



SFMTA

# Subway Renewal Overview

San Francisco County Transportation Authority  
March 22, 2022 Board Meeting



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# Vision for Modernizing Muni Metro



# We envision a Muni Metro System that ...



## is the best option for citywide trips

- Supports city's climate and environmental goals
- Improves access and meets transportation related quality of life needs
- Supports city's Vision Zero goals

## is free from delays

- Street traffic
- Subway congestion

## is frequent and reliable

- High frequency of service
- Minimal wait times
- Predictable and smooth transfers

## is safe and accessible for all

- Personal and transportation safety
- Accessible for people with mobility disabilities

# Muni Metro Modernization

The Subway Renewal is one pillar of SFMTA's overall vision for delivering a modernized Muni Metro system.

## Muni Metro Modernization

### Subway Renewal

(one-time SGR capital investment and ongoing lifecycle mgmt.)

### Muni Forward Surface Rail

(enhancement and expansion capital investment)

### Light Rail Fleet Management and Facility Upgrades

(LRV lifecycle mgmt. and future facilities needs)

### Train Control Upgrade Project

### Muni Metro Core Capacity Planning Study

(system capacity analysis)

Together, these improvements will enable us to meet the transit needs of San Francisco and ensure we deliver first-class rail service for our customers.



# Subway Renewal

10-year capital investment strategy for the Subway

# Muni Metro Subway is...

**the City's greatest transit-dedicated asset – it is the “backbone” of our light rail system.**

The Muni Metro Subway provides critical transit service connecting

- SF neighborhoods with each other and with downtown,
- SF residents to the greater region through connections to BART, Caltrain and future regional expansions, and
- the region to San Francisco neighborhood businesses, attractions, family and friends.



Frequent and reliable Muni Metro is integral to San Francisco's transit future.

# Challenges Faced

For decades Muni Metro has been pushed to its limits.

The Subway was built in the 1970s, and as a result:

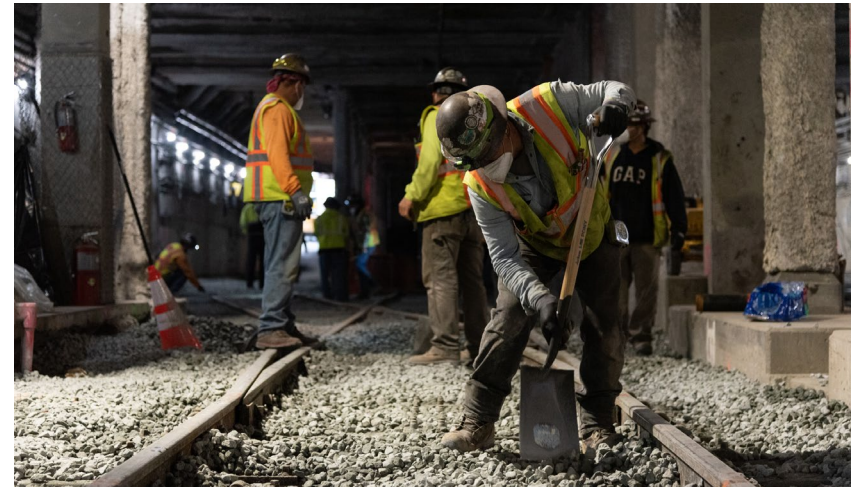
- crowding and delays due to failures of critical, aging infrastructure like track or overhead lines, and unresponsive train control plague the system.
- while significant investment has been made in the subway, many systems are original. Our backlog of capital work persists and out paces available funding.



Subway issues impact **every Muni Metro rider**, no matter where they travel.

# Our outstanding Maintenance of Way staff is essential to quality Muni Metro service

- Keeping Muni Metro running requires both
  - regular day-to-day maintenance of transit critical infrastructure and
  - strategic capital replacement and upgrade campaigns
- Maintenance costs and complexity increases overtime if capital assets are not replaced
- SFMTA committed to quarterly extended maintenance program in the subway to address projects that require longer maintenance window –  
*Planned next for April 14-24*







# Subway Renewal: Vision

Muni's vision for the Metro system is a **frequent, dependable** light rail service for our customers. Riders will experience **short, uninterrupted trips** because the system will be **free from congestion and delays** caused by system failures. Critical infrastructure that keeps the system moving will be **state-of-the-art** and routine maintenance will ensure the system is kept in a **state of good repair**. Modern stations, customer information and amenities will attract riders, provide equitable access and increase **comfort and safety** at all stages of our customers' journey. As San Francisco grows, the system will be equipped to meet future demands and deliver **first-class service**.

# Subway Renewal will be guided by implementation principles rooted in delivery and customer experience.

- 1. Lifecycle Management:** Commit to a lifecycle management approach that results in timely assessment, repair and replacement of service critical assets and keeps the subway in a continual state of good repair.
- 2. Customer Experience:** Integrate delivery of improvements to customer-facing amenities with improvements to service critical assets to build public support and foster trust.
- 3. Resilient and Redundant:** Build a more resilient subway that addresses known vulnerabilities, builds in redundancy and responds to security and environmental threats.
- 4. Project Delivery:** Pair ongoing incremental delivery with strategically planned shutdowns that maximize progress per construction window.
- 5. Adaptive System:** Create a more flexible and adaptive system to support existing riders and prepare for potential growth

# Over the next ten years, investment in key systems will be critical to realize a subway that meets the needs of SF and the region.



Total Need	\$ 1,715M
Program and Project Planning	\$ 23M
Train Control Upgrades	\$ 609M
Track Replacement & Wayside Equipment	\$ 235M
Traction Power Upgrades	\$ 499M
Tunnel Safety, Security & Resiliency	\$ 46M
Stations & Passenger Comfort	\$ 303M

# Capital Investment Areas

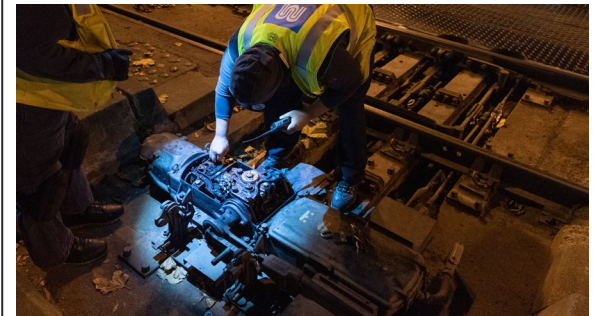
## Train Control Upgrades (\$609M)

- Upgrade 20+ year old system to state-of-the-art communication-based train control via the Train Control Upgrade Project
- Implement near-term SGR improvements on existing system



## Track Replacement and Repair (\$235M)

- Assess condition of critical components of the track system and replace aging infrastructure (e.g. straight/curve track, track support structures, switch machines and switches)
- Establish trackway debris removal program



## Traction Power Upgrades (\$499M)

- Replace critical power delivery feeders and upgrade substations to prepare for added capacity
- Study feasibility and plan for future implementation of new OCS technology



# Capital Investment Areas (Contd.)

## Tunnel Safety, Security and Resiliency (\$46M)

- Completed Tunnel inspection and remediation work
- Replace lighting, portal intrusion and safety systems like fire suppression
- Coordinate with Port-led resiliency work and implement mitigation measures



## Station Enhancements, Passenger Comfort (\$303M)

- Assess condition of all station systems (electrical, HVAC, agent booths, interiors etc.)
- Deliver incremental refresh of customer-facing spaces
- Upgrade platform customer information signage and wayfinding



# Delivering Subway Renewal Improvements will help to...

## Improve

- safety and reliability
- asset condition/SGR
- wayfinding, access and comfort

## Increase

- operational efficiency/flexibility
- capacity
- resiliency/redundancy

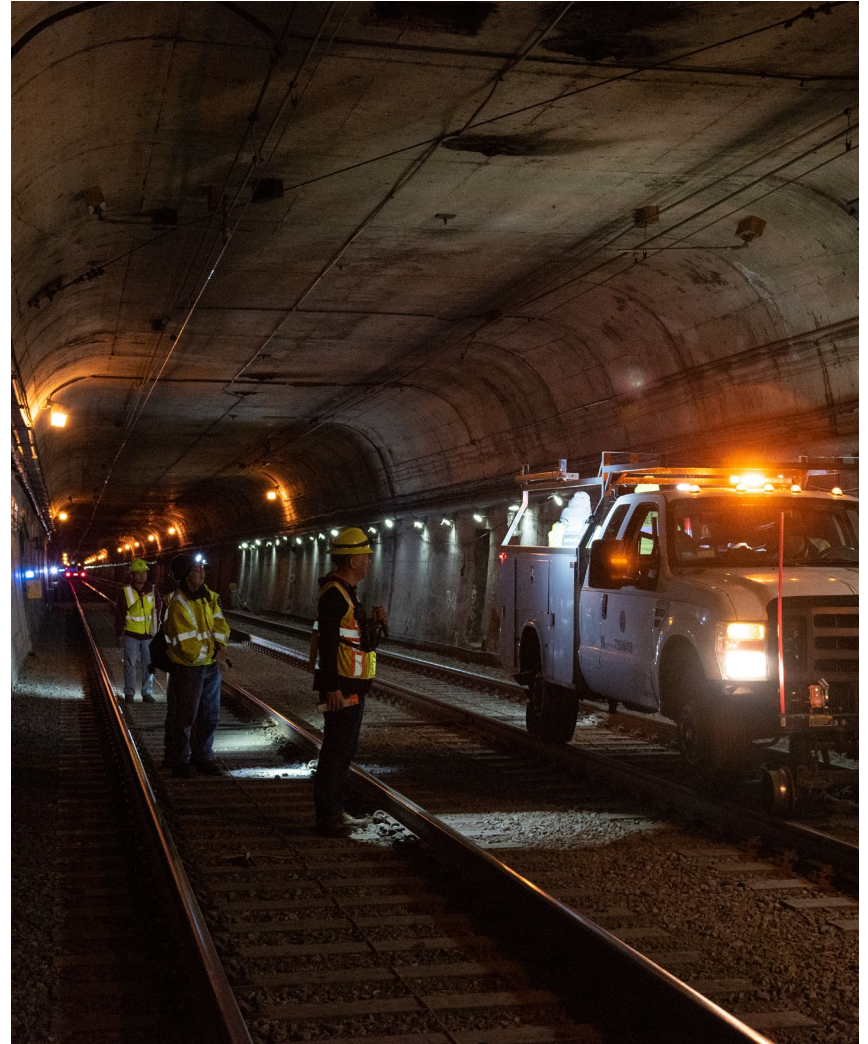
## Reduce

- equipment/system failures
- service disruptions
- crowding
- maintenance needs



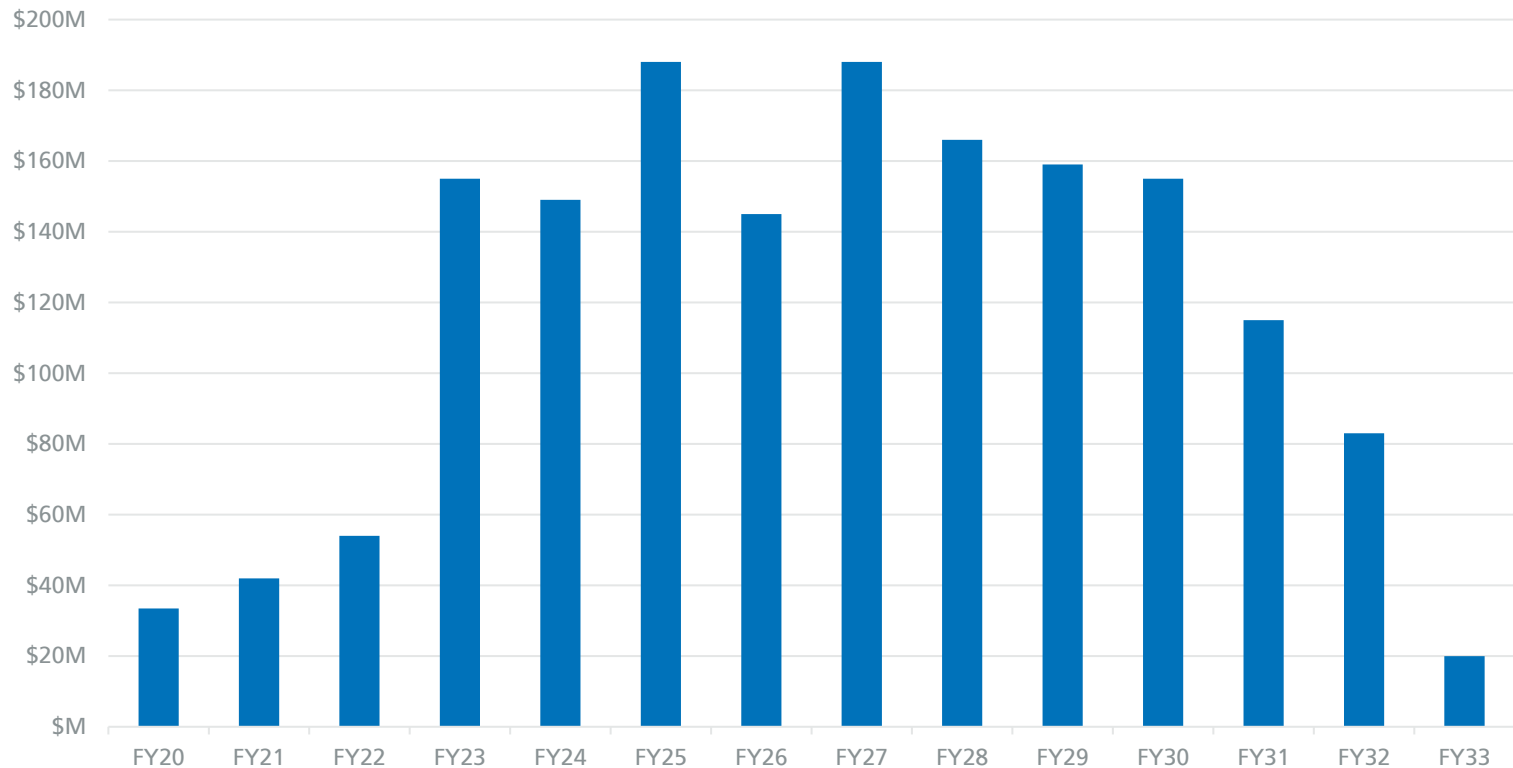
# Implementation Challenges

- Funding will be our greatest barrier (only partially funded in CIP)
- Project delivery – proactively addressing scope, schedule and budget challenges
- Accurately identifying interdependencies and incorporating into the sequencing of work
- Balancing need to minimize customer inconvenience while also establishing efficient work windows



# A significant ramp up in funding is required to deliver this program effectively

Subway Renewal Program: Estimated Annual Cost

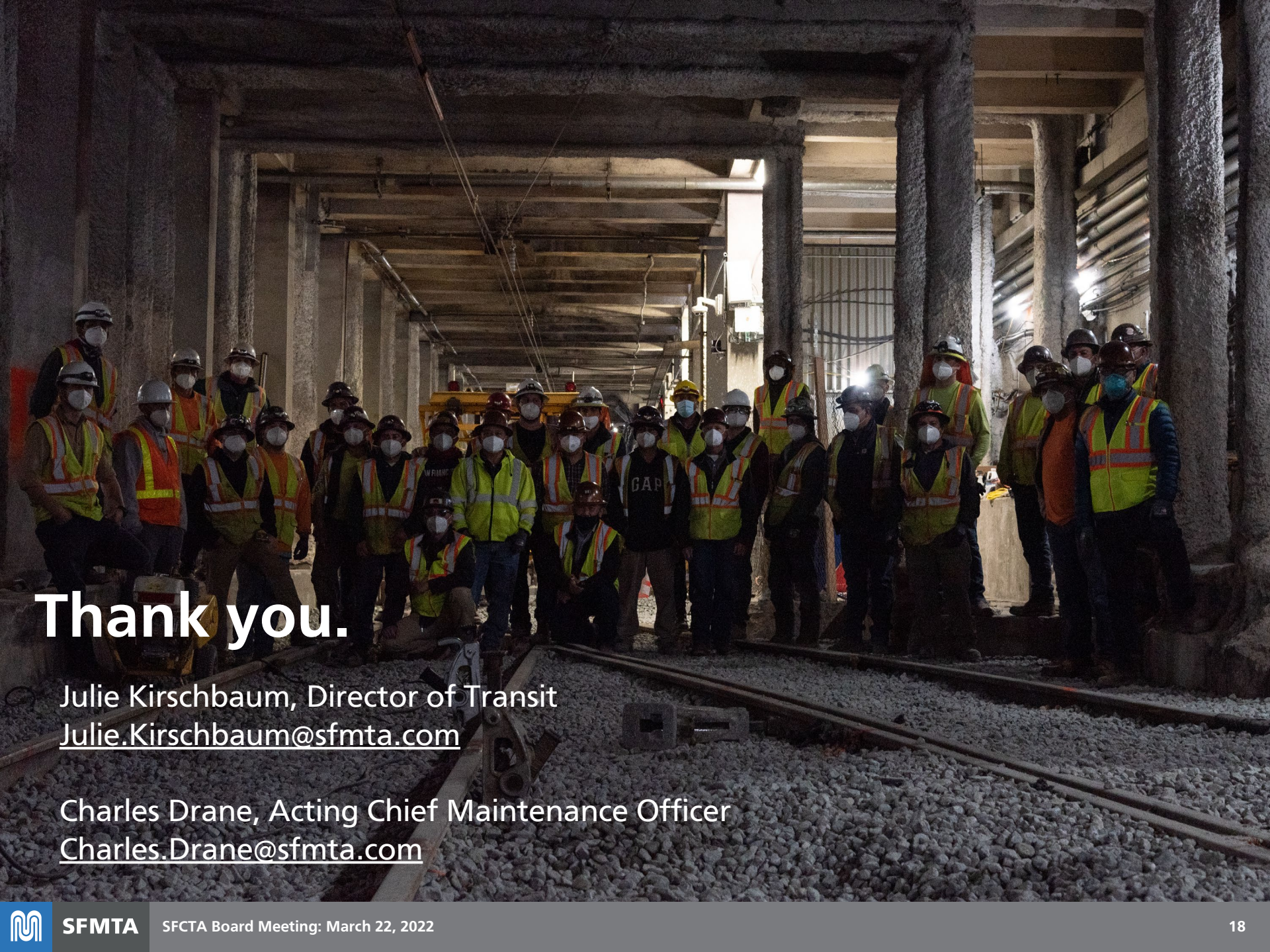




# Next Steps

- Detail a comprehensive implementation strategy
  - Program Management Approach
  - Community Engagement Strategy
  - Contracting and Construction Delivery
  - Funding Strategy
- Implement incremental improvements that can be delivered with internal staff and existing contracts
- Complete a series of studies to guide key investment categories
  - Facilities Condition Assessment
  - Rigid Traction Power Feasibility
  - Signal Interlocking Standardization
- Issue RFP for Train Control Project





# Thank you.

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