

RAIL ALIGNMENT AND BENEFITS (RAB) STUDY

PREVIOUSLY KNOWN AS RAILYARD
ALTERNATIVES & I-280 BOULEVARD STUDY



San Francisco
Planning

May 22, 2018

CONNECTING CALIFORNIA

4,300 LANE MILES + 115 AIRPORT GATES WOULD BE NEEDED
to create equivalent capacity of high speed rail

545 MILLION TRIPS BETWEEN REGIONS
In 2040. That is 50% more than 2010

California will grow
260,000 NEW RESIDENTS EVERY YEAR

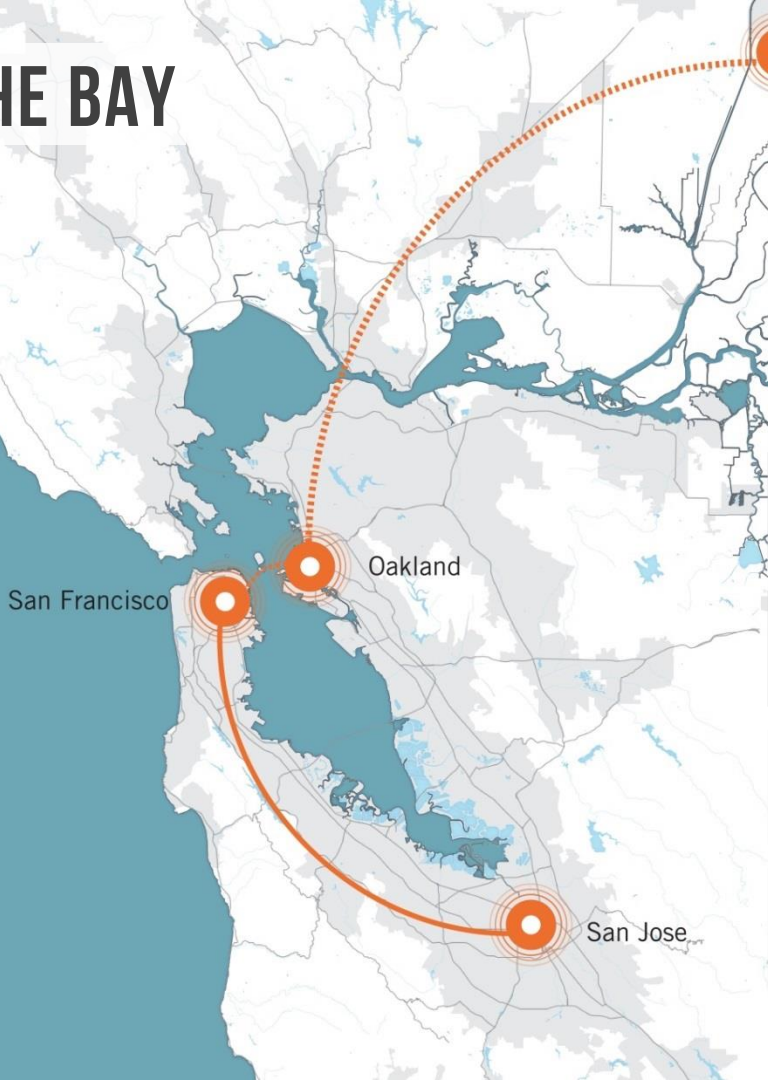


CALIFORNIA	2015	2065	GROWTH
Population	39 M	52 M	+ 33%
Employees	16 m	28 m	+ 77%

Option:
MAXIMIZE RAIL
OR
EXPAND AIRPORTS/HWYS

CONNECTING THE BAY

Option:
MAXIMIZE RAIL
OR
EXPAND
I-80
I-280
US-101



BAY AREA	2015	2065	GROWTH
Population	7.6 M	10.7 M	+ 41%
Employees	4 M	5.8 M	+ 44%

250 MILLION HOURS OF TRAFFIC DELAY
Every year in the Bay Area

The Bay Area is expected to grow by
57,000 NEW RESIDENTS EVERY YEAR

SAN JOSE TO SAN FRANCISCO WOULD TAKE 30 MINUTES
By High Speed Rail in 2027

RAIL RIDERSHIP WOULD INCREASE BY 1200 %
with High Speed Rail by 2040

CONNECTING SAN FRANCISCO

San Francisco	2015	2065	GROWTH
Population	860,000	1,430,000	+ 66%
Employees	700,000	995,000	+ 44%



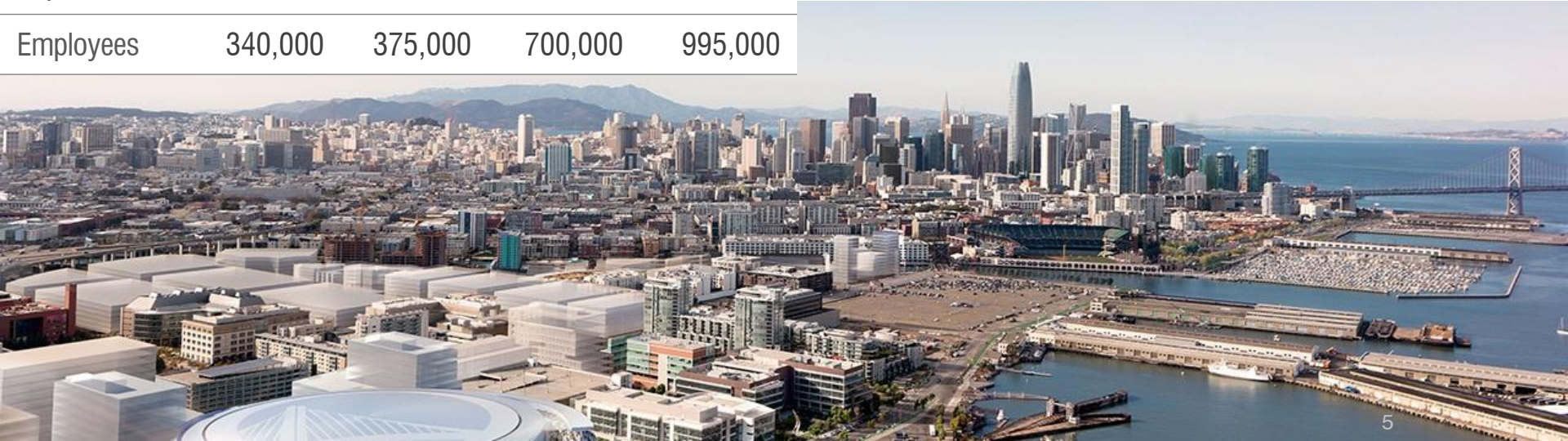
MUNI METRO DEMAND IS 124% CAPACITY
during morning commute (2015)

San Francisco is expected to grow by
12,000 NEW RESIDENTS EVERY YEAR

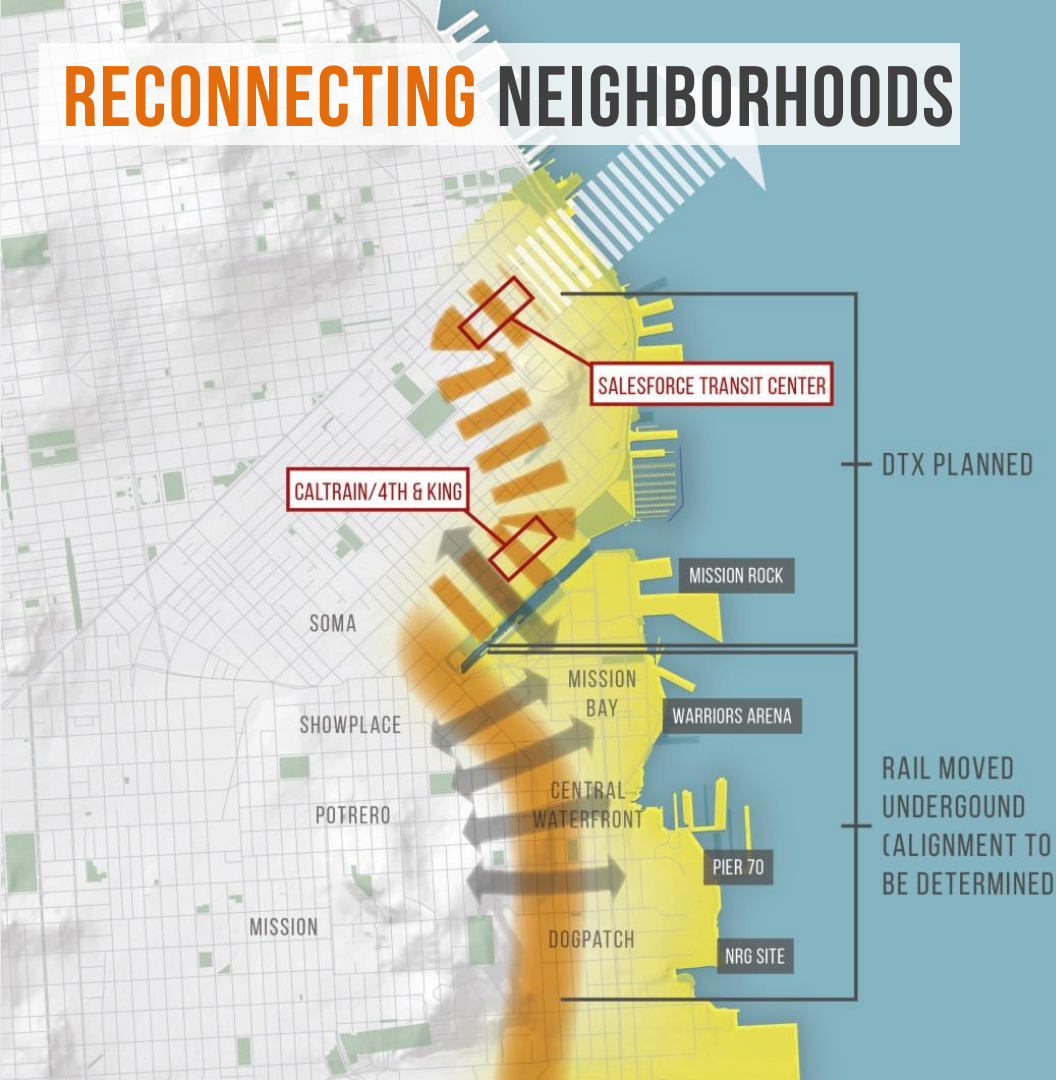
Option:
**MAXIMIZE RAIL
OR
INCREASE
DEMAND ON
SF STREETS**



SAN FRANCISCO	1950	1970	2015	2065
Population	700,000	715,000	860,000	1,470,000
Employees	340,000	375,000	700,000	995,000



RECONNECTING NEIGHBORHOODS



FIDI, Mission Bay, SOMA, So. Bayfront	2015	2065	GROWTH
Population	87,000	257,000	194%
Employees	304,000	554,000	82%

20,000 NEW HOUSEHOLDS IN SOUTHERN BAYFRONT
are planned, from Mission Creek to Executive Park

35,000 NEW JOBS + 520 ACRES OF OPEN SPACE
are also planned in the Southern Bayfront

6 EAST-WEST ROADS COULD BE RECONNECTED
across Caltrain tracks

Option:
UNDERGROUND RAIL
OR
NEIGHBORHOOD ISOLATION

RECONNECTING NEIGHBORHOODS



Three rail alignments under consideration:

FUTURE WITH SURFACE RAIL: DTX + TRENCHED STREETS

PENNSYLVANIA AVENUE: DTX + EXTENDED TUNNEL

MISSION BAY: MODIFIED DTX + 3RD STREET TUNNEL

Further engineering work required

UP TO 10 TRAINS PER HOUR PER DIRECTION

110,000 + CALTRAIN RIDERS PER DAY

2040 ridership projection

WHY DO WE NEED THIS STUDY?



- To coordinate state, regional and local infrastructure for generations of growth
- To connect neighborhoods while supporting Caltrain and High-Speed Rail operations
- Current plans require 16th St to be closed 20+ minutes every hour (during peak)



WHY NOW? MAJOR PLANNED NEW INFRASTRUCTURE

CALTRAIN ELECTRIFICATION



HIGH SPEED RAIL (HSR)



SALESFORCE TRANSIT CENTER



TRADE-OFFS TO CONSIDER

EQUITY



OPERATIONS, CAPACITY,
AND SAFETY OF ALL MODES



ADHERENCE TO EXISTING
PLANS/POLICIES



CONSTRUCTION SCHEDULES



POTENTIAL DEVELOPMENT
OPPORTUNITIES



COSTS



RAB STUDY COMPONENTS

An aerial photograph of San Francisco, California, showing the city skyline, the Golden Gate Bridge, and the bay. The image is used as a background for the slide.

Each component:

- Is independent of others
- Will affect San Francisco for 100+ years

1 Rail Alignment to
Salesforce
Transit Center

2 Railyard
Reconfiguration/
Relocation

3 Urban Form and
Land Use
Considerations

4 Transit Center
(SFTC)
Extension/Loop

5 Boulevard I-280

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RAIL ALIGNMENTS TO SALESFORCE TRANSIT CENTER



0 0.25 0.5 Miles



OPTION 1:
FUTURE WITH SURFACE RAIL
DTX + TRENCHED STREETS

OPTION 2:
PENNSYLVANIA AVE ALIGNMENT
DTX + EXTENDED TUNNEL

OPTION 3:
MISSION BAY ALIGNMENT
MODIFIED DTX + 3RD ST. TUNNEL

2

RAILYARD RECONFIGURATIONS / RELOCATION

What if Caltrain SEPARATED operations from staging and storage/maintenance?



3 URBAN FORM AND LAND USE CONSIDERATIONS



Restoration of street grid

Improved bike/ped connections

Eliminate rail hazards & noise

Housing

Open Space

Office/Retail

4th St

5th St

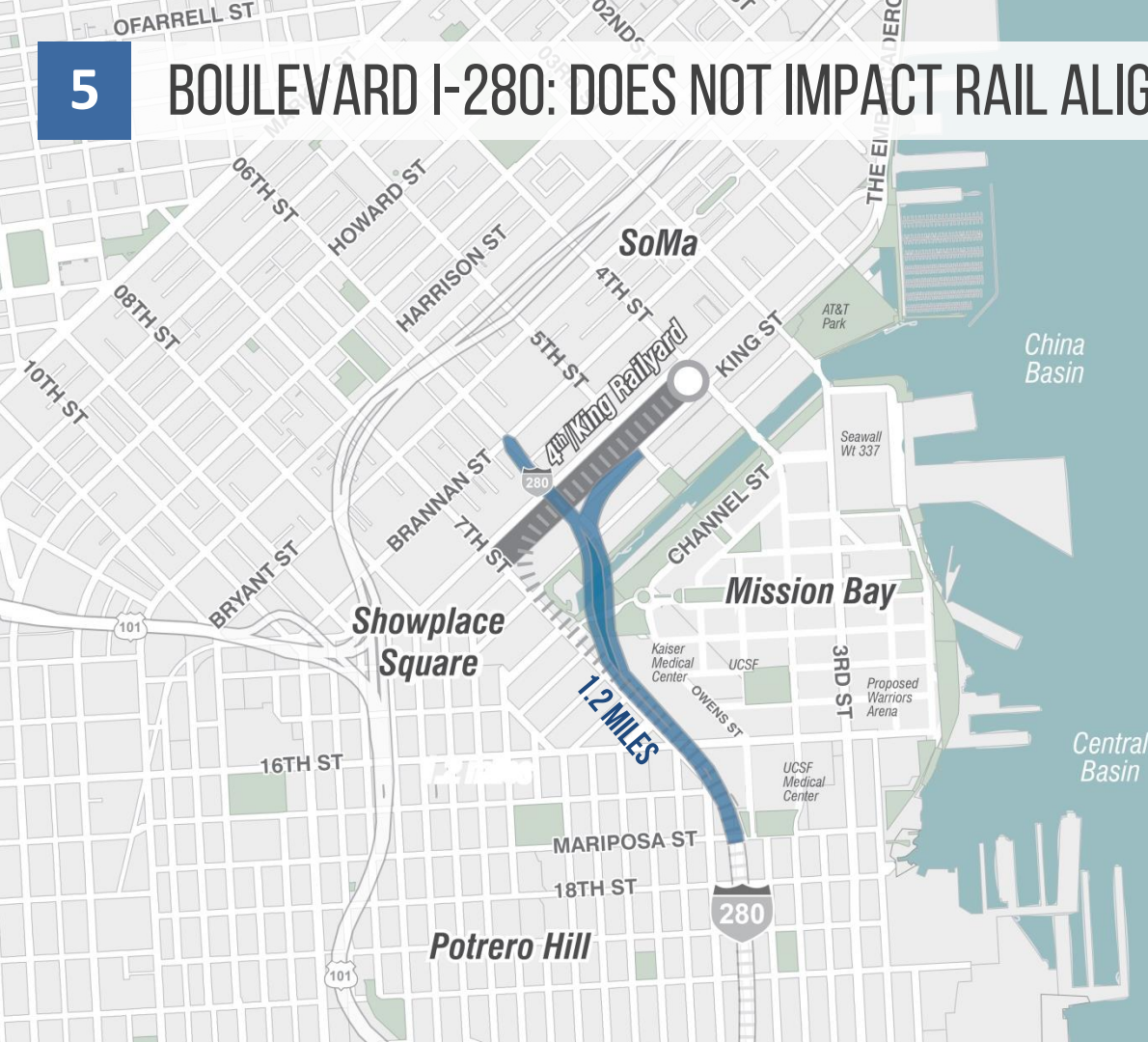
6th St

King St

Townsend St

5

BOULEVARD I-280: DOES NOT IMPACT RAIL ALIGNMENTS



- Removing I-280 does not create new opportunities for rail
- No physical relationship to other components
- Removing I-280 requires much longer conversation with Caltrans

An aerial, grayscale photograph of a dense urban area. A multi-lane highway runs diagonally from the top left towards the center. A river or canal flows through the lower right portion of the image. A large stadium is visible on the right side. A white rectangular box is centered in the image, containing the word "COSTS" in orange, bold, sans-serif capital letters.

COSTS

PRELIMINARY ESTIMATE OF PROBABLE COSTS AND SCHEDULE COMPARISONS/CONSIDERATIONS

ALIGNMENT	COST ¹	EXPECTED COMPLETION DATE ²
FUTURE WITH SURFACE RAIL: DTX + TRENCHED STREETS	\$5.1 Billion	2026
PENNSYLVANIA AVENUE: DTX + EXTENDED TUNNEL	\$6.0 Billion	2027
MISSION BAY: MODIFIED DTX + 3 RD STREET TUNNEL	\$9.3 Billion	2031

1. Includes construction costs, value capture, and impact costs
2. Completion date estimate if all money were available on January 1, 2017

**Conceptual
Level
Comparative
Cost
Estimates**

OPTION 2 PENNSYLVANIA AVENUE: DTX + EXTENDED TUNNEL

OVERVIEW

- Eliminates 20+ minutes of street closure during each peak hour
- Avoids a long, deep trenching of 16th Street and 7th/Mission Bay Drive
- Removes conflict point at two at-grade intersections – improves safety
- Does not slow down DTX design and construction
- Allows all trains to utilize SFTC

LAND USE BENEFITS

- Reconnects over 1-mile of the city
- Creates land use opportunities at 4th/King Railyard
- Creates opportunities to improve 22nd Street Caltrain Station

OPERATIONS BENEFITS

- Allows for more direct train movement from storage into operations
- Allows possibility of additional storage underground at 4th/Townsend
- Provides for nominally faster rail travel times

CONS

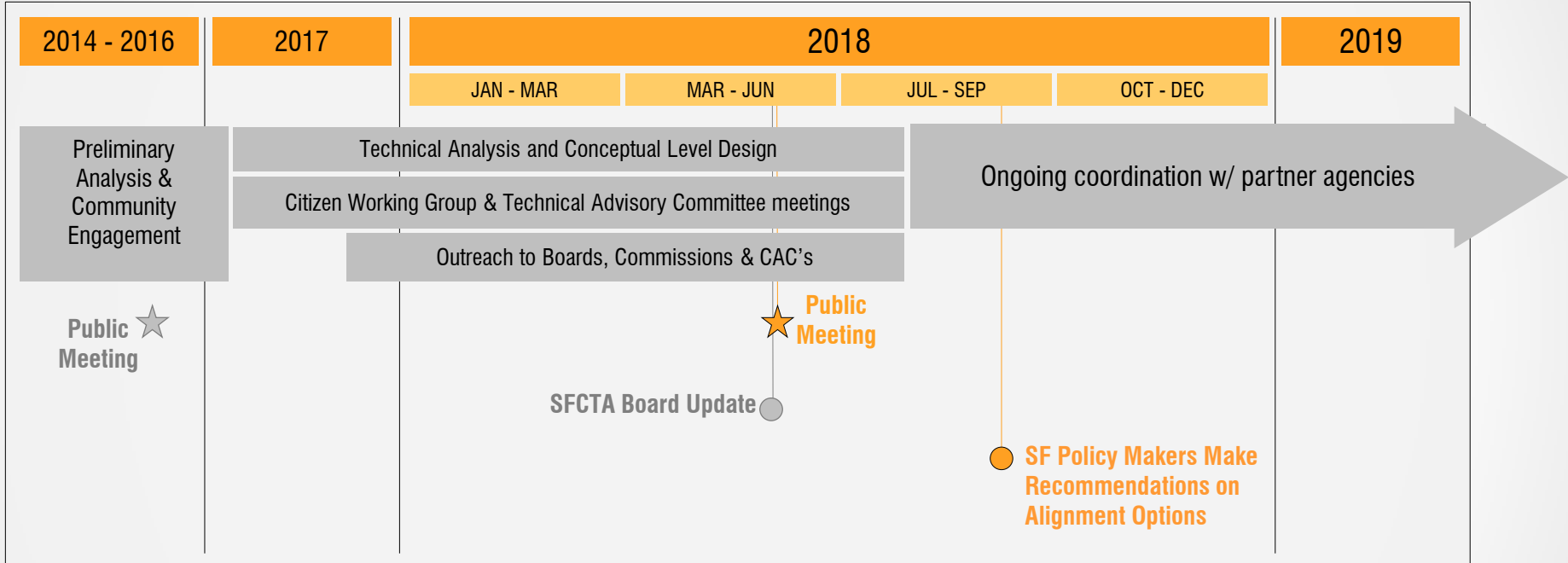
- Increases project costs
- Requires additional environmental review south of 7th/Townsend
- Requires relocation of storage & maintenance to a southern location
- Likely requires the relocation of underground utilities



NEXT STEPS



RAB TIMELINE



Dates subject to change

THANK YOU

sf-planning.org/rab

Study Manager

Susan Gygi, PE



San Francisco
Planning