



SFMTA

# Subway Renewal

Transportation Authority Board

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# Subway Infrastructure Challenges

## Known vulnerabilities:

- Splices, overhead line slow zones
- Aging track and switches from Embarcadero to Castro
- Outdated train control system
- Switch and signal system wiring
- Track stability/ballast in Twin Peaks tunnel
- Resiliency (e.g., aging back up power systems)

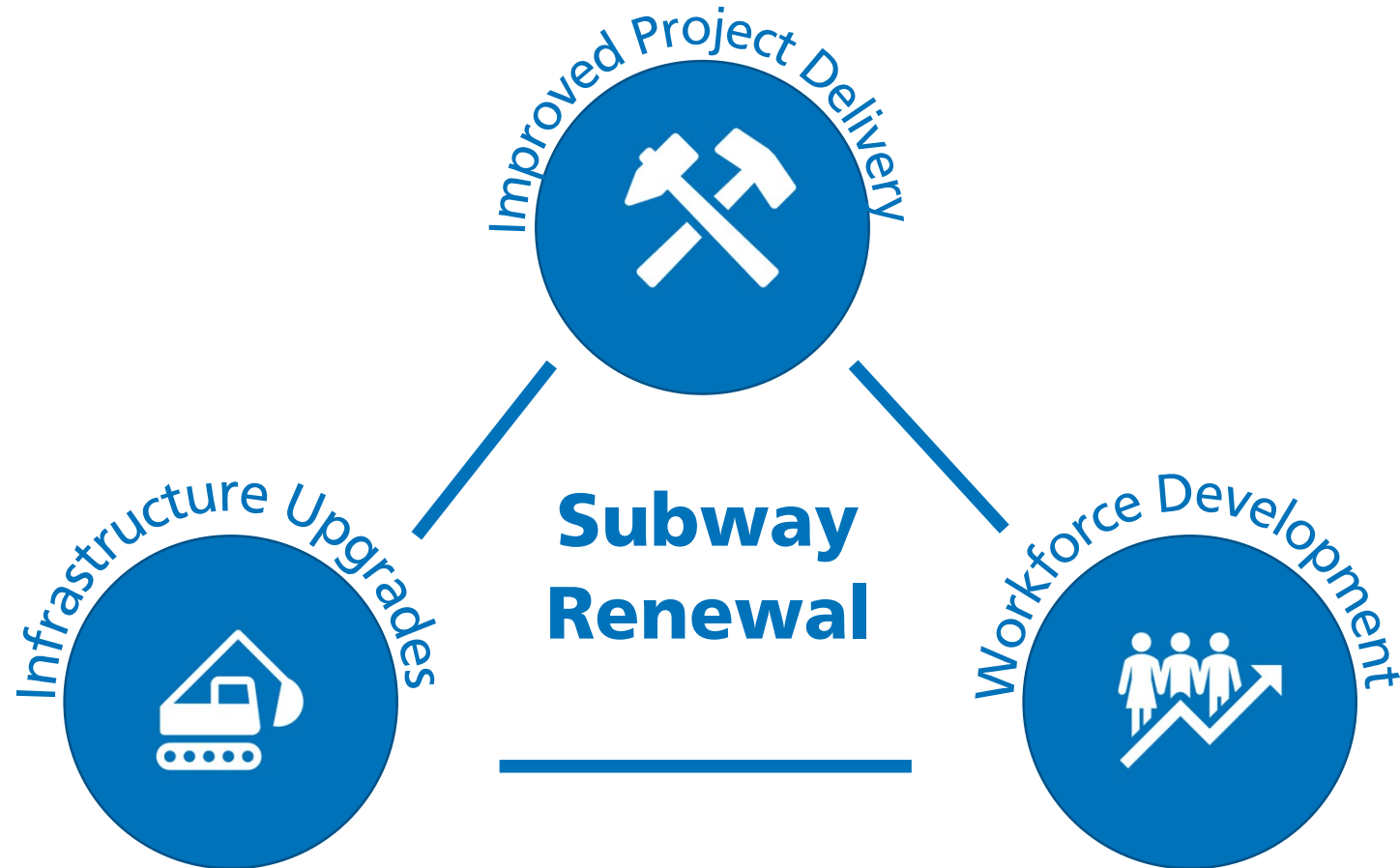
## Currently analyzing:

- Station systems – electrical, fire/life safety
- Traction power system for three and four car trains

# Recent Investments

- Escalator replacement
- Radio replacement
- Emergency “blue light “phone system replacement
- Upgraded passenger announcement system
- Track replacement and earthquake safety in Twin Peaks Tunnel
- Quarterly extended maintenance window (e.g., subway lighting f/Montgomery to VN)

# Comprehensive Program Needed



# Subway Renewal Program

- Subway work best addressed systematically, as a comprehensive work program
- Many elements are funded in 5-year capital plan, but as discrete, stand alone, items
- Capital investment approach also needs revamping to better integrate engineering and maintenance needs

# Major work underway will kick off long-term program

We can't eliminate all subway vulnerabilities in only a few months, but this shutdown will be a major down payment and focuses on critical work that is ready to go:

1. **Rail grinding** for a smoother, quieter ride and extended life of the rail
2. **Spot replacement of track fasteners and rails** in areas of higher wear and deterioration due to ground water
3. **Switch machine replacement** in Embarcadero pocket
4. **Eureka Curve ballast** replacement to provide increased stability to the rail and reduce maintenance
5. **Overhead lines work** including wire replacement to reduce splices, splice replacement and redesign of support structure to eliminate slow zones
6. **Upgrade Subway Lighting** to be completed to allow for improved visibility during maintenance work and emergency response

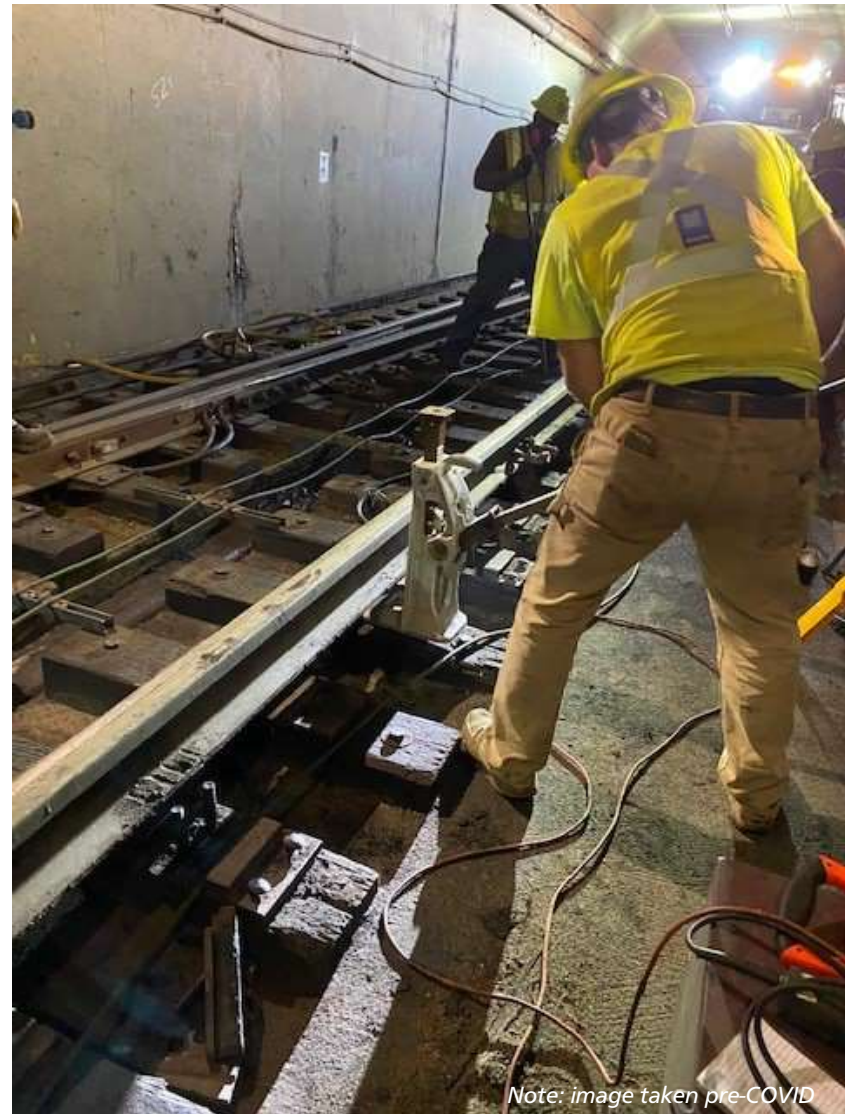
# Subway Shutdown

- Multi-disciplinary subway task force convened to scope and lead subway work
- Significant work already completed or underway, including new sections of overhead wire and splice replacement
- Emergency declaration to expedite Eureka Curve ballast work - expected subway duration dependent on getting contractor on board and mobilized
- Evaluating service enhancements to manage increased trips between now and early Spring

# Future Work

5 to 8 year effort:

- Remaining Tangent Track and Switch Replacement
- Crossover Replacement
- Electrical Systems in Subway Stations
- Ventilation System
- Power Upgrades
- Train Control



*Note: image taken pre-COVID*





Thank you

