

Highway Safety

Transportation Commission Meeting Dustin Witt, Highway Safety Engineer

What is the SHSP?

REQUIRED by the Federal Transportation Law

Updated every **FIVE** years

DATA driven approach

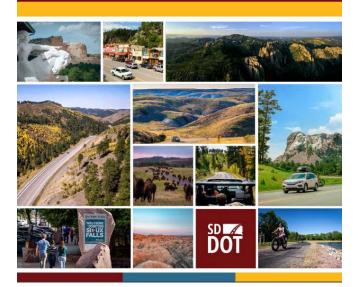
Statewide & coordinated plan involving **MULTI-DISCIPLINARY** safety partners

Focused on the reduction of fatalities and incapacitating injuries on ALL public roads

STRATEGIES to keep moving toward zero

2024 South Dakota Strategic Highway Safety Plan

August 2024



Study Advisory Team

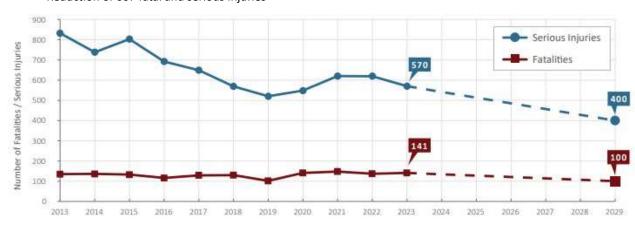
- Federal Highway Administration
 - Amanda Kurth, Safety Specialist
- Rapid City Metropolitan Planning Organization
 Kip Harrington, Long Range Planning Division Manager
- Rosebud Sioux Tribe
 - LaJuanda Stands and Looks Back, Tribal Transportation Planner
- South Dakota Association of County Highway Superintendents
 Dustin Hofland, President
- South Dakota Department of Health
 Marty Link, Rural Health Program Manager
- South Dakota Department of Public Safety
 - John Broers, Director of Driver Licensing
 - Jon Stahl, Motor Carrier Captain
 - Robert Weinmeister, Director of Office of Highway Safety
- South Dakota Department of Transportation
 - Dale Healey, Highway Safety Planning Engineer
 - Mark Leiferman, Project Development Program Manager
 - Brace Prouty, Scoping and Safety Engineering Supervisor
 - Andy Vandel, Office of Research Engineering Supervisor
 - Dustin Witt, Highway Safety Engineer



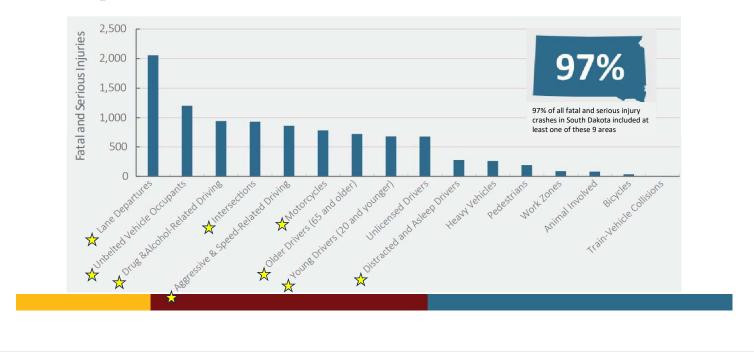


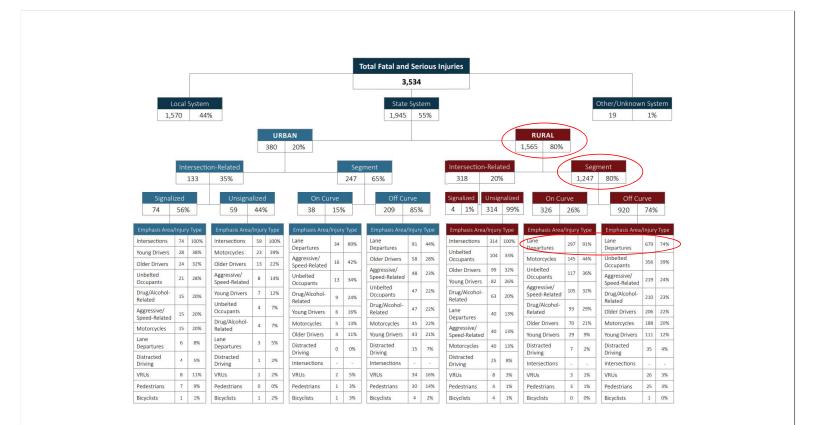
Vision: Eliminate ALL deaths and life-changing injuries on South Dakota roads so everyone arrives home safely every day.

- 2019 Update (2013-2017) 3,479 fatal and serious injuries
- 2024 Update (2018-2022) 2,872 fatal and serious injuries



• Reduction of 607 fatal and serious injuries





Emphasis Area Selection



Go to Emphasis Area Lane Departures Fatal and Serious Injury Crashes (2018-2022) Definition: Crashes involving vehicles leaving their original lane of travel. This includes run-off-road and head-on crashes.

ROADWAY JURISDICTION

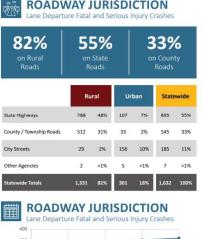
STATEWIDE < CRASH **STATISTICS**

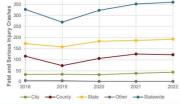
1,632 Total fatal and serious

injury lane departure crashes

326 Fatal and serious injury lane departure crashes per year (average)

57% of all fatal and serious injury crashes in South Dakota were lane departure crashes





Lane Departures

Fatal and Serious Injury Crashes (2018-2022)

Ø **DRIVER AGE AND GENDER** Lane Departure Fatal and Serious Injury Crashes

Age	м	ale	Fer	nale	State	ewide	All Fatal and Serio Injury Crashes		
<21	171	8%	100	5%	271	13%	13%		
21 to 25	157	8%	58	3%	215	10%	10%		
26 to 35	312	15%	87	4%	399	19%	19%		
36 to 45	232	11%	80	4%	312	15%	15%		
46 to 55	210	10%	64	3%	274	13%	14%		
56 to 65	275	13%	54	3%	329	16%	16%		
>65	199	10%	58	3%	262	13%	14%		
Total	1,556	75%	501	24%	2.062	100%			

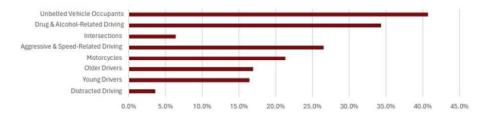
EMPHASIS AREA

		Serious Injury	Percentage	Percentage of All Fatal and Serious Injury Crashes	
Unbelted Vehicle Occupants	224	441	40.7%	30.4%	10.4%
Drug & Alcohol-Related Driving	165	394	34.3%	26.0%	8.3%
Intersections	24	80	6.4%	26.0%	-19.6%
Aggressive & Speed-Related Driving	133	299	26.5%	22.7%	3.7%
Motorcycles	59	288	21.3%	24.5%	-3.3%
Older Drivers	73	202	16.9%	20.7%	-3.8%
Young Drivers	54	213	16.4%	17.6%	-1.3%
Distracted Driving	7	51	3.6%	4.6%	-1.1%
Unbelted Vehicle Occupants Drug & Alcohol-Related Driving Intersections Aggressive & Speed-Related Driving Motorcycles Older Drivers Young Drivers Distrated Driving					

EMPHASIS AREA

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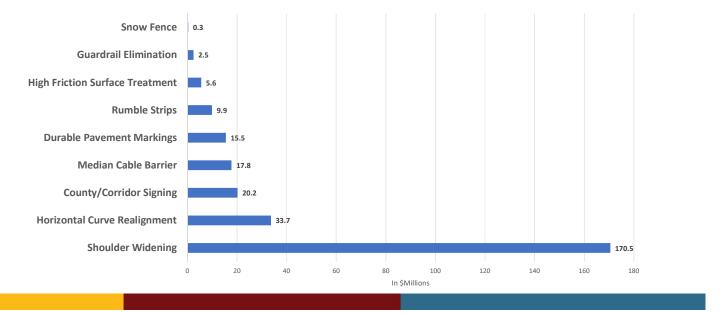
Lane Departure Fa	tal and Ser	ious Injury Cra	ashes		
	Fatal	Serious Injury	Percentage	Percentage of All Fatal and Serious Injury Crashes	Difference
Unbelted Vehicle Occupants	224	441	40.7%	30.4%	10.4%
Drug & Alcohol-Related Drivin	g 165	394	34.3%	26.0%	8.3%
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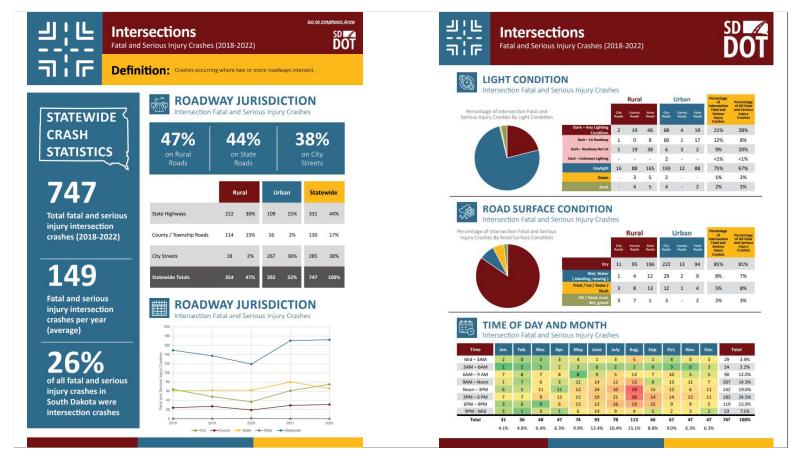
Lane Departure Countermeasures

- Shoulder Widening Up to 34% reduction (High cost, long term benefit)
- Rumble Strips
 - Shoulder/Edgeline Rumble Strips 20% reduction in run off road crashes
 - Centerline Rumble Stripes >50% reduction in cross centerline crashes
- High Friction Surface Treatment 66% reduction on icy/wet roads on curves
- Horizontal Curve Flattening Up to 39% reduction
- Horizontal Curve Signing 37% reduction in crashes on curves
- Median Cable Barrier 97% reduction in cross median crashes
- Durable High Grade Pavement Markings 11% reduction in crashes
- Snow Fence 62% reduction in injuries in winter conditions





								Т	otal Fatal and	d Se	rious I	njuries								
									3	,534	l I									
		C																Other/Unknow		
1.5		System							State 1.945		55%							19	/n Sys 1%	
1,5	/0	1	/0						1,545	-	5570			_		_		15		0
					UR	BAN									RURAL					
					380	20%								\bigcirc	1,565 80%					
	Int	orcocti	on-Related					Soa	nent			Intersection-	Rela	ted			Sou	nent		
		133	35%					247	65%		(318	209) – –		1,247	80%		
													_							
Signali	zed		Unsigna	alized	d	On Cu	rve		Off Cu	irve		Signalized l	Jnsig	nalized	On Cu	rve		Off Cu	irve	
74	56%	6	59	449	%	38	15%	6	209	859	6	4 1%	314	99%	326	269	6	920	74%	%
Emphasis Area/	Iniun	Tune	Emphasis Area	/toiur	or Turne	Emphasis Area/	loiun	Type	Emphasis Area	/Iniur	u Tune	Emphasis Area/	Iniun	Tuno	Emphasis Area/	/Iniur	Tuno	Emphasis Area	Iniur	n Tur
ntersections	74	100%	Intersections	59	100%	Lane	34	89%	Lane	91	44%	Intersections	314	100%	Lane	297	91%	Lane	679	
oung Drivers	28	38%	Motorcycles	23	39%	Departures	34	69%	Departures	-		Unbelted	104	33%	Departures			Departures	679	14
Older Drivers	24	32%	Older Drivers	13	22%	Aggressive/ Speed-Related	16	42%	Older Drivers	58	28%	Occupants			Motorcycles	145	44%	Unbelted Occupants	356	39
Unbelted	21	28%	Aggressive/	8	14%	Unbelted	13	34%	Aggressive/ Speed-Related	48	23%	Older Drivers	99	32%	Unbelted Occupants	117	36%	Aggressive/	219	24
Dccupants Drug/Alcohol-			Speed-Related Young Drivers	7	12%	Occupants	15	5470	Unbelted	47	22%	Young Drivers Drug/Alcohol-	82	26%	Aggressive/	105	32%	Speed-Related		
Related	15	20%	Unbelted			Drug/Alcohol- Related	9	24%	Occupants Drug/Alcohol-			Related	63	20%	Speed-Related			Drug/Alcohol- Related	210	23
Aggressive/ Speed-Related	15	20%	Occupants	4	7%	Young Drivers	6	16%	Related	47	22%	Lane Departures	40	13%	Related	93	29%	Older Drivers	206	22
Motorcycles	15	20%	Drug/Alcohol- Related	4	7%	Motorcycles	5	13%	Motorcycles	45	22%	Aggressive/			Older Drivers	70	21%	Motorcycles	188	20
Lane			Lane			Older Drivers	4	11%	Young Drivers	43	21%	Speed-Related	40	13%	Young Drivers	29	9%	Young Drivers	111	12
Departures	6	8%	Departures	3	5%	Distracted	0	0%	Distracted Driving	15	7%	Motorcycles	40	13%	Distracted Driving	7	2%	Distracted	35	49
Distracted	1	5%	Distracted Driving	1	2%	Intersections	2		Intersections	-	-	Distracted Driving	25	8%	Intersections			Intersections		
Jriving	8	11%	VRUs	1	2%	VRUs	2	5%	VRUs	34	16%	VRUs	8	3%	VRUs	3	1%	VRUs	26	39
0	0			-				3%	Pedestrians	30	14%	Pedestrians	4	1%	Pedestrians	3	1%	Pedestrians	25	35
Driving /RUs Pedestrians	7	9%	Pedestrians	0	0%	Pedestrians	1	376	recescrians	50	T+4.50	recescitatis	195	170	reacouriano	1.0	1/0	Pedestrians	25	37



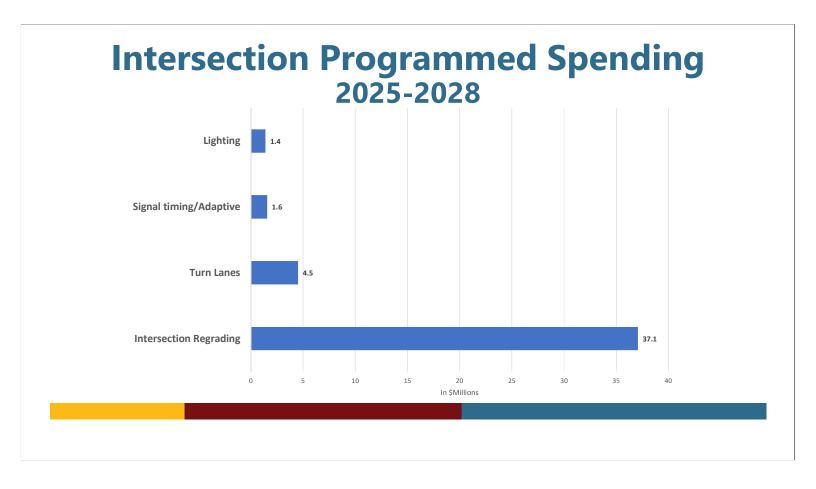


TIME OF DAY AND MONTH Intersection Fatal and Serious Injury Crashes

Time	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	т	Total	
Mid – 3AM	2	0	3	3	4	1	3	5	1	-4	0	3	29	3.9%	
3AM - 6AM	2	2	5	2	3	0	2	2	0	3	0	3	24	3.2%	
6AM - 9 AM	7	8	7	8	8	9	5	13	7	10	3	5	90	12.09	
9AM – Noon	1	7	6	3	11	14	12	13	9	13	11	7	107	14.39	
Noon – 3PM	6	5	11	11	12	24	10	19	15	12	6	11	142	19.09	
3PM – 6 PM	7	7	9	13	15	19	21	38	14	14	15	11	183	24.59	
6PM - 9PM	3	6	4	6	15	12	16	19	15	9	9	5	119	15.99	
9PM - Mid	3	1	3	1	6	14	9	4	5	2	3	2	53	7.1%	
Total	31	36	48	47	74	93	78	113	66	67	47	47	747	1009	
	4.1%	4.8%	6.4%	6.3%	9.9%	12.4%	10.4%	15.1%	8.8%	9.0%	6.3%	6.3%			

Intersection Countermeasures

- Alternative Intersections Various crash reduction (see later slides)
- Add Turn Lanes Reduces crashes 8 to 33%
- Roadway Configuration from 4-lane to 3-lane Reduces crashes by 47%
- Roadway Configuration from 5-lane to divided 4-lane Reduces crashes by 58%
- Realign Skewed Intersection Reduces crashes 11 to 48%
- Improve Intersection Signing Reduces crashes 8 to 38%
- Corridor Signal Timing Reduces crashes by 21%
- Intersection Lighting Reduces crashes by 20%



Roundabouts

- Single Lane Roundabouts Reduce injury crashes by 83%
- Watertown
 - Before (2012-2016): 24 crashes (16 injuries)
 - After (2019-2023): 20 crashes (4 injuries) 11 hitting objects
 3 injuries ramped center islands
- Sisseton
 - Before (2014-2018): 15 crashes (5 injuries)
 - After (2021-2024): 1 crash (0 injuries) 1 hitting object



Reduced Conflict Intersections

- Reduces 35% of all crashes and 71% of fatal and injury crashes
- Pierre
 - Before (2012-2016): 7 crashes (1 injury) 6 through, 1 right turner
 - After (2018-2022): 1 crash (1 injury) Right turner



Diverging Diamond Interchanges

- Reduces all crashes by 14% and fatal/injury crashes by 44%
- Lacrosse Street in Rapid City
 - Before 18.4 crashes per year
 - After 10 crashes in first year



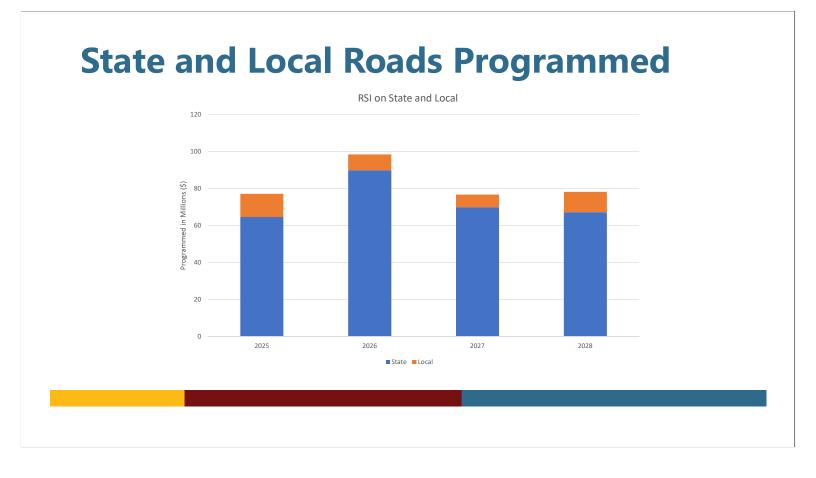


Roadway Safety Improvement Program



Where do serious crashes happen?

- State Roads (~7,800 miles about 10%)
 - 55% of fatal and serious injuries
 - 69% of miles traveled
- Non-State Roads (~74,200 miles about 90%)
 - 45% of fatal and serious injuries
 - 31% of miles traveled
 - Serious crash rate per mile traveled double compared to State highways



Research Project

- Department of Transportation
- Department of Public Safety
- Department of Health
- Department of Education





Toward Zero Deaths®

National Strategy on Highway Safety

Safety and Speed Management Board

- SDDOT Internal Board
 - Highway Safety Engineer, Highway Safety Planning Engineer, Operations Traffic Engineer, Region Traffic Engineer (x4), Road Design Traffic Engineer
- Meet monthly to discuss:
 - All Fatal Crashes
 - Speed limit review
 - Intersection control review
 - New safety initiatives



QR Code links to SHSP

THANK YOU



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45