



**MEMO TO:** Mayor and City Council

**FROM:** Linda De Boldt, Director of Public Works, 425-556-2733

**DATE:** December 9, 2014

**SUBJECT: 2015 – 2016 Targeted Safety Improvement Program (TSIP)**

The purpose of this study session memo is to provide the Mayor and Council with an overview of the Targeted Safety Improvement Program (TSIP), an annual update on projects, and to seek direction on 2015-2016 proposed projects.

## **I. PROGRAM PURPOSE**

The purpose and mission of the TSIP is to identify existing and potential traffic safety problem areas and implement projects to reduce collisions, injuries, deaths, and their related losses through proactive collision prevention, reactive collision response, and multi-modal safety improvements consistent with the 2013 Transportation Master Plan (TMP).

### **History**

The total number of police reported collisions on public streets has experienced only modest increases over the last twenty (20) year time period despite a substantial increase in both land use development and traffic volumes. Today, most of the reported collisions are due to driver inattention and are not as easily reduced through engineering solutions as in past years. More attention is now being focused on prevention of potential collisions, especially those that could involve pedestrians or cyclists. This is consistent with the TMP policy direction to promote “real mobility choices” for all modes of travel.

### **Overview**

The TSIP was specifically identified in the 2005 TMP as an ongoing program and was first approved for Capital Improvement Project (CIP) funding in the 2007-2008 budget. In 2007, the City Council approved selection criteria and a ranking matrix to be used to identify projects to be funded by the TSIP program.

This program carries out the policy direction in the 2013 TMP. It approaches traffic safety from both a proactive (collision prevention), and reactive (collision response) basis. It is a systematic method that clearly identifies, evaluates, and recommends safety projects of benefit to the community.

The current list of projects was compiled using the approved selection criteria. These projects were then evaluated based on the ranking matrix that distinguishes between two categories: 1) risk and 2) project complexity and cost (see Attachment A).

The budget for this Program is \$225,000 per year for a total of \$450,000 for 2015-2016. Previous projects approved and completed as part of the TSIP program are shown in the table below.

## II. STATUS OF PREVIOUSLY APPROVED TSIP PROJECTS

<b>Project Location</b>	<b>Project Description</b>	<b>Status</b>
1. Leary Way /West Lake Sammamish Parkway	Add signage, modify signal and relocate crosswalk for better visibility.	Complete
2. Citywide Signal Head Visibility	Tree trimming-one time.	Complete
3. Old Redmond Road/West Lake Sammamish Lake Parkway	Intersection improvements and signal.	Complete
4. Willows Road Trail Crossing at NE 9900 Block	Realign and signalize pedestrian crossing.	Complete.
5. Citywide Countdown Heads	Change out pedestrian signal heads to show countdown.	Complete.
6. NE 116 <sup>th</sup> Street at 162 <sup>nd</sup> Avenue NE	Construct 50' continuation of wide sidewalk on north side of 116 <sup>th</sup> Ave NE and install crosswalk with pedestrian-actuated flashing beacon.	Complete.
7. Flashing Beacon Replacement	Replace smart studs with Rectangular Rapid Flashing Beacons at four locations. <ul style="list-style-type: none"> <li>• 161<sup>st</sup> Avenue NE at Bella Bottega</li> <li>• Bear Creek Parkway at Town Center</li> <li>• NE 83<sup>rd</sup> Street at Transit Center (two locations)</li> </ul>	Complete.
8. 164 <sup>th</sup> Avenue NE from Redmond Way to NE 87 <sup>th</sup> Street	Reduce existing four travel lanes to three with bike lanes in both directions. Grant received for this project with matching funds provided by TSIP.	Complete.

9. Red-Wood Road - South of NE 109 <sup>th</sup> Street	Design 420' of pedestrian improvements along the west side of Red-Wood Road with a cantilevered sidewalk structure similar to Bel-Red Road south of NE 40 <sup>th</sup> Street.	Final Design and Cost Estimate complete.
10. Willows Road at NE 90 <sup>th</sup> Street/NE 95 <sup>th</sup> Street	Design realignment of NE 91 <sup>st</sup> Street to north at Arena Sports driveway to allow left turn movements to operate simultaneously at intersection.	Design is complete.
11. Red-Wood Road 109 <sup>th</sup> to 116 <sup>th</sup>	Design and construct widened shoulder on the west side. A portion is complete.	Construction complete from 113 <sup>th</sup> to 116 <sup>th</sup> .
12. 156 <sup>th</sup> Ave NE between NE 45 <sup>th</sup> Street and NE 51 <sup>st</sup> Street	Design and construct a mid-block crossing between NE 45 <sup>th</sup> Street and NE 51 <sup>st</sup> Street to serve Microsoft campus and residential use on the east side.	Conduit is installed. Remainder delayed pending analysis of possible full traffic signal with Microsoft.
13. 159 <sup>th</sup> Avenue NE/116 <sup>th</sup> Street Crosswalk	Install new crosswalk with RRFB for North/South Crossing of 116 <sup>th</sup> Avenue NE.	On hold pending developer completion of subdivision.
14. 166 <sup>th</sup> Ave NE Rechannelization	Provided partial funding for rechannelizing 166 <sup>th</sup> Ave NE between NE 85 <sup>th</sup> St and NE 100 <sup>th</sup> St.	Currently under construction.
15. Bear Creek Parkway and 164 <sup>th</sup> Ave NE	Completed design and successfully bid for installing RRFB at this location.	Construction is about to begin.
16. 148 <sup>th</sup> Ave NE, Willows Road to NE 87 <sup>th</sup> Street and Redmond Way	Evaluate the 148 <sup>th</sup> Avenue NE corridor from Willows Road to Redmond Way for possible reconfiguration of street and improvement of pedestrian crossing at 148 <sup>th</sup> Avenue NE and NE 87 <sup>th</sup> Street.	Construction is about to begin.

17. NE 40 <sup>th</sup> Street and SR 520 Ramp on the west side	Design intersection improvements per the NE 40 <sup>th</sup> Street Corridor Study to provide a median for pedestrians and bicyclists crossing at the SR520 Bike Trail.	Construction is about to begin.
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**Summary**

Since 2008, when the first list of projects were approved by the City Council, there have been nine projects completed, two with design completed, two on hold and four under construction. TSIP has been used to leverage \$5.4 million in total project costs to date.

**PROPOSED 2015-2016 TARGETED SAFETY IMPROVEMENT PROGRAM**

**Project Selection Process**

Attachment B illustrates the project selection process graphically. The green oval represents the study session discussion with a review of the completed projects, and more importantly the recommendation of the 2015-2016 proposed project list for Council review and approval. In the current 2015-2016 process, 29 projects were identified using the selection criteria as the “list of potential projects.” Each potential project was ranked based on the ranking matrix and are listed in Attachment C. The highest ranked projects were identified for funding as part of the 2015-2016 TSIP proposed projects list. The following table shows the proposed list within the available funding for 2015-2016.

**TSIP Proposed Projects**

	<b>Design</b>	<b>Construction</b>
<b>Proposed 2015-2016 Program</b>		
<b>Dynamic Curve Warning sign on WLSP</b>	<b>\$ 25,000.00</b>	
<b>Old Redmond Road and 143<sup>rd</sup> Ave NE-RRFB</b>	<b>\$ 50,000.00</b>	
<b>Old Redmond Road and 146<sup>th</sup> Ave NE-RRFB</b>	<b>\$ 50,000.00</b>	
<b>NE 81<sup>st</sup> Street and 161<sup>st</sup> Ave NE – Pedestrian Crossing</b>	<b>\$ 25,000.00</b>	
<b>Mid-Block Crossing Improvement 160<sup>th</sup></b>		

**Ave NE/Trader Joes**

**Red-Wood Road (SR202) NE 109<sup>th</sup> Street to  
NE 113<sup>th</sup> Street**

**(Shoulder widening)**

<b>2014 Carry-Over (2014)</b>	<b>\$170,000.00</b>
<b>Proposed for Design</b>	<b>-\$150,000.00</b>
	<b>\$ 20,000.00</b>
<b>Available for Construction</b>	<b>\$470,000.00</b>

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\*\*Total includes use of past fund balance

**Descriptions**

Dynamic Curve Warning of West Lake Sammamish Parkway (WLSP) in 3800 Block -  
Evaluate and begin design of Dynamic Curve Warning signs on the curve on WSLP  
between NE 38<sup>th</sup> St & NE 40<sup>th</sup> St.

Old Redmond Road and 143<sup>rd</sup> Ave NE – Design and install Rectangular Rapid Flashing  
Beacon to replace current static pedestrian warning signs.

Old Redmond Road and 146<sup>th</sup> Ave NE – Design and install Rectangular Rapid Flashing  
Beacon to replace current static pedestrian warning signs.

NE 81<sup>st</sup> Street and 161<sup>st</sup> Ave NE- Pedestrian Crossing – Design a mid-block crossing  
with curb ramps, crosswalk markings and consider Rectangular Rapid Flashing  
Beacon system to improve pedestrian safety.

Mid-Block Crossing Improvements at 160<sup>th</sup> Ave NE /Trader Joes  
Improve current mid-block crossing by adding Rectangular Rapid Flashing Beacon  
system and repainting crosswalks.

Red-Wood Road (SR 202) NE 109<sup>th</sup> Street to NE 113<sup>th</sup> Street – Construct remaining  
area of paved shoulder along west side. WSDOT is paving this area in 2016;  
recommendation is to add the widened area to their construction project.

**Next Steps**

- Begin design and analysis of recommended projects
- Construction to begin in 2016

**III. LIST OF ATTACHMENTS**

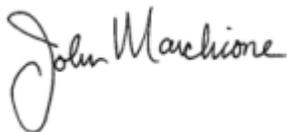
- A. Project Complexity and Cost
- B. Project Selection Process Graphic
- C. Potential Projects Ranked

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**Mike Paul, Public Works Construction Engineering  
Manager**

**12/04/2014**  
**Date**



Approved for Agenda \_\_\_\_\_  
**John Marchione, Mayor**

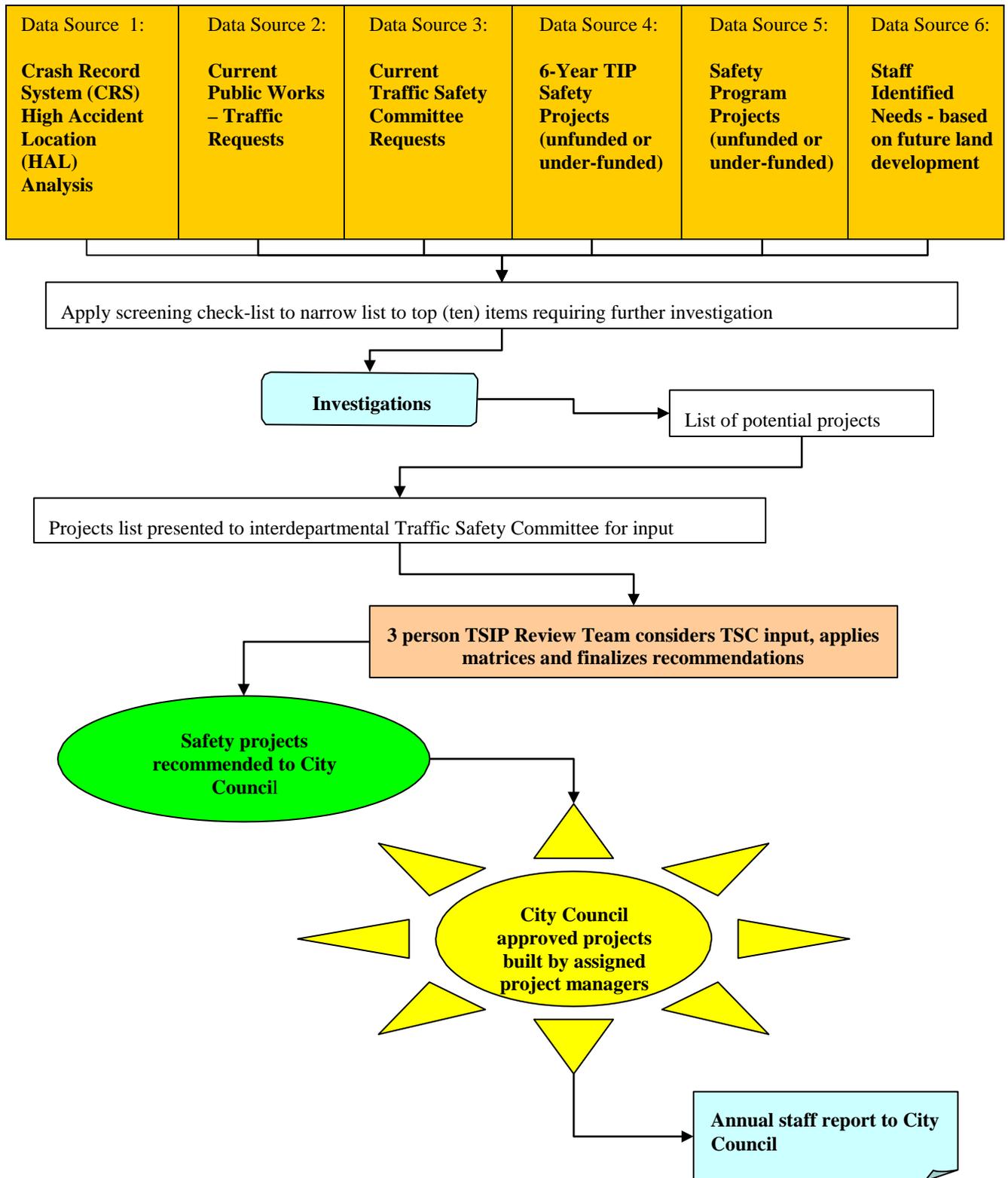
**12/04/2014**  
**Date**

## ATTACHMENT A

Note: Proactive items are to be reviewed using these matrices on a forward looking basis.

<b>Risk Ranking Matrix</b>			<i>Likelihood of Occurrence Score</i>			<b>Total Points</b>	
			<b>High-6</b>	<b>Med-5</b>	<b>Low-4</b>	<b>High</b>	<b>45</b>
			Very likely - Possible to occur frequently	Occasionally - Possible to occur, but infrequently in most circumstances	Highly unlikely - Could occur but only in exceptional circumstances		<b>44</b>
<b>Hazard Severity Score</b>	<b>High-6</b>	Fatalities and/or extensive property damage	<b>36</b>	<b>30</b>	<b>24</b>	<b>43</b>	
	<b>Med-5</b>	Moderate injuries and/or moderate property damage	<b>30</b>	<b>25</b>	<b>20</b>	<b>42</b>	
	<b>Low-4</b>	No injuries and/or no property damage	<b>24</b>	<b>20</b>	<b>16</b>	<b>41</b>	
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<b>Complexity Score</b>	<b>High-1</b>	Project requires quite a few parts or segments and/or considerable coordination with other jurisdictions	<b>1</b>	<b>2</b>	<b>3</b>	<b>40</b>	
	<b>Med-2</b>	Project requires more than a few parts or segments and/or new technology, or moderate coordination with other jurisdictions	<b>2</b>	<b>4</b>	<b>6</b>	<b>39</b>	
	<b>Low-3</b>	Project requires few parts or segments, existing technology, and little or no coordination with other jurisdictions	<b>3</b>	<b>6</b>	<b>9</b>	<b>38</b>	
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<b>Project Complexity &amp; Cost Matrix</b>			<i>Cost Score</i>			<b>Med</b>	<b>37</b>
			<b>High-1</b>	<b>Med-2</b>	<b>Low-3</b>		<b>36</b>
			\$250,000 and over	\$75,001 - \$249,999	\$25,000 – \$75,000	<b>Med</b>	<b>35</b>
<b>Complexity Score</b>	<b>High-1</b>	Project requires quite a few parts or segments and/or considerable coordination with other jurisdictions	<b>1</b>	<b>2</b>	<b>3</b>	<b>34</b>	
	<b>Med-2</b>	Project requires more than a few parts or segments and/or new technology, or moderate coordination with other jurisdictions	<b>2</b>	<b>4</b>	<b>6</b>	<b>33</b>	
	<b>Low-3</b>	Project requires few parts or segments, existing technology, and little or no coordination with other jurisdictions	<b>3</b>	<b>6</b>	<b>9</b>	<b>32</b>	
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<b>Complexity Score</b>	<b>High-1</b>	Project requires quite a few parts or segments and/or considerable coordination with other jurisdictions	<b>1</b>	<b>2</b>	<b>3</b>	<b>31</b>	
	<b>Med-2</b>	Project requires more than a few parts or segments and/or new technology, or moderate coordination with other jurisdictions	<b>2</b>	<b>4</b>	<b>6</b>	<b>30</b>	
	<b>Low-3</b>	Project requires few parts or segments, existing technology, and little or no coordination with other jurisdictions	<b>3</b>	<b>6</b>	<b>9</b>	<b>29</b>	
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<b>Complexity Score</b>	<b>High-1</b>	Project requires quite a few parts or segments and/or considerable coordination with other jurisdictions	<b>1</b>	<b>2</b>	<b>3</b>	<b>28</b>	
	<b>Med-2</b>	Project requires more than a few parts or segments and/or new technology, or moderate coordination with other jurisdictions	<b>2</b>	<b>4</b>	<b>6</b>	<b>27</b>	
	<b>Low-3</b>	Project requires few parts or segments, existing technology, and little or no coordination with other jurisdictions	<b>3</b>	<b>6</b>	<b>9</b>	<b>26</b>	
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<b>Complexity Score</b>	<b>High-1</b>	Project requires quite a few parts or segments and/or considerable coordination with other jurisdictions	<b>1</b>	<b>2</b>	<b>3</b>	<b>25</b>	
	<b>Med-2</b>	Project requires more than a few parts or segments and/or new technology, or moderate coordination with other jurisdictions	<b>2</b>	<b>4</b>	<b>6</b>	<b>24</b>	
	<b>Low-3</b>	Project requires few parts or segments, existing technology, and little or no coordination with other jurisdictions	<b>3</b>	<b>6</b>	<b>9</b>	<b>23</b>	
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<b>Complexity Score</b>	<b>High-1</b>	Project requires quite a few parts or segments and/or considerable coordination with other jurisdictions	<b>1</b>	<b>2</b>	<b>3</b>	<b>22</b>	
	<b>Med-2</b>	Project requires more than a few parts or segments and/or new technology, or moderate coordination with other jurisdictions	<b>2</b>	<b>4</b>	<b>6</b>	<b>21</b>	
	<b>Low-3</b>	Project requires few parts or segments, existing technology, and little or no coordination with other jurisdictions	<b>3</b>	<b>6</b>	<b>9</b>	<b>20</b>	
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<b>Complexity Score</b>	<b>High-1</b>	Project requires quite a few parts or segments and/or considerable coordination with other jurisdictions	<b>1</b>	<b>2</b>	<b>3</b>	<b>19</b>	
	<b>Med-2</b>	Project requires more than a few parts or segments and/or new technology, or moderate coordination with other jurisdictions	<b>2</b>	<b>4</b>	<b>6</b>	<b>18</b>	
	<b>Low-3</b>	Project requires few parts or segments, existing technology, and little or no coordination with other jurisdictions	<b>3</b>	<b>6</b>	<b>9</b>	<b>17</b>	

## ATTACHMENT B



**ATTACHMENT C**

Rank Order	Location	Description	Total Project Cost	Proposed TSIP Amount 2015	Pedestrian/Bicycle Collisions, Jan 2011-Mar 2014	Collisions, Jan 2011-Mar 2014	ADT	Total Points	Notes
1	W Lake Sammamish Pkwy int curve at 3800 block	Design and evaluate installing Dynamic Curve Warning signs on the curve on WSLP between NE 38th St & NE 40th St.	\$159,000	25,000	3	7 Collisions	11,100	36	Wait to see how recent changes are working
2	Old Redmond Road/143rd	Design and install Rectangular Rapid Flashing Beacon to replace current static pedestrian warning signs.	\$178,000	50,000	2	3 Collisions	9,200	36	Design and Build
3	Old Redmond Road/ 146th West Leg	Design and install Rectangular Rapid Flashing Beacon to replace current static pedestrian warning signs.	\$188,000	50,000	1	2 Collisions	9,200	36	Design and Build
4	Mid Block Crossing at NE 81st and 161st	Install mid-block crossing with curb ramps, crosswalk markings and Rectangular Rapid Flashing Beacon system to improve pedestrian safety.	\$194,000	25,000	2	12 Collisions	7,000	36	Design and paint an interim mid block crossing
5	Mid block crossing improvements at 160th and Trader Joes	Improve current mid-block crossing by adding Rectangular Rapid Flashing Beacon system and repainting crosswalks.	\$159,000		N/A	N/A	11,900	36	Design of RRFB
6	West Lake Sammamish Parkway between NE 51st Street and Bel Red Road	Stripe the west side of WLSP between NE 51st Street and Bel Red Road to create a bicycle lane and pedestrian path. Provide additional signage and street pavement markings for bicycles on the east side of the road.	\$140,384		0	15 Collisions	17,400	34	Leverage with Bike Program
7	Willows Road and Willows Run Golf Complex	Install mid block crossing with curb ramps, crosswalk markings and HAWK pedestrian activated crossing signal.	\$333,000		N/A	N/A	23,200	33	Working with One Redmond
8	Red-Wood Road Widening (SR 202), 109th St to 113th Ct	Widen roadway to provide shoulder wide enough to accommodate pedestrians and bicyclists. Approximately 1260 LF of 6' width asphalt pavement from 109th St to 113th Ct.	\$240,000		N/A	N/A	26,900	33	Estimate and Design completed by Parametrix. Estimate revised by CM Design for contingencies. Leverage with WSDOT Overlay Project in 2016
9	Avondale Road at NE 95th Street	Intersection re-alignment reduces skew, adds a north leg crosswalk, eliminates split-phasing and provides for north to south U-turns.	\$1,184,000		0	31 Collisions	39,100	33	Forward to CIP after Avondale Corridor is complete

\*Total costs are conceptual for planning purposes only, obtained from multiple sources and subject to change