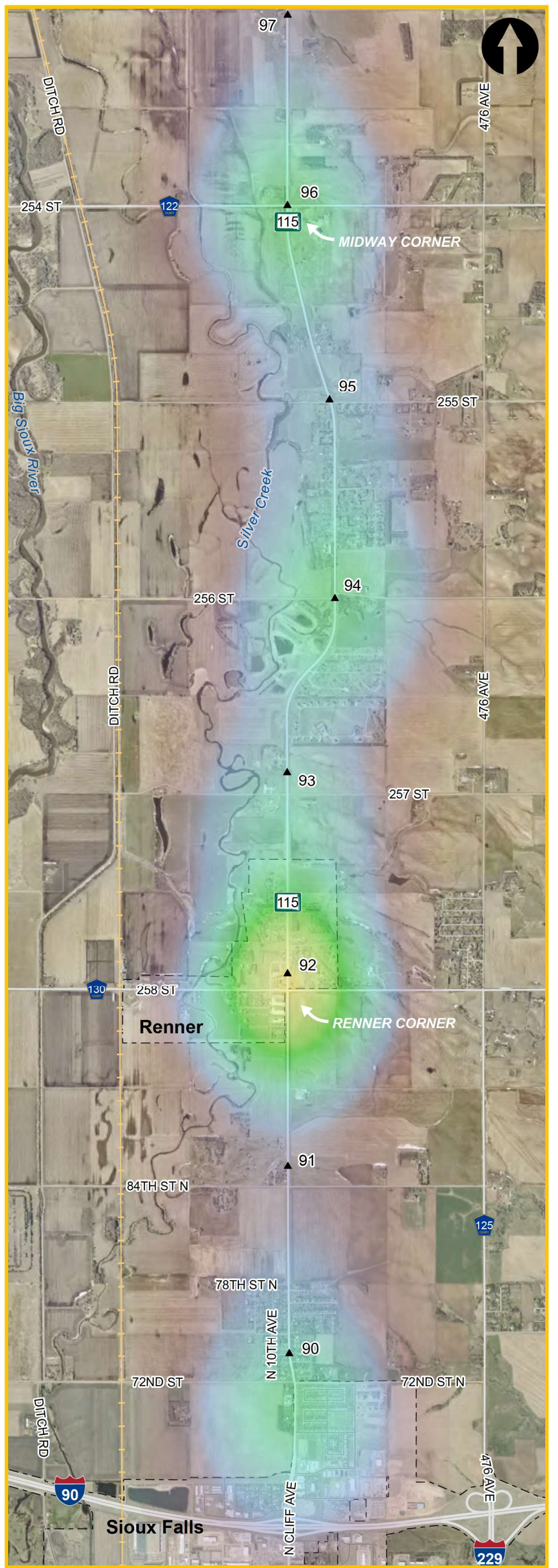
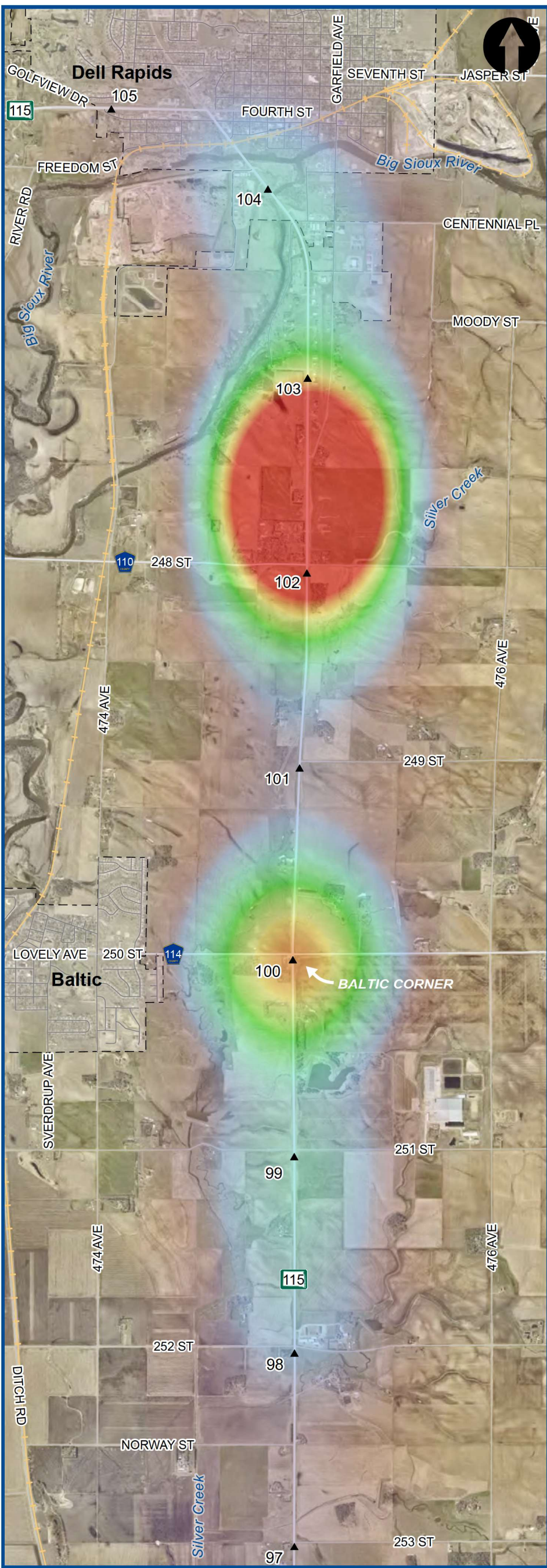
- M.C. Highway 110 to West 4<sup>th</sup> Street (89 percent)
- M.C. Highway 130 (Renner Corner) to M.C. Highway 122 (Midway Corner) (69 percent)
- M.C. Highway 114 (Baltic Corner) to M.C. Highway 110 (65 percent)

#### Winter Weather Crash Summary

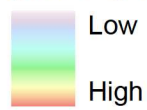
34 total winter weather-related crashes occurred along the S.D. Highway 115 corridor between November and March months during the observation period. 2 serious injury crashes involved winter-weather conditions and a cluster of these crash types was observed at or within ¼ mile from the M.C. Highway 110 intersection. Through discussion with the study advisory team and SDDOT Sioux Falls Area maintenance staff, there has been concern of blowing snow that leads to slippery road conditions near this intersection and the M.C. Highway 114 (Baltic Corner) intersection. Blowing issues typically occur in areas with minimal ditch storage and open fields. Winter weather-related crash density is shown in **Figure 11**.

#### Crash Review Conclusions

Intersections and segments identified by **\*Bold\*** text within the preceding tables were locations designated for additional review and identify an area of potential transportation needs to be addressed as part of this study. Additional discussion regarding crash trends at each of these locations, as well as additional corridor-wide crash information and figures, is presented in the *Crash History Review* technical memo (**Appendix B**).



**Weighted Severity Crash Density**  
(Including Wild Animal Crashes)

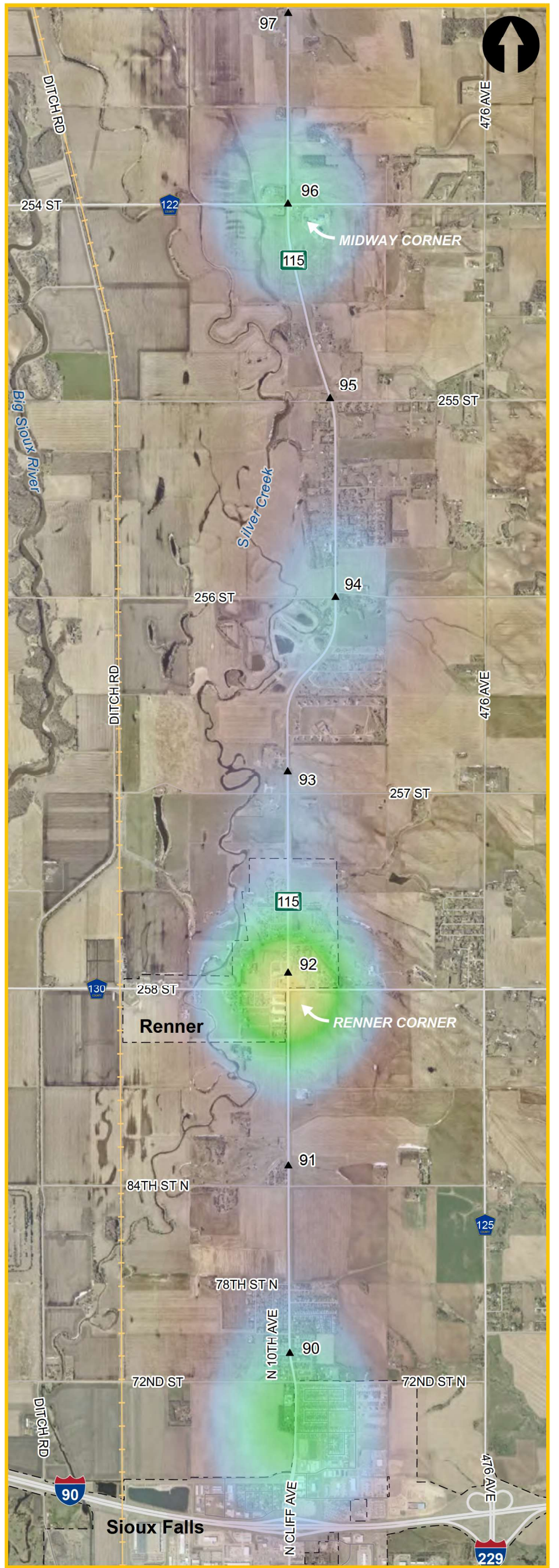
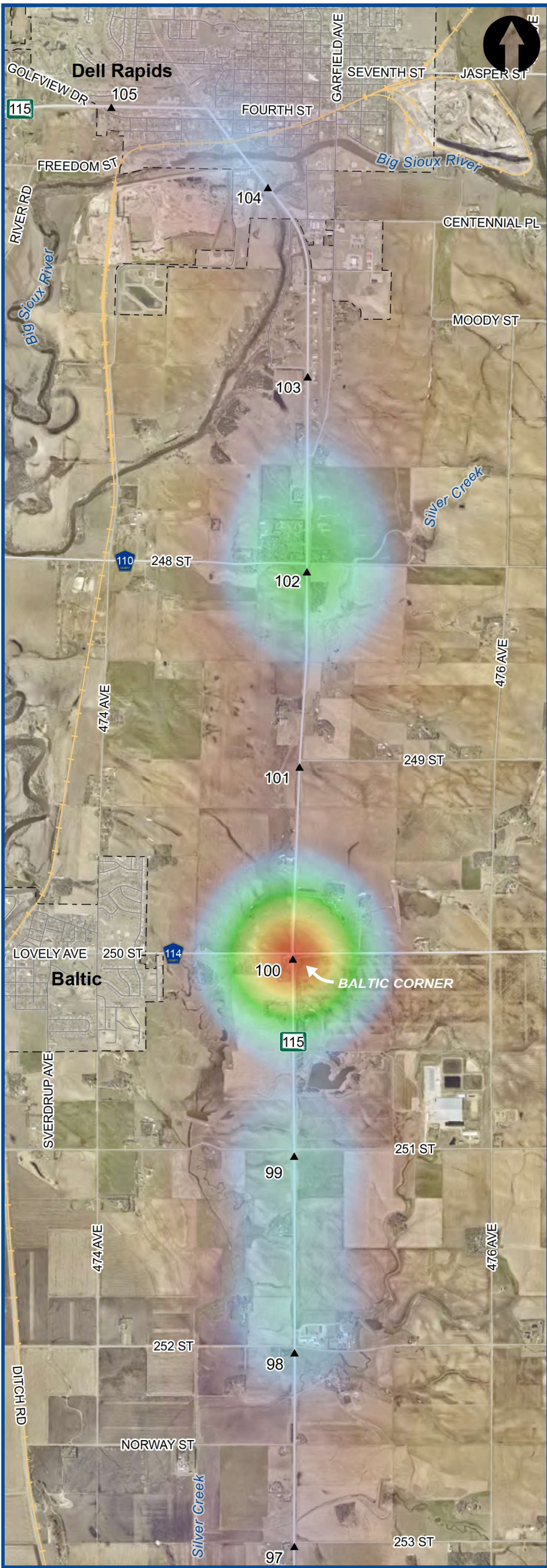


**WEIGHTED SEVERITY CRASH DENSITY (2019-2023)**

(Including Wild Animal Crashes)

FIGURE 9





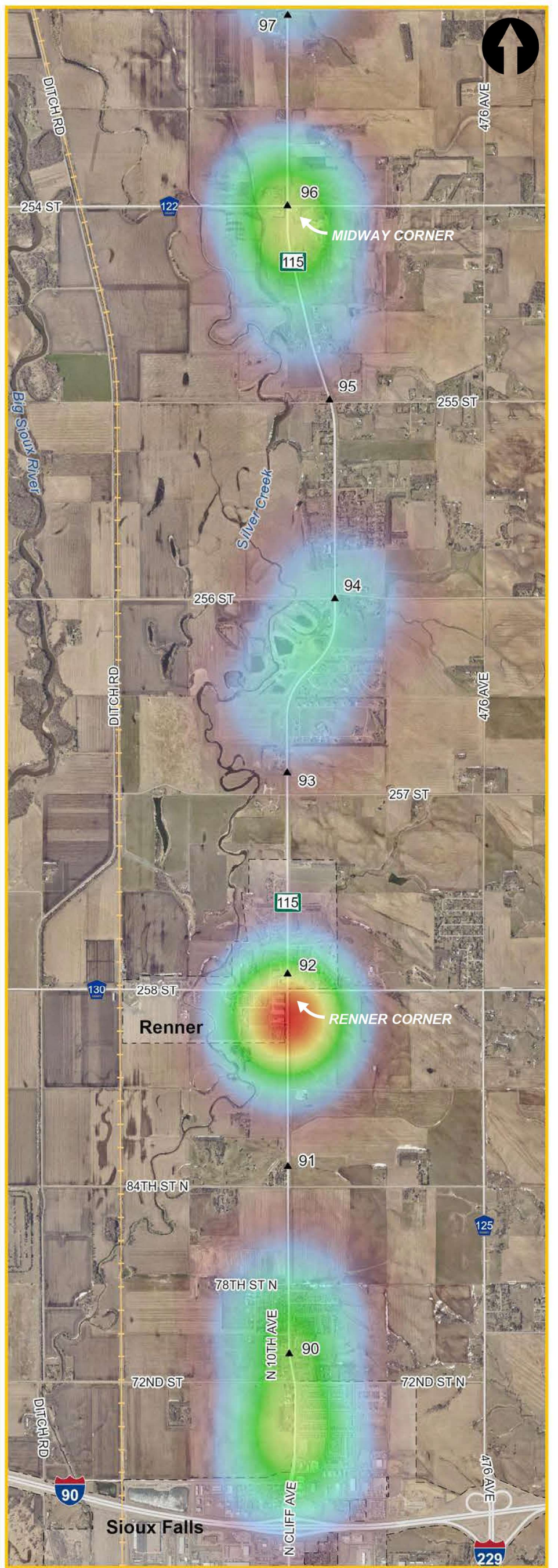
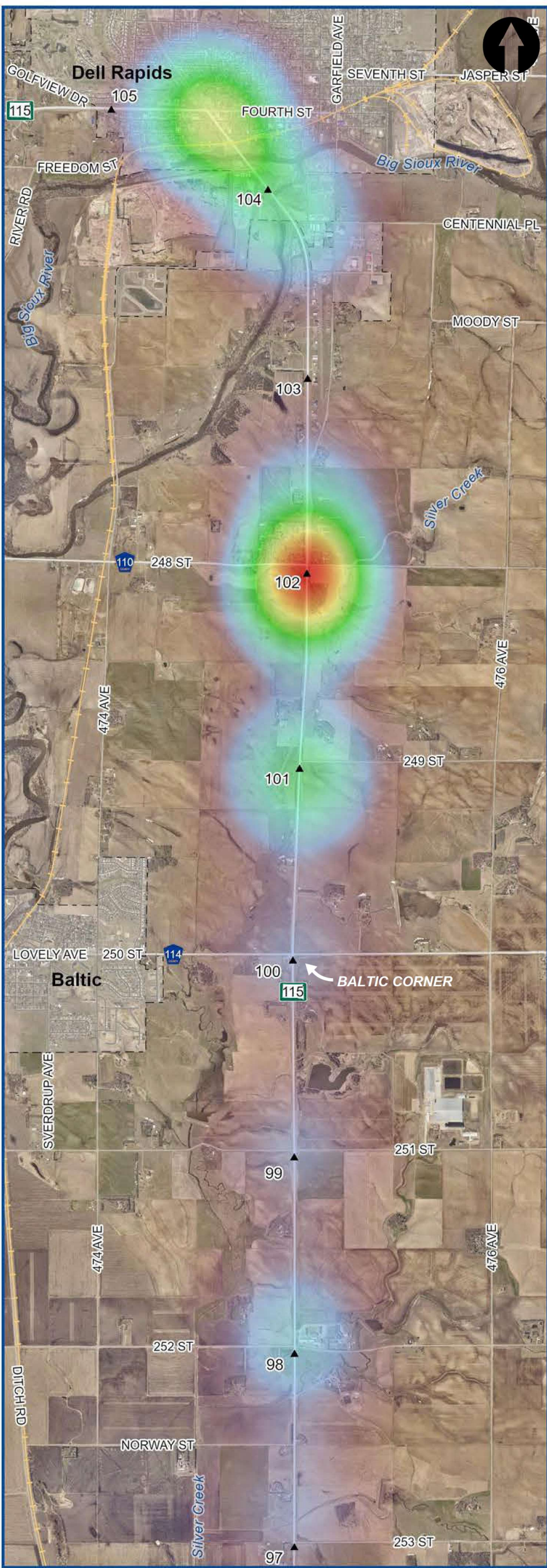
**Weighted Severity Crash Density**  
(Excluding Wild Animal Crashes)

Low  
High



**WEIGHTED SEVERITY CRASH DENSITY (2019-2023)**  
(Excluding Wild Animal Crashes)  
FIGURE 10





**Winter Weather Crash Density**

Low  
High



**WINTER WEATHER CRASH DENSITY (2019-2023)**  
FIGURE 11



## 4.5 S.D. Highway 115 Corridor Reliability

S.D. Highway 115 corridor reliability was evaluated in terms of travel time variability, speed, and potential sources of congestion. A full year of historical INRIX traffic data (2023) was obtained for this analysis. Due to the S.D. Highway 115 corridor being excluded from the National Highway System (NHS) outside the City of Sioux Falls urban area, travel time data was only available between East Dike Place/Drive and M.C. Highway 130 (Renner Corner). Conclusions from this review are as follows.

### **S.D. Highway 115 corridor (East Dike Place/Drive to M.C. Highway 130 (Renner Corner))**

- Segment operates with median speeds of 47 to 48 mph, reflecting the shift from 40 to 55 mph posted speed limits, notable access density with suburban neighborhoods in the area, and existing capacity limitations
- Reliability is likely to decrease during peak commute traffic hours, most notably for southbound AM peak traffic (commute to Sioux Falls) and northbound PM peak traffic (commute from Sioux Falls)
- The corridor is likely to benefit from improved capacity along this segment and at the 72<sup>nd</sup> Street North and M.C. Highway 130 (Renner Corner) intersections as anticipated urban development continues
- Other enhancements to improve reliability could include improved access management such as raised medians and consolidated access locations or intersection traffic control changes to either a roundabout or traffic signal with additional turn lanes at major intersections
- Winter weather and crash events were identified to impact corridor segment reliability. Effective management for these situations often involves both traveler information and maintenance practices pre-event and post-event. Findings of the project analysis on safety and ITS treatments should be considered when determining how best to proceed with enhancements to traveler information and weather management. Agency operations personnel should also be engaged to further allow data-driven improvements to be considered.

Additional information is provided in the *Reliability Analysis technical memo (Appendix C)*.

## 5. Future Land Use

Available future land use plans were reviewed to aid in the development and assignment of traffic forecasts through the S.D. Highway 115 study corridor.

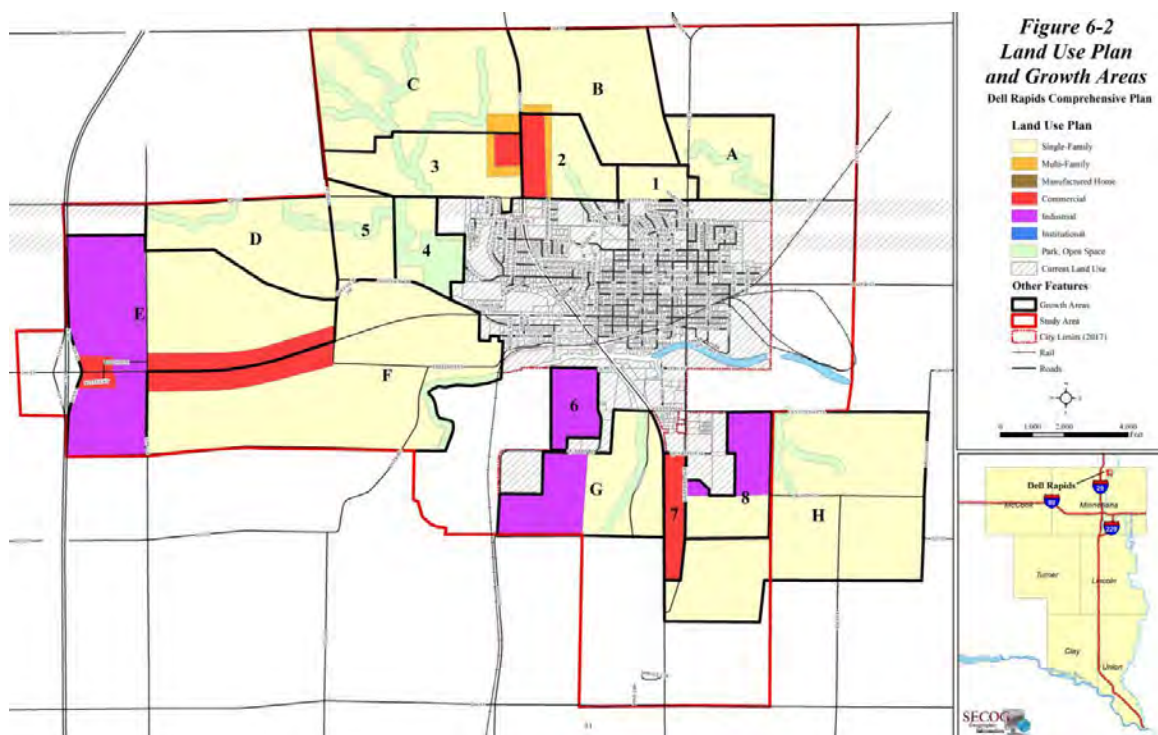
### 5.1 Dell Rapids Area (West 4<sup>th</sup> Street & M.C. Highway 110 Intersections)

The *Dell Rapids Comprehensive Plan* Land Use Plan and Growth Areas are shown in **Figure 12**. First tier growth areas, those identified as Areas #1-8, have readily available utilities and transportation infrastructure through extensions of the existing network. Generally, these growth areas are to the north and northwest of the existing Dell Rapids core.

To the south, Area #7 reflects a narrow potential redevelopment area for light industrial or commercial uses along S.D. Highway 115. Area #8 reflects potential future industrial and residential.

Second tier growth areas, identified as Areas A-H, are those that require extensive improvements to utilities and transportation. Most second tier growth is to the north and west of the current core area. To the south, Areas G and H are identified for residential, though the depth to rock in both areas may limit development density and form.

There are no analysis study intersections within the Dell Rapids' growth areas to the south (#7, #8, G, and H). Most traffic generated by these development areas would enter at other intersections and are treated as mid-segment traffic in the forecasted volume sets.



**Figure 12: Dell Rapids Land Use Plan and Growth Areas**

Source: [Dell Rapids Comprehensive Plan](#), July 2020

It was concluded that the Dell Rapids area traffic growth factors be applied consistently to S.D. Highway 115 through movements as most of the new future traffic will be passing through the study corridor to/from the projected growth areas to the north and west of the current core area.

As Dell Rapids develops to the west, it is anticipated that M.C. Highway 110 will see an increase in bypass type traffic traveling between the western and southern portions of Dell Rapids. The study's traffic forecasts account for this potential, long-range route.

## 5.2 Baltic Area (Baltic Corner)

A meeting was held with the City of Baltic on June 17, 2024, to discuss future growth for the community. Key takeaways include:

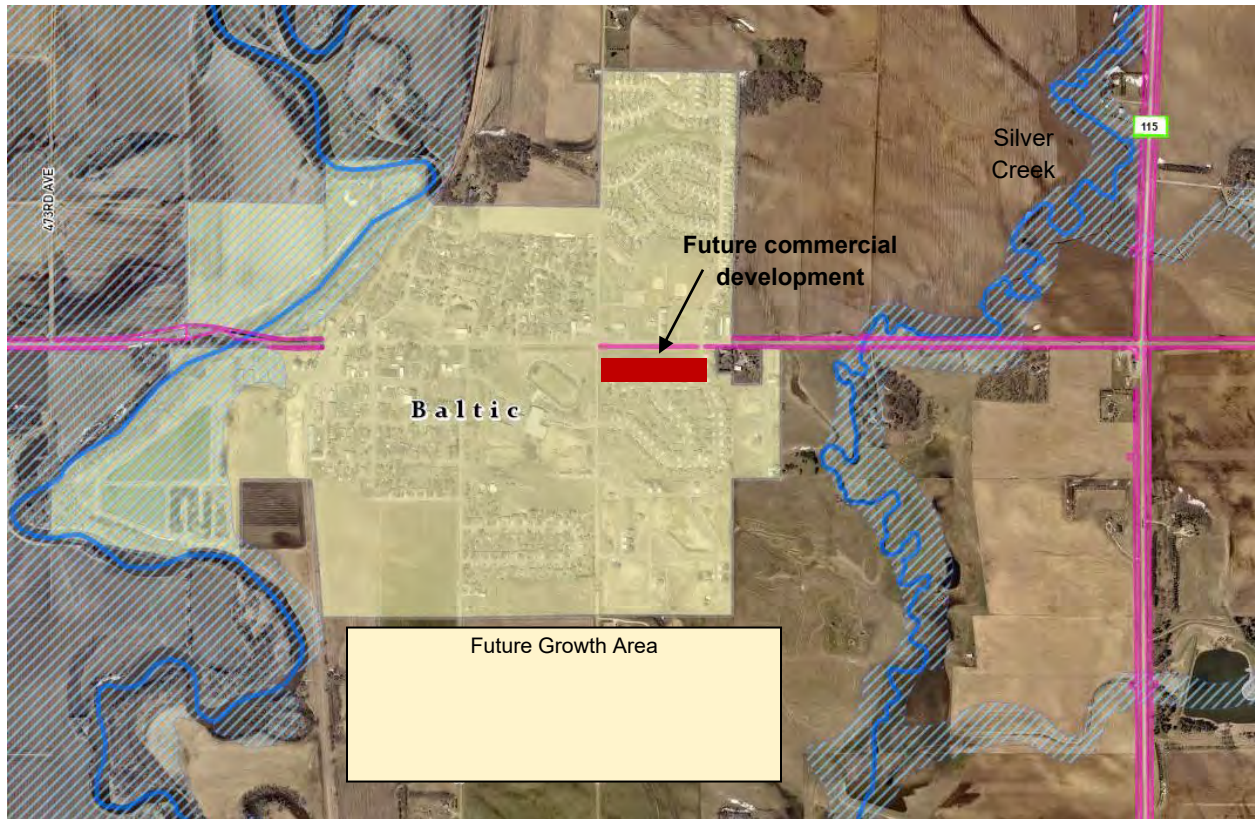
- Future growth anticipated along the south side of Baltic and west of Silver Creek
- Silver Creek is a barrier to near-term, higher-density development along S.D. Highway 115 as significant investment would be required to extend utilities and other infrastructure to serve the area
  - Until a time when those utilities can be extended, there is potential for light industrial and small commercial development
- 474<sup>th</sup> Avenue is a break point within the community for travel beyond the City's core area
  - Residents west of 474<sup>th</sup> Avenue tend to head west to I-29 and residents east of 474<sup>th</sup> Avenue tend to head east to S.D. Highway 115
- Promoting business within the City of Baltic is a priority; best serves the community and increases their tax base
  - Convenience store/gas station and strip retail planned on M.C. Highway 114 between 474<sup>th</sup> Avenue and 6<sup>th</sup> Street
- Population growth is anticipated to be steady, but managed
  - TDM shows Baltic traffic growth at a 31-year equivalent factor of approximately 1.8, which is similar to the Dell Rapids area. This was considered reasonable.

While no major development is currently planned at the S.D. Highway 115 & 250<sup>th</sup> Street intersection (Baltic Corner), smaller-scale highway-based development that can be managed with limited City utilities is possible. This aligns with the 2035 Minnehaha County Future Land Use that identifies a ¼-mile rural service commercial node at the intersection (see **Figure 14**).

It is anticipated that land uses with the potential of generating higher traffic volumes would be geared towards pulling traffic from S.D. Highway 115. To account for this potential within the study's planning horizon, trip generation for a small convenience store/gas station and strip retail plaza was calculated to incorporate additional turning movements at the intersection. Trip generation for both land uses is summarized in **Table 8**.

Because the TDM already accounts for some development in the Baltic area, the forecast adjustments applicable to these land uses focus on the pass-by component. Approximately 60 percent of the generated pass-by trips were applied to the S.D. Highway 115 & M.C. Highway 114 (Baltic Corner) intersection peak hour traffic forecasts to incorporate higher traffic volumes turning from S.D. Highway 115, accessing the highway commercial land uses, and then turning back onto S.D. Highway 115 to continue their route.

It is assumed that larger, higher-density development that generates additional trips, both new and pass-by, would be addressed through traffic impact study.



Source: Minnehaha County GIS

**Figure 13: Baltic Area**

**Table 8: Baltic Area Land Use – ITE Trip Generation**

ITE Land Use	ITE Land Use Code	Variable	AM Total / In / Out (Pass-by %)	PM Total / In / Out (Pass-by %)	Daily
C-Store/Gas Station	945	8 veh. fueling positions	128 / 64 / 64 (60%)	147 / 74 / 73 (56%)	2,121
Strip Retail Plaza	822	9k sf	21 / 13 / 8 (40%)	59 / 30 / 29 (40%)	609

### 5.3 M.C. Highway 122 (Midway Corner)

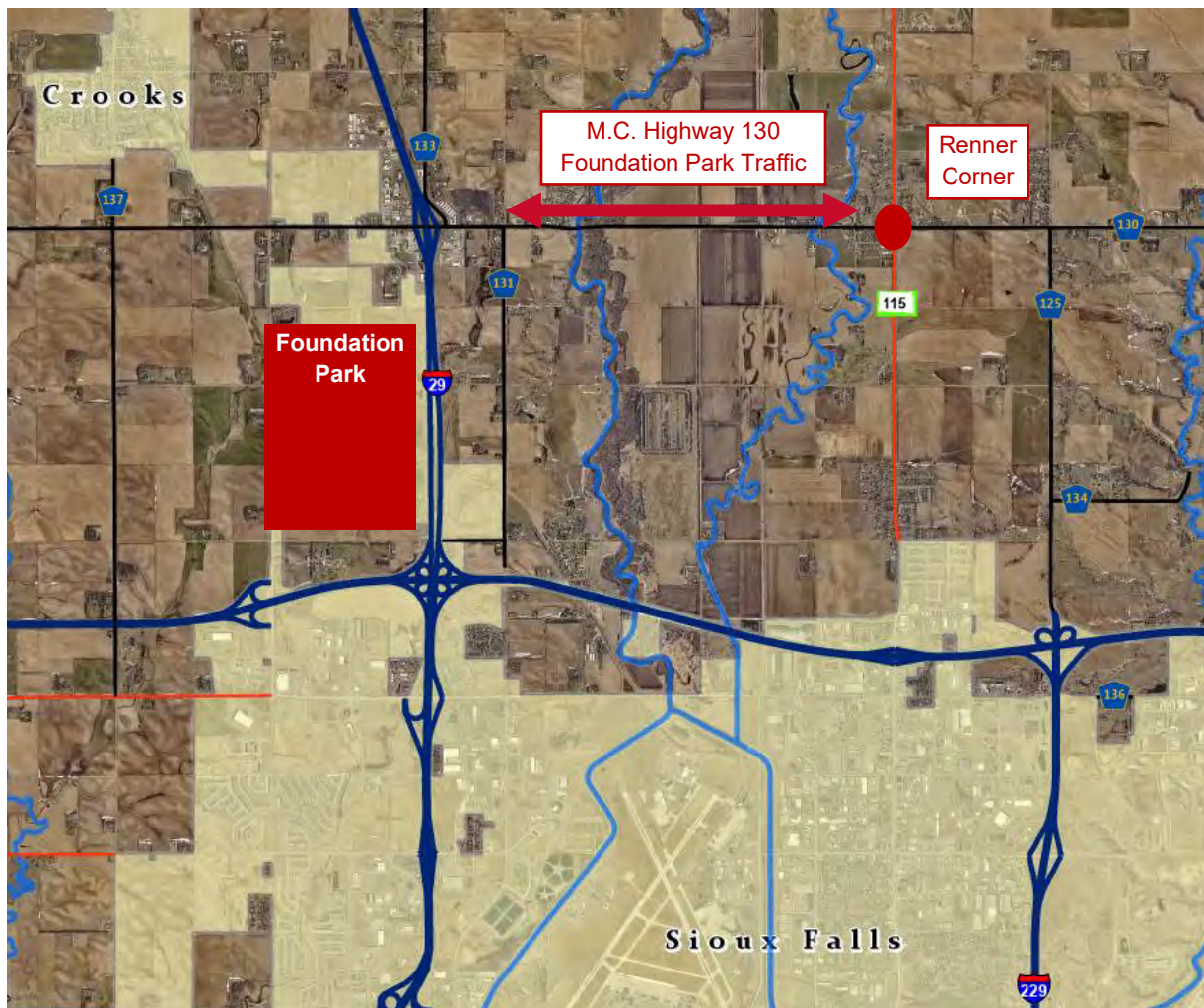
The TDM includes notable growth on M.C. Highway 122 and thus volumes turning to/from the county highway, particularly to/from the south, show higher growth rates than S.D. Highway 115 mainline through volumes. The intersection is identified as a ½-mile commercial node in the 2035 Minnehaha County Future Land Use map (see **Figure 14**).



## 5.4 Renner Area (Renner Corner)

The TDM shows considerable traffic growth in the Renner area, with traffic being loaded directly onto S.D. Highway 115 and M.C. Highway 130 through several centroid connectors. The 2035 Minnehaha County Future Land Use includes a transition area surrounding Renner. A ½-mile commercial node is also located at the S.D. Highway 115 & M.C. Highway 130 (Renner Corner) intersection.

M.C. Highway 130 is a popular east/west route for travel between the Brandon/Garretson and Dell Rapids/Baltic areas. The S.D. Highway 115 & M.C. Highway 130 (Renner Corner) intersection's westbound right turn and southbound left turn volumes are two of the higher turning movements throughout the study area. It is anticipated the M.C. Highway 130 route will similarly be in high demand for travel to/from Foundation Park, which is a large industrial area west of I-29. Traffic volumes developed as part of the Foundation Park traffic impact studies and *I-29 Exit 86 Interchange Modification Study* were incorporated into these forecasts to show additional growth within the intersection, and particularly for the west leg.

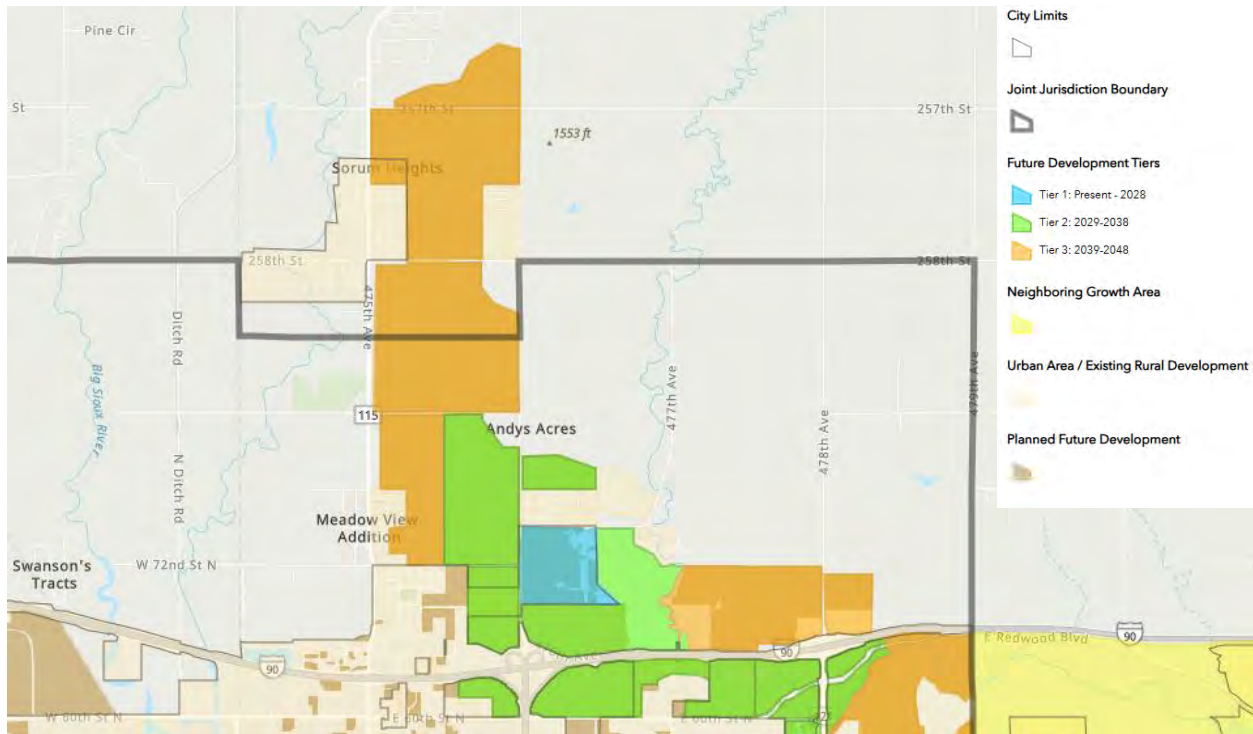


Source: Minnehaha County GIS

**Figure 15: Foundation Park Industrial Area**

## 5.5 Sioux Falls Area (72<sup>nd</sup> Street North and East Dike Place/Drive Intersections)

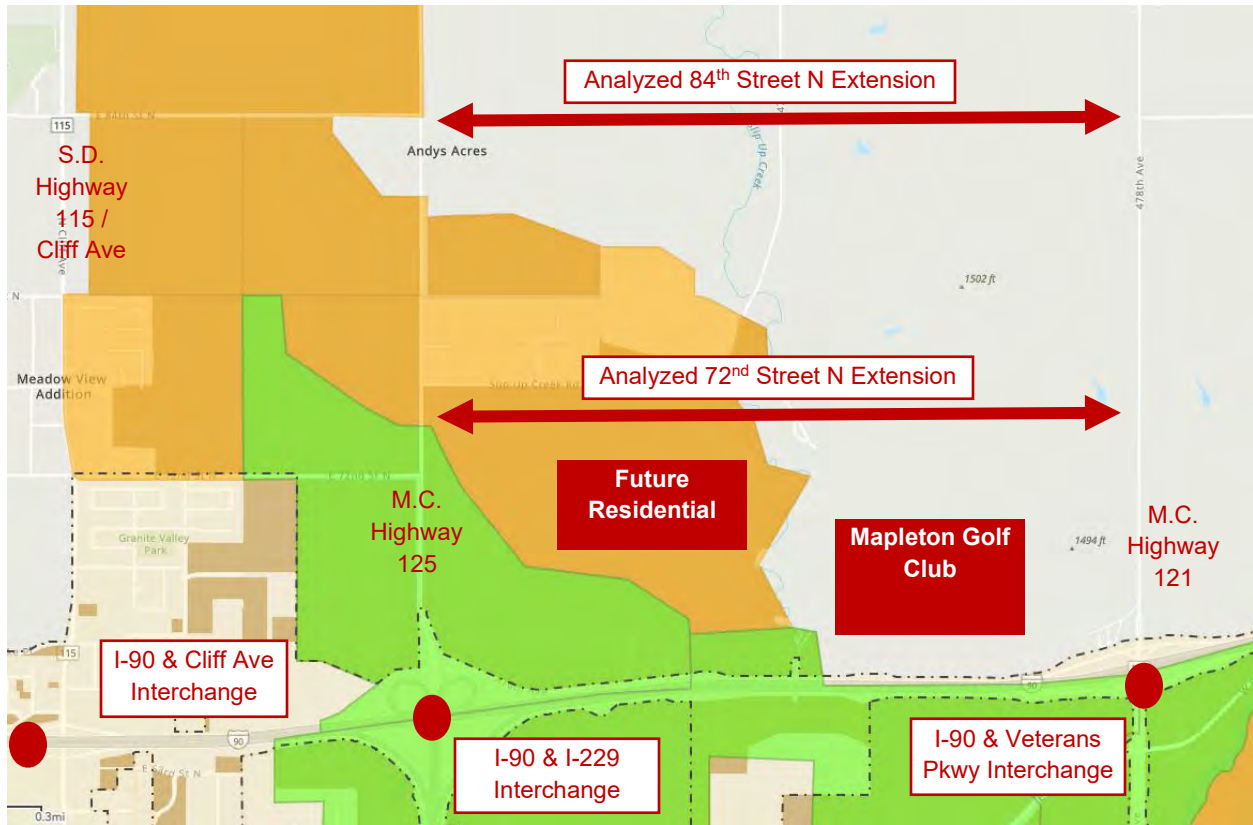
The Sioux Falls joint jurisdictional boundary primarily extends north to M.C. Highway 130, though the boundary does shift ½-mile south in the Renner area. The Sioux Falls future development tier map, shown in **Figure 16**, identifies the current development growth areas through Year 2048. Along S.D. Highway 115, development areas are primarily along the east side of the corridor and represent a Tier 3 timeframe (2039-2048).



Source: City of Sioux Falls GIS

**Figure 16: Sioux Falls Future Development Tiers**

In late 2023, HDR assisted the City of Sioux Falls to assess potential impacts of the planned Mapleton Golf Club and surrounding residential development and operational benefits of extending 72<sup>nd</sup> Street North and 84<sup>th</sup> Street North between S.D. Highway 115 and 478<sup>th</sup> Avenue (M.C. Highway 121). The development scenario that accounts for the updated golf and residential land use and 72<sup>nd</sup> Street North and 84<sup>th</sup> Street North extensions, shown in **Figure 17**, was incorporated into the forecasts.



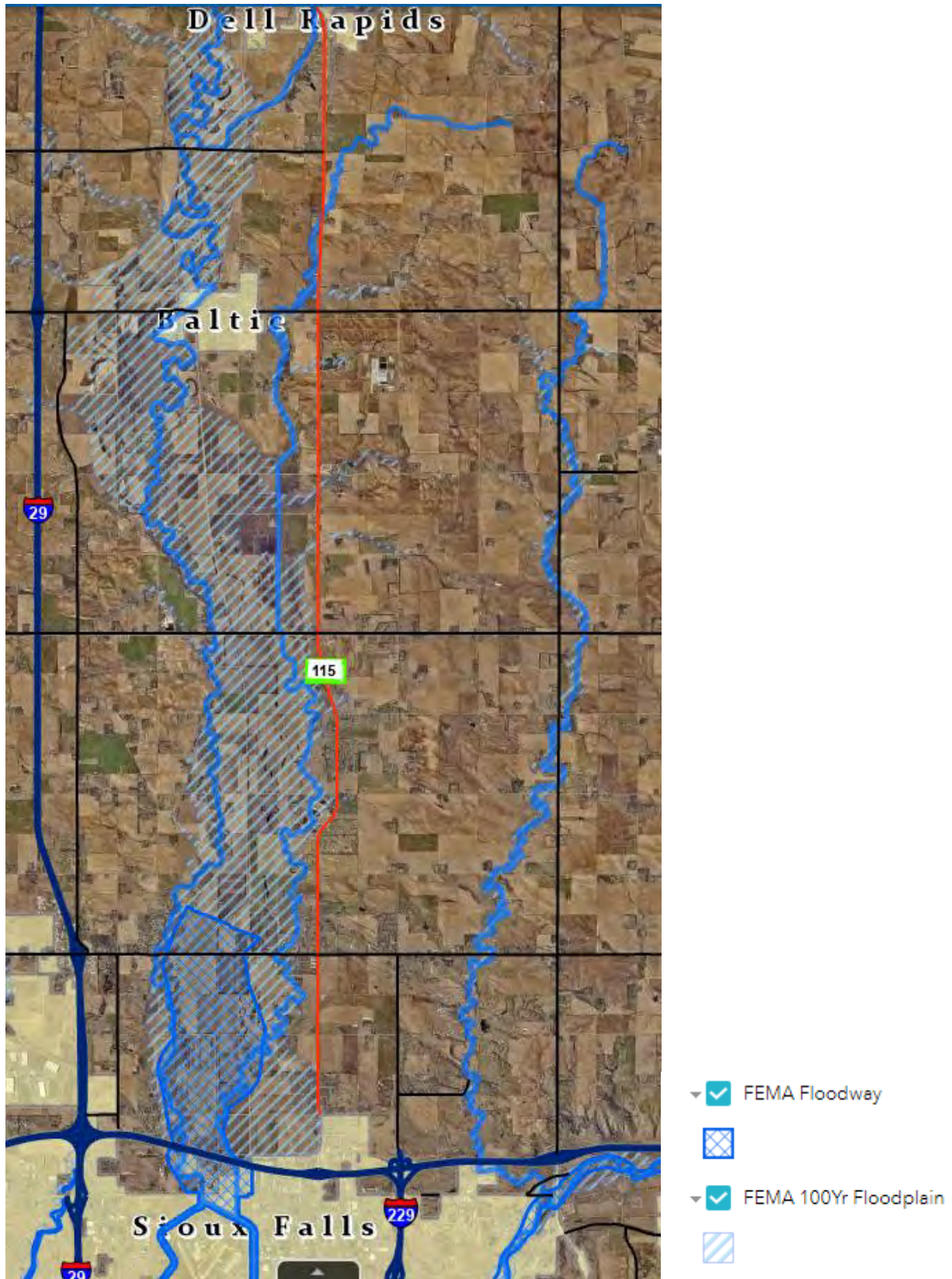
Basemap source: City of Sioux Falls GIS

**Figure 17: Mapleton Golf Club Area Development**

Forecasts developed for this study maintain the current 476<sup>th</sup> Avenue (M.C. Highway 125) access to I-229. The 72<sup>nd</sup> Street / 84<sup>th</sup> Street extension sub-area traffic forecasts found that S.D. Highway 115 volumes increased south of M.C. Highway 130 if this access was removed. This condition should continue to be monitored if/when this project comes to fruition.

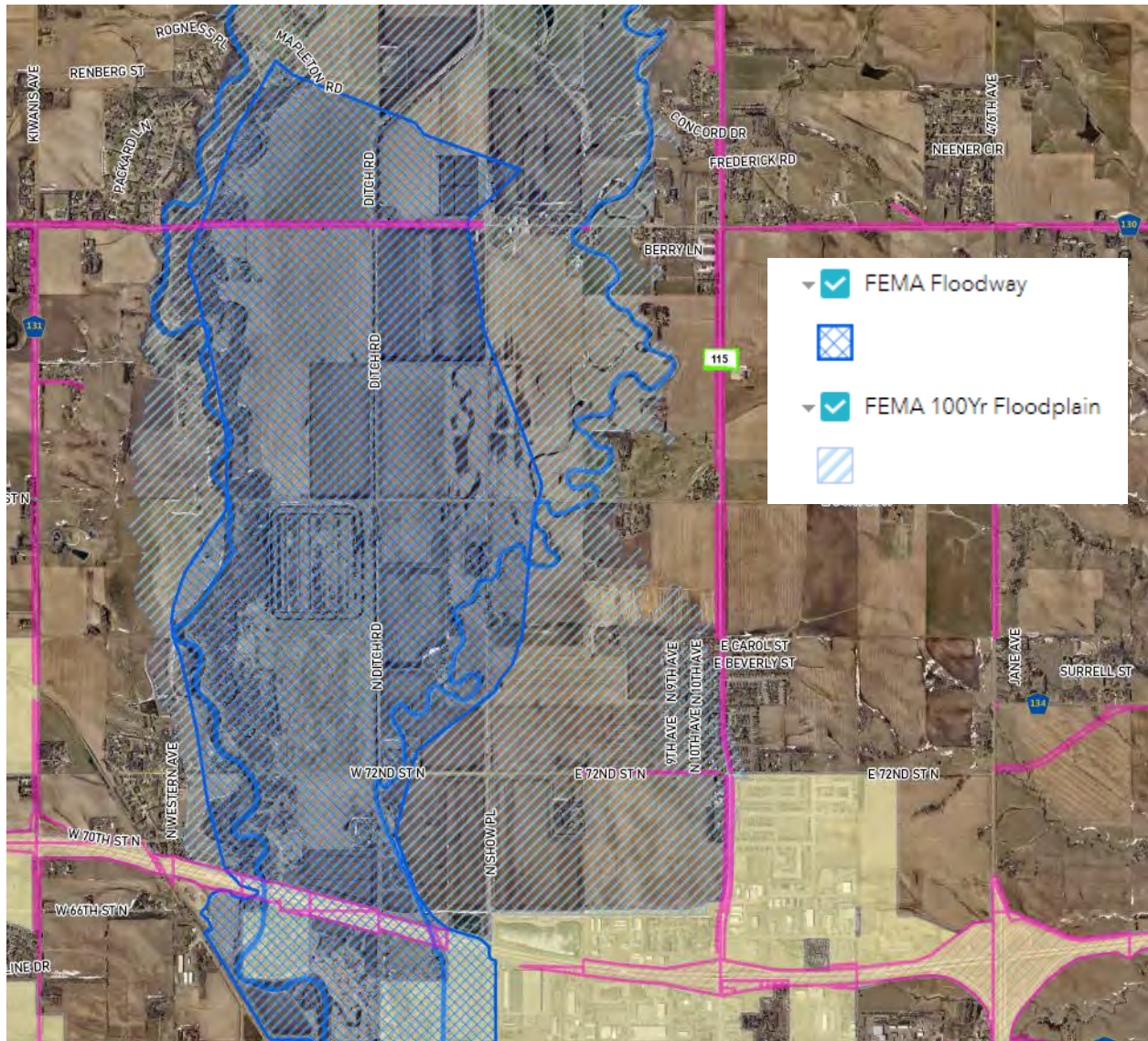
## 5.6 Big Sioux River Floodway and Floodplain

Development on the west side of S.D. Highway 115 is going to be limited by the Big Sioux River floodplain for much of the study area between Baltic and Sioux Falls. The FEMA Floodway and FEMA 100-year Floodplain for the area between Dell Rapids and Sioux Falls are shown in **Figure 18**. A zoomed view of the Renner to Sioux Falls area is shown in **Figure 19**.



Source: Minnehaha County GIS

**Figure 18: FEMA Floodway and 100 Year Floodplain (Dell Rapids to Sioux Falls)**



Source: Minnehaha County GIS

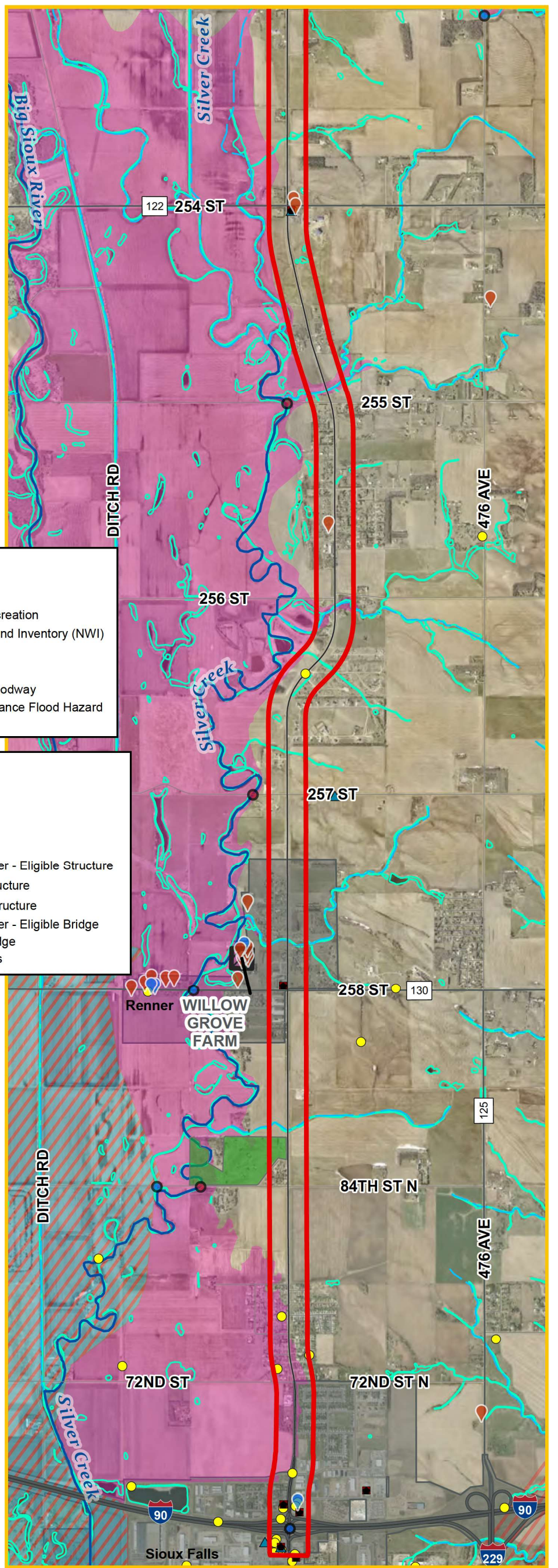
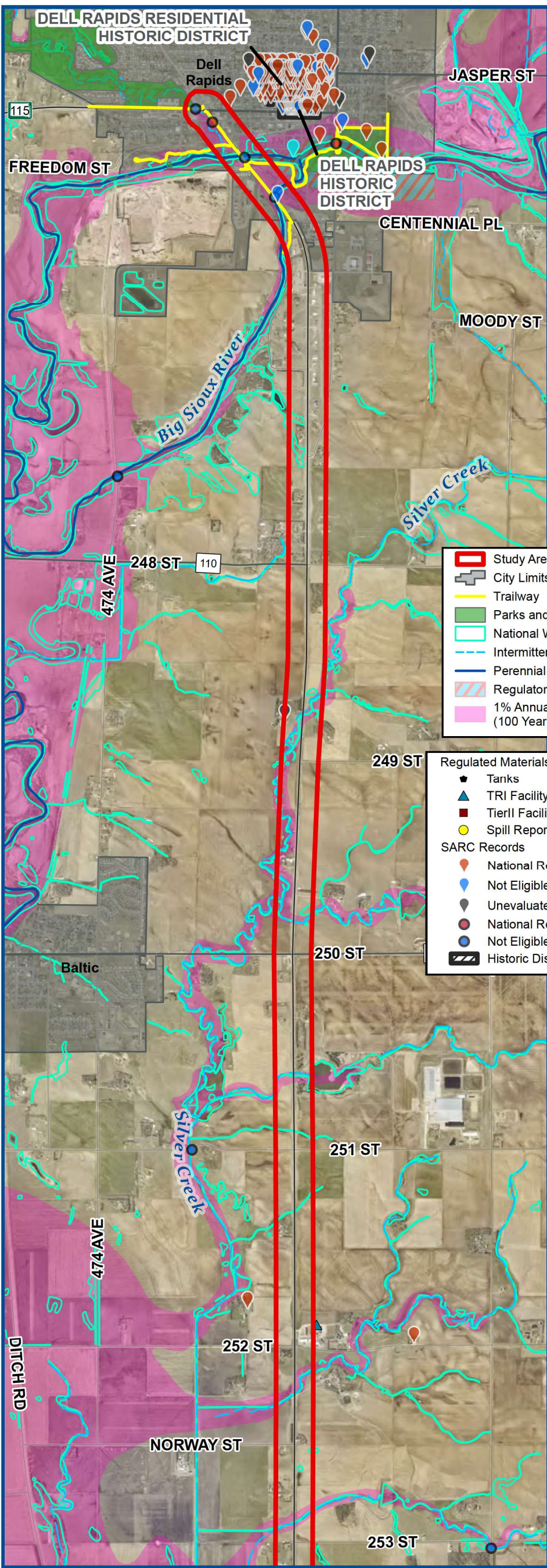
**Figure 19: FEMA Floodway and 100 Year Floodplain (Renner to Sioux Falls)**

## 6. Environmental Overview

An environmental screening of the study area was conducted throughout the study process to identify direct, indirect, and cumulative impacts anticipated for the potential improvements. At the onset of this process, a map was created to illustrate environmental considerations during the concept and scenario development steps of the study. As shown in **Figure 20**, there are considerable amounts of floodplain and wetlands throughout the corridor.

The *S.D. Highway 115 Corridor Environmental Screening Report*, included in **Appendix D**, summarizes findings from the scan regarding the following resources:

- Threatened and Endangered Species
- Wildlife
- Archaeological/Historical properties
- Section 4(f)/6(f)
- Wetlands and Other Waters of the U.S.
- Floodplain
- Noise
- Hazardous Materials
- Right of Way (ROW)



	Study Area
	City Limits
	Trailway
	Parks and Recreation
	National Wetland Inventory (NWI)
	Intermittent
	Perennial
	Regulatory Floodway
	1% Annual Chance Flood Hazard (100 Year)

Regulated Materials	
	Tanks
	TRI Facility
	Tier II Facility
	Spill Reports
SARC Records	
	National Register - Eligible Structure
	Not Eligible Structure
	Unevaluated Structure
	National Register - Eligible Bridge
	Not Eligible Bridge
	Historic Districts



**ENVIRONMENTAL CONSIDERATIONS**  
FIGURE 20



## 7. Traffic Forecasts

Traffic forecasts help assess future-year capacity and operational needs throughout the study area due to growth in traffic demand and/or changes in traffic patterns. For this study, forecast years include:

- Year 2031 – First Possible Year of Project Completion
- Year 2043 – Interim Year
- Year 2055 – Planning Horizon Year

The traffic forecast methodology followed guidance in *NCHRP 765: Analytical Travel Forecasting Approaches for Project-Level Planning and Design*. The primary sources of growth rates include the SDDOT 30-year projected traffic volumes for S.D. Highway 115 and the Sioux Falls MPO TDM. The TDM scenario used in this study was Scenario 45 (S45), originally developed for the *Sioux Falls Downtown Traffic Impact Study*, which includes a 2021 Base Year and a 2050 Planning Horizon that is based on 2050 land use and the 2045 constrained roadway network from the *2045 Go Sioux Falls Long Range Transportation Plan*.

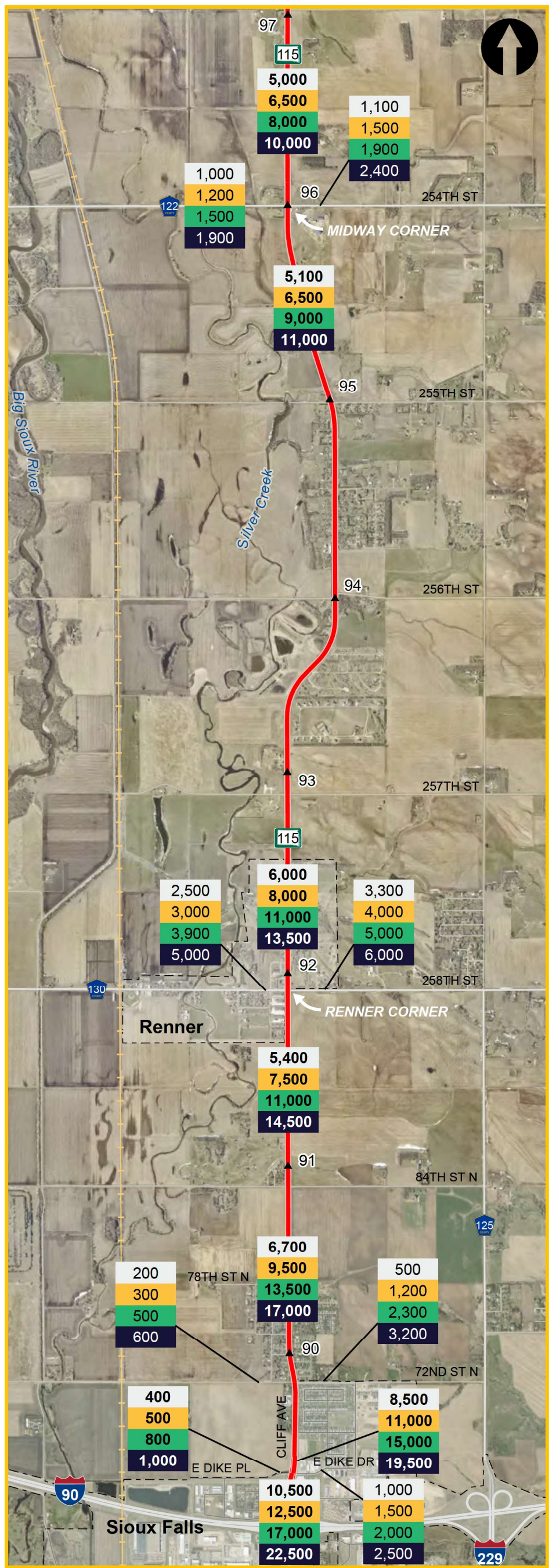
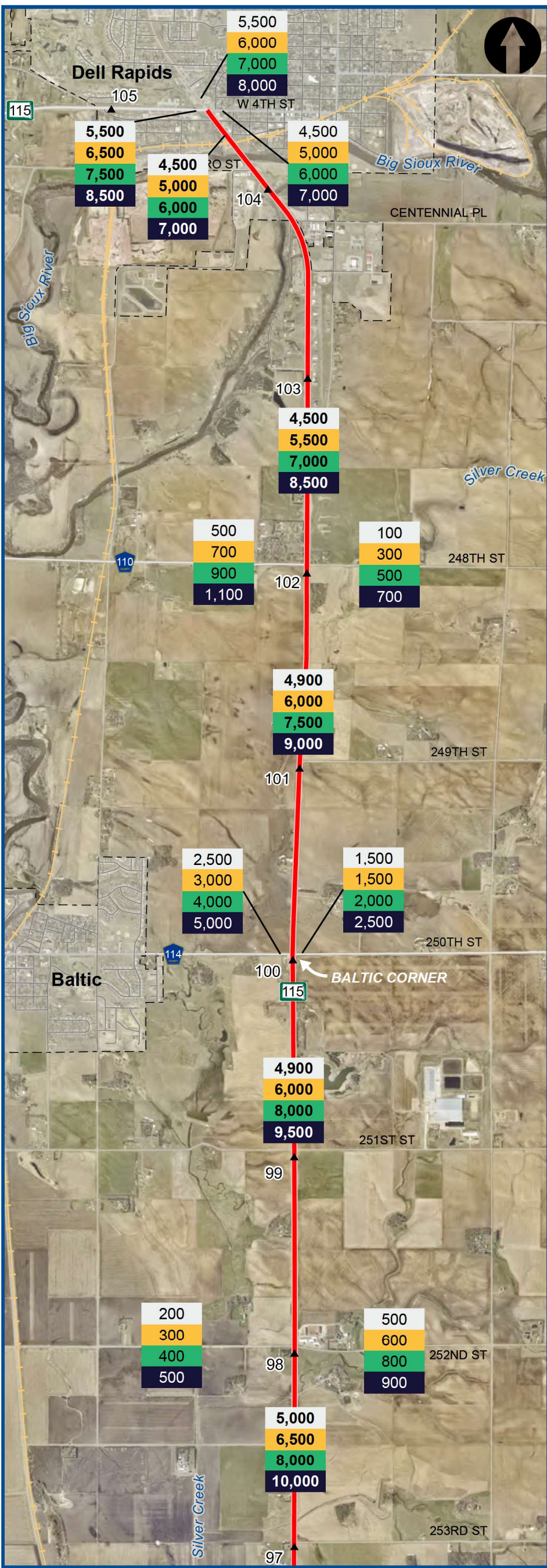
Year 2055 traffic volumes were derived by extrapolating growth trend lines between the TDM's two scenario years. Year 2031 and 2043 traffic volumes were developed by interpolating straight-line growth between the Existing condition and 2055 Planning Horizon volume sets. Peak hour intersection turning movement volumes were smoothed at all intersections and balanced across intersections where applicable. Similar to the Existing condition volumes, balancing between intersections south of M.C. Highway 122 was not feasible due to rural residential developments and/or mid-segment crossroads that contributed to notable differences in S.D. Highway 115 volumes between major intersections.

The following data sources and previous studies were referenced to help gauge reasonableness and consistency with planning completed to date:

- SDDOT 20, 25, and 30-year projected traffic
- *I-29 Exit 86 Interchange Modification Study*
- *Dell Rapids Master Transportation Plan*
- SDDOT-derived growth rates for Minnehaha County
- Historical counts

Where there were gaps in the TDM's estimation of future development, development-generated traffic was assigned to the study area street network based on an estimation of that future development occurring within the study's planning horizon. This traffic assignment overlay was based on Institute of Transportation Engineers (ITE) trip generation rates and/or traffic volumes developed through previous studies.

An existing and future-year no build condition daily traffic volumes summary is shown in **Figure 21**. Year 2031, 2043, and 2050 No Build daily and intersection traffic volumes are shown in **Figure 22** through **Figure 24**. Additional information regarding the overall traffic forecasting process and a study-level review of the Sioux Falls MPO TDM is provided in **Appendix E**.



**TRAFFIC LEGEND**  
Daily Volumes

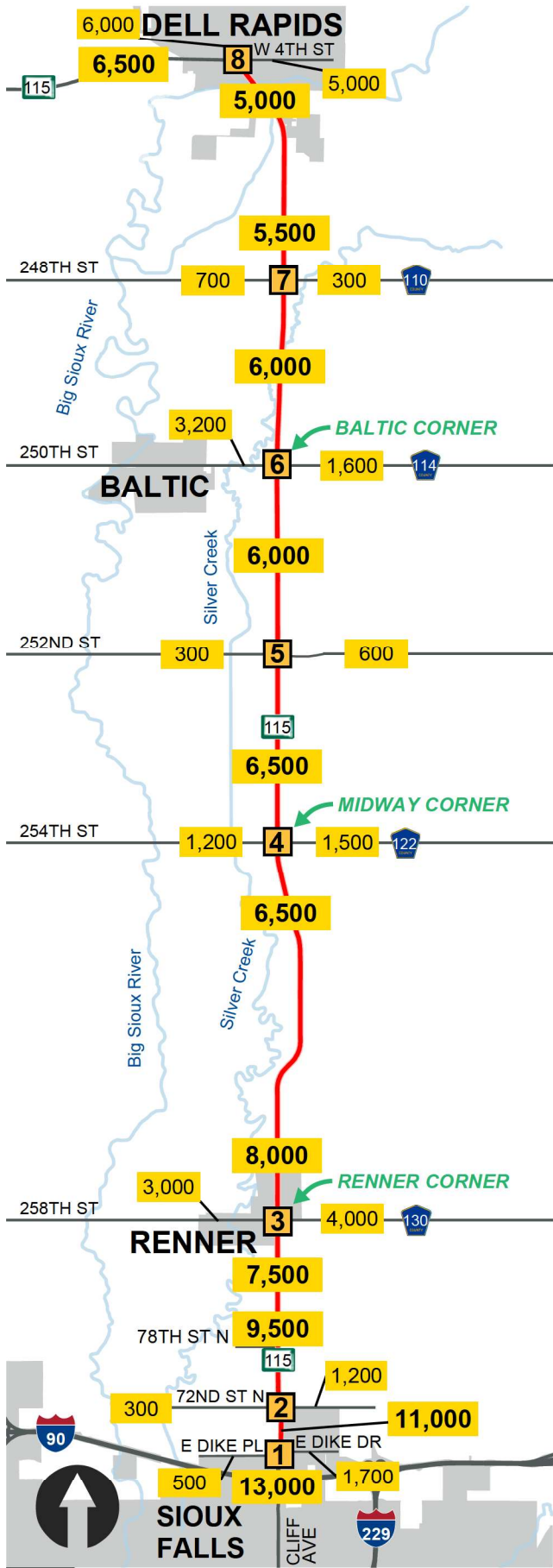
5,000	Existing
6,500	2031
8,000	2043
10,000	2055



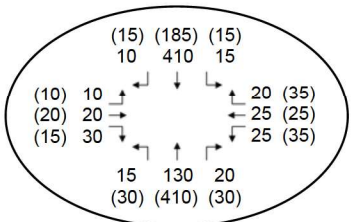
EXISTING (2024) & FUTURE-YEAR (2031, 2043, & 2055) NO BUILD CONDITION DAILY TRAFFIC VOLUMES SUMMARY

FIGURE 21

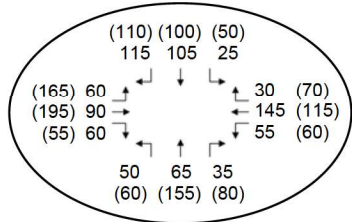




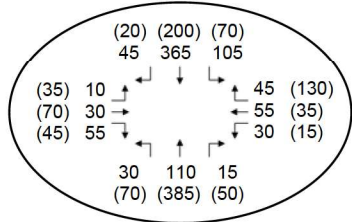
**4 SD115 & MC Hwy 122**



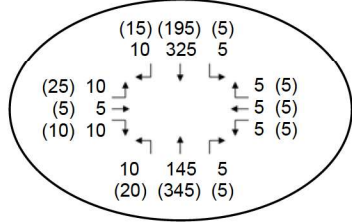
**8 SD115 & W. 4th Street**



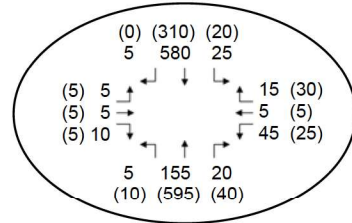
**3 SD115 & MC Hwy 130**



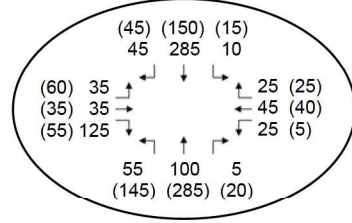
**7 SD115 & MC Hwy 110**



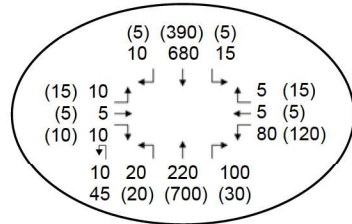
**2 SD115 & 72nd St N**



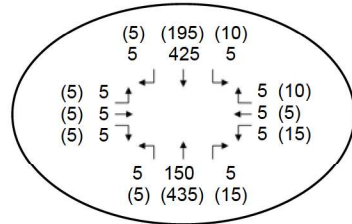
**6 SD115 & MC Hwy 114**



**1 SD115 & E. Dike Pl/Dr**



**5 SD115 & 252nd Street**

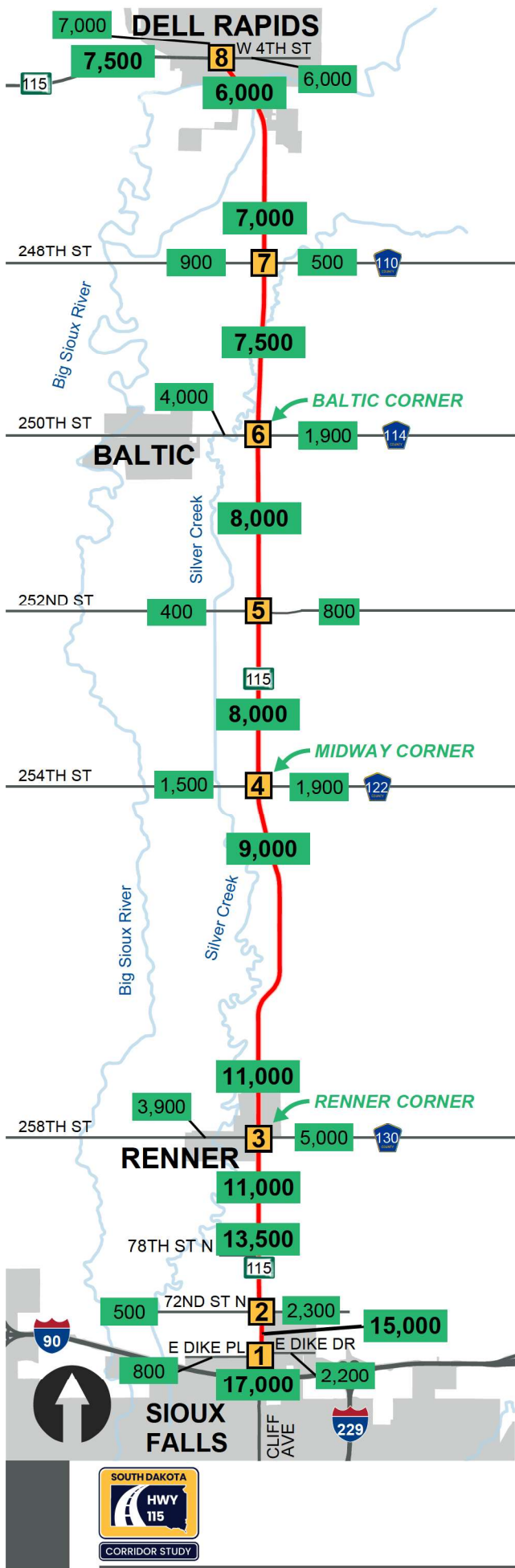


**LEGEND**

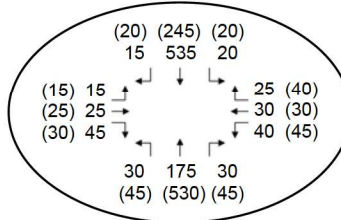
- 1** Study Intersection
- 10,000** Daily Traffic Volumes
- AM (PM)** Peak Hour Traffic Volumes

**2031 NO BUILD CONDITIONS TRAFFIC FORECASTS**

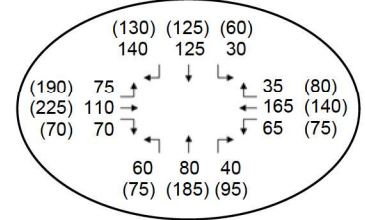
**FIGURE 22**



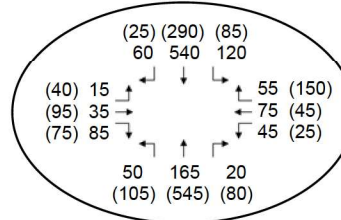
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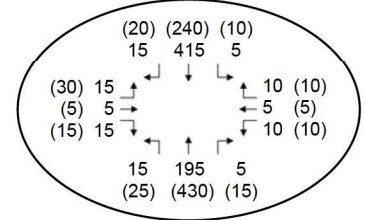
**8** SD115 & W. 4th Street



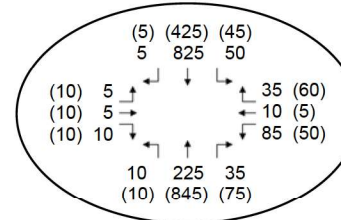
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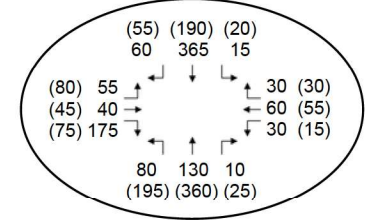
**7** SD115 & MC Hwy 110



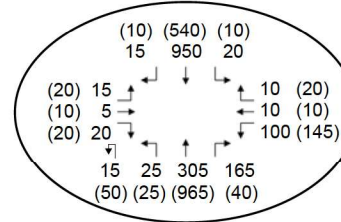
**2** SD115 & 72nd St N



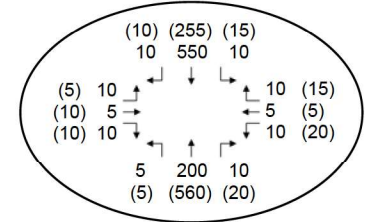
**6** SD115 & MC Hwy 114



**1** SD115 & E. Dike Pl/Dr



**5** SD115 & 252nd Street

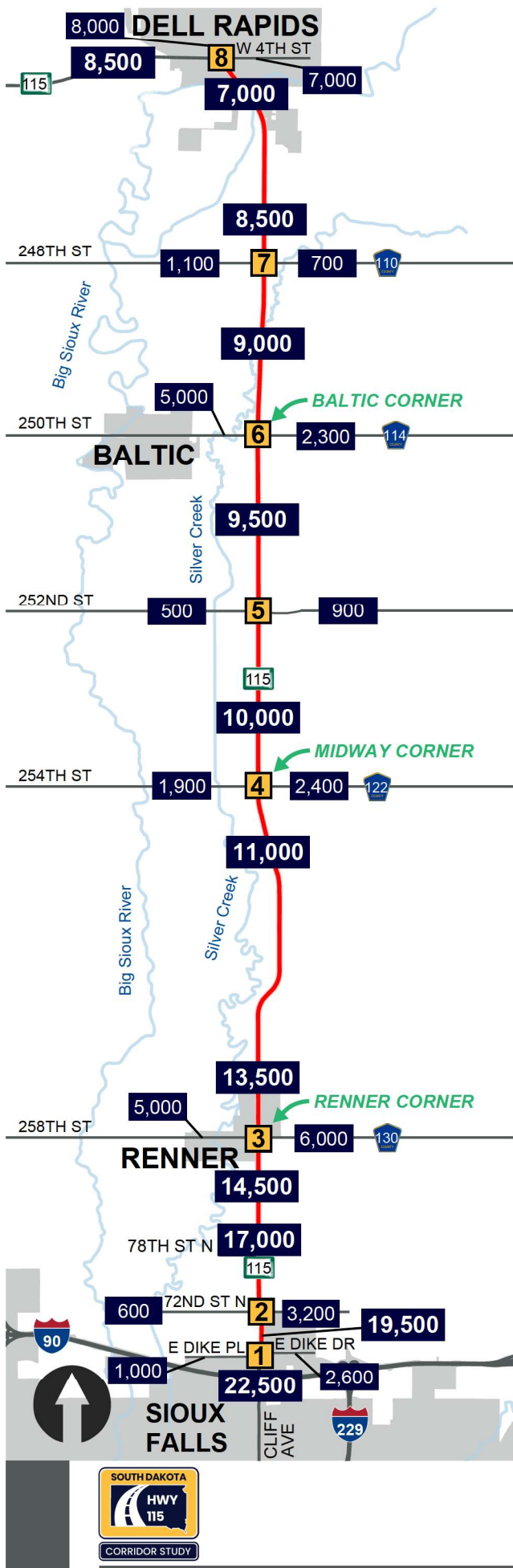


**LEGEND**

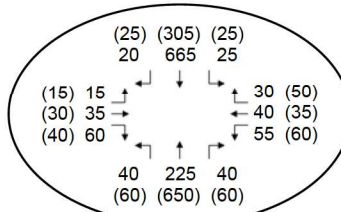
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- 10,000 Daily Traffic Volumes
- AM (PM) Peak Hour Traffic Volumes

2043 NO BUILD CONDITIONS TRAFFIC FORECASTS

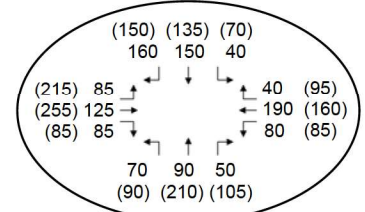
FIGURE 23



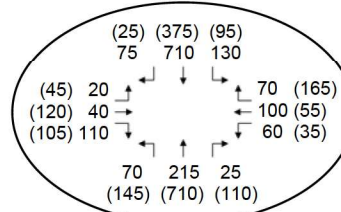
**4** SD115 & MC Hwy 122



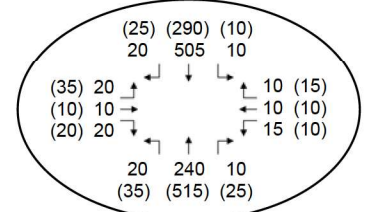
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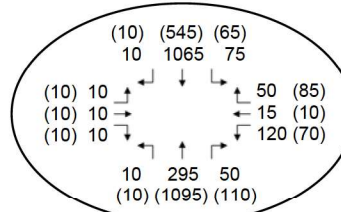
**3** SD115 & MC Hwy 130



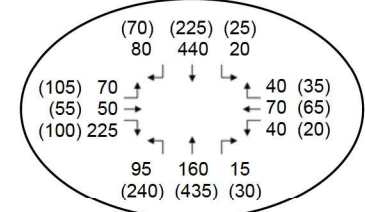
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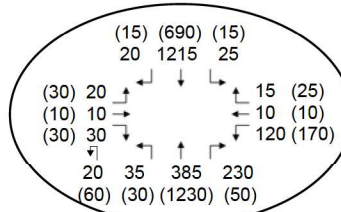
**2** SD115 & & 72nd St N



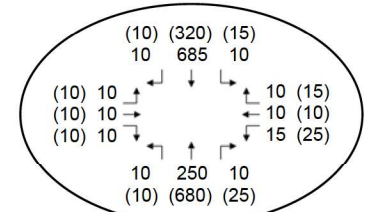
**6** SD115 & MC Hwy 114



**1** SD115 & E. Dike Pl/Dr



**5** SD115 & 252nd Street



**LEGEND**

- 1 Study Intersection
- 10,000 Daily Traffic Volumes
- AM (PM) Peak Hour Traffic Volumes

**2055 NO BUILD CONDITIONS TRAFFIC FORECASTS**

**FIGURE 24**

## 8. Analysis Methodology

### 8.1 Traffic Operations Analysis

Operation performance of highways and intersections is evaluated in terms of the quality of service, which describes how well a transportation facility operates from the traveler’s perspective. Quality of service is usually measured with “Level of Service” (LOS), a letter grade like those used in school. A summary of LOS measures for different roadway facilities pertinent to this study are provided in **Figure 25**.

Peak hour LOS is calculated for study area intersections and roadway segments using Highway Capacity Software 2024 Release (HCS2024), and methodology described in the *7<sup>th</sup> Edition of the Highway Capacity Manual* (HCM7). The following primary and secondary (supporting) operational measures were used for this study. LOS threshold tables specific to each measure are provided in **Appendix F**.

**Table 9: Level of Service Measures**

Roadway Feature	LOS Measure	Supporting Measures
Intersections	<ul style="list-style-type: none"> <li>Total (overall) intersection delay</li> </ul>	<ul style="list-style-type: none"> <li>95<sup>th</sup> percentile queues</li> <li>Individual movement delay</li> <li>TWSC intersections: worst-case stop-control delay</li> </ul>
Urban Street Segments	<ul style="list-style-type: none"> <li>Travel speed as a percentage of base free flow speed</li> </ul>	<ul style="list-style-type: none"> <li>Travel time</li> </ul>
Multilane Highway Segments	<ul style="list-style-type: none"> <li>Vehicle density</li> </ul>	<ul style="list-style-type: none"> <li>Travel time</li> </ul>
2-Lane Highway Segments	<ul style="list-style-type: none"> <li>Follower density</li> </ul>	<ul style="list-style-type: none"> <li>Travel time</li> </ul>
Bicycle and pedestrian	<ul style="list-style-type: none"> <li>LOS score (in applicable scenarios)</li> </ul>	

Two-way stop-control delay (TWSC)

≡ Two-Lane Highway/Passing Lanes		
<b>A</b>	Average Travel Speed: >55 mph Percent Time Spent Following: ≤35%	
<b>B</b>	Average Travel Speed: >50-55 mph Percent Time Spent Following: ≤35-50%	
<b>C</b>	Average Travel Speed: >45-50 mph Percent Time Spent Following: ≤50-65%	
<b>D</b>	Average Travel Speed: >40-45 mph Percent Time Spent Following: ≤65-80%	
<b>E</b>	Average Travel Speed: ≤40 mph Percent Time Spent Following: >80%	
<b>F</b>	Average Travel Speed: Demand exceeds capacity Percent Time Spent Following: Demand exceeds capacity	

### Levels Designation Scale:

LOS is presented through a familiar A to F scale, where "A" means the best operating condition and "F" the worst.

**LOS Measures and Definitions:** Highway Capacity Manual and SDDOT Road Design Manual

≡ Multilane Highway/Freeway		
<b>A</b>	Free-flow operation Density: ≤11 passenger cars/mile/lane	
<b>B</b>	Reasonably free-flow operation; minimal restriction on lane changes and maneuvers Density: >11-18 passenger cars/mile/lane	
<b>C</b>	Near free-flow operation; noticeable restriction on lane changes and other maneuvers Density: >18-26 passenger cars/mile/lane	
<b>D</b>	Speed decline with increasing flows; significant restriction on lane changes and other maneuvers Density: >26-35 passenger cars/mile/lane	
<b>E</b>	Facility operates at capacity; very few gaps for lane changes and other maneuvers; frequent disruptions and queues Density: >35-45 passenger cars/mile/lane	
<b>F</b>	Unstable flow; operational breakdown Density: >45 passenger cars/mile/lane or Demand exceeds capacity	

✚ Unsignalized Intersection		Ⓜ Signalized Intersection	
<b>A</b>	Queuing is rare Intersection Control Delay: ≤10 seconds/vehicle	Very minimal queuing; excellent corridor progression and/or short cycle lengths Intersection Control Delay: ≤10 seconds/vehicle	
<b>B</b>	Occasional queuing Intersection Control Delay: >10-15 seconds/vehicle	Some queuing; good corridor progression and/or short cycle lengths Intersection Control Delay: >10-20 seconds/vehicle	
<b>C</b>	Regular queuing Intersection Control Delay: >15-25 seconds/vehicle	Regular queuing; not all demand may be serviced on some cycles (cycle failure) Intersection Control Delay: >20-35 seconds/vehicle	
<b>D</b>	Queue lengths increased Intersection Control Delay: >25-35 seconds/vehicle	Queue lengths increased; routine cycle failures Intersection Control Delay: >35-55 seconds/vehicle	
<b>E</b>	Significant queuing Intersection Control Delay: >35-50 seconds/vehicle	Long queues, congested conditions; majority of cycles fail Intersection Control Delay: >55-80 seconds/vehicle	
<b>F</b>	Volume to capacity ratio approaches 1.0; very long queues Intersection Control Delay: >50 seconds/vehicle	Volume to capacity ratio near 1.0; very long queues, almost all cycles fail Intersection Control Delay: >80 seconds/vehicle	

Note: Unsignalized intersection control delay shown in figure for overall (or weighted) intersection delay. Two-way stop-control delay (TWSC) is measured from the worst-case stop-controlled approach with the same average delay (seconds/vehicle) thresholds.

**Figure 25: Level of Service Descriptions**

## 8.2 Level of Service Goals

Study LOS goals differ depending on whether the intersection or roadway segment is in an urban or rural area. Typically, intersections and roadway segments in the FHWA-designated urbanized area are analyzed with urban LOS goals while areas outside of the urbanized area are analyzed with rural LOS goals. Within this study, the urbanized area boundary designated by FHWA and the Sioux Falls MPO defines between East Dike Place/Drive to 78<sup>th</sup> Street North as "urban". Based on these findings, the following urban/rural LOS classification limits were used for this analysis:

- **Urban Area:** East Dike Place/Drive to 78<sup>th</sup> Street North
- **Rural Area:** 78<sup>th</sup> Street North to West 4<sup>th</sup> Street

Minimum allowable LOS thresholds for this study are shown in **Table 10**.

**Table 10: Level of Service Goals**

Roadway Feature	Minimum Allowable LOS	Notes
Signalized Intersections	Rural: LOS B Urban: LOS C	Rural: LOS B or better desirable  Urban: LOS C or better desirable Individual movements allowed to operate at LOS D, but the overall intersection shall be LOS C or better in urban areas  Individual movements will not be allowed to operate with a v/c ratio > 1.0 Queue storage ratio will not be allowed to exceed 1.0 for any movements
Unsignalized Intersections	Rural: LOS B Urban: LOS C	Rural: LOS B or better desirable  Urban: LOS C or better desirable  TWSC, AWSC, and roundabouts LOS based on weighted average intersection delay Worst-case stop-controlled (WCSC) approach delay and LOS may be lower than the minimum allowable LOS
Multilane Highway Segments	Rural: LOS B Urban: LOS C	Rural: LOS B or better desirable  Urban: LOS C or better desirable
Urban Street Segments	Rural: LOS B Urban: LOS C	Rural: LOS B or better desirable  Urban: LOS C or better desirable  Applies to urban signalized corridors.
2-Lane Highway Segments	Rural: LOS B Urban: LOS C	Rural: LOS B or better desirable  Urban: LOS C or better desirable

### 8.3 Predictive Safety Analysis

A predictive safety analysis was completed for the No Build conditions and each corridor scenario using the HSM method to evaluate expected safety of proposed intersection and roadway modifications. As stated in the HSM, “*The predictive method provides a quantitative measure of expected crash frequency under both existing conditions and conditions which have not yet occurred. This allows proposed roadway conditions to be quantitatively assessed...*” (HSM, 2010 version).

FHWA’s Interactive Highway Safety Design Model (IHSDM) was the tool used to evaluate safety in the No Build and Build scenario conditions. Output includes the predicted average annual crash frequency over the analyzed timeframe (2024 – 2050). Crashes are categorized as fatal and injury crashes (F+I) and property damage only (PDO) crashes for both intersections and roadway segments.

## 9. Existing and Future No Build Conditions Traffic Analysis

An existing and future No Build condition traffic operations analysis was conducted to aid in identifying long-range traffic operational needs throughout the study area. Locations that do not meet LOS goals outlined for this study area are noted in **\*Bold\*** text in the tables. Additional information regarding these analyses is provided in the *Existing and Future No Build Condition Traffic Operations Analysis technical memo* in **Appendix G**.

### 9.1 Intersections

Intersection operation summaries for the Existing (2024), 2031 No Build, 2043 No Build, and 2055 No Build conditions are presented in **Table 11** through **Table 14** and shown in **Figure 26**.

**Table 11: Intersection Operations – Existing (2024) Conditions**

Corridor	Crossroad	Intersection Control	Measure	AM LOS Delay / LOS	PM LOS Delay / LOS
S.D. Highway 115	W. 4 <sup>th</sup> Street	AWSC	Overall:	11.0 / B	14.2 / B
	M.C. Highway 110	TWSC	Overall: (WCSC):	0.9 / A (11.4 / B)	1.1 / A (12.3 / B)
	M.C. Highway 114 (Baltic Corner)	TWSC	Overall: (WCSC):	4.9 / A (13.7 / B)	5.6 / A (18.5 / C)
	252 <sup>nd</sup> Street	TWSC	Overall: (WCSC):	0.6 / A (12.3 / B)	1.0 / A (13.4 / B)
	M.C. Highway 122 (Midway Corner)	TWSC	Overall: (WCSC):	2.6 / A (13.4 / B)	2.8 / A (14.8 / B)
	M.C. Highway 130 (Renner Corner)	TWSC	Overall: (WCSC):	5.4 / A (16.5 / C)	6.9 / A (23.9 / C)
S.D. Highway 115 / Cliff Avenue	72 <sup>nd</sup> Street North	TWSC	Overall: (WCSC):	1.2 / A (14.9 / B)	1.1 / A (15.9 / C)
	East Dike Place/Drive	Signal	Overall:	7.0 / A	8.4 / A

**\*Bold\***: does not meet LOS goal.

**Table 12: Intersection Operations – 2031 No Build Conditions**

Corridor	Crossroad	Intersection Control	Measure	AM LOS Delay / LOS	PM LOS Delay / LOS
S.D. Highway 115	W. 4 <sup>th</sup> Street	AWSC	Overall:	12.4 / B	<b>*17.9 / C*</b>
	M.C. Highway 110	TWSC	Overall: (WCSC):	1.1 / A (12.7 / B)	1.5 / A (14.7 / B)
	M.C. Highway 114 (Baltic Corner)	TWSC	Overall: (WCSC):	5.7 / A (16.5 / C)	8.3 / A (31.7 / D)
	252 <sup>nd</sup> Street	TWSC	Overall: (WCSC):	0.8 / A (13.9 / B)	1.2 / A (15.4 / C)
	M.C. Highway 122 (Midway Corner)	TWSC	Overall: (WCSC):	3.2 / A (16.8 / C)	3.7 / A (20.1 / C)
	M.C. Highway 130 (Renner Corner)	TWSC	Overall: (WCSC):	7.2 / A (27.3 / D)	15.0 / B (70.0 / F)
S.D. Highway 115 / Cliff Avenue	72 <sup>nd</sup> Street North	TWSC	Overall: (WCSC):	2.3 / A (21.6 / C)	1.9 / A (23.5 / C)
	East Dike Place/Drive	Signal	Overall:	7.6 / A	8.7 / A

**\*Bold\***: does not meet LOS goal.

**Table 13: Intersection Operations – 2043 No Build Conditions**

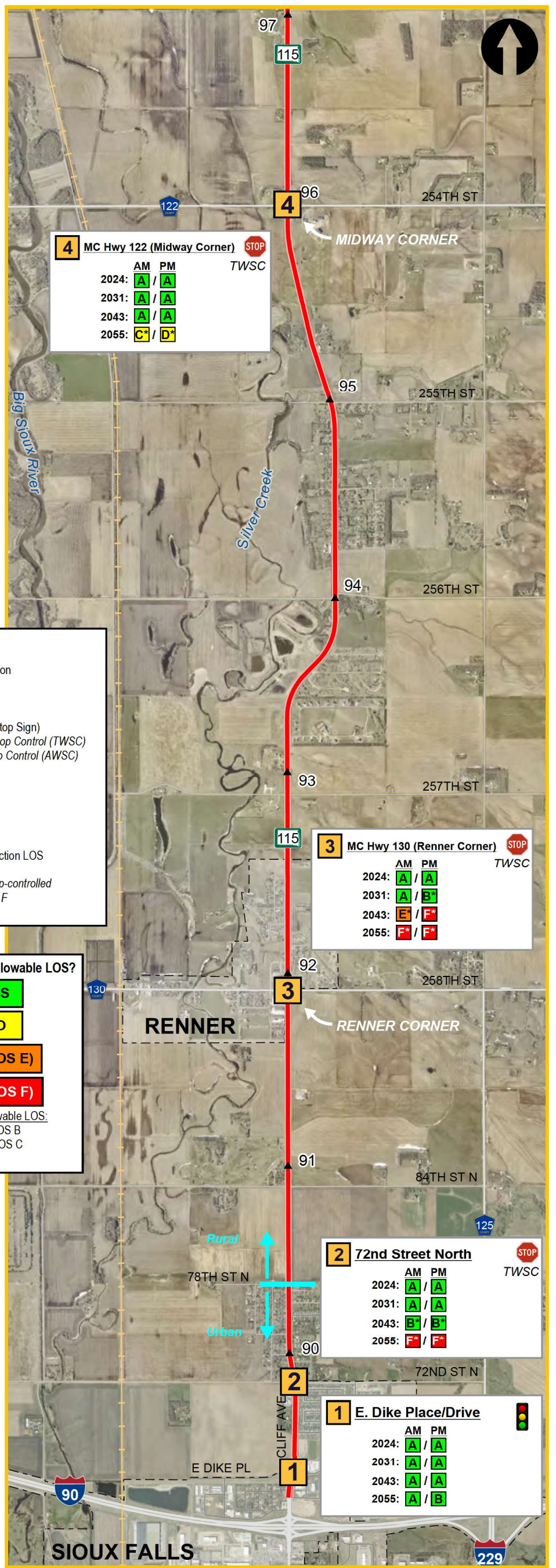
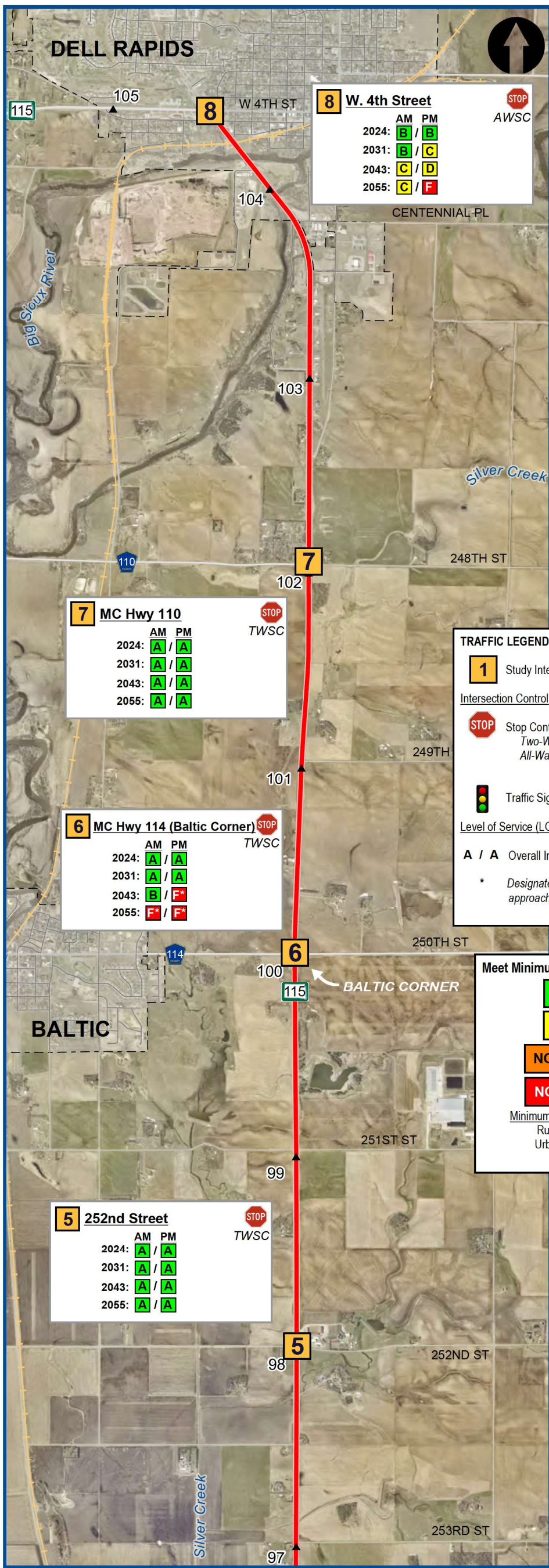
Corridor	Crossroad	Intersection Control	Measure	AM LOS Delay / LOS	PM LOS Delay / LOS
S.D. Highway 115	W. 4 <sup>th</sup> Street	AWSC	Overall:	<b>*15.2 / C*</b>	<b>*29.0 / D*</b>
	M.C. Highway 110	TWSC	Overall: (WCSC):	1.5 / A (15.0 / C)	2.0 / A (18.0 / C)
	M.C. Highway 114 (Baltic Corner)	TWSC	Overall: (WCSC):	10.2 / B (32.0 / D)	<b>*55.1 / F*</b> <b>*(&gt;&gt; 80 / F)*</b>
	252 <sup>nd</sup> Street	TWSC	Overall: (WCSC):	1.2 / A (17.2 / C)	1.6 / A (20.6 / C)
	M.C. Highway 122 (Midway Corner)	TWSC	Overall: (WCSC):	5.4 / A (31.0 / D)	6.6 / A (41.9 / E)
	M.C. Highway 130 (Renner Corner)	TWSC	Overall: (WCSC):	<b>*40.0 / E*</b> <b>*(&gt;&gt; 80 / F)*</b>	<b>*&gt;&gt; 80 / F*</b> <b>*(&gt;&gt; 80 / F)*</b>
S.D. Highway 115 / Cliff Avenue	72 <sup>nd</sup> Street North	TWSC	Overall: (WCSC):	12.8 / B (>> 80 / F)	14.2 / B (>> 80 / F)
	East Dike Place/Drive	Signal	Overall:	8.6 / A	9.6 / A

**\*Bold\***: does not meet LOS goal.

**Table 14: Intersection Operations – 2055 No Build Conditions**

Corridor	Crossroad	Intersection Control	Measure	AM LOS Delay / LOS	PM LOS Delay / LOS
S.D. Highway 115	W. 4 <sup>th</sup> Street	AWSC	Overall:	<b>*20.8 / C*</b>	<b>*50.7 / F*</b>
	M.C. Highway 110	TWSC	Overall: (WCSC):	2.1 / A (19.4 / C)	2.7 / A (25.2 / D)
	M.C. Highway 114 (Baltic Corner)	TWSC	Overall: (WCSC):	<b>*50.2 / F*</b> <b>*(&gt;&gt; 80 / F)*</b>	<b>*&gt;&gt; 80 / F*</b> <b>*(&gt;&gt; 80 / F)*</b>
	252 <sup>nd</sup> Street	TWSC	Overall: (WCSC):	1.8 / A (23.9 / C)	2.4 / A (31.7 / D)
	M.C. Highway 122 (Midway Corner)	TWSC	Overall: (WCSC):	<b>*18.7 / C*</b> <b>*(&gt;&gt; 80 / F)*</b>	<b>*26.1 / D*</b> <b>*(&gt;&gt; 80 / F)*</b>
	M.C. Highway 130 (Renner Corner)	TWSC	Overall: (WCSC):	<b>*&gt;&gt; 80 / F*</b> <b>*(&gt;&gt; 80 / F)*</b>	<b>*&gt;&gt; 80 / F*</b> <b>*(&gt;&gt; 80 / F)*</b>
S.D. Highway 115 / Cliff Avenue	72 <sup>nd</sup> Street North	TWSC	Overall: (WCSC):	<b>*&gt;&gt; 80 / F*</b> <b>*(&gt;&gt; 80 / F)*</b>	<b>*&gt;&gt; 80 / F*</b> <b>*(&gt;&gt; 80 / F)*</b>
	East Dike Place/Drive	Signal	Overall:	9.9 / A	10.9 / B

**\*Bold\***: does not meet LOS goal.



**TRAFFIC LEGEND**

**1** Study Intersection

**Intersection Control**

- STOP Stop Control (Stop Sign)
- Two-Way Stop Control (TWSC)
- All-Way Stop Control (AWSC)

Traffic Signal

**Level of Service (LOS)**

A / A Overall Intersection LOS

\* Designates stop-controlled approach LOS F

**Meet Minimum Allowable LOS?**

YES

NO

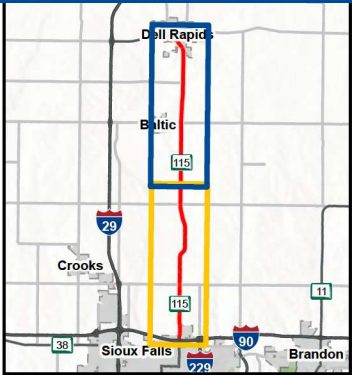
NO (LOS E)

NO (LOS F)

**Minimum Allowable LOS:**  
Rural: LOS B  
Urban: LOS C

EXISTING (2024) & FUTURE-YEAR (2031, 2043, & 2055) NO BUILD CONDITIONS INTERSECTION PEAK HOUR LOS SUMMARY

FIGURE 26



## 9.2 Highway Segments

Summaries of highway segment operations for the Existing, 2031 No Build, 2043 No Build, and 2055 No Build conditions are provided in **Table 15** through **Table 18** and shown in **Figure 27**.

**Table 15: S.D. Highway Segment Operations – Existing (2024) Conditions**

Corridor	From	To	Length mi	Facility Type	AM LOS SB / NB	PM LOS SB / NB
S.D. Highway 115	M.C. Highway 110	W. 4 <sup>th</sup> Street	2.48	2-Lane (TWLTL)	A-B / A	A / A-B
	M.C. Highway 114 (Baltic Corner)	M.C. Highway 110	1.99	2-Lane	A / A	A / A-B
	252 <sup>nd</sup> St	M.C. Highway 114 (Baltic Corner)	2.00	2-Lane	B / A	A / B
	M.C. Highway 122 (Midway Corner)	252 <sup>nd</sup> St	2.00	2-Lane	B / A	A / B
	M.C. Highway 130 (Renner Corner)	M.C. Highway 122 (Midway Corner)	4.11	2-Lane	B- <b>C*</b> / A	A / B- <b>C*</b>
S.D. Highway 115 / Cliff Avenue	78 <sup>th</sup> St N	M.C. Highway 130 (Renner Corner)	1.50	2-Lane	B- <b>C*</b> / A	A / B- <b>C*</b>
	72 <sup>nd</sup> St N	78 <sup>th</sup> St N	0.50	2-Lane (TWLTL)	C / A	A / C
	North of East Dike Pl/Dr	72 <sup>nd</sup> St N	0.38	2-Lane (TWLTL)	C / A	B / C
	South of East Dike Pl/Dr	North of East Dike Pl/Dr	0.16	Multilane	A / A	A / A

**\*Bold\***: does not meet LOS goal.

**Table 16: Highway Segment Operations – 2031 No Build Conditions**

Corridor	From	To	Length mi	Facility Type	AM LOS SB / NB	PM LOS SB / NB
S.D. Highway 115	M.C. Highway 110	W. 4 <sup>th</sup> Street	2.48	2-Lane (TWLTL)	B / A	A-B / B
	M.C. Highway 114 (Baltic Corner)	M.C. Highway 110	1.99	2-Lane	B / A	A / B
	252 <sup>nd</sup> St	M.C. Highway 114 (Baltic Corner)	2.00	2-Lane	B / A	A / B
	M.C. Highway 122 (Midway Corner)	252 <sup>nd</sup> St	2.00	2-Lane	B / A	A / B
	M.C. Highway 130 (Renner Corner)	M.C. Highway 122 (Midway Corner)	4.11	2-Lane	B- <b>C*</b> / A	A-B / B- <b>C*</b>
S.D. Highway 115 / Cliff Avenue	78 <sup>th</sup> St N	M.C. Highway 130 (Renner Corner)	1.50	2-Lane	<b>C*</b> / A	A-B / <b>C*</b>
	72 <sup>nd</sup> St N	78 <sup>th</sup> St N	0.50	2-Lane (TWLTL)	C / A	B / <b>D*</b>
	North of East Dike Pl/Dr	72 <sup>nd</sup> St N	0.38	2-Lane (TWLTL)	<b>D*</b> / A	B / <b>D*</b>
	South of East Dike Pl/Dr	North of East Dike Pl/Dr	0.16	Multilane	A / A	A / A

**\*Bold\***: does not meet LOS goal.

**Table 17: Highway Segment Operations – 2043 No Build Conditions**

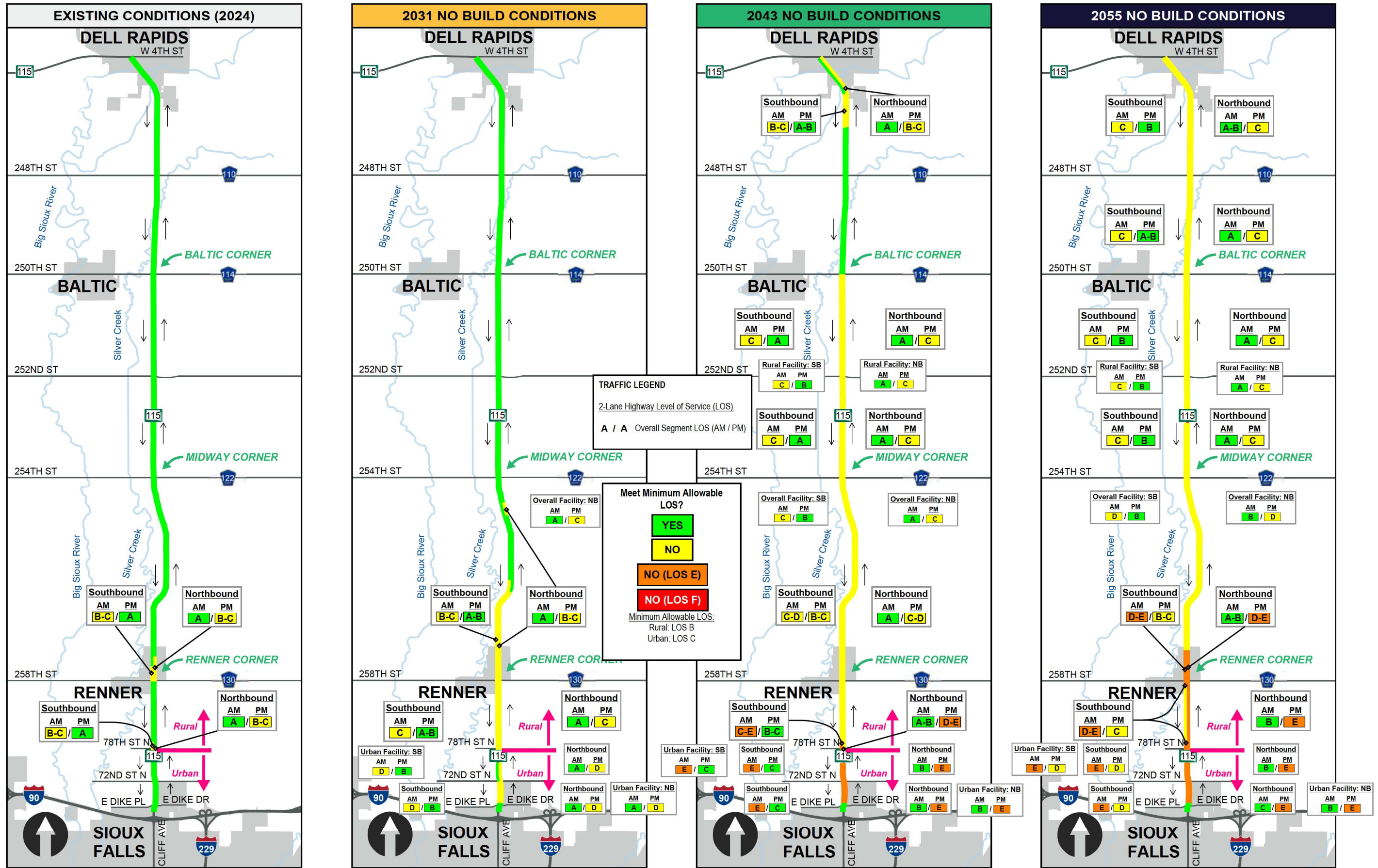
Corridor	From	To	Length mi	Facility Type	AM LOS SB / NB	PM LOS SB / NB
S.D. Highway 115	M.C. Highway 110	W. 4 <sup>th</sup> Street	2.48	2-Lane (TWLTL)	B- <b>C*</b> / A	A-B / B- <b>C*</b>
	M.C. Highway 114 (Baltic Corner)	M.C. Highway 110	1.99	2-Lane	B / A	A / B
	252 <sup>nd</sup> St	M.C. Highway 114 (Baltic Corner)	2.00	2-Lane	<b>C*</b> / A	A / <b>C*</b>
	M.C. Highway 122 (Midway Corner)	252 <sup>nd</sup> St	2.00	2-Lane	<b>C*</b> / A	A / <b>C*</b>
	M.C. Highway 130 (Renner Corner)	M.C. Highway 122 (Midway Corner)	4.11	2-Lane	<b>C-D*</b> / A	B- <b>C*</b> / <b>C-D*</b>
S.D. Highway 115 / Cliff Avenue	78 <sup>th</sup> St N	M.C. Highway 130 (Renner Corner)	1.50	2-Lane	<b>C-E*</b> / A-B	B- <b>C*</b> / <b>D-E*</b>
	72 <sup>nd</sup> St N	78 <sup>th</sup> St N	0.50	2-Lane (TWLTL)	<b>E*</b> / B	C / <b>E*</b>
	North of East Dike Pl/Dr	72 <sup>nd</sup> St N	0.38	2-Lane (TWLTL)	<b>E*</b> / B	C / <b>E*</b>
	South of East Dike Pl/Dr	North of East Dike Pl/Dr	0.16	Multilane	A / A	A / A

**\*Bold\***: does not meet LOS goal.

**Table 18: Highway Segment Operations – 2055 No Build Conditions**

Corridor	From	To	Length mi	Facility Type	AM LOS SB / NB	PM LOS SB / NB
S.D. Highway 115	M.C. Highway 110	W. 4 <sup>th</sup> Street	2.48	2-Lane (TWLTL)	<b>*C*</b> / A-B	B / <b>*C*</b>
	M.C. Highway 114 (Baltic Corner)	M.C. Highway 110	1.99	2-Lane	<b>*C*</b> / A	A-B / <b>*C*</b>
	252 <sup>nd</sup> St	M.C. Highway 114 (Baltic Corner)	2.00	2-Lane	<b>*C*</b> / A	B / <b>*C*</b>
	M.C. Highway 122 (Midway Corner)	252 <sup>nd</sup> St	2.00	2-Lane	<b>*C*</b> / A	B / <b>*C*</b>
	M.C. Highway 130 (Renner Corner)	M.C. Highway 122 (Midway Corner)	4.11	2-Lane	<b>*D-E*</b> / A-B	B- <b>*C*</b> / <b>*D-E*</b>
S.D. Highway 115 / Cliff Avenue	78 <sup>th</sup> St N	M.C. Highway 130 (Renner Corner)	1.50	2-Lane	<b>*D-E*</b> / B	<b>*C*</b> / <b>*E*</b>
	72 <sup>nd</sup> St N	78 <sup>th</sup> St N	0.50	2-Lane (TWLTL)	<b>*E*</b> / B	<b>*D*</b> / <b>*E*</b>
	North of East Dike Pl/Dr	72 <sup>nd</sup> St N	0.38	2-Lane (TWLTL)	<b>*E*</b> / C	<b>*D*</b> / <b>*E*</b>
	South of East Dike Pl/Dr	North of East Dike Pl/Dr	0.16	Multilane	A / A	A / A

**\*Bold\***: does not meet LOS goal.



EXISTING (2024) & NO BUILD CONDITIONS (2031, 2043, & 2055)  
 CORRIDOR SEGMENT PEAK HOUR LOS SUMMARY

FIGURE 27



### 9.3 Planning-Level Turn Lane Warrants

Existing and future-year peak hour traffic volumes were reviewed to identify planning-level timeframes for if/when turn lanes may be warranted at unsignalized intersections. Methodology for this review followed the vehicular volume criterion outlined in Chapter 15 of the SDDOT Road Design Manual. This review does not necessitate installation of a new turn lane or removal of an existing turn lane as there are additional criteria and considerations that ultimately factor into the decision.

**Table 19** identifies turn lanes that may be warranted within the 2055 Planning Horizon as well as a planning-level year of need to help guide timelines for future improvements. Turn lane volume warrants vary based on posted speeds for left turn lanes ( $\leq 35$  mph, 36-44 mph, 45-54 mph, and  $\geq 55$  mph) and right turn lanes ( $< 45$  mph and  $\geq 45$  mph) as defined in Chapter 15 of the SDDOT Road Design Manual. Turn lanes shown to be warranted are identified as follows:

- Existing (2024) Year: represents a potential existing need
- Year 2031: represents a potential short-term need
- Year 2043: represents a potential mid-term need
- Year 2055: represents a long-range consideration

**Table 19: Unsignalized Intersection Planning-Level Turn Lane Volume Warrants – S.D. Highway 115 No Build Condition**

S.D. Highway 115 Intersection	Posted Speed Limit	Southbound		Northbound	
		Left Turn	Right Turn	Left Turn	Right Turn
M.C. Highway 110	65	Existing	Meets Criterion [2055]	Existing	Meets Criterion [2055]
M.C. Highway 114 (Baltic Corner)	65	Meets Criterion [2031]	Meets Criterion [2031]	Existing	Meets Criterion* [2055]
252 <sup>nd</sup> Street	65	Meets Criterion [2031]	Does Not Meet	Meets Criterion [2055]	Meets Criterion [2043]
M.C. Highway 122 (Midway Corner)	55	Existing	Meets Criterion* [2055]	Existing	Existing
M.C. Highway 130 (Renner Corner)	55	Existing	Meets Criterion [2024]	Existing	Meets Criterion# [2031]
72 <sup>nd</sup> Street North	55	Existing	Does Not Meet	Existing	Meets Criterion# [2031]

# Approaching warrant threshold relative to proximate speed limit in Existing (2024) Year

\* Approaching warrant threshold relative to proximate speed limit in Year 2043

## 9.4 Planning-Level Signal Warrants (Study Intersections)

A planning-level traffic signal warrant review was conducted for S.D. Highway 115 corridor study intersections to identify approximate timeframes for when traffic volumes may warrant a traffic signal. This traffic signal warrant review uses guidelines presented in the Chapter 4C of the *2023 Manual on Uniform Traffic Control Devices (MUTCD)*. Similar to the turn lane warrant review, findings from this review do not necessitate installation. Typically, signals are installed after counted, existing traffic volumes meet a qualifying warrant threshold(s) and other improvements are evaluated.

Hourly planning-level traffic volumes were developed to review Warrant 1 (eight-hour vehicular volumes) and Warrant 2 (four-hour vehicular volume). Warrant 3 (peak hour) was not considered as special conditions required for the warrant were not found along the corridor. Hourly traffic volumes collected in 2024 were forecasted to the years 2031, 2043, and 2055 based on growth factors reflected in the 2031, 2043, and 2055 peak hour No Build condition traffic volumes.

**Table 20** summarizes findings from the 2031, 2043, and 2055 Build condition warrant review for the existing S.D. Highway 115 corridor typical sections with the inclusion of turn lanes that are anticipated to be warranted through the 2055 Planning Horizon. Intersections shown to reach warrant thresholds in year 2031 represent short-term needs for potential changes in traffic control while an intersection not meeting warrant thresholds until later in the 2055 Planning Horizon represent long-range considerations. Additional information is included in the *Build Condition Traffic Operations Analysis technical memo* provided in **Appendix H**.

**Table 20: Unsignalized Intersection Planning-Level Traffic Signal Warrants**

S.D. Highway 115 Intersection	Posted Speed Limit	Traffic Signal Warrant Met			
		Existing (2024)	Year 2031	Year 2043	Year 2055
West 4 <sup>th</sup> Street	35				Does Not Meet
M.C. Highway 110	65				Does Not Meet
M.C. Highway 114 (Baltic Corner)	65			X	X
252 <sup>nd</sup> Street	65				Does Not Meet
M.C. Highway 122 (Midway Corner)	55				X
M.C. Highway 130 (Renner Corner)	55		X		
72 <sup>nd</sup> Street North	55			X	
East Dike Place/Drive	45	Existing traffic signal present			

Warrant 3 Peak Hour not considered in this summary.

Traffic signal warrant review based on existing S.D. Highway 115 corridor typical section with warranted turn lanes. Meeting a planning-level warrant does not necessitate installation of a traffic signal.

## 9.5 67<sup>th</sup> Street North Intersection Planning-Level Signal Warrants

In addition to study intersections, the study advisory team requested to review planning-level traffic signal volume and crash history warrants at the S.D. Highway 115 / Cliff Avenue & 67<sup>th</sup> Street North intersection. This location was not previously included as a major study analysis intersection and was only evaluated in this individual analysis. The intersection was incorporated into the following study existing and future-year traffic volume forecast scenarios:

- Existing (2025) Conditions: reflects traffic counts collected by the City of Sioux Falls in August 2025
- 2031 First Possible Year of Project Completion
- 2043 Interim Year
- 2055 Planning Horizon

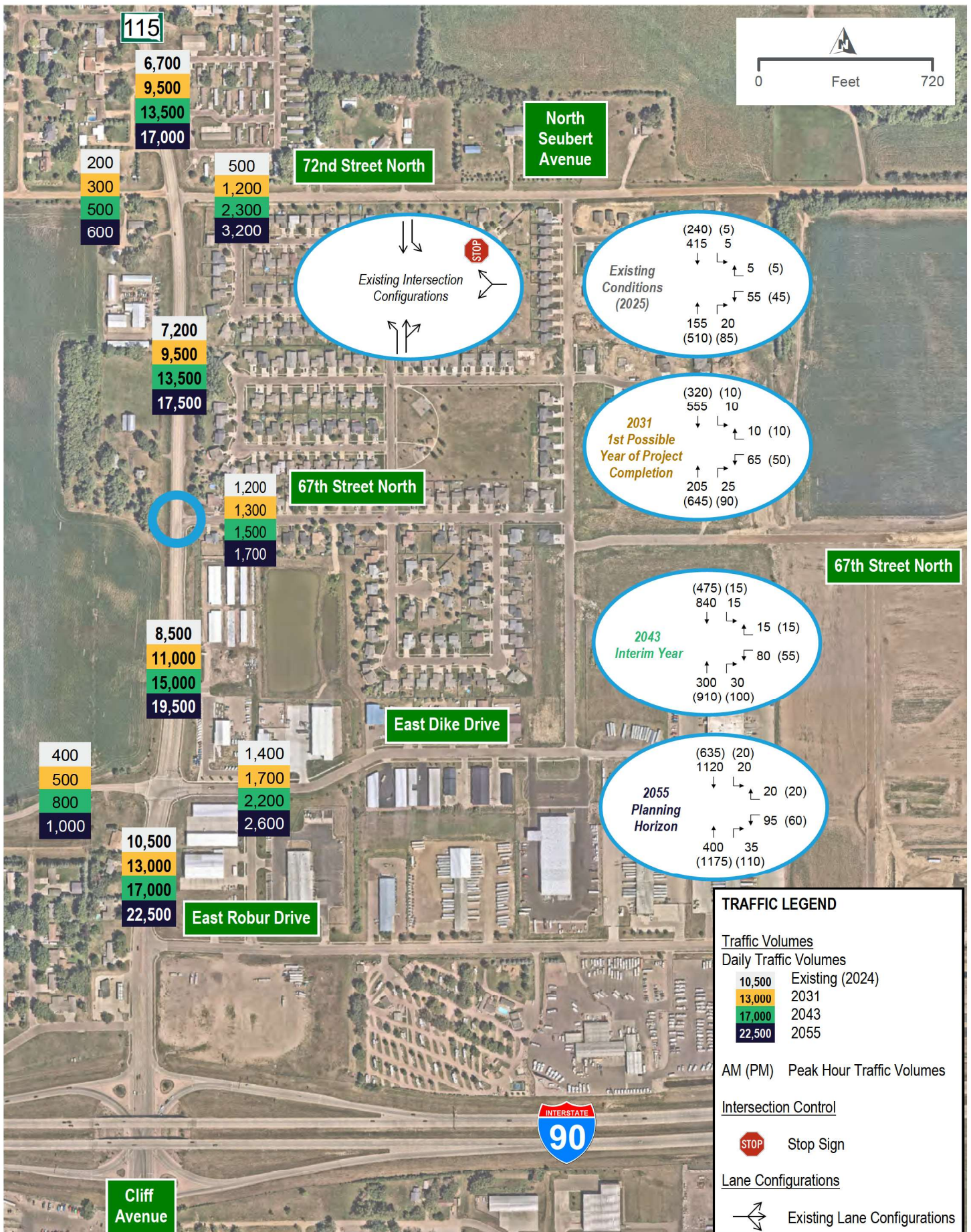
The forecast scenarios for this analysis were structured to fit within the S.D. Highway 115 Corridor Study daily and peak hour traffic volume forecasts. More information regarding those previously completed forecasts is available in the *Traffic Forecasts technical memo (Appendix E)*. The 67<sup>th</sup> Street North leg of the intersection was forecasted using the latest version of the Sioux Falls MPO TDM.

It should be noted that the future traffic growth along 67<sup>th</sup> Street North is anticipated to be limited due to the following constraints:

- Surrounding single-family residential land uses
- Limited available developable areas likely to access S.D. Highway 115 / Cliff Avenue via 67<sup>th</sup> Street North
- Offset T-intersections at North Seubert Avenue (likely to divert traffic along 67<sup>th</sup> Street North from the east to utilize 72<sup>nd</sup> Street North or East Dike Place/Drive)
- Anticipation that 72<sup>nd</sup> Street North, East Dike Place/Drive, and East Robur Drive will be more desirable routes to S.D. Highway 115 / Cliff Avenue based on higher functional classification designations, available connectivity from the east, and the location of available developable areas

Existing and future-year daily segment and peak hour intersection traffic volumes for the area surrounding S.D. Highway 115 / Cliff Avenue & 67<sup>th</sup> Street North intersection are shown in **Figure 28**.

Similar to the study analysis intersections, a planning-level traffic signal warrant review was conducted for the S.D. Highway 115 / Cliff Avenue & 67<sup>th</sup> Street North intersection to identify approximate timeframes for when traffic volumes may warrant a traffic signal under existing configurations. Applicable warrant criteria including Warrant 1 (eight-hour vehicular volumes), Warrant 2 (four-hour vehicular volume), and Warrant 7 (crash experience) were analyzed.



S.D. HIGHWAY 115 / CLIFF AVENUE & 67TH STREET NORTH INTERSECTION TRAFFIC VOLUMES & EXISTING CONFIGURATIONS

FIGURE 28



Warrants 1 and 2 were evaluated with existing and future No Build traffic volumes at 100 percent and 70 percent thresholds depending on major route posted speeds. The baseline warrant review assumes a speed greater than 45 mph, similar to the existing posted speed of 55 mph, and is applicable at the 70 percent volume thresholds. A sensitivity analysis assumes further urbanization of the corridor and a reduction in posted speed to match the 40 mph speed south of East Dike Place/Drive and uses 100 percent thresholds based on this speed.

For all scenarios, the inclusion of minor street (westbound) right turning traffic volumes was taken into consideration based on guidance from the *MUTCD* and *NCHRP Report 457 Evaluating Intersection Improvements: An Engineering Study Guide*. Westbound right turning traffic volumes were excluded from the analysis based on:

- T-intersection configuration and lack of a corresponding eastbound approach
- Existing space for westbound left and right turning traffic to queue in separate lanes
- Future plans to stripe exclusive westbound left and right turn lanes

**Table 21** summarizes findings from the Existing (2025), 2031, 2043, and 2055 No Build condition warrant review for the existing S.D. Highway 115 / Cliff Avenue intersection configurations under the existing 55 mph posted speed limit and a sensitivity analysis with a 40 mph posted speed limit. Based on this review, signal warrants are anticipated to be met by year 2055 for the existing baseline scenario (55 mph; 70 percent thresholds). However, if the speed limit were reduced to 40 mph as shown in the sensitivity analysis, it is anticipated that signal warrants would not be met through the study planning horizon. The sensitivity analysis is applicable at the 100 percent thresholds.

Additional information is included in the *67<sup>th</sup> Street North Traffic Signal Warrants Analysis technical memo* provided in **Appendix I**.

**Table 21: S.D. Highway 115 / Cliff Avenue & 67th Street North Intersection Planning-Level Signal Warrants Review (Existing Configurations)**

Scenario	Signal Warrant	Traffic Signal Warrant Met			
		Existing (2025)	Year 2031	Year 2043	Year 2055
Existing 55 mph Posted Speed Limit	Warrant 1 (8-Hour Volumes)				X
	Warrant 2 (4-Hour Volumes)				X
Sensitivity Analysis (40 mph Posted Speed Limit)	Warrant 1 (8-Hour Volumes)				Does Not Meet*
	Warrant 2 (4-Hour Volumes)				Does Not Meet*
Applicable to both scenarios	Warrant 7 (Crash Experience)	Does Not Meet			

Warrant 3 Peak Hour not considered in this summary. Traffic signal warrant review based on existing intersection configurations. Meeting a planning-level warrant does not necessitate installation of a traffic signal.

\* Reducing the posted speed limit from 55 mph to 40 mph raises the applicable MUTCD signal warrant thresholds from 70% to 100%. This adjusted criteria indicates a signal is not warranted under those parameters in in year 2055 at 40 mph.

## 10. Identification of Transportation Issues and Needs

The culmination of study process Step 1 was the first set of public and stakeholder open house meetings. Two daytime stakeholder open house meetings with business owners and local organization representatives and two evening public open house meetings were held in Sioux Falls and Dell Rapids on August 21 and 22, 2024. An additional follow-up open house meeting for business owners and landowners was held in Sioux Falls on October 14, 2024. The focus of these meetings was to present data-driven transportation needs identified through preliminary analyses and gather feedback from the public and stakeholders on what they see as existing and long-range issues throughout the corridor. A summary of these meetings is provided in **Appendix J**.

A second component to the first set of public involvement meetings was conducting travel surveys along the corridor. A sampling of questions/topics on the surveys is shown in **Table 22**. Additional information on the travel survey is also provided in **Appendix J**.

Overarching transportation issues and needs identified by the study stakeholders, public, study advisory team, and analysis completed in Step 1 are summarized in **Figure 29**.



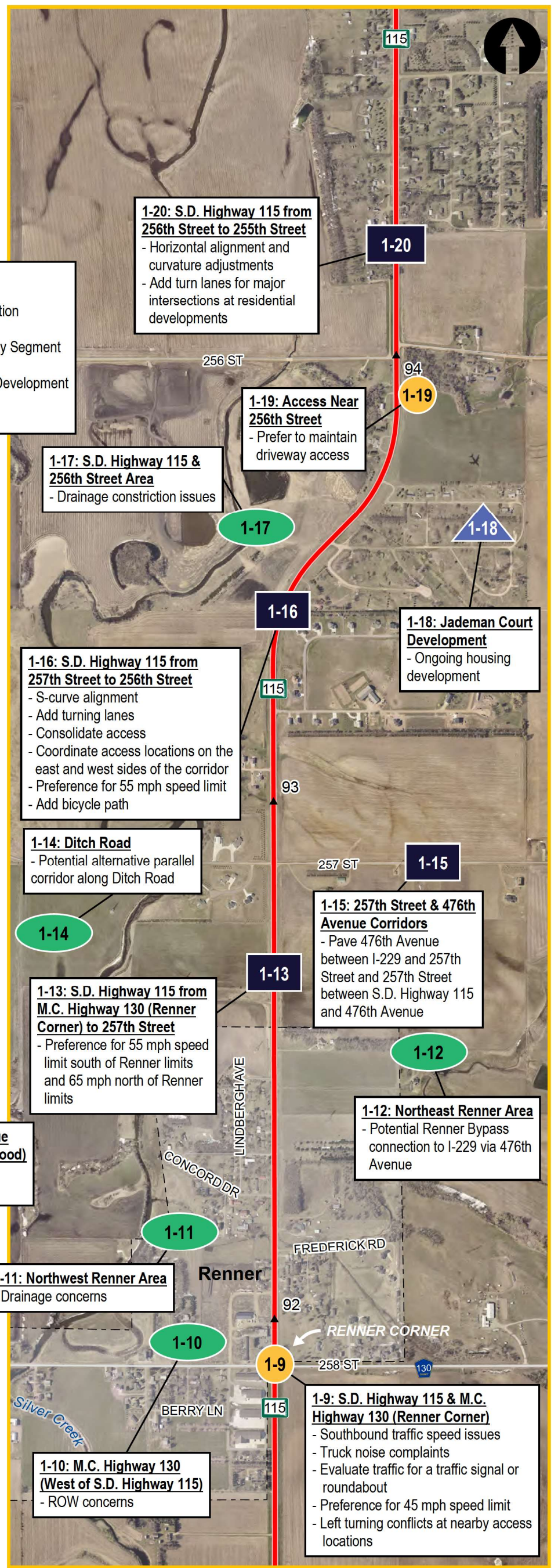
*Participants reviewing display board content at the Dell Rapids August 22, 2024 public open house meeting.*



*Participants viewing video presentation at the Dell Rapids August 22, 2024 public open house meeting.*

**Table 22: Travel Survey Summary**

Question / Topic	Travel Survey
<p>What are the three (3) areas of transportation safety you are most concerned with along the corridor?</p>	<ul style="list-style-type: none"> <li>• Intersection safety and operations (61 responses)</li> <li>• Access to homes, businesses, and fields (55 responses)</li> <li>• Traffic volumes (45 responses)</li> <li>• Number of through or passing lanes (44 responses)</li> <li>• Distracted Drivers (30 responses)</li> </ul>
<p>What three (3) goals or characteristics of the corridor should the study focus on?</p>	<ul style="list-style-type: none"> <li>• Traffic flow improvements (94 responses)</li> <li>• Safety for all modes of travel and users (66 responses)</li> <li>• Efficiency and reliability of corridor travel and users (55 responses)</li> <li>• Roadway access management and consolidation (29 responses)</li> <li>• Accessibility for all modes of travel and users (24 responses)</li> <li>• Bicycle and pedestrian routes and connections (21 responses)</li> </ul>
<p>When considering the next 10-20 years, what do you believe are the top three (3) priorities for transportation improvements along the corridor?</p>	<ul style="list-style-type: none"> <li>• Intersection improvements (98 responses)</li> <li>• Traffic flow and roadway reliability (97 responses)</li> <li>• Roadway lighting (24 responses)</li> <li>• Multimodal considerations (21 responses)</li> <li>• Protected wildlife crossings (20 responses)</li> <li>• Establishing a framework to help guide access management (18 responses)</li> </ul>



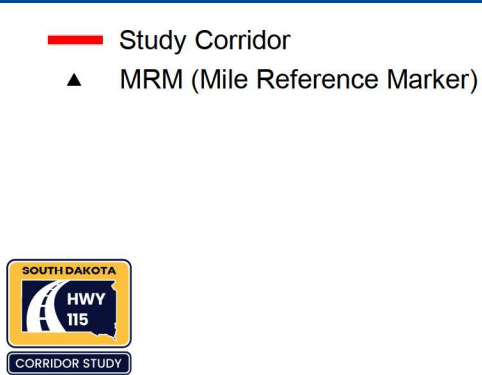
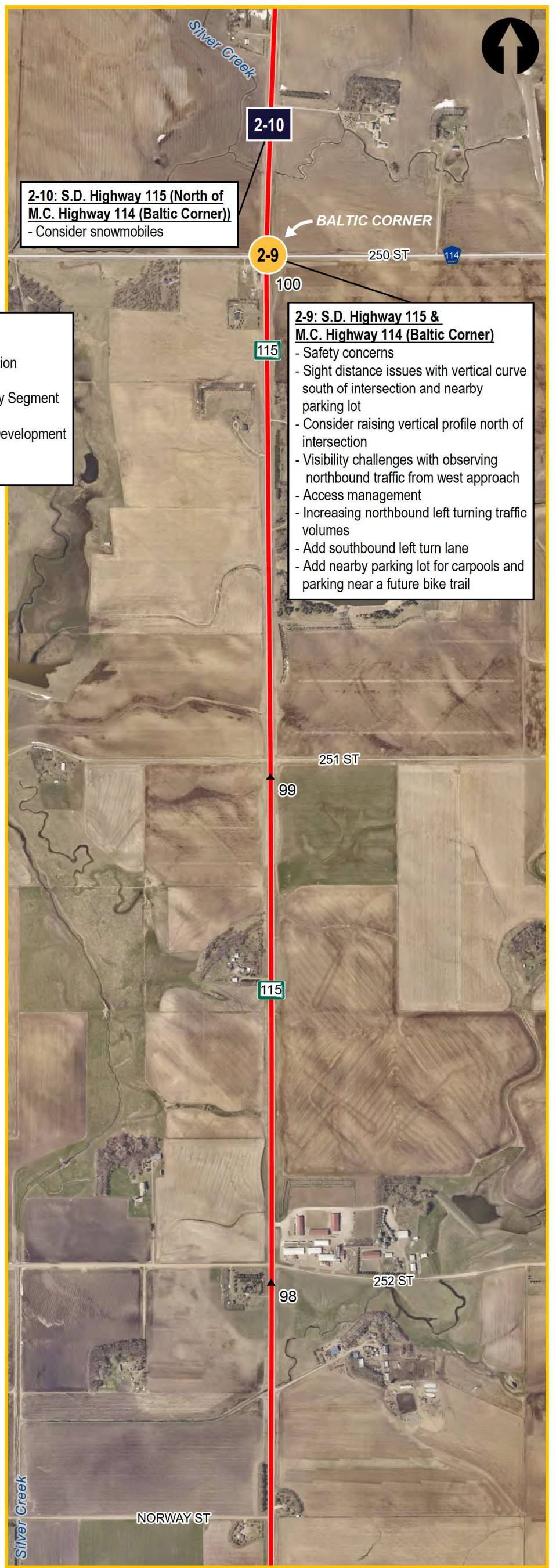
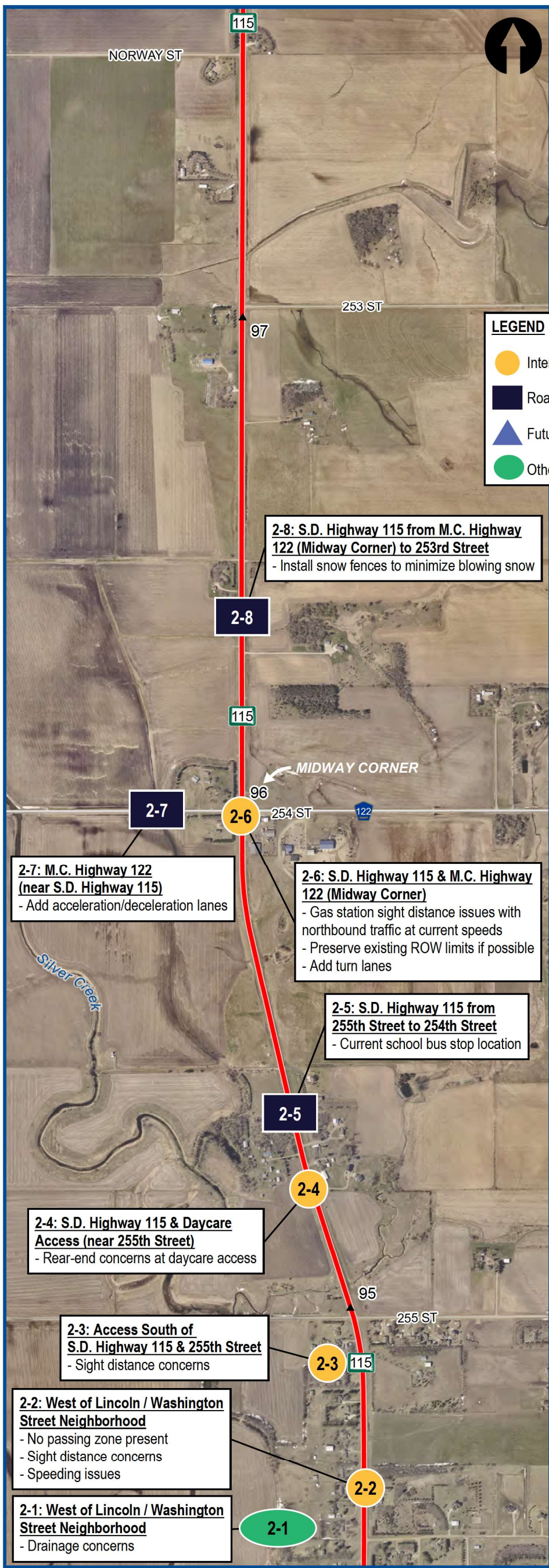
TRANSPORTATION ISSUES AND NEEDS SUMMARY  
FIGURE 29-A



— Study Corridor  
▲ MRM (Mile Reference Marker)

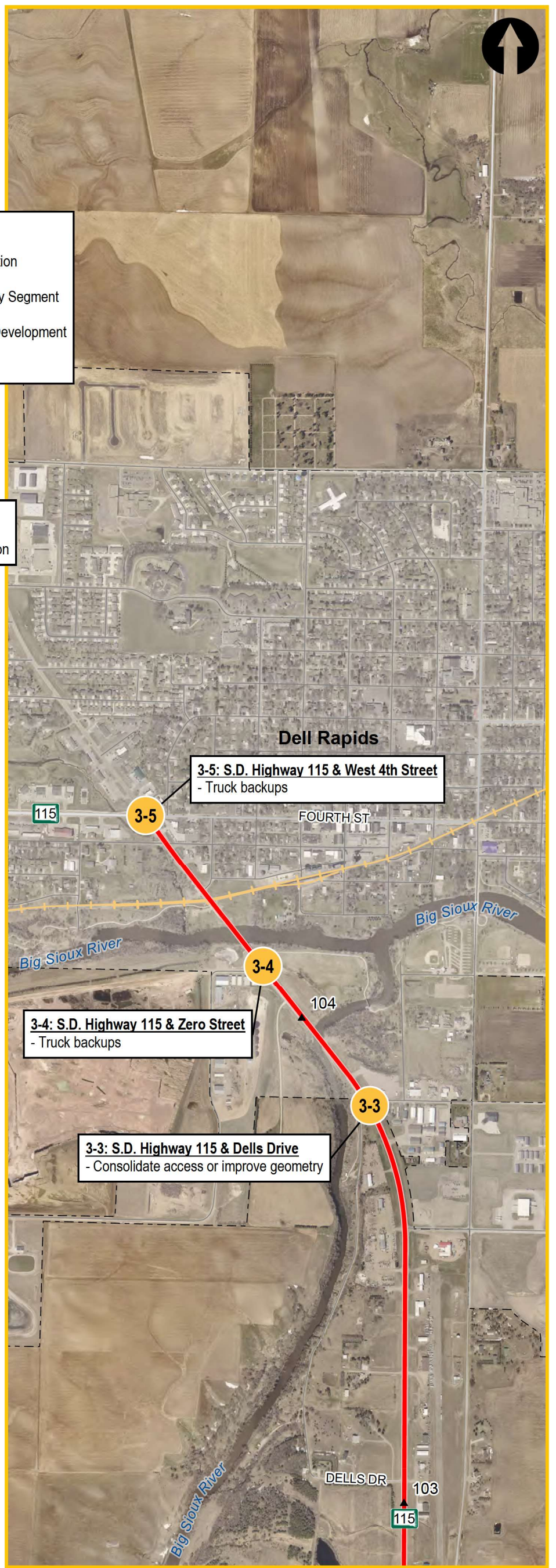
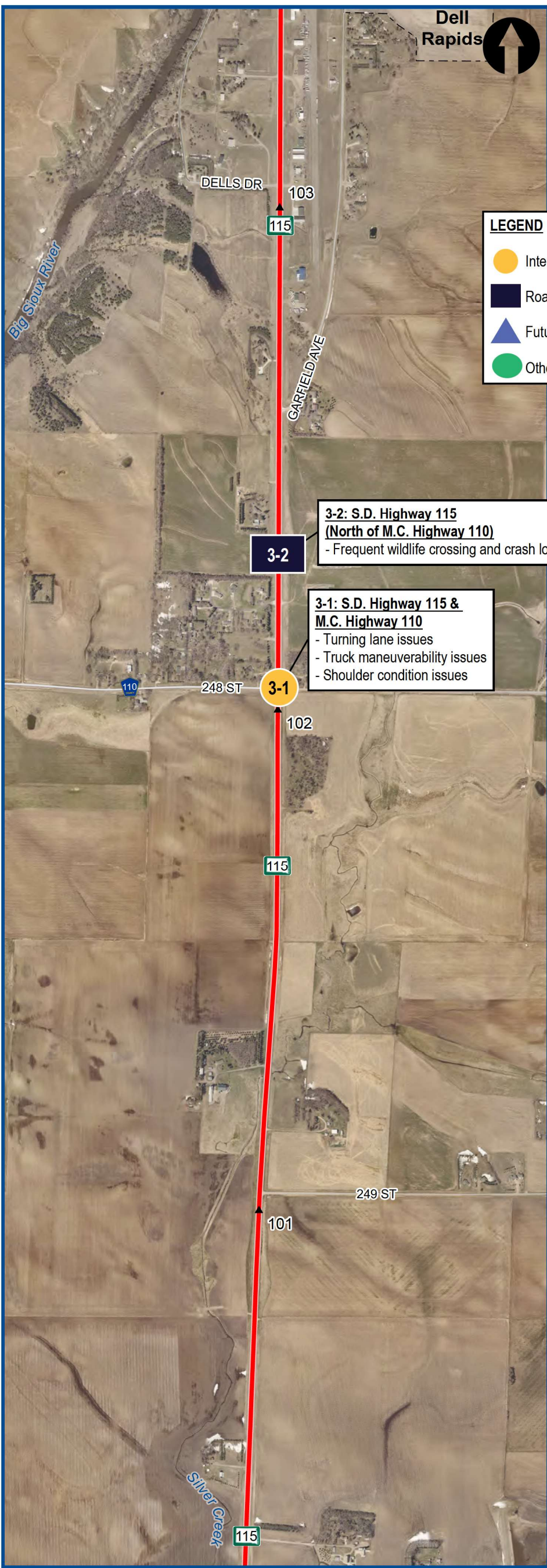


0 1,000 Feet



**TRANSPORTATION ISSUES AND NEEDS SUMMARY**  
FIGURE 29-B





**LEGEND**

- Intersection
- Roadway Segment
- ▲ Future Development
- Other



- Study Corridor
- ▲ MRM (Mile Reference Marker)



**TRANSPORTATION ISSUES AND NEEDS SUMMARY**  
FIGURE 29-C



## 11. Concept Development

Study process Step 2 began with the first SAT workshop on October 28, 2024 to brainstorm potential concepts to address identified transportation issues and needs.

The S.D. Highway 115 corridor was subdivided into the following segments for the concept development phase:

- A. S.D. Highway 115: Sioux Falls to South of Midway Corner
- B. S.D. Highway 115: Midway Corner to M.C. Highway 110
- C. S.D. Highway 115: North of M.C. Highway 110 to Dell Rapids

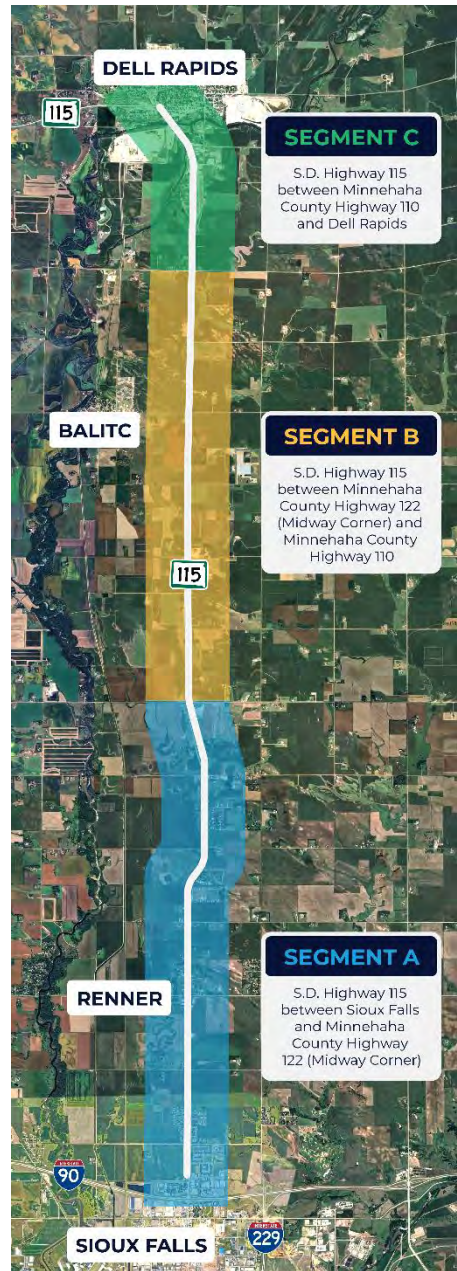
Potential typical sections with different urban and rural elements, such as number of lanes, median widths, curbs, and roadside ditches where applicable, were identified for each of the three segments to establish a framework for concept development. Overall, 29 different intersection and segment conceptual layouts were generated throughout the corridor. Each intersection concept includes warranted turn lanes and was developed to meet LOS goals established for this study. A preliminary cost was calculated for each concept, though all costs were considered illustrative given the different corridor cross-sections each could be paired with in a larger scenario.

Throughout this process, supplemental study advisory team and small group workshops and meetings were also held on specific topics such as access management, blowing snow, Intelligent Transportation System (ITS) elements, and project timeframes. Feedback from these meetings aided in further refinement and evaluation of concepts in preparation for the development of corridor scenarios. Meeting minutes from these discussions are provided in **Appendix K**.

## 12. Corridor Scenario Development

Prior to the second set of stakeholder and public meetings, the study advisory team reconvened to develop feasible corridor scenarios reflective of potential future projects as part of study process Step 3. Key considerations in this collaborative step of the study process included preliminary traffic operations and safety analyses, public and stakeholder feedback, preliminary assessments of cost, constructability, and feasibility, and input from the study advisory team and others within the SDDOT. Meeting minutes from the workshop are included in **Appendix K**.

The three corridor scenario segments are shown in **Figure 30**. A compiled list of all scenarios with layouts is described in the subsequent chapters.



**Figure 30: S.D. Highway 115 Corridor Scenario Segments**

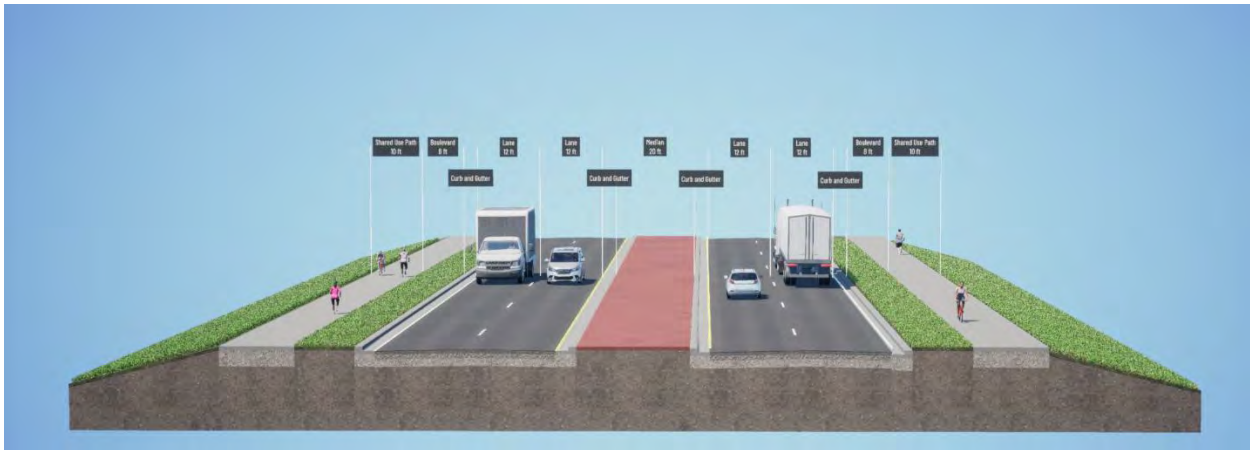
Supporting analysis documentation for each of the corridor scenarios is provided in the following technical memos and reports:

- *Future Build Conditions Traffic Operations technical memo (Appendix H)*
- *67<sup>th</sup> Street North Traffic Signal Warrants Analysis technical memo (Appendix I)*
- *S.D. Highway 115 Passing Lane technical memo (Appendix M)*
- *Corridor Access Management Review technical memo (Appendix N)*
- *Predictive Safety Analysis for S.D. Highway 115 Corridor Study Area technical memo (Appendix O)*
- *Public Meeting #2 Summary Report (Appendix J)*

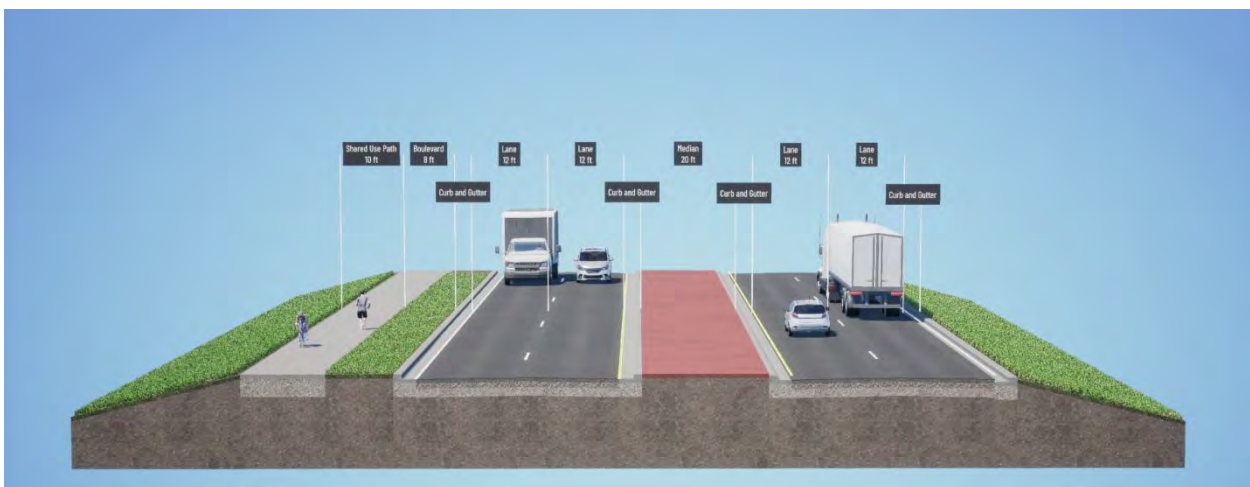
## 13. Typical Section Options

Typical roadway and bridge sections applicable to the corridor scenarios are listed below and shown in **Figure 31** through **Figure 37**.

- Urban 4-Lane Divided (Raised Median) Corridor Typical Section with Shared Use Path on Both Sides (**Figure 31**)
- Urban 4-Lane Divided (Raised Median) Corridor Typical Section with Shared Use Path on One Side (**Figure 32**)
- Rural 4-Lane Divided (Depressed Median) Corridor Typical Section (**Figure 33**)
- Rural Side-by-Side Passing Lanes Corridor Typical Section (**Figure 34**)
- Suburban 3-Lane Corridor Typical Section (**Figure 35**)
- Urban 4-Lane Undivided Big Sioux River Bridge Typical Section (**Figure 36**)
- Suburban 3-Lane Big Sioux River Bridge Existing Typical Section (**Figure 37**)



**Figure 31: Urban 4-Lane Divided (Raised Median) Corridor Typical Section with Shared Use Path on Both Sides**



**Figure 32: Urban 4-Lane Divided (Raised Median) Corridor Typical Section with Shared Use Path on One Side**





Figure 36: Urban 4-Lane Undivided Big Sioux River Bridge Typical Section

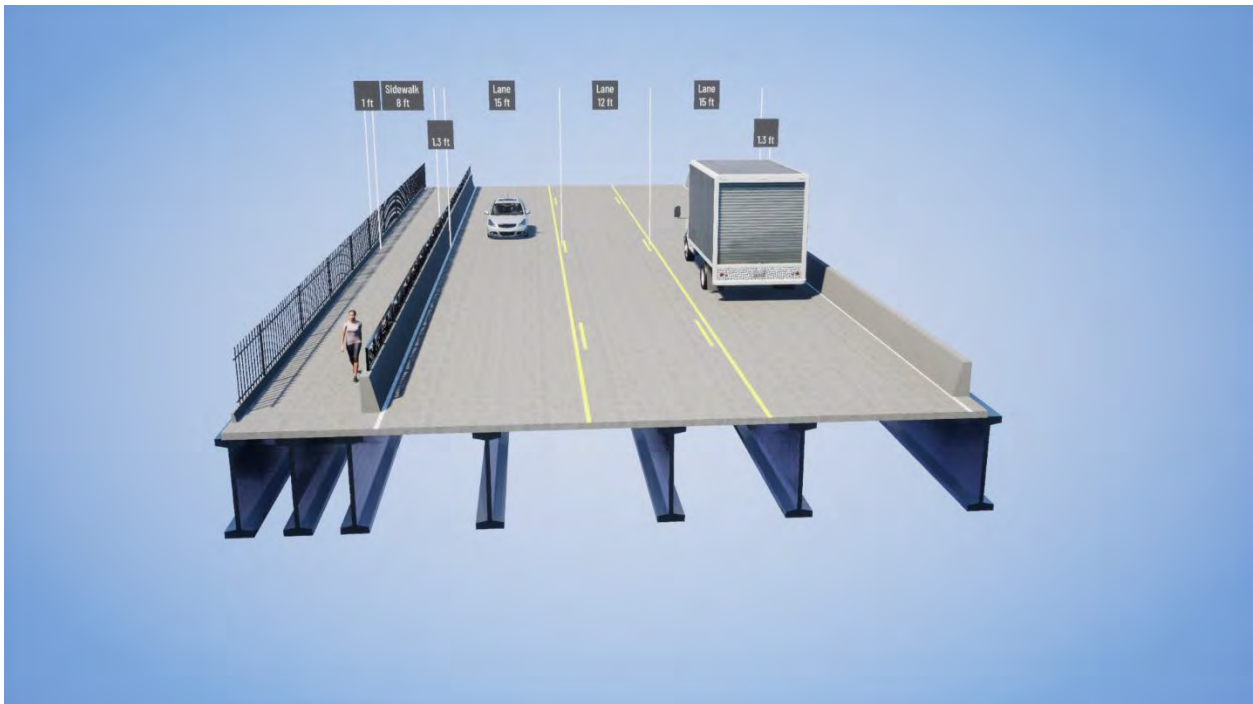


Figure 37: Suburban 3-Lane Big Sioux River Bridge Existing Typical Section

## 14. S.D. Highway 115 Sioux Falls to South of Midway Corner Scenarios

Primary transportation needs driving the S.D. Highway 115 segment from Sioux Falls to Midway Corner scenario development centered on intersection and segment capacity, safety, and access management, including:

- Improve safety and capacity at the S.D. Highway 115 intersection with M.C. Highway 130 (Renner Corner)
- Improve safety, capacity, reliability, access management, and multimodal user facilities along S.D. Highway 115 corridor between Sioux Falls and Midway Corner

Due to limited available right-of-way (ROW) and the anticipated strong demand for additional lane capacity, one primary corridor scenario and several major intersection scenarios were developed to address these needs. These scenarios reflect potential projects programmed in the 2030-2033 Developmental Statewide Transportation Improvement Program (STIP).

### Scenario A-1: Urban 4-Lane Divided (Raised Median) Corridor Improvements

- *Urban 4-lane divided (raised median) section (Figure 38)*
- *Access management treatments identified in access plan*

### Intersection Option: S.D. Highway 115 / Cliff Avenue & East Dike Place/Drive Intersection Improvements

- *Maintain existing traffic signal and lane configurations (Figure 39)*

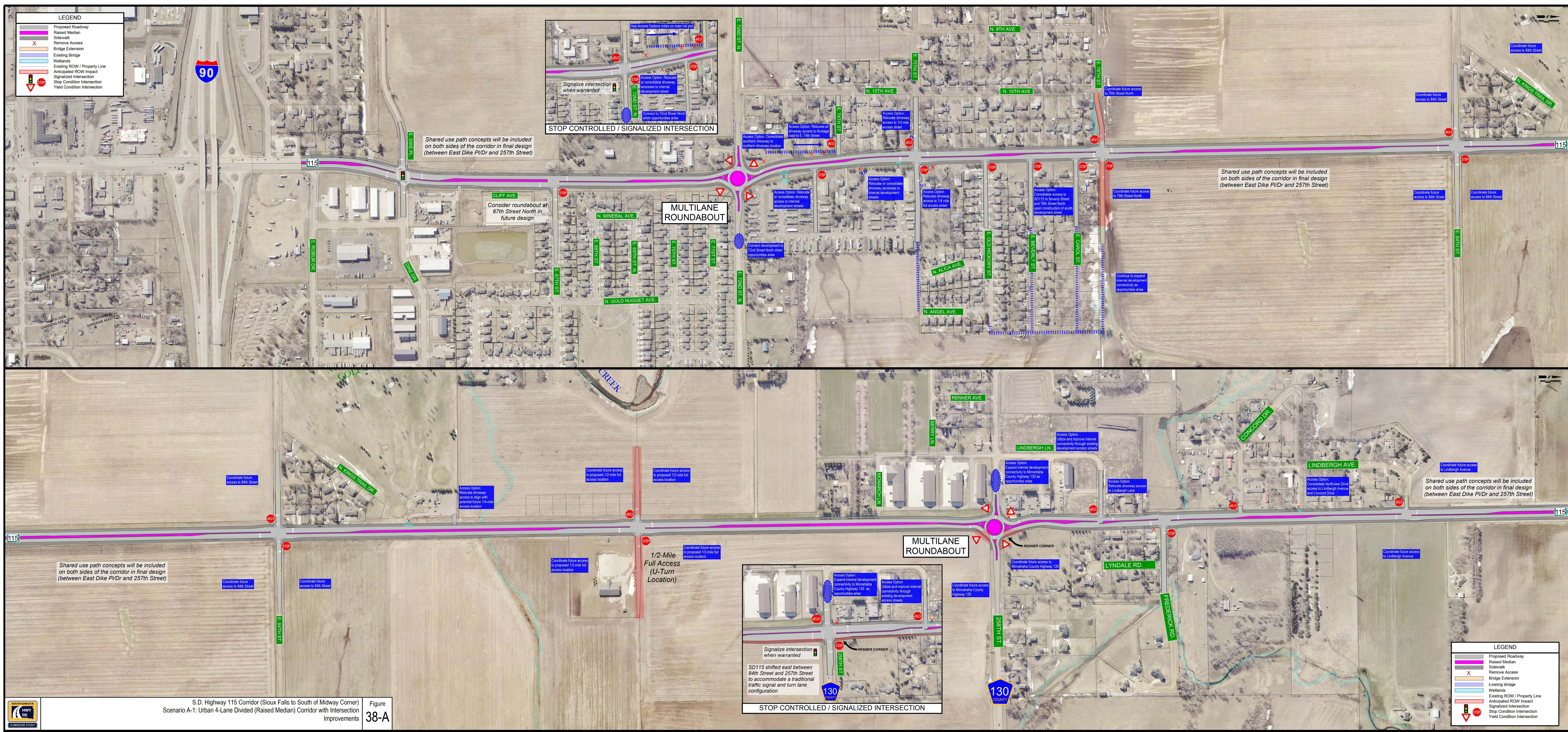
### Intersection Option: S.D. Highway 115 / Cliff Avenue & 72<sup>nd</sup> Street North Intersection Improvements

- *Conventional two-way stop-controlled / signalized intersection option (Figure 40A)*
  - *Includes warranted S.D. Highway 115 mainline turn lanes*
- *Multilane hybrid roundabout (Figure 40B)*

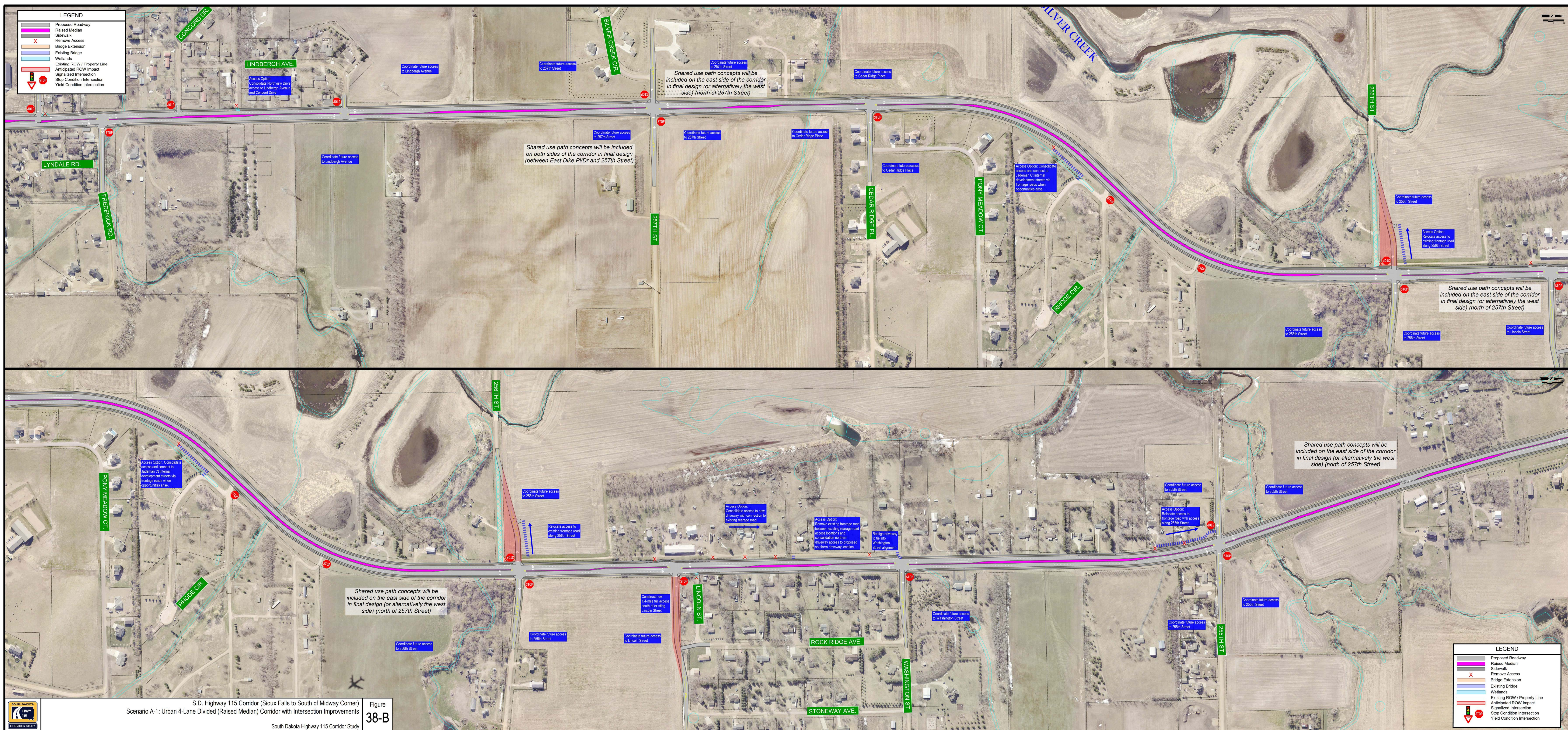
### Intersection Option: S.D. Highway 115 & M.C. Highway 130 (Renner Corner) Intersection Improvements

- *Conventional two-way stop-controlled / signalized intersection option (Figure 41A)*
  - *Includes warranted S.D. Highway 115 mainline turn lanes*
- *Multilane hybrid roundabout option (Figure 41B)*

**Figure 38** through **Figure 41** provide an overview of the proposed scenario improvements, with corridor layouts typically displaying multilane hybrid roundabout intersections at 72<sup>nd</sup> Street North and M.C. Highway 130 (Renner Corner) with inset views of conventional intersection alternatives. Each of the scenarios support long-range goals identified in the corridor study's **Bicycle and Pedestrian Plan** and the **Access Plan**.



S.D. Highway 115 Corridor (Sioux Falls to South of Midway Corner)  
 Scenario A-1: Urban 4-Lane Divided (Raised Median) Corridor with Intersection Improvements  
 Figure 38-A

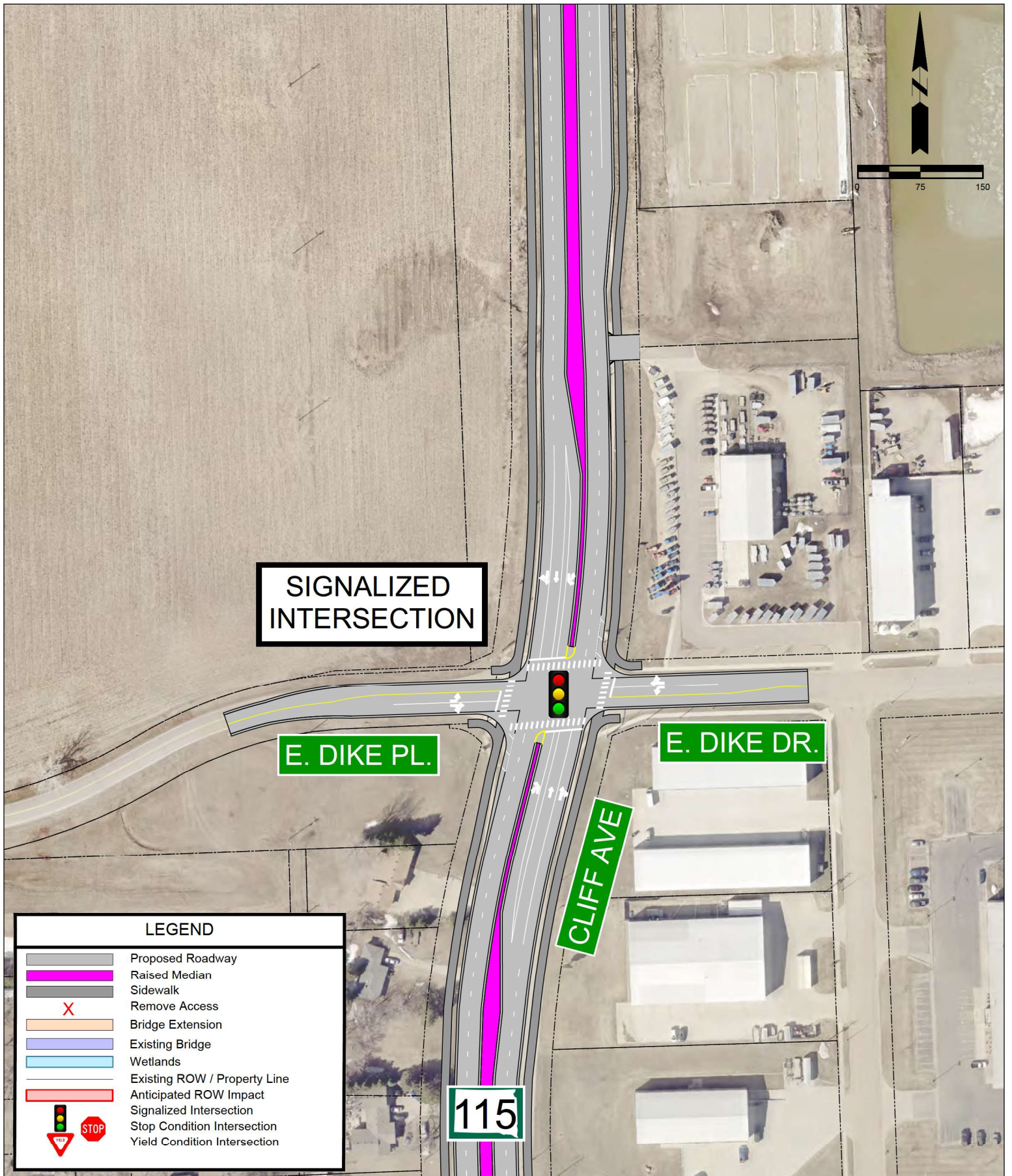


- LEGEND**
- Proposed Roadway
  - Raised Median
  - Sidewalk
  - Remove Access
  - Bridge Extension
  - Existing Bridge
  - Wetlands
  - Existing ROW / Property Line
  - Anticipated ROW Impact
  - Signalized Intersection
  - Stop Condition Intersection
  - Yield Condition Intersection

- LEGEND**
- Proposed Roadway
  - Raised Median
  - Sidewalk
  - Remove Access
  - Bridge Extension
  - Existing Bridge
  - Wetlands
  - Existing ROW / Property Line
  - Anticipated ROW Impact
  - Signalized Intersection
  - Stop Condition Intersection
  - Yield Condition Intersection

S.D. Highway 115 Corridor (Sioux Falls to South of Midway Corner)  
 Scenario A-1: Urban 4-Lane Divided (Raised Median) Corridor with Intersection Improvements  
 South Dakota Highway 115 Corridor Study

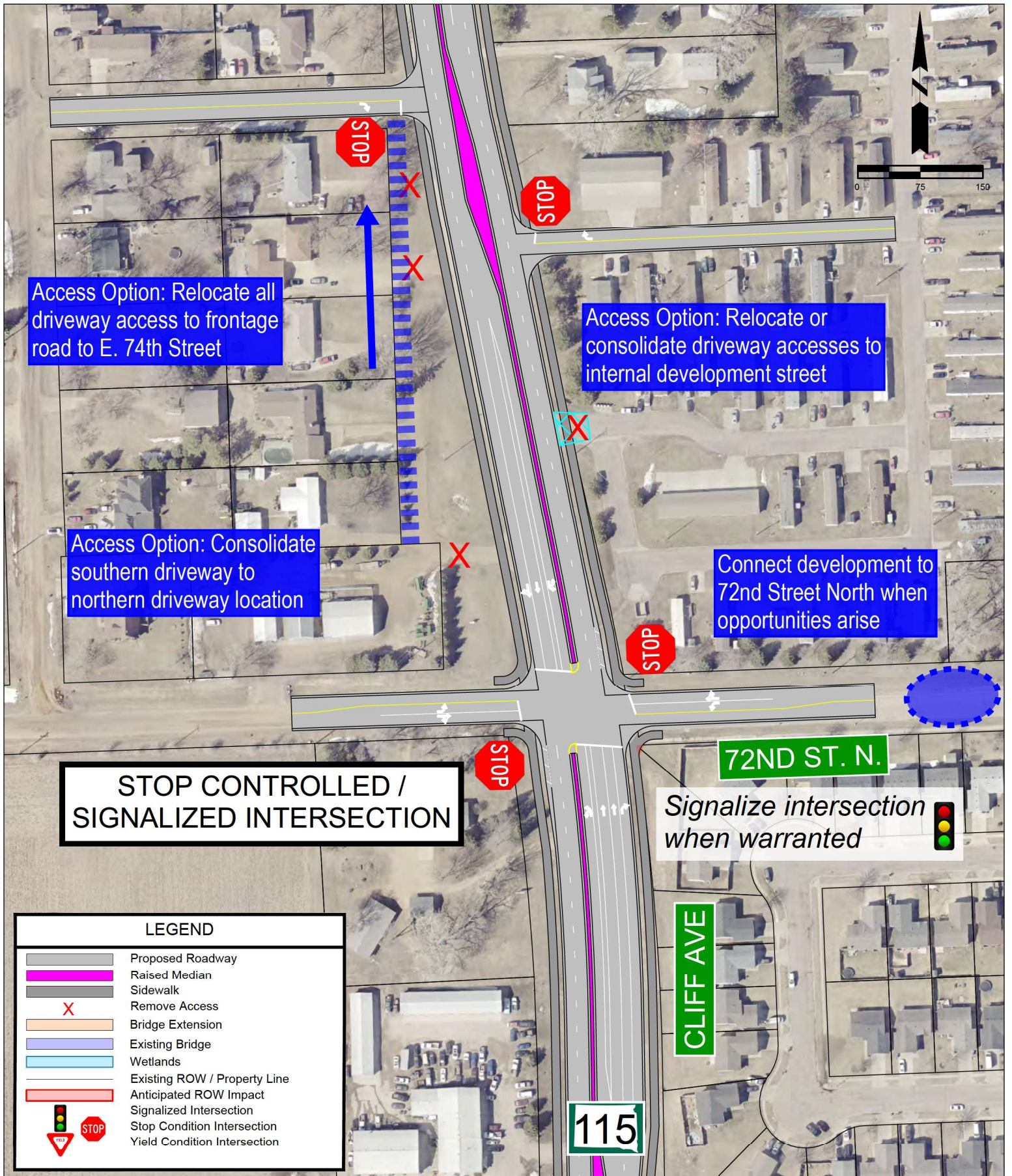
Figure  
**38-B**



S.D. Highway 115 / Cliff Avenue & East Dike Place/Drive Intersection  
 Scenario A-1: Urban 4-Lane Divided (Raised Median) Corridor with Intersection Improvements  
 Intersection Configuration: Multilane Traffic Signal with Turn Lanes (Existing Configuration)

Figure  
 39

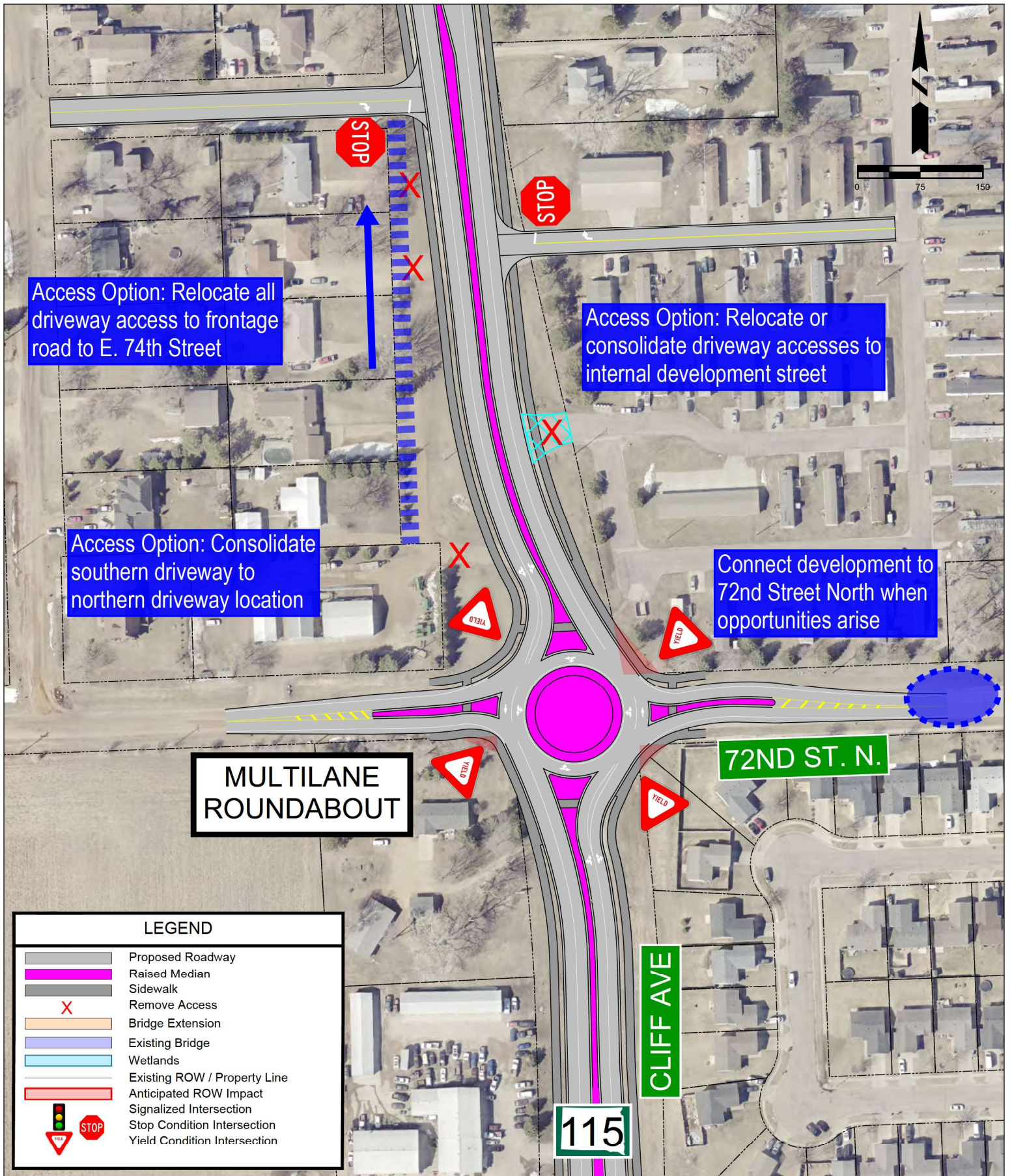




S.D. Highway 115 / Cliff Avenue & 72nd Street North Intersection  
 Scenario A-1: Urban 4-Lane Divided (Raised Median) Corridor with Intersection Improvements  
 Intersection Configuration: Multilane Traffic Signal with Turn Lanes (A-1a)

Figure  
**40-A**

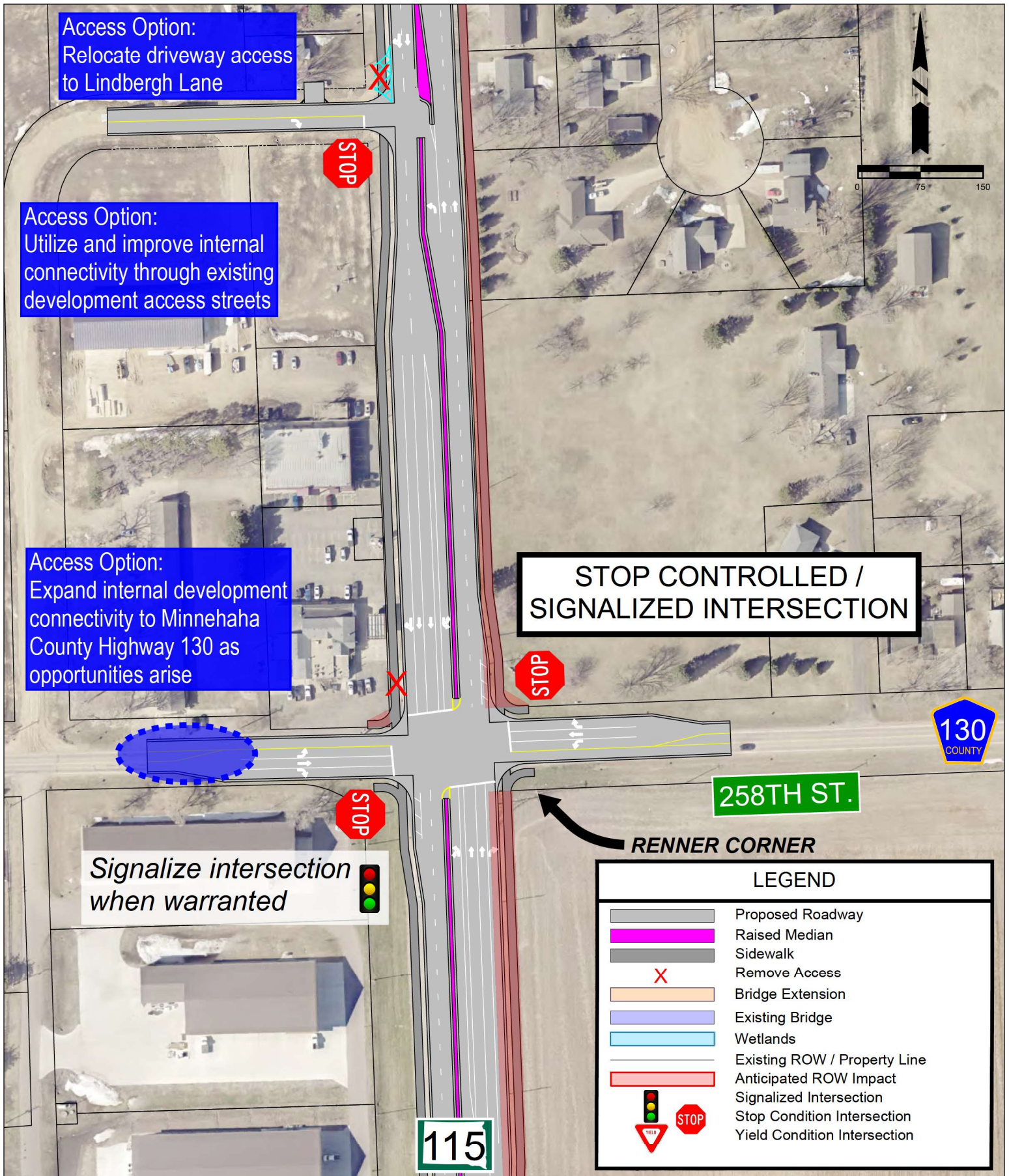




S.D. Highway 115 / Cliff Avenue & 72nd Street North Intersection  
 Scenario A-1: Urban 4-Lane Divided (Raised Median) Corridor with Intersection Improvements  
 Intersection Configuration: Multilane Roundabout (A-1b)

Figure  
**40-B**

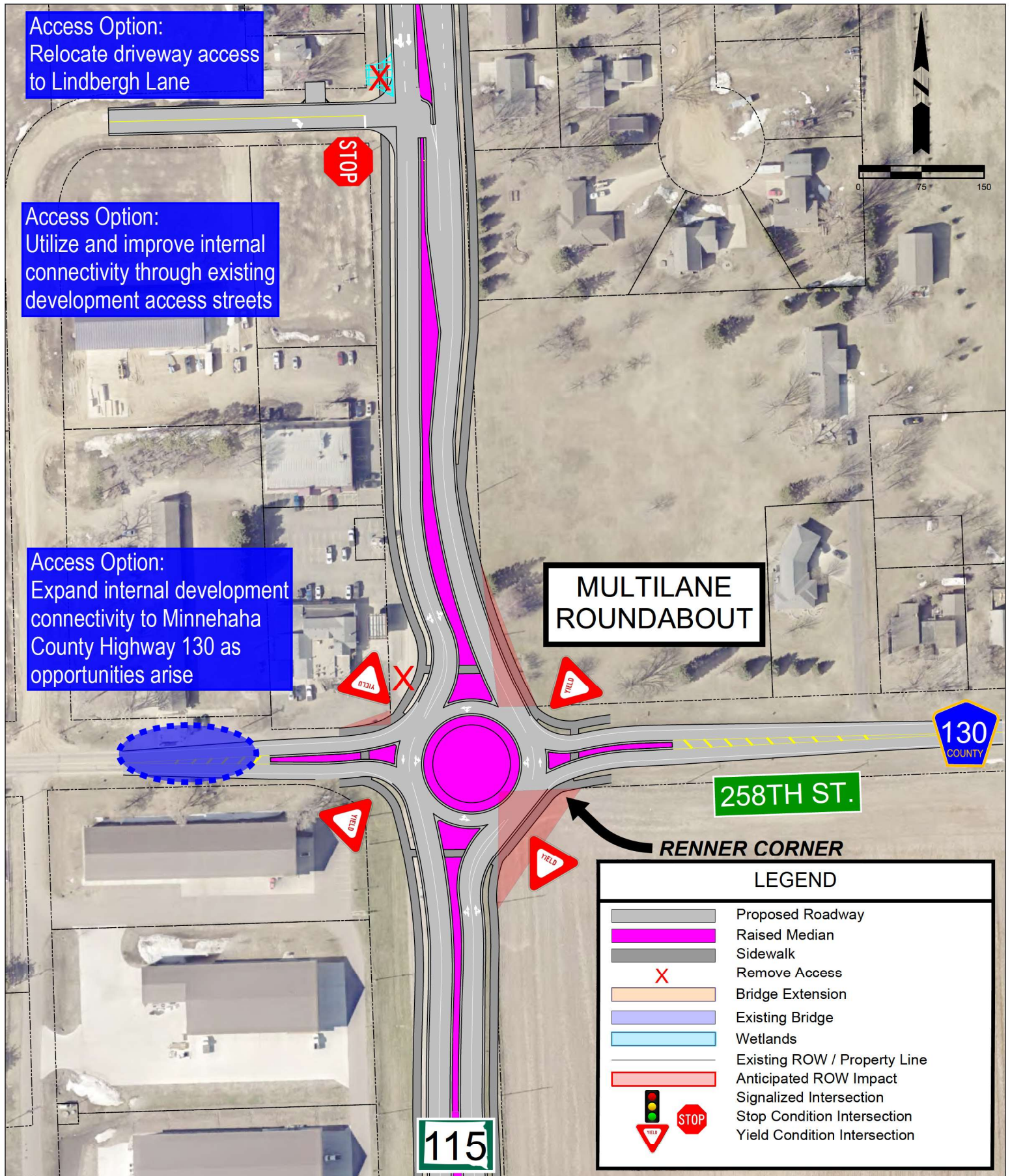




S.D. Highway 115 & M.C. Highway 130 (Renner Corner) Intersection  
 Scenario A-1: Urban 4-Lane Divided (Raised Median) Corridor with Intersection Improvements  
 Intersection Configuration: Multilane Traffic Signal with Turn Lanes (A-1a)

Figure  
**41-A**





S.D. Highway 115 & M.C. Highway 130 (Renner Corner) Intersection  
 Scenario A-1b: Urban 4-Lane Divided (Raised Median) Corridor with Intersection Improvements  
 Intersection Configuration: Multilane Roundabout (A-1b)

Figure  
**41-B**

## 14.1 Design Notes

Due to anticipated demand for additional lane capacity and limited available right-of-way (ROW) and ditch drainage space, the sole feasible corridor concept is Scenario A-1. This scenario features an urban 4-lane divided (raised median) corridor which provides the additional lane capacity, minimizes ROW needs, manages dense access locations, and aligns with anticipated future storm sewer and drainage needs. Multilane roundabouts reflect a hybrid design with two lanes in each direction along S.D. Highway 115 / Cliff Avenue (mainline) and single lanes in each direction along intersecting streets, while the conventional traffic signal intersections reflect warranted and operationally needed turn lanes at major intersections.

Each identified major intersection, which meets access spacing requirements, includes U-turn movement opportunities with corresponding U-turn bump-outs. In current rural areas without existing intersections that meet spacing requirements, the concepts identify full access and U-turn movement opportunities at ½-mile increments. Future development-driven access locations at ¼-mile increments, consistent with access spacing guidelines, are identified in the **Access Plan**.

The intersection at 67<sup>th</sup> Street North, a non-major study intersection, is included in all proposed concepts as a full access conventional stop-controlled intersection. Based on the signal warrant analysis (**Appendix I**), a signal is not warranted under proposed multilane build conditions if posted speeds are lowered to match the 40 mph speed limit south of this location. A roundabout configuration could be explored as an additional concept at this location in future design projects.

Multimodal features include a 10-ft. shared use path on both sides of the corridor through 257<sup>th</sup> Street based on City of Sioux Falls preferences in identified future growth areas. From 257<sup>th</sup> Street to M.C. Highway 122 (Midway Corner), a 10-ft. shared use path is included on the east side of the corridor only, based on the more consistent presence of residential development and the Vollan Oil gas station (at Midway Corner) on the east side of the corridor. Concepts depict shared use paths on the corridor throughout the overall segment, thus including a potential alternative shared use path location on the west side of the corridor from 257<sup>th</sup> Street to M.C. Highway 122 (Midway Corner).

## 14.2 Traffic Operations Analysis

Year 2055 Build condition traffic operations for the three S.D. Highway 115 / Cliff Avenue analysis intersections in this area are shown in the following tables. East Dike Place/Drive is expected to operate with LOS B with the existing traffic signal control and lane configurations. 72<sup>nd</sup> Street North and M.C. Highway 130 (Renner Corner) are expected to operate with LOS A as roundabouts and between LOS B and LOS C as traffic signals.

**Table 23: S.D. Highway 115 Sioux Falls to South of Midway Corner – Multilane Highway Intersection Operations (2055 Build)**

S.D. Highway 115 Intersection		S.D. Highway 115 Section	Intersection Control	Measure	AM		PM	
					Delay (s/veh)	LOS	Delay (s/veh)	LOS
Scenario A-1	M.C. Highway 130 (Renner Corner)	Multilane	Roundabout	Overall	8.1	A	8.8	A
			Traffic Signal	Overall	21.4	C	23.8	C
	72 <sup>nd</sup> Street North	Multilane	Roundabout	Overall	8.2	A	8.0	A
			Traffic Signal	Overall	17.1	B	17.1	B
	East Dike Place/Drive	Multilane	Traffic Signal (Existing)	Overall	12.4	B	15.3	B

The required number of S.D. Highway 115 mainline lanes through the existing 2-lane highway segment was reviewed through an incremental process documented in three memos. The *Existing and Future No Build Condition Traffic Operations Analysis technical memo* identified need for additional lane capacity under future no build conditions (**Appendix G**). The *Passing Lanes Analysis technical memo* provided a preliminary analysis of feasible locations and lengths for passing lanes along the corridor, which indicated passing lanes were not feasible along this segment due to horizontal curvature, limited ROW, and dense access locations (**Appendix M**). The *Build Conditions Traffic Operations Analysis technical memo* (**Appendix H**) reviewed the multilane highway corridor segment LOS, which is summarized in **Table 24**. With a multilane highway corridor, segment LOS is expected to be LOS A or B throughout this segment.

**Table 24: S.D. Highway 115 Sioux Falls to South of Midway Corner – Multilane Highway / Urban Street Segment Operations (2055 Build)**

Scenario	From	To	Length (mi)	Highway Type	AM LOS		PM LOS	
					SB	NB	SB	NB
A-1	M.C. Highway 130 (Renner Corner)	M.C. Highway 122 (Midway Corner)	4.1	Multilane	A	A	A	A
	78 <sup>th</sup> Street North	M.C. Highway 130 (Renner Corner)	1.5	Multilane	A	A	A	B
	72 <sup>nd</sup> Street North	78 <sup>th</sup> Street North	0.5	Multilane	B	A	A	B
	East Dike Place/Drive	72 <sup>nd</sup> Street North	0.5	Multilane	B	A	B	B

### 14.3 Predictive Safety Analysis

Results from the predictive safety analysis are shown in **Table 25**.

**Table 25: S.D. Highway 115 Sioux Falls to South of Midway Corner – Predicted Crashes per Year (2031 to 2055)**

Scenario	F & I Crashes	Change from No Build + increase - decrease (Multilane Sensitivity Analysis)	Total Crashes	Change from No Build + increase - decrease (Multilane Sensitivity Analysis)
No Build ( <i>baseline</i> )	11.4	-	32.4	-
No Build – Undivided Multilane ( <i>baseline sensitivity analysis</i> )	16.2	+42%	33.4	+3%
Scenario A-1a Build (Urban 4-Lane Divided with Conventional Stop-Control / Signals)	7.2	-37% (-56%)	22.8	-30% (-32%)
Scenario A-1a Build (Urban 4-Lane Divided with Multilane Roundabouts)	5.1-5.4	-53% to -55% (-67% to -68%)	18.0-19.1	-41% to -44% (-43% to -46%)

The multilane highway scenarios with either conventional stop-control / signalized intersections or multilane roundabouts (Scenarios A-1a and A-1b) both show decreases in number of F&I crashes and total crashes from the no build condition and no build (multilane sensitivity analysis) which models the facility as an undivided multilane highway to showcase the safety benefits of the raised median. Overall, the multilane highway with multilane roundabouts provided the greatest predicted safety benefit.

### 14.4 Potential Impacts and Public Comment

Potential impacts on this segment of the corridor include ROW needs, environmental and wetland challenges, and long-term drainage facility considerations. In Scenario A-1, the corridor generally fits within existing ROW except in intersection areas. In particular, the conventional intersection concepts tend to require more additional ROW than the multilane roundabouts (e.g., Renner Corner) due to the warranted left and right turn lanes which feature long turn lane lengths based on the existing posted speeds of 55 or 65 mph. Portions of this corridor segment are currently within the 100-year floodplain between East Dike Place/Drive and 78<sup>th</sup> Street North, near 256<sup>th</sup> Street, and north of 255<sup>th</sup> Street.

Based on the environmental challenges and the proposed corridor concept utilizing most of the available ROW, drainage will be important consideration in future design efforts and projects. These projects will develop specific drainage designs and recommendations in relation to the recommended corridor typical sections.

Additional access concepts involving consolidation or relocation of driveways or the construction of frontage roads will likely represent more notable property impacts if implemented. These concepts will help further reduce conflict points and improve safety along the main line corridor.

Public and stakeholder feedback was mostly supportive of the potential scenario improvements. While a multilane highway was generally desired, commenters also expressed concern with this corridor investment when I-29 is located several miles to the east of S.D. Highway 115. Both favorable and unfavorable comments were provided regarding the multilane roundabouts and raised medians. Overall, there was support for both elements when considering the notable safety benefits and in some cases reduced ROW needs for the multilane roundabouts and raised median corridor. Many commenters expressed a desire to lower existing speed limits in this area.

## 14.5 Future Pavement and Structure Needs Summary

A summary of upcoming major investment needs along the corridor segment includes:

- Structures
  - No bridge structures are located on this segment
  - 36 culverts
- Roadway pavement (*SDDOT Needs Book* timeframe)
  - Reconstruction eligible (starting 2025):
    - S.D. Highway 115: 72<sup>nd</sup> Street North to 78<sup>th</sup> Street North
    - S.D. Highway 115: M.C. Highway 130 (Renner Corner) Area (additional projects eligible in 2040-2045)
    - S.D. Highway 115: 255<sup>th</sup> Street to M.C. Highway 122 (Midway Corner) (additional projects eligible in 2030-2035)
  - Resurfacing only (starting 2025):
    - S.D. Highway 115: 78<sup>th</sup> Street North to north of 84<sup>th</sup> Street (additional project eligible in 2040-2045)
    - S.D. Highway 115: North of 84<sup>th</sup> Street to M.C. Highway 130 (Renner Corner) (additional projects eligible in 2040-2045)
    - S.D. Highway 115: M.C. Highway 130 (Renner Corner) to north of 257<sup>th</sup> Street
    - S.D. Highway 115: North of 257<sup>th</sup> Street area
    - S.D. Highway 115: North of 257<sup>th</sup> Street area to 255<sup>th</sup> Street (additional projects eligible in 2035-2040)

In addition, a recent joint and spall repair project along S.D. Highway 115 between 72<sup>nd</sup> Street North and M.C. Highway 110 (STIP Project 09LD) was completed in 2025. A future project is currently identified along S.D. Highway 115 from 72<sup>nd</sup> Street North to M.C. Highway 110 in the 2030-2033 Developmental STIP (PCN 08LM).

## 14.6 Evaluation Summary and Scenario Recommendations

**Table 26** presents an evaluation summary matrix of traffic operations, predictive safety, ROW and cost, and potential environmental impact measures. The overarching benefits and drawbacks of each scenario are summarized in **Table 27**. Based on a review of the evaluation matrix, benefits and drawbacks, and timelines for next major investment needs, long-range recommendations and potential timelines are summarized in **Table 28**.

**Table 26: S.D. Highway 115 Sioux Falls to South of Midway Corner Corridor Scenario Summary Matrix**

Scenario	Traffic Operations				Predictive Safety		ROW & Costs			Environmental Impacts
	Intersection Operations (2055 LOS)	S.D. Highway 115 Corridor Operations (2055 LOS)	Access Management	Corridor Reliability & Driver Expectancy	F&I Crashes	Total Crashes	ROW Acquisition	Construction & ROW Costs	Impact to Private Property	Potential Impacts
	AM / PM	AM / PM	5 - Best 3 - Middle 1 - Least	5 - Best 3 - Middle 1 - Least	Average Annual # Crashes	Average Annual # Crashes	Acres	\$ mil	5 - Least 3 - Middle 1 - Most	Low, Medium, High
<b>A-1a</b>	LOS B or C	B / C	4	4	7.2	22.8	5.6	\$112.5	3	Medium
<b>A-1b</b>	LOS A	B / C	5	5	5.1-5.4	18.0-19.1	5.3	\$114.0	4	Medium
<b>No Build</b>	LOS D to LOS F	B-D / D-E	2	2	11.4	32.4	0	\$0	5	Low

**Table 27: S.D. Highway 115 Sioux Falls to South of Midway Corner Corridor Scenario Benefits and Drawbacks**

Scenario	Benefits	Drawbacks
<b>No Build (baseline)</b>	<ul style="list-style-type: none"> <li>No environmental impacts, cost, or property impacts.</li> </ul>	<ul style="list-style-type: none"> <li>Does not improve corridor safety.</li> <li>Does not improve corridor capacity or reliability.</li> <li>Does not improve access management and reduce conflict points along the corridor.</li> <li>Does not add warranted turn lanes at intersections.</li> <li>Does not add multimodal improvements.</li> </ul>
<b>Scenario A-1a (Urban 4-Lane Divided with Conventional Intersections)</b>	<ul style="list-style-type: none"> <li>Adds corridor capacity and reliability.</li> <li>Adds shared use paths (multimodal improvements).</li> <li>Adds warranted intersection turn lanes.</li> <li>Provides predicted reduction in crashes.</li> </ul>	<ul style="list-style-type: none"> <li>Medium environmental impact to wetlands.</li> <li>Requires future drainage facility upgrades.</li> <li>Slightly greater ROW needs.</li> </ul>
<b>Scenario A-1b (Urban 4-Lane Divided with Multilane Roundabouts)</b>	<ul style="list-style-type: none"> <li>Adds corridor capacity and reliability.</li> <li>Adds shared use paths (multimodal improvements).</li> <li>Greatest predicted reduction in crashes.</li> <li>Provides greater traffic calming effect.</li> <li>Slightly less ROW needs.</li> </ul>	<ul style="list-style-type: none"> <li>Medium environmental impact to wetlands.</li> <li>Requires future drainage facility upgrades.</li> <li>ROW needs.</li> </ul>

**Table 28: S.D. Highway 115 Corridor Sioux Falls to South of Midway Corner Recommendations**

**Corridor Scenario:** Scenario A-1b (Urban 4-Lane Divided (Raised Median) Corridor with Multilane Roundabouts)

**Cross-section:** Construct an urban 4-lane divided corridor with recommended improvements  
**Timeline:**

*2032 and earlier*

- Reconstruct S.D. Highway 115 from East Dike Place/Drive to 78<sup>th</sup> Street North to reflect Scenario A-1.
- Reconstruct 72<sup>nd</sup> Street North intersection as a Multilane Roundabout to reflect Scenario A-1b.
- Address access around 72<sup>nd</sup> Street North intersection and residential neighborhoods through 78<sup>th</sup> Street North.
- Construct median through intersection functional areas (top priority).
- Construct access roads for minor access points if possible, or, maintain as RIRO access and require access from minor streets when redeveloped to higher land use.

*2032 – 2043*

- Reconstruct S.D. Highway 115 from 78<sup>th</sup> Street North to M.C. Highway 122 (Midway Corner) to reflect Scenario A-1.
- Reconstruct M.C. Highway 130 (Renner Corner) intersection as a Multilane Roundabout to reflect Scenario A-1b.
- Address access around M.C. Highway 130 (Renner Corner) and M.C. Highway 122 (Midway Corner) intersections, Washington / Lincoln Street area neighborhood, and reconstructed corridor through M.C. Highway 122 (Midway Corner).
- Construct median through intersection functional areas (top priority).
- Construct access roads for minor access points if possible, or, maintain as RIRO access and require access from minor streets when redeveloped to higher land use.

## 15. S.D. Highway 115 Midway Corner to M.C. Highway 110 Scenarios

For the S.D. Highway 115 corridor segment between M.C. Highway 122 (Midway Corner) to M.C. Highway 110, the primary transportation needs focused more on intersection and segment capacity, providing safe passing opportunities, improving overall safety, and access management around intersection functional areas. Further needs include:

- Improve safety and capacity at the S.D. Highway 115 intersection with M.C. Highway 122 (Midway Corner) and M.C. Highway 114 (Baltic Corner)
- Improve safety, capacity, safe passing opportunities, access management near intersections, and multimodal user facilities along S.D. Highway 115 corridor from Midway Corner to M.C. Highway 110

Based on the more rural nature of this portion of the corridor and more available ROW, three scenarios were developed for the S.D. Highway 115 segment from Midway Corner to M.C. Highway 110. These scenarios reflect potential projects programmed in the 2030-2033 Developmental Statewide Transportation Improvement Program (STIP).

### Scenario B-1: Urban 4-Lane Divided (Raised Median) Corridor Improvements

- *Urban 4-lane divided (raised median) section (Figure 42)*
- *Access management treatments identified in access plan*

### Scenario B-2: Rural 4-Lane Divided (Depressed Median) Corridor Improvements

- *Rural 4-lane divided (depressed median) section (Figure 42)*
- *Access management treatments identified in access plan*

### Scenario B-3: Rural Side-by-Side Passing Lanes Corridor Improvements

- *One through lane and one passing lane in each direction with a rural side-by-side passing lanes section (Figure 42)*
- *Passing lane opportunities are present in between each major study intersection for a total of three segments (in each direction)*
- *Access management treatments identified in access plan*

### Intersection Option: S.D. Highway 115 & M.C. Highway 122 (Midway Corner) Intersection Improvements

Applicable to Corridor Scenarios B-1, and B-2, and B-3:

- *B-1a/B-2a/B-3a: Conventional two-way stop-controlled / signalized intersection option (Figure 43A)*
  - *Includes warranted S.D. Highway 115 mainline turn lanes*
- *B-1b/B-2b/B-3b: Multilane hybrid roundabout option (Figure 43B)*

### Intersection Option: S.D. Highway 115 & 252<sup>nd</sup> Street Intersection Improvements

#### Applicable to Corridor Scenarios B-1 and B-2:

- *B-1a/B-2a: Conventional two-way stop-controlled intersection option (Figure 44A)*
  - *Includes warranted S.D. Highway 115 mainline turn lanes*
- *B-1b/B-2b: Multilane hybrid roundabout option (Figure 44B)*

#### Applicable to Corridor Scenario B-3:

- *B-3a: Conventional two-way stop-controlled option (Figure 44C)*
  - *Includes warranted S.D. Highway 115 mainline turn lanes*
- *B-3b: Single-lane roundabout option (Figure 44D)*

### Intersection Option: S.D. Highway 115 & M.C. Highway 114 (Baltic Corner) Intersection Improvements

#### Applicable to Corridor Scenarios B-1 and B-2:

- *B-1/2a: Conventional two-way stop-controlled / signalized intersection option (Figure 45A)*
  - *Includes warranted S.D. Highway 115 mainline turn lanes*
- *B-1/2b: Multilane hybrid roundabout option (Figure 45B)*

#### Applicable to Corridor Scenarios B-3:

- *B-3a: Conventional two-way stop-controlled / signalized intersection option (Figure 45C)*
  - *Includes warranted S.D. Highway 115 mainline turn lanes*
- *B-3b: Single-lane roundabout option (Figure 45D)*

### Intersection Option: S.D. Highway 115 & M.C. Highway 110 Intersection Improvements

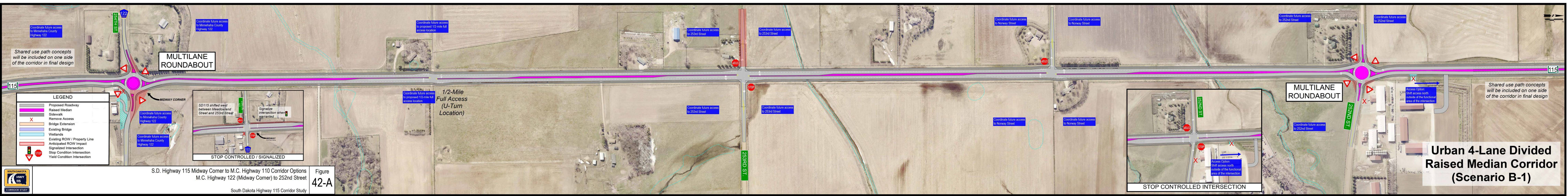
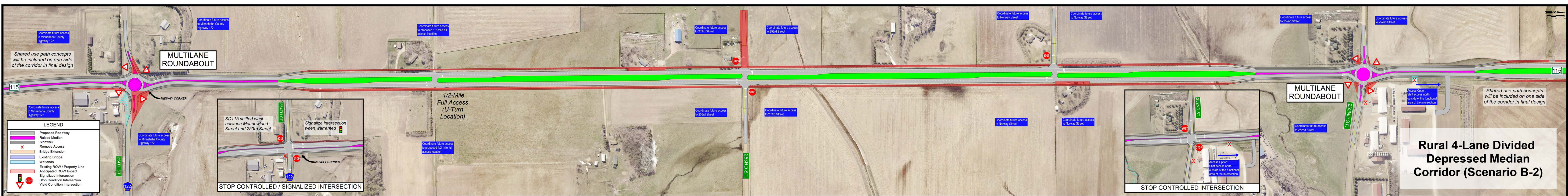
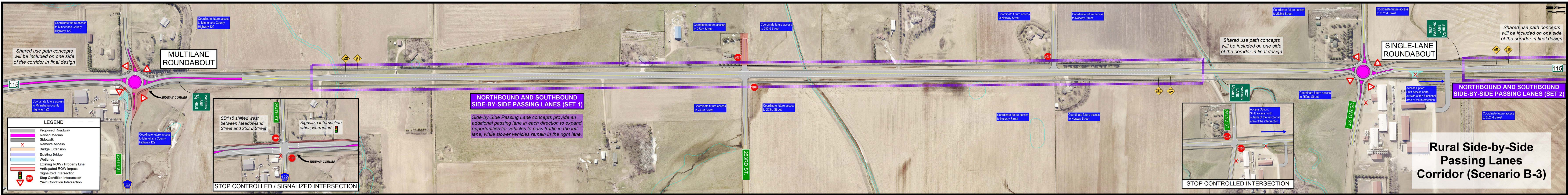
#### Applicable to Corridor Scenarios B-1 and B-2:

- *B-1/2a: Conventional two-way stop-controlled / signalized intersection option (Figure 46A)*
  - *Includes warranted S.D. Highway 115 mainline turn lanes*
- *B-1/2b: Multilane hybrid roundabout option (Figure 46B)*

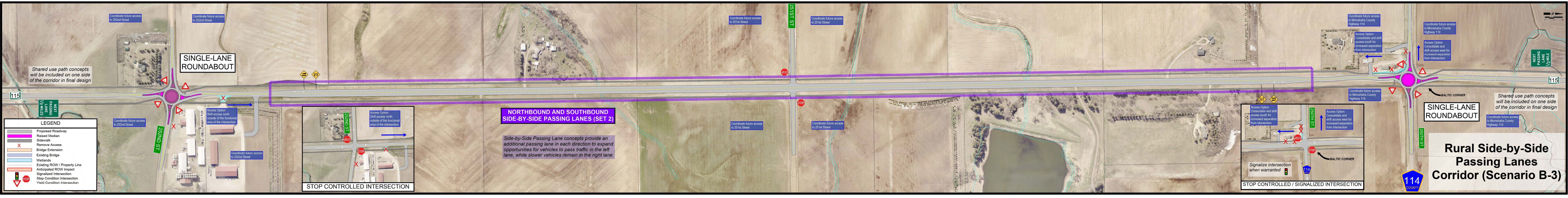
#### Applicable to Corridor Scenario B-3:

- *B-3a: Conventional two-way stop-controlled / signalized intersection option (Figure 46C)*
  - *Includes warranted S.D. Highway 115 mainline turn lanes*
- *B-3b: Single-lane roundabout option (Figure 46D)*

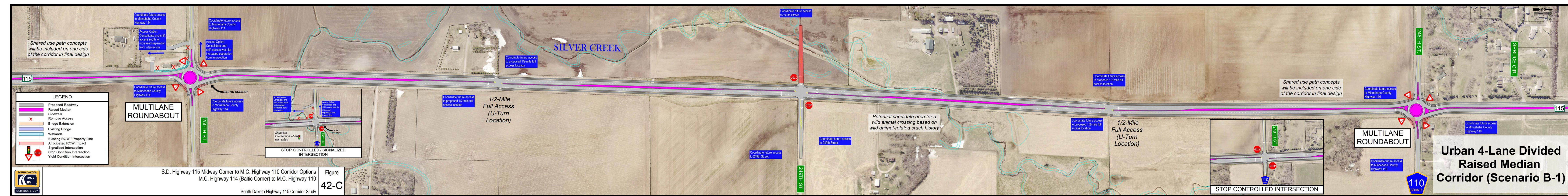
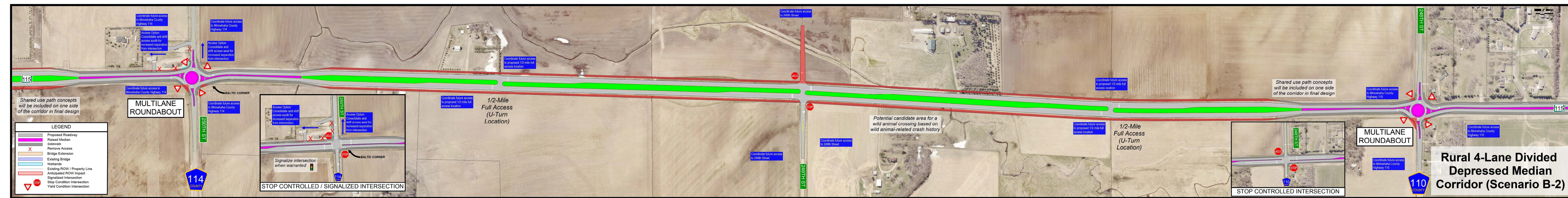
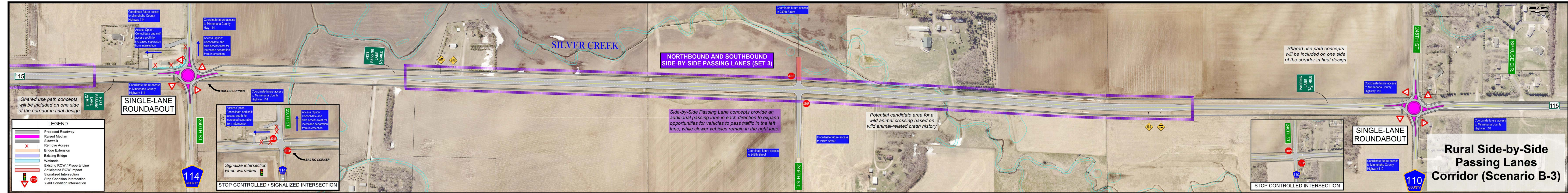
**Figure 42** through **Figure 46** provide an overview of the proposed scenario improvements, with corridor layouts depicting the urban and rural multilane concepts and the rural side-by-side passing lanes concept. Intersection configuration layouts include multilane hybrid roundabouts and conventional stop-controlled or signalized intersections for all intersections along this segment, as well as single-lane roundabouts and conventional intersections for 252<sup>nd</sup> Street, M.C. Highway 114 (Baltic Corner), and M.C. Highway 110. The single-lane concepts are associated with either the rural passing lanes corridor or could be considered as interim improvements prior to full multilane corridor reconstruction. Each scenario supports long-range goals identified in the corridor study's **Bicycle and Pedestrian Plan** and the **Access Plan**.



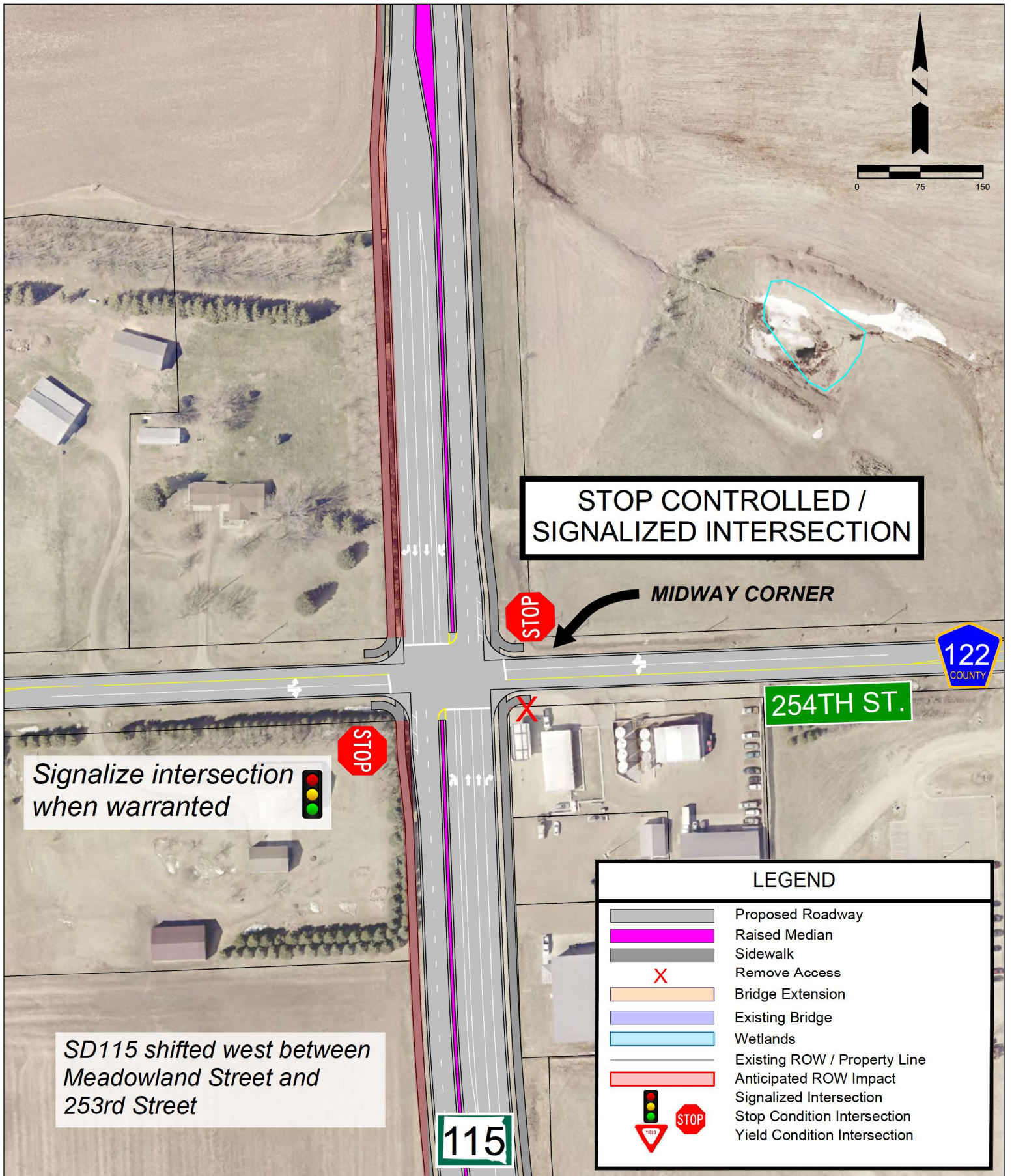
S.D. Highway 115 Midway Corner to M.C. Highway 110 Corridor Options  
 M.C. Highway 122 (Midway Corner) to 252nd Street  
 South Dakota Highway 115 Corridor Study



S.D. Highway 115 Midway Corner to M.C. Highway 110 Corridor Options  
252nd Street to M.C. Highway 114 (Baltic Corner)



S.D. Highway 115 Midway Corner to M.C. Highway 110 Corridor Options  
 M.C. Highway 114 (Baltic Corner) to M.C. Highway 110  
 South Dakota Highway 115 Corridor Study  
 Figure 42-C



**STOP CONTROLLED /  
SIGNALIZED INTERSECTION**

**STOP** *MIDWAY CORNER*

**254TH ST.**

*Signalize intersection  
when warranted*



*SD115 shifted west between  
Meadowland Street and  
253rd Street*

**115**

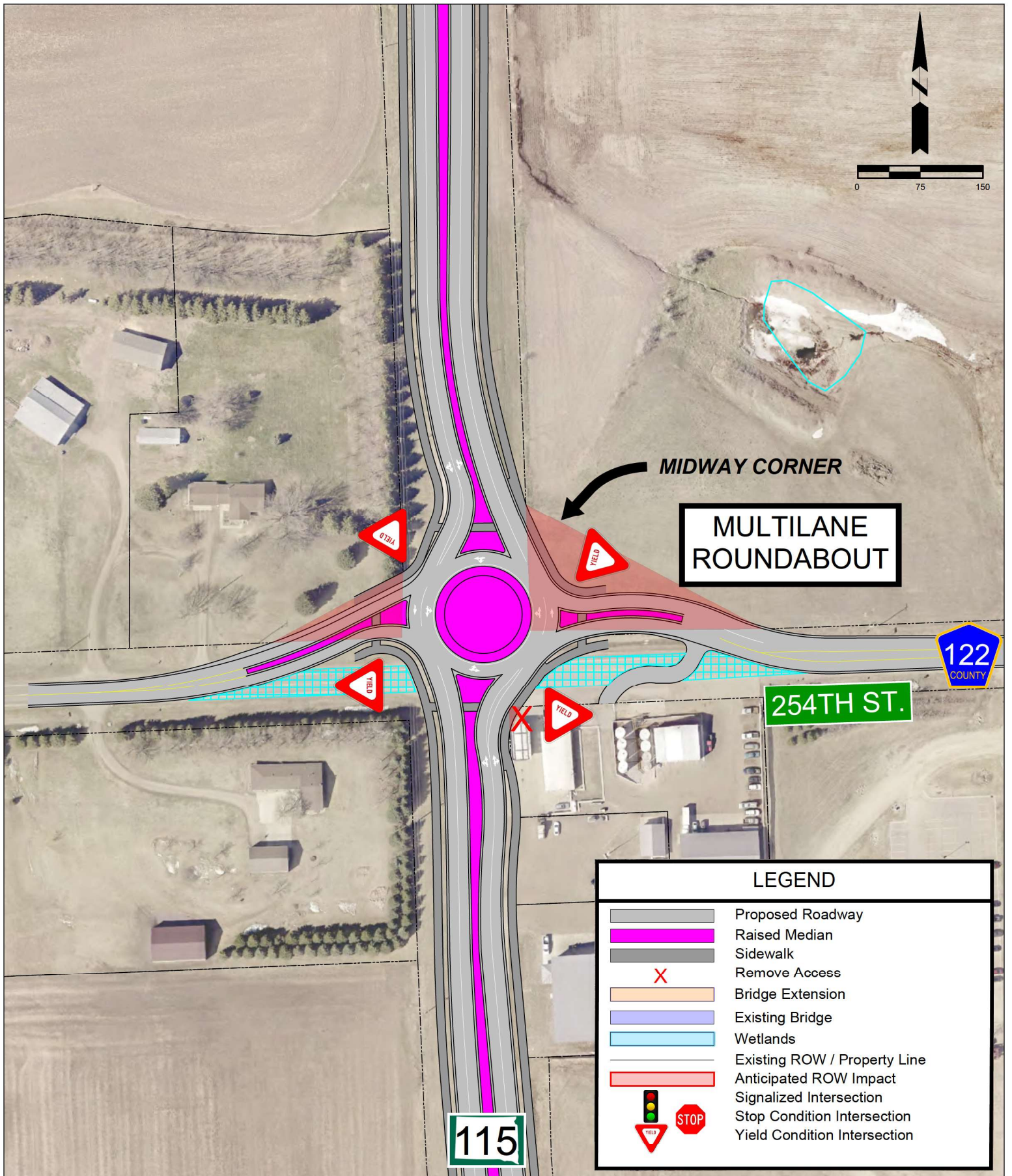
**122**  
COUNTY

LEGEND	
	Proposed Roadway
	Raised Median
	Sidewalk
	Remove Access
	Bridge Extension
	Existing Bridge
	Wetlands
	Existing ROW / Property Line
	Anticipated ROW Impact
	Signalized Intersection
	Stop Condition Intersection
	Yield Condition Intersection



S.D. Highway 115 & M.C. Highway 122 (Midway Corner) Intersection  
Midway Corner to M.C. Highway 110 (Scenario B-1, B-2, and B-3)  
Intersection Configuration: Multilane Traffic Signal with Turn Lanes (B-1/2a)  
South Dakota Highway 115 Corridor Study

Figure  
**43-A**

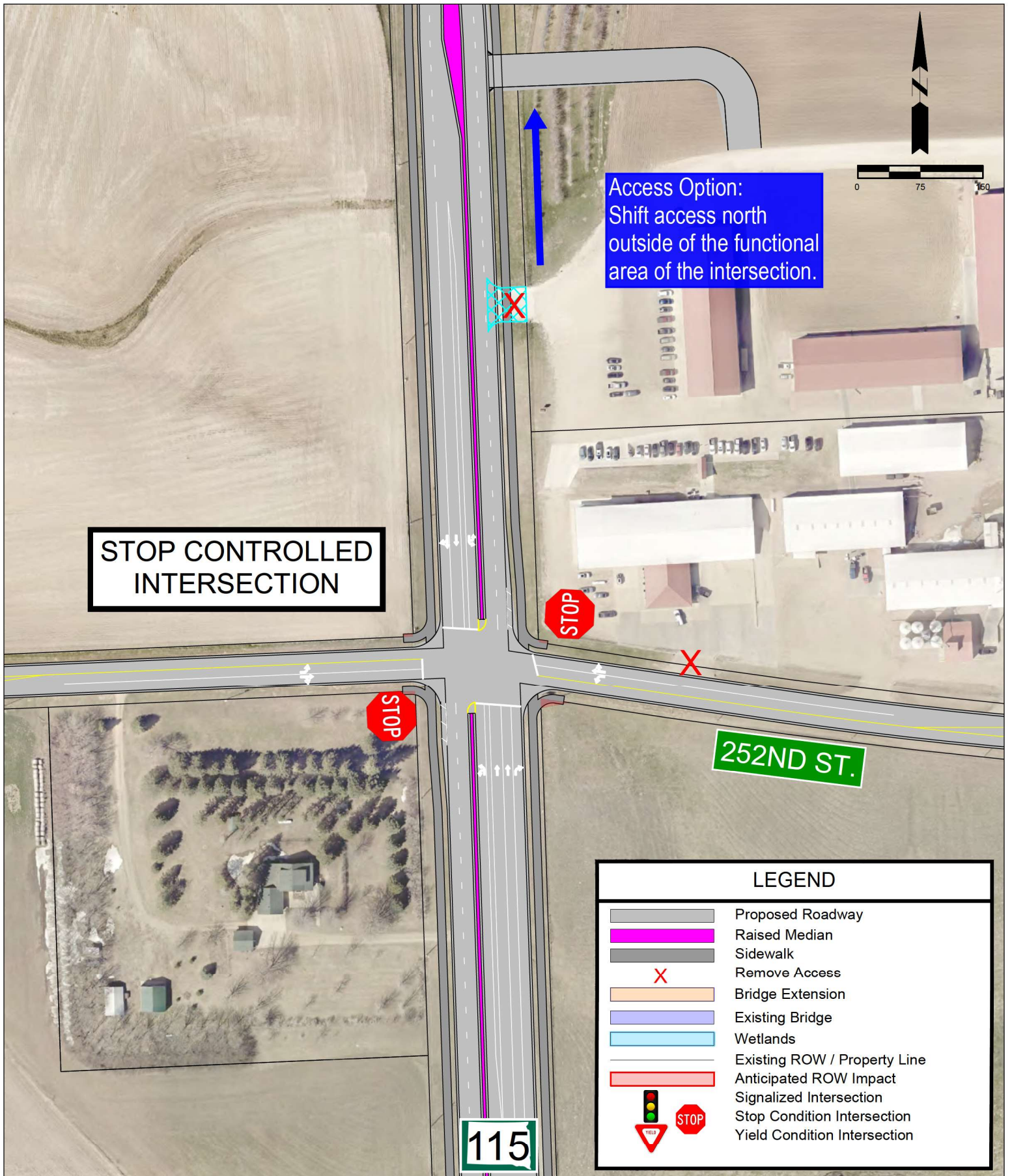


S.D. Highway 115 & M.C. Highway 122 (Midway Corner) Intersection  
 Midway Corner to M.C. Highway 110 (Scenario B-1, B-2, and B-3)

Intersection Configuration: Multilane Roundabout (B-1/2b)  
 South Dakota Highway 115 Corridor Study

Figure  
**43-B**

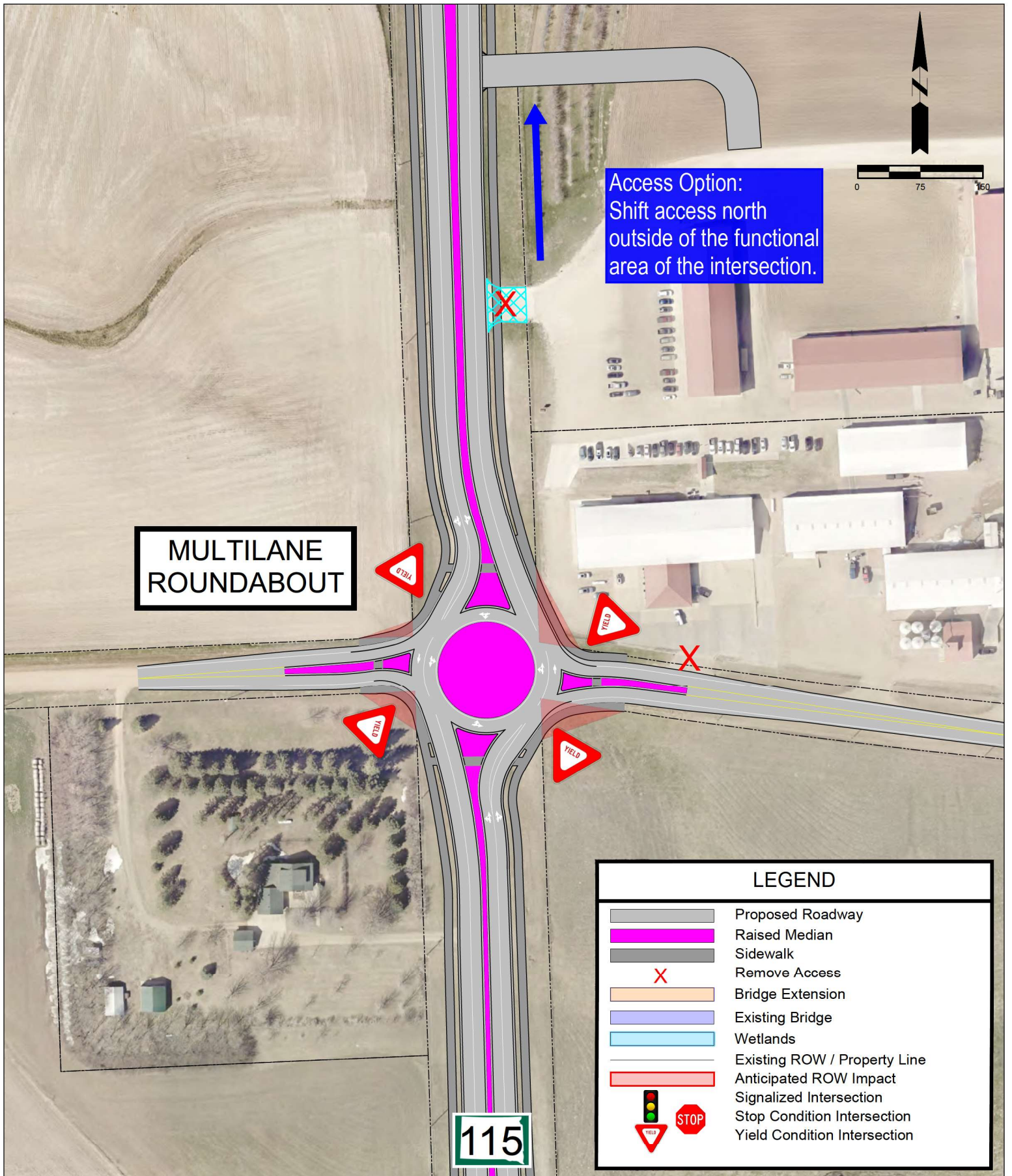




S.D. Highway 115 & 252nd Street Intersection  
Midway Corner to M.C. Highway 110 (Scenario B-1 and B-2)

Intersection Configuration: Multilane Two-Way Stop-Control with Turn Lanes (B-1/2a)  
South Dakota Highway 115 Corridor Study

Figure  
**44-A**



MULTILANE  
ROUNDAABOUT

Access Option:  
Shift access north  
outside of the functional  
area of the intersection.

LEGEND	
	Proposed Roadway
	Raised Median
	Sidewalk
	Remove Access
	Bridge Extension
	Existing Bridge
	Wetlands
	Existing ROW / Property Line
	Anticipated ROW Impact
	Signalized Intersection
	Stop Condition Intersection
	Yield Condition Intersection

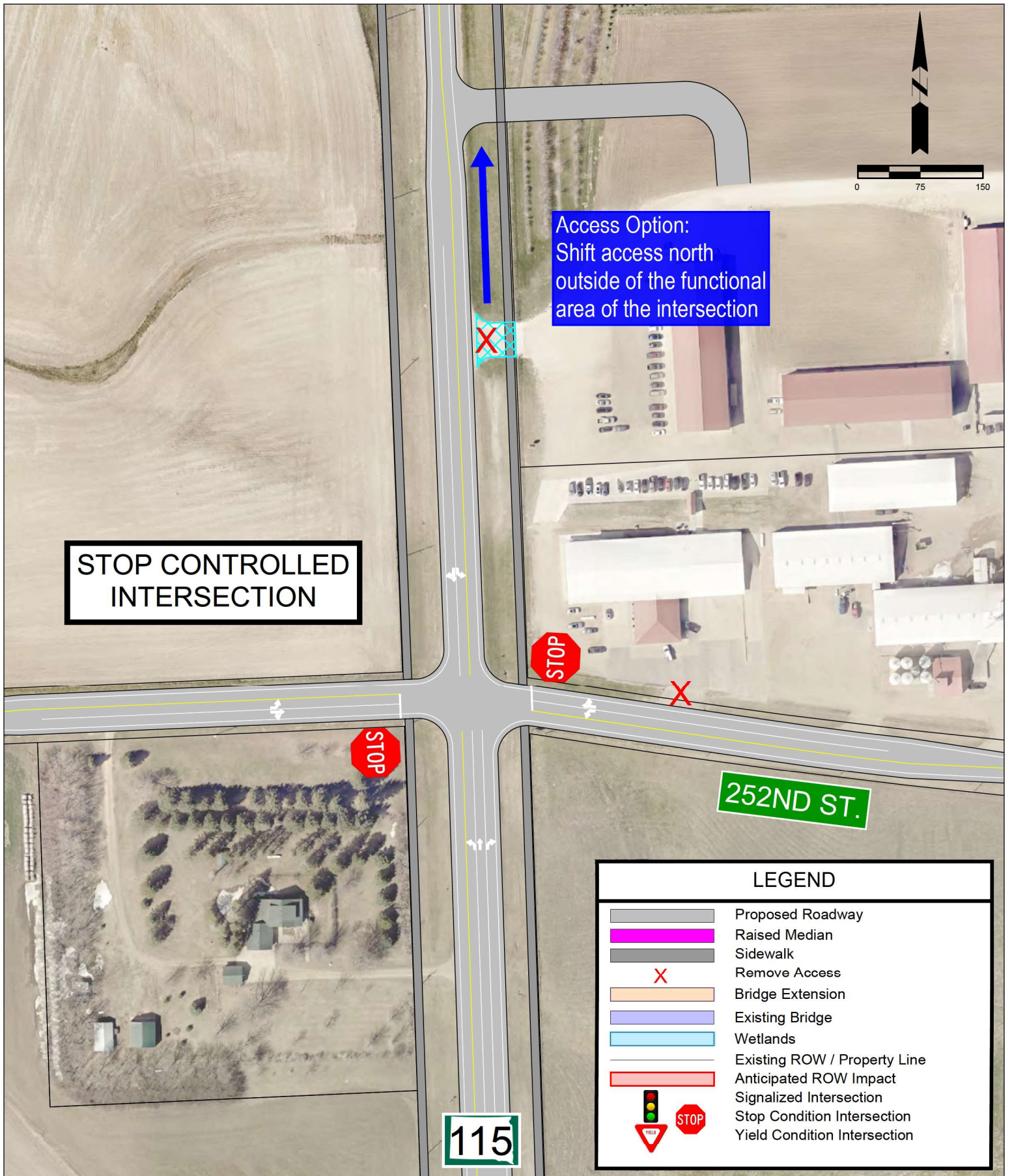
115



S.D. Highway 115 & 252nd Street Intersection  
Midway Corner to M.C. Highway 110 (Scenario B-1 and B-2)

Intersection Configuration: Multilane Roundabout (B-1/2b)  
South Dakota Highway 115 Corridor Study

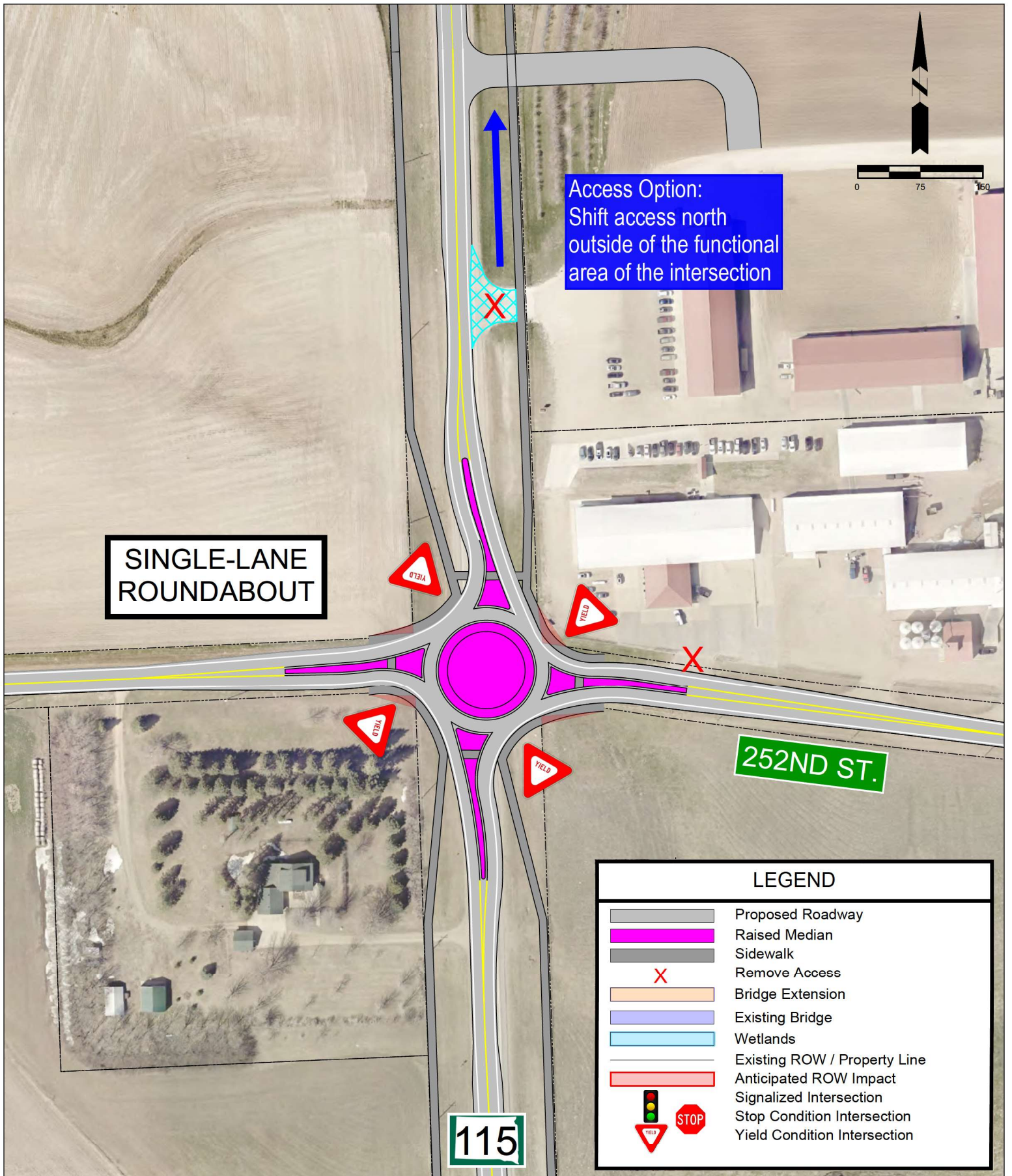
Figure  
44-B



S.D. Highway 115 & 252nd Street Intersection  
Midway Corner to M.C. Highway 110 (Scenario B-3)

Intersection Configuration: Two-Way Stop-Control with Turn Lanes (B-3a)  
South Dakota Highway 115 Corridor Study

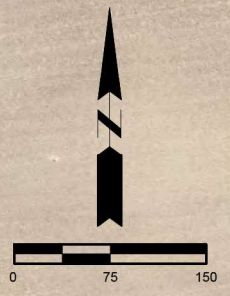
Figure  
44-C



S.D. Highway 115 & 252nd Street Intersection  
Midway Corner to M.C. Highway 110 (Scenario B-3)

Intersection Configuration: Single-Lane Roundabout (B-3b)  
South Dakota Highway 115 Corridor Study

Figure  
**44-D**



Access Option:  
Consolidate and  
shift access west for  
increased separation  
from intersection

**STOP CONTROLLED /  
SIGNALIZED  
INTERSECTION**



**250TH ST.**

**BALTIC CORNER**

*Signalize intersection  
when warranted*

Access Option:  
Consolidate and shift  
access south for  
increased separation  
from intersection

LEGEND	
	Proposed Roadway
	Raised Median
	Sidewalk
	Remove Access
	Bridge Extension
	Existing Bridge
	Wetlands
	Existing ROW / Property Line
	Anticipated ROW Impact
	Signalized Intersection
	Stop Condition Intersection
	Yield Condition Intersection

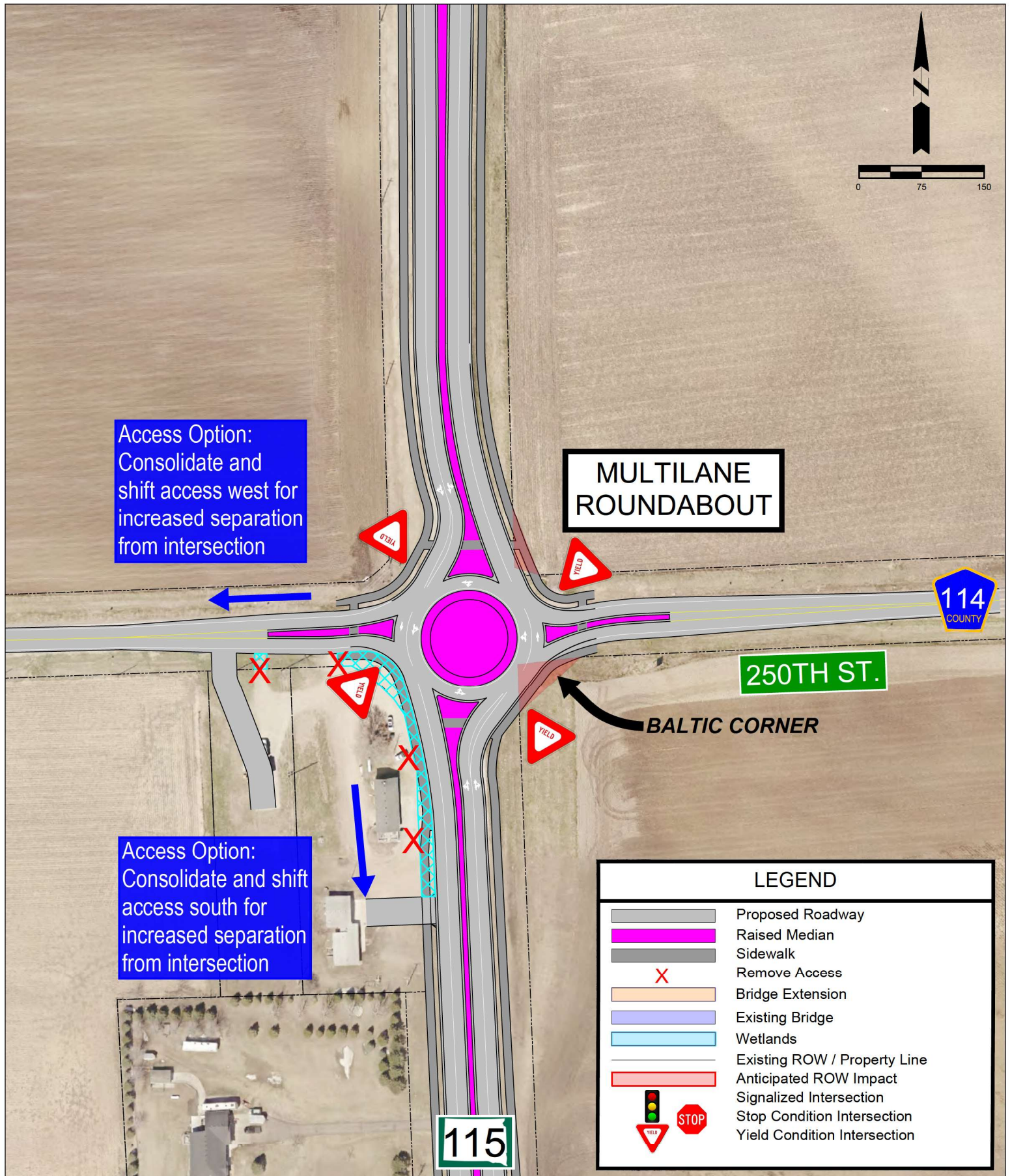
**115**



S.D. Highway 115 & M.C. Highway 114 (Baltic Corner) Intersection  
Midway Corner to M.C. Highway 110 (Scenario B-1 and B-2)

Intersection Configuration: Multilane Traffic Signal with Turn Lanes (B-1/2a)  
South Dakota Highway 115 Corridor Study

Figure  
**45-A**



Access Option:  
Consolidate and  
shift access west for  
increased separation  
from intersection

MULTILANE  
ROUNDBOUT

250TH ST.

BALTIC CORNER

Access Option:  
Consolidate and shift  
access south for  
increased separation  
from intersection

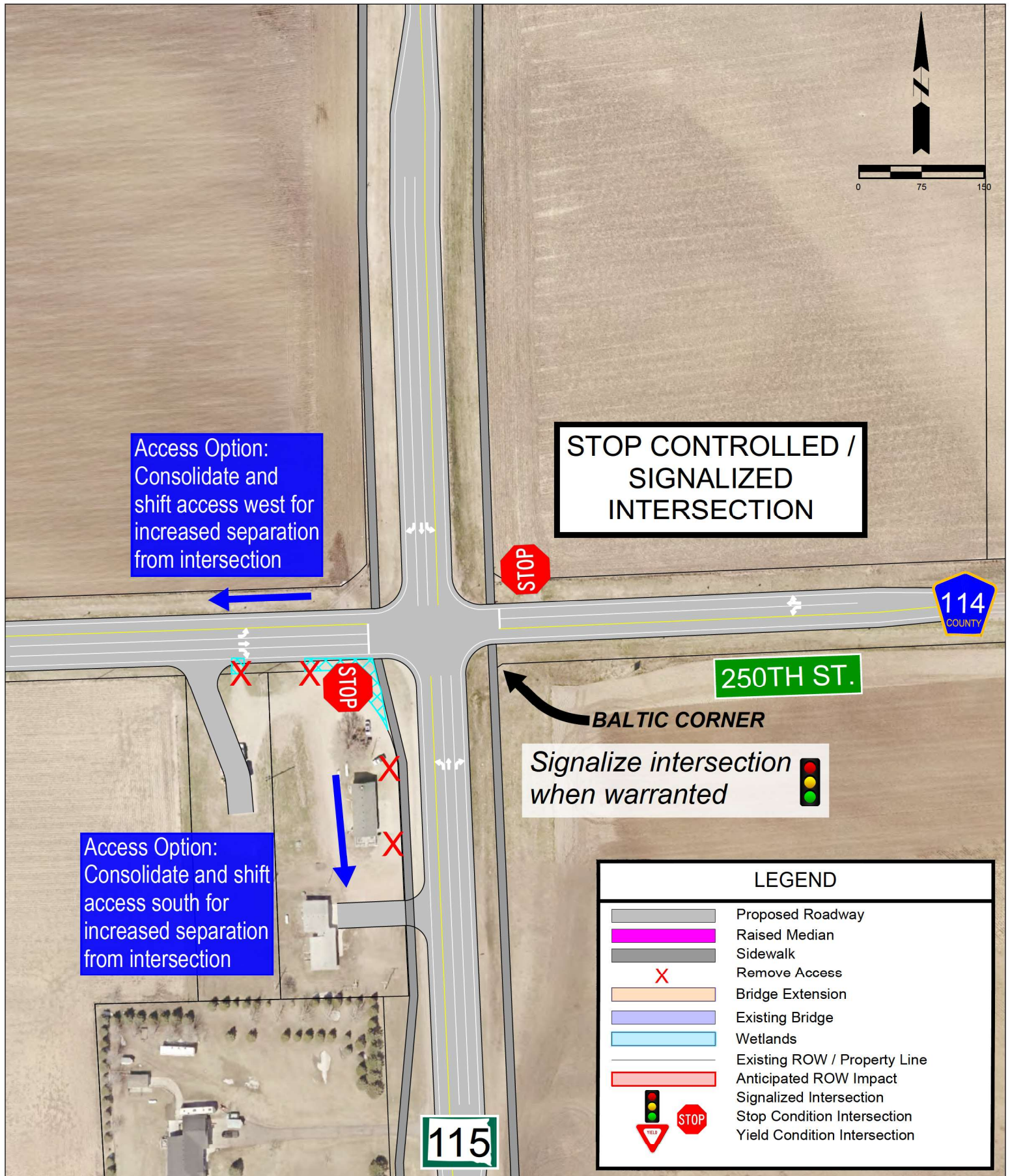
LEGEND	
	Proposed Roadway
	Raised Median
	Sidewalk
	Remove Access
	Bridge Extension
	Existing Bridge
	Wetlands
	Existing ROW / Property Line
	Anticipated ROW Impact
	Signalized Intersection
	Stop Condition Intersection
	Yield Condition Intersection



S.D. Highway 115 & M.C. Highway 114 (Baltic Corner) Intersection  
Midway Corner to M.C. Highway 110 (Scenario B-1 and B-2)

Intersection Configuration: Multilane Roundabout (B-1/2b)  
South Dakota Highway 115 Corridor Study

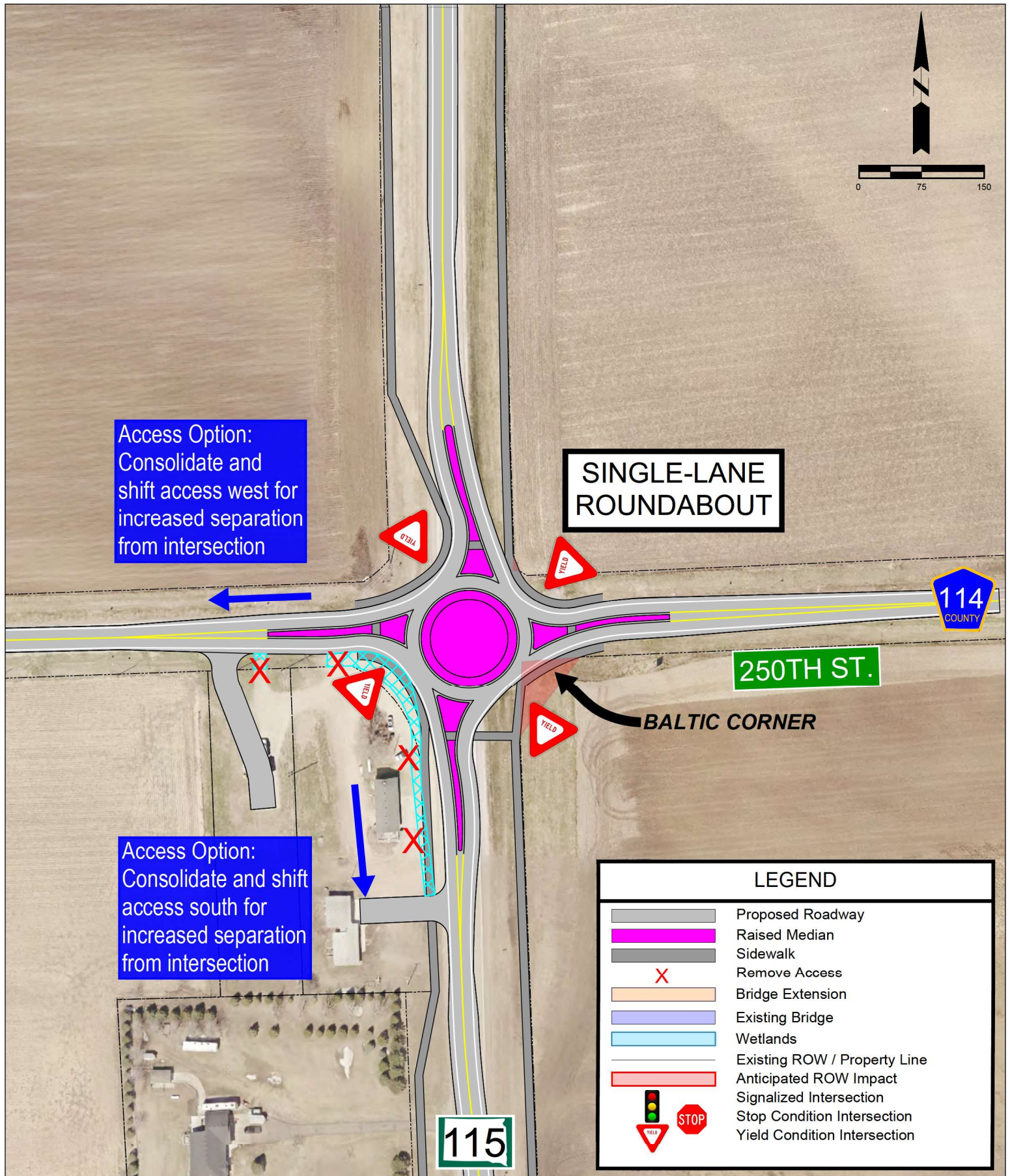
Figure  
45-B



S.D. Highway 115 & M.C. Highway 114 (Baltic Corner) Intersection  
Midway Corner to M.C. Highway 110 (Scenario B-3)

Intersection Configuration: Traffic Signal with Turn Lanes (B-3a)  
South Dakota Highway 115 Corridor Study

Figure  
**45-C**



Access Option:  
Consolidate and  
shift access west for  
increased separation  
from intersection

**SINGLE-LANE  
ROUNDAABOUT**

**250TH ST.**

**BALTIC CORNER**

Access Option:  
Consolidate and shift  
access south for  
increased separation  
from intersection

LEGEND	
	Proposed Roadway
	Raised Median
	Sidewalk
	Remove Access
	Bridge Extension
	Existing Bridge
	Wetlands
	Existing ROW / Property Line
	Anticipated ROW Impact
	Signalized Intersection
	Stop Condition Intersection
	Yield Condition Intersection

**115**

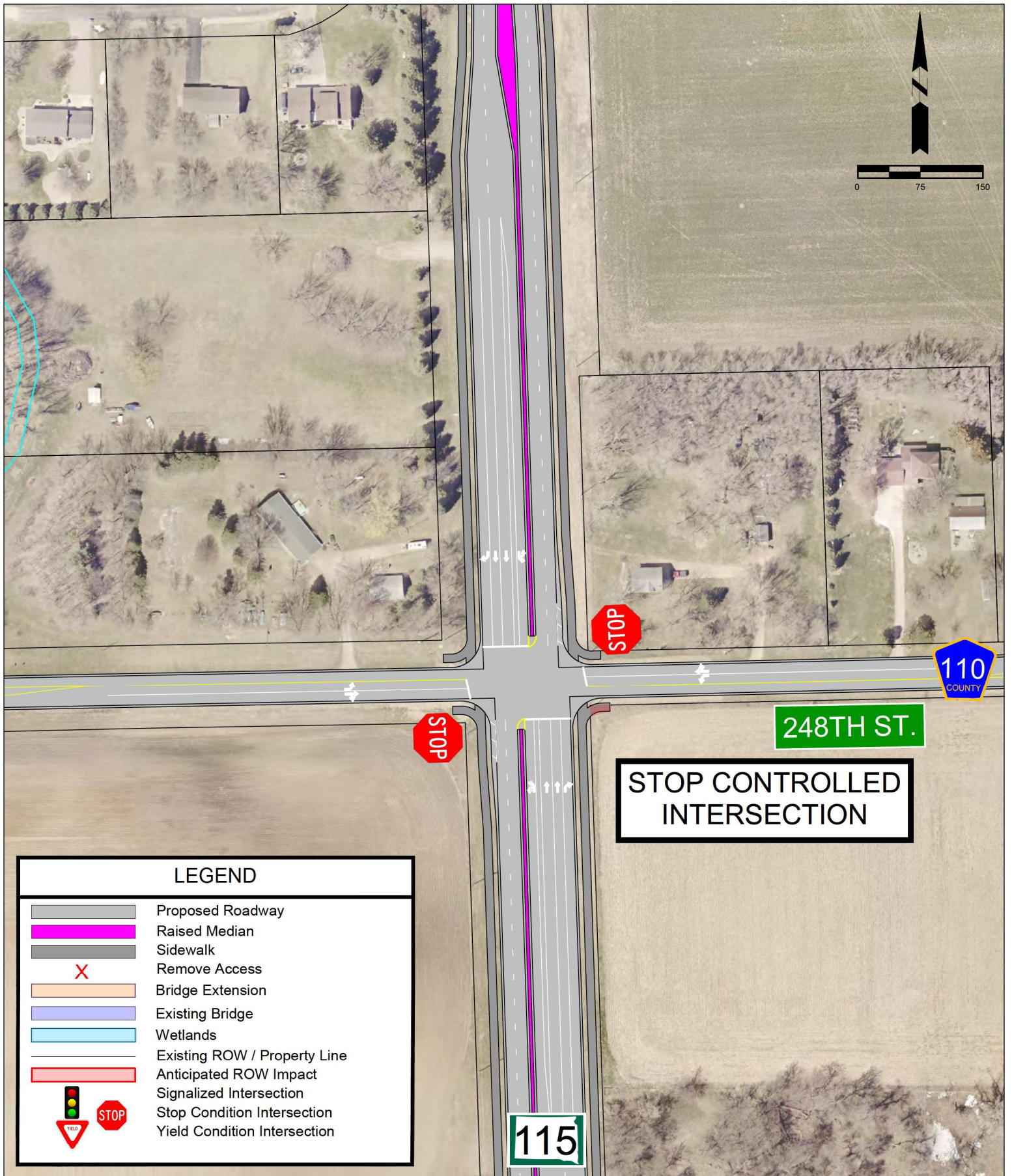
**114  
COUNTY**



S.D. Highway 115 & M.C. Highway 114 (Baltic Corner) Intersection  
Midway Corner to M.C. Highway 110 (Scenario B-3)

Intersection Configuration: Single-Lane Roundabout (B-3b)  
South Dakota Highway 115 Corridor Study

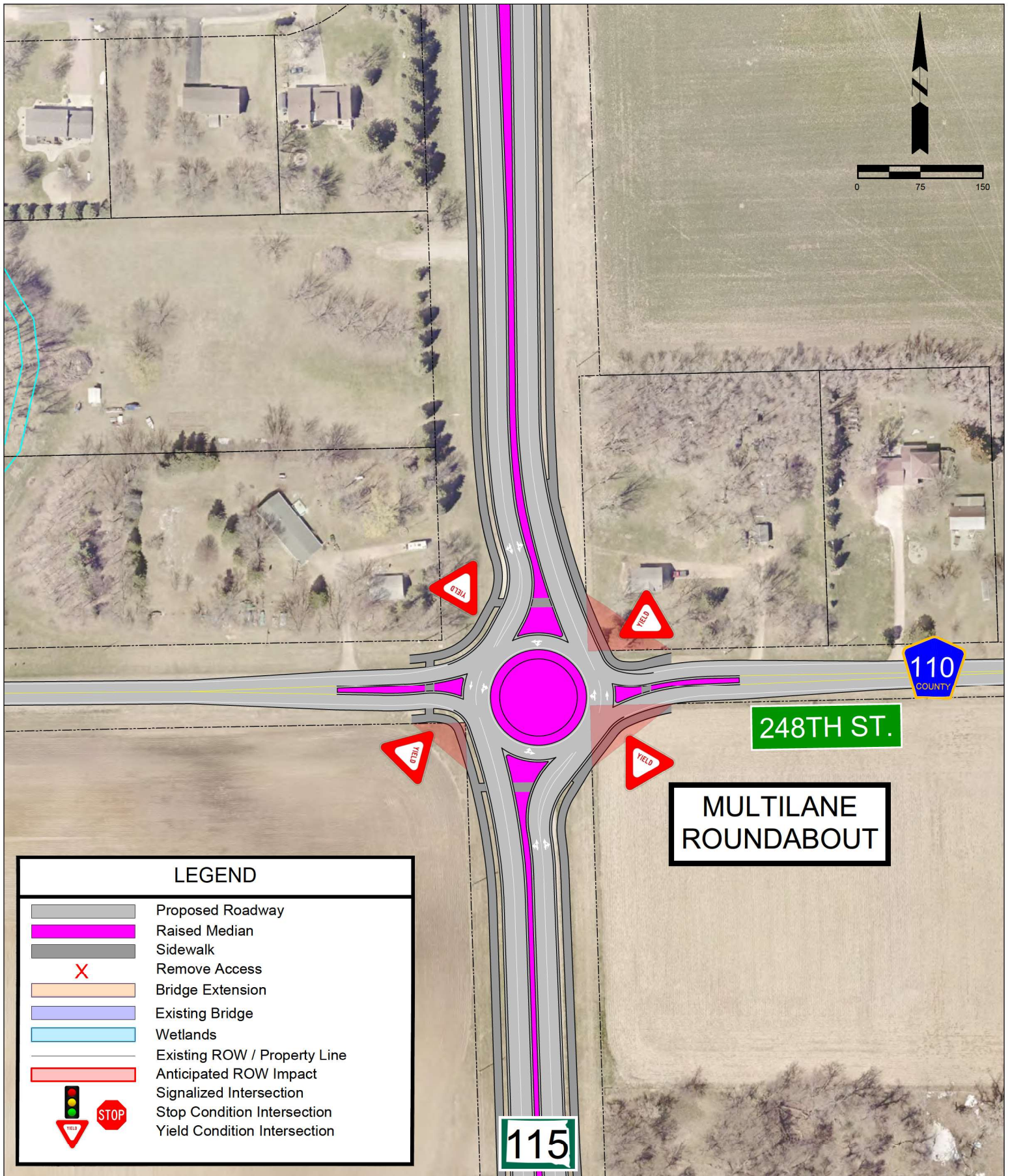
Figure  
**45-D**



S.D. Highway 115 & M.C. Highway 110 Intersection  
 Midway Corner to M.C. Highway 110 (Scenario B-1 and B-2)

Intersection Configuration: Multilane Two-Way Stop-Control with Turn Lanes (B-1/2a)  
 South Dakota Highway 115 Corridor Study

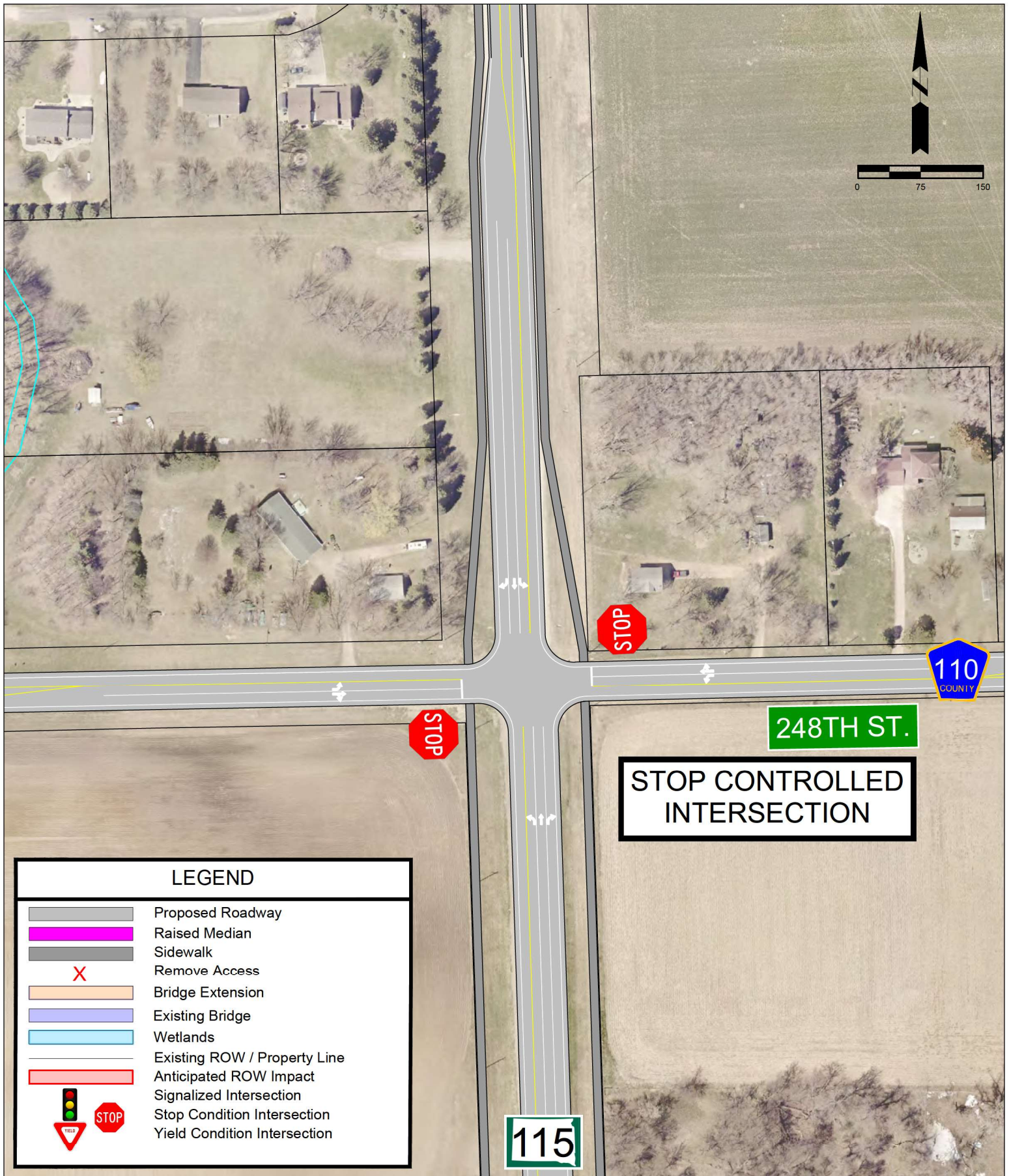
Figure  
**46-A**



S.D. Highway 115 & M.C. Highway 110 Intersection  
Midway Corner to M.C. Highway 110 (Scenario B-1 and B-2)

Intersection Configuration: Multilane Roundabout (B-1/2b)  
South Dakota Highway 115 Corridor Study

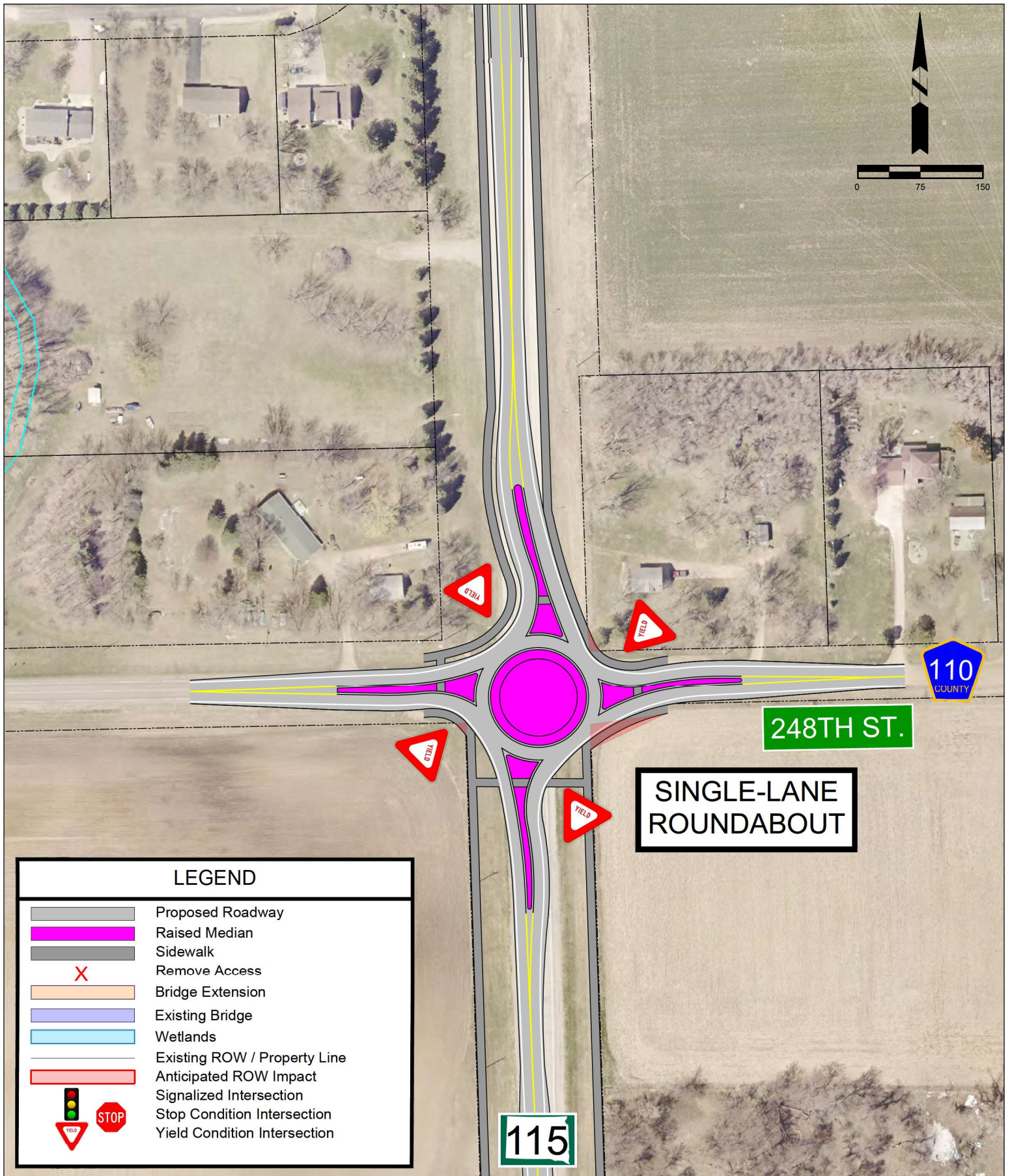
Figure  
**46-B**



S.D. Highway 115 & M.C. Highway 110 Intersection  
Midway Corner to M.C. Highway 110 (Scenario B-3)

Intersection Configuration: Two-Way Stop-Control with Turn Lanes (B-3a)  
South Dakota Highway 115 Corridor Study

Figure  
**46-C**



S.D. Highway 115 & M.C. Highway 110 Intersection  
Midway Corner to M.C. Highway 110 (Scenario B-3)

Intersection Configuration: Single-Lane Roundabout (B-3b)  
South Dakota Highway 115 Corridor Study

Figure  
**46-D**

## 15.1 Design Notes

Due to anticipated demand for additional lane capacity and greater available ROW widths, the three feasible corridor concepts were developed including Scenario B-1 (Urban 4-Lane Divided (Raised Median) Corridor), Scenario B-2 (Rural 4-Lane Divided (Depressed Median) Corridor) and Scenario B-3 (Rural Side-by-Side Passing Lanes Corridor).

Each identified major intersection, which meets access spacing requirements, includes U-turn movement opportunities with corresponding U-turn bump-outs. In current rural areas without existing intersections meeting spacing requirements, the concepts identify full access and U-turn movement opportunities at ½-mile increments. Future development-driven access locations at ¼-mile increments, consistent with access spacing guidelines, are identified in the **Access Plan**.

Multimodal features include a 10-ft. shared use path on the west side of the corridor from M.C. Highway 122 (Midway Corner) through M.C. Highway 110 based on optimized connectivity to the City of Baltic (west of the corridor) and the existing west-side shared use path along S.D. Highway 115 near Dell Rapids. Concepts depict shared use paths on both sides of the corridor throughout the overall segment, thus including a potential alternative shared use path location on the east side of the corridor from M.C. Highway 122 (Midway Corner) to M.C. Highway 110.

## 15.2 Traffic Operations Analysis

Year 2055 Build condition traffic operations for the four S.D. Highway 115 intersections are shown in **Table 29**. Single-lane and multilane roundabout concepts at each intersection are anticipated to operate at LOS A while conventional stop-controlled or signalized intersection concepts are anticipated to operate at between LOS A and LOS C.

**Table 29: S.D. Highway 115 Corridor Midway Corner to M.C. Highway 110 Intersection Operations (2055 Build)**

S.D. Highway 115 Intersection		S.D. Highway 115 Section	Intersection Control	Measure	AM		PM	
					Delay (s/veh)	LOS	Delay (s/veh)	LOS
Scenarios B-1 and B-2	M.C. Highway 110	Multilane	TWSC	Overall (WCSC):	1.9 (16.7)	A (C)	2.2 (17.9)	A (C)
			Multilane Roundabout	Overall	4.5	A	4.5	A
	M.C. Highway 114 (Baltic Corner)		Signal	Overall	24.5	C	29.4	C
			Multilane Roundabout	Overall	6.6	A	6.2	A
	252 <sup>nd</sup> Street		TWSC	Overall	1.4 (20.5)	A (C)	1.8 (24.3)	A (C)
			Multilane Roundabout	Overall	4.9	A	4.9	A
	M.C. Highway 122 (Midway Corner)		Signal	Overall	21.4	C	23.8	C
			Multilane Roundabout	Overall	8.1	A	8.8	A
Scenarios B-3	M.C. Highway 110	2-Lane with Passing Lanes	TWSC	Overall	2.0 (18.5)	A (C)	2.5 (22.8)	A (C)
			Single-Lane Roundabout	Overall	6.7	A	6.9	A
	M.C. Highway 114 (Baltic Corner)		Signal	Overall	25.2	C	28.1	C
			Single-Lane Roundabout	Overall	9.7	A	11.0	B
	252 <sup>nd</sup> Street		TWSC	Overall	1.6 (22.7)	A (C)	2.0 (27.8)	A (D)
			Single-Lane Roundabout	Overall	8.4	A	8.2	A

TWSC: worst-case stop-control approach delay.

**Table 30: S.D. Highway 115 Corridor Midway Corner to M.C. Highway 110 Segment Operations (2055 Build)**

Scenario	From	To	Length (mi)	Highway Type	AM LOS		PM LOS	
					SB	NB	SB	NB
<b>B-1 and B-2</b>	M.C. Highway 114 (Baltic Corner)	M.C. Highway 110	1.0	Multilane	A	A	A	A
	252 <sup>nd</sup> Street	M.C. Highway 114 (Baltic Corner)	2.0	Multilane	A	A	A	A
	M.C. Highway 122 (Midway Corner)	252 <sup>nd</sup> Street	2.0	Multilane	A	A	A	A
	Overall Facility			5.0		A	A	A
<b>B-3</b>	M.C. Highway 114 (Baltic Corner)	M.C. Highway 110	1.0	2-Lane (with Passing Lanes)	A-C	A	A-B	A-C
	252 <sup>nd</sup> Street	M.C. Highway 114 (Baltic Corner)	2.0	2-Lane (with Passing Lanes)	A-C	A	A-B	A-C
	M.C. Highway 122 (Midway Corner)	252 <sup>nd</sup> Street	2.0	2-Lane (with Passing Lanes)	A-C	A	A	B-C
	Overall Facility			5.0		B	A	A

As shown, the identified improvements will provide long-range capacity for the S.D. Highway 115 corridor between M.C Highway 122 (Midway Corner) to M.C. Highway 110. M.C. Highway 122 (Midway Corner), 252<sup>nd</sup> Street, M.C. Highway 114 (Baltic Corner), and M.C. Highway 110 intersections are expected to achieve LOS A or better with either multilane roundabouts or conventional stop-control / signalization and turn lane improvements. Single-lane roundabout alternatives for these intersections, except M.C. Highway 122 (Midway Corner), exhibit LOS A or LOS B, while single through lane corridor conventional intersections exhibit LOS A to LOS C. Signalized intersections feature higher delay and LOS than their roundabout counterparts due to the assumptions of existing posted speeds of 65 mph, which requires protected only mainline left turn phasing.

A multilane corridor throughout this segment provides the best LOS with LOS A, while a combined set of three passing lanes in each direction exhibits LOS B or LOS A. Passing lane operations tend to have more delay based on the directional peak hour commutes, with southbound AM and northbound PM featuring slightly more delay.

## 15.3 Predictive Safety Analysis

**Table 31** presents results from the IHSDM predictive safety analysis. All three corridor scenarios demonstrate a safety benefit to the corridor, with the multilane corridor with roundabout scenarios (B-1b and B-2b) showing the greatest expected reduction in crashes. Scenario B-3's reduction is less due to the range of predicted crashes when modeling the corridor with passing lanes compared to a 4-lane undivided facility.

**Table 31: S.D. Highway 115 Corridor Midway Corner to M.C. Highway 110 Segment Operations Predicted Crashes per Year**

Scenario	F & I Crashes	Change from No Build + increase - decrease	Total Crashes	Change from No Build + increase - decrease
No Build ( <i>baseline</i> )	7.1	-	18.9	-
No Build – Undivided Multilane ( <i>baseline sensitivity analysis</i> )	11.6	+63%	19.9	+5%
Scenario B-1a Build ( <i>Urban 4-Lane Divided with Conventional Stop-Control / Signals</i> )	3.7	-48% (-68%)	11.9	-37% (-40%)
Scenario B-1b Build ( <i>Urban 4-Lane Divided with Multilane Roundabouts</i> )	2.6-2.8	-61% to -63% (-76% to -78%)	9.8-10.7	-43% to -48% (-46% to -51%)
Scenario B-2a Build ( <i>Rural 4-Lane Divided with Conventional Stop-Control / Signals</i> )	5.4	-43% (24%)	12.2	-168% (-36%)
Scenario B-2b Build ( <i>Rural 4-Lane Divided with Multilane Roundabouts</i> )	4.3-4.5	-37% to -39% (-61% to -63%)	10.1-11.0	-42% to -47% (-45% to -49%)
Scenario B-3a Build ( <i>Rural Side-by-Side Passing Lanes with Conventional Stop-Control / Signals</i> )	4.1	-42% (-64%)	11.5	-39% (-42%)
Scenario B-3b Build ( <i>Rural Side-by-Side Passing Lanes with Single-Lane Roundabouts</i> )	3.3	-53% (-71%)	9.8	-48% (-51%)
Scenario B-3 Build ( <i>Undivided 4-Lane Sensitivity Analysis</i> )	7.7-8.5	+8 to +20% (-27% to -33%)	14.9-16.6	-12% to -21% (-17% to -25%)

## 15.4 Potential Impacts and Public Comment

Potential improvements are primarily focused on the additional lane capacity along the corridor (either as a multilane section or passing lanes) and improvements at the main intersections such as turn lanes and signalization or roundabouts. While ROW is generally more available in this section of the S.D. Highway 115 corridor, the rural 4-lane divided (depressed median) typical section would take up a greater portion of it compared to the urban 4-lane divided (raised median) section. However, the rural multilane corridor better aligns with the more rural nature of this portion of the corridor where development is anticipated to take much longer to occur than the southern and northern corridor extents near Sioux Falls and Dell Rapids, respectively.

The rural side-by-side passing lanes present a more condensed rural section that provides full passing lane opportunities in both directions between major intersections. A combined set of three northbound and southbound passing lanes between M.C. Highway 122 (Midway Corner), 252<sup>nd</sup> Street, M.C. Highway 114 (Baltic Corner), and M.C. Highway 110 is recommended to meet study LOS goals through the planning horizon with this concept and provide consistency through this segment. The additional through or passing lanes are not carried through study intersections, outside of M.C. Highway 122 (Midway Corner), based on the lack of additional through lane capacity needs at these intersections. Disbenefits for this concept include reduced safety benefits with the lack of full separation provided by the multilane scenarios as well as the lack of long-term capacity benefits afforded to the multilane scenarios.

Public and stakeholder feedback generally focused on the proposed improvements at the M.C. Highway 122 (Midway Corner) and M.C. Highway 114 (Baltic Corner) intersections. At the M.C. Highway 122 (Midway Corner) intersection, commenters expressed concern about potential light pollution surrounding the proposed concepts and suggestions for jake brake noise enforcement in association with the roundabout concepts. For M.C. Highway 114 (Baltic Corner) intersection, there was strong public input regarding safety concerns with the existing intersection configurations. Commenters mentioned concerns with sight distance from the minor street approaches and related to the vertical curve south of the intersection, placement of stop bar pavement markings, observations of vehicles passing on the right near the intersection, and the potential for rear-end collisions at higher speeds. Overall, there was feedback supporting the roundabout concepts, particularly at the Baltic Corner, to improve safety along the corridor. Similar to other portions of the corridor, there was a general request to lower posted speed limits.

## 15.5 Future Pavement and Structure Needs

A summary of upcoming major investment needs along the corridor segment includes:

- Structures
  - No bridge structures are located on this segment
  - 24 culverts
- Roadway pavement (*SDDOT Needs Book* timeframe)
  - S.D. Highway 115 resurfacing only projects (starting 2025):
    - M.C Highway 122 (Midway Corner) to M.C. Highway 110 (additional project eligible in 2040-2045)

In addition, a recent joint and spall repair project along S.D. Highway 115 between 72<sup>nd</sup> Street North and M.C. Highway 110 (STIP Project 09LD) was completed in 2025. A future project is currently identified along S.D. Highway 115 from 72<sup>nd</sup> Street North to M.C. Highway 110 in the 2030-2033 Developmental STIP (PCN 08LM).

## 15.6 Evaluation Summary and Recommendations

**Table 32** presents an evaluation summary matrix of traffic operations, predictive safety, ROW and construction costs, route connectivity, and potential environmental impact measures. The overarching benefits and drawbacks of each scenario are summarized in **Table 33**. Based on a review of the evaluation matrix, benefits and drawbacks, and timelines for next major investments along the corridor, long-range recommendations and potential timelines are summarized in **Table 34**.

**Table 32: S.D. Highway 115 South of Midway Corner to M.C. Highway 110 Corridor Scenario Summary Matrix**

Scenario	Traffic Operations				Predictive Safety		ROW & Costs			Environmental Impacts
	Intersection Operations (2055 LOS)	S.D. Highway 115 Corridor Operations (2055 LOS)	Access Management	Corridor Reliability & Driver Expectancy	F&I Crashes	Total Crashes	ROW Acquisition	Construction & ROW Costs	Impact to Private Property	Potential Impacts
	<i>AM / PM</i>	<i>AM / PM</i>	<i>5 - Best 3 - Middle 1 - Least</i>	<i>5 - Best 3 - Middle 1 - Least</i>	<i>Average Annual # Crashes</i>	<i>Average Annual # Crashes</i>	<i>Acres</i>	<i>\$ mil</i>	<i>5 - Least 3 - Middle 1 - Most</i>	<i>Low, Medium, High</i>
<b>B-1a</b>	A-C / A-C	A / A	4	4	3.7	11.9	2.0	\$98.0	3	Medium
<b>B-1b</b>	A / A	A / A	5	5	2.6-2.8	9.8-10.7	2.8	\$96.5	3	Medium
<b>B-2a</b>	A-C / A-C	A / A	4	4	5.4	12.2	8.5	\$91.5	1	Medium
<b>B-2b</b>	A / A	A / A	5	5	4.3-4.5	10.1-11.0	9.3	\$90.0	1	Medium
<b>B-3a</b>	A-C / A-C	A-B / A-B	3	3	4.1-8.5	11.5-16.6	1.4	\$66.0	4	Low
<b>B-3b</b>	A / A	A-B / A-B	4	3	3.3-7.7	9.8-14.9	2.0	\$69.5	4	Low
<b>No Build</b>	A-F / A-F	C-E / C-E	2	2	7.1	18.9	0	\$0	5	Low

**Table 33: S.D. Highway 115 South of Midway Corner to M.C. Highway 110 Corridor Scenario Benefits and Drawbacks**

Scenario	Benefits	Drawbacks
<b>No Build (baseline)</b>	<ul style="list-style-type: none"> <li>• No environmental impacts, cost, or property impacts.</li> </ul>	<ul style="list-style-type: none"> <li>• Does not improve corridor safety.</li> <li>• Does not improve corridor capacity or reliability.</li> <li>• Does not improve access management and reduce conflict points along the corridor.</li> <li>• Does not add warranted turn lanes at intersections.</li> <li>• Does not add multimodal improvements.</li> </ul>
<b>Scenario B-1a (Urban 4-Lane Divided with Conventional Intersections)</b>	<ul style="list-style-type: none"> <li>• Adds corridor capacity and reliability.</li> <li>• Adds shared use paths (multimodal improvements).</li> <li>• Adds warranted intersection turn lanes.</li> <li>• Provides predicted reduction in crashes.</li> </ul>	<ul style="list-style-type: none"> <li>• Medium environmental impact to wetlands.</li> <li>• Requires future drainage facility upgrades.</li> <li>• ROW needs.</li> <li>• Fewer safety benefits.</li> </ul>
<b>Scenario B-1b (Urban 4-Lane Divided with Multilane Roundabouts)</b>	<ul style="list-style-type: none"> <li>• Adds corridor capacity and reliability.</li> <li>• Adds shared use paths (multimodal improvements).</li> <li>• Greatest predicted reduction in crashes.</li> <li>• Provides greater traffic calming effect.</li> </ul>	<ul style="list-style-type: none"> <li>• Medium environmental impact to wetlands.</li> <li>• Requires future drainage facility upgrades.</li> <li>• ROW needs.</li> </ul>
<b>Scenario B-2a (Rural 4-Lane Divided with Conventional Intersections)</b>	<ul style="list-style-type: none"> <li>• Adds corridor capacity and reliability.</li> <li>• Adds shared use path (multimodal improvements).</li> <li>• Adds warranted intersection turn lanes.</li> <li>• Provides predicted reduction in crashes.</li> </ul>	<ul style="list-style-type: none"> <li>• Medium environmental impact to wetlands.</li> <li>• Requires future drainage facility upgrades.</li> <li>• ROW needs.</li> <li>• Fewer safety benefits.</li> </ul>
<b>Scenario B-2b (Rural 4-Lane Divided with Multilane Roundabouts)</b>	<ul style="list-style-type: none"> <li>• Adds corridor capacity and reliability.</li> <li>• Adds shared use path (multimodal improvements).</li> <li>• Greatest predicted reduction in crashes.</li> <li>• Provides greater traffic calming effect.</li> </ul>	<ul style="list-style-type: none"> <li>• Medium environmental impact to wetlands.</li> <li>• Requires future drainage facility upgrades.</li> <li>• ROW needs.</li> </ul>
<b>Scenario B-3a (Rural Side-by-Side Passing Lanes with Conventional Intersections)</b>	<ul style="list-style-type: none"> <li>• Lesser environmental impacts, cost, or property impacts.</li> <li>• Adds shared use path (multimodal improvements).</li> </ul>	<ul style="list-style-type: none"> <li>• Fewer safety benefits.</li> <li>• Less long-term additional capacity benefits.</li> </ul>
<b>Scenario B-3b (Rural Side-by-Side Passing Lanes with Single-Lane Roundabouts)</b>	<ul style="list-style-type: none"> <li>• Lesser environmental impacts, cost, or property impacts.</li> <li>• Adds shared use path (multimodal improvements).</li> </ul>	<ul style="list-style-type: none"> <li>• Fewer safety benefits.</li> <li>• Less long-term additional capacity benefits.</li> </ul>

**Table 34: S.D. Highway 115 South of Midway Corner to M.C. Highway 110 Recommendations**

**Corridor Scenario:**

- Scenario B-1b (Urban 4-Lane Divided (Raised Median) Corridor with Multilane Roundabouts) or
- B-2b (Rural 4-Lane Divided (Depressed Median) Corridor with Multilane Roundabouts)

**Cross-section:** Construct either an urban 4-lane divided (raised median) or rural 4-lane divided (depressed median) corridor with recommended improvements

**Timeline:**

*2032-2043:*

- Reconstruct M.C. Highway 122 (Midway Corner) intersection as a Multilane Roundabout to reflect Scenario B-1/2b.
- Construct median through intersection functional areas (top priority).
- Construct access roads for minor access points if possible, or, maintain as RIRO access and require access from minor streets when redeveloped to higher land use.
- Reconstruct S.D. Highway 115 from M.C. Highway 122 (Midway Corner) to 252<sup>nd</sup> Street to reflect Scenario B-1 or B-2.
- Reconstruct S.D. Highway 115 from 252<sup>nd</sup> Street to M.C. Highway 114 (Baltic Corner) to reflect Scenario B-1 or B-2.
- Reconstruct 252<sup>nd</sup> Street intersection as a Multilane Roundabout to reflect Scenario B-1/2b.
- Reconstruct M.C. Highway 114 (Baltic Corner) intersection as a Multilane Roundabout to reflect Scenario B-1/2b. Consider earlier interim build-out as a Single-Lane Roundabout (similar to Scenario B-3b).
- Address access around 252<sup>nd</sup> Street and M.C. Highway 114 (Baltic Corner) intersections and reconstructed corridor through M.C. Highway 114 (Baltic Corner).
- Consolidate and/or revise access point locations.

*2043-2055:*

- Reconstruct S.D. Highway 115 from M.C. Highway 114 (Baltic Corner) to M.C. Highway 110 to reflect Scenario B-1 or B-2.
- Reconstruct M.C. Highway 110 intersection as a Multilane Roundabout to reflect Scenario B-1/2b.
- Address access around M.C. Highway 110 intersection and reconstructed corridor through M.C. Highway 110.
- Consolidate and/or revise access point locations

## 16. S.D. Highway 115 North of M.C. Highway 110 to Dell Rapids Scenarios

Transportation needs along the S.D. Highway 115 corridor from north of M.C. Highway 110 to West 4<sup>th</sup> Street in Dell Rapids focused on intersection and segment capacity, safety, access management, and multimodal facility enhancements, including:

- Improve safety and capacity at the S.D. Highway 115 intersection with West 4<sup>th</sup> Street
- Improve safety, capacity, reliability, access management, and multimodal user facilities along the S.D. Highway 115 corridor from North of M.C. Highway 110 to Dell Rapids

Two primary corridor scenarios were developed based on corridor consistency with concepts to the south and the more limited capacity needs in this area.

### Scenario C-1: Urban 4-Lane Divided (Raised Median) Corridor with Intersection Improvements

- *Urban 4-lane divided (raised median) section (Figure 47)*
- *Access management treatments identified in access plan*
- *Includes bridge expansions for the two Big Sioux River bridges to accommodate an undivided 4-lane roadway section*

### Scenario C-2: Suburban 3-Lane Corridor with Intersection Improvements

- *Suburban 3-lane section (Figure 47)*
- *Access management treatments identified in access plan*
- *Maintains existing Big Sioux River bridge sections*

### Intersection Option: S.D. Highway 115 & West 4<sup>th</sup> Street Intersection Improvements

#### Applicable to Corridor Scenarios C-1:

- *C-1a: Conventional signalized intersection option (Figure 48A)*
  - *Includes warranted S.D. Highway 115 mainline turn lanes*
- *C-1b: Single-lane roundabout option (Figure 48B)*

#### Applicable to Corridor Scenarios C-2:

- *C-2a: Conventional signalized intersection option (Figure 48C)*
  - *Includes warranted S.D. Highway 115 mainline turn lanes*
- *C-2b: Single-lane roundabout option (Figure 48D)*

**Figure 47** and **Figure 48** provide an overview of the proposed scenario improvements, with corridor layouts depicting the urban 4-lane divided (raised median) corridor and suburban 3-lane corridor concepts. Intersection configuration layouts include single-lane roundabouts and conventional signalized intersections for the West 4<sup>th</sup> Street intersection. Each scenario supports long-range goals identified in the corridor study's **Bicycle and Pedestrian Plan** and the **Access Plan**.

## 16.1 Design Notes

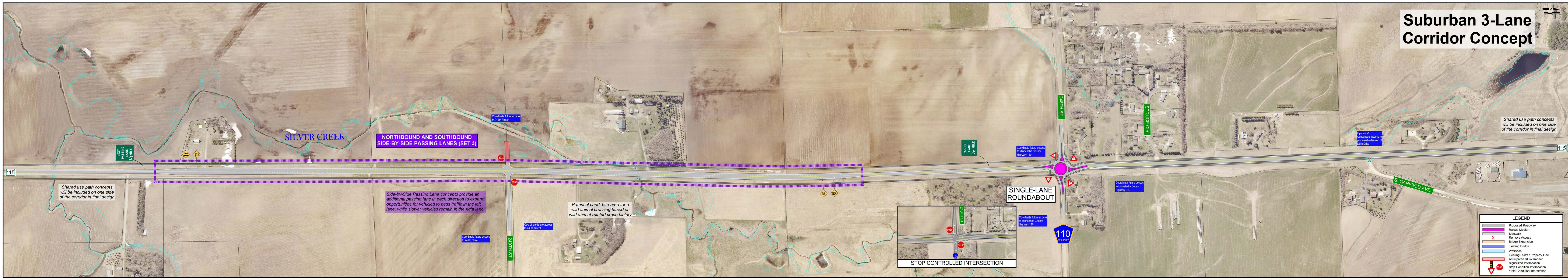
Scenarios C-1a and C-1b require expansion of the two existing Big Sioux River bridges to accommodate 4 through lanes with an undivided 4-lane section. Scenarios C-2a and C-2b maintain the existing bridge sections.

It is recommended that a signalized intersection be considered for the West 4<sup>th</sup> Street intersection due to limitations with ROW and wetlands surrounding the intersection. The single-lane roundabout intersection requires a larger footprint to accommodate the center island and a northbound right turn bypass lane which may present adjacent environmental and wetland challenges. This option should be retained for further evaluation and consideration based on potential safety benefits and public feedback.

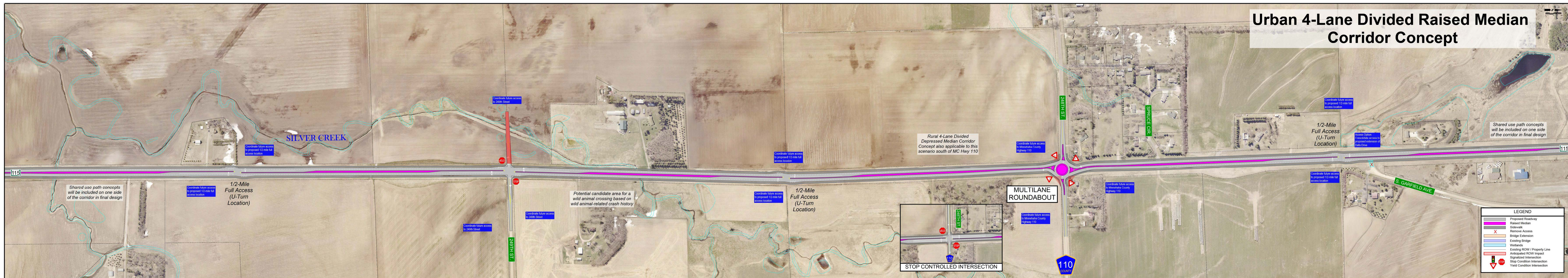
Each identified major intersection, which meets access spacing requirements, includes U-turn movement opportunities with corresponding U-turn bump-outs. In current rural areas without existing intersections meeting spacing requirements, the concepts identify full access and U-turn movement opportunities at ½-mile increments. Future development-driven access locations at ¼-mile increments, consistent with access spacing guidelines, are identified in the **Access Plan**.

Multimodal features include a 10-ft. shared use path on the west side of the corridor from M.C. Highway 110 to the existing west side shared use path at Centennial Place that connects to the City of Dell Rapids. Concepts depict shared use paths on both sides of the corridor throughout the overall segment, thus including a potential alternative shared use path location on the east side of the corridor from M.C. Highway 110 to West 4<sup>th</sup> Street in Dell Rapids.

### Suburban 3-Lane Corridor Concept



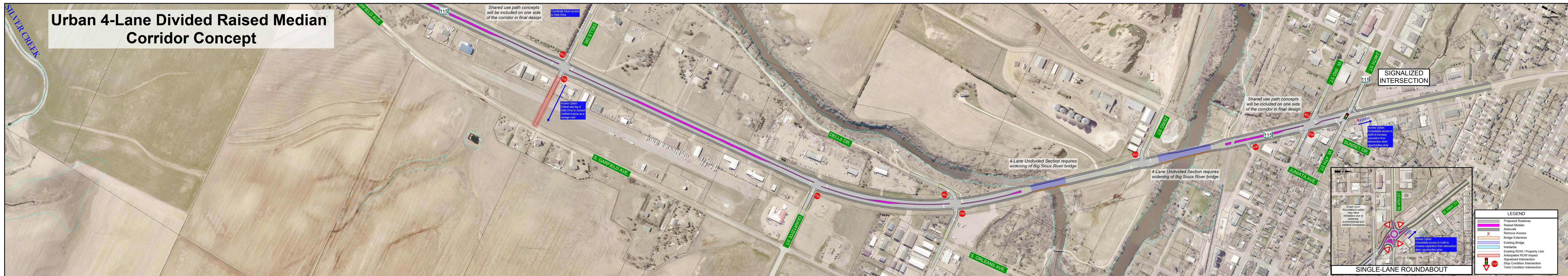
### Urban 4-Lane Divided Raised Median Corridor Concept

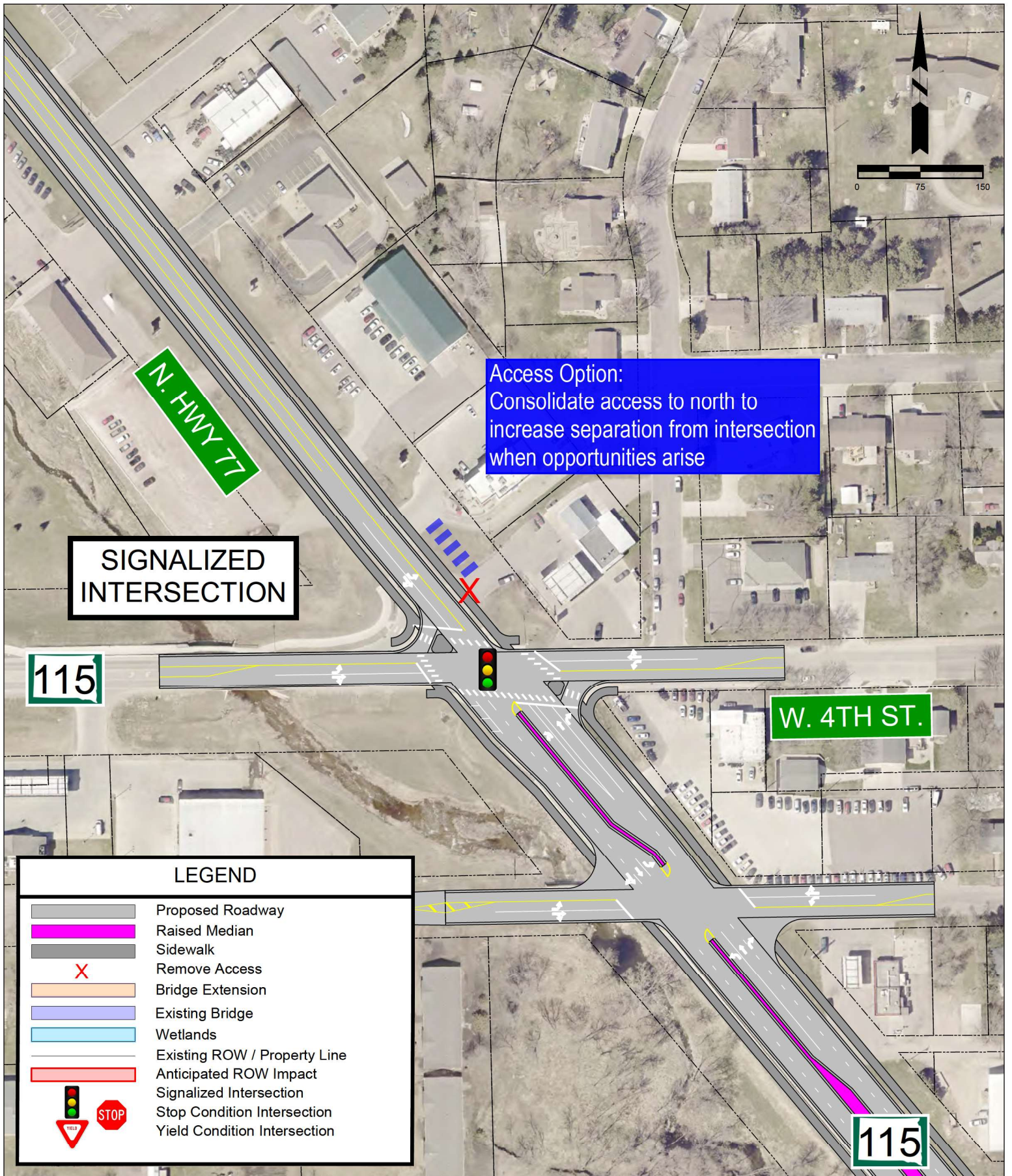


### Suburban 3-Lane Corridor Concept



### Urban 4-Lane Divided Raised Median Corridor Concept

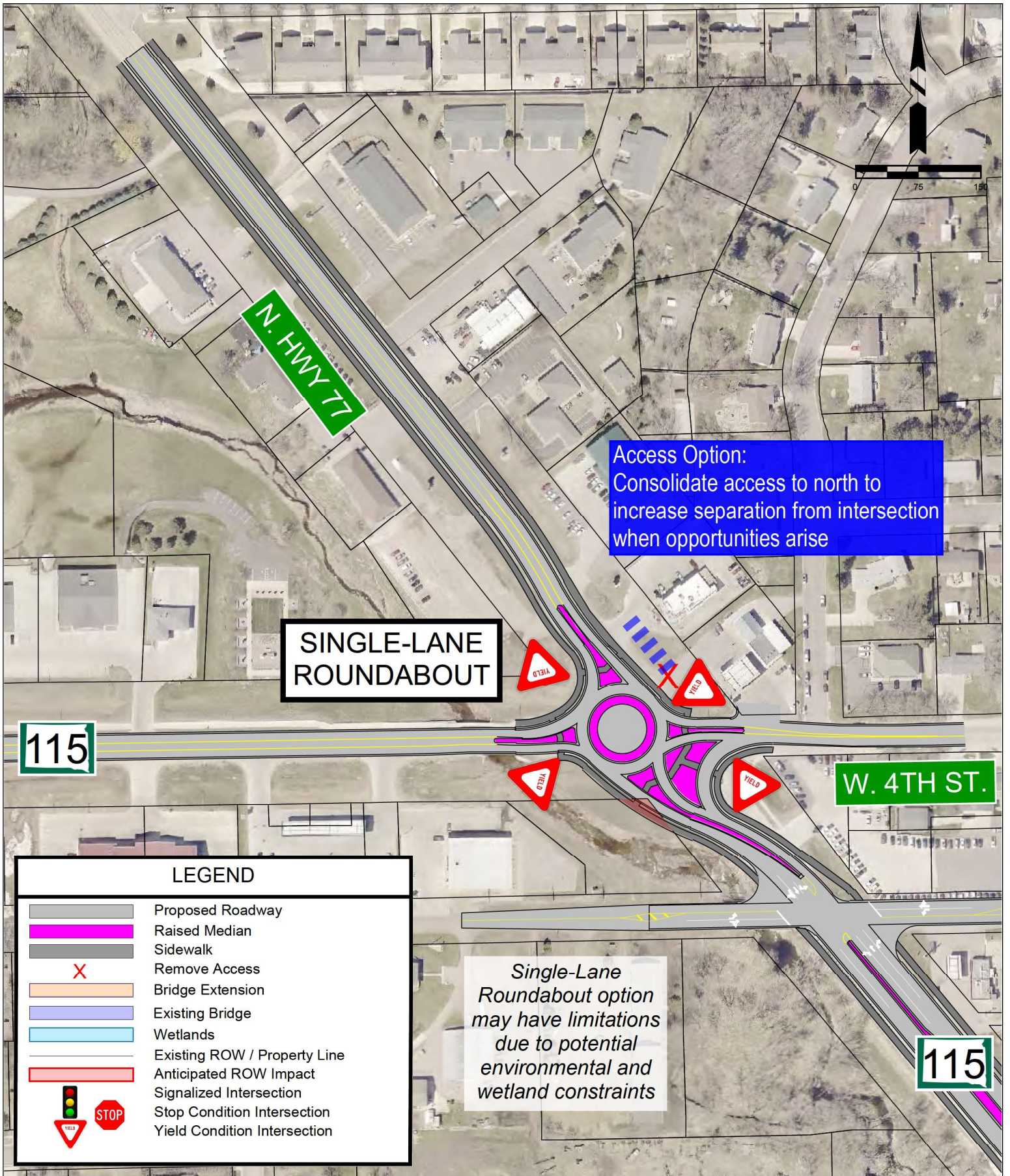




S.D. Highway 115 & West 4th Street Intersection  
North of M.C. Highway 110 to Dell Rapids (Scenario C-1a)

Intersection Configuration: Traffic Signal With Turn Lanes (Urban 4-Lane Divided Corridor)  
South Dakota Highway 115 Corridor Study

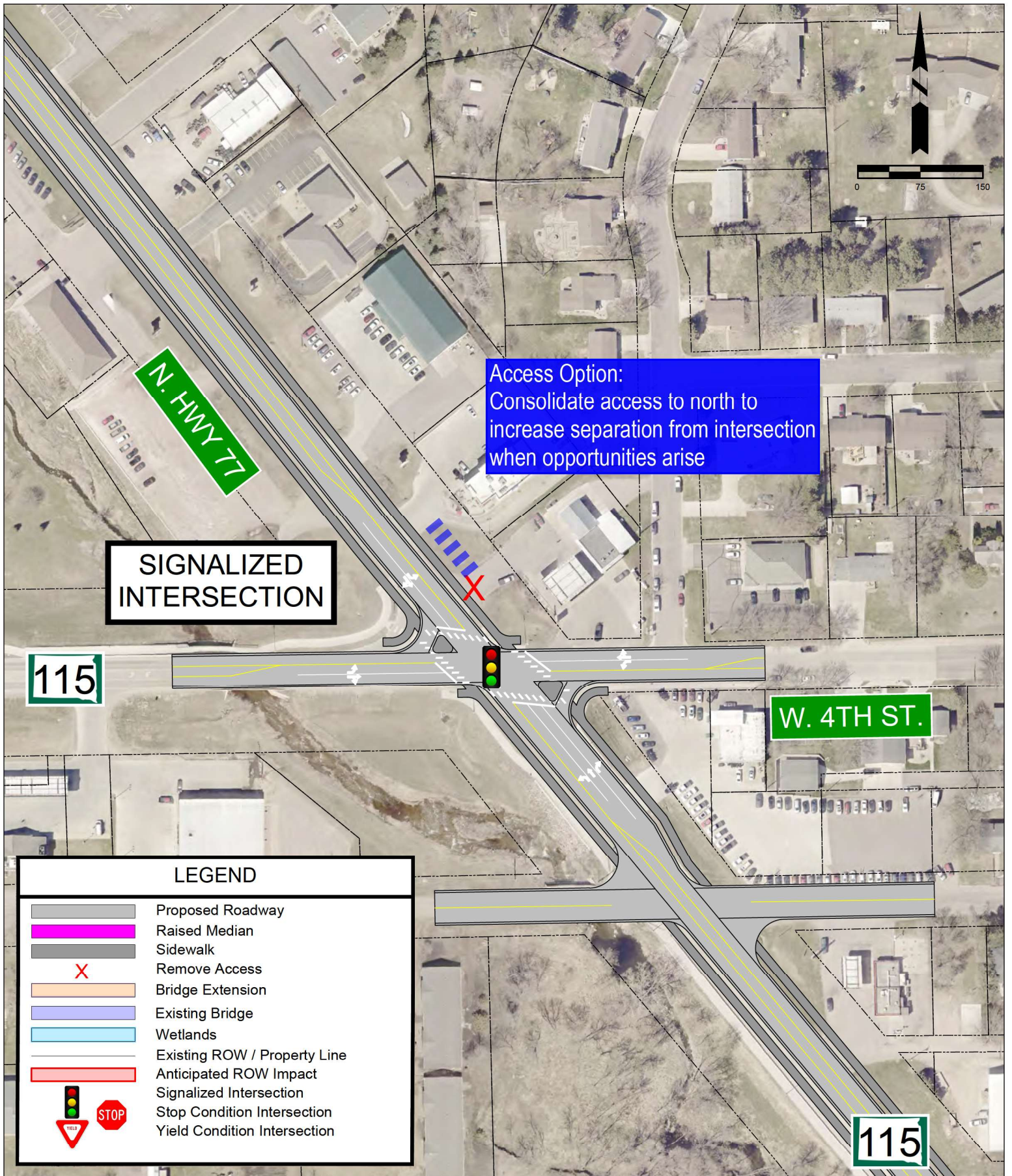
Figure  
**48-A**



S.D. Highway 115 & West 4th Street Intersection  
North of M.C. Highway 110 to Dell Rapids (Scenario C-1b)

Intersection Configuration: Single-Lane Roundabout (Urban 4-Lane Divided Corridor)  
South Dakota Highway 115 Corridor Study

Figure  
**48-B**



Access Option:  
 Consolidate access to north to  
 increase separation from intersection  
 when opportunities arise

**SIGNALIZED  
 INTERSECTION**

**115**

**W. 4TH ST.**

**115**

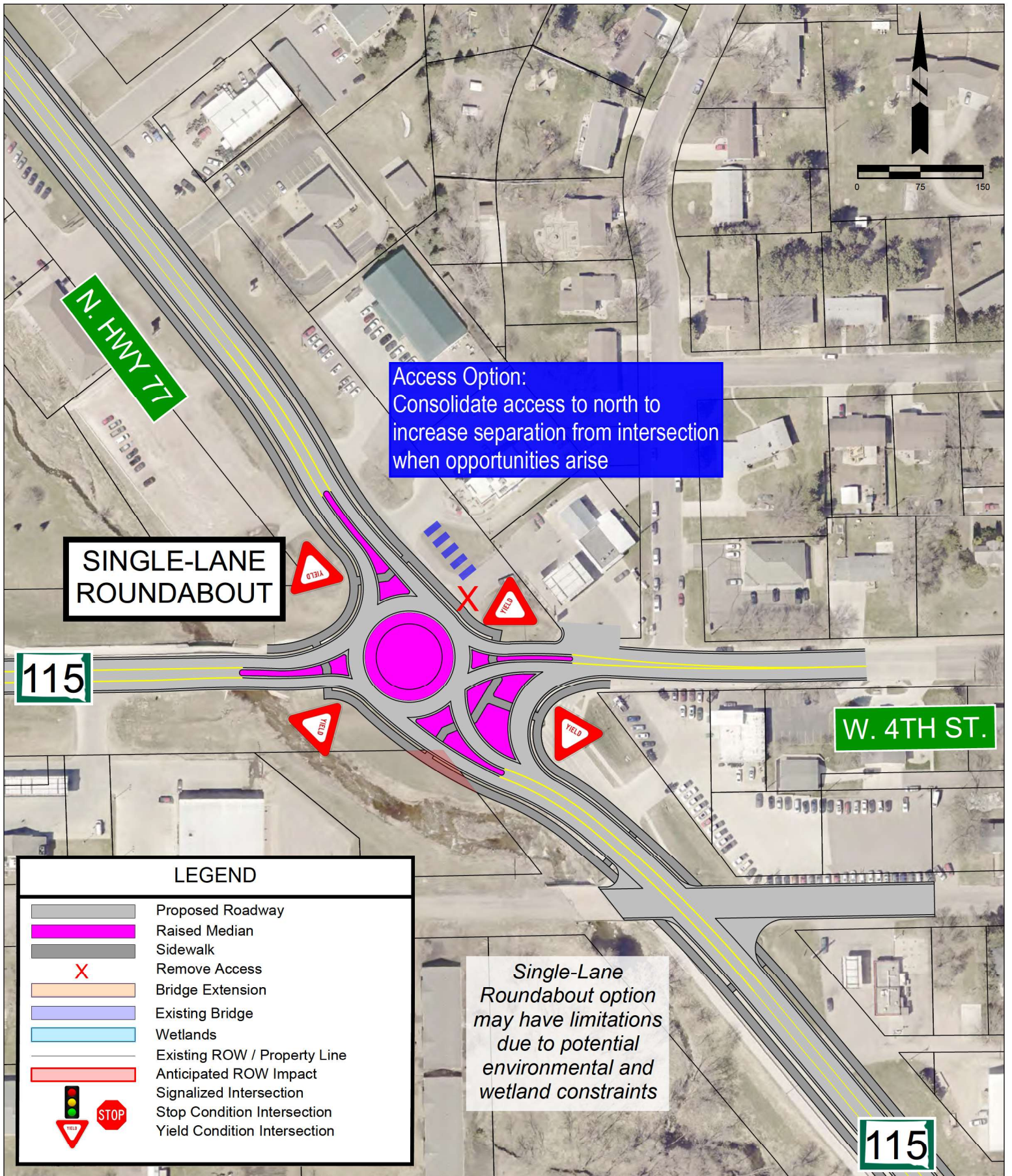
LEGEND	
	Proposed Roadway
	Raised Median
	Sidewalk
	Remove Access
	Bridge Extension
	Existing Bridge
	Wetlands
	Existing ROW / Property Line
	Anticipated ROW Impact
	Signalized Intersection
	Stop Condition Intersection
	Yield Condition Intersection

S.D. Highway 115 & West 4th Street Intersection  
 North of M.C. Highway 110 to Dell Rapids (Scenario C-2a)

Figure  
**48-C**

Intersection Configuration: Traffic Signal with Turn Lanes (Suburban 3-Lane Corridor)  
 South Dakota Highway 115 Corridor Study





S.D. Highway 115 & West 4th Street Intersection  
North of M.C. Highway 110 to Dell Rapids (Scenario C-2b)

Intersection Configuration: Single-Lane Roundabout (Suburban 3-Lane Corridor)  
South Dakota Highway 115 Corridor Study

Figure  
**48-D**

## 16.2 Traffic Operations Analysis

West 4<sup>th</sup> Street intersection traffic operations are expected to exhibit either LOS A or B in the AM peak hour and LOS C in the PM peak hour in the 2055 Planning Horizon, as shown in **Table 35**. The traffic signal configuration features more delay in the AM and less delay in the PM compared to the single-lane roundabout alternative.

**Table 35: S.D. Highway 115 North of M.C. Highway 110 to Dell Rapids Intersection Operations (2055 Build)**

S.D. Highway 115 Intersection		S.D. Highway 115 Section	Intersection Control	Measure	AM		PM	
					Delay (s/veh)	LOS	Delay (s/veh)	LOS
Scenario C-1a, C-1b, C-2a, & C-2b	West 4 <sup>th</sup> Street	Multilane / 3-Lane	Signal	Overall	19.1	B	15.1	C
			Single-Lane Roundabout	Overall	8.0	A	21.0	C

**Table 36: S.D. Highway 115 Corridor North of M.C. Highway 110 to Dell Rapids Segment Operations (2055 Build)**

Scenario	From	To	Length (mi)	Highway Type	AM LOS		PM LOS	
					SB	NB	SB	NB
C-1	M.C. Highway 110	West 4 <sup>th</sup> Street	2.5	Multilane	A	A	A	A
C-2	M.C. Highway 110	West 4 <sup>th</sup> Street	2.5	3-Lane	C	A	B	C

As shown in **Table 36**, the identified improvements will provide long-range capacity for the S.D. Highway 115 corridor between M.C. Highway 110 and West 4<sup>th</sup> Street and the West 4<sup>th</sup> Street intersection. A multilane corridor throughout this segment provides the best LOS with LOS A, while the 3-lane section exhibits between LOS A and LOS C, depending upon the peak hour and direction of traffic. While the 3-lane section has slightly more delay and less LOS than the multilane, LOS C is still an appropriate level for this corridor segment where Dell Rapids development is anticipated to urbanize and expand to through the 2055 planning horizon.

### 16.3 Predictive Safety Analysis

Results from the predictive safety analysis are shown in **Table 37**. The urban 4-lane divided corridor with a single-lane roundabout at West 4<sup>th</sup> Street shows the greatest crash reductions amongst each scenario. However, the signalized and 3-lane concepts are very similar in both F&I and total predicted crashes and thus the predicted safety benefits are not notably different between each scenario.

**Table 37: S.D. Highway 115 North of M.C. Highway 110 to Dell Rapids Predicted Crashes per Year (2031 to 2055)**

Scenario	F & I Crashes	Change from No Build + increase - decrease	Total Crashes	Change from No Build + increase - decrease
No Build ( <i>baseline</i> )	1.4	-	5.4	-
No Build – Undivided Multilane ( <i>baseline sensitivity analysis</i> )	2.8	+100%	9.2	+70%
Scenario C-1a Build ( <i>Urban 4-Lane Divided with Conventional Signal</i> )	1.2	-14% (-57%)	3.7	-31% (-60%)
Scenario C-1b Build ( <i>Urban 4-Lane Divided with Single-Lane Roundabout</i> )	1.0	-29% (-64%)	3.6	-33% (-61%)
Scenario C-2a Build ( <i>Suburban 3-Lane with Conventional Signal</i> )	1.2	-14% (-57%)	3.9	-27% (-60%)
Scenario C-2b Build ( <i>Suburban 3-Lane with Single-Lane Roundabout</i> )	1.1	-20% (-60%)	3.8	-30% (-59%)

### 16.4 Potential Impacts and Public Comment

Environmental and property impacts are anticipated to be minimal along this corridor. The main constraint would be in the area surrounding the West 4<sup>th</sup> Street intersection single-lane roundabout concept. This concept would likely necessitate additional ROW and wetland impacts near Rocky Run Creek and may also require adjustments to the existing bridge to the west.

There was limited feedback from public and stakeholders along this segment. The main item receiving feedback was a preference amongst some commentors for the single-lane roundabout at West 4<sup>th</sup> Street instead of a traffic signal.

## 16.5 Future Pavement and Structure Needs Summary

A summary of existing structures and upcoming major investment needs along the corridor segment includes:

- Structures
  - Big Sioux River bridge north of Zero Street (2018)
  - Big Sioux River bridge north of Dells Drive (2016)
  - West 3<sup>rd</sup> Street bridge (2025)
  - 17 culverts
  
- No major projects have been identified in this area through either the SDDOT's Pavement Needs book or in the 2030-2033 Development STIP.

## 16.6 Evaluation Summary and Recommendations

**Table 38** presents an evaluation summary matrix of traffic operations, predictive safety, ROW and construction costs, and potential environmental impact measures. The overarching benefits and drawbacks of each scenario are summarized in **Table 39**.

Based on a review of the evaluation matrix, benefits and drawbacks, and timelines for next major investments along the corridor, long-range recommendations and potential timelines are summarized in **Table 40**.

**Table 38: S.D. Highway 115 North of M.C. Highway 110 to Dell Rapids Corridor Scenario Summary Matrix**

Scenario	Traffic Operations				Predictive Safety		ROW & Costs			Environmental Impacts
	Intersection Operations (2055 LOS)	S.D. Highway 115 Corridor Operations (2055 LOS)	Access Management	Corridor Reliability & Driver Expectancy	F&I Crashes	Total Crashes	ROW Acquisition	Construction & ROW Costs	Impact to Private Property	Potential Impacts
	<i>AM / PM</i>	<i>AM / PM</i>	<i>5 - Best 3 - Middle 1 - Least</i>	<i>5 - Best 3 - Middle 1 - Least</i>	<i>Average Annual # Crashes</i>	<i>Average Annual # Crashes</i>	<i>Acres</i>	<i>\$ mil</i>	<i>5 - Least 3 - Middle 1 - Most</i>	<i>Low, Medium, High</i>
<b>C-1a</b>	B / C	A / A	5	3	1.2	3.7	0.8	\$44.0	4	Medium
<b>C-1b</b>	A / C	A / A	5	3	1.0	3.6	0.8	\$44.5	3	Medium
<b>C-2a</b>	B / C	A-C / B-C	3	5	1.2	3.9	0.9	\$23.5	4	Low
<b>C-2b</b>	A / C	A-C / B-C	3	5	1.1	3.8	0.9	\$24.0	5	Low
<b>No Build</b>	C / F	A-C / B-C	1	4	1.4	5.4	0.0	\$0.0	5	Low

**Table 39: S.D. Highway 115 North of M.C. Highway 110 to Dell Rapids Scenario Benefits and Drawbacks**

Scenario	Benefits	Drawbacks
<p><b>No Build (baseline)</b></p>	<ul style="list-style-type: none"> <li>No environmental impacts, cost, or property impacts.</li> </ul>	<ul style="list-style-type: none"> <li>Does not improve corridor safety.</li> <li>Does not improve access management and reduce conflict points along the corridor.</li> <li>Does not add multimodal improvements.</li> </ul>
<p><b>Scenario C-1a (Urban 4-Lane Divided with Conventional Signalized Intersections)</b></p>	<ul style="list-style-type: none"> <li>Adds corridor capacity and reliability.</li> <li>Adds shared use paths (multimodal improvements).</li> <li>Provides predicted reduction in crashes.</li> </ul>	<ul style="list-style-type: none"> <li>Requires expansions on two Big Sioux River bridges.</li> <li>Medium environmental impact to wetlands.</li> <li>Requires future drainage facility upgrades.</li> <li>ROW needs.</li> <li>Fewer safety benefits.</li> </ul>
<p><b>Scenario C-1b (Urban 4-Lane Divided with Single-Lane Roundabout)</b></p>	<ul style="list-style-type: none"> <li>Adds corridor capacity and reliability.</li> <li>Adds shared use paths (multimodal improvements).</li> <li>Predicted reduction in crashes.</li> <li>Provides greater traffic calming effect.</li> </ul>	<ul style="list-style-type: none"> <li>Requires expansions on two Big Sioux River bridges.</li> <li>Medium environmental impact to wetlands.</li> <li>Requires future drainage facility upgrades.</li> <li>ROW needs.</li> </ul>
<p><b>Scenario C-2a (Suburban 3-Lane with Conventional Signalized Intersection)</b></p>	<ul style="list-style-type: none"> <li>Low environmental impact to wetlands.</li> <li>Adds shared use path (multimodal improvements).</li> <li>Provides predicted reduction in crashes.</li> </ul>	<ul style="list-style-type: none"> <li>Requires future drainage facility upgrades.</li> <li>Fewer safety benefits.</li> </ul>
<p><b>Scenario C-2b (Suburban 3-Lane with Single-Lane Roundabout)</b></p>	<ul style="list-style-type: none"> <li>Adds shared use path (multimodal improvements).</li> <li>Predicted reduction in crashes.</li> <li>Provides greater traffic calming effect.</li> </ul>	<ul style="list-style-type: none"> <li>Environmental impact to wetlands with single-lane roundabout.</li> <li>ROW needs.</li> </ul>

**Table 40: S.D. Highway 115 North of M.C Highway 110 to Dell Rapids Corridor Recommendations**

**Corridor Scenario:** Scenario C-2 (Suburban 3-Lane Corridor)

**Cross-section:** Maintain and expand suburban 3-lane corridor and recommended improvements

**Timeline:**

*2032-2043:*

- *Reconstruct West 4<sup>th</sup> Street intersection as a Traffic Signal to reflect Scenario C-2a. Consider the single-lane roundabout concept (Scenario C-2b) as an alternative if feasible.*

*2043-2055:*

- *Reconstruct SD115 from M.C. Highway 110 to West 4<sup>th</sup> Street to reflect Scenario C-2.*

## 17. ITS Recommendations

The recommended Intelligent Transportation System (ITS) plan focuses on three primary areas of transportation systems management and operations (TSMO) needs to complement potential capital improvements:

- Traveler information systems
- Data collection
- Communications

Recommendations were developed as part of a January 16, 2026, meeting with SDDOT, City of Sioux Falls, Minnehaha County, and SECOG staff. Discussions centered on the three focus areas and potential implementations, leading to recommendations contained herein. Further discussion on this process is provided in the *ITS Recommendations* technical memo in **Appendix P**. Recommended locations for ITS deployment are shown in **Figure 49**.

### Focus Area 1: Traveler information systems improvements

**Need:** Crash history, large animal crossings along the northern rural section of the corridor, and winter weather-related events along the corridor.

**Recommendation:** ITS deployments to provide roadway monitoring capabilities at high crash locations or areas with a history of winter-weather and/or wild animal-related crashes, greater information dissemination capabilities, and infrastructure installations to support ITS devices:

- Closed Circuit Television (CCTV) cameras with Pan-Tilt-Zoom (PTZ) capabilities
- Large Animal Detection System (LADS)
- Communications and power infrastructure

### Focus Area 2: Data collection improvements

**Need:** Collect traffic count and vehicle classification information representative of areas along the corridor outside of future Sioux Falls and Dell Rapids growth areas.

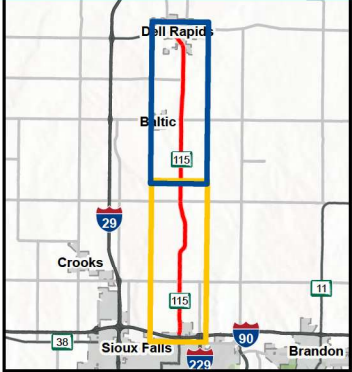
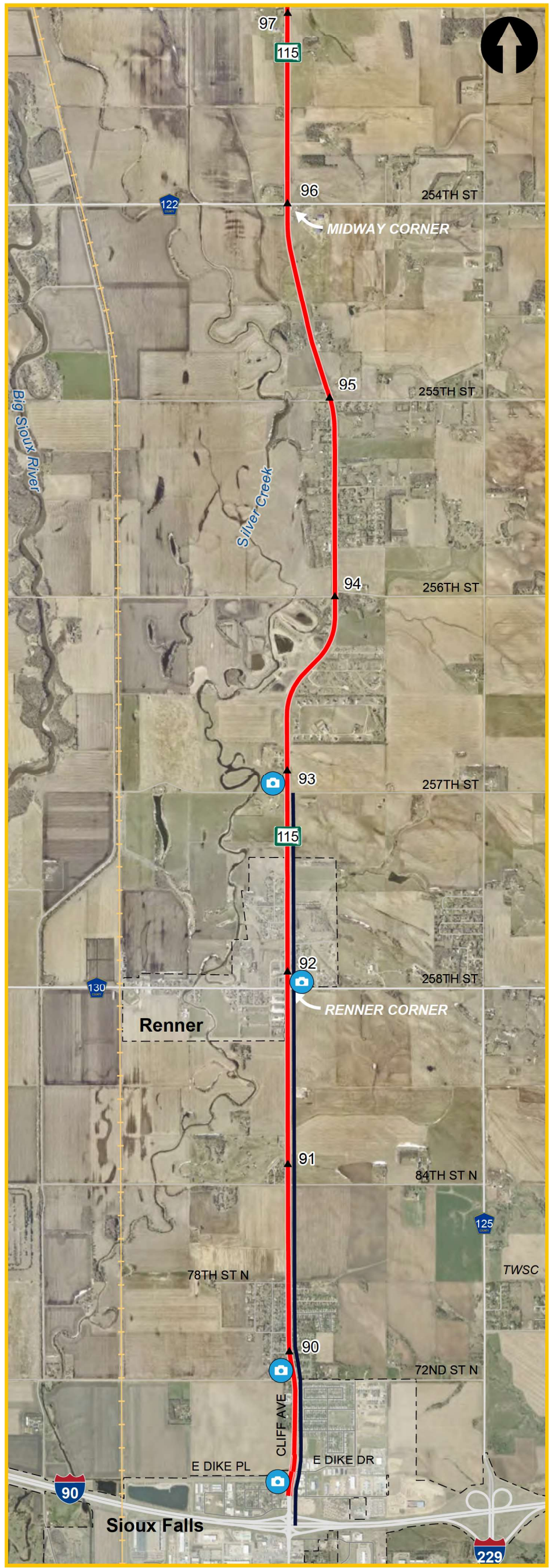
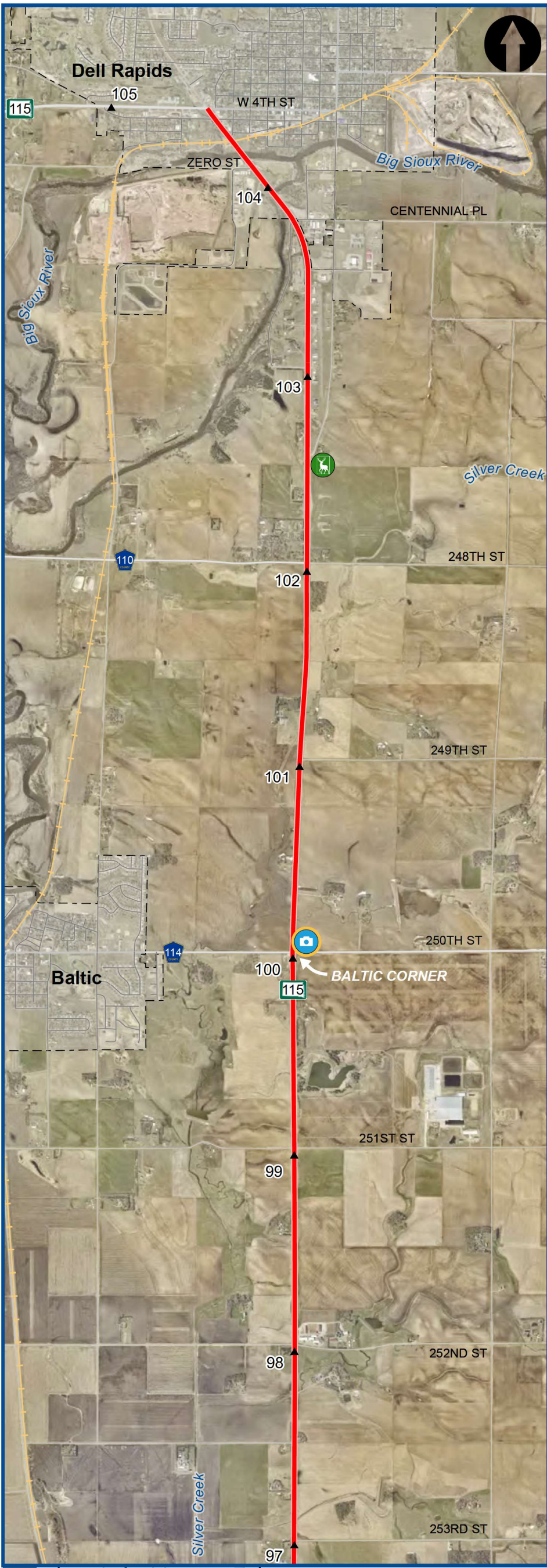
**Recommendation:** ITS deployments to provide traffic count and vehicle classification information:

- Automatic traffic recorders (ATR)
- Side-fire radar sensors (one located with proposed CCTV at the S.D. Highway 115 & M.C. Highway 114 (Baltic Corner) intersection)
- Communications and power infrastructure





### Focus Area 3: Communications improvements

**Need:** Monitor traffic and safety along the corridor.

**Recommendation:** Install fiber optic cables in conduit for CCTV deployments within the City of Sioux Falls future growth areas and additional networks. This fiber optic deployment should connect to the City of Sioux Falls existing fiber optic infrastructure at I-90 and Cliff Avenue to S.D. Highway 115 and 257<sup>th</sup> Street. Cellular communications should be utilized for SDDOT ITS devices installed along the corridor.



**LEGEND**

-  Proposed CCTV Locations
-  Proposed Large Animal Detection System (LADS) Locations
-  Proposed ATR Locations
-  Proposed Fiber Optic Locations



**ITS RECOMMENDATIONS**  
FIGURE 49



## 18. Wildlife Crossings Review

During the crash history review, it was observed that the rural northern portion of the study corridor experienced frequent wild animal-related crashes. In addition, public and study stakeholders mentioned concerns with wildlife crossings during open house meetings. When asked in the travel survey about what improvements to prioritize along the corridor, one of the top five responses was incorporating protected wildlife crossings.

Based on the safety background and public and stakeholder feedback on this issue, the potential inclusion of protected wildlife crossings was discussed at the study advisory team concept development workshop on October 28, 2024. During this meeting, SDDOT staff mentioned an upcoming statewide rural wildlife crossing study and suggested that the S.D. Highway 115 corridor study identify potential wildlife crossing locations with a concentration on drainage way crossings. The larger statewide study will determine more specific improvements and projects for such crossings across the state and potentially along S.D. Highway 115. It should also be noted that a 2016 SDDOT statewide wildlife crossing study identified this corridor as a statistically significant hot spot for wildlife-vehicle crashes<sup>2</sup>.

To determine potential wildlife crossing locations along the corridor, an analysis was conducted to summarize wildlife-vehicle collision trends and identify potential mitigation strategies.

### Wildlife Movement Summary

With respect to wildlife-vehicle collisions on the S.D. Highway 115 corridor, white-tailed deer are the primary species of concern as collisions with deer are more likely to result in vehicle damage and human injury than collisions with smaller species like coyotes and raccoons. Deer are considered common throughout most of the corridor, particularly in the rural area towards the northern extent of the corridor. Deer utilize habitat year-round in this area with no major migrations into or out of the study area. There are few impediments to deer movements in the study area, such as chain link fence, meaning deer can cross S.D. Highway 115 at most locations along the corridor.

Daily deer movements are largely attributed to habitat availability and usage within individual home ranges. Deer may prefer to feed on one side of the highway but retreat to bedding or watering areas on the other side. Daily movements may also be in response to human disturbance from farming, hunting, or to escape from predation. In rural and semi-rural farming environments along the corridor, deer activity is often nocturnal with daily peak deer movements tending to occur at dawn and dusk and seasonally during the breeding season, roughly October through December.

<sup>2</sup> Cramer, P., J. Kintsch, K. Gunson, F. Shilling, M. Kenner, and C. Chapman. 2016. Reducing WVC in South Dakota, Study SD2014-03, Final Report. Prepared for the South Dakota Department of Transportation and the U.S. Department of Transportation Federal Highway Administration. July 29, 2016.

### Wildlife-Vehicle Crash History and Roadkill Data Review

Overall, 62 percent (176 crashes) of 285 total reported crashes reported along the S.D. Highway 115 corridor were wild animal-related. Specific corridor segment locations where wild animal-related crashes exceeded 50 percent of total crashes included the following:

- S.D. Highway 115: M.C. Highway 110 to West 4<sup>th</sup> Street (89 percent)
- S.D. Highway 115: M.C. Highway 130 (Renner Corner) to M.C. Highway 122 (Midway Corner) (69 percent)
- S.D. Highway 115: M.C. Highway 114 (Baltic Corner) to M.C. Highway 110 (65 percent)
- S.D. Highway 115: M.C. Highway 122 (Midway Corner) to 252<sup>nd</sup> Street (57 percent)
- S.D. Highway 115: 252<sup>nd</sup> Street to M.C. Highway 114 (Baltic Corner) (55 percent)

The wildlife-vehicle crash data does not differentiate wild animal species, but it is assumed a majority involve collisions with white-tailed deer. The 176 reported wildlife-vehicle crashes equate to an average of 35 crashes per year or roughly 2.5 collisions per mile per year. In total, non-injury wildlife-vehicle collisions along the corridor come with an estimated cost of over \$650,000 annually in property damage<sup>3</sup>. **Figure 50** depicts wildlife roadkill density for years 2019 and 2025 along S.D. Highway 115 based on available data from the SDDOT's online GIS database.

Wildlife-vehicle crashes occurred year-round but were generally highest during the late-fall and winter months (October, November, and February) and lowest during the summer months (July and August). Total wildlife-vehicle crashes per year have declined by about 50 percent from 2019 to 2023. 80 percent occurred at night without the presence of roadway lighting. Nearly all wildlife-vehicle collisions occurred along a segment where the posted speeds were 55 mph or greater and 91 percent occurred where posted speeds were 65 mph.

### Wildlife-Vehicle Crash Hotspot Analysis

A wildlife-vehicle crash hotspot analysis was performed to identify statistically significant hot spot location along S.D. Highway 115. The analysis was conducted based on wildlife-vehicle crash frequency within each ½-mile segment of the corridor. The two half-mile segments north of 248<sup>th</sup> Street (MP 102-103) were identified as statistically significant hot spot locations. Approximately 42 percent occurred within this one-mile corridor segment. A supplemental Kernel density analysis was conducted and identified the three-miles corridor segment from 257<sup>th</sup> Street to M.C. Highway 122 (Midway Corner) as an elevated wildlife-vehicle crash location. The results of the wildlife-vehicle crash hotspot analysis are depicted in **Figure 51**.

<sup>3</sup> Blincoe, L., T. Miller, J. S. Wang, D. Swedler, T. Coughlin, B. Lawrence, F. Guo, S. Klauer, and T. Dingus. 2022. The economic and societal impact of motor vehicle crashes, 2019 (Report No. DOT HS 813 403). National Highway Traffic Safety Administration.

## Recommendations

A set of wildlife-vehicle crash mitigation strategies and recommendations were made as part of the *Wildlife Crossings Review* technical memo, provided in **Appendix Q**. These opportunistic strategies and recommendations for consideration along S.D. Highway 115 should be further evaluated for implementation feasibility in future studies and projects.

**Signing:** Install deer crossing sign with yellow flashing lights along S.D. Highway 115 segments between M.C. Highway 110 and Garfield Avenue and between 257<sup>th</sup> Street and M.C. Highway 122 (Midway Corner). Solar powered flashing deer crossing signs can be a relatively low-cost mitigation strategy if installed along short segments identified as hot spots along the corridor.

**Fencing:** Evaluate wildlife exclusion fencing where fencing termination points can be tied to anthropogenic features like major roadway intersections, dense housing developments, or commercially developed lands. These locations could include wildlife-vehicle crash hotspot locations of S.D. Highway 115 between M.C. Highway 110 and Garfield Avenue and between 257<sup>th</sup> Street and M.C. Highway 122 (Midway Corner). In addition, wildlife exclusion fencing could be added to the two Big Sioux River bridges along the corridor, although these locations may only serve to mitigate a small number of wildlife-vehicle crashes per year.

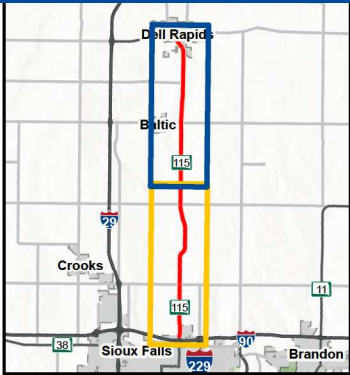
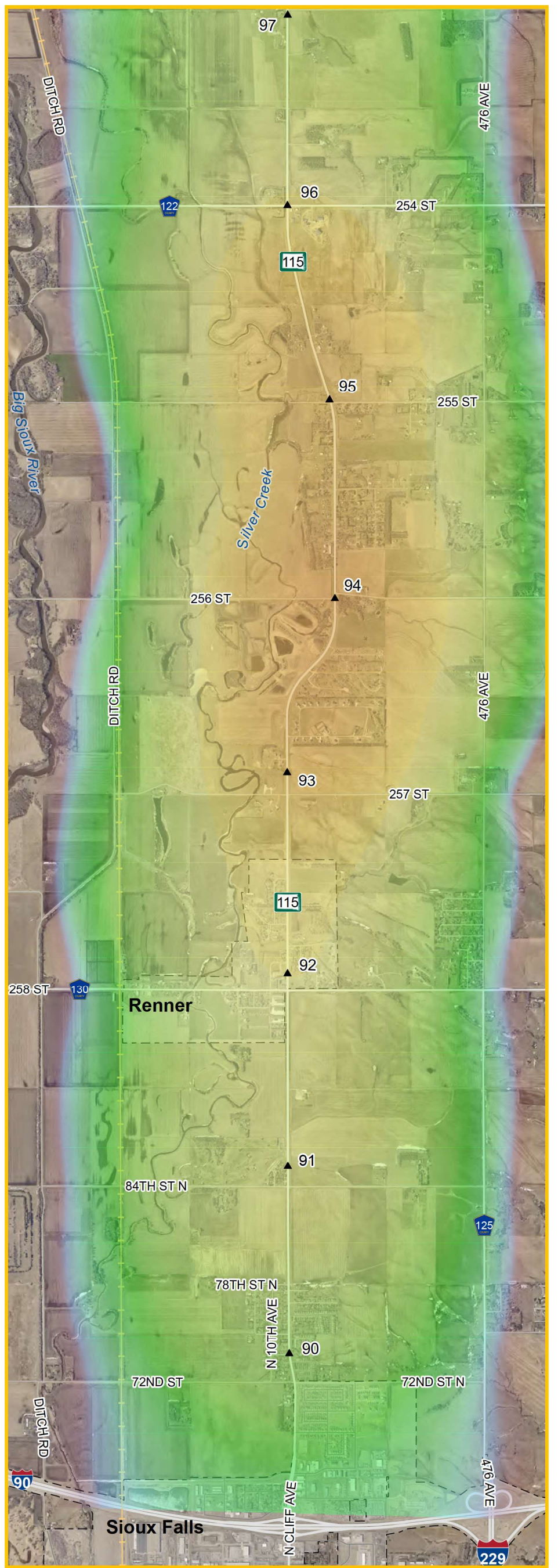
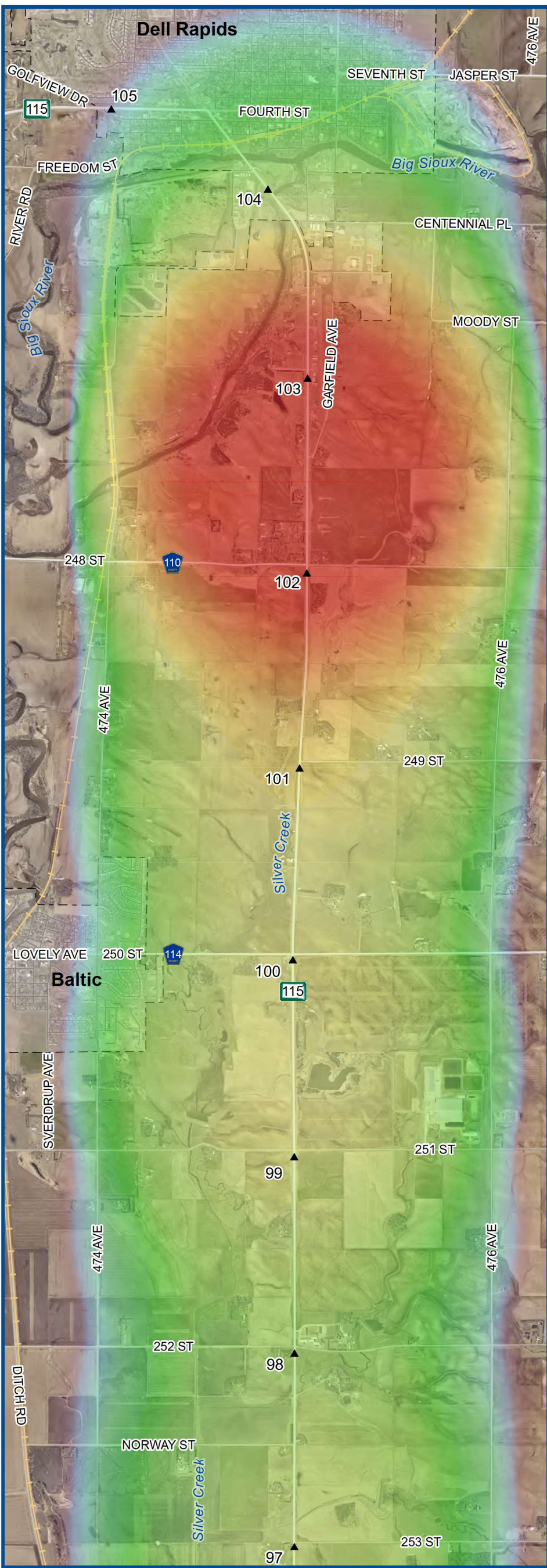
Wildlife exclusion fences have several potential challenges to be considered with design, construction, and long-term operation and maintenance. Wildlife exclusion fences not associated with wildlife crossings may serve to cut off daily wildlife movements and fragment important habitat. Uncontrolled access highways like S.D. Highway 115 tend to have numerous intersecting roads, driveways, and approach roadways that, if not mitigated correctly, serve as a break or gap in the wildlife fence. These gaps can be closed through the use of fence gates, double cattleguard design, and electrified mats installed across the intersecting roadway. Wildlife exclusion fence must also be constructed with wildlife jumpouts, typically located every ¼- to ½-miles, that allow wildlife inside the fence to escape the right-of-way. Overall, this strategy should be further explored and approved by the SDDOT and the South Dakota Game, Fish, and Parks (SDGFP) prior to implementation.

**Wildlife Underpass/Overpass Structures:** Evaluate the use of wildlife crossing structures in wildlife-vehicle crash hot spot locations along S.D. Highway 115. Several implementation challenges may exist along the corridor including:

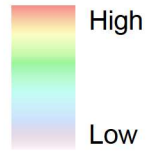
- High costs
- Minimal topographic relief for an underpass that accommodates the 13-foot minimum wildlife overhead clearance and 23-foot minimum width typical for deer.
- Lack of topographic high points on each side of the corridor that can be bridged with a wildlife overpass. Although overpasses can be constructed in flat terrain, the entrance ramp footprint tends to extend well beyond the existing right-of-way.
- Lack of potential crossing locations where public lands are present on both sides of the corridor. Additional research is needed to identify private lands protected under conservation easement. Wildlife crossings in areas with private ownership that are not protected run the risk of future land use changes.

**Wildlife Detection Systems:** Evaluate the use of wildlife detection systems (WDS) in wildlife-vehicle crash hot spot locations along S.D. Highway 115. Wildlife detection systems (WDS) are an emerging technology that state DOT's are experimenting with and adopting across the western U.S. Through the use of advanced radar and thermal imaging technology, detection systems are being used to detect animal crossings of the roadway in real-time to warn the traveling public of the danger on the roadway. Typically, large wildlife crossing signs with flashing yellow lights are used to warn drivers of the immediate danger. Signs are illuminated when an animal is detected entering the right-of-way and stay on until the danger has moved out of the right-of-way.

**Roadway Lighting:** Install overhead roadway lighting to increase driver vision during nighttime hours to minimize deer collisions in wildlife-vehicle crash hot spot locations. Along the S.D. Highway 115 corridor, providing overhead lighting in urban fringe areas such as between 72<sup>nd</sup> Street North and 78<sup>th</sup> Street North near Sioux Falls and M.C. Highway 110 to Dells Drive near Dell Rapids would provide additional safety benefits which currently do not feature roadway lighting facilities.



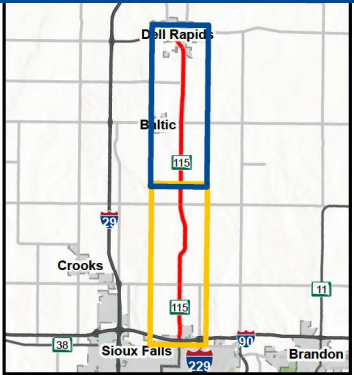
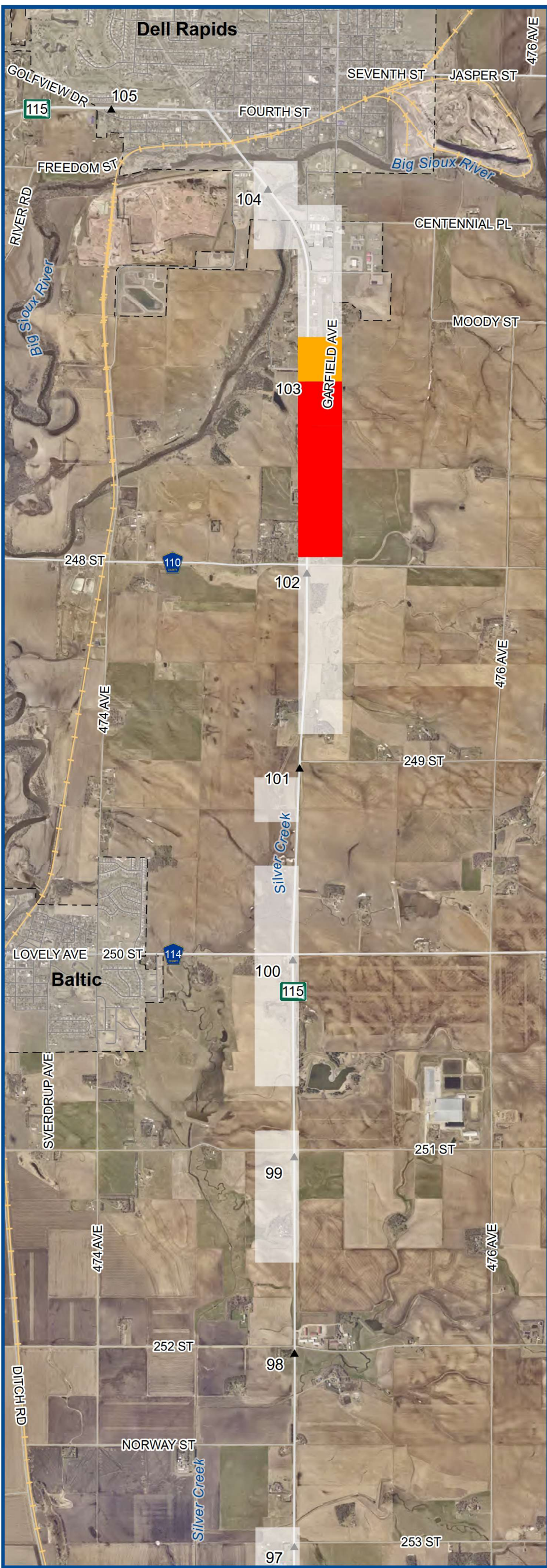
**Wildlife Roadkill Density**



**WILDLIFE ROADKILL DENSITY (2019-2025)**

FIGURE 50





**Wildlife-Vehicle Collision Hotspots**

**Significance**

- 99%
- 95%

Not Significant



**WILDLIFE-VEHICLE COLLISION HOTSPOTS**

FIGURE 51



## 19. Blowing Snow Recommendations

In the early stages of the study, several problematic blowing and drifting snow areas were identified by the SAT, SDDOT maintenance staff, public, and study stakeholders. Blowing snow and slushy road conditions, particularly in rural areas along the corridor with open fields on both sides of the corridor, was a frequently cited concern. A winter-weather crash analysis, shown in **Figure 11**, found that the problematic locations identified anecdotally largely aligned with higher winter-weather crash locations. It should be noted that some of these issues persist due to lack of available existing ditch snow storage along the corridor. It is recommended that a multi-faceted approach using the following design and seasonal operational measures be considered to address blowing and drifting snow:

### Roadway typical sections

- Height above surrounding terrain for fill sections
- Barn roof design for large fill sections
- Flat-bottom ditches for cut sections

### Safety barriers

- Concrete barriers considerations; poor performance for blowing and drifting snow
- W-beam considerations; poor performance for blowing and drifting snow
- Box-beam and cable rail considerations; better performance for blowing and drifting snow

### Snow fences

- Structural snow fence
- Living snow fence
- Temporary / seasonal snow fence
- Consider implementation of snow fences at problematic locations including:
  - Between 78<sup>th</sup> Street North and M.C. Highway 130 (Renner Corner)
  - Between 257<sup>th</sup> Street and M.C. Highway 122 (Midway Corner)
  - S.D. Highway 115 & M.C. Highway 122 (Midway Corner) intersection
  - S.D. Highway 115 & M.C. Highway 114 (Baltic Corner) intersection

### Snow maintenance

- V-plowing
- Use and promote best snow maintenance practices for SDDOT and partner agency maintenance staff and adjacent property owners
- Review clusters of sign posts to determine if consolidation opportunities exist
- Add roadway lighting to aid maintenance efforts

Short-term solutions should focus on using and promoting best snow maintenance practices, reviewing and consolidating sign post clusters, and implementing v-plowing techniques. Long-term, incorporating blowing snow design considerations into the typical section and safety barrier design, such as raising the roadway elevation, installing snow fences, and adding roadway lighting is recommended. Further discussion is provided in the *Blowing Snow Analysis* technical memo provided in **Appendix R**.

## 20. Bicycle and Pedestrian Plan

The **Bicycle and Pedestrian Plan** recommendations present a long-range plan for bicycle and pedestrian facilities along the urban and developing areas of the S.D. Highway 115 corridor. This plan serves as an overarching guide for incorporating shared-use path facilities in future projects and promotes a continuous and connected network. Connections are shown to existing facilities as well as future, planned facilities identified by the *Sioux Falls MPO Bicycle Plan*<sup>4</sup>, *2019 City of Dell Rapids Master Transportation Plan*<sup>5</sup>, and the *2023 Sioux Falls Bicycle Plan*<sup>6</sup>. It should be noted that S.D. Highway 115 from Sioux Falls to M.C. Highway 114 (Baltic Corner) was previously designated as a primary bicycle route in the *Sioux Falls MPO Bicycle Plan*.

### 20.1 Bicycle and Pedestrian Plan

The **Bicycle and Pedestrian Plan** focuses on the following long-range goals for four primary segments, as shown in **Figure 52**.

#### Sioux Falls to Renner (Sioux Falls Growth Areas)

- Continuous shared use paths on both sides of S.D. Highway 115 between Sioux Falls and Renner extending to 257<sup>th</sup> Street (current City of Sioux Falls growth areas)
- Future high-visibility crosswalks at major roundabout or signalized intersections
- Potential connections to existing and planned City of Sioux Falls bicycle and pedestrian facilities

#### Renner to M.C. Highway 122 (Midway Corner)

- Continuous shared use path on the east side of S.D. Highway 115 between Renner (257<sup>th</sup> Street) and M.C. Highway 122 (Midway Corner)
  - Alternative options of a shared use path(s) on the west or both side(s)
- Future high-visibility crosswalks at major roundabout or signalized intersections

#### M.C. Highway 122 (Midway Corner) to M.C. Highway 110

- Continuous shared use path on the west side of S.D. Highway 115 between M.C. Highway 122 (Midway Corner) and M.C. Highway 114 (Baltic Corner)
  - Alternative options of a shared use path(s) on the east or both side(s)
- Potential connections to existing and planned Sioux Falls MPO bicycle and pedestrian facilities

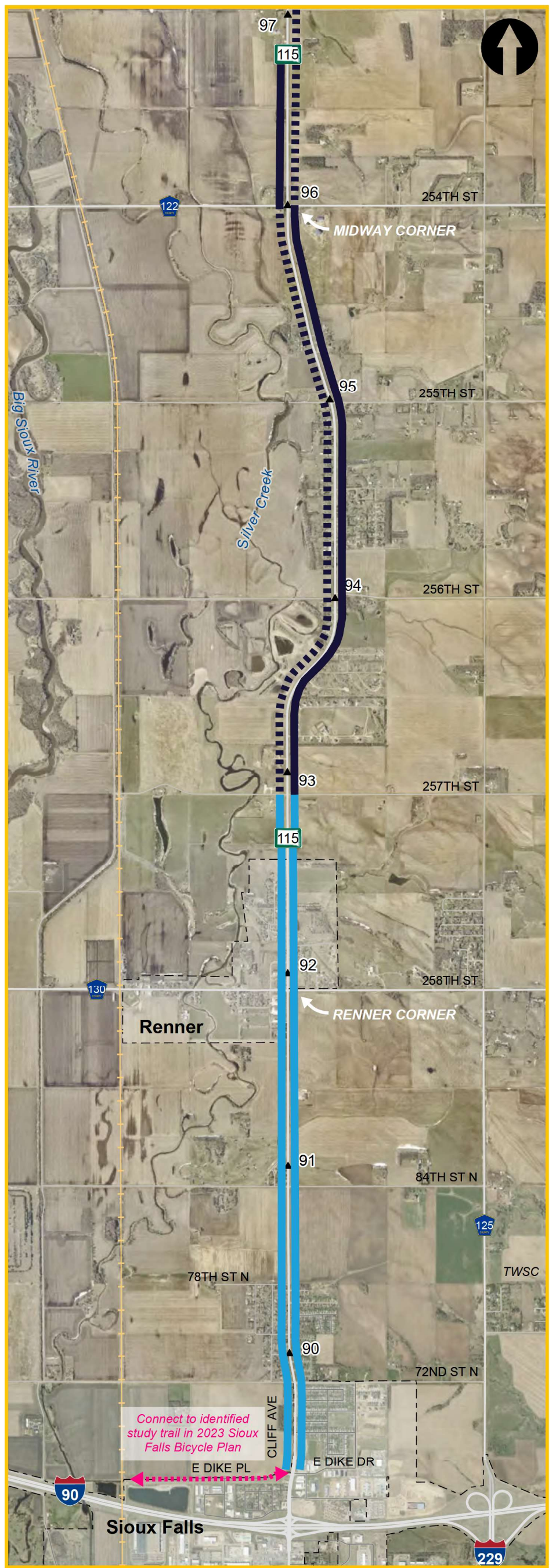
#### M.C. Highway 110 to Dell Rapids

- Continuous shared use path on the west side of S.D. Highway 115 between M.C. Highway 110 to Centennial Place
- Connection to existing shared use path on west side of S.D. Highway 115 from Centennial Place to West 4<sup>th</sup> Street
- Potential connections to existing and planned City of Dell Rapids bicycle and pedestrian facilities

<sup>4</sup> [Sioux Falls MPO Bicycle Plan](#). Sioux Falls MPO, 2009.

<sup>5</sup> [Dell Rapids Master Transportation Plan](#). South Dakota Department of Transportation and City of Dell Rapids, 2019.

<sup>6</sup> [2023 Sioux Falls Bicycle Plan](#). City of Sioux Falls, 2023.



- LEGEND**
- Proposed Sioux Falls Area Shared Use Path (Both Sides)
  - Proposed Single Side Shared Use Path (East or West Side)
  - Includes alternatives for the opposing side or both sides
  - Existing Dell Rapids Area Shared Use Path (West Side)



**BICYCLE AND PEDESTRIAN PLAN**  
FIGURE 52



## 21. Access Plan

It is recommended that current access criteria shown in **Figure 54** be used as the foundation for an opportunistic approach to access management through future projects, development, and redevelopment. Current access criteria and access management techniques identified in the *SDDOT Road Design Manual* and *City of Sioux Falls Engineering Design Standards* (for Sioux Falls growth areas) have been incorporated into corridor scenarios within this report.

Each S.D. Highway 115 corridor segment was reviewed in greater detail to identify specific considerations, access techniques, and local roadway network options to guide future access management. These access management options also seek to address existing access-based conflicts which were identified in the *Corridor Access Management Review technical memo* (see **Appendix N**).

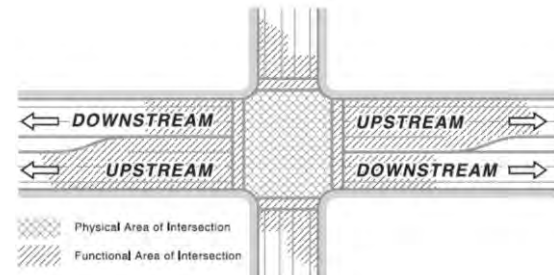
### 21.1 S.D. Highway 115 Sioux Falls to South of Midway Corner

Current access criteria along S.D. Highway 115 between Sioux Falls and Midway Corner varies slightly depending upon its location with future growth areas. It is jointly classified as Urban Fringe and based on City of Sioux Falls Design Standards between East Dike Place/Drive in Sioux Falls and 257<sup>th</sup> Street. Urban fringe roadways feature ¼-mile signal spacing and median openings, access density of 5 accesses/side/mile, and minimum driveway spacing of 1,000 feet. Under the City of Sioux Falls Design Standards and Major Roads Plan, S.D. Highway 115 between East Dike Place/Drive to M.C. Highway 130 (Renner Corner) is an Arterial Type 1 which include ¼-mile signaling spacing and median openings, and ¼-mile minimum driveway spacing. From 257<sup>th</sup> Street to M.C. Highway 122 (Midway Corner), the corridor is classified under only SDDOT Urban Fringe access criteria.

This segment features a steady shift from urban and developing areas to suburban and rural neighborhood residential developments. These areas have many potential access conflicts based on higher access density with many direct driveway connections to S.D. Highway 115, presence of driveways within major intersection functional areas, and the potential for left-turn conflicts where the existing center two-way left turn lane is present.

#### Intersection Functional Area

A key element of the plan is to protect the intersection functional area, shown below, at major intersections within urban areas to minimize conflicts through queue and driver perception and maneuver distances. The functional area upstream of the physical intersection accounts for 1) distance traveled during the perception-reaction time, 2) deceleration distance while the driver maneuvers to a stop, and 3) queue storage. Downstream functional area typically accounts for stopping sight distance and is shorter than the upstream functional area.



**Figure 53: Intersection Physical Area and Functional Area**

Source: SDDOT Road Design Manual

### ¼-Mile Full Access Intersections

Existing and potential future ¼-mile full access intersections, shown in **Figure 54**, meet or largely meet the intent of existing access criteria as listed below. It should be noted that the urban 4-lane divided (raised median) corridor provides U-turn opportunities every ¼-mile if the corridor segment location is within the current FHWA urban boundary (between East Dike Place/Drive and 78<sup>th</sup> Street North) or every ½-mile in rural areas (north of 78<sup>th</sup> Street) unless existing roads at the ¼-mile location are present. While not included in the concept layouts, the access plan does identify additional ¼-mile access locations in rural areas to guide future development.

- East Dike Place/Drive (existing signal)
- 67<sup>th</sup> Street North
- 72<sup>nd</sup> Street North
- 75<sup>th</sup> Street North
- 78<sup>th</sup> Street North
- Between 78<sup>th</sup> Street North and 84<sup>th</sup> Street North: 1 development-driven ¼-mile location
- 84<sup>th</sup> Street North
- Between 84<sup>th</sup> Street and M.C. Highway 130 (Renner Corner)
  - 1 future ½-mile location
  - 2 development-driven ¼-mile locations
- M.C. Highway 130 (Renner Corner)
- Frederick Road
- Edgeview Court
- Between Edgeview Court and 257<sup>th</sup> Street:
  - 1 development-drive ¼-mile location
- 257<sup>th</sup> Street
- Cedar Ridge Place
- 256<sup>th</sup> Street
- Lincoln Street
- Washington Street
- 255<sup>th</sup> Street
- Between 255<sup>th</sup> Street and M.C. Highway 122 (Midway Corner):
  - 1 future ½-mile location
  - 2 development-driven ¼-mile locations

### Access Management Treatment Progression

For this segment of S.D. Highway 115, the only feasible concept was the urban 4-lane divided (raised median) corridor due to the available existing right-of-way (ROW), consistency with an urbanizing area and the existing corridor to the south, and the opportunity to better manage the existing dense access conflicts with the center raised median. As such, access treatments in this area represent levels of progression in access management, defined as follows:

- 1) Install proposed urban 4-lane divided (raised median) corridor with ¼-mile or ½-mile U-turn opportunities to reduce conflicts and convert non-¼ mile locations to right-in right-out (RIRO) accesses
- 2) Consolidate and/or relocate accesses and driveway outside of major intersection functional areas and off the S.D. Highway 115 corridor to internal development streets where possible
- 3) Install frontage roads and further consolidate access based on the further expansion of internal development streets as opportunities arise. Opportunistic improvements along this corridor segment, depicted in **Figure 54**, include:

- East 72<sup>nd</sup> Street North Development Connectivity option
- 74<sup>th</sup> Street North Frontage Road Connection option
- East 75<sup>th</sup> to 78<sup>th</sup> Street North Development Internal Street Connectivity option
- West M.C. Highway 130 (Renner Corner) Development Internal Street Connectivity option
- West 256<sup>th</sup> Street Relocated Frontage Road Connection option
- West 255<sup>th</sup> Street Frontage Road Connection option

## 21.2 S.D. Highway 115 Midway Corner to South of M.C. Highway 110

S.D. Highway 115 from M.C. Highway 122 (Midway Corner) to south of M.C. Highway 110 is classified as SDDOT Urban Fringe with ¼-mile signal spacing and median openings, access density of 5 accesses/side/mile, and minimum driveway spacing of 1,000 feet. This segment is more rural in nature and has less access density with only occasional driveways except near select major intersections.

### ¼-Mile Full Access Intersections

Existing and potential ¼-mile full access intersections, shown in **Figure 54**, meet existing access criteria as listed below. It should be noted that the rural and urban 4-lane divided corridor options provides U-turn opportunities every ½-mile in rural areas (north of 78<sup>th</sup> Street) unless existing roads at the ¼-mile location are present. While not included in the concept layouts, the access plan does identify additional ¼-mile access locations in rural areas to guide future development.

- M.C. Highway 122 (Midway Corner)
  - 2 development-driven ¼-mile locations
- Between M.C. Highway 122 (Midway Corner) and 253<sup>rd</sup> Street
  - 1 future ½-mile location
  - 2 development-driven ¼-mile locations
- 253<sup>rd</sup> Street
  - 2 development-driven ¼-mile locations
- Between 253<sup>rd</sup> Street and Norway Street
  - 1 future ½-mile location
  - 2 development-driven ¼-mile locations
- Norway Street
  - 2 development-driven ¼-mile locations
- Between Norway Street and 252<sup>nd</sup> Street
  - 1 future ½-mile location
  - 2 development-driven ¼-mile locations
- 252<sup>nd</sup> Street
  - 2 development-driven ¼-mile locations
- Between 252<sup>nd</sup> Street and 251<sup>st</sup> Street
  - 1 future ½-mile location
  - 2 development-driven ¼-mile locations
- 251<sup>st</sup> Street
  - 2 development-driven ¼-mile locations
- Between 251<sup>st</sup> Street and M.C. Highway 114 (Baltic Corner)
  - 1 future ½-mile location
  - 2 development-driven ¼-mile locations
- M.C. Highway 114 (Baltic Corner)
  - 2 development-driven ¼-mile locations
- Between M.C. Highway 114 (Baltic Corner) and 249<sup>th</sup> Street
  - 1 future ½-mile location
  - 2 development-driven ¼-mile locations
- 249<sup>th</sup> Street
  - 2 development-driven ¼-mile locations
- Between 249<sup>th</sup> Street and M.C. Highway 110
  - 1 future ½-mile location
  - 2 development-driven ¼-mile locations
- M.C. Highway 110
  - 2 development-driven ¼-mile locations

### Access Management Treatment Progression

For this segment of S.D. Highway 115, there were three feasible concepts including:

- Rural side-by-side passing lanes corridor
- Rural 4-lane divided (depressed median) corridor
- Urban 4-lane divided (raised median) corridor

Each concept, in the order listed above, reflects increasing levels of access management based on the presence of a traversable or non-traversable center median. Due to the low level of existing access density, most additional access management treatments involve consolidating and/or relocating driveways near major intersections outside of the intersection functional area.

Intersections with consolidation and relocation access treatment options for driveways within the intersection functional area include:

- M.C. Highway 122 (Midway Corner)
- 252<sup>nd</sup> Street
- M.C. Highway 114 (Baltic Corner)

## 21.3 S.D. Highway 115 North of M.C. Highway 110 to Dell Rapids

S.D. Highway 115 between M.C. Highway 110 and Dell Rapids. From M.C. Highway 110 to Centennial Place, S.D. Highway 115 is classified as Urban Fringe with ¼-mile signal spacing and median openings, access density of 5 accesses/side/mile, and minimum driveway spacing of 1,000 feet. From Centennial Place to West 4<sup>th</sup> Street in Dell Rapids, S.D. Highway 115 is classified as Urban Developed with ¼-mile signal spacing and median openings, access density of 2 accesses/block face, and minimum driveway spacing of 100 feet.

### ¼-Mile Full Access Intersections

Existing and potential future ¼-mile full access intersections, shown in **Figure 54**, meet existing access criteria as listed below. It should be noted that the urban 4-lane divided corridor option provides U-turn opportunities every ½-mile in rural areas (north of 78<sup>th</sup> Street) unless existing roads at the ¼-mile location are present. While not included in the concept layouts, the access plan does identify additional ¼-mile access locations in rural areas to guide future development.

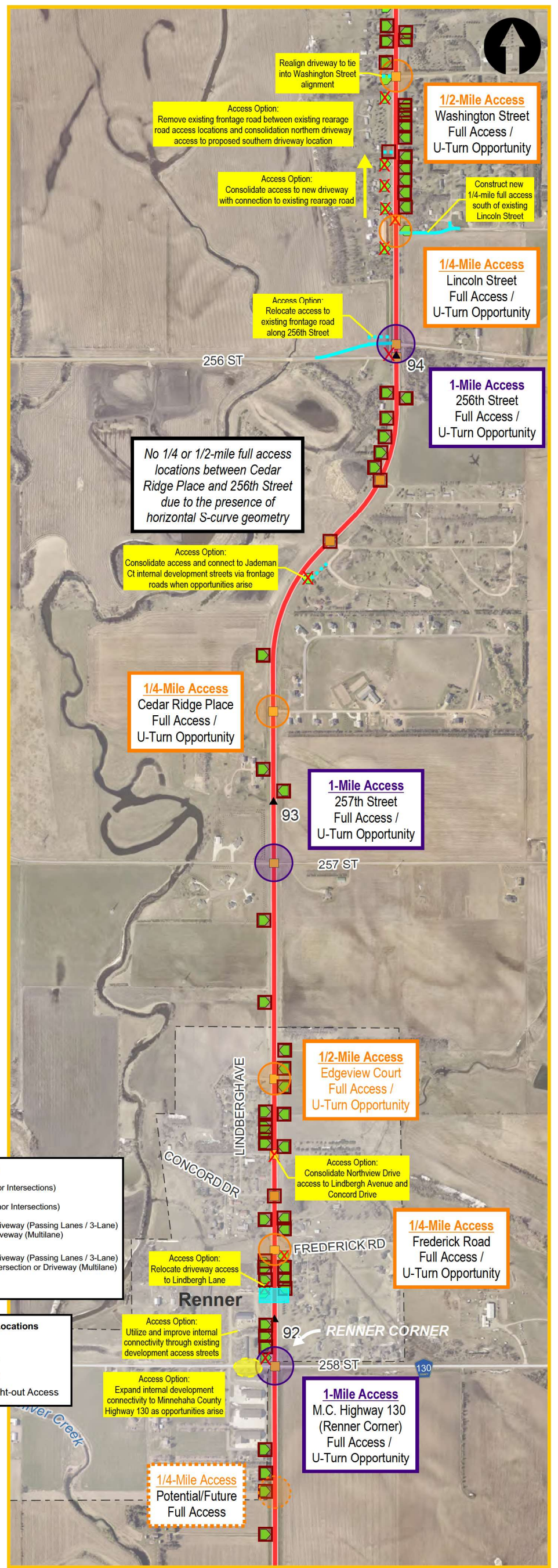
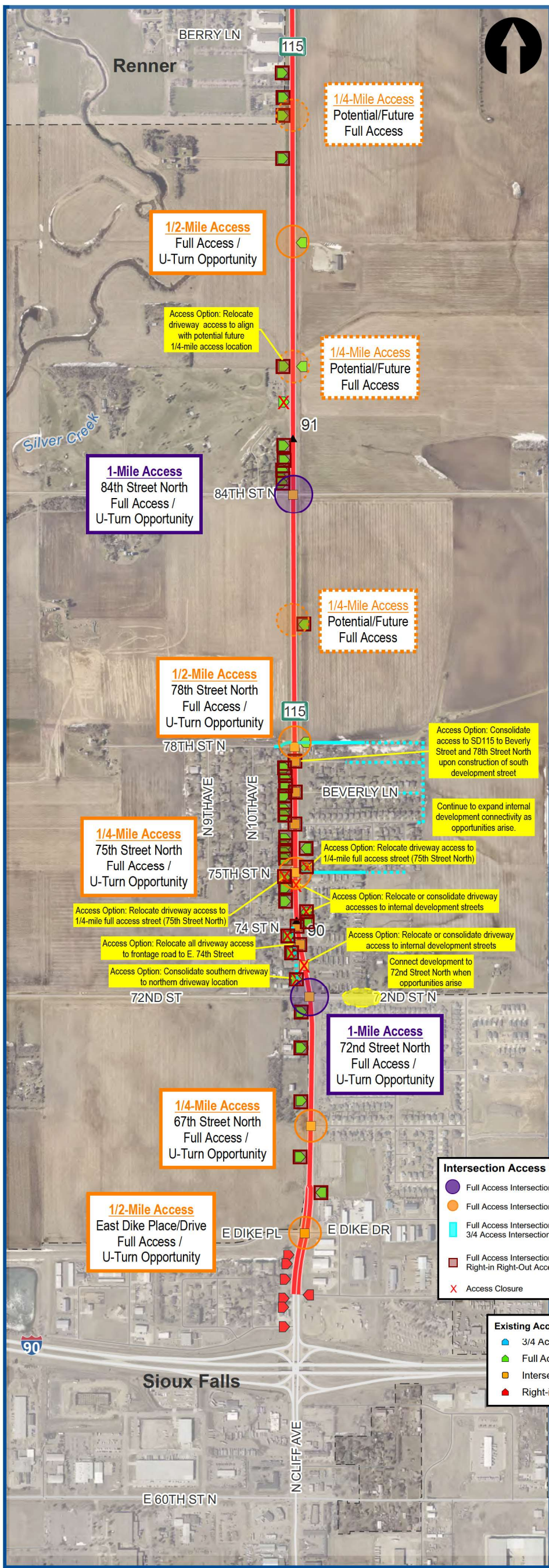
- Between M.C. Highway 110 and existing Garfield Avenue
  - 1 future ½-mile location
  - 2 development-driven ¼-mile locations
- Dells Drive (south)
- Between Dells Drive and Quartzite Street: 1 development-driven ¼-mile location
- Quartzite Street
- Dells Drive (north) / Centennial Place
- Zero Street
- West 4<sup>th</sup> Street
  - West 3<sup>rd</sup> Street is located approximately 350-feet south of West 4<sup>th</sup> Street to provide full access to the Dell Rapids Fire Department building to the west of the intersection

### Access Management Treatment Progression

For this segment of S.D. Highway 115, there were two feasible concepts including:

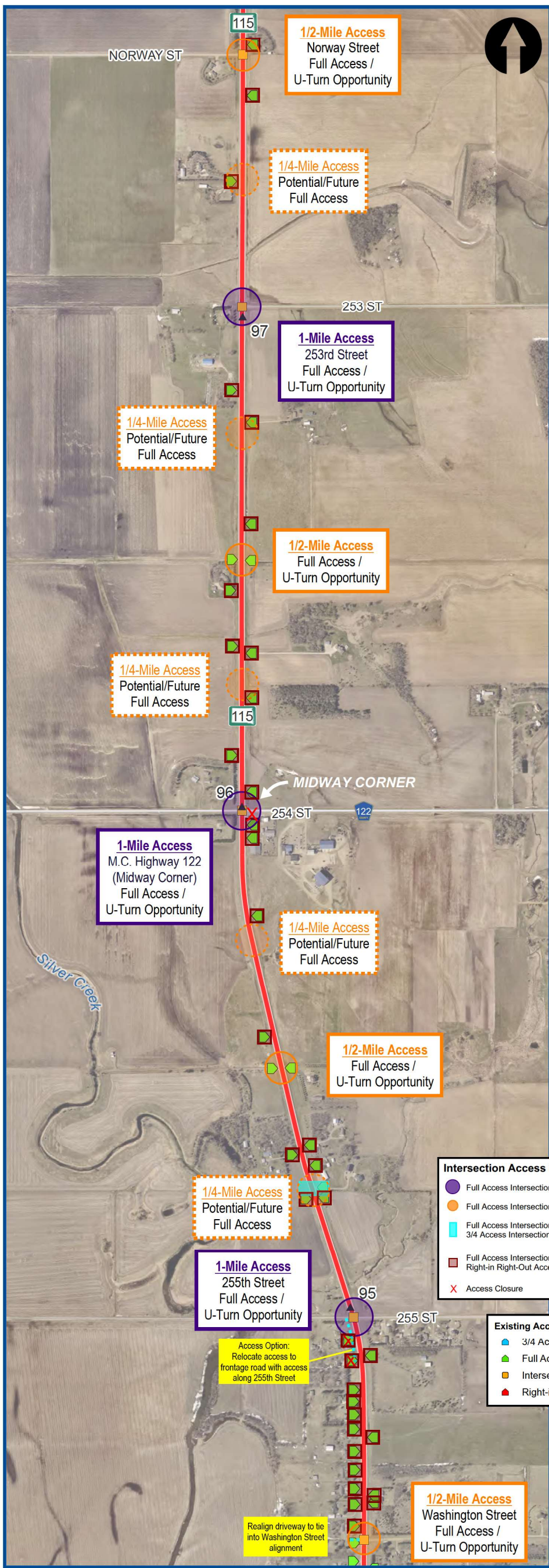
- Suburban 3-lane corridor
- Urban 4-lane divided (raised median) corridor

Both concepts, in the order listed above, reflect increasing levels of access management based on the presence of a traversable or non-traversable center median. The West 4<sup>th</sup> Street intersection includes an option for consolidation and relocation access treatment for driveways within the intersection functional area.



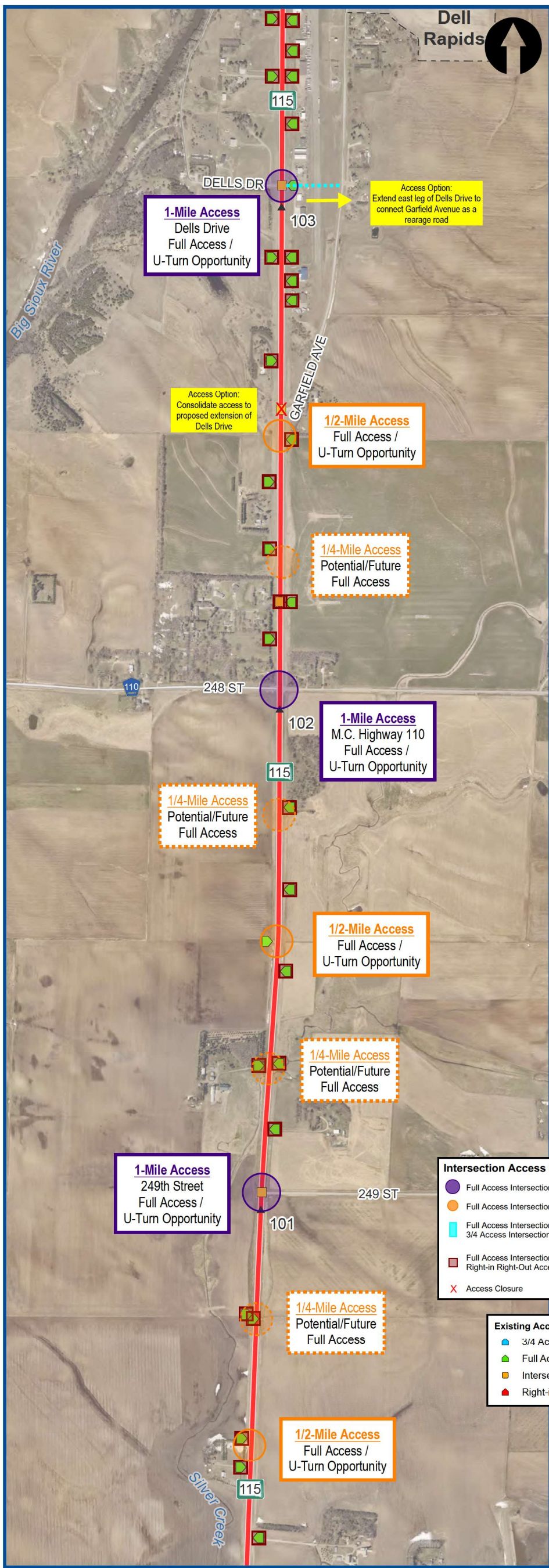
S.D. HIGHWAY 115 CORRIDOR ACCESS PLAN  
FIGURE 54-A





S.D. HIGHWAY 115 CORRIDOR ACCESS PLAN  
FIGURE 54-B





S.D. HIGHWAY 115 CORRIDOR ACCESS PLAN  
FIGURE 54-C



## 22. Summary of Recommendations and Implementation Timelines

The following presents a summary of short-term, development driven, and long-range recommended capital improvements, generalized timeline, and planning-level costs as identified by this corridor study. Overarching S.D. Highway 115 segment reconstruction projects are noted with **Bold Blue** in the tables and shown graphically in **Figure 55**.

**Table 41: Recommendations and Planning Timelines**

Planning Timeline	Corridor Segment or Intersection Reconstruction	S.D. Highway 115 Corridor Segment	Long-Range Segment Scenario	Construction & ROW Cost (\$mil)
2032 – 2043	<b>Segment: East Dike Place/Drive to 78<sup>th</sup> Street North</b>	Sioux Falls to South of Midway Corner	A-1	\$16.0*
	72 <sup>nd</sup> Street North intersection: multilane roundabout	Sioux Falls to South of Midway Corner	A-1b	\$5.5
	<b>Segment: 78<sup>th</sup> Street North to South of M.C. Highway 122 (Midway Corner)</b>	Sioux Falls to South of Midway Corner	A-1	\$70.0*
	M.C. Highway 130 (Renner Corner) intersection: multilane roundabout	Sioux Falls to South of Midway Corner	A-1b	\$5.4
	M.C. Highway 122 (Midway Corner) intersection: multilane roundabout	Midway Corner to M.C. Highway 110	B-1/2b	\$5.4
	West 4 <sup>th</sup> Street intersection: traffic signal (consider single-lane roundabout alternative if feasible)	M.C. Highway 110 to West 4 <sup>th</sup> Street	C-2a <i>(Alt: C-2b)</i>	\$4.1 <i>(\$4.6)</i>
	<b>Segment: M.C. Highway 122 (Midway Corner) to M.C. Highway 114 (Baltic Corner)</b>	Midway Corner to M.C. Highway 110	B-1 or B-2	\$61.3* \$57.1*
	252 <sup>nd</sup> Street intersection: multilane roundabout	Midway Corner to M.C. Highway 110	B-1/2b	\$5.4
	M.C. Highway 114 (Baltic Corner) intersection: multilane roundabout (consider earlier interim reconstruction single-lane roundabout)	Midway Corner to M.C. Highway 110	B-2b <i>(Int: B-3b)</i>	\$5.4 <i>(Int: \$4.2)</i>
2043 – 2055	<b>Segment: M.C. Highway 114 (Baltic Corner) to M.C. Highway 110</b>	Midway Corner to M.C. Highway 110	B-1 or B-2	\$28.2* \$25.8*
	M.C. Highway 110 intersection: multilane roundabout	Midway Corner to M.C. Highway 110	B-1/2b	\$5.4
	<b>Segment: M.C. Highway 110 to Centennial Place</b>	M.C. Highway 110 to West 4 <sup>th</sup> Street	C-2	\$23.5*

*\*Project construction & Right of Way (ROW) costs include major study intersection projects*

Additional considerations and recommendations in conjunction with the identified capital improvements involve the following:

- ITS recommendations
- Blowing snow recommendations
- Bicycle and Pedestrian Plan
- Access Plan



**SEGMENT C:**  
S.D. Highway 115 between M.C. Highway 110 and Dell Rapids

**Corridor Scenario:**  
Scenario C-2a or C-2b

**CROSS-SECTION:**  
Suburban 3-Lane Corridor

**TIMELINE:**  
**2032-2043**  

- Reconstruct West 4th Street intersection as Traffic Signal (C-2a). Consider Single-Lane Roundabout alternative (C-2b) if feasible.

**2043-2055**  

- Reconstruct S.D. Highway 115 from M.C. Highway 110 to Centennial Place

**SEGMENT B:**  
S.D. Highway 115 between M.C. Highway 122 (Midway Corner) and M.C. Highway 110

**Corridor Scenario:**  
Scenario B-1b or B-2b

**CROSS-SECTION:**  

- Urban 4-Lane Divided (Raised Median) Corridor with Multilane Roundabouts
- Rural 4-Lane Divided (Depressed Median) Corridor with Multilane Roundabouts

**TIMELINE:**  
**2032-2043**  

- Reconstruct M.C. Highway 122 (Midway Corner) intersection as a Multilane Roundabout
- Reconstruct S.D. Highway 115 from M.C. Highway 122 (Midway Corner) to M.C. Highway 114 (Baltic Corner)
- Reconstruct 252nd Street intersection as a Multilane Roundabout
- Reconstruct M.C. Highway 114 (Baltic Corner) intersection as a Multilane Roundabout. Consider earlier reconstruction as a Single-Lane Roundabout (interim).

**2043-2055**  

- Reconstruct S.D. Highway 115 from M.C. Highway 114 (Baltic Corner) to M.C. Highway 110
- Reconstruct M.C. Highway 110 intersection as a Multilane Roundabout

**SEGMENT A:**  
S.D. Highway 115 between Sioux Falls and M.C. Highway 122 (Midway Corner)

**Corridor Scenario:**  
Scenario A-1b

**CROSS-SECTION:**  
Urban 4-Lane Divided (Raised Median) Corridor with Multilane Roundabouts

**TIMELINE:**  
**2032-2043**  

- Reconstruct S.D. Highway 115 from East Dike/Place to 78th Street North
- Reconstruct 72nd Street North intersection as a Multilane Roundabout
- Reconstruct S.D. Highway 115 from 78th Street North to South of M.C. Highway 122 (Midway Corner)
- Reconstruct M.C. Highway 130 (Renner Corner) intersection as a Multilane Roundabout

## 23. Appendix

# A. Methods and Assumptions Document

## B. Crash History Review Technical Memo

## C. Reliability Analysis Technical Memo

# D. S.D. Highway 115 Corridor Environmental Screening Report

## E. Traffic Forecasts Technical Memo

## F. HCM7 LOS Thresholds Tables

## G. Existing & Future No Build Conditions Traffic Operations Technical Memo

# H. Future Build Conditions Traffic Operations Technical Memo

# I. 67th Street North Traffic Signal Warrants Analysis Technical Memo

# J. Stakeholder and Public Meeting Open House Summary Reports

# K. Concept Development Information

Study Advisory Team Meeting Minutes

# L. Corridor Scenario Development

## Planning-Level Cost Estimates

# M. S.D. Highway 115 Passing Lane Technical Memo

# N. Corridor Access Management Review Technical Memo

# O. Predictive Safety Analysis for S.D. Highway 115 Corridor Study Area Technical Memo

## P. ITS Recommendations Technical Memo

# Q. Wildlife Crossing Review Technical Memo

## R. Blowing Snow Analysis Technical Memo