

Safety Analysis of Rte. 46

From Rte. 1A, Holden to Rte. 9, Eddington

Overall Summary, Conclusions, & Recommendations:

A desktop review of crash history has been conducted along Rte. 46 from Rte. 1A to Rte. 9, a minor arterial. This analysis has identified three locations that are exhibiting relatively high crash concentrations:

- Portions of Route 46 from Mann Hill Road to Holden-Eddington town line (High Crash Location) – 37 crashes in 11 years.
- Intersections of Rte. 1A with Rte. 46, 51 crashes in 11 years.
- Intersections of Rte 9 with Rte 46, (High Crash Location) – 13 Crashes in 11 years.

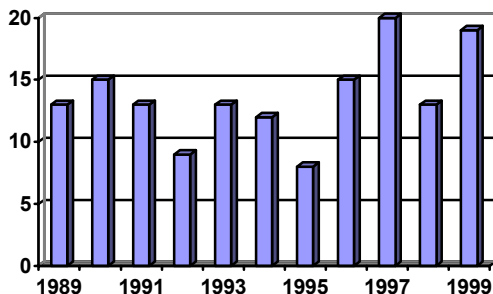
From this analysis, it appears that sight distance may be lacking at the two intersections. Horizontal and/or vertical alignment problems may exist along the segment of Rte. 46 from Mann Hill Rd. to the Eddington town line. Driver inattention and excessive speed were frequently noted. 14% of crashes on Route 46 from 1A to 9 involved commercial vehicles. The statewide average for commercial vehicle involvement in crashes on minor arterials is 7%. This section of Route 46 has a commercial vehicle crash involvement twice that of the state average. Approximately 20% of all crashes occurred on un-sanded icy roads.

Rte. 46 currently consists of two 10' travel lanes with 2-4' gravel shoulders. Current MDOT design standards call for an 11' travel lane with 4' shoulders. The draft design guidelines call for two 11' travel lanes with 3' paved shoulders (10' travel lanes with three foot paved shoulders would be acceptable if no safety problems exist).

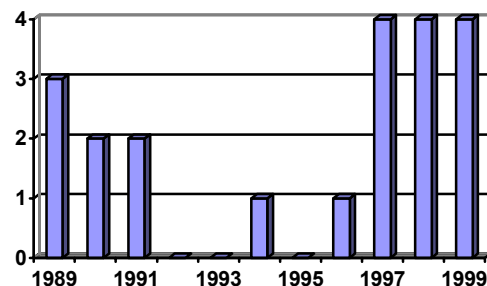
A field review should be conducted to perform a roadside safety audit on this section of Rte. 46 to confirm these findings, and to identify other potential safety improvements. In the interim until road system improvements can be implemented, speed enforcement is highly recommended along Route 46 from Route 1A to Route 9. Additionally, stop ahead signs may be warranted at the two intersections. Deer crossing and other hazard warning signs, along with a speed limit review may be advisable from Rte. 1A to Mountain Pond Road. Finally, winter sanding operations should be reviewed to ensure that icy conditions are adequately controlled.

Refer to attached maps for crash and road locations.

Total Crashes 1989-1999



Crashes Involving Commercial Vehicles
(Does not imply commercial vehicle was at fault)



1. Rte. 46 from Rte. 1A Holden to Rte. 9 Eddington:

The five major driver factors have included excessive speed (14.6%), driver inattention (14.6%), failure to yield (13.3%), driver inexperience (4.6%), and following too close (4%).

Ten-Year crash history 1989-1999

- 29% intersection movement and 20% rear end crashes, indicative of crashes at intersections.
- 29% run off road crashes
- 11% crashes with deer
- 14% of Crashes involved commercial vehicles (21 of 150 crashes). The statewide average for minor arterials is 7%.
- All fatal injuries (3) and 5 of the 10 severe injuries occurred in one crash (alcohol a factor).
- 55.3% of crashes took place in clear weather with dry roads
- 7.3% of the crashes occurred on a clear day with un-sanded snow/ice covered roads (11 of 150 crashes). 13.3% of crashes occurred in stormy conditions on un-sanded roads (20 of 150 crashes).

Three-year history 1997-1999

- 27% intersection movement and 27% rear end crashes
- 27% run off road crashes
- 25% crashes with deer
- No alcohol/drug related crashes
- No asleep drivers
- No fatalities, 1 severe injury
- 59.6% of crashes took place in clear/cloudy skies with dry road conditions.
- 17.3% of crashes occurred on a clear day with un-sanded snow/ice covered roads (9 of 52 crashes). Two of these crashes resulted in a severe injury.
- Crashes involving commercial vehicles have remained steady (4 per year).

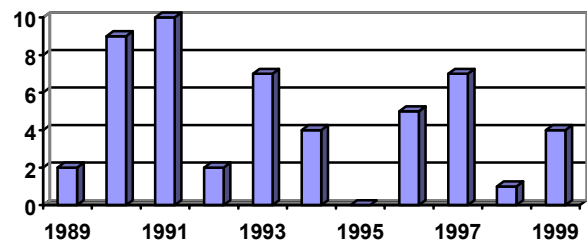
2. Intersection of Rte. 1A and Rte. 46:

The five major driver factors include driver inattention-distraction 33.3%(17), failure to yield 21.6%(11), disregard for traffic control devise 13.7%(7), illegal unsafe speed 5.8%(3), and improper lane change 5.8%(3). This suggests that sight distance may be a factor.

Ten-Year History 1989-1999

- Two crashes involved alcohol or drug use. Of these, both resulted in injuries.
- No crashes on un-sanded roads while clear weather
- 20.8% of vehicle occupants involved in crashes were injured
- Only one crash in eleven years between 7pm and 6am (involved alcohol/drug use).

Crashes at Rte.46 and 1A 1989-1999



Three-Year History 1997-1999

- There have been 12 crashes since 1997; of these, half (6) were taking left hand turns while four were stopped in traffic (presumably waiting to make a left hand turn).
- Only 1 of 12 crashes occurred in dark conditions.

3. Intersection of Rte. 9 and Rte. 46:

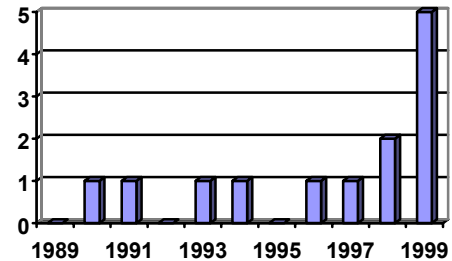
The top driver factors include: driver inattention-distraction 15.3%(2), improper turn 15.3%(2), Failure to yield 15.3%(2), and following too close 15.3%(2).

This intersection has experienced a high percentage of rear-end and left turn crashes. These may be due to poor visibility on stop sign approach from RTE 46. A stop sign advanced warning sign may be warranted if not already present. There may be other sight distance problems at the intersection.

Ten-Year History 1989-1999

- 9 of 13 crashes involved vehicles taking left hand turns.
- 7 of 13 crashes were rear-end crashes.
- No crashes on un-sanded roads while clear
- No alcohol or drug related crashes.
- 14.6% of vehicle occupants involved in crashes were injured.

Rte. 46 Crashes 1989-1999



Three-Year History 1997-1999

- High Crash Location. Node #1906067.Eight crashes in three years with a critical rate factor of 2.48. This intersection is ranked 164th of all Maine's High Crash Locations.
- Crashes at this intersection have increased considerably in 1999.

4. Rte. 46 from Mann Hill Rd. to Eddington Town Line:

The top driver factors have included: driver inattention-distraction 16.2%(6), Illegal unsafe speed 10.8%(4), driver inexperience 10.8%(4), other human violation factors 8.1%(3), and vision obscured 5.4%(2).

A high percentage of single vehicle crashes (75.6%) with no asleep drivers leads us to believe that vehicle control is a major factor with this stretch of road. The lack of vehicle control may be due to excessive speed (10.8%, 4 of 37 crashes) and alignment of the roadway (60%, 16 of 37 crashes).

Ten-Year History 1989-1999

- 18 run off the road crashes of 37 total crashes
- 8 crashes with deer
- No crashes on un-sanded roads while clear.
- Two Crashes involving Alcohol (resulting in one possible injury)
- 29.7% of vehicle occupants involved in crashes were injured (25 of 84 occupants)
- 43.2% of crashes occurred on curves (16 of 37 crashes)
- 60% of injuries occurred on curved road (15 of 25 injuries)
- 75.6% of crashes involved single vehicles (28 of 37 crashes).

Three Year history 1997-1999

- High Crash Location (Mann Hill Road to Hatcase Road). Low node 1902142, high node 1904127. Eight crashes in three years with a critical rate factor of 1.49 (Rte. 46 from Mann Hill Rd. to Mountain Pond Rd. This section of road is ranked 298th of all Maine's High Crash Locations.
- 6 run off road crashes
- 6 crashes with deer
- There were 3 crashes on un-sanded roads in clear weather.
- There were 14 crashes that occurred in snow/sleet weather conditions with un-sanded roads.