Expanded Community Advisory Panel (XCAP) Meeting

Agenda Item #3a and #3b

10.16.19
• New Counts—Tuesday, October 1st, 2019

• New Counts compared to December 6, 2018 Counts

• New Counts – lower by 5% during the AM and 10% during the PM

<table>
<thead>
<tr>
<th></th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thursday 12/6/18 Counts</td>
<td>Tuesday 10/1/2019 Counts</td>
</tr>
<tr>
<td>Total</td>
<td>2,592</td>
<td>2,474</td>
</tr>
</tbody>
</table>
• Peak Hour Turning Movement Count (TMC) - December 6, 2018 Counts

• Signal timings (Cycle Lengths – 150s AM and 180s PM)

• # of trains – 8 trains AM peak Hour and 8 trains PM peak Hour (can be up to 10 trains)

• Approximate gate down time – 45s (6 minutes in an hour)

• Simulation using PTV Vissim
Alma & Churchill – Existing Traffic Volumes

- **AM Peak Hour**
  - 150 Pedestrian
  - 260 Bicycles
  - 2,600 Vehicles

- **PM Peak Hour**
  - 60 Pedestrian
  - 28 Bicycles
  - 3,310 Vehicles
• Same as existing turning movement counts

• Same as existing signal timings

• # of trains – 12 trains AM peak Hour and 12 trains PM peak Hour
  • (1 train every 5 mins)

• Approximate gate down time – 45s (9 minutes in an hour)
Intersection Delay increases by 40% with electrification.
Intersection Delay increases by 40% with electrification.
• Year 2030 Volumes – 13% increase in peak hour volumes (based on Palo Alto Travel Demand Forecasting Model)

• AM Peak Hour
  • 3 to 4 cycles for the northbound Left-turn to clear (2 to 3 cycles under Existing conditions)
  • 2 to 3 cycles for westbound Churchill (1 to 3 cycles under existing conditions)
  • 30% increase in delay

• PM Peak Hour
  • 3 to 4 cycles for eastbound Churchill (2 to 3 cycles under existing conditions)
  • 25% increase in delays
Draft Fact Sheets will be posted online with the October 16, 2019 Meeting Materials https://connectingpaloalto.com/presentations-and-reports/

**Draft Fact Sheets**

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**RAIL FACT SHEETS**

**Meadow-Charleston Hybrid**

What is a hybrid?

For the hybrid alternative, the railroad tracks will be raised above Meadow Drive and Charleston Road. The new electrified railroad tracks will be built at the same location as the existing railroad tracks and will begin rising near El Verano Avenue, remain raised above Meadow Drive and Charleston Road, and return to the existing elevation north of the Ferne Avenue. Between Park Boulevard and Alma Street, the roadways at Meadow Drive and Charleston Road will be lowered and will have a similar configuration that exists today, with the addition of Class II buffered bike lanes on Charleston Road. This will require expanding the width of the road to maintain bike lanes through the underpass of the railroad and to accommodate the new column supporting the railroad structure.

By the numbers

- Railroad track is designed for 110 mph.
- Meadow Drive and Charleston Road are designed for 35 mph.
- Maximum grade on railroad: 1%.
- Maximum grade on roadway: 8%.
- Travel lane widths are 10-12 feet.
- Bike lane widths are 5-6 feet.

Engineering Challenges

- A non-standard temporary vertical clearance of 12 feet will be required on tracks.
- Caltrans’ minimum allowable clearance is 15.5 feet.
- Lowering of the roadways will require a pump station.
- Increased long-term maintenance costs and risk of flooding due to pump stations.
- Major utility relocations will be required for the lowered roadways.

Cost Breakdown

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost Breakdown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roadway &amp; Railroad Items</td>
<td>$92M to $115M</td>
</tr>
<tr>
<td>Structure Items</td>
<td>$13M to $20M</td>
</tr>
<tr>
<td>Right-of-way &amp; Utilities</td>
<td>$21M to $25M</td>
</tr>
<tr>
<td>Support Costs</td>
<td>$37M to $49M</td>
</tr>
<tr>
<td>Escalation to 2025</td>
<td>$37M to $49M</td>
</tr>
<tr>
<td><strong>TOTAL PROJECT COSTS</strong></td>
<td><strong>$200M to $250M</strong></td>
</tr>
</tbody>
</table>

Neighborhood Considerations

- Vertical clearance of Meadow Drive and Charleston Road under the railroad will be 15.5 feet.
- The railroad tracks will be approximately 15 feet above the existing street between Meadow Drive and Charleston Road.
- With grade separations at Meadow Drive and Charleston Road, the traffic at nearby intersections is expected to improve.
- During construction, Alma Street, Meadow Drive, and Charleston Road will be reduced to two lanes, and right turn lanes on Alma Street at Meadow Drive and Charleston Road will be removed.

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**For more information visit:** https://connectingpaloalto.com

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*Draft*
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https://connectingpaloalto.com/presentations-and-reports/

Draft Fact Sheets

Evaluation with City Council-Adopted Criteria

- Facilitate movement across the corridor for all modes of transportation
  Meadow Drive and Charleston Road will be grade separated from the railroad for all modes and will remain open.

- Reduce delay and congestion for vehicular traffic at rail crossings
  With construction of the grade separation, the railroad crossing gates and warning lights at Meadow Drive and Charleston Road will be removed. Thus, the traffic will not be interrupted by gates coming down.

- Provide clear, safe routes for pedestrians and bicyclists crossing the rail corridor, separate from vehicles
  Pedestrians/bicyclists will be separated from train traffic, and bike lanes will be added Charleston Road.

- Support continued rail operation and Caltrain service improvements
  A temporary railroad track will be required and a crossover track located north of the San Antonio Caltrain Station will be relocated.

- Finance with feasible funding sources
  At a construction cost of $290-250 million, additional funding sources will need to be secured.

- Reduce rail noise and vibration
  Train horn noise and warning bells will be eliminated by the replacement of the at-grade crossings with grade separations. Train wheel noise could radiate out; however, this can be mitigated with a sound barrier.

- Minimize visual changes along the corridor
  Railroad tracks will be approximately 15 feet above grade. Landscaping with trees will be incorporated for screening where feasible.

- Maintain access to neighborhoods, parks, and schools along the corridor while reducing regional traffic on neighborhood streets
  No diversion of regional traffic with construction of grade separations.

- Minimize right-of-way acquisition
  No acquisition of private properties is required. However, driveway modifications will be required.

- Minimize disruption and duration of construction
  Extended lane reductions at Alma Street, Meadow Drive, and Charleston Road will be required. Construction would last for approximately 4 years.

Concept Plan and Profile
Thank you