City of Palo Alto (ID # 8037)

City Council Rail Committee Staff Report

Report Type: Action Items **Meeting Date: 4/26/2017**

Summary Title: Rail Program Briefing Paper from March-April 2017

Title: Receive and Review Rail Program Briefing Paper from March-April 2017

From: City Manager

Lead Department: Planning and Community Environment

Recommendation

Staff recommends that the Rail Committee receive the attached Rail Program briefing paper from March and April 2017.

Background and Discussion

The Rail Program Manager will provide a monthly briefing report to the Rail Committee, which provides a summary of all recent meetings related to the City of Palo Alto Rail Program and highlights any relevant issues for the Rail Committee. The briefing report for March and April 2017 is attached. The period covered in this report is March 21, 2017 to April 19, 2017.

Timeline, Resource Impact, Policy Implications, Environmental Review

N/A

Attachments:

- Attachment A - Rail Program Briefing Paper March-April 2017

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To: **James Keene, City Manager, City of Palo Alto**

Thru: **Joshuah Mello, Chief Transportation Official, City of Palo Alto**

From: **Michele DiFrancia, Deputy Project Manager, Mott MacDonald**

Date: **April 19, 2017**

Re: **Rail Program Management Services Briefing Packet March-April 2017**

Below is a summary of Rail Program Management activity since the last Rail Committee meeting on April 5, 2017.

1. CSS Alternatives Analysis - Community Workshop #1 on May 20, 2017

We have held several planning meetings since the Rail Committee authorized proceeding with the first community workshop on May 20, 2017. A presentation on the latest planning efforts will be given to the Rail Committee on April 26.

2. City/ County Staff Coordinating Committee (CSCG) Meeting hosted by CHSRA on April 19, 2017

The monthly CSCG meeting is being held on the same day as this update, so a verbal report will be provided to the Rail Committee on April 26.

3. Wayside Horns

On March 22, 2017, at the request of the Rail Committee, Mott MacDonald presented on the subject of Quiet Zone designation relevant to Fair Oaks Lane in Menlo Park (already a designated Quiet Zone) and Palo Alto Ave (being considered for Quiet Zone designation). At that meeting, the Rail Committee requested additional information regarding the option of Wayside Horn use as an alternative to Quiet Zone designation.

Definition

A Wayside Horn (WSH) is a warning device which is mounted facing oncoming traffic at a grade crossing. The WSH produces an audible warning equivalent to that provided by a train mounted horn (Per the Train Horn Rule) but the sound is highly focused along the roadway approach to the crossing with greatly reduced noise levels in the overall community. When used, the Wayside Horn provides an approved alternative to the sounding of the locomotive horn by the train operator, so the train mounted horn will NOT be sounded under normal conditions.

Benefits

The benefits of the WSH is vastly reduced community “noise pollution” generated from spill-over of the locomotive horn beyond the approach roadway where warning is intended.

Sound Comparison

Traditional Train horn produces noise levels between 96 and 110 db as required by the FRA for a duration of 15 to 20 seconds as it approaches the crossing for 2 long and one short, then 1 long, horn sound repeatedly until it completely occupies the crossing. This results is a sound range much larger than that of a WSH.

Activation of the WSH

The WSH is activated by the railroad track circuitry which sends a blinking signal light to the driver signaling that the WSH system is operating. The Driver does not

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use the Train horn and instead the mast mounted WSH system is rung. The resulting sound is very concentrated and focused on the local crossing.

Cost of WSH

The installation cost of the WSH system ranges from $250,000 to $500,000, which includes the WSH mast arm and light signal system that notifies the train crew of the status of the WSH system. In addition, the railroad crossing must be equipped with Constant Warning Time Circuitry, a Power Out indicator, gates and flashing lights. This does not include the cost of any additional upgrades that may be required at that crossing. Maintenance can range from $1,500 to $2,500 per year.

WSH system includes a train light indicator, horn, and gates at a minimum.

WSH vs Quiet Zone

WSH is a good alternative when the equipment and or geometric constraints make it infeasible to have a Quiet Zone. A Quiet Zone strives to eliminate the horn altogether by providing enough equipment as to prevent crossing highway traffic from entering the tracks when a train approaches. This includes but is not limited to long medians, crossing gates for each crossing lane, Constant Warning Time Circuitry and Power Out Indicator. The cost of a Quiet Zone could be up to $5,000,000, not including annual maintenance.

Train Horn use

The Train Horn can still be used if the driver does not see the blinking signal telling him/her not to use the train horn OR if she/he sees circumstances that warrant the horn to be used. This is also true in the case of a Quiet Zone.

Sources:

Altamont Corridor Express, Wayside Horn Demonstration FAQ
Automated Horn System, Quiet Zone Technologies, www.QuietZoneTech.com
Which Solution is right for you? Quiet Zone Technologies, www.QuietZoneTech.com

4. Vegetation/ Landscaping Requirements for Rail Corridor

Per the request of the Chief Transportation Official, below is a description and graphical depiction of the safety requirements for a Rail Corridor with respect to vegetation/landscaping within the corridor cross section. These requirements are articulated in the Public Utilities Commission of the State of California, Rules for

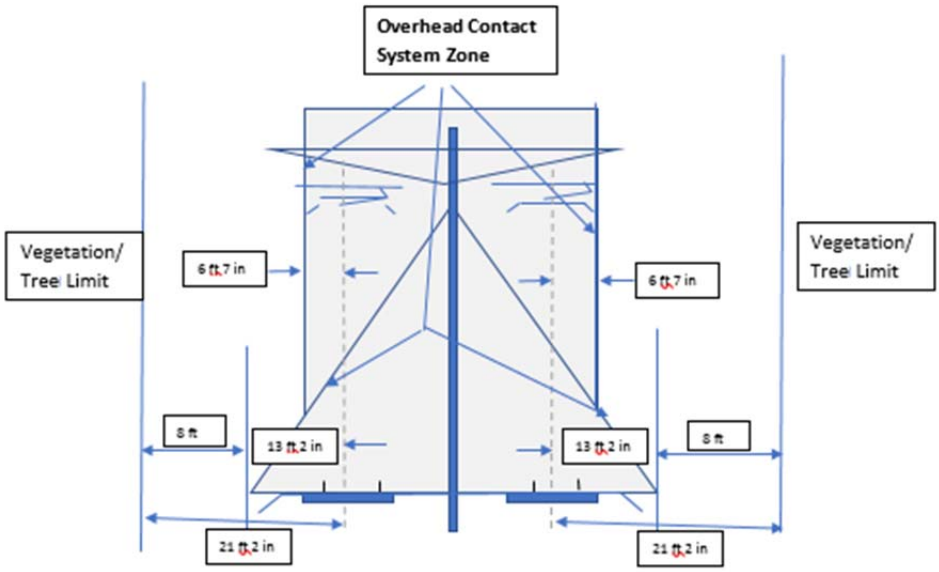
Overhead 25 kV AC Railroad electrification systems for a High-Speed Rail System, March 26, 2015. In addition, the specific cross sections depicted here are from the Caltrain, Peninsula Corridor Joint Powers Board Electrification OCS Arrangements details minimum clearances.

Basic Requirements

Generally speaking, the guidelines identify what is considered to be the Overhead Contact System Zone. This area depicts the zone that is affected by the 25Kv electrification system and pantograph. This zone is physically restricted to physical objects of any kind that are not directly part of the rail system. The guidelines read as follows:

Energized Parts of the 25 kV Electrification System shall have a minimum clearance of 8 feet to trees and vegetation, and there shall be no overhanging vegetation.

Center Cantilever (Caltrain Std Dwg)

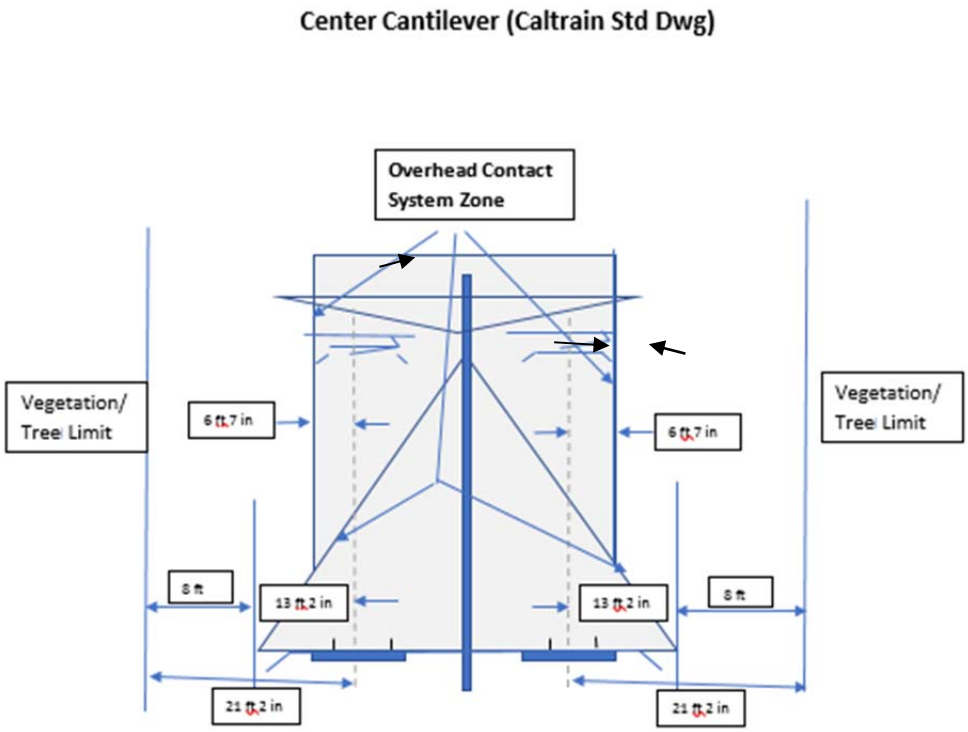


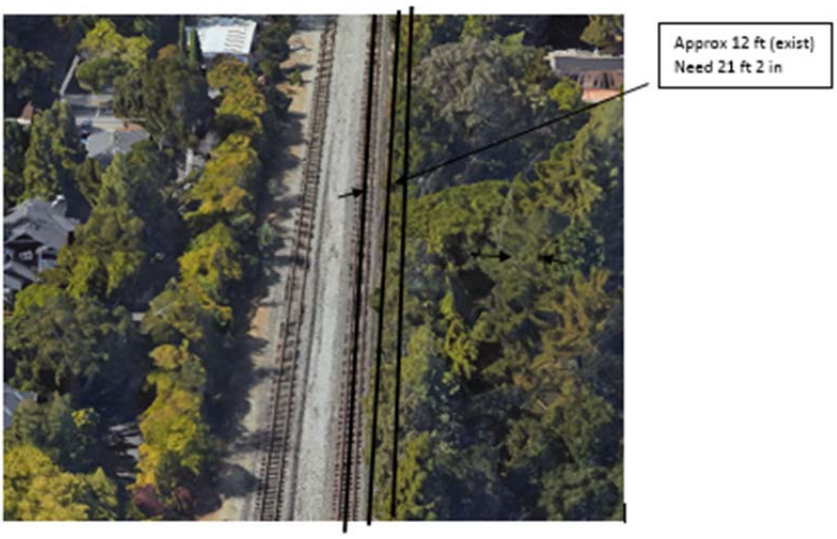
Vegetation and Energized Parts of the 25 kV Electrification System should have a minimum clearance of 8 feet and there should be no overhanging vegetation. If the PUC has any knowledge obtained either through normal operating practices like inspections or via notification that dead, rotten, or diseased trees or portions of may fall into any parts of the 25 kV Electrification System, all such vegetation will be removed. If a portion of vegetation or tree meets this criterion, it too will be removed. This is not the case if the PUC has made documented good faith effort to contact the owner regarding trimming or removal of vegetation, and the owner has refused or was unobtainable. A good faith effort includes any form of documented communication.

In addition to the above, the PUC and R/W shall be managed such that vegetation will not:

1. Constitute a fire hazard or other threat to safety of operations.
2. Obstruct a vehicle or a train operator's visibility of signs, signals, or the track ahead
3. Interfere with personnel in performing normal trackside duties

4. Obstruct emergency walkways.





Atherton Corridor near Fair Oaks Lane

In the corridor near the Palo Alto Station, the R/W varies from 80 ft to 100 ft, except at the stations where it widens. More importantly, the tree line is well inside of the R/W corridor. Per the criteria above, and based on the graphic images available at this time, the desired clearance of 21 ft 2 inches from the track center line (see above) is not being met.

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5. Consultant Expenditures to Date

Below is a summary of Mott MacDonald's expenditures through March 31, 2017, with the following notes and requested information:

- Task 4 (Rail Corridor Circulation Study) includes approximately 40% of subconsultant Circlepoint's work; remaining amount was recently authorized with Task 5. Work-to-date and deliverables under Task 4 have included:
    - Draft Community Engagement Plan
    - Preparation and presentation to Rail Committee on March 22 regarding Community Engagement and CSS process
    - Draft Existing Conditions Report
    - Draft Travel Demand Model Validation Report
- Mott MacDonald hours to date under Task 4 total 525.

Phase/Task Description	Budget	Current Charges	Billed to date	Percent of Budget Expended	Remaining Budget
Task 1 - Support Council Rail Committee	**$ 161,684.40**	$ 16,104.05	$ 53,105.35	32.8%	$ 108,579.05
Task 2 - Convene Rail Technical Group	**$ 48,960.80**	$ -	$ -	0.0%	$ 48,960.80
Task 3 - Represent City during CHSR Environmental Analysis Phase	**$ 137,289.82**	$ -	$ 5,705.79	4.2%	$ 131,584.03
Task 4 - Manage Rail Corridor Circulation Study	**$ 218,349.08**	$ 47,433.28	$ 96,121.90	44.0%	$ 122,227.18
Task 5 - Manage Context Sensitive Solution Alternative Analysis	**$ 397,531.63**	$ -	$ -	0.0%	$ 397,531.63
Task 6 - Prepare Draft & Final Project Study Reports & 15% Plan Sets	**$ 240,395.46**		$ -	0.0%	$ 240,395.46
Task 7 - Complete Environmental Analysis for Preferred Alternatives	**$ 224,406.91**		$ -	0.0%	$ 224,406.91
Task 8 - Financing Plans	**$ 28,398.30**	$ -	$ -	0.0%	$ 28,398.30
Task 9 - Additional Tasks/Meetings	**$ 110,367.40**	$ 6,246.66	$ 6,246.66	5.7%	$ 104,120.74
	$ -		$ -		
			$ -		
Totals	**$ 1,567,383.80**	**$ 69,783.99**	**$ 161,179.70**	**10.3%**	**$ 1,406,204.10**
					$ 69,783.99