



SFMTA

Train Control Upgrade Project

SFMTA Community Advisory Committee
August 1, 2024



What we will ask the SFMTA Board to approve in August:

As-needed consultant services contract:

- Five-year term
- Five options to extend term an additional year, for a total of ten years
- Not to exceed \$36,000,000 *2024 dollars

Consultant has modern train control expertise that SFMTA does not; has worked with all potential suppliers.

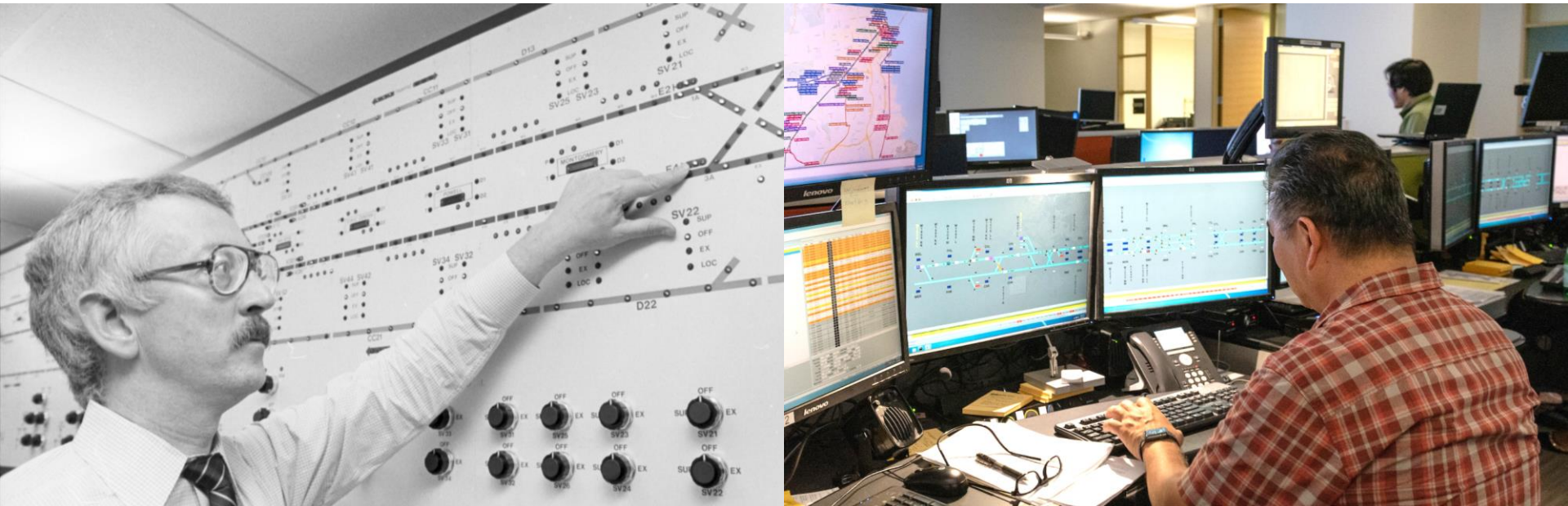
We need the consultant's knowledge to avoid preventable risks.



Why upgrade Muni Metro's train control?

Critical need: Replace the outdated Automatic Train Control System to prevent critical failure and keep Muni Metro running.

Unique opportunity: Modernize the technology that make Muni Metro work, improve service and enable future Metro growth. Centerpiece of subway renewal plan.





TCUP Benefits to Muni Metro Riders

Fewer delays

Customers no longer “stuck” due to subway congestion or slow-moving trains

Faster trips and less time waiting

Better traffic signal management for less waiting at red lights

More reliable service

More consistent frequencies and travel times making trip-planning more reliable

More efficient connections

More reliable Metro will improve connections to crosstown routes and between neighborhoods

Better service management

More flexibility for train controllers to manage bunching and gaps



Consultant Contract

Consultants support our key project delivery strategies

We need the consultant's knowledge to avoid preventable risks.



Help identify and reduce project risks



Support and transfer knowledge to SFMTA staff



Help hold supplier & installers accountable



Current system limitations

The Automatic Train Control System (ATCS) is almost 30 years old with 1980s technology and 1990s components.

2019 Muni Reliability Working Group recommended **replacing the ATCS as the top priority.**

Aging train control infrastructure

+

Outdated train control technology

Computer failures

Communication failures

Lack of parts and expertise

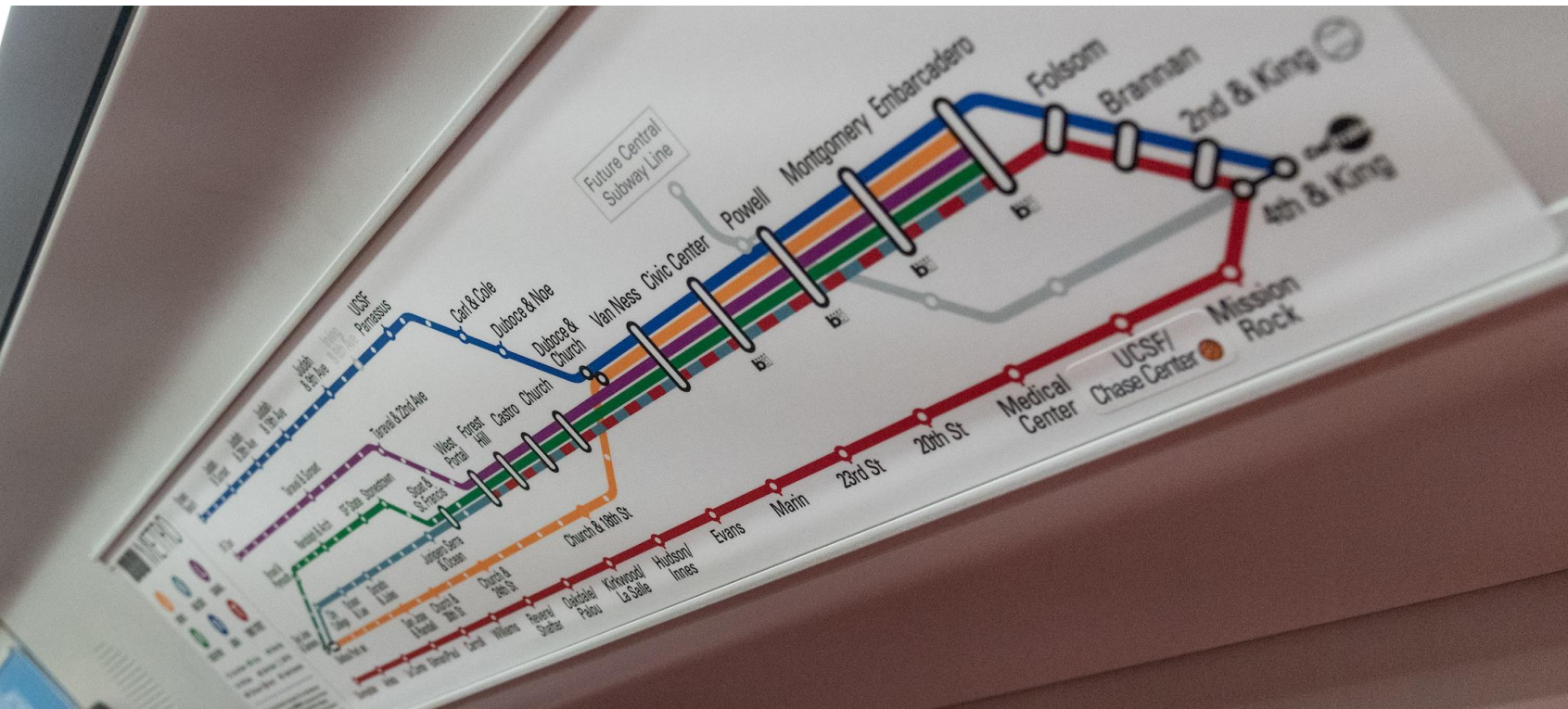
No on-street train control



Muni Metro structural design

5 lines operate mostly in 1 tunnel. A high-performing system is required.

Muni Metro is the 3rd busiest light rail in the U.S. and the last to use only 1 main tunnel for majority of service.





Characteristics of a modern CBTC system



Tracks the locations of all trains at all times



Prevents collisions and enforces safe spacing between trains



Maintains consistent spacing between trains



Controls the trains' braking and acceleration



Sets the train's routing



Prevents delays due to train congestion, traffic signals, or junction delays



Ensures reliable train frequency and service



Allows greater flexibility of service plans and service during disruptions



Alignment with City Priorities

- **Economic recovery**



TCUP will make Muni Metro faster and more efficient for thousands of workers and shoppers along transit citywide.

Fast, frequent, efficient transit attracts investment and economic opportunities.

- **Advancing equity**



TCUP will improve service and mobility between outer neighborhoods, education centers, citywide jobs and downtown.

Better, faster transit service benefits students, workers and low-income households.

- **Increasing job access**



TCUP will **lower travel time**, providing more access to jobs especially for people who live farther away.

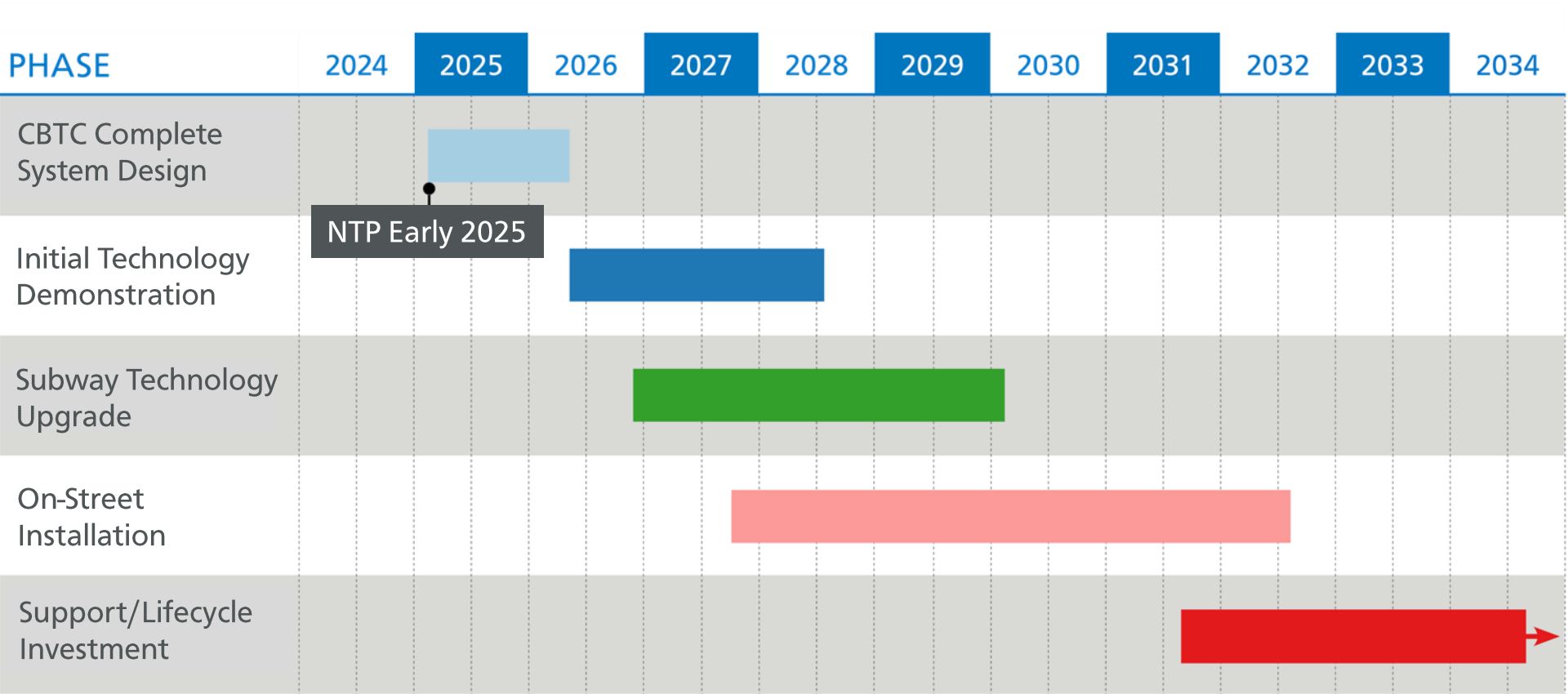
- **Climate goals**



TCUP will move more people reliably and sustainably, **reducing the need for greenhouse gas vehicles** as the population grows.



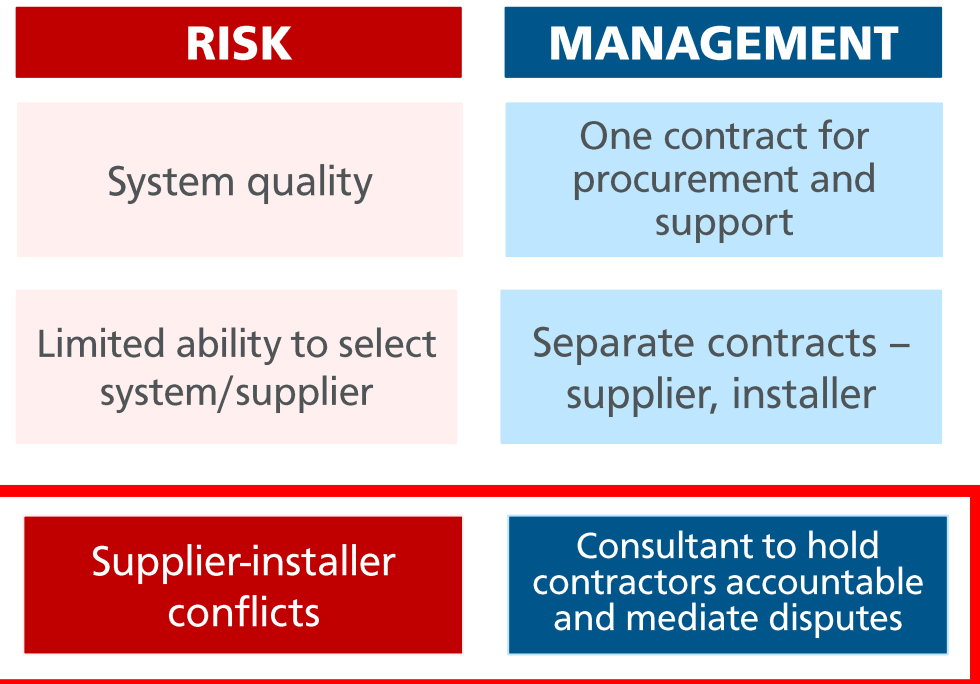
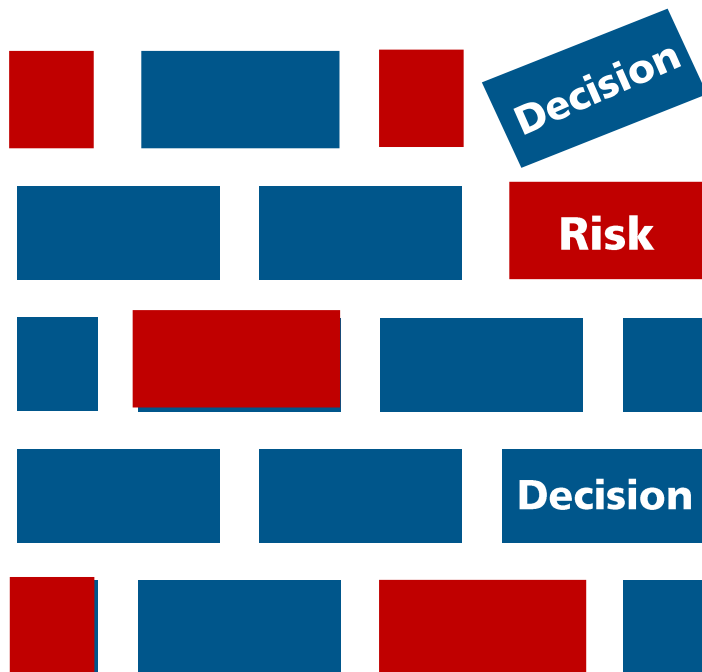
Train Control Upgrade Project Schedule



Risk Management in Contract Strategy

TCUP centers proactive risk management early and often to minimize challenges. Decision → Analysis → Risk → Analysis → Decision

Partnering with knowledgeable CBTC consultants is a vital part of the TCUP risk management strategy.





Harnessing Peer Expertise

U.S.A

MBTA Green Line
BART
New York City Subway



CANADA

Vancouver SkyTrain
Edmonton
Toronto (Eglinton LRT)



EUROPE

London (LU and DLR)
Amsterdam
Frankfurt VGM





Learning from past projects and improving contracts

Separate contracts

SUPPLIER

- Provides technology
- Helps design system
- Provides long-term maintenance support

SBE/DBE goal: 5%

INSTALLERS

- Multiple installers shorten construction timeline

SBE/DBE goal: 100% (preliminary)

CONSULTANT

- Support staff with project delivery

SBE/DBE goal: 15%

Key Features

Performance goals

Long-term needs

Knowledge transfer, in-house skill-building

Project Delivery Success Strategies

Procurement

**Supplier Partnership and
Performance Incentives**

**Quality, Timely, Flexible,
Construction Delivery**

Using Lessons Learned

Managing Risk

**Consultant
support helps tie
all the pieces
together**



Services in Consultant RFP

Consultant will support staff to deliver the project



Project Management & Administrative Support



Construction Management Support



Design and Engineering Support



System Integration Support



Quality Assurance Support



Testing and Commissioning



Safety and Security Evaluation



Post-Delivery, Operations and Maintenance Consulting

WSP/PGH Wong Joint Venture

- Local ties and international experience
- Know the Bay Area contracting environment
- Experience with SFMTA peer agencies
- Strong relationships with all likely suppliers, installers and other vendors
- Small businesses and minority-owned businesses are key part of the team



Global CBTC Experience • 8 SBE/DBE Firms • Local and National Talent

Trusted to Deliver CBTC Projects Worldwide

Experience with all 9 SFMTA-Identified Peer Transit Agencies

U.S. Peers



Canadian Peers



International Peers



Strong CBTC Vendor Relationships
 Extensive experience with Alstom, Hitachi Rail, Siemens and Thales. Team members include past CBTC vendor employees.



Funding Approach

Funding plan commits to project, prioritizes discretionary sources.

\$400M: Capital Improvement Plan (CIP) FY25-29 Funding Plan

\$700M: Full Funding Plan

Funding Highlights:

- TCUP has been successful in competitive grants and discretionary funding sources.
- 10-year funding plan shows commitment necessary to compete for funding.
- Strong project for competitive discretionary funding and local opportunities.

Questions?

