

**Traffic Movement Permit Application Addendum
Asylum – Portland, Maine
JN 3131**

Date: May 16, 2016
Subject: TMP Application Addendum
To: Rick Knowland, City of Portland
From: Randy Dunton, Gorrill Palmer (JN 3131)
Copies: Tom Errico, John Kenney

Gorrill Palmer (GP) has prepared this Traffic Movement Permit Application Addendum in response to comments received from the City of Portland and Mr. Thomas Errico at the MaineDOT scoping meeting held on May 2, 2016 at City Hall. It addresses the distribution of the forecast site traffic, additional collision data, and the potential for an all-way stop at the intersection of Free Street and Center Street.

Trip Distribution

The traffic forecast to be generated by the site was originally distributed based on the assumption that traffic would enter the site at Lancaster Lane and the existing traffic patterns at the intersection of Free Street with Center Street. Based on parking information received from VBRC, the site traffic distribution was reassessed to reflect the use of the identified parking area. The Asylum will be utilizing 60 parking spaces in the Midtown parking lot (bounded by Center Street, Free Street, Cross Street, and Spring Street), which will be guaranteed on event nights as coordinated by the Asylum's program director. The updated trip distribution assumes that all traffic going to the Asylum will utilize the manned entrance to the parking area on Free Street. This is a conservative approach, since the parking lot has other accesses that could be used, which would further dissipate the traffic over the adjacent roadway network. The distribution of the site traffic is shown on the attached Figure 2.

Crash Data

The City requested that the collision data include the roadway segments for each leg of the intersection of Free Street / Center Street. GP obtained the three-year crash report from MaineDOT for the period of 2013-2015, the most recent period available, for the additional area (attached). Based on the crash report from MaineDOT and the MaineDOT High Crash Location (HCL) criteria discussed in Section 2 of the TMP Application dated April 14, 2016, there are no HCLs in the vicinity of the site.

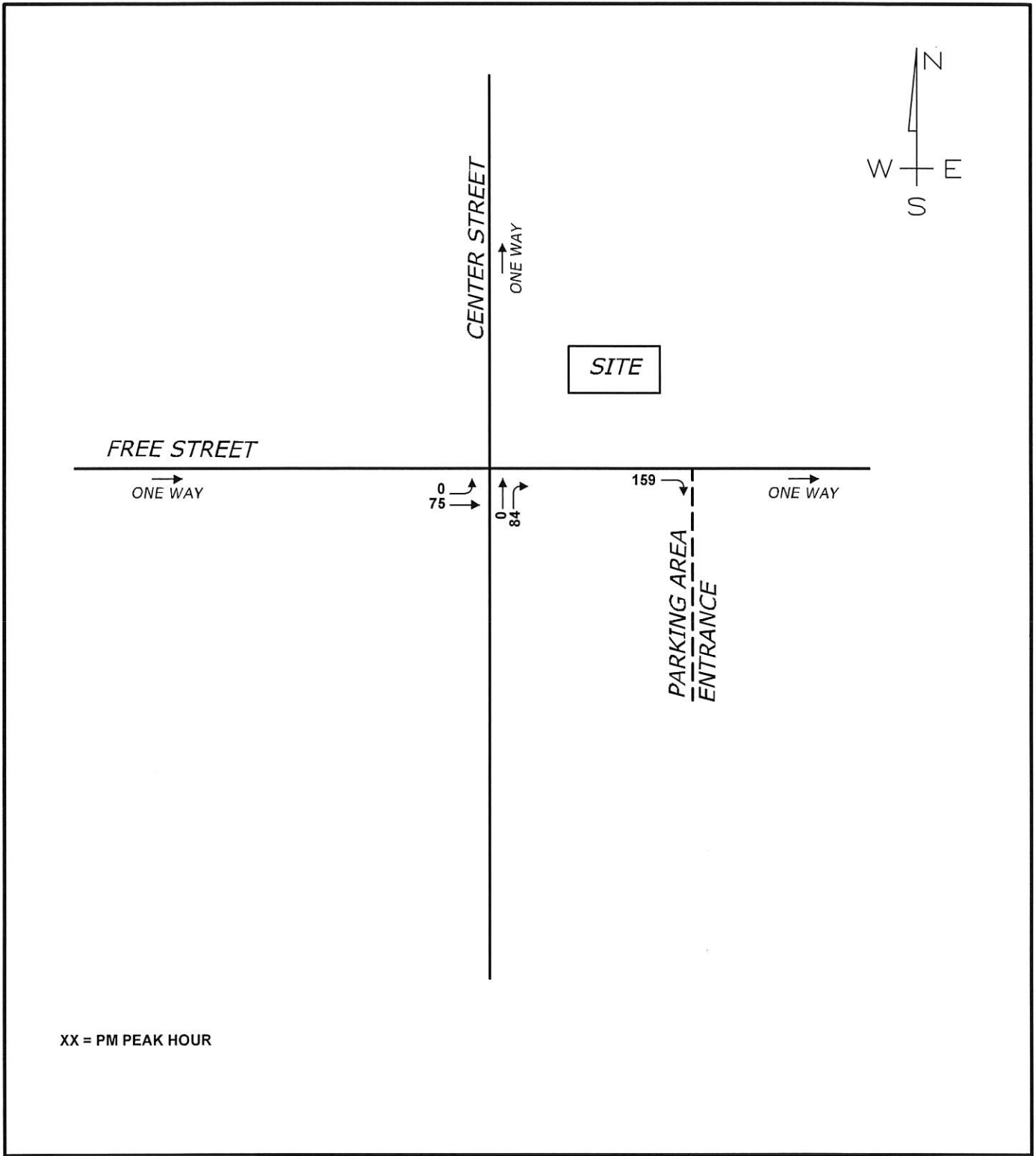


All-Way Stop Analysis

The City suggested considering an all-way stop at the intersection of Free Street with Center Street. Given the one-way traffic patterns, this would result in a total of two STOP signs. Based on the existing traffic volume information (from a turning movement count collected in October 2012), the intersection is not anticipated to warrant an all-way stop using the Manual on Uniform Traffic Control Devices (MUTCD) criteria. However, the pedestrian volumes during a Cross Insurance Arena event may warrant an all-way stop. Based on this information, it is our recommendation that if the City would like to pursue an all-way stop, a traffic count (including pedestrians) should be conducted during a Cross Insurance Arena event and an all-way stop analysis should be completed using the updated traffic volumes. If an all-way stop is warranted, the City could erect an additional STOP sign for the Free Street eastbound traffic.

Trip Assignment

Figure No. 2



ASYLUM EXPANSION PORTLAND, MAINE

Design: ET Scale: NONE
Draft: CG Date: APRIL 2016
Checked: RED File Name: 3131-TRAFF.dwg

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

Crash Summary I Section Detail Crash Summary II 1320 Public 1320 Private 1320 Summary

REPORT DESCRIPTION

Free St

REPORT PARAMETERS

Year 2013, Start Month 1 through Year 2015 End Month: 12

Route: **0560122**

Start Node: **18975**
End Node: **18977**

Start Offset: **0**
End Offset: **0**

Exclude First Node
 Exclude Last Node

Route: **0560297**

Start Node: **19050**
End Node: **18976**

Start Offset: **0**
End Offset: **0**

Exclude First Node
 Exclude Last Node

Route: **0560297**

Start Node: **18976**
End Node: **18973**

Start Offset: **0**
End Offset: **0**

Exclude First Node
 Exclude Last Node

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	K	Injury Crashes			PD	Injury	Percent Annual M	Crash Rate	Critical Rate	CRF
						A	B	C			Ent-Veh			
18975	0560122 - 0.20	Int of CENTER ST SPRING ST	9	12	0	0	1	3	8	33.3	3,505	1.14	1.27	0.00
												Statewide Crash Rate: 0.67		
18976	0560122 - 0.24	0509396 POR,FREE,CENTER ST.	2	4	0	1	0	2	1	75.0	2,402	0.55	0.43	1.29
												Statewide Crash Rate: 0.14		
18977	0560122 - 0.31	Int of CENTER ST, CONGRESS ST	2	7	0	0	0	3	4	42.9	4,560	0.51	0.38	1.34
												Statewide Crash Rate: 0.15		
19050	0560297 - 0.20	0509470 POR,FREE,BROWN ST.	2	2	0	0	0	0	2	0.0	1,884	0.35	0.46	0.00
												Statewide Crash Rate: 0.14		
18970	0560297 - 0.29	0509390 POR,FREE,COTTON ST.1	2	0	0	0	0	0	0	0.0	1,147	0.00	0.51	0.00
												Statewide Crash Rate: 0.14		
18973	0560297 - 0.37	Int of CROSS ST N FREE ST	2	0	0	0	0	0	0	0.0	1,147	0.00	0.51	0.00
												Statewide Crash Rate: 0.14		
Study Years: 3.00				25	0	1	1	8	15	40.0	14,645	0.57	0.46	1.24
NODE TOTALS:				25	0	1	1	8	15	40.0	14,645	0.57	0.46	1.24

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section U/R Length	Total Crashes	K	A	B	C	PD	Injury	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
18975	18976	194658 Int of CENTER ST, SPRING ST	0 - 0.04	0560122 - 0.20 RD INV 05 60122	0.04	2	0	0	0	0	0	0	0.0	0.00041	0.00	1413.24	0.00
18976	18977	194660 0509396 POR, FREE, CENTER ST.	0 - 0.07	0560122 - 0.24 RD INV 05 60122	0.07	2	3	0	0	0	2	2	0.0	0.00072	1392.35	1239.38	1.12
18976	19050	194661 0509396 POR, FREE, CENTER ST.	0 - 0.07	0560297 - 0.20 RD INV 05 60297	0.07	2	1	0	0	0	1	1	0.0	0.00132	252.74	1060.09	0.00
18970	18976	194653 0509390 POR, FREE, COTTON ST.1	0 - 0.02	0560297 - 0.27 RD INV 05 60297	0.02	2	3	0	0	1	2	2	33.3	0.00023	4358.46	1581.57	2.76
18970	18973	194652 0509390 POR, FREE, COTTON ST.1	0 - 0.08	0560297 - 0.29 RD INV 05 60297	0.08	2	3	0	1	0	2	2	33.3	0.00092	1089.61	1164.38	0.00
Section Totals:					0.28	10	0	1	0	1	7	22	20.0	0.00360	926.20	823.46	1.12
Grand Totals:					0.28	35	0	2	1	9	22	34.3	0.00360	3241.70	980.89	3.30	

Study Years: 3.00

Crash Summary

Section Details

Start Node	End Node	Element	Offset Begin - End	Route - MP	Total Crashes	Injury Crashes			Crash Report	Crash Date	Crash Mile Point	Injury Degree
						K	A	B				
18975	18976	194658	0 - 0.04	0560122 - 0.20	0	0	0	0	2015-41236	09/03/2015	0.28	PD
18976	18977	194660	0 - 0.07	0560122 - 0.24	3	0	0	0	2014-18191	07/03/2014	0.29	
									2013-18201	07/24/2013	0.30	PD
18976	19050	194661	0 - 0.07	0560297 - 0.20	1	0	0	0	2015-18045	06/20/2015	0.26	PD
18970	18976	194653	0 - 0.02	0560297 - 0.27	3	0	0	1	2014-28122	10/18/2014	0.28	C
									2014-31870	11/19/2014	0.28	PD
									2015-44355	10/12/2015	0.28	PD
18970	18973	194652	0 - 0.08	0560297 - 0.29	3	0	1	0	2015-47511	11/05/2015	0.32	A
									2015-10249	03/22/2015	0.32	PD
									2013-9641	04/17/2013	0.33	PD

Totals: 10 0 1 0 1 7

Maine Department Of Transportation - Traffic Engineering, Crash Records Section
Crash Summary II - Characteristics

Crashes by Day and Hour

Day Of Week	Hour of Day												Un	Tot									
	12	1	2	3	4	5	6	7	8	9	10	11			12	PM							
SUNDAY	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	
MONDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
TUESDAY	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	5
WEDNESDAY	0	0	0	0	0	0	0	1	0	0	2	1	0	1	0	1	1	0	1	0	0	0	8
THURSDAY	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	2	1	0	1	0	0	8
FRIDAY	0	0	0	0	0	0	0	0	0	0	1	2	0	1	0	1	0	0	0	1	0	0	6
SATURDAY	0	1	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	5
Totals	2	2	1	0	0	0	1	3	0	1	2	2	4	1	2	1	3	3	1	1	2	0	35

Vehicle Counts by Type

Unit Type	Total	Unit Type	Total
1-Passenger Car	46	23-Bicyclist	1
2-(Sport) Utility Vehicle	15	24-Witness	18
3-Passenger Van	1	25-Other	2
4-Cargo Van (10K lbs or Less)	0	Total	92
5-Pickup	3		
6-Motor Home	0		
7-School Bus	1		
8-Transit Bus	0		
9-Motor Coach	0		
10-Other Bus	0		
11-Motorcycle	0		
12-Moped	0		
13-Low Speed Vehicle	0		
14-Autocycle	0		
15-Experimental	0		
16-Other Light Trucks (10,000 lbs or Less)	0		
17-Medium/Heavy Trucks (More than 10,000 lbs)	0		
18-ATV - (4 wheel)	0		
20-ATV - (2 wheel)	0		
21-Snowmobile	0		
22-Pedestrian	5		

Maine Department of Transportation - Traffic Engineering, Crash Records Section
Crash Summary II - Characteristics

Crashes by Driver Action at Time of Crash

Driver Action at Time of Crash	Dr 1	Dr 2	Dr 3	Dr 4	Dr 5	Other	Total
No Contributing Action	14	14	2	0	0	0	30
Ran Off Roadway	0	0	0	0	0	0	0
Failed to Yield Right-of-Way	5	3	0	0	0	0	8
Ran Red Light	2	1	0	0	0	0	3
Ran Stop Sign	1	0	0	0	0	0	1
Disregarded Other Traffic Sign	0	0	0	0	0	0	0
Disregarded Other Road Markings	0	0	0	0	0	0	0
Exceeded Posted Speed Limit	0	0	0	0	0	0	0
Drove Too Fast For Conditions	2	0	0	0	0	0	2
Improper Turn	1	1	0	0	0	0	2
Improper Backing	2	1	0	0	0	0	3
Improper Passing	0	0	0	0	0	0	0
Wrong Way	0	0	0	0	0	0	0
Followed Too Closely	2	3	1	0	0	0	6
Failed to Keep in Proper Lane	0	0	0	0	0	0	0
Operated Motor Vehicle in Erratic, Reckless, Careless, Negligent or Aggressive Manner	0	0	0	0	0	0	0
Swerved or Avoided Due to Wind, Slippery Surface, Motor Vehicle, Object, Non-Motorist in Roadway	0	0	0	0	0	0	0
Over-Correcting/Over-Steering	1	0	0	0	0	0	1
Other Contributing Action	2	1	0	0	0	0	3
Unknown	1	0	0	0	0	0	1
Total	33	24	3	0	0	0	60

Crashes by Apparent Physical Condition And Driver

Apparent Physical Condition	Dr 1	Dr 2	Dr 3	Dr 4	Dr 5	Other	Total
Apparently Normal	32	23	3	0	0	6	64
Physically Impaired or Handicapped	0	0	0	0	0	0	0
Emotional(Depressed, Angry, Disturbed, etc.)	0	0	0	0	0	0	0
Ill (Sick)	0	0	0	0	0	0	0
Asleep or Fatigued	0	0	0	0	0	0	0
Under the Influence of Medications/Drugs/Alcohol	1	1	0	0	0	0	2
Other	0	0	0	0	0	0	0
Total	33	24	3	0	0	6	66

Driver Age by Unit Type

Age	Driver	Bicycle	SnowMobile	Pedestrian	ATV	Total
09-Under	1	0	0	0	0	1
10-14	0	0	0	0	0	0
15-19	5	0	0	0	0	5
20-24	10	0	0	0	0	10
25-29	6	0	0	0	0	6
30-39	15	0	0	0	0	15
40-49	12	0	0	0	0	12
50-59	7	0	0	0	0	7
60-69	5	0	0	0	0	5
70-79	6	0	0	0	0	6
80-Over	0	0	0	0	0	0
Unknown	1	1	0	5	0	7
Total	68	1	0	5	0	74

Crash Summary II - Characteristics

Most Harmful Event		Injury Data		
Most Harmful Event	Total	Severity Code	Injury Crashes	Number Of Injuries
1-Overturn / Rollover	0	K	0	0
2-Fire / Explosion	0	A	2	2
3-Immersion	0	B	1	1
4-Jackknife	0	C	9	18
5-Cargo / Equipment Loss Or Shift	0	PD	22	0
6-Fell / Jumped from Motor Vehicle	0	Total	34	21
7-Thrown or Falling Object	0			
8-Other Non-Collision	0			
9-Pedestrian	4			
10-Pedalcycle	0			
11-Railway Vehicle - Train, Engine	0			
12-Animal	0			
13-Motor Vehicle in Transport	52			
14-Parked Motor Vehicle	9			
15-Struck by Falling, Shifting Cargo or Anything Set in Motion by Motor Vehicle	0			
16-Work Zone / Maintenance Equipment	0			
17-Other Non-Fixed Object	0			
18-Impact Attenuator / Crash Cushion	0			
19-Bridge Overhead Structure	0			
20-Bridge Pier or Support	0			
21-Bridge Rail	0			
22-Cable Barrier	0			
23-Culvert	0			
24-Curb	0			
25-Ditch	0			
26-Embankment	0			
27-Guardrail Face	0			
28-Guardrail End	0			
29-Concrete Traffic Barrier	0			
30-Other Traffic Barrier	0			
31-Tree (Standing)	0			
32-Utility Pole / Light Support	0			
33-Traffic Sign Support	0			
34-Traffic Signal Support	0			
35-Fence	0			
36-Mailbox	0			
37-Other Post Pole or Support	0			
Total	67			

Traffic Control Devices		Road Character	
Traffic Control Device	Total	Road Grade	Total
1-Traffic Signals (Stop & Go)	17	1-Level	17
2-Traffic Signals (Flashing)	0	2-On Grade	15
3-Advisory/Warning Sign	0	3-Top of Hill	0
4-Stop Signs - All Approaches	0	4-Bottom of Hill	3
5-Stop Signs - Other	10	5-Other	0
6-Yield Sign	0	Total	35
7-Curve Warning Sign	0		
8-Officer, Flagman, School Patrol	0		
9-School Bus Stop Arm	0		
10-School Zone Sign	0		
11-R.R. Crossing Device	0		
12-No Passing Zone	0		
13-None	8		
14-Other	0		
Total	35		

Light Condition		Total	
Light Condition	Total	Light Condition	Total
1-Daylight	22	1-Daylight	22
2-Dawn	0	2-Dawn	0
3-Dusk	1	3-Dusk	1
4-Dark - Lighted	11	4-Dark - Lighted	11
5-Dark - Not Lighted	1	5-Dark - Not Lighted	1
6-Dark - Unknown Lighting	0	6-Dark - Unknown Lighting	0
7-Unknown	0	7-Unknown	0
Total	35	Total	35

Maine Department Of Transportation - Traffic Engineering, Crash Records Section
Crash Summary II - Characteristics

Crashes by Year and Month

Month	2013	2014	2015	Total
JANUARY	1	2	1	4
FEBRUARY	0	1	3	4
MARCH	1	1	1	3
APRIL	1	1	0	2
MAY	0	0	2	2
JUNE	0	2	3	5
JULY	2	1	2	5
AUGUST	0	0	0	0
SEPTEMBER	1	1	1	3
OCTOBER	0	1	2	3
NOVEMBER	0	1	1	2
DECEMBER	2	0	0	2
Total	8	11	16	35

Report is limited to the last 10 years of data.

Crash Summary II - Characteristics

Crashes by Crash Type and Type of Location

Crash Type	Straight Road	Curved Road	Three Leg Intersection	Four Leg Intersection	Five or More Leg Intersection	Driveways	Bridges	Interchanges	Other	Parking Lot	Private Way	Cross Over	Railroad Crossing	Total
Object in Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rear End / Sideswipe	7	0	6	4	0	0	0	0	0	0	0	0	0	17
Head-on / Sideswipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Intersection Movement	0	0	2	8	0	1	0	0	0	0	0	0	0	11
Pedestrians	1	0	1	3	0	0	0	0	0	0	0	0	0	5
Train	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Went Off Road	0	0	0	1	0	0	0	0	0	0	0	0	0	1
All Other Animal	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycle	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jackknife	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rollover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Submersion	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thrown or Falling Object	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bear	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deer	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Moose	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turkey	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	9	0	9	16	0	1	0	0	0	0	0	0	0	35

Crash Summary II - Characteristics

Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
Blowing Sand, Soil, Dirt												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Blowing Snow												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Clear												
Dark - Lighted	4	1	0	0	0	0	0	0	0	0	5	10
Dark - Not Lighted	1	0	0	0	0	0	0	0	0	0	0	1
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	13	0	0	0	0	0	0	2	0	0	2	17
Dusk	1	0	0	0	0	0	0	0	0	0	0	1
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Cloudy												
Dark - Lighted	1	0	0	0	0	0	0	0	0	0	0	1
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	2	0	0	0	0	0	0	1	0	0	0	3
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0

Maine Department Of Transportation - Traffic Engineering, Crash Records Section
Crash Summary II - Characteristics

Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
Fog, Smog, Smoke												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0
Rain												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Severe Crosswinds												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	1	1
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0

Maine Department Of Transportation - Traffic Engineering, Crash Records Section
Crash Summary II - Characteristics

Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
Sleet, Hail (Freezing Rain or Drizzle)												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Snow												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	1	0	0	0	1
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	22	1	0	0	0	0	0	4	0	0	0	35