Redwood and Grant Transit Hub Improvement Project, Novato, CA

2018 ITE Joint Western & Texas Annual Meeting

Presented by:
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Redwood and Grant Transit Hub Improvement Project, Novato, CA

Alternate Title:

“We Crossed the Streams - Undertaking a double crossover urban transit hub in Northern California”
San Francisco Bay Area

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Site Overview
Site Issues

**safety:**
Poor sight angles into the facility and between traffic and crossing pedestrians.

**platform capacity:**
Width of boarding islands limits passenger capacity and wheelchair accessibility.

**operations:**
No bypass lane for buses operating in the same direction.

**state of good repair:**
Need to improve aging facility.
Who Use the Station?

<table>
<thead>
<tr>
<th>Agency / Company</th>
<th>Average Daily Bus Trips</th>
<th>Estimated Daily Riders</th>
<th>Routes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marin Transit</td>
<td>110</td>
<td>613</td>
<td>49, 71, 251, 259, 151</td>
</tr>
<tr>
<td>Golden Gate Transit</td>
<td>91</td>
<td>400-600</td>
<td>70, 80, 101, 58</td>
</tr>
</tbody>
</table>

How do they get there?

- 35% Arrived by Bus (Transfers)
- 35% Walked to Stop
- 7% Bicycled to Stop
- 6% Drove to Stop
- 6% Were Dropped Off
Project Goals

Improve Transit and Roadway Operations
- Maintain safe operations for bus operators
- Minimize operational conflicts
- Improve reliability

Improve Safety/Security for Passengers
- Design of platforms for public safety
- Design for no crowding
- Design for ADA

Improve Pedestrian Access to the Transit Center
- Improve access to and through facility
- Maintain safe pedestrian access
Project Alternatives

- Existing (baseline)
- Existing with bypass (side platform)
- New center island design with bypass (center platform)
## Alternatives Evaluation

### Goal 1: Improve Ability to Meet Transit and Roadway Operational Needs

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Existing Facility</th>
<th>Concept #1</th>
<th>Concept #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A. Maintain safe operations for bus operators</td>
<td>![Green Arrow]</td>
<td>![Green Arrow]</td>
<td>![Green Arrow]</td>
</tr>
<tr>
<td>1B. Minimize operations conflicts between buses</td>
<td>![Green Arrow]</td>
<td>![Red Arrow]</td>
<td>![Green Arrow]</td>
</tr>
<tr>
<td>1C. Minimize operations conflicts between buses and bus passengers</td>
<td>![Red Arrow]</td>
<td>![Green Arrow]</td>
<td>![Green Arrow]</td>
</tr>
<tr>
<td>1D. Minimize operations conflict between buses and other vehicles of the road</td>
<td>![Green Arrow]</td>
<td>![Green Arrow]</td>
<td>![Green Arrow]</td>
</tr>
<tr>
<td>1E. Improve ability to make timed bus transfers</td>
<td>![Red Arrow]</td>
<td>![Green Arrow]</td>
<td>![Green Arrow]</td>
</tr>
</tbody>
</table>

### Goal 2: Improve Safety / Security for Passengers

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>2A. Design platform(s) in such a way that passengers feel safe and platform activity is visible to Public Safety</td>
<td>![Red Arrow]</td>
<td>![Green Arrow]</td>
<td>![Yellow Arrow]</td>
</tr>
<tr>
<td>2B. Design platform(s) so that passengers are not crowded in a confined space during the peak period of bus options</td>
<td>![Yellow Arrow]</td>
<td>![Green Arrow]</td>
<td>![Yellow Arrow]</td>
</tr>
</tbody>
</table>

### Goal 3: Make Pedestrian Access to the Transit Center More Convenient While Non-Existing

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<th>Concept #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>3A. Improve access via the midblock crosswalk to facilitate safe pedestrian travel to from the transit facility</td>
<td>![Red Arrow]</td>
<td>![Green Arrow]</td>
<td>![Green Arrow]</td>
</tr>
<tr>
<td>3B. Maintain safe pedestrian access from the surrounding project area</td>
<td>![Red Arrow]</td>
<td>![Yellow Arrow]</td>
<td>![Yellow Arrow]</td>
</tr>
</tbody>
</table>
Site Plan
Bus Weave
Pedestrian Crossing
Sight Lines & Visibility
Design of Traffic Signal & TSP
Design of Traffic Signal and TSP

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Design of Traffic Signal and TSP

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Design – Traffic Signal
Design of Traffic Signal and TSP

GENERAL NOTES
1. This work is intended to be performed in accordance with the 2018 Edition of the California Standard Plans, Standard Specifications, California Manual on Uniform Traffic Control Devices, latest edition of the City of Novato Construction and Engineering Standards, Special Provisions.
2. This plan is exclusive for electrical work only.
3. All new conduits shall be minimum 2- inch and shall be scheduled 40 PVC. All existing conduits to be removed and replaced with conduit having Class B electrical tubing. The ends of all conduits terminating in pull boxes shall be sealed with an approved sealing compound.
4. Enclosures, box, pull boxes, and detector positions shall be verified by the Engineer prior to installation.
5. Contractor shall verify overhead and underground clearance with all utility companies prior to construction.

PROJECT NOTES
- Provide signal and traffic control (SCC) units existing Control Cabinet. Provide additional terminal blocks as required.
- New Model 338, Controller Cabinet, provides and cable from adjacent existing controller cabinets. Provide new terminal blocks for each SCC, respectively.

LEGEND
- (x) TYPE 52 CONTROL ASSEMBLY CABLE
- (x) TYPE 52 CONTROL ASSEMBLY CABLE
- E - INTERCONNECT FULL SCALE NO. 1
- F - INTERCONNECT FULL SCALE NO. 1
- (x) TRAFFIC SIGNAL CONSOLE
- C - MANUAL EQUIPMENT

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Design of Traffic Signal and TSP

PROPOSED REDWOOD BOULEVARD/DIABLO-DELONG TRANSIT SIGNAL COORDINATION

STEADY DEMAND SEQUENCE
REDWOOD BOULEVARD/DIABLO AVENUE - DELONG AVENUE

TRANSIT ACTUATION (BUS DETECTION) = COORDINATED

PEDESTRIAN ACTUATION (PUSHBUTTON) = FREE

PROPOSED REDWOOD BOULEVARD/GRNAT TRANSIT SIGNAL COORDINATION

STEADY DEMAND SEQUENCE
REDWOOD BOULEVARD/GRNAT AVENUE

TRANSIT ACTUATION (BUS DETECTION) = COORDINATED

PEDESTRIAN ACTUATION (PUSHBUTTON) = FREE
Proposed Operation – Ped Only

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Proposed Operation – Transit Call
We Crossed the Streams
We Crossed the Streams
Questions

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