ECR Corridor Initiatives

Transit Signal Priority (TSP)
Bus Speed & Reliability Study

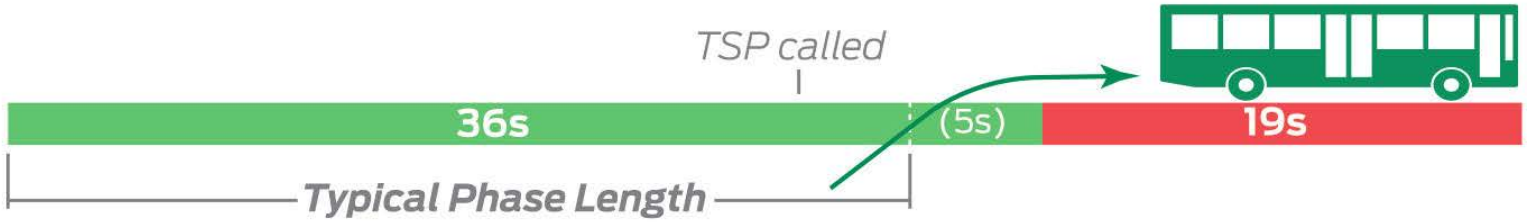
SamTrans Board of Directors Meeting

August 4, 2021

TRANSIT SIGNAL PRIORITY (TSP) PRELIMINARY EVALUATION

Daniel Shockley, Senior Planner

What is Transit Signal Priority (TSP)?



- Allows for extended green light when the bus is approaching an intersection
  - TSP hardware has been installed at nearly every signal on the El Camino Real corridor and all buses used to operate Route ECR
- Partially operational in October 2020, live as of January 2021

samTrans

Preliminary Analysis

Context: Covid-19 pandemic and impacts to travel conditions

- Travel time savings
  - Average travel time between timepoints based on APC data, aggregated by month
- On-time performance / reliability
  - Share of stop arrivals that are on time
    - On time defined as no later than 5 and no earlier than 1 minute of scheduled arrival
- Project delivery
  - Construction complete by deadline set in MTC grant application

Preliminary Results

Metric	Observed	Preliminary Results
Travel time savings	Up to 4 minutes of savings between individual timepoints (compared to Feb 2019)	✓
Reliability	Improvement in on-time performance from 71% (Feb 2020) to 84% (Feb 2021)	✓
Project delivery on time	Delivered by June 2021 deadline	✓
Ridership increase	Too soon to evaluate	
Cost savings	Too soon to evaluate	

samTrans

Looking Ahead

- Ongoing monitoring and evaluation, in coordination with Operations Planning/Scheduling team
- Explore system optimization in conjunction with ECR Bus Speed & Reliability Study recommendations

ECR BUS SPEED AND RELIABILITY STUDY

Gwen Buckley, Senior Planner

Importance of Route ECR

Backbone of Network

- Serves 13 cities across 28 miles
- Intersects 17 of the 22 Priority Development Areas (PDAs) in San Mateo County
- Provides connections to BART and Caltrain stations

Ridership Workhorse

- Generates about 25% of daily SamTrans ridership

Resource-intensive

- About 20% of bus operations budget
- Very long route, challenging to operate

samTrans

Study Goal and Outcomes

Goal

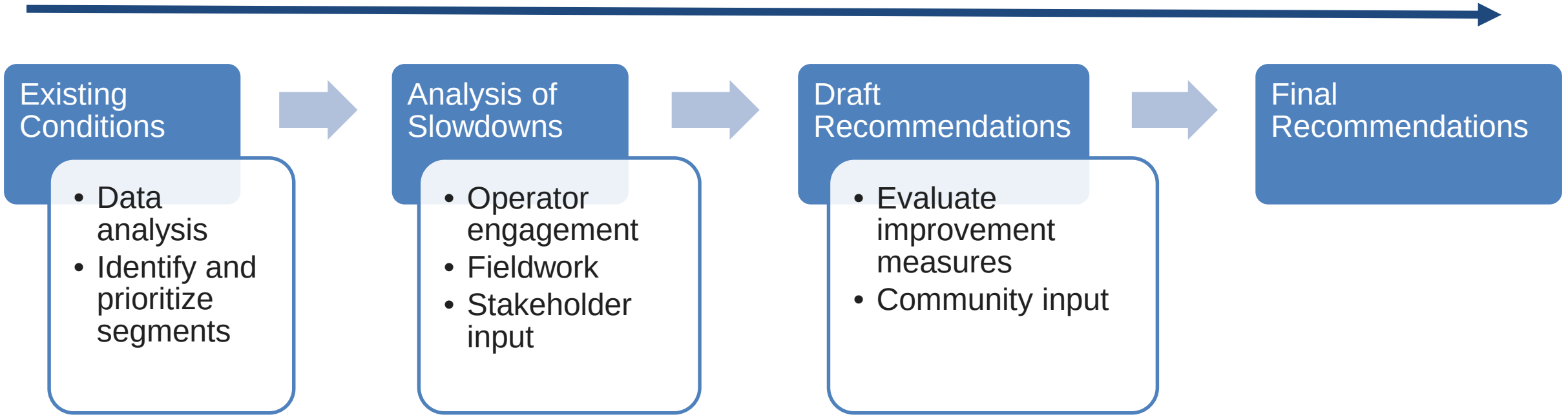
- Increase bus **speeds** and improve bus **reliability** on El Camino Real

Desired Outcomes

- A better rider experience
- Ability to attract new riders and support ridership recovery
- Improved operational efficiency
- Better driving experience for our bus operators

Study Tasks

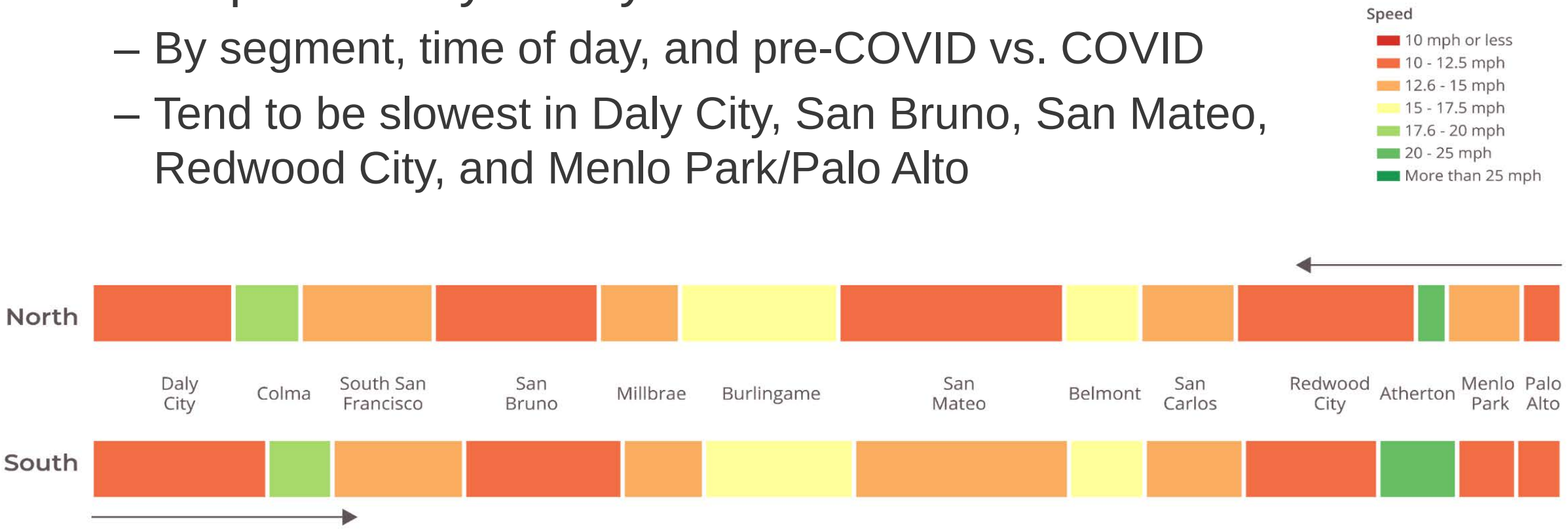
Summer 2021 | Fall 2021 | Winter 2022 | Spring 2022



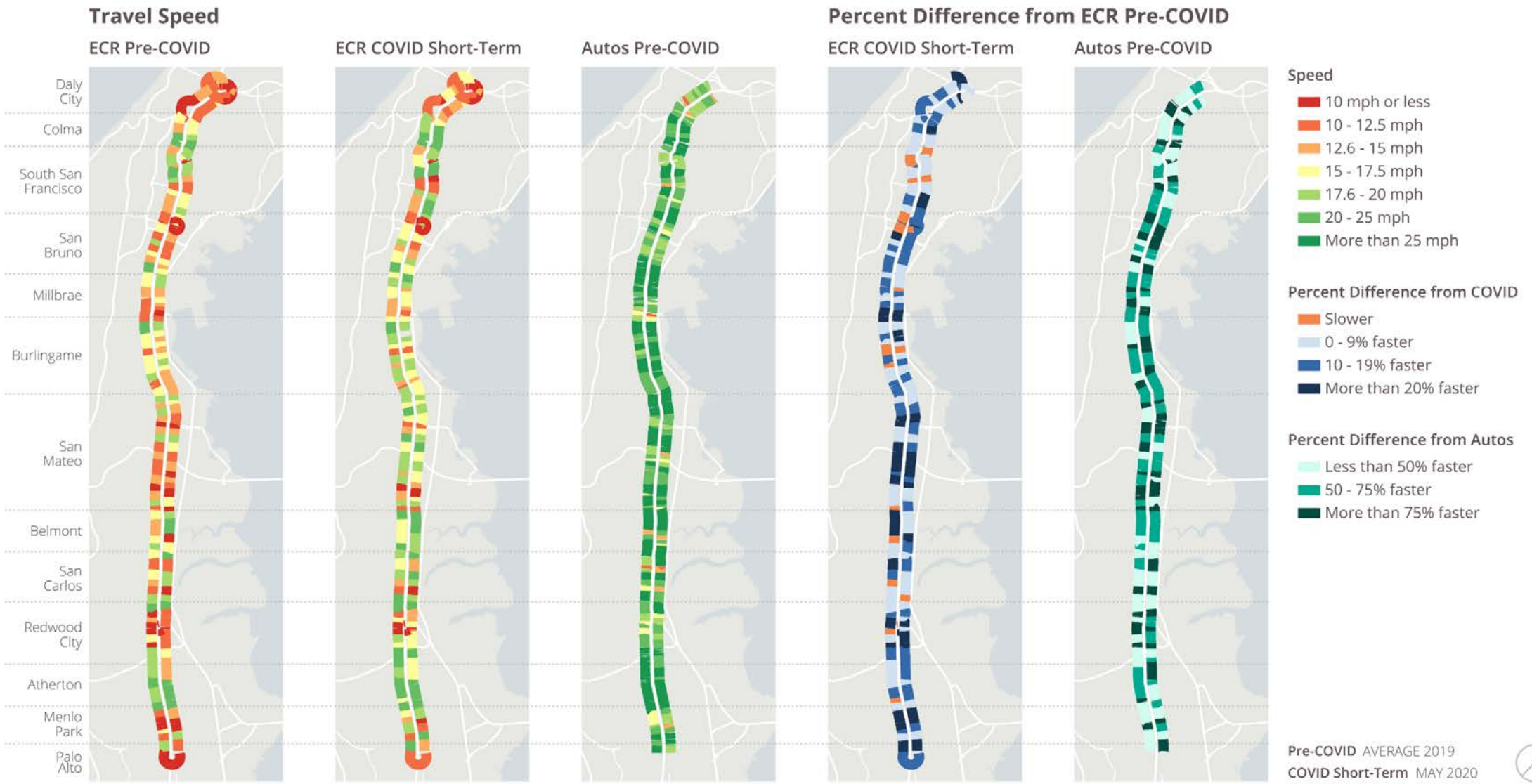
samTrans

Bus Speeds by Segment

- Bus speeds vary widely across the corridor
  - By segment, time of day, and pre-COVID vs. COVID
  - Tend to be slowest in Daly City, San Bruno, San Mateo, Redwood City, and Menlo Park/Palo Alto

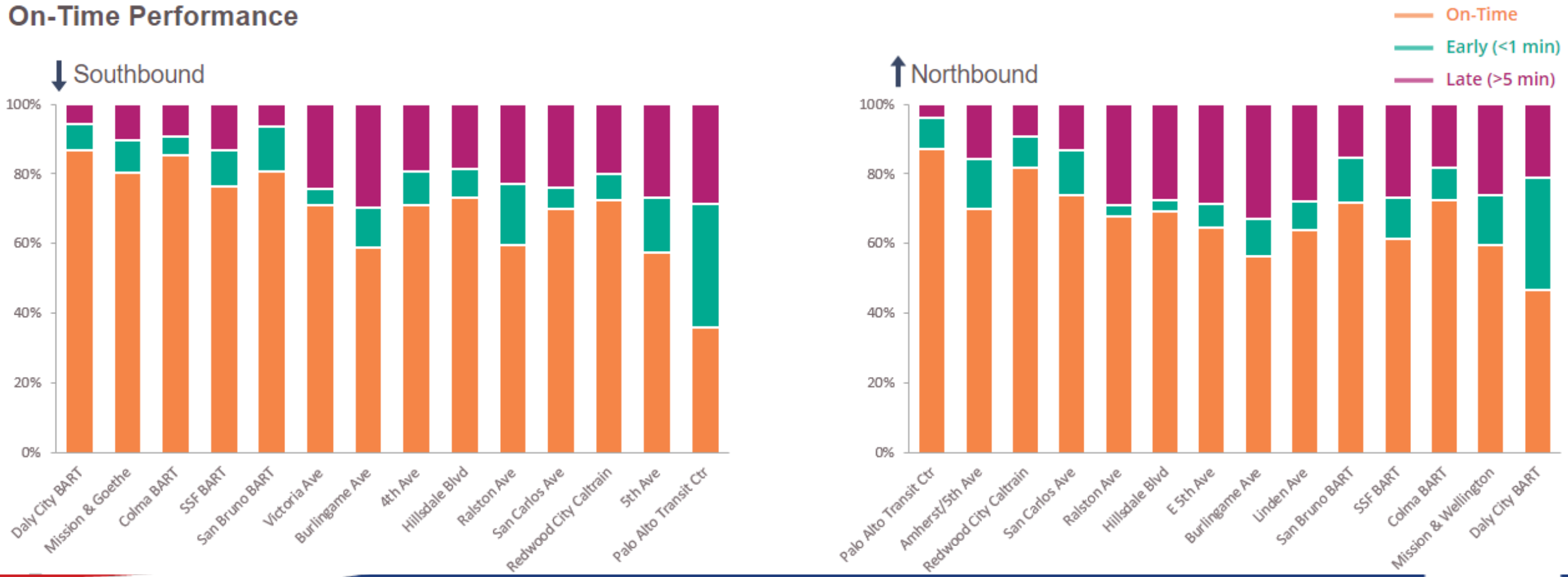


ECR Speed Comparisons (Avg Daily)



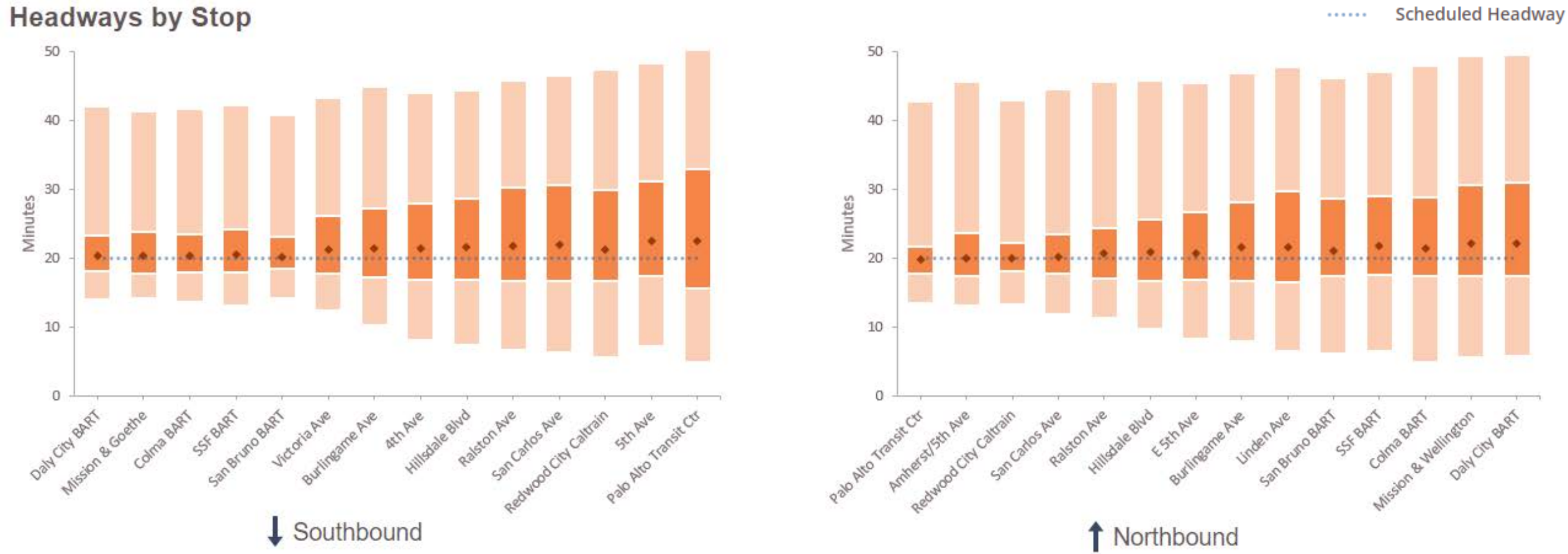
On-Time Performance

- On-time performance worsens as buses travel on the corridor
  - Especially unreliable around Redwood City/Menlo Park and Daly City



Headways by Stop (Avg Weekday, 2019)

- Wait times are inconsistent – especially at ends of the corridor
  - Passengers experience unreliable headways due to bus delays and bunching

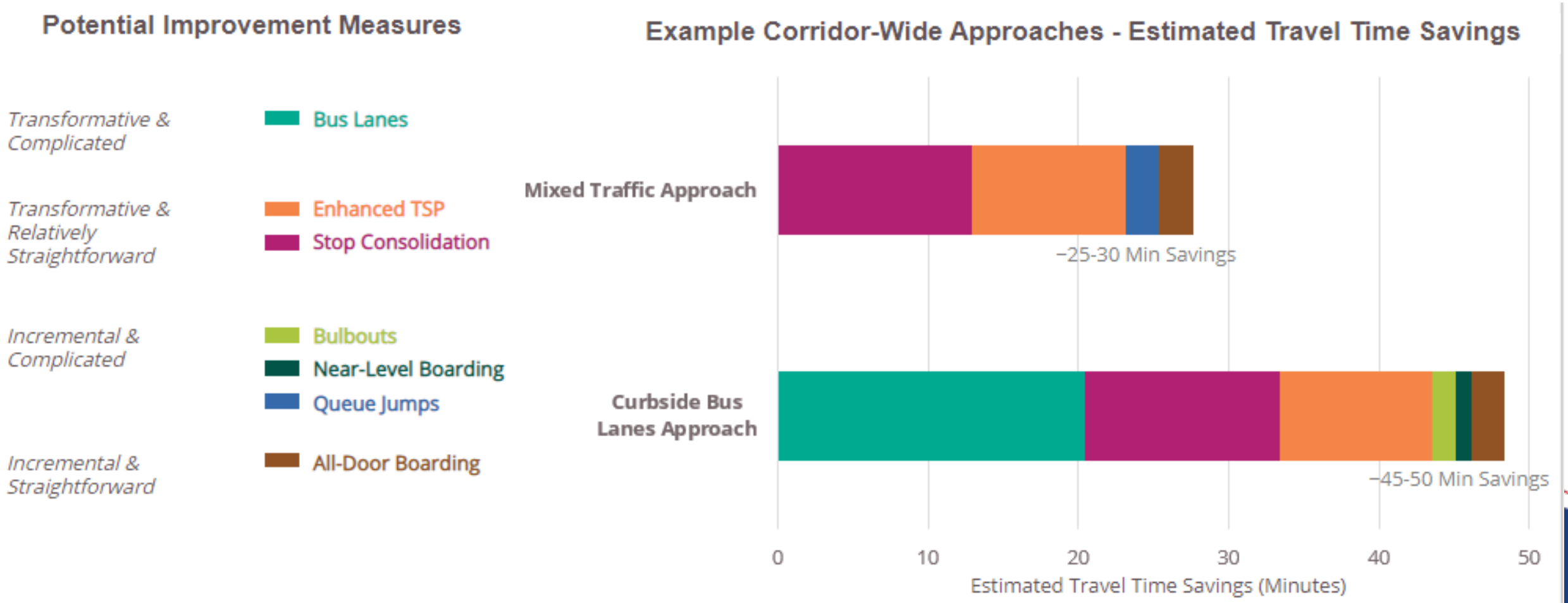


Key Findings

- On-time performance and wait times are unreliable
  - Riders consistently encounter late arrivals and extended wait times
- Traffic congestion, signals, and frequent stops are primary drivers of speed and reliability
  - Slow segments occur throughout the corridor, but are particularly concentrated in a few cities
- Faster service during COVID-19 illustrates potential for improvements
  - Opportunity to reduce travel times, enhance reliability, and improve experience for riders and drivers

Examples of Improvements

- Greatest potential time savings = bus lanes, enhanced TSP, and stop consolidation
- Balancing transformation potential and feasibility



Next Steps

- Prioritize segments with greatest potential for improvements based on:
  - Bus speeds and delays
  - Speed improvement during COVID-19 shelter-in-place order
  - Typical passenger load
  - City interest/partnership potential
  - Available street right-of-way
- Continued investigation of other improvements, specifically TSP enhancement and stop consolidation
- Continued operator and stakeholder engagement
- Initiate community outreach

QUESTIONS?