SD44/PLATTE-WINNER BRIDGE CORRIDOR STUDY AND ENVIRONMENTAL ASSESSMENT

Agreement No. 410583, Work Order PD-19-16

Project Nos. HP5596(19); P0044()290, PCN 05X0

PROJECT MEMORANDUM

SD44 EXISTING CONDITIONS AND FUTURE-YEAR NO-BUILD CONDITIONS TRAFFIC OPERATIONS

To: Study Advisory Team (SDDOT, FHWA, SDGFP)

From: Tim Thoreen, Jon Wiegand, and Matt Brua

Date: 7/25/17

Document Summary

This memorandum presents the traffic operations analysis along the SD44 corridor between and including the intersections of SD47 and SD50 for Existing Conditions, 2025 Base Year No-Build Conditions, and 2050 Planning Year No-Build Conditions. This information will serve as a baseline analysis for the identification of study area operational needs as well as the development and evaluation of Build concepts along the corridor. As part of the analysis, the future-year traffic forecasts were developed based on counts collected in March 2017.

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Introduction

This memorandum presents the traffic operations analysis along the SD44 corridor between and including the intersections of SD47 and SD50 for Existing Conditions, 2025 Base Year No-Build Conditions, and 2045 Planning Year No-Build Conditions. Future-year traffic volumes were developed based on March 2017 traffic counts and county-specific growth factors. The operations analysis will serve as a baseline analysis for the identification of study area operational needs as well as the development and evaluation of Build concepts along the corridor.

Traffic Data

The study team collected intersection turning movement counts on March 1 and 2 at the following study area intersections:

- SD44 and SD47 (24-hour count)
- SD44 and SD1806 (13.5-hour count)
- SD44 and Snake Creek Recreation Area entrance (13.5-hour count)
- SD44 and SD50 (24-hour count)

The counts were tabulated in 15-minute increments to determine intersection and roadway segment peak hour volumes.

Additional traffic and roadway geometric data gathered for use in the traffic operations analysis includes:

- Truck Percentages
    - March 2017 counts
- Peak Hour Factor
    - March 2017 counts
- Roadway geometrics and grade
    - Construction plans provided by the SDDOT
- Percent no-passing zone and access point density
    - Aerial imagery

Traffic Operations Analysis Methodology

Traffic operations for all roadway elements within the study area were evaluated using methodology described in version 6 of the Highway Capacity Manual (HCM 6). Highway Capacity Software version 7.1 (HCS7) was used to analyze two-lane highways (module version 7.1), two-way stop-controlled intersections (module version 7.1), and all-way stop-controlled intersections (module version 7.1). HCS7 measures percent time-spent following (PTSF) on two-lane highways and control delay in terms of seconds per delay per vehicle (sec/veh) at two-way stop-control intersections. Level of Service (LOS) values were applied to these measures in accordance with methodology outlined in HCM 6.

An intersection weighted average methodology was also used to present an alternative average vehicle delay measure at two-way stop-controlled intersections with SD 44 (SD1806, Snake Creek Recreation Area entrance, SD50). This methodology uses average control delay values for the stop-controlled approach calculated using HCM 6 two-way stop-control analysis and assumes zero delay for the major street throughout and right-turn vehicles to calculate an average delay for all vehicles entering the intersection. A LOS measure can also be

applied to the weighted average delay using HCM 6 all-way stop-control thresholds for intersection delay and LOS.

Tables 1 and 2 present the LOS thresholds used to evaluate operations along two-lane highway segments and at intersections within the study area.

TABLE 1: TWO-LANE HIGHWAY LEVEL OF SERVICE THRESHOLDS (CLASS II)

Level of Service (LOS)	Percent-Time Spent Following (PTSF) Class II Highway
A	≤ 40
B	> 40 – 55
C	> 55 – 70
D	> 70 – 85
E	> 85
F	Demand exceeds capacity

Source: Transportation Research Board, HCM 6

TABLE 2: INTERSECTION LEVEL OF SERVICE THRESHOLDS

Level of Service (LOS)	Two-Way Stop-Control*, All-Way Stop-Control, and Roundabouts
A	0 – 10
B	> 10 – 15
C	> 15 – 25
D	> 25 – 35
E	> 35 – 50
F	Demand exceeds capacity; > 50

Source: Transportation Research Board, HCM 6

** Two-way stop-control LOS reflects worst=-case stop-controlled approach*

The following LOS thresholds represent the minimum allowable LOS measures for future-year Build concepts to be carried forward and considered for implementation. For the analysis contained within this memorandum, these LOS thresholds will also be applied to the Existing Conditions and future-year No-Build conditions to identify areas of operational needs.

- SD44 Corridor and Segments
    - LOS B or better
- Two-Way Stop-Controlled Intersections, All-Way Stop-Controlled Intersections, and Roundabouts
    - LOS B or better

Bicycle Analysis Methodology

The Two-Lane Highways Module in HCS7 was used to analyze bicycle facilities along the SD44 corridor. HMC 6 Chapter 15 provides bicycle LOS criteria for two-lane highways, which is referred to as a bicycle LOS score. Bicycle LOS is based on a traveler perception model that incorporates the following five variables (in order of importance, as shown on page 15-9 of HCM 6):

- Average effective width of the outside through lane,
- Motorized vehicle volumes
- Motorized vehicle speeds,
- Heavy vehicle (truck) volumes, and
- Pavement condition

The bicycle LOS score ranges are shown in **Table 3**.

TABLE 3: BICYCLE LEVEL OF SERVICE SCORE RANGES

Bicycle Level of Service	Bicycle Level of Service Score
A	≤ 1.5
B	> 1.5 – 2.5
C	> 2.5 – 3.5
D	> 3.5 – 4.5
E	> 5.5
F	Demand exceeds capacity

Source: Transportation Research Board, HCM 6

Peak Hour Volume Development

Hourly intersection turning movement volumes were developed from the March 2017 traffic counts at the following four intersections:

- SD44 and SD47 (24-hour count)
- SD44 and SD1806 (13.5-hour count)
- SD44 and Snake Creek Recreation Area entrance (13.5-hour count)
- SD44 and SD50 (24-hour count)

Morning, midday, and afternoon/evening peak hour volumes were identified at each intersection and along each respective intersection approach segment based on the March 2017 counts. A review of these volumes indicated that traffic generally increased from morning to evening, and the afternoon/evening peak period represented the highest volume during the day. The study team determined that a single peak period was to be developed (as opposed to two or three peak periods) and analyzed based on the p.m. peak hour volumes only.

Using the peak period data set developed from the March 2017 counts, the percentage of daily traffic occurring in the peak hour, represented by a 'K' value, was identified for each segment. The directional distribution, 'D', was also identified on the respective segment to reflect the directional split of traffic during that peak hour. The 'K' and 'D' values representative of the traffic operations analysis study peak hour are shown in **Table 4**.

TABLE 4: 2017 COUNT PEAK HOUR K AND D FACTORS

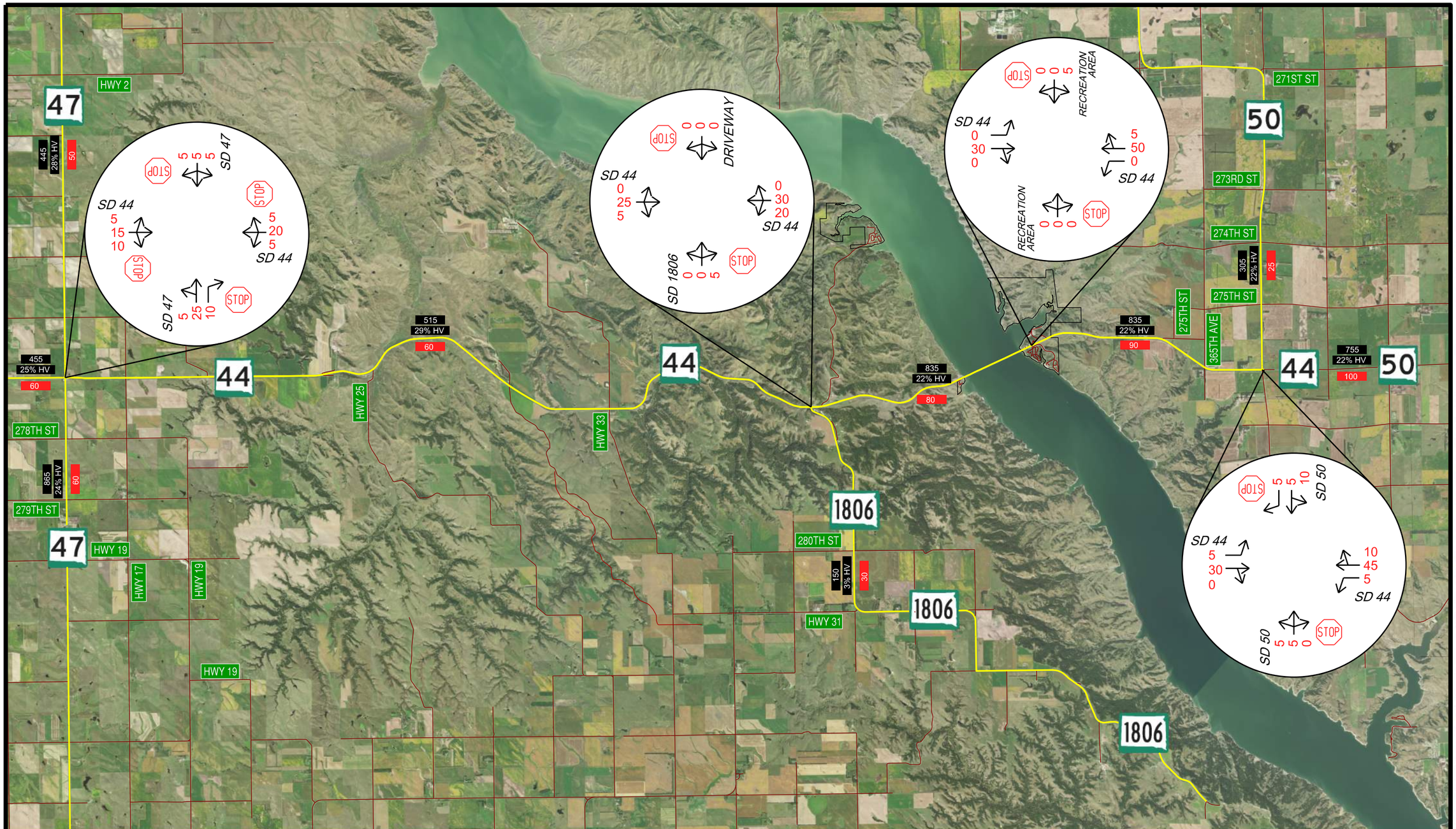
SD44 Segment	**'K' Factor** *Percentage of Daily Traffic in Peak Hour*	**'D' Factor** *Directional Split (EB% / WB%)*
West of SD47	10.4%	50% / 50%
SD47 to SD1806	10.3%	42% / 58%
SD1806 to Snake Creek Recreation Area Entrance	11.1%	39% / 61%
Snake Creek Recreation Area Entrance to SD50	11.0%	40% / 60%
East of SD50	11.3%	37% / 63%

Through discussions with the SDDOT, it was concluded that March volumes tend to fluctuate notably throughout the month due to weather, events, and other localized variables. While the traffic volumes were collected on two days with good weather and road conditions, the variability in developing seasonal factors for March volumes can lead to a degree of uncertainty when factoring March counts to an average daily volume. Due to this uncertainty, it was concluded that the respective segment 'K' factors and 'D' factors, intersection turning movement percentages, truck percentages, and peak hour factors obtained from the March 2017 counts would be used to develop future-year forecasts based on Average Daily Traffic (ADT) segment volumes developed for the 2016 SDDOT Traffic Flow map.

Growth factors were provided by the SDDOT for Gregory and Charles Mix Counties. Using the 2016 SDDOT Traffic Flow Map ADT, daily SD44 segment traffic volumes were developed for years 2017, 2025 and 2050. Peak hour segment volumes were calculated by applying the calculated K and D values to the segments and the turning movement percentages at each intersection from the 2017 counts. Traffic volumes were smoothed and balanced across the study area.

The following figures illustrate the developed traffic volumes, representative of average daily traffic, for this study:

- Existing Conditions (2017): **Figure 1**
- 2025 Base Year Conditions: **Figure 2**
- 2050 Planning Horizon Conditions: **Figure 3**



LEGEND

- XXX — AVERAGE DAILY TRAFFIC VOLUME
- XX% HV — % HEAVY VEHICLES
- XXX — PEAK HOUR VOLUME (2-WAY)
- STOP — STOP CONTROL
- XX — PEAK HOUR VOLUME

FIGURE 1: EXISTING CONDITIONS (2017) TRAFFIC VOLUMES

South Dakota DOT
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SD 44/Platte-Winner Bridge Corridor Study and Environmental Assessment

Gregory and Charles Mix Counties

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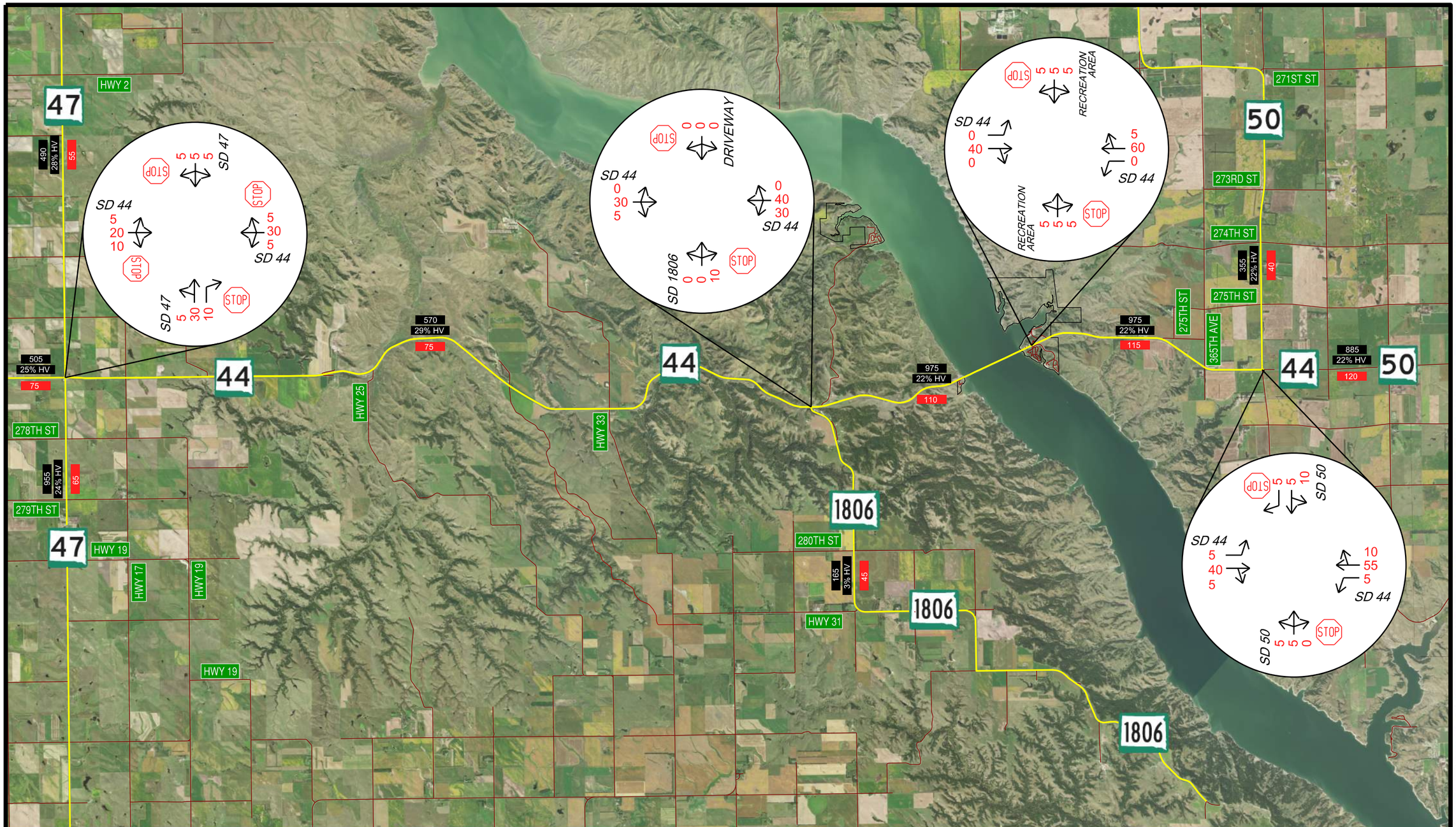

LEGEND

- XXX — AVERAGE DAILY TRAFFIC VOLUME
- XX% HV — % HEAVY VEHICLES
- XXX — PEAK HOUR VOLUME (2-WAY)
- STOP — STOP CONTROL
- XX — PEAK HOUR VOLUME

FIGURE 2: 2025 BASE YEAR CONDITIONS TRAFFIC VOLUMES

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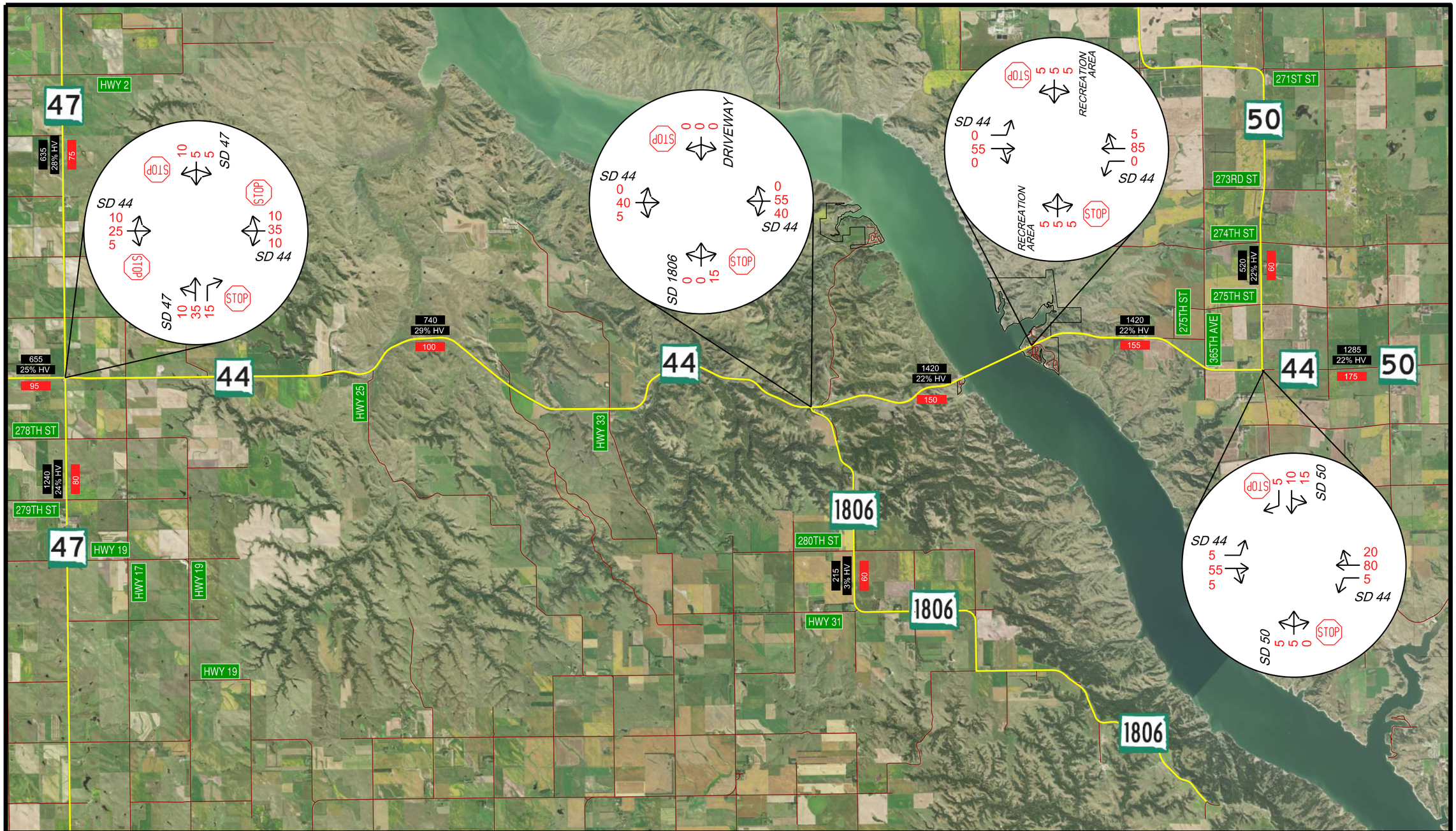

LEGEND

- XXX — AVERAGE DAILY TRAFFIC VOLUME
- XX% HV — % HEAVY VEHICLES
- XXX — PEAK HOUR VOLUME (2-WAY)
- STOP — STOP CONTROL
- XX — PEAK HOUR VOLUME

FIGURE 3: 2050 PLANNING YEAR CONDITIONS TRAFFIC VOLUMES

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Existing Conditions Traffic Operations Analysis

The traffic volumes representing the Existing Conditions are presented in **Figure 1**. The LOS results are summarized in **Figure 4** and shown with respective highway segment PTSF and intersection delay in **Tables 5 and 6**, respectively. The bicycle LOS score along the SD44 corridor is shown in **Table 7**.

TABLE 5: SD44 HIGHWAY SEGMENTS – EXISTING CONDITIONS

SD44 Segment	Direction of Travel	Terrain/ Grade	Segment Length (miles)	Percent No Passing Zone	Climbing Lane	PTSF (%)	LOS
1	EB	Rolling	4.2	30%		25.3	A
	WB	Rolling	4.2	36%		27.5	A
2	EB	-8.0%	1.2	70%		27.8	A
	WB	8.0%	1.2	83%	X	6.9	A
3	EB	Rolling	1.0	48%		30.1	A
	WB	Rolling	1.0	59%		31.8	A
4	EB	-4.5%	1.4	35%		24.4	A
	WB	4.5%	1.4	27%		21.5	A
5	EB	Rolling	0.8	25%		23.6	A
	WB	Rolling	0.8	44%		29.5	A
6	EB	6.0%	0.8	77%		29.2	A
	WB	-6.0%	0.8	68%		29.8	A
7	EB	-5.9%	1.4	54%		27.2	A
	WB	5.9%	1.4	59%		30.3	A
8	EB	4.9%	0.6	26%		20.7	A
	WB	-4.9%	0.6	26%		21.4	A
9	EB	-3.0%	0.5	28%		22.1	A
	WB	3.0%	0.5	83%		29.4	A
10	EB	6.0%	1.3	39%		26.5	A
	WB	-6.0%	1.3	21%		18.9	A
11	EB	-6.0%	2.1	29%		15.9	A
	WB	6.0%	2.1	32%		32.5	A
12	EB	-6.0%	0.8	41%		20.1	A
	WB	6.0%	0.8	86%		38.6	A
13	EB	Level	1.1	0%		8.4	A
	WB	Level	1.1	0%		13.7	A
14	EB	3.5%	1.1	49%		22.3	A
	WB	-3.5%	1.1	43%		33.7	A
15	EB	3.5%	1.3	43%		21.1	A
	WB	-3.5%	1.3	34%		30.8	A
16	EB	Rolling	1.7	14%		17.5	A
	WB	Rolling	1.7	6%		22.1	A
Facility	**EB**	**-**	**21.3**	**36%**	**-**	**22.7**	**A**
	WB	**-**	**21.3**	**40%**	**-**	**26.6**	**A**

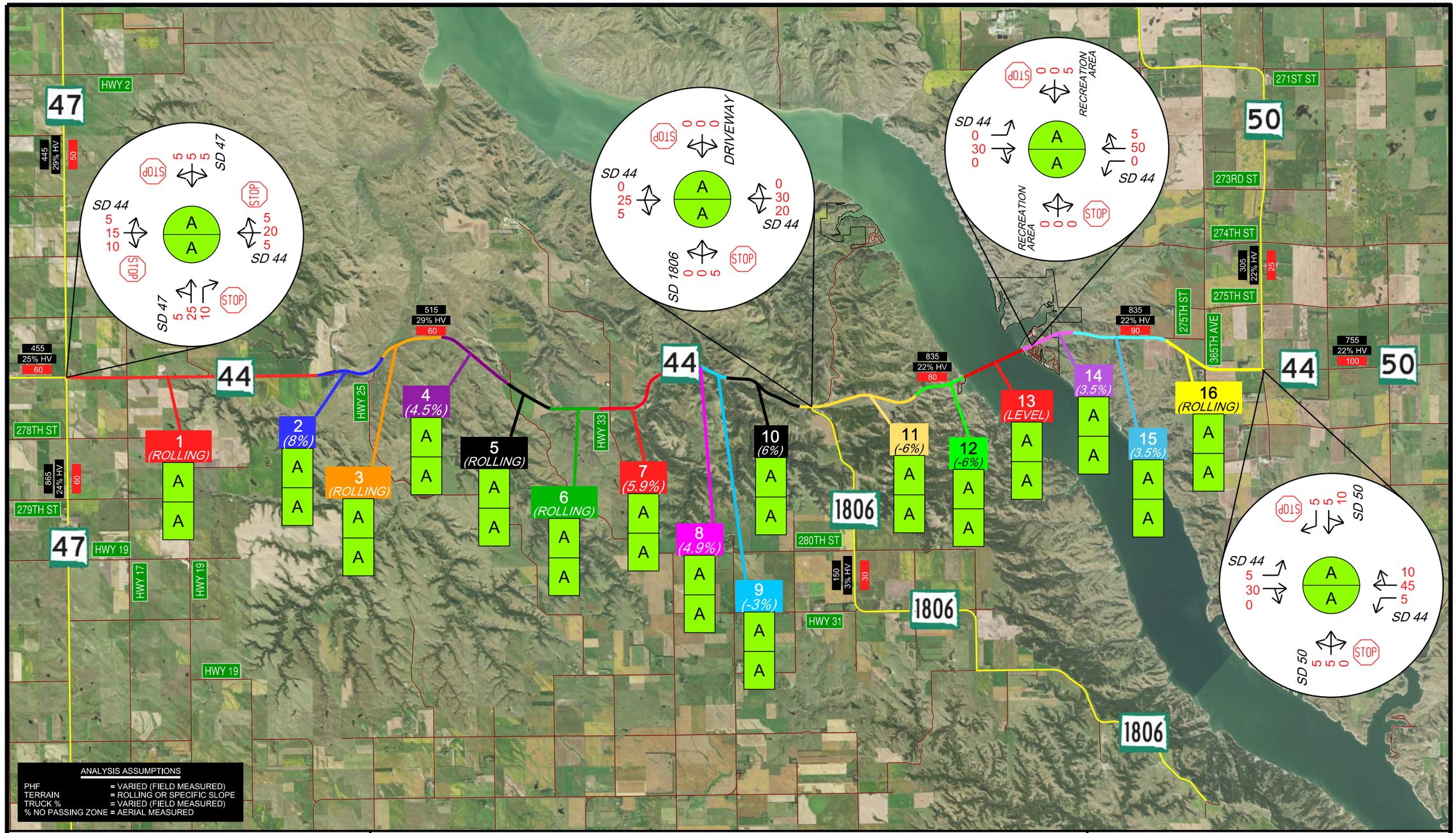
TABLE 6: SD44 CORRIDOR INTERSECTIONS – EXISTING CONDITIONS

SD44 Intersection	Intersection Control Type	HCM 6 LOS		Weighted Average LOS	
		Avg. Delay (sec/veh)	LOS	Weighted Avg. Delay (sec/veh)	LOS
SD47	AWSC	7.5	A	7.6	A
SD1806	TWSC*	8.5	A	2.2	A
Snake Creek Entrance	TWSC*	9.0	A	0.5	A
SD50	TWSC*	9.8	A	2.9	A

** Two-way stop-control LOS reflects worst=-case stop-controlled approach*

TABLE 7: SD44 HIGHWAY SEGMENT BICYCLE LOS SCORE – EXISTING CONDITIONS

SD44 Segment	Direction of Travel	Bicycle Score LOS		SD44 Segment	Direction of Travel	Bicycle Score LOS
1	EB	F		9	EB	F
	WB	F			WB	F
2	EB	F		10	EB	F
	WB	F			WB	F
3	EB	F		11	EB	F
	WB	F			WB	F
4	EB	F		12	EB	F
	WB	F			WB	F
5	EB	F		13	EB	F
	WB	F			WB	F
6	EB	F		14	EB	C
	WB	F			WB	D
7	EB	F		15	EB	C
	WB	F			WB	D
8	EB	F		16	EB	C
	WB	F			WB	D



LEGEND

XXX	AVERAGE DAILY TRAFFIC VOLUME
XX% HV	% HEAVY VEHICLES
XXX	PEAK HOUR VOLUME (2-WAY)
STOP	STOP CONTROL
XX	PEAK HOUR VOLUME

LEVEL OF SERVICE

X	SEGMENT NUMBER
(X%)	SEGMENT GRADE (EASTBOUND TRAVEL)
X	WESTBOUND — 2-LANE HIGHWAY SEGMENT LEVEL-OF-SERVICE
X	EASTBOUND
X / X	HCM 6 WEIGHTED — INTERSECTION LEVEL-OF-SERVICE

A | B | C | D | E | F

FIGURE 4: EXISTING CONDITIONS (2017) TRAFFIC OPERATIONS ANALYSIS

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2025 Base Year No-Build Traffic Operations Analysis

The traffic volumes representing the 2025 No-Build Conditions are presented in **Figure 2**. The LOS results are summarized in **Figure 5** and shown with respective highway segment PTSF and intersection delay in **Tables 8 and 9**, respectively. The bicycle LOS score along the SD44 corridor is shown in **Table 10**.

TABLE 8: SD44 HIGHWAY SEGMENTS – 2025 NO-BUILD CONDITIONS

SD44 Segment	Direction of Travel	Terrain/ Grade	Segment Length (miles)	Percent No Passing Zone	Climbing Lane	PTSF (%)	LOS
1	EB	Rolling	4.2	30%		25.4	A
	WB	Rolling	4.2	36%		30.9	A
2	EB	-8.0%	1.2	70%		27.0	A
	WB	8.0%	1.2	83%	X	7.7	A
3	EB	Rolling	1.0	48%		29.8	A
	WB	Rolling	1.0	59%		36.0	A
4	EB	-4.5%	1.4	35%		23.5	A
	WB	4.5%	1.4	27%		24.1	A
5	EB	Rolling	0.8	25%		23.9	A
	WB	Rolling	0.8	44%		33.1	A
6	EB	6.0%	0.8	77%		28.4	A
	WB	-6.0%	0.8	68%		33.1	A
7	EB	-5.9%	1.4	54%		26.2	A
	WB	5.9%	1.4	59%		34.0	A
8	EB	4.9%	0.6	26%		20.3	A
	WB	-4.9%	0.6	26%		23.9	A
9	EB	-3.0%	0.5	28%		21.7	A
	WB	3.0%	0.5	83%		32.6	A
10	EB	6.0%	1.3	39%		25.7	A
	WB	-6.0%	1.3	21%		21.4	A
11	EB	-6.0%	2.1	29%		16.8	A
	WB	6.0%	2.1	32%		36.0	A
12	EB	-6.0%	0.8	41%		20.8	A
	WB	6.0%	0.8	86%		41.8	B
13	EB	Level	1.1	0%		9.7	A
	WB	Level	1.1	0%		16.4	A
14	EB	3.5%	1.1	49%		26.5	A
	WB	-3.5%	1.1	43%		33.6	A
15	EB	3.5%	1.3	43%		25.7	A
	WB	-3.5%	1.3	34%		30.7	A
16	EB	Rolling	1.7	14%		21.7	A
	WB	Rolling	1.7	6%		23.3	A
Facility	**EB**	**-**	**21.3**	**36%**	**-**	**23.4**	**A**
	WB	**-**	**21.3**	**40%**	**-**	**29.3**	**A**

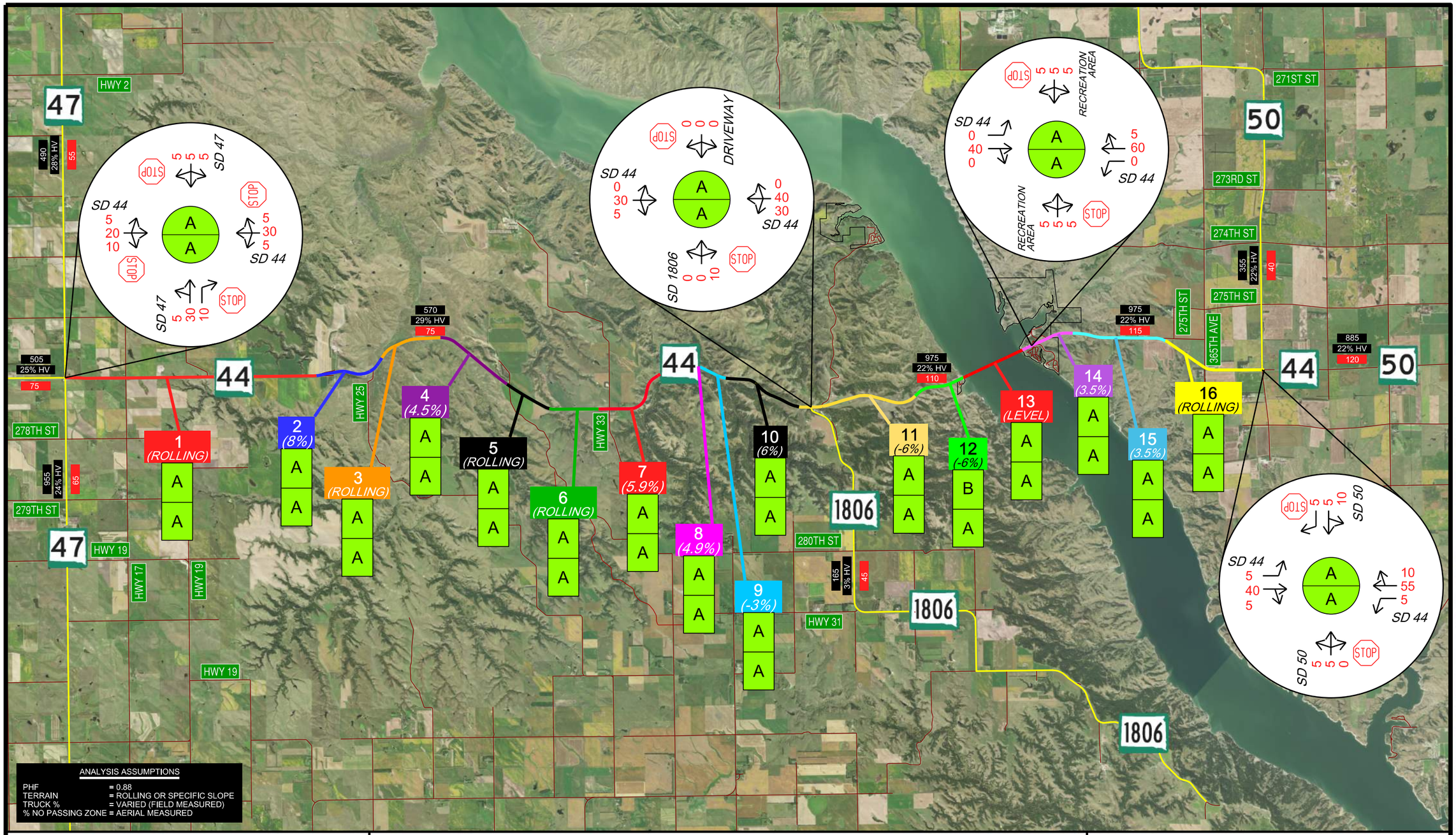
TABLE 9: SD44 CORRIDOR INTERSECTIONS – 2025 NO-BUILD CONDITIONS

SD44 Intersection	Intersection Control Type	HCM 6 LOS		Weighted Average LOS	
		Avg. Delay (sec/veh)	LOS	Weighted Avg. Delay (sec/veh)	LOS
SD47	AWSC	7.6	A	7.5	A
SD1806	TWSC*	8.6	A	2.7	A
Snake Creek Entrance	TWSC*	9.2	A	2.0	A
SD50	TWSC*	9.9	A	2.4	A

** Two-way stop-control LOS reflects worst=-case stop-controlled approach*

TABLE 10: SD44 HIGHWAY SEGMENT BICYCLE LOS SCORE – 2025 NO-BUILD CONDITIONS

SD44 Segment	Direction of Travel	Bicycle Score LOS		SD44 Segment	Direction of Travel	Bicycle Score LOS
1	EB	F		9	EB	F
	WB	F			WB	F
2	EB	F		10	EB	F
	WB	F			WB	F
3	EB	F		11	EB	F
	WB	F			WB	F
4	EB	F		12	EB	F
	WB	F			WB	F
5	EB	F		13	EB	F
	WB	F			WB	F
6	EB	F		14	EB	D
	WB	F			WB	D
7	EB	F		15	EB	D
	WB	F			WB	D
8	EB	F		16	EB	D
	WB	F			WB	D



LEGEND

XXX	AVERAGE DAILY TRAFFIC VOLUME
XX% HV	% HEAVY VEHICLES
XXX	PEAK HOUR VOLUME (2-WAY)
STOP	STOP CONTROL
XX	PEAK HOUR VOLUME

LEVEL OF SERVICE

X	SEGMENT NUMBER
(X%)	SEGMENT GRADE (EASTBOUND TRAVEL)
X	WESTBOUND
X	EASTBOUND
	2-LANE HIGHWAY SEGMENT LEVEL-OF-SERVICE
X / X	HCM 6 WEIGHTED
	INTERSECTION LEVEL-OF-SERVICE

A | B | C | D | E | F

FIGURE 5: 2025 BASE YEAR CONDITIONS TRAFFIC OPERATIONS ANALYSIS

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2050 Planning Year No-Build Traffic Operations Analysis

The traffic volumes representing the 2050 No-Build Conditions are presented in **Figure 3**. The LOS results are summarized in **Figure 6** and shown with respective highway segment PTSF and intersection delay in **Tables 11 and 12**, respectively. The bicycle LOS score along the SD44 corridor is shown in **Table 13**.

TABLE 11: SD44 HIGHWAY SEGMENTS – 2050 NO-BUILD CONDITIONS

SD44 Segment	Direction of Travel	Terrain/ Grade	Segment Length (miles)	Percent No Passing Zone	Climbing Lane	PTSF (%)	LOS
1	EB	Rolling	4.2	30%		27.0	A
	WB	Rolling	4.2	36%		34.7	A
2	EB	-8.0%	1.2	70%		27.7	A
	WB	8.0%	1.2	83%	X	8.4	A
3	EB	Rolling	1.0	48%		31.2	A
	WB	Rolling	1.0	59%		40.3	B
4	EB	-4.5%	1.4	35%		24.1	A
	WB	4.5%	1.4	27%		26.4	A
5	EB	Rolling	0.8	25%		25.6	A
	WB	Rolling	0.8	44%		36.9	A
6	EB	6.0%	0.8	77%		28.8	A
	WB	-6.0%	0.8	68%		36.3	A
7	EB	-5.9%	1.4	54%		26.9	A
	WB	5.9%	1.4	59%		37.1	A
8	EB	4.9%	0.6	26%		21.0	A
	WB	-4.9%	0.6	26%		26.6	A
9	EB	-3.0%	0.5	28%		22.3	A
	WB	3.0%	0.5	83%		35.8	A
10	EB	6.0%	1.3	39%		26.1	A
	WB	-6.0%	1.3	21%		24.2	A
11	EB	-6.0%	2.1	29%		18.8	A
	WB	6.0%	2.1	32%		39.7	A
12	EB	-6.0%	0.8	41%		22.8	A
	WB	6.0%	0.8	86%		44.7	B
13	EB	Level	1.1	0%		11.6	A
	WB	Level	1.1	0%		19.5	A
14	EB	3.5%	1.1	49%		27.7	A
	WB	-3.5%	1.1	43%		37.4	A
15	EB	3.5%	1.3	43%		26.8	A
	WB	-3.5%	1.3	34%		34.4	A
16	EB	Rolling	1.7	14%		25.4	A
	WB	Rolling	1.7	6%		29.1	A
Facility	**EB**	**-**	**21.3**	**36%**	**-**	**24.7**	**A**
	WB	**-**	**21.3**	**40%**	**-**	**32.8**	**A**

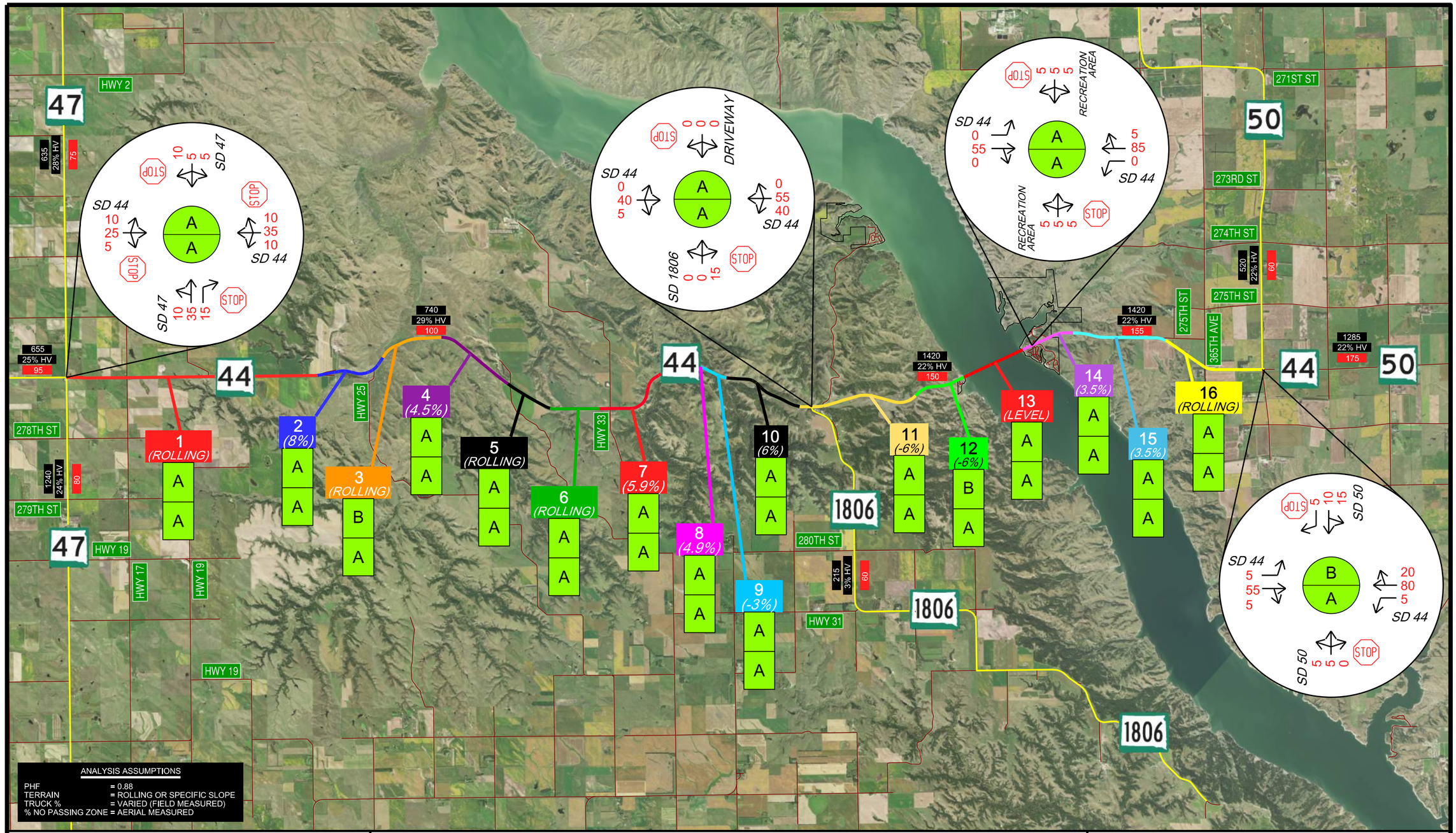
TABLE 12: SD44 CORRIDOR INTERSECTIONS – 2050 NO-BUILD CONDITIONS

SD44 Intersection	Intersection Control Type	HCM 6 LOS		Weighted Average LOS	
		Avg. Delay (sec/veh)	LOS	Weighted Avg. Delay (sec/veh)	LOS
SD47	AWSC	7.7	A	7.7	A
SD1806	TWSC*	8.7	A	2.8	A
Snake Creek Entrance	TWSC*	9.5	A	1.6	A
SD50	TWSC*	10.3	B	2.3	A

** Two-way stop-control LOS reflects worst=-case stop-controlled approach*

TABLE 13: SD44 HIGHWAY SEGMENT BICYCLE LOS SCORE – 2050 NO-BUILD CONDITIONS

SD44 Segment	Direction of Travel	Bicycle Score LOS		SD44 Segment	Direction of Travel	Bicycle Score LOS
1	EB	F		9	EB	F
	WB	F			WB	F
2	EB	F		10	EB	F
	WB	F			WB	F
3	EB	F		11	EB	F
	WB	F			WB	F
4	EB	F		12	EB	F
	WB	F			WB	F
5	EB	F		13	EB	F
	WB	F			WB	F
6	EB	F		14	EB	D
	WB	F			WB	F
7	EB	F		15	EB	D
	WB	F			WB	F
8	EB	F		16	EB	D
	WB	F			WB	F



LEGEND

XXX	AVERAGE DAILY TRAFFIC VOLUME
XX% HV	% HEAVY VEHICLES
XXX	PEAK HOUR VOLUME (2-WAY)
STOP	STOP CONTROL
XX	PEAK HOUR VOLUME

LEVEL OF SERVICE

X	SEGMENT NUMBER
(X%)	SEGMENT GRADE (EASTBOUND TRAVEL)
X	WESTBOUND
X	EASTBOUND
	2-LANE HIGHWAY SEGMENT LEVEL-OF-SERVICE
X / X	HCM 6 WEIGHTED
	INTERSECTION LEVEL-OF-SERVICE

A | B | C | D | E | F

FIGURE 6: 2050 PLANNING YEAR CONDITIONS TRAFFIC OPERATIONS ANALYSIS

South Dakota DOT
Project HP5596(19) 3616 P; P0044()290 3014 N, PCN 05X0
SD 44/Platte-Winner Bridge Corridor Study and Environmental Assessment

Gregory and Charles Mix Counties

HRGreen

NORTH

0 4,000 8,000
Feet

Summary and Conclusions

The Existing Conditions, 2025 No-Build Conditions, and 2050 No-Build Conditions do not exhibit any locations with constrained capacity, measured either by PTSF along 2-lane highway segments or at stop-controlled intersections. All SD44 two-lane highway segments meet the LOS B or better operational goal established for this study. The vast majority of these segments measured at LOS A while the following two segments indicated a low LOS B during the respective scenario:

- Segment 3, westbound
    - 2050 No-Build Conditions
- Segment12, westbound
    - 2025 No-Build Conditions
    - 2050 No-Build Conditions

The primary contribution to the LOS B measure for Segment 3 is the 59 percent no-passing in the westbound direction. For Segment 12, the primary contributing factors are the 6 percent upgrade and 86 percent no-passing.

Intersection operations were generally LOS A in all scenarios, with the lone exception being the SD50 stop-controlled approach in the 2050 No-Build Conditions, which was a low LOS B.

A review of the bicycle LOS indicated that a vast majority of the corridor scored a LOS F, particularly along Segments 1-13 that exhibit a 4-foot shoulder, 2-foot across the bridge, from the 2016 resurfacing project. For segments east of the bridge, the score gravitates towards LOS F due to the increase in traffic volumes that includes a large proportion of trucks.