

Badger Road Overview

Interior Delegation Presentation • July 1, 2014

Alaska Department of Transportation and Public Facilities (DOT&PF) annually reviews crash data from roads and intersections around the state. This analysis is used to determine if there are crash trends.

Our very preliminary research regarding fatal crashes on the Badger corridor do not reveal any trends; each of the crashes had a unique set of circumstances and was caused by different factors. There is not one fix that would have prevented subsequent crashes.

Attached you will find:

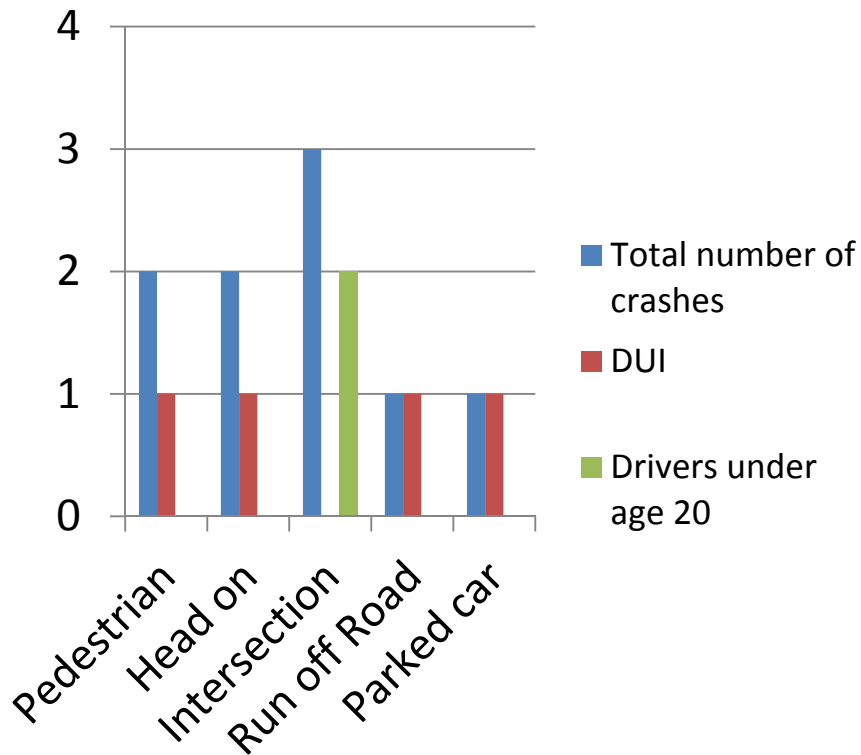
- Badger Road History
- Analysis of Fatal and Major Injury Crashes
- Traffic Volumes
- Upcoming Safety Improvements and an overview of HSIP
- Analysis of Bradway Intersection
- Overview of Traffic Signals and Speed Limit on Badger
- Future Steps

Badger Road History

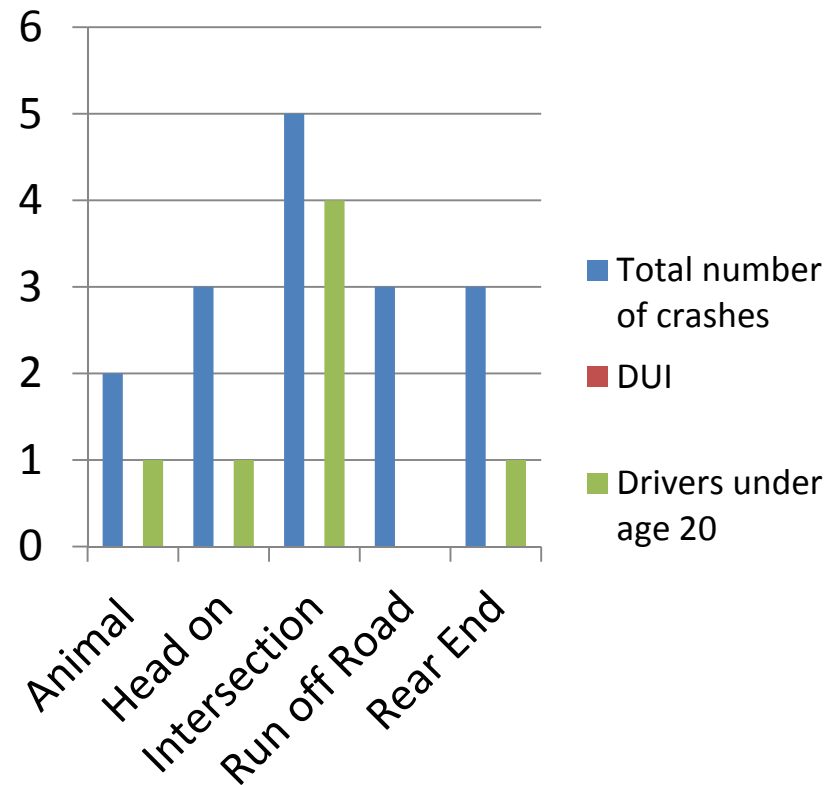
- From 1991-1997 (7 years), there were 5 fatal and 20 major injury crashes
- Reconstruction of Badger Road completed in 1997
 - Included:
 - Realignment of intersections to improve visibility
 - Addition of turn lanes and a separated pedestrian/bicycle pathway
 - Intersection lighting at major intersections
- From 1998-2011 (14 years), there were 6 fatal and 16 major injury crashes
- From 2012-present day, there have been 3 fatal crashes. Major injury crash information from 2012 and later has not been submitted to DOT&PF by DMV. (Crash data reporting normally lags by two to three years. Advances in electronic crash reporting will reduce data lag in coming years)

Fatal and Major Injury Crashes Post-reconstruction

**Fatal Crash Events
(1998-present day)**



**Major Injury Crash Events
(1998-2011)**



Traffic Volumes

- Current traffic volumes on average 6-7,000 vehicles/day. The traffic volumes are on target with the design of the roadway. 2014 traffic counts will be taken in August.
- FMATS has predicted future capacity issues at some locations on Badger Road. A study of Badger Road to determine needed capacity improvements is being included in the draft Metropolitan Transportation Plan Update, which will be processed through the FMATS Technical and Policy Committees for adoption.

Upcoming Safety Improvements

- Badger and Old Rich (FY16 construction funding)
 - Northbound approach to receive additional signal head so there is one head for each lane.
 - A diagonally striped “keep clear” pavement marking will be installed to discourage southbound drivers from stopping between the stop bar for the signal and the ARRC crossing.
 - Existing “Right Turn Signal” signs on Old Rich will be updated to electronic “No Right Turn Across Tracks” signs.
- Badger and Holmes/Montgomery (FY16 construction funding)
 - Additional signal heads installed so there is one head for each lane.
 - Flashing yellow arrow left turn arrows installed for left turn lanes.
- 2 lane portion of Badger Rd (pending FHWA approval)
 - Update curve warning signs and pass/no-pass striping to most recent guidance in Alaska Traffic Manual
 - Part of a system improvement on several greater Fairbanks area routes
- Moose warning signs being installed this summer in high moose collision area (Hartzog to Bradway)

Highway Safety Improvement Program (HSIP)

- HSIP is a federally-mandated program which has the overall objective of achieving a significant reduction in traffic fatalities and serious injuries on all public roads.
- The HSIP requires a data-driven, strategic approach to improving highway safety.

Source: FHWA HSIP Fact Sheet

How are HSIP projects selected?

- Regional Traffic and Safety Engineers in Alaska's three regions screen crash data annually in accordance with the Alaska HSIP Handbook.
- In Northern Region, our Traffic and Safety Engineer reviews 325 intersections and nearly 2,800 roadway segments.
- This review is based on the most recent five years of available reported crash data that DOT&PF receives from DMV; currently 2007-2011. If a crash pattern is present, projects targeting either a specific location or a system improvement may be nominated if they meet the criteria in the HSIP Handbook. Benefit cost analysis is completed for nominated projects.
- Project nominations are reviewed by DOT&PF Headquarters. Eligible projects that fit within the projected funding plan are forwarded to FHWA for inclusion in Alaska's HSIP program.

HSIP Review of Badger Road

- 11 intersections on Badger Road are reviewed each year - Bradway, Dennis, Holmes/Peede, Holmes/Montgomery, Hurst, Nordale, the Old Rich, Plack, Repp, Lakloey, and Peridot. The roadway segments between these intersections are also reviewed.
- No strong crash patterns were present between 2007-2011 at the Badger Road unsignalized intersections.
- Segment crashes are predominately single vehicle run-off-the-road crashes or moose/animal collisions.

Bradway Intersection

- Between 1991-2011 (21 years), there were no major injury or fatal crashes at this intersection. Nearly half of all collisions at this intersection during that timeframe were moose collisions.
- Traffic and Safety staff reviewed sight distance (visibility) at this intersection in early June. Sight distance exceeded 3,000' towards North Pole and 1800' towards Ft. Wainwright. Recommended intersection sight distance to make a left turn from a stop onto a 55 mph roadway is 610'.

When is a traffic signal appropriate?

- The Alaska Traffic Manual adopts the Federal Manual on Uniform Traffic Control Devices guidelines for installation of traffic signals.
- The Manual identifies 9 different ways a traffic signal might be justified
 - Warrants 1-3 are based on traffic volumes to address delay
 - Warrant 4 is used for areas with high pedestrian and traffic volumes in conflict
 - Warrant 5 is used for school crossing of high volume roadways
 - Warrants 6 & 8 address traffic flow on the roadway network (i.e. traffic progression)
 - Warrant 7 is for areas with moderate traffic volumes experiencing more than 5 crashes in a 12-month period that could be corrected by signal installation
 - Warrant 9 addresses proximity to railroad crossings.
- The Manual requires an engineering study be performed prior to installation of a new signal.

Why are unwarranted traffic signals a bad idea?

- Frequency of crashes at signalized intersections is notably higher than at unsignalized intersections (especially rear-end crashes).
- Increased delay for through traffic, which can lead to cut-thru traffic to other routes by drivers trying to avoid the signal.

Are more traffic signals needed on Badger Road?

- Intersection turning movement counts are needed to determine if warrants related to delay are met
 - Badger and Peede counted in 2008
 - Badger and Nordale counted in 2009
 - These are the highest volume intersecting roadways
 - Volumes have been stable since those counts were taken
 - Warrants not met at that time and no change likely
- Crash warrant not met at any of the unsignalized intersections

Why is the majority of Badger Road posted at 55 mph?

- When Badger Road was reconstructed, it was designed to accommodate traffic travelling 60 mph.
- In the absence of law enforcement, the majority of drivers will drive at a speed that feels reasonable to them, regardless of posted speed limit.
- A recently installed vehicle classifier at Beulah has collected vehicle speeds of over 400,000 vehicles. Over 70% of all traffic is travelling between 50 and 60 mph, and less than 2% of vehicles are travelling over 65 mph. Excessive speeding is not a problem on this section of Badger Road, and the majority of drivers are travelling at speeds well within the design of the roadway. Speed data on the west end of Badger Road will be collected later this summer.

Why not lower the speed limit?

- Artificially lowered speed limits can increase crashes because some drivers will drive at the posted speed while others drive at the speed that feels reasonable. The faster drivers will approach slower drivers unexpectedly, leading to rear end crashes. In addition, some faster drivers become impatient and make questionable passing maneuvers that could lead to head on crashes.
- Alaska (like most other states) has the “Basic Rule” (13 AAC 02.275) that states “No person may drive a vehicle at a speed greater than is reasonable and prudent considering the traffic, roadway, and weather conditions.” Page 28 of the Alaska Drivers Manual covers this rule in depth for new/ new to the state drivers.

Next Steps

- Traffic and Safety staff will review speed data for the west end of Badger Road
- Crash history on Badger Road will be reviewed again this winter after 2012 crash data processing is complete. HSIP projects may be nominated if strong crash patterns are identified between 2008-2012.
- DOT&PF will support inclusion of a Badger Road Corridor study by FMATS.