



***Road Safety Audit &
Proposed Safety Improvements
Mt. Hood Highway (U.S. 26)***

***Camp Creek Campground to Timberline Highway
(Milepost 47.19 to 54.23)***

Presented by Sue D'Agnese
ODOT Region 1 Traffic Manager
July 29, 2010



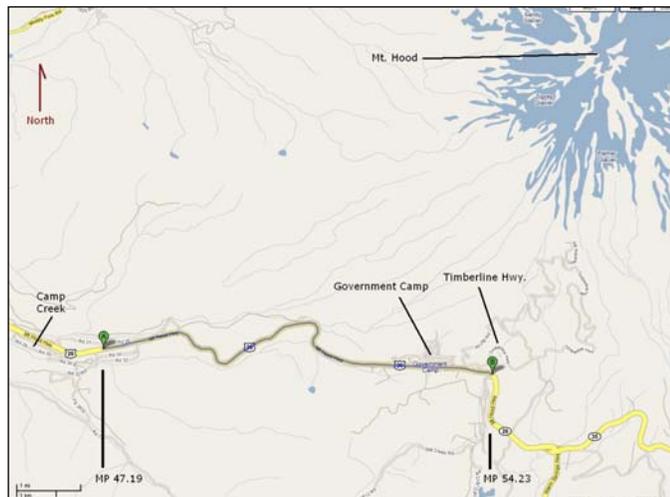


RSA Team Members

- Independent, multi-disciplined team:
 - Jack Freeman, P.E., PTOE – Team Leader
 - Hermanus Steyn, Pr. Eng.; P.E. – Asst. Team Leader
 - Carl Deaton, P.E. – Senior Roadway Designer, ODOT Region 2
 - Robert Tolman – TMM, ODOT Region 5
- Team resources:
 - Jim McNamee – TMM, ODOT Region 1, District 2C
 - Sue D’Agnese – ODOT Region 1 Traffic manager
 - Jerry Sabel – Hwy. 26 Safety Corridor Citizen Advisory Commission
 - Mike Reel – Oregon State Police

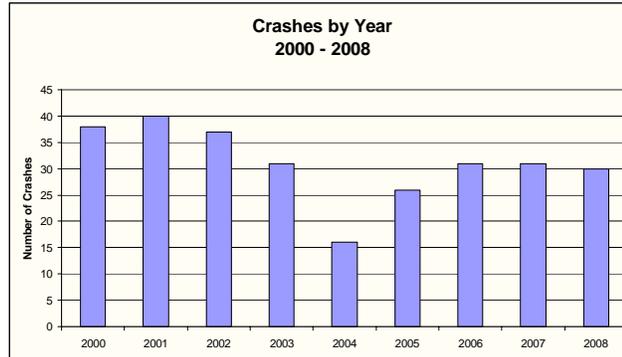


Mt. Hood Highway RSA Segment (Milepost 47.19 to 54.23)





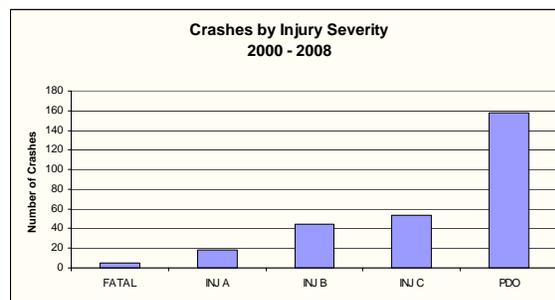
2000 – 2008 Crashes



Total Crashes = 280



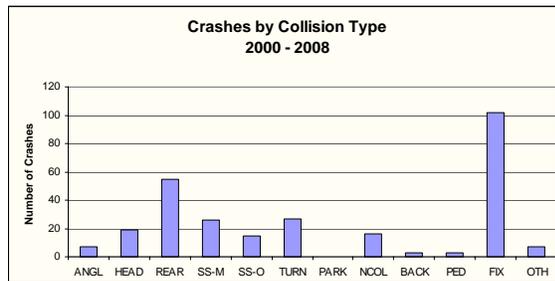
Crashes by Injury Severity



55% of all crashes are non-injury (PDO) crashes



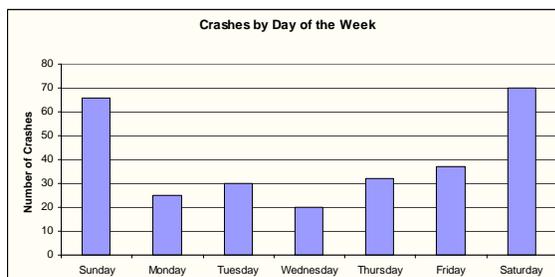
Crashes by Collision Type



Crashes primarily fixed-object or rear-end



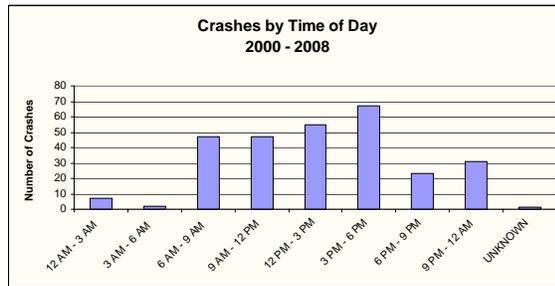
Crashes by Day of the Week



Crashes occur primarily during the weekends



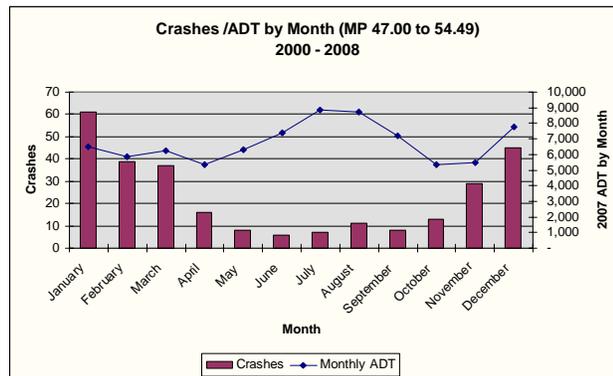
Crashes by Time of Day



Crashes occur primarily during daylight hours



Crashes / ADT by Month



Crashes occur primarily during the winter months



ODOT's Response to RSA

- Implementation plan:
 - Immediate
 - Mid-term
 - Long-term



Camp Creek Entrance (MP 47.0 – 47.1) Crash Analysis 2000-2008

- Total crashes: 12
- Fatalities/injuries: 1 / 8
- Predominant crash types:
 - Fixed-object (6)
 - Rear-end (2)
- Predominant road conditions:
 - Snow/ice (5)
 - Wet (2)
 - Dry (5)
- Directional crash notes:
 - Both rear-end crashes were westbound
 - Fixed-object crashes occurred in various directions





Camp Creek Entrance Milepost 47.0 – 47.1

- Problem:
 - Drivers misjudge the curve because of restricted visibility, lose control and hit trees
- Proposed Solution:
 - Increase size of “Curve Ahead” sign
 - Trim back trees inside curve
 - Widen graveled westbound shoulder
 - Add guardrail to eastbound shoulder
- Anticipated Benefits:
 - Improves recovery area
 - Improves sight distance approaching curve westbound



Milepost 47.6 – 48.8

- Total crashes: 15
- Fatalities/injuries: 0 / 7
- Predominant crash types:
 - Fixed-object (9)
 - Side-swipe (4)
- Predominant road conditions:
 - Snow/ice (10)
 - Wet (3)
- Directional crash notes:
 - 10 crashes were westbound (6 of these were fixed-object)





Milepost 47.6 – 48.8

- Problem:
 - Lack of safe westbound passing opportunities throughout corridor
 - Lack of safe chain on/off areas throughout corridor
- Proposed Solution:
 - Within the existing tree line:
 - Add a westbound passing lane
 - Add a safe chain on/off area
 - Provide a VMS to inform drivers of chain requirements and designated chain on/off area
- Anticipated Benefits:
 - Reduces unsafe passing throughout corridor
 - Reduces speeding through mountain communities
 - Reduces pedestrian and rear-end crashes associated with unsafe chaining activities



Map Curve Milepost 49.4 – 50.1

- Total crashes: 23
- SPIS Top 15%
- Fatalities/injuries: 0 / 15
- Predominant crash types:
 - Fixed-object (11)
 - Rear-end (4)
 - Head-on (4)
- Predominant road conditions:
 - Snow/ice (14)
 - Wet (4)
 - Dry (5)
- Directional crash notes:
 - 18 of the 23 crashes were westbound
 - 7 cross-over crashes





Map Curve Milepost 49.4 – 50.1



- Problem:
 - Rocks on roadway
 - Cross-over crashes as a result of missing the curve and unsafe westbound passing
- Proposed Solution:
 - Cut back rock face and provide catchment to keep rocks off roadway (requires some tree removal)
 - Widen to install aesthetic concrete median barrier
- Anticipated Benefits:
 - Improves recognition of the curve
 - Prevents hitting rocks in road and the rock slope
 - Eliminates cross-over crashes
 - Reduces speeds
 - Improves sight distance approaching the curve



Between Map Curve & Mirror Lake Milepost 51.3 – 51.6



- Total crashes: 10
- Fatalities/injuries: 2 / 5
- Predominant crash types:
 - Fixed-object (5)
 - Head-on (2)
- Predominant road conditions:
 - Snow/ice (6)
 - Wet (2)
 - Dry (2)
- Directional crash notes:
 - 7 crashes were westbound (4 of these were fixed-object)
 - 4 crashes were between westbound and eastbound vehicles



Between Map Curve & Mirror Lake Milepost 51.3 – 51.6

- Problem:
 - Unsafe westbound passing
 - Speeding
 - Cross-over crashes
- Proposed Solution:
 - Widen to install aesthetic concrete median barrier
- Anticipated Benefits:
 - Reduces speeds
 - Eliminates unsafe passing
 - Eliminates cross-over crashes



Mirror Lake Curve Milepost 51.6 – 52.2

- Total crashes: 33
- Fatalities/injuries: 1 / 12
- Predominant crash types:
 - Uniform mix of head-on, side-swipe, fixed-object and rear-end crashes
- Predominant road conditions:
 - Snow/ice (27)
 - Wet (5)
 - Dry (1)
- Directional crash notes:
 - Uniform distribution of eastbound and westbound crashes (no north- or southbound crashes)





Mirror Lake Curve Milepost 51.6 – 52.2



- Problem:
 - Crashes caused by driving too fast for weather conditions
 - Westbound passing lane is too short
 - Changing lanes in curves is difficult to maneuver
- Proposed Solution:
 - Extend both eastbound and westbound passing lanes into straight sections of road
 - Widen to install aesthetic concrete median barrier
- Anticipated Benefits:
 - Reduces passing speeds in the curves
 - Eliminates cross-over crashes
 - Improves curve recognition



Additional Improvements (outside RSA)

- **Cable barrier – MP 28.4 to 30.3**
 - Problem: Cross-over crashes
 - Proposed Solution: Install narrow median cable barrier
 - Anticipated Benefits: Eliminates cross-over crashes
- **Paving – Rhododendron to MP 49.2**
 - Paving will begin summer 2011
- **Paving – MP 49.2 to 57.5**
 - Paving will be done in conjunction with the Mt. Hood Highway Safety Project (estimated in 2013)
- **Paving – MP 57.5 to 71.0**
 - Paving is estimated to begin in 2012



Questions & Discussion

- Please visit the stations around the room for more information.
 1. RSA & general project information
 2. Environmental, cultural & historic resources
 3. Select tree removal for safety
 4. Rock-fall mitigation
 5. Other projects in the area