Update Topics

1. Embarcadero Transportation Planning
2. EEP Phasing Plan
3. Phase 1 Overview
4. Future Phasing & Coordination
Embarcadero Enhancement Project

Planning Phase

Northern Segment
Broadway to North Point

Central Segment
Folsom to Broadway

Southern Segment
Folsom to Townsend

FW-Pier 39 (separate & related study)
North Point to Jefferson/Mason
Embarcadero Transportation Goals

- Safety
- Access
- Mobility
- Connectivity
- Economic Recovery
VISION FOR A BETTER EMBARCADERO

- Comprehensive & coordinated wayfinding
- Simplified intersections with fewer conflicts, smarter signals
- Enhanced promenade & urban design
- Faster, more reliable transit
- Safer, more efficient loading & curb access
- ADA accessibility upgrades
- Two-way, ‘water-side’ protected bikeway
- Shorter pedestrian crossings
Sansome & Battery Connections Project

- Substantially completed in July 2019
- Dedicated bike lanes off The Embarcadero, Chestnut to Jackson Street
- Major safety upgrades to Chestnut/Sansome intersection, including:
  - Simplified intersection (SB turn restrictions)
  - New marked crosswalk & painted safety zones
  - Reconfigured Sansome turn lane(s)
  - Bike/ped ‘head start’
2020 Quick-Builds

Ferry Terminal

Rincon Restaurant Zone

Pier 35
Preliminary Engineering

Analysis

Phase 1
Central Segment
✓ 3rd travel lane provides room for relatively quick, cost-effective improvements

Phase 2
Southern Segment
✓ No 3rd lane but promenade generally wider, fewer loading conflicts, median narrowing opps

Northern Segment (more study needed)
$? No 3rd lane, loading challenges, higher infrastructure costs, other uncertainties

Embarcadero Traffic Safety Update
Jan 2021
<table>
<thead>
<tr>
<th>Segment</th>
<th>Target Construction</th>
<th>Budget (est.)</th>
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<tr>
<td>Mission to Broadway</td>
<td>2021/22</td>
<td>$1m*</td>
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<tr>
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<tr>
<td>Folsom to Townsend</td>
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<td>$15-20m*</td>
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*Rough estimates, subject to change*
Mission Street to Broadway

Initial phase focused on safety opportunities from repurposing third NB travel lane in highest collision/highest traffic volume area. Potentially achievable within months of approval.

Embarcadero Enhancement Project

Phase 1 Overview

Embarcadero Traffic Safety Update

Jan 2021
Embarcadero Enhancement Project

Phase 1A

CONCEPTUAL

Ferry Building

Floating loading areas

Add bike signals to existing poles

Wide buffer zones/access aisles

The Embarcadero
Embarcadero Enhancement Project

Phase 1B

Embarcadero Traffic Safety Update
Jan 2021
Pedestrian crossing distance with islands:
Existing: 38 feet  Potential: 22 feet

No change to promenade clear path-of-travel (12-16 feet)
Embarcadero Enhancement Project

Phase 1B

Embarcadero Traffic Safety Update

Jan 2021

CONCEPTUAL

Ferry Building

Add curb ramps for load zones

Add pedestrian island to shorten roadway crossing

The Embarcadero
Embarcadero Enhancement Project

Parking & Loading

Water side loading, Mission - Broadway:
- Existing: ~1,091 ft
- Phase 1A: 750 ft
- Phase 1B: 840 ft

Opportunity to add new curbside loading or parking for ~15 vehicles on the city side, north and south of Washington Street
Embarcadero Enhancement Project

Washington St

Pier 1

Driveway

Pier 1/2 Moto Lot

Load Zone

Embarcadero Traffic Safety Update

Jan 2021
Embarcadero Enhancement Project

Turn box to facilitate bikeway connection

Existing

Proposed
Proposed

- 20’ Muni Trackway
- 5’ Median
- 10’ Left-Turn Lane
- 10’6” Left-Turn Lane
- 10’6” Thru Lane
- 5’ Buffer (Future Island)
- 10’6” Two-way Protected Bikeway
- 30’ (Typical) Curbface to Building Edge
- 16-20’ (Constrained) Promenade Zone
- Waterfront Restaurant
Mission Street to Broadway

Initial phase focused on safety opportunities from repurposing third NB travel lane in highest collision/higher traffic volume area. Potentially achievable within months of approval.

Embarcadero Enhancement Project

Phase 1 Overview

PHASE ONE SUMMARY

- Water-side separated bikeway in roadway between vehicle loading/pedestrian refuge areas and the existing curb of the promenade
- Enhanced bicycle network connections including turn bays/boxes & other improvements
- Enhanced pedestrian crossings including shorter crossing distances, improved signal timing and new accessibility features
- Proposed vehicle lane removal or ‘diet’ to better design The Embarcadero for multi-modal safety while maintaining sufficient vehicle mobility
- New curbside loading/parking to better balance loading demand and maintain overall curb access near the Ferry Building
- Potential Changeable Message Sign (CMS) pending further design and funding
Project Timeline

- **Late 2020**: Early Outreach
- **Winter 2021**: Broad Outreach, Refine Design
- **Spring 2021**: Seek Approvals
- **Late ’21 / Early ’22**: Implement Phase 1A

Embarcadero Enhancement Project

Embarcadero Traffic Safety Update
**Embarcadero Enhancement Project**

**Phase Two**

**Folsom to Townsend**

Significant capital investment (in relatively stable seismic area) to close gap in Bay Trail protected bikeway, support Port pier re-development, and improve Caltrain/ferry transit & ballpark/Mission Rock access.
Embarcadero Enhancement Project

Two-Way Bikeway with two vehicle lanes

- Preliminary engineering reveals ‘fatal flaw’ promenade impacts at Pier 17 (Exploratorium) short of relocating bus loading operations & pier upgrades

- Additional pinchpoints, including Piers 9 and 27, would yield minimum width bike facility & promenade

- High cost & complexity = out of EEP scope

Two-Way Bikeway with one vehicle lane

- EEP not considering, but likely considered in future public engagement/planning

- Exploratorium load zone remains a major pinchpoint if existing curbs remain

- Lane diet traffic analysis TBD
Fisherman’s Wharf / Pier 39
Complete Streets Study

• $175k traffic study in process but delayed due to COVID
• Goals of better circulation into/out of parking areas, improved transit operations and curb access, and room for Embarcadero bikeway to reach Jefferson/Powell
• Scope being revised to include outreach and analysis for the Embarcadero north of Broadway
• Outreach planned for summer/fall 2021
Waterfront Transportation Coordination

Historic Pier Rehabilitation Program

Resiliency Program

Waterfront Land Use Plan Update
Thank You!
sfmta.com/embarcadero
Embarcadero@sfmta.com
Safe Streets Evaluation Handbook

SFMTA Quick-Build Initiative

Double Parking

Passenger vehicles represent the majority of double parking post pilot

93% of commercial vehicles are loading in designated loading zones

PEDESTRIAN/BICYCLIST CONFLICTS

Of the total pedestrians observed crossing into the bike lane from the school boarding islands during the morning and afternoon school hours, there were 0 observations of close calls/near misses, collisions, or spillage into the bikeway

School loading island located at Valencia Street between Clinton Park and Brosnan Street

After School Pick-Up vs. Evening Bike Commute

No conflicts were observed even with a higher number of pedestrians and bikes present

*Staff from the SF Friends School assisted students crossing the bikeway from the loading islands during school drop-off/pick-up hours
Project Briefings

- Port Commission (2014, 2018)
- Northeast Waterfront Advisory Group (NEWAG)
- Central Waterfront Advisory Group (CWAG)
- Maritime Commerce Advisory Committee (MCAC)
- Ballpark Mission Bay Transportation Committee
- San Francisco Hotel Council
- SF Travel, SF Tour Guide Guild
- South Beach/Rincon/Mission Bay Neighborhood Assoc.
- Barbary Coast Neighborhood Association
- District 3 SFMTA Working Group
- Fisherman’s Wharf Community Benefits District
- Fisherman’s Wharf Restaurant Association
- Fisherman’s Wharf Merchants Association
- MTC Bay Trail Steering Committee
- Individual stakeholders incl. Ferry Building, Exploratorium, Pier 39, and many others…

Open Houses & Workshops

Vendor Ride-Alongs
Previous Actions

• Documentation and analysis of existing enforcement efforts, 311 complaints
• Updated collision analysis
• Initial geofencing discussions with Uber, Lyft

Why

• Inform priorities with regard to potential PCO and SFPD enforcement ‘bumps’
• Promote better, safer behaviors in conjunction with initial engineering changes
• Expand Vision Zero messaging & understanding

Challenges

• Limited effectiveness w/o infrastructure changes
• Limited funding & staffing
Design Precedents

Getting to the Curb
A Guide to Building Protected Bike Lanes That Work for Pedestrians

Terry Francois Boulevard Quick-Build Project
Improving bicycling connections to the Chase Center and waterfront
### Washington Intersection Alternatives

#### Table of Alternatives

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Remove Clay Northbound U-Turn</th>
<th>Remove Washington Northbound Left 1</th>
<th>Prohibit Washington Northbound U-Turn</th>
<th>Remove Washington Southbound U-Turn</th>
<th>Notes For Consideration</th>
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<tr>
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<td>X</td>
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<td>SRV volumes: AM 7, PM 3</td>
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<td>1D</td>
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* Combination of Changes that provides a blend of benefits to safety, operations and access

#### Proposed Improvements

- **Remove Clay Northbound U-Turn**
  - Removes motorized traffic from pedestrian/bicycle crossing
  - Allows for potential shortening of crossing distance with removal of turn lane
  - Increased green time for Southbound traffic
  - Would divert trips to alternate routes (Washington Northbound U-Turn, Broadway Northbound U-Turn, Northbound left turn)

- **Remove Washington Northbound Left 1**
  - Allows removal of 1 Westbound Washington Lane (shorter and crossing distance on west leg)
  - Allows shift of other northbound lanes down (shorter pedestrian crossing distance on south leg)
  - Likely allows Southbound right turns
  - May require additional Northbound left green time to accommodate demand
  - Would divert some trips to alternate routes

- **Prohibit Washington Northbound U-Turn**
  - Allows for Overlap Eastbound Right, less volume would need to be accommodated
  - Would divert trips to alternate routes (Clay Northbound U-Turn, Broadway Northbound U-Turn, Howard Northbound left turn)

- **Remove Washington Southbound U-Turn**
  - Allows for wider pedestrian median and shorter crossing distance
  - Allows for longer Northbound through/drain time (10s)
  - Would divert trips to alternate routes (Perry Building Southbound U-Turn, Broadway Southbound U-Turn)

**Note:**
1. Broadway SRV likely to be removed in the ultimate configuration

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**EEP Phase 1**

**EEP Phase 2**

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**SFMTA**

Embarcadero Traffic Safety Update

**Aug 2020**
Embarcadero Enhancement Project  Circulation Analysis

Big-Data Approach to Evaluate Traffic Conditions Under the Proposed Phase One Improvements (Mission Street to Broadway)

Key components of the analysis:
- Origin-Destination (OD) data from the StreetLight platform
- Top Routes for OD pairs from the StreetLight platform
- Travel time data for the Top Routes from the Inrix platform
- Traffic operations and travel times based on calibrated Synchro models

Travel Time Summary (minutes)

<table>
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<tr>
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<th>Weekday AM Peak Hour</th>
<th>Weekday PM Peak Hour</th>
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<tbody>
<tr>
<td></td>
<td>Shifting Vehicles</td>
<td>Travel Time</td>
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<tr>
<td>Existing Conditions</td>
<td>0</td>
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<tr>
<td>Proposed Phase One - No Volume Shift</td>
<td>0</td>
<td>12.4*</td>
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<tr>
<td>Proposed Phase One - 50% Volume Shift</td>
<td>250</td>
<td>9.0*</td>
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<tr>
<td>Proposed Phase One - 100% Volume Shift</td>
<td>500</td>
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* Travel times may be worse due to lower capacity conditions and queue spill back at Washington Street
* Desired volume shift to maintain existing travel times and current level of congestion with the reduction of one lane (and no signal timing changes)
Embarcadero Enhancement Project

Circulation Analysis

Sept 2019 – Estimated Travel Demand

Relative volumes - for OD pairs that have Embarcadero as one of the top routes, this plot shows the aggregated volumes along Embarcadero and the alternative routes. The purpose of this analysis is to visualize and evaluate potential alternate routes for trips currently using the proposed Phase One segment of Embarcadero.

EEP Phase 1  EEP Phase 2
These plots show the desired traffic diversions to maintain existing travel times and current levels of congestion on Embarcadero. These diversions are estimated based on an inverse relationship of the ODs identified in Step 1 and the travel times in Step 2.

* Desired volume shift to maintain existing travel times and current levels of congestion
50 percent of desired traffic diversions (to maintain existing travel times and current levels of congestion on Embarcadero with the reduction of one northbound lane along the proposed Phase One segment). These diversions are estimated based on an inverse relationship of the OD volumes and the travel times estimated in the previous steps.