ECR Bus Speed and Reliability Study
Draft Recommendations

SamTrans Board of Directors

May 4, 2022

Agenda

- Study Background and Overview
- Draft Recommendations
  - Approach to developing and evaluating improvements
  - Overview of draft recommendations
- Outreach
  - Caltrans and city partner coordination
  - Public outreach
- Next Steps

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STUDY BACKGROUND AND OVERVIEW

Study Goal and Outcomes

Goal

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

Desired Outcomes

- A better rider experience
- Improve rider access to social and economic opportunities
- Better driving experience for our bus operators
- Improve route efficiency
- Attract new riders and support ridership recovery

Study Background

- Study funded by a Caltrans Sustainable Transportation Planning Grant

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Connection to *Reimagine SamTrans*

ECR Study is building on input received on Route ECR during three phases of *Reimagine SamTrans:*

Phase 1

- Riders expressed desire for faster and more reliable service, and more service on weekends

Phase 2

- **Alt 1**: Split route with increased frequency, Rapid route overlay
- **Alt 2**: Consolidation/ reduction in bus stops, no route alignment change
- **Alt 3**: No changes to route

Phase 3

- **Alt 1**: Increased frequency on weekends
- **Alt 2**: Consolidation of stops, no alignment change

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DRAFT RECOMMENDATIONS

Recommendation Development Process

Identified recommendations based on:

- Expected travel time savings and reliability improvements
- Rider benefits and impacts
- Relative costs
- Feasibility
  - Coordination required between SamTrans, municipalities, Caltrans
  - Right of way constraints

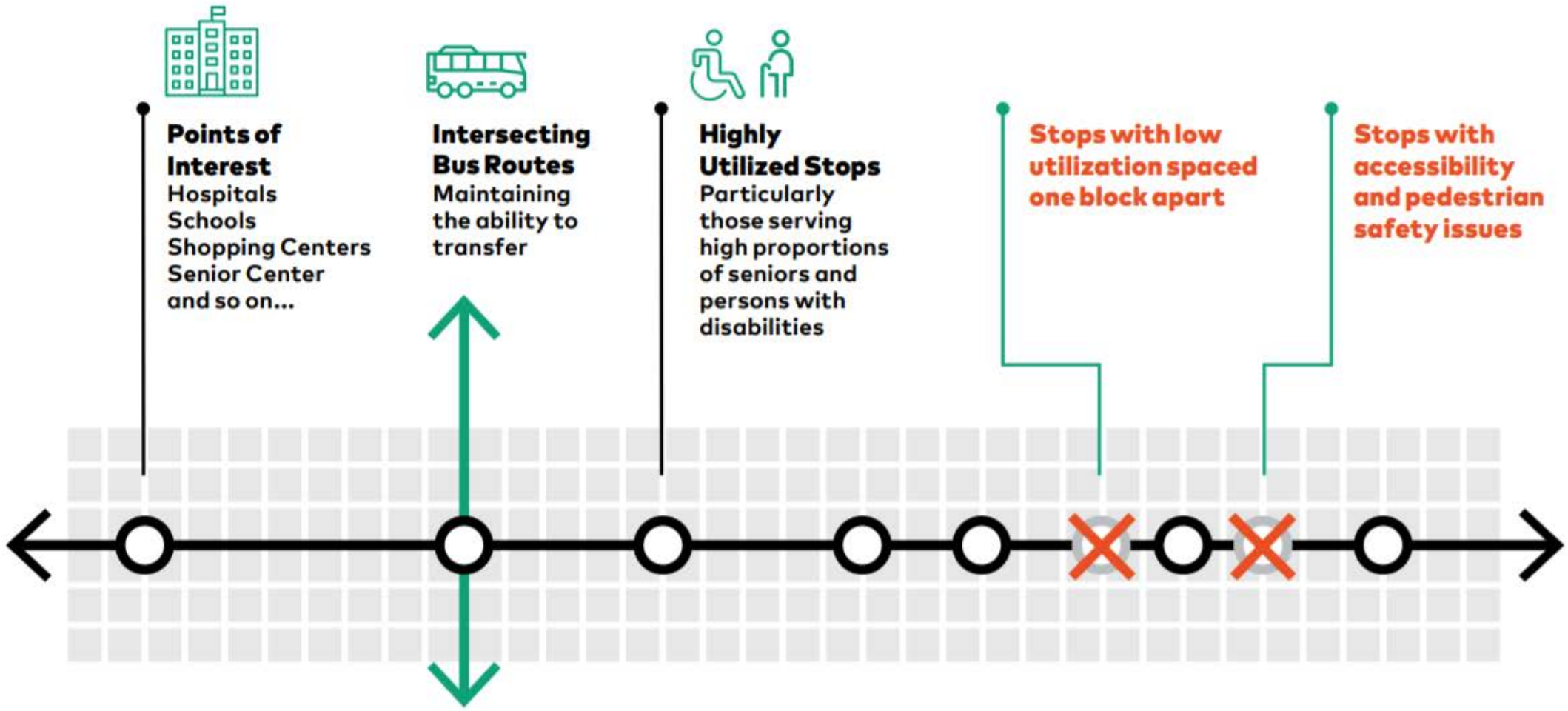
Summary of Draft Recommendations

Four types of recommendations are included:

1. Bus Stop Balancing
2. Capital and Bus Stop Placement Improvements
3. Transit Signal Priority (TSP) Optimization
4. Bus-Only Lanes

1. Bus Stop Balancing

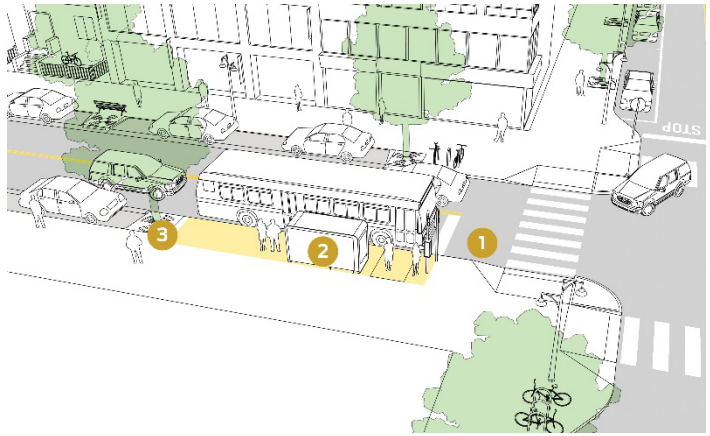
The Basics of Bus Stop Balancing



1. Bus Stop Balancing

- Draft Recommendations include 30% overall reduction in number of Route ECR stops (~64 stops total)
- Maintain spacing consistent with ridership and land use density:
  - ¼ mile spacing in high density, high ridership areas
  - ½ mile spacing in low density, low ridership areas
- Supported by public input: **70% of Reimagine survey respondents** said they would be willing to **walk farther for faster bus service**

2. Capital & Stop Placement Improvements

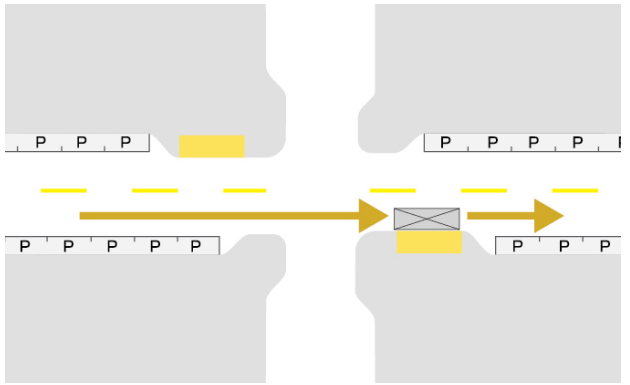


Bus Bulb-outs

Replaces pullout stops with in lane stops to reduce bus delays merging into traffic and decreases pedestrian crossing distance

Far-Side Stops

Moves stops to far side to reduce conflicts/delays with right-turning vehicles



Queue Jumps

Adds a bus-specific signal phase at intersections with near-side stops

Pedestrian Access

Addresses unmarked or unsignalized crosswalks, narrow or missing sidewalks, curb ramps, and other barriers to stop access.

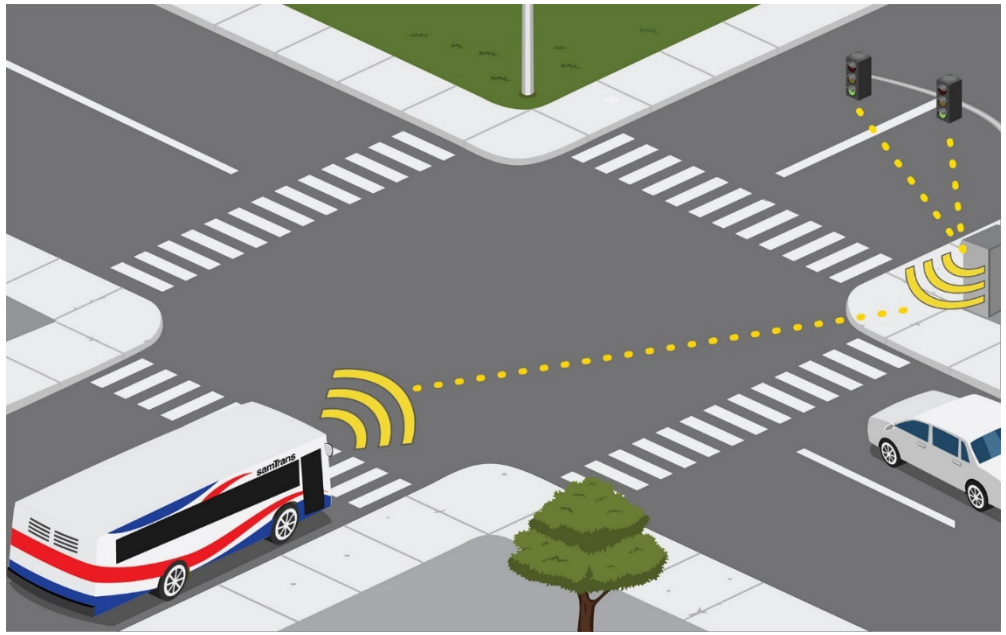
Source: NACTO Transit Street Design Guide

2. Capital & Stop Placement Improvements

- Align agency efforts around a capital improvement vision that reduces dwell time and passenger delay
- Work with city partners to implement this vision through planned or future capital projects
- Draft recommendations include:
  - Bus bulbs at ~70 stops along corridor
  - Queue jumps near ~7 stops
  - Pedestrian access improvements at ~40 stops
  - Relocation of 15-25% of stops (e.g., near-side to far-side of intersection)

3. Transit Signal Priority Optimization

- TSP installed in January 2021 at every signal on El Camino Real
- Bus requests green light extension when approaching an intersection
- Ways to optimize:
  - Increase the green light extension time
  - Better integration with our CAD/AVL systems
  - Relocate stops from near-side to far-side of intersection



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4. Bus-Only or HOV Lanes

- Most effective improvement measure, with the biggest tradeoffs
- SamTrans analyzed four factors to prioritize potential segments:
  - Bus speeds pre-COVID
  - Increase in speeds during COVID
  - Bus passenger loads
  - Right of way & six-lane cross-sections
- San Mateo, Millbrae, San Bruno, and Menlo Park demonstrated greatest potential, need & operational benefit

Lombard Street (US-101) Bus/HOV Lane Pilot

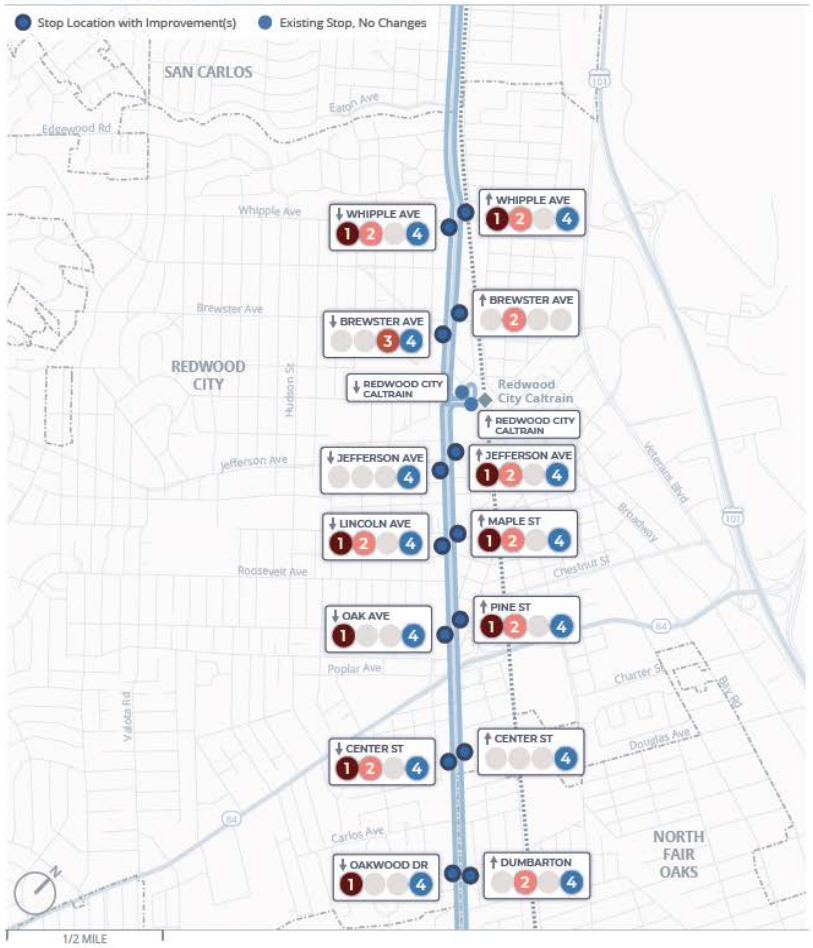
STAKEHOLDER AND PUBLIC OUTREACH

Coordination with Caltrans and city partners

- Presented bus stop improvement vision at recent meetings with Caltrans and cities
- This vision may be used to inform corridor plans, capital improvement programs, and development review processes

Proposed Route ECR Improvements

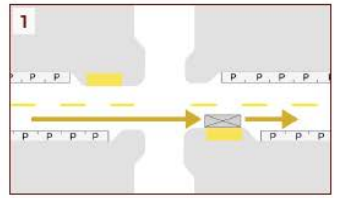
PROPOSED BUS STOP LOCATIONS & IMPROVEMENTS



The following infrastructure improvements are recommended to support faster and more reliable bus operations on El Camino Real in Redwood City.

1 Bus Stop Balancing & Placement

Far-side, in-lane bus stops with balanced spacing helps buses travel faster and more reliably. ECR stops should be spaced every ¼ to ½ mile, with shorter spacing occurring in areas with high ridership and/or serving transit connections, public facilities, and equity priority areas. Stops should be located on the far side of intersections in the lane of travel to maximize the effectiveness of the corridor's transit signal priority system and avoid delays and conflicts associated with near-side and pullout stops.

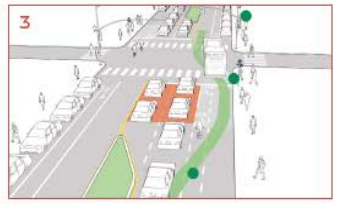


2 Bus Bulbs

Bus bulbs are curb extensions that allow buses to stop in the lane of traffic. Bus bulbs improve speed and reliability by reducing the amount of time lost when merging in and out of traffic, while also reducing pedestrian crossing distances. Where space permits, near-level boarding and separated bikeway bypasses are suggested features for bus bulbs.

3 Queue Jumps

In cases where near-side pullout stops are most suitable, queue jumps reduce delay for buses merging back into traffic. Queue jumps allow buses to enter traffic flow from a dedicated bus lane or right-turn only lane via transit signal priority (a leading bus interval or active signal priority).



4 Pedestrian Improvements

Improving pedestrian connections to bus stops helps reduce overall passenger travel times and access barriers. Pedestrian access improvements may include striping unmarked crosswalks, adding traffic signals or pedestrian hybrid beacons at unsignalized crossings, adding or widening sidewalks, and adding or modernizing curb ramps.

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Public Outreach In Progress

- Timeline: April 11 - May 20
- Seeking input on proposed improvements
- Outreach approach
  - Ambassadors at key bus stops and riding routes
    - Focus on stops that are: high-ridership, located in equity-priority areas
  - Signage at bus stops
  - Multi-lingual virtual community meeting on May 19, 5:30pm
    - More info at: www.samtrans.com/ecrstudy
  - Website with interactive map

Next Steps

- Continued coordination with the cities and Caltrans
- Incorporate findings from stakeholder and public outreach
- Develop implementation plan
  - Possibly include bus stop balancing in early 2023 as part of *Reimagine SamTrans* implementation; additional rider communications will be needed
  - Develop a capital improvement program and funding plan on other improvements as part of the final recommendation
- Finalize recommendations and bring to Board in early Fall 2022