SFMTA

Train Control Upgrade Project

San Francisco Board of Supervisors

Budget and Finance Committee

October 19, 2022

What is a train control system?

A train control system:

- Tracks the locations of trains in the system
- Prevents collisions, and enforces safe spacing between trains
- Controls the trains' braking (and acceleration in auto mode)
- Sets the train's routing through the system

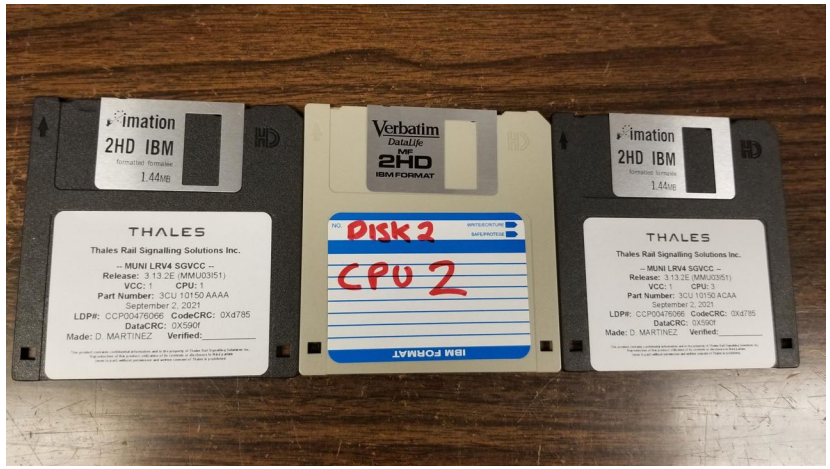
The train control system affects:

- The frequency of train service (how close together the trains can be)
- Reliability of train service
- Flexibility of service plans, and of service during disruptions
- Delays due to train congestion, traffic signals, or junction delays

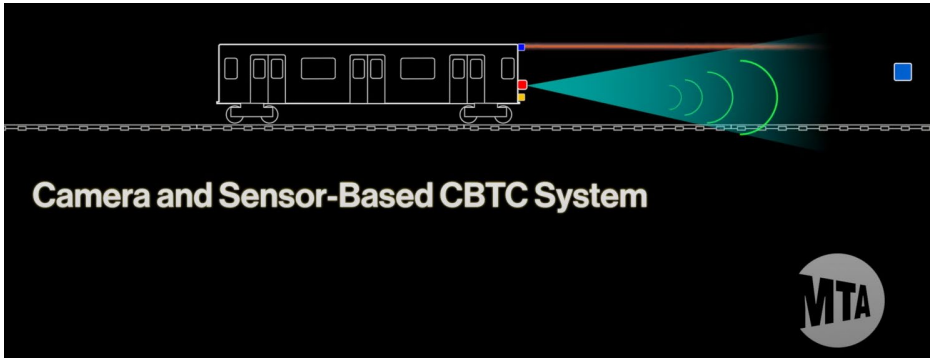
Muni has a train control system currently operating in the subway.

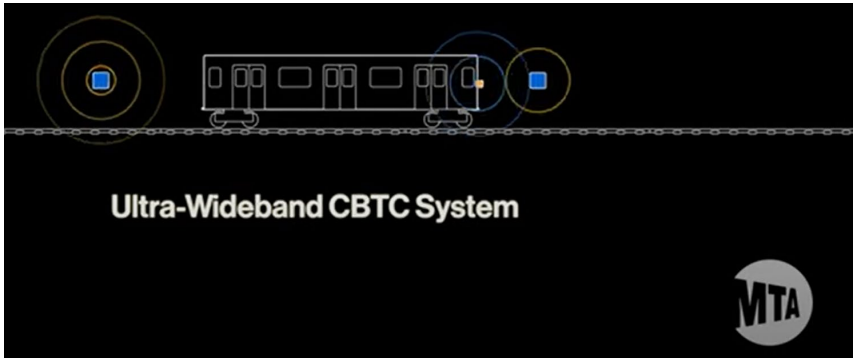
It is almost 25 years old

We need to replace the system this decade to keep our subway in a state of good repair.



We will benefit from the latest technologies offered by modern CBTC systems.





We can also get more benefits from improved design, such as expanding the CBTC system to the surface.

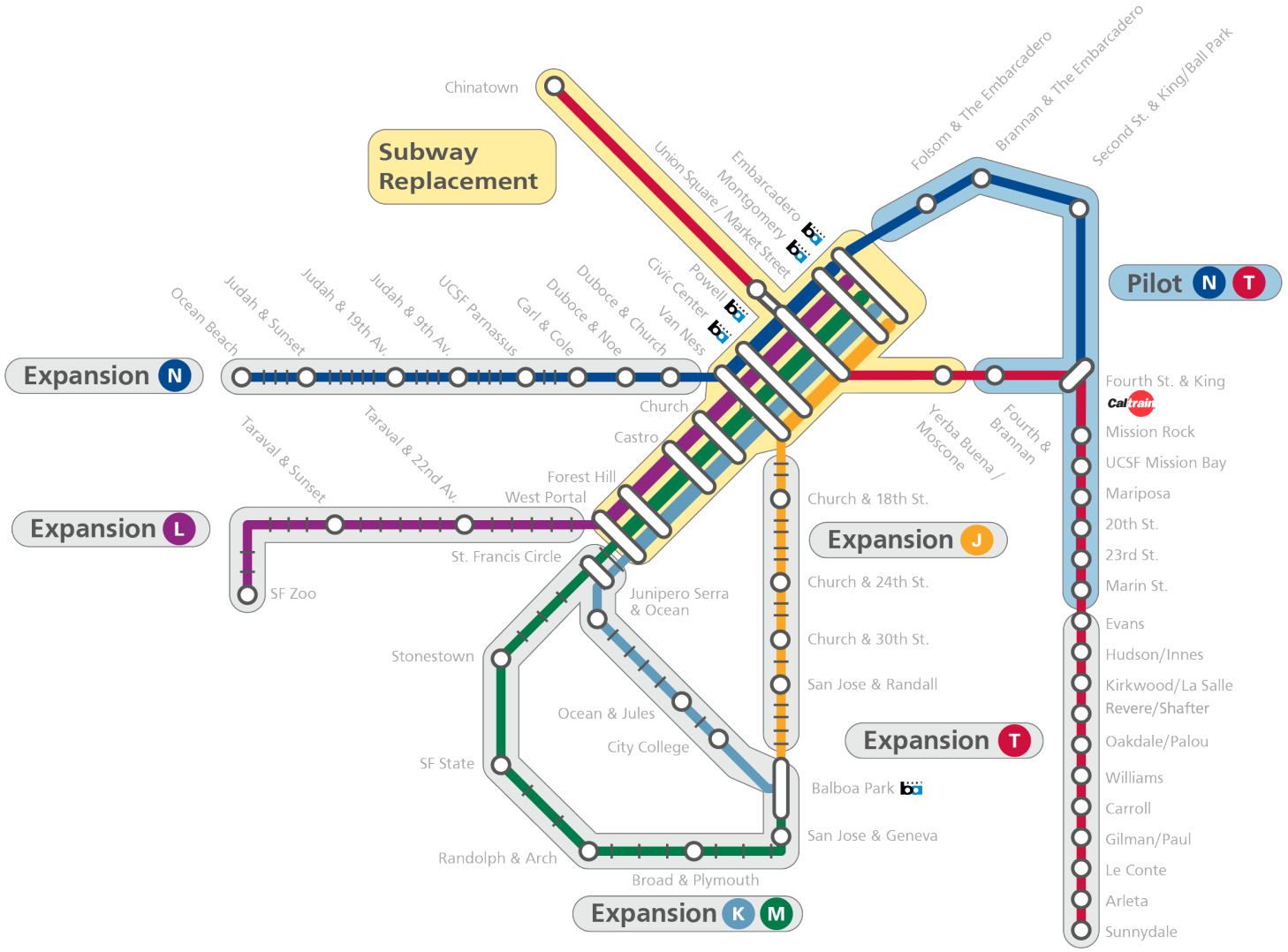
Reduced delays: Customers no longer "stuck" on trains between stations due to subway congestion or slow-moving trains with a communication failure

Reduced travel times: Trips on Muni will be faster as trains will not have to wait for traffic lights on the surface – the train control system will talk to the signals and let them know a train is coming

Improved reliability: More consistent wait times that match the advertised frequency of trains, which makes trip-planning more reliable

Better service: the new system will give train controllers more flexibility to manage bunching and gaps

New communications-based train control (CBTC) system upgrade to improve Muni light rail service



Lessons Learned

SFMTA draws from multiple sources of "lessons learned" to set up Train Control for success including:

Major SFMTA capital projects like
Central Subway and Van Ness BRT

Peer agencies – North America and Europe

Past SFMTA technology projects

Current ATCS system

Applying Lessons Learned

Procurement Method	Ensure selection based on quality of supplier's product and expected long-term performance, not short-term construction issues
Harness Opportunities	Negotiate support terms while supplier is in competition with its peers
Supplier Partnership & Performance Incentives	Create contractual incentives for supplier to partner in the success of the system
Support-Focused/ Lifecycle Management	Treat the system as a technology product, hardware and software kept up-to-date
Risk Assessment	Anticipate risk points ahead of time with a comprehensive risk assessment process

Contracts

Supplier

System Design, Procurement and Support

Technology system procurement best fit for selection criteria and enables long-term performance-based support

SBE/DBE goal: 5%

Initial RFP

Installer(s)

System Installation

Separating the installation contracts enables a more refined construction scope and allows us to maximize SBE/DBE

SBE/DBE goal: 100% (preliminary)

Multiple future RFPs

Consultant

Delivery Support

Technical consulting contract to support project management and leverage outside train control expertise to ensure we deliver the best system possible

SBE/DBE goal: 15% (preliminary)

Single future RFP

Benefits of including support contract with design RFP

Improves price and terms because firms are in competition with peers

Key elements linked to strategic goals:

- Performance-based support fee creates contractual elements for supplier to build reliability into initial design
- Vendor-Managed Spares Inventory designed to incentivize reduced parts replacement
- Regular software updates keeps hardware and software up to date

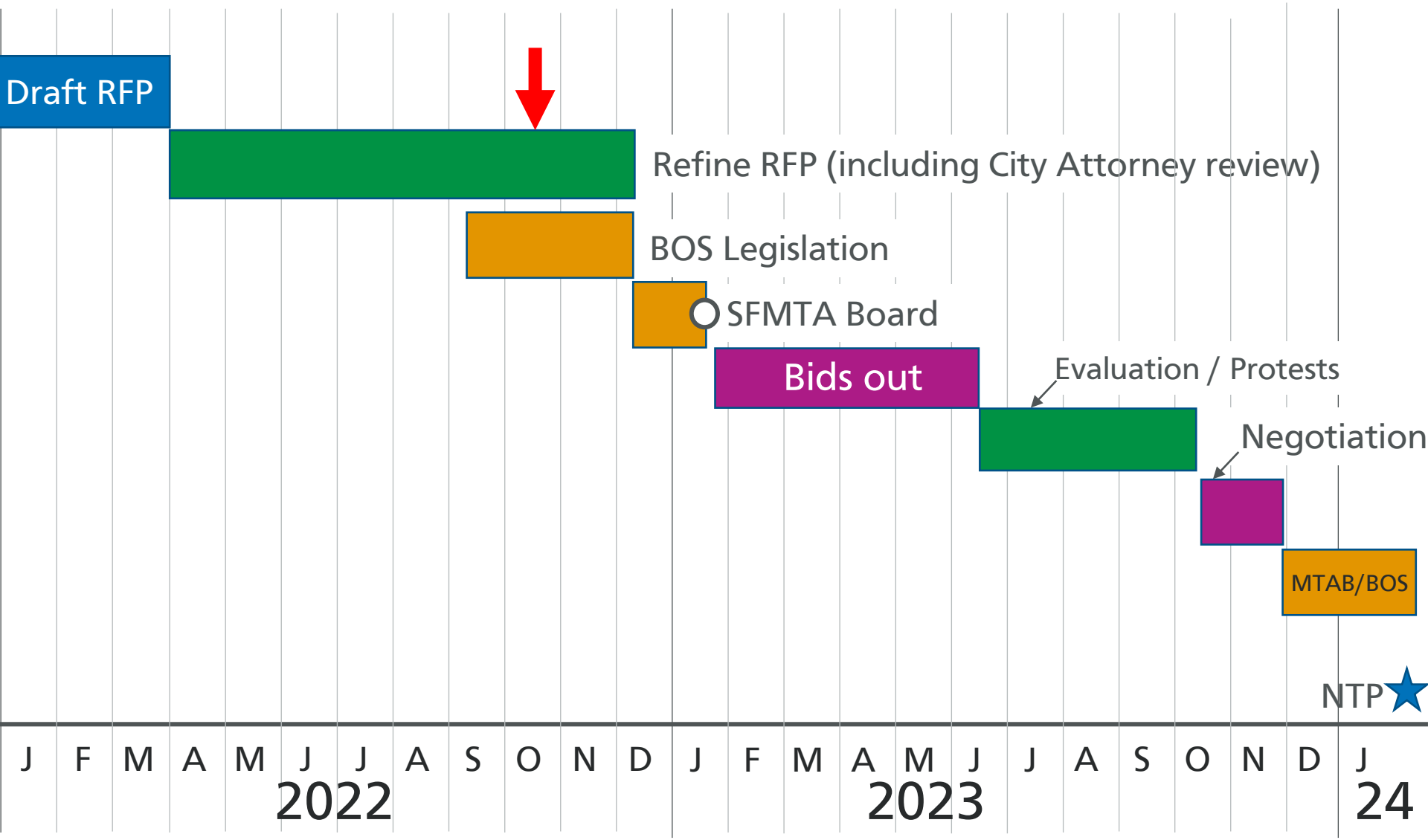
SFMTA Board of Supervisors Ordinance Request

SFMTA requesting BOS approval for an ordinance to allow:

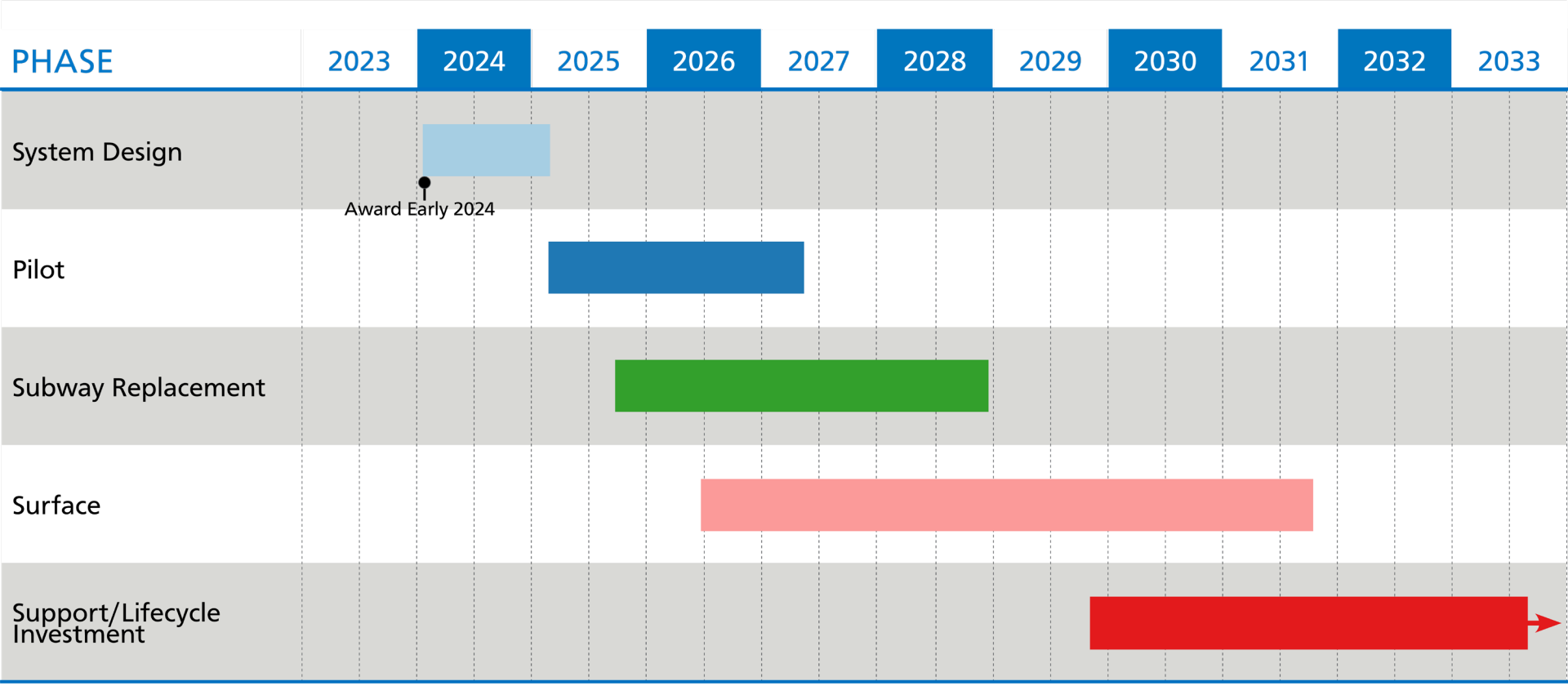
- Advertisement of a supplier contract which extends past 10 years
- Negotiated procurement (i.e., best/final offer)

Proposed Contract Duration:

- Design/Implementation Phase: **8 years**
- Initial Support Term: **10 years**
- Additional Support Terms (2 options): **5 years each**


Draft RFP
Refine RFP (including City Attorney review)
BOS Legislation
SFMTA Board
Bids out
Evaluation / Protests
Negotiation
MTAB/BOS
NTP
J F M A M J J A S O N D J F M A M J J A S O N D J
2022
2023
24

Proposed Project Schedule



Total Project Budget: $608 million
Support Costs: $100 million over 10 years