San Francisco Bay Trail Connection
Castro Street Richmond to Point Molate

Richmond Bicycle/Pedestrian Advisory Committee
December 13, 2010
Introduction/Partners

- City of Richmond
  - Lead Agency
  - BPAC
  - Richmond Community

- ABAG
  - Design and Process
  - Funding Partner

- Caltrans
  - Environmental; Process Review
  - Design Process
  - State and Federal Funding Disbursement

- Chevron
  - Key Stakeholder
  - Funding Partner

- BCDC
  - Shoreline Permitting

- US Coast Guard
  - Homeland Security (MTSA)

- TRAC
  - Community Liaison

- Questa Design Team (Consultant)
  - Project Management
  - Analysis and Design
  - Alternatives
  - Recommendations
The **Bay Trail Connection to Point Molate** is a planned multi-use path that will provide non-motorized access from Richmond to Point Molate closing a one-mile gap in the San Francisco Bay Trail.

Study route begins at Castro Street Bus Terminal and ends near the Richmond/San Rafael Bridge Toll Plaza. Study segment will connect to future Pt. Molate trail via existing tunnel at foot of bridge.

Chevron, East Bay Regional Parks District, and City of Richmond are cooperating on final alignment for Point Molate segment.
The goal of the project is to provide an off-street route to Point Molate that is safe, enjoyable, continuous and accessible for pedestrians and bicyclists.

1. Close a gap in the Bay Trail
2. Encourage bicycling and walking
3. Balance trail user and adjacent uses needs
Richmond to Point Molate Bay Trail

Goals

Close a Gap in the Bay Trail

Provide access to planned Bay Trail and recreational areas at Castro Point, Pt. Molate & Pt. San Pablo

Provide Class I bicycle & pedestrian access to connect with planned Bay Trail segment on San Rafael Bridge
Richmond to Point Molate Bay Trail

Goals

Balance trail user and adjacent uses needs

Major Transportation Corridor

Major Petroleum Refinery

Residential Uses
2001 feasibility study concluded trail should be located south of I-580 above retaining walls on Chevron property and Caltrans ROW.

City of Richmond, ABAG-Bay Trail, Caltrans and Chevron met several times in 2007-08 and informally recommended above option.

MTC completed a study related to the San Rafael Bridge Retrofit project, exploring options for bicycle travel.

Pt. Molate/Pt. San Pablo peninsula plans include pedestrian and bicycle facilities linked to Richmond area via design study trail.

Caltrans planning to replace section of I-580 (Scofield Deck), temporarily restricting bicycle access to Pt. Molate. Interim shuttle service considered during retrofit work.
Federal funding in addition to local & state
Modified by Caltrans for FHWA
Focus on Path Alternatives
1. Assess all alternatives, including previously studied alternatives
2. Formation of Design Team to Review and Evaluate Alternatives
3. Public Process to Identify Locally Preferred Alternative
4. Project Study Report (PSR)
5. Environmentally Superior Alternative – CEQA & NEPA
6. PS&E / Construction
Richmond to Point Molate Bay Trail

Trail Alternatives Between Tewksbury and Toll Plaza
Alt. 1 - I-580 At-Grade

- **Advantages**
  - Low cost/ease of construction
  - Ability to use existing structures
  - Minimum elevation gain

- **Disadvantages**
  - Poor user experience
  - Requires Caltrans encroachment & design exception

- **Summary - Not Currently Viable Alternative**
  - Caltrans will not allow exception to eliminate existing right-hand shoulder
Alt. 2 - Above Retaining Walls

- **Advantages**
  - Moderate cost & constructability
  - Moderate elevation gain
  - Good user experience

- **Disadvantages**
  - Requires extensive earthwork & security upgrades
  - Requires elevated structure over Scofield Road

- **Summary – Potentially Viable Option**
  - Requires Chevron easement & Caltrans encroachment permit
  - Requires extensive planning, design & funding
Advantages
- Excellent user experience
- Moderate cost & constructability
- Connectivity to Western Drive shoreline

Disadvantages
- Creates significant operational and security issues for Chevron Refinery
- Requires extensive earthwork & security upgrades
- Greatest elevation gain / most switchbacks
- Requires elevated structure over Scofield Road

Summary - Not Currently Viable Alternative
- Eliminated due to conflicts with existing topography and with nearby residences, and operations & security conflicts within Chevron Refinery
Alt. 4 – Hybrid of Alts. 1&2

- **Advantages**
  - Moderate cost & constructability
  - Moderate elevation gain
  - Good user experience

- **Disadvantages**
  - Requires moderate earthwork & security upgrades
  - Requires elevated structure over Scofield Road

- **Summary – Potentially Viable Alternative**
  - Requires Chevron easement & Caltrans encroachment permit
  - Requires extensive planning, design & funding
Alt. 1 & 4 – Geometric Constraints along I-580
Bridge Option I: High Takeoff Point

- **Advantages**
  - Good user experience
  - Minimizes earthwork
  - Minimizes refinery conflicts

- **Disadvantages**
  - Highest structure cost
  - Longest elevated structure
  - Highest visual impact

**Summary – Potentially viable alternative**
- Requires extensive planning, design & funding
Bridge Option II: Low Takeoff Point w/ Switchback

### Advantages
- Good user experience
- Lowest structure cost
- Lowest visual impact

### Disadvantages
- Requires additional Chevron Easement
- Requires additional earthwork/trail switchback

### Summary – Potentially viable alternative
- Requires extensive planning, design & funding
Richmond to Point Molate Bay Trail

Trail Alternatives Between Castro Street and Tewksbury
Alternative A - Chevron Way

- **Advantages**
  - Connectivity to Chevron facility
  - Modest elevation gain
  - Good user experience

- **Disadvantages**
  - Requires additional Chevron easement
  - Requires sidewalk & roadway realignment
  - Requires Caltrans encroachment
  - Additional at-grade crossing
  - Longer route, farther from closest community
  - Does not provide continuous Class I facility

- **Summary – Potentially viable alternative**
  - Opportunity if unable to construct I-580 at-grade
  - Requires moderate planning, design & funding
Alternative B - I-580 At-Grade

- **Advantages**
  - Moderate cost/ease of construction
  - Ability to use existing structures
  - Minimum elevation gain & shortest distance

- **Disadvantages**
  - Poor user experience
  - Requires realignment of I-580 on/off ramp
  - Requires Caltrans encroachment & possible design exception

- **Summary** – Potentially viable alternative
  - Requires moderate planning, design & funding
**Alternative C – Tewksbury Ave.**

- **Advantages**
  - Low cost/ease of construction
  - Avoids Caltrans encroachment

- **Disadvantages**
  - Poor user experience / steep grades
  - Requires realignment of Tewksbury sidewalks
  - Impacts to residences / possible loss of parking

- **Summary – Potentially viable alternative**
  - Requires minimal planning, design & funding
Richmond to Point Molate Bay Trail

Project Considerations

- Existing Right-of-Way, Topography, Utilities & Infrastructure
- Environmental Setting – Visual Impacts
- I-580 Safety & Maintenance
- Chevron Operations - Security & Safety
- Residential Impacts
- Functional Design
  - Trail Width, Grades & Curvature
  - Visibility & Views
  - Safety & security
  - Trail User Experience
- Constructability
- Funding
# Decision Matrix

<table>
<thead>
<tr>
<th>Trail Segment</th>
<th>Alt/ Options</th>
<th>Description</th>
<th>Meets Project Goals (y)</th>
<th>Meets Design Criteria</th>
<th>R.G.W./ Easement Compliance</th>
<th>FTA Security Compliance</th>
<th>Refinery Operational Conflicts</th>
<th>Trail User Experience</th>
<th>Trail User Safety</th>
<th>Environ. Impacts</th>
<th>Land Use Conflicts</th>
<th>Visual Impacts</th>
<th>Relative Cost (b)</th>
<th>Relative Conventibility (b)</th>
<th>Total Score (c)</th>
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<tbody>
<tr>
<td><strong>I-580 Bypass Alternatives</strong></td>
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<td>Class I Path South Shoulder 1-580</td>
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<td>Class I Trail Above Wall w/ Bike/Ped Bridge (Questa 2001)</td>
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<td>Class I Trail Under Office bldg w/ Bike/Ped Bridge (Questa 2001)</td>
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<td>Class I Path/Trail At 1 Exit/Wt 2 West Hybrid</td>
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<td><strong>South Connector Alternatives</strong></td>
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<td>Class IIII Lanes on Tevisbury Ave</td>
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<td>Class I Path At Grade on I-580 EB Off Ramp</td>
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<td>Class IIII Path Marine Ave. &amp; Chevron Way</td>
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<td><strong>Bike/Ped Bridge Options</strong></td>
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**Rating Key**
1. TT - Total Fail, Not Currently Feasible
2. Highly Constrained/Costs/Environmental Impacts (Worst Option)
3. Moderately Constrained/Costs/Environmental Impacts
4. Somewhat Constrained/Costs/Environmental Impacts (Best Option)
5. Least Constrained/Costs/Environmental Impacts (Best Option)

**Notes**
- According to 2010 Questa Purpose and Needs Statement
- Alternatives/Options Ranked under Relative Criteria
- Highest Point Total is apparently Best /Most Preferred Option

Questra Engineering Corporation
11/23/2010
3. ASSESSMENT WORKSHEETS

Functionality and Safety

Success Criteria
If all of the following statements are true, the alternative provides for a Class 1 multi-use pathway in conformance with key Caltrans functionality and safety design criteria.

1. All grades are less than 5%.

2. Grades steeper than 4% and less than 400 ft have at least one pull out.
   US Access Board ADA Accessibility Guidelines for Buildings and Facilities

3. On 5% grades, users travelling downhill can always see at least 200 feet ahead.
   Caltrans Highway Design Manual 1003.1 (5)

4. All curves have a radius of 155 ft or greater.
   Caltrans Highway Design Manual 1003.1 (5)

5. Width is sufficient such that mode and direction separation can be provided where there are grades 4% or steeper that are longer than 300 feet.
   Caltrans Chapter 1003.1

Failure Criteria
If any of the following is true, this alternative should be considered unsuccessful in meeting basic functional and safety requirements.

A. At some point on the trail, users cannot see more than 100 feet ahead.
B. The slope is greater than 5% for more than 500 feet.
C. Where there are walls, fences, or rails, the clear width is less than 12 ft.
D. The radius of a curve near the bottom of a long grade is less than 100 feet.

Summary
Check the appropriate box according to the results above.

☐ Good: Alternative satisfies key safety and functional goals.
☐ Mediocre: Alternative does not fully satisfy key safety and functional goals.
☐ Unsatisfactory: Alternative does not satisfy basic safety and functional requirements.

Aesthetics

Success Criteria
If all of the following statements are true, the alternative provides for a new Bay side facility in conformance with key Caltrans, FFRMA, and RDC design criteria.

1. The alternative takes maximum advantage of the setting the Bay provides by creating new viewing opportunities.
   Caltrans (SRH Chapter 27, FWA-AR-10504, RDC’s Public Access Design Guidelines Section 1.16, SF Bay Trail Plan Policies (30)

2. Wherever possible, measures have been taken so that the freeway does not dominate the visual and aural experience of bridge and trail users.
   Caltrans (SRH Chapter 27, FWA-AR-10504, RDC’s Public Access Design Guidelines Section 1.14) (33)

3. The alternative preserves intactness, vividness, and unity of the views from the highway.
   Caltrans (SRH Chapter 27, FWA-AR-10504, RDC’s Public Access Design Guidelines Section 1.14)

Failure Criteria
If any of the following is true, this alternative should be considered unsuccessful in meeting basic aesthetics requirements.

A. One or more existing drivers’ views of the Bay and Golden Gate Bridge, or Bay and mountains is completely blocked.
   Caltrans (SRH Chapter 27, FWA-AR-10504)

B. The alternative makes no accommodations for user viewing opportunities.
   RDC’s Public Access Design Guidelines Section 1.16, SF Bay Trail Plan Policy (15)

C. Feasible opportunities to vertically and horizontally separate the bicycle and pedestrian pathway from the freeway and/or provide a landscape buffer have not been taken.
   SF Bay Trail Plan Policies (15)

Summary
Check the appropriate box according to the results above.

☐ Good: Alternative satisfies key aesthetics goals.
☐ Mediocre: Alternative does not fully satisfy key aesthetics goals.
☐ Unsatisfactory: Alternative does not satisfy basic aesthetics requirements.
Next Steps

- Finalize Decision Matrix
- Prepare PSR
- Evaluate Environmental Issues (CEQA and NEPA)
- Update Schedule
- Construction Budget Update