MOUNTAIN LOOP HIGHWAY
Feasibility Study

Public Meeting No. 2

Wednesday, March 6th, 2019
Thursday, March 7th, 2019
6:00 p.m. ~ 8:30 p.m.
Outline for Meeting

1. Study Background
2. Overview of First Public Meeting
3. Summary of Existing and Projected Conditions
4. Improvement Options under Consideration

*Focus on 14-Mile Gravel Section*

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>6:00 – 6:45</td>
<td>(Presentation)</td>
</tr>
<tr>
<td>6:45 to 8:30</td>
<td>(Open House)</td>
</tr>
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Study Background
Mtn. Loop Highway Corridor – Study

Background

- Initiated in January 2018
- Partner agencies include Snohomish County, USFS and FHWA
- 18-month schedule
- Draft report late-April, 2019
- Special focus on 14-mile gravel portion
Goals and Purpose of Study

• Identify needs and objectives
• Identify potential impacts and constraints
• Identify short-range and long-range improvements
• Develop planning level cost estimates
• Develop information and data for the Partner Agencies to consider if a project moves forward from the study (dependent on available funds)
Overview of Public Meetings
Public Meetings - Overview

• Two public meetings were held in August
  • Granite Falls 8/20
  • Darrington 8/21

• Info was provided on:
  • Project goals, schedule, process
  • Study next steps

• Attendees could provide input at or following the meeting
Granite Falls Meeting

• 20 attendees signed in
• Seven written comments received
Granite Falls Meeting

Granite Falls Comments

- Environment
- Maintenance
- Access to Services
- Tourism
- Do not Pave
- Support for Paving
- Retain Road as is
- Seasonal Openings of Road
- Speed/Safety
- Recreation

Comments Received

PUBLIC MEETING NO. 2
Darrington Meeting

- 27 attendees signed in
- 10 written comments received
Darrington Meeting

Darrington Comments

- Environment
- Maintenance
- Access to Services
- Tourism
- Do not Pave
- Support for Paving
- Retain Road as is
- Seasonal Openings of Road
- Speed/Safety
- Recreation

Comments Received

PUBLIC MEETING NO. 2
Summary of Existing and Projected Conditions
Mtn. Loop Highway Corridor - **Context**

- Functionally classified as a Rural Major Collector
- Designated a Forest Road Scenic Byway (1990)
- Posted speed is 25 mph to 45 mph
- Serves multiple uses
  - Local traffic
  - Recreational traffic
  - Tourism traffic
Mtn. Loop Highway Corridor - Physical Characteristics

- Surfacing / width varies
  - Gravel, “predominately” single-lane roadway (14-miles between Barlow Pass and the White Chuck River Road)
  - Paved, two-lane roadway (remaining)

- 147 access points

- Constructed or improved at various times (as early as 1936 // finished in 1941)
Figure A.1
Study Area
Mountain Loop Highway Feasibility Study
Snohomish County, Washington
Mtn. Loop Highway Corridor - Projected ADT

- Year 2040 projected volumes range from 1,372 – 3,640 vpd (near Verlot) to 334 – 820 vpd (near Granite Falls)

<table>
<thead>
<tr>
<th>Section</th>
<th>Average Summer Daily Volume</th>
<th>Future Volume (2040)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2010</td>
<td>2011</td>
</tr>
<tr>
<td>MP 10.76-19.99</td>
<td>--</td>
<td>1,089</td>
</tr>
<tr>
<td>MP 20.00-30.68</td>
<td>--</td>
<td>461</td>
</tr>
<tr>
<td>MP 44.65-50.99</td>
<td>397</td>
<td>--</td>
</tr>
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</table>
Mtn. Loop Highway Corridor – Vehicle Speeds

• 85th Percentile Speed throughout Corridor
Mtn. Loop Highway Corridor – Vehicle Classifications

- Summer Vehicle Classifications

![Bar Chart]

- Motorbikes: 3% (MP 10.76 to MP 30.68), 3% (MP 44.65 to MP 50.87)
- Cars & Trailers: 75% (MP 10.76 to MP 30.68), 63% (MP 44.65 to MP 50.87)
- 2 Axle Long: 13% (MP 10.76 to MP 30.68), 19% (MP 44.65 to MP 50.87)
- Buses: 0% (MP 10.76 to MP 30.68), 1% (MP 44.65 to MP 50.87)
- 2 Axle 6 Tire: 8% (MP 10.76 to MP 30.68), 8% (MP 44.65 to MP 50.87)
- 3 Axle Single: 0% (MP 10.76 to MP 30.68), 3% (MP 44.65 to MP 50.87)
- 4 Axle Single: 0% (MP 10.76 to MP 30.68), 1% (MP 44.65 to MP 50.87)
- <5 Axle Double: 1% (MP 10.76 to MP 30.68), 1% (MP 44.65 to MP 50.87)
Mtn. Loop Highway Corridor – Seasonal Variation

• Seasonal Variation in Traffic (2015)
Mtn. Loop Highway Corridor - Safety

• For period between January 1, 2008 through December 31, 2017

• Data for the gravel portion of the corridor was not available

• 55 total reported crashes
  • Two fatalities
  • Four crashes produced serious injuries
  • 19 resulted in non-serious injuries
Mtn. Loop Highway Corridor – Crash Statistics

- Majority during summer months
- Single vehicle crashes accounted for 90%
- 65% occurred during daylight conditions
- Fixed object collisions (38 crashes)
- Roll-over collisions (10 crashes)
- 7 fixed object collisions observed near MP 15.5 (between the Wiley Creek Campground and Schweitzer Creek)
- 8 crashes observed between MP 11 and MP 12
Mtn. Loop Highway Corridor - Access Points

- 147 Access Points

<table>
<thead>
<tr>
<th>Begin (MP)</th>
<th>End (MP)</th>
<th>Segment Length (mi)</th>
<th>Approaches</th>
<th>Density (app/mi)</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>10.76</td>
<td>16</td>
<td>4.24</td>
<td>55</td>
<td>13.0</td>
<td>Begin Study Area to Esswine GC</td>
</tr>
<tr>
<td>16</td>
<td>21</td>
<td>5.00</td>
<td>17</td>
<td>3.4</td>
<td>Esswine GC to Dick Sperry Picnic</td>
</tr>
<tr>
<td>21</td>
<td>26</td>
<td>5.00</td>
<td>23</td>
<td>4.6</td>
<td>Dick Sperry Picnic to Perry Creek GC</td>
</tr>
<tr>
<td>26</td>
<td>31</td>
<td>5.00</td>
<td>8</td>
<td>1.6</td>
<td>Perry Creek GC to Begin Gravel Section</td>
</tr>
<tr>
<td>31</td>
<td>37</td>
<td>6.00</td>
<td>14</td>
<td>2.0</td>
<td>Begin Gravel Section to Bedal</td>
</tr>
<tr>
<td>37</td>
<td>45</td>
<td>8.00</td>
<td>18</td>
<td>2.3</td>
<td>Bedal to End Gravel Section</td>
</tr>
<tr>
<td>45</td>
<td>50.87</td>
<td>5.87</td>
<td>12</td>
<td>2.0</td>
<td>End Gravel Section to End Study Area</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>40.11</td>
<td>147</td>
<td>3.7</td>
<td></td>
</tr>
</tbody>
</table>

Total
Mtn. Loop Highway Corridor - Roadway Geometrics

• 280 existing horizontal curves
  • 112 do not appear to meet current standards for 40 mph
  • 97 percent of those are on gravel portion (i.e. 109 curves)
  • 25 mph – 6 curves do not meet standards

• 253 existing vertical curves
  • 114 do not appear to meet current standards for 40 mph
  • 112 of those are on gravel portion
  • 25 mph – 45 curves do not meet standards
## Mtn. Loop Highway Corridor – Pavement Conditions

<table>
<thead>
<tr>
<th>MP</th>
<th>Surface</th>
<th>Last Surface</th>
<th>Last Treatment*</th>
<th>PCI</th>
<th>Condition</th>
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<tbody>
<tr>
<td>11.31</td>
<td>Single Chip Seal</td>
<td>2009</td>
<td>2009</td>
<td>86</td>
<td>Good</td>
</tr>
<tr>
<td>12.10</td>
<td>Single Chip Seal</td>
<td>2009</td>
<td>2009</td>
<td>90</td>
<td>Good</td>
</tr>
<tr>
<td>13.18</td>
<td>Single Chip Seal</td>
<td>2009</td>
<td>2009</td>
<td>86</td>
<td>Good</td>
</tr>
<tr>
<td>19.34</td>
<td>Single Chip Seal</td>
<td>2017</td>
<td>2017 (sink hole)</td>
<td>88</td>
<td>Good</td>
</tr>
<tr>
<td>21.20</td>
<td>Single Chip Seal</td>
<td>2012</td>
<td>2012</td>
<td>85</td>
<td>Good</td>
</tr>
<tr>
<td>26.73</td>
<td>Single Chip Seal</td>
<td>2013</td>
<td>2013</td>
<td>91</td>
<td>Good</td>
</tr>
<tr>
<td>29.00</td>
<td>Single Chip Seal</td>
<td>2013</td>
<td>2013</td>
<td>91</td>
<td>Good</td>
</tr>
<tr>
<td>44.67</td>
<td>Single Chip Seal</td>
<td>2003</td>
<td>2017</td>
<td>77</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>46.20</td>
<td>Single Chip Seal</td>
<td>2003</td>
<td>2017</td>
<td>90</td>
<td>Good</td>
</tr>
</tbody>
</table>
Mtn. Loop Highway Corridor – Other

• Landslides
  • Gold Basin Campground
  • Waldheim
  • Marten Creek

• Steep Slopes
  • Elevated risk of erosion
  • Observed during field review

• Elevated risk of erosion

• Observed during field review

• Sinkholes
  • Near MP 19 requires ongoing maintenance

• Washouts
  • Debris torrent where floating logs jam the water source (Bedal Creek Bridge)
Mtn. Loop Highway Corridor – Summary of Observations

Physical Features and Characteristics

• All bridges meet minimum design load rating standards
• Three (out of 60) culverts were in failing condition
• Six (out of 60) were in poor condition
• The corridor does not meet the minimum roadway surface width of 32 feet.
  • Generally 28 feet for the majority of the paved section
  • First six miles near the beginning has a width of 22 feet.
  • Width of gravel section varies greatly, providing only one travel lane in some locations.
• Majority of the pavement in the corridor is in good condition.
Mtn. Loop Highway Corridor – Summary of Observations

**Geometric Conditions**

- 96 percent of the horizontal curves on the paved sections meet or exceed a 40-mph design speed
  - 41 percent of the horizontal curves on the gravel section appear to meet the same standard

- 69 percent of the vertical curves on the gravel portion do not appear to meet a 40-mph design standard
  - Two percent of the vertical curves on the paved portion do not meet a 40-mph design speed

- Multiple vertical curves along the gravel portion do not appear to meet a 40-mph design standard for grade
Traffic Conditions

- Traffic volumes range from 156 vpd near White Chuck, to as high as 1,767 vpd near the Verlot campground.
- Average speeds varied from 37.5 mph at White Chuck to 55.3 mph at Perry Creek.
- More than 90 percent of vehicles traveled between 45 and 55 mph.
- Vehicles traveled at an average speed of 51 mph.
  - This does not include speed on the gravel portion.
- The majority of vehicles traveling on the corridor are passenger cars (approximately 75 and 63 percent on the first and second paved sections, respectively) and two axle single unit vehicles (approximately 13 and 19 percent).
Mtn. Loop Highway Corridor – Summary of Observations

**Safety**

- Records show 55 crashes occurring within the study area between January 1, 2008, to December 31, 2017
  - Two crashes resulted in fatalities
  - Four crashes resulted in serious injuries
  - 19 crashes resulted in non-serious injuries
- The main observed crash types are fixed object collisions (38) followed by roll-over collisions (10)
- 7 fixed object collisions were observed near MP 15.5 between the Wiley Creek Campground and Schweitzer Creek
- 8 crashes were observed between MP 11 and MP 12
Mtn. Loop Highway Corridor – Recreational

Corridor is readily accessible to more than 3 million residents of the central Puget Sound area, and provides access to:

- 13 campgrounds
- 2 public boat launches
- 3 interpretive sites
- 3 wilderness areas
- 3 Research Natural Areas
- 4 picnic areas
- 2 National Historic Register sites
- the historic mining town of Monte Cristo, and
- 30 trailheads with access to over 80 hikes, spanning over 200 miles of trail, including the Pacific Crest National Scenic Trail
Mtn. Loop Highway Corridor – Recreational

• 2017 Visitors to Verlot Public Service Center by Month
Mtn. Loop Highway Corridor – Economics

• 2017 Sales at Verlot Public Service Center by Month

![Sales by Month Chart]

- Feb: $2,481.59
- Mar: $3,012.45
- Apr: $7,840.06
- May: $31,828.80
- Jun: $58,160.57
- Jul: $26,244.32
- Aug: $21,876.64
- Sep: $12,981.74
- Oct: $4,806.00
- Nov: $2,912.81
- Dec: $0.00
Mtn. Loop Highway Corridor – Economics

• The *Gem of the Emerald Corridor: Nature’s Value in the Mt. Baker-Snoqualmie National Forest* report provides estimates of visitors and expenditures by ranger district to the national forest (Earth Economics Economics 2018)

• In the Darrington Ranger District in 2015, there were a total of 228,817 visitors with expenditures of approximately $7.3 million contributing to the regional economy

<table>
<thead>
<tr>
<th>Expenditures</th>
<th>Annual Jobs Supported by Outdoor Recreation Spending</th>
<th>Visits per Job</th>
</tr>
</thead>
<tbody>
<tr>
<td>$7,277,672</td>
<td>Direct: 26</td>
<td>Indirect: 3</td>
</tr>
</tbody>
</table>
Mtn. Loop Highway Corridor – Economics


• Since 2001, there have been a total of approximately 1,057 planned acres and approximately 875 accomplished acres of timber harvest near the study area (USDA Forest Service 2018)
Improvement Options under Consideration 14-Mile Gravel Section
14-Mile Gravel Section

Option 1: Minor Road and Drainage Improvements

- Utilize existing footprint
- Shape roadway to obtain crown and promote drainage
- Place 4” to 6” aggregate course
- Signage as appropriate
- No geometric improvements
- Cost = TBD
14-Mile Gravel Section

Option 2: Improve to 25 mph Design Speed (bring to standards)

- Follows existing road alignment
- Modest improvements to horizontal alignment and vertical profile
- Gravel or asphalt surfacing
- Between 18 – 32 feet in width
- Cost = TBD
Typical Section - 25mph
Mountain Loop Highway

9' Travel Lane

Variable 1:3 1:3 -2.0% 1:3 Variable
14-Mile Gravel Section

Option 3: Improve to 40 mph Design Speed (bring to standards)

• Widen to meet standards

• Horizontal and vertical profile improvements

• Shape roadway to obtain crown and promote drainage

• Major “off presently traveled way” impacts

• 32 feet in width

• Cost = TBD
Next Steps

• Complete analysis of options for 14-mile section
• Identify other spot improvements (if needed)
• Develop funding matrix of Local, County, State and Federal funding programs
• Complete draft study report
  • Late-April 2019