MEMO TO: Mayor Marchione and City Council

FROM: Tim Fuller, Director of Public Works, 556-2733

Ron Grant, Assistant Public Works Director/City Engineer, 556-2742 Rob Crittenden, Traffic Operations, Safety and Engineering, 556-2838

Tricia Thomson, Targeted Safety Improvement Program Coordinator, 556-2776

DATE: December 11, 2012

SUBJECT: STUDY SESSION ON TARGETED SAFETY IMPROVEMENT PROGRAM (TSIP)

The purpose of this study session is to provide Mayor and Council with an overview of the TSIP program, an annual update on projects, and to seek direction on 2013-2014 proposed projects.

I. PROGRAM PURPOSE

The purpose and mission of the Targeted Safety Improvement Program (TSIP) is to identify existing and potential traffic safety problem areas and implement projects to reduce crashes, injuries, deaths, and their related losses through proactive collision prevention, reactive collision response, and multi-modal safety improvements consistent with the 2005 Transportation Master Plan (TMP).

HISTORY

The total number of police reported collisions on public streets has experienced only modest increases over the last 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 CIP funding in the 2007-2008 budget. In 2007, 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 2005 TMP, and is an action item in the current 3-Year Priority Action Plan. 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 annual budget for this Program is \$450,000. Previous projects approved and completed as part of the TSIP program are shown in the table below.

II. STATUS OF PREVIOUSLY APPROVED TSIP PROJECTS

Proj	ject Location	Project Description	Status		
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.	Avondale Road to Novelty Hill	Prioritize plan for delivering safety, access and mobility improvements	Preliminary Design has begun		
4.	Old Redmond Road/West Lake Sammamish Lake Parkway	Complete			
5.	Willows Road Trail Crossing at NE 9900 Block	Realign and signalize pedestrian crossing	Complete		
6.	Citywide Countdown Heads	Change out pedestrian signal heads to show countdown	Complete		
7.	148 th Ave NE, Willows Road to NE 87 th Street and Redmond Way	Evaluate the 148th Avenue NE corridor from Willows Road to Redmond Way for possible reconfiguration of street and improvement of pedestrian crossing at 148th Avenue NE at NE 87 th Street	Preliminary Design has begun		
8.	NE 40 th Street and SR 520 Ramp on the west side	Design intersection improvements per the NE 40th Street Corridor Study to provide a median for pedestrians and bicyclists crossing at the SR520 Bike Trail	Preliminary Design		
9.	Flashing Beacon Replacement	Replace smart studs with Rectangular Rapid Flashing Beacons at four locations. 161st Avenue NE at Bella Bottega Bear Creek Parkway at Town Center NE 83 rd Street at Transit Center (two locations)	Complete		

10. Red-Wood Road -	Design 420 feet of pedestrian improvements	Alternatives
South of NE	along the west side of Red –Wood Road with	Analysis and
109 th Street	a cantilevered sidewalk structure similar to	Cost Estimate
	Bel-Red Road south of NE 40th Street.	complete
11. 164th Avenue NE	Reduce existing four travel lanes to three	In-Design
from Redmond	with bike lanes in both directions. Grant	
Way to NE 87th	received for this project with matching funds	
Street	provided by TSIP	
12. NE 116th Street at	Construct 50' continuation of wide sidewalk	Complete
162nd Avenue NE	on north side of 116 th Ave NE and install	
	crosswalk with pedestrian-actuated flashing	
	beacon.	

SUMMARY

Since 2008 when the first list of projects were approved by Council there have been seven projects completed and four more are now in design. TSIP has been used to leverage \$3.5 million in total project costs to date.

III. PROPOSED 2013-2014 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 2013-2014 proposed project list for Council review and approval. In the current 2013-2014 process, 34 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 2013-2014 TSIP proposed projects list. The following available funding shows the proposed list within the for 2013-2014.

TSIP PROPOSED PROJECTS

	Design	Construction	2013	2014
Proposed 2013-2014 Program				
NE 40 th Street at SR 520 Ramp		X	\$184,000	
148 th Ave NE, Willows Road to Redmond Way		\mathbf{X}	\$208,000	
166 th Ave NE (NE 85 th Street to NE 100 th Street	X		\$100,000	
Bear Creek Parkway at 164 th Ave NE	\mathbf{X}	\mathbf{X}		\$ 75,000
Red-Wood Road (SR 202) NE 109 th Street to NE 116 th Street	X	X		\$150,000
156 th Ave NE between NE 45 th Street and NE 51 st Street *	\mathbf{X}	\mathbf{X}		\$100,000
Willows Road at NE 90 th Street/NE 95 th Street	X			\$ 25,000
159th Avenue NE/NE 116th Street	\mathbf{X}	\mathbf{X}		\$125,000
Total **			\$492,000	\$475,000

^{**}Total includes use of past fund balance

Descriptions

<u>NE 40th Street and SR 520 Ramp on the west side</u> – Construct intersection improvements for pedestrians and bicyclists crossing at the SR 520 Bike Trail. Move the curb on the south side to provide a shorter crossing on the south side of the intersection.

148th Avenue NE, Willows Road to Redmond Way – Construction of a Pedestrian Hybrid Beacon (PHB) formerly called a HAWK, as a signal for pedestrian crossing at 148th Avenue NE at NE 87th Street. When pedestrian pushes button, vehicles get a flashing yellow, then red signal at this midblock crossing.

<u>166th Avenue NE – NE 85th Street to NE 100th Street – Complete a needs assessment for the corridor (including citizen input). Prepare alternatives analysis, particularly needed for intersection of NE 85th Street and the steep grade up the hill. Preliminary design (30%) and cost estimate for selected alternative.</u>

<u>Bear Creek Parkway at 164th Avenue NE</u> – Design and install flashing beacon at the existing pedestrian crossing from Bear Creek trail to Redmond Town Center.

Red-Wood Road (SR 202) NE 109th Street to NE 116th Street – Design and construct 2,180 feet of paved shoulder along west side.

<u>156th Avenue NE between NE 45th Street and NE 51st Street</u> – Design and construct a mid-block crossing between NE 45th Street and NE 51st Street to serve Microsoft campus and residential use on east side. * Full construction depends on developer contribution.

<u>Willows Road at NE 90th Street/NE 95th Street</u> – Design realignment of NE 91st Street to north, or Arena Sports driveway to south, to allow left turn movements to operate simultaneously at intersection.

159th Avenue NE/NE 116th Street Crosswalk – Design and install flashing beacon and provide north/south pedestrian crossing across NE 116th Street.

NEXT STEPS:

- ➤ Finalize design of NE 40th Street at SR 520 and 148th Avenue NE at Willows Road to Redmond Way and move these projects to construction in 2013

 ➤ Begin design for 166th Avenue NE, conduct public involvement and present 30% drawings and
- estimates for Council discussion in December 2013
- Remainder of projects will be started in 2014

ATTACHMENT A

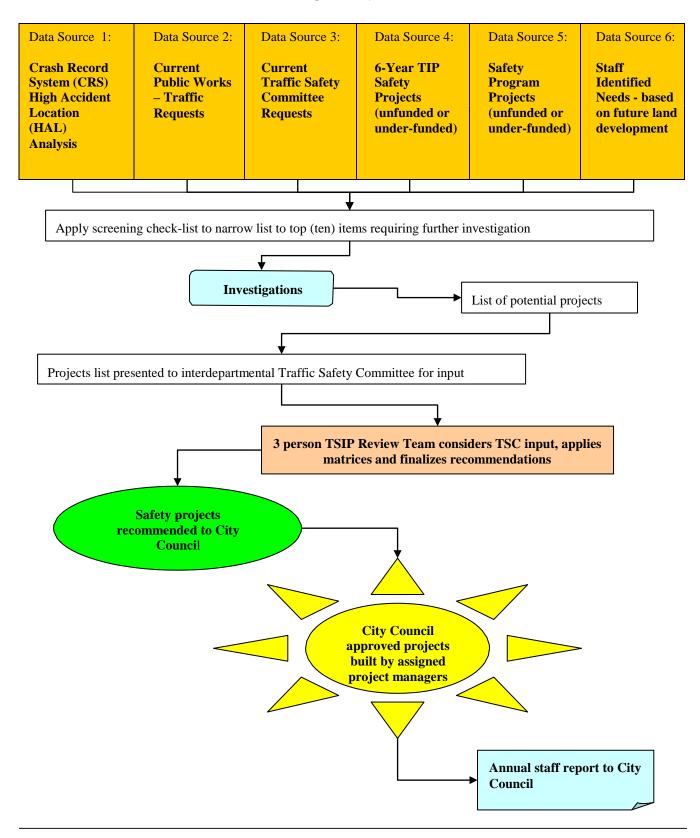
Note: Proactive items are to be reviewed using these matrices on a forward looking basis.

			Likelihood of Occurrence Score						
Risk Ranking Matrix			Panking High-6		Low-4				
			Very likely - Possible to occur frequently	Occasionally - Possible to occur, but infrequently in most circumstances	Highly unlikely - Could occur but only in exceptional circumstances				
Score	High-6	Fatalities and/or extensive property damage	36	30	24				
Hazard Severity Score	Med-5	Moderate injuries and/or moderate property damage	30	25	20				
Haza	Low-4	No injuries and/or no property damage	24	20	16				

	Project		Cost Score					
Project Complexity 8			High-1	Low-3				
Complexity & Cost Matrix		\$250,000 and over	\$75,001 - \$249,999	\$25,000 – \$75,000				
	High-1	Project requires quite a few parts or segments and/or considerable coordination with other jurisdictions	1	2	3			
Complexity Score	Med-2	Project requires more than a few parts or segments and/or new technology, or moderate coordination with other jurisdictions	2	4	6			
	Low-3	Project requires few parts or segments, existing technology, and little or no coordination with other jurisdictions	3	6	9			

Total Points						
1 011	45					
	44					
igh	43					
	42					
High	41					
I	40					
	39					
	38					
	37					
	36					
	35					
	34					
Med	33					
	32					
	31					
	30					
	29					
	28					
	27					
	26					
	25					
	24					
	23					
-0 W	22					
۲	21					
	20					
	19					
	18					
	17					

ATTACHMENT B



Targeted Safety Improvement Program Attachment C

Rank Order	Location	Mitigation	Total Project Cost	Previously Approved TSIP Amount	Proposed TSIP Amount 2013-2014	Collisions, Jan 2009- Feb 2012	ADT	Total Points	Severity/ Likelyhood	Complexity -Cost	Notes
1	NE 40th Street at SR 520 Ramps (N side)	Construct raised median pedestrian refuge island with push button on NE 40th Street along 520 Trail route; curb bump-outs at WB on-ramp; "No Right on Red" and Yield to Pedestrian" signage; retime signals for leading ped phase	\$284,000	\$100,000	\$184,000	18 Collisions,	32,600	38	36 H/H	2 M/H	Leveraging potential with Microsoft to improve safety and access in campus vicinity. Started design in 2011
2	148th Avenue NE at NE 87th Street	Design and construct crossing and traffic signal to serve residents and office workers; access to bus stops on 148th (new Rapid Ride route)	\$250,000	\$42,000	\$208,000	4 Collisions,	15,700	36	30 H/M	6 L/L	2011 TSIP funding for design only; appropriate to implement now that Ra[id Ride is operating, construction funding requested
3	166th Avenue NE (85th to 100th)	Reduce existing four travel lanes to three lanes with bike lanes in each direction	\$850,000	-	\$100,000	17 Collisions,	13,900	36	30 M/M	6 M/H	Proposed funding is for community engagement, needs assessment, preliminary design and engineers cost estimate
4	Bear Creek Parkway at 164th Avenue NE	Install flashing beacon at the existing pedestrian crossing from Bear Creek trail to Redmond Town Center	\$75,000		\$75,000	6 Collisions,	16,200	34	24 H/L	9 L/L	Increased interest with 164th across BNSF/Central Connector
5	Red-Wood Road (SR 202), 109th to 116th	Construct 2,180' of paved shoulder along west side. Shift centerline to allow continuous striped shoulder on both sides for pedestrians and cyclists.	\$150,000		\$150,000	17 Collisions,	16,500	34	30 H/M	4 M/M	Leverage with Ped Bike program
6	Avondale Rd at Avondale Way	Intersection re-alignment and addition of pedestrian crosswalks	\$1,000,000	-	\$ -	19 collisions,	35,000 / 12,100	33	30 M/H	3 L/H	HOLD until corridor study is complete
7	Redmond Way, 140th to 148th North Side	Construct 600 ' of missing sidewalk; solutions include extensive retaining walls or structured steel walkway w/railing	\$925,000	-	\$ -	22 Collisions,	33,600	33	30 H/M	3 L/H	Ped Bike program to apply for grant
8	Red-Wood Road (SR 202) south of 109th	Construct 420' sidewalk along west side using cantilevered structure (similar to Bel-Red Road near Microsoft campus)	\$605,000	\$88,000	\$ -	7 Collisions	15,000	32	30 H/M	2 M/H	Project doesn't rank high enough in Ped Bike
9	156th Avenue NE (between 45th & 51st)	Construct a mid-block crossing between 45th and 51st Streets to serve Microsoft campus and residential use on east side	\$240,000		\$100,000	10 Collisions,	12,900	31	25 M/M	6 L/M	Leverage with Microsoft
10	Willows / 90th-95 Driveway	Realign NE 91st Street to north, or Arena Sports driveway to south, to allow left turn movements to operate simultaneously at intersection	\$50,000		\$25,000	9 Collisions,	21,600	30	26 M/H	4 M/M	Needs analysis and preliminary design
11	159th / 116th Crosswalk	Install new crosswalk with Rapid Flashing Beacon, curb ramps and minor sidewalk sections	\$125,000		\$125,000		8,500	30	24 H/L	6 L/M	Bauman property is designing roundabout
12	Avondale Road at 180th Avenue NE	Add crosswalk on the south leg of the intersection, providing direct pedestrian access to bus stops	\$41,000		\$ -	10 Collisions,	43,200 / 1,200	29	20 M/L	9 L/L	Wait for Corridor study completion
13	W Lake Sammamish Pkwy at NE 24th Street	Improve sight-distance by re-grading NW corner of intersection	\$25,000		\$ -	5 Collisions	4,500 / 600	29	20 M/L	9 L/L	Postpone to coincide with Bellevue's project
14	West Lake Sammamish Parkway between NE 51st Street and Bel Red Road	Provide interim nonmotorized facilities	\$153,000		\$ -	10 Collisions,	17,000	26	20 M/L	6 L/M	Interim non motorized facilities

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