2020 South Dakota Decennial Interstate Corridor Study

Phase Three Report

September 2021

SD DOT

prepared by:

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SOUTH DAKOTA DOT 2020 DECENNIAL INTERSTATE CORRIDOR STUDY

Phase 3 Report

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South Dakota DOT 2020 Decennial ICS

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EXECUTIVE SUMMARY

The South Dakota Department of Transportation (SDDOT) and the Study Advisory Team (SAT) are conducting an Interstate Corridor Study (ICS) that focuses on ensuring appropriate Levels of Service throughout the Interstate System and identifying areas not in compliance with current Interstate design standards. In Phase 3, the project team has compiled and prioritized projects that have emerged in Phases 1 and 2 to provide an interstate project implementation plan compatible with the SDDOT statewide project planning process. Refer to the flowchart at the right.

The process began with interchange needs identified in previous phases of the ICS, reflecting potential projects across SDDOT's Interstate System. These needs were ranked based on the significance and severity of the need and on the timeframe of the need. A similar process was undertaken for mainline needs.

The identified needs were compared to planned SDDOT projects in the Statewide Transportation Improvement Program (STIP) and data from the state's pavement management system. This allowed the interchange and mainline projects to be grouped with each other and with previously planned capital projects.

Based on this process, a group of 57 potential projects has been identified that will serve to guide SDDOT capital investment programs from the end of the current STIP through the 2040 horizon of the ICS. These projects are summarized in **Table ES-1**.

Table ES-1. Projects by Year

Legend: = Perform Study -= Construct Project

Project	Rank	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041+
I-90 – Exit 10: North Avenue/Belle Fourche	1																				
I-29 – Exit 133: Brookings/Huron	2																				
I-29 – Exit 26: Vermillion/Yankton	3																				
I-90 – Exit 67: Liberty Boulevard/ Ellsworth AFB	4																				
I-90 – Exit 61: Elk Vale Road	5																				
I-90 – Exit 310: Stickney/Aberdeen	6																				
I-229 – Exit 7: Rice Street	7																				
I-229 – Exit 2: Western Avenue	8																				
I-90 – Exit 48: Stage Stop Canyon Rd.	9																				
I-90 – Exit 58: Haines Avenue	10																				
I-90: MRM 44 to MRM 57	ML 4																				
I-90 – Exit 32: Junction Avenue	11																				
I-29 – Exit 68: Lennox/Parker	12																				
I-29: MRM 67 to MRM 69	ML 2																				
I-29 – Exit 109: Madison/Colman	13																				

Table ES-1. Projects by Year

Legend: = Perform Study -= Construct Project

Project	Rank	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041+
I-229 – Exit 1C: Louise Avenue	14																				
I-229: MRM 0 to MRM 4	ML T6																				
I-90 – Exit 330: Mitchell/Huron	16																				
I-90 – Exit 55: Deadwood Avenue	17																				
I-90 – Exit 52: Black Hawk/ Peaceful Pines Road	19																				
I-90 – Exit 60: North Street	20																				
I-90: MRM 58 to MRM 64	ML T6																				
I-29 – Exit 47: Beresford/Irene	22																				
I-29 – Exit 1: Dakota Dunes	23																				
I-29 – Exit 86: Renner/Crooks	24																				
I-29 –Exit 38: Volin	26																				
I-29 – Exit 2: North Sioux City	28																				
I-90 – Exit 23: Whitewood	29																				
I-29 – Exit 79: 12th Street	30																				
I-29: MRM 77 to MRM 80	ML I																				
I-90 – Exit 357: Bridgewater	31																				
I-90 – Exit 368: Canistota	31																				

Table ES-1. Projects by Year

Legend: = Perform Study -= Construct Project

Project	Rank	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041+
I-29 – Exit 207: Summit/Aberdeen	35			-																	
I-29 – Exit 4: McCook Lake	36				P									-							
I-90 – Exit 319: Mount Vernon	39											P				-					
I-90 – Exit 17: Lead/ Deadwood	40											P				-					
I-90 – Exit 12: Jackson Blvd.	43												P				-				
I-90 – Exit 364: Salem/Yankton	44				P																
I-29 – Exit 81: Russell Street	45					-															
I-90 – Exit 410: Valley Springs/Garretson	46												P				-				
I-90: MRM 410.5 to MRM 411	ML T7																				
I-90 – Exit 395: Marion Road	48													P				-			
I-29 – Exit 98: Dell Rapids	49											P				-					
I-29 – Exit 94: Baltic	50																				P
I-29: MRM 42 to MRM 43	ML 3					-															
I-90: MRM 400 to MRM 406	ML 5													P				-			
I-29: MRM 71 to MRM 73	ML T6													P				-			

Table ES-1. Projects by Year

Legend: = Perform Study -= Construct Project

Project	Rank	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041+
I-90: MRM 58 to MRM 64	ML T6																				
I-90: MRM 396 to MRM 399	ML T6																				
I-229: MRM 5 to MRM 7	ML T6																				
I-29: MRM 62 to MRM 62.5	ML T7																				
I-29: MRM 64 to MRM 64.5	ML T7																				
I-29: MRM 74 to MRM 75	ML T7																				

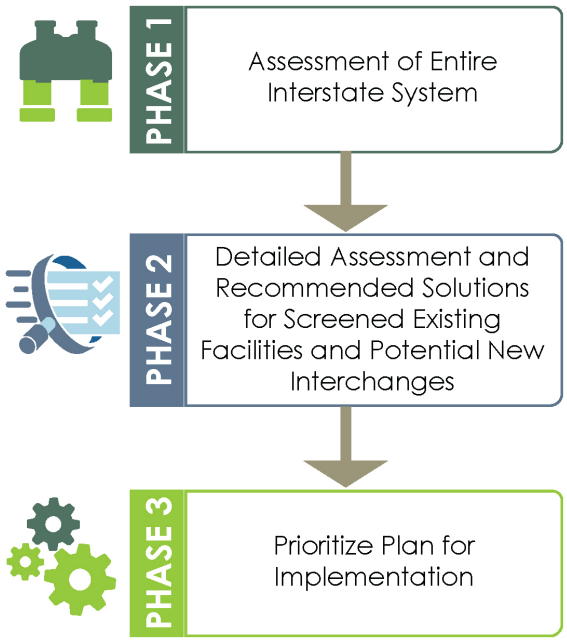
1. INTRODUCTION

The South Dakota Department of Transportation (SDDOT) and the Study Advisory Team (SAT) are conducting an Interstate Corridor Study (ICS) that focuses on ensuring a mainline Level of Service (LOS) of B or better throughout the rural Interstate System and LOS C or better throughout the Interstate System and identifying areas not in compliance with current Interstate design standards. This report is the third Decennial ICS and builds on both the Year 2000 and the Year 2010 study efforts, in addition to incorporating several new evaluations.

1.1 2020 Decennial ICS Process

The 2020 Decennial ICS has been conducted in three phases, as shown in the flowchart below/right. The first two phases have:

- Completed a traffic LOS analysis for both existing and future conditions on the Interstate System mainline and interchanges.
- Identified locations on the Interstate System not in compliance with current design standards under both the current and predicted future traffic conditions.
- Identified bridges on the Interstate System that will need bridge replacement before 2035.
- Developed feasible solutions to address the portions of the Interstate System that fail to meet current design standards and/or traffic LOS expectations under both the current and predicted future traffic conditions.



This report documents the Phase 3 effort, which consists of a review of Phases 1 and 2 to develop prioritization recommendations for identified improvements. The goal of developing a prioritized list of projects is to guide future capital investment across the Interstate System. Interchange and interstate mainline ranking lists were developed to determine project prioritization based on the significance of the need, the severity of the need and the timing of becoming a need. Project grouping has also been considered where cost and schedule synergies may exist between adjacent identified projects. The following sections describe the methodology behind each of these metrics, along with an approach to establishing the project prioritization.

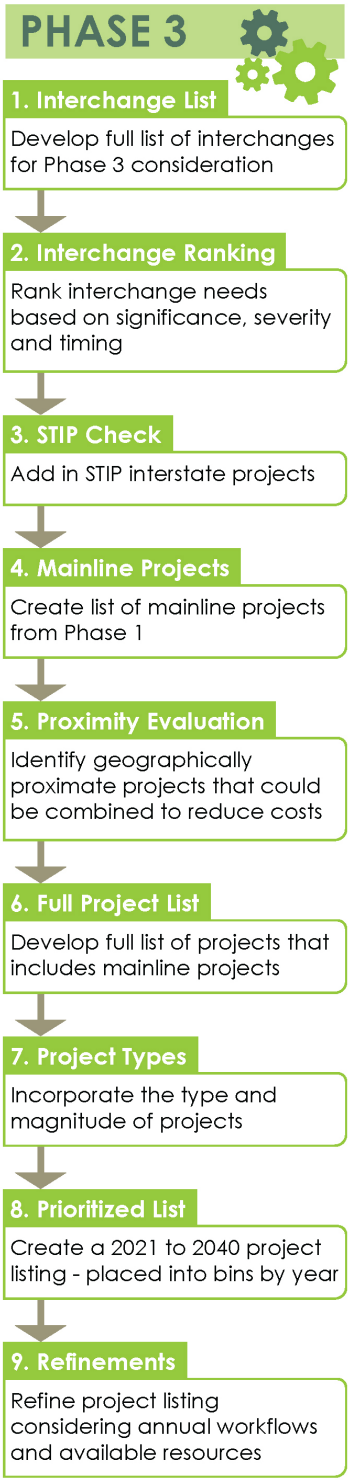
1.2 Phase 3 Study Process

The flow chart to the right illustrates the process used to create the prioritized project list presented at the end of this report.

The first three steps considered the interchange projects identified in Phase 1, some of which were refined in Phase 2. This included both existing interchanges and potential new interchanges identified for analysis in the project scope. Following the development of the full list of interchanges to be considered, the interchanges were ranked based on the significance of the need for improvement, the severity of the need and the timing of becoming a need. A project implementation workshop with the SAT and other SDDOT staff was also conducted to refine and confirm the interchange ranking list.

The next three steps considered the mainline projects identified in Phase 1. These projects were also ranked based on the significance of the need for improvement, the severity of the need and the timing of becoming a need. They were then checked for adjacencies with interchange projects and other SDDOT projects to develop a full list of projects. This allowed the project team to check for appropriate project grouping, where cost and schedule synergies existed between adjacent identified interchanges and mainline projects adjacent or proximate to the interchange.

The full list was then prioritized based on ICS project rankings and timelines for other SDDOT projects with adjacencies. Adjustments to the list were then made in consideration of projected annual budget constraints and anticipated planning, design, and construction capabilities of SDDOT.



2. INTERCHANGE PROJECT RANKINGS

The first step in the prioritization process was to rank interchange projects. The project list, defined in Phase 1 of the ICS, identified potential needs at the 159 existing and potential interchanges across the system. The ranking process used outcomes of the Phase 1 and Phase 2 analyses from the ICS when possible. As described below, several interchange projects were excluded from this evaluation as they are currently under construction or are already reflected in the Statewide Transportation Improvement Program (STIP). Interchanges currently being rebuilt have been excluded from the ranking and prioritization processes, as they are assumed to meet operational needs and design criteria. The STIP projects have been added back into the overall prioritization as part of a later step.

2.1 Interchange Ranking Methodology

The methodology for the ranking included two primary components: significance and severity of the need and timing of need. The significance and severity of the need was defined in the Phase 1 effort, while timing of the need was applied as part of the Phase 3 effort to begin the prioritization process. Each component is discussed further.

2.1.1 Significance and Severity of Need

The interchange evaluations performed during the Phase 1 efforts were used to reflect significance and severity of need. The Phase 1 analysis summarized needs in each of five categories:

- Geometrics – Identification of geometric deficiencies
- LCV Movements – Serviceability of interchange ramp terminal intersections for Long Combination Vehicles
- Structures – Condition of existing interchange bridges
- Safety – Patterns based on 5-year crash analysis
- Operations – Existing and year 2050 operations at ramp terminals or merge/diverge areas

Based on these evaluations, 77 interchanges indicated at least one area of need, as shown in the Phase 1 report. As part of the Phase 1 efforts, an initial interchange scoring was completed. Although this scoring was not presented explicitly in the Phase 1 report, it was shared with the SAT and used to select interchanges for preliminary solutions from the list of 77 interchanges with needs. This initial scoring has been included as **Appendix A** for reference. It should be noted that the system interchanges in Sioux Falls and Rapid City occupy two lines in the scoring matrix because the merge/diverge operational results differ depending on the interstate being analyzed. The analysis conducted in Phase 1 was used to define the initial significance and severity of need score in the Phase 3 ranking process.

The raw scores for each interchange provided a good indication of which locations were candidates for improvements and were appropriate for the Phase 1 evaluations. To use that information in the Phase 3 ranking and prioritization process, a weighting factor was applied to the more critical metrics examined in Phase 1. These metrics and the associated factors applied are as follows:

- A 1.3 factor for future (year 2050) operations
- A 1.5 factor for safety deficiencies
- A 1.3 factor for structural condition

Applying these weighting factors to the raw scores provides more emphasis on safety issues, operational performance of the interchange ramp terminal intersections, and structural conditions for each interchange. The remaining metrics were left with a 1.0 weighting factor. This process resulted in a revised Phase 1 ranking for use in the Phase 3 effort.

2.1.2 Timing of Need

Existing Interchanges

The second component of the ranking process was associated with the timing of the improvement needs at an interchange. As previously discussed, the goal was to use the data and analysis from previous study efforts to adjust the interchange prioritization based on quantifiable measures. Safety and operations were used to develop a parameter to inform the timing rankings, with more severe conditions contributing to a more urgent project need.

- Safety was selected to recognize that if an interchange analysis showed an existing safety issue, it should be addressed sooner than interchanges with a low safety ranking. A base factor of 1.5 was applied to the safety scoring to indicate the importance of this need.
- Current operations at the ramp terminal intersections were selected for a similar reason. If the interchange is currently experiencing congestion and delay, it should be addressed sooner than a location operating acceptably under current conditions. Again, a base factor of 1.5 was applied to the current operations scoring to indicate the importance of this need.
- Future operations at the ramp terminal intersections were also included in the timing evaluation. If an interchange was determined to have an operational issue in year 2050, it is expected to begin experiencing congestion and delay between the existing year and 2050. This raw score was used in the timing calculation without a weighting factor, as the timing of the congestion and delay was not determined during previous study efforts.

The resulting timing scores were calculated for each interchange, resulting in a range of timing scores across the 158 interchanges evaluated. These results were used to define the timing of need score in the Phase 3 ranking process.

Potential New Interchanges

Seven potential new interchange locations were evaluated during Phase 2 of the project, and the SDDOT requested that these potential new interchange locations be included in the interchange project rankings. Because these interchanges do not currently exist, they were not evaluated in Phase 1 and were not assigned Phase 1 scores. To incorporate these potential new interchanges in the Phase 3 timing, these locations were assigned scores for traffic operations only, based on the operational performance level of interchanges adjacent to the potential new locations. It is assumed that the timing of the need for a new interchange would be accelerated by operational deficiencies at nearby interchanges.

2.1.3 Adjustment to Scores

The project team recognized that there is some overlap between the refined significance and severity of need scores and the timing of need scores. For example, both scores use safety and future operations in their separate processes. Since there is some overlap in the scores, an adjustment factor was applied to lessen the impact of that commonality. The refined significance and severity of need scores were assigned a 75 percent weight and the timing of need scores were assigned the remaining 25 percent weight.

2.1.4 Project Implementation Workshop

After the project team completed the initial scoring and related adjustments, the preliminary scoring was reviewed with the SAT in a workshop format. The workshop participants reviewed the methodologies and discussed specific interchanges by region.

Key takeaways from this meeting include:

- After discussion, the SAT approved the use of a timing factor within the scoring and ranking process.
- Paving needs are a key driver for some interstate projects, and it was asked how these would be reflected. Because these needs have already been defined and ranked through SDDOT's pavement management program, they will be introduced to the process during the prioritization efforts.
- Although the scoring looks at interchanges individually, the SDDOT has the option to group several interchanges into a corridor study. This should be considered if several adjacent interchanges are ranked and prioritized similarly.

2.2 Project Types

As a separate step in the ranking process, each interchange was reviewed to determine the type of project that could be used to address the deficiencies identified during the ranking process. This effort was informed by the interchange improvement identification process completed in Phase 1, the results

of the detailed Phase 2 evaluations at 12 existing and 7 potential new interchange locations across the system, and input received during the Phase 3 workshop. Each type of project was assigned a code in accordance with **Table 2-1**, and these codes were added to the ranking matrix.

Table 2-1. Interchange Project Types

Project	Code	Description
Study	S	Evaluation of single site or broader corridor to identify appropriate alternative to advance into scoping.
Safety Countermeasure(s)	SC	Maintenance crash mitigation project to address identified pattern. Often maintenance-type projects include signing and striping, sight distance improvements, guardrail, etc.
Full Reconstruction	FR	Complete replacement of current interchange
Partial Reconstruction	PR	Involves major modifications to bridge(s), realignment of ramps, reconfiguration of adjacent accesses.
Ramp Terminal Enhancement	RTE	Change to traffic control, restriping, spot widening – no realignment/shifts of location.
Bridge Replacement	BR	Maintain current interchange configuration, only replace deficient bridge.
Ramp Modifications	RM	Improvements to ramp geometry, merge/diverge area
Adjacent Access Changes	AAC	Adjacent access realignment or reconfiguration to improve access spacing or limit movements, etc.
New Interchange	NI	Construct new interchange where no interchange currently exists.
—	STIP	Project already included in the STIP.

2.3 Interchange Ranking Matrix

Based on the methodology above, the interchanges were ranked based on significance and severity of needs and timing of needs. Once that effort was completed, project types and costs were assigned to each interchange. This process resulted in a master list of ranked interchange projects, as shown in **Table 2-2**. Details of the scoring that generated these rankings are presented in **Appendix B**. **Appendix B** also identifies the various SDDOT regions associated with each interchange.

Table 2-2. Interchange Project Rankings

Route	Exit	Location	Rank	Improvement Type
I-90	Exit 10	North Avenue/Belle Fourche	1	AAC
I-29	Exit 133	Brookings/Huron	2	FR
I-29	Exit 26	Vermillion/Yankton	3	BR/RTE/RM
I-90	Exit 67	Liberty Boulevard/Ellsworth AFB	4	RTE
I-90	Exit 61	Elk Vale Road	5	RTE/AAC
I-90	Exit 310	Stickney/Aberdeen	6	FR

Table 2-2. Interchange Project Rankings

Route	Exit	Location	Rank	Improvement Type
I-229	Exit 7	Rice Street	7	FR
I-229	Exit 2	Western Avenue	8	STIP
I-90	Exit 48	Stage Stop Canyon Road	9	FR
I-90	Exit 58	Haines Avenue	10	RM
I-90	Exit 32	Junction Avenue	11	RTE
I-29	Exit 68	Lennox/Parker	12	RTE/RM
I-29	Exit 109	Madison/Colman	13	BR/S
I-229	Exit 1C	Louise Avenue	14	STIP
I-90	Exit 235	Kennebec	15	NA
I-90	Exit 330	Mitchell/Huron	16	RTE
I-90	Exit 55	Deadwood Avenue	17	RM/AAC
I-29	Exit 80	Madison Street	18	NA
I-90	Exit 52	Black Hawk/Peaceful Pines Road	19	RM
I-90	Exit 60	North Street	20	RM
I-90	Exit 344	Alexandria	21	NA
I-29	Exit 47	Beresford/Irene	22	RTE
I-29	Exit 1	Dakota Dunes	23	RTE
I-29	Exit 86	Renner/Crooks	24	FR
I-29	Exit 150	Toronto/Estelline	25	NA
I-29	Exit 38	Volin	26	SC
I-29	Exit 114	Flandreau	27	NA
I-29	Exit 2	North Sioux City	28	FR
I-90	Exit 23	Whitewood	29	RTE
I-29	Exit 79	12th Street	30	SC
I-90	Exit 357	Bridgewater	31	BR, SC
I-90	Exit 368	Canistota	31	BR, SC
I-29	Exit 127	Elkton/Sinai	33	NA
I-90	Exit 192	Murdo/White River	34	NA
I-29	Exit 207	Summit/Aberdeen	35	SC
I-29	Exit 4	McCook Lake	36	PR
I-90	Exit 379	Humboldt/Madison	37	NA
I-90	Exit 350	Emery/Farmer	38	NA
I-90	Exit 319	Mount Vernon	39	BR
I-90	Exit 17	Lead/Deadwood	40	RTE/RM
I-29	Exit 185	Waverly	41	NA
I-29	Exit 140	White	42	NA
I-90	Exit 12	Jackson Blvd.	43	RTE
I-90	Exit 364	Salem/Yankton	44	SC

Table 2-2. Interchange Project Rankings

Route	Exit	Location	Rank	Improvement Type
I-29	Exit 81	Russell Street	45	SC
I-90	Exit 410	Valley Springs/Garretson	46	RM
I-29	Exit 180	Watertown	47	NA
I-90	Exit 395	Marion Road	48	RTE
I-29	Exit 98	Dell Rapids	49	RTE
I-29	Exit 94	Baltic	50	NA
I-29	Exit 53	Viborg	51	NA
I-90	Exit 390	Hartford	52	RTE
I-90	Exit 374	Montrose	53	SC
I-29	Exit 64	Worthing/Lennox	54	RM
I-29	Exit 9	Jefferson	55	NA
I-29	Exit 164	Castlewood/Clear Lake	56	NA
I-90	Exit 284	Kimball	57	NA
I-90	Exit 335	Riverside Road	57	NA
I-90	Exit 44	Piedmont	59	RM
I-90	Exit 110	Wall/Badlands Loop	60	RTE/RM
I-90	Exit 40	Tilford Road	61	NA
I-29	Exit 232	Sisseton	62	NA
I-90	Exit 296	White Lake	63	SC
I-29	Exit 82	Benson Road	64	FR
I-29	Exit 59	Davis	65	BR
I-29	Exit 56	Fairview	66	FR
I-90	Exit 332	Mitchell/Parkston	67	NA
I-90	Exit 308	Plankinton	68	BR
I-90	Exit 272	Pukwana	69	NA
I-90	Exit 163	Belvidere	70	NA
I-90	Exit 57	I-190	71	RM
I-229	Exit 5	26th Street	72	FR
I-29	Exit 15	Elk Point	73	FR
I-90	Exit 225	Presho	74	NA
I-29	Exit 177	Watertown	75	NA
I-29	Exit 31	Spink/Akron	76	NA
I-90	Exit 30	Lazelle Street/Deadwood-Lead	77	RM
I-29	Exit 50	Centerville/Hudson	78	FR
I-29	Exit 78	26th Street	79	SC, RTE
I-29	Exit 121	Nunda/Ward	80	NA
I-90	Exit 353	Spencer/Emery	80	NA
I-29	Exit 132	Brookings	82	NA

Table 2-2. Interchange Project Rankings

Route	Exit	Location	Rank	Improvement Type
I-90	Exit 78	New Underwood	83	NA
I-190	Exit 1A	I-90	84	NA
I-90	Exit 150	Kadoka	85	NA
I-90	Exit 8	McGuigan Road	86	NA
I-90	Exit 260	Oacoma/Chamberlain	87	NA
I-29	Exit 104	Trent	88	NA
I-90	Exit 402	Veterans Parkway	89	NA
I-90	Exit 226	Presho/Winner	90	NA
I-90	Exit 400	I-229	91	FR
I-90	Exit 143	Philip	92	NA
I-90	Exit 289	Platte	92	NA
I-90	Exit 325	Betts Road	92	NA
I-29	Exit 213	Wilmot	95	NA
I-29	Exit 83	60th Street North	96	SC
I-90	Exit 109	Wall	97	NA
I-90	Exit 131	Interior/Badlands Loop	98	BR
I-90	Exit 14	27th Street/Spearfish Canyon	99	RTE
I-90	Exit 170	Midland	100	NA
I-90	Exit 396	I-29	101	NA
I-29	Exit 224	Peever	102	NA
I-90	Exit 84	167th Avenue	103	NA
I-90	Exit 241	Lyman	104	NA
I-90	Exit 112	Philip/Pierre	105	FR
I-90	Exit 399	Cliff Avenue	106	RM
I-90	Exit 208	(none)	107	NA
I-29	Exit 18	Elk Point	108	NA
I-90	Exit 177	(none)	109	NA
I-90	Exit 90	173rd Avenue	110	NA
I-90	Exit 98	Wasta	111	NA
I-90	Exit 88	171st Avenue	112	NA
I-29	Exit 201	Twin Brooks	113	NA
I-90	Exit 172	(none)	113	NA
I-190	Exit 1C	North Street	115	NA
I-29	Exit 242	(none)	116	NA
I-29	Exit 246	New Effington/Rosholt	116	NA
I-90	Exit 251	Gregory/Winner	116	NA
I-90	Exit 191	Murdo	119	BR
I-29	Exit 157	Brandt	120	NA

Table 2-2. Interchange Project Rankings

Route	Exit	Location	Rank	Improvement Type
I-90	Exit 2	McNenny Fish Hatchery	120	NA
I-90	Exit 107	Cedar Butte Road	120	NA
I-90	Exit 201	Draper	120	NA
I-90	Exit 127	(none)	124	NA
I-90	Exit 116	239th Street	125	NA
I-90	Exit 121	Big Foot Road	126	NA
I-90	Exit 152	Kadoka	127	NA
I-90	Exit 263	Chamberlain	128	NA
I-29	Exit 62	Canton	129	NA
I-29	Exit 84	I-90	130	NA
I-90	Exit 220	(none)	131	NA
I-90	Exit 214	Vivian	132	NA
I-90	Exit 265	Chamberlain	133	NA
I-90	Exit 101	Jensen Road	134	NA
I-229	Exit 1A	I-29	135	NA
I-90	Exit 248	Reliance/Lower Brule	136	NA
I-29	Exit 42	Alcester/Wakonda	137	NA
I-90	Exit 183	Okaton	138	NA
I-90	*Exit 404*	*Brandon*	*139*	*NI*
I-90	*Exit 408*	*Brandon*	*139*	*NI*
I-29	Exit 75	I-229	141	NA
I-229	Exit 10	I-90	142	NA
I-29	*Exit 87*	*Crooks 257th Street*	*143*	*NI*
I-29	*Exit 88*	*Crooks 256th Street*	*143*	*NI*
I-29	*Exit 89*	*Crooks 255th Street*	*143*	*NI*
I-90	*Exit 16*	*Rainbow Road, Spearfish*	*146*	*NI*
I-90	*Exit 264*	*Chamberlain*	*147*	*NI*
I-190	Exit 0	Omaha Street/End I-190	147	NA
I-229	Exit 6	10th Street	NIC	
I-229	Exit 3	Minnesota Avenue	NIC	
I-90	Exit 212	Pierre/Ft. Pierre	NIC	
I-29	Exit 193	South Shore/Stockholm	NIC	
I-29	Exit 71	Harrisburg/Tea	NIC	
I-29	Exit 73	Tea	NIC	
I-29	Exit 74	85th Street	NIC	
I-29	Exit 77	41st Street	NIC	
I-90	Exit 34	BH National Cemetery	NIC	
I-90	Exit 37	Pleasant Valley Road	NIC	

Table 2-2. Interchange Project Rankings

Route	Exit	Location	Rank	Improvement Type
I-90	Exit 46	Elk Creek Road		NIC
I-90	Exit 59	LaCrosse Street		NIC
I-90	Exit 63	Box Elder/Ellsworth AFB Commercial		NIC
I-90	Exit 387	Hartford		NIC
I-90	Exit 406	Brandon/Corson		NIC
I-229	Exit 4	Cliff Avenue		NIC
I-229	Exit 9	Benson Road		NIC

The italicized rows in **Table 2-2** reflect potential future interchanges that were evaluated in the Phase 2 study. The potential new interchanges are typically ranked below the existing interchanges based on need since these additional interchanges are not needed to maintain acceptable traffic conditions throughout the Interstate System. It is anticipated that the urgency of constructing new interchanges at any of these locations would be driven by local growth needs rather than the need to maintain acceptable interstate operations and safety. Hence, the Phase 2 study did not recommend any new interchange on the Interstate System. The NIC (not in contract) value in the ranking column refers to interchanges that were not ranked Phase 1 due to recent or current projects.

3. MAINLINE PROJECT RANKINGS

The second step in the prioritization process was the mainline project ranking. Operational needs were identified for various mainline segments in Phase 1 of the ICS. The projects were identified based on route and mileage reference markers (MRMs) indicating the beginning and end of each project. Although mainline safety, structures, and geometric conditions were also evaluated in Phase 1, the needs were not assigned scores at that time. The Phase 3 evaluation provides additional ranking and scoring information not documented in the Phase 1 effort.

3.1 Mainline Ranking Methodology

The methodology for the ranking consisted of two primary components: significance and severity of the need and timing of need. The significance and severity of the need was based on analyses completed for the Phase 1 effort, while timing of the need was applied as part of the Phase 3 effort to begin the prioritization process. Each component is discussed further below.

3.1.1 Significance and Severity of Need

The interchange evaluations performed during the Phase 1 efforts were used to reflect significance and severity of need. The Phase 1 analysis identified needs in each of the following five categories:

- Geometrics – Identification of geometric deficiencies
- Truck Parking – Capacity needs identified in the truck parking analysis
- Structures – Condition of existing mainline bridges
- Safety – Needs based on three elements:
  - Deficiencies based on 5-year crash analysis
  - Areas not meeting median cable barrier warrants
  - Areas identified for improvements in the blowing snow analysis
- Operations – Year 2050 operations at merge/diverge areas or along the mainline

Based on these needs, 61 mainline segments representing 116 miles of interstate reflected at least one area of need, as shown in the Phase 1 report and the supporting technical memoranda. Since these needs were not compiled and scored during the Phase 1 process, an initial scoring was completed for the Phase 3 evaluation.

Geometrics

The geometric deficiencies identified during the Phase 1 effort were reviewed. Many deficiencies were related to clear zone and inslopes. The Phase 1 report notes that these issues do not typically warrant

immediate correction. Hence, geometry was not considered in the scoring process. However, when interchange or mainline projects occur in areas with these identified needs, they should be addressed.

Truck Parking

The Truck Parking Assessment identified improvements at 36 locations across the Interstate System. Many of these recommendations reflect modifications to private facilities near interchanges and/or changes to interstate guide signing that would not warrant a capital project. Hence, truck parking efforts were not considered in the scoring process. If an SDDOT rest area falls within a mainline segment to be improved, truck parking should be considered along with the mainline improvement.

Structures

Bridges across the system were evaluated for condition and clearance in Phase 1. Of the 13 poor bridges, 11 are structures over the mainline interstate that carry local traffic. The 6 poor structures over the interstate within interchanges have been reflected in the interchange rankings. Upgrades and/or replacement of the remaining 5 structures over the mainline would not warrant a mainline improvement project. The I-90 structure over Box Elder Creek west of Rapid City was included in an identified ICS mainline project that has other needs. The I-90 structure over SD19 in Exit 379 has been reflected in the interchange rankings. Based on this review, structures were not considered further in the scoring process.

Safety

The Phase 1 evaluation presented three mainline safety-related evaluations: crash history, median cable barrier (MCB) warrants, and the blowing snow analysis. Although the improvements recommended in the blowing snow analysis will affect mainline safety, they are typically constructed outside the roadway footprint to lessen the impacts of snow blowing across the highway. Hence, the blowing snow analysis has not been scored separately. The MCB warrants use geometric conditions and safety experience to define areas where MCBs may be an effective tool to reduce crossover crashes. The resulting projects are typically lower cost and may be constructed through existing contract mechanisms within SDDOT. Since the MCB warrants include underlying geometric and safety measures and do not require significant capital projects for installation, they have not been scored separately.

The mainline crash history compiled for the Phase 1 effort was reviewed and areas with safety concerns were assigned a score of 1.0. During this process, it was noted that many of the high crash areas were related to wildlife collisions. Wildlife collision mitigations typically address a targeted wildlife crossing area (such as a watercourse). These mitigations are typically lower cost and may be constructed through existing contract mechanisms within SDDOT. Hence, a sensitivity analysis was conducted that reduced or eliminated the safety scores where wildlife mitigations were the only recommended safety solution. Based on the minor changes observed during the sensitivity analysis, locations where the only safety

recommendation was to perform wildlife mitigation were scored with a zero value. The 1.0 score was retained for other safety needs.

Operations

Like the interchange evaluations, traffic operations are a key driver for potential future projects. As described in the Phase 1 report, the operational analyses included basic freeway segments, ramp merge and diverge segments, and weaving areas. The LOS thresholds defined during the Phase 1 efforts were maintained during the Phase 3 scoring. Using these thresholds, locations with identified existing operational needs were scored with a 1.0 value. Similarly, locations with identified future operational needs were scored with a 1.0 value.

Summary

Based on the scoring process above, identified mainline segments could receive one point for safety, one point for existing operations, and one point for future operations.

3.1.2 Timing of Need

The second component of the ranking process was associated with the timing of the mainline improvement needs. As previously discussed, the goal was to use the data and analyses from previous study efforts to adjust the interchange prioritization based on quantifiable measures. Safety and operations were used to inform the timing rankings. Instead of developing a separate timing score in the ranking spreadsheet, the timing factors described below were applied directly to the safety and operations scores before the overall scores were calculated.

- Safety was selected to recognize that if a mainline segment showed an existing safety issue, it should be addressed sooner than segments with a low safety ranking. A base factor of 1.5 was applied to the safety scores to indicate the importance of this need.
- Current mainline operations were selected for a similar reason. If the segment is currently experiencing congestion and delay, it should be addressed sooner than one operating acceptably under current conditions. Again, a base factor of 1.5 was applied to the current operations scores to indicate the importance of this need.

These factors were applied in the scoring matrix and final scores were calculated for each segment. Since the significance and severity needs were simply multiplied by the timing factors above, there were no adjustments to the mainline scores.

3.2 Mainline Ranking Matrix

Based on the methodology above, the mainline segments were ranked based on significance and severity of needs and timing. This process resulted in a master list of ranked mainline projects. The mainline projects that scored greater than 0.0 are shown in **Table 3-1**. The master list of mainline analysis segments is presented in **Appendix C**.

Table 3-1. Mainline Projects

Route	Begin MRM	End MRM	Needs	Rank
I-29	77	80	MCB, Safety, Existing Operations, Future Operations	1
I-29	67	69	MCB, Existing Operations	2
I-29	42	43	Safety	3
I-90	44	57	Safety, MCB, Structure, Future Operations	4
I-90	400	406	MCB, Safety, Future Operations	5
I-29	71	73	MCB, Future Operations	Tied – 6
I-90	58	64	MCB, Future Operations	Tied – 6
I-90	396	399	MCB, Future Operations	Tied – 6
I-229	0	4	MCB, Future Operations	Tied – 6
I-229	5	7	MCB, Future Operations	Tied – 6
I-29	62	62.5	Future Operations	Tied – 7
I-29	64	64.5	Future Operations	Tied – 7
I-29	74	75	Future Operations	Tied – 7
I-90	410.5	411	Future Operations	Tied – 7

4. OTHER PROJECTS

The project ranking identified previously defines the relative needs for interchange and mainline projects based on the ICS effort. Information regarding existing projects being planned by SDDOT has been gathered to support assigning years to the ranked projects and identifying opportunities for combining projects (Steps 3 and 5 of the flowchart shown in **Section 1.2**).

The two main data sources for this effort are SDDOT's pavement management system and the federally mandated transportation planning process. Both inputs are described further below.

4.1 Paving Needs

The SDDOT regularly evaluates pavement conditions across the state highway network. Among other things, this process results in a list of pavement needs, including joint repairs and other minor efforts, chip seals and overlays, and full-depth pavement reconstruction. These needs are regularly updated in the SDDOT's pavement database and reported in the Needs Book. The needs generally span a 20-year period from the date of the pavement inventory.

The ICS project team received the latest pavement conditions assessment table for the Interstate System from SDDOT. It captures data from 2021 to 2040 and lists approximately 630 pavement segments with a variety of needs. For each segment, the table includes the type of need (resurfacing, repairs, etc.) and the year of the need. The various types of needs are shown in **Table 4-1**. Various paving needs are not applicable to the Interstate System (for example, gravel resurfacing), so those were not considered as interstate needs. For those needs relevant to the interstate, only needs that would result in a significant project were considered as part of the ICS project prioritization. These generally include pavement reconstruction and significant overlays. **Table 4-1** lists the types of needs considered.

Table 4-1. Pavement Need Types

Treatment Code	Treatment Description	Interstate Need?	Defines Project?
AOVC	AC Overlay (No Crack and Seat)	Yes	Yes
GRND	Pavement Grinding	Yes	No
MACO	Mill and AC Overlay	Yes	Yes
MACS	Mill and Class S AC Overlay	Yes	No
MICR	Microsurfacing of Asphalt Concrete	Yes	No
MPCO	PCC Overlay Over Asphalt	Yes	Yes
PVR1	Pavement Restoration 1	Yes	Yes
PVR2	Pavement Restoration 2	Yes	Yes
RASI	Rout and Seal Treatment – Interstate only	Yes	No

Table 4-1. Pavement Need Types

Treatment Code	Treatment Description	Interstate Need?	Defines Project?
RBOV	Rubblize Concrete and AC Overlay	Yes	Yes
RECR	Reconstruction to Rigid Pavement	Yes	Yes
RRPC	Remove & Replace Concrete Pavement Rural	Yes	Yes
SASJ	Saw and Seal Joints	Yes	No
UBCO	Unbonded Concrete Overlay	Yes	Yes

For each paving need identified through this process, the location of the project (route, beginning MRM, and ending MRM) and the year of need were extracted. It should be noted that some segments have multiple needs (for example, a chip seal in the short term and a full reconstruction in the long term). These needs were combined with the STIP projects, the interchange projects, and the mainline projects to help define projects for implementation.

4.2 STIP Projects

In accordance with federal regulations, the SDDOT compiles a STIP annually. The SDDOT STIP covers a 4-year period and provides a prioritized list of transportation projects across the state, complete with basic project descriptions, implementation timeframes, and funding information. Projects may include resurfacing, bridge replacements, safety improvements, capacity improvements, and other project types. The included projects must be consistent with the vision in the state's current 20-year transportation plan. Both the STIP and the statewide transportation plan are developed with input from metropolitan planning organizations (MPOs), local agencies, and the public.

The project team received a preliminary draft of the 2022–2025 STIP (and 2025–2028 developmental STIP) project list for evaluation as part of the ICS prioritization process. It lists approximately 125 projects across the Interstate System, including paving, structures, interchange reconstruction, and safety improvements. These projects do not necessarily align with the ICS separation of interchange and mainline projects. For example, the ongoing efforts at I-90 Exit 63 include both reconstruction of the Exit 63 interchange and mainline operational improvements between Exit 61 and Exit 63. For each project, the table includes the type of work, the limits of the effort, and the implementation year. The various project types are shown in **Table 4-2**.

Various projects are not applicable to the ICS effort (for example, spot improvements), so those were not considered during the prioritization process. **Table 4-2** lists the project types considered.

Table 4-2. STIP Project Types

Project Type Description	Project Considered?
AC Resurfacing	Yes
AC Resurfacing, Mill	Yes
AC Resurfacing, Miscellaneous, Mill	Yes
AC Surfacing	Yes
Fence Restoration	No
Grading, PCC Surfacing	Yes
Grading, PCC Surfacing, Interchange Reconstruction	Yes
Grading, PE Only, Structure, Interchange Improvement	Yes
Grading, Structure, PCC Surfacing	Yes
Grading, Structure, PCC Surfacing, Interchange Reconstruction	Yes
Grading, Structure, PCC Surfacing, Miscellaneous	Yes
Interchange Improvement	Yes
Interchange Reconstruction	Yes
Interchange Reconstruction, Grading, PCC Surfacing	Yes
Interchange Reconstruction, Grading, Structure, AC Resurfacing, Mill	Yes
Interchange Reconstruction, PE Only	Yes
Interchange Reconstruction, Structure	Yes
Interchange Reconstruction, Structure Repair	Yes
Interchange Reconstruction, Structure, PCC Surfacing, Roadway Lighting	Yes
Intersection Improvement	Yes
Joint Repair, Spall Repair	No
Miscellaneous	No
PCC Surfacing	Yes
PCC Surfacing, Grading, Structure	Yes
PCCP Resurfacing, Structure, Shoulder Widening	Yes
Reconstruct to PCCP	Yes
Remove & Replace PCC Surfacing	Yes
Remove & Replace PCC Surfacing, Structure	Yes
Safety Upgrading	No
Spot Improvement	No
Structure	Yes
Structure Preservation	No
Structure Preservation, Approach Grading	No

Table 4-2. STIP Project Types

Project Type Description	Project Considered?
Structure Preservation, Guardrail	No
Structure Repair	No
Structure, Grading	Yes

For each STIP project identified through this process, the location of the project (route, beginning MRM, and ending MRM or Exit number) and the implementation year were extracted. It should be noted that some areas have multiple projects (for example, a mainline paving project and a structure replacement). These projects were combined with the paving needs, the ICS interchange projects, and the ICS mainline projects to define the Implementation Plan.

5. PROJECT PRIORITIZATION

The ranked ICS interchange projects, ranked ICS mainline projects, SDDOT paving projects, and SDDOT STIP projects were combined based on location across the system. The process and results are described below.

5.1 Input Refinements

The first step in the process was to refine the various input tables for use in the prioritization process.

5.1.1 Interchange Projects

Throughout the ICS, the interchange projects were referred to by route and exit number. However, to connect these projects to the mainline and paving projects, beginning and end MRMs were required. To accomplish this, the MRM ranges between interchanges were divided in half, and each half was assigned to the adjacent exit. For example, the midpoint between I-90 Exit 1 and I-90 Exit 2 was assumed to occur at MRM 1.5, so the range associated with Exit 1 was from MRM 0.0 (the state line) to MRM 1.5 (halfway between Exit 1 and Exit 2). When needed, these values were manually refined to reflect the actual MRM of the interchange ramp influence areas defined during the Phase 1 operational analyses.

5.1.2 Mainline Projects

As the mainline projects already reflected MRMs, no additional work was required to use these projects in the prioritization process.

5.1.3 Paving Projects

The SDDOT paving project listing provided MRMs but not in a format that could easily be used in the prioritization process. The MRM values provided in the original table were refined to reflect consistency with other MRM applications in the prioritization process. The route names were also extracted from text strings in the SDDOT dataset. A total of 630 unique paving projects were included in the evaluation. The paving list separates projects by direction, resulting in a larger number of projects over the same number of centerline miles as other project types.

5.1.4 STIP Projects

The route data were extracted from text strings provided in the SDDOT STIP project listing. STIP paving projects often provided beginning and end MRMs, but structure and interchange projects often referred to exit numbers in their text description. Hence, MRMs were manually assigned based on the text description in the STIP data and the midpoints developed for the ICS interchange projects.

Further, although the projects provided in the STIP listing were all interstate projects, several projects did not reflect an effort that should be prioritized in the ICS. Two common examples were the construction of crossovers in support of larger interchange or mainline projects and various overlay and

chip seal projects. Hence, the STIP data were manually filtered to include only significant capital projects to be reflected in the prioritization effort. A total of 53 STIP projects were carried forward in the evaluation.

5.2 Project Grouping and Scheduling

The next step in the process was to compile all four project categories in one table and to sort them by MRM. The resulting table was then manually reviewed to group interchange, mainline, paving, and STIP projects. Through this process, various paving and STIP projects that did not overlap the defined ICS mainline and/or interchange projects were dropped from further evaluation. There were 7 locations where interchange projects (from **Chapter 2**) and / or mainline projects (from **Chapter 3**) were grouped.

Once the projects were grouped in this manner, each group was reviewed to determine a potential project implantation year. This manual process considered SDDOT's anticipated years for STIP and paving projects and the rankings of the various ICS projects. This process resulted in 57 combined projects, as identified in **Table 5-1**. In this table, locations where interchange and/or mainline projects were grouped are shaded in gray.

Table 5-1. Project Grouping Results

Route	Exit	Location	Ranking	Grouped With	Year
I-90	Exit 10	North Avenue/Belle Fourche	1	(none)	(none)
I-29	Exit 133	Brookings/Huron	2	1 STIP project, 2 paving projects	2029
I-29	Exit 26	Vermillion/Yankton	3	1 STIP project	2029
I-90	Exit 67	Liberty Boulevard/Ellsworth AFB	4	1 STIP project, 2 paving projects	2029
I-90	Exit 61	Elk Vale Road	5	2 paving projects	2040
I-90	Exit 310	Stickney/Aberdeen	6	3 paving projects	2031
I-229	Exit 7	Rice Street	7	(none)	(none)
I-229	Exit 2	Western Avenue	8	1 STIP project, 4 paving projects	2036
I-90	Exit 48	Stage Stop Canyon Road	9	1 STIP project, 4 paving projects	2026
I-90	Exit 58	Haines Avenue	10	7 paving projects	2033
I-90	mainline	MRM 57 to MRM 59	ML 4		
I-90	Exit 32	Junction Avenue	11	2 paving projects	2035
I-29	Exit 68	Lennox/Parker	12	(none)	(none)
I-29	mainline	MRM 67 to MRM 69	ML 2		

Table 5-1. Project Grouping Results

Route	Exit	Location	Ranking	Grouped With	Year
I-29	Exit 109	Madison/Colman	13	(none)	(none)
I-229	Exit 1C	Louise Avenue	14	7 paving projects	2033
I-229	mainline	MRM 0 to MRM 2	ML T6		
I-90	Exit 235	Kennebec	15	2 paving projects	2021
I-90	Exit 330	Mitchell/Huron	16	(none)	(none)
I-90	Exit 55	Deadwood Avenue	17	2 paving projects	2039
I-29	Exit 80	Madison Street	18	4 paving projects	2026
I-90	Exit 52	Black Hawk/Peaceful Pines Road	19	2 paving projects	2037
I-90	Exit 60	North Street	20	4 paving projects	2034
I-90	mainline	MRM 59 to MRM 61	ML T6		
I-90	Exit 344	Alexandria	21	1 paving project	2036
I-29	Exit 47	Beresford/Irene	22	2 paving projects	2032
I-29	Exit 1	Dakota Dunes	23	9 paving projects	2030
I-29	Exit 86	Renner/Crooks	24	1 STIP project, 2 paving projects	2029
I-29	Exit 150	Toronto/Estelline	25	(none)	(none)
I-29	Exit 38	Volin	26	(none)	(none)
I-29	Exit 114	Flandreau	27	2 paving projects	2034
I-29	Exit 2	North Sioux City	28	2 paving projects	2031
I-90	Exit 23	Whitewood	29	2 paving projects	2025
I-29	Exit 79	12th Street	30	18 paving projects	2032
I-29	mainline	MRM 78 to MRM 80	ML 1		
I-90	Exit 357	Bridgewater	31	1 STIP project, 2 paving projects	2023
I-90	Exit 368	Canistota	31	1 STIP project, 2 paving projects	2023
I-29	Exit 127	Elkton/Sinai	33	1 STIP project, 2 paving projects	2039
I-90	Exit 192	Murdo/White River	34	2 paving projects	2039
I-29	Exit 207	Summit/Aberdeen	35	(none)	(none)
I-29	Exit 4	McCook Lake	36	1 STIP project, 2 paving projects	2032
I-90	Exit 379	Humboldt/Madison	37	3 STIP projects, 2 paving projects	2022
I-90	Exit 350	Emery/Farmer	38	2 paving projects	2028

Table 5-1. Project Grouping Results

Route	Exit	Location	Ranking	Grouped With	Year
I-90	Exit 319	Mount Vernon	39	2 paving projects	2033
I-90	Exit 17	Lead/Deadwood	40	2 paving projects	2037
I-29	Exit 185	Waverly	41	1 STIP project, 1 paving project	2028
I-29	Exit 140	White	42	(none)	(none)
I-90	Exit 12	Jackson Blvd.	43	2 paving projects	2035
I-90	Exit 364	Salem/Yankton	44	2 paving projects	2021
I-29	Exit 81	Russell Street	45	5 paving projects	2028
I-90	Exit 410	Valley Springs/Garretson	46	7 paving projects	2032
I-90	mainline	MRM 408 to MRM 411	ML T7		
I-29	Exit 180	Watertown	47	(none)	(none)
I-90	Exit 395	Marion Road	48	8 paving projects	2032
I-29	Exit 98	Dell Rapids	49	1 STIP project	2027
I-29	Exit 94	Baltic	50	(none)	(none)
I-29	mainline	MRM 42 to MRM 43	ML 3	1 STIP project, 5 paving projects	2024
I-90	mainline	MRM 400 to MRM 406	ML 5	6 paving projects	2027
I-29	mainline	MRM 71 to MRM 73	ML T6	1 STIP project, 2 paving projects	2028
I-90	mainline	MRM 396 to MRM 399	ML T6	1 STIP project, 16 paving projects	2027
I-229	mainline	MRM 5 to MRM 7	ML T6	3 STIP projects, 9 paving projects	2026
I-29	mainline	MRM 62 to MRM 62.5	ML T7	2 STIP projects, 8 paving projects	2028
I-29	mainline	MRM 64 to MRM 64.5	ML T7		
I-29	mainline	MRM 74 to MRM 75	ML T7	1 STIP project, 2 paving projects	2022

The project list shown in **Table 5-1** is incomplete in that it does not reflect the following elements:

- It does not reflect years for efforts where no STIP or paving project overlaps occurred.
- It does not consider the ability of SDDOT staff to complete two to three projects per year based on staff and funding availability
- It does not include necessary preliminary efforts, such as Interstate Modification Justification Reports (IMJRs) or corridor studies.

To address these items, the project team performed a second manual assignment of projects to years to reflect the constraints above and include necessary studies. It was assumed that studies will be initiated five years before construction. The results of this process are reflected in **Table 5-2**. The table presents the planned year for required studies (shown by a  in the table) and the planned year that the project is planned to be built (shown by a  in the table). The project definitions mirror **Table 5-1**. For the purposes of **Table 5-2**, only smaller, immediate need projects have been included before 2029, the last year of the current developmental STIP. These include efforts that could be completed by SDDOT forces or through statewide contracts such as striping and signal maintenance programs. Major capital projects identified in this list have been pushed to 2030 or later based on engineering judgment and the inputs described in earlier chapters of this report.

5.3 Conclusion

The Phase 3 efforts have resulted in a prioritized list of potential projects across the South Dakota Interstate System. This list of projects will guide future project planning and funding allocations for SDDOT staff based on identified systemwide needs.

During the 2020 ICS efforts, the project team and SAT members identified several items that they would like to include in the next version of the ICS. These items were collected and tracked during the ICS process and have been summarized in a brief memo. The memo is attached to this report as **Appendix D** for future use by SDDOT staff.

Table 5-2. Projects by Year

Legend: = Perform Study -= Construct Project

Project	Rank	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041+
I-90 – Exit 10: North Avenue/Belle Fourche	1																				
I-29 – Exit 133: Brookings/Huron	2																				
I-29 – Exit 26: Vermillion/Yankton	3																				
I-90 – Exit 67: Liberty Boulevard/ Ellsworth AFB	4																				
I-90 – Exit 61: Elk Vale Road	5																				
I-90 – Exit 310: Stickney/Aberdeen	6																				
I-229 – Exit 7: Rice Street	7																				
I-229 – Exit 2: Western Avenue	8																				
I-90 – Exit 48: Stage Stop Canyon Rd.	9																				
I-90 – Exit 58: Haines Avenue	10																				
I-90: MRM 44 to MRM 57	ML 4																				
I-90 – Exit 32: Junction Avenue	11																				
I-29 – Exit 68: Lennox/Parker	12																				
I-29: MRM 67 to MRM 69	ML 2																				
I-29 – Exit 109: Madison/Colman	13																				
I-229 – Exit 1C: Louise Avenue	14																				
I-229: MRM 0 to MRM 4	ML T6																				

Table 5-2. Projects by Year

Legend: = Perform Study -= Construct Project

Project	Rank	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041+
I-90 – Exit 330: Mitchell/Huron	16																				
I-90 – Exit 55: Deadwood Avenue	17																				
I-90 – Exit 52: Black Hawk/ Peaceful Pines Road	19																				
I-90 – Exit 60: North Street	20																				
I-90: MRM 58 to MRM 64	ML T6																				
I-29 – Exit 47: Beresford/Irene	22																				
I-29 – Exit 1: Dakota Dunes	23																				
I-29 – Exit 86: Renner/Crooks	24																				
I-29 –Exit 38: Volin	26																				
I-29 – Exit 2: North Sioux City	28																				
I-90 – Exit 23: Whitewood	29																				
I-29 – Exit 79: 12th Street	30																				
I-29: MRM 77 to MRM 80	ML I																				
I-90 – Exit 357: Bridgewater	31																				
I-90 – Exit 368: Canistota	31																				
I-29 – Exit 207: Summit/Aberdeen	35																				

Table 5-2. Projects by Year

Legend: = Perform Study -= Construct Project

Project	Rank	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041+
I-29 – Exit 4: McCook Lake	36																				
I-90 – Exit 319: Mount Vernon	39																				
I-90 – Exit 17: Lead/ Deadwood	40																				
I-90 – Exit 12: Jackson Blvd.	43																				
I-90 – Exit 364: Salem/Yankton	44																				
I-29 – Exit 81: Russell Street	45																				
I-90 – Exit 410: Valley Springs/Garretson	46																				
I-90: MRM 410.5 to MRM 411	ML T7																				
I-90 – Exit 395: Marion Road	48																				
I-29 – Exit 98: Dell Rapids	49																				
I-29 – Exit 94: Baltic	50																				
I-29: MRM 42 to MRM 43	ML 3																				
I-90: MRM 400 to MRM 406	ML 5																				
I-29: MRM 71 to MRM 73	ML T6																				
I-90: MRM 58 to MRM 64	ML T6																				

Table 5-2. Projects by Year

Legend: = Perform Study -= Construct Project

Project	Rank	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041+
I-90: MRM 396 to MRM 399	ML T6																				
I-229: MRM 5 to MRM 7	ML T6																				
I-29: MRM 62 to MRM 62.5	ML T7																				
I-29: MRM 64 to MRM 64.5	ML T7																				
I-29: MRM 74 to MRM 75	ML T7																				

APPENDIX A. INITIAL INTERCHANGE RANKINGS

Scoring Framework Table

Design Checks	LCV Checks	Traffic Operations			Safety Checks			Bridge Checks
		LOS	Urban Score	Rural Score	Ranking Categories	Average Rank	Score	
1 point for each 'supports improvements' result in the Design Criteria Check table divided by the total number of checks to normalize	0.25 points for each "supports improvements" result in the LCV check table (max score 0.5); this value is doubled if it is on a critical route	LOS A	0.00	0.00	Number of crashes	>3.4	0	1 point for each bridge in the interchange that is rated 'poor' divided by the total number of bridges in the interchange to normalize to 1.
		LOS B	0.00	0.00	Crash Rate	<=3.4	0.17	
		LOS C	0.00	0.17	Weighted Crash Rate	<=2.8	0.33	
		LOS D	0.33	0.33	Weighted Crash rate	<=2.4	0.5	
		LOS E	0.67	0.67	within area type	<=2.0	0.67	
		LOS F	1.00	1.00	Weighted Crash Rate	<=1.6	0.83	
					within interchange	<=1.2	1	

South Dakota DOT 2020 Decennial ICS

Phase 1 Interchange Rankings - Raw Unweighted

Interstate	Exit	Location	Design Checks	LCV Checks	2050 Ramp Terminal LOS	2050 Merge/ Diverge LOS	Safety Checks	Bridge Checks	Sum	Raw Phase 1 Rank
I-90	Exit 10	North Avenue / Belle Fourche	0.225	1.00	1.00	0.17	1.00	0.50	3.892	1
I-29	Exit 26	Vermillion/Yankton	0.225	1.00	1.00	0.17	0.33	0.50	3.225	2
I-29	Exit 133	Brookings/Huron	0.155	1.00	0.83	0.17	0.50	0.50	3.155	3
I-90	Exit 48	Stage Stop Canyon Rd.	0.282	0.50	1.00	0.67	0.17	0.50	3.116	4
I-90	Exit 55	Deadwood Avenue	0.324	0.50	0.33	1.00	0.33	0.50	2.990	5
I-90	Exit 310	Stickney/Aberdeen	0.155	1.00	0.17	0.17	1.00	0.50	2.989	6
I-90	Exit 61	Elk Vale Road	0.067	0.00	1.00	0.67	0.67	0.50	2.901	7
I-90	Exit 67	Liberty Boulevard / Ellsworth AFB	0.184	0.25	1.00	0.33	0.50	0.50	2.767	8
I-90	Exit 32	Junction Avenue	0.225	0.50	1.00	0.33	0.17	0.50	2.725	9
I-90	Exit 357	Bridgewater	0.141	0.50	0.00	0.17	0.83	1.00	2.641	10
I-90	Exit 368	Canistota	0.141	0.50	0.00	0.17	0.83	1.00	2.641	10
I-90	Exit 58	Haines Avenue	0.119	0.25	0.50	0.67	0.83	0.25	2.619	12
I-29	Exit 59	Davis	0.268	0.50	0.33	0.33	0.17	0.50	2.101	46
I-29	Exit 68	Lennox/Parker	0.254	0.50	0.50	0.17	0.67	0.50	2.591	13
I-90	Exit 212	Pierre/Ft. Pierre	0.070	1.00	0.33	0.17	0.50	0.50	2.570	14
I-90	Exit 379	Humboldt/Madison	0.141	0.50	0.00	0.17	1.00	0.75	2.558	15
I-29	Exit 80	Madison Street	0.281	0.00	0.33	0.83	0.83	0.25	2.530	16
I-90	Exit 52	Black Hawk / Peaceful Pines Road	0.141	0.00	0.67	0.67	0.50	0.50	2.475	17
I-90	Exit 23	Whitewood	0.141	0.50	0.67	0.33	0.33	0.50	2.474	18
I-29	Exit 86	Renner/Crooks	0.141	0.50	0.33	0.33	0.67	0.50	2.474	18
I-229	Exit 7	Rice Street	0.211	0.00	1.00	0.00	1.00	0.25	2.461	20
I-90	Exit 60	North Street	0.067	0.00	0.33	0.67	0.83	0.50	2.400	21
I-90	Exit 235	Kennebec	0.056	0.50	0.17	0.17	1.00	0.50	2.390	22
I-29	Exit 4	McCook Lake	0.211	0.50	0.67	0.33	0.17	0.50	2.378	23
I-29	Exit 38	Volin	0.211	0.50	0.00	0.33	0.83	0.50	2.377	24
I-29	Exit 109	Madison/Colman	0.113	0.25	0.33	0.17	1.00	0.50	2.363	25
I-29	Exit 94	Baltic	0.113	0.50	0.33	0.33	0.83	0.25	2.362	26
I-29	Exit 47	Beresford/Irene	0.239	0.25	1.00	0.33	0.50	0.00	2.322	27
I-29	Exit 1	Dakota Dunes	0.155	0.00	0.67	0.33	0.67	0.50	2.322	27
I-90	Exit 319	Mount Vernon	0.141	0.50	0.00	0.17	0.50	1.00	2.308	29
I-90	Exit 344	Alexandria	0.141	0.50	0.00	0.17	1.00	0.50	2.308	29
I-90	Exit 374	Montrose	0.141	0.50	0.00	0.17	1.00	0.50	2.308	29
I-229	Exit 1C	Louise Avenue	0.218	0.25	0.67	0.17	1.00	0.00	2.302	32
I-29	Exit 127	Elkton/Sinai	0.127	0.50	0.33	0.17	0.67	0.50	2.294	33
I-90	Exit 192	Murdo/White River	0.113	0.50	0.33	0.17	0.67	0.50	2.280	34
I-29	Exit 114	Flandreau	0.113	0.50	0.17	0.17	0.83	0.50	2.280	34
I-29	Exit 150	Toronto/Estelline	0.070	0.50	0.17	0.17	0.83	0.50	2.237	36
I-90	Exit 410	Valley Springs/Garretson	0.225	0.50	0.00	0.50	0.50	0.50	2.225	37
I-90	Exit 12	Jackson Blvd.	0.225	0.50	0.83	0.33	0.33	0.00	2.224	38
I-29	Exit 53	Viborg	0.324	0.50	0.00	0.33	0.50	0.50	2.157	39
I-90	Exit 330	Mitchell/Huron	0.127	0.00	1.00	0.17	0.33	0.50	2.127	40
I-90	Exit 296	White Lake	0.127	0.50	0.00	0.17	0.83	0.50	2.127	40
I-90	Exit 350	Emery/Farmer	0.127	0.50	0.00	0.17	0.83	0.50	2.127	40
I-29	Exit 9	Jefferson	0.282	0.50	0.00	0.33	0.50	0.50	2.115	43
I-90	Exit 17	Lead/Deadwood	0.113	0.00	0.67	0.33	0.50	0.50	2.113	44

South Dakota DOT 2020 Decennial TCS

Phase 1 Interchange Rankings - Raw Unweighted

Interstate	Exit	Location	Design Checks	LCV Checks	2050 Ramp Terminal LOS	2050 Merge/ Diverge LOS	Safety Checks	Bridge Checks	Sum	Raw Phase 1 Rank
I-29	Exit 180	Watertown	0.085	0.50	0.33	0.17	0.50	0.50	2.085	47
I-29	Exit 185	Waverly	0.085	0.50	0.00	0.17	0.83	0.50	2.085	47
I-29	Exit 140	White	0.056	0.50	0.00	0.17	0.83	0.50	2.056	49
I-90	Exit 30	Lazelle Street / Deadwood-Lead	0.211	0.00	0.33	0.33	0.67	0.50	2.044	50
I-29	Exit 98	Dell Rapids	0.042	0.50	0.83	0.00	0.67	0.00	2.042	51
I-29	Exit 79	12th Street	0.244	0.00	0.50	0.00	1.00	0.25	1.994	54
I-29	Exit 56	Fairview	0.324	0.50	0.00	0.33	0.33	0.50	1.990	55
I-90	Exit 308	Plankinton	0.155	0.50	0.00	0.17	0.17	1.00	1.989	56
I-90	Exit 40	Tilford Road	0.155	0.50	0.00	0.33	0.50	0.50	1.988	57
I-29	Exit 15	Elk Point	0.310	0.50	0.33	0.17	0.17	0.50	1.977	58
I-29	Exit 164	Castlewood/Clear Lake	0.141	0.50	0.17	0.17	0.50	0.50	1.975	59
I-29	Exit 207	Summit/Aberdeen	0.141	0.00	0.17	0.17	1.00	0.50	1.975	59
I-90	Exit 284	Kimball	0.127	0.50	0.17	0.17	0.50	0.50	1.961	61
I-90	Exit 335	Riverside Road	0.127	0.50	0.17	0.17	0.50	0.50	1.961	61
I-90	Exit 364	Salem/Yankton	0.127	0.50	0.17	0.17	1.00	0.00	1.961	61
I-90	Exit 110	Wall / Badlands Loop	0.113	0.50	0.17	0.17	0.50	0.50	1.947	64
I-90	Exit 57	I-190	0.113	0.00	0.00	1.00	0.33	0.50	1.946	65
I-90	Exit 332	Mitchell/Parkston	0.099	0.00	0.33	0.17	0.83	0.50	1.932	66
I-90	Exit 390	Hartford	0.155	0.25	0.67	0.33	0.50	0.00	1.905	67
I-90	Exit 395	Marion Road	0.197	0.00	1.00	0.33	0.33	0.00	1.863	68
I-29	Exit 50	Centerville/Hudson	0.338	0.50	0.00	0.33	0.17	0.50	1.838	69
I-29	Exit 2	North Sioux City	0.169	0.00	1.00	0.33	0.33	0.00	1.835	70
I-29	Exit 31	Spink/Akron	0.169	0.50	0.00	0.33	0.33	0.50	1.835	70
I-29	Exit 232	Sisseton	0.085	0.25	0.33	0.17	0.50	0.50	1.835	70
I-90	Exit 272	Pukwana	0.127	0.50	0.00	0.17	0.50	0.50	1.794	73
I-90	Exit 163	Belvidere	0.113	0.50	0.00	0.17	0.50	0.50	1.780	74
I-29	Exit 81	Russell Street	0.244	0.00	0.50	0.17	0.83	0.00	1.744	75
I-90	Exit 78	New Underwood	0.239	0.50	0.17	0.17	0.17	0.50	1.740	76
I-90	Exit 225	Presho	0.070	0.50	0.00	0.17	0.50	0.50	1.737	77
I-90	Exit 150	Kadoka	0.141	0.50	0.17	0.17	0.17	0.50	1.642	78
I-90	Exit 353	Spencer/Emery	0.141	0.50	0.00	0.17	0.33	0.50	1.641	79
I-29	Exit 121	Nunda/Ward	0.141	0.50	0.00	0.17	0.33	0.50	1.641	79
I-90	Exit 44	Piedmont	0.268	0.50	0.17	0.67	0.50	0.00	2.102	45
I-29	Exit 104	Trent	0.099	0.50	0.00	0.33	0.17	0.50	1.599	81
I-29	Exit 82	Benson Road	0.237	0.00	1.00	0.00	0.33	0.00	1.570	82
I-29	Exit 177	Watertown	0.070	0.00	0.33	0.17	0.50	0.50	1.570	82
I-90	Exit 260	Oacoma/Chamberlain	0.056	0.50	0.17	0.17	0.17	0.50	1.557	84
I-90	Exit 226	Presho/Winner	0.211	0.50	0.00	0.17	0.17	0.50	1.545	85
I-29	Exit 64	Worthing/ Lennox	0.190	0.00	0.33	0.17	0.33	0.50	1.523	86
I-90	Exit 143	Philip	0.141	0.50	0.00	0.17	0.17	0.50	1.475	87
I-90	Exit 289	Platte	0.141	0.50	0.00	0.17	0.17	0.50	1.475	87
I-90	Exit 325	Betts Road	0.141	0.50	0.00	0.17	0.17	0.50	1.475	87
I-29	Exit 213	Wilmot	0.127	0.50	0.00	0.17	0.17	0.50	1.461	90
I-90	Exit 84	167th Avenue	0.268	0.50	0.00	0.17	0.00	0.50	1.435	91
I-90	Exit 8	McGuigan Road	0.085	0.00	0.50	0.17	0.17	0.50	1.419	93

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Phase 1 Interchange Rankings - Raw Unweighted

Interstate	Exit	Location	Design Checks	LCV Checks	2050 Ramp Terminal LOS	2050 Merge/ Diverge LOS	Safety Checks	Bridge Checks	Sum	Raw Phase 1 Rank
I-29	Exit 224	Peever	0.085	0.50	0.17	0.17	0.00	0.50	1.419	93
I-90	Exit 241	Lyman	0.239	0.50	0.00	0.17	0.00	0.50	1.406	95
I-90	Exit 109	Wall	0.070	0.50	0.00	0.17	0.17	0.50	1.404	96
I-29	Exit 18	Elk Point	0.296	0.50	0.17	0.17	0.00	0.25	1.380	98
I-90	Exit 208	(none)	0.211	0.50	0.00	0.17	0.00	0.50	1.378	99
I-90	Exit 402	Veteran's Parkway	0.120	0.00	0.33	0.33	0.50	0.00	1.283	110
I-90	Exit 131	Interior/Badlands Loop	0.085	0.25	0.17	0.17	0.17	0.50	1.336	100
I-29	Exit 78	26th Street	0.169	0.00	0.50	0.00	0.67	0.00	1.336	100
I-90	Exit 396	I-29	0.156	0.00	0.00	0.50	0.17	0.50	1.323	102
I-90	Exit 177	(none)	0.155	0.50	0.00	0.17	0.00	0.50	1.322	103
I-90	Exit 400	I-229	0.155	0.00	0.00	1.00	0.17	0.00	1.322	103
I-90	Exit 90	173rd Avenue	0.141	0.50	0.00	0.17	0.00	0.50	1.308	105
I-90	Exit 88	171st Avenue	0.128	0.50	0.00	0.17	0.00	0.50	1.295	106
I-29	Exit 201	Twin Brooks	0.127	0.50	0.00	0.17	0.00	0.50	1.294	107
I-90	Exit 172	(none)	0.127	0.50	0.00	0.17	0.00	0.50	1.294	107
I-29	Exit 132	Brookings	0.127	0.00	0.50	0.00	0.67	0.00	1.294	107
I-29	Exit 242	(none)	0.099	0.50	0.00	0.17	0.00	0.50	1.266	111
I-29	Exit 246	New Effington/Rosholt	0.099	0.50	0.00	0.17	0.00	0.50	1.266	111
I-90	Exit 251	Gregory/Winner	0.099	0.50	0.00	0.17	0.00	0.50	1.266	111
I-190	Exit 1A	I-90	0.113	0.00	0.00	0.33	0.46	0.50	1.404	97
I-229	Exit 5	26th Street	0.089	0.00	0.67	0.00	0.67	0.00	1.426	92
I-90	Exit 191	Murdo	0.085	0.50	0.00	0.17	0.00	0.50	1.252	114
I-29	Exit 157	Brandt	0.070	0.50	0.00	0.17	0.00	0.50	1.237	115
I-90	Exit 2	McNenny Fish Hatchery	0.070	0.50	0.00	0.17	0.00	0.50	1.237	115
I-90	Exit 107	Cedar Butte Road	0.070	0.50	0.00	0.17	0.00	0.50	1.237	115
I-90	Exit 201	Draper	0.070	0.50	0.00	0.17	0.00	0.50	1.237	115
I-90	Exit 127	(none)	0.056	0.50	0.00	0.17	0.00	0.50	1.223	119
I-90	Exit 116	239th Street	0.028	0.50	0.00	0.17	0.00	0.50	1.195	120
I-90	Exit 121	Big Foot Road	0.014	0.50	0.00	0.17	0.00	0.50	1.181	121
I-90	Exit 98	Wasta	0.169	0.00	0.00	0.17	0.83	0.00	1.169	122
I-29	Exit 84	I-90	0.156	0.00	0.00	0.33	0.00	0.50	0.989	134
I-90	Exit 112	Philip/Pierre	0.070	0.00	0.00	0.17	0.17	0.75	1.154	126
I-29	Exit 83	60th Street North	0.099	0.00	0.50	0.00	0.50	0.00	1.099	127
I-90	Exit 170	Midland	0.155	0.00	0.00	0.17	0.50	0.25	1.072	129
I-90	Exit 263	Chamberlain	0.197	0.00	0.17	0.17	0.00	0.50	1.031	130
I-90	Exit 152	Kadoka	0.169	0.00	0.00	0.17	0.17	0.50	1.003	131
I-90	Exit 220	(none)	0.085	0.50	0.00	0.17	0.00	0.25	1.002	132
I-90	Exit 214	Vivian	0.070	0.50	0.00	0.17	0.00	0.25	0.987	135
I-90	Exit 399	Cliff Avenue	0.104	0.00	0.33	0.00	0.50	0.00	0.937	136
I-90	Exit 248	Reliance/Lower Brule	0.239	0.50	0.00	0.17	0.00	0.00	0.906	137
I-90	Exit 14	27th Street / Spearfish Canyon	0.059	0.00	0.67	0.00	0.17	0.00	0.893	138
I-29	Exit 42	Alcester/Wakonda	0.282	0.25	0.00	0.33	0.00	0.00	0.865	139
I-90	Exit 183	Okaton	0.183	0.50	0.00	0.17	0.00	0.00	0.850	140
I-90	Exit 101	Jensen Road	0.141	0.00	0.00	0.17	0.00	0.50	0.808	141
I-90	Exit 265	Chamberlain	0.127	0.00	0.33	0.17	0.17	0.00	0.794	142

South Dakota DOT 2020 Decennial ICS

Phase 1 Interchange Rankings - Raw Unweighted

Interstate	Exit	Location	Design Checks	LCV Checks	2050 Ramp Terminal LOS	2050 Merge/ Diverge LOS	Safety Checks	Bridge Checks	Sum	Raw Phase 1 Rank
I-190	Exit 1C	North Street	0.089	0.00	0.33	0.00	0.67	0.00	1.092	128
I-29	Exit 62	Canton	0.085	0.00	0.33	0.00	0.33	0.00	0.748	143
I-229	Exit 10	I-90	0.155	0.00	0.00	0.17	0.17	0.00	0.489	145
I-229	Exit 1A	I-29	0.099	0.00	0.00	0.17	0.33	0.00	0.599	144
I-29	Exit 75	I-229	0.099	0.00	0.00	0.00	0.33	0.00	0.432	146

APPENDIX B. DETAILED INTERCHANGE RANKING MATRIX

South Dakota DOT 2020 Decennial ICS

Phase 3 Interchange Ranking - Statewide

Region	SortID	Interstate	Exit	Location	Refined Phase 1 Score	Timing Score	Safety	Current Capacity	Current Capacity x 1.5	Future Capacity	75% of Phase 1 Score	25% of Timing Score	Phase 3 Total Score	Phase 3 Rank
Rapid City	090010	I-90	Exit 10	North Avenue / Belle Fourche	4.84	2.50	1.50	0.00	0.00	1.00	3.63	0.63	4.26	1
Aberdeen	029133	I-29	Exit 133	Brookings/Huron	3.80	2.43	0.75	0.67	1.01	0.67	2.85	0.61	3.46	2
Mitchell	029026	I-29	Exit 26	Vermillion/Yankton	3.84	1.75	0.50	0.17	0.25	1.00	2.88	0.44	3.32	3
Rapid City	090067	I-90	Exit 67	Liberty Boulevard / Ellsworth AFB	3.47	2.76	0.75	0.67	1.01	1.00	2.60	0.69	3.29	4
Rapid City	090061	I-90	Exit 61	Elk Vale Road	3.68	2.00	1.00	0.00	0.00	1.00	2.76	0.50	3.26	5
Mitchell	090310	I-90	Exit 310	Stickney/Aberdeen	3.69	1.50	1.50	0.00	0.00	0.00	2.77	0.38	3.14	6
Mitchell	229007	I-229	Exit 7	Rice Street	3.34	2.50	1.50	0.00	0.00	1.00	2.50	0.63	3.13	7
Mitchell	229002	I-229	Exit 2	Western Avenue	3.37	2.33	1.50	0.33	0.50	0.33	2.53	0.58	3.11	8
Rapid City	090048	I-90	Exit 48	Stage Stop Canyon Rd.	3.65	1.25	0.25	0.00	0.00	1.00	2.74	0.31	3.05	9
Rapid City	090058	I-90	Exit 58	Haines Avenue	3.26	1.25	1.25	0.00	0.00	0.00	2.45	0.31	2.76	10
Rapid City	090032	I-90	Exit 32	Junction Avenue	3.26	1.25	0.25	0.00	0.00	1.00	2.44	0.31	2.76	11
Mitchell	029068	I-29	Exit 68	Lennox/Parker	3.22	1.17	1.00	0.00	0.00	0.17	2.42	0.29	2.71	12
Mitchell	029109	I-29	Exit 109	Madison/Colman	3.11	1.50	1.50	0.00	0.00	0.00	2.33	0.38	2.71	13
Mitchell	229001	I-229	Exit 1C	Louise Avenue	3.00	1.83	1.50	0.00	0.00	0.33	2.25	0.46	2.71	14
Pierre	090235	I-90	Exit 235	Kennebec	3.09	1.50	1.50	0.00	0.00	0.00	2.32	0.38	2.69	15
Mitchell	090330	I-90	Exit 330	Mitchell/Huron	2.74	2.50	0.50	0.67	1.01	1.00	2.06	0.63	2.68	16
Rapid City	090055	I-90	Exit 55	Deadwood Avenue	3.41	0.50	0.50	0.00	0.00	0.00	2.55	0.12	2.68	17
Mitchell	029080	I-29	Exit 80	Madison Street	3.12	1.25	1.25	0.00	0.00	0.00	2.34	0.31	2.65	18
Rapid City	090052	I-90	Exit 52	Black Hawk / Peaceful Pines Road	3.08	1.33	0.75	0.17	0.25	0.33	2.31	0.33	2.64	19
Rapid City	090060	I-90	Exit 60	North Street	3.07	1.25	1.25	0.00	0.00	0.00	2.30	0.31	2.61	20
Mitchell	090344	I-90	Exit 344	Alexandria	2.96	1.50	1.50	0.00	0.00	0.00	2.22	0.38	2.59	21
Mitchell	029047	I-29	Exit 47	Beresford/Irene	2.87	1.75	0.75	0.00	0.00	1.00	2.15	0.44	2.59	22
Mitchell	029001	I-29	Exit 1	Dakota Dunes	3.01	1.34	1.01	0.00	0.00	0.33	2.26	0.33	2.59	23
Mitchell	029086	I-29	Exit 86	Renner/Crooks	3.06	1.00	1.00	0.00	0.00	0.00	2.29	0.25	2.54	24
Aberdeen	029150	I-29	Exit 150	Toronto/Estelline	2.93	1.32	1.32	0.00	0.00	0.00	2.20	0.33	2.53	25
Mitchell	029038	I-29	Exit 38	Volin	2.94	1.25	1.25	0.00	0.00	0.00	2.21	0.31	2.52	26
Mitchell	029114	I-29	Exit 114	Flandreau	2.90	1.25	1.25	0.00	0.00	0.00	2.17	0.31	2.48	27
Mitchell	029002	I-29	Exit 2	North Sioux City	2.30	3.00	0.50	1.00	1.50	1.00	1.72	0.75	2.47	28
Rapid City	090023	I-90	Exit 23	Whitewood	2.99	0.83	0.50	0.00	0.00	0.33	2.24	0.21	2.45	29
Mitchell	029079	I-29	Exit 79	12th Street	2.72	1.50	1.50	0.00	0.00	0.00	2.04	0.38	2.41	30
Mitchell	090357	I-90	Exit 357	Bridgewater	2.94	0.83	0.83	0.00	0.00	0.00	2.21	0.21	2.41	31
Mitchell	090368	I-90	Exit 368	Canistota	2.94	0.83	0.83	0.00	0.00	0.00	2.21	0.21	2.41	31
Aberdeen	029127	I-29	Exit 127	Elkton/Sinai	2.88	1.00	1.00	0.00	0.00	0.00	2.16	0.25	2.41	33
Pierre	090192	I-90	Exit 192	Murdo/White River	2.86	1.00	1.00	0.00	0.00	0.00	2.15	0.25	2.40	34
Aberdeen	029207	I-29	Exit 207	Summit/Aberdeen	2.68	1.50	1.50	0.00	0.00	0.00	2.01	0.38	2.38	35
Mitchell	029004	I-29	Exit 4	McCook Lake	2.81	1.08	0.25	0.33	0.50	0.33	2.11	0.27	2.38	36
Mitchell	090379	I-90	Exit 379	Humboldt/Madison	2.78	1.00	1.00	0.00	0.00	0.00	2.09	0.25	2.34	37
Mitchell	090350	I-90	Exit 350	Emery/Farmer	2.69	1.25	1.25	0.00	0.00	0.00	2.02	0.31	2.33	38
Mitchell	090319	I-90	Exit 319	Mount Vernon	2.86	0.75	0.75	0.00	0.00	0.00	2.14	0.19	2.33	39
Rapid City	090017	I-90	Exit 17	Lead/Deadwood	2.71	1.08	0.75	0.00	0.00	0.33	2.03	0.27	2.30	40
Aberdeen	029185	I-29	Exit 185	Waverly	2.65	1.25	1.25	0.00	0.00	0.00	1.99	0.31	2.30	41
Aberdeen	029140	I-29	Exit 140	White	2.62	1.25	1.25	0.00	0.00	0.00	1.97	0.31	2.28	42

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Phase 3 Interchange Ranking - Statewide

Region	SortID	Interstate	Exit	Location	Refined Phase 1 Score	Timing Score	Safety	Current Capacity	Current Capacity x 1.5	Future Capacity	75% of Phase 1 Score	25% of Timing Score	Phase 3 Total Score	Phase 3 Rank
Rapid City	090012	I-90	Exit 12	Jackson Blvd.	2.64	1.17	0.50	0.00	0.00	0.67	1.98	0.29	2.27	43
Mitchell	090364	I-90	Exit 364	Salem/Yankton	2.51	1.50	1.50	0.00	0.00	0.00	1.88	0.38	2.26	44
Mitchell	029081	I-29	Exit 81	Russell Street	2.31	1.74	1.25	0.33	0.50	0.00	1.73	0.44	2.17	45
Mitchell	090410	I-90	Exit 410	Valley Springs/Garretson	2.63	0.75	0.75	0.00	0.00	0.00	1.97	0.19	2.16	46
Aberdeen	029180	I-29	Exit 180	Watertown	2.58	0.75	0.75	0.00	0.00	0.00	1.94	0.19	2.13	47
Mitchell	090395	I-90	Exit 395	Marion Road	2.33	1.50	0.50	0.00	0.00	1.00	1.75	0.37	2.12	48
Mitchell	029098	I-29	Exit 98	Dell Rapids	2.29	1.58	0.67	0.17	0.25	0.67	1.72	0.40	2.12	49
Mitchell	029094	I-29	Exit 94	Baltic	2.54	0.83	0.83	0.00	0.00	0.00	1.90	0.21	2.11	50
Mitchell	029053	I-29	Exit 53	Viborg	2.56	0.75	0.75	0.00	0.00	0.00	1.92	0.19	2.11	51
Mitchell	090390	I-90	Exit 390	Hartford	2.36	1.34	0.75	0.17	0.26	0.33	1.77	0.33	2.10	52
Mitchell	090374	I-90	Exit 374	Montrose	2.46	1.00	1.00	0.00	0.00	0.00	1.84	0.25	2.09	53
Mitchell	029064	I-29	Exit 64	Worthing/ Lennox	2.44	1.00	1.00	0.00	0.00	0.00	1.83	0.25	2.08	54
Mitchell	029009	I-29	Exit 9	Jefferson	2.52	0.75	0.75	0.00	0.00	0.00	1.89	0.19	2.07	55
Aberdeen	029164	I-29	Exit 164	Castlewood/Clear Lake	2.43	0.75	0.75	0.00	0.00	0.00	1.82	0.19	2.01	56
Mitchell	090284	I-90	Exit 284	Kimball	2.41	0.75	0.75	0.00	0.00	0.00	1.81	0.19	2.00	57
Mitchell	090335	I-90	Exit 335	Riverside Road	2.41	0.75	0.75	0.00	0.00	0.00	1.81	0.19	2.00	57
Rapid City	090044	I-90	Exit 44	Piedmont	2.40	0.75	0.75	0.00	0.00	0.00	1.80	0.19	1.99	59
Rapid City	090110	I-90	Exit 110	Wall / Badlands Loop	2.40	0.75	0.75	0.00	0.00	0.00	1.80	0.19	1.99	60
Rapid City	090040	I-90	Exit 40	Tilford Road	2.39	0.75	0.75	0.00	0.00	0.00	1.79	0.19	1.98	61
Aberdeen	029232	I-29	Exit 232	Sisseton	2.33	0.75	0.75	0.00	0.00	0.00	1.75	0.19	1.94	62
Mitchell	090296	I-90	Exit 296	White Lake	2.28	0.83	0.83	0.00	0.00	0.00	1.71	0.21	1.92	63
Mitchell	029082	I-29	Exit 82	Benson Road	2.04	1.50	0.50	0.00	0.00	1.00	1.53	0.37	1.90	64
Mitchell	029059	I-29	Exit 59	Davis	2.43	0.25	0.25	0.00	0.00	0.00	1.83	0.06	1.89	65
Mitchell	029056	I-29	Exit 56	Fairview	2.31	0.50	0.50	0.00	0.00	0.00	1.73	0.12	1.85	66
Mitchell	090332	I-90	Exit 332	Mitchell/Parkston	2.18	0.83	0.83	0.00	0.00	0.00	1.64	0.21	1.84	67
Mitchell	090308	I-90	Exit 308	Plankinton	2.37	0.25	0.25	0.00	0.00	0.00	1.78	0.06	1.84	68
Mitchell	090272	I-90	Exit 272	Pukwana	2.19	0.75	0.75	0.00	0.00	0.00	1.65	0.19	1.83	69
Pierre	090163	I-90	Exit 163	Belvidere	2.18	0.75	0.75	0.00	0.00	0.00	1.64	0.19	1.82	70
Rapid City	090057	I-90	Exit 57	I-190	2.26	0.50	0.50	0.00	0.00	0.00	1.70	0.12	1.82	71
Mitchell	229005	I-229	Exit 5	26th Street	1.96	1.34	1.01	0.00	0.00	0.33	1.47	0.33	1.80	72
Mitchell	029015	I-29	Exit 15	Elk Point	2.31	0.25	0.25	0.00	0.00	0.00	1.73	0.06	1.80	73
Pierre	090225	I-90	Exit 225	Presho	2.14	0.75	0.75	0.00	0.00	0.00	1.60	0.19	1.79	74
Aberdeen	029177	I-29	Exit 177	Watertown	2.07	0.75	0.75	0.00	0.00	0.00	1.55	0.19	1.74	75
Mitchell	029031	I-29	Exit 31	Spink/Akron	2.15	0.50	0.50	0.00	0.00	0.00	1.61	0.12	1.74	76
Rapid City	090030	I-90	Exit 30	Lazelle Street / Deadwood-Lead	2.13	0.50	0.50	0.00	0.00	0.00	1.60	0.13	1.72	77
Mitchell	029050	I-29	Exit 50	Centerville/Hudson	2.07	0.25	0.25	0.00	0.00	0.00	1.55	0.06	1.62	78
Mitchell	029078	I-29	Exit 78	26th Street	1.82	1.00	1.00	0.00	0.00	0.00	1.36	0.25	1.61	79
Aberdeen	029121	I-29	Exit 121	Nunda/Ward	1.96	0.50	0.50	0.00	0.00	0.00	1.47	0.12	1.59	80
Mitchell	090353	I-90	Exit 353	Spencer/Emery	1.96	0.50	0.50	0.00	0.00	0.00	1.47	0.12	1.59	80
Aberdeen	029132	I-29	Exit 132	Brookings	1.78	1.00	1.00	0.00	0.00	0.00	1.33	0.25	1.58	82
Rapid City	090078	I-90	Exit 78	New Underwood	2.02	0.25	0.25	0.00	0.00	0.00	1.52	0.06	1.58	83
Rapid City	190000	I-190	Exit 1A	I-90	1.78	0.69	0.69				1.34	0.17	1.51	84
Pierre	090150	I-90	Exit 150	Kadoka	1.93	0.25	0.25	0.00	0.00	0.00	1.44	0.06	1.51	85

South Dakota DOT 2020 Decennial ICS

Phase 3 Interchange Ranking - Statewide

Region	SortID	Interstate	Exit	Location	Refined Phase 1 Score	Timing Score	Safety	Current Capacity	Current Capacity x 1.5	Future Capacity	75% of Phase 1 Score	25% of Timing Score	Phase 3 Total Score	Phase 3 Rank
Rapid City	090008	I-90	Exit 8	McGuigan Road	1.80	0.42	0.25	0.00	0.00	0.17	1.35	0.11	1.46	86
Mitchell	090260	I-90	Exit 260	Oacoma/Chamberlain	1.84	0.25	0.25	0.00	0.00	0.00	1.38	0.06	1.44	87
Mitchell	029104	I-29	Exit 104	Trent	1.83	0.25	0.25	0.00	0.00	0.00	1.37	0.06	1.44	88
Mitchell	090402	I-90	Exit 402	Veterans Parkway	1.63	0.75	0.75	0.00	0.00	0.00	1.22	0.19	1.41	89
Pierre	090226	I-90	Exit 226	Presho/Winner	1.78	0.25	0.25	0.00	0.00	0.00	1.33	0.06	1.40	90
Mitchell	090400	I-90	Exit 400	I-229	1.65	0.50	0.50	0.00	0.00	0.00	1.24	0.12	1.37	91
Pierre	090143	I-90	Exit 143	Philip	1.71	0.25	0.25	0.00	0.00	0.00	1.28	0.06	1.34	92
Mitchell	090289	I-90	Exit 289	Platte	1.71	0.25	0.25	0.00	0.00	0.00	1.28	0.06	1.34	92
Mitchell	090325	I-90	Exit 325	Betts Road	1.71	0.25	0.25	0.00	0.00	0.00	1.28	0.06	1.34	92
Aberdeen	029213	I-29	Exit 213	Wilmot	1.69	0.25	0.25	0.00	0.00	0.00	1.27	0.06	1.33	95
Mitchell	029083	I-29	Exit 83	60th Street North	1.50	0.75	0.75	0.00	0.00	0.00	1.12	0.19	1.31	96
Rapid City	090109	I-90	Exit 109	Wall	1.64	0.25	0.25	0.00	0.00	0.00	1.23	0.06	1.29	97
Rapid City	090131	I-90	Exit 131	Interior/Badlands Loop	1.62	0.25	0.25	0.00	0.00	0.00	1.21	0.06	1.28	98
Rapid City	090014	I-90	Exit 14	27th Street / Spearfish Canyon	1.43	0.83	0.50	0.00	0.00	0.33	1.07	0.21	1.28	99
Pierre	090170	I-90	Exit 170	Midland	1.40	0.75	0.75	0.00	0.00	0.00	1.05	0.19	1.24	100
Mitchell	090396	I-90	Exit 396	I-29	1.56	0.25	0.25	0.00	0.00	0.00	1.17	0.06	1.23	101
Aberdeen	029224	I-29	Exit 224	Peever	1.62	0.00	0.00	0.00	0.00	0.00	1.21	0.00	1.21	102
Rapid City	090084	I-90	Exit 84	167th Avenue	1.59	0.00	0.00	0.00	0.00	0.00	1.19	0.00	1.19	103
Pierre	090241	I-90	Exit 241	Lyman	1.56	0.00	0.00	0.00	0.00	0.00	1.17	0.00	1.17	104
Rapid City	090112	I-90	Exit 112	Philip/Pierre	1.46	0.25	0.25	0.00	0.00	0.00	1.10	0.06	1.16	105
Mitchell	090399	I-90	Exit 399	Cliff Avenue	1.29	0.75	0.75	0.00	0.00	0.00	0.97	0.19	1.15	106
Pierre	090208	I-90	Exit 208	(none)	1.53	0.00	0.00	0.00	0.00	0.00	1.15	0.00	1.15	107
Mitchell	029018	I-29	Exit 18	Elk Point	1.51	0.00	0.00	0.00	0.00	0.00	1.13	0.00	1.13	108
Pierre	090177	I-90	Exit 177	(none)	1.47	0.00	0.00	0.00	0.00	0.00	1.10	0.00	1.10	109
Rapid City	090090	I-90	Exit 90	173rd Avenue	1.46	0.00	0.00	0.00	0.00	0.00	1.09	0.00	1.09	110
Rapid City	090098	I-90	Exit 98	Wasta	1.17	0.83	0.83	0.00	0.00	0.00	0.88	0.21	1.09	111
Rapid City	090088	I-90	Exit 88	171st Avenue	1.45	0.00	0.00	0.00	0.00	0.00	1.08	0.00	1.08	112
Aberdeen	029201	I-29	Exit 201	Twin Brooks	1.44	0.00	0.00	0.00	0.00	0.00	1.08	0.00	1.08	113
Pierre	090172	I-90	Exit 172	(none)	1.44	0.00	0.00	0.00	0.00	0.00	1.08	0.00	1.08	113
Rapid City	190001	I-190	Exit 1C	North Street	1.09	1.01	1.01	0.00	0.00	0.00	0.82	0.25	1.07	115
Aberdeen	029242	I-29	Exit 242	(none)	1.42	0.00	0.00	0.00	0.00	0.00	1.06	0.00	1.06	116
Aberdeen	029246	I-29	Exit 246	New Effington/Rosholt	1.42	0.00	0.00	0.00	0.00	0.00	1.06	0.00	1.06	116
Pierre	090251	I-90	Exit 251	Gregory/Winner	1.42	0.00	0.00	0.00	0.00	0.00	1.06	0.00	1.06	116
Pierre	090191	I-90	Exit 191	Murdo	1.40	0.00	0.00	0.00	0.00	0.00	1.05	0.00	1.05	119
Aberdeen	029157	I-29	Exit 157	Brandt	1.39	0.00	0.00	0.00	0.00	0.00	1.04	0.00	1.04	120
Rapid City	090002	I-90	Exit 2	McNenny Fish Hatchery	1.39	0.00	0.00	0.00	0.00	0.00	1.04	0.00	1.04	120
Rapid City	090107	I-90	Exit 107	Cedar Butte Road	1.39	0.00	0.00	0.00	0.00	0.00	1.04	0.00	1.04	120
Pierre	090201	I-90	Exit 201	Draper	1.39	0.00	0.00	0.00	0.00	0.00	1.04	0.00	1.04	120
Rapid City	090127	I-90	Exit 127	(none)	1.37	0.00	0.00	0.00	0.00	0.00	1.03	0.00	1.03	124
Rapid City	090116	I-90	Exit 116	239th Street	1.35	0.00	0.00	0.00	0.00	0.00	1.01	0.00	1.01	125
Rapid City	090121	I-90	Exit 121	Big Foot Road	1.33	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	126
Pierre	090152	I-90	Exit 152	Kadoka	1.24	0.25	0.25	0.00	0.00	0.00	0.93	0.06	0.99	127
Mitchell	090263	I-90	Exit 263	Chamberlain	1.23	0.00	0.00	0.00	0.00	0.00	0.92	0.00	0.92	128

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Phase 3 Interchange Ranking - Statewide

Region	SortID	Interstate	Exit	Location	Refined Phase 1 Score	Timing Score	Safety	Current Capacity	Current Capacity x 1.5	Future Capacity	75% of Phase 1 Score	25% of Timing Score	Phase 3 Total Score	Phase 3 Rank
Mitchell	029062	I-29	Exit 62	Canton	1.02	0.50	0.50	0.00	0.00	0.00	0.76	0.12	0.89	129
Mitchell	029084	I-29	Exit 84	I-90	1.14	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.85	130
Pierre	090220	I-90	Exit 220	(none)	1.08	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.81	131
Pierre	090214	I-90	Exit 214	Vivian	1.06	0.00	0.00	0.00	0.00	0.00	0.80	0.00	0.80	132
Mitchell	090265	I-90	Exit 265	Chamberlain	0.98	0.25	0.25	0.00	0.00	0.00	0.73	0.06	0.80	133
Rapid City	090101	I-90	Exit 101	Jensen Road	0.96	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.72	134
Mitchell	229000	I-229	Exit 1A	I-29	0.77	0.50	0.50	#N/A			0.57	0.12	0.70	135
Pierre	090248	I-90	Exit 248	Reliance/Lower Brule	0.91	0.00	0.00	0.00	0.00	0.00	0.68	0.00	0.68	136
Mitchell	029042	I-29	Exit 42	Alcester/Wakonda	0.87	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.65	137
Pierre	090183	I-90	Exit 183	Okaton	0.85	0.00	0.00	0.00	0.00	0.00	0.64	0.00	0.64	138
Mitchell	*090404*	*I-90*	*Exit 404*	*Brandon*	*0.00*	*2.50*	*0.00*	*1.00*	*1.50*	*1.00*	*0.00*	*0.63*	*0.63*	*139*
Mitchell	*090408*	*I-90*	*Exit 408*	*Brandon*	*0.00*	*2.50*	*0.00*	*1.00*	*1.50*	*1.00*	*0.00*	*0.63*	*0.63*	*139*
Mitchell	029075	I-29	Exit 75	I-229	0.60	0.50	0.50	0.00	0.00	0.00	0.45	0.12	0.57	141
Mitchell	229010	I-229	Exit 10	I-90	0.57	0.25	0.25	0.00	0.00	0.00	0.43	0.06	0.49	142
Mitchell	*029087*	*I-29*	*Exit 87*	*Crooks 257th Street*	*0.00*	*1.00*	*0.00*	*0.00*	*0.00*	*1.00*	*0.00*	*0.25*	*0.25*	*143*
Mitchell	*029088*	*I-29*	*Exit 88*	*Crooks 256th Street*	*0.00*	*1.00*	*0.00*	*0.00*	*0.00*	*1.00*	*0.00*	*0.25*	*0.25*	*143*
Mitchell	*029089*	*I-29*	*Exit 89*	*Crooks 255th Street*	*0.00*	*1.00*	*0.00*	*0.00*	*0.00*	*1.00*	*0.00*	*0.25*	*0.25*	*143*
Rapid City	*090016*	*I-90*	*Exit 16*	*Rainbow Road, Spearfish*	*0.00*	*0.33*	*0.00*	*0.00*	*0.00*	*0.33*	*0.00*	*0.08*	*0.08*	*146*
Mitchell	*090264*	*I-90*	*Exit 264*	*Chamberlain*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*147*
Rapid City	190002	I-190	Exit 0	Omaha Street / End I-190	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	147

Note:

The italicized rows in this table reflect potential future interchanges that were evaluated in the Phase 2 study. The potential new interchanges are typically ranked below the existing interchanges based on need since these additional interchanges are not needed to maintain acceptable traffic conditions throughout the interstate system. It is anticipated that the urgency of constructing new interchanges at any of these locations would be driven by local growth needs rather than the need to maintain acceptable interstate operations and safety. Hence, the Phase 2 study did not recommend any new interchange on the interstate network. The NIC (not in contract) value in the ranking column refers to interchanges that were not ranked Phase 1 due to recent or current projects.

APPENDIX C. DETAILED FREEWAY RANKING MATRIX

Route	Begin MRM	End MRM	Overall Safety	Truck Parking	Existing Operations	Future Operations	Total
I-29	77	80	1.5	0	1.5	1	4
I-29	67	69	0	0	1.5	0	1.5
I-29	42	43	1.5	0	0	0	1.5
I-90	44	57	0	0	0	1	1
I-90	400	406	0	0	0	1	1
I-29	71	73	0	0	0	1	1
I-90	58	64	0	0	0	1	1
I-90	396	399	0	0	0	1	1
I-229	0	4	0	0	0	1	1
I-229	5	7	0	0	0	1	1
I-29	62	62.5	0	0	0	1	1
I-29	64	64.5	0	0	0	1	1
I-29	74	75	0	0	0	1	1
I-90	410.5	411	0	0	0	1	1
I-90	32	41	0	0	0	0	0
I-29	102	104	0	0	0	0	0
I-29	84	89	0	0	0	0	0
I-29	123	124	0	0	0	0	0
I-90	23	24	0	0	0	0	0
I-90	26	27	0	0	0	0	0
I-29	38	42	0	0	0	0	0
I-29	121	121	0	0	0	0	0
I-29	160	160	0	0	0	0	0
I-29	213	213	0	0	0	0	0
I-29	235	235	0	0	0	0	0
I-29	250	250	0	0	0	0	0
I-90	69	69	0	0	0	0	0
I-90	99	99	0	0	0	0	0
I-90	129	129	0	0	0	0	0
I-90	138	138	0	0	0	0	0
I-90	166	166	0	0	0	0	0
I-90	188	188	0	0	0	0	0
I-90	194	194	0	0	0	0	0
I-90	218	221	0	0	0	0	0
I-90	251	251	0	0	0	0	0
I-90	264	264	0	0	0	0	0
I-90	301	301	0	0	0	0	0
I-90	337	337	0	0	0	0	0
I-90	362	362	0	0	0	0	0

Route	Begin MRM	End MRM	Overall Safety	Truck Parking	Existing Operations	Future Operations	Total
I-90	412	412	0	0	0	0	0
I-29	15	18	0	0	0	0	0
I-29	75	77	0	0	0	0	0
I-29	80	83	0	0	0	0	0
I-29	99	101	0	0	0	0	0
I-29	109	114	0	0	0	0	0
I-29	115	116	0	0	0	0	0
I-29	147	148	0	0	0	0	0
I-90	12	14	0	0	0	0	0
I-90	15	17	0	0	0	0	0
I-90	73	75	0	0	0	0	0
I-90	79	81	0	0	0	0	0
I-90	88	90	0	0	0	0	0
I-90	170	173	0	0	0	0	0
I-90	183	184	0	0	0	0	0
I-90	195	197	0	0	0	0	0
I-90	239	243	0	0	0	0	0
I-90	303	304	0	0	0	0	0
I-90	344	348	0	0	0	0	0
I-90	369	370	0	0	0	0	0
I-90	378	380	0	0	0	0	0
I-229	7	9	0	0	0	0	0

APPENDIX D. 2030 ICS INPUTS MEMORANDUM

South Dakota DOT
2020
Decennial ICS

MEMORANDUM

TO: Project File, SDDOT 2020 Decennial Interstate Corridor Study

FROM: Felsburg Holt & Ullevig

DATE: September 3, 2021

SUBJECT: SDDOT 2030 Decennial Interstate Corridor Study Inputs
FHU Reference No. 118571-01

It is anticipated that the South Dakota Department of Transportation SDDOT will develop a new systemwide Interstate Corridor Study (ICS) in the 2029-2030 timeframe. Over its history, each edition of the ICS has introduced new dimensions – some being added to address critical topics that have emerged in preceding years and some to expand the document's utility to the SDDOT in its project development process. In the spirit of continuing improvement, efficiency and evolution, the study team has prepared this brief memorandum to document items that we believe merit consideration for inclusion in the next edition of the ICS.

1. Transportation Systems Management and Operations (TSMO) and Intelligent Transportation Systems (ITS) Elements: While these types of projects have not traditionally been addressed by the SDDOT as programmed capital projects, they both offer opportunities to enhance the interstate system. Many of these elements require smaller capital investments than full interchange reconstructions or interstate capacity improvements. They should be incorporated into the ICS where appropriate as recommended improvements for integration into the SDDOT's project planning process.

2. Structural Needs: Bridge ratings were included in the 2020 ICS and gave rise to numerous project recommendations based on structural condition. The next edition of the ICS should more meaningfully integrate the timing of structural needs into the project prioritization. Taking this step would help the SDDOT anticipate bridge projects and minimize bridge needs arising out of an "emergency" situation. It is recommended that SDDOT Project Development engage with the Office of Bridge Management to determine the most effective way to assist with identifying and prioritizing projects in advance of emergent needs.

3. Traffic Operations Analysis Expansion: The 2020 ICS used guidance in the Highway Capacity Manual to develop 15-to-20-mile analysis segments across the interstate network. These segments account for interactions between interchanges within each segment, but do not account for interactions between segments, For the next edition of the ICS, the Department should consider ways to address the interaction between segments in the traffic operations analysis to better capture system function. Further, the traffic operations analysis should extend the analysis areas to include a portion of interstate freeway entering South Dakota from the adjacent states, where poor operations across state lines could affect the freeways in South Dakota.

4. Freight Planning: Planning for the efficient and safe movement of freight throughout the interstate system is expected to grow in importance in coming years. SDDOT has developed a statewide freight plan, and the interstate network provides a key backbone for freight transport in South Dakota. The next edition of the ICS should ensure that freight components identified during statewide freight planning efforts are given thorough attention.

5. Stakeholder Engagement: SDDOT should contemplate a more robust stakeholder engagement plan as part of the next edition of the ICS. Gathering input from public entities and transportation planning agencies throughout the state will help to maximize capture of future anticipated needs and trends that could affect the interstate network.

South Dakota DOT

Decennial ICS

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