

# Short-Term Recommendations for Improving the Safety of High Crash Locations in Rural Aroostook County



December 2018

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## Summary

Through a contract with the Maine Department of Transportation (MaineDOT), Northern Maine Development Commission (NMDC) staff performed preliminary safety assessments of high crash nodes (intersections) and high crash links (segments of highway between intersections) in Aroostook County. These assessments were then developed into a report that was shared with the MaineDOT Region 5 Office, MaineDOT Bureau of Planning, and the local towns in which the high locations are located. Recommendations in the report offer low cost, short-term remedies for making high crash locations safer.

High crash locations (HCLs) were identified by MaineDOT as being locations with eight (8) or more crashes and exceed the Critical Rate Factor (CRF) of 1.00 or greater within a three-year period. A highway location with a CRF greater than 1.00 has a frequency of crashes that is greater than the statewide average for similar locations. A CRF is a statistical measure to determine the “expected crash rate” as compared to similar intersections in the State of Maine. In this regard, the analysis considers both the number of crashes and exposure over a three-year period.

The following report provides safety assessments, recommendations, HCL and other relevant data, maps, photos, and MaineDOT crash diagrams for twenty-one (21) high crash locations nodes and links located in Aroostook County. HCLs in this report were selected by NMDC staff based on the following factors:

- Selecting only HCLs identified in the *MaineDOT High Crash Location Listing, 2015-2017*;
- Making sure HCLs were not already being addressed by capital projects in the MaineDOT 2018-2020 Work Plan;
- Avoiding HCLs located on or associated with the Interstate System.
- Making sure locations were not already being addressed by the MaineDOT Region 5 Office or the MaineDOT Bureau of Planning.

It should be noted that in several locations, and supported by accident reports and observations by NMDC staff, driver or landowner actions rather than design or road geometrics lead to a majority of crashes. For example, crashes on links located in Ashland and Castle Hill were predominately animal related. There is a large deer wintering area in these communities and deer are commonly seen in or along the roads. During discussions with the Regional Wildlife Biologist, Inland Fisheries and Wildlife has, since 2013, the authority to stop landowners from feeding deer when it presents a public safety threat or a threat to deer. IF&W has worked with landowners in a half dozen locations in Littleton, Caribou, Ashland, and Portage and have had 100 percent compliance. For the most part, drivers are aware of these locations and need to pay better attention.

A second factor that is hard to quantify is the impact of distracted drivers. During the field work for this report, it was very common to see distracted drivers, texting drivers, cell phone glued to their ear drivers, impatient drivers, speeding, and pedestrians crossing whenever or wherever. While it is difficult to make meaningful recommendations to MaineDOT regarding this type of activity, the old National Safety Council’s ‘Drive Defensively’ slogan is more true today than ever.





## **How to Use This Document**

The preliminary assessments and recommendations included in this document are the products of a planning-level analysis intended to identify some of the site features, road characteristics, and crash factors associated with locations identified in MaineDOT's High Crash Location database. The intent of the assessment is to identify potential low cost, short-term solutions for making these HCLs safer. The recommendations range from simple maintenance, such as vegetation clearing, to identification of locations that might be considered for capital improvements, such as new turn lanes, traffic signals, roundabouts, or realignments.

In some instances, where longer-term, more expensive solutions appear to offer potential improvement, specific further study is not only recommended but is required. However in all instances some additional review and engineering analysis by MaineDOT would be required before implementing any recommendations. For instance, consideration of new or better signage is a low cost recommendation for a number of sites, but new signage should not be installed without further engineering review to be sure the additional signage is warranted and is likely to be effective.

It is NMDC's hope that MaineDOT can use this document as a tool to help them prepare for their own visitation of the HCL sites, perform their own safety audits, review and prioritize the recommendations, and implement low cost solutions that will help save lives, and prevent injuries or property damage.

## **Town of Ashland**

Location: Beginning at the intersection of Garfield Road, Portage Road, and Station Street (node 8097) and extending north 1.57 miles to the intersection of Portage Road and Wrightville Road (node 8098).

Assessment: This link is located on State Route 11, known as the Portage Road, to the north of Ashland's downtown. The link begins at Garfield Road intersection and extends north to the Wrightville Road intersection. The link is a two-lane road with paved shoulders and is relatively flat. This link closely follows the Aroostook River. While the link is relatively straight, there is a moderately sharp curve located just to the south of the Wrightville Road. This curve is marked with a school bus stop and curve sign.

Land uses along the link include, residential, agricultural, forestland, and some small scale commercial development. According to the Maine Department of Inland Fisheries and Wildlife Regional Biologist, the entire Aroostook River Valley from Ashland to Castle Hill has become a large deer wintering area. When NMDC completed a similar report in 2016, staff noticed numerous deer trails crossing the link, but it was not identified as an HCL at that time. NMDC staff noted a seasonal Deer Crossing sign located along the link.

### **Recommendations:**

- Continue to work with landowners to adjust wildlife feeding locations, especially during the winter months.
- Consider the creation of educational programs for driver concerning the presence of high concentrations of deer.
- Consider trimming/removing vegetation to the greatest practical extent along link to improve visibility and potentially improve road surface conditions during the winter months.
- Consider installing additional Speed Limit signage.
- Consider installing flashing Deer Concentration signs that can be turned on in the winter months.

### **Crash Summary:**

According to MaineDOT, nine (9) of the 14 crashes involved deer. While this area is a known deer wintering area, crashes occurred in the winter and late spring. Three (3) crashes were attributed to water on the road surface in late December 2015 and early January 2016. The remaining crashes included a failure to yield and a disregard school bus signal. Crashes were spread throughout the link.

### High Crash Information (2015-2017)

Begin Node	End Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
8097	8098	14	1.15	14.3	186	37

Source: MaineDOT, 2018

### Link Information

This section of Route 11 is not a mobility corridor or retrograde arterial.

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
Portage Road (Rt. 11)	2	B	A	B	Major Collector	State	35 to 55

Source: MaineDOT 2018

### Traffic Counts

The following traffic counts were contacted on at near the link.

Historical AADT	AADT Location
2012- 3,040 2013- 2,760 2015-3,210	Route 11 east of the Garfield Road at Bridge #3554
2011- 1,690 2012- 1,690 2013- 1,730 2014- 1,890 2015- 1,890 2016- 1,830	Route 11 north of the Garfield Road

Source: MaineDOT, 2016

### Traffic Signals

None present along segment.

### MaineDOT Workplan Calendar Years 2018, 2019, 2020

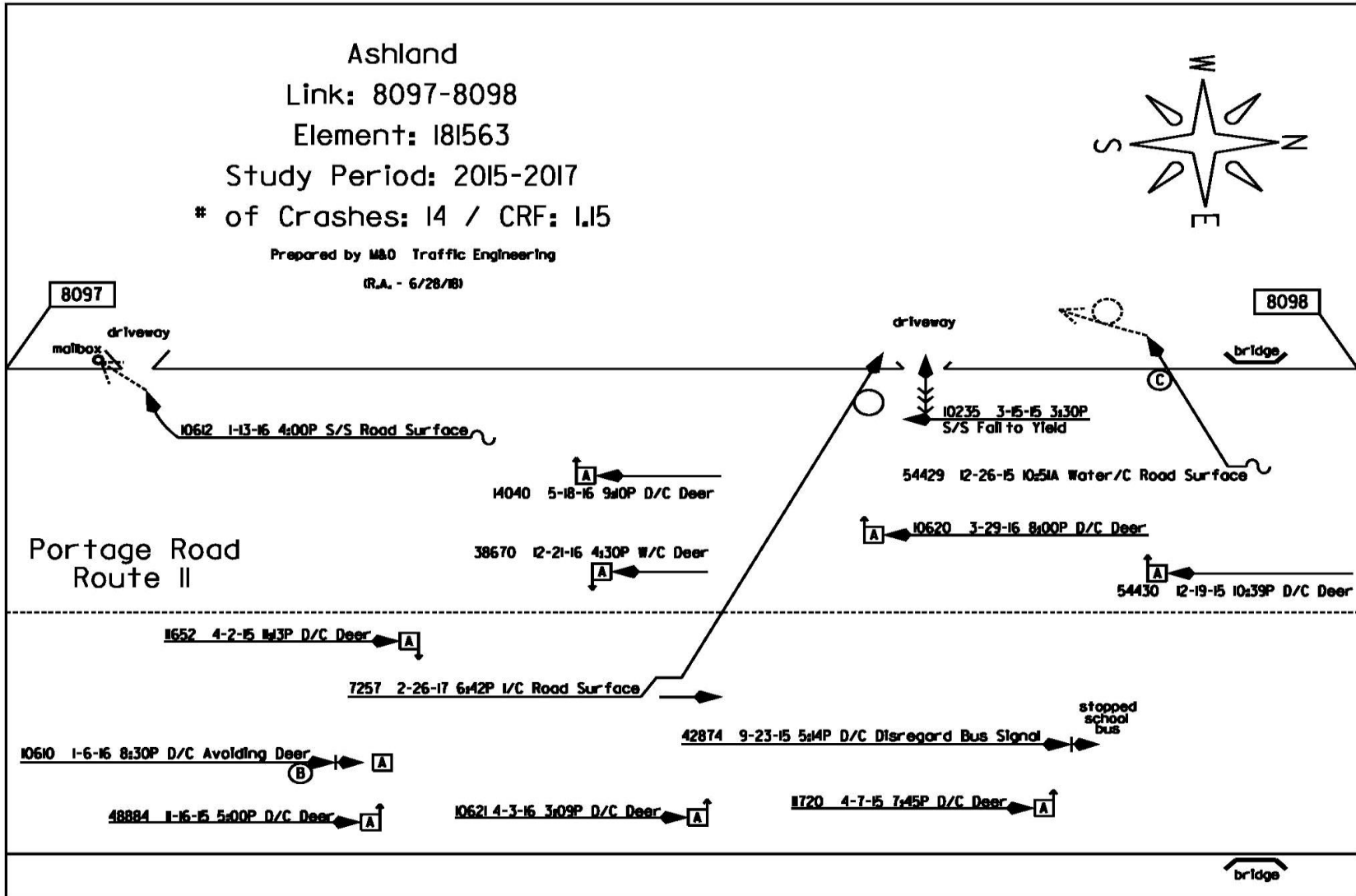
No projects are scheduled on this link in the Work Plan.

## Aerial View

Beginning at the intersection of Garfield Road, Portage Road and Station Street (node 8097) and extending north 1.57 miles to the intersection of Portage Road and Wrightville Road (node 8098). Red line indicates HCL link.



MaineDOT Crash Diagram, 2018





Portage Road looking north toward Wrightville Road. Seasonal Deer Crossing sign is covered (uncovered during the winter months). Notice vegetation close to road to the north.



Source: NMDC, 2018



Portage Road looking south towards Ashland. Just north of the season Deer Crossing Sign. Notice vegetation close to road reducing visibility.



Source: NMDC, 2018

Portage Road looking south toward Ashland. Notice school bus crossing sign.



Source: NMDC, 2018

## Town of Ashland

Location: Beginning at the Intersection of Heidi Circle (node 8812) and extending easterly 1.12 miles on the Presque Isle Road (node 8623).

Assessment: This link begins just to the east of Ashland's downtown and extends easterly on the Presque Isle Road (Route 163). The two-lane road with paved shoulders is straight and flat. Route 163 is a major route between Ashland and Presque Isle.

Land uses along the link include residential, commercial, light industrial, abandoned agriculture, and forestlands. Nearly all of the development is located at the Heidi Circle end of the link. While NMDC staff did not notice active forestry operations along the link, there was significant timber harvesting activity further east. Much of that timber was being trucked through Ashland.

MaineDOT was in the process of completing a road project along the link. As stated above, Ashland is a large deer wintering area and deer from the surrounding area congregate here during the winter months.

### Recommendations:

- Continue to work with landowners to adjust wildlife feeding locations, especially during the winter months.
- Consider trimming/removing vegetation to the greatest practical extent along link to improve visibility and potentially improve road surface conditions during the winter months.
- Consider installing flashing Deer Concentration signs that can be turned on in the winter months.

### Crash Summary:

All nine (9) crashes are deer and moose related and have occurred throughout the year.

### High Crash Information (2013-2015)

Beginning Node	Ending Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
8812	8623	9	1.43	22.2	158	25

Source: MaineDOT, 2018

### Link Information

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
Presque Isle Road	2	D	A	B	Minor Arterial	State	35-50

Source: MaineDOT, 2018

### Most Recent Highway Treatment

Light capital paving was completed in August 2007.

### Traffic Signals

None present along segment.

### Traffic Counts

Traffic Counts are not available at this specific location.

Historical AADT	AADT Location
2012- 2,740 2015- 2,180	Route 163 East of Walker Street

Source: MaineDOT 2018

### MaineDOT Workplan Calendar Years 2018, 2019, 2020

An Ultra Thin Bonding Wearing Surface project, beginning 0.18 miles east of Walker Street and extending easterly 4.03 miles is being completed in 2018.



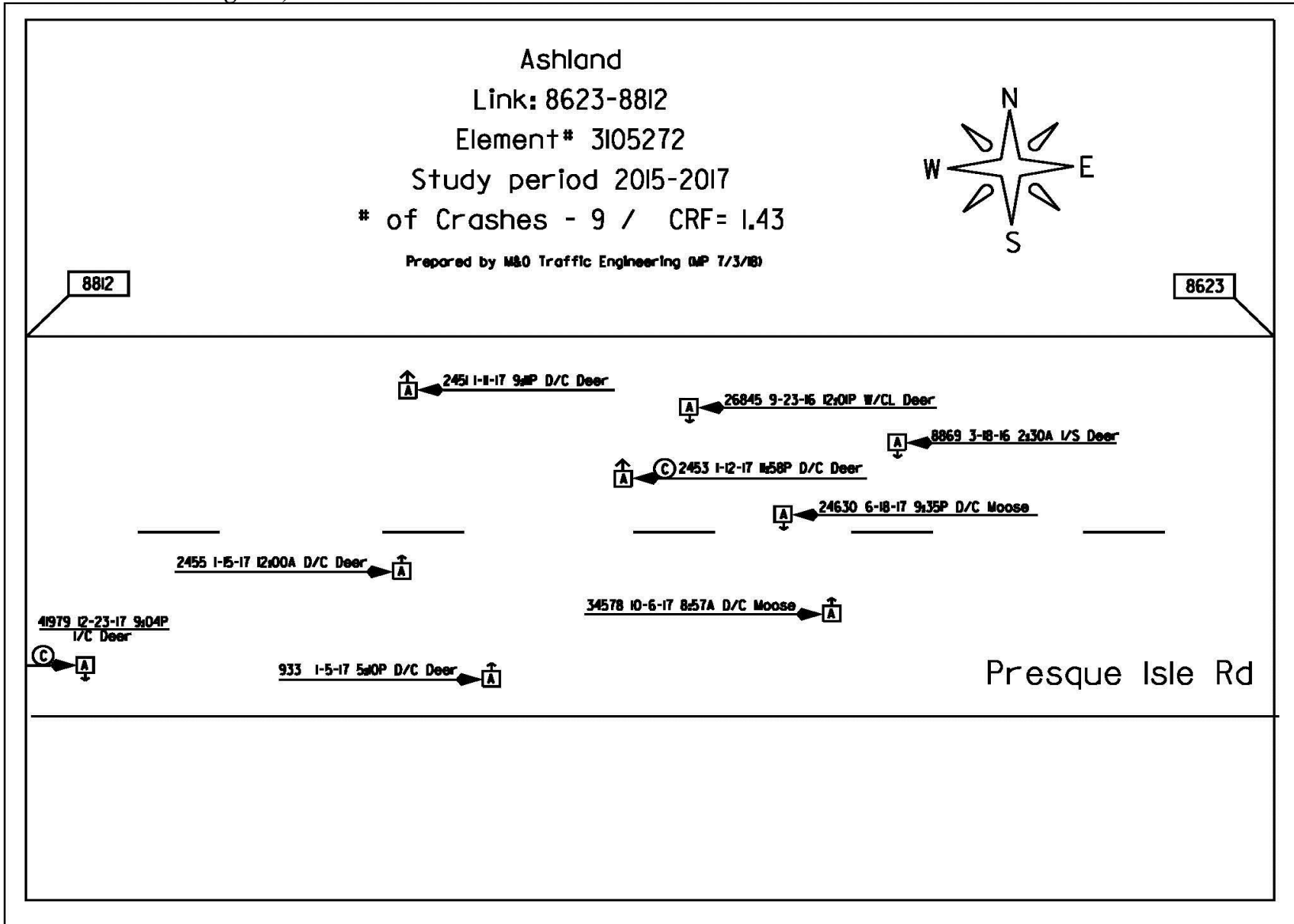
## Aerial View

Beginning at the Intersection of Heidi Circle (node 8812) and extending easterly 1.12 miles on the Presque Isle Road (node 8623). Red line indicates link.



Source: Google Earth, 2016

MaineDOT Crash Diagram, 2018



Presque Isle Road (Route 163) looking west towards Ashland. Note vegetation close to road.



Source: NMDC 2018



## Town of Ashland

Location: Frenchville Road beginning at the intersection of Frenchville Road and York Ridge Road (node 7877) extending northeast 0.93 miles to intersection of Frenchville Road and Sheridan Road (node 7878).

Assessment: This link is located on State Route 227 east of Ashland’s downtown. The link begins at Exchange Street and extends easterly along Route 227 from the York Ridge Road to the Sheridan Road. to the York Ridge Road. The York Ridge Road is a local, summer-maintained road only. The link is a two-lane road with gravel shoulders. While the link is relatively straight, the eastern portion is hilly (York Ridge) with several blind areas and driveways.

Land uses along the link include, residential, agricultural, forestland, and some small scale commercial development. While the link is in a known Deer Wintering Area, NMDC staff noticed that there were no animal crossing signs located anywhere along the link.

### Recommendations:

- Install seasonal deer crossing signs that can be used during high hit times.
- Consider installing flashing “High Hit” area signs that can be utilized during times when high concentrations of deer are present.
- Remove vegetation along the link to the greatest practical extent to improve visibility.
- Consider more frequent mowing of vegetation during the summer months.

### Crash Summary:

All of the crashes are deer/moose related.

### High Crash Information (2013-2015)

Beginning Node	Ending Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
7877	7878	8	2.25	0.0	88	12

Source: MaineDOT, 2018

### Link Information

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
Frenchville Road	4	B	A	C	Major Collector	State	50

### **Traffic Counts**

<b>Historical AADT</b>	<b>AADT Location</b>
2012- 1,320 2015- 1,160	Route 227 east of School Street
2012- 800 2015- 760	Route 227 east of Cottage Hill Road

Source: MaineDOT 2018

### **Most Recent Highway Treatment**

Light maintenance surface treatment in September 2010.

### **Traffic Signals**

None present along segment.

### **MaineDOT Work Plan, Calendar Years 2018, 2019, 2020**

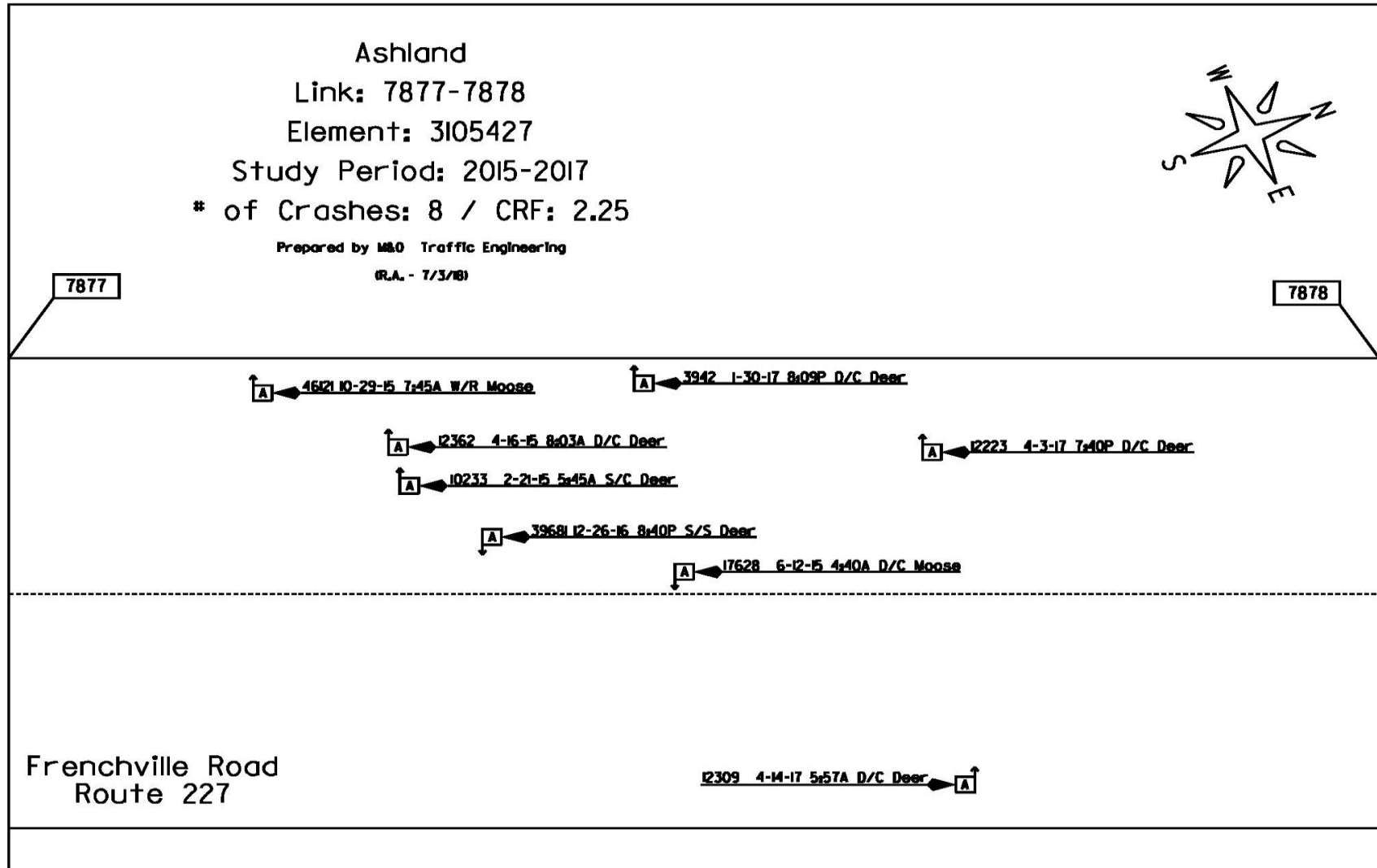
MaineDOT is completing a large culvert replacement 0.12 miles north of the York Ridge Road in 2018.

## Aerial View

Frenchville Road beginning at the intersection of Frenchville Road and York Ridge Road (node 7877) extending northeast 0.93 miles to intersection of Frenchville Road and Sheridan Road (node 7878).



MaineDOT Crash Diagram, 2018





Route 227 looking east. Note decreased visibility due to vegetation.



Source: NMDC, 2018

Route 227 looking east at known deer crossing.



Source: NMDC, 2018

## **Town of Ashland**

**Location:** Frenchville Road beginning at the intersection of Exchange Street (node 7875) and extending northeast 2.5 miles to the intersection of York Ridge Road (node 7877)

**Assessment:** This link is located on State Route 227 east of Ashland's downtown. The link begins at Exchange Street and extends easterly along Route 227 to the York Ridge Road. The York Ridge Road is a local, summer-maintained road only. The link is a two-lane road with gravel shoulders. While the link is relatively straight, the eastern portion is hilly (York Ridge) with several blind areas and driveways.

Land uses along the link include, residential, agricultural, forestland, and some small scale commercial development. While the link is located in a known Deer Wintering Area, NMDC staff noticed that there were no animal crossing signs located anywhere along the link. NMDC staff also had to stop abruptly for a flock of Wild Turkey at York Ridge as they crossed the road.

This link was also an HCL in 2016. At that time, staff also noticed numerous deer trails along the length of the link.

### **Recommendations:**

- Consider installation of "Deer Crossing" signs as this is a large deer wintering area.
- Consider working with landowners to adjust wildlife feeding locations, especially during the winter months.
- Consider the creation of educational programs for driver concerning the presence of high concentrations of deer.
- Consider trimming vegetation along link to improve visibility.
- Consider installing additional Speed Limit signage.
- Advocate for additional Any Deer permits in this wildlife management unit.

### **Crash Summary:**

Sixteen (16), or 76 percent, of the 21 crashes involved deer. The remaining crashes included speed, improper backing, failure to keep in lane, a medical condition, and road condition. Crashed occurred throughout the year.

In the 2013-2015 report, According to MaineDOT, all but one of the crashes are animal related. Eleven (11) of the 14 crashes are deer related, one moose related, and one a failure to keep in the lane. All the deer related crashes occurred between January and April when deer are concentrated in the wintering area. The Maine Department of Inland Fisheries and Wildlife indicates that this section of the route is located along a deer wintering area and several landowners feed deer during the winter months. This feeding can further concentrate deer along the corridor.

This link has had a total of 35 crashes since 2013 and the critical rate factor increased from 1.76 to 2.58. The link also has a County rank of #7, down from #13 in 2016.



### High Crash Information (2015-2017)

Beginning Node	Ending Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
7875	7877	21	2.58	9.5	71	7
2013-2015						
7875	7877	14	1.76	7.1	114	13

Source: MaineDOT, 2018

### Link Information

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
Frenchville Road	4	B	C	A	Major Collector	State	35-50

Source: MaineDOT, 2018

### Traffic Counts

Historical AADT	AADT Location
2012- 1,320 2015- 1,160	Route 227 east of School Street
2012- 800 2015- 760	Route 227 east of Cottage Hill Road

Source: MaineDOT, 2018

### Most Recent Highway Treatment

Light maintenance surface treatment in September 2010.

### Traffic Signals

None present along segment.

### MaineDOT Work Plan, Calendar Years 2018, 2019, 2020

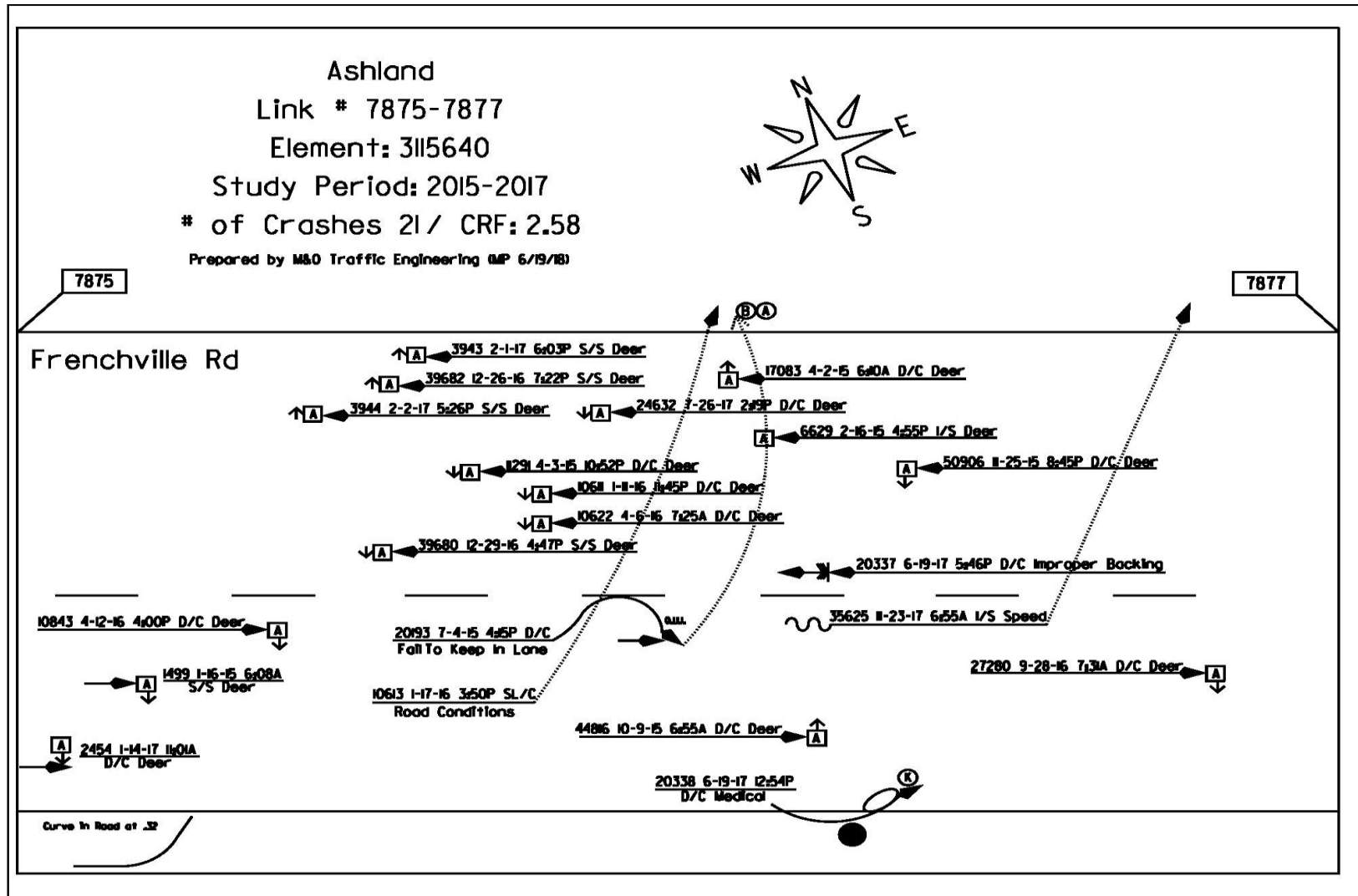
MaineDOT is completing a large culvert replacement 0.12 miles north of the York Ridge Road in 2018.

### Aerial View

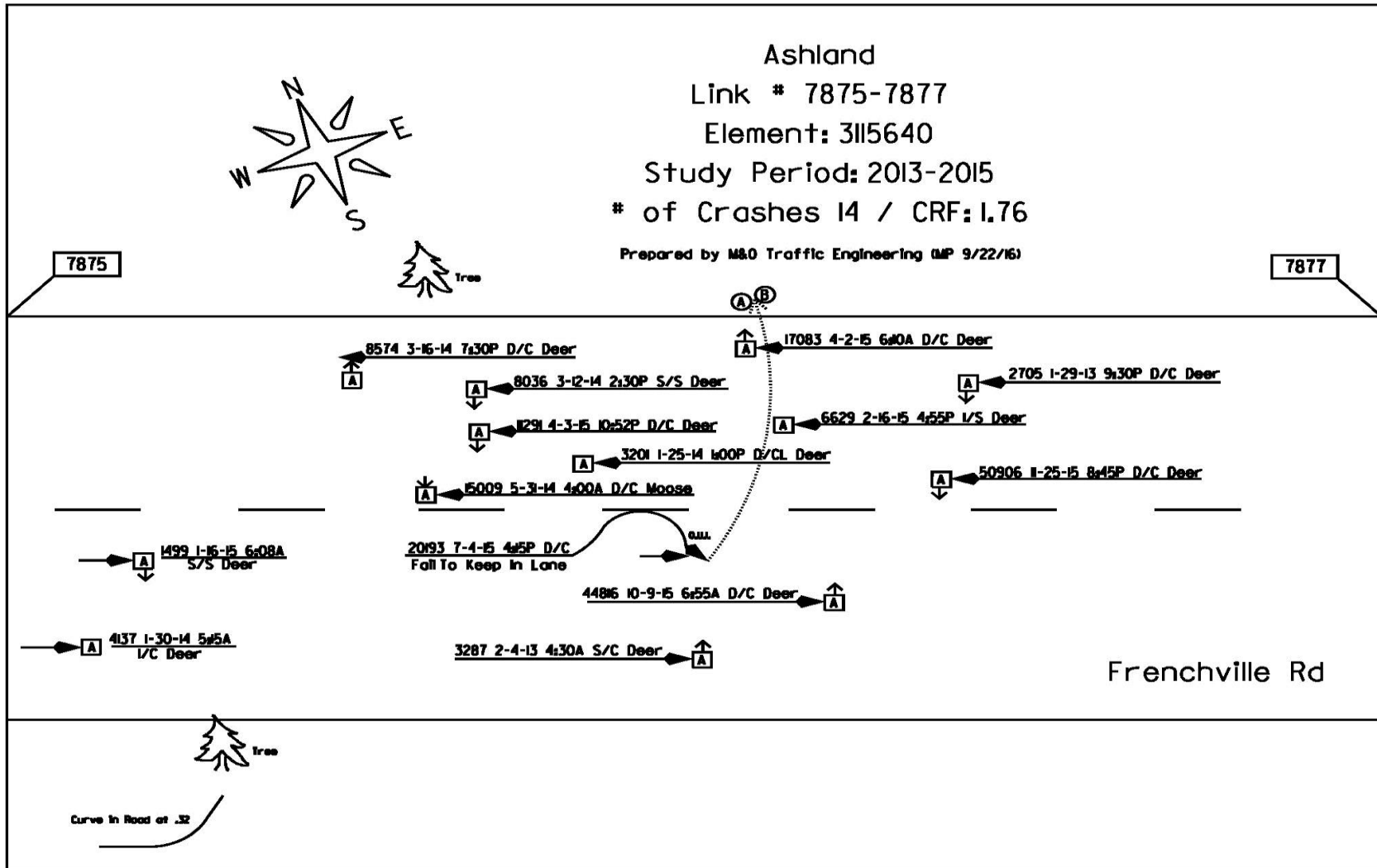
Frenchville Road beginning at the intersection of Exchange Street (node 7875) and extending northeast 2.5 miles to the intersection of York Ridge Road (node 7877). Red line indicates HCL link.



MaineDOT Crash Diagram, 2018



MaineDOT Crash Diagram, 2016





Route 227 near Exchange Street, looking west. Note vegetation close to road and lack of mowing.



Source: NMDC, 2018

Route 227 near Ashland's downtown, looking west. Vegetation in need of clearing and a blind hill.



Source: NMDC 2018

Route 227 looking east. This is a known deer crossing area.



Source: NMDC, 2018



Route 227 just east of Ashland's village area. Notice the flock of Wild Turkey that are being fed by a landowner. This area is also heavily utilized by white-tailed deer. (2016 Photo)



Source: NMDC, 2016

Deer Trail crossing Route 227. (2016 Photo).



Source: NMDC, 2016

Route 227 looking east. Notice Speed Limit sign is hidden by tree. This area is heavily utilized by deer. (2016 Photo)



Source: NMDC, 2016

## Town of Ashland

Location: Presque Isle Road beginning at node 8624 and extending easterly 1.68 miles to the T11 R4 townline (node 8625).

Assessment: This link begins to the east of Ashland’s downtown and extends easterly on the Presque Isle Road (Route 163) to the T11 R4 townline. The two-lane road with paved shoulders contains one sharp curve where the speed limit is reduced to 40 miles per hour while the remaining portion is straight and predominately flat. Route 163 is a major route between Ashland and Presque Isle.

Land uses along the link include residential, commercial, light industrial, abandoned agriculture and forestlands. There was significant timber harvesting activity further east. Much of that timber was being trucked through Ashland.

MaineDOT was in the process of completing a road project along the link.

**Recommendations:**

- Signage warning motorists of potential icy conditions at curve.

**Crash Summary:**

There have been twelve (12) crashes along this link. Five (5) of the 12 were attributed to road conditions, all of which occurred during the winter (late November through January) months. All of these occurred at or near the sharp curve. Two (2) of the crashes were attributed to mechanical issues (tires falling off and broken drive shaft), two (2) avoiding moose, and one (1) each for manual electronic, medical impairment, and internal distraction (bees).

**High Crash Information (2015-2017)**

Beginning Node	Ending Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
8624	8625	12	1.39	41.7	162	26

Source: MaineDOT, 2018

**Link Information**

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
Presque Isle Road	2	D	A	B	Minor Arterial	State	50

Source: MaineDOT 2018

## Traffic Counts

Traffic counts are conducted that the T11 R4 townline.

Historical AADT	AADT Location
2012- 1,710 2015- 1,510	Route 163 at the T11 R4 townline.

Source: MaineDOT 2018

## Most Recent Highway Treatment

Highway reconstruction completed in October 2004.

## Traffic Signals

None present along segment.

## MaineDOT Work Plan Calendar Years 2018, 2019, 2020

An Ultra Thin Bonding Wearing Surface project, beginning 0.18 miles east of Walker Street and extending easterly 4.03 miles is being completed in 2018.

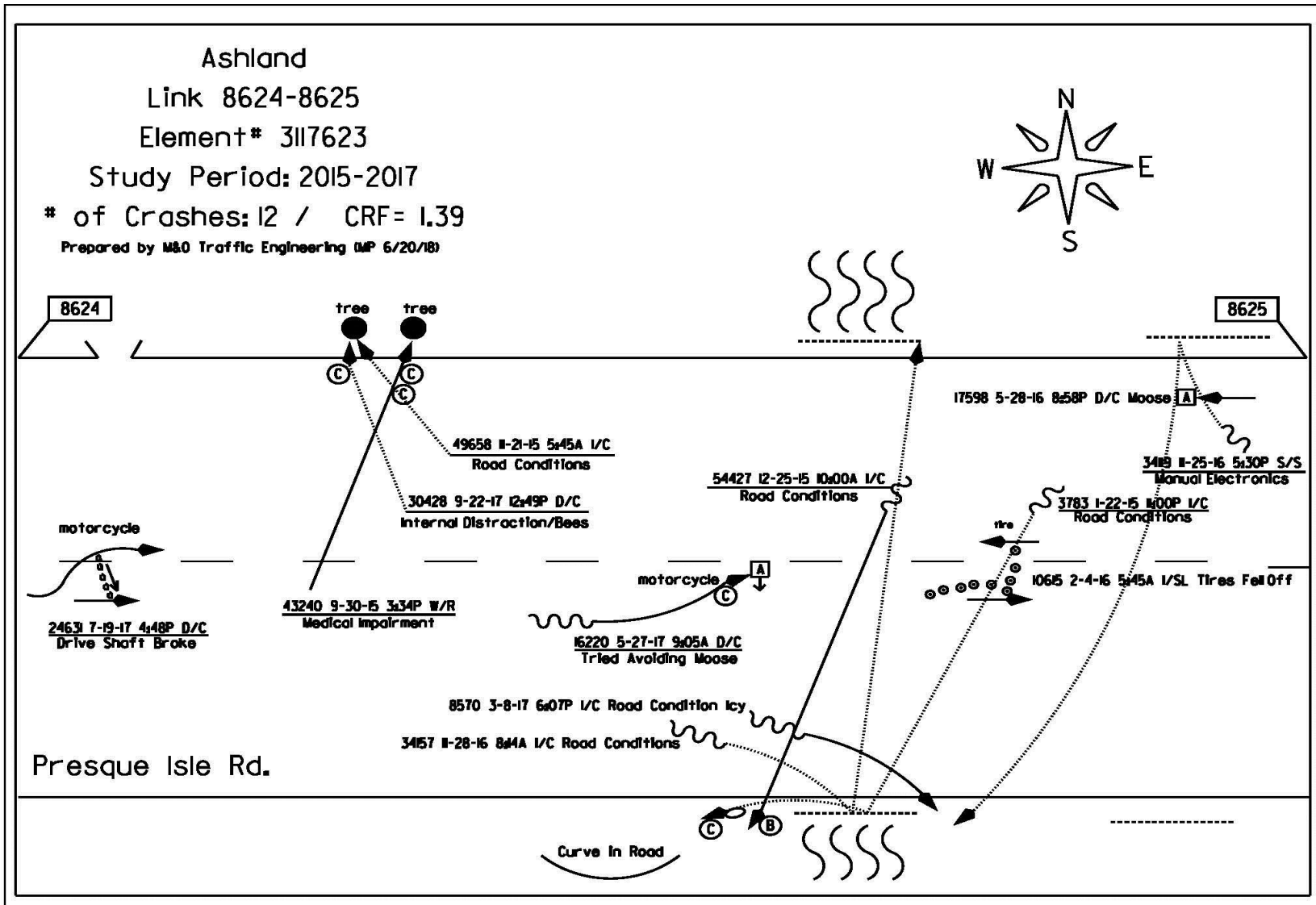


**Aerial Photo**

Presque Isle Road beginning at node 8624 and extending easterly 1.68 miles to the T11R4 town line (node 8625). Red line indicates HCL link.



MaineDOT Crash Diagram, 2018





Presque Isle Road at the Ashland townline. Notice curve signs, guardrail, and speed reduction sign.



Source: NMDC, 2018

## City of Caribou

Location: Intersection of Herschel Street and High Street. (Node 61737)

Assessment: This intersection is located on High Street, Herschel Street, and Route 161B/164 in downtown Caribou. Caribou's City Office, Police Station, and Library are located on High Street along with a church, grocery store, and small convenience/gas station. This route is used to access Bennett Drive as well as Caribou's downtown.

There are two lanes at the intersection (on Route 161B/164) with a turning lane onto High Street. Traffic has the option of heading north onto North Main Street, turning west to Herschel Street, or turning east onto High Street. There are crosswalks located just south of the intersection on Rt. 161B/164 and east on High Street and the crosswalk is marked by signs. Caribou's Public Library entrance is located just to the north of the intersection. North Main Street is a one-way street at this location.

This intersection was also an HCL in 2013-2015 timeframe. This is the number 1 ranked HCL in Aroostook County for both the 2013-15 and 2015-17 timeframe. There was a road improvement project scheduled for High Street in 2018 but due to costs, it has been deferred until 2019. There are no additional safety measures planned for this project at this intersection. At the time of the writing of that report, pedestrian crossings were not well marked (painted). They are in 2018.

### **Recommendations:**

- Consider flashing pedestrian crossing signs located south of the intersection.
- Consider lighted lane delineations.
- Consider better striping indicating thru lanes and turning lanes.
- Continue to stripe crosswalks.
- Consider moving access to Caribou Public Library.

### **Crash Summary:**

According to MaineDOT, there were 10 crashes at this location between 2015 and 2017. Eight of the ten crashes were on High Street with vehicles crossing toward Herschel Street. Most the crashes were the result of vehicles following too closely. Crashes were spread through the year with no one month being more prevalent.

The remaining two crashes were located on North Main Street/Route 161/164 and both were "failure to yield." This location was also the number 1 ranked HCL in Aroostook County during the 2015-17 timeframe.



### High Crash Information (2015-2017)

Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
61737	10	2.58	0.0	122	1
2013-2015					
61737	12	3.70	23.1	60	1

Source: MaineDOT, 2016 and 2018

### Link Information

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
High Street	3	A/C	B/C	F	Major Collector	State Aid	25
Main Street	3	A	B	B/C	Major Collector	State Aid	25

Source: MaineDOT, 2018

### Traffic Counts

Traffic Counts are not available at this specific location.

Historical AADT	AADT Location
2012- 5,480 2015- 5,240	SR 161B/164 (HATCH)(OW) E/O SR 164

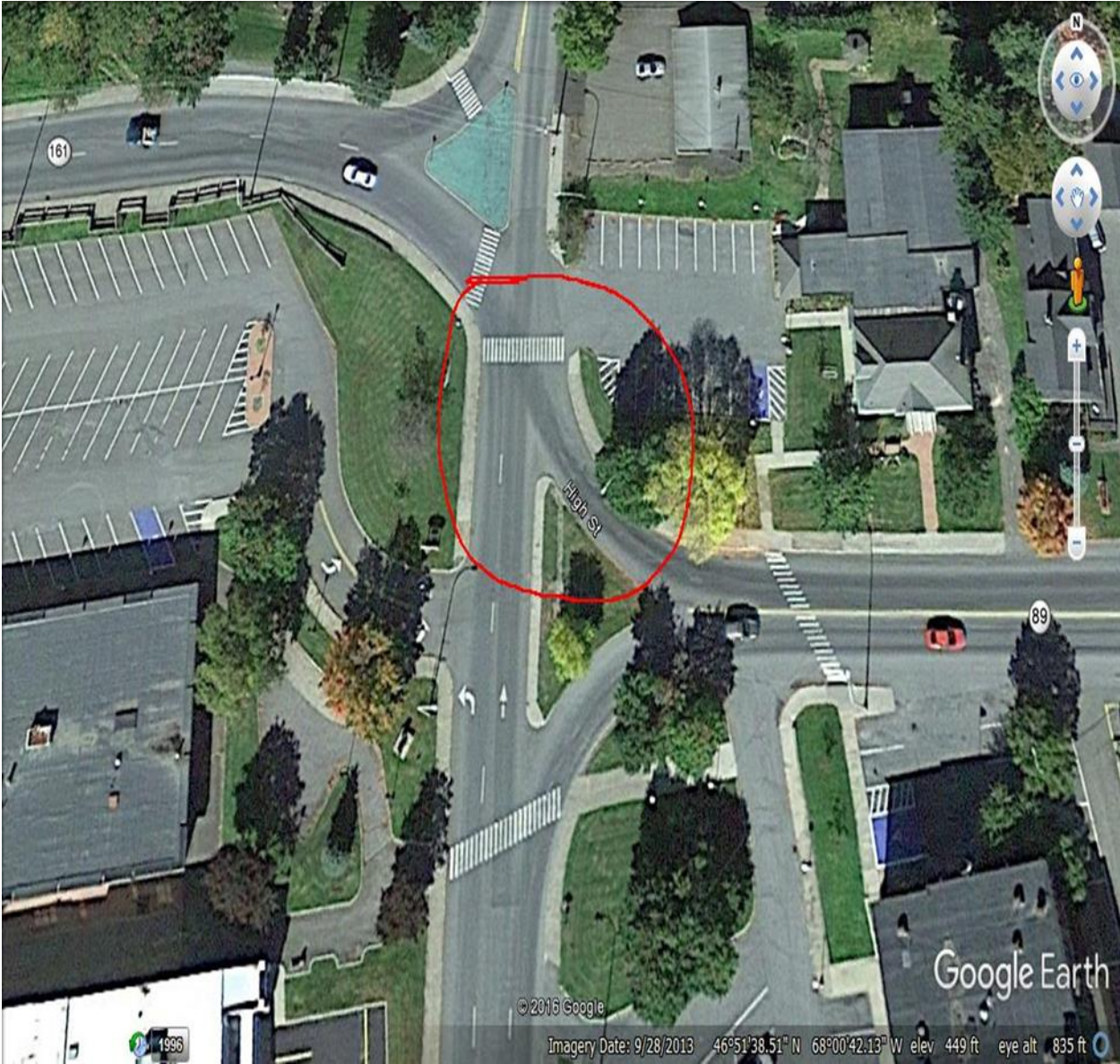
Source: MaineDOT 2016

### Capital Work Plan Projects

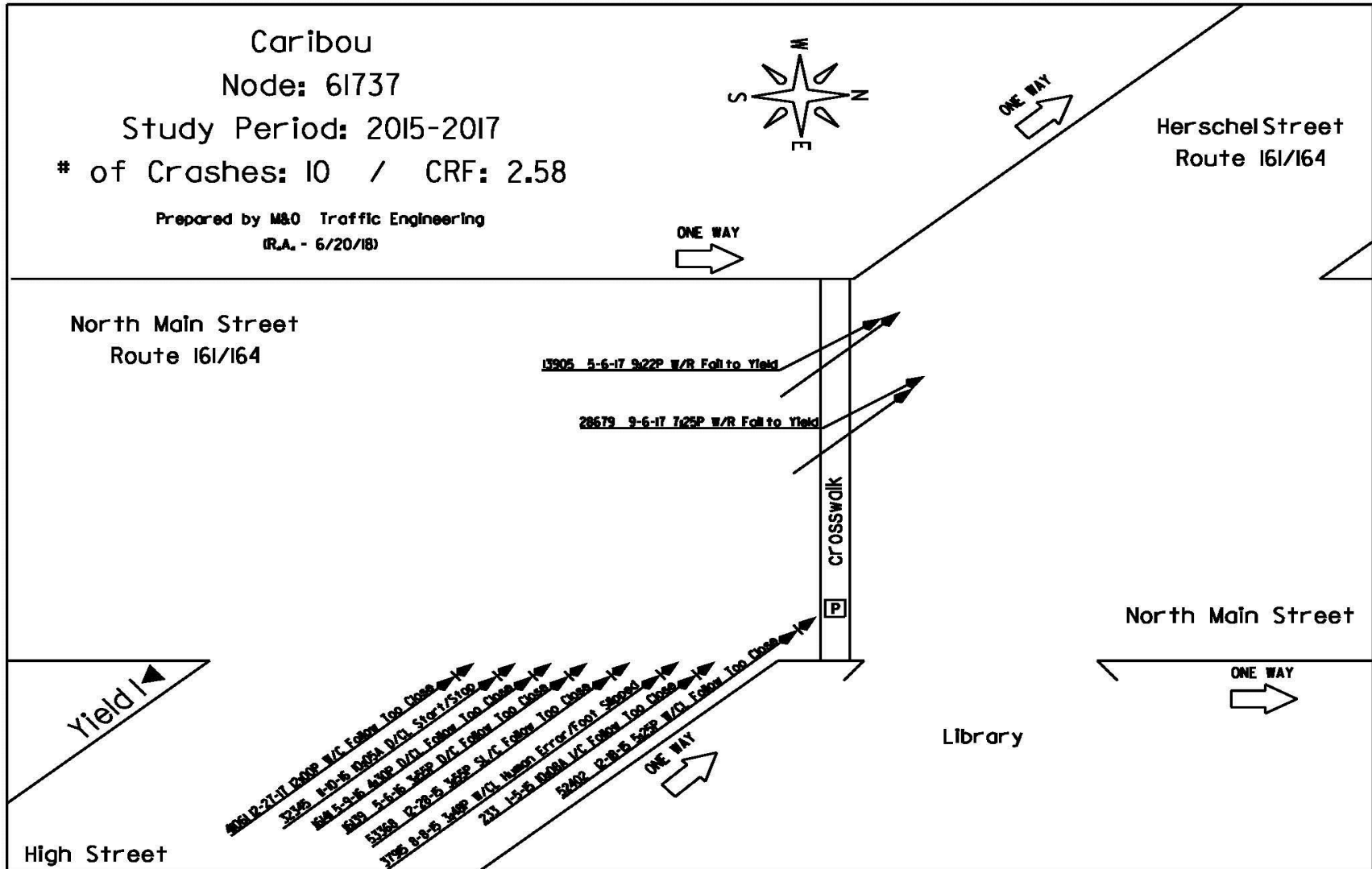
There is a project in the design and permitting stage beginning at node 8668 and extending westerly. This is a drainage improvement project and scheduled for 2020.

**Aerial View**

Intersection of Herschel Street and High Street (Node 61737). Red circle indicates HCL location.



MaineDOT Crash Diagram, 2018





High and Herschel Street intersection looking west. Pedestrian crosswalk not well marked.



Source: NMDC, 2018

High and Herschel Street looking north. Pedestrian crosswalk well marked. Also, better lane designation since 2016 report.



Source: NMDC 2018



## City of Caribou

Location: South Main Street beginning at the intersection of Kittenger Drive (node 9583) and extending approximately 1.15 miles south east to node 65670 Non-intersection of Main Street.

Assessment: This link is located on what is known as South Main Street. This is a straight two-lane road with paved shoulders. There are steep slopes located at Prestile Stream where a guardrail has been installed. The crest of the hill south of the Kittenger Drive intersection has short sight distances.

Land Uses along the link include several commercial establishments, commercial apartments, single family residential units as well as overgrown farm fields. A commercial day care located on Kittenger Drive generates turning traffic through the day. This area surrounding the link is a deer wintering area.

This link was an HCL in the 2013-15 timeframe. Since the time of the writing of that report, deer crossing signs have been installed and a major road improvement project completed.

### Recommendations:

- Consider “Blind Drive” signage.
- Consider “Turning Traffic” signage near Prestile Stream.
- Consider widening the shoulder at Kittenger Drive to allow for turning traffic to turn into Kittenger Drive.
- Consider brush removal to improve visibility of signs.
- If deer feeding is occurring during the winter months, work with landowners to appropriately site feeding areas away from roads.

### Crash Summary:

There have been twelve (12) crashes along this link. Six (6) involved deer, 2 were the result of speed, and one each for lost steering, following too close, avoiding vehicle, and improper turn. A comparison between the two diagrams indicate most of the collisions since 2015 involved deer.

### High Crash Information (2015-2017)

Beginning Node	Ending Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
9583	65670	12	1.35	25.0	166	27
<b>2013-2015</b>						
9583	65670	12	1.38	23.1	138	17

Source: MaineDOT, 2016 and 2018

### Link Information

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
South Main Street	3	D	A	A	Major Urban Collector	State Aid	50

### Traffic Counts

Historical AADT	AADT Location
2015- 1,850	SR 164 (S MAIN ST) North of the US Route 1 intersection

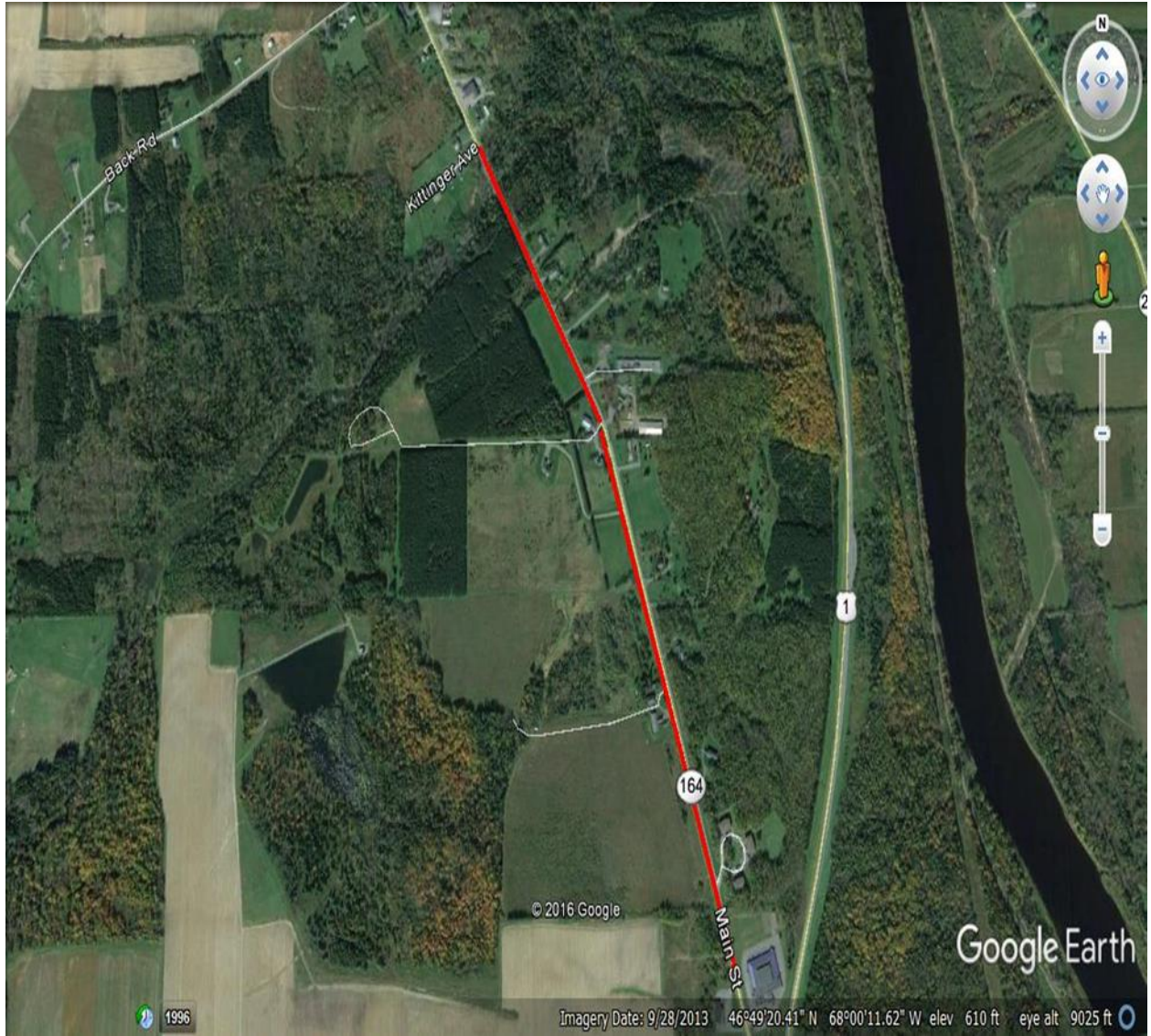
Source: MaineDOT 2016

### Capital Improvement Projects

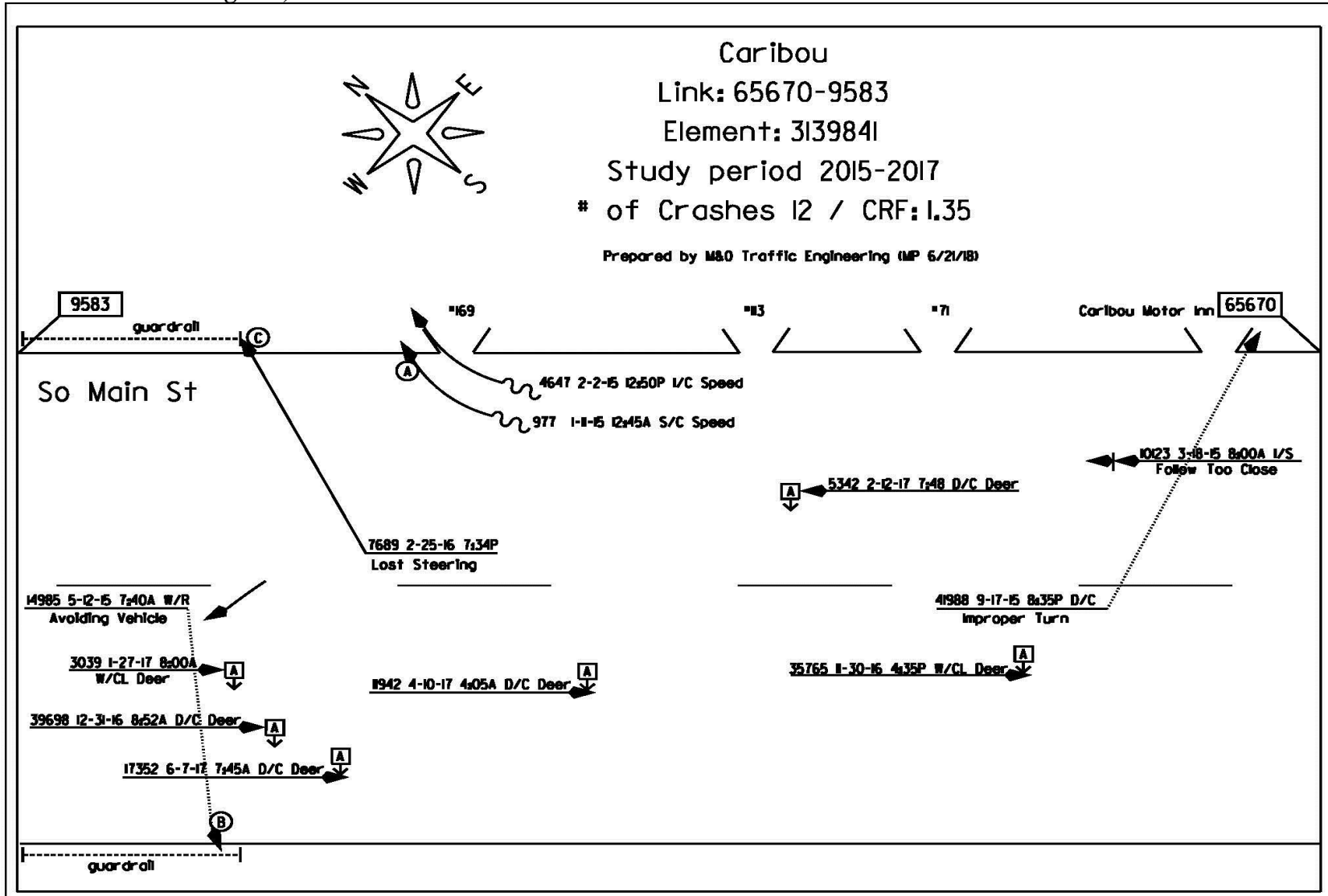
Drainage and paving were completed in 2017. There are no projects listed in the 2018-2020 MaineDOT Work Plan for this link.

**Aerial View**

Kittenger Drive south to Caribou Inn and Convention Center.

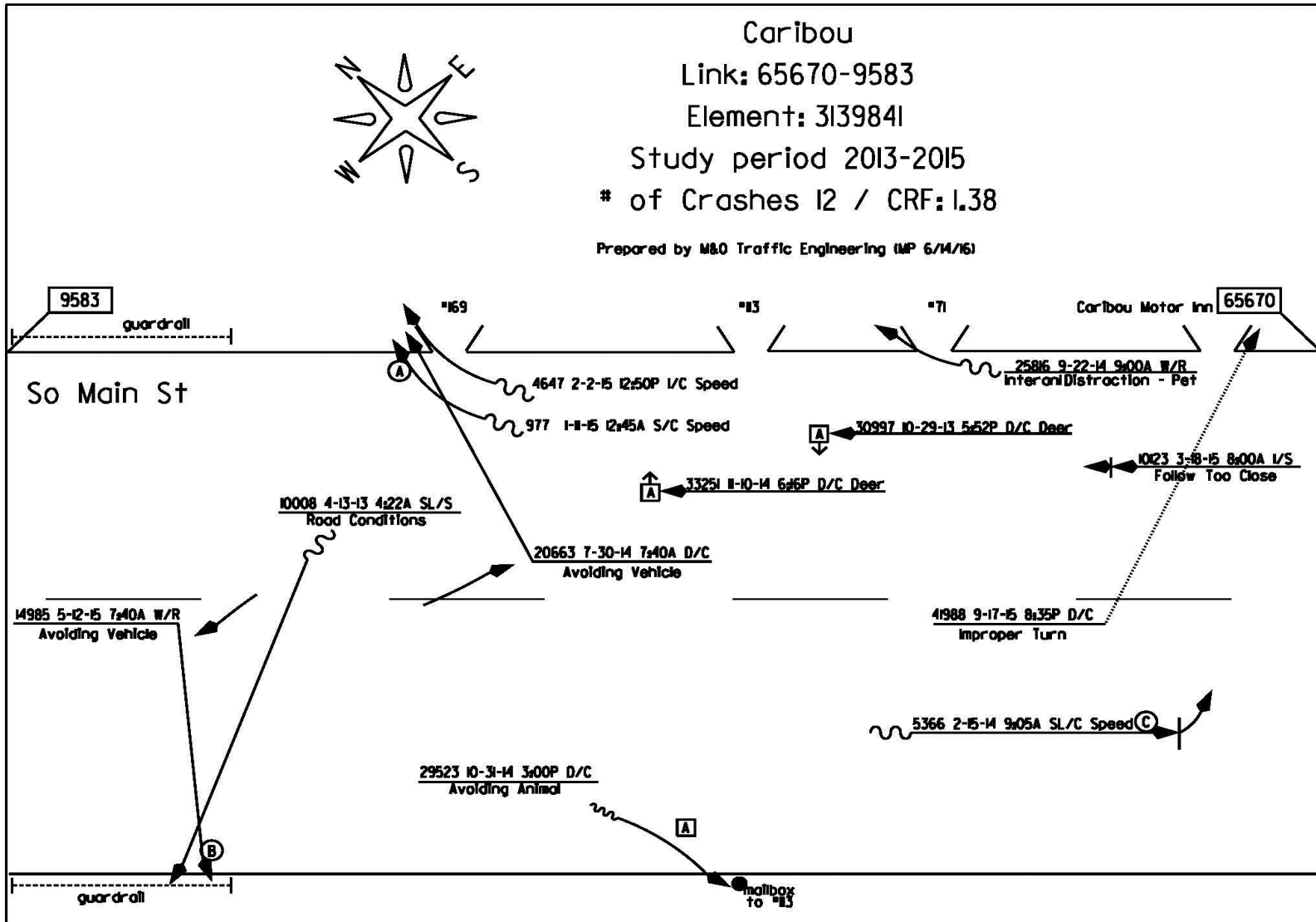


MaineDOT Crash Diagram, 2018





MaineDOT Crash Diagram, 2016



South Main Street looking west toward downtown Caribou. Notice location of commercial entrance and sight distance. Speed limit at this location is 50 mph.



Source: NMDC 2018

South Main Street looking south toward US Route 1. Hidden Drive sign and vehicle turning into commercial establishment.





South Main Street looking south toward US Route 1. Steep slope with two commercial entrances (2016 photo)



Source: NMDC 2016

South Main Street looking north towards Caribou's downtown. Deer Crossing signs have been placed.



Source: NMDC 2018

## City of Caribou

Location: Bennett Drive from the intersection of Laurette Circle (Node 8675) northeast 0.28 miles to intersection of Skyway Drive (node 8975).

Assessment: This link is located on Bennett Drive in Caribou. It is a four lane heavily used collector road that serves many businesses and institutions. Laurette Drive serves as an access road to several of Caribou's residential neighborhoods. Traffic counts on the link are typically some of the highest in Caribou. Staff counted 27 entrances and 5 intersections located along the link with several businesses having two (2) or more entrances.

During the 2013-15 timeframe, this link was also an HCL. At the time, NMDC staff also noticed that the "Right Lane Must Turn Right" sign located before the intersection with Sperry Drive was not prominently displayed. While travel lanes were marked, crosswalks were not well marked. Overall, traffic patterns appeared to be confused with cars/trucks turning into many different entrances or intersections at any given time.

At the time of the writing of this report (2018), lanes were well delineated, cross walks painted, and signage improved. The number of accesses remained the same since the 2016 report.

Land use along the link is entirely commercial and institutional.

### **Recommendations:**

- Increase enforcement for distracted drivers.
- Follow the recommendations of the traffic studies conducted for the new school and the Dunkin Donuts restaurant.
- Consider working with business to reduce the number of accesses and share entrances.
- Consider a center turning lane.
- Consider traffic calming measures.
- Consider changing the "Right Turn Only" sign southbound so that it is more prominent.
- Consider painting crosswalks more frequently.
- Continue to paint travel and turning lanes frequently.

### **Crash Summary:**

There have been nineteen (19) up from 18 in the 2013-2105 timeframe. Many are associated with what could be called driver inattention or failure to yield type crashes. As stated above, this is a busy link with many entrances to businesses. At times, traffic is queued onto Bennett Drive while people order coffee at a local coffee shop.

A comparison between the 2016 and 2018 crash diagrams provided by MaineDOT indicates that most of the same causes of crashes remain.



### High Crash Information (2015-2017)

Beginning Node	Ending Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
8675	8975	19	2.0	10.5	96	13
2013-2015						
8675	8975	18	2.02	16.7	96	9

Source: MaineDOT, 2016 and 2018

### Link Information

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
Bennett Drive	2	A	B	A	Major Urban Collector	State Aid	25

Source: MaineDOT 2018

### Traffic Counts

Historical AADT	AADT Location
2012- 8,950 2015-8,930	Bennett Drive N/O Glendale Road

Source: MaineDOT 2016

### MaineDOT Work Plan Projects

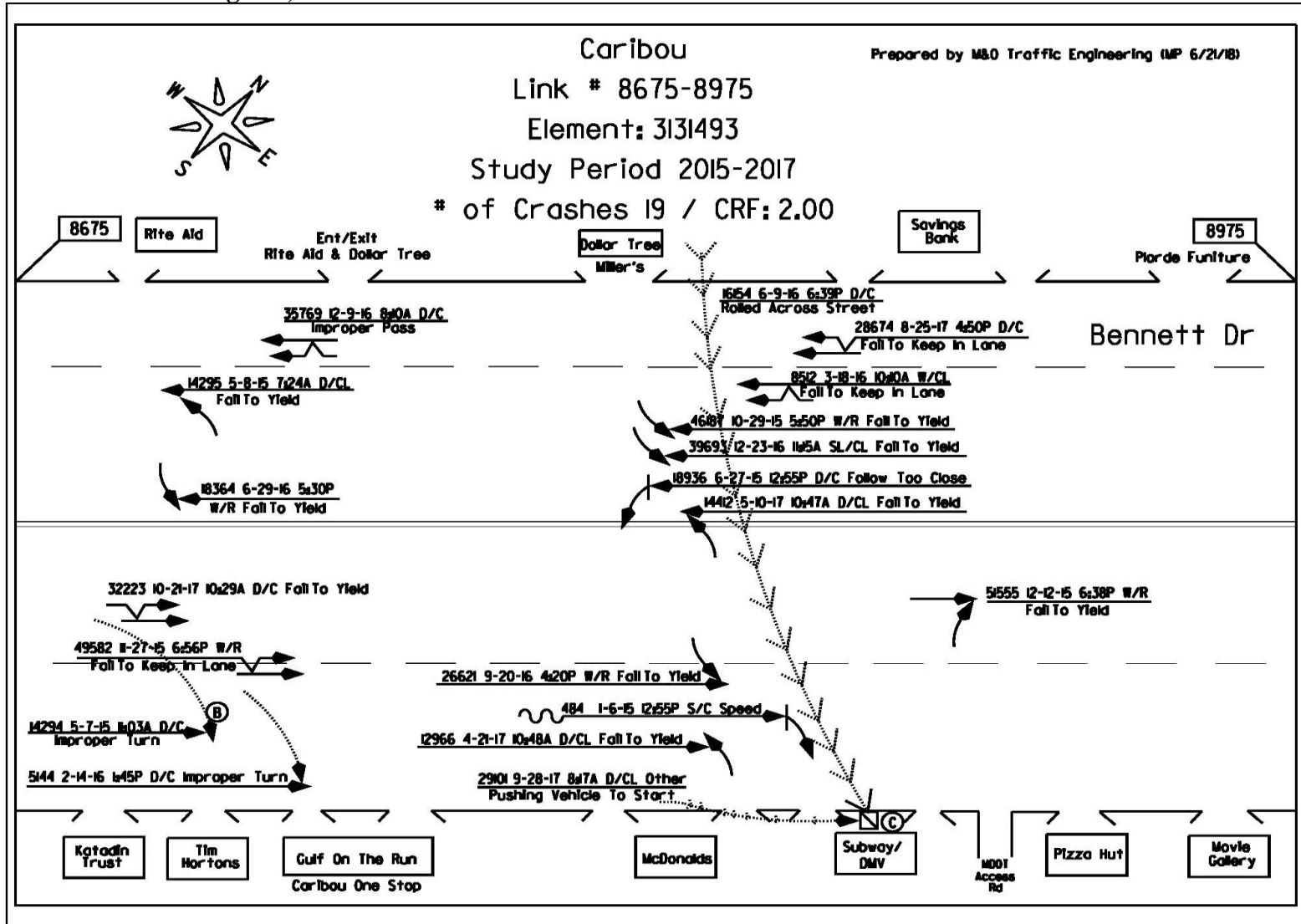
No projects are listed for this link in the MaineDOT Work Plan Calendar Years 2018-2019-2020.

## Aerial View

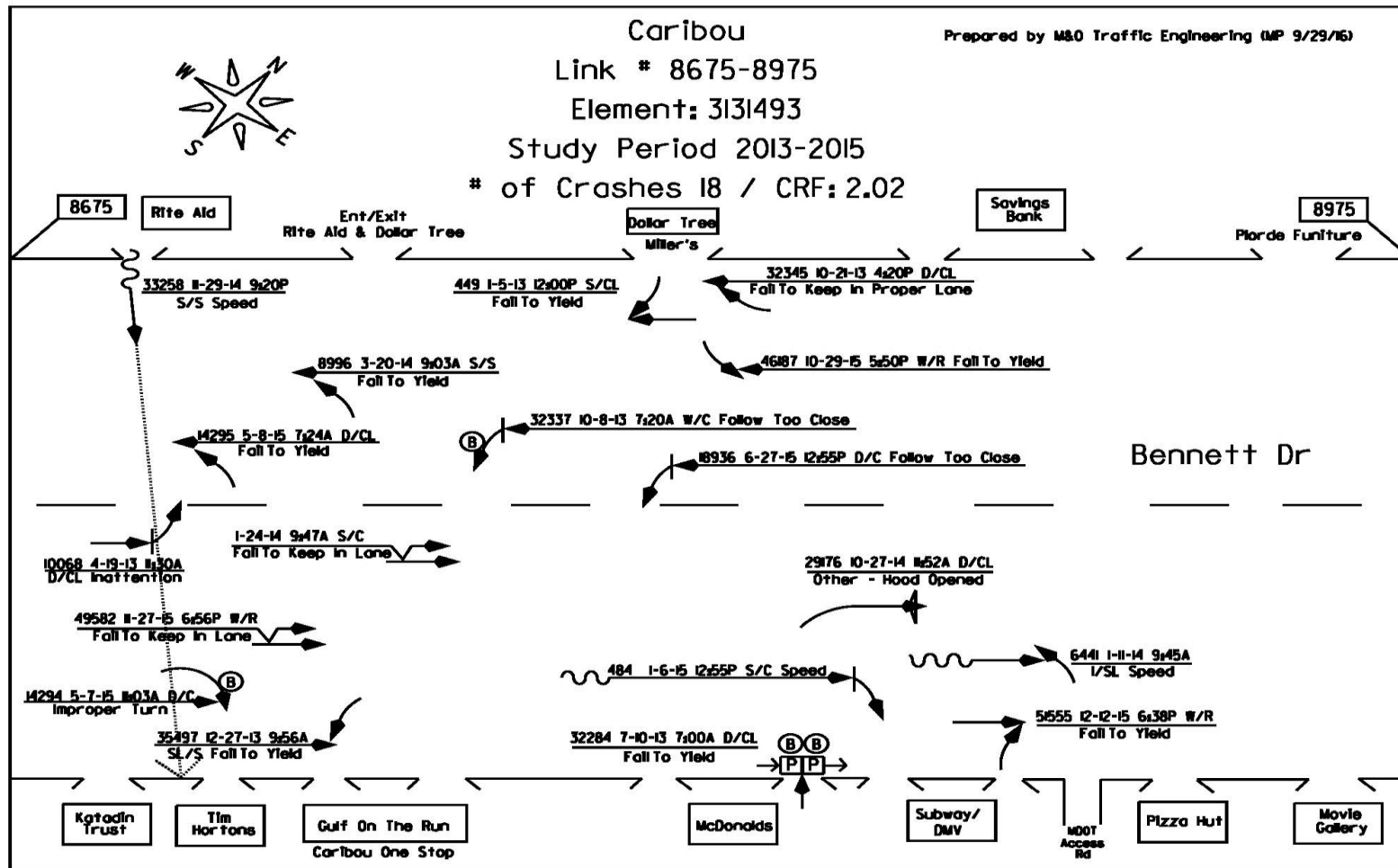
Bennett Drive from the intersection of Laurette Circle northeast 0.28 miles to intersection of Skyway Drive. Red line indicated HCL link.



MaineDOT Crash Diagram, 2018



MaineDOT Crash Diagram, 2016





Bennett Drive looking south. Right Lane Must turn not prominently displayed.



Source: NMDC, 2018

Bennett Drive looking south. Better lane marking since 2016 report.



Source: NMDC 2018

Bennett Drive. A local business still has at least 4 entrances onto link. (2016 photo)



Source: NMDC 2016

Bennett Drive looking north. Notice number of entrances. (2016 photo)



Source: NMDC 2016

## City of Caribou

Location: High Street from intersection of Goldfrank Drive (node 8669) westerly 0.18 miles to non-intersection of High Street at node 8668

Assessment: This link is located on High Street in Caribou. It is a two lane heavily used collector road that serves many businesses and institutions. Caribou's City Office including the Police Department along with the Fire and Ambulance, a bank, convenience store, super market, and a church. Goldfrank Drive serves a residential neighborhood. At the time of the writing of this report, the road is heavily rutted both east and west bound. MaineDOT had requested bids for the reconstruction of the route but due to cost the project has been deferred to 2019. A small mill and fill project is scheduled for 2018.

Land use along the link is entirely commercial and institutional. There are numerous access and the several businesses have one continuous access. This can create a confused traffic situation with cars turning in many different locations.

### Recommendations:

- Increase enforcement for distracted drivers.
- Consider working with business to reduce the number of accesses and share entrances.
- Consider a modern "Watch for turning traffic sign
- Consider the development of a center turning lane.
- Consider traffic calming measures.
- Consider painting crosswalks more frequently.

### Crash Summary:

There have been eight (8) crashes along this link. Four (4) have been associated with following to close, 3 failure to yield, and one unknown. Many are associated with what could be called driver inattention or failure to yield type crashes. As stated above, this is a busy link with many entrances to businesses.

### High Crash Information (2015-2017)

Beginning Node	Ending Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
8668	8669	8	1.25	25.0	176	30

Source: MaineDOT, 2018

### Link Information

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
High Street	3	C	B	F	Major Urban Collector	State Aid	25

Source: MaineDOT 2018

### Traffic Counts

Historical AADT	AADT Location
2013- 8,160 2015- 8,370	High Street east of intersection with Route 161
2015-8,180	High Street west of intersection with Bennett Drive

Source: MaineDOT 2016

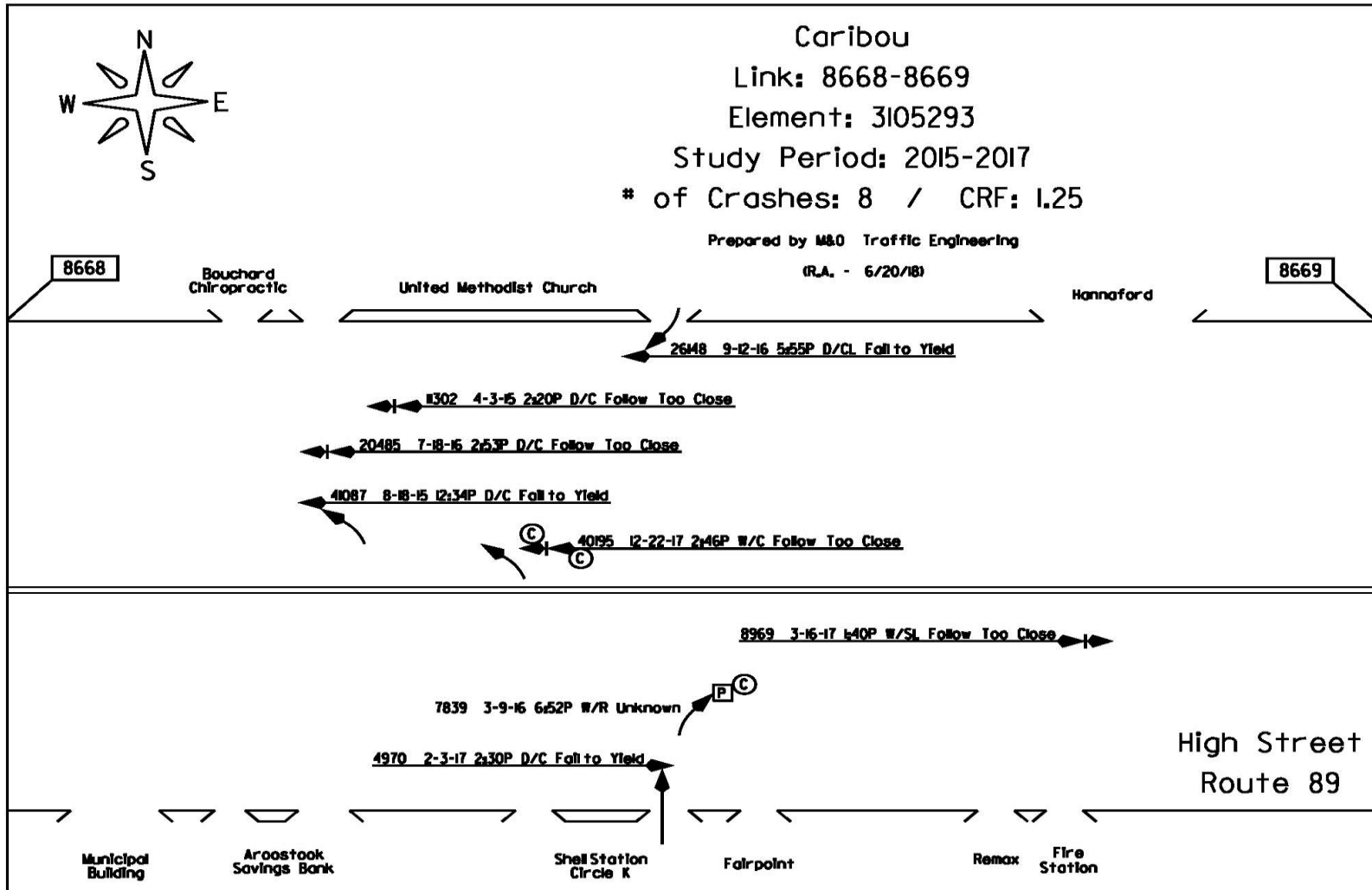


**Aerial View**

High Street from intersection of Goldfrank Drive (node 8669) westerly 0.18 miles to non-intersection of High Street at node 8668. Red line indicated HCL link.



MaineDOT Crash Diagram, 2018



High Street looking east toward Goldfrank Dr. Notice the unrestricted access to local business.



Source: NMDC 2018

High Street looking west. Note unrestricted access



Source: NMDC 2018



High Street. Notice unrestricted access.



Source: NMDC, 2018

High Street east bound. While picture is hard to decipher, road is heavily rutted.



Source: NMDC, 2018



## City of Caribou

Location: Sweden Street from the intersection of Record Street (node 7976) west 0.04 miles to the intersection of Stevens Street (node 7977).

Assessment: This link is located on Sweden Street in Caribou. It is a one way, one lane heavily used urban collector road that serves businesses and institutions. Sweden Street is straight, and Record Street intersects at the eastern portion of the link where the US Post Office is located close to the road. There is perpendicular parking located on both sides of the street and vehicles typical back out into on-coming traffic. Cars turning onto Sweden Street and those backing out of parking spaces could potentially have their vision blocked at times. There is traffic calming located at the intersection.

Land uses along the link include a US Post Office and several commercial establishments. NMDC staff noticed vehicles backing out into traffic as well as pedestrians and patrons using the established crosswalks. This created a confused situation where drivers are forced to remain vigilant.

### Recommendations:

- Consider reducing the number of parking spaces on Sweden Street and at the Post Office and have patron utilize the existing parking lot.

### Crash Summary:

There have been eight (8) crashes along this link. Seven of the 8 were attributed to improper backing while the final crash was “failure to yield.” Many are associated with what could be called driver inattention as vehicles backed into other vehicles backing out of parking spaces. This could possibly be attributed to blind spots in vehicles or driver inattention.

### High Crash Information (2015-2017)

Beginning Node	Ending Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
7976	7977	8	13.42	0.0	3	2

Source: MaineDOT, 2018

### Link Information

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
Sweden Street	4	A	A	A	Major Urban Collector	State Aid	25

Source: MaineDOT 2018

## Traffic Counts

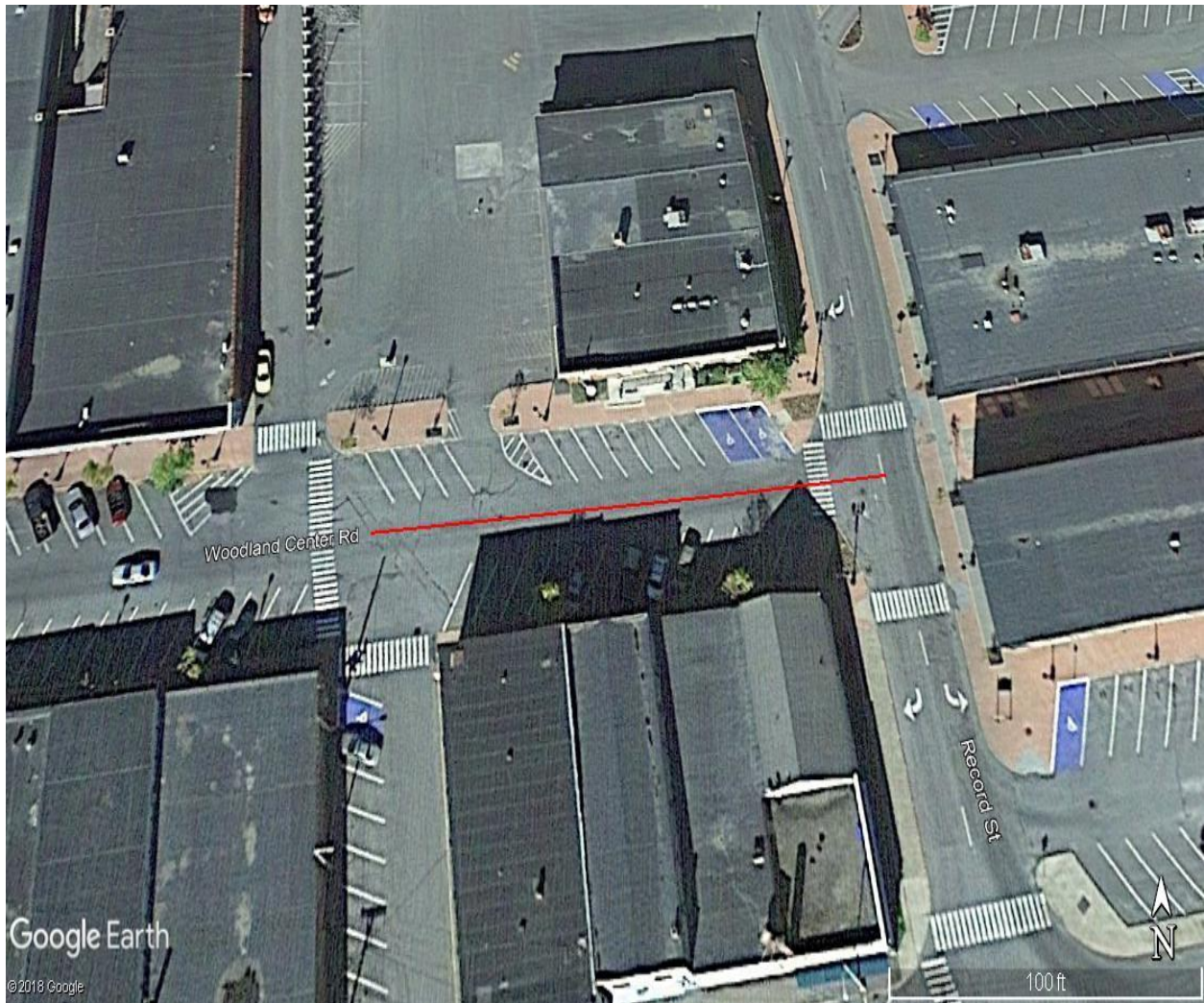
Traffic counts are not available for this link.

Historical AADT	AADT Location
2012- 5,480 2015- 5,240	Route 161B/164 east of intersection with Route 164
2012- 7,510 2013- 7,270 2015- 7,090	Route 161B/164 west of intersection with Route 164

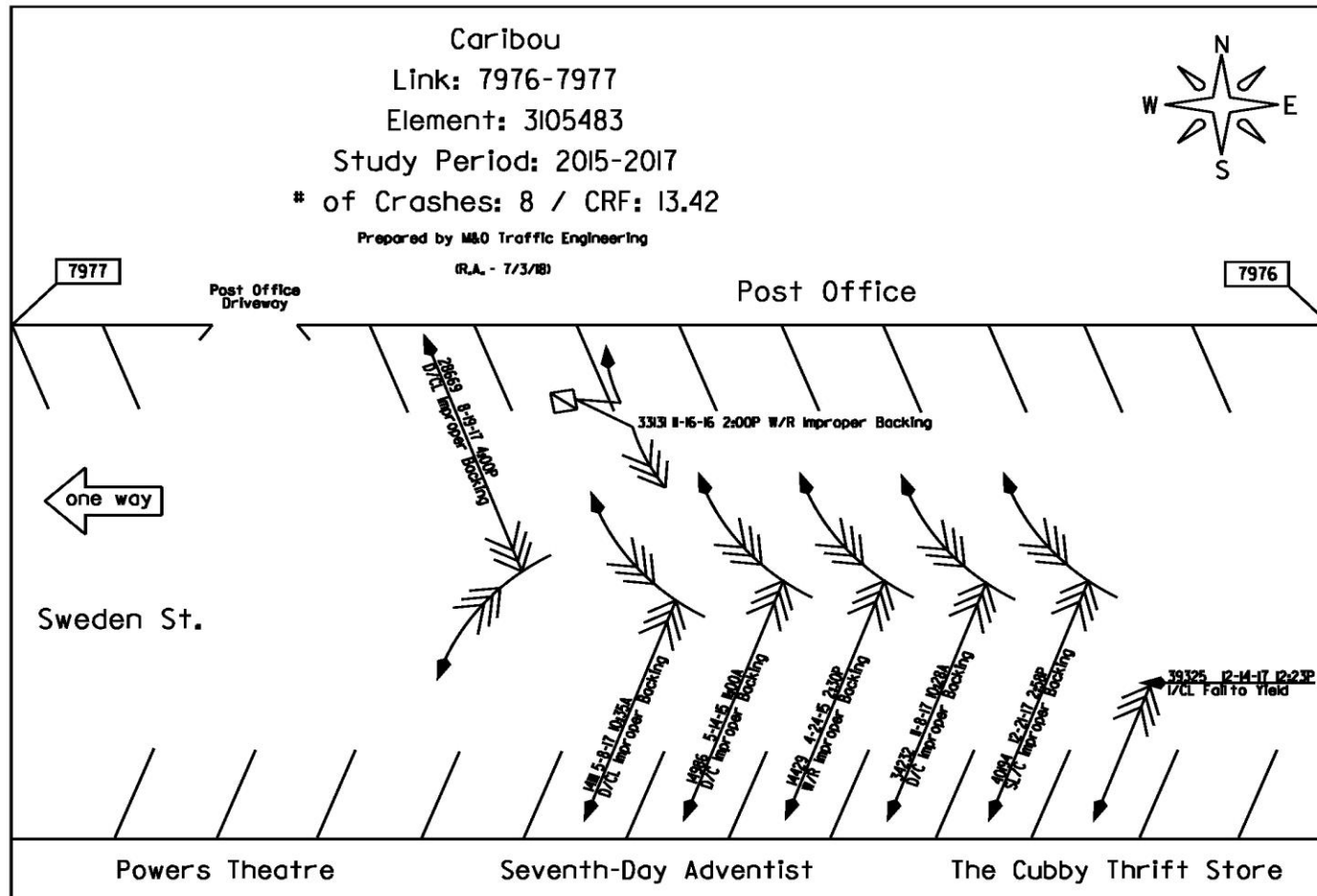
Source: MaineDOT 2017

**Aerial View**

Sweden Street from the intersection of Record Street (node 7976) west 0.04 miles to the intersection of Stevens Street (node 7977). Red line indicates link.



MaineDOT Crash Diagram, 2018





Intersection of Record Street and Sweden Street looking west toward Sweden Street. Crosswalks are well marked. Notice the location of the Post Office for traffic turning onto Sweden Street.



Source: NMDC 2018

Sweden Street at Record Street looking north. Notice traffic calming measures in place. Vehicles on Sweden Street must back out into on-coming traffic.



Source: NMDC 2018

Vehicle turning onto Sweden Street. Looking north from Record Street.



Source: NMDC, 2018

## Town of Castle Hill

Location: State Road from non-intersection of State Road (node 7881) east 1.48 miles to the intersection of McDonald Road (node 7882).

Assessment: This link is located in Castle Hill on State Route 227 also known as the State Route. It is a two-lane road with gravel shoulders. The link is very hilly but predominately straight. Curves and steep hills are will marked. At the time of the writing of this report, MaineDOT was completing ditching projects near the MacDonalad Road and just to the west of the western end of the link.

While traffic counts are relatively low, it is a main corridor between Ashland and Presque Isle. The corridor is sparsely populated with some single family residential units and there is commercial forestland and agricultural fields. NMDC staff noticed that at the top of the hill located west of the MacDonalad Road there was a large open field. This may have contributed to the two-weather related accidents.

According to the Maine Department of Inland Fisheries and Wildlife Regional Biologist, the entire Aroostook River Valley has become a large deer wintering area. When NMDC completed a similar report in 2016, staff noticed numerous deer trails crossing the link, but it was not identified as an HCL at that time.

### Recommendations:

- Consider installation of deer/moose crossing signs.
- Consider reviewing passing lanes on hilly sections of the link.
- Consider trimming/removing vegetation to the greatest practical extent along the eastern portion of the link to improve visibility.
- Consider installing additional Speed Limit signs.
- Consider working with landowners to install snow fencing at appropriate locations during the winter months.
- Consider more timely mowing of grass along link to improve visibility.

### Crash Summary:

Between 2015 and 2017, there were ten (10) crashes along this link. Seven (7) of the 10 involved deer or moose and one each for road conditions, severe winds, and oversteering. Animal related crashes occurred throughout the year while road condition and wind occurred in December and March.

### High Crash Information (2015-2017)

Beginning Node	Ending Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
7881	7882	10	2.28	10.0	86	11

Source: MaineDOT, 2018

### Link Information

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
State Road	4	D	C	A	Major Collector	State	55

Source: MaineDOT, 2016

### Traffic Counts (Counts were not taken near this link)

Historical AADT	AADT Location
2015-610	SR 227 west of IR 473 (Waddell Road)

Source: MaineDOT, 2016

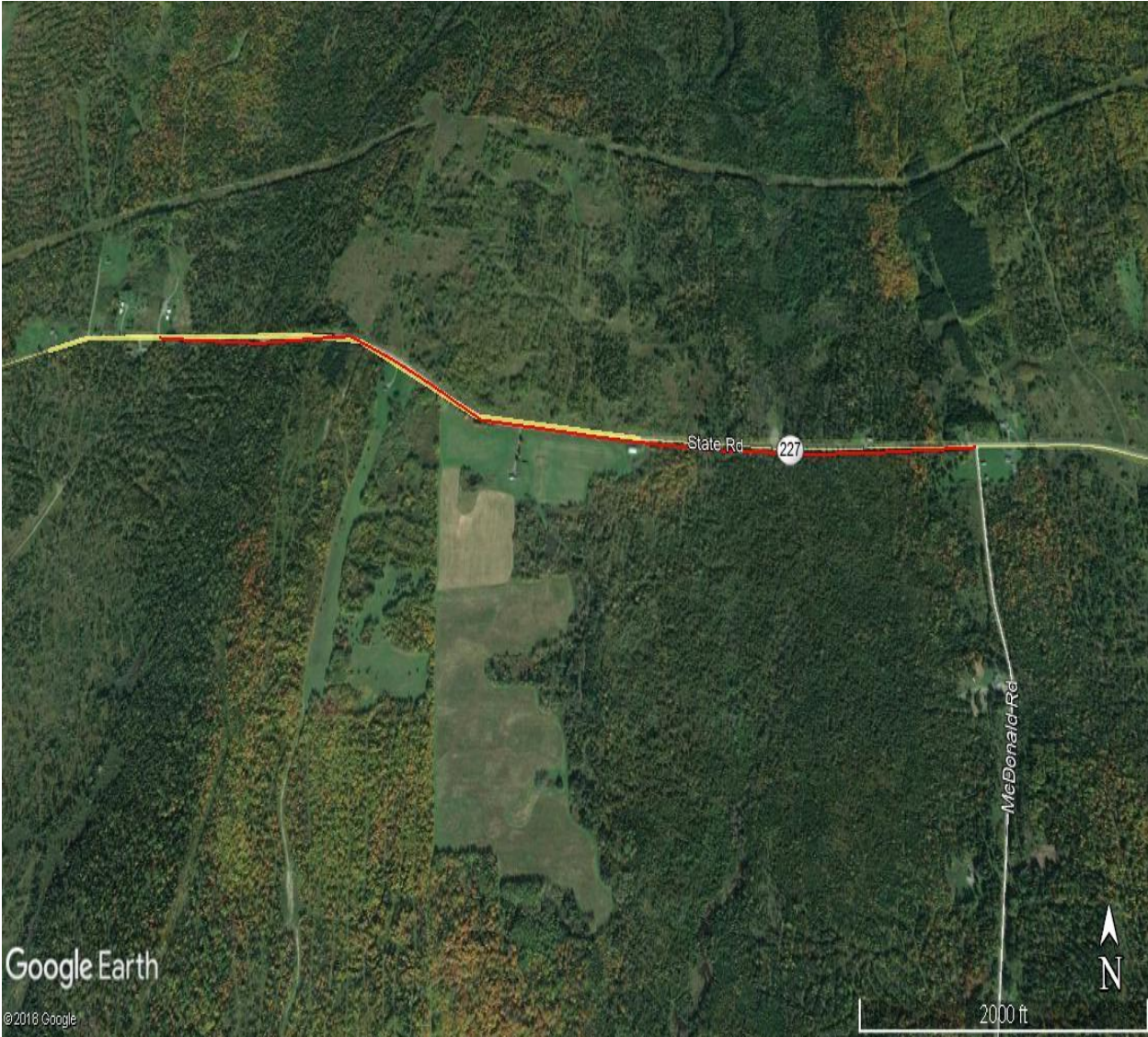
### MaineDOT Work Plan Calendar Years 2018, 2019, and 2020

There is a drainage projected listed in the Work Plan to be completed in 2018.

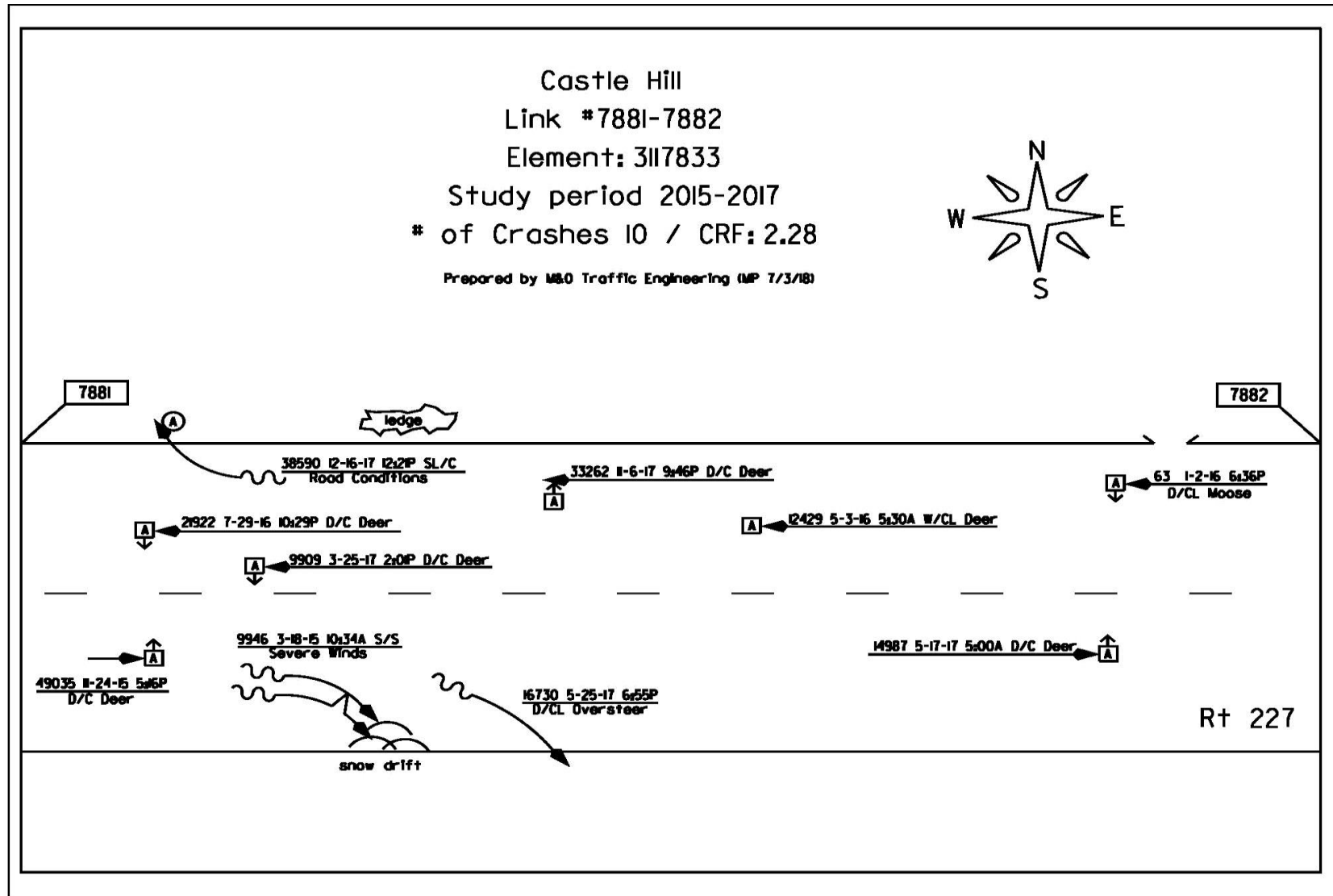


**Aerial View**

State Road from non-intersection of State Road (node 7881) east 1.48 miles to the intersection of McDonald Road (node 7882). Red line indicates HCL link.



MaineDOT Crash Diagram, 2018





Route 227 looking east towards the MacDonald Road. Notice vegetation close to road reducing sight distance and animal detection.



Source: NMDC 2018

Route 227 east towards the MacDonald Road. Vegetation close to road. Also notice Work Area signs. MaineDOT was completing a road ditching project near the MacDonald Road.



Source: NMDC, 2018



Route 227 looking west toward Ashland



Source: NMDC 2018



## Town of Caswell

Location: Van Buren Road from node 8069 north 1.8 miles to node 8070.

Assessment: This link is located in Caswell on Route 1-A also known as the Van Buren Road. It is a two-lane road with paved shoulders. The link is predominately straight, with a few minor hills. The St. John Valley Scenic Byway begins approximately 1 mile north of node 8070 at the Hamlin townline and extends northerly through the St. John Valley.

While traffic counts are low, it is a main travel route between the central Aroostook area and the St. John Valley, especially for heavy haul freight. The corridor contains a mixture of residential, agricultural, and forestlands. There is a small compact area of development that contains a convenience store and residential development. In this area, the speed limit is reduced to 40 miles per hour. There does not appear to be site distance issues along the link.

At the time of the writing of this report, there did not appear to be forest harvest operations occurring along the link. Several of the woodlots were cut in the past 5-8 years and were regenerating. Also, most of the agricultural lands were in potato or rotational crops. In several of these areas, NMDC staff noticed moose trails along the roadway.

### Recommendations:

- Consider installation of moose crossing signs.
- Continue to trim vegetation along link to improve visibility.
- Consider installing additional Speed Limit signs.

### Crash Summary:

According to MaineDOT, there were eight (8) crashes along this node. Six (6) or 75 percent involved moose, one (1) bear, and 1 making an improper (U turn) turn. Nearly all of the moose/vehicle collision were during the winter months. One, along with the bear collision, was during the Fall.

### High Crash Information (2015-2017)

Beginning Node	Ending Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
8069	8070	8	1.17	0.0	184	35

Source: MaineDOT, 2018

## Link Information

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
Van Buren Road	3	B	A	C	Major Collector	State	55-40-55

Source: MaineDOT, 2018

## Traffic Counts

Average Annual Daily Traffic (AADT) had declined along Route 1-A in Caswell between 2012 and 2015. It should be noted that traffic counts were not taken near this link.

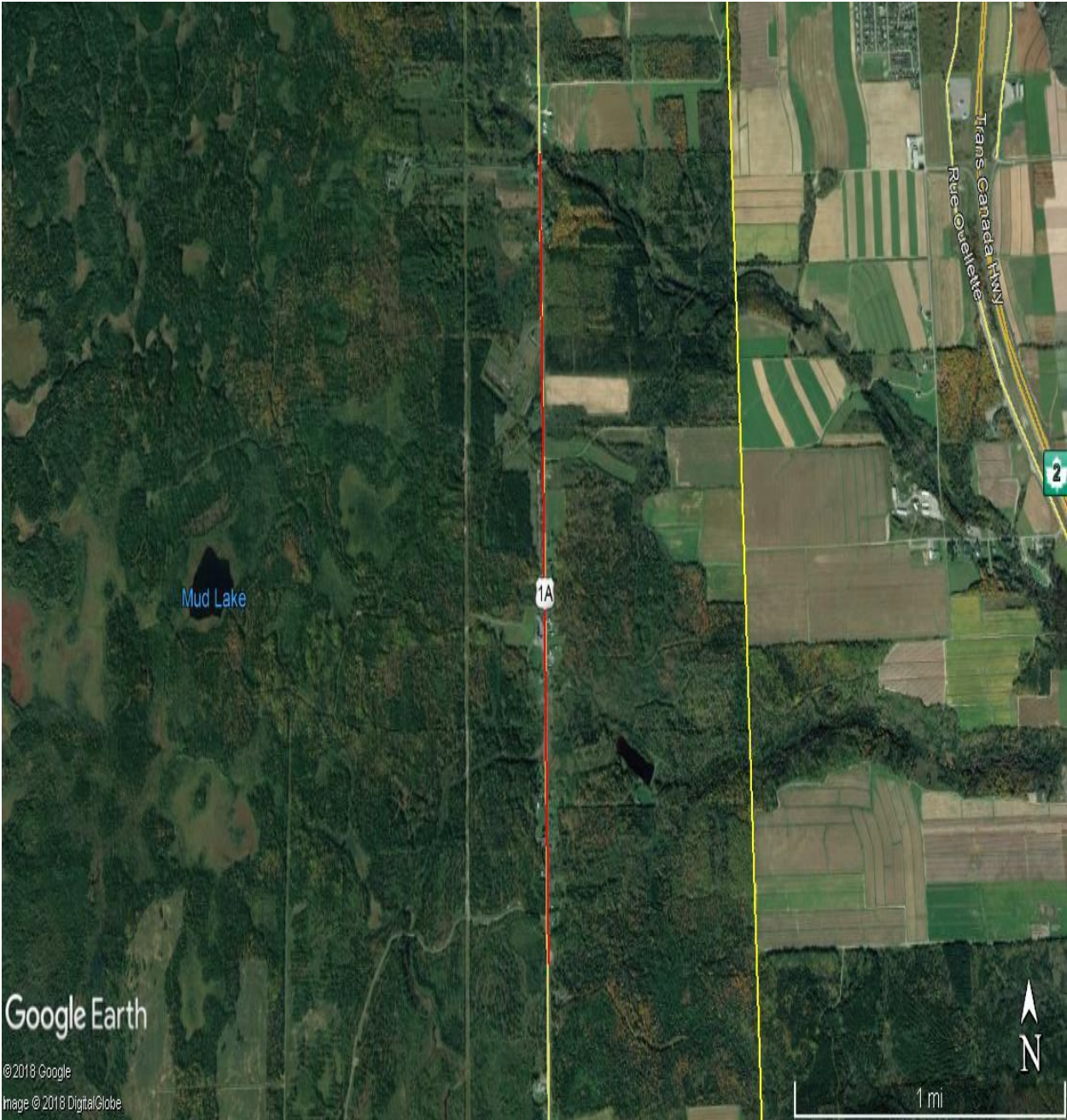
AADT Location	Historical AADT
Route 1-A at the Limestone Townline	2012-1080 2015- 940
Route 1-A North of Chardee at Townline	2012-1040 2015-840

Source: MaineDOT, 2016

## MaineDOT Work Plan Projects

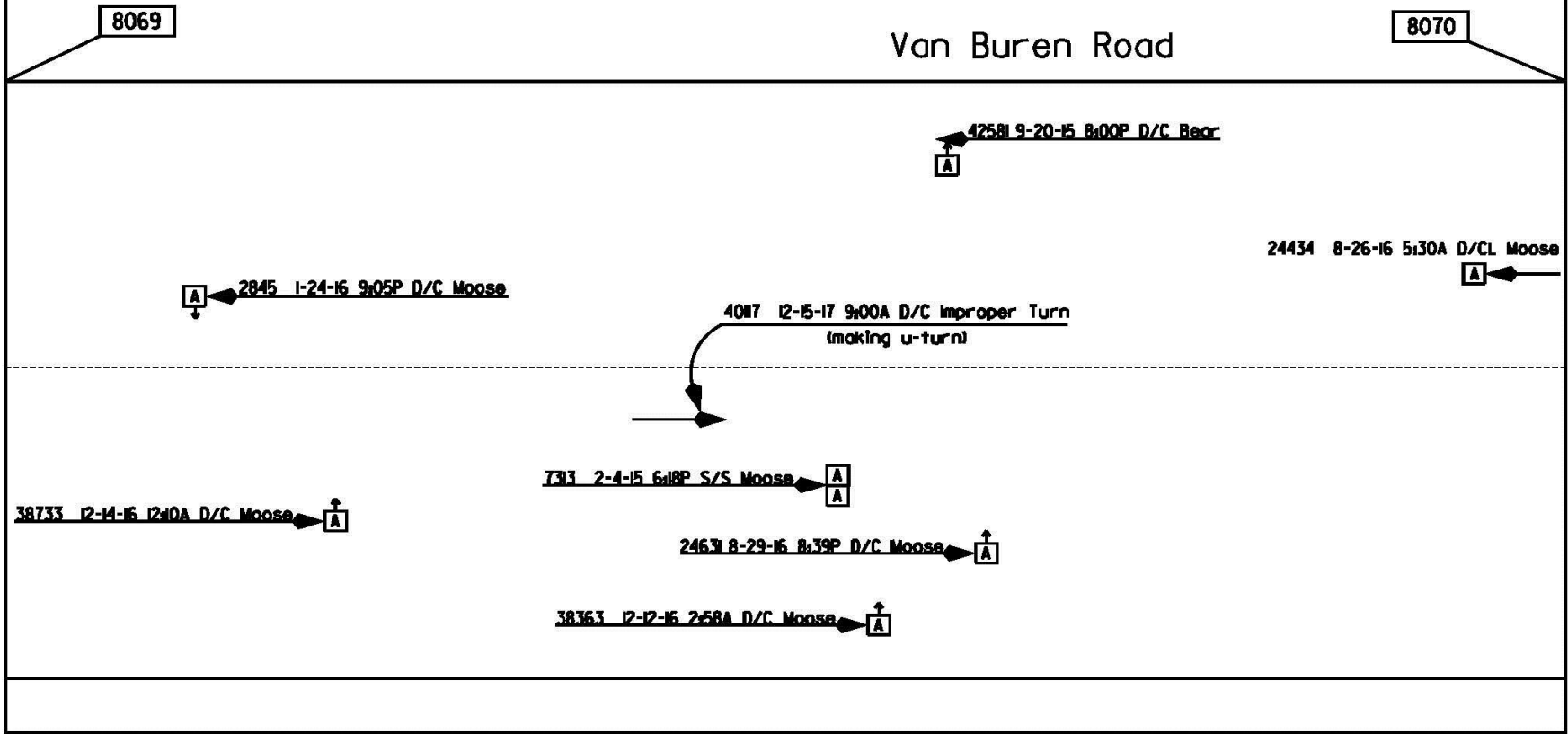
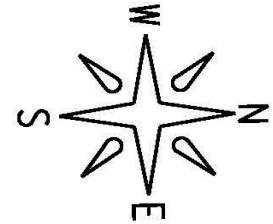
MaineDOT is planning to replace a large culvert on Route 1-A 0.89 mile south of the Hamlin townline in 2018.

**Aerial View**



Caswell  
Link: 8069-8070  
Element: 3117585  
Study Period: 2015-2017  
# of Crashes: 8 / CRF: 1.17

Prepared by M&O Traffic Engineering  
(R.A. - 6/21/18)





Van Buren Road in Caswell located at node 8069 looking north.



Source: NMDC, 2018

Van Buren Road in Caswell looking south from node 8070.



Source: NMDC, 2018



Source: NMDC, 2018

Older timber harvest located near node 8070 in Caswell.



Source: NMDC, 2018



Moose crossing located near node 8069. While most of the moose/vehicle collisions occurred during the winter months, this is indicative of the moose population in the area.



Source: NMDC, 2018

Moose crossing located near node 8069.



Source: NMDC, 2018

Small compact area located along the Van Buren Road in Caswell. Speed limit is reduced from 55 to 40 in this area.



Source: NMDC, 2018



## Connor Township

**Location:** Van Buren Road from intersection of Guerrette Road (node 8463) southwest 1.46 miles to intersection of Sheen Road. (node 8758).

**Assessment:** This link contains two lanes with paved shoulders. The southern end contains numerous single family residential units which diminish as one travels north. Speed limits near these residential unit drops to 50 mph. There are several areas of wetlands which provide ideal moose habitat. The link is generally straight with long passing zones. There is a sharp curve located just north of the Sheen Road intersection.

Land uses along the link include single family residential dwellings and forestland.

### Recommendations:

- Consider animal crossing signs at appropriate locations
- Consider working with landowners to reduce the number of access near the Sheen Road and at the residential development north of the Sheen Road on the west side of the link.
- Consider a further reduction of the speed limit along the southern end of the link.
- Consider an improved winter road maintenance schedule.
- Consider trimming vegetation to the furthest extend possible along the right-of-way.
- Consider more frequent mowing of grass to allow for longer sight distances.

### Crash Summary:

This link was an HCL in the 2013-15.

Between 2015 and 2017, there were eight (8) crashes along the link. Five (5) of the eight involved animals (deer/moose) and one (1) ach failure to yield, failure to stay in proper lane, and failure to yield. During the time of the writing of this report, NMDC staff noticed “driver impatience” where vehicles following slower vehicles passed at the first opportunity.

In the 2013-15 timeframe, three (3) of the crashes were due to road surface conditions in December. Four (4) involved animal collision (dog and moose) while the remaining two included “failure to yield” and “fail to keep in proper lane.”

### High Crash Information (2015-2017)

Beginning Node	Ending Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
8463	8758	8	1.16	25.0	185	36
<b>2013-2015</b>						
8463	8758	9	1.36	11/1	152	19

Source: MaineDOT, 2018

## Link Information

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
Van Buren Road	1	D	A	B	Principal Arterial	State	55-50-55

Source: MaineDOT, 2018

## Traffic Counts

Traffic Counts are not available at this specific location.

Historical AADT	AADT Location
2015- 2,130	US Route One northeast of the Emond Road

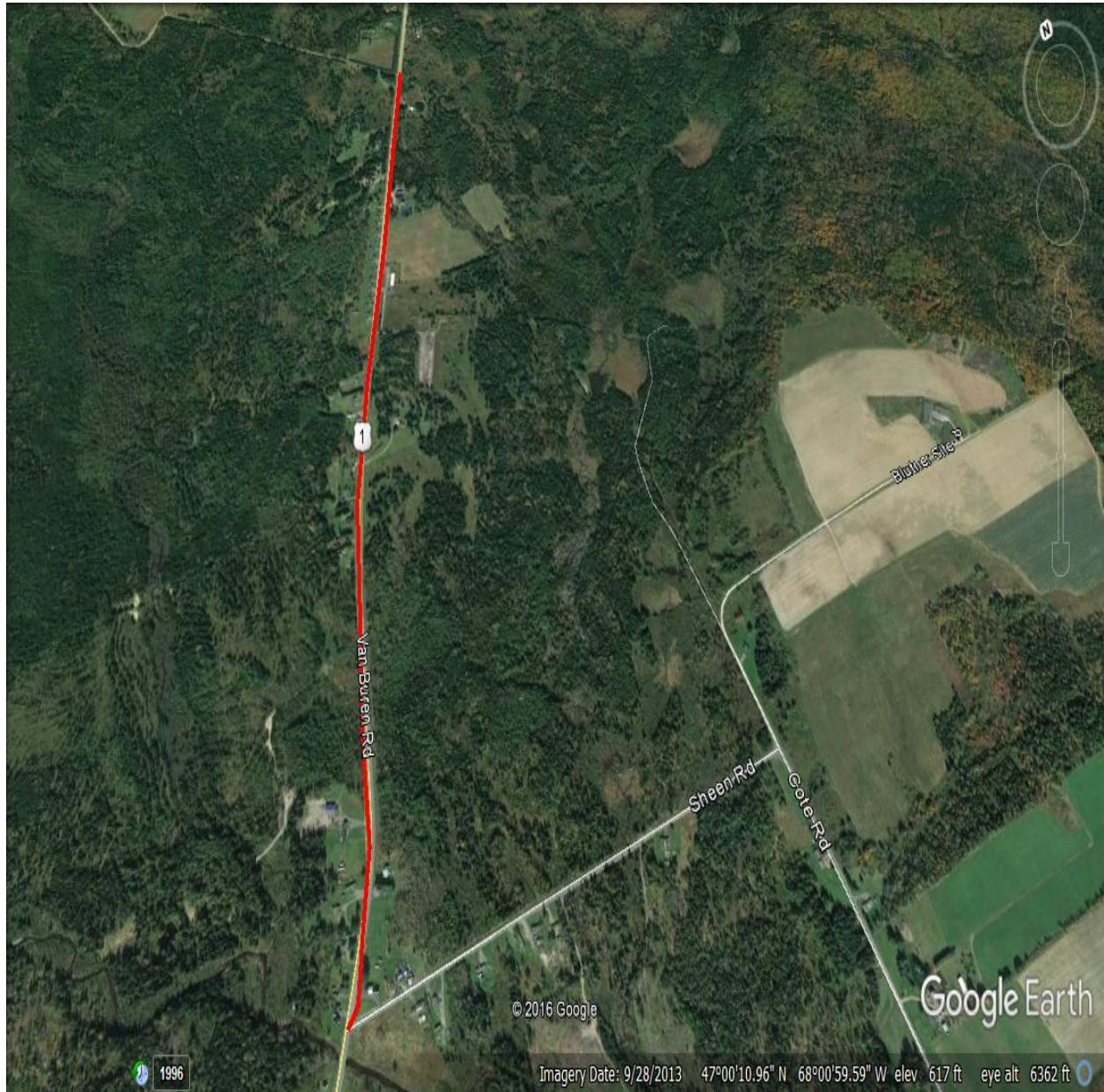
Source: MaineDOT 2016

## MaineDOT Workplan Calendar Years 2018-2019-2020

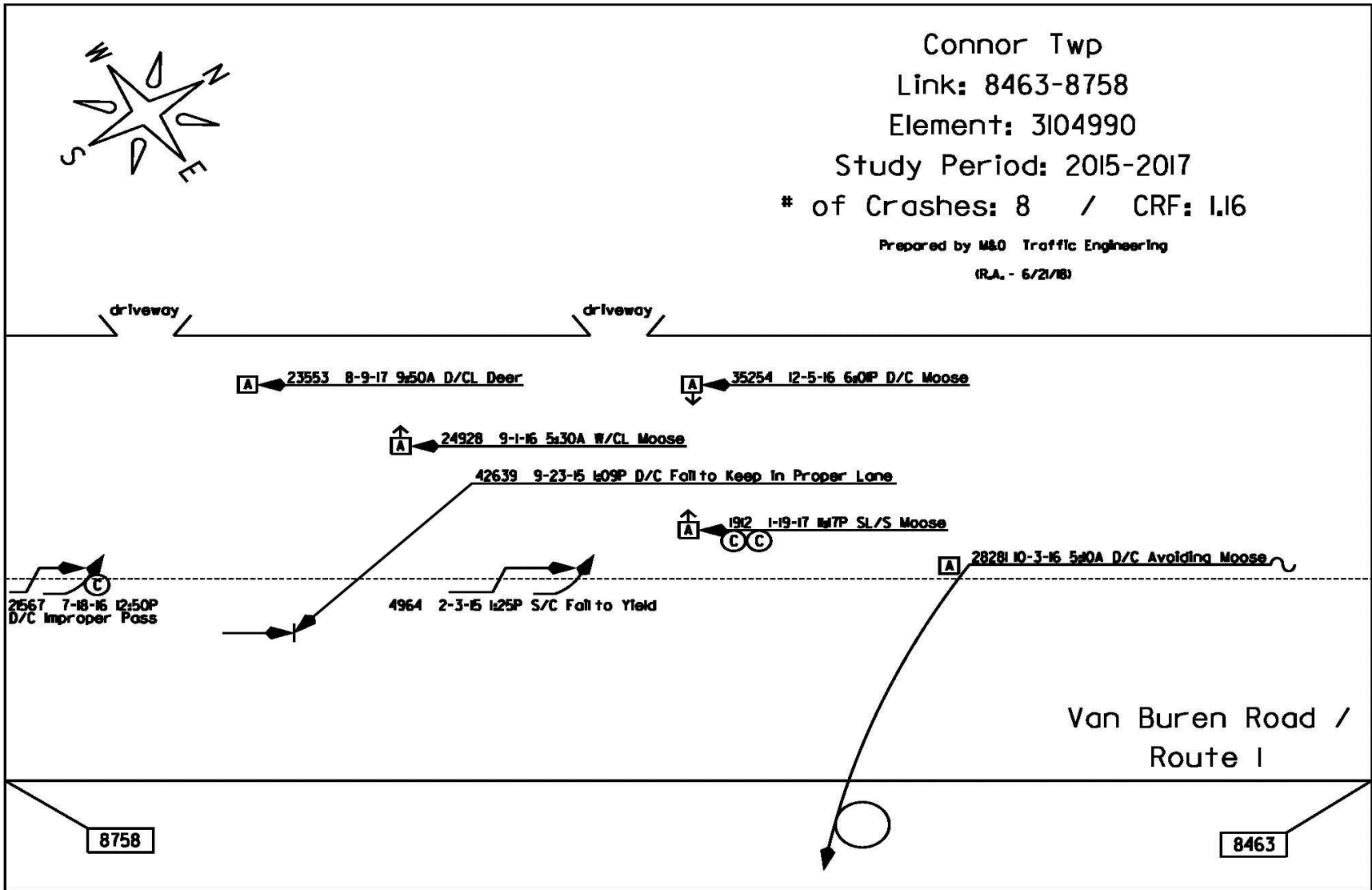
No projects are planned for this link in the current workplan.

**Aerial View**

Intersection of Guerrette Road (node 8463) and Van Buren Road to intersection of Sheen Road and Van Buren Road. (node 8758). Red line indicates HCL link.

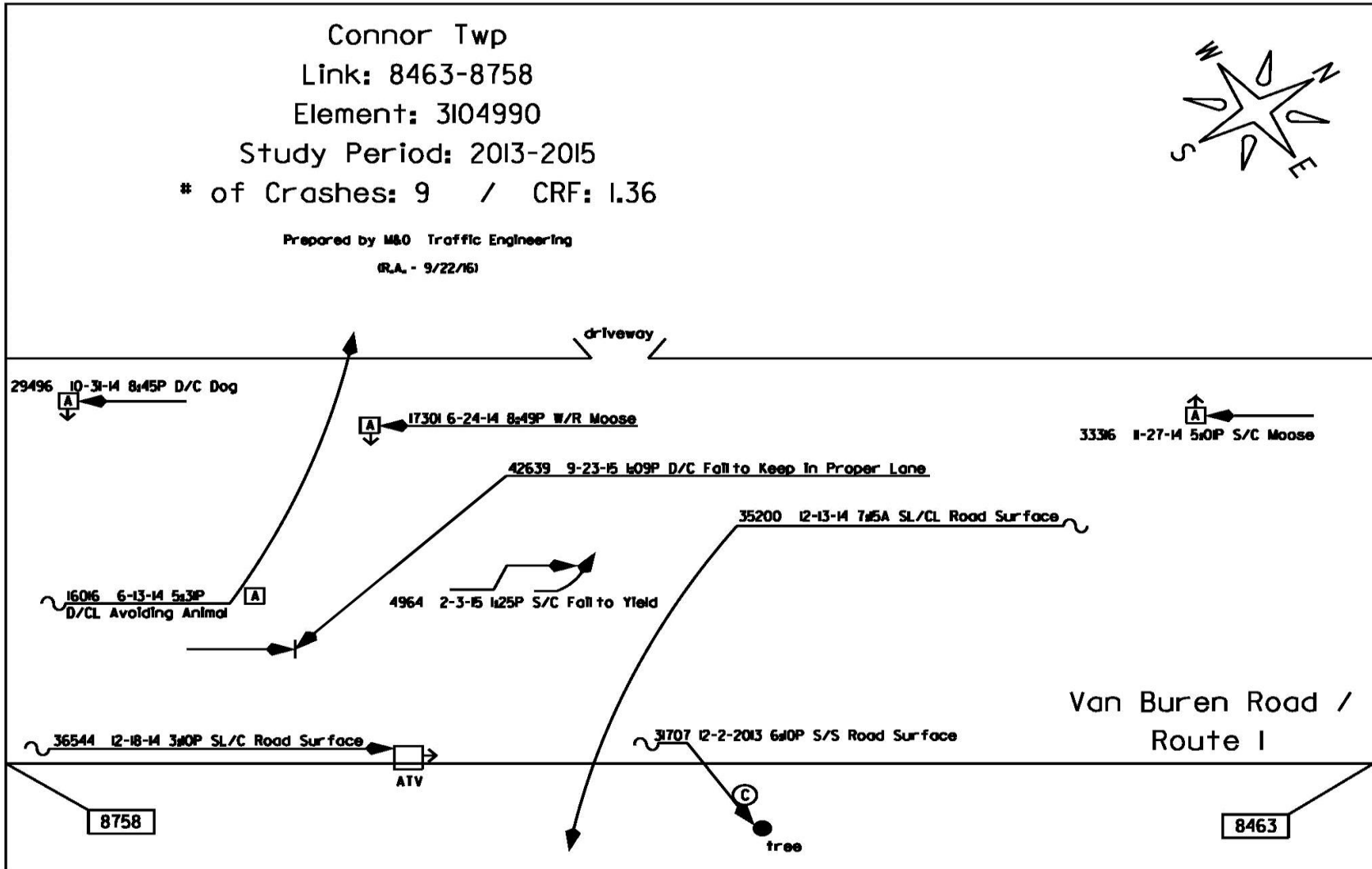


MaineDOT Crash Diagram, 2018





MaineDOT Crash Diagram, 2016



Van Buren Road/ Sheen Road intersection looking north.



Source: NMDC, 2018

Sign marking Curve and School bus stop at curve north of Sheen Road



Source: NMDC, 2018



Passing zone with perennial “yard sale.”



Source: NMDC, 2018

Residential development with numerous access. Speed limit is reduced to 50 mph along this section.



Source: NMDC 2018

Vegetation close to road which is reducing sight distances.



Source: NMDC, 2018



## Connor Township

Location: Non-intersection on Van Buren Road (node 8464) northeast 0.79 miles to Connor Planation/Cyr Plantation Townline (node 8465).

Assessment: This two-lane road has wide paved shoulders and animal reflectors along the length of the Element. The road is straight with a 55 mph speed limit and the vegetation has been cleared for most of the length. This link has a reflector system along its length in an attempt to reduce animal/vehicle collisions. This link was an HCL in 2013-15 and the number of crashes has increased from 8 to 15 with the rank also increasing from #10 to #4.

The element is very rural with mostly commercial forestland located along the corridor. There are several small seasonal camps and single family residential units. Several logging roads intersect the element. This is ideal moose habitat and NMDC staff noticed significant moose tracks and crossings along the road during the winter months.

### Recommendations:

- Advocate for additional moose permits.
- Determine the effectiveness of the reflector system to reduce the number of animal/vehicle collisions.
- If found effective, consider creating a public service announcement/ educational program about the reflector system.
- Add flashing “Moose Crossing” signs at southern end of link and in Cyr Planation.
- Consider airing a moose public service announcement during the Fall rutting period and during the winter months warning motorist of the potential of moose in the road.
- Improve trimming of vegetation along link to improve early detection of moose/deer.
- Clear vegetation to the greatest practical extent along right-of-way.

### Crash Summary:

Fourteen (14) of the 15 crashes involved moose and occurred at the northern end of the link. The other involved a motorcycle and unknown causes. As stated above, the number of crashes along this link has increased since 2015.

In 2013-15, Seven (7) of the eight (8) crashes involved animal collisions, (six (6) of which were moose). The other collision was driver falling asleep.

### High Crash Information (2015-2017)

Beginning Node	Ending Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
8464	8465	15	3.60	20.0	36	4
<b>2013-15</b>						
8464	8465	8	2.01	25.0	97	10

Source: MaineDOT, 2018

## Link Information

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
Van Buren Road	1	D	A	B	Principal Arterial	State	55

Source: MaineDOT, 2018

## Traffic Counts (Source: MaineDOT 2016)

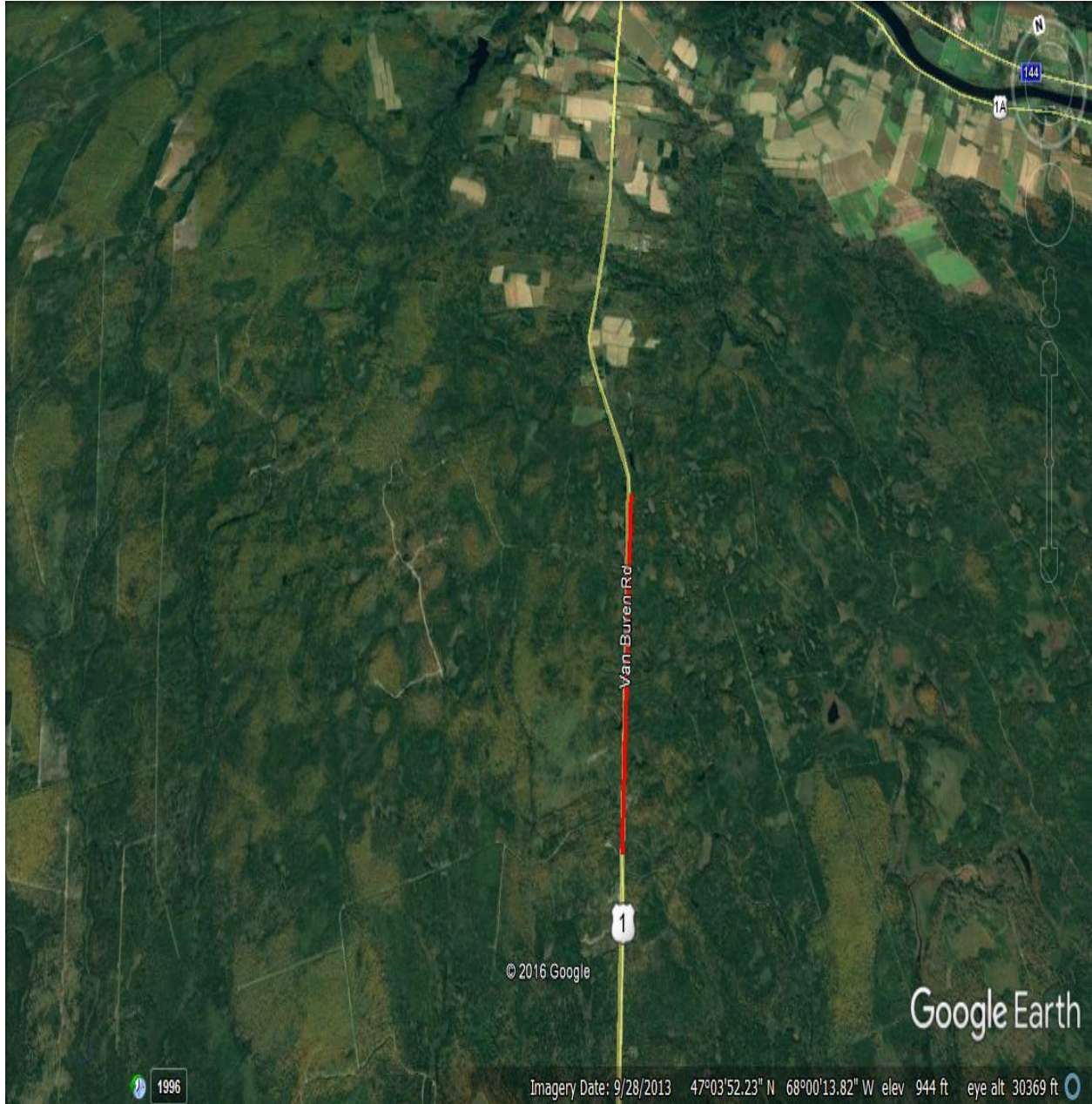
Historical AADT		AADT Location
2012-1040	2015-840	US 1A N/O IR 2099 (Chardee) (PW)

## MaineDOT Workplan Calendar Years 2018-2019-2020

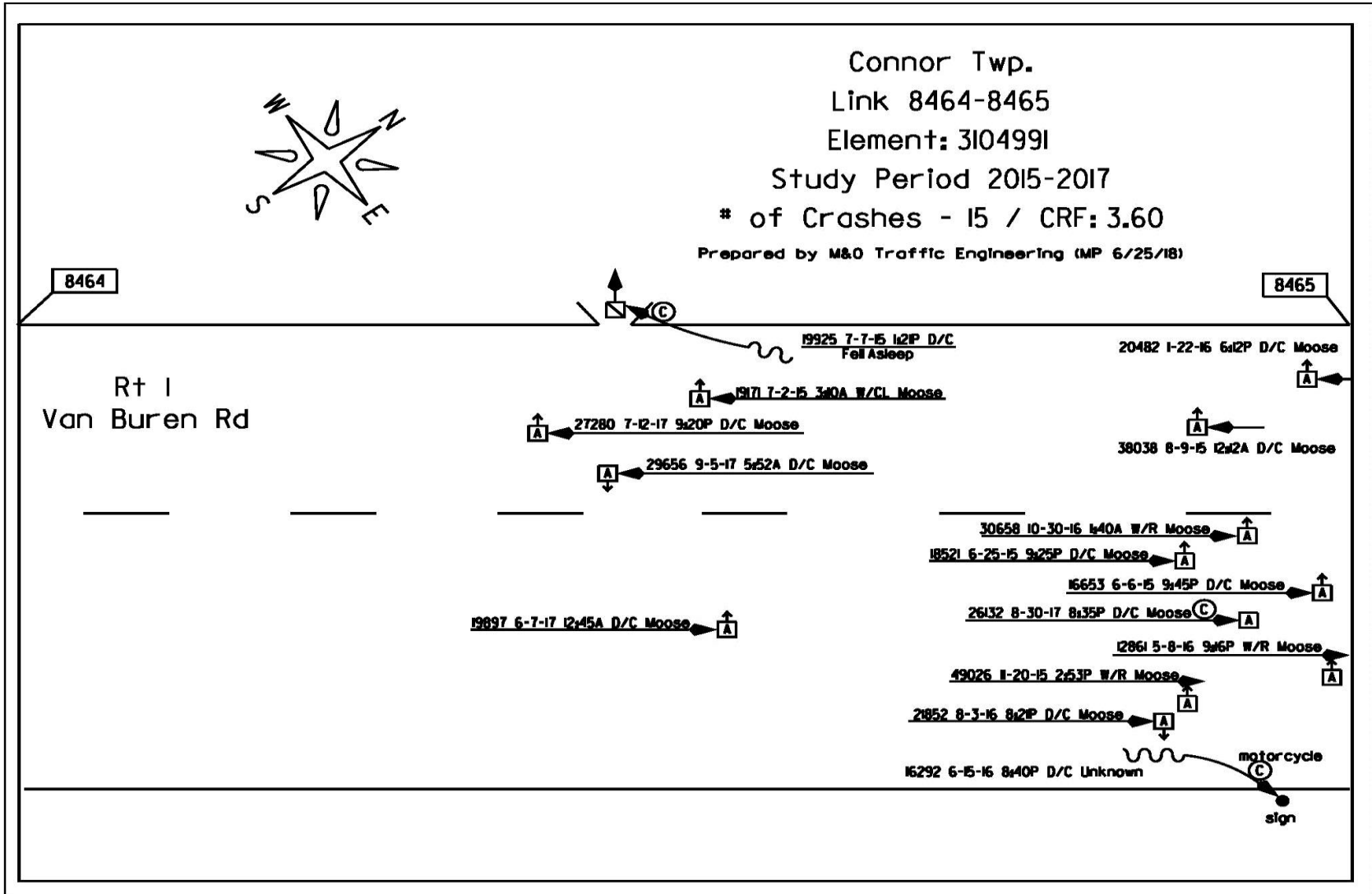
No projects are planned for this link in the current workplan.

## Aerial View

Non-intersection on Van Buren Road (node 8464) northeast 0.79 miles to Connor Planation/Cyr Plantation Townline (node 8465). Red line indicates HCL link.

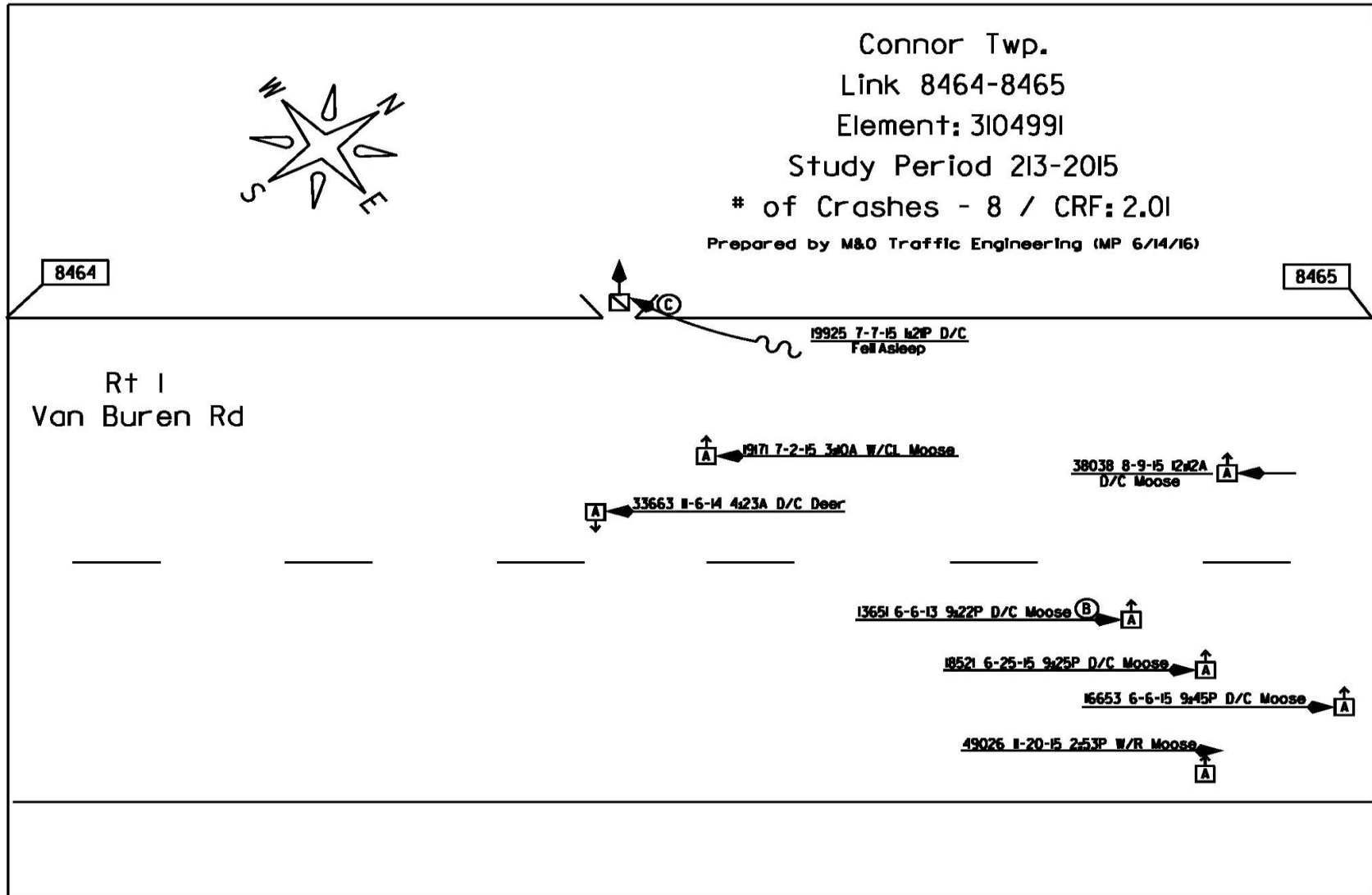


MaineDOT Crash Diagram, 2018





MaineDOT Crash Diagram, 2016



Connor/Cyr Plantation Townline with reflector.



Source: NMDC 2018

Moose crossing/habitat at Connor/Cyr Plantation Townline.



Source: NMDC, 2018



Moose trail and reflector system along link.



Source: NMDC, 2018

Vehicle traveling north on Route 1



Source: NMDC, 2018

## Cross Lake Township

Location: Caribou Road beginning at intersection of Ouellette Road (node 8018) and extending northwesterly 1.59 miles to node 8019.

Assessment: This two-lane road has gravel shoulders with several well marked curves. There is a 50 mph speed limit and the vegetation was not trimmed at the time of the writing of this report. The link is well marked with Curve, School Bus Stop, and Moose Crossing signs. Route 161 is a major route between the St. John Valley and central Aroostook area and serves as a heavy haul freight route.

The element is rural with mostly agricultural lands, a large wetland, and scattered residential development.

### Recommendations:

- Consider additional speed enforcement details along corridor.
- Consider installing snow fencing in areas where drifting occurs.
- Consider airing a moose public service announcement during the Fall rutting period and during the winter warning motorists of the potential of moose in the road.
- Continue to trim vegetation along link to improve early detection of moose/deer.

### Crash Summary:

Four (4) of the 10 crashes involved speed, 4 involved moose, and 2 were attributed to road conditions.

### High Crash Information (2015-2017)

Beginning Node	Ending Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
8018	8019	10	1.31	0.0	170	28

Source: MaineDOT, 2018

### Link Information

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
Caribou Road	2	B	A	C	Minor Arterial	State	50

Source: MaineDOT, 2018



## Traffic Counts

Historical AADT	AADT Location
2012- 1,080 2015- 1,370	Route 161 northwest of the Ouellette Road intersection

Source: MaineDOT 2018

## Most Recent Highway Treatment

Light Capital Paving was completed in September 2016.

## MaineDOT Work Plan Calendar Years 2018, 2019, and 2020.

A culvert replacement (#159063) located 2.5 miles north of the Ouellette Road is scheduled in 2019.

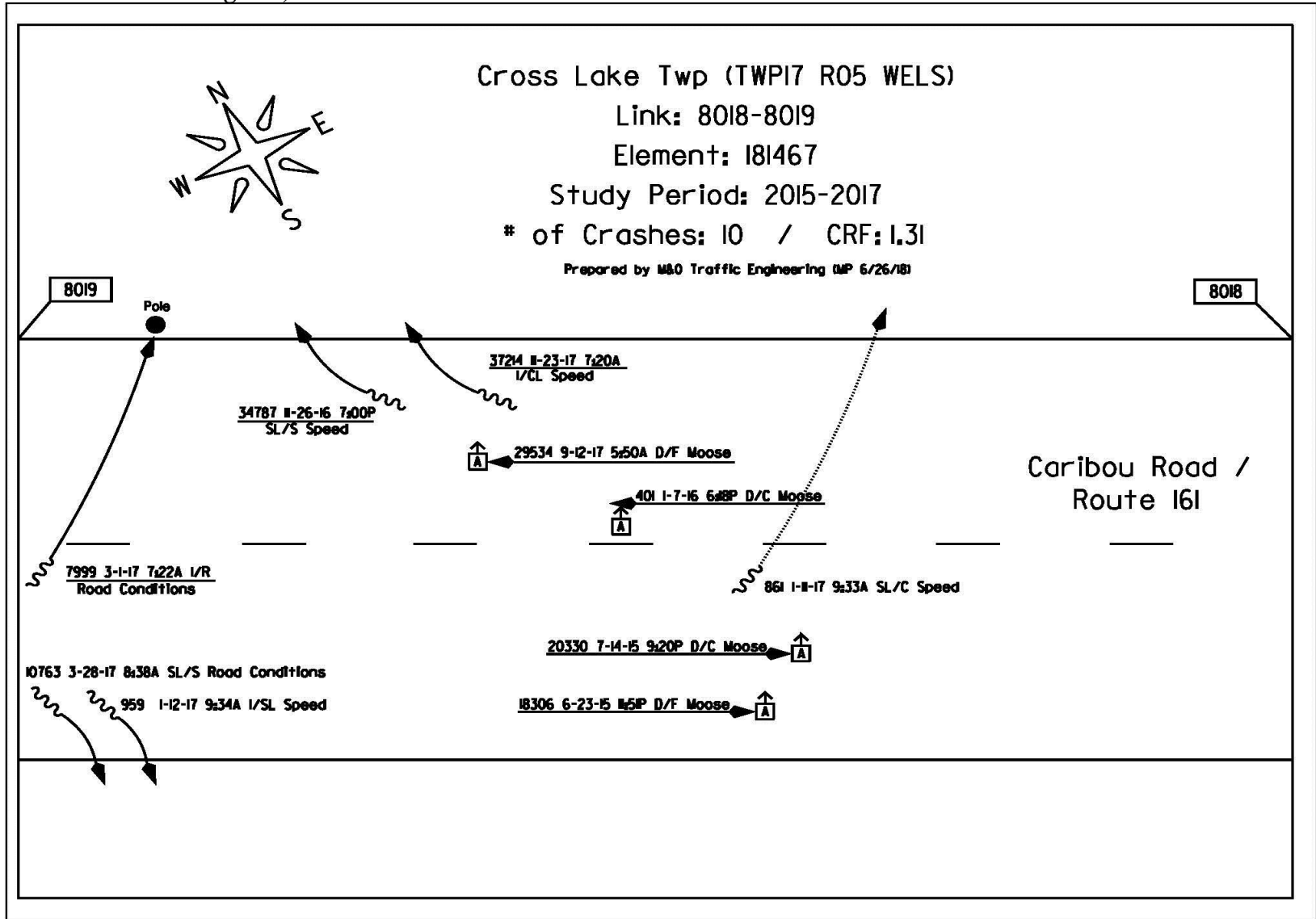
A 1 ¼ inch Overlay is scheduled from 2.04 miles northwest of the Stockholm townline and extending northwesterly 7.32 miles in 2019. This is not located on the link but is adjacent.

## Aerial View

Caribou Road beginning at intersection of Ouellette Road (node 8018) and extending northwesterly 1.59 miles to node 8019.



MaineDOT Crash Diagram, 2018





Large wetland located at north end of link.



Source: NMDC, 2018

Moose Crossing signs are located at either end of wetland area.



Source: NMDC, 2018



## Cyr Plantation

Location: Caribou Road (Route 1) from the Connor Twp./Cyr Plantation line (node 8465) northeast 0.99 miles to node 8466.

Assessment: This two-lane road has wide paved shoulders and animal reflectors along the length of the Element. The road is straight with a 55 mph speed limit. Staff noticed that vehicles travel at a high rate of speed and pass slower vehicles in several location. Antidotally, staff also noticed a high concentration of moose along the link during the winter months. This link has a reflector system along its length which was installed in an attempt to reduce animal/vehicle collisions. Unlike the link located just to the south in Connor Township, the number of crashes has decreased from 16 in 2013-2015 to eight (8) in 2015-2017 and the County rank dropped from #3 to #20.

The element is very rural with mostly commercial forestland located along the corridor. There are several small seasonal camps and single family residential units. Several logging roads intersect the element.

### Recommendations:

- Determine the effectiveness/viability of the reflector system to reduce the number of animal/vehicle collisions.
- Add flashing “Moose Crossing” signs at northern end of link and in Connor Township.
- Consider airing a moose public service announcement during the Fall rutting period and during the winter months warning motorist of the potential of moose in the road.
- Improve trimming of vegetation along link to improve early detection of moose/deer.
- Clear vegetation to the greatest practical extent along right-of-way.

### Crash Summary:

Six (6) of the crashes involved moose with the remaining crashes being driver falling asleep (1) and improper passing (1).

In 2016, a majority of the crashes were animal related. Several involved high speed and at the time of the writing of the 2016 report, NMDC staff noticed that traffic travels at a high rate of speed along this corridor. This hasn’t changed in 2018.

### High Crash Information

2015-2017						
Beginning Node	Ending Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
8465	8466	8	1.64	25.0	137	20
2013-15						
8465	8466	16	3.43	18.8	30	3

Source: MaineDOT, 2018

## Link Information

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
Caribou Road (Rt. 1)	1	C	A	B	Principal Arterial	State	55

Source: MaineDOT, 2018

## Traffic Counts (Source: MaineDOT 2016)

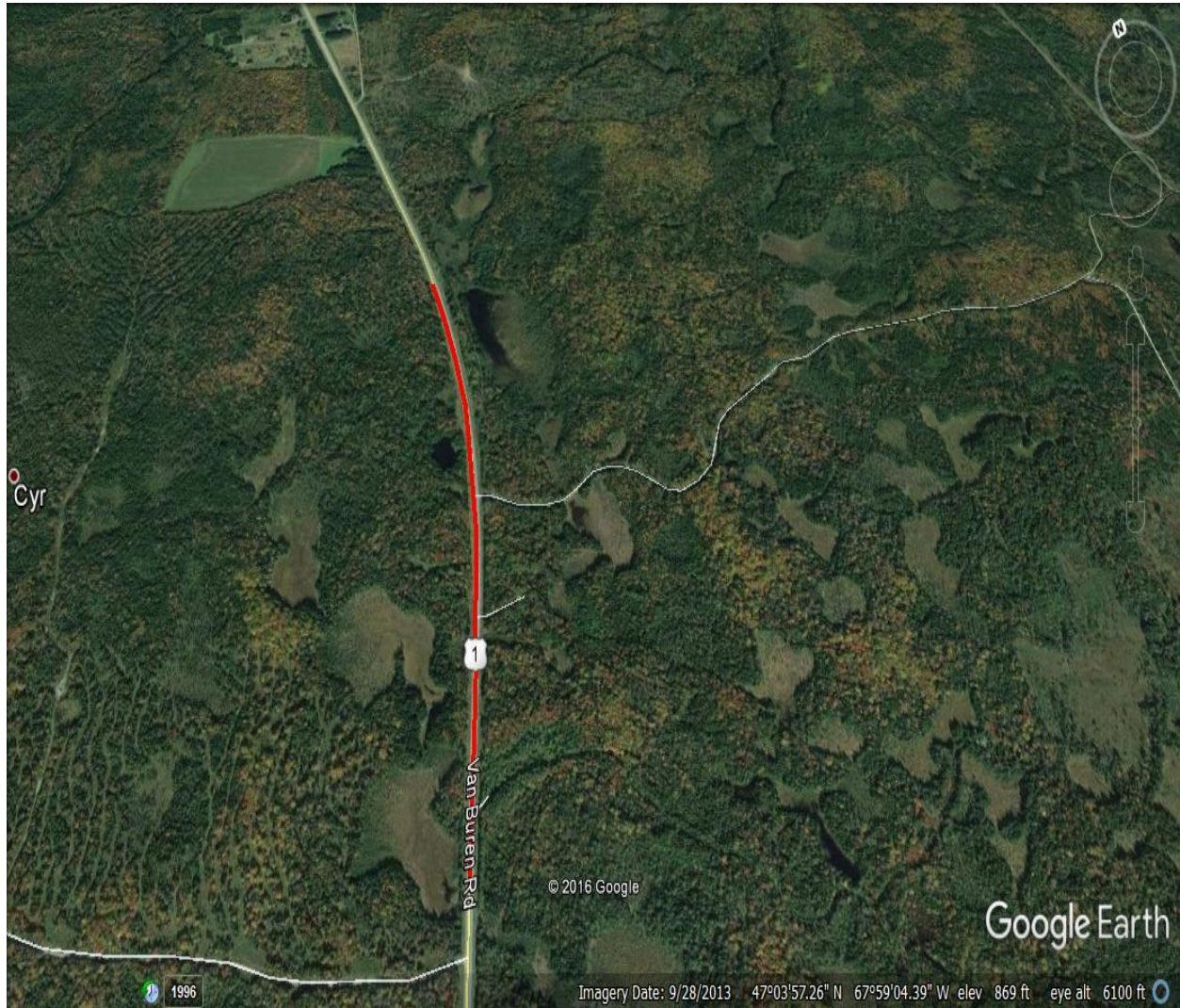
Historical AADT	AADT Location
2015- 1,470	US Route 1 south of the intersection of IR 5030 (S JCT)

## MaineDOT Workplan Calendar Years 2018-2019-2020

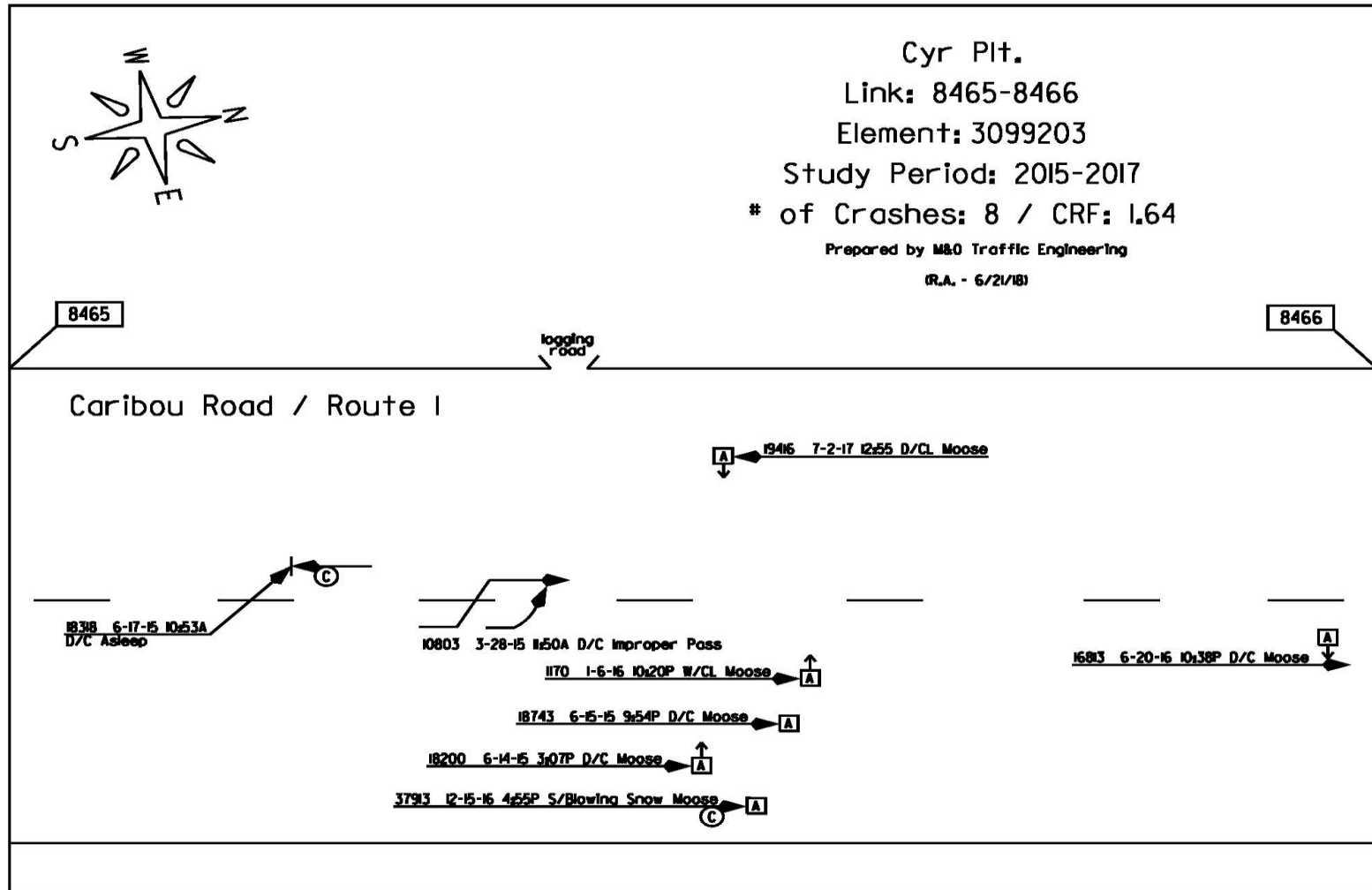
No projects are planned for this link in the current workplan.

## Aerial View

Caribou Road (Route 1) from the Connor Twp./Cyr Plt. line (node 8465) northeast 0.99 miles to node 8466. Red line indicates HCL link.



MaineDOT Crash Diagram, 2018





Vegetation close to road and grass not mowed. Route 1 heading north in Cyr Plantation.



Source: NMDC 2018

Vegetation close to road and grass not mowed. Note shadows in travel lane. Route 1 looking south in Cyr Plantation.



Source: NMDC, 2018



Tall grass behind reflector. Route 1 heading north in Cyr Plantation.



Source: NMDC, 2018

## Town of Fort Fairfield

Location: Presque Isle Road from the Presque Isle/Fort Fairfield townline (node 8663) northeast 0.7 miles to the Conant Road intersection (node 8664).

Assessment: This link is located in Fort Fairfield on the Presque Isle Road (Route 167). This is a major route between Fort Fairfield and Presque Isle and has medium traffic counts. There is a mixture of small commercial, single family residential, and agricultural lands along the link. The link is a two-lane road with paved shoulders. While there is a moderately steep hill at either end of the link, it is for the most part straight with good sight distances. Areas of agricultural land may be situated in such a way as to create long expanses for blowing snow to become an issue. Staff noticed several vehicles traveling at a high rate of speed. Staff also noticed several driveways located on either side of the crest of a hill which could potentially create a dangerous situation. And finally, there is a passing zone located at the intersection of the Conant Road. While there is a turning lane (westbound), cars heading east could potentially be distracted and turn into oncoming traffic.

The entrance to the Maine Nordic Heritage Center is located at node 8663 which is situated at the top of a hill with minimal site distance, especially for vehicles heading towards Fort Fairfield. Hills and blind areas are well marked with signage.

### Recommendations:

- Consider a review of the passing zones.
- Consider installing deer crossing signs.
- Consider airing a moose public service announcement during the Fall rutting period warning motorists of the potential of moose in the road.
- Continue to trim vegetation along link to improve early detection of moose/deer.
- Extend the no passing zone heading northeast towards Fort Fairfield.

### Crash Summary:

Two (2) of the nine crashes involved improper passing or following too close with vehicles turning into driveway/ Nordic Heritage entrance. Five (5) of the crashes involved deer or moose, with the remaining 2 crashes attributed to driver inexperience and unsafe speed.

### High Crash Information (2015-2017)

Beginning Node	Ending Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
8663	8664	9	1.26	22.2	175	29

Source: MaineDOT, 2018

## Link Information

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
Presque Isle Road	2	D	A	D	Minor Arteria	State	50

Source: MaineDOT, 2018

## Traffic Counts

Traffic counts were not completed along the link.

Historical AADT	AADT Location
2012- 2,890 2015- 2,620	Route 167 southwest of the intersection with Road 1166

Source: MaineDOT, 2017

## MaineDOT Capital Workplan

There are no projects listed in the MaineDOT's Workplan for the Calendar Years 2018, 2019, and 2020 for this link.

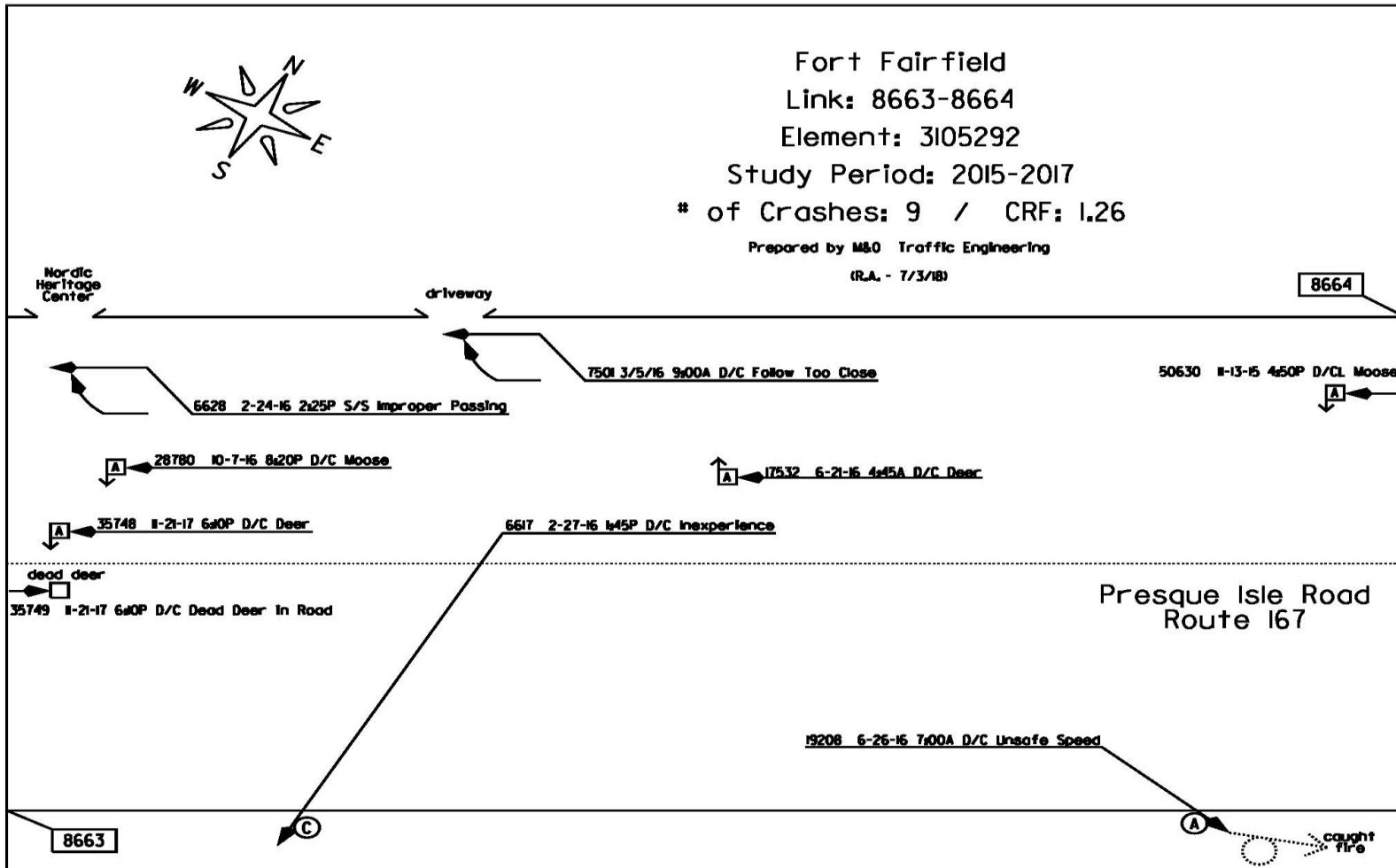


## Aerial View

Red line indicates HCL link.



MaineDOT Crash Diagram, 2018





Entrance to Nordic Heritage Center looking toward Presque Isle. Notice short sight distance.



Source: NMDC 2018

Entrance of Nordic Heritage Center looking northeast towards Fort Fairfield.



Source: NMDC, 2018



Conant Road Intersection looking northeast towards Fort Fairfield.



Source: NMDC, 2018

Presque Isle Road at Conant Road intersection looking towards Presque Isle. Blind hill with driveway. School bus stop is well marked with signs in both directions.



Source: NMDC, 2018



Presque Isle Road looking towards the Conant Road intersection. Typical deer and moose habitat. But notice the good sight distance.



Source: NMDC, 2018

## Town of Fort Kent

**Location:** West Main Street from the intersection of Meadow Lane (node 8571) extending 0.1 miles to the intersection of Hall Street (node 8572).

**Assessment:** West Main Street (Route 161/1) is located in the downtown area and is Fort Kent’s Main Street. The road is two lanes and has a wide paved shoulder and parallel parking is allowed on both sides of the link. The link is flat with a gentle curve. There are two (2) marked pedestrian crossings.

Land uses along the link are commercial, residential (second story apartments), and institutional (Post Office). There are a number of curb cuts and vehicles were observed turning at a number of locations. The speed limit is 25 miles per hour along this link. Both Meadow Lane and Hall Streets serve residential neighborhoods.

### Recommendations:

- Consider completing a traffic study along West Main Street from the intersection of Pleasant Street to the Town Office.
- Implement findings of traffic study.
- Consider a reduction in the number of curb cuts.

### Crash Summary:

There were eight (8) crashes between 2015 and 2017. Two (2) were failure to yield and one each for opened car door, hit gas rather than brake, improper turn, improper backing, speed, and avoiding vehicle. There were no fatal accidents or injuries occurring along this link in the timeframe.

### High Crash Information (2015-2017)

Beginning Node	Ending Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
8571	8572	8	2.90	0.0	50	5

Source: MaineDOT, 2018

### Link Information

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
West Main Street (Rt. 161/1)	2	B	A	B	Minor Arterial	State	25

Source: MaineDOT, 2018

## Traffic Counts

Traffic counts were not conducted along the link. The following are counts that have been completed on West Main Street in the general vicinity of the HCL link.

Historical AADT	AADT Location
2012-3,730 2015-3,820	(Rt 161) West Main Street southwest of Pearl Street
2012- 4,450	(Rt. 161) West Main Street southwest of US Route 1 (Customs)
2012-8,060 2015-8,590	Route1/161 West Main Street west of Page Avenue

Source: MaineDOT 2018

## Most Recent Highway Treatment

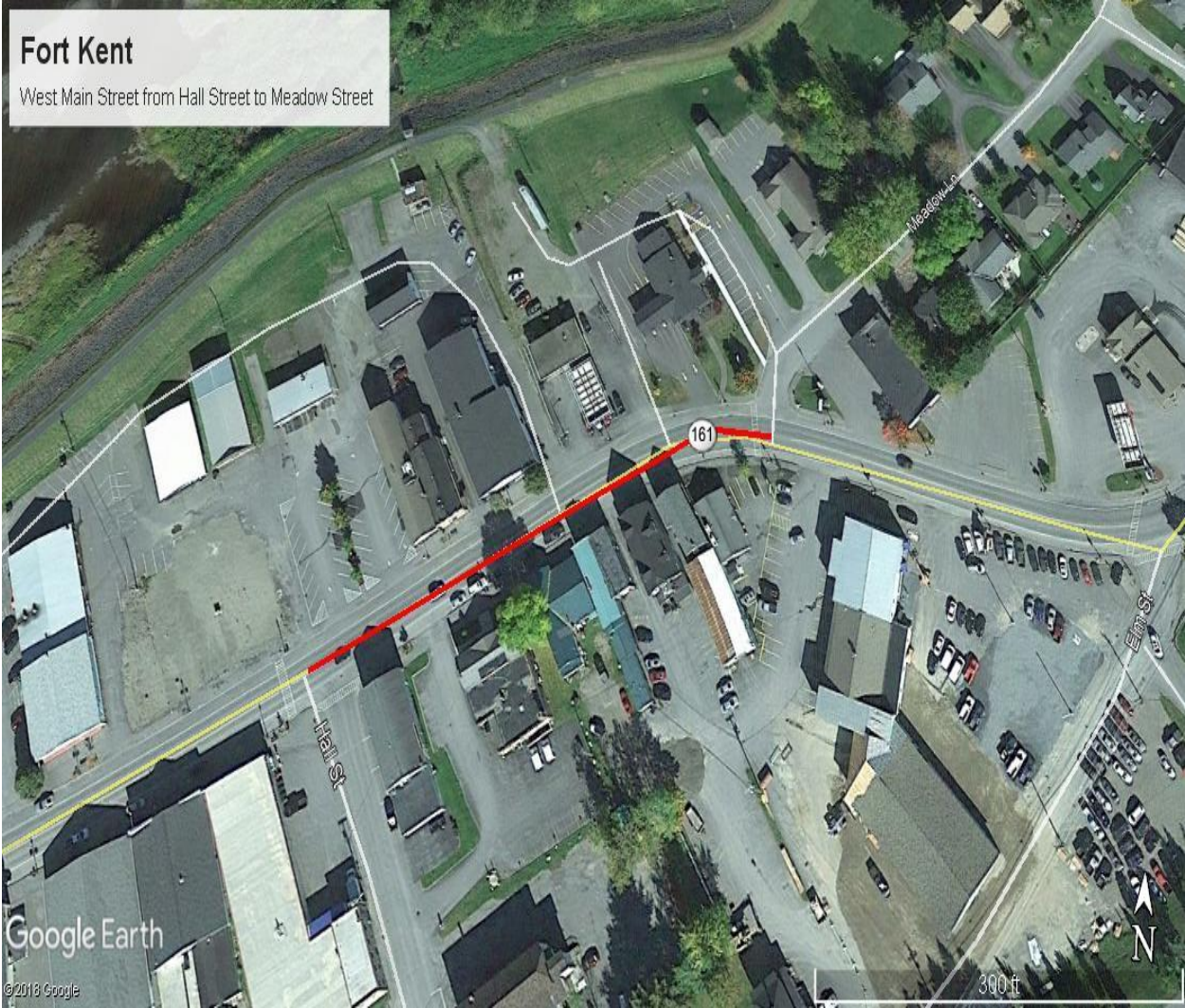
In 2011, a highway rehabilitation project was completed at this link. This project began at Sunnyfield Drive and extended northeasterly 4.59 miles to nearly the Fort Kent townline and included slope stabilization.

## Capital Work Plan Project

There are no scheduled Capital Work Plan projects in this location for the timeframe 2018-2020.

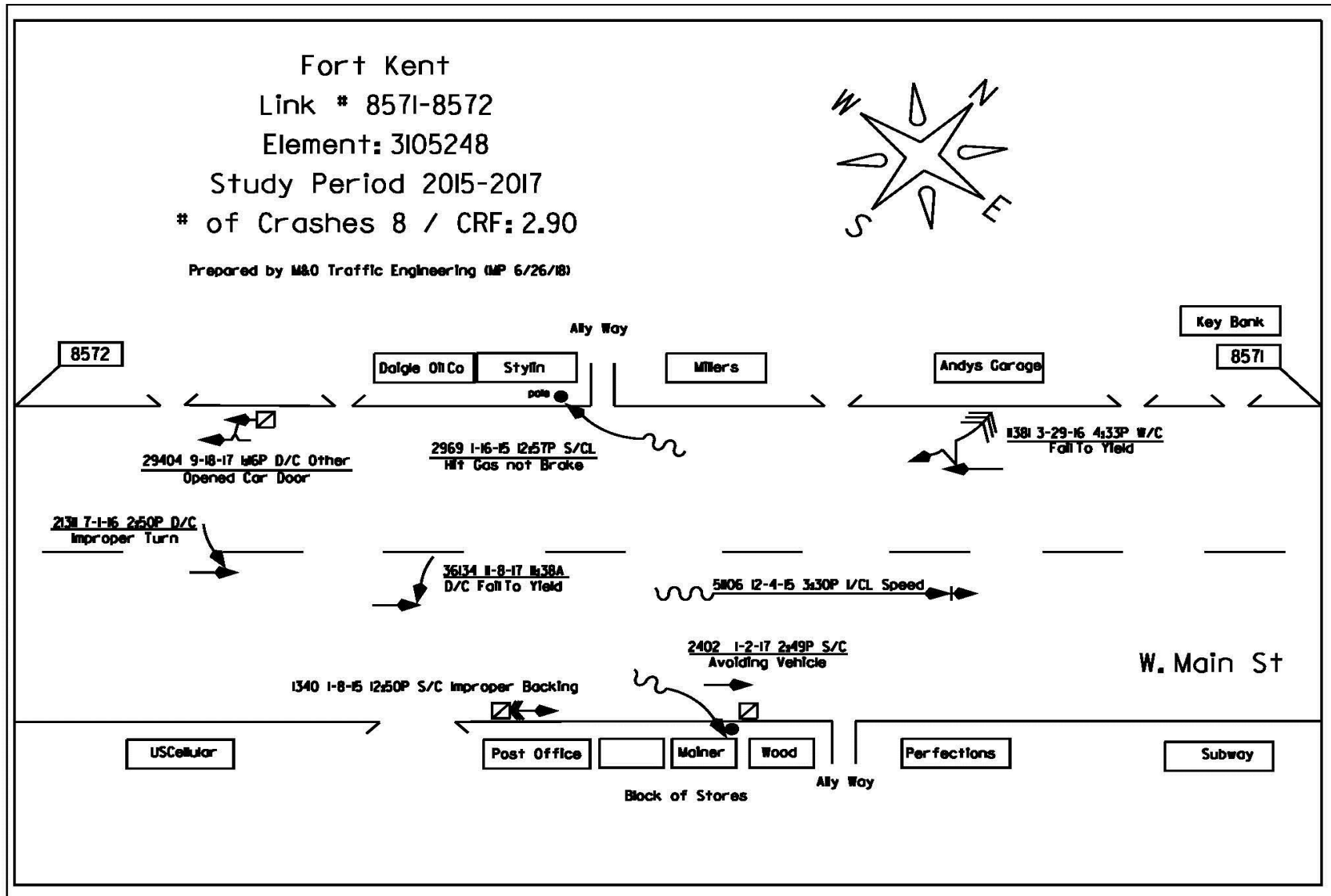
**Aerial View**

West Main Street from the intersection of Meadow Lane (node 8571) extending 0.1 miles to the intersection of Hall Street (node 8572).





MaineDOT Crash Diagram, 2018



West Main Street at Meadow Lane looking toward Hall Street (west). Crosswalks are well marked and notice wide shoulders.



Source: NMDC, 2018

West Main Street looking east toward Meadow Lane. Notice number of curb cuts.



Source: NMDC, 2018

West Main Street looking east



Source: NMDC, 2018

## Town of Masardis

Location: Masardis Road beginning at the intersection of the Sterling Ridge Road (node 7619) and extending northerly 2.35 miles to the Masardis/Ashland townline (node 7622).

Assessment: Route 11 is a major north-south route and is heavily utilized by the forest industry in this location. The road is two lanes and has a wide paved shoulder. There one rail crossing located at the north end of the link that are will marked and a second just over the Ashland townline. The road is relatively flat with a series of curves located at the northern end. The speed limit is 50 miles per hour and sight distances are generally good. A majority of the collisions occurred at the north end of the link.

Land uses along the link are industrial, residential, forested, and agriculture. The Maibec Mill is located at the southern end of the link where heavy haul trucking was bringing timber to the mill and shipping finished product out. NMDC staff noticed a front-end loader that had a broom attached to it. At the time of the writing of this report, staff did not notice any mud, dirt, or debris located along the link.

There is ideal moose/deer habitat located along the northern portion of the link. While doing a field review, NMDC staff had to slow to avoid a white-tailed deer which crossed the road just to the south of the railroad crossing.

### Recommendations:

- Consider installing snow fencing along the open fields to the north of the Sterling Road intersection.
- Continue to trim vegetation along the link to improve early detection of moose/deer. Trim additional vegetation south of Scopan Stream to the greatest practical extent.
- Continue to work with the mill manager to reduce mud, dirt, and debris near the Sterling Ridge Road intersection.
- Trim vegetation to ensure that all railroad and sharp curve signs are visible.

### Crash Summary:

There were seventeen (17) crashes between 2015 and 2017. There were no fatal accidents occurring along this link in the timeframe.

### High Crash Information (2015-2017)

Beginning Node	Ending Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
7619	7622	17	1.17	56.3	184	35

Source: MaineDOT, 2018

The following causes of the crashes were listed as reported by the Maine State Police or the Arostook County Sherriff's Department.



Cause	Number
Moose	3
Deer	2
Speed	3
OUI	1
Ice Patch	1
Road Conditions	2
Mechanical	1
Unknown Cause	2
Fail to Keep in Lane	1
Flying Debris	1

Source: MaineDOT, 2018

### Link Information

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
Masardis Road (Route 11)	2	F	A	C	Major Collector	State	50

Source: MaineDOT, 2018

### Traffic Counts

Traffic counts were not conducted along the link. The following are counts that have been completed on Route 11.

Historical AADT	AADT Location
2012- 1,630 2013- 1,520 2015- 1,250	Route 11 north of the intersection with the Garfield Road.

Source: MaineDOT 2017

### Most Recent Highway Treatment

A ¾ inch overlay was completed in 2013 beginning 1.1 miles south of the Masardis townline and extending north 6.47 miles. There was also a ¾ inch overlay completed in 2013 beginning 0.31 miles north of the Sterling Ridge Road and extending north for 1 mile.

### Capital Work Plan Project

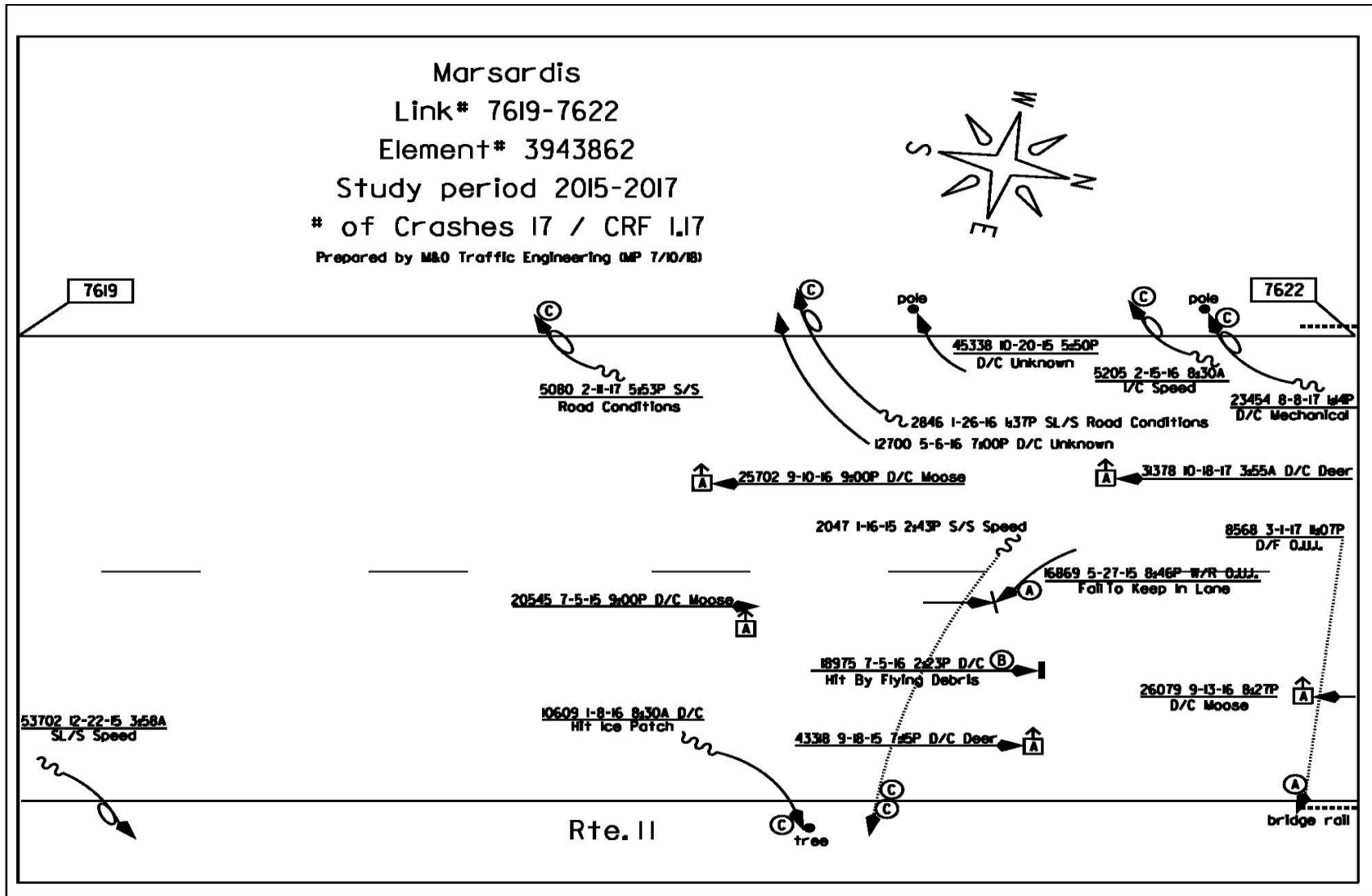
There are no scheduled Capital Work Plan projects in this location for the timeframe 2018-2020.

**Aerial View**

Masardis Road beginning at the intersection of the Sterling Ridge Road (node 7619) and extending northerly 2.35 miles to the Masardis/Ashland townline (node 7622). Red line indicates HCL link.



MaineDOT Crash Diagram, 2018





Masardis Road (Route 11) looking north toward Ashland. Passing zones are well marked. Notice vegetation close to road.



Source: NMDC, 2018

Same location looking south toward railroad crossing. Crossing is well marked. Vegetation is close to road.



Source: NMDC, 2018



Masardis Road looking north towards Ashland. Notice large field on either side of road. Consider installing snow fence during the winter months.



Source: NMDC, 2018

Masardis Road (Route 11) at the Sterling Ridge Road intersection. Notice mill parking across from mill and sharp curve sign.



Source: NMDC, 2018



Masardis Road looking north towards Ashland townline and railroad crossing. Sharp curve marked as is passing zone.



Source: NMDC, 2018

Same location



Source: NMDC, 2018

## **Town of Westfield**

Location: Houlton Road beginning at the intersection of the Burleigh and Shorey Road (node 8383) and extending north 1.69 miles to the intersection of the Cambridge Road (node 8385).

Assessment: The Houlton Road (US Route 1) is a wide two and three lane road with paved shoulders along this link. This is the major north-south route in Aroostook County and heavily utilized by passenger vehicles and trucking. Site distances are generally good, with a few exceptions, and there are passing lanes located on the hills (southbound traffic) near the Cambridge Road. The Burleigh Road intersection contains a turning lane for vehicles heading towards Westfield's village area. The link is marked with signs and at the time of the report, lanes were well marked. Vegetation and utility poles located along the Houlton Road at the Burleigh Road intersection create a blind spot and it is difficult to see on-coming southbound traffic.

Land uses along the link included residential, commercial and agriculture. There are numerous driveways and entrances located along the link. A few driveways, especially those near the crest of the hills, are located in blind spots

It should be noted that while reviewing this site, NMDC witnessed two (2) near accidents. The first was at the Burleigh Road intersection when a tractor trailer pulled out in front of on-coming traffic, both north and south bound. Traffic had to come to a complete stop for this vehicle. The second occurred near the intersection of the Cambridge Road. NMDC staff were heading north when a passenger vehicle heading south, turned onto the Cambridge Road cutting off vehicles heading north. One vehicle had to veer into the southbound lane in order to avoid a collision. Staff noticed that most vehicles traveled at a high rate of speed along this link.

### **Recommendations:**

- Trim vegetation near the Burleigh Road intersection to improve visibility.
- Increase speed enforcement along the link.
- Make drivers aware of potential turning traffic, especially south bound traffic near the Cambridge Road where the passing lane ends.
- Review the passing lane at the Cambridge Road.
- Consider planting vegetation or installing snow fencing on the west side of the link where snow drifting may be an issue.

### **Crash Summary**

There have been twenty-five (25) crashes along this link. Eight (8) have involved speed, 6 were attributed to road conditions (all in late Fall or early winter), 5 were animal related, and one each for hit and run, bald tires, oversteering, vehicle deflect, avoiding vehicle, and failure to keep in lane.



Beginning Node	Ending Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
8385	8383	25	1.39	40.9	156	24

Source: MaineDOT, 2018

### Link Information

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
Houlton Road (US Route 1)	1	C	A	B	Principle Arterial	State	55

Source: MaineDOT, 2018

### Traffic Counts

Historical AADT	AADT Location
2015- 5,090	US Route 1 north of the Shorey Road

Source: MaineDOT, 2016

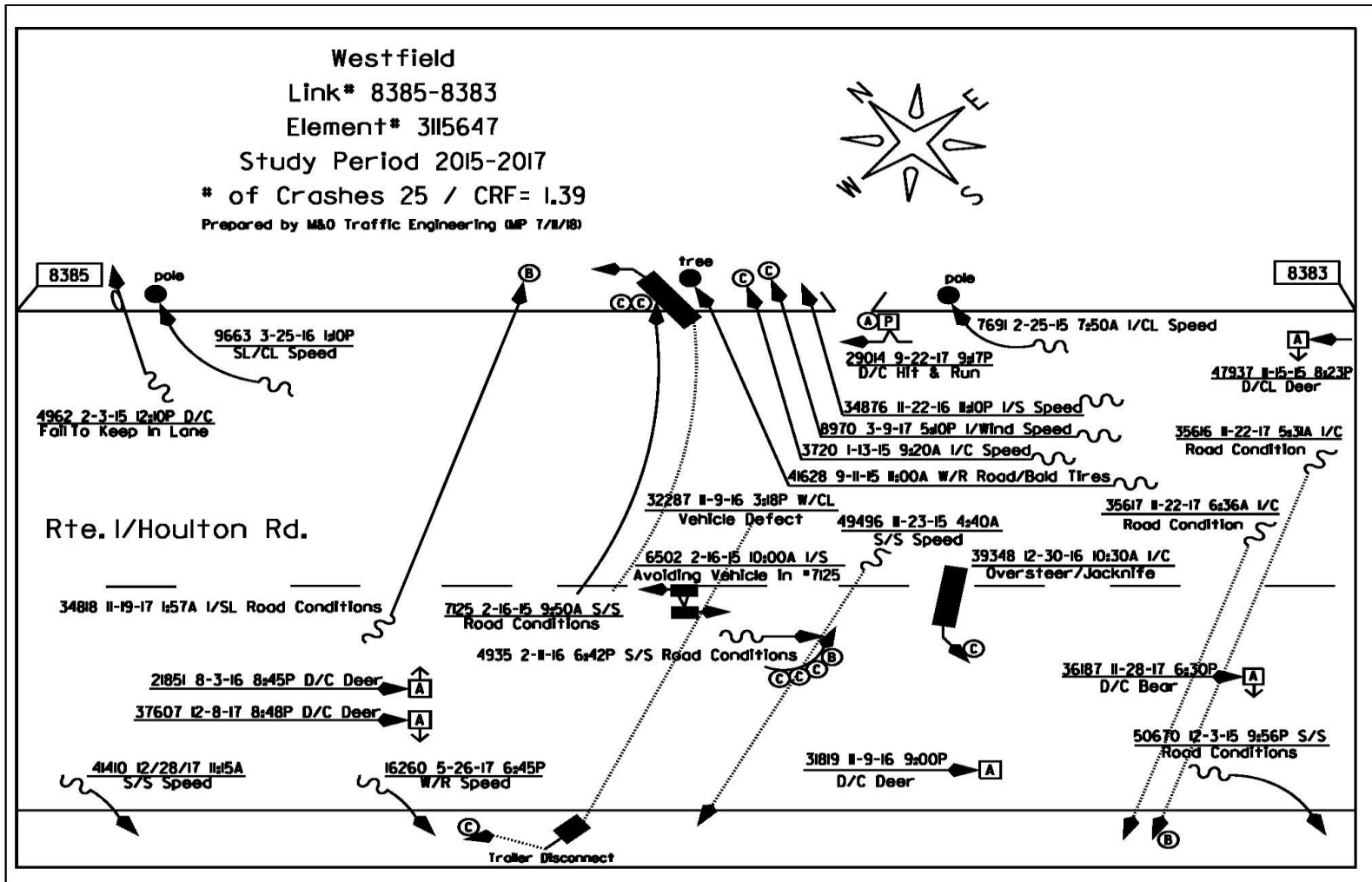
### MaineDOT Capital Work Plan Calendar Years 2018, 2019, 2020

There are no projects listed in the Capital Work Plan for this link.

## Aerial View



MaineDOT Crash Diagram, 2018





Burleigh Road intersection looking north. Note vegetation and utility poles blocking view.



3

Source: NMDC, 2018

Line striping at intersection of the Burleigh Road. Southbound.



Source: NMDC, 2018

Intersection of Cambridge Road. Passing lane (southbound) ends at crest of hill.



Source: NMDC, 2018

Same location.



Source: NMDC, 2018



## Town of Woodland

Location: Woodland Center Road from the intersection of the Fowler Road (node 6937) easterly 0.97 miles to the intersection of the Thidodeau Road (node 6938).

Assessment: This two-lane is predominately straight with several hills and a blind curve located at the Fowler Road. The speed limit is 50 miles per hour and sight distances are generally good. A majority of the collisions occurred near Caribou Stream where the road is flat and straight.

The link is well marked with signage ranging from Keep to the Right, School Bus Stop, Hidden Drive, and Curves. There is one School Bus stop sign located just east of the Fowler Road visible when heading west that is hidden by vegetation. There is a guardrail located at Caribou Stream.

Land uses along the link are residential, abandoned agriculture, and active agricultural. This is ideal habitat for moose and deer and the Caribou Stream area is a natural crossing. There is a small amount of forestland and Caribou Stream crosses just to the west of the Thibodeau Road.

### Recommendations:

- Consider installing animal crossing signs near Caribou Stream.
- Continue to trim vegetation along the link to improve early detection of moose/deer. Trim additional vegetation west of Caribou Stream.
- Trim vegetation to ensure that the School Bus Stop sign is visible to travelers heading west. (near the Fowler Road).

### Crash Summary:

Five (5) of the nine crashes involved deer/moose near Caribou Stream. Additionally, there was one each identified as: OUI, unknown causes, following too close, and failure to yield. The animal crashes occurred throughout the year with no one month standing out.

### High Crash Information (2015-2017)

Beginning Node	Ending Node	Total Crashes	Critical Rate Factor	Percent Injury	State Rank	County Rank
6937	6938	9	1.62	22.2	139	21

Source: MaineDOT, 2018

### Link Information

Road Name	Highway Corridor Priority	Customer Service Level-Safety	Customer Service Level-Service	Customer Service Level-Condition	Functional Class	Jurisdiction	Speed Limit
Woodland Center	4	A/B	A	A/C	Major Collector	State	50

Source: MaineDOT, 2018



## Traffic Counts

Historical AADT	AADT Location
2012- 1,080	Route 228 west of the Caribou Stream Bridge

Source: MaineDOT 2017

## Capital Work Plan Project

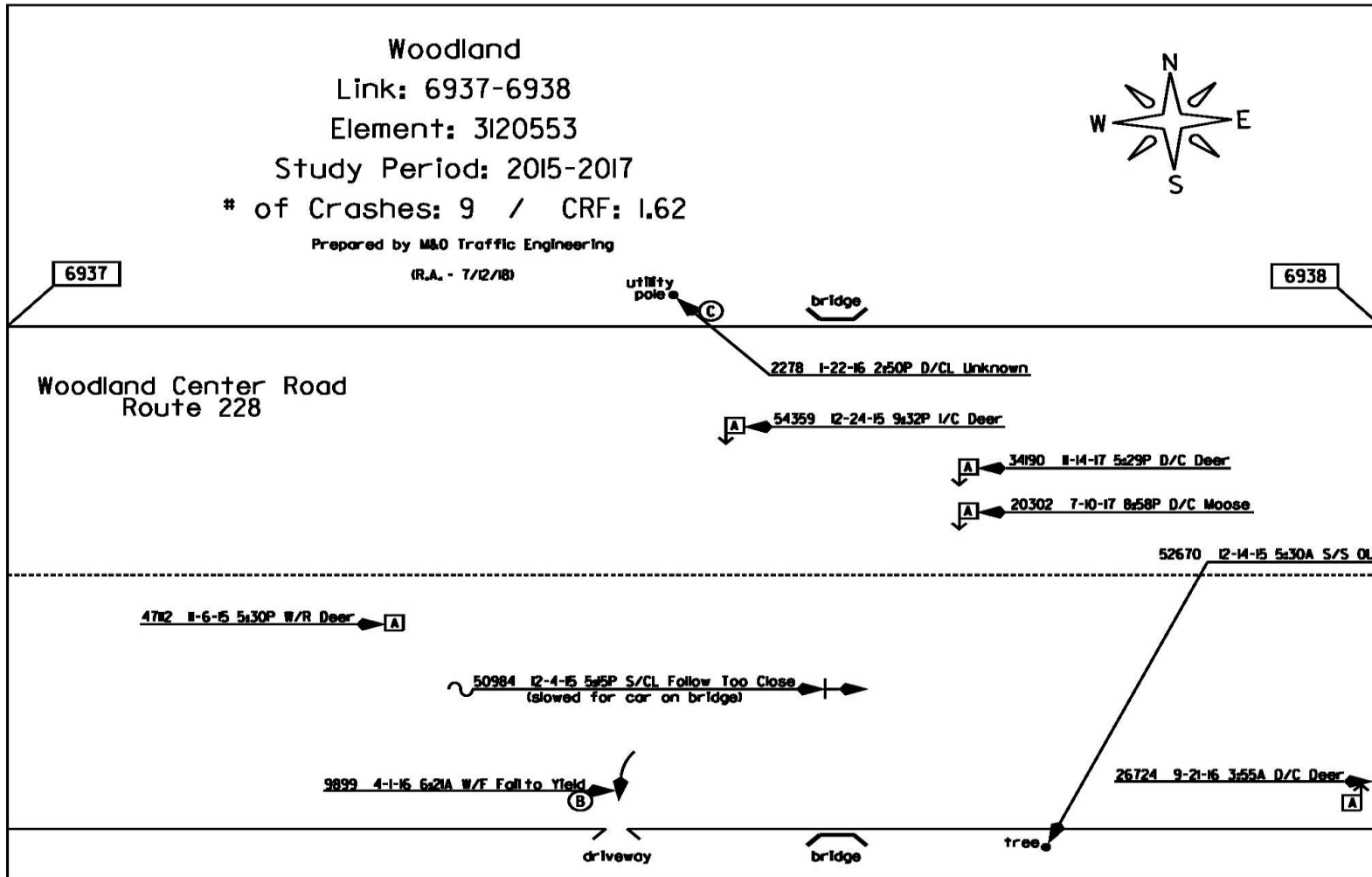
There are no scheduled Capital Work Plan projects in this location for the timeframe 2018-2020. According to MaineDOT, light capital paving was completed in 2015.

**Aerial View**

Red line indicates location of HCL link.



MaineDOT Crash Diagram, 2018





Woodland Center Road westbound. School Bus stop sign hidden by vegetation



Source: NMDC, 2018

Same location from the Eastbound lane. Looking west.



Source: NMDC, 2018

Woodland Center Road at Caribou Stream



Source: NMDC, 2018

Woodland Center Road at Caribou Stream.



Source: NMDC, 2018

