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MEMORANDUM

February 14, 2019

TO: Howard Young, Town of Portola Valley - by email only

FROM: Paul Krupka

RE: DRAFT Task 4 Results > Portola Valley Pedestrian Safety Planning Study

Krupka Consulting (“Consultant”) was engaged by the Town of Portola Valley (“Town”) to provide professional traffic engineering services to support the *Portola Valley Pedestrian Safety Planning Study* (“Study”). The purpose of the Study was to conduct a professional traffic engineering review of school area and major corridor streets with regard to pedestrian safety and provide conceptual ideas and opinions about potential improvements to address observed issues.

This memorandum summarizes a preliminary professional opinion about pedestrian safety issues and opportunities at or near schools, at key crosswalks on Alpine Road and Portola Road, and on key travel corridors including Alpine Road, Portola Road and Los Trancos Road near its junction with Alpine Road. It will be reviewed by Town staff and refined for discussion with and review by the Bicycle, Pedestrian & Traffic Safety Committee (“BPTS Committee”).

The collective feedback on this memorandum will be incorporated into a report representing the foundation for subsequent efforts that are intended to ultimately result in discrete pedestrian improvements with rationale, dimensions, and costs constituting a Capital Improvement Program (CIP) element.

Study Context

The Town and BPTS Committee, having observed pedestrian safety issues directly and heard community opinions and concerns about them, wish to proactively and earnestly implement relevant standards set forth in the Circulation Element of the Town General Plan to address general and specific safety issues such as conflicts between users, visibility and sight lines, traffic speed, and driver behavior. The following excerpts from the Circulation Element are noteworthy.

...the "country lane" quality of roads should be fostered to the maximum extent feasible and still meet an acceptable level of safety. (3106 1)

Adequate provision should be made for pedestrian, bicycle and equestrian crossings at appropriate locations. Specific locations should be controlled to provide adequate sight distance and minimize hazard. Such crossings should be clearly distinguished by signs and lane markings. (3106 2)

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The town should monitor intersections on Alpine and Portola Roads to identify any safety problems and then develop appropriate traffic engineering solutions where problems require action. (Appendix 1, Future Action 2)

The Town's rural character and "country lane" quality of roads are foundational guidelines for Consultant's efforts. Given the Study is a professional engineering effort, it follows that some of the conceptual improvements presented herein may stimulate considerable discussion and tension about potential tradeoffs between traffic control devices and Town character.

Consultant, following customary industry practice, considered and applied guidance and standards set forth in the California Manual of Uniform Traffic Control Devices (CA MUTCD) in addition to the Town General Plan. The CA MUTCD contains the basic principles that govern the design and use of traffic control devices for all streets, highways, bikeways, and private roads open to public travel regardless of type or class or the public agency, official, or owner having jurisdiction.

Issues and Opportunities

General Issues - Based on numerous field observations, personal communications with Town staff, the BPTS Committee, school officials and residents, community input at a meeting in December 2018 and review of [REDACTED] reports, several general issues exist that influence pedestrian safety and, in turn, represent opportunities for improvement. These are summarized below.

- Conflicts between motorists, pedestrians and bicyclists near schools and on key travel corridors where competing movements exist due to nearby activity centers or roadway layout or lack of separation between modes. Adult crossing guards employed by schools are present during school arrival and departure periods at Ormondale School, Corte Madera School and the Alpine Road/Portola Road intersection, which enhance student safety. The Town's extensive system of off-street paths and trails is an important resource that generally reduces these conflicts. However, there are many locations without safe pedestrian refuge areas or walking paths, or both.
- Limited advance or local visibility of existing crosswalks and traffic control devices. Two locations stand out in this regard as noted below.
 - The crosswalk at Brookside Drive on Portola Road, which is between two reversing curves on Portola Road, is in a school speed zone, and in-pavement crosswalk lights are out of service; and
 - The crosswalk at Golden Oak Drive on Alpine Road, which is between two reversing curves on Alpine Road and is subject to numerous conflicting movements at local street and driveway intersections.
- Average vehicle speeds were reviewed and found to be reasonably near posted speed limits. However, critical speeds (also known as "85th percentile speeds") have been routinely measured to be approximately five miles per hour above posted speed limits. The number of citations for speeding are relatively low, and speed is not a common cause of reported vehicle collisions. The Sheriff deploys a speed trailer on Town streets to alert motorists of current travel speeds. In sum, vehicle speed is an issue that influences pedestrian and bicycle safety in Town and is an important consideration supporting potential safety improvements.

- Collisions, based on a review of State records for years 2016, 2017 and 2018, were relatively low in number and did not indicate notable concentrations by location. No collisions resulted in fatalities and several injury collisions were recorded along with property damage only collisions, the latter which were in the majority. Primary causes of collisions included unsafe speed and moving violations such as improper turns and failure to yield right of way. Several collisions involved vehicles and bicycles.

[REDACTED]

- Bicycles must share Town streets and observations indicated existing striped shoulders are well used and generally respected by motorists. Observations and factual evidence indicate that motorists at times drive on shoulders, which, while legal if done safely, introduces conflict with bicyclists. No formal bikeways are designated on Town streets.
- Some motorists disobey rules of the road and cause conflicts that affect the safety of others and the environmental character of Town streets. Observed behaviors include unsafe passing on shoulders, unsafe movements into and out of local streets and driveways, speeding, tailgating, and lack of attention to roadway conditions at critical decision points.

Specific Issues and Improvement Opportunities - Table 1 is a preliminary list of issues and opportunities by school location and specific locations in the Alpine Road and Portola Road corridors. It is a long list intended for careful review by Town staff and the BPTS Committee. The tabulation has columns for rough probable costs and priorities, which were left blank to allow immediate focus on the conceptual improvements without influence by these factors.

The intent is to refine Table 1 based on feedback from Town staff and the BPTS Committee, and add costs and priorities. Also, a key map of improvement locations and exhibits and photos to illustrate improvement concepts will be added to the memorandum.

Placement of issues on the list is for discussion purposes only and is not intended to identify or imply the existence of a legally unsafe or dangerous condition. Rather the list identifies conditions that are not optimal for a variety of reasons and which warrant further discussion and analysis by policy makers. Following this discussion it is expected that some issues will fall off the list, some will be identified as high or low priority and some will need further analysis.

Enclosure: as stated

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**Table 1
ISSUES AND IMPROVEMENT CONCEPTS**

CATEGORY	ID #	LOCATION	ISSUE	IMPROVEMENT CONCEPT	ROUGH PROBABLE COST	PRIORITY
SCHOOL AREA						
Ormondale	1	Shawnee Pass/Iroquois Trail	Limited Warning Devices	School Crossing Sign Assemblies (all approaches) Yield Lines (all approaches) Remove/replace SLOW PED XING on Shawnee Pass Enhance school one way flow signage		
	2		Conflicts (students and parents walking in street)	Monitor and Control (adult crossing guard);		
	3	Iroquois Trail	Dead End -Conflicts (students and parents walking in street)	Monitor and Control (adult crossing guard); meter traffic in		
	4		Limited Off-Street Loading - Conflicts (students and parents walking in street)	Monitor and Control (adult crossing guard); meter traffic in		
Windmill						
Windmill	5	Portola Road	Speeding and tailgating; motorists behind parent vehicles entering school "rush" their movements, pass to left or right	School Advance Crossing Assemblies Schedule random speed enforcement		
	6		School driveway lacks STOP sign, pavement markings, and crosswalk; existing motorists creep onto pathway and shoulder; Bike platoons/groups can surprise exiting motorists	STOP sign and crosswalk or stop bar or both, located to complement pathway and exiting sight distance		
	7		Fall/winter sun aligns with Portola Road and may blinds southbound motorists and motorists exiting school driveway	Warning or advisory signs		
	8		Bike platoons/groups can surprise motorists leaving school driveway	Warning or advisory signs		
Priory						
Priory	9	School Driveway at Portola Road	Crosswalk (on driveway) is white	Remove and replace with yellow high visibility marking ("ladder" style is common in Town)		
	10		STOP sign mounted low	Install standard height STOP sign		

**Table 1
ISSUES AND IMPROVEMENT CONCEPTS**

CATEGORY	ID #	LOCATION	ISSUE	IMPROVEMENT CONCEPT	ROUGH PROBABLE COST	PRIORITY
	11		Some motorists exit driveway in unsafe manner	Schedule random enforcement		
		Portola Road	School speed zone	See Portola Road Corridor below		
			Brookside crosswalk	See Portola Road Corridor below		
Corte Madera	12	Alpine Road at Indian Crossing	Speeding on eastbound (downhill) approach to Indian Crossing	Schedule random speed enforcement		
	13	Alpine Road at Corte Madera	No SLOW SCHOOL XING marking on westbound approach	SLOW SCHOOL XING marking		
	14		No School Crossing Sign Assemblies at crosswalk	School Crossing Sign Assemblies (both directions)		
	15		Crosswalk marking faded	Remove/replace crosswalk marking		
CORRIDOR						
Alpine Road	16	East Town Limit	Town Character and Roadway User Behavior	Consider supplemental "Town of Portola Valley" sign(s), complementary to the existing monument sign at Town limits, that state a simple "motto" or "mantra" from the Town governing documents.		
	17		Speeding	Consider Vehicle Speed Feedback Sign		
	18					
	19	Westridge Drive Intersection	Inconsistent crosswalk markings	Remove and replace crosswalk on Alpine Road with high visibility marking ("ladder" style is common in Town)		
	20		No crosswalk signs and markings at Portola Road crosswalk	Crosswalk YIELD regulatory signs and pavement markings; Crosswalk warning signs		
		Golden Oak Crosswalk	Conflicts due to: limited motorist and pedestrian visibility on Alpine Road (between two reversing curves); and conflicting movements at local street and driveway intersections and Samtrans bus stops			

**Table 1
ISSUES AND IMPROVEMENT CONCEPTS**

CATEGORY	ID #	LOCATION	ISSUE	IMPROVEMENT CONCEPT	ROUGH PROBABLE COST	PRIORITY
	21		No crosswalk signs and markings (except the crosswalk yield sign on the crosswalk at centerline)	Crosswalk YIELD regulatory signs and pavement markings; Crosswalk warning signs		
	22		Motorist/pedestrian conflicts and "close calls" at crosswalk; unsafe passing on right due to left turning vehicles; buses blocking views; vehicles turning right to Alpine Hills T&S	Evaluate/install Rectangular Rapid Beacon Warning Assembly (solar power) and supportive Yield and Warning Signs and markings		
	23		[REDACTED]	[REDACTED]		
		Los Trancos Intersection	Conflicts at Los Trancos intersection: eastbound motorist right turn with pedestrians and bicyclists			
	24		[REDACTED]	[REDACTED]		
	25		Sight distance leaving Los Trancos looking west and east limited by foliage	Assess and clear foliage in public right of way; assess and clear foliage on private property		
	26		Opposing traffic leaving Portola Valley Garage	Review business concerns and operations; consider traffic control devices (STOP sign and bar, crosswalk)		

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ISSUES AND IMPROVEMENT CONCEPTS**

CATEGORY	ID #	LOCATION	ISSUE	IMPROVEMENT CONCEPT	ROUGH PROBABLE COST	PRIORITY
		Portola Road Intersection	Conflicts and “close calls” between motorists, pedestrians and bicyclists; notable pedestrian volumes crossing Alpine Road; less crossing Portola Road; “rolling stop” right turns Alpine to Portola; notable a.m. peak period right turns from Portola to Alpine (no right turn lane - motorists create one)			
	27		Standard crosswalks	Remove and replace crosswalks with high visibility marking (“ladder” style is common in Town)		
	28		No crosswalk signs and markings	Crosswalk YIELD regulatory signs and pavement markings; Crosswalk warning signs		
	29		Predominant turning movements unknown (?)	Conduct peak period and school peak period turning movement counts; evaluate with regard to intersection lane layout		
	30		Adult Crossing Guard limited to school arrival/departure times; serves primary student crossing on east leg (south pathway to triangle/commercial center)	Evaluate whether crossing guards should be stationed for additional time periods		
	31		“Rolling stops”	Schedule random enforcement		
Portola Road	32	North Town Limit	Town Character and Roadway User Behavior	Consider supplemental “Town of Portola Valley” sign(s), complementary to the existing monument sign at Town limits, that state a simple “motto” or “mantra” from the Town governing documents.		
	33		Speeding	Consider Vehicle Speed Feedback Sign		
	34		Vehicle/Bicycle Conflicts	Consider Supplemental Bike Route Signs		
	35	Wyndham Crosswalk	No crosswalk signs and markings	Crosswalk YIELD regulatory signs and pavement markings; Crosswalk warning signs		
	36	Farm Road Crosswalk	No crosswalk signs and markings	Crosswalk YIELD regulatory signs and pavement markings; Crosswalk warning signs		

**Table 1
ISSUES AND IMPROVEMENT CONCEPTS**

CATEGORY	ID #	LOCATION	ISSUE	IMPROVEMENT CONCEPT	ROUGH PROBABLE COST	PRIORITY
	37		Informal pathway connection on west side	Consider constructing pathway connection to Schoolhouse parking lot (there is a east-west pathway to the north, west of Portola Road		
	38	Westridge Drive Crosswalk	Inconsistent crosswalk markings	Remove and replace crosswalk on Portola Road with high visibility marking (“ladder” style is common in Town)		
	38		No crosswalk signs and markings	Crosswalk YIELD regulatory signs and pavement markings; Crosswalk warning signs		
	39	Grove Drive Crosswalk	No crosswalk signs and markings	Crosswalk YIELD regulatory signs and pavement markings; Crosswalk warning signs		
	40	Priory School Zone	School Speed Limit Assemblies: Limited visibility in both directions; flashing lights not working	Relocate southbound assembly upstream of Brookside Drive to improve visibility; make flashing lights operational “when children are present”		
	41		School zone is between two reversing curves, which limits motorist awareness and attention	School Advance Crossing Assemblies		
	42	Brookside Crosswalk	Location not optimal relative to Priory driveway, resulting left turning vehicles queue on crosswalk	Relocate crosswalk south (just north of Priory driveway); design and construct formal pathway to crosswalk from Brookside and Corte Madera		
	43		Motorist/pedestrian conflicts and “close calls” at crosswalk; unsafe passing on right shoulder due to left turning vehicles;	Continue enforcement of unsafe driving on shoulder		
	44		In pavement crosswalk lights not working	Evaluate/install Rectangular Rapid Beacon Warning Assembly (solar power) and supportive Yield and Warning Signs and markings		
	45		No adult crossing guard	Employ temporary crossing guard (until above assembly is installed)		
	46		Informal and minimal pathway serving crosswalk on west side	Design and construct temporary pathway between Corte Madera and Brookside (to be incorporated into crosswalk relocation project)		
	47	Corte Madera Intersection	Narrow roadway limits area for safe walking; there is substantial pedestrian usage	Evaluate possibility for refuge area (off traveled way or pavement markings); a high-visibility crosswalk at Portola may be an appropriate aid in this regard		
	48		Unsafe motorist right turn movements to Corte Madera	Consider warning signage for southbound traffic (e.g. “watch for pedestrians”); schedule random enforcement		

Table 1 ISSUES AND IMPROVEMENT CONCEPTS						
CATEGORY	ID #	LOCATION	ISSUE	IMPROVEMENT CONCEPT	ROUGH PROBABLE COST	PRIORITY
Los Trancos Road	49	Firethorn Way Intersection	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

DRAFT

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