SFMTA

Muni Metro Capacity Study

Community Working Group Meeting #2

November 16

Agenda

1. Introductions/ice-breaker
2. Re-cap of meeting roadmap/Study purpose
3. Existing and future capacity forecasts
4. Initial capacity improvement ideas and review

Introductions and ice breaker

For everyone

- What's your name?
- Share what plans you have for the upcoming holiday season.

If you missed the first meeting, please also share:

- Where do you live/work?
- What's your connection to Muni Metro? (e.g. live/work near one of the lines, regular rider, etc.)
- What perspectives do you bring? Community or group you represent?

Meeting Roadmap

Meeting #1 (November 2): Introduction

Today **Meeting #2** (Thursday, November 16): Project need and potential solutions to be studied

Potential subsequent meeting topics (approximately quarterly):

- Vision development for future rail system
- Benefits and tradeoffs of potential capacity expansion strategies
- Range of potential packages of systemwide improvements
- Funding and implementation timeline, phasing of improvements
- Limited discussion of specific improvements on key surface lines

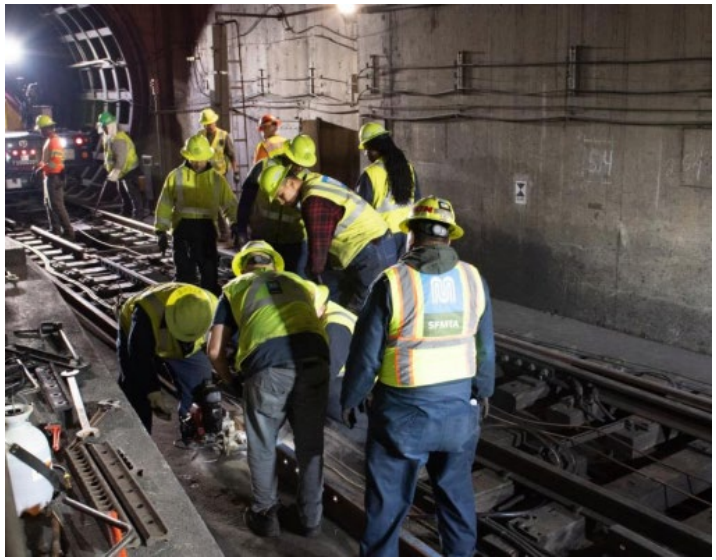
Role of Muni Metro Capacity Study

Answer the following questions:

1. How much more capacity is needed?
    - When?
    - Where?
2. How much more capacity do planned strategies “buy” us?
3. What other strategies should be added to our plans to accommodate future needs?
4. What is the most strategic way to fund these improvements?

Playing the long game for major funding: FTA's Core Capacity Grant Program

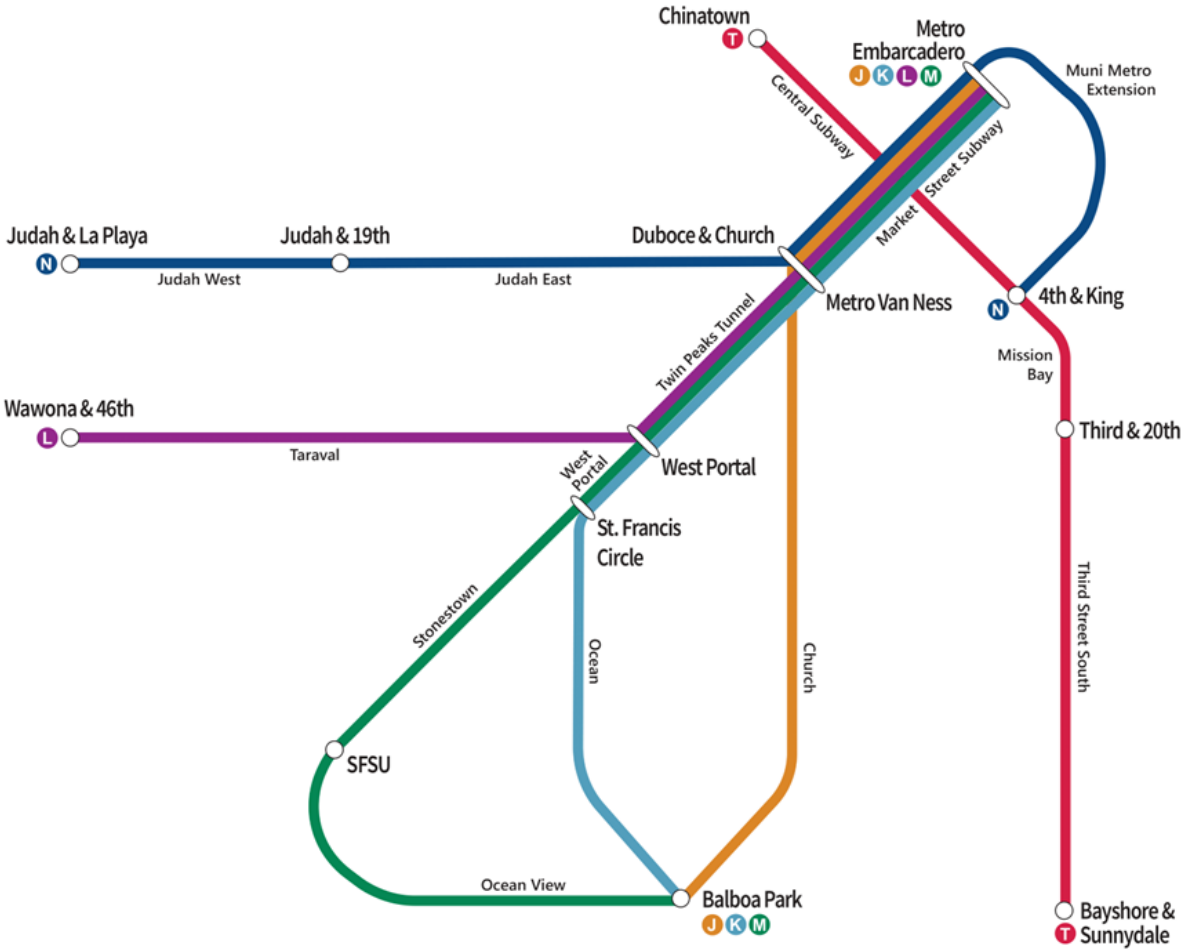
- Provides federal funding to expand the capacity of existing transit systems that are over capacity
- Application process can take 4-6 years to prepare/apply/be awarded
- Up to $1 Billion grants are distributed (half project cost)
- Ideal for systems like Muni Metro, which need to simultaneously address capacity and aging infrastructure



Muni Metro system demand forecasting approach

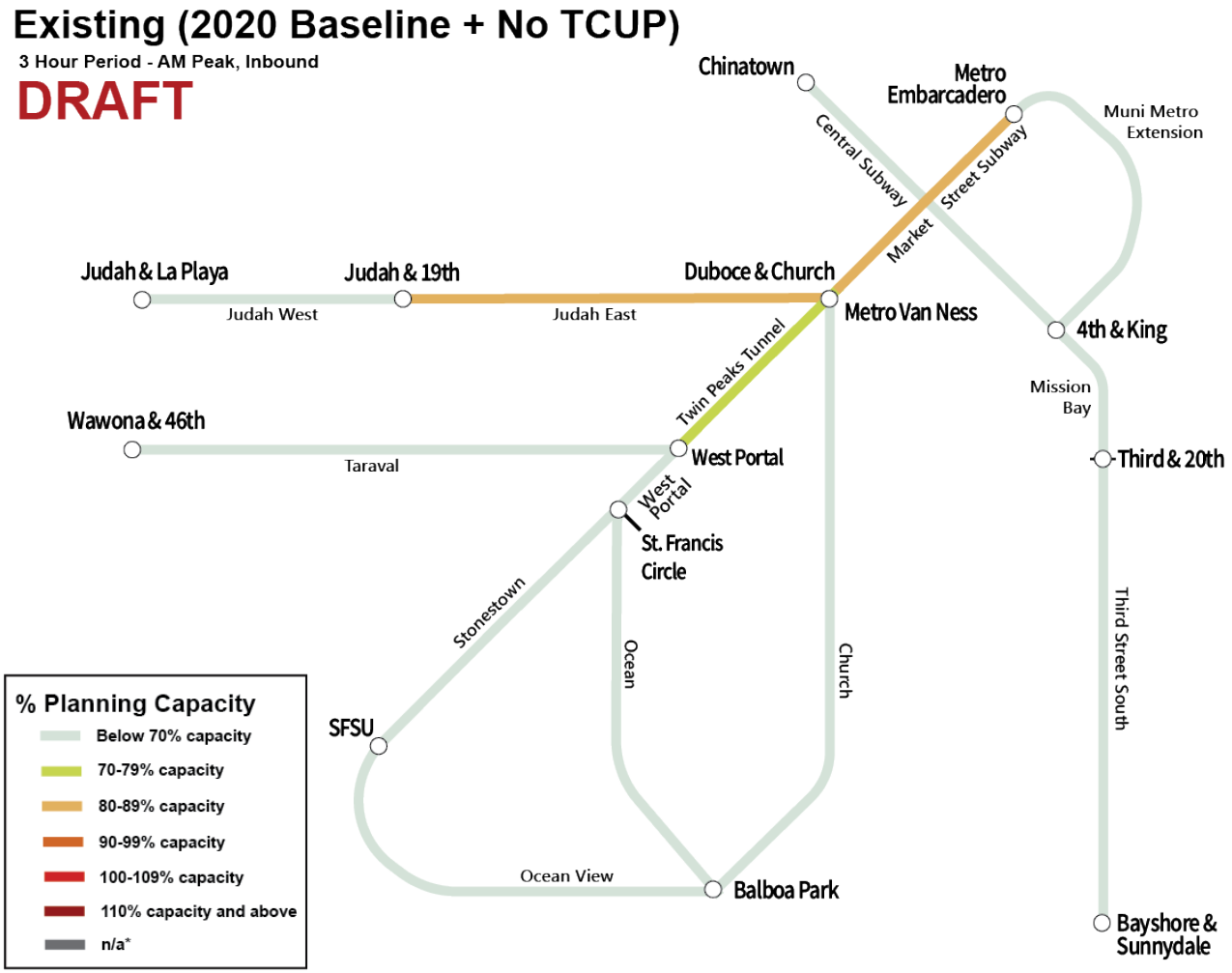
- Travel model outputs from San Francisco's activity-based travel model, SF-CHAMP
- Uses observed travel patterns, detailed representations of San Francisco's transportation system, population and employment data, transit boardings, roadway volumes, and number of vehicles available to predict future travel
- Each Muni Metro system segment's future capacity represented by comparing:
    - **Demand**: SF-CHAMP model outputs for 3-hour morning rush hour
    - **Capacity**: 139 people per car (-3.7 ft^2/standing passenger) * trains per hour * length of train (e.g. 1 vs. 2-car) 3 hour rush hour

Existing Muni Metro system



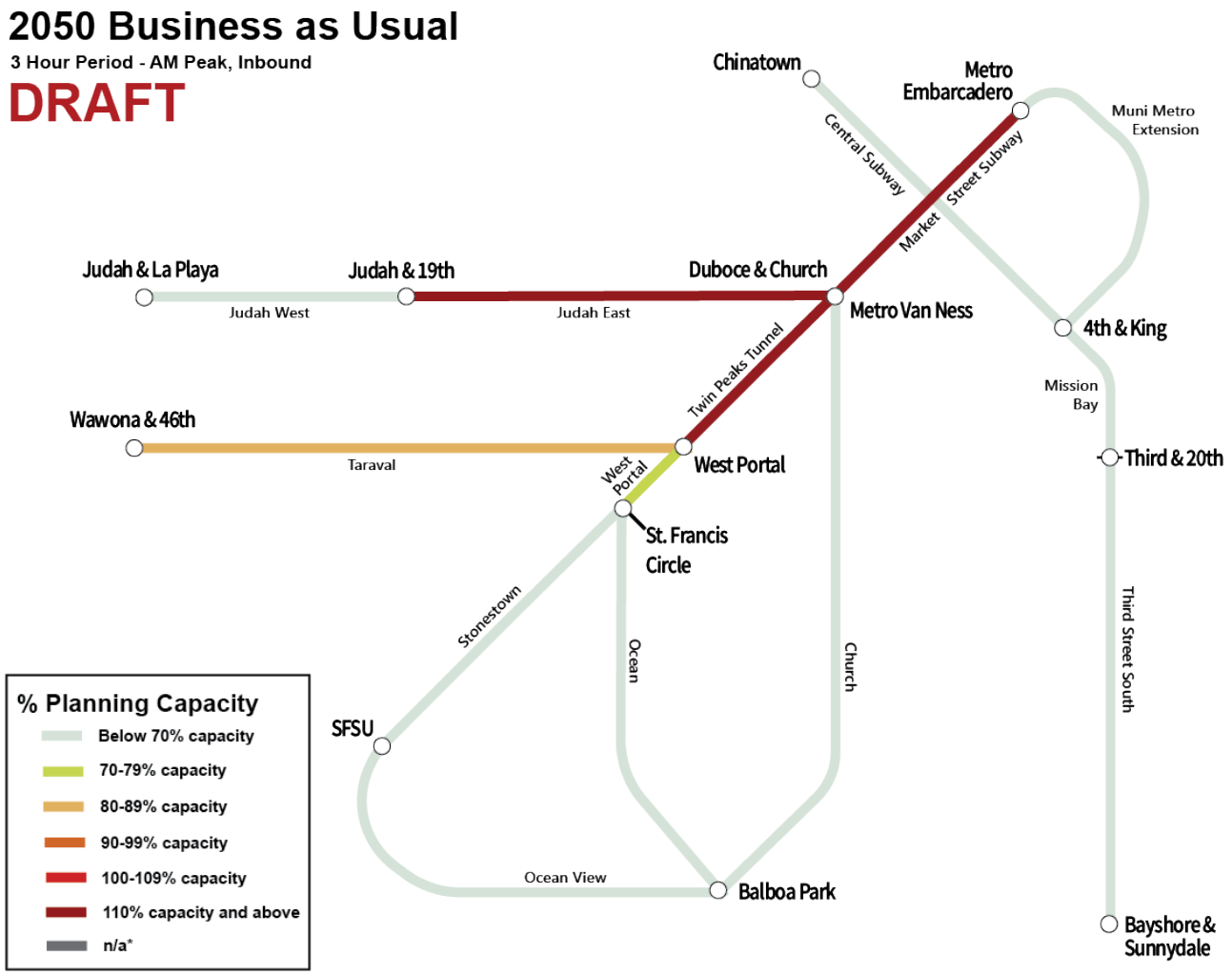
Today's system: generally, not overcapacity

Fullest segments: 1) N-Judah to 19th Avenue 2) Twin Peaks Tunnel



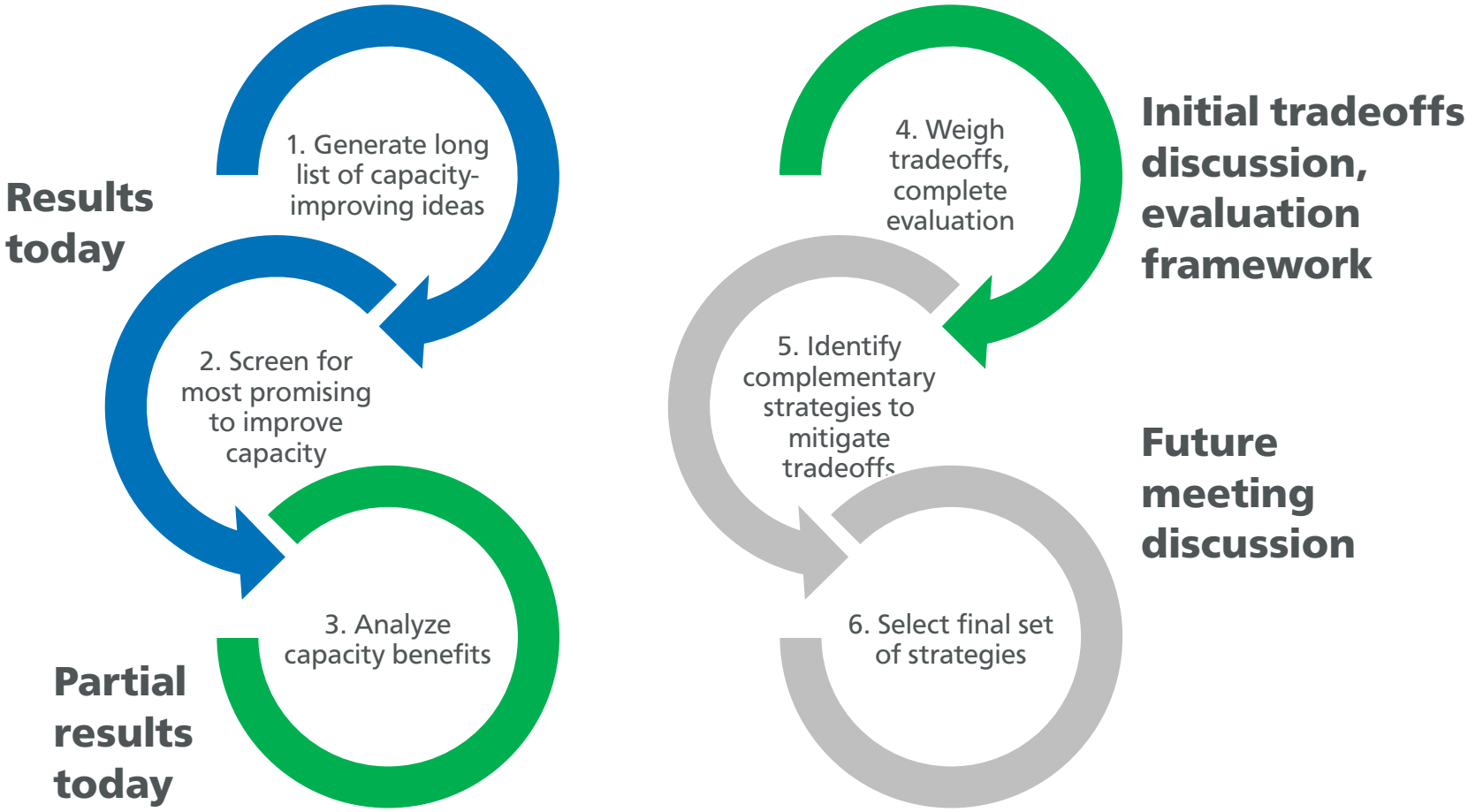
By 2050, segments forecast overcapacity

1) Market Street Subway; 2) Twin Peaks Tunnel; 3) N-Judah to 19th Avenue



*includes capacity benefits anticipated from the Train Control Upgrade Project

Capacity strategy development and screening approach



1. Long list of capacity-improving ideas

Ideas generated via past study review including:

- SFMTA Rail Capacity Strategy
- MTC Core Capacity Planning Study
- ConnectSF Transit Strategy
- Past 19th Avenue/M-Ocean View studies

Potential Capacity-Improving Strategies

1. 3-car N Judah trains
2. 3- or 4-car trains between SF State and downtown
3. Different vehicles for better performance on surface-only lines
4. Low-floor trains for all lines
5. Transit-only/-preferential streets
6. Signal priority/pre-emption
7. New turnback track at Harrison Street
8. Service restructuring
9. Grade separation at key locations
10. Coupling trains at portals

(More information on each strategy at end of slide deck)

2. Screen for most promising to improve capacity

Greatest potential	Further Study	Low potential	Complementary
• Train Control Upgrade Project (TCUP), assumed in baseline • 3-cars to La Playa/Judah • 3- or 4-cars between Downtown and SF State • Service restructuring	• Different vehicles for surface-only lines • Low-floor trains for all lines • New turnback track at Harrison Street • Grade separation at key locations	• Coupling trains at portals	• Transit-only/preferential streets • Transit signal priority/pre-emption

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Strategy's preliminary capacity benefits analysis results presented today.

3- and 4-car trains

What is it? Operate 3-car train to Judah/La Playa and 3- or 4-car train between Downtown and SF State.

Benefit: Could provide 50-100% more capacity on these lines.

Tradeoff: May require lengthening station platforms, consolidating stops, and/or closing intersections.

Reminder: for consideration to solve future 20+ year capacity needs. This Study will not be a decision-making phase for infrastructure plans to support longer trains, which would require extensive future outreach and additional analysis.

Route restructuring

What is it? Remove one or more 1- to 2-car Muni Metro rail lines from the subway to allow their scheduled slots in the subway to be used by 3- to 4-car trains

Benefit: Could alleviate crowding by providing 2-3 times as much capacity per train slot

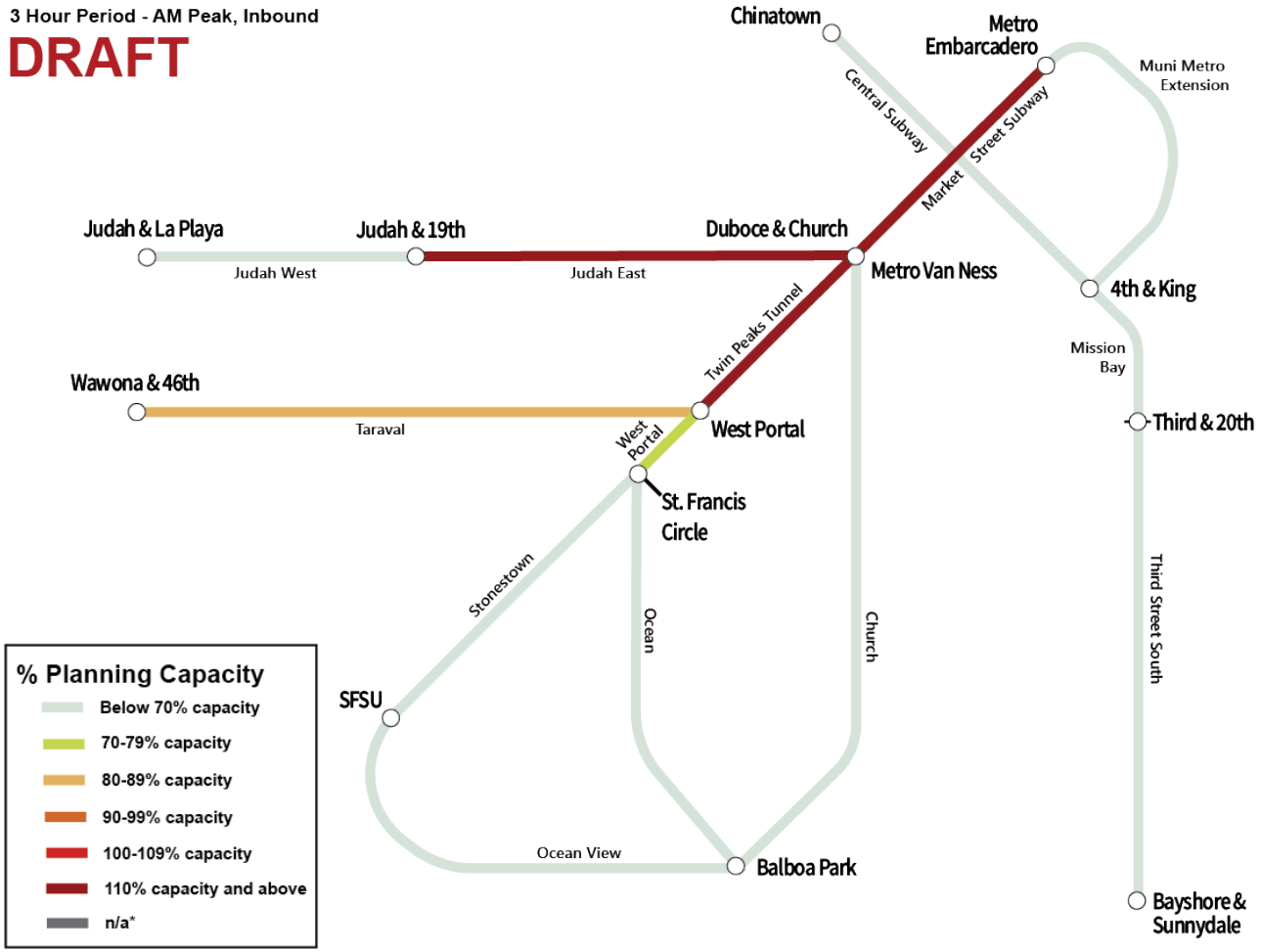
Tradeoff: Some riders would need to transfer (more travel time, need to physically change locations, etc.)

Reminder: for consideration to solve future 20+ year capacity needs. This Study will not be a decision-making phase for any service restructuring ideas, which would require extensive future outreach and additional analysis.

2050 Business as Usual

Segments forecast overcapacity:

1) Market Street Subway;
2) Twin Peaks Tunnel;
3) N-Judah to 19th Avenue

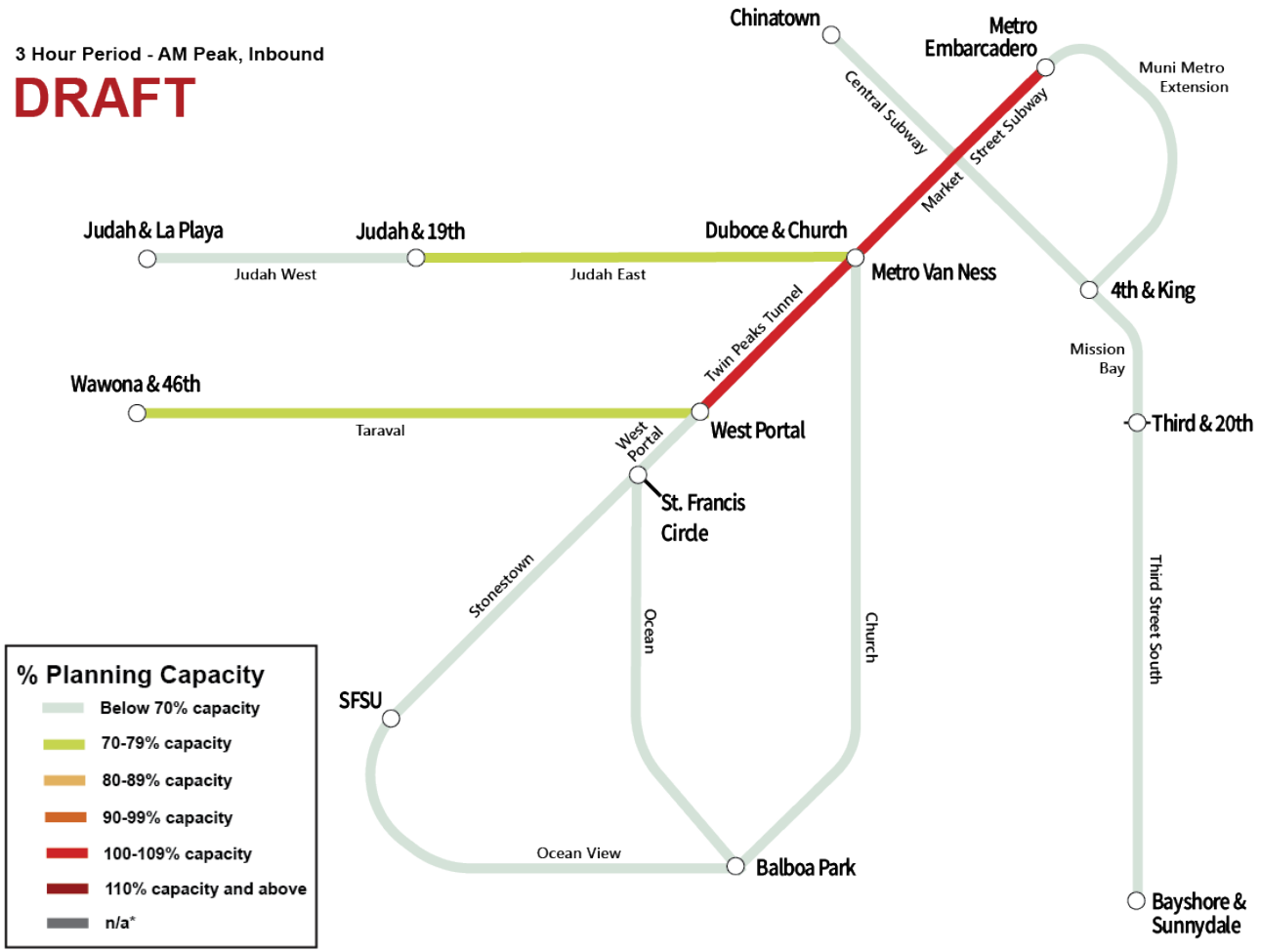


* Note that T-Third future demand/capacity is not shown here. Additional T Third speed and reliability solutions are currently being developed through a nearer term study. More reliable demand data, particularly for the northern part of the corridor is pending

2050 with 3-cars to Judah/La Playa and between Downtown and SF State

Segments forecast overcapacity:

1) Market Street Subway;
2) Twin Peaks Tunnel



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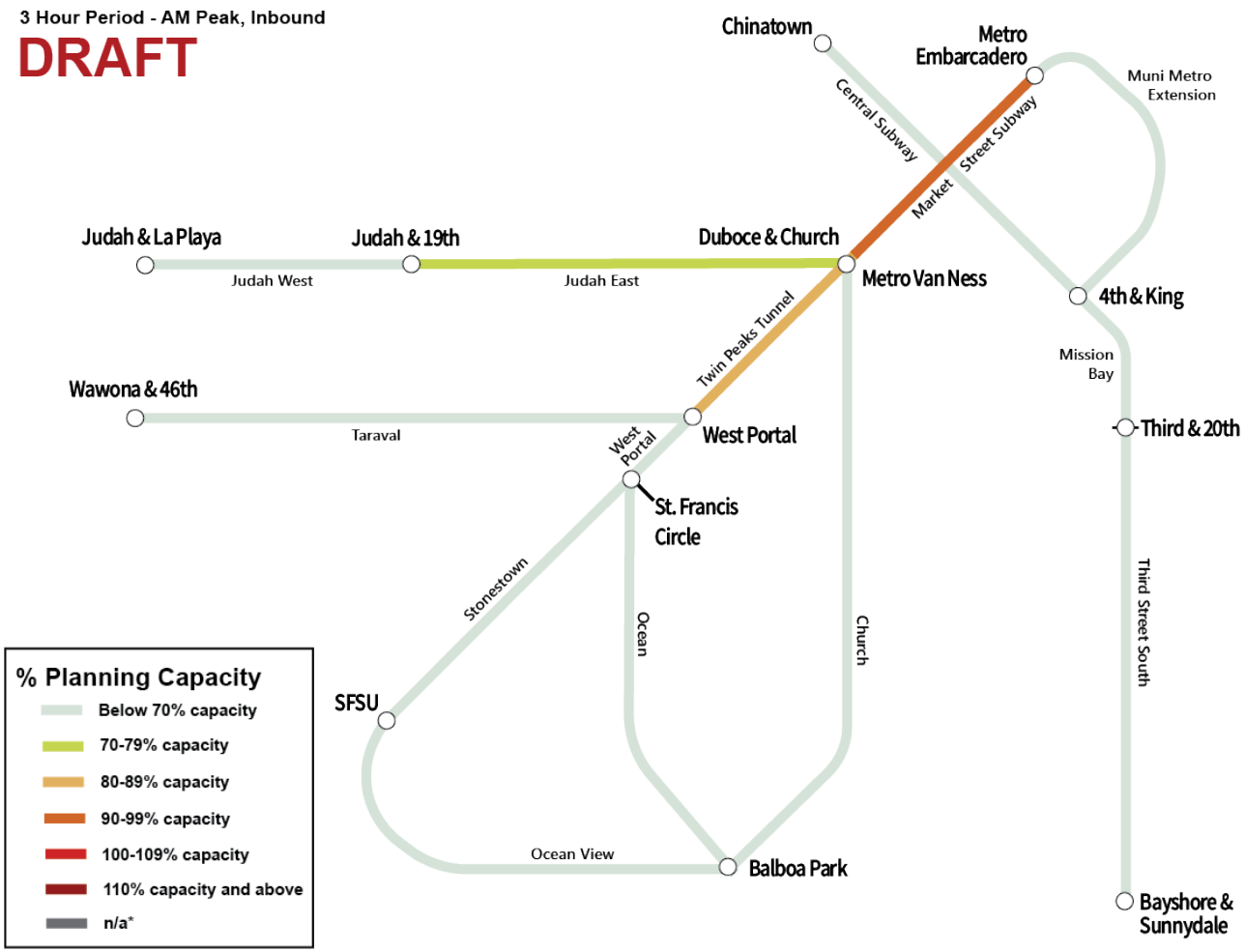
2050 with 3-cars to Judah/La Playa and between Downtown and SF State and one surface-only line

Segments forecast overcapacity:

None, though Market Street Subway would be near capacity



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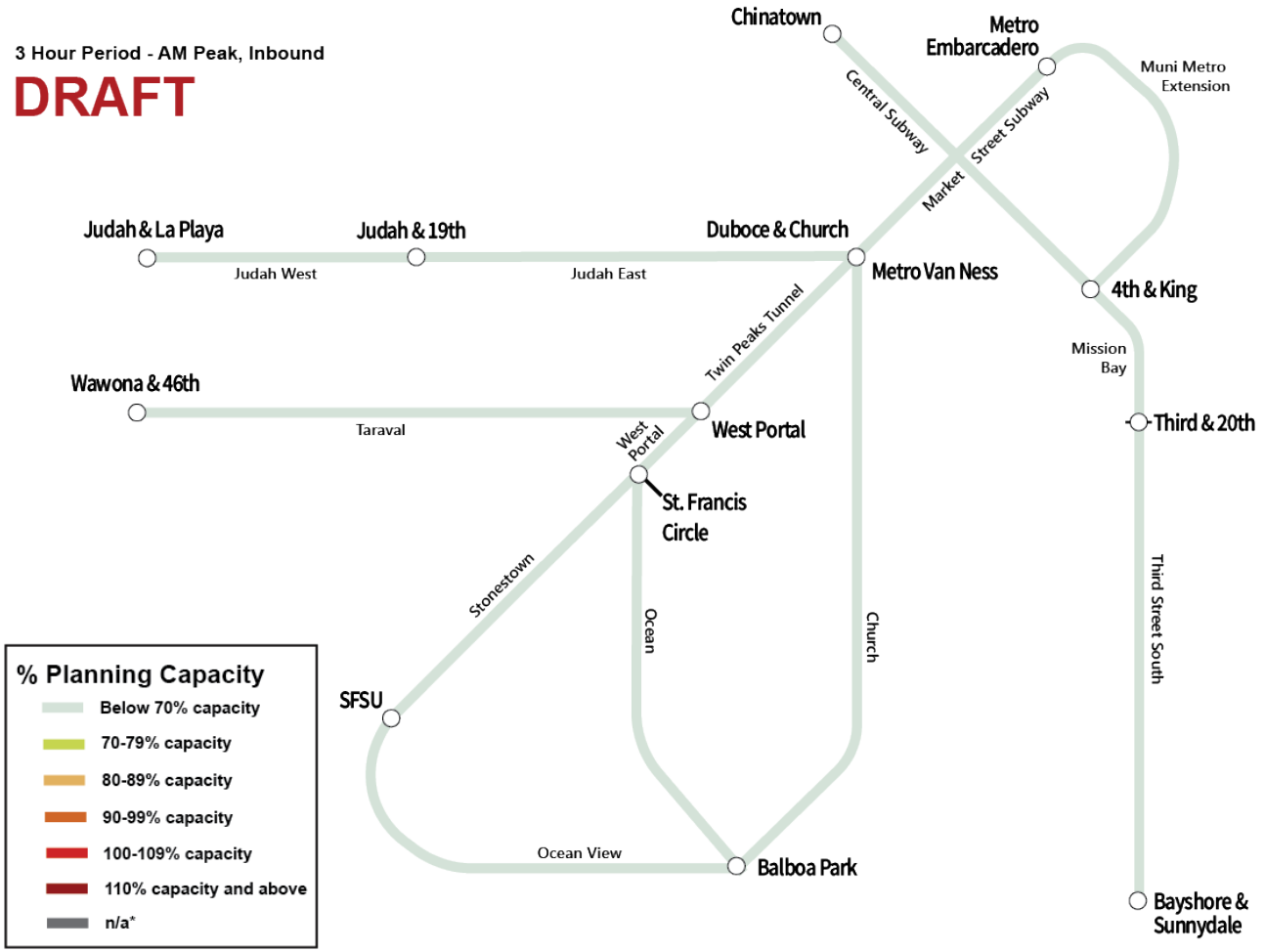
2050 with 3-cars to Judah/La Playa and between Downtown and SF State and multiple surface-only lines

Segments forecast overcapacity:

None



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Evaluation framework

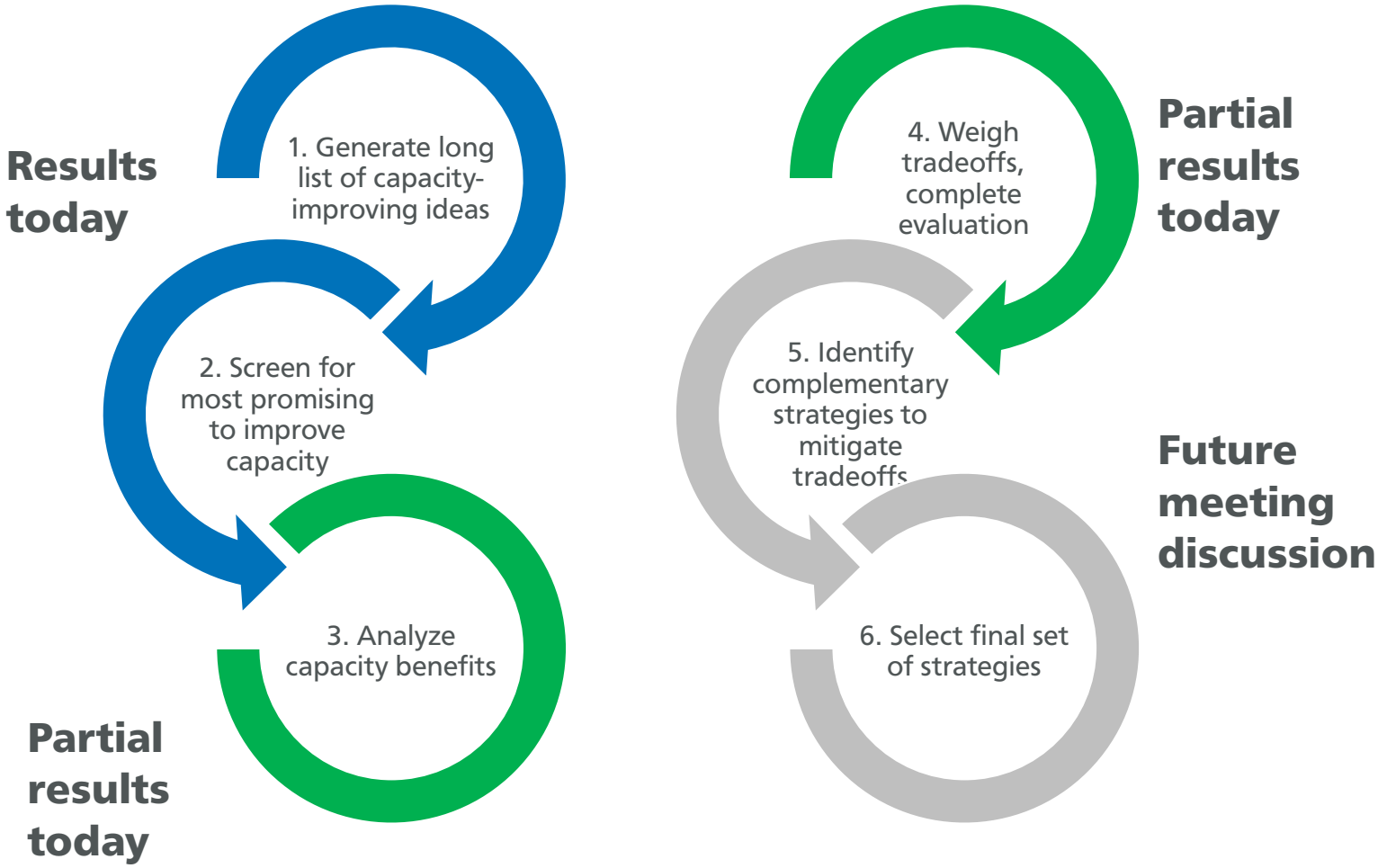
Key funding objectives

- **Capacity:** Expand capacity enough to meet demand where needed
- **State of Good Repair:** Effectively repair or replace aging infrastructure

Additional important goals

- **Cost effectiveness** (are there other ways to achieve the same results for less money?)
- **Improve transit speed and reliability** (necessary for capacity increases to be effective)
- **Trade-offs** How many tradeoffs (e.g. construction disruption or other impacts on surrounding neighborhoods, how well solutions respond to community member and rider concerns
- **Accessibility:** Improve Muni Metro system accessibility
- **Equity:** Improve Muni Metro equity

Capacity strategy development and screening approach



Discussion questions

1. What questions or comments do you have about the existing and future capacity forecasts and initial screening of strategies?
2. What comments or concerns do you have on the tradeoffs expressed for the strategies of focus tonight (3-car trains, route restructuring)?
3. What feedback do you have on the draft evaluation framework?