

Transit Transformation Task Force (TTTF) Meeting 4

Welcome to San Francisco



Agenda

Topic

- **1** Welcome and Opening Remarks
- 2 Roll Call
- 3 Approval of the TTTF Meeting Minutes for April 15, 2024 (Roll Call)
- 4 Discussion of service improvements related to increasing frequency and reliability through transit prioritization
 - a Staff & Technical Working Group Presentation
 - Public comment (2 minutes per speaker)
 - Discussion
- **5** Discussion of **fare coordination between agencies**
 - Staff & Technical Working Group Presentation
 - Public comment (2 minutes per speaker)
 - Discussion
- 6 Discussion of service improvements related to coordinated scheduling
 - Staff & Technical Working Group Presentation
 - Public comment (2 minutes per speaker)
 - Discussion
- Discussion of safety and cleanliness on and around transit
 - a Staff & Technical Working Group Presentation
 - Public comment (2 minutes per speaker)
 - Discussion
- 8 Public comment for items not on the agenda (2 mins per speaker)
- Preview of next steps and topics for future meetings
- Adjourn



Today, the TTTF advances from the "what" to the "how" – from describing what transformation is to how we can achieve it





Today's goal

Develop findings and recommendations that will:

- Achieve transformational ridership increases
- Improve operational efficiency
- Allow improvements to be implemented atscale and at-speed in California

by improving availability, speed, reliability, and frequency via **policy recommendations**



Today's Objectives



1. **Review case studies** of successful service improvement types that are referenced in SB 125

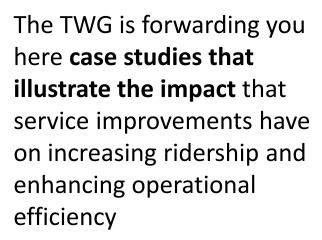


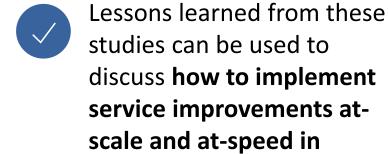
2. Discuss how we could take inspiration from these case studies to have **similar impacts** on customer experience, ridership and service efficiency in California



3. Understand how the **TTTF report could facilitate the policies** to advance similar service improvements

Case studies





California









1. Van Ness Improvement Project (1f.1d)⁴



2. Ontario One Fare Program (1f.1a)⁴



3. Switzerland Schedule Coordination (1f.1b)4



Increasing frequency and reliability through transit prioritization (1f.1d)¹: The Van Ness Improvement Project



Problem: Bus speeds have been steadily declining – leading to reduced ridership and forcing operators to commit more resources to keep existing frequencies



From 2002 to 2019 the average US bus speed fell from 12.6 mph to 12.4 mph (-3%). In CA, 12.5 mph to 11.7 mph (-7%)¹

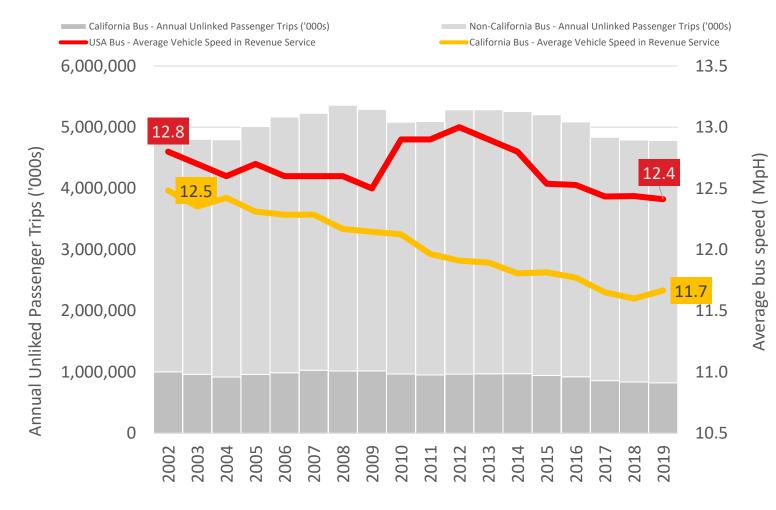


Lower bus speed contributed to a decrease in ridership (-18% over the same period in CA)¹



Slower speeds frustrate riders, and force transit operators to use additional operational resources to simply maintain existing service frequencies

Average US and CA Bus Speeds¹





San Francisco case study: Transit operational challenges



Over 80% of San Francisco Muni trips are by bus or surface rail

As a result, congestion heavily impacts service quality and cost



San Francisco case study: Congestion increases operating costs

As congestion increases in areas where transit does not have traffic priority measures, transit service becomes slower and more expensive to provide.

EXAMPLE: Cost to Provide 10-Minute Bus Frequency, 6 AM – 12 AM, daily

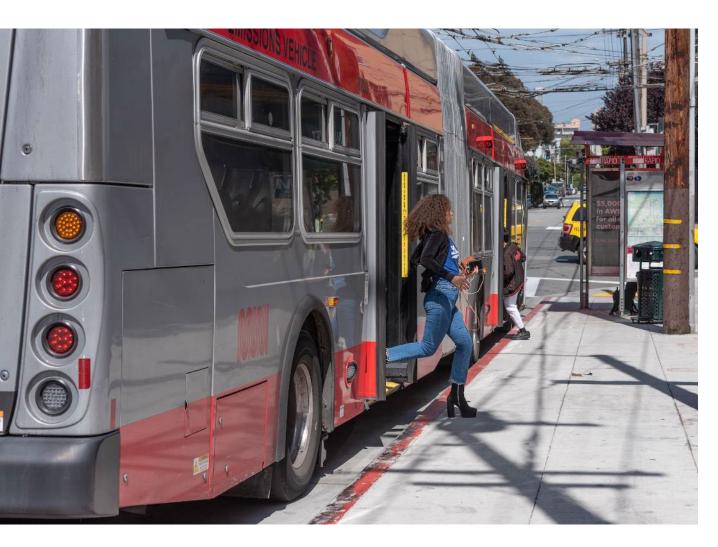
Travel
time and
cost
increase
together

Travel Time	Buses Required	Annual Cost
30 minutes	(3)	\$4 million
45	(4.5)	\$6 million
60		\$8 million
75		\$10 million

Assumes operating cost of \$200/hour per vehicle for example purposes only. Actual costs vary by mode.



San Francisco case study: The solution – Muni Forward



Transit priority upgrades that deliver *fast, reliable* service

Integrated improvements to transit streets, service and customer experience

Supports Vision Zero through safety upgrades and mode shift from driving to transit

Quick-build and iterative approach
Focus on **high-ridership** and **equity priority**routes

Complementary measures implemented, such as headway-based management, scheduling for 100% service delivery, and systemwide all-door boarding

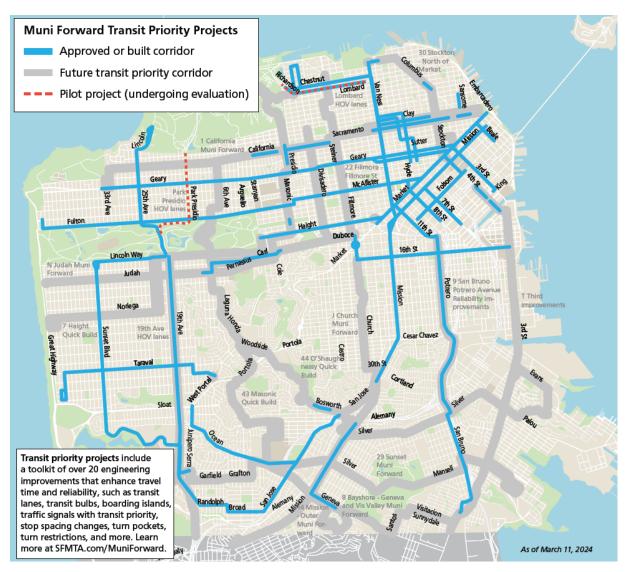


San Francisco case study: Citywide transit priority improvements

100 miles of transit reliability upgrades built since 2014

Toolkit of 20+ measures to improve reliability and safety, such as:

- Transit lanes
- Transit signal priority
- Transit bulbs and islands
- Updating transit stop spacing
- Turn pockets and restrictions
- Pedestrian bulbs
- Road diets





San Francisco case study: Driving transit's recovery in San Francisco

Bus lines where we've made major transit priority investments are driving our ridership recovery:

• Van Ness (49*): **131%**

• 16th Street (22/55): **102**%

• Mission (14/14R): **92%**

• Geary (38/38R): **75%**

• Haight (6/7): **75**%

• 19th Ave (28/28R): **74%**

• *Systemwide* : **65**%

Data source: September 2019 versus September 2023 average weekday ridership.

*-The 47 Van Ness also ran on Van Ness Avenue prior to the pandemic but is no longer in service. The ridership recovery rate is 100% when including the entire 49-line and boardings on the 47-line that occurred on Van Ness before the pandemic.





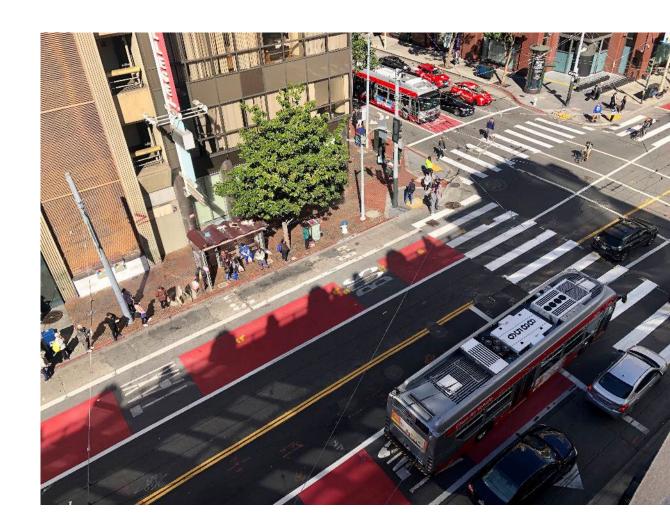
San Francisco case study: Corridor highlight – 14R Mission Rapid

Improvements from 2016-2023

- Transit lanes, bus bulbs, signal priority, bus stop spacing changes
- Increased Rapid and local frequency
- Pedestrian safety upgrades

Results

- 19% ridership increase (2015-2019)
- 92% ridership recovery compared to pre-pandemic levels (2019-2023)
- Overall travel time on 14 local reduced 9% (2015-2023)
- Travel time in SoMa reduced up to 31% after bus lane added in 2021
- 33% reduction in pedestrian injury collisions in Inner Mission since 2016

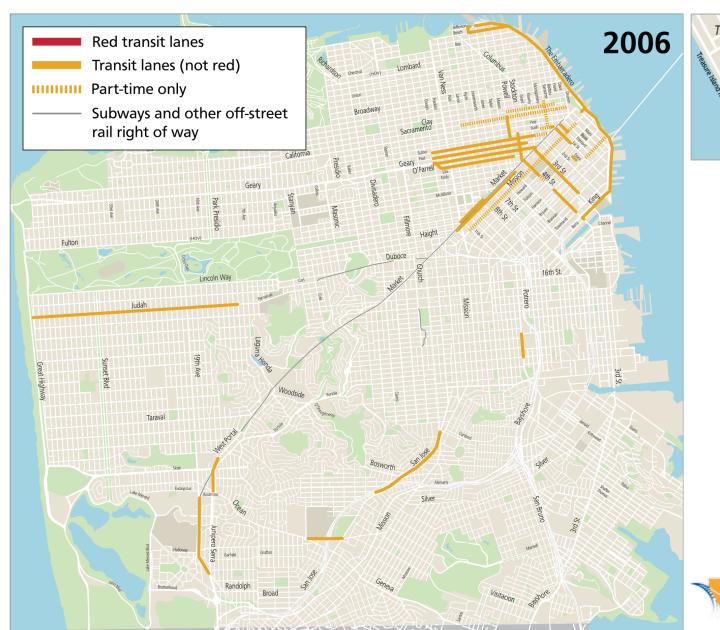




San Francisco case study: Transit lane network

San Francisco has over **75 miles of transit lanes**

We've expanded transit lanes by over 33% since 2020







San Francisco case study: Transit lane network

San Francisco has over **75 miles of transit lanes**

We've expanded transit lanes by over 33% since 2020







San Francisco case study: Transit priority projects on California's highways at three different scales

Quick-build pilot



- Transit/HOV-2+ lanes
- Pilot (evaluation underway)
- Standalone project (separate from any state of good repair projects)

Standard transit priority projects



Lombard St. Safety Project

- Transit and pedestrian bulbs
- Stop consolidation
- Transit signal priority
- Coordinated with utility work and repaving



- Transit and pedestrian bulbs
- Stop consolidation
- Transit signal priority
- Coordinated with utility work and repaving

Full BRT



- Center-running transit lanes and stations
- Stop consolidation
- Transit signal priority
- Pedestrian bulbs
- Streetscape enhancements
- Full curb-to-curb rebuild of street and utility infrastructure



Van Ness BRT

Buses on Van Ness Avenue faced heavy local and interregional congestion¹

The Van Ness BRT project aimed to reduce travel times by over 30% on Van Ness¹ in conjunction with SF's citywide plan for transit priority

Initiatives implemented¹

SB 125 policy area: Transit prioritization (1f.1d)²



Introduced dedicated center-running bus lanes



Implemented dedicated station platforms



Employed all-door boarding and Transit Signal Priority (TSP)³



Eliminated most left turn for cars, reducing traffic friction

Customer experience elements addressed

Speed



Frequency



Reliability



Availability





Van Ness BRT Outcome accomplished





Van Ness BRT is the first full BRT project in San Francisco, and achieved significant increases in ridership, travel time, and reliability as part of a broader transit priority program

Elements	Outcome accomplished	
Ridership	Ridership on the 49 Van-Ness Mission line is at 130% of pre-pandemic levels ¹	
Speed	Reduced trip times by 36% ¹ northbound (up to 9 minutes per trip) and 26% southbound (up to 6 minutes per trip) on weekday trips ¹	
Reliability	Variability of travel time improved by to up to 45% on weekdays ¹	
Availability	Introduced San Francisco's first full BRT corridor ² , improving performance on the trunk of a key city bus network line and for regional bus services	

Van Ness BRT Potential challenges to scale across California



High cost and long timeline may make it difficult to replicate similar BRT improvements in San Francisco and California, at-scale, and at-speed

Potential challenges		Details	
	Risk of extended timelines	Took nearly 20 years to complete ¹ , with ~13 years ² for pre-construction planning, design and environmental review, and 6 years for construction	
	Complex approval process	Required approval from multiple agencies (e.g., SFMTA, SFCTA, SF Board of Supervisors, Caltrans, FTA)	
\$	Expensive implementation costs	High implementation costs (e.g., \$170M+ for Van Ness BRT ⁴) makes full-scale BRT difficult to replicate across California	
	Challenging community buy-in	Community input process was time-intensive (e.g., 100+ community meetings); utility construction impacts often conflated with BRT scope	



Van Ness BRT

From SF MTA – Lessons learned and potential improvements



Lesson learned



Pursue less capital-intensive transit priority projects for most corridors to reduce cost and deliver benefits sooner and with fewer impacts to communities



Adopt an iterative and incremental approach to project implementation, delivering interim improvements that can be upgraded over time instead of waiting for the perfect "gold plated" project



Where possible, join existing utility projects instead of serving as the project lead, with public messaging focused on overall state of good repair and safety benefits of the project, which are often responsible for the largest construction impacts



Use SB 922 CEQA streamlining process whenever possible to reduce environmental review burden



Van Ness BRT

The Technical Working Group developed a set of actions for the TTTF to consider



Proposed options



Consider making state funding more flexible to secure long-term support for capital projects



Reevaluate permitting regulations, with some entity having the power to say "yes"

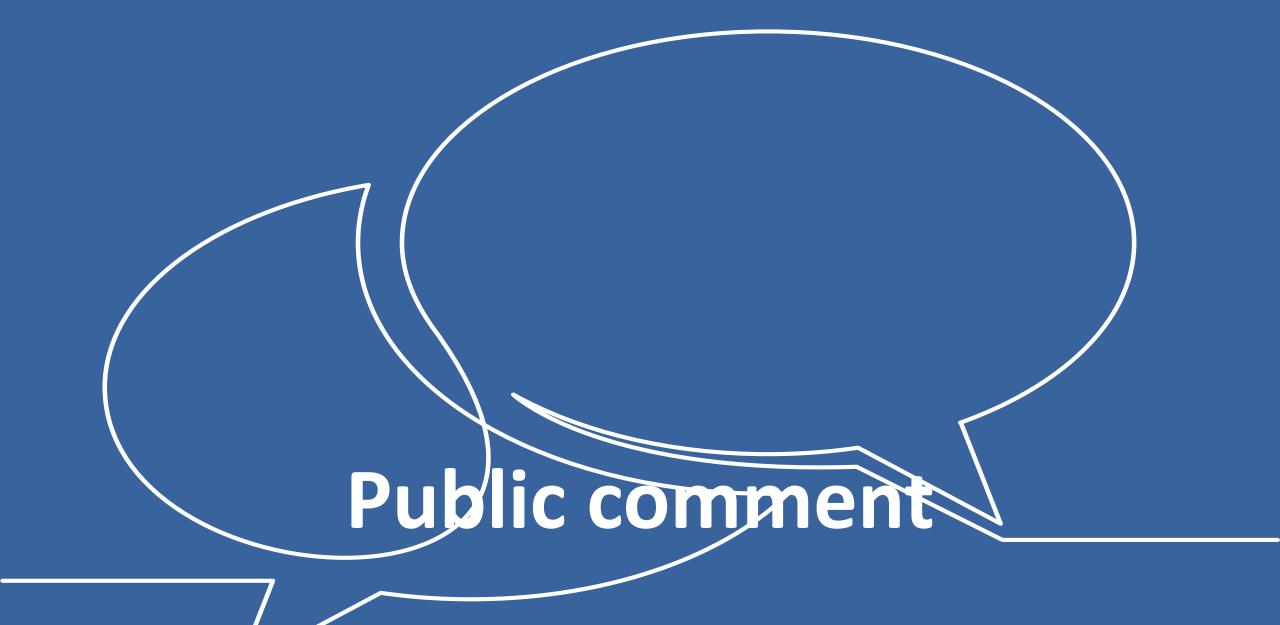


Create standardized BRT guides to lower costs and streamline implementation, e.g.:

- Standardized TSP specifications
- Bus shelter design standard



Evaluate opportunity for Caltrans to build BRT-specific elements (e.g., bus shelters) on its assets, and potentially act as a project manager/builder for non-Caltrans roads



For discussion



What would need to change to implement transit prioritization at a scale and speed sufficient to achieve the transformational ridership goals laid out in SB 125?

How could the SB 125 report be used to facilitate these changes?

Fare coordination or integration between transit agencies (1f.1a)¹: Ontario One Fare Program



Problem: Riders can save time by choosing routes that cross agencies boundaries, but can be discouraged by multiple/higher fares



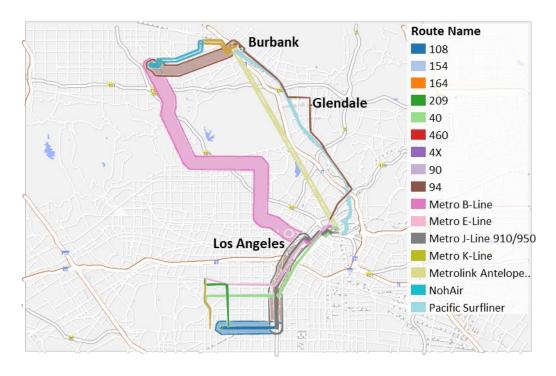
Travelers using multiple transit systems incur higher costs from separate fares for each segment, discouraging public transit use



Price-sensitive riders often opt for longer, less convenient trips to reduce travel expenses



Transit costs disproportionately affect low-income travelers; these customers may choose to take slower, less direct routes and further exacerbating inequities in access to efficient transportation



Travel Time	Transfers (systems)	Fare
103 min	3 (1, Metro)	\$1.75
108 min	4 (2, Metro and Burbank Bus)	\$2.50
91 min	4 (2, Metro and Metrolink)	\$3.75-\$5.50 ¹
98 min	2 (2, Metro and Amtrak)	\$9.75



Ontario One Fare Program

Transit riders faced different fare structures in the Greater Toronto and Hamilton Area (GTHA)

The Ontario One Fare
Program allows transit
agencies to keep their
existing fare structures
while eliminating
multiple-fare charges
for riders transferring
between systems¹

Initiatives

SB 125 policy area: Service and fare coordination (1f.1a)³



Implemented a key element of unifying travel across participating transit agencies in the Greater Toronto & Hamilton Area¹



Eliminated multiple charges for transit riders transferring between participating transit systems²



Was built on **deploying unified payment methods** as part of broader roadmap to integrate elements of transit fares

Customer experience elements addressed

Speed



Frequency



Reliability



Availability





Ontario One Fare Program Outcome accomplished





Effectively integrated fares across the Greater Toronto Area, facilitating access to intraregional and interregional trips, increasing affordability and ridership

Elements	Outcomes accomplished	
Ridership	Facilitated over 5M transit system transfers in two months ¹	
	Expected to increase ridership by 8M rides per year ²	
Speed	Decreased total trip time by enabling riders to take the most efficient combination of transit services for their trip on a single fare ³	
24 Availability	Increased affordability of transit: riders ⁴ save \$1,600 in fares per year ² based on 5 cross-boundary trips per week Encouraged new riders to use public transit	



Ontario One Fare Program From Ontario MTO¹ – Lessons learned and potential improvements



Lesson learned



Recognize that fare standardization and unification across agencies is a long-term goal; implement changes incrementally, beginning with agencies that opt-in to fare integration



Acknowledge the mandate transit agencies have toward riders in their locality rather than the broader region and address agencies' concerns over a loss of autonomy



Offer incentives to transit agencies to encourage participation in fare coordination, particularly for lost fares resulting from free transfers; recognize the long-term investment required to support increased ridership from fare coordination



Create community buy-in by highlighting the multiple benefits of fare standardization and unification



Ontario One Fare Program Challenges to scale in California



California, like Ontario, faces challenges implementing fare integration due to the diverse priorities of transit agencies across the California and the resource alignment required for integration

Potential challenges		Details	
	Limited coordination	Limited incentive at local level to harmonize fare policies unless prioritized across multiple agencies	
	Legacy Technologies	Need to enable transfers across regions with different fare payment suppliers without fully integrating payment technology	
	Ongoing operating subsidies	Lost fare revenues from free transfers would need to be made up from other sources to maintain transit agency revenues	



Ontario One Fare Program The Technical Working Group developed a set of actions for the TTTF to consider



Proposed options



Establish "responsible entity" to ensure fare and revenue coordination (short-term) and standardization (long-term)



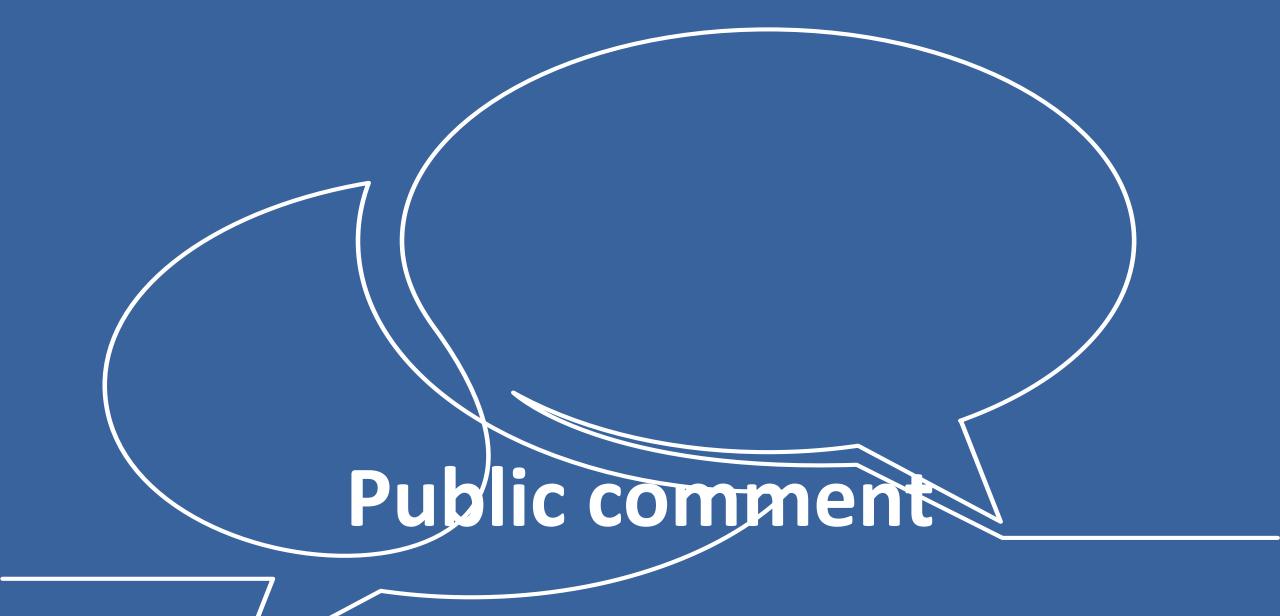
Promote short-term fare standardization at a regional level before larger statewide scaling | Example: Standardized \$2.75 interagency transfer discount, providing free local transfers, launching soon across the Bay Area. (Funded for 18-24 months as pilot).



Ensure acceptance of open-loop (credit / debit / mobile wallet) payments — even while legacy systems are in place



Condition funding on long-term participation in standardized, open payment infrastructure and simplification





For discussion



What would need to change to better integrate fare policy in California?

How could the SB 125 report be used to facilitate these changes?

Lunch

30 minutes

Coordinated scheduling, mapping, and wayfinding between transit agencies (1f.1b)¹: Switzerland



Problem: Riders face inconsistent transfer times and long waits due to delays on many desired routes





Riders are often required to transfer due to service area boundaries and journey distance



Challenges in schedule coordination and issues with service reliability often result in **long transfer penalties** for many preferred journeys



Many public transit systems treat transfers as the **norm** rather than the exception, to support the needs of a diverse set of riders

Illustrative - Time penalty for delays along Capital Corridor-BART route¹

Capital corridor → BART (Southbound)

Arrival: 7.36am at Richmond using Capital Corridor

Target transfer: BART Orange Line (final destination: e.g., San Jose)

	Delay	Transfer time ²	Transfer penalty ³
Scenario 1	No delay	6 min	
Scenario 2	7 min	19 min	+13 min

BART → Capital Corridor (Northbound)

Arrival: 5.17pm at Richmond via BART Orange Line

Target transfer: Capital Corridor (final destination: e.g., Sacramento)

	Delay	Transfer time ²	Transfer penalty ³
Scenario 1	No delay	15 min	
Scenario 2	16 min	1 hour	+45 min



Switzerland Schedule Coordination

Switzerland faced decreasing transit ridership as personal cars gained popularity¹

Switzerland implemented coordinated scheduling and an integrated fare structure on a national and regional scale²

Initiatives

SB 125 policy area: Coordinated scheduling (1f.1b)⁴



Created **national & regional integrated timetable** using a "pulse" schedule to align transfer times across agencies, facilitating anywhere-to-anywhere travel across systems and geographies



Planned capital investments required for expansion of the integrated timetable



Created coordinated, tiered process among many agencies to oversee implementation of joint timetable and fare structures²

Customer experience elements addressed

Speed



Frequency



Reliability



Availability







Switzerland Schedule Coordination Outcome accomplished

Output (ridership)

Improvement (customer experience elements)



Integrated schedule contributed to a more efficient network, resulting in reduced transfer times and a significant increase in ridership throughout Switzerland

Elements	Outcome accomplished	
Ridership	129% increase in ridership on Zurich S-Bahn within 4 years of opening with coordinated scheduling ¹	
Speed	Average train speed increased by more than 23% from 1994 to 2010 ²	
Frequency	Reduction in headways from 1 hour to 15-30 minutes ³	
Availability	96% increase in rail service in Zurich from 1990 to 2012 ⁴	



Switzerland Schedule Coordination Potential challenges to scale in California



Financial and cross-agency collaboration obstacles could make adoption of a similar effort difficult in California

Potential challenges		Details	
	Cross-agency model	Lack of pre-existing operating or organizational model for cross-agency collaboration	
	Data quality and availability	Limited data availability and different data requirements across agencies may inhibit integration	
	Prioritized investment	Need to prioritize infrastructure investment required to upgrade specific routes to align with a coordinated schedule rather than other priorities	



Switzerland Schedule Coordination: The Technical Working Group developed a set of actions for the TTTF to consider



Proposed options



Organized process is necessary among MPOs¹, State of California, County Transportation Commissions, Operators, other stakeholders to oversee joint timetable implementation, facilitate agency collaboration, and provide guidance/standards on balancing local and regional operations (e.g., holding bus/trains at a given transfer point if one is late)



Agencies need common data collection, analysis, and publication standards (e.g., use mobility data standards accepted by Google Maps and Apple Maps) to inform schedule decisions and better support cross-agency collaboration





For discussion



What would need to change to integrate schedules in California? Where should the schedules be integrated?

How could the SB 125 report be used to facilitate these changes?

What prevents integrated scheduling today?

Providing a safe and clean ride for passengers and operators (1f.1c)¹



TTTF prioritized a safe and clean ride for passengers and operators

Categories for consideration by TTTF4



Workforce safety



Riders' safety



Coordination with Health & Human Services



Shelters, wayfinding, security, & communication systems

Objectives of this section

1. Discuss ways to address SB 125 recommendations on providing a safe and clean ride for passengers and operators (1f.1c)¹

2. Understand how the TTTF report could facilitate the adoption of these improvements



Technical Working Group and key transit leaders proposed a number of ways to address safety and cleanliness (1/2)

Priority	Description	Possible actions
Workforce safety	Ensure physical security of frontline transit workers	 Install protective doors for bus operators Work to create unified legal frameworks in routes that cross jurisdictions, to ease enforcement of safety measures
Riders' safety	Ensure physical security, comfort, and perception of safety for transit riders with special attention paid to priority populations (e.g., women, elderly people with	 Create safety ambassador program Use PA systems¹ at operator stations to increase perceived oversight and comfort for riders Facilitate collaboration between legal system and transit agencies to improve enforcement

elderly, people with

disabilities)



(e.g., share follow-up on prosecutions)

Public address (PA) systems are electronic systems that consists of loudspeakers and microphones and are used to convey announcements or messages on a bus or at a station

Technical Working Group and key transit leaders have proposed a number of ways to address safety and cleanliness (2/2)

Priority	1
	Coordina with Hea & Human Services
	Shelters,

Description



Possible actions



Improve coordination with H&HS Agencies to ensure comprehensive healthrelated safety and security responses



Prioritize services for populations with health needs that are riding the transit system



Shelters, wayfinding, security, & communicat ion systems

Improve lighting, provide shelters, wayfinding, and security systems to enhance rider safety



Construct emergency call boxes



Improve existing security camera quality and increase quantity across stations/stops



Standardize information presented on signage at transit stops, shelters & stations (e.g., platform labels, transfer stop directions) to improve customer experience





For discussion

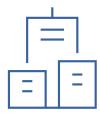


What would need to change to improve safety, security, and cleanliness on transit systems in California?

How could the SB 125 report be used to facilitate these changes?

Problem: Lack of first- and last-mile connections to transit networks

SB 125 policy area: Strategies to provide first- and last-mile access to transit (1f.1e)¹



Despite higher transit availability², car ownership is increasing, and transit ridership is decreasing, in dense urban neighborhoods

 A lack of safe access to existing transit networks (e.g., safe pedestrian paths and crossings) may be inhibiting ridership



First/last mile challenges are most acute in suburban and rural areas

- 90% drop in transit use when riders must walk more than a half-mile³
- Safe active transportation infrastructure and mobility hubs (e.g., bicycle-share) can expand the range of fixed-route transit



Next steps

Thoughts on the below topics are appreciated:

- 1 Discussion of service improvements related to Strategies to provide firstand last-mile access to transit (1f.1e)¹
- 2 Implications of these service enablers on labor and labor spend (e.g., addressing workforce recruitment, employee engagement, retention, and development challenges)
- 3 Implications of these service enablers on maintenance and maintenance spending (e.g., designing strategies to achieve fleet and asset management goals and needs)
- Additional feedback you have on today's discussions (e.g., other initiatives to investigate)

A separate follow-up to gather your responses will be sent by June 28th, which will inform the work of the Technical Working Group (TWG) and content for TTTF meeting 5 (scheduled for August 29th, 10:30AM-3PM PT, Southern California Association of Governments (SCAG) Main Office)

If you would like to share any reports, data, studies, and/or surveys which might be relevant to this work, please send them to SB 125Transit@calsta.ca.gov



Themes

		Diagnostic phase	Design phase
Theme	Date	Location	Duration
Introduction	Dec 19, 2023	Virtual	2 hours
What outcomes does transit need to achieve in order to meet California's mandates?	Feb 29, 2024	Sacramento, CA	2 hours
How would the customer experience need to change to meet California's goals?	April 15, 2024	San Diego, CA	4 hours
What service improvements do these outcomes require?	June 17, 2024	San Francisco, CA	3 hours
What does this level of service imply for OpEx spend, workforce development, and employee engagement?	Aug 29, 2024	Los Angeles, CA	3 hours
What does this level of service imply for CapEx spend?	Oct 28, 2024	Salinas / Monterey, CA	3 hours
How can this level of OpEx and CapEx be funded?	Dec 10, 2024	Clovis (Fresno), CA	4 hours
What prioritized topics and draft decisions should be included in the report?	Early Feb 2025	Riverside, CA	4 hours
Draft report review ¹	April 2025	Sacramento, CA	4 hours
Final report briefing before submission ¹	Sept 2025	San Francisco, CA (TBD)	4 hours

