Core Capacity Transit Study: Project Update

March 22, 2017

Outcomes for Today

- Public Outreach feedback
- SF Metro short and medium term recommendation
- Long Term study findings
- Study next steps

Public Outreach

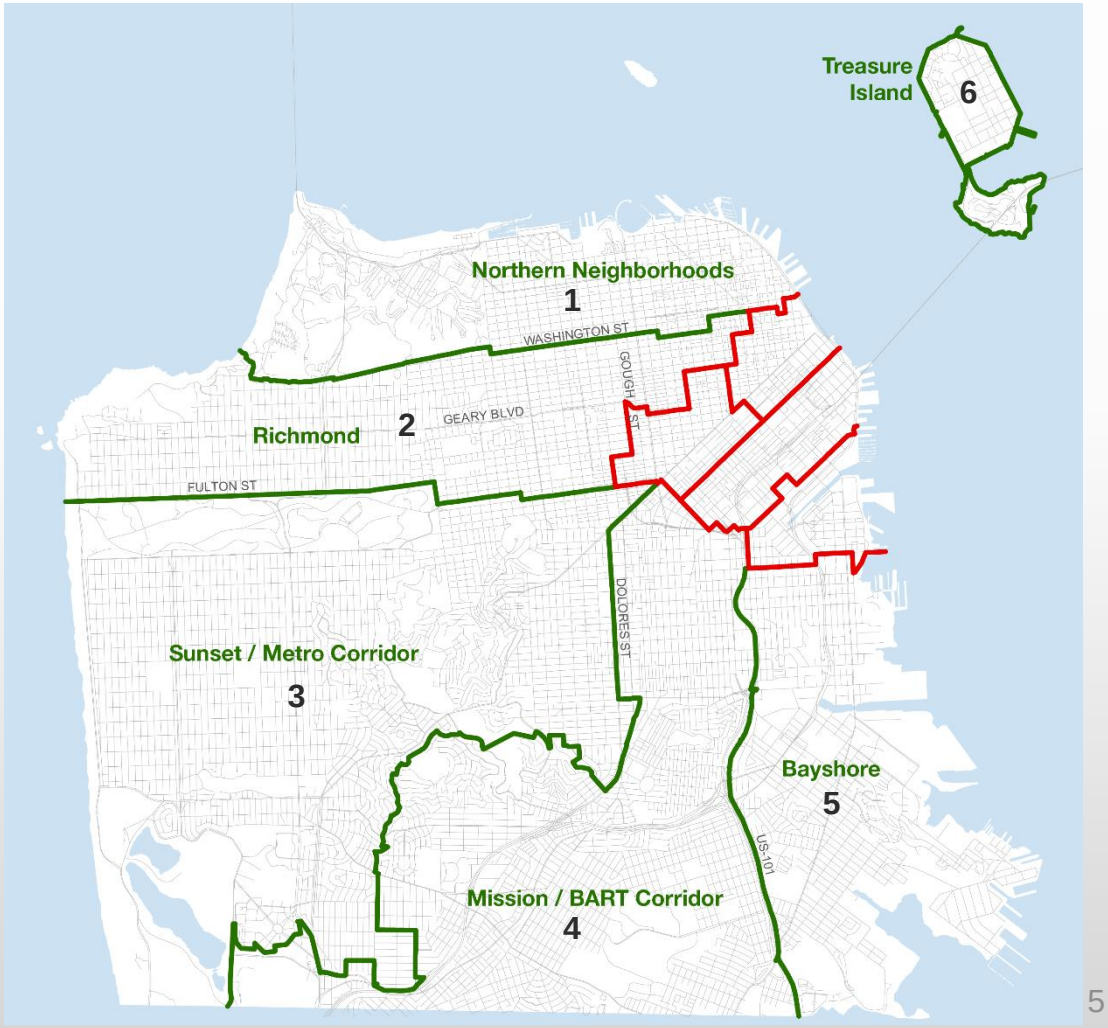
- Two outreach events hosted, one each in San Francisco and Oakland
- Feedback included:
  - Prioritize *comprehensive* short/mid term solutions- e.g. include service and infrastructure with any pricing solutions
  - Long-term projects (e.g. second tube) should work to solve *big regional problems*
  - Optimize technology & traveler information so people can make better choices in real-time
  - Include equity in the discussion

SF Metro

Short and Medium Term Evaluation

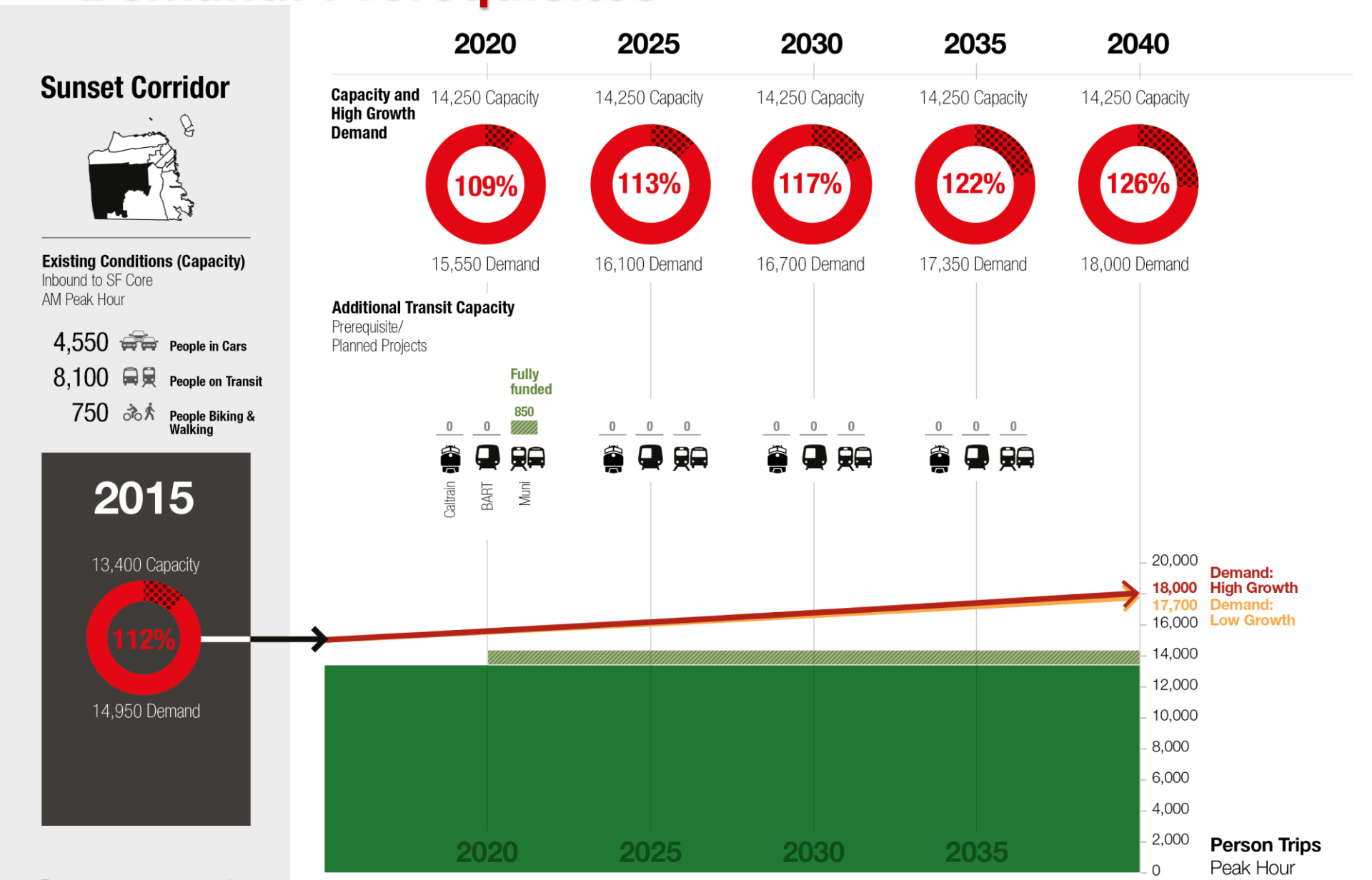
SF Metro Corridor Future Growth

- Similar analysis to Transbay, but capacity/demand assessed in 6 sub-areas
- Richmond & Sunset corridors show projected demand above planned capacity
- Other corridors show future planned capacity above projected demand



CORE CAPACITY TRANSIT STUDY

SF Metro Sunset Corridor Capacity and Demand: Prerequisites



Short/Medium-Term Packages

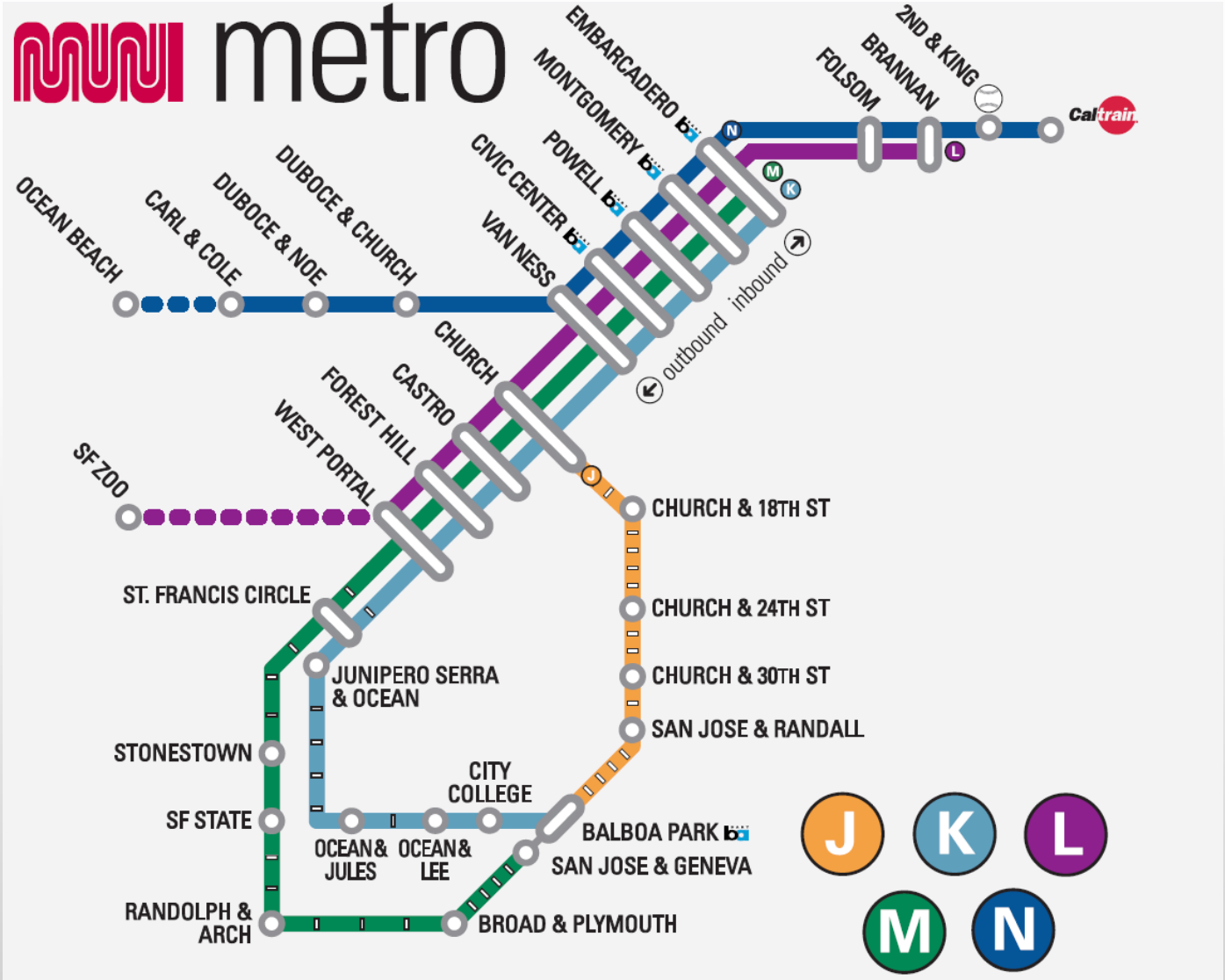
1a	**Focus on Improving Train Operations on City Streets** • *Scheduled Capacity: Lengthen trains throughout the system* • *Realized Capacity: Limit travel-time variability on surface*

1b	**Join Trains at Merge Points to Increase Tunnel Capacity** • *Scheduled Capacity: Lengthen trains in core of system*

2	**Simplify the Structure of the System** • *Scheduled Capacity: Lengthen trains on key lines* • *Realized Capacity: Reduce tunnel exposure to surface variability*

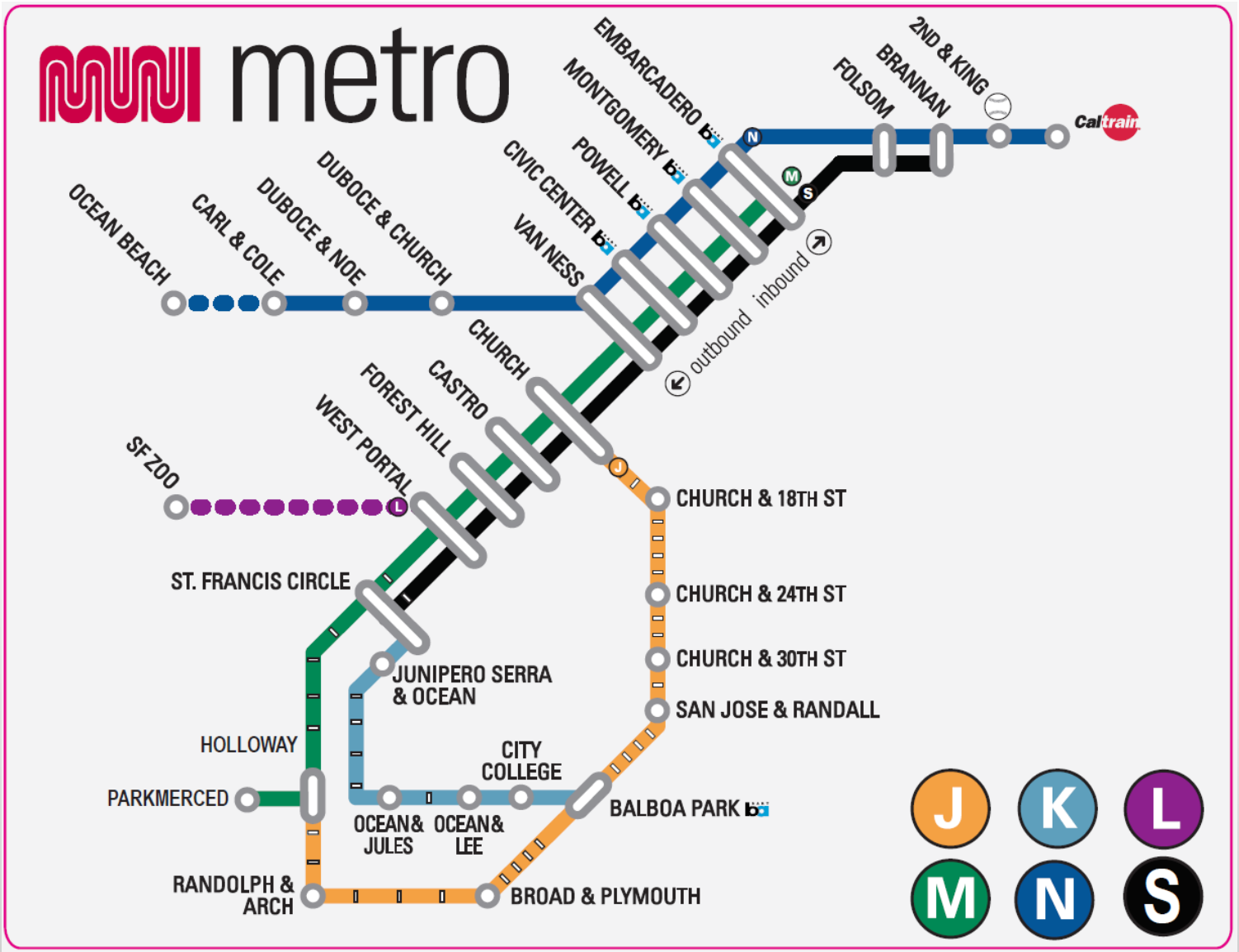
Current System Structure

2a: Restructure – Church Station Transfer



CORE CAPACITY TRANSIT STUDY

2c: Restructure – Spine-Transfer



CORE CAPACITY TRANSIT STUDY

Evaluation Results

Metrics

Conclusions

Performance Evaluation

(Relative to baseline/no-build)

	Capacity	Utilization	Reliability	Resiliency
	Peak Hour Person Spaces	Load Factor	Surface Travel Time Variance	Relative Assessment
Package 1a				
Package 2a				
Package 2c				

Lower performing

Higher performing

CORE CAPACITY TRANSIT STUDY

SF Metro Capacity and Demand w/ Package 1a (Surface Optimization)

Sunset Corridor

Existing Conditions (Capacity)
Inbound to SF Core
AM Peak Hour

4,550	People in Cars
8,100	People on Transit
750	People Biking & Walking

2015

13,400 Capacity

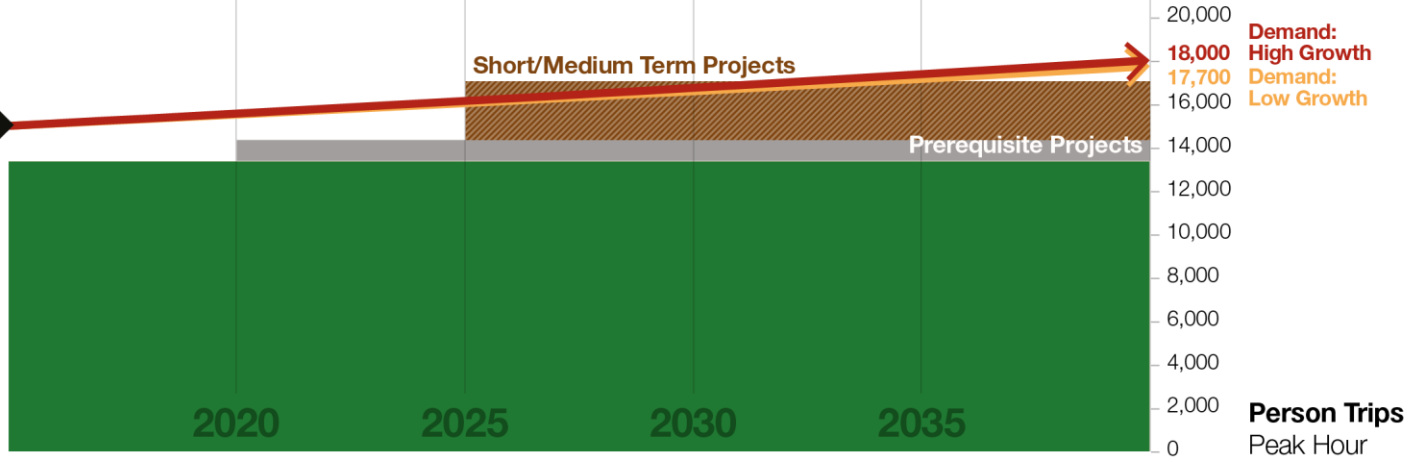
112%

14,950 Demand

	2020	2025	2030	2035	2040
Capacity and High Growth Demand	14,250 Capacity	16,950 Capacity	16,950 Capacity	16,950 Capacity	16,950 Capacity
	109%	95%	99%	102%	106%
	15,550 Demand	16,100 Demand	16,700 Demand	17,350 Demand	18,000 Demand

Additional Transit Capacity
Short/Medium Term Projects

	2020	2025	2030	2035	2040
Caltrain	0	0			
BART	0	0			
Muni	0	2,700			



Totals may not sum due to rounding

Recommended Package 1a: Capital Costs

Improvements		Estimated Cost
Not Fully Funded Prerequisite Projects		
1	SFMTA – Fleet and Yard	$787M
2	Surface Light Rail Safety & Capacity Project	$100M
	Subtotal Prerequisite Projects	$887M
Not Fully Funded Recommended Projects		
1	Surface Improvements - Station improvements - Roadway improvements - Transit priority traffic control improvements	$51M
	Subtotal Recommended Projects	$51M
	Total Recommended Package	$938M

Next Steps

- Investment in pre-requisite projects
- Continued and enhanced implementation of travel time and reliability improvements for light rail lines
- ConnectSF – Citywide identification of long term priorities and key travel corridors

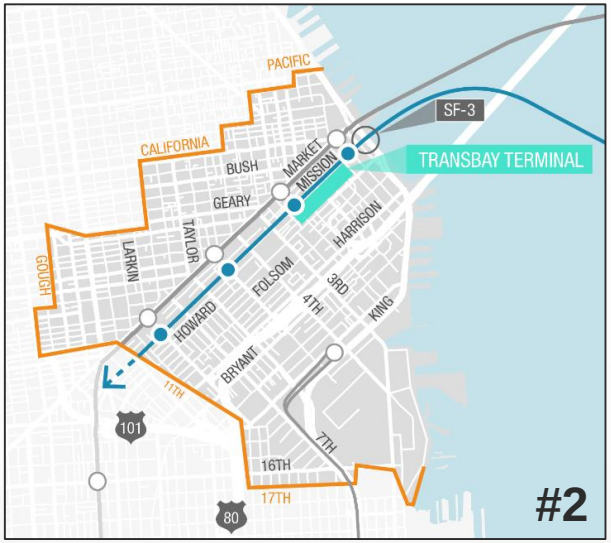
Long Term Summary

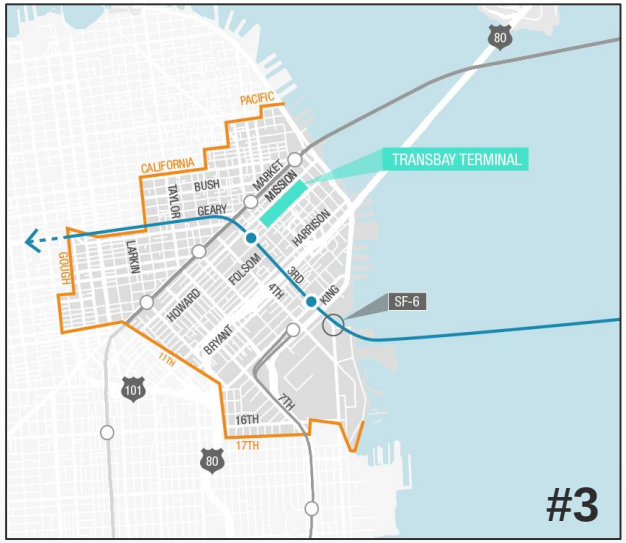
Long Term Options

	Long Term Option	Capacity Estimate	Capital Cost Estimate
1	More Bus and Ferry: Maximize Existing Assets - +125 buses - +6 ferries	+13,000	$600M
2	BART Independent Line (via Mission) -28 trains/hour	+30,000	$5B - $12B
3	BART Independent Line (3rd St. Crossing) - 28 trains/hour	+30,000	$5B - $12B
4	BART Merged Line (SOMA/Mission Bay) - 12 to 24 trains/hour	+10,000 – 20,000	$5B - $12B
5	Greater Regional Rail Connection - 10 to 12 trains/hour	+12,000 – 18,000	$5B - $11B

Long Term Options – SF Alignments

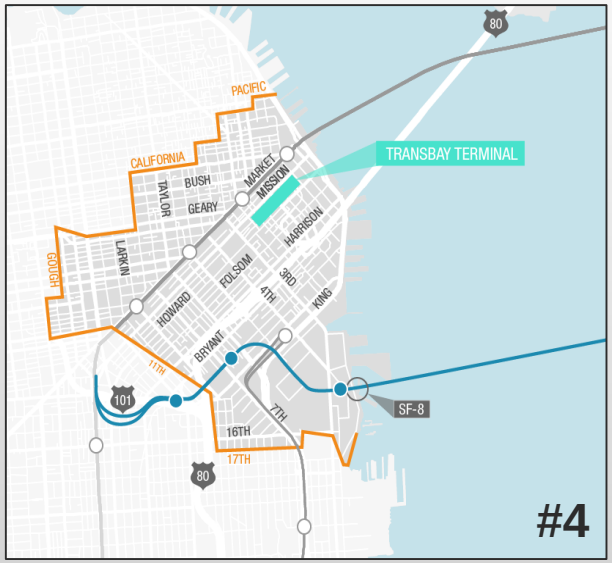
BART Independent Line – via Mission St.

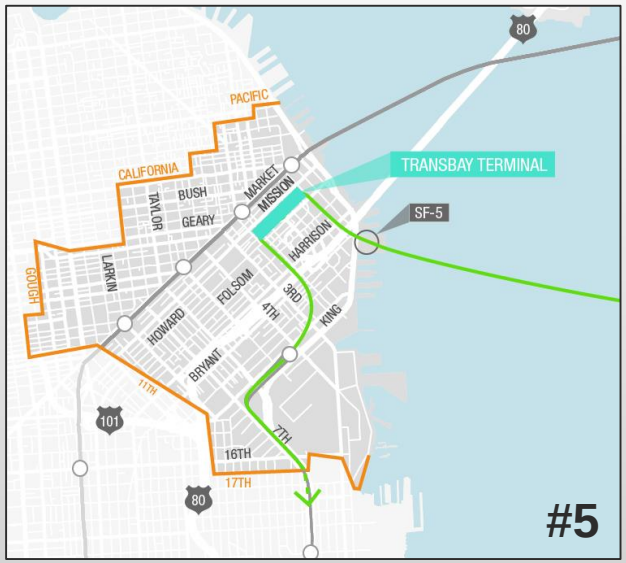




BART Independent Line – 3rd St. Crossing

BART Merged Line – SOMA/ Mission Bay





Greater Regional Rail Connection

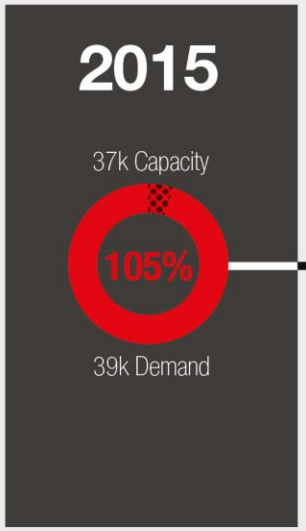
CORE CAPACITY TRANSIT STUDY

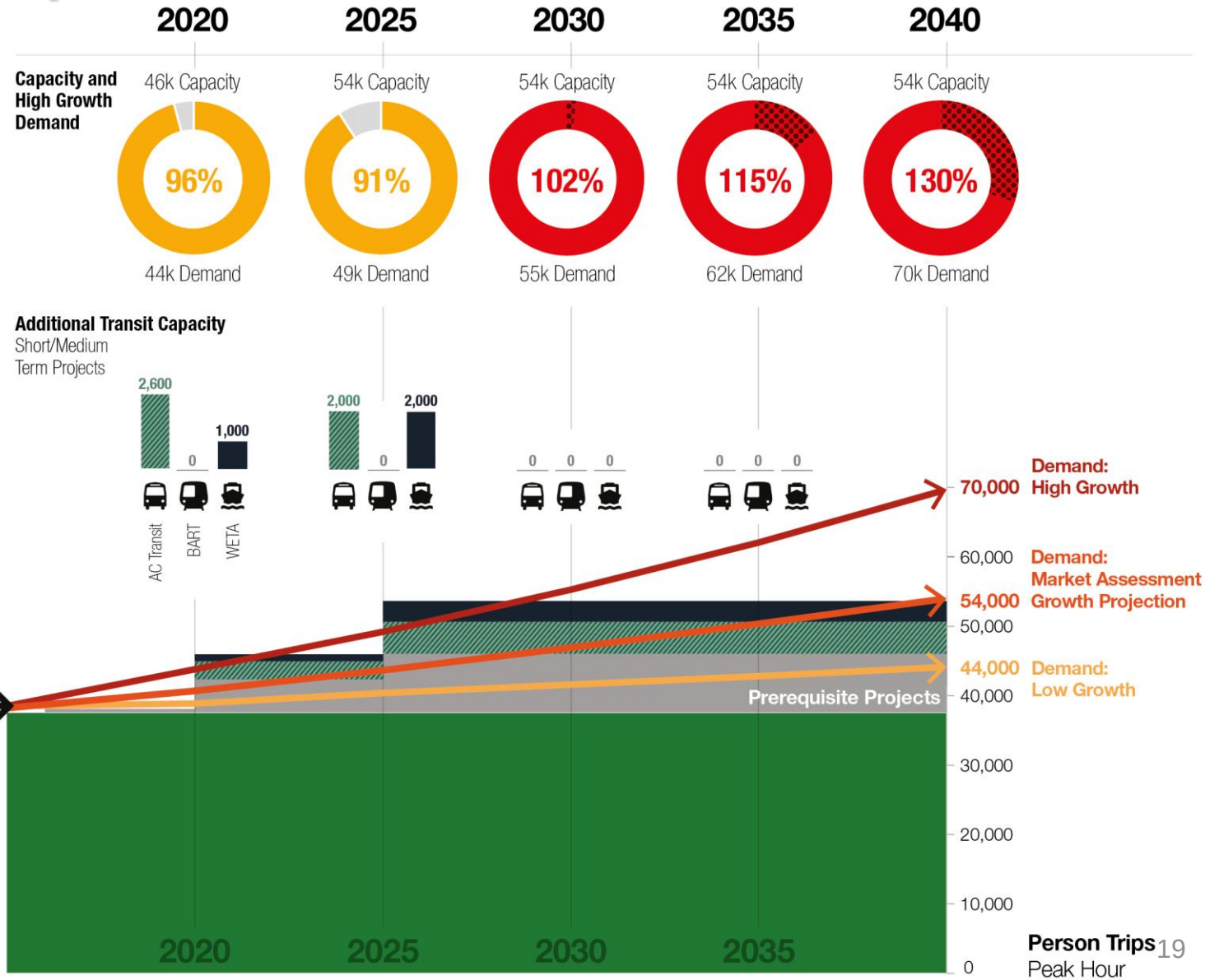
Transbay Capacity and Demand: Short and Medium Improvements

Transbay Corridor

Short and Medium Packages
Estimated transit capacity increases

10,000 **People in Cars**
29,000 **Transit Trips**
- 2,700 AC Transit & WestCAT bus
- 25,000 BART
- 1,300 WETA ferry



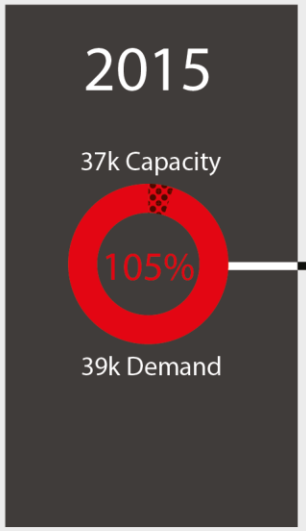


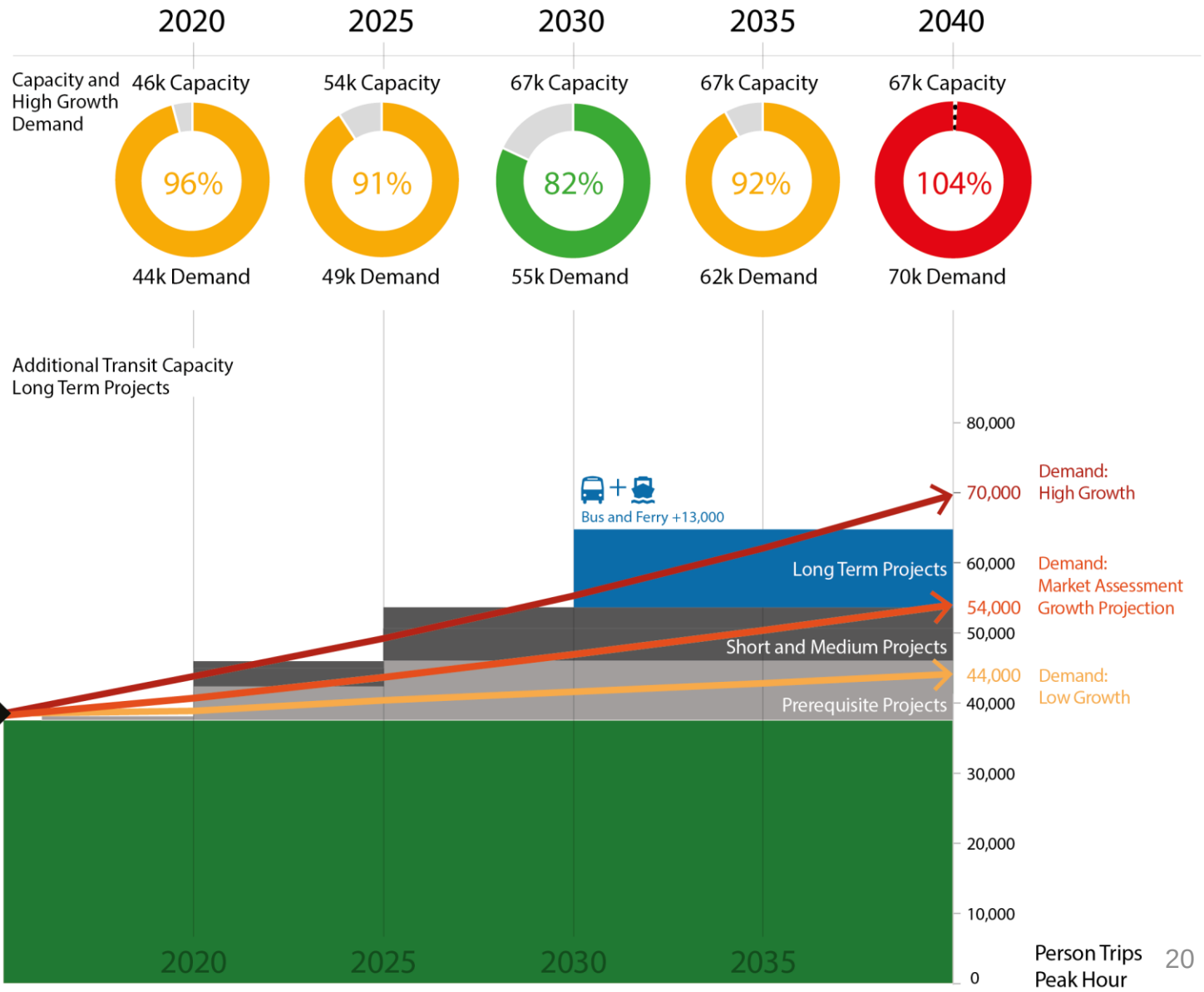
Transbay Capacity and Demand: More Bus and Ferry

Transbay Corridor

Long Term Projects
Estimated transit capacity increases

10,000 People in Cars
29,000 Transit Trips
2,700 AC Transit & WestCAT bus
25,000 BART
1,300 WETA ferry





Transbay Capacity and Demand: BART Independent Line

Transbay Corridor

Long Term Projects
Estimated transit capacity increases

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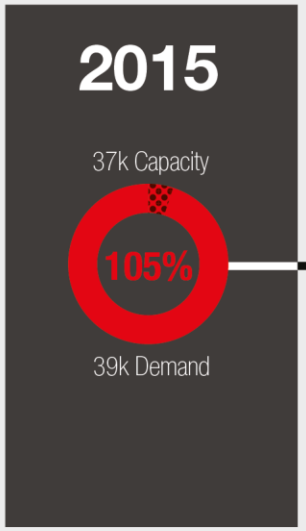
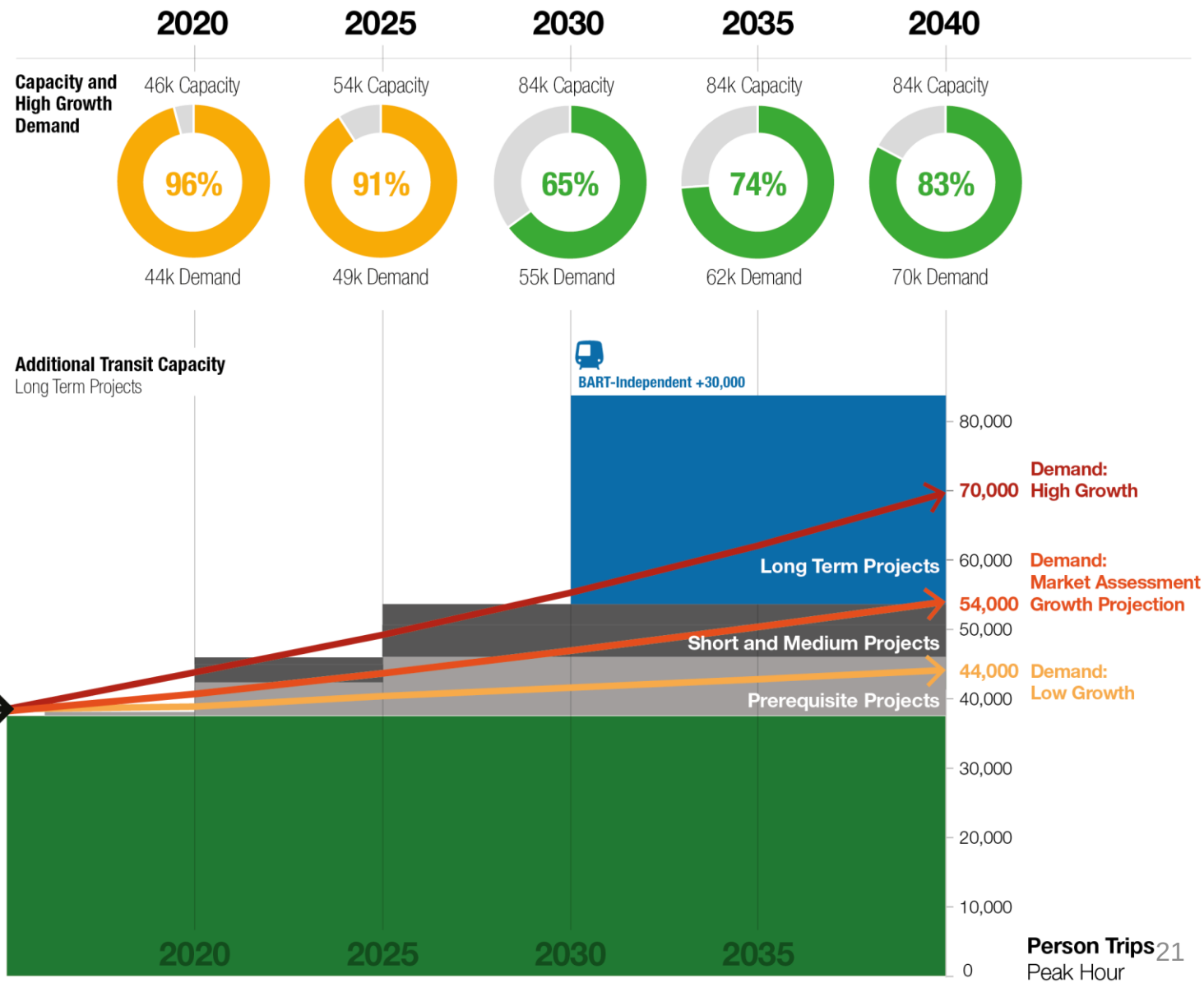
29,000 **Transit Trips**
- 2,700 AC Transit & WestCAT bus
- 25,000 BART
- 1,300 WETA ferry





Transbay Capacity and Demand: BART Merged Line

Transbay Corridor

Long Term Projects
Estimated transit capacity increases

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29,000 **Transit Trips**
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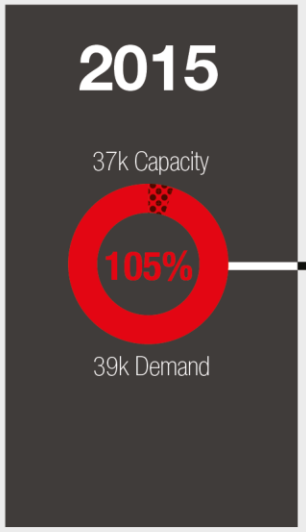
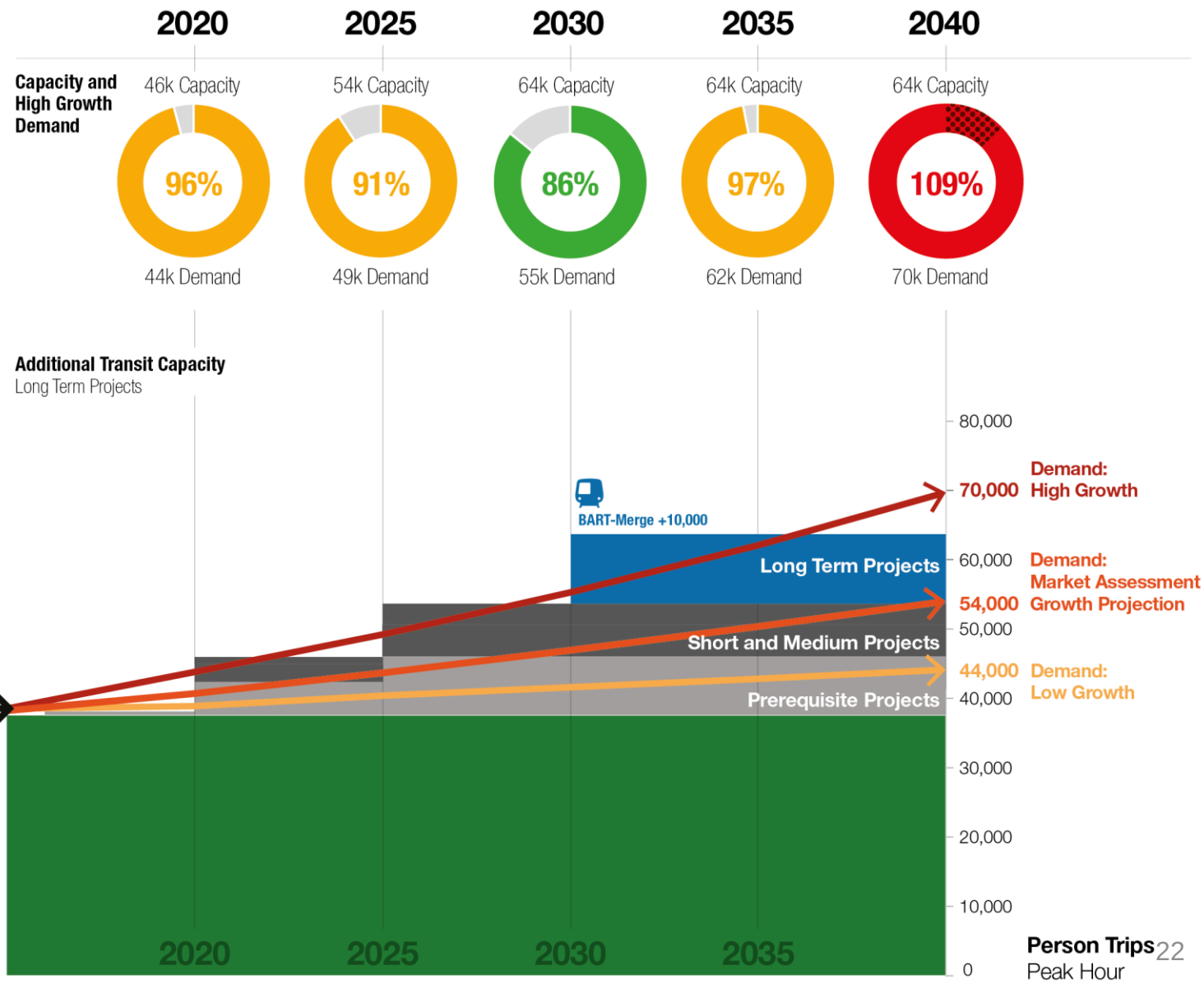
- 25,000 BART
- 1,300 WETA ferry





Transbay Capacity and Demand: Greater Regional Rail

Transbay Corridor

Long Term Projects
Estimated transit capacity increases

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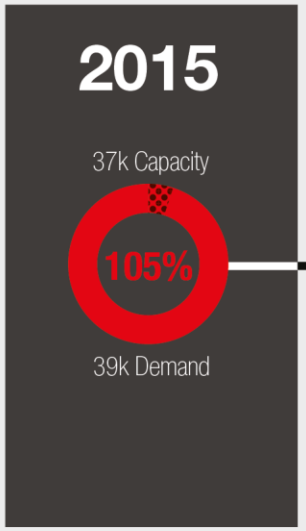
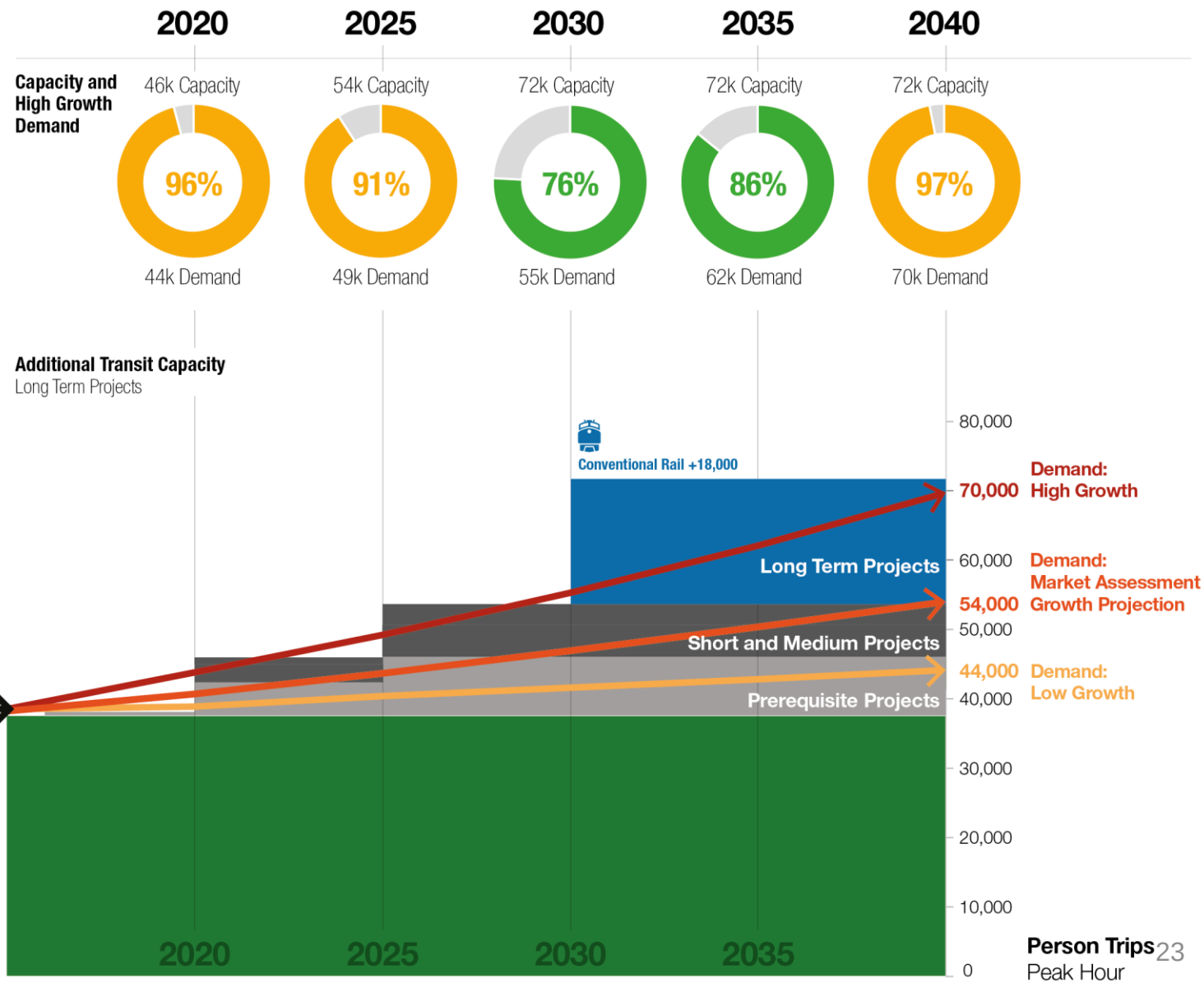
29,000 **Transit Trips**
- 2,700 AC Transit & WestCAT bus
- 25,000 BART
- 1,300 WETA ferry





Transbay Capacity and Demand: BART + Conventional Rail

Transbay Corridor

Long Term Projects
Estimated transit capacity increases

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29,000 **Transit Trips**
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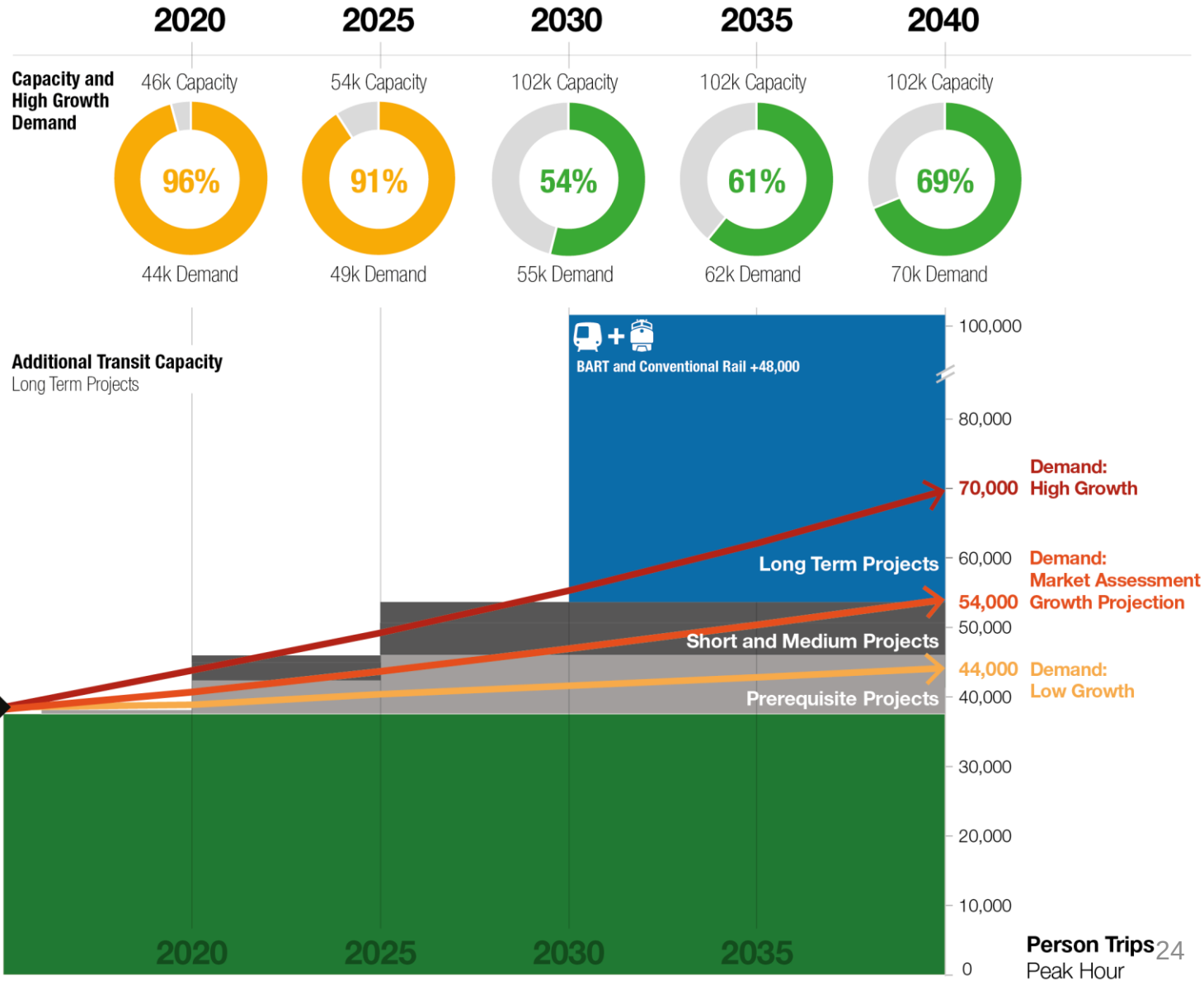
- 1,300 WETA ferry



2015

37k Capacity

105%

39k Demand

Long Term Summary

- All options deliver sufficient capacity to meet demand for the medium growth 2040 forecast
- However, two options (bus and ferry option and BART Merged/Breakout Line) do **not** deliver sufficient capacity for the high-growth forecast
- All other rail options provide sufficient capacity for the high growth 2040 forecast
- Recommend a long term project to provide additional transit capacity in the corridor for 2030+

Next Steps

- Develop and issue Final Report
- Second crossing continuation study
  - Includes BART and conventional rail option for analysis
  - Need to Identify study leaders
    - Identify program management role and who does it
    - BART will lead BART portion
    - Responsible entity to lead conventional rail portion needs to be identified/created
  - Extend PMT participation (and new stakeholders)
  - Study anticipated to look at market demand first, then service needed to address demand, then operations and infrastructure
- Key scoping questions
  - Geographic scale: corridor, regional, mega-regional?
  - Institutional governance and other policy considerations
- A scoping effort is needed ASAP to develop a second crossing continuation study framework.
  - Recommend Execs meet again to outline continuation effort

Questions?