

TIMELINE OF RELATED PROJECTS

LEGEND

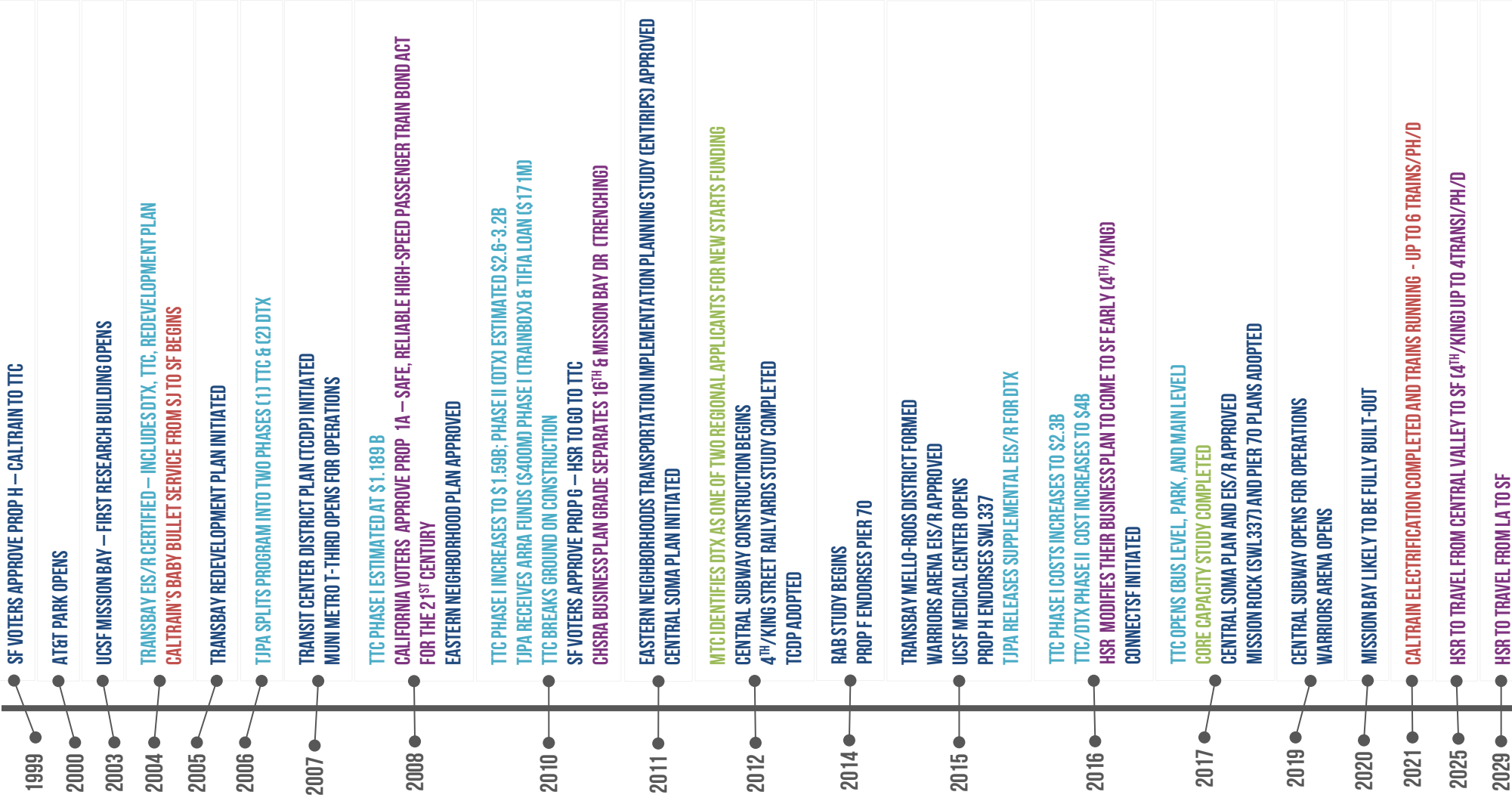
CITY AND COUNTY OF SAN FRANCISCO

TRANSBAY TRANSIT CENTER + DTN EXTENSION

CALTRAIN

CALIFORNIA HIGH SPEED RAIL

METROPOLITAN TRANSPORTATION AUTHORITY



FIRST DATE NEW STARTS FUNDS
WILL BE AVAILABLE FOR DTX AS
CENTRAL SUBWAY WILL BE
COMPLETED

EARLIEST DTX START ON
CONSTRUCTION (7 YEARS)

GLOSSARY

TRANSBAY TRANSIT CENTER (TTC): THE REPLACEMENT FOR THE TRANSBAY TERMINAL AND THE FUTURE END OF THE HIGH-SPEED RAIL (HSR) AND CALTRAIN RAIL LINES

4TH/KING RAILYARD (OR RAILYARD): CALTRAIN'S OPERATION, STORAGE, AND MAINTENANCE FACILITY LOCATED ALONG KING STREET FROM 4TH -7TH STREETS

ALIGNMENT: THE PATH RAIL WOULD TAKE BETWEEN EXISTING RAIL TRACKS AND THE TRANSBAY TRANSIT CENTER

DTX: ABBREVIATION FOR THE "DOWNTOWN RAIL EXTENSION," THE ENVIRONMENTALLY-CLEARED ALIGNMENT FOR HIGH-SPEED RAIL AND CALTRAIN TO REACH THE TRANSBAY TRANSIT CENTER

COMPONENT: FOR THE RAB STUDY, THERE ARE 5 COMPONENTS. OR TOPIC AREAS, UNDER STUDY: RAIL ALIGNMENT INTO TTC, TRANSBAY TRANSIT CENTER LOOP, RECONFIGURATION/RELOCATION OF 4TH/KING RAILYARD, BOULEVARDING I-280, AND OPPORTUNITIES FOR PUBLIC BENEFIT

OPTION: A CHOICE FOR SOLVING A PARTICULAR COMPONENT IN THE STUDY. EACH COMPONENT ATTEMPTS TO SOLVE AT LEAST ONE CHALLENGE IN THE AREA. THERE MAY BE MULTIPLE OPTIONS FOR EACH COMPONENT

ALTERNATIVE: A COMBINATION OF A GROUP OF OPTIONS THAT MAY BE STUDIED UNDER ENVIRONMENTAL REVIEW

CUT AND COVER: A CONSTRUCTION METHOD IN WHICH YOU DIG UP THE STREET, CONSTRUCT THE TUNNEL AND THEN REPLACE THE STREET OVER THE CONSTRUCTION. E.G., MARKET STREET BART/MUNI TUNNEL; DTX ALONG TOWNSEND AS PROPOSED



SEM: A MINED TUNNELING METHOD WHEREBY THE TUNNEL IS EXCAVATED SEQUENTIALLY AND SUPPORTED THROUGHOUT CONSTRUCTION. SUPPORT METHODS CAN BE VARIED IN THE FIELD TO ADDRESS THE SPECIFIC GROUND CONDITIONS BEING ENCOUNTERED. E.G., DTX ALONG 2ND STREET AS PROPOSED

TUNNEL BORING: USES A MACHINE TO EXCAVATE TUNNELS THROUGH SOIL/ROCK UNDERGROUND WITH MINIMAL IMPACT TO THE STREET SURFACE. E.G., CENTRAL SUBWAY



CHRSA: CALIFORNIA HIGH SPEED RAIL AUTHORITY, THE STATE AGENCY ESTABLISHED TO DEVELOP AND IMPLEMENT HIGH-SPEED INTERCITY RAIL SERVICE

DTX ELEMENTS

CHANGES TO ORIGINAL DTX DESIGN (SEIS/R — DEC 2015)

1. **EXTENDED TRAIN BOX**
2. **ADDED VENTILATION STRUCTURES & PROPOSED LOCATIONS**
3. **ADDED INTERCITY BUS FACILITY**
4. **DEFINED ALIGNMENT FOR BART/MUNI PEDESTRIAN CONNECTOR**
5. **WIDENED THROAT STRUCTURE**
6. **MODIFIED FOURTH/TOWNSEND UNDERGROUND STATION**
7. **ADDED TUNNEL STUB FOR FUTURE GRADE SEPARATION**
8. **ADDED TURN-BACK AND MAINTENANCE-OF-WAY (MOW) TRACKS**

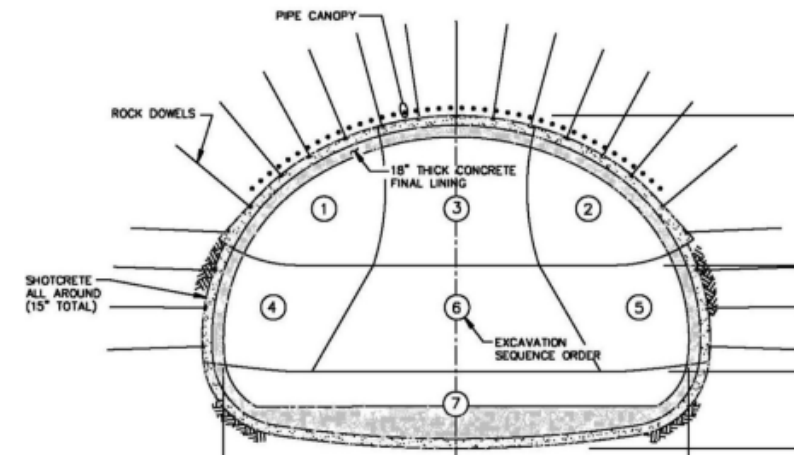
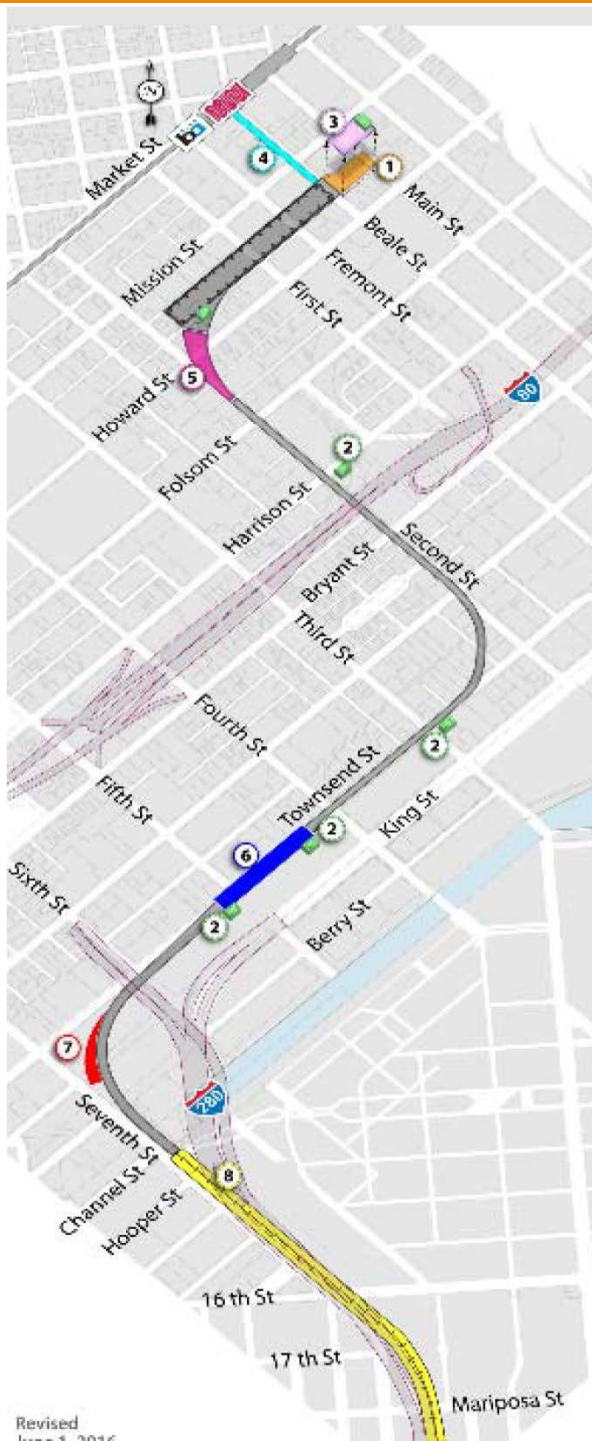


Figure 2, SEM Cross Section

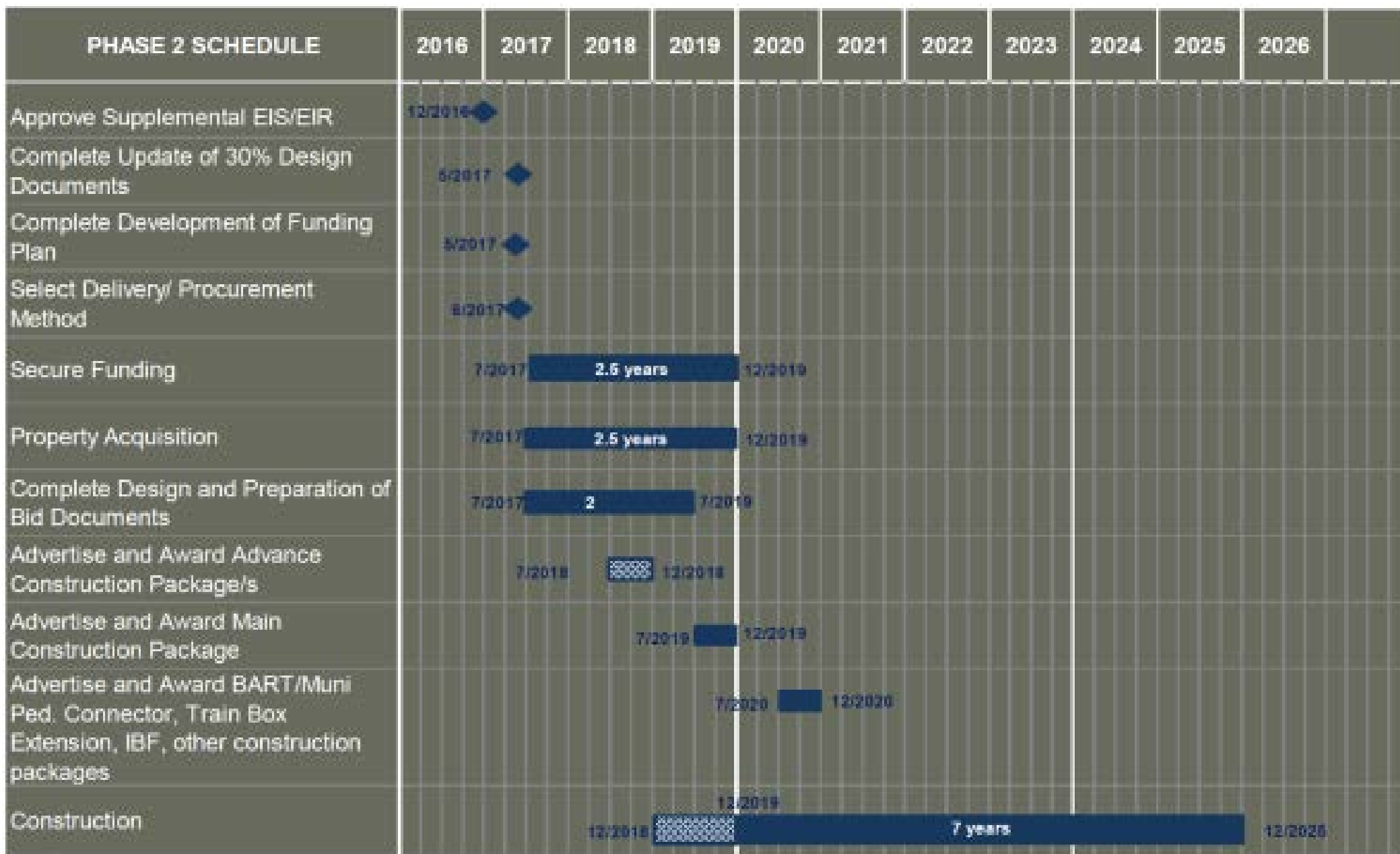
DTX PROPOSED FUNDING PLAN

Potential Funding Sources Identified for Phase 2 (\$ millions)

Source	Amount (Range)	Assumed Term	Status
San Francisco County Sales Tax	\$83	2016-2019	Committed
San Mateo County Sales Tax	\$19	N/A	Committed and spent
Committed MTC/BATA Bridge Tolls	\$7	N/A	Committed and spent
Tax Increment (after repayment of existing TIFIA loan)	\$200–\$340	2019-2050	Committed
Mello-Roos Special Tax	\$275–\$375	2020-2025	Committed
Regional Transportation Improvement Program	\$18	N/A	Committed
Future San Francisco County Sales Tax	\$350	2019-2026	Subject to SFCTA or voter approval
FTA New Starts	\$650	2019-2026	Subject to federal approval
New MTC/BATA Bridge Tolls	\$300	2019-2026	Subject to MTC/BATA and voter approval
Future California High Speed Rail Funds	\$557	2019-2026	Subject to federal/state approval
Land Sales	\$45	2018	Contingent upon sale
Potential Passenger Facility Charges or Maintenance Contribution	\$865–\$1,920	2026-2060	Subject to CHSRA and/or Caltrain approval
Total	\$3,369–\$4,664		

Source: TJPA, 2016

DTX PROPOSED SCHEDULE



NOTE: EARLIEST CONSTRUCTION — 2019; EARLIEST OPENING 2026

SOURCE: TJPA, 2016

EXAMPLES OF GRADE-SEPARATED ROADS

Potential Grade-Separation of 16th Street



Source: CHSRA (2010), developed when HSR was to have it's own tracks. That has changed and HSR will share the tracks with Caltrain.

Potential Grade-Separation of Mission Bay Drive



Source: CHSRA (2010), developed when HSR was to have it's own tracks. That has changed and HSR will share the tracks with Caltrain.

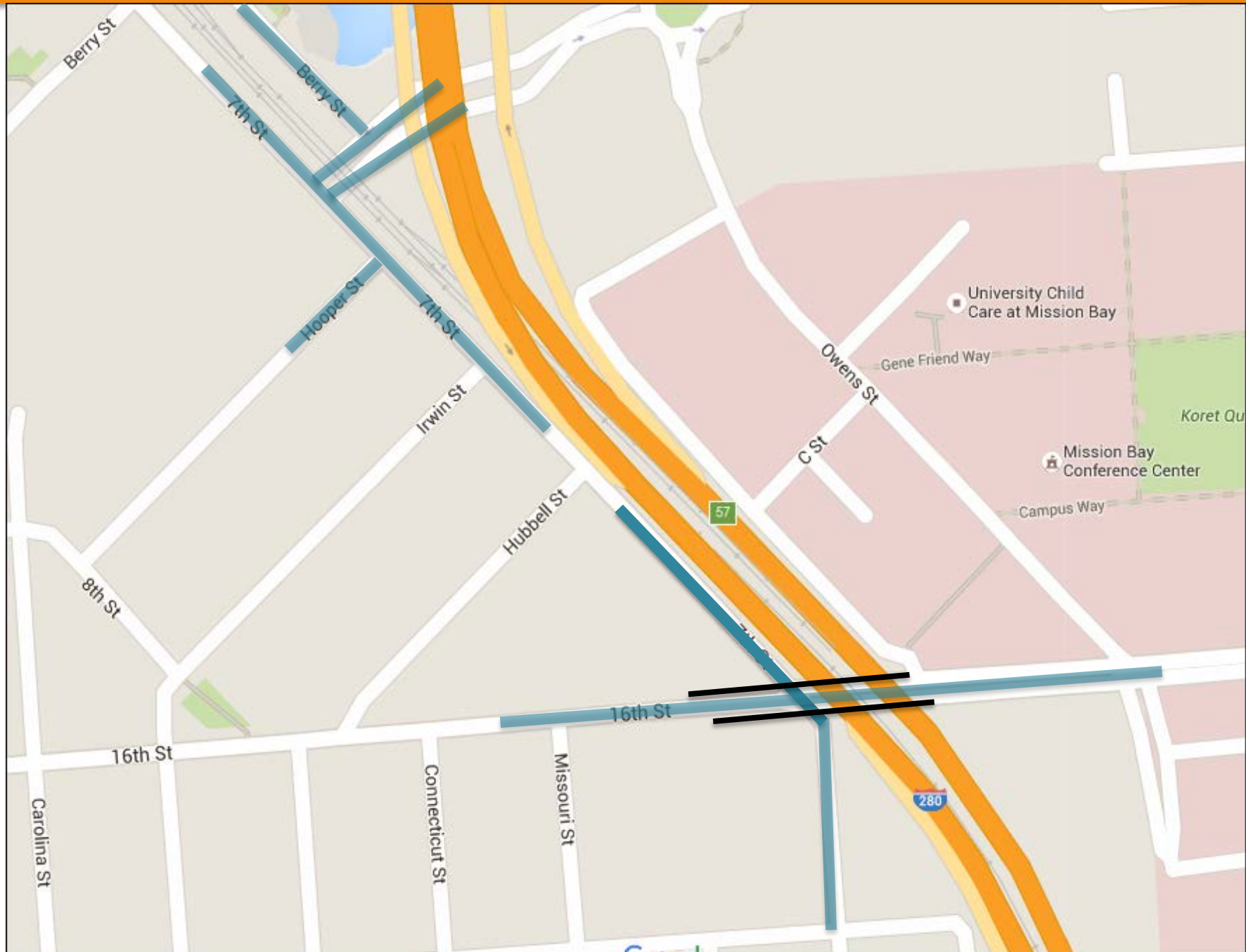
Existing Grade-Separation Near West Oakland Bart Station at 7th Street



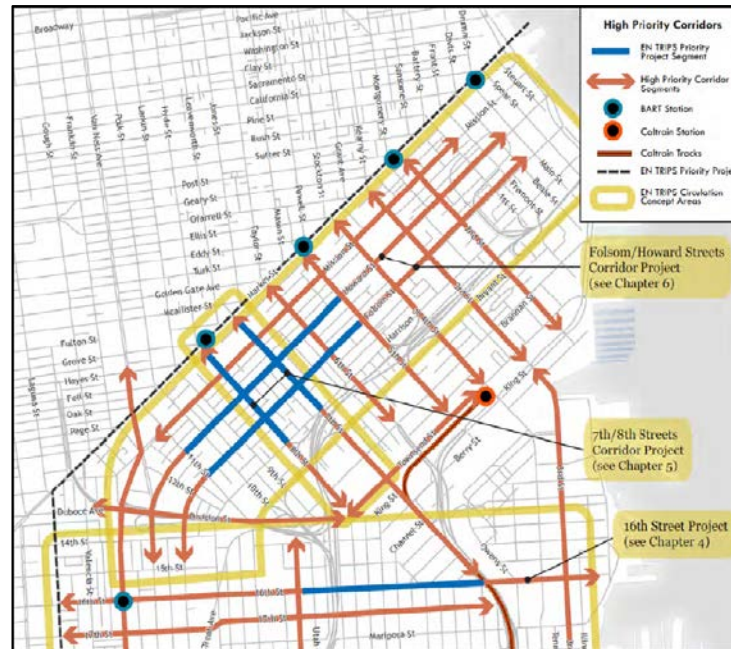
Existing Grade-Separation at Cesar Chavez



APPROX. LENGTH OF POTENTIAL TRENCHING



TRANSPORTATION PLANNING IN THE AREA - CITY OF SAN FRANCISCO PLANNED 16TH STREET



The Eastern Neighborhoods Transportation Implementation Planning Study (EN TRIPS) classifies 16th Street as a High Priority Corridor

Here's a look at EN TRIPS with 22 Fillmore BRT lanes (proposed)

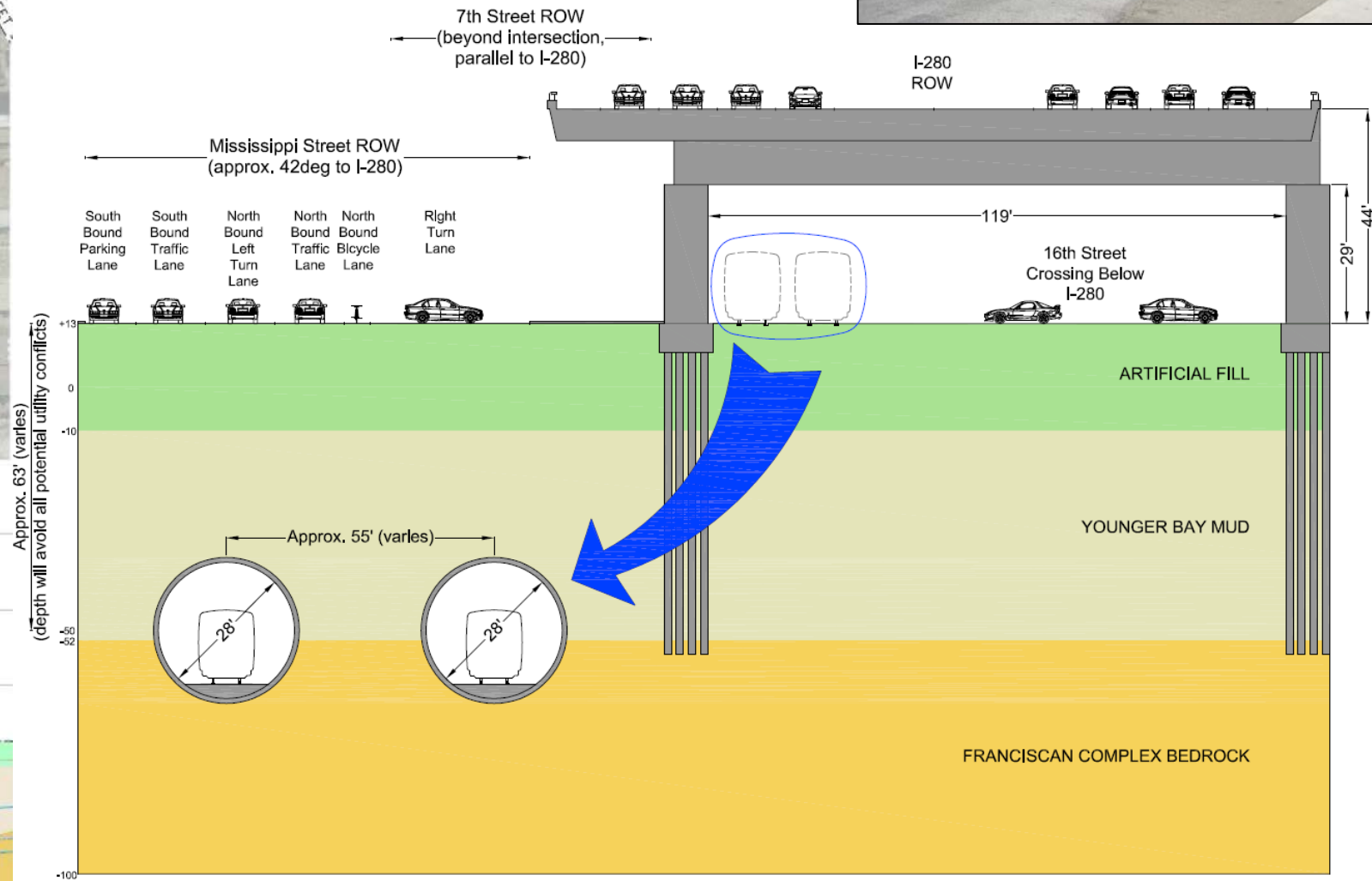
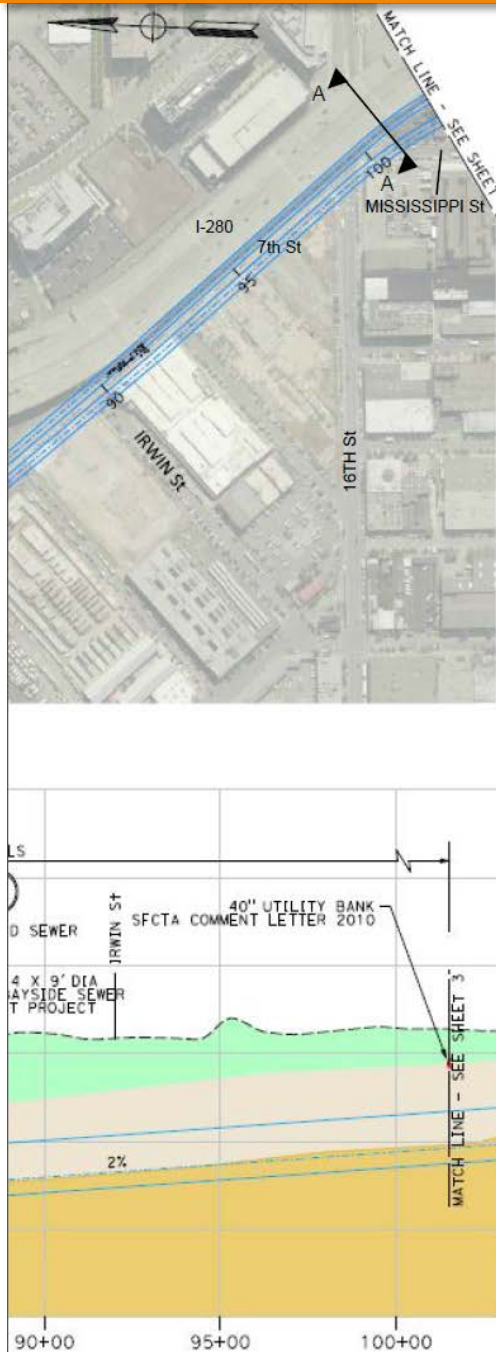


CHSRA SCHEMATIC OF 4TH/KING (INTERIM STATION)



- PLATFORMS 1 & 2 MUST BE LENGTHENED AND WIDENED FOR CHSRA USE (PURPLE)
- CURRENTLY THERE ARE 6 PLATFORMS (ALL USED BY CALTRAIN) EACH SERVING 2 TRACKS – TOTAL 12 TRACKS; WIDENED PLATFORMS RESULT IN LOSS OF ONE AND A HALF PLATFORMS FOR CALTRAIN USE (NUMBER OF TRACKS GO FROM 12 TO 11 BUT ONLY 5 WILL BE USED BY CALTRAIN).
- LIKELY RE-TRACK MOST OF YARD

SCHEMATIC VIEW OF STREET CROSS SECTION



Section A-A

(not to scale, example of a typical cross section, actual cross section and freeway supports vary along the alignment)

STUDY QUESTIONS

- HOW DO WE GET HIGH SPEED RAIL AND CALTRAIN TO TRANSBAY TRANSIT CENTER?
- HOW DO WE PROVIDE RELIABLE TRAVEL TIMES FOR ALL MODES?
- HOW DO WE PROVIDE BETTER ACCESS TO PUBLIC AMENITIES (E.G., UCSF, MEDICAL CENTER, PARKS, ETC.)?
- ARE WE OK WITH TRENCHING STREETS (16TH AND MISSION BAY DRIVE)?
- IS THERE AN OPPORTUNITY TO IMPROVE ADDITIONAL INFRASTRUCTURE (E.G., 22ND STREET STATION, RE-CONNECTING THE STREET GRID, ETC.)?
- SHOULD WE CONTINUE TO HAVE A RAIL STORAGE YARD WITHIN THE DOWNTOWN CORE?
- WHAT OPPORTUNITIES ARE THERE FOR HOUSING, OPEN SPACE, AND EMPLOYMENT IN FREED AREAS?
- COULD A BOULEVARDED 280 FROM MARIPOSA NORTH BENEFIT THE NEIGHBORHOODS?
- HOW IS TRAFFIC TO/FROM I-280 BEST MANAGED?
- WHAT ARE THE TRADEOFFS?