



INFORMATION REPORT

TO: Chair and Members Public Works Committee	WARD(S) AFFECTED: WARDS 5 and 9
COMMITTEE DATE: November 18, 2013	
SUBJECT/REPORT NO: Red Hill Valley Parkway Improvements (PW13081) - (Wards 5 and 9) (Outstanding Business List Item)	
SUBMITTED BY: Gerry Davis, CMA General Manager Public Works Department	PREPARED BY: Stephen Cooper, C.E.T. Project Manager Community Traffic (905) 546-2424, Extension 2558
SIGNATURE:	Dave Ferguson, C.E.T. Superintendent of Traffic Engineering (905) 546-2424, Extension 2433

Council Direction:

At the January 23, 2013, Council meeting, the following Motion was approved and provided to staff:

1. That staff be directed to investigate upgrading the lighting on the Red Hill Valley Parkway in the vicinity of the Mud/Stone Church Rd interchanges, and
2. That staff be directed to investigate better reflective signage and lane markings or other initiatives to assist motorists in the same area,
3. That a full costing of all options and alternatives be presented to committee for their consideration.

Information:

As a result of the Motion, staff retained CIMA+ Consulting to complete an In-service Safety Review on the section of the Red Hill Valley Parkway (RHVP) between Dartnall Road and Greenhill Avenue.

The study objective was to determine if any safety improvements could be made to enhance driver safety/performance and driver sense of security in these areas.

The report included a review of current lighting along with enhancements that could assist driver comfort while driving on the Red Hill Valley Parkway. It should be noted that as part of the original RHVP design and prior Council approval, the roadway lighting

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was not recommended or implemented as a result of the environmental concerns (light pollution).

The findings of the study indicated that the Red Hill Valley Parkway is operating safely. However, the report did suggest implementing several safety countermeasures that could further enhance or improve driver safety and security. Many of the recommendations identified involve relatively minor changes to various signs and pavement markings in the study area. Staff is in the process of implementing many of the identified signage countermeasures which should be completed by the end of 2013. Pavement marking will be completed in the spring of 2014 as weather permits. Existing maintenance accounts are being utilized to complete the identified short term countermeasure work at an estimated cost of \$133,000. A listing of short term countermeasures and locations identified in the report are listed in Appendix A.

The consultant's report also recommended the installation of Raised Permanent Pavement Marking (e.g. cat's eyes). The purpose of this recommendation was to provide additional markings to assist with positive guidance for motorists; Staff is supportive of this recommendation. Generally, installations of these types of marking work best when they are installed during repaving of the roadway. Staff from the Public Works, Traffic Engineering Section will work with Construction Engineering to determine the repaving schedule for this area and coordinate the installation of the permanent markings. In the interim, staff will ensure that temporary markings are installed in 2014, until the more permanent ones can be installed. Staff will also review further countermeasures such as friction testing with Construction Engineering.

The report also reviewed roadway lighting and while the report did not recommend the installation of lighting along the entire road segment, the consultant's did report recommended that lighting be installed on the westbound Mud St. on-ramp. The cost to install roadway lighting in this section is initially estimated at \$275,000. However as outlined under the original Red Hill Valley Report that was approved by Council prior to construction of the roadway, roadway lighting was not recommended or implemented as a result of the environmental concerns.

Staff propose that the identified countermeasures should be implemented and monitored prior to any further consideration of the installation of new roadway lighting. Staff will continue to monitor the outlined study area for a one-year period, once all signage and pavement marking countermeasures are implemented.

All of the sign changes outlined in the consultant's report will be completed by the end of 2013. Pavement improvements will be completed by June 2014 during the regular scheduled re-painting of the Red Hill Valley Parkway to minimize costs.

Overall Study Area- Short Term Countermeasures

Countermeasure	B/C Ratio	Cost	Timing
Friction Testing	n/a	\$10,000	ST
PRPM or	3.29	\$75,000	ST
Inverted Profile Markings	n/a	n/a*	ST
Wide Markings	3.39	\$40,000	ST
Slippery When Wet Signs	n/a	\$5,000	ST
Enforcement of Travel Speeds	n/a	n/a	ST
Trailblazer Signage	n/a	\$2,000	ST
Remove Lane Exit Signs	n/a	\$1,000	ST
Total Costs		\$133k	

Road Segment- Short Term Countermeasures

Name	Road Segment	Collisions	Field	Countermeasure	B/C Ratio	Cost	Term
West of Darthall	Darthall 1 & 2	+ None	+ No major findings	+ n/a	+ n/a	+ n/a	+ n/a
Between Darthall & Mud	Darthall 3, 4 & 5	+ 48% SMV	+ Potentially restricted sightlines for merging traffic from Darthall onto NB RHVP	+ Extend solid white line from gore	+ n/a	+ \$500	+ ST
			+ Exit information sign partially obscured NB RHVP	+ Remove Deer Warning sign	+ n/a	+ \$500	+ ST
			+ Change in alignment in SB direction	+ Alter SB alignment with pavement markings & alteration to rumble strips & possibly to the shoulder	+ n/a	+ \$4,000*	+ ST
Between Mud & Greenhill	Mud 1, 2 & 3	+ 60% SMV + 50% non-daylight	+ Uneven terrain in front of guiderail NB	+ Flatten terrain or raise guiderail NB	+ n/a	+ n/a**	+ ST
	Mud 4, 5 & 6	+ Exp. > Pred. @ Mud 4 + Primarily SMV + High proportion of non-daylight & wet surface	+ Closely spaced & obscured signage at critical decision points SB	+ Relocate "ENGINE BRAKES" sign NB	+ n/a	+ \$500	+ ST
			+ Potentially confusing "keep right" sign NB	+ Remove "Slower Traffic" sign SB	+ n/a	+ \$500	+ ST
			+ Closely spaced & obscured signage at critical decision points NB	+ Place "Object Marker" sign on same post as "Exit" sign SB	+ n/a	+ \$500	+ ST
Greenhill 1 to 4		+ None	+ No major findings	+ n/a	+ n/a	+ n/a	+ n/a
Total Costs						+ \$6,500***	

* Cost is for pavement markings only. Other potential required works could increase cost substantially

**It is expected that this countermeasure could be completed by City forces

***Not including other potential works associated with the alignment adjustment

RHVP Ramp- Short Term/Medium Countermeasures

Name	Ramp	Collisions	Field	Countermeasure	B/C Ratio	Cost	Term
Dartnall Int.	Ramp 1 & 2	+ n/a	+ Culvert and drop-off within deflection area of approach eccentric loader end treatment (Ramp 2)	+ End guiderail and change end treatment	+ n/a	+ \$11,000	+ ST
	Ramp 3	+ n/a	+ No major findings	+ n/a	+ n/a	+ n/a	+ n/a
	Ramp 4	+ n/a	+ No major findings	+ n/a	+ n/a	+ n/a	+ n/a
Mud Int.	Ramp 5	+	+ Lane ends within curve	+ Restripe to one lane for each ramp	+ n/a	+ \$8,000	+ MT
	Ramp 6	+ Exp. > Pred. + 65% of all ramp collisions + High proportion & frequency of SMV, non-daylight & wet surface	+ TAC illumination warrant justified	+ Install lighting on ramp	+ 3.78	+ \$275,000	+ ST
			+ Closely spaced / eclipsing signage at diverge point + Evidence of lane departures	+ Install high-friction pavement approaching and through curve	+ 2.32	+ \$93,000	+ ST
				+ Install progressively larger chevrons	+ n/a	+ \$4,000	+ ST
				+ Install pavement marking text	+ n/a	+ \$1,500	+ ST
			+ Install dynamic / variable speed warning sign	+ n/a	+ \$7,000	+ ST	

RHVP Ramp- Short Term Countermeasures (Continued)

Greenhill Int.	Ramp 9	+ Exp. > Pred., however very low # of collisions	+ No major findings	+ n/a	+ n/a	+ n/a	+ n/a
	Ramp 10	+ Exp. > Pred., however very low # of collisions	+ No major findings	+ n/a	+ n/a	+ n/a	+ n/a
Total Costs					+ ST = \$405,000	+ MT = \$8,000	