



## Muni Metro Core Capacity Study Community Working Group May 9 Pre-Meeting Questions and Answers

### Introduction

This document has been developed in response to feedback from the Muni Metro Core Capacity Study Community Working Group (CWG) questionnaire that was shared in preparation for the May 9, 2024, CWG meeting.

The questionnaire asked CWG members to provide broad feedback on four proposed capacity strategies and share any additional questions.

The “Take-Aways” section provides a summary of some of the key questions or concerns we noted in the responses to the questionnaire. This feedback from CWG members is shown in italics throughout the document. Some questions are taken directly from individual questionnaire responses. Some are paraphrased. And some reflect a combination of feedback, synthesized in the form of a question to facilitate staff’s ability to respond and provide additional information or context.

### Why are we doing a Muni Metro Core Capacity Study?

- Pre-pandemic Muni Metro service was plagued by delays, crowding, and reliability problems. We’ve come a long way to addressing some of those challenges, but there is much more we can and must do to ensure that Metro operates efficiently and reliably long-term.
- To be prepared to address potential ridership growth over the next 20+ years, we need to plan ahead and identify multiple strategies that can increase Muni Metro capacity and ensure state of good repair.

### What’s the purpose of the Study?

- San Francisco’s population is expected to grow substantially over the next 20+ years, which will increase ridership on Muni ridership. Muni Metro is a critical part of keeping a growing San Francisco able to move around the city and beyond. We will need to move more people on Muni Metro and avoid Metro becoming overcrowded, congested, delayed and unreliable. We will also need to repair and replace aging infrastructure so the system can continue to function.
- Several ongoing near-term projects are addressing short-term needs to keep the system moving and improve service. Others are focused on repairing and replacing aging infrastructure on a near-term basis. This study looks at long-term needs (10+ years in the future): what do we have to do, and when, for Muni Metro able to serve the riders that will rely on it in the decades to come.

### What do we hope to learn from the Community Working Group?

- Your input about what you like and dislike about the proposed strategies, questions, concerns, and other observations will be included in our analysis of those strategies and what additional information or ideas future projects should consider. From you, we will gain a more complete understanding, in conjunction with other methods of outreach to community members.
- The Study will put forward the potential benefits and potential challenges of various capacity building strategies. Your feedback will fold into the analysis of those benefits and challenges, alongside feedback received through other forms of community outreach.

## Take-Aways from the Community Working Group questionnaire

\*Summaries of CWG feedback from the questionnaire is shown in italics, with short answers provided in sub-bullets

### 3- and 4-car trains

- *What specifically would need to happen to make this work?*
  - The most visible potential change would be longer platforms at some surface stops so that passengers can use all doors to board trains. At some locations, cross-traffic may need to be restricted at intersections where 3- or 4-car trains would be longer than the length of the block. Less visible changes may include upgrades to the electric power supply system, changes to tracks where trains reverse directions, and changes at rail yards. Specific changes would be studied further in subsequent projects.
- *Would any on-street impacts be temporary or permanent?*
  - Most street changes needed to operate longer trains, such as longer platforms, would need to be permanent. Some temporary street changes would also be needed, such as during construction. Specific street changes would be studied in subsequent projects.
- *How would long trains affect parking, especially along on-street commercial corridors?*
  - In some locations, it may be necessary to remove or relocate some parking to accommodate longer train platforms. Specific parking changes would be studied in subsequent projects.
- *How would longer trains affect frequency? How would longer trains affect stop spacing? Which intersections might have to close and how would that affect traffic, safety, other modes? What new infrastructure would need to be built and what would the impacts be?*
  - These are the kind of details that future implementation projects would work to address. It's possible that longer trains could require some changes to stop spacing, and in some locations, intersections and traffic flows would need to be carefully considered. The Metro Core Capacity Study aims to provide strategies that could be used to achieve greater Muni Metro capacity and reliability. Specific operational challenges and solutions could be addressed by future projects that implement the strategies developed in our Study.

### Route restructuring

- *How would removing 1- and 2-car trains from the subway work in combination with adding 3- or 4-car trains? How would this affect train/subway traffic?*
  - The subway can only accommodate so many trains per hour. Once the maximum number of trains per hour has been reached, the only way to increase the number of people the subway carries is to lengthen the trains by adding additional cars. Our Study is exploring ways to both increase the maximum number of trains per hour the rail system can carry, and to lengthen the trains.
- *Would route restructuring inconvenience people with disabilities, people with small children or seniors?*

- The Study would include recommendations for any future project to carefully consider and mitigate any impacts to these riders.
- *Concerns about challenges for J Church riders if transfers are required.*
  - We recognize the concerns raised by J Church riders, and we are eager to continue to explore ways to balance Muni Metro efficiency and reliability with the needs of J Church riders.
- *Transfers should be safe, avoid having to cross streets, comfortable, accessible, and timely. Improve pavement, elevators, timed transfers, weather protection, wayfinding.*
  - These are recommendations that we can include in our study and recommend that they be incorporated as projects move toward design and implementation.
- *Could service improvements on other lines help reduce or avoid transfers?*
  - It's possible that improvements to bus lines could help improve capacity or reduce transfers, but this would not fully address the need for greater capacity and state of good repair on the rail system.
- *Why not put train lines underground entirely?*
  - Constructing new tunnels is costly and can take over a decade. While it could be an option in the future, we are also looking for quicker and less costly improvements that could allow Muni Metro to gradually move more riders quickly and reliably over time.

### **Crossing arms and/or street light preemption**

- *How would this affect people waiting to cross in wheelchairs, on bikes, or with strollers?*
  - Signal preemption means the trains and signal lights communicate far enough in advance so a green light cycle can be triggered or held as the train approaches, but the light cycle will still allow enough time for cross-traffic or pedestrians to cross the street safely. Pedestrians waiting to cross the intersection may have to wait while the train passes.
- *How could crossing arms be made safe from people who might go around them?*
  - Where needed, modern crossing arms can be designed to block the full width of the roadway and sidewalk and use visual and auditory warnings to alert road users not to enter the path of the train.

### **Exclusive right-of-way and/or raised track**

- *What exactly would raised trackways look like – elevated like New York or Chicago?*
  - Raised trackways are typically only a few inches higher than the surrounding pavement – at or below curb height. An existing example is the existing trackway on Judah between 9<sup>th</sup> and 19<sup>th</sup> Avenues.
  - Another option to create an exclusive right-of-way for Metro trains on the street would be with a curb-like barrier, similar to the ones used along the existing tracks on 3<sup>rd</sup> Street.
  - To help make our terminology clearer, we can use the terms “curb height trackway” or “curb separated trackway” instead of “raised trackway” moving forward.

- *Would raised trackways remove sidewalk space for pedestrians or space for other modes?*
  - Curb separated or curb height trackways can be placed in the same location as existing tracks. They typically do not reduce the sidewalk width. Like other transit lanes, other vehicles may be restricted from driving in the trackways.
- *How would cars be prevented from entering the trackway?*
  - For both curb height trackways and curb separated trackways, the curb deflects vehicles from entering the trackway. At intersections, signage and physical barriers such as plastic diverter bumps could be used to indicate that other vehicles are not allowed to use the trackway. These strategies are already used for the separated trackways on Third Street.
- *How would raised trackways affect adjacent traffic or cross-traffic including emergency services?*
  - In some locations the trackway can be made passable to cross-traffic. There are intersections with curb height trackways along Judah between 9<sup>th</sup> and 19<sup>th</sup> Avenues that work this way. In other locations, cross-traffic could be restricted, as is the case at certain intersections along Judah as well.
  - Trackways can be designed to allow emergency vehicles to drive over the curb in order to cross if necessary. We work with the San Francisco Police Department and the San Francisco Fire Department to ensure any street design and engineering supports emergency service access.
- *This may not work in all areas. Where would this be effective?*
  - Current locations with separated trackways – including Judah, 3<sup>rd</sup> Street, 19<sup>th</sup> Avenue, and San Jose Avenue – have shown effectiveness at improving transit performance in a variety of street configurations. Proposed locations would be analyzed in detail before decisions are made, and this would be done in future projects after our Study is completed.
- *Would separated/elevated trackways mean riders won't have to exit trains directly into traffic?*
  - The Study is exploring ways to add full-length platforms to Muni Metro stops to address this need. This can be done in conjunction with curb separated trackways. In the shorter term, several of the ongoing Muni Forward projects are also extending platforms.
- *Is there consideration of "pedestrianizing" some locations in lieu of separated or elevated trackways?*
  - Yes, this idea will be explored in the study. In some locations, some physical feature separating the trackways from the rest of the roadway may still be desirable.

### Additional Community Work Group member questions

- *How will the Train Control Upgrade Project impact Metro capacity?*
  - The Train Control Upgrade Project (TCUP) is moving forward, and one of the benefits is that the new, more powerful technology will give the SFMTA the capability to support longer trains and prioritize or preempt street signals. TCUP is anticipated to improve Muni Metro reliability by 20-25% by reducing train delays. By itself, however, TCUP doesn't increase Metro capacity enough. It must be combined with the Muni Metro Core Capacity strategies we are exploring.
- *Is more undergrounding an option?*

- Constructing new tunnels is costly and can take over a decade. While it could be an option in the future, we are also looking for quicker and less costly improvements that could allow Muni Metro to gradually move more riders quickly and reliably over time.
- *How are options being evaluated?*
  - *How is ridership measured?*
    - Current ridership is measured by automated passenger counters (APCs) – sensors on the doors of light rail vehicles that detect people crossing the threshold of the doors. Subway turnstile data is also used. Future ridership is estimated by the SF-CHAMP model, a travel demand prediction model operated by the San Francisco County Transportation Authority, which takes future housing growth programmed in the City’s Housing Element into account.
  - *How is capacity measured?*
    - Capacity is determined by the number of train cars per hour that cross a given point. Hypothetically, if 20 two-car cars and 20 three-car trains can enter the subway in one hour, then the subway would have a capacity of  $20 \times 2 + 20 \times 3 = 100$  cars per hour.
  - *How is on time performance measured?*
    - On-time performance is measured automatically by GPS equipment on trains. The position of trains is analyzed to determine whether trains are bunched (too close together), gapped (too far apart), or operating normally.
- *Why do operators ring train bells at stops?*
  - This is a safety requirement to alert people that a train is approaching or crossing the intersection.
- *What are the challenges of 3- or 4-car trains re: operation, maintenance, safety, etc.?*
  - Once the infrastructure is in place, longer trains could provide service similar to current trains, but with additional capacity. Additional cars will require increased maintenance and storage space, and yard expansion options will be explored. Safety features and procedures will also be explored to ensure that longer trains can be operated safely.
- *Should we focus more on buses that can be redirected easier?*
  - The capacity that Muni Metro provides on busy corridors cannot be easily matched by buses – a 3-car train provides the same capacity as six 40-foot buses or four 60-foot buses. Muni’s bus network is vital to service citywide, and the SFMTA is continuously exploring ways to improve bus service and performance in parallel with efforts to improve Muni Metro.
- *Can pilot projects be implemented prior to full implementation?*
  - The strategies that are recommended by the Study would be implemented by future projects. During those future projects, some strategies may be possible to test with pilot programs and/or to implement as quick-build projects prior to full construction.
- *Which lines are under consideration to be converted to a bus route or streetcar?*
  - This study is not considering converting Muni Metro lines to bus routes (some use of buses is typically needed for temporary reasons, such as construction projects).

- The Study is exploring the possible capacity benefits of converting one or more Muni Metro lines into surface-only lines as historic streetcars or low floor trams. This may help address a long-standing challenge of our Metro system of five lines bottlenecking into one tunnel. San Francisco has the third busiest light rail network in the country but the last to use a single tunnel for the majority of its Metro lines. This service configuration has posed operational problems throughout the subway's history.
- *Will this Study consider adding Muni Metro lines to service the west side?*
  - The Study focuses on improving our existing rail network and does not consider extension of the system. A separate [Geary/19<sup>th</sup> Avenue Subway](#) study is exploring a potential new subway line on the west side.
- *Do proposed near-term changes at West Portal affect this Study? If so, how?*
  - The proposed near-term changes are not related to this Study. The Muni Metro Core Capacity Study will analyze whether longer term changes (10+ years from now) may be needed at West Portal to handle Metro ridership growth, such as accommodating longer trains.
- *Is it possible to bring back the substitute bus service?*
  - Substitute bus service was a temporary measure used during the COVID-19 pandemic while we were unable to run Muni Metro trains. Bus service changes are outside the topic area of our study, which is focused on increasing the capacity of the existing rail system.
- *Is it possible to add service around Twin Peaks to reduce traffic in the tunnel west of Church?*
  - To fully address future capacity needs, longer and more frequent trains through the Twin Peaks Tunnel will be needed, which the Study will explore.