Intersection of Circle Blvd and OR 99W; Benton County, OR

Basic site characteristics:
- Posted speed of 50 mph on major approach
- 2 lanes of traffic in each major direction (N/S) - 2 lanes in each minor direction (E/W)
- Exclusive left turn lanes
- Intersection has slight skew (70 degrees)
- No sight distance restrictions
- Northbound approach is isolated
- Signal Ahead Sign on northbound approach

Signalized intersection located ~1800 ft to the north

Traffic signal has good visibility

SAS located 700 ft before stop bar

9th Street parallels OR 99W on the west.
The railroad tracks parallel OR 99W on the east.

Unknown site characteristics:
- Signal phasing
- Actual travel speeds
- Turning Volumes

Title: Circle and 99W Intersection
Date: 11/09/09
Prepared by: OSU Research Team
Description: Site Characteristics
File: VISOCUMENT

1
## Sample Traffic Volume from Field Visit

<table>
<thead>
<tr>
<th>Date</th>
<th>From North</th>
<th>From East</th>
<th>From South</th>
<th>From West</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Right</td>
<td>Thru</td>
<td>Left</td>
<td>Peds</td>
</tr>
<tr>
<td>9/14/2009</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3:00</td>
<td>2</td>
<td>46</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>3:05</td>
<td>7</td>
<td>36</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>3:10</td>
<td>3</td>
<td>24</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>3:15</td>
<td>6</td>
<td>49</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>3:20</td>
<td>5</td>
<td>38</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>3:25</td>
<td>5</td>
<td>43</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>30 minute</td>
<td>28</td>
<td>236</td>
<td>40</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>304</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Intersection of Circle Blvd and OR 99W; Benton County, OR

<table>
<thead>
<tr>
<th>2003-2007 Crashes</th>
<th>2003-2007 Crashes by Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Rear-End</td>
</tr>
<tr>
<td>7</td>
<td>Turning</td>
</tr>
<tr>
<td>12</td>
<td>Angle</td>
</tr>
<tr>
<td>2</td>
<td>Sideswipe-Overtaking</td>
</tr>
<tr>
<td>1</td>
<td>Sideswipe-Meeting</td>
</tr>
<tr>
<td>0</td>
<td>Fixed Object</td>
</tr>
<tr>
<td>2</td>
<td>Other</td>
</tr>
<tr>
<td>44</td>
<td>Total</td>
</tr>
</tbody>
</table>

Turning: 16%
Angle: 27%
SS-Over: 5%
SS-Meet: 2%
Fixed Object: 0%
Rear-End: 45%
Other: 5%

2003-2007 Rear End Crashes:
- Northbound: 9
- Southbound: 6
- Eastbound: 2
- Westbound: 3

2003-2007 Crashes by Time of Day:
- Noon: 4
- 11 AM: 3
- 8 AM: 2
- 9 AM: 2
- 10 AM: 2
- 12 PM: 2
- 1 PM: 1
- 2 PM: 1
- 3 PM: 1
- 4 PM: 1
- 5 PM: 1
- 6 PM: 1
- 7 PM: 1
- 8 PM: 1
- 9 PM: 1
- 10 PM: 1
- 11 PM: 1

2003-2007 Crashes by Light Conditions:
- Dark with lights: 27%
- Dark no street lights: 11%
- Daylight: 55%
- Dawn: 5%
- Dusk: 2%

2003-2007 Crashes by Severity:
- PDO: 55%
- Injury: 45%
- Fatal: 0%

2003-2007 Crashes by Pavement Condition:
- Wet: 34%
- Snow: 2%
- Dry: 54%
- Ice: 0%
Intersection of **Circle** and **OR 99W**, **Benton** County (Page 1)

<table>
<thead>
<tr>
<th></th>
<th>Northbound</th>
<th>Southbound</th>
<th>Eastbound</th>
<th>Westbound</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Speed Limit</strong></td>
<td>50 mph</td>
<td>50 mph</td>
<td>35 mph</td>
<td>35 mph</td>
</tr>
<tr>
<td><strong>Isolated Major Approach</strong></td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>(&gt;1mile Isolation)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Advanced Intersection Warning</strong>*</td>
<td>SAS</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

*SAS = Signal Ahead Sign  
CFSSA = Continuous Flashing Symbolic Signal Ahead  
PTSWF = Prepare to Stop when Flashing*

Aerial photograph or diagram indicating intersection geometry and lane configurations
### Intersection of Circle and OR 99W, Benton County (Page 2)

**Image shows northbound approach.**

**Picture showing typical arrangement and number of signal heads**

![Graph of Circle and 99W, NB speed](image)

**Average northbound speed = 48.7 mph**

**Graphs of speed data for high-speed approaches**

<table>
<thead>
<tr>
<th>Direction</th>
<th>AADT</th>
<th>% left turns</th>
<th>% right turns</th>
<th>% total turns</th>
<th>Total # of Vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northbound</td>
<td>18,200</td>
<td>22.5</td>
<td>16.1</td>
<td>38.6</td>
<td>378</td>
</tr>
<tr>
<td>Southbound</td>
<td>14,500</td>
<td>13.2</td>
<td>9.2</td>
<td>22.4</td>
<td>304</td>
</tr>
<tr>
<td>Eastbound</td>
<td>unknown</td>
<td>11.0</td>
<td>23.8</td>
<td>34.8</td>
<td>374</td>
</tr>
<tr>
<td>Westbound</td>
<td>unknown</td>
<td>15.0</td>
<td>12.6</td>
<td>27.6</td>
<td>293</td>
</tr>
</tbody>
</table>

**Other notes:** Stop bar for westbound traffic is ~30 ft past railroad tracks. Stop bar for eastbound traffic is ~400 ft past signalized intersection of Circle and 99W. Northbound approach changes from 1 to 2 lanes ~700 ft before stop bar.
Intersection of Circle and OR 99W, Benton County (Page 3)

Collision Diagram

Arrow indicates North.

Red arrow indicates vehicle at fault.

Circle

Symbols indicate isolated, high-speed approaches.

2003-2007 Crash Data

Symbols

Moving Vehicle
Bicycle
Fixed Object
Animal

Collision Types

Rear-end
Head-on
Turning
Angle
Sideways-Overtaking
Sideways-Meeting

Abbreviations

FAT = Fatality
INJ = Injury
PDO = Property Damage Only
DLIT = Dark with street lights

Collision Diagram showing five years of crash data. Include severity, pavement conditions, time of day, and light conditions. Indicate vehicle at fault with red arrow. Include description of symbols/abbreviations.

Feedback from users familiar with intersection:

________________________
________________________
________________________
________________________

OSU
Oregon State University

Portland State University