Interactive Highway Safety Design Model

Crash Prediction Evaluation Report

May 9, 2019

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Report Overview

Report Generated: May 9, 2019 11:19 AM
Report Template: System: Single Page [System] (mlcpm3, Jan 25, 2019 1:43 PM)

Evaluation Date: Thu May 09 09:50:27 EDT 2019
IHSDM Version: v14.0.0 (Sep 26, 2018)
Crash Prediction Module: v9.0.0 (Sep 26, 2018)

User Name: Eugene Taylor
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Project Title: I-95 half mile sample
Project Comment: Created Thu May 09 09:40:08 EDT 2019
Project Unit System: U.S. Customary

Highway Title: I-95 half mile sample baseline
Highway Comment: Created Thu May 09 09:40:46 EDT 2019
Highway Version: 1

Evaluation Title: Evaluation 1
Evaluation Comment: Created Thu May 09 09:50:13 EDT 2019

Minimum Location: 0.000
Maximum Location: 26+40.000
Policy for Superelevation: AASHTO 2011 U.S. Customary
Calibration: HSM Configuration
Crash Distribution: HSM Configuration
Model/CMF: HSM Configuration
Empirical-Bayes Analysis: None
First Year of Analysis: 2019
Last Year of Analysis: 2024

Section Types

Section 1 Evaluation

Section: Section 1
Evaluation Start Location: 0.000
Evaluation End Location: 26+40.000
Functional Class: Freeway
Type of Alignment: Divided, Multilane
Model Category: Freeway Segment
Calibration Factor: FI_MV=1.0; FI_SV=1.0; PDO_MV=1.0; PDO_SV=1.0;

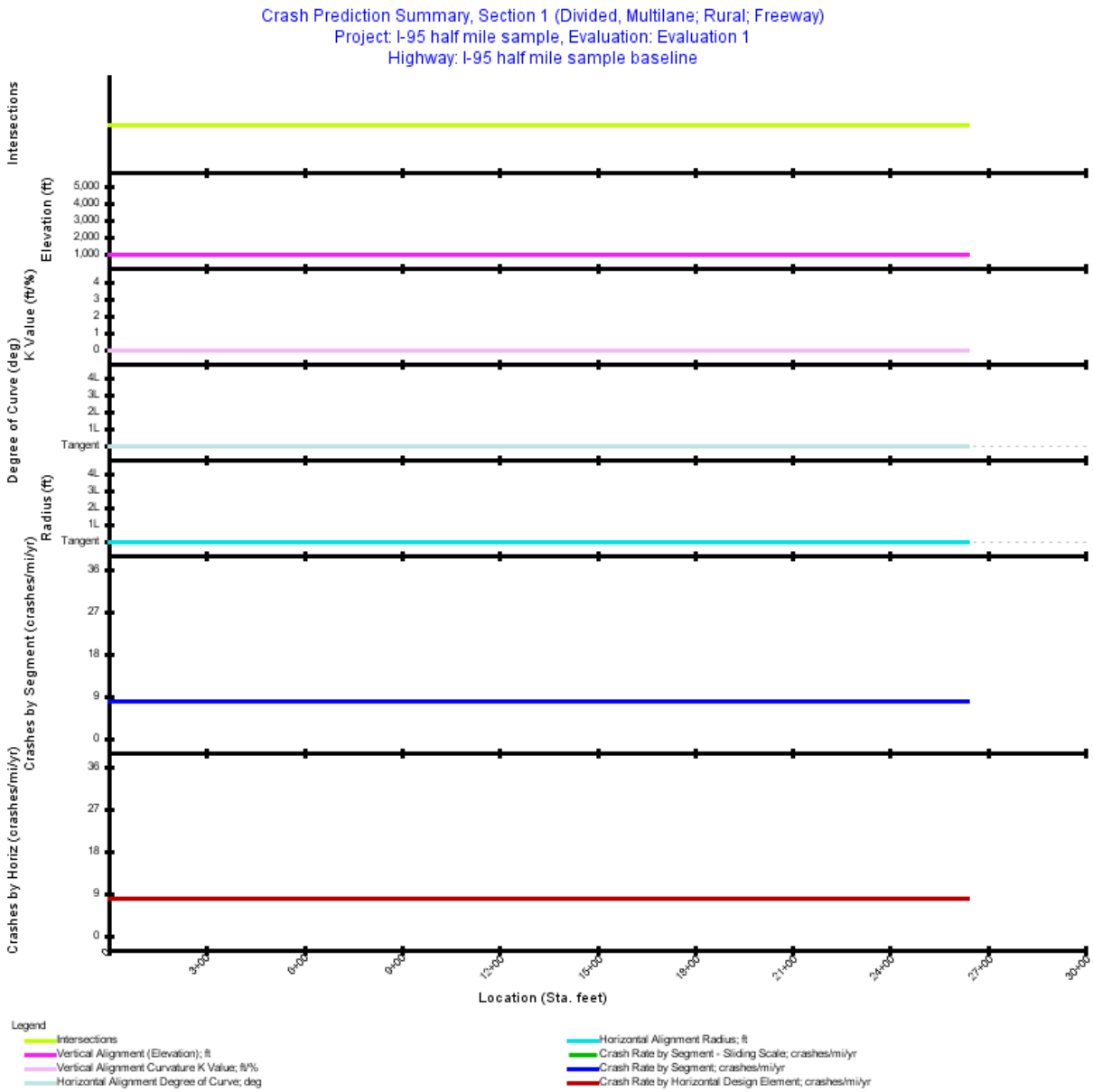

Figure 1. Crash Prediction Summary (Section 1)

Table 1. Evaluation Freeway - Homogeneous Segments (Section 1)

Seg. No.	Type	Area Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length(mi)	AADT	Median Width (ft)	Type	Effective Median Width (ft)
1	4F	Rural	0.000	26+40.000	2,640.00	0.5000	2019-2024: 53,300	60.00	Traversable Median	68.00

Table 2. Predicted Freeway Crash Rates and Frequencies (Section 1)

First Year of Analysis	**2019**
Last Year of Analysis	**2024**
Evaluated Length (mi)	**0.5000**
Average Future Road AADT (vpd)	**53,300**
Predicted Crashes	
Total Crashes	**24.06**
Fatal and Injury Crashes	**6.89**
Property-Damage-Only Crashes	**17.17**
Percent of Total Predicted Crashes	
Percent Fatal and Injury Crashes (%)	**29**
Percent Property-Damage-Only Crashes (%)	**71**
Predicted Crash Rate	
Crash Rate (crashes/mi/yr)	**8.0207**
FI Crash Rate (crashes/mi/yr)	**2.2969**
PDO Crash Rate (crashes/mi/yr)	**5.7238**
Predicted Travel Crash Rate	
Total Travel (million veh-mi)	**58.36**
Travel Crash Rate (crashes/million veh-mi)	**0.41**
Travel FI Crash Rate (crashes/million veh-mi)	**0.12**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.29**

Note: *Total Travel and Crash Rates/Million Vehicle Miles* for *Speed Change Lanes* reflect AADTs that are **half of the Freeway Segment AADTs** based on the assumption of 50/50 directional distribution.

Table 3. Predicted Crash Frequencies and Rates by Freeway Segment/Intersection (Section 1)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Effective Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	26+40.000	0.5000	24.062	4.0103	1.1484	2.8619	8.0207	0.41
Total			0.5000	24.062	4.0103	1.1484	2.8619	8.0207	

Note: *Effective Length* is the *segment length* minus the length of the *speed change lanes* if present.
Note: *Travel Crash Rates/Million Vehicle Miles* for *Speed Change Lanes* reflect AADTs that are **half of the Freeway Segment AADTs** based on the assumption of 50/50 directional distribution.

Table 4. Predicted Crash Frequencies and Rates by Horizontal Design Element (Section 1)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
Tangent	0.000	26+40.000	0.5000	24.062	4.0103	1.1484	2.8619	8.0207	0.41

Table 5. Predicted Crash Frequencies by Year (Section 1)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2019	4.01	1.15	0.286	2.86	0.714
2020	4.01	1.15	0.286	2.86	0.714
2021	4.01	1.15	0.286	2.86	0.714
2022	4.01	1.15	0.286	2.86	0.714
2023	4.01	1.15	0.286	2.86	0.714
2024	4.01	1.15	0.286	2.86	0.714
Total	24.06	6.89	0.286	17.17	0.714
Average	4.01	1.15	0.286	2.86	0.714

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.
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Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 6. Predicted Crash Severity by Freeway Segment (Section 1)

Seg. No.	Fatal (K) Crashes (crashes)	Incapacitating Injury (A) Crashes (crashes)	Non-Incapacitating Injury (B) Crashes (crashes)	Possible Injury (C) Crashes (crashes)	No Injury (O) Crashes (crashes)
1	0.2819	0.6608	2.7652	3.1827	17.1713

Table 7. Predicted Freeway Segment Crash Type Distribution (Section 1)

Element Type	Crash Type	Fatal and Injury		Property Damage Only		Total	
		Crashes	Crashes (%)	Crashes	Crashes (%)	Crashes	Crashes (%)
Highway Segment	Collision with Animal	0.04	0.2	0.68	2.8	0.72	3.0
Highway Segment	Collision with Fixed Object	2.28	9.5	6.50	27.0	8.79	36.5
Highway Segment	Collision with Other Object	0.12	0.5	1.30	5.4	1.43	5.9
Highway Segment	Other Single-vehicle Collision	1.48	6.2	1.69	7.0	3.17	13.2
Highway Segment	Collision with Parked Vehicle	0.10	0.4	0.24	1.0	0.34	1.4
Highway Segment	Total Single Vehicle Crashes	4.02	16.7	10.41	43.2	14.43	60.0
Highway Segment	Right-Angle Collision	0.16	0.7	0.20	0.8	0.36	1.5
Highway Segment	Head-on Collision	0.05	0.2	0.03	0.1	0.08	0.3
Highway Segment	Other Multi-vehicle Collision	0.17	0.7	0.53	2.2	0.70	2.9
Highway Segment	Rear-end Collision	1.81	7.5	3.44	14.3	5.24	21.8
Highway Segment	Sideswipe, Same Direction Collision	0.68	2.8	2.57	10.7	3.25	13.5
Highway Segment	Total Multiple Vehicle Crashes	2.87	11.9	6.76	28.1	9.63	40.0
Highway Segment	Total Highway Segment Crashes	6.89	28.6	17.17	71.4	24.06	100.0
	Total Crashes	6.89	28.6	17.17	71.4	24.06	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

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Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Crash Summary

I- 95 (INTERSTATE 95) from MPT 0.000 to MPT 18.000

JASPER COUNTY

01/01/2016 - 12/31/2018 (3.0 years)

Length = 18.000 miles

AADT = 55,520

Functional Class = Rural -- Principal Arterial - Interstate

Crashes by Injury Class

Fatality Crashes	9
Injury Crashes	130
PDO Crashes	530
Total Crashes	**669**

Crashes by Manner Of Collision

Rear End	309
Angle	49
Sideswipe	73
Head On	3
Run Off Road	194
Animal	7
Bicycle	0
Pedestrian	1
Other	33
Total Crashes	**669**

Special Contributing Factors

Night	188
Day	481
Wet	139
Dry	530

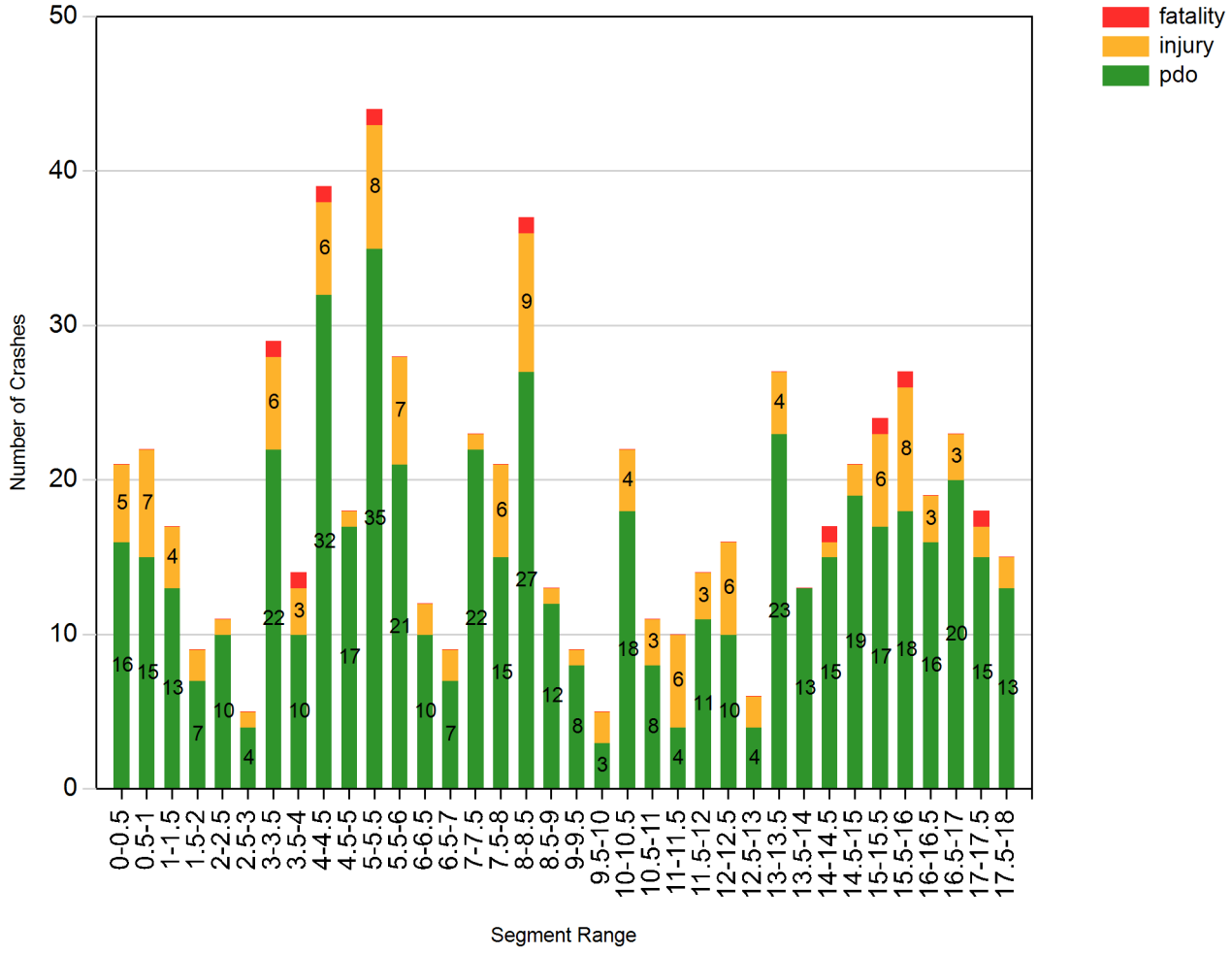
I- 95 (INTERSTATE 95) from MPT 0.000 to MPT 18.000

JASPER COUNTY

01/01/2016 - 12/31/2018 (3.0 years)

Length = 18.000 miles AADT = 55,520

Functional Class = Rural -- Principal Arterial - Interstate



I- 95 (INTERSTATE 95) from MPT 0.000 to MPT 18.000

JASPER COUNTY

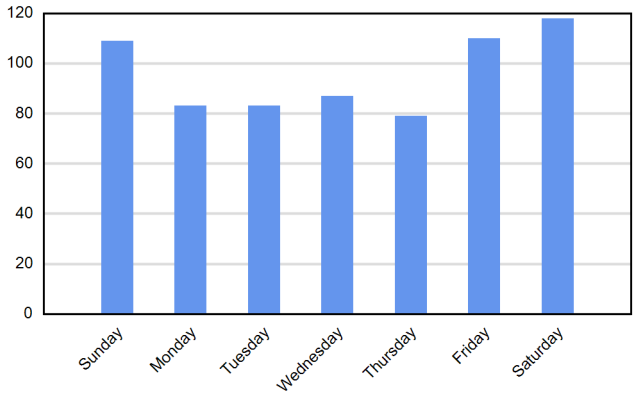
01/01/2016 - 12/31/2018 (3.0 years)

Length = 18.000 miles AADT = 55,520

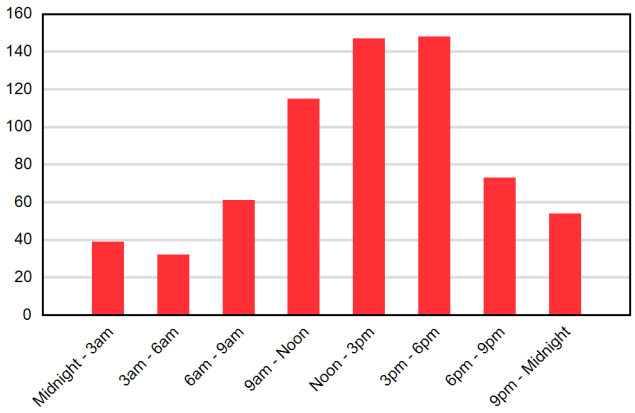
Functional Class = Rural -- Principal Arterial - Interstate

Year	2016	2017	2018	Total
Rear End	66	134	109	309
Angle	12	11	26	49
Sideswipe	28	23	22	73
Head On	1	2	0	3
Run Off Road	53	63	78	194
Animal	3	0	4	7
Bicycle	0	0	0	0
Pedestrian	1	0	0	1
Other	5	15	13	33
	169	248	252	669

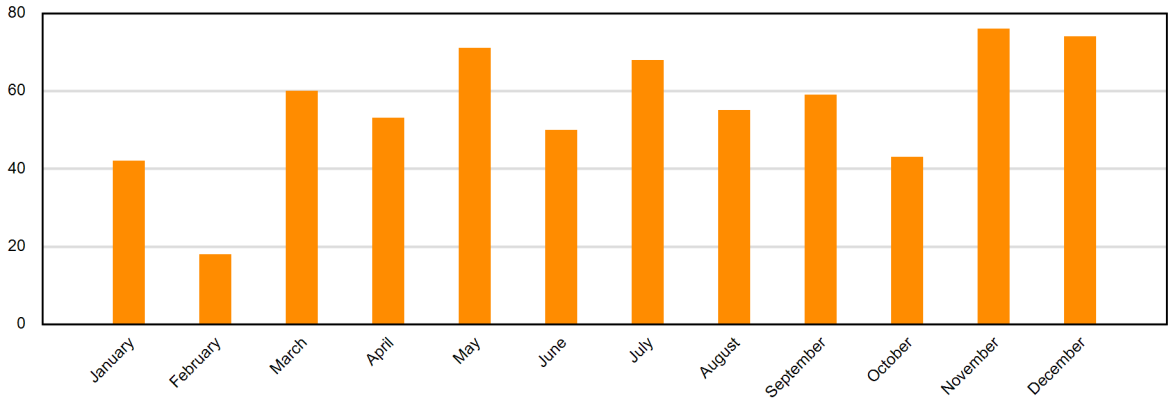
Day of the Week



Time of Day



Month of the Year



Section Crashes

MPT 0.000 to 0.500 (Stack #1)

Total Crashes: 21 Light: 16 Dark: 5 Dry: 19 Wet: 2 Fatalities: 0 Injuries: 5 PDO: 16

1	16506114	0.373	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
2	16511712	0.076	INJ0	DAY	WET	BRIDGE RAIL	NO COLLISION W/MV
3	16520972	0.455	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
4	16529295	0.190	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
5	16561915	0.380	INJ2	DAY	DRY	GUARDRAIL FACE	NO COLLISION W/MV
6	16567629	0.006	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
7	16599443	0.468	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
8	16620782	0.020	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
9	16638006	0.346	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
10	16650533	0.232	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
11	16651125	0.456	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
12	18501588	0.368	INJ0	DAY	ICE	BRIDGE RAIL	NO COLLISION W/MV
13	18504548	0.310	INJ0	DARK	DRY	OTHER	NO COLLISION W/MV
14	18505576	0.381	INJ0	DUSK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
15	18507706	0.468	INJ2	DAY	DRY	MOTOR VEHICLE (PARKED)	REAR END
16	18527788	0.044	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
17	18554387	0.085	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
18	18561119	0.124	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
19	18584990	0.039	INJ1	DARK	DRY	HIGHWAY TRAFFIC SIGN POST	NO COLLISION W/MV
20	18596737	0.164	INJ0	DAY	DRY	OVERTURN/ROLLOVER	NO COLLISION W/MV
21	18603642	0.209	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 0.500 to 1.000 (Stack #2)

Total Crashes: 22 Light: 16 Dark: 6 Dry: 21 Wet: 1 Fatalities: 0 Injuries: 7 PDO: 15

1	16506394	0.838	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
2	16537834	0.507	INJ2	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
3	16548540	0.533	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
4	16554279	0.876	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
5	16597671	0.862	INJ2	DAY	DRY	TREE	NO COLLISION W/MV
6	16615098	0.668	INJ0	DAY	DRY	BRIDGE RAIL	NO COLLISION W/MV
7	16643621	0.581	INJ0	DAY	DRY	MEDIAN BARRIER	NO COLLISION W/MV
8	17504008	0.637	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
9	17655631	0.803	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
10	17655972	0.802	INJ0	DARK	DRY	GUARDRAIL FACE	NO COLLISION W/MV
11	18507568	0.522	INJ0	DAY	DRY	GUARDRAIL FACE	NO COLLISION W/MV

Section Crashes

12	18523863	0.649	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
13	18542631	0.524	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
14	18542639	0.530	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
15	18569548	0.752	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
16	18581943	0.568	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
17	18584601	0.774	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
18	18590818	0.511	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
19	18609877	0.878	INJ1	DAY	DRY	OVERTURN/ROLLOVER	NO COLLISION W/MV
20	18636696	0.799	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
21	18664820	0.972	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
22	18665145	0.707	INJ1	DUSK	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 1.000 to 1.500 (Stack #3)

Total Crashes: 17 Light: 13 Dark: 4 Dry: 14 Wet: 3 Fatalities: 0 Injuries: 4 PDO: 13

1	16579653	1.281	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
2	16580597	1.142	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
3	16592582	1.188	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
4	16627890	1.358	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
5	16632246	1.052	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
6	17539639	1.232	INJ2	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
7	17616674	1.040	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
8	17655629	1.430	INJ0	DARK	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END
9	18502096	1.381	INJ0	DARK	DRY	OTHER MOVABLE OBJECT	NO COLLISION W/MV
10	18529918	1.209	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
11	18569558	1.015	INJ1	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END
12	18583567	1.240	INJ1	DAY	WET	TREE	NO COLLISION W/MV
13	18601387	1.076	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
14	18663713	1.237	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
15	18673123	1.078	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
16	18689372	1.102	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
17	18689567	1.471	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 1.500 to 2.000 (Stack #4)

Total Crashes: 9 Light: 9 Dark: 0 Dry: 6 Wet: 3 Fatalities: 0 Injuries: 2 PDO: 7

1	16617912	1.944	INJ0	DAY	WET	GUARDRAIL FACE	NO COLLISION W/MV
2	16663142	1.682	INJ1	DAY	WET	MEDIAN BARRIER	NO COLLISION W/MV
3	17537959	1.507	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
4	18500066	1.549	INJ2	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

Section Crashes

5	18501211	1.647	INJ0	DAY	ICE	MOTOR VEHICLE (STOPPED)	ANGLE
6	18507115	1.699	INJ0	DAY	DRY	SEPARATION OF UNITS	NO COLLISION W/MV
7	18550914	1.905	INJ0	DAY	DRY	GUARDRAIL FACE	NO COLLISION W/MV
8	18592487	1.601	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
9	18644277	1.808	INJ0	DAY	DRY	MEDIAN BARRIER	NO COLLISION W/MV

MPT 2.000 to 2.500 (Stack #5)

Total Crashes: 11 Light: 7 Dark: 4 Dry: 7 Wet: 4 Fatalities: 0 Injuries: 1 PDO: 10

1	16543505	2.135	INJ0	DARK	DRY	MOTOR VEHICLE (STOPPED)	SIDESWIPE SAME
2	16551025	2.182	INJ0	DARK	DRY	MEDIAN BARRIER	NO COLLISION W/MV
3	16607041	2.275	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
4	16668129	2.392	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
5	17601702	2.110	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	NO COLLISION W/MV
6	17638249	2.370	INJ1	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END
7	17681608	2.110	INJ0	DARK	DRY	OTHER MOVABLE OBJECT	NO COLLISION W/MV
8	18500644	2.447	INJ0	DAY	ICE	OVERTURN/ROLLOVER	NO COLLISION W/MV
9	18501530	2.435	INJ0	DAY	ICE	MOTOR VEHICLE (PARKED)	SIDESWIPE SAME
10	18501532	2.037	INJ0	DAY	ICE	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
11	18583312	2.454	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 2.500 to 3.000 (Stack #6)

Total Crashes: 5 Light: 3 Dark: 2 Dry: 5 Wet: 0 Fatalities: 0 Injuries: 1 PDO: 4

1	16551641	2.832	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
2	16559646	2.626	INJ0	DARK	DRY	GUARDRAIL FACE	NO COLLISION W/MV
3	16577141	2.862	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
4	16644873	2.517	INJ0	DAY	DRY	OTHER MOVABLE OBJECT	NO COLLISION W/MV
5	18686580	2.910	INJ1	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME

MPT 3.000 to 3.500 (Stack #7)

Total Crashes: 29 Light: 14 Dark: 15 Dry: 24 Wet: 5 Fatalities: 1 Injuries: 6 PDO: 22

1	16006776	3.100	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
2	16010482	3.100	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
3	16012720	3.110	INJ0	DAY	DRY	TREE	NO COLLISION W/MV
4	16026464	3.200	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
5	16575168	3.054	INJ0	DAY	DRY	OTHER MOVABLE OBJECT	NO COLLISION W/MV
6	16595856	3.068	INJ0	DARK	DRY	ANIMAL (ALL OTHER)	NO COLLISION W/MV
7	16640036	3.421	INJ0	DARK	WET	TREE	NO COLLISION W/MV
8	16640037	3.384	INJ0	DARK	WET	TREE	NO COLLISION W/MV

Section Crashes

9	16653321	3.184	INJ0	DAY	DRY	CROSS MEDIAN/CENTER	SIDESWIPE SAME
10	17508464	3.100	INJ2	DAY	WET	TREE	NO COLLISION W/MV
11	17530858	3.350	INJ3	DARK	DRY	TREE	NO COLLISION W/MV
12	17537933	3.243	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
13	17548873	3.152	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
14	17560075	3.320	INJ0	DARK	DRY	UNKNOWN MOVABLE OBJECT	NO COLLISION W/MV
15	17568852	3.100	INJ0	DARK	DRY	OTHER NONCOLLISION	NO COLLISION W/MV
16	17598399	3.320	INJ1	DARK	DRY	TREE	NO COLLISION W/MV
17	17611892	3.260	INJ0	DAY	WATER (STANDING, ETC)	HIGHWAY TRAFFIC SIGN POST	NO COLLISION W/MV
18	17640549	3.100	INJ0	DARK	WET	JACKKNIFE	NO COLLISION W/MV
19	17661403	3.100	INJ1	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
20	18539393	3.105	INJ0	DARK	DRY	MOTOR VEHICLE (OTHER ROADWAY)	SIDESWIPE SAME
21	18557870	3.211	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
22	18571363	3.086	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
23	18589406	3.154	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
24	18607352	3.134	INJ1	DAY	DRY	OVERTURN/ROLLOVER	NO COLLISION W/MV
25	18615393	3.098	INJ1	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
26	18615866	3.100	INJ0	DARK	DRY	JACKKNIFE	NO COLLISION W/MV
27	18626517	3.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
28	18689262	3.097	INJ4	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
29	18691298	3.102	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME

MPT 3.500 to 4.000 (Stack #8)

Total Crashes: 14 Light: 7 Dark: 7 Dry: 13 Wet: 1 Fatalities: 1 Injuries: 3 PDO: 10

1	17530859	3.860	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
2	17562276	3.800	INJ0	DAY	DRY	DITCH	NO COLLISION W/MV
3	17582986	3.900	INJ1	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
4	17601532	3.895	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
5	17611813	3.650	INJ3	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
6	17621480	3.693	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
7	17660052	3.660	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
8	17682484	3.803	INJ0	DARK	WET	TREE	NO COLLISION W/MV
9	18512098	3.954	INJ2	DAY	DRY	OVERTURN/ROLLOVER	NO COLLISION W/MV
10	18533845	3.984	INJ0	DAY	DRY	TREE	NO COLLISION W/MV
11	18567910	3.529	INJ0	DARK	DRY	ANIMAL (DEER ONLY)	NO COLLISION W/MV
12	18585445	3.784	INJ4	DARK	DRY	OTHER (POST, POLE, SUPPORT, ETC)	NO COLLISION W/MV

Section Crashes

13	18625923	3.968	INJ0	DARK	DRY	MOTOR VEHICLE (STOPPED)	BACKED INTO
14	18691302	3.721	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 4.000 to 4.500 (Stack #9)

Total Crashes: 39 Light: 27 Dark: 12 Dry: 34 Wet: 5 Fatalities: 1 Injuries: 6 PDO: 32

1	16005143	4.100	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
2	16011419	4.490	INJ1	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
3	16011421	4.100	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
4	16012718	4.110	INJ0	DARK	WET	TREE	NO COLLISION W/MV
5	16017555	4.100	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
6	16604417	4.492	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
7	16651316	4.283	INJ0	DARK	DRY	HIGHWAY TRAFFIC SIGN POST	NO COLLISION W/MV
8	17503329	4.087	INJ0	DAY	DRY	TREE	NO COLLISION W/MV
9	17521455	4.280	INJ0	DARK	DRY	MOTOR VEHICLE (STOPPED)	REAR END
10	17537939	4.225	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
11	17537940	4.380	INJ0	DARK	DRY	TREE	NO COLLISION W/MV
12	17553777	4.182	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
13	17577849	4.100	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
14	17605663	4.110	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
15	17611893	4.140	INJ0	DAY	WET	GUARDRAIL FACE	NO COLLISION W/MV
16	17613462	4.490	INJ4	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	HEAD ON
17	17622908	4.100	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
18	17623997	4.250	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
19	17624290	4.110	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
20	17625553	4.460	INJ0	DAWN	DRY	MOTOR VEHICLE (PARKED)	SIDESWIPE SAME
21	17635682	4.148	INJ0	DAY	WET	TREE	NO COLLISION W/MV
22	17643711	4.300	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
23	17659900	4.100	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
24	17659901	4.100	INJ0	DARK	DRY	MOTOR VEHICLE (STOPPED)	REAR END
25	17661708	4.110	INJ1	DAY	DRY	TREE	NO COLLISION W/MV
26	17670407	4.288	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
27	17675058	4.100	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
28	17680917	4.090	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
29	18501890	4.255	INJ0	DAY	ICE	OVERTURN/ROLLOVER	NO COLLISION W/MV
30	18502572	4.192	INJ2	DAY	DRY	TREE	NO COLLISION W/MV
31	18507539	4.181	INJ0	DAY	DRY	DITCH	NO COLLISION W/MV
32	18532372	4.048	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
33	18544623	4.175	INJ1	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END

Section Crashes

34	18563502	4.110	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
35	18609288	4.338	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
36	18618728	4.223	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	NO COLLISION W/MV
37	18639173	4.299	INJ0	DARK	DRY	ANIMAL (DEER ONLY)	NO COLLISION W/MV
38	18684298	4.210	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
39	18688718	4.141	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END

MPT 4.500 to 5.000 (Stack #10)

Total Crashes: 18 Light: 14 Dark: 4 Dry: 14 Wet: 4 Fatalities: 0 Injuries: 1 PDO: 17

1	16017502	4.780	INJ0	DARK	DRY	GUARDRAIL FACE	NO COLLISION W/MV
2	16674574	4.857	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
3	16676497	4.652	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
4	17520177	4.800	INJ0	DAY	DRY	OTHER MOVABLE OBJECT	NO COLLISION W/MV
5	17570897	4.600	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
6	17572257	4.735	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
7	17601338	4.729	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
8	17663798	4.818	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
9	17679117	4.900	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END
10	17682490	4.969	INJ0	DAY	DRY	MEDIAN BARRIER	NO COLLISION W/MV
11	18528562	4.871	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
12	18570931	4.854	INJ0	DARK	DRY	MEDIAN BARRIER	NO COLLISION W/MV
13	18572422	4.533	INJ0	DARK	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END
14	18587591	4.567	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
15	18667880	4.599	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
16	18671675	4.855	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
17	18691283	4.510	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
18	18691284	4.500	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 5.000 to 5.500 (Stack #11)

Total Crashes: 44 Light: 33 Dark: 11 Dry: 35 Wet: 9 Fatalities: 1 Injuries: 8 PDO: 35

1	16010483	5.410	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
2	16012719	5.210	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
3	16013508	5.480	INJ1	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
4	16015103	5.110	INJ1	DARK	WET	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
5	16015909	5.350	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
6	16024298	5.110	INJ0	DAY	WET	DITCH	NO COLLISION W/MV
7	16644875	5.110	INJ1	DARK	DRY	PEDESTRIAN	NO COLLISION W/MV
8	16653325	5.152	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

Section Crashes

9	16677938	5.375	INJ0	DUSK	DRY	MOTOR VEHICLE (STOPPED)	REAR END
10	17535482	5.182	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	BACKED INTO
11	17537935	5.200	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
12	17563638	5.470	INJ0	DAY	WET	BRIDGE PARAPET END	NO COLLISION W/MV
13	17577823	5.210	INJ0	DAY	DRY	MEDIAN BARRIER	NO COLLISION W/MV
14	17582551	5.100	INJ0	DAY	DRY	EQUIPMENT FAILURE	NO COLLISION W/MV
15	17584071	5.200	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	ANGLE
16	17591918	5.110	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
17	17600533	5.080	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END
18	17611374	5.110	INJ1	DAY	DRY	OTHER MOVABLE OBJECT	NO COLLISION W/MV
19	17611382	5.110	INJ0	DAY	DRY	GUARDRAIL FACE	NO COLLISION W/MV
20	17612142	5.203	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
21	17613809	5.050	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
22	17635985	5.110	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
23	17644080	5.020	INJ0	DARK	WET	DITCH	NO COLLISION W/MV
24	17652073	5.110	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
25	17659598	5.150	INJ0	DARK	DRY	MOTOR VEHICLE (STOPPED)	REAR END
26	17665161	5.110	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
27	17682485	5.340	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
28	17684078	5.110	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
29	18507540	5.161	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
30	18532686	5.274	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
31	18543224	5.356	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
32	18557869	5.075	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
33	18571016	5.161	INJ0	DAY	WET	MOTOR VEHICLE (STOPPED)	REAR END
34	18576095	5.039	INJ1	DAY	DRY	CARGO/EQUIP LOSS OR SHIFT	NO COLLISION W/MV
35	18585443	5.059	INJ1	DUSK	DRY	MEDIAN BARRIER	NO COLLISION W/MV
36	18587593	5.125	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
37	18598302	5.010	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
38	18609283	5.098	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
39	18616647	5.451	INJ0	DUSK	WET	GUARDRAIL FACE	NO COLLISION W/MV
40	18647496	5.366	INJ0	DAY	DRY	TREE	NO COLLISION W/MV
41	18651883	5.110	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
42	18689245	5.000	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
43	18689669	5.202	INJ4	DAY	DRY	TREE	NO COLLISION W/MV
44	18690249	5.144	INJ0	DARK	WET	MOTOR VEHICLE (STOPPED)	SIDESWIPE SAME

Section Crashes

MPT 5.500 to 6.000 (Stack #12)

Total Crashes: 28 Light: 23 Dark: 5 Dry: 24 Wet: 4 Fatalities: 0 Injuries: 7 PDO: 21

1	16011897	5.850	INJ0	DARK	WET	MOTOR VEHICLE (IN TRANSPORT)	HEAD ON
2	16645159	5.768	INJ1	DAY	DRY	SPILL (TWO-WHEELED VEH)	REAR END
3	16666654	5.775	INJ1	DUSK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
4	17503325	5.780	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
5	17528701	5.780	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
6	17530857	5.780	INJ0	DAY	DRY	BRIDGE RAIL	REAR END
7	17530908	5.920	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
8	17533726	5.930	INJ0	DAY	DRY	HIGHWAY TRAFFIC SIGN POST	NO COLLISION W/MV
9	17537927	5.850	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	NO COLLISION W/MV
10	17545460	5.820	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
11	17563294	5.690	INJ0	DAY	WET	MOTOR VEHICLE (STOPPED)	SIDESWIPE SAME
12	17591855	5.960	INJ0	DAY	DRY	OTHER MOVABLE OBJECT	NO COLLISION W/MV
13	17604244	5.780	INJ0	DUSK	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END
14	17612139	5.519	INJ1	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
15	17620368	5.550	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
16	17624605	5.754	INJ2	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
17	17655625	5.600	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
18	17665195	5.780	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
19	17683824	5.780	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
20	18502748	5.835	INJ0	DARK	ICE	GUARDRAIL FACE	NO COLLISION W/MV
21	18509106	5.784	INJ0	DARK	DRY	GUARDRAIL END	NO COLLISION W/MV
22	18531407	5.780	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
23	18531408	5.780	INJ0	DAY	DRY	GUARDRAIL FACE	REAR END
24	18585447	5.783	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
25	18587596	5.801	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
26	18626062	5.541	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
27	18626063	5.787	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
28	18684640	5.984	INJ0	DAY	DRY	MEDIAN BARRIER	NO COLLISION W/MV

MPT 6.000 to 6.500 (Stack #13)

Total Crashes: 12 Light: 7 Dark: 5 Dry: 9 Wet: 3 Fatalities: 0 Injuries: 2 PDO: 10

1	16645155	6.399	INJ0	DARK	DRY	ANIMAL (DEER ONLY)	NO COLLISION W/MV
2	16647168	6.403	INJ1	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
3	17508463	6.340	INJ0	DAY	WET	MEDIAN BARRIER	NO COLLISION W/MV
4	17577820	6.380	INJ0	DAWN	DRY	DITCH	NO COLLISION W/MV

Section Crashes

5	17600405	6.200	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
6	17616667	6.030	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
7	17662526	6.430	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
8	18500009	6.350	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
9	18539405	6.238	INJ0	DAWN	DRY	ANIMAL (DEER ONLY)	NO COLLISION W/MV
10	18670327	6.356	INJ0	DARK	WET	TREE	NO COLLISION W/MV
11	18673835	6.012	INJ0	DAY	WET	MEDIAN BARRIER	NO COLLISION W/MV
12	18690141	6.085	INJ0	DAY	DRY	FENCE	NO COLLISION W/MV

MPT 6.500 to 7.000 (Stack #14)

Total Crashes: 9 Light: 6 Dark: 3 Dry: 5 Wet: 4 Fatalities: 0 Injuries: 2 PDO: 7

1	16011706	6.780	INJ0	DARK	WET	GUARDRAIL FACE	NO COLLISION W/MV
2	16015779	6.567	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
3	16024294	6.850	INJ0	DARK	WET	MEDIAN BARRIER	NO COLLISION W/MV
4	17537929	6.990	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
5	17550794	6.690	INJ0	DARK	DRY	WORK ZONE MAINT. EQUIPMENT	SIDESWIPE SAME
6	17611357	6.667	INJ1	DAY	DRY	TREE	SIDESWIPE SAME
7	17618516	6.850	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
8	17640547	6.660	INJ2	DAY	WET	TREE	NO COLLISION W/MV
9	18607274	6.781	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 7.000 to 7.500 (Stack #15)

Total Crashes: 23 Light: 19 Dark: 4 Dry: 23 Wet: 0 Fatalities: 0 Injuries: 1 PDO: 22

1	16002894	7.010	INJ0	DAY	DRY	GUARDRAIL FACE	NO COLLISION W/MV
2	16015908	7.110	INJ0	DAY	DRY	OTHER MOVABLE OBJECT	NO COLLISION W/MV
3	16026461	7.168	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
4	16645197	7.440	INJ0	DAY	DRY	MEDIAN BARRIER	NO COLLISION W/MV
5	16675155	7.160	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
6	17534898	7.370	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
7	17537936	7.040	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
8	17602712	7.400	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
9	17604171	7.160	INJ0	DAY	DRY	EQUIPMENT FAILURE	NO COLLISION W/MV
10	17607671	7.370	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
11	17610583	7.268	INJ0	DAY	DRY	GUARDRAIL FACE	SIDESWIPE SAME
12	17610653	7.490	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
13	17621483	7.390	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
14	17661923	7.000	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
15	17683939	7.110	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME

Section Crashes

16	18531403	7.031	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
17	18547719	7.215	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
18	18565015	7.435	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
19	18581445	7.160	INJ0	DAY	DRY	MOTOR VEHICLE (PARKED)	BACKED INTO
20	18581696	7.316	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
21	18587592	7.355	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
22	18684612	7.089	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
23	18686577	7.095	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE

MPT 7.500 to 8.000 (Stack #16)

Total Crashes: 21 Light: 15 Dark: 6 Dry: 15 Wet: 6 Fatalities: 0 Injuries: 6 PDO: 15

1	16020101	7.860	INJ1	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
2	17537943	7.860	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
3	17578702	7.565	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
4	17606915	7.900	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
5	17612143	7.754	INJ0	DARK	WET	FENCE	NO COLLISION W/MV
6	17622109	7.660	INJ2	DAY	WET	DITCH	NO COLLISION W/MV
7	17662547	7.520	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
8	17665178	7.860	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
9	17682486	7.660	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
10	17683938	7.860	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
11	18505589	7.644	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
12	18587590	7.736	INJ0	DAY	WET	CROSS MEDIAN/CENTER	NO COLLISION W/MV
13	18587594	7.856	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
14	18587597	7.756	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
15	18587598	7.530	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
16	18603619	7.600	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
17	18644964	7.706	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
18	18681803	7.768	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
19	18686578	7.579	INJ1	DAY	WET	DITCH	NO COLLISION W/MV
20	18691299	7.722	INJ0	DAY	DRY	GUARDRAIL FACE	NO COLLISION W/MV
21	18691301	7.804	INJ0	DARK	WET	MOTOR VEHICLE (IN TRANSPORT)	ANGLE

MPT 8.000 to 8.500 (Stack #17)

Total Crashes: 37 Light: 29 Dark: 8 Dry: 31 Wet: 6 Fatalities: 1 Injuries: 9 PDO: 27

1	16005867	8.360	INJ0	DARK	DRY	UNKNOWN MOVABLE OBJECT	NO COLLISION W/MV
2	16006769	8.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
3	16006770	8.160	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME

Section Crashes

4	16011413	8.160	INJ2	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
5	16011415	8.150	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
6	16011417	8.160	INJ0	DARK	DRY	TREE	NO COLLISION W/MV
7	16011420	8.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
8	16011422	8.350	INJ1	DUSK	WET	GUARDRAIL FACE	NO COLLISION W/MV
9	16015101	8.160	INJ4	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
10	16015102	8.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
11	17013682	8.160	INJ3	DARK	DRY	GUARDRAIL FACE	NO COLLISION W/MV
12	17558538	8.160	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
13	17583114	8.080	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
14	17594407	8.160	INJ1	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
15	17611336	8.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
16	17611383	8.160	INJ0	DAY	DRY	MEDIAN BARRIER	NO COLLISION W/MV
17	17611896	8.370	INJ0	DAY	WET	DITCH	NO COLLISION W/MV
18	17621482	8.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
19	17630610	8.160	INJ0	DAY	DRY	TREE	NO COLLISION W/MV
20	17646065	8.160	INJ1	DAY	WET	SPILL (TWO-WHEELED VEH)	NO COLLISION W/MV
21	17646649	8.160	INJ0	DARK	DRY	FENCE	NO COLLISION W/MV
22	17677818	8.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
23	17682489	8.070	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
24	18539409	8.174	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
25	18541490	8.451	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
26	18541717	8.461	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
27	18543223	8.095	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
28	18565537	8.416	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
29	18569141	8.386	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END
30	18583511	8.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
31	18596245	8.160	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
32	18607720	8.321	INJ0	DARK	WET	MEDIAN BARRIER	NO COLLISION W/MV
33	18615111	8.315	INJ1	DAY	DRY	GUARDRAIL FACE	NO COLLISION W/MV
34	18659748	8.230	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
35	18668438	8.060	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
36	18687731	8.185	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
37	18687822	8.288	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 8.500 to 9.000 (Stack #18)

Total Crashes: 13 Light: 11 Dark: 2 Dry: 9 Wet: 4 Fatalities: 0 Injuries: 1 PDO: 12

1	16659133	8.564	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME

Section Crashes

2	16674609	8.784	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
3	17530860	8.860	INJ3	DAY	DRY	OVERTURN/ROLLOVER	NO COLLISION W/MV
4	17537928	8.530	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
5	17558543	8.660	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
6	17608312	8.672	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END
7	17683825	8.660	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
8	18561223	8.924	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
9	18597735	8.684	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END
10	18616648	8.906	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END
11	18666638	8.718	INJ0	DAY	DRY	DITCH	NO COLLISION W/MV
12	18688717	8.677	INJ0	DARK	WET	OTHER MOVABLE OBJECT	NO COLLISION W/MV
13	18689633	8.633	INJ0	DARK	DRY	MOTOR VEHICLE (STOPPED)	REAR END

MPT 9.000 to 9.500 (Stack #19)

Total Crashes: 9 Light: 7 Dark: 2 Dry: 7 Wet: 2 Fatalities: 0 Injuries: 1 PDO: 8

1	16018154	9.160	INJ3	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
2	17577801	9.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
3	17621376	9.490	INJ0	DAY	WET	TREE	NO COLLISION W/MV
4	17622111	9.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
5	17638595	9.160	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
6	17665095	9.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
7	17665150	9.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
8	17667312	9.310	INJ0	DARK	WET	MEDIAN BARRIER	NO COLLISION W/MV
9	18609286	9.029	INJ0	DAY	DRY	TREE	NO COLLISION W/MV

MPT 9.500 to 10.000 (Stack #20)

Total Crashes: 5 Light: 3 Dark: 2 Dry: 4 Wet: 1 Fatalities: 0 Injuries: 2 PDO: 3

1	16674572	9.999	INJ1	DUSK	WET	TREE	NO COLLISION W/MV
2	17562269	9.860	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
3	18532935	9.970	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
4	18609290	9.802	INJ0	DAY	DRY	MEDIAN BARRIER	NO COLLISION W/MV
5	18629144	9.550	INJ2	DAY	DRY	OVERTURN/ROLLOVER	NO COLLISION W/MV

MPT 10.000 to 10.500 (Stack #21)

Total Crashes: 22 Light: 18 Dark: 4 Dry: 22 Wet: 0 Fatalities: 0 Injuries: 4 PDO: 18

1	16007845	10.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
2	16011411	10.160	INJ0	DAY	DRY	TREE	NO COLLISION W/MV
3	16011895	10.160	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END

Section Crashes

4	16597034	10.178	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
5	17503327	10.100	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
6	17522395	10.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
7	17530310	10.470	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
8	17530855	10.160	INJ0	DARK	DRY	GUARDRAIL FACE	NO COLLISION W/MV
9	17535284	10.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
10	17548595	10.090	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
11	17582985	10.160	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
12	17582995	10.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
13	17583000	10.460	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
14	17670374	10.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
15	18600782	10.311	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
16	18606886	10.089	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
17	18607351	10.284	INJ2	DARK	DRY	OVERTURN/ROLLOVER	NO COLLISION W/MV
18	18611173	10.440	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
19	18616644	10.192	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
20	18660922	10.298	INJ0	DARK	DRY	MOTOR VEHICLE (STOPPED)	REAR END
21	18665827	10.459	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
22	18690328	10.455	INJ0	DAY	DRY	DITCH	NO COLLISION W/MV

MPT 10.500 to 11.000 (Stack #22)

Total Crashes: 11 Light: 11 Dark: 0 Dry: 11 Wet: 0 Fatalities: 0 Injuries: 3 PDO: 8

1	16005145	10.690	INJ1	DAY	DRY	DITCH	NO COLLISION W/MV
2	16659687	10.745	INJ0	DAY	DRY	MOTOR VEHICLE (OTHER ROADWAY)	REAR END
3	16666657	10.763	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
4	17594404	10.788	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
5	17637824	10.820	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	NO COLLISION W/MV
6	17660048	10.910	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
7	17670359	10.690	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	HEAD ON
8	18507545	10.660	INJ2	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
9	18587589	10.693	INJ0	DAY	DRY	CROSS MEDIAN/CENTER	SIDESWIPE SAME
10	18587595	10.563	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
11	18670324	10.915	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 11.000 to 11.500 (Stack #23)

Total Crashes: 10 Light: 7 Dark: 3 Dry: 8 Wet: 2 Fatalities: 0 Injuries: 6 PDO: 4

1	16018148	11.160	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
2	16020077	11.016	INJ1	DAY	DRY	EQUIPMENT FAILURE	NO COLLISION W/MV

Section Crashes

3	16020079	11.490	INJ3	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
4	16627543	11.368	INJ0	DARK	WET	TREE	NO COLLISION W/MV
5	17505016	11.220	INJ1	DAY	WET	MEDIAN BARRIER	NO COLLISION W/MV
6	17535285	11.160	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
7	17621067	11.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
8	17621481	11.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
9	18611191	11.160	INJ1	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
10	18615074	11.159	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 11.500 to 12.000 (Stack #24)

Total Crashes: 14 Light: 9 Dark: 5 Dry: 11 Wet: 3 Fatalities: 0 Injuries: 3 PDO: 11

1	16545361	11.666	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
2	17537934	11.660	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
3	17548555	11.801	INJ0	DARK	DRY	ANIMAL (ALL OTHER)	ANGLE
4	17555342	11.690	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
5	17555343	11.690	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
6	17577791	11.940	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
7	17593301	11.660	INJ2	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
8	17597365	11.960	INJ1	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
9	18513285	11.660	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
10	18606195	11.771	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	NO COLLISION W/MV
11	18659745	11.737	INJ0	DARK	WET	OTHER NONCOLLISION	NO COLLISION W/MV
12	18660341	11.840	INJ1	DARK	WET	HIGHWAY TRAFFIC SIGN POST	NO COLLISION W/MV
13	18663378	11.810	INJ0	DARK	WET	GUARDRAIL FACE	NO COLLISION W/MV
14	18690231	11.796	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END

MPT 12.000 to 12.500 (Stack #25)

Total Crashes: 16 Light: 9 Dark: 7 Dry: 14 Wet: 2 Fatalities: 0 Injuries: 6 PDO: 10

1	16018161	12.077	INJ0	DARK	DRY	DITCH	NO COLLISION W/MV
2	16645200	12.103	INJ0	DARK	DRY	DITCH	NO COLLISION W/MV
3	16671023	12.334	INJ1	DARK	WET	TREE	NO COLLISION W/MV
4	17537941	12.160	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
5	17542268	12.490	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
6	17570511	12.160	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
7	17610322	12.440	INJ0	DAY	DRY	TREE	NO COLLISION W/MV
8	17618857	12.420	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
9	17633788	12.160	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
10	17666213	12.490	INJ0	DAY	DRY	TREE	NO COLLISION W/MV

Section Crashes

11	18606196	12.192	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
12	18615073	12.468	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
13	18616643	12.204	INJ1	DAY	DRY	OVERTURN/ROLLOVER	ANGLE
14	18625490	12.159	INJ1	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
15	18666515	12.242	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
16	18667879	12.160	INJ0	DUSK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 12.500 to 13.000 (Stack #26)

Total Crashes: 6 Light: 5 Dark: 1 Dry: 6 Wet: 0 Fatalities: 0 Injuries: 2 PDO: 4

1	17522397	12.812	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
2	17549182	12.660	INJ0	DAY	DRY	DITCH	NO COLLISION W/MV
3	17558540	12.690	INJ1	DAY	DRY	ANIMAL (ALL OTHER)	REAR END
4	17630181	12.930	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
5	18607350	12.858	INJ2	DARK	DRY	TREE	NO COLLISION W/MV
6	18634696	12.964	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE

MPT 13.000 to 13.500 (Stack #27)

Total Crashes: 27 Light: 18 Dark: 9 Dry: 23 Wet: 4 Fatalities: 0 Injuries: 4 PDO: 23

1	16002898	13.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
2	16011418	13.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
3	16513669	13.248	INJ3	DARK	WET	TREE	NO COLLISION W/MV
4	16514320	13.081	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
5	16529055	13.019	INJ3	DAY	DRY	TREE	NO COLLISION W/MV
6	16541490	13.205	INJ2	DAY	WATER (STANDING, ETC)	TREE	NO COLLISION W/MV
7	16576343	13.179	INJ0	DAWN	DRY	DITCH	NO COLLISION W/MV
8	16593095	13.368	INJ0	DAY	DRY	TREE	NO COLLISION W/MV
9	16627156	13.146	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
10	16672283	13.262	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
11	17541145	13.090	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
12	17545448	13.160	INJ0	DARK	WET	TREE	NO COLLISION W/MV
13	17568253	13.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
14	17583225	13.490	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
15	17622110	13.160	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
16	17627456	13.292	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
17	17660047	13.220	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
18	18511518	13.043	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

Section Crashes

19	18539410	13.001	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
20	18590821	13.028	INJ2	DAY	DRY	DITCH	NO COLLISION W/MV
21	18597308	13.486	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
22	18600150	13.175	INJ0	DARK	DRY	TREE	NO COLLISION W/MV
23	18627270	13.057	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
24	18634956	13.225	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
25	18635897	13.412	INJ0	DAY	WET	MOTOR VEHICLE (STOPPED)	REAR END
26	18685042	13.249	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
27	18689691	13.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 13.500 to 14.000 (Stack #28)

Total Crashes: 13 Light: 12 Dark: 1 Dry: 12 Wet: 1 Fatalities: 0 Injuries: 0 PDO: 13

1	16002897	13.690	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
2	16578032	13.571	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
3	16589934	13.937	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
4	16619941	13.838	INJ0	DAY	DRY	OVERTURN/ROLLOVER	NO COLLISION W/MV
5	16645091	13.961	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
6	17523841	13.890	INJ0	DARK	WET	TREE	NO COLLISION W/MV
7	17616678	13.910	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
8	17660050	13.520	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
9	17675050	13.690	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
10	17675762	13.590	INJ0	DAY	DRY	TREE	NO COLLISION W/MV
11	17678769	13.890	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
12	18563557	13.925	INJ0	DAY	DRY	OTHER MOVABLE OBJECT	NO COLLISION W/MV
13	18667394	13.750	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 14.000 to 14.500 (Stack #29)

Total Crashes: 17 Light: 15 Dark: 2 Dry: 13 Wet: 4 Fatalities: 1 Injuries: 1 PDO: 15

1	16527511	14.401	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
2	16542574	14.009	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
3	17515654	14.490	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
4	17533715	14.290	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
5	17566840	14.160	INJ0	DAY	DRY	TREE	REAR END
6	17568508	14.190	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
7	17576798	14.160	INJ0	DAY	WET	GUARDRAIL FACE	NO COLLISION W/MV
8	17652461	14.080	INJ0	DAY	DRY	MEDIAN BARRIER	NO COLLISION W/MV
9	17659893	14.290	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
10	18552272	14.033	INJ0	DAY	WET	DITCH	NO COLLISION W/MV

Section Crashes

11	18635348	14.265	INJ1	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END
12	18638569	14.189	INJ0	DAY	DRY	TREE	NO COLLISION W/MV
13	18638573	14.190	INJ0	DAY	DRY	TREE	NO COLLISION W/MV
14	18646441	14.086	INJ4	DUSK	WET	DITCH	NO COLLISION W/MV
15	18655525	14.240	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
16	18667750	14.256	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
17	18688675	14.195	INJ0	DARK	DRY	DITCH	NO COLLISION W/MV

MPT 14.500 to 15.000 (Stack #30)

Total Crashes: 21 Light: 14 Dark: 7 Dry: 16 Wet: 5 Fatalities: 0 Injuries: 2 PDO: 19

1	16548537	14.602	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
2	16579651	14.781	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
3	16597349	14.519	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
4	16627549	14.522	INJ0	DARK	WET	TREE	NO COLLISION W/MV
5	16663875	14.800	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
6	17540190	14.690	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
7	17654370	14.660	INJ0	DARK	DRY	OTHER MOVABLE OBJECT	NO COLLISION W/MV
8	17664511	14.590	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
9	18500642	14.911	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
10	18503553	14.877	INJ0	DAY	ICE	TREE	NO COLLISION W/MV
11	18517510	14.628	INJ0	DAY	WET	TREE	NO COLLISION W/MV
12	18525088	14.583	INJ0	DAWN	DRY	TREE	NO COLLISION W/MV
13	18545685	14.724	INJ0	DARK	WET	TREE	NO COLLISION W/MV
14	18570937	14.591	INJ0	DAY	WET	TREE	NO COLLISION W/MV
15	18580124	14.919	INJ3	DUSK	DRY	GUARDRAIL FACE	NO COLLISION W/MV
16	18601388	14.896	INJ2	DAY	DRY	OVERTURN/ROLLOVER	NO COLLISION W/MV
17	18602840	14.921	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
18	18623508	14.682	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
19	18625913	14.899	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
20	18654851	14.762	INJ0	DARK	DRY	TREE	NO COLLISION W/MV
21	18667396	14.922	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 15.000 to 15.500 (Stack #31)

Total Crashes: 24 Light: 17 Dark: 7 Dry: 20 Wet: 4 Fatalities: 1 Injuries: 6 PDO: 17

1	16542583	15.384	INJ2	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
2	16546258	15.023	INJ1	DAWN	DRY	TREE	NO COLLISION W/MV
3	16561925	15.109	INJ0	DAY	DRY	TREE	NO COLLISION W/MV
4	16578035	15.318	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

Section Crashes

5	16580880	15.367	INJ2	DAY	WET	TREE	NO COLLISION W/MV
6	16625523	15.385	INJ1	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
7	16627550	15.371	INJ0	DARK	WET	TREE	ANGLE
8	16653863	15.306	INJ2	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
9	16656303	15.106	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
10	16666938	15.254	INJ0	DARK	DRY	DITCH	NO COLLISION W/MV
11	16672285	15.421	INJ0	DAY	DRY	OTHER MOVABLE OBJECT	NO COLLISION W/MV
12	17516655	15.010	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
13	17543650	15.160	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
14	17548540	15.380	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
15	17587547	15.460	INJ4	DARK	WET	TREE	NO COLLISION W/MV
16	17607837	15.210	INJ0	DUSK	WET	TREE	NO COLLISION W/MV
17	17631146	15.080	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
18	18500136	15.377	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
19	18528489	15.053	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
20	18584597	15.336	INJ0	DAY	DRY	OTHER MOVABLE OBJECT	NO COLLISION W/MV
21	18600158	15.224	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
22	18671389	15.241	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
23	18684234	15.389	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
24	18690092	15.112	INJ1	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END

MPT 15.500 to 16.000 (Stack #32)

Total Crashes: 27 Light: 16 Dark: 11 Dry: 11 Wet: 16 Fatalities: 1 Injuries: 8 PDO: 18

1	16010485	15.690	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
2	16501792	15.636	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
3	16502172	15.649	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
4	16513668	15.796	INJ4	DARK	DRY	TREE	NO COLLISION W/MV
5	16532202	15.853	INJ0	DARK	WET	TREE	NO COLLISION W/MV
6	16593296	15.810	INJ0	DAY	DRY	OTHER MOVABLE OBJECT	NO COLLISION W/MV
7	16615102	15.502	INJ0	DARK	WET	OVERTURN/ROLLOVER	NO COLLISION W/MV
8	16615206	15.860	INJ1	DARK	WET	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
9	16617590	15.715	INJ0	DARK	WET	TREE	NO COLLISION W/MV
10	16639434	15.952	INJ1	DUSK	WET	MOTOR VEHICLE (STOPPED)	REAR END
11	16644617	15.804	INJ0	DARK	DRY	TREE	NO COLLISION W/MV
12	17542270	15.670	INJ2	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
13	17593709	15.690	INJ2	DARK	WET	TREE	NO COLLISION W/MV
14	17621646	15.610	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
15	17626223	15.890	INJ0	DAY	WET	DITCH	NO COLLISION W/MV

Section Crashes

16	17637987	15.730	INJ2	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
17	17666751	15.870	INJ0	DUSK	WET	TREE	NO COLLISION W/MV
18	18512039	15.715	INJ0	DAY	WET	DITCH	NO COLLISION W/MV
19	18570938	15.885	INJ0	DAY	WET	HIGHWAY TRAFFIC SIGN POST	NO COLLISION W/MV
20	18601909	15.917	INJ2	DAY	WET	TREE	NO COLLISION W/MV
21	18618764	15.890	INJ0	DAY	WET	MEDIAN BARRIER	NO COLLISION W/MV
22	18626957	15.881	INJ0	DAY	WET	HIGHWAY TRAFFIC SIGN POST	NO COLLISION W/MV
23	18636692	15.820	INJ1	DARK	DRY	TREE	NO COLLISION W/MV
24	18638576	15.638	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
25	18674604	15.622	INJ3	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
26	18676698	15.882	INJ0	DAY	WET	HIGHWAY TRAFFIC SIGN POST	NO COLLISION W/MV
27	18690593	15.938	INJ0	DARK	WET	TREE	NO COLLISION W/MV

MPT 16.000 to 16.500 (Stack #33)

Total Crashes: 19 Light: 10 Dark: 9 Dry: 6 Wet: 13 Fatalities: 0 Injuries: 3 PDO: 16

1	16528404	16.228	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
2	16536003	16.186	INJ0	DARK	WET	TREE	NO COLLISION W/MV
3	16565044	16.198	INJ0	DARK	WET	TREE	NO COLLISION W/MV
4	16595864	16.188	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
5	17013304	16.190	INJ0	DAY	WET	MEDIAN BARRIER	NO COLLISION W/MV
6	17540979	16.180	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
7	17620034	16.470	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
8	17622449	16.230	INJ0	DARK	DRY	MOTOR VEHICLE (STOPPED)	REAR END
9	17634234	16.380	INJ0	DAY	DRY	OTHER MOVABLE OBJECT	NO COLLISION W/MV
10	17659597	16.370	INJ1	DAY	WET	TREE	NO COLLISION W/MV
11	18569561	16.198	INJ2	DARK	WET	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
12	18600143	16.084	INJ0	DAY	WET	TREE	NO COLLISION W/MV
13	18600153	16.276	INJ0	DARK	WET	MEDIAN BARRIER	NO COLLISION W/MV
14	18604374	16.209	INJ1	DARK	WET	MEDIAN BARRIER	NO COLLISION W/MV
15	18631467	16.028	INJ0	DAY	WET	DITCH	NO COLLISION W/MV
16	18644278	16.298	INJ0	DARK	WET	MEDIAN BARRIER	NO COLLISION W/MV
17	18660351	16.329	INJ0	DARK	DRY	MEDIAN BARRIER	NO COLLISION W/MV
18	18678251	16.001	INJ0	DAY	WET	DITCH	NO COLLISION W/MV
19	18679901	16.327	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	ANGLE

MPT 16.500 to 17.000 (Stack #34)

Total Crashes: 23 Light: 19 Dark: 4 Dry: 16 Wet: 7 Fatalities: 0 Injuries: 3 PDO: 20

1	16019624	16.690	INJ0	DARK	DRY	MEDIAN BARRIER	NO COLLISION W/MV

Section Crashes

2	16592574	16.980	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
3	16639461	16.849	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
4	16639462	16.985	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
5	16670659	16.592	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
6	17006969	16.940	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
7	17012125	16.690	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
8	17028522	16.690	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	NO COLLISION W/MV
9	17551864	16.510	INJ1	DAY	DRY	OVERTURN/ROLLOVER	NO COLLISION W/MV
10	17563116	16.970	INJ0	DAY	WET	DITCH	NO COLLISION W/MV
11	17563589	16.690	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
12	17572381	16.690	INJ0	DAY	WET	GUARDRAIL FACE	NO COLLISION W/MV
13	17593055	16.690	INJ0	DAY	WET	MEDIAN BARRIER	NO COLLISION W/MV
14	17600581	16.550	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
15	17609228	16.890	INJ1	DAY	WET	MEDIAN BARRIER	NO COLLISION W/MV
16	17618859	16.570	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
17	17660053	16.510	INJ0	DAY	WATER (STANDING, ETC)	MEDIAN BARRIER	NO COLLISION W/MV
18	18002672	16.690	INJ1	DAY	WET	TREE	NO COLLISION W/MV
19	18012232	16.890	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	BACKED INTO
20	18519229	16.561	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
21	18572091	16.905	INJ0	DAY	WET	DITCH	NO COLLISION W/MV
22	18654856	16.629	INJ0	DAY	DRY	MEDIAN BARRIER	NO COLLISION W/MV
23	18675207	16.672	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 17.000 to 17.500 (Stack #35)

Total Crashes: 18 Light: 11 Dark: 7 Dry: 11 Wet: 7 Fatalities: 1 Injuries: 2 PDO: 15

1	16015481	17.190	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
2	16533791	17.029	INJ0	DARK	WET	MEDIAN BARRIER	NO COLLISION W/MV
3	16548865	17.406	INJ4	DAY	WET	MOTOR VEHICLE (STOPPED)	REAR END
4	16607627	17.307	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
5	16634375	17.102	INJ0	DAY	DRY	HIGHWAY TRAFFIC SIGN POST	NO COLLISION W/MV
6	16648231	17.188	INJ0	DARK	DRY	ANIMAL (DEER ONLY)	NO COLLISION W/MV
7	16648524	17.271	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
8	17013308	17.480	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END
9	17553293	17.230	INJ0	DAWN	WET	MEDIAN BARRIER	NO COLLISION W/MV
10	17563590	17.200	INJ0	DARK	DRY	MEDIAN BARRIER	NO COLLISION W/MV
11	17639182	17.100	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE

Section Crashes

12	18010683	17.340	INJ0	DARK	DRY	ANIMAL (ALL OTHER)	NO COLLISION W/MV
13	18539341	17.194	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
14	18631466	17.313	INJ0	DAY	WET	MEDIAN BARRIER	NO COLLISION W/MV
15	18635304	17.133	INJ0	DAY	WET	MEDIAN BARRIER	NO COLLISION W/MV
16	18669052	17.051	INJ1	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
17	18689492	17.021	INJ0	DARK	WET	MOTOR VEHICLE (STOPPED)	REAR END
18	18690089	17.293	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 17.500 to 18.000 (Stack #36)

Total Crashes: 15 Light: 11 Dark: 4 Dry: 11 Wet: 4 Fatalities: 0 Injuries: 2 PDO: 13

1	16519239	17.943	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
2	16544242	17.661	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
3	16555889	17.794	INJ0	DAY	WET	OVERTURN/ROLLOVER	NO COLLISION W/MV
4	16579992	17.558	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
5	16606632	17.637	INJ2	DAY	DRY	OVERTURN/ROLLOVER	REAR END
6	17009871	17.730	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
7	17009873	17.980	INJ0	DAY	WET	UNKNOWN NON-COLLISION	NO COLLISION W/MV
8	17009874	17.730	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME
9	17013678	17.690	INJ3	DAY	DRY	SPILL (TWO-WHEELED VEH)	NO COLLISION W/MV
10	17566837	17.840	INJ0	DUSK	WET	MEDIAN BARRIER	NO COLLISION W/MV
11	17608289	17.690	INJ0	DAY	WET	TREE	NO COLLISION W/MV
12	17616723	17.690	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
13	17616730	17.930	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
14	17647183	17.930	INJ0	DARK	DRY	UNKNOWN MOVABLE OBJECT	NO COLLISION W/MV
15	18690544	17.573	INJ0	DARK	DRY	UNKNOWN MOVABLE OBJECT	NO COLLISION W/MV

(Calibrated at 2.5)*	Total	F&I	PDO
Predicted Uncalibrated (C/M/Y)	8	2	6
Predicted Calibrated* (C/M/Y)	20	5	15
Observed (C/M/Y)	12	2	10

The roadway appears to be performing approximately / marginally better than expected when compared to the calibrated predictive crash frequencies. The area of focus considered was the disproportional percentage of 'Rear-end' crashes. (46% vs. 27% statewide) Review of half mile segments/crash stacks showed congestion/slowed traffic to be a common cause of the rear end crashes. The areas near ramps appeared to be the hot spot areas, which would typically add additional crashes due to the additional weave movements and conflict points. From review, it appears rear end crashes in these areas were more a function of the congestion due to the ramps, than actual conflict points associated with the ramps. From review of Wet/Dry state of crashes: from MM15.7-16.5 there were 38 crashes, with 24 wet. (64% wet crashes) This area is in a HC. From MM 16.7-17.7, there were 39 crashes, with 14 wet. (36% wet) This area is in a HC. Compared to an average of 19% wet crashes for the 18 mile corridor.

Crashes by Injury Class

		% of Total Crashes	
Fatality Crashes	9	*1%*	*Statewide Average = 1%***
Injury Crashes	130	*19%*	*Statewide Average = 21%*
PDO Crashes	530	*79%*	*Statewide Average = 78%*
Total Crashes	**669**	*100%*	

Proposed countermeasures: To aid in reducing 'Rear-end' crashes and 'Run off the roadway' crashes, which make up approximately 75% of the crashes in this corridor, we recommend the following countermeasures: wider inside paved shoulders, ensure adequate clear zone is provided, and use OGFC in the project area. Additionally, recommend a review of the functionality of each interchange to verify LOS is adequate through the design year.

Crashes By Manner of Collision

		% of Total Crashes	
Rear End	309	*46%*	*Statewide Average = 27%*
Angle	49	*7%*	*Statewide Average = 5%*
Sideswipe	73	*11%*	*Statewide Average = 12%*
Head On	3	*0%*	*Statewide Average = 1%*
Run Off Road	194	*29%*	*Statewide Average = 51%*
Other	41	*6%*	*Statewide Average = 4%*
Total Crashes	**669**	*100%*	
Wet	130	*19%*	

Ramps	NB Exit Lane length	NB Accel lane length	SB Exit Lane length	SB Accel lane length
Welcome Center	Taper	850'	N/A	N/A
US17	225' decel	600'	225' decel	600'
US278	Taper	500'	Taper	650'

(Calibrated at 2.5)*	Total	F&I	PDO
Predicted Uncalibrated (C/M/Y)	8	2	6
Predicted Calibrated* (C/M/Y)	20	5	15
Observed (C/M/Y)	12	2	10

The roadway appears to be performing approximately / marginally better than expected when compared to the calibrated predictive crash frequencies. The area of focus considered was the disproportional percentage of 'Rear-end' crashes. (46% vs. 27% statewide) Review of half mile segments/crash stacks showed congestion/slowed traffic to be a common cause of the rear end crashes. The areas near ramps appeared to be the hot spot areas, which would typically add additional crashes due to the additional weave movements and conflict points. From review, it appears rear end crashes in these areas were more a function of the congestion due to the ramps, than actual conflict points associated with the ramps. From review of Wet/Dry state of crashes: from MM15.7-16.5 there were 38 crashes, with 24 wet. (64% wet crashes) This area is in a HC. From MM 16.7-17.7, there were 39 crashes, with 14 wet. (36% wet) This area is in a HC. Compared to an average of 19% wet crashes for the 18 mile corridor.

Crashes by Injury Class

		% of Total Crashes	
Fatality Crashes	9	*1%*	*Statewide Average = 1%***
Injury Crashes	130	*19%*	*Statewide Average = 21%*
PDO Crashes	530	*79%*	*Statewide Average = 78%*
Total Crashes	**669**	*100%*	

Proposed countermeasures: To aid in reducing 'Rear-end' crashes and 'Run off the roadway' crashes, which make up approximately 75% of the crashes in this corridor, we recommend the following countermeasures: wider inside paved shoulders, ensure adequate clear zone is provided, and use OGFC in the project area. Additionally, recommend a review of the functionality of each interchange to verify LOS is adequate through the design year.

Crashes By Manner of Collision

		% of Total Crashes	
Rear End	309	*46%*	*Statewide Average = 27%*
Angle	49	*7%*	*Statewide Average = 5%*
Sideswipe	73	*11%*	*Statewide Average = 12%*
Head On	3	*0%*	*Statewide Average = 1%*
Run Off Road	194	*29%*	*Statewide Average = 51%*
Other	41	*6%*	*Statewide Average = 4%*
Total Crashes	**669**	*100%*	
Wet	130	*19%*	

Ramps	NB Exit Lane length	NB Accel lane length	SB Exit Lane length	SB Accel lane length
Welcome Center	Taper	850'	N/A	N/A
US17	225' decel	600'	225' decel	600'
US278	Taper	500'	Taper	650'

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18616640	27	5	8656	30	0.267	7/24/2018 0:00	22	0	0		1	2	2	278	0	INDEPENI	10	10	0	1	95
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17674066	27	5	8658	10	0.073	12/16/2017 0:00	60	0	1		3	1	4	13	0	BEES CRE	0	0	21	4	29

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Interactive Highway Safety Design Model

Crash Prediction Evaluation Report

November 15, 2019

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Notice

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Report Overview

Report Generated: Nov 15, 2019 11:54 AM
Report Template: System: Single Page [System] (mlcpm3, Nov 5, 2019 12:13 PM)

Evaluation Date: Fri Nov 15 11:54:28 EST 2019
IHSDM Version: v15.0.0 (Oct 31, 2019)
Crash Prediction Module: v10.0.0 (Oct 31, 2019)

User Name: Eugene Taylor
Organization Name: SCDOT
Phone: 8037371103
E-Mail: taylorea@scdot.org

Project Title: I-95 half mile sample
Project Comment: Created Thu May 09 09:40:08 EDT 2019
Project Unit System: U.S. Customary

Highway Title: I-95 4-lane 2045 no-build
Highway Comment: Copied from I-95 4-lane 2019 current (v1)
Highway Version: 1

Evaluation Title: 2045 no-build
Evaluation Comment: Created Fri Nov 15 11:54:12 EST 2019

Minimum Location: 0.000
Maximum Location: 26+40.000
Policy for Superelevation: AASHTO 2011 U.S. Customary
Calibration: HSM Configuration
Crash Distribution: HSM Configuration
Model/CMF: HSM Configuration
First Year of Analysis: 2045
Last Year of Analysis: 2045
Empirical-Bayes Analysis: None
First Year of Observed Crashes:
Last Year of Observed Crashes:

Disclaimer Regarding Crash Prediction Method

IMPORTANT NOTICE ABOUT COMPARING RESULTS FROM HIGHWAY SAFETY MANUAL FIRST EDITION (2010) MODELS TO RESULTS FROM NEW MODELS DEVELOPED UNDER NCHRP PROJECTS 17-70 AND 17-58

Since the publication of the Highway Safety Manual - First Edition (HSM-1), in 2010 by the American Association of State Highway and Transportation Officials (AASHTO), multiple research efforts have been undertaken through the National Cooperative Highway Research Program (NCHRP) to develop safety performance models for road segment and intersection facility types that were not initially reflected in the HSM-1, in order to expand the breadth and depth of the HSM in the future.

The IHSDM Crash Prediction Module (CPM) is intended as a faithful implementation of HSM Part C predictive methods. As NCHRP projects to develop new predictive methods for the HSM are completed, FHWA works to incorporate the new methods into IHSDM, sometimes in advance of publication in the HSM. The following new crash predictive methods have been accepted by NCHRP project panels and incorporated into IHSDM, while pending AASHTO's approval for incorporation into a future edition of the HSM:

- Roundabouts: completed in 2018 under NCHRP Project 17-70, the new methods will provide improved outcomes for the safety analysis of roundabouts.
- 6+ lane and one-way urban/suburban arterials (including models for segments and intersections): completed under NCHRP Project 17-58.

However, in the absence of local calibration factors (see HSM-1 Part C, Appendix A for guidance on calibration of the predictive models), it is neither appropriate nor advisable to directly compare the results from new models (from NCHRP Projects 17-58 and 17-70) to results from HSM-1 models, as the models were not calibrated to the same base state data sets, and consequently can produce unexpected results. If local calibration factors are available and applied to both new models and HSM-1 models, then it may be appropriate to directly compare the results.*[Note: Work being performed under NCHRP Project 17-72 (Update of Crash Modification Factors for the Highway Safety Manual) is expected to re-calibrate many of the old (HSM-1) and new (e.g., NCHRP 17-70) models to data from a single (or small number of) states, that would allow results from all models to be directly compared.]*

The models produced for NCHRP Project 17-70 have independent value in terms of informing the design of a roundabout and assessing the effects of different design characteristics on the expected safety performance of a roundabout.

The HSM-1 interim method previously included in IHSDM for evaluating roundabouts on urban/suburban arterials (i.e., evaluating an existing intersection and then applying a Crash Modification Factor for replacing the existing intersection with a roundabout) has been deactivated in IHSDM, to minimize any confusion with the new roundabout methodology.

Section Types

Section 1 Evaluation

Section: Section 1
Evaluation Start Location: 0.000
Evaluation End Location: 26+40.000
Functional Class: Freeway

Type of Alignment: Divided, Multilane
Model Category: Freeway Segment
Calibration Factor: FI_MV=1.0; FI_SV=1.0; PDO_MV=1.0; PDO_SV=1.0;

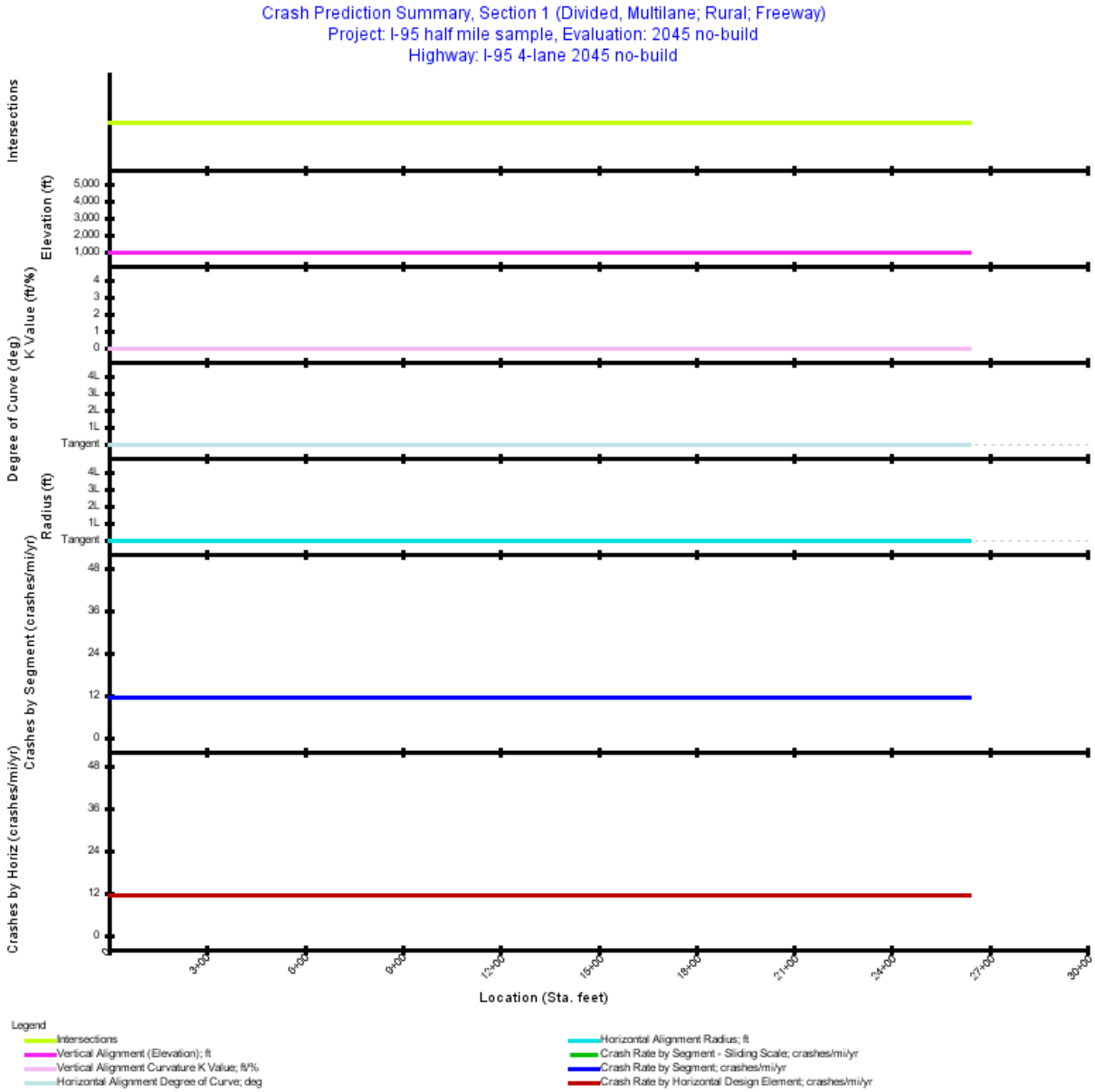

Figure 1. Crash Prediction Summary (Section 1)

Table 1. Evaluation Freeway - Homogeneous Segments (Section 1)

Seg. No.	Type	Area Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length(mi)	AADT	Median Width (ft)	Type	Effective Median Width (ft)
1	4F	Rural	0.000	26+40.000	2,640.00	0.5000	2045: 70,500	65.00	Non-Traversable Median	71.00

Table 2. Predicted Freeway Crash Rates and Frequencies Summary (Section 1)

First Year of Analysis	**2045**
Last Year of Analysis	**2045**
Effective Length (mi)	**0.5000**
Average Future Road AADT (vpd)	**70,500**
Predicted Crashes	
Total Crashes	**5.69**
Fatal and Injury Crashes	**1.53**
Property-Damage-Only Crashes	**4.16**
Percent of Total Predicted Crashes	
Percent Fatal and Injury Crashes (%)	**27**
Percent Property-Damage-Only Crashes (%)	**73**
Predicted Crash Rate	
Crash Rate (crashes/mi/yr)	**11.3738**
FI Crash Rate (crashes/mi/yr)	**3.0602**
PDO Crash Rate (crashes/mi/yr)	**8.3136**
Predicted Travel Crash Rate	
Total Travel (million veh-mi)	**12.87**
Travel Crash Rate (crashes/million veh-mi)	**0.44**
Travel FI Crash Rate (crashes/million veh-mi)	**0.12**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.32**

Note: *Effective Length* is the *segment length* minus the length of the *speed change lanes* if present.

Note: *Total Travel and Crash Rates/Million Vehicle Miles* for *Speed Change Lanes* reflect AADTs that are **half of the Freeway Segment AADTs** based on the assumption of 50/50 directional distribution.

Table 3. Predicted Crash Frequencies and Rates by Freeway Segment/Intersection (Section 1)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Effective Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	26+40.000	0.5000	5.687	5.6869	1.5301	4.1568	11.3738	0.44
Total			0.5000	5.687	5.6869	1.5301	4.1568	11.3738	0.44

Note: *Effective Length* is the *segment length* minus the length of the *speed change lanes* if present. This may create Freeway segments with zero effective length and zero crashes.

Table 4. Predicted Crash Frequencies and Rates by Horizontal Design Element (Section 1)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
Tangent	0.000	26+40.000	0.5000	5.687	5.6869	1.5301	4.1568	11.3738	0.44

Table 5. Predicted Crash Frequencies by Year (Section 1)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2045	5.69	1.53	26.905	4.16	73.095
Total	5.69	1.53	26.905	4.16	73.095
Average	5.69	1.53	26.905	4.16	73.095

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 6. Predicted Crash Severity by Freeway Segment (Section 1)

Seg. No.	Fatal (K) Crashes (crashes)	Incapacitating Injury (A) Crashes (crashes)	Non-Incapacitating Injury (B) Crashes (crashes)	Possible Injury (C) Crashes (crashes)	No Injury (O) Crashes (crashes)
1	0.0626	0.1467	0.6140	0.7067	4.1568

Table 7. Predicted Freeway Crash Type Distribution (Section 1)

Element Type	Crash Type	Fatal and Injury		Property Damage Only		Total	
		Crashes	Crashes (%)	Crashes	Crashes (%)	Crashes	Crashes (%)
Highway Segment	Collision with Animal	0.01	0.1	0.14	2.5	0.15	2.7
Highway Segment	Collision with Fixed Object	0.46	8.0	1.39	24.4	1.84	32.4
Highway Segment	Collision with Other Object	0.03	0.4	0.28	4.9	0.30	5.3
Highway Segment	Other Single-vehicle Collision	0.29	5.2	0.36	6.3	0.66	11.5
Highway Segment	Collision with Parked Vehicle	0.02	0.3	0.05	0.9	0.07	1.2
Highway Segment	Total Single Vehicle Crashes	0.80	14.1	2.22	39.0	3.02	53.1
Highway Segment	Right-Angle Collision	0.04	0.7	0.06	1.0	0.10	1.7
Highway Segment	Head-on Collision	0.01	0.2	0.01	0.1	0.02	0.4
Highway Segment	Other Multi-vehicle Collision	0.04	0.8	0.15	2.7	0.19	3.4
Highway Segment	Rear-end Collision	0.46	8.1	0.98	17.3	1.44	25.4
Highway Segment	Sideswipe, Same Direction Collision	0.17	3.0	0.74	13.0	0.91	16.0
Highway Segment	Total Multiple Vehicle Crashes	0.73	12.8	1.94	34.1	2.67	46.9
Highway Segment	Total Highway Segment Crashes	1.53	26.9	4.16	73.1	5.69	100.0
	Total Crashes	1.53	26.9	4.16	73.1	5.69	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Interactive Highway Safety Design Model

Crash Prediction Evaluation Report

November 15, 2019

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Report Overview

Report Generated: Nov 15, 2019 11:55 AM
Report Template: System: Single Page [System] (mlcpm3, Nov 5, 2019 12:13 PM)

Evaluation Date: Fri Nov 15 11:55:28 EST 2019
IHSDM Version: v15.0.0 (Oct 31, 2019)
Crash Prediction Module: v10.0.0 (Oct 31, 2019)

User Name: Eugene Taylor
Organization Name: SCDOT
Phone: 8037371103
E-Mail: taylorea@scdot.org

Project Title: I-95 half mile sample
Project Comment: Created Thu May 09 09:40:08 EDT 2019
Project Unit System: U.S. Customary

Highway Title: I-95 6-lane w/median wall 2045
Highway Comment: Copied from I-95 half mile sample baseline 6 lane travesable median (v1)
Highway Version: 1

Evaluation Title: 2045 w/median wall
Evaluation Comment: Created Fri Nov 15 11:55:09 EST 2019

Minimum Location: 0.000
Maximum Location: 26+40.000
Policy for Superelevation: AASHTO 2011 U.S. Customary
Calibration: HSM Configuration
Crash Distribution: HSM Configuration
Model/CMF: HSM Configuration
First Year of Analysis: 2045
Last Year of Analysis: 2045
Empirical-Bayes Analysis: None
First Year of Observed Crashes:
Last Year of Observed Crashes:

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- Roundabouts: completed in 2018 under NCHRP Project 17-70, the new methods will provide improved outcomes for the safety analysis of roundabouts.
- 6+ lane and one-way urban/suburban arterials (including models for segments and intersections): completed under NCHRP Project 17-58.

However, in the absence of local calibration factors (see HSM-1 Part C, Appendix A for guidance on calibration of the predictive models), it is neither appropriate nor advisable to directly compare the results from new models (from NCHRP Projects 17-58 and 17-70) to results from HSM-1 models, as the models were not calibrated to the same base state data sets, and consequently can produce unexpected results. If local calibration factors are available and applied to both new models and HSM-1 models, then it may be appropriate to directly compare the results.*[Note: Work being performed under NCHRP Project 17-72 (Update of Crash Modification Factors for the Highway Safety Manual) is expected to re-calibrate many of the old (HSM-1) and new (e.g., NCHRP 17-70) models to data from a single (or small number of) states, that would allow results from all models to be directly compared.]*

The models produced for NCHRP Project 17-70 have independent value in terms of informing the design of a roundabout and assessing the effects of different design characteristics on the expected safety performance of a roundabout.

The HSM-1 interim method previously included in IHSDM for evaluating roundabouts on urban/suburban arterials (i.e., evaluating an existing intersection and then applying a Crash Modification Factor for replacing the existing intersection with a roundabout) has been deactivated in IHSDM, to minimize any confusion with the new roundabout methodology.

Section Types

Section 1 Evaluation

Section: Section 1
Evaluation Start Location: 0.000
Evaluation End Location: 26+40.000
Functional Class: Freeway

Type of Alignment: Divided, Multilane
Model Category: Freeway Segment
Calibration Factor: FI_MV=1.0; FI_SV=1.0; PDO_MV=1.0; PDO_SV=1.0;

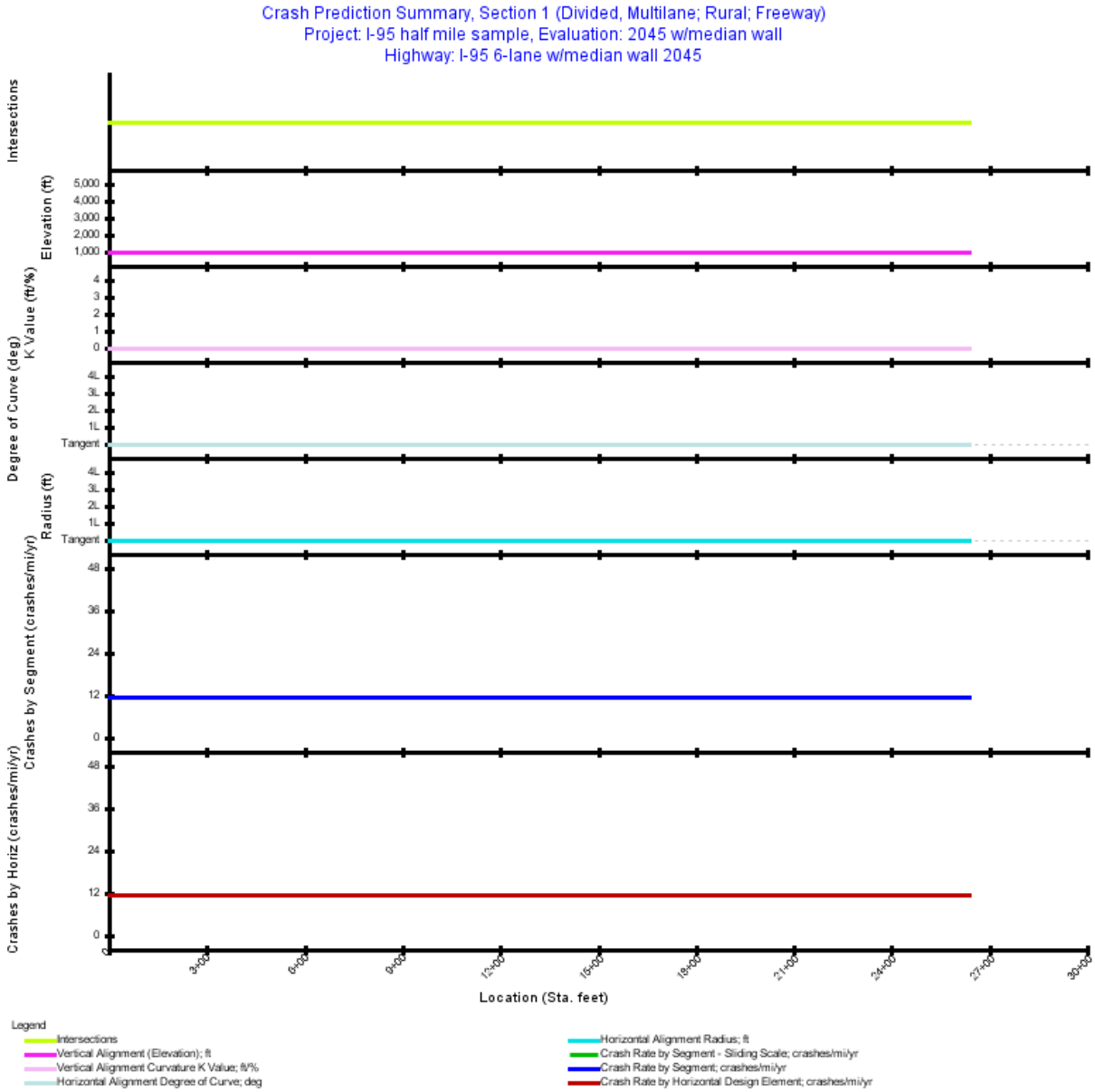

Figure 1. Crash Prediction Summary (Section 1)

Table 1. Evaluation Freeway - Homogeneous Segments (Section 1)

Seg. No.	Type	Area Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length(mi)	AADT	Median Width (ft)	Type	Effective Median Width (ft)
1	6F	Rural	0.000	26+40.000	2,640.00	0.5000	2045: 70,500	0.00	None	0.00

Table 2. Predicted Freeway Crash Rates and Frequencies Summary (Section 1)

First Year of Analysis	**2045**
Last Year of Analysis	**2045**
Effective Length (mi)	**0.5000**
Average Future Road AADT (vpd)	**70,500**
Predicted Crashes	
Total Crashes	**5.80**
Fatal and Injury Crashes	**1.51**
Property-Damage-Only Crashes	**4.29**
Percent of Total Predicted Crashes	
Percent Fatal and Injury Crashes (%)	**26**
Percent Property-Damage-Only Crashes (%)	**74**
Predicted Crash Rate	
Crash Rate (crashes/mi/yr)	**11.5995**
FI Crash Rate (crashes/mi/yr)	**3.0238**
PDO Crash Rate (crashes/mi/yr)	**8.5757**
Predicted Travel Crash Rate	
Total Travel (million veh-mi)	**12.87**
Travel Crash Rate (crashes/million veh-mi)	**0.45**
Travel FI Crash Rate (crashes/million veh-mi)	**0.12**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.33**

Note: *Effective Length* is the *segment length* minus the length of the *speed change lanes* if present.

Note: *Total Travel and Crash Rates/Million Vehicle Miles* for *Speed Change Lanes* reflect AADTs that are **half of the Freeway Segment AADTs** based on the assumption of 50/50 directional distribution.

Table 3. Predicted Crash Frequencies and Rates by Freeway Segment/Intersection (Section 1)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Effective Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	26+40.000	0.5000	5.800	5.7998	1.5119	4.2879	11.5995	0.45
Total			0.5000	5.800	5.7998	1.5119	4.2879	11.5995	0.45

Note: *Effective Length* is the *segment length* minus the length of the *speed change lanes* if present. This may create Freeway segments with zero effective length and zero crashes.

Table 4. Predicted Crash Frequencies and Rates by Horizontal Design Element (Section 1)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
Tangent	0.000	26+40.000	0.5000	5.800	5.7998	1.5119	4.2879	11.5995	0.45

Table 5. Predicted Crash Frequencies by Year (Section 1)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2045	5.80	1.51	26.068	4.29	73.932
Total	5.80	1.51	26.068	4.29	73.932
Average	5.80	1.51	26.068	4.29	73.932

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 6. Predicted Crash Severity by Freeway Segment (Section 1)

Seg. No.	Fatal (K) Crashes (crashes)	Incapacitating Injury (A) Crashes (crashes)	Non-Incapacitating Injury (B) Crashes (crashes)	Possible Injury (C) Crashes (crashes)	No Injury (O) Crashes (crashes)
1	0.0547	0.1323	0.5750	0.7499	4.2879

Table 7. Predicted Freeway Crash Type Distribution (Section 1)

Element Type	Crash Type	Fatal and Injury		Property Damage Only		Total	
		Crashes	Crashes (%)	Crashes	Crashes (%)	Crashes	Crashes (%)
Highway Segment	Collision with Animal	0.01	0.1	0.16	2.8	0.17	3.0
Highway Segment	Collision with Fixed Object	0.45	7.8	1.58	27.2	2.03	34.9
Highway Segment	Collision with Other Object	0.03	0.4	0.32	5.4	0.34	5.9
Highway Segment	Other Single-vehicle Collision	0.29	5.0	0.41	7.0	0.70	12.1
Highway Segment	Collision with Parked Vehicle	0.02	0.3	0.06	1.0	0.08	1.3
Highway Segment	Total Single Vehicle Crashes	0.79	13.7	2.52	43.5	3.31	57.1
Highway Segment	Right-Angle Collision	0.04	0.7	0.05	0.9	0.09	1.6
Highway Segment	Head-on Collision	0.01	0.2	0.01	0.1	0.02	0.3
Highway Segment	Other Multi-vehicle Collision	0.04	0.7	0.14	2.4	0.18	3.1
Highway Segment	Rear-end Collision	0.45	7.8	0.90	15.5	1.35	23.3
Highway Segment	Sideswipe, Same Direction Collision	0.17	2.9	0.67	11.6	0.84	14.5
Highway Segment	Total Multiple Vehicle Crashes	0.72	12.4	1.77	30.5	2.48	42.9
Highway Segment	Total Highway Segment Crashes	1.51	26.1	4.29	73.9	5.80	100.0
	Total Crashes	1.51	26.1	4.29	73.9	5.80	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 8. Evaluation Message

Start Location (Sta. ft)	End Location (Sta. ft)	Message
0.000	26+40.000	for segment #1 (0.000 to 26+40.000), Median barrier offset (0.0 feet) is less than specified boundaries (0.75 feet); adjusted in CMF calculations.
0.000	26+40.000	for segment #1 (0.000 to 26+40.000), Median barrier offset (0.0 feet) is less than specified boundaries (0.75 feet); adjusted in CMF calculations.

Interactive Highway Safety Design Model

Crash Prediction Evaluation Report

November 15, 2019

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Report Overview

Report Generated: Nov 15, 2019 12:00 PM
Report Template: System: Single Page [System] (mlcpm3, Nov 5, 2019 12:13 PM)

Evaluation Date: Fri Nov 15 12:00:01 EST 2019
IHSDM Version: v15.0.0 (Oct 31, 2019)
Crash Prediction Module: v10.0.0 (Oct 31, 2019)

User Name: Eugene Taylor
Organization Name: SCDOT
Phone: 8037371103
E-Mail: taylorea@scdot.org

Project Title: I-95 half mile sample
Project Comment: Created Thu May 09 09:40:08 EDT 2019
Project Unit System: U.S. Customary

Highway Title: I-95 6-lane travesable median 2045
Highway Comment: Copied from I-95 half mile sample baseline (v1)
Highway Version: 1

Evaluation Title: 2045 w/Traversable median & cable barrier
Evaluation Comment: Created Fri Nov 15 11:58:44 EST 2019

Minimum Location: 0.000
Maximum Location: 26+40.000
Policy for Superelevation: AASHTO 2011 U.S. Customary
Calibration: HSM Configuration
Crash Distribution: HSM Configuration
Model/CMF: HSM Configuration
First Year of Analysis: 2045
Last Year of Analysis: 2045
Empirical-Bayes Analysis: None
First Year of Observed Crashes:
Last Year of Observed Crashes:

Disclaimer Regarding Crash Prediction Method

IMPORTANT NOTICE ABOUT COMPARING RESULTS FROM HIGHWAY SAFETY MANUAL FIRST EDITION (2010) MODELS TO RESULTS FROM NEW MODELS DEVELOPED UNDER NCHRP PROJECTS 17-70 AND 17-58

Since the publication of the Highway Safety Manual - First Edition (HSM-1), in 2010 by the American Association of State Highway and Transportation Officials (AASHTO), multiple research efforts have been undertaken through the National Cooperative Highway Research Program (NCHRP) to develop safety performance models for road segment and intersection facility types that were not initially reflected in the HSM-1, in order to expand the breadth and depth of the HSM in the future.

The IHSDM Crash Prediction Module (CPM) is intended as a faithful implementation of HSM Part C predictive methods. As NCHRP projects to develop new predictive methods for the HSM are completed, FHWA works to incorporate the new methods into IHSDM, sometimes in advance of publication in the HSM. The following new crash predictive methods have been accepted by NCHRP project panels and incorporated into IHSDM, while pending AASHTO's approval for incorporation into a future edition of the HSM:

- Roundabouts: completed in 2018 under NCHRP Project 17-70, the new methods will provide improved outcomes for the safety analysis of roundabouts.
- 6+ lane and one-way urban/suburban arterials (including models for segments and intersections): completed under NCHRP Project 17-58.

However, in the absence of local calibration factors (see HSM-1 Part C, Appendix A for guidance on calibration of the predictive models), it is neither appropriate nor advisable to directly compare the results from new models (from NCHRP Projects 17-58 and 17-70) to results from HSM-1 models, as the models were not calibrated to the same base state data sets, and consequently can produce unexpected results. If local calibration factors are available and applied to both new models and HSM-1 models, then it may be appropriate to directly compare the results.*[Note: Work being performed under NCHRP Project 17-72 (Update of Crash Modification Factors for the Highway Safety Manual) is expected to re-calibrate many of the old (HSM-1) and new (e.g., NCHRP 17-70) models to data from a single (or small number of) states, that would allow results from all models to be directly compared.]*

The models produced for NCHRP Project 17-70 have independent value in terms of informing the design of a roundabout and assessing the effects of different design characteristics on the expected safety performance of a roundabout.

The HSM-1 interim method previously included in IHSDM for evaluating roundabouts on urban/suburban arterials (i.e., evaluating an existing intersection and then applying a Crash Modification Factor for replacing the existing intersection with a roundabout) has been deactivated in IHSDM, to minimize any confusion with the new roundabout methodology.

Section Types

Section 1 Evaluation

Section: Section 1
Evaluation Start Location: 0.000
Evaluation End Location: 26+40.000
Functional Class: Freeway

Type of Alignment: Divided, Multilane
Model Category: Freeway Segment
Calibration Factor: FI_MV=1.0; FI_SV=1.0; PDO_MV=1.0; PDO_SV=1.0;

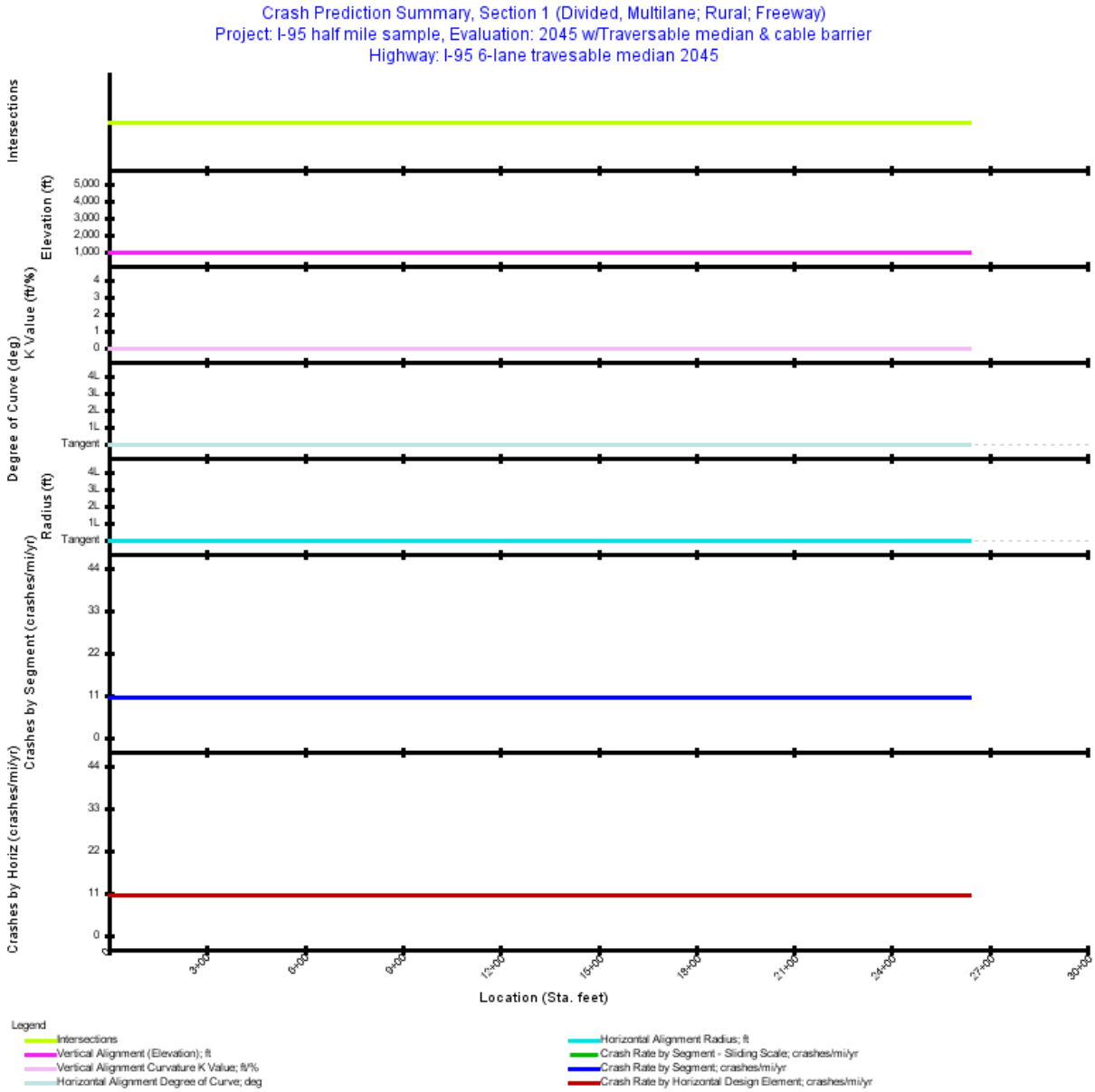

Figure 1. Crash Prediction Summary (Section 1)

Table 1. Evaluation Freeway - Homogeneous Segments (Section 1)

Seg. No.	Type	Area Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length(mi)	AADT	Median Width (ft)	Type	Effective Median Width (ft)
1	6F	Rural	0.000	26+40.000	2,640.00	0.5000	2045: 70,500	27.00	Traversable Median	47.00

Table 2. Predicted Freeway Crash Rates and Frequencies Summary (Section 1)

First Year of Analysis	**2045**
Last Year of Analysis	**2045**
Effective Length (mi)	**0.5000**
Average Future Road AADT (vpd)	**70,500**
Predicted Crashes	
Total Crashes	**5.30**
Fatal and Injury Crashes	**1.35**
Property-Damage-Only Crashes	**3.95**
Percent of Total Predicted Crashes	
Percent Fatal and Injury Crashes (%)	**25**
Percent Property-Damage-Only Crashes (%)	**75**
Predicted Crash Rate	
Crash Rate (crashes/mi/yr)	**10.6107**
FI Crash Rate (crashes/mi/yr)	**2.7054**
PDO Crash Rate (crashes/mi/yr)	**7.9053**
Predicted Travel Crash Rate	
Total Travel (million veh-mi)	**12.87**
Travel Crash Rate (crashes/million veh-mi)	**0.41**
Travel FI Crash Rate (crashes/million veh-mi)	**0.10**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.31**

Note: *Effective Length* is the *segment length* minus the length of the *speed change lanes* if present.

Note: *Total Travel and Crash Rates/Million Vehicle Miles* for *Speed Change Lanes* reflect AADTs that are **half of the Freeway Segment AADTs** based on the assumption of 50/50 directional distribution.

Table 3. Predicted Crash Frequencies and Rates by Freeway Segment/Intersection (Section 1)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Effective Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	26+40.000	0.5000	5.305	5.3053	1.3527	3.9527	10.6107	0.41
Total			0.5000	5.305	5.3053	1.3527	3.9527	10.6107	0.41

Note: *Effective Length* is the *segment length* minus the length of the *speed change lanes* if present. This may create Freeway segments with zero effective length and zero crashes.

Table 4. Predicted Crash Frequencies and Rates by Horizontal Design Element (Section 1)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
Tangent	0.000	26+40.000	0.5000	5.305	5.3053	1.3527	3.9527	10.6107	0.41

Table 5. Predicted Crash Frequencies by Year (Section 1)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2045	5.30	1.35	25.497	3.95	74.503
Total	5.30	1.35	25.497	3.95	74.503
Average	5.30	1.35	25.497	3.95	74.503

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 6. Predicted Crash Severity by Freeway Segment (Section 1)

Seg. No.	Fatal (K) Crashes (crashes)	Incapacitating Injury (A) Crashes (crashes)	Non-Incapacitating Injury (B) Crashes (crashes)	Possible Injury (C) Crashes (crashes)	No Injury (O) Crashes (crashes)
1	0.0489	0.1184	0.5144	0.6709	3.9527

Table 7. Predicted Freeway Crash Type Distribution (Section 1)

Element Type	Crash Type	Fatal and Injury		Property Damage Only		Total	
		Crashes	Crashes (%)	Crashes	Crashes (%)	Crashes	Crashes (%)
Highway Segment	Collision with Animal	0.01	0.1	0.15	2.8	0.16	3.0
Highway Segment	Collision with Fixed Object	0.37	7.0	1.45	27.4	1.82	34.4
Highway Segment	Collision with Other Object	0.02	0.4	0.29	5.5	0.31	5.9
Highway Segment	Other Single-vehicle Collision	0.24	4.6	0.38	7.1	0.62	11.7
Highway Segment	Collision with Parked Vehicle	0.02	0.3	0.05	1.0	0.07	1.3
Highway Segment	Total Single Vehicle Crashes	0.66	12.4	2.32	43.8	2.98	56.2
Highway Segment	Right-Angle Collision	0.04	0.7	0.05	0.9	0.09	1.7
Highway Segment	Head-on Collision	0.01	0.2	0.01	0.1	0.02	0.4
Highway Segment	Other Multi-vehicle Collision	0.04	0.8	0.13	2.4	0.17	3.2
Highway Segment	Rear-end Collision	0.44	8.3	0.83	15.6	1.26	23.9
Highway Segment	Sideswipe, Same Direction Collision	0.17	3.1	0.62	11.7	0.78	14.8
Highway Segment	Total Multiple Vehicle Crashes	0.69	13.1	1.63	30.7	2.32	43.8
Highway Segment	Total Highway Segment Crashes	1.35	25.5	3.95	74.5	5.30	100.0
	Total Crashes	1.35	25.5	3.95	74.5	5.30	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.