

San Francisco-Oakland Bay Bridge West Span Path

Public Meeting #2

November 19th, 2018 | 6:00 - 8:00 pm

Bay Area Metro Center | 375 Beale Street



ARUP



Meeting Agenda

6:00pm

Arrivals and light refreshments

6:30pm

Welcome, introductions, background presentation

6:55pm

Q+A

7:05pm

Interactive workstations

- SF touchdown
- YBI pathway
- Main span structural solution
- Construction sequence
- Timeline, cost, environmental studies
- Virtual reality (VR)

7:50pm

Wrap-up and next steps

8:00pm

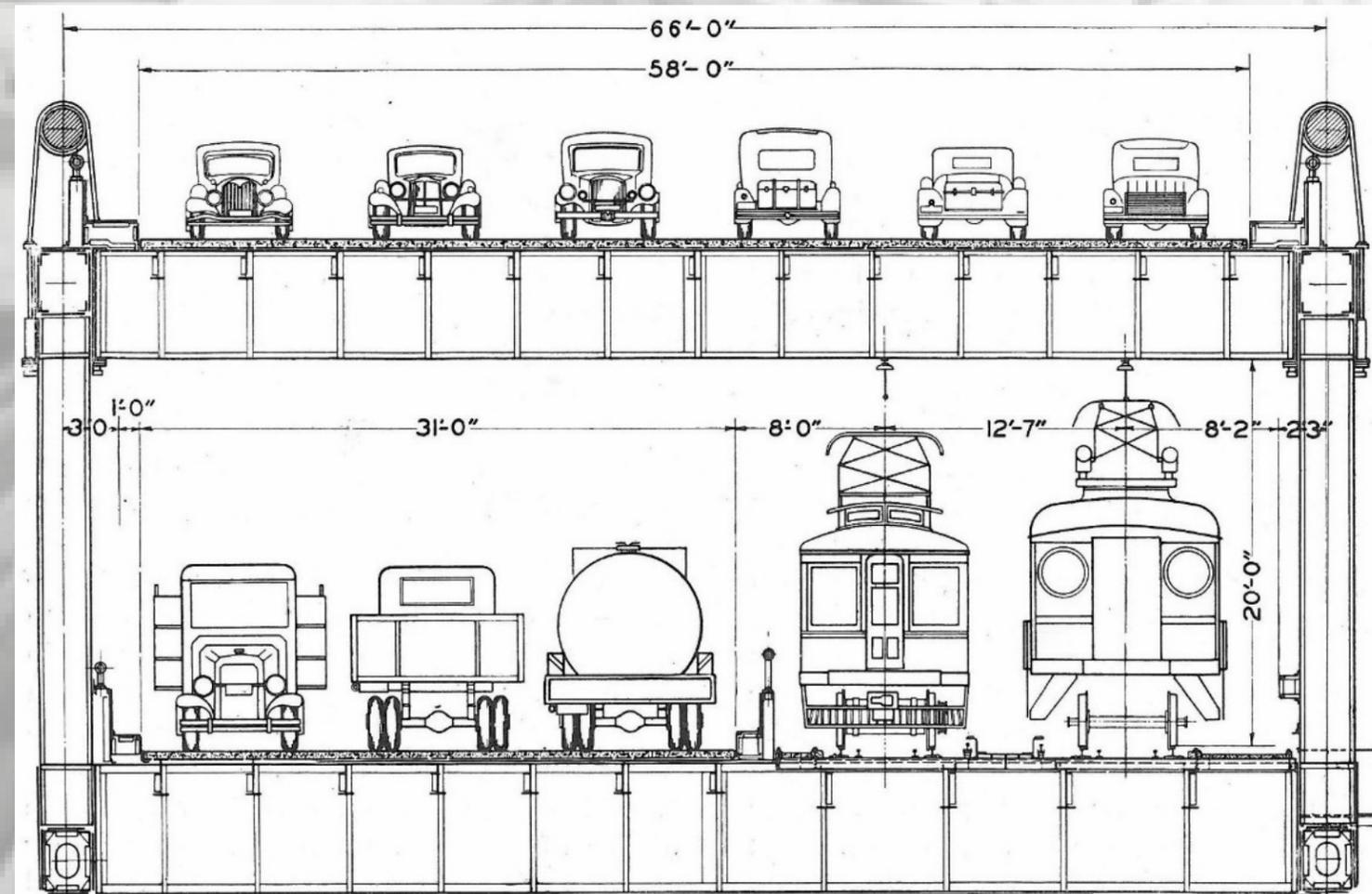
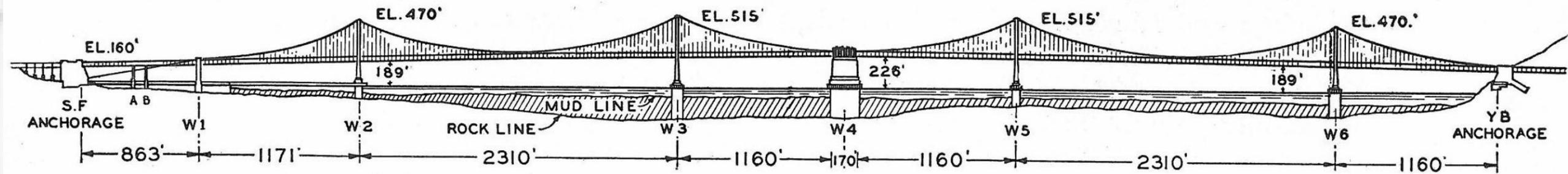
Adjourn

Stiffening Truss
Span W5-W6
6-2097

PAST | PRESENT | FUTURE

Brief History of the Bay Bridge

The West Bay Crossing



Cross-section through bridge decks. The upper deck has six lanes for automobiles; the lower deck accommodates three lines of trucks, and has two tracks for interurban electric cars.



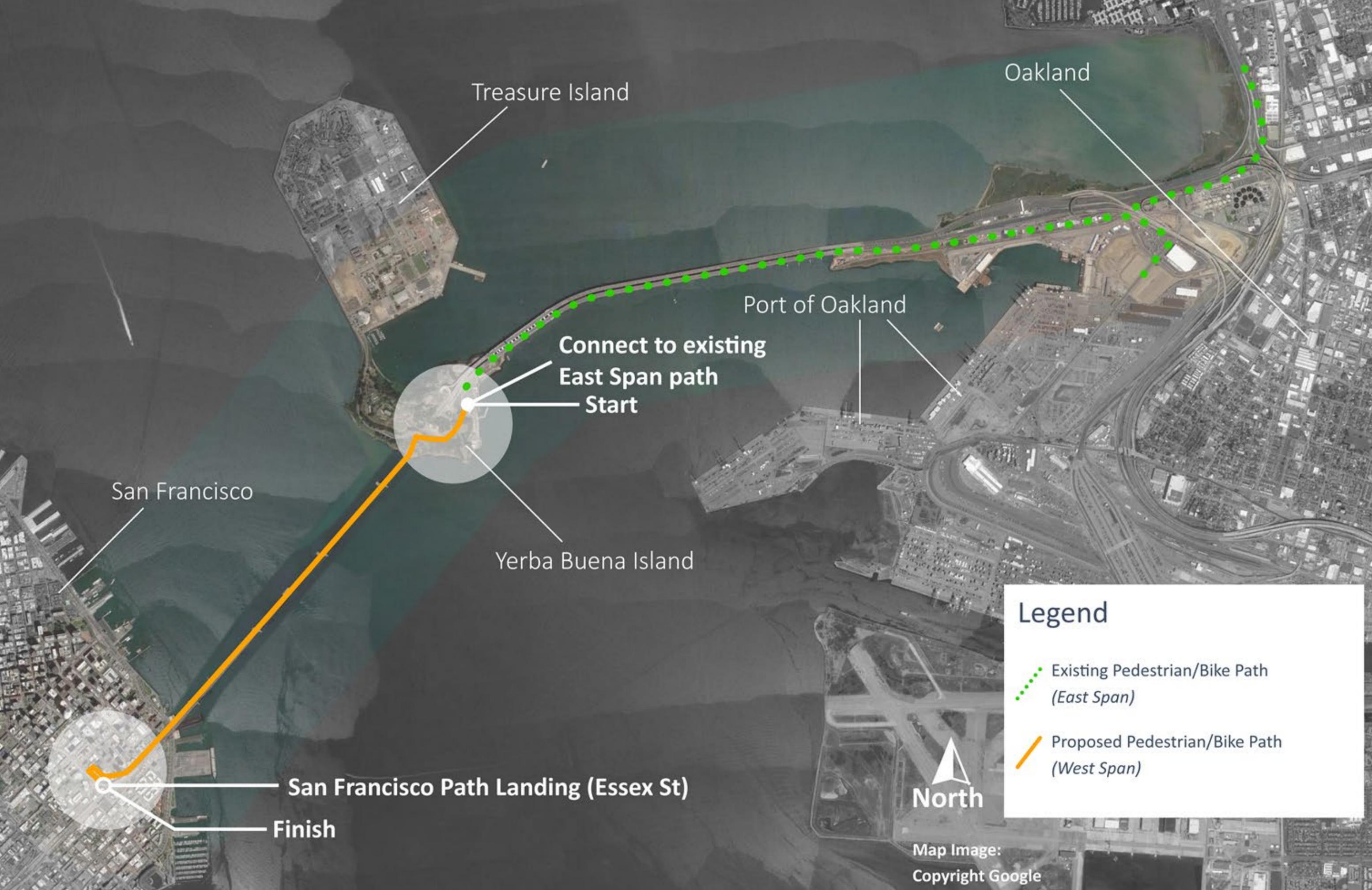
Source: National Register of Historic Places in the United States of America



An aerial photograph of a city, likely San Francisco, showing a large body of water (the bay) and a bridge (the Golden Gate Bridge) crossing it. The city's grid pattern and various buildings are visible. A semi-transparent white rectangular box is overlaid on the center of the image, containing text.

PAST | PRESENT | FUTURE

Project Context



Treasure Island

Oakland

Port of Oakland

Connect to existing
East Span path
Start

San Francisco

Yerba Buena Island

San Francisco Path Landing (Essex St)

Finish

Legend

- Existing Pedestrian/Bike Path
(East Span)
- Proposed Pedestrian/Bike Path
(West Span)



North

Map Image:
Copyright Google



Population
Growth

Infrastructure
Growth

Employment
Growth

Traffic +
Commuting

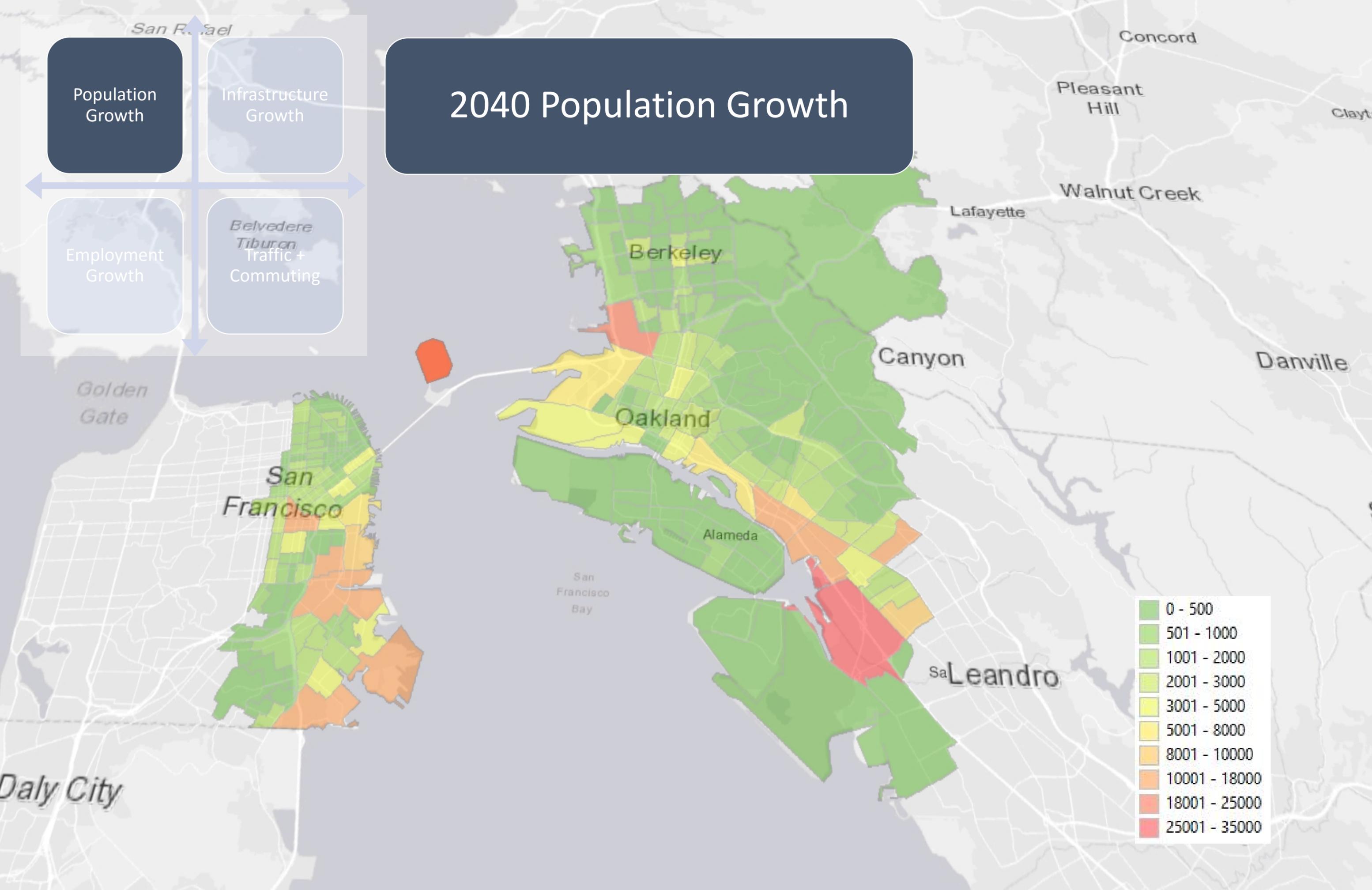
2040 Population Growth

Population Growth

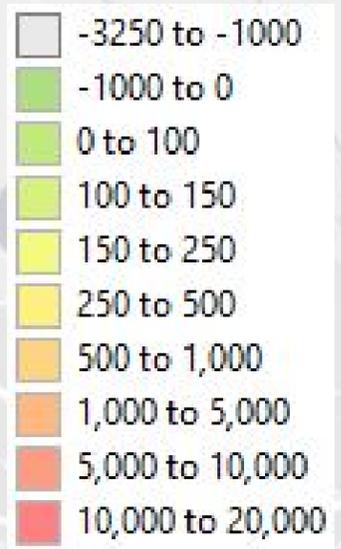
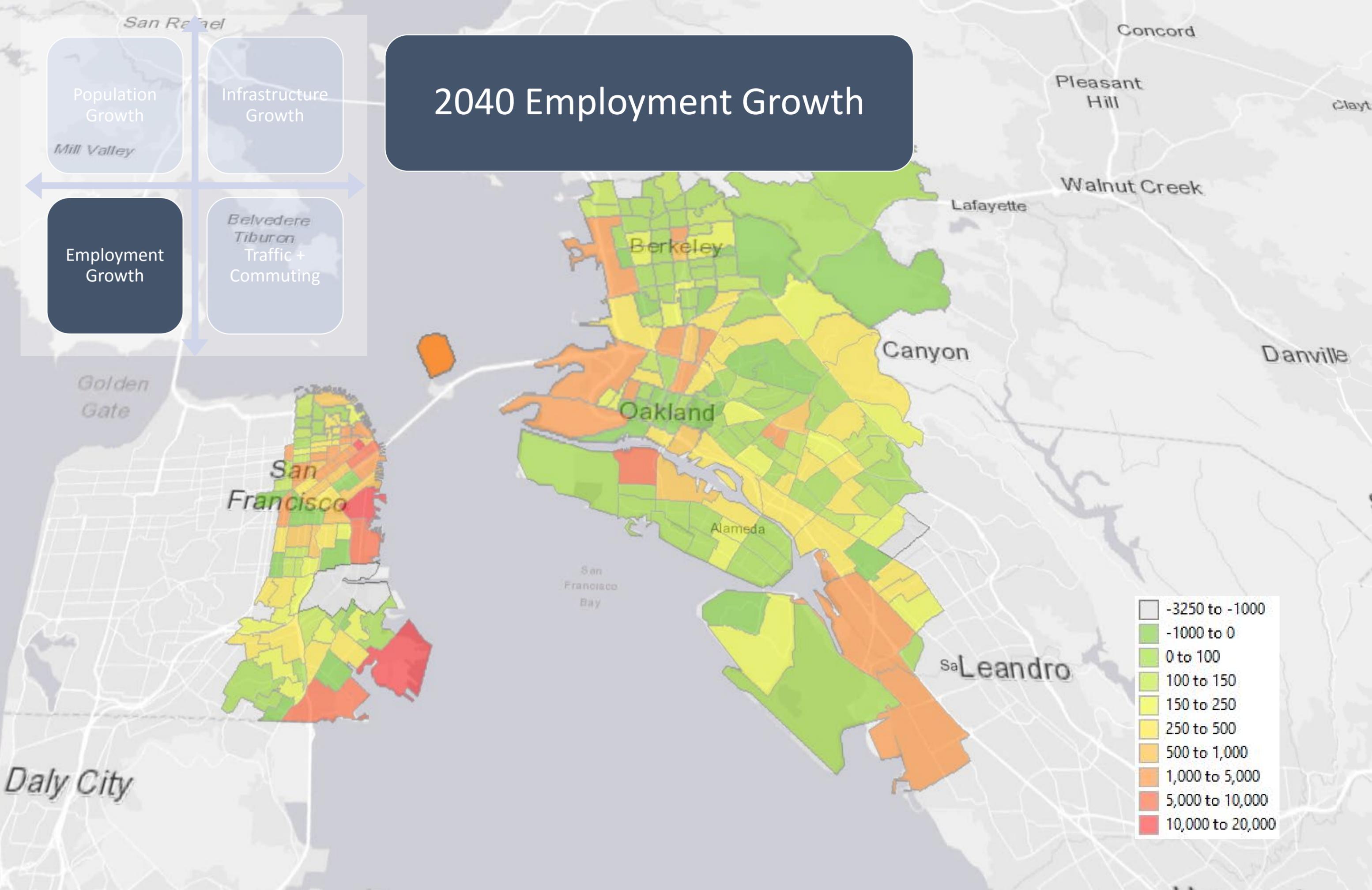
Infrastructure Growth

Employment Growth

Belvedere Tiburon Traffic + Commuting



2040 Employment Growth



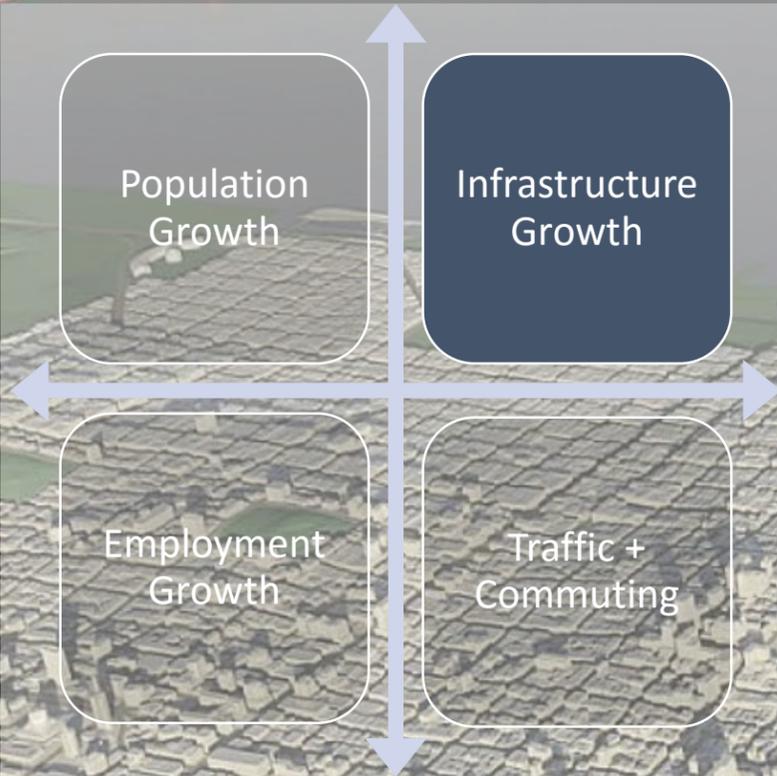


Population
Growth

Infrastructure
Growth

Employment
Growth

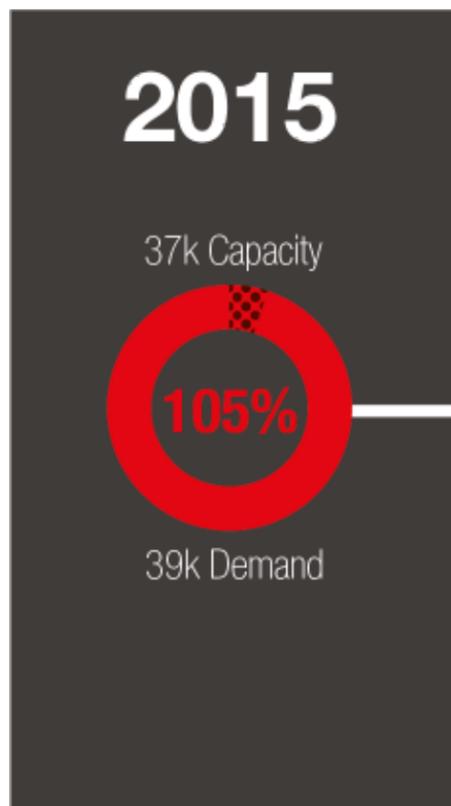
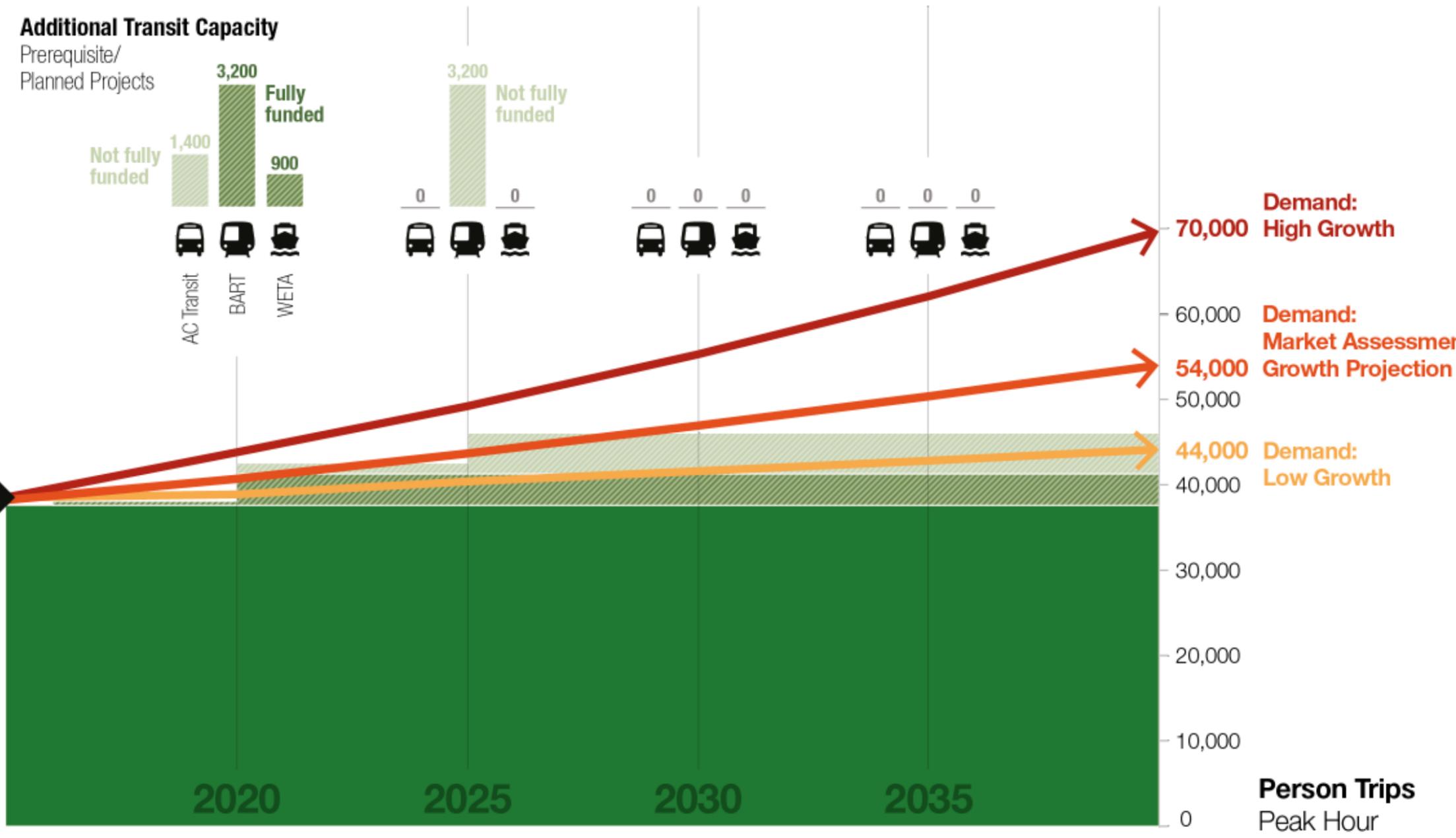
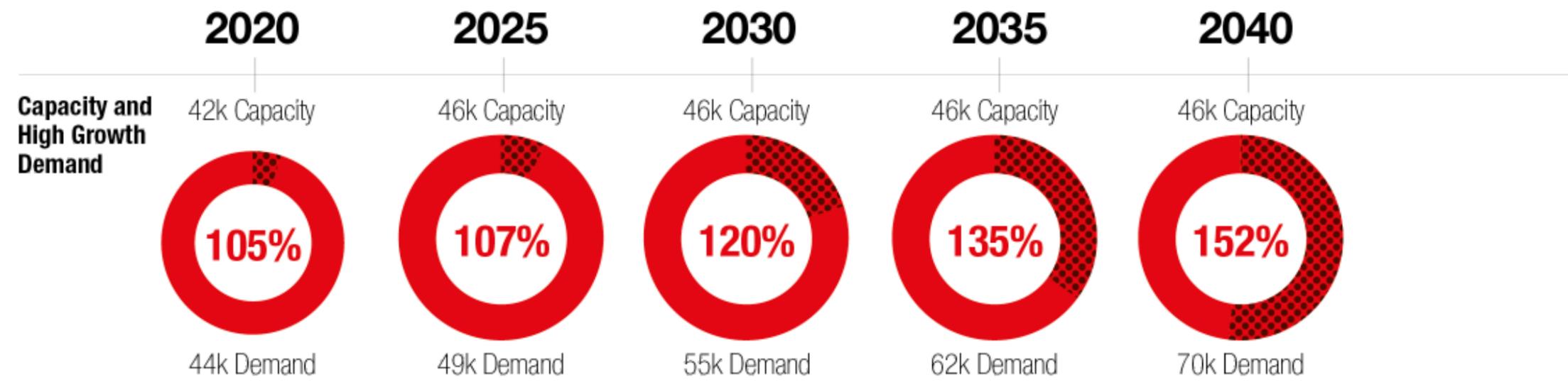
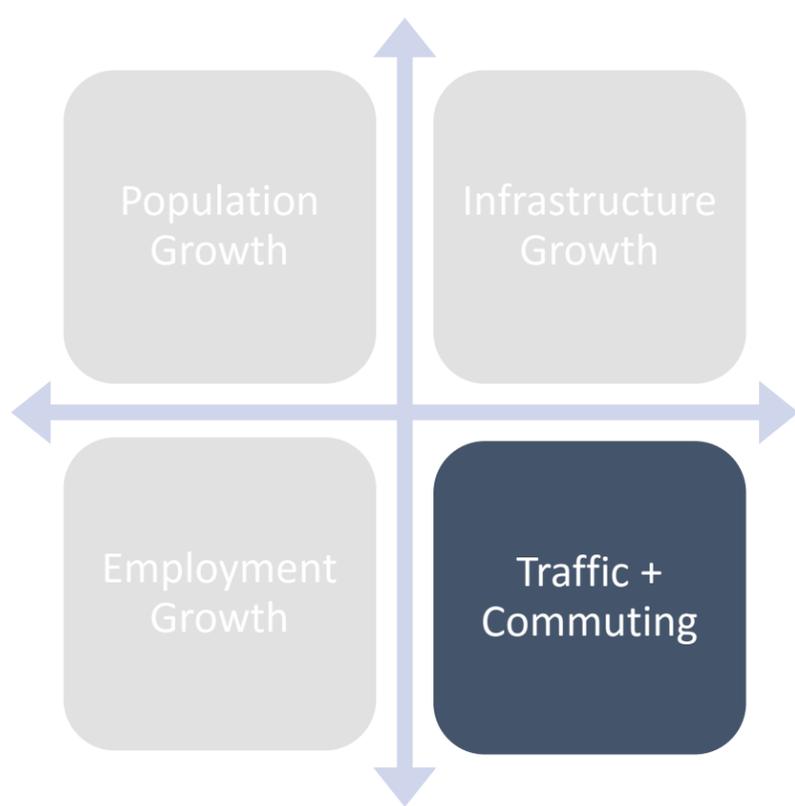
Traffic +
Commuting



24,000 Residents on Treasure Island by 2035



Source: SOM and Treasure Island Development Authority (TIDA)



PAST | PRESENT | FUTURE

Closing the Bay Trail Gap Usage and Impact

Distance to:
Yerba Buena Island: 2 1/4 Miles
Bay Bridge Toll Plaza: 3/4 Miles



	Bikes 	E-Bikes 	Walking 
Proposed West Span Path 2.9 miles	17 minutes	10 minutes	57 minutes
Existing East Span Path 4.4 miles	26 minutes	15 minutes	88 minutes
Total Bay Bridge Trail 7.3 miles	44 minutes	25 minutes	145 minutes

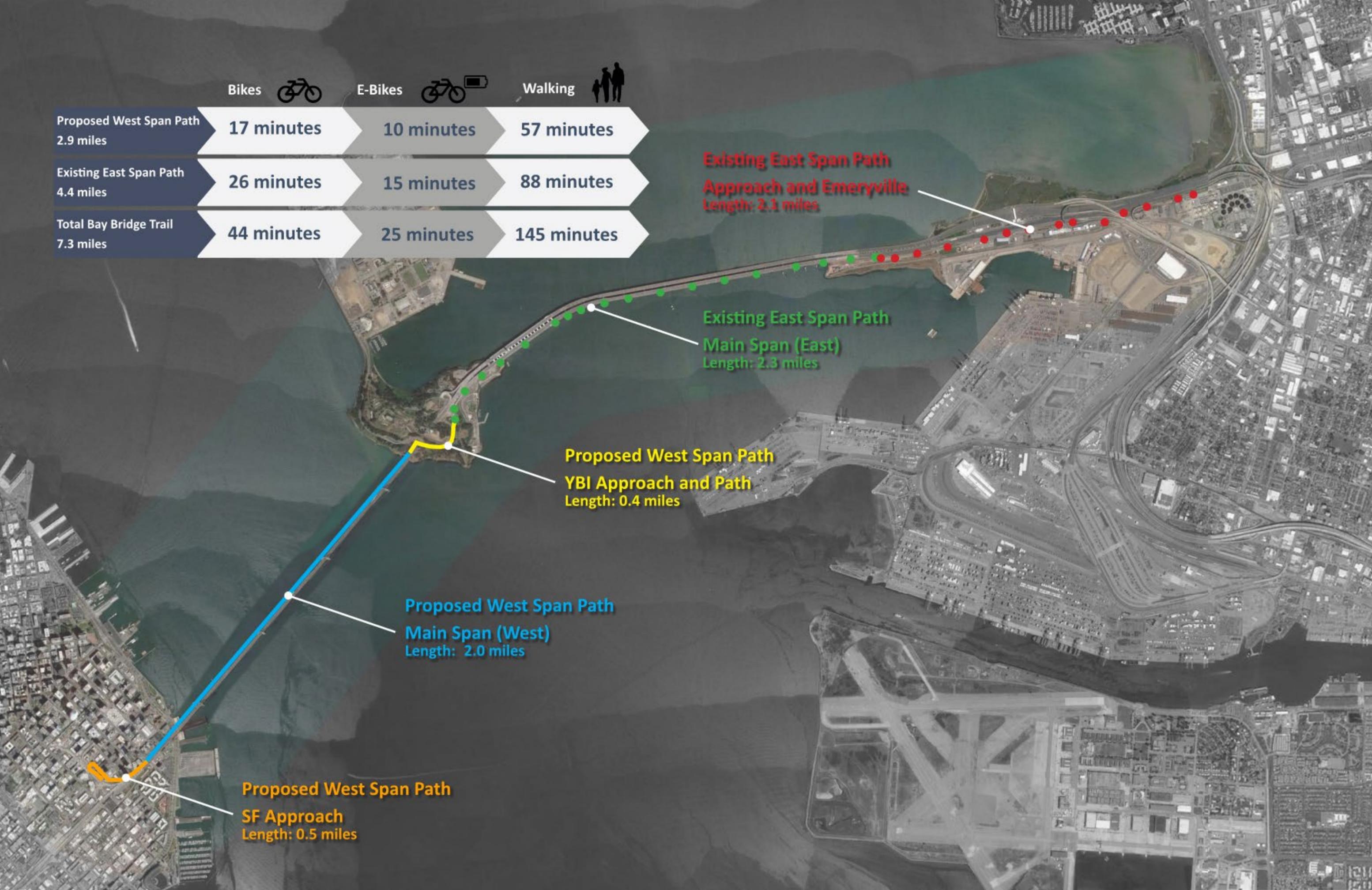
Existing East Span Path
Approach and Emeryville
Length: 2.1 miles

Existing East Span Path
Main Span (East)
Length: 2.3 miles

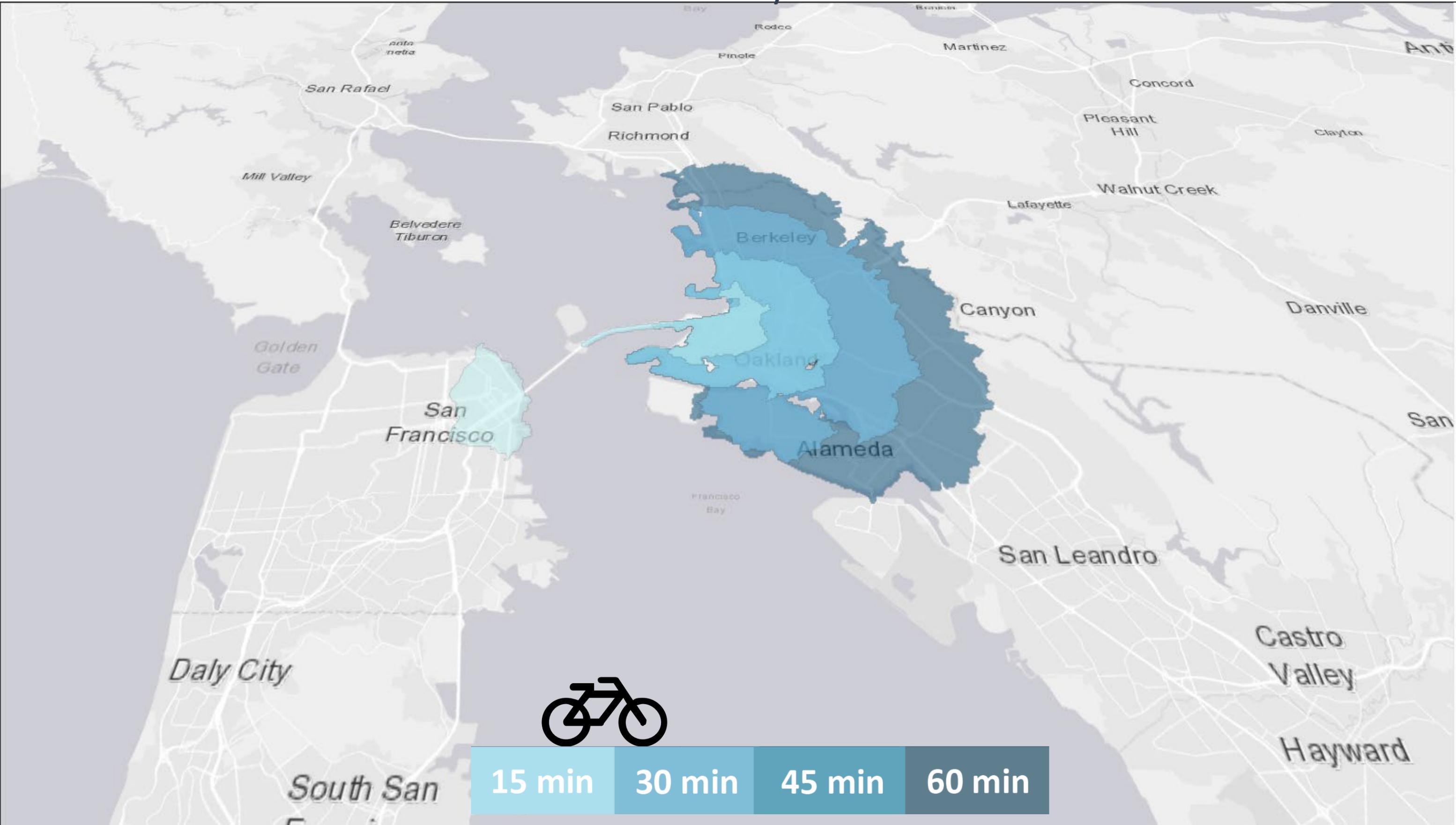
Proposed West Span Path
YBI Approach and Path
Length: 0.4 miles

Proposed West Span Path
Main Span (West)
Length: 2.0 miles

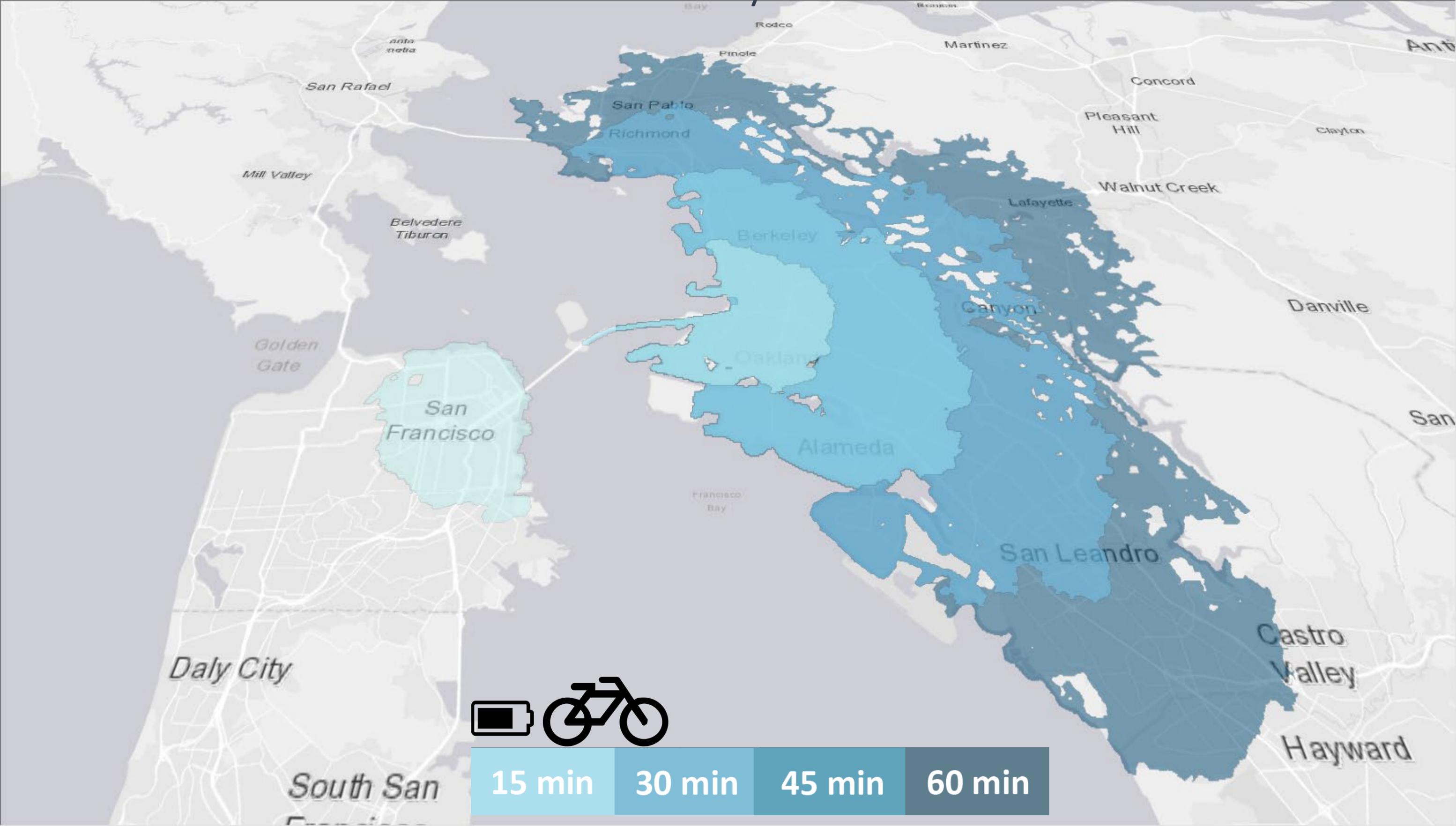
Proposed West Span Path
SF Approach
Length: 0.5 miles



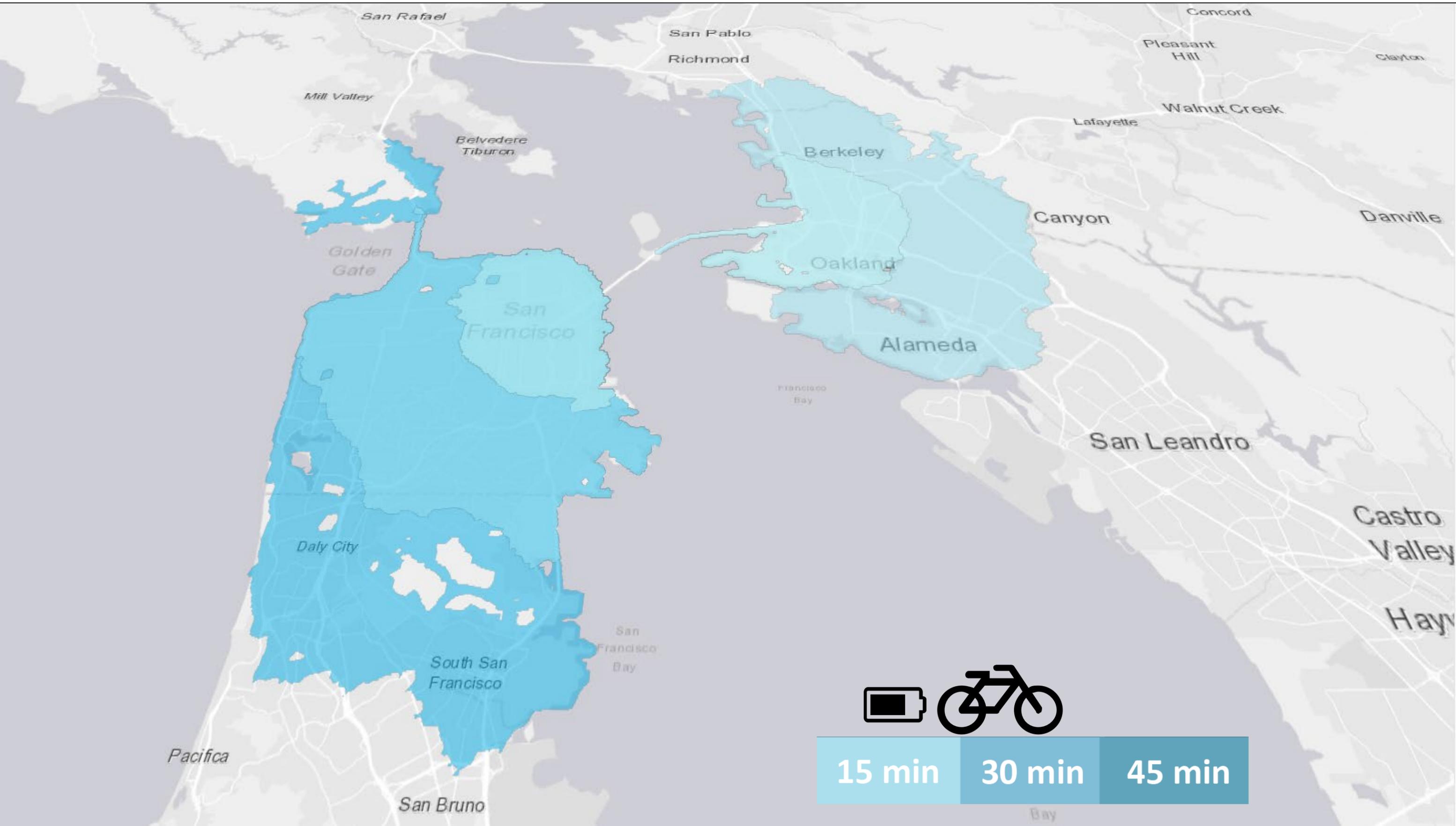
Travel Time to Touchdown for SF Employees who live in East Bay on Bike



Travel Time to Touchdown for SF Employees who live in East Bay on E-Bike



Travel Time to Touchdown for East Bay Employees who live in SF on E-Bike



Peak Hour Bike Ridership Forecasts



	East Bay Cyclists who work in San Francisco	280	790
	San Francisco Cyclists who work in East Bay	110	300
	Recent Growth (2015-2018)	20	50
	2040 Forecasted Growth	150	410
	Tourism Bicycle Volumes	400	460
	Treasure Island Bicycle Volumes	560	760
Total:		1,520	2,770

10%

of automobile trips can be served by bikes



- 3,825 SOV autos and 2,691 HOV to SF Core via automobile on SFOBB
- Vehicle occupancy = 1.15 mixed lanes, 2.54 for HOV
- For each comparison, 1,133 person trips by bike assumed

26%

of AC Transit trips can be served by bikes



- 4,330 AC Transit Riders by 2040 based on improvements outlined in Plan Bay Area 2040
- Not-inclusive of Treasure Island trips

3%

of all Transbay Corridor Trips can be served by bikes



- All bicycle counts used were from e-assist bike forecasts for Oakland to San Francisco commutes, recent, and 2040 forecasted growth
- Assumes ideal conditions - weekday with clear weather



PAST | PRESENT | FUTURE

Feasibility Study and
Recommended Design



Receive **public feedback**
on design alternatives

Goal of Public Meeting #1



Showcase
**recommended
design**

Goal of Public Meeting #2

2016

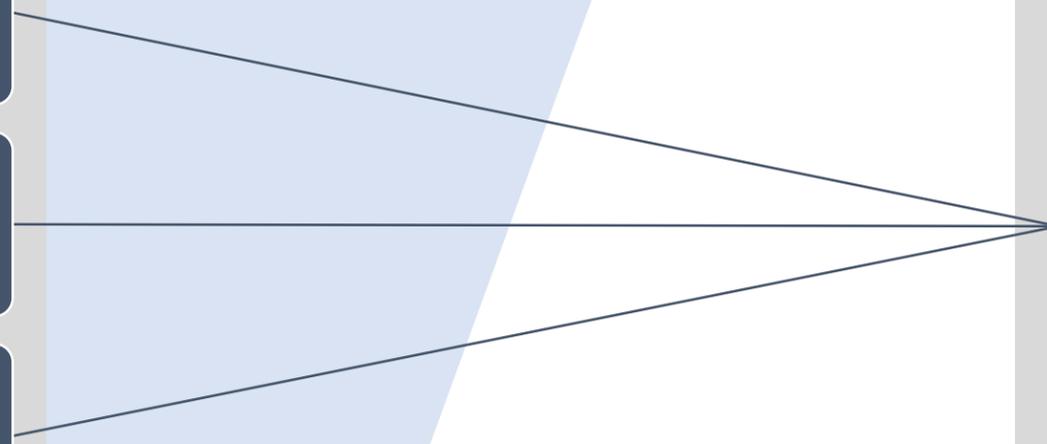
6 options for SF
touchdown

6 options for YBI
pathway

6 options for
main span

2018

1 recommended
design





Receive **public feedback**
on design alternatives

Goal of Public Meeting #1



Showcase
**recommended
design**

Goal of Public Meeting #2

2016

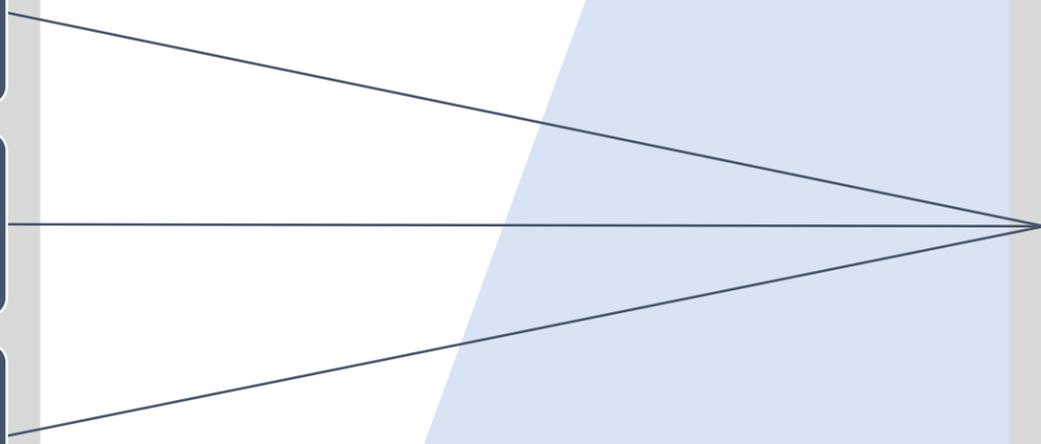
6 options for SF
touchdown

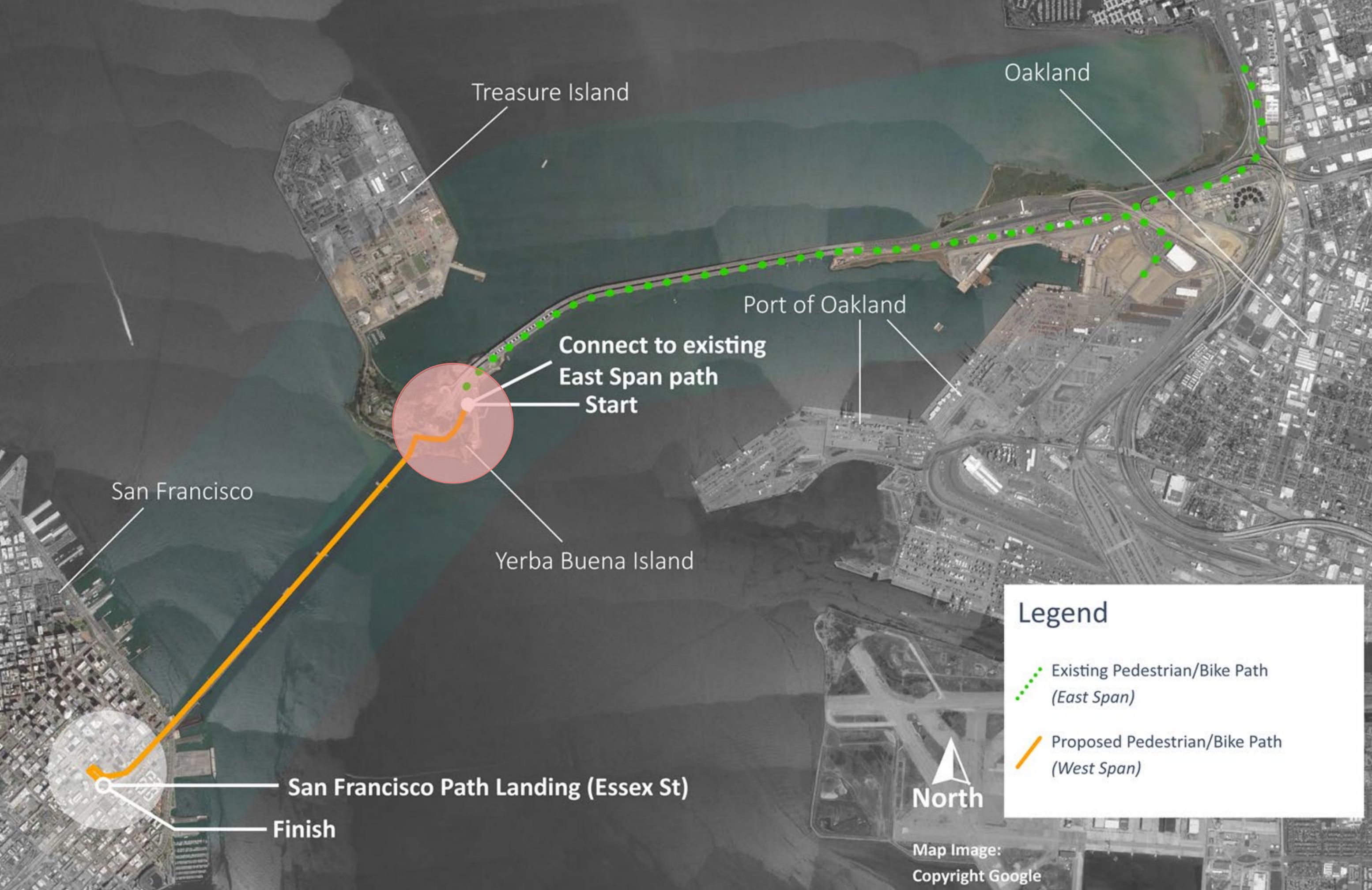
6 options for YBI
pathway

6 options for
main span

2018

1 recommended
design





Treasure Island

Oakland

Port of Oakland

Connect to existing East Span path Start

San Francisco

Yerba Buena Island

San Francisco Path Landing (Essex St)

Finish

Legend

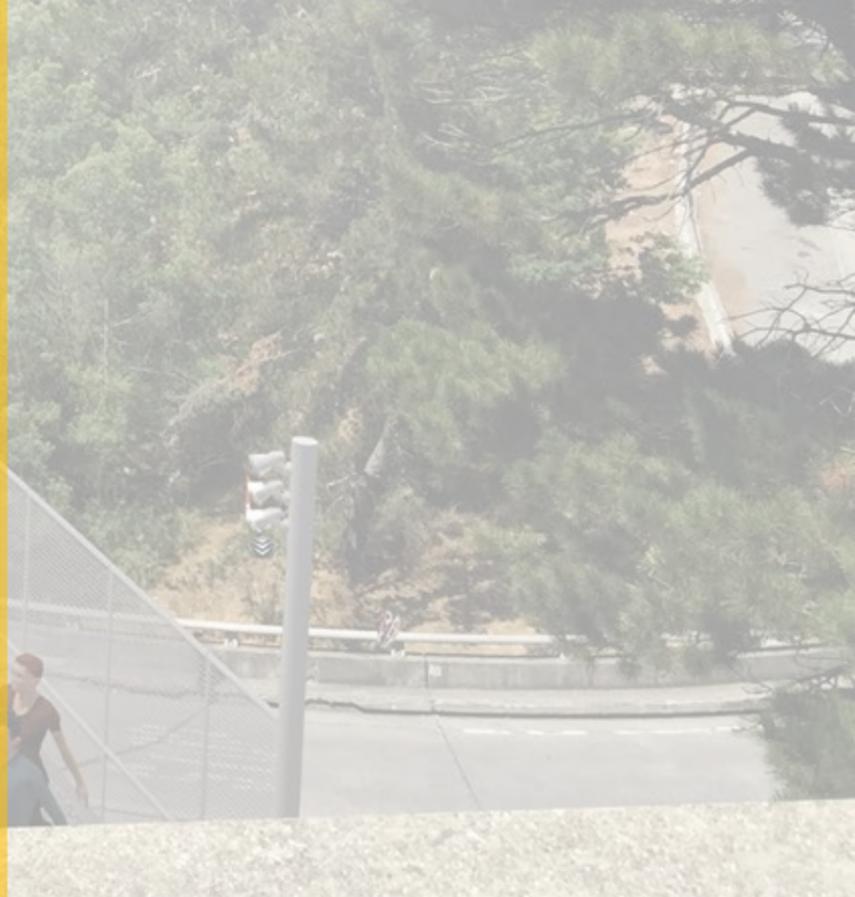
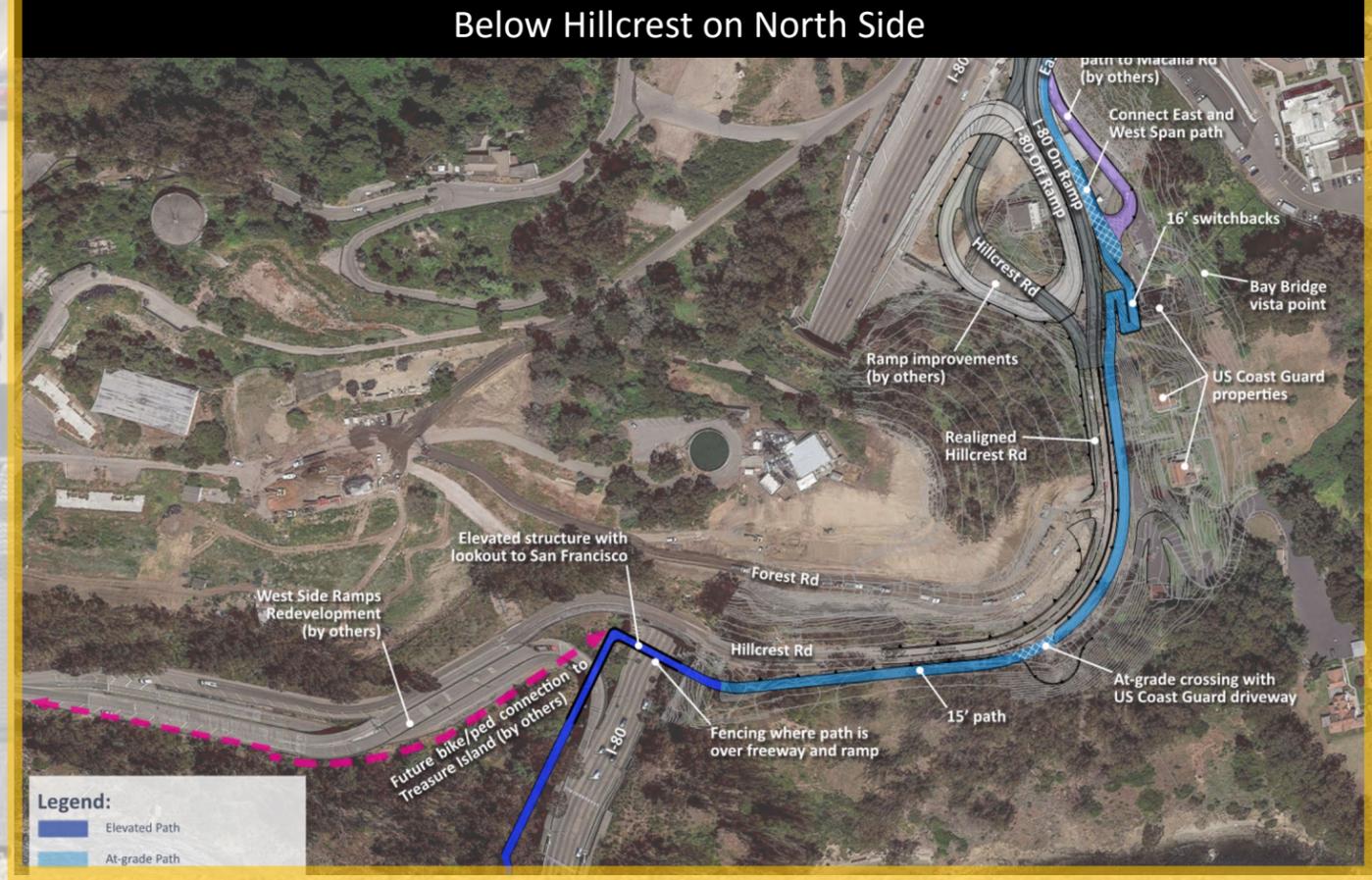
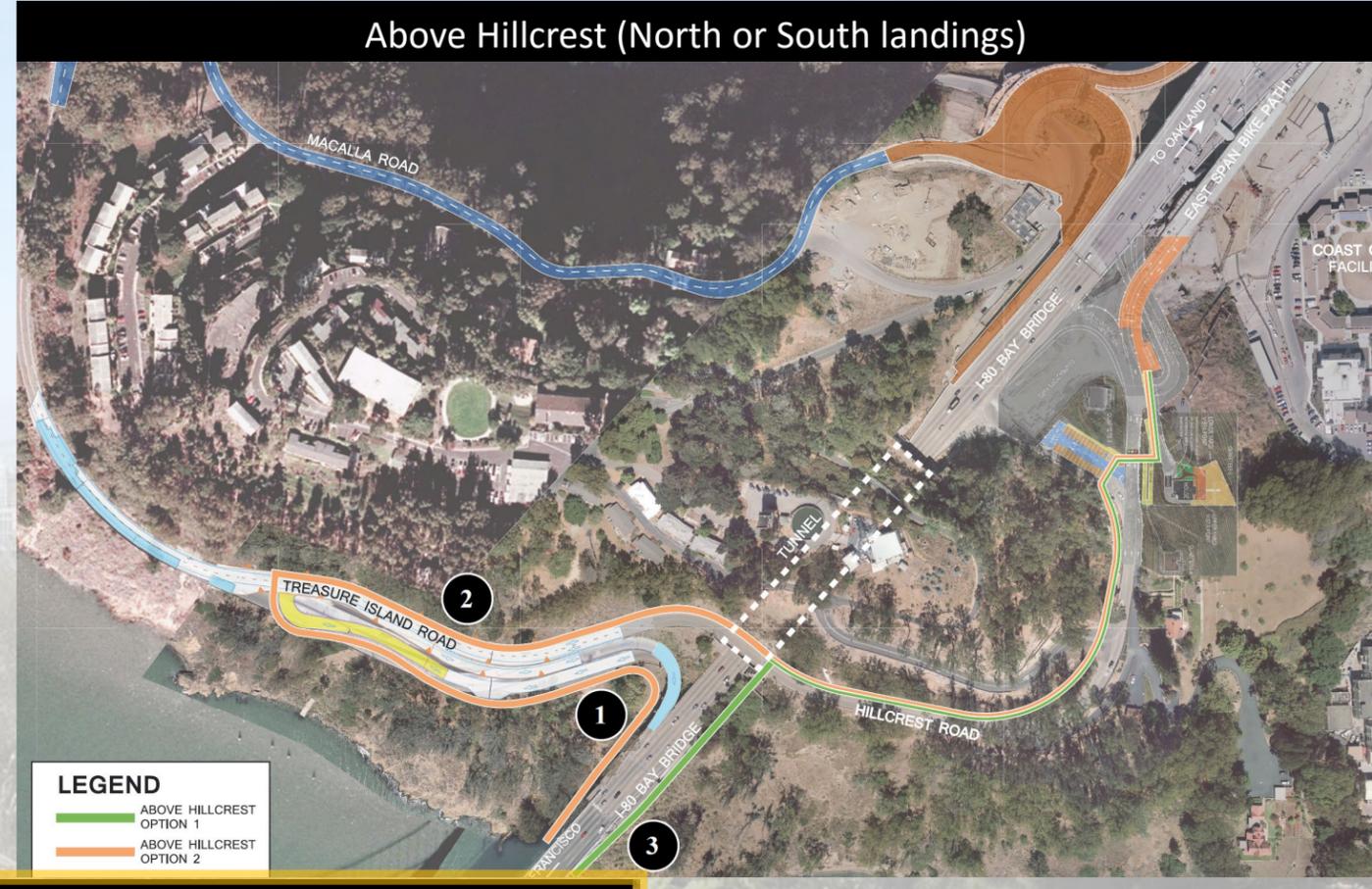
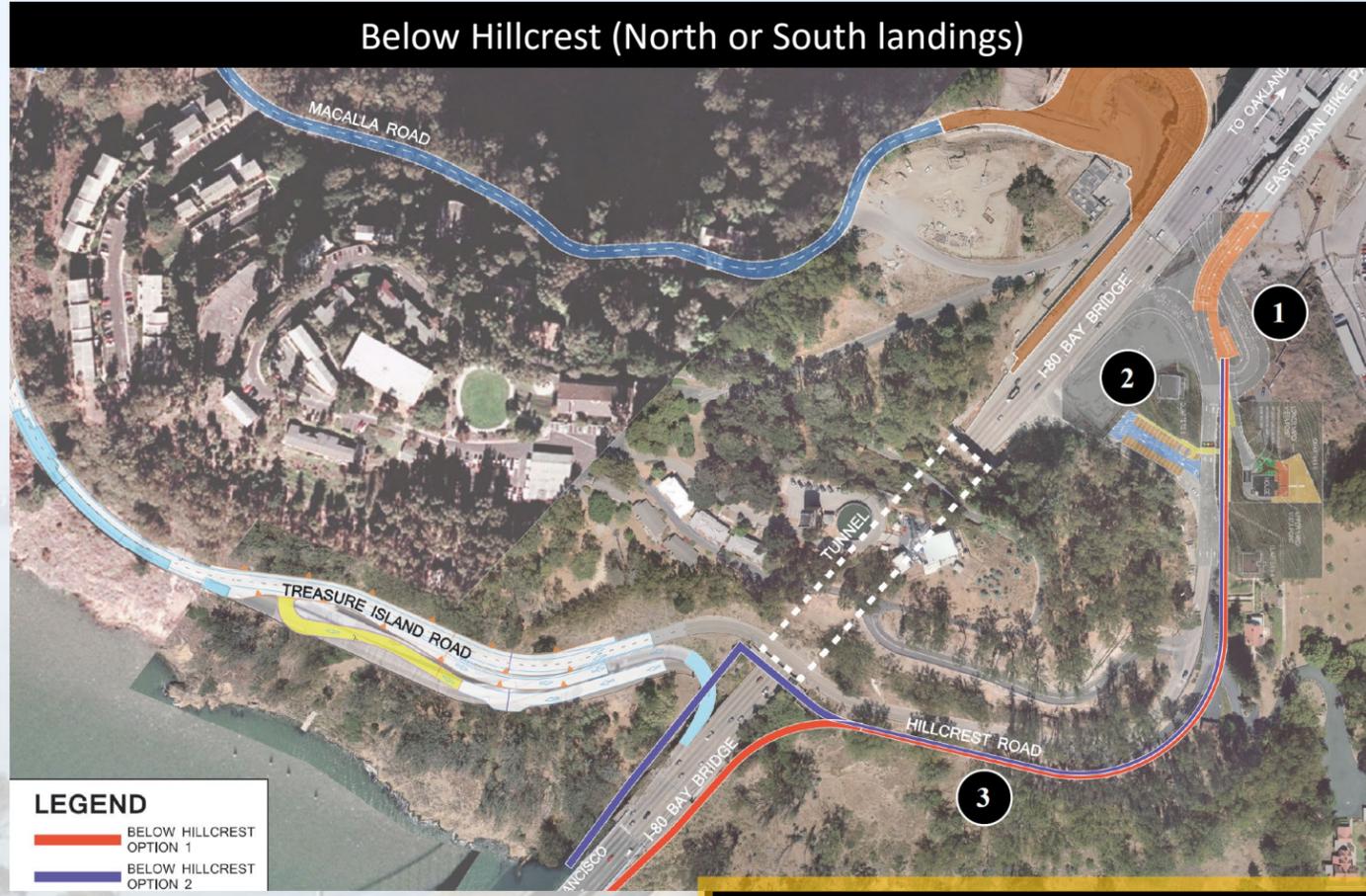
- Existing Pedestrian/Bike Path (East Span)
- Proposed Pedestrian/Bike Path (West Span)



North

Map Image: Copyright Google

YBI Pathway Recommended Design : Below Hillcrest on North





- Existing Bike Path
- New Plaza
- Upgraded Bike Path
- New Bike Path



Upgraded Bike Path

New Bike Path

New Plaza

Existing Bike Path



Treasure Island Rd

Hillcrest Rd

I-80

Connection to existing East Span path

US Coast Guard

I-80

3D Image:
Copyright Google

Legend

-  Existing Pedestrian/Bike Path (East Span)
-  Proposed Pedestrian/Bike Path (West Span)



Treasure Island

Port

Connect to existing East Span path Start

Yerba Buena Island

San Francisco

San Francisco Path Landing (Essex St)

Finish

Yerba Buena Island





Treasure Island

Oakland

Port of Oakland

Connect to existing
East Span path
Start

San Francisco

Yerba Buena Island

Legend

- Existing Pedestrian/Bike Path
(East Span)
- Proposed Pedestrian/Bike Path
(West Span)



North

San Francisco Path Landing (Essex St)

Finish

Map Image:
Copyright Google

SF Touchdown Recommended Design : Essex Street

Paint Yard (North or South landings)



Embarcadero (North or South landings)



North Side at Essex Street



South Side at Beale/Bryant





Salesforce Transit Center

1st St

Harrison St

Fremont St Off-Ramp

I-80

2nd St

3D Image:
Copyright Google



Finish

Map Image:
Copyright Google

Essex Street





Treasure Island

Oakland

Port of Oakland

Connect to existing
East Span path
Start

San Francisco

Yerba Buena Island

Legend

- Existing Pedestrian/Bike Path
(East Span)
- Proposed Pedestrian/Bike Path
(West Span)



North

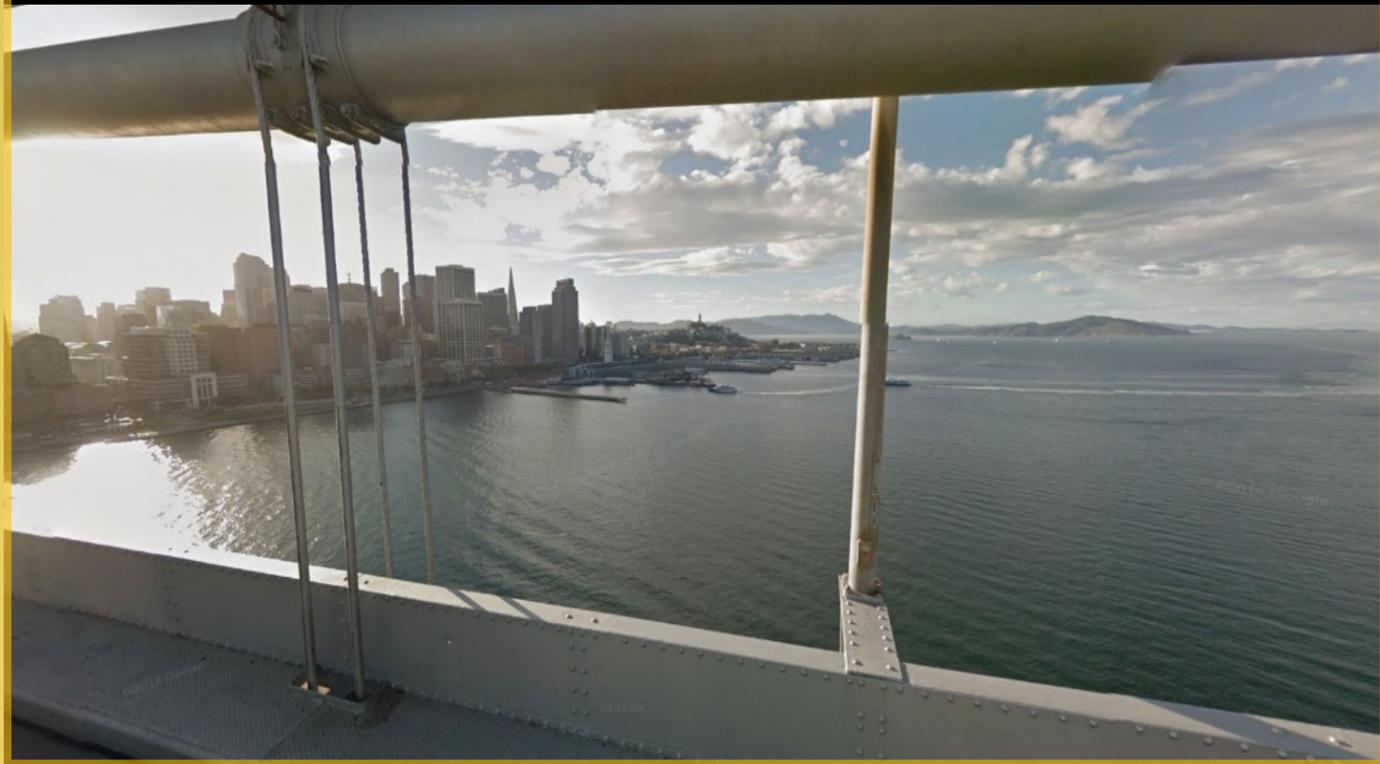
San Francisco Path Landing (Essex St)

Finish

Map Image:
Copyright Google

Main Span Alternatives

North Side and Outboard



South Side and Outboard



Outboard Deck



On-Deck



Main Span Alternatives

Outboard Using New Cables



Suspended Elevated Deck



Suspended Elevated Using New Cables



Suspended Elevated Deck



Main Span Alternatives

Cantilever (Moment Connection)



Short Propped Cantilever



Recommended Design
Boomerang (Pinned Connection)



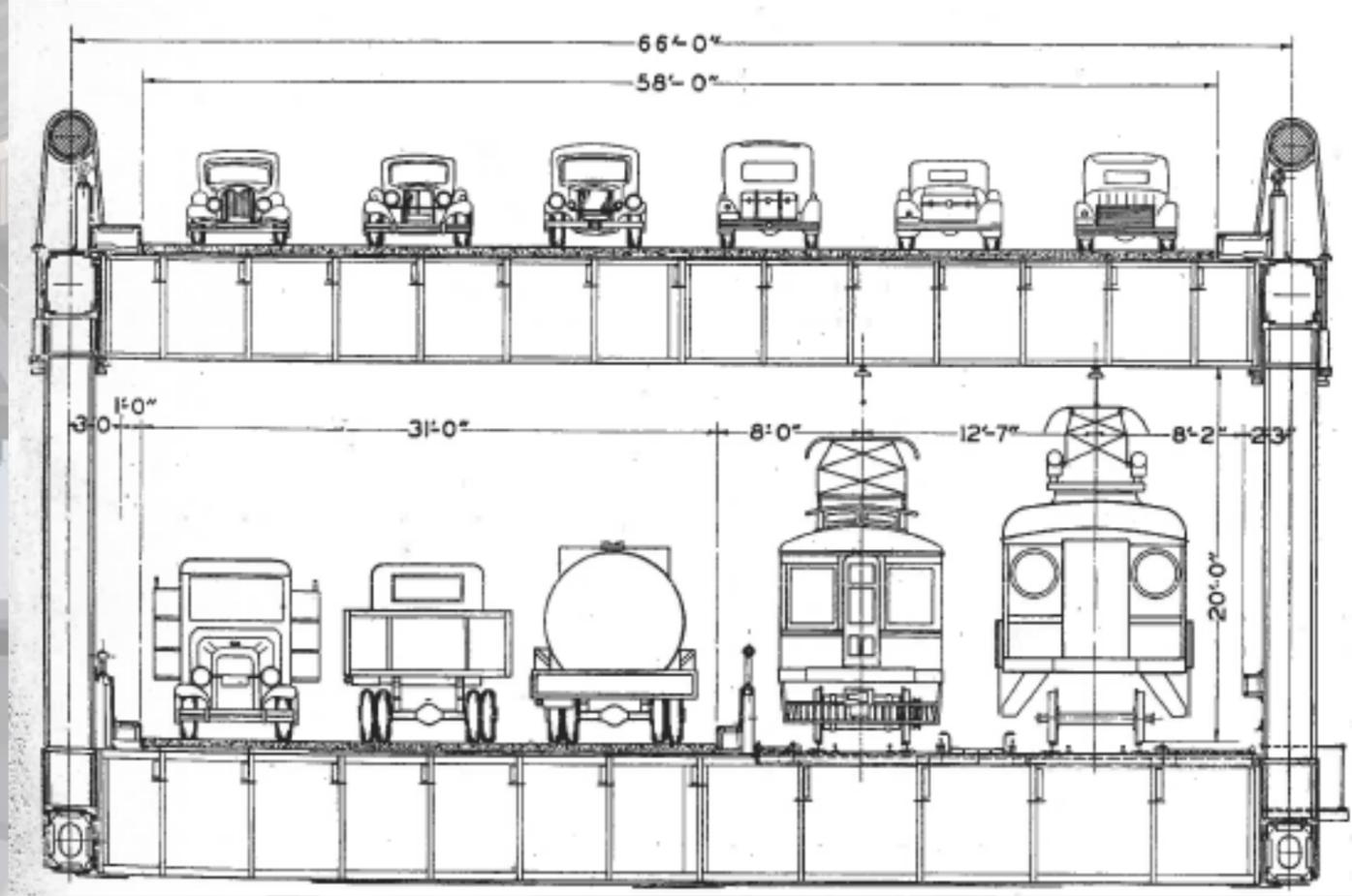
Long Propped Cantilever



Recommended Structural Design: Boomerang

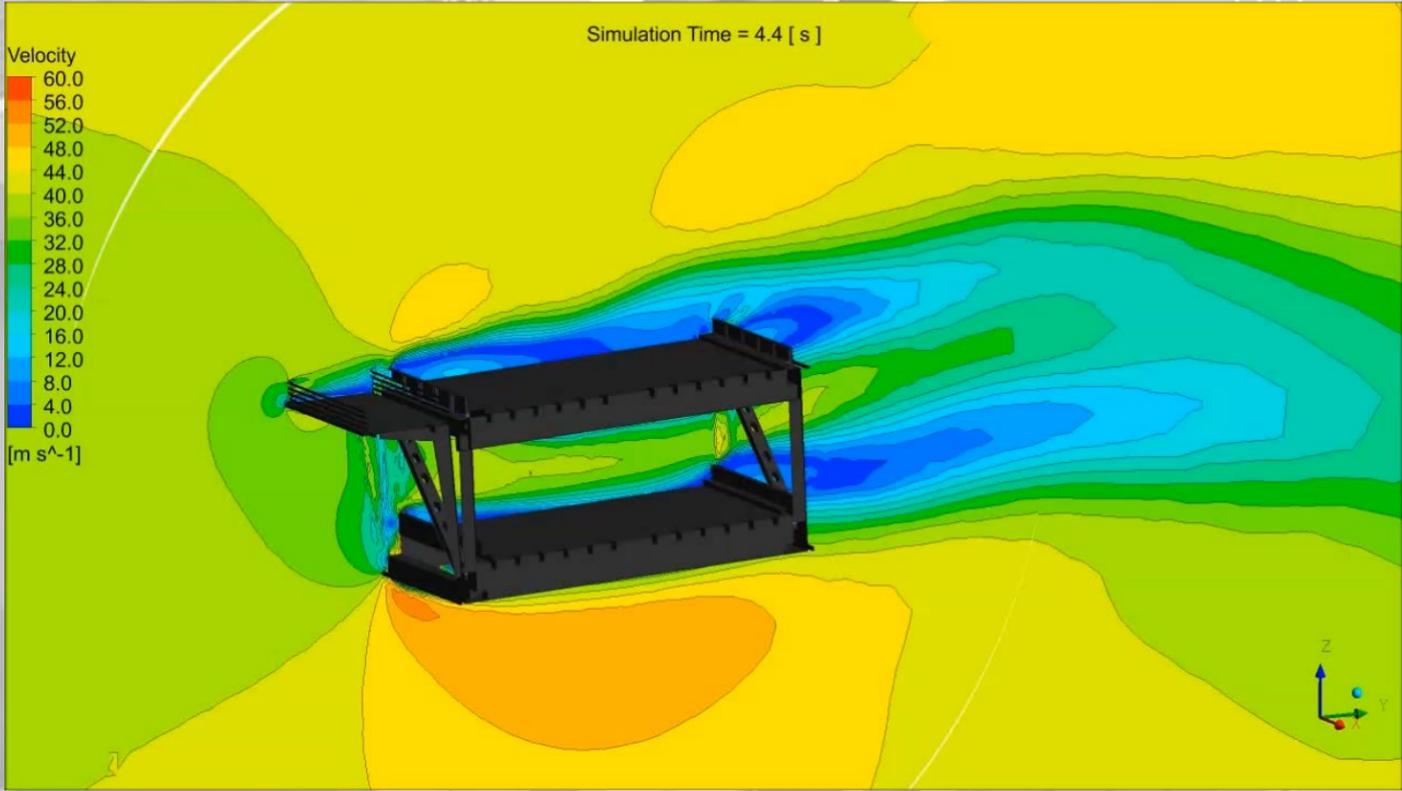
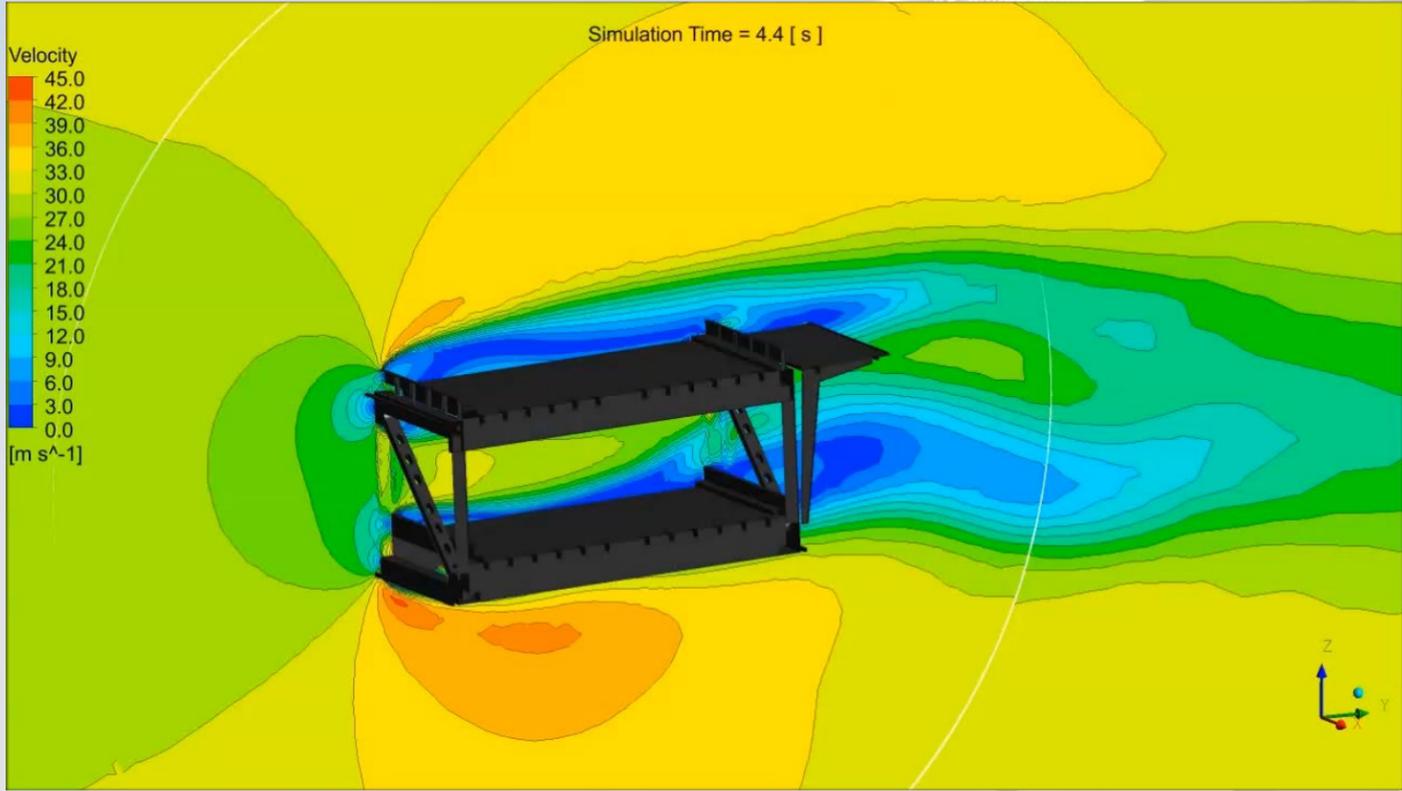


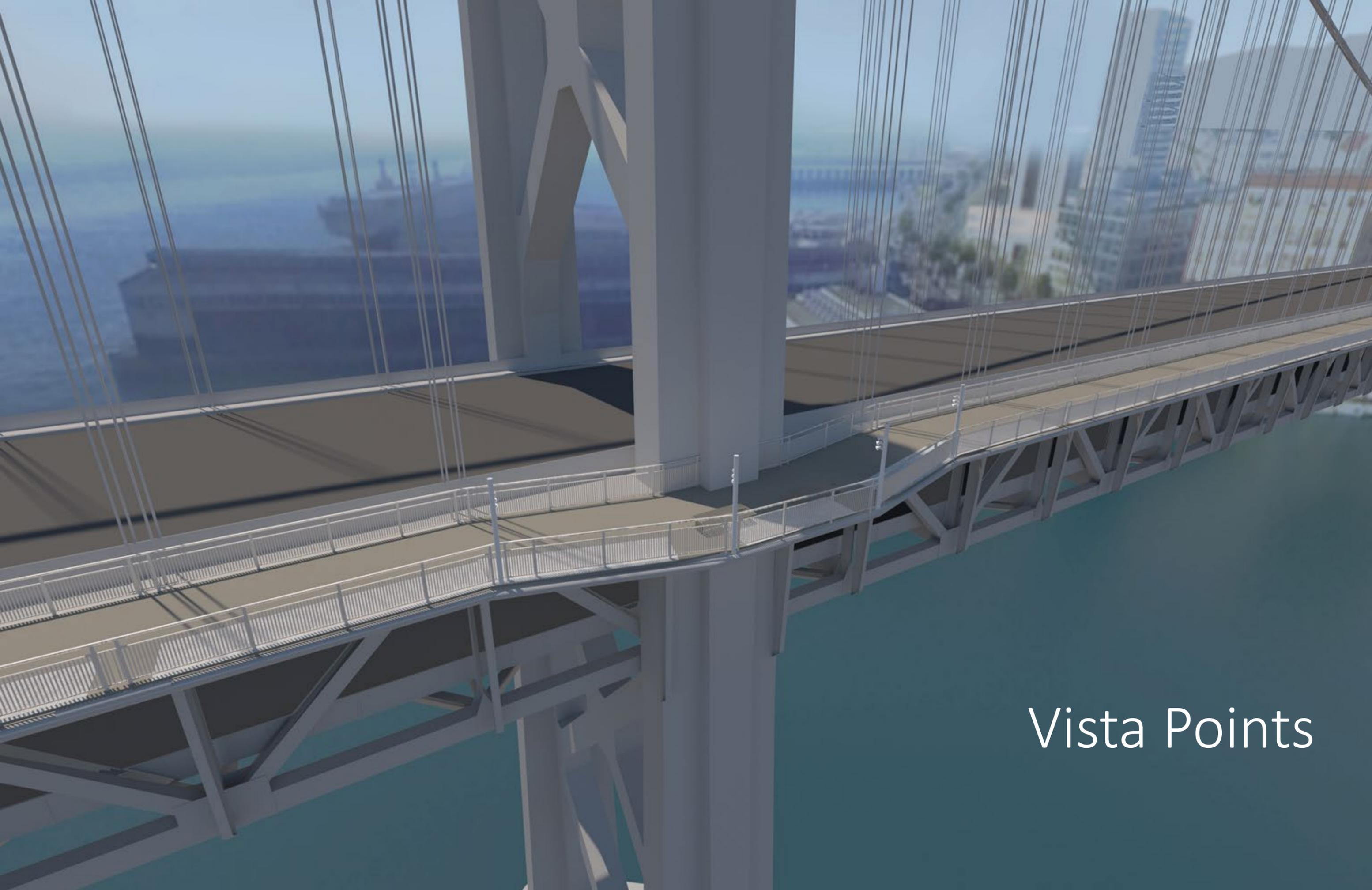
Study 1: Load Rating



Study 2: Deflection

Study 3: Wind Stability Studies





Vista Points

Vista Points

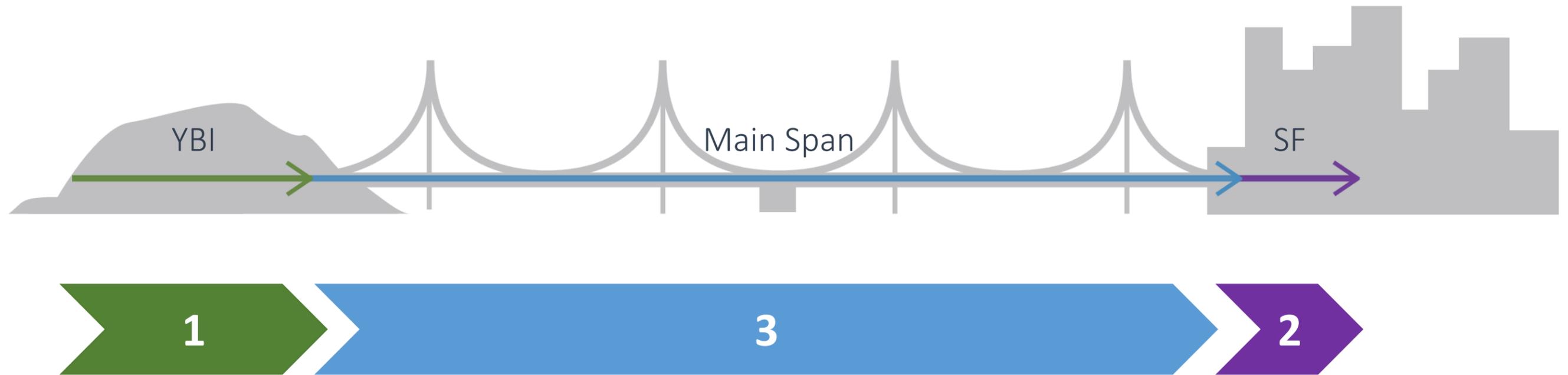


PAST | PRESENT | FUTURE

Funding and Next Steps

Phasing and Environmental

Construction Phasing

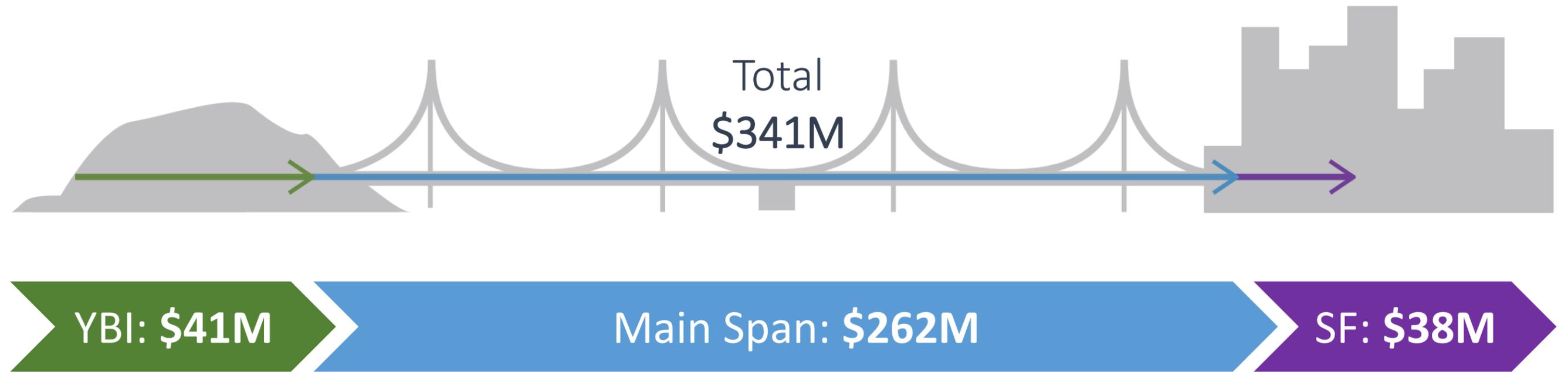


Project Phasing

	Current BPM Project		Future Phases	
	2015	2016 - 2018	TBD Pending Funding Plan	
Public Workshops				
Alternatives Screening	Light blue bar			
Conceptual Design		Orange bar with person icon		
Preliminary Engineering		Yellow bar with person icon		
Environmental Studies		Yellow bar	Yellow bar	
Final Design			Light blue bar	
Funding/Procurement			Dark blue bar	Light blue bar
Construction				Green arrow '1', Purple arrow '2', Blue arrow '3'

Cost and Possible Funding Sources

2018 Costs (USD)



TBD Funding Sources

RM3	San Francisco Bike Trail / Safe Routes to Transit
SB1	Active Transportation Program (ATP) Solutions for Congested Corridors Program (SCCP)
Agencies	Stakeholder and Partner Agencies (MTC/BATA, Caltrans, SFCTA, ACTC, TIDA, etc.)
Other	Private/Corporate Sponsorship, Crowdsourcing, etc.



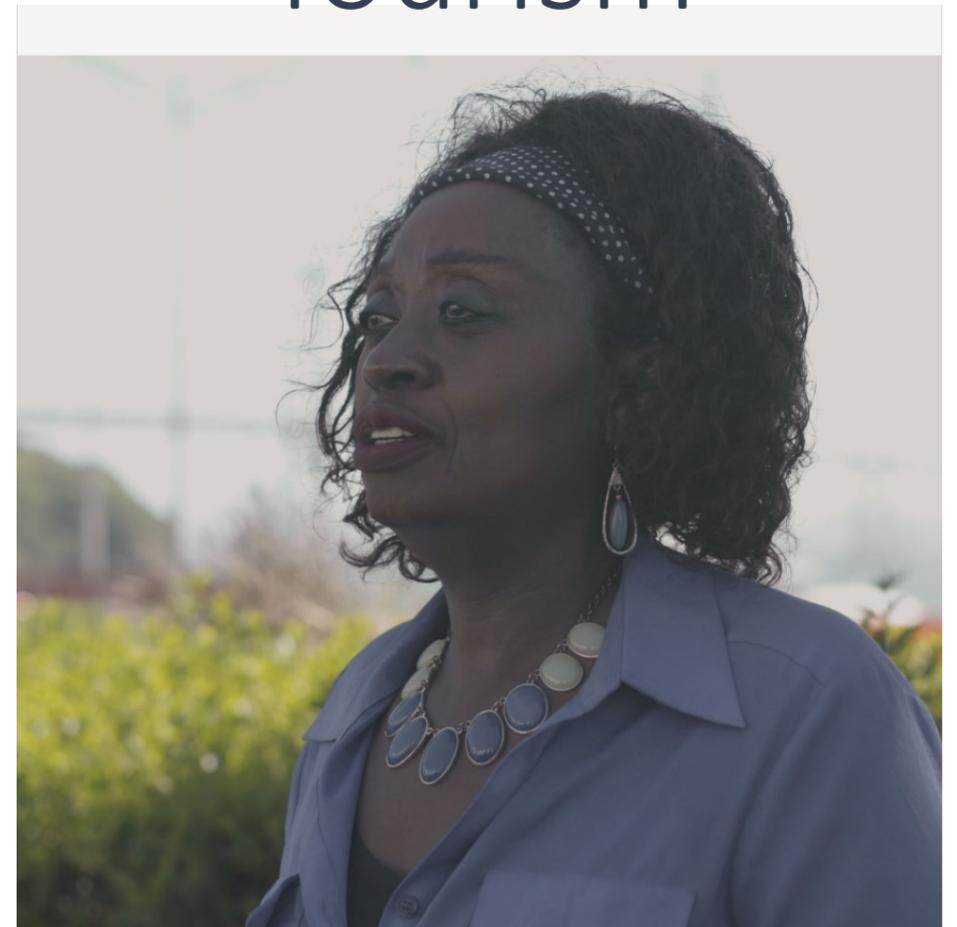
Recreation



Commuting



Tourism



Meeting Agenda



6:00pm Arrivals and light refreshments

6:30pm Welcome, introductions, backgrounds presentation

6:55pm Q+A

7:05pm Interactive workstations

- SF touchdown
- YBI pathway
- Main span structural solution
- Bike ridership forecasts
- Cost, phasing, environmental
- Virtual reality (VR)

7:50pm Wrap-up and next steps

8:00pm Adjourn

Q + A



Interactive Stations

- SF touchdown
- YBI pathway
- Main span structural solution
- Bike ridership forecasts
- Cost, phasing, environmental
- Virtual reality (VR)



Acknowledgements

Presenters

Richard Coffin richard.coffin@arup.com
Rafael Manzanarez rafael.manzanarez@arup.com

Facilitator

Dave Javid dave@plantoplace.com

Presentation + Visualization

Julieta Moradei julieta.moradei@arup.com

Video director + producer

Andrew Petrilla andrewpetrilla@bclip.com

Renderings + VR

Anthony Cortez anthony.cortez@arup.com

Photographer

David Knight david.knight@arup.com

BATA Project Manager

Peter Lee plee@bayareametro.gov

The ARUP logo is displayed in a large, white, serif font against the background of the bridge and city skyline.

Wrap-Up and Next Steps

- Feedback from Stations
 - SF touchdown
 - YBI pathway
 - Main span structural solution
 - Bike ridership forecasts
 - Cost, phasing, environmental
- Winterfest – December 2nd 2019

ARUP



Thank You

