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# A Blueprint for Connected Public Transport in Los Angeles County

Best practices and policy reform for integrating transit services, fare policy enhancements, integrated ticketing, and seamless transfers

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**16. Abstract**
The intercity and intercounty public systems in the Southern California region still need to be fully integrated, which presents challenges to riders, like paying fares and accessing fare discounts, receiving real-time travel information, and making seamless intermodal transfers. Los Angeles County alone has 26 municipal transit agencies. Los Angeles Metro's (Metro) position as the primary and largest transit agency serving Los Angeles gives it the influence to lead integration efforts. Outside of Los Angeles County, the Orange County Transportation Authority (OCTA), Riverside Transit Agency (RTA), San Diego Metropolitan Transit System (MTS), and Metrolink operate services that provide transit access between LA County and destinations in the Southern California region. Yet, the organization of these transit providers creates a complex transit system governance structure that challenges coordination across operators –limited coordination results in a fragmented regional transit system that can confuse riders and operators.

The report uses responses from interviews with LA Metro, Southern California Association of Governments (SCAG), LOSSAN Rail Corridor Agency, and Caltrans employees and data from the 2022 Metro Customer Survey Study and Metrolink 2022 Rider Survey to analyze the barriers to fare integration. After reviewing data and exploring case studies of integrated transit systems worldwide, this report recommends three actions that LA Mero can consider to enhance fare integration and create seamless transfers between intercity and intercounty transit providers. (1) Establish Initiatives for Equitable Fare Policies, (2) Analyze Current Governance Structures and; (3) Enhance Physical Infrastructure at Transit Station Areas.

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## Disclaimer

This report was prepared in partial fulfillment of the requirements for the Master in Urban and Regional Planning degree in the Department of Urban Planning at the University of California, Los Angeles. It was prepared at the direction of the Los Angeles Metro as a planning client. The views expressed herein are those of the authors and not necessarily those of the Department, the UCLA Luskin School of Public Affairs, UCLA as a whole, or the client.

# A Blueprint for Connected Public Transport for Los Angeles County

Best practices and policy reform for integrating transit services, fare policy enhancements, integrated ticketing, and seamless transfers



UCLA Institute of Transportation Studies

A comprehensive project submitted in partial satisfaction of the requirements for the degree Master of Urban and Regional Planning.

Cover Image: Metro K Line
Courtesy of Saul Gonzalez

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# Executive Summary

The Los Angeles County transit ecosystem consists of various intercity and intercounty transit operators who service millions of riders in LA County per year. Los Angeles County has 26 municipal transit agencies. Among these agencies, the Los Angeles County Metropolitan Transportation Authority (LA Metro) is the primary and largest transit agency serving Los Angeles County. LA Metro operates a comprehensive network consisting of over 170 bus routes and two heavy rail lines, and five light rail lines that connect the county. In 2022 alone, LA Metro estimated 255,253,370 riders systemwide, which includes bus and rail.[1] Additionally, the Orange County Transportation Authority (OCTA), Riverside Transit Agency (RTA), San Diego Metropolitan Transit System (MTS), and Metrolink operate services that provide transit access between LA County and destinations in the Southern California region. The organization of these transit providers creates a complex transit system governance structure that makes coordination across operators a challenge—limited coordination results in a fragmented regional transit system that confuses both riders and operators. In addition to complex governance structures, lack of available real-time travel information, barriers to making fare payments or accessing fare discounts, and lack of physical connections and intermodal transfers are just a few of the challenges that impact integration in the Los Angeles transit systems today.

However, in the last 15 years, LA County has progressed in its efforts to integrate the countywide transit system. In 2007, LA Metro led the adoption of the Transit Access Pass (TAP) Card, which now includes 26 municipal operators and connects riders to transit services countywide with a single tap of a card. The TAP card is a working example of what countywide coordination can achieve. In addition, integration continued so that Tap could be used on mobile devices- making payment more convenient. Today, LA County eagerly awaits new transit services like the Regional Connector, a monumental accomplishment for rail integration in the region. The Regional Connector will connect Azusa to Long Beach, East LA to Santa Monica on one train, eliminating transfers that can often be burdensome to riders. With these developments, the LA County transit system can continue to advance integration in the future.

To address the challenges of transit integration, this report examined transit agencies in the US and abroad that lead the way for fare integration, integrating ticketing and seamless transfers. The report mainly focuses on LA Metro, LOSSAN Rail Corridor Agency (LOSSAN) (managed by the Orange County Transportation Authority), and Metrolink (operated by the Southern California Regional Rail Authority (SCRRA). The report uses findings from interviews with transit professionals at LA Metro, LOSSAN, Southern California Association of Governments (SCAG) and the California Department

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[1] *Metro ridership*. (n.d.). Retrieved May 22, 2023, from https://opa.metro.net/MetroRidership/

of Transportation (Caltrans) to create recommendations to enhance fare policies, identify new leadership roles in current transit governance structure and invest in physical infrastructure that will facilitate seamless transfers.

This report recommends three priority areas that Metro and its partnering agencies can consider improving the coordination of transit integration countywide. While these recommendations are prepared for Metro, they rely on other key stakeholders and organizations at the regional and state level for successful implementation. The recommendations are intended to improve rider experience by providing more equitable payment methods and enhanced transfers. These recommendations fall into three priority areas:

1. Establishing initiatives for equitable fare policies
2. Analyzing current governance structures
3. Enhancing physical infrastructure at transit station areas

# Introduction and Background

# Introduction

Intercity and intercounty transit in Southern California can be challenging for riders due to barriers to paying fares or accessing fare discounts, availability of real-time travel information, and disconnected intermodal transfers. Therefore, Metro initiated a Rail Network Integration Study in 2021 following the 2018 California State Rail Plan to identify ways to integrate Metro's existing network with intercounty transit and statewide transit. This capstone report seeks to find opportunities to augment the current Metro study.

Southern California has the following six counties: Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. However, the delivery of services across these transit providers can be fragmented due to the complexity of the transit governance structure. In addition, a rider's journey may also be impacted by inconvenient payment structures and poor transfer facilities. These challenges vary by transit provider but factored together, can make public transit burdensome for many riders.

A lack of funding, agreements, and coordination across transit agencies largely limits Southern California's regional transit system integration. Additionally, equity considerations still need to be standardized to benefit riders the same way throughout the county. These systems can be improved by following the lead of other cities that have achieved efficient integration by establishing coordinated governance structures and centering the rider's experience in their transit infrastructure.

When approaching this topic, I arrived at three questions that helped guide my research:
- What policies can be implemented to create an integrated, accessible public transportation system?
- How can barriers caused by a lack of agency coordination and challenging fare structures be overcome with policy?
- What are the major barriers to creating a more integrated transit system in Los Angeles?

While analyzing the challenges of creating a more integrated countywide transportation system, I divided my findings into four issue areas discussed further in the following section:
The four issue areas include:
1. Complex Governance Structures
2. Intercounty Fare Coordination
3. Lack of Seamless Connections
4. Need for Equity Based Integration Goals

# Background

## Challenge 1: Complex Governance Structures

A governance structure is central to the decision-making processes within transit agencies. This report intends to find barriers in the current governance structure of transit agencies that service LA County and the Southern Californian region by examining three primary rail operators: LA Metro, SCRRA/Metrolink and OCTA/LOSSAN. The following section will briefly summarize the governance structures of these agencies to explain how they are organized internally and how they interact with other agencies.

### Los Angeles Metropolitan Transportation Authority (LA Metro)

LA Metro is governed by a board of directors with 14 members, 13 of whom are voting members. The board is comprised of the following members:

- The five Los Angeles County Supervisors
- The mayor of Los Angeles
- Three Los Angeles mayor-appointees (at least one of whom must be an L.A. City Council member)
- Four city council members or mayors from cities other than Los Angeles, who each represent one region: San Gabriel/Pomona Valley, Arroyo/Verdugo, Gateway Cities, and Westside Cities
- One non-voting member appointed by the Governor of California[2]

Even though the Metro Board makes decisions on wide-scale issues, they consult Service Councils on localized decisions like bus stop placement and changes in bus services. There are five Service Councils that represent the following regions: Gateway Cities, San Fernando Valley, San Gabriel Valley, South Bay, and Westside/Central. Each Service Council is led by a board that is made up of political appointees. The regionalized focus of the five service councils gives residents the opportunity to provide feedback for service issues in their communities.[3] These Service Councils also conduct public hearings, evaluate Metro programs in their local jurisdictions, and meet with management staff.  LA Metro also has a Bus Operations Subcommittee that provides technical assistance to LA Metro by evaluating transportation polices, operating challenges, and reviewing transportation financing programs in LA County. The Subcommittee meets monthly yet fare integration has not yet been a priority of their agenda items, which means there is the opportunity to include them on these efforts.

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[2]"Los Angeles County Metropolitan Transportation Authority." *Wikipedia*, *Wikipedia*, https://en.wikipedia.org/w/index.php?title=Los_Angeles_County_Metropolitan_Transportation_Authority&oldid=1156213018

[3] Local service councils. (n.d.). *LA Metro*. Retrieved May 23, 2023, from https://www.metro.net/about/local-service-councils/

The Transit Access Pass (TAP) Program Department is housed within LA Metro, but the card and fare collection systems are managed by Cubic. Cubic is a private company that delivers integrated transportation management systems. This partnership benefits the LA Metro because it continues to deliver innovative solutions to improve the rider's experience, like the creation of the TAP Card, installation of TAP validators and most recently the release of the TAP app. However, this partnership can be limited due to contractual agreements and reliance on Cubic to operate the fare payment infrastructure.

## Metrolink

Aside from Metro, Metrolink is operated by the Southern California Regional Rail Authority (SCRRA) and serves six counties in Southern California: Los Angeles, Orange, Riverside, San Bernardino, Ventura, and North San Diego counties. The Southern California Regional Rail Authority, a joint powers authority made up of an 11-member board representing the transportation commissions of Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties, governs the service. The transportation commissions of these countries are listed below:

- Los Angeles County Municipal Transit Authority (LA Metro)
- Orange County Transportation Authority (OCTA)
- Riverside County Transportation Commission (RCTC)
- San Bernardino County Transportation Authority (SBCTA)
- Ventura County Transportation Commission (VCTC)

In 2013, Metrolink's TAP-enabled tickets became available, which allows riders to continue to travel from Metrolink to other regional transit providers with an LA County destination at no additional costs. [4]While this integration technology creates compatibility with the TAP system, Metrolink is still not a participating TAP agency. Therefore, full integration with TAP and Metrolink should be considered for an even more seamless trip where a rider could use their TAP card to pay for Metrolink and additional transfers. This would however require robust coordination between Metro, TAP, and Metrolink/SCRRA.

## LOSSAN Rail Corridor Agency

Outside of LA Metro and Metrolink is the Los Angeles-San Diego- San Luis Obispo (LOSSAN) Rail Corridor Agency. The LOSSAN agency operates services on the rail corridor between San Diego, Los Angeles, and San Luis Obispo. In 2012, the approval of Senate Bill (SB) 1225 authorized the LOSSAN agency to oversee the state supported

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[4]Metrolink. (2013, July). New TAP-enabled tickets allow Metrolink riders to pass through Metro turnstiles. *Metrolink Matters: Metrolink News and Events* https://metrolinktrains.com/globalassets/about/mmattersjunejuly2013.pdf

Pacific Surfliner intercity passenger rail service.[5]  The Pacific Surfliner operates through the following Southern California counties: San Diego, Orange, Los Angeles, Ventura, Santa Barbara, and San Luis Obispo. OCTA serves as the managing agency for LOSSAN; however, Amtrak runs and operates services as well as the ticketing platforms. As of FY 2019-20, Amtrak operates 12 daily Pacific Surfliner round trips between San Diego and Los Angeles.[6]The LOSSAN agency has governing body composed of Board of Directors with voting members who represent rail operators and planning agencies along the LOSSAN rail corridor and non-voting members which include the following members:[7]

Member Agencies

- San Diego Metropolitan Transit System (SDMTS)
- San Diego Association of Governments (SANDAG)
- North County Transit District (NCTD)
- OCTA Riverside County Transportation Commission (RCTC)
- Los Angeles County Metropolitan Transportation Authority (Metro)
- Ventura County Transportation Commission (VCTC)
- Santa Barbara County Association of Governments (SBCAG)
- San Luis Obispo Council of Governments (SLOCOG)

Ex-Officio Members

- Amtrak California Department of Transportation (Caltrans)
- Division of Rail and Mass Transportation (DRMT)
- California High-Speed Rail Authority (CHSRA)
- Southern California Association of Governments (SCAG)

However, there are barriers to expanding the integration between the Pacific Surfliner and other transit providers like LA Metro or Metrolink because Amtrak operates the service and has complete autonomy over its ticketing systems. Other barriers to expanding the Pacific Surfliner service include access to railroads and navigating shared-use agreements with the host railroads that Pacific Surfliner uses for their operations.

## Challenge 2: Intercounty Fare Coordination

### What is Fare Integration?

Fare integration provides a way to make transit service more accessible to riders by using a common payment method that is at either no additional cost or low cost to the rider. Fare integration enables riders to transfer to multiple transit agencies with a single

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[5] LOSSAN. (n.d.). *LOSSAN Rail Corridor Agency Business Plan FY 2022-23/FY 2023-24*. Prepared for California State Transportation Agency.

[6] LOSSAN. (n.d.). *LOSSAN Rail Corridor Agency Business Plan FY 2022-23/FY 2023-24*. Prepared for California State Transportation Agency.

[7] Ibid

pass. For example, the Metrolink Rail 2 Rail Program allows Monthly Pass holders to travel on Amtrak Pacific Surfliner trains along the Ventura County and Orange County Lines at no additional charge, including Saturdays and Sundays.[8] Furthermore, Amtrak Pacific Surfliner Monthly Ticket holders can ride any Metrolink train, within the station pairs indicated on their ticket, at no additional charge.[9]

Fare Integration also simplifies the customer experience of navigating apps or machine-based payments by consolidating the payment choices. A LA Metro Board Motion to Consolidate Metro Transportation Apps is an example of how board directed action can improve customer interface. By consolidating all of Metro's phone applications (including Bike Share, Metro Micro, TAP, Metro Parking etc.), the customer interface would be simplified.[10]

## Background of TAP

The vision of a universal fare system for Los Angeles County began at the Los Angeles County Transportation Commission (LACTC) in 1990.[11] In August 2001, the Metro Board adopted smart card technology as the regional standard of integration for the Transit Access Pass (TAP) program, previously known as the Universal Fare System (UFS). In May 2006, Universal Fare System (UFS) equipment was installed on Metro's bus and rail fleet to test TAP card capabilities on bus fare boxes and rail ticket vending machines. By February 2007, TAP began replacing paper passes.  Initially, TAP began with only nine agencies and grew to 26 municipal operators throughout LA County.[12] This was a milestone as it was a massive regional effort to create a "stored value" payment system that could be used systemwide across the region. In 2017, the Metro board approved transfer on second boarding which was a new way to pay for interagency transfers. Before this motion, transfers from multiple agencies were made on paper passes that were separate from the TAP system. With board approval, TAP was able to facilitate

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[8] Rail 2 Rail® Program | Metrolink. https://www.metrolinktrains.com/rider-info/general-info/rail-2-rail/.

[9] Ibid

[10] Consolidate Metro Transportation App Motion (Board Report No. 2022–0789). (2022). LA Metro.

[11] Librarian, Metro Digital Resources. "TAP Cards and Universal Fare Media in Los Angeles Transit: History & Resources." *Metro's Primary Resources*, 15 Feb. 2023, https://metroprimaryresources.info/tap-cards-and-universal-fare-media-in-los-angeles-transit-history-resources/15741/.

[12] Note: these agencies/systems are Angels Flight Railway, Antelope Valley Transit Authority (AVTA), Baldwin Park Transit, Beach Cities Transit, Burbank Bus, Carson Circuit, Compton Renaissance Transit System. Culver CityBus, Foothill Transit. Gardena GTRANS, Glendale Beeline, Glendora Transportation Division, Huntington Park Transit Unlimited, LA County Department of Public Works, LADOT, Los Angeles World Airports (LAWA), Long Beach Transit, Metro, Montebello Bus Lines, Monterey Park Spirit Bus, Norwalk Transit. Palos Verdes Peninsula Transit Authority, Pasadena Transit, Santa Clarita Transit, Santa Monica Big Blue Bus, Torrance Transit

interagency transfers using stored value, promote interagency transfers, and increase the ease of travel for riders. The EZ transit pass is another example of a long-standing regional integration effort. It has 23 participating agencies and uses a "zone" based fare.[13] In September 2020, LA Metro launched its TAP mobile app via the Apple App Store which enabled contactless payment, leveraging near field communication (NFC) which allows riders to reload TAP cards on iPhones. In 2021, Metro expanded the app to Android users.

## Fare Payments Across the Los Angeles County Region

The introduction of the TAP card was a monumental milestone not only for LA Metro, but all participating agencies. It created an easy form of payment for riders and proved that cooperation across municipal operators is possible. Moving forward to card-based payment positioned Metro and its partners to be among the transit agencies participating in the card-based payment movement. While the TAP card remains a regional unifier, there are limitations to its use. The TAP card itself is not valid on Metrolink, LOSSAN, or other agencies outside of LA County. Additionally fare policies range across the 26 participating TAP agencies which may confuse riders of what their fare is; especially when some agencies remain fare free, and others resume fare collection.  For example, agencies like LADOT remain fare-free while all other TAP agencies collect fares. By July 2023, LA Metro will implement fare capping which will benefit only riders on Metro bus and Rail who use TAP cards. While both initiatives reduce transportation costs for riders, they are exclusive to each respective agency. Ultimately, despite these agencies' affiliation with TAP, there are no regulations to enforce uniform reductions in transit fares. Therefore, the benefits of fare policies are not unified across all TAP agencies which leads to unequal distributions of fare discounts. Within the TAP fare structure each agency has their own base-fare which is displayed in *Figure 1*. Metrolink uses distance-based fares since it services more commuters traveling from further locations across the county. Metrolink uses distance-based fares. Trips vary by distance between trip origin and destination. Fares range between a one-way trip, roundtrip, and $10 weekend day pass. Fares on Amtrak are divided into different categories based on common refund, cancellation, and discount policies.

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[13]"EZ Transit Pass and Other Discounts." *LA Metro*, https://www.metro.net/riding/fares/ez-transit-pass/.
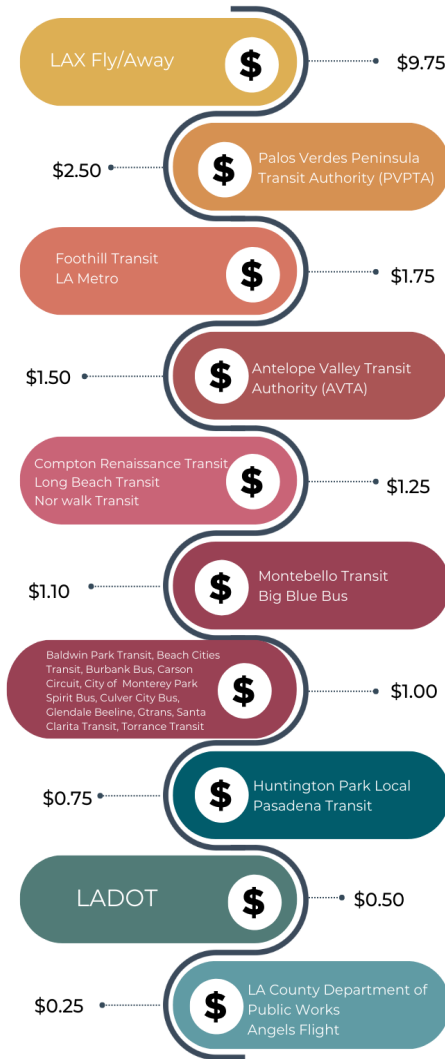
**Figure 1: List of Fares by TAP Agency**

# Challenge 3: Lack of Seamless Connections

Making transfers accessible and convenient for riders is essential to an integrated transit network. Transfers are typically used when a passenger needs to switch from one transit line, such as a bus or train, to another to complete their journey.

Transfers take place in the following situations.
1. Switching between different bus routes or subway lines to reach a destination.
2. Changing from one mode of transit, like from biking to a bus, or bus to train.
3. Combining different transit agencies' services

These transfers are made easier when riders can pay with a unified payment method (i.e., TAP), and when agencies have agreed upon rules regarding the number of transfers allowed within a single trip or in the allotted transfer time window. Additionally,

the physical infrastructure of transit stations should facilitate easy transfers by providing supportive amenities such as pedestrian infrastructure, bike infrastructure, ride-share, car share, and wayfinding.

## First/Last Mile

First/last mile refers to the beginning and end of a rider's journey when using public transportation. The first mile is measured from the origin to the transit stop and the last mile is the final segment of a trip from the transit station to the destination. Metro created the first/last mile program to improve access around transit stations and stops. Metro's goal to make it easier to travel in Los Angeles includes riders who walk, bike, or roll to and from their nearest station or bus stop. [14] Enhancing connections to stations by improving safety and access around Metro stations strengthens connections between transit stations and encourages transit use. First/ Last Mile improvements will also be essential to the priority station areas identified in Metro's Rail Network Integration Study including Van Nuys, Burbank, and Norwalk. Seamless connections to these stations will be critical since high volume transfer activity is expected between Metro Rail, regional rail, commuter rail and future California State High Speed Rail stations. [15]
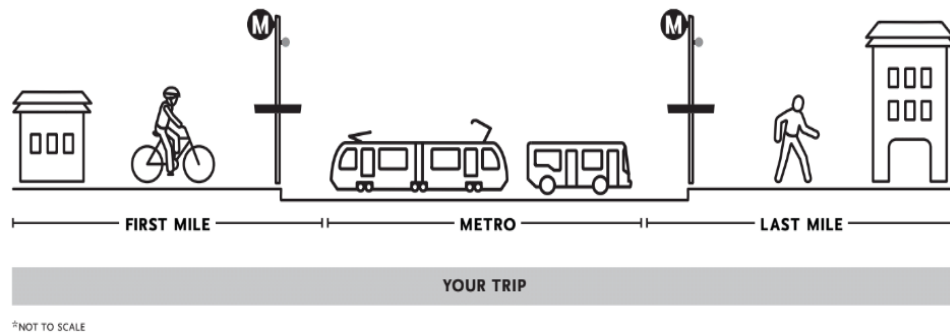


**Figure 2: First/ Last Mile Trip (Source: LA Metro)**

## Availability of Real-Time Data

In addition to the physical infrastructure that supports accessible and smooth transfers is the availability of real-time information that indicates the time until the train or bus arrives. Sharing this information allows riders to plan their trips more efficiently. The General Transit Feed Specification (GTFS), a set of specifications for transit data, has gained widespread acceptance and is now considered the unofficial standard for transit information in the United States and California. Over time, GTFS has expanded beyond

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[14]"First/Last Mile." *LA Metro*, https://www.metro.net/about/first-last/.
[15] Los Angeles County rail network integration study. (n.d.) LA Metro.https://www.metro.net/projects/los-angeles-county-rail-network-integration-study/

operational data to encompass ridership and other planning data.[16] At the state level, Cal-ITP developed California Minimum GTFS Guidelines and worked with transit agencies by assessing their system and providing technical assistance to help reach Cal-ITP's goal of ensuring statewide GTFS static coverage by 2020 and GTFS Realtime by the end of 2021.[17] Continuing to standardize the availability of real time data will make transfers between Metro Bus and Rail, Metrolink and Amtrak more convenient for riders.

# Challenge 4: Need for Equity Based Integration Goals

Equity should be the focal point of any integration effort, as the integration goals should first serve the most vulnerable and transit-dependent riders. Policy and infrastructure improvements to benefit this demographic will result in outcomes that benefit the entire transit rider population.

The data from LA Metro 2022 Customer Experience Survey revealed that 28% of LA Metro riders pay in cash, 51.8% have an annual household income of under $15,000 and 37.8% receive Senior/Disabled discounts.[18] These responses make a clear case that serving low-income, cash paying riders should be a priority. Also making discounts more accessible should be a priority since over 50% of riders rely on them.

However, integration efforts are often conflated with increased technology that may not be accessible to all riders. This report will focus on open loop payment as a prime example of how technological advancements can benefit a subset of the population, but with equitable considerations can be amended to benefit all riders.

Open loop transit payments refer to a system of payment for public transit which enables passengers to use their contactless credit or debit cards, smartphones, or other mobile devices to pay their fare. This system is called an "open loop" because it is not tied to a specific transit company or card provider. Instead, it allows passengers to use a card they already have, without having to purchase a separate transit card. The benefits of open loop payments include decreased dwell time which is the time a bus spends waiting while riders pay their fare, increased convenience for riders, removes time spent

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[16] Matute, J., Bains, J., Fraade, J., Gahbauer, J., Lu, R., Pinski, M., Popp, Z., Taylor, B. D., & Wickland, T. (2017). *California statewide transit strategic plan: Recommendations report*. https://escholarship.org/uc/item/1dc1c0kv

[17] *Cal-itp: California integrated travel project*. (n.d.). Retrieved May 21, 2023, from https://www.calitp.org

[18] 2022 LA Metro Customer Survey," ETC Institute, May 2022, `https://etcinstitute.com/communityplanning/transportation/ la-metro-bus-customer-survey/

in line waiting at a ticket vending machine, and it lowers operational costs of maintaining ticket vending machines and distributing fare media for transit agencies.[19]

Open loop transit fares work by using the same technology as contactless payment cards. Passengers simply tap their card on a reader when boarding and exiting the transit system, and the fare is automatically deducted from their account. This system is designed to be convenient for passengers, as they don't need to worry about carrying a separate transit card or purchasing tickets in advance. In the case of Los Angeles, TAP cards are only valid on the 26 participating TAP agencies, and the stored value is solely used to pay for transit; making it a "closed" system. Therefore, a closed, card-based system presents more limitations to potential integration with other services like non-transit transactions or payments without transit cards. The opposite of card-based systems is account-based, which allows payments from funds stored in external accounts (i.e., bank accounts). Account-based systems often facilitate "open" payments from standards-based technology (i.e., ISO-14443[20] for the identification code that signifies contactless payment cards). [21] (*Figure 3*)



**Figure 3: Contactless Payment Icon (Source: Mastercard)**

While open loop payments may increase convenience for some riders, it may simultaneously create new hurdles for others who rely on cash payments or are underbanked. However, continuing the acceptance of closed loop cards and supporting the expansion of pre-paid debit cards can make transit payments more accessible for low-income riders. In an April board report, Metro proposed an open payment, account-based TAP system dual launch would create a fare collection system that offers flexibility, security, and convenience.[22] Combining TAP and account based payment

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[19] Nelson, L. "Understanding the pros and cons of cashless fare payment for buses". https://mobilitylab.org/2018/10/16/understanding-the-pros-and-cons-of-cashless-fare-payment-for-buses/. 2018

[20] Note: "ISO 14443 is an international standard governed by the ISO defining the physical characteristics and working interaction between contactless (proximity) tags and devices operating at 13.56 MHz (NFC – RFID) at up to 10 cm in distance( https://learn.gototags.com/nfc/standards/iso-14443) Iso 14443 nfc standard. (n.d.). GoToTags Learning Center. Retrieved May 21, 2023, from https://learn.gototags.com/nfc/standards/iso-14443

[21] Matute, J., Bains, J., Fraade, J., Gahbauer, J., Lu, R., Pinski, M., Popp, Z., Taylor, B. D., & Wickland, T. (2017). California statewide transit strategic plan: Recommendations report. https://escholarship.org/uc/item/1dc1c0kv

[22] Metro Board Report, "Fare Capping Marketing Updates, Cash to TAP Conversion Update and CAL-ITP Open Payment Efficacy", File # 2023-0002, Apr 19, 2023

would allow customers who pay full fare the opportunity to pay for transit using their debit card while providing account-based benefits like discounts to cash paying and/or underbanked riders to use their TAP as a payment method. This proposal is one way to create equity in the system integration.

Another is the University Basic Mobility Pilot which may provide pre-paid cards to participants in the pilot. The Universal Basic Mobility (UBM) pilot is an example of how public transportation agencies are reaching out to lower-income and/or minority populations to provide them with subsidies for fare payments. UBM is related to fare integration because it allows access to different modes and gives participants the opportunity to access all transit modes without financial burden. The UBM program selected 1000 residents in South Los Angeles, 900 of them were selected randomly by completing online surveys, and an additional 100 participants were selected from in-person engagement events. In phase one of the pilot, participants will receive $150 in a prepaid debit card that is limited to transit services alone. In the second phase, there is an option to create a payment structure like PayPal that would allow riders to add their TAP card number as a payment option. The money would be loaded onto TAP cards and riders could pay for any third-party transit operators (ex: Uber, Lyft, Bikeshare, etc.). The UBM Pilot is an initiative that more transit agencies should consider making equitable access across modes.

## Statewide Initiatives

At the state level, the California Integrated Travel Program (Cal-ITP) provides guidance and technical assistance for transit agencies statewide to make travel easier and more cost-effective for riders and transit providers. Cal-ITP is supported by the California State Transportation Agency (CalSTA), California Department of Transportation (Caltrans) and funded through a grant from the California Transit and Intercity Rail Capital Program (TIRCP). The three main objectives of Cal-ITP include: enabling contactless payments, automating customer discounts, and standardizing information for easy trip planning[23]. Table 1 provides an overview of the types of fare payments statewide.

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[23] *Cal-itp: California integrated travel project*. (n.d.), from https://www.calitp.org

**Table 1: Statewide Fare Payment Accounts System Overview [24]**

| | Store of Value | Interoperability | Technology Lock-In |
|---|---|---|---|
| Most California transit-fare payment systems today | Card-based: Fare purses and data are stored on a single card | Closed: Fare equipment accepts only smartcards issued by the agency | Proprietary: Licensed to a specific company and operating according to nonconventional standards |
| In the future, with a statewide Accounts System | Account-based: Multiple access cards and other fare media link to a central transportation account, which processes transactions | Open: Equipment accepts multiple types of fare media issued by various providers | Standards-based: Using non-licensed equipment that coheres to an international stand, e.g., ISO-1443 |

# Types of Prepaid Cards

While expanding contactless payment has many benefits like lowering dwell times and eliminating the cost of fare media for passengers, it can be a barrier to riders who depend on cash payments or are unbanked. Therefore, alternatives to contactless bank cards or smartphones payments must be provided. Pre- paid cards can be the answer to closing the gap between banked and under/non-banked users. Monterey-Salinas Transit successfully piloted this solution and will be discussed later in this report.

Table 2 describes the type of prepaid cards that can be used to provide cards to riders with the opportunity to participate in an open-loop payment system without having to get a bank card.

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[24]  California Statewide Transit Strategic Plan: Recommendations Report, Matute et al, 2017 https://escholarship.org/uc/item/1dc1c0kv (5-3)

**Table 2: Types of Prepaid Cards**[25]

| Non-reloadable prepaid | Reloadable prepaid cards |
|---|---|
| - No application requirements for users<br>- Use may vary by the merchant.<br>- Limited amount of funds based on the value of the card at time of purchase | - Issued by financial institutions<br>- User must provide identification information to meet regulatory requirements (i.e., Social Security number, Individual Tax Identification Number)<br>- Card can be reloaded |

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[25] *A Guide to Prepaid Cards for Transit Agencies,* 2011 Alliance activities: Publications: prepaid cards for transit agencies. (n.d.). *Secure Technology Alliance*.https://www.securetechalliance.org/publications-prepaid-cards-for-transit-agencies/

# Methodology

# Methodology

This report seeks to understand how transit agency governance structures and interagency coordination can impede integration of transit fares, ticking, and making multimodal connections.

The main questions of that guided this research include:

- What policies can be implemented to create an integrated, accessible public transportation system?
- How can barriers caused by a lack of agency coordination and challenging fare structures be overcome with policy?
- What are the major barriers to creating a more integrated transit system in Los Angeles?

## Qualitative Data Collection

This research relied on qualitative data from interviews to understand from the agency's (Metro) perspective what operations could be improved to make intercity and intercounty transit more integrated. I interviewed members of various Metro departments, including the Countywide Planning, Operations, Management, Budget, TAP, Office of Strategic Innovation, Local Programming, and Customer Experience Team. In addition to Metro Interviews, interviews were conducted with each organization member with LOSSAN, SCAG, and Caltrans. I contacted these individuals to understand how their respective agencies interact with other agencies in the Los Angeles County public transit ecosystem. Their feedback was crucial to the outcome of the policy recommendations, and they provided context to the existing data on customer service. In addition, the interviews provided insights on challenges related to interagency coordination, funding for transit integration, and areas of opportunity for connecting transport in Los Angeles. Key takeaways from these interviews include the following themes, which are also incorporated throughout this report: Equity, Governance, Customer Experience, and Physical Infrastructure.

## Quantitative Data Collection

In addition to conducting interviews, Metro 2022 Customer Experience (CX) Survey data and Metrolink 2022 Rider survey data were reviewed to see trends in user experience ranging from local bus and rail to regional rail. Metro conducted customer surveys between March and May 2022. 12,239 surveys were taken across Metro buses, trains, and Metro Micro vehicles yielding a 63% response rate.[26] Across the areas of concern,

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[26] Metro, L. A. (2022, October 27). Results of our 2022 customer experience survey. *The Source*. https://thesource.metro.net/2022/10/27/results-of-our-2022-customer-experience-survey/

reliability, frequency, safety, cleanliness, and homelessness rank the highest among respondents. These are the top five issues noted on both bus and rail. Metrolink also conducted its customer surveys which collected ridership data. In spring 2022, Metrolink conducted surveys via email to 896,068 current and former Metrolink customers to better understand current ridership patterns.[27] From March 2022 to April 2022, 12,666 online surveys were received from all six counties in the Metrolink Service Area.

## Case Studies

Lastly, a collection of case studies of best practices for fare integration in the U.S. and abroad were explored. The systems selected represent a wide range of examples of fare integration, integrated ticketing, and equitable fare policies. The case study includes transit systems from the following locations: Japan, Taipei, London, Switzerland, and Monterey County, California.

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[27] *Rider survey 2022 | metrolink*. (n.d.). https://www.metrolinktrains.com/about/agency/rider-survey-2022/

# Case Studies

# Case Studies

## Japan: A Case Study for Customer Experience

Japan's rail system is one of the best practices for customer experience because of how the East Japan Railway Company centers the user's experience in the agency's goals. The East Japan Railway Company (JR East) is the largest of the seven Japan Railways Group Companies. JR East services the Greater Tokyo Area, the Tohoku region, and neighboring areas. JR East also operates all the Shinkansen (high-speed rail lines), north of Tokyo. JR Easts' "Move Up" Policy outlines the principles and goals of the JR East group as they adapt their services to best serve their customers. Currently, JR East Group is facing a new social and economic climate from a declining population to a shift towards autonomous driving. JR East's response to these changes is to shift their services' focus from railways to services that align more with the needs and values of its riders.[28]The "Move Up" Policy discusses solutions like strengthening coalitions between railways and secondary transportation modes to create a seamless mobility network for customers. One of their goals by 2027 is to create new services based on "multilayered 'real' networks and station hubs for interactions of people and platforms information and product exchange. Moreover, by utilizing the Suica Card as a payment and authentication function, they aim to offer a one-stop service where customers can use Suica for a variety of services in their daily lives."[29] The Multilayered "real" network includes the following: IT & Suica Services, Lifestyle Services, and Transportation Services (Figure 4).

The JR East card system allows for a one-stop provider of services that makes transportation an integral part of daily life. One of the targets of this vision is a seamless customer experience to pay for transportation and other goods. The Suica Card and the JRE Point Card are two main interfaces that allow for seamless travel across multiple travel modes and at retail or commercial vendors. One of the foundations of JR East Group's business platform is using travel cards as a payment platform as well as a mobility linkage platform. For example, the Suica card can be used to pay for transportation, but it can also be used at grocery stores and convenience markets. JR East uses the following efforts to achieve seamless mobility initiatives including offering multi-faceted services tailored to individuals using the multiple cards of the JR East rail network, reducing total travel time by mobility linkage platform, and increasing opportunities to use Suica through partnerships with various payment methods.[30]Ultimately, Japan's JR East system is a case study for enhancing regional

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[28]JR East Group. (n.d.). *"Move Up" 2027*. https://www.jreast.co.jp/e/investor/moveup/pdf/all.pdf
[29]Ibid
[30]Ibid

convenience for transit users and making transit a reliable service of riders' everyday lives.
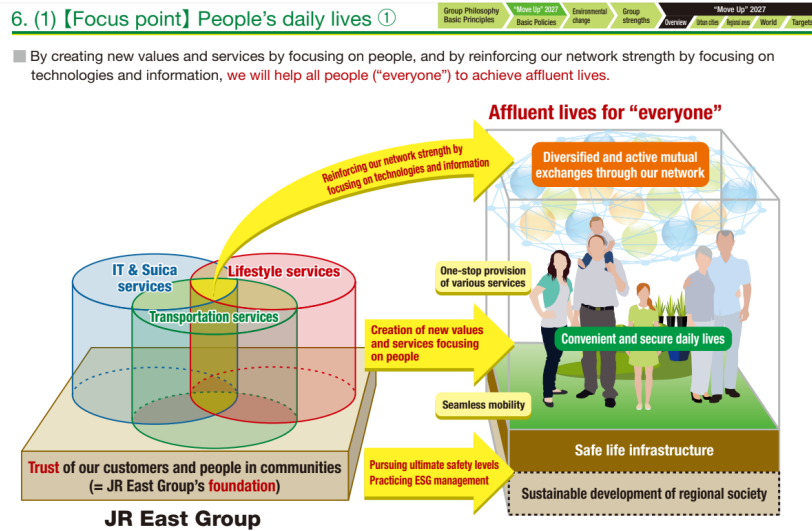


**Figure 4: Multilayered "Real" Network (Source: JR East Group)**

## Taipei: A Case Study for Ticket Integration

Taipei City, Taiwan's Mass Rapid Transit (MRT) is another best practice for ticket integration because its various ticket options are accepted on both public transit and at local retailers. Fare integration in Taipei refers to the implementation of a single ticketing system that allows passengers to use different modes of transportation within the city without having to purchase separate tickets for each mode of transport. The Taipei Metro offers Single-Journey Tickets, Travel Passes, All Pass Tickets, and Stored Value cards including EasyCards.

For example, with a Taipei Metro Pass, riders can receive free coupons at restaurants, bakeries, and stores near metro stations and across Taiwan. Metro Travel Pass Coupons can also be redeemed at museums and other cultural institutions which engages tourists and allows a seamless transition from transit to tourist destinations.[31] Additionally, the EasyCard is a reloadable smart card that can be used for payment on Taipei's MRT, buses, YouBikes, and other forms of transportation. Passengers can load money onto their cards and use it to pay for their fares. The EasyCard system also offers discounts for frequent travelers, as well as benefits such as automatic top-up and online account management.

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[31] Corporation, T. R. T. (2013, December 5). Taipei Rapid Transit corporation. Taipei Rapid Transit Corporation. https://english.metro.taipei/cp.aspx?n=BECC2E7AC426F659

The EasyCard system was founded in 2000 and has been in operation since 2002. Since then, it has been expanded to cover more modes across the city. Users grew from 20 million to 50 million by 2014 and usage grows 20% each year.[32] TheEasyCard is now being extended to access the Maokong Gondola, admission to Taipei Zoo, and Taiwan High Speed Rails (HSR).

Overall, the fare integration in Taipei makes it easier for travelers to navigate the city and provides them with incentives to take public transit to access various discounts, coupons, and promotions at nearby commercial destinations.

## London: A Case Study for Open Loop Fare Payment

London's Transport is a leading example of open-loop payment on transit. In a 2016 Commissioner's Report, Transport for London (TFL) claims that since the implementation of contactless payment cards (CPCs) in 2014, more than 300 million journeys were made using CPCs.[33] There was a reported increase in pay-as-you-go journeys being made using CPCs as well.

The Commissioner's report also includes the success of contactless payment cards via mobile phones by using account-based technology from applications like Apple Pay or other mobile wallets. In the second half of 2015 more than 3.2 million journeys were made using mobile devices. While London adopted contactless payment, it still accepted closed loop payments using its Oyster Card. London implemented daily fare capping in 2005 using Oyster cards and then weekly capping in 2014.The UK Cards Associations (UKCA) has a three tier Contactless Transit Model. The model includes the following Single Pay as You Go, Aggregated Pay as You Go, and Pre-Purchase. (Figure 5)

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[32] EASYCARD Corporation Manager of IT, EASYCARD Corporation
[33] Brown, M. (2016). *Commissioner's Report.* Transport for London.

## CONTACTLESS PAYMENT MODELS

### MODEL 1 - SINGLE PAY AS YOU GO

### MODEL 2 - AGGREGATED PAY AS YOU GO

### MODEL 3 - PRE-PURCHASE

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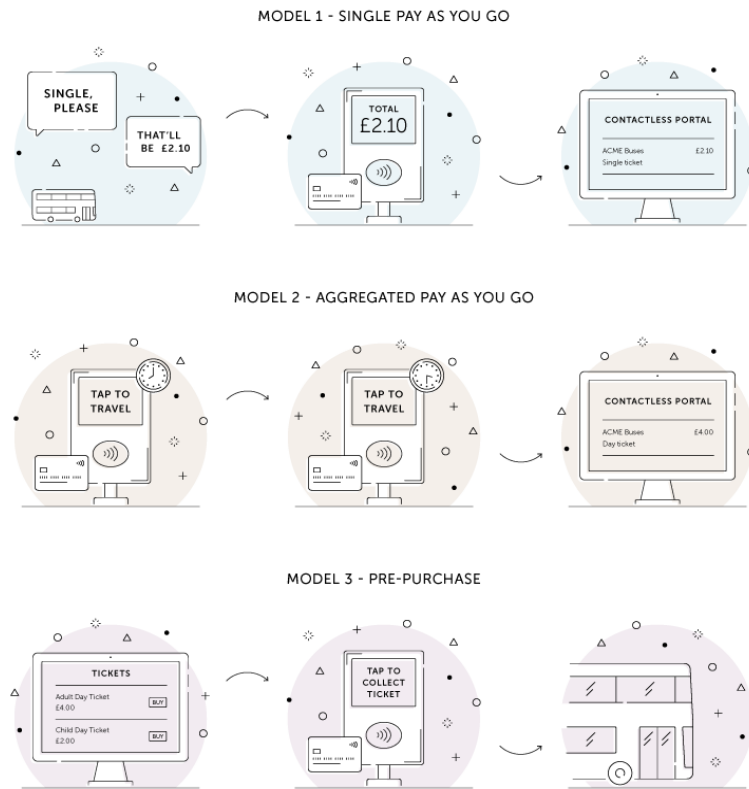
**Figure 5: UK Contactless Payment Models (Source: Passenger Technology Group)**

The UK Contactless Transit Models 2 and 3 are included in the Cal-ITP feasibility study as California's EMV acceptance would be following these models. EMV stands for Europay, Mastercard, and Visa which are the three companies that created the payment standard. The Aggregate Pay as You Go, and the Pre-Purchase models allow customers to tap and pay with contactless bank cards as well as mobile phones if they adhere to the contactless EMV specifications. However, base fares and prepaid passes are still accepted. London Underground utilizes its contactless payment structure to reward passengers as they ride via a "pay as you go cap." The cap limits how much one

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[34] Dave. (2018, January 15). *Understanding the uk cards association contactless transit models*. Passenger. https://passenger.tech/news/understanding-uk-cards-association-contactless-transit-models/

pays for all journeys in one day or week. The passenger must touch in and out on the same device whether it be a contactless card, device, or Oyster card to ensure that they aren't charged a maximum fare. Daily and weekly caps vary by zone, time of travel, and the number of rides. However, if one's total fares have reached more than the cap for the span of zones covered during one day of travel, the agency automatically subtracts the difference. For example, pay-as-you-go with weekly capping will not exceed the price of a 7-day Travel card, therefore riders will most likely get better value from tapping as they go. London serves as a great example of how fare capping and open payment can work in tandem. Once fare capping is implemented at Metro, it may be advantageous for the agency to consider augmenting the fare payment infrastructure with open-loop technology- like London.

# Switzerland: A Case for System Wide Integration

Switzerland's transport is an excellent case study for systemwide integration as it combines integrated ticketing, seamless transfers, and enhancing the customer experience reflected in both the Japan, Taipei, and London examples. While Switzerland is a small country with a population of 8.6 million people, it hosts 460 transportation companies including 80 railway companies. Additionally, Switzerland was selected as a case study because the Swiss Transit network captured the interest of Southern California Transit Agencies and MPOs during the SwissCal Conference in the Spring of 2022. During the Conference, Swiss Public Transit officials explained that Swiss public transport is structured to deliver seamless transit service across the country while coordinating with different local transit agencies and local governments.

## Role of Key Stakeholders in Swiss Public Transit

For Switzerland, coordination is the key to its public transportation success which is managed at both the federal and regional level. To create an integrated system, public transportation in Switzerland is generally organized into three different levels: Governmental, Semi-Public and "Private Level". The coordination across these entities is a best practice for public-private-partnerships (P3) and is an example of world class transit service delivery. Figure 5 outlines the various actors involved in the public transit system.

**Governmental Level**

The federal government, or Federal Office of Transport (FOT) oversees strategic planning and finances railway infrastructure, is the safety authority for the entire public transport sector and defines the legal framework for public transport in Switzerland.[35] Cantonal actors which are comparable to US Counties and municipalities oversee financing regional and local transport services.

**Semi-Private Level**

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[35]South California Association of Governments (SCAG). (2022). *SwissCal Conference on the Swiss Public Transportation Ecosystem*.

Companies at this level are entirely or partially owned by the state. They operate most of the transit and oversee some aspects of coordination when such authority is delegated to them by the Federal Government or the Federal Office of Transport (FOT).[36] The FOT sets targets for semi-public level companies every four years and these targets are reviewed regularly. The semi-public companies and associations are free to implement these targets in any way they see fit.

**Private level**
Although referred to as the "private" level, this category mainly includes publicly owned and governed public transit operators. Most transit operators are arms-length companies fully owned by public jurisdiction. However, fully private (and not publicly owned) companies are also included in this level.[37]
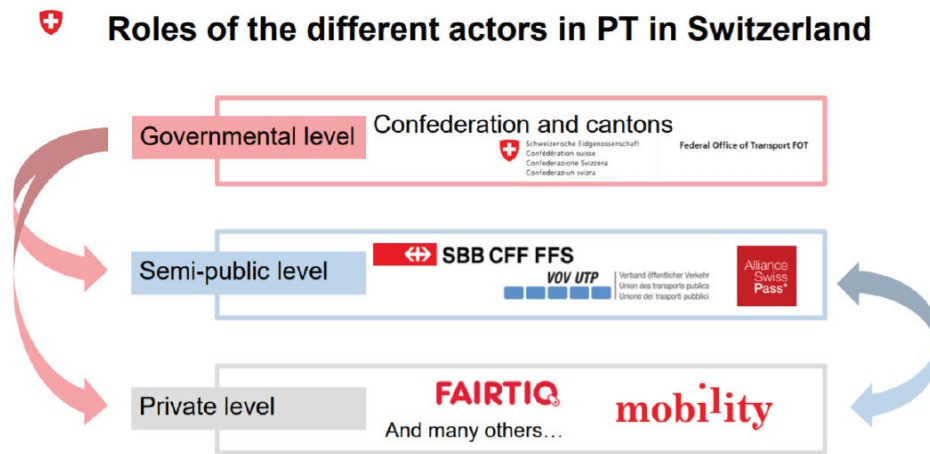


**Figure 6: Roles of the different actors in public transit in Switzerland (Source: Remund)[38]**

## App-Based Customer Experience

Another element of the Swiss Transit system is its seamless customer experience interface. Switzerland utilizes Fairtiq, a comprehensive app-based platform that allows riders to buy tickets, manage payment methods like credit cards or mobile payments, and plan trips for various modes of public transportation. In one swipe, the user can travel across destinations among 250 transit operators. The app provides the rider with freedom to travel without knowing what service provider they will use, how much it will cost or having to pre-load funds.[39] Fairtiq uses GPS technology on rider's smartphones to decide the start and end points of their journey. A rider's journey begins once they

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[36]Ibid

[37] Ibid

[38]Remund, Anna, Swiss Federal Office of Transport (2022). *SwissCal Conference on the Swiss Public Transportation Ecosystem*.

[39] Ibid

board their chosen transportation method and activate the app, then the app calculates the fare based on the distance traveled in accordance with the relevant fare zones. A key element of the app is that it automatically applies the most cost-effective fare for riders based on their travel patterns instead of holding the rider responsible for choosing the right ticket for their trip. Ultimately, Fairtiq offers a seamless experience for passengers and provides a user-friendly integrated solution for passengers traveling across different regions or modes of travel.

## Drawing Connections to California

While Southern California does not have a comparable geographic layout to Switzerland, it can learn from Switzerland's coordinated efforts with neighboring countries like France. Instead of having to connect transit across international borders, Southern California does have to coordinate with nearby counties which nevertheless raises similar challenges in integration across jurisdictions and geographic boundaries. The connection between Unireso and the Leman Pass which provides travel across the Switzerland-France border demonstrates how jurisdictional obstacles can be overcome by putting the customer first to deliver seamless mobility. This pass should be further explored as best practice for Los Angeles as it develops coordination across counties in the Southern California region and eventually across the state with the complete of California High Speed Rail.

Ultimately, success of the Swiss transport ecosystem is due to its close collaboration with other operators, adhering to existing regulations and adapting new regulations as needed, having common definitions and standards, and understanding technological challenges. Therefore, it is recommended that Metro and its partnering agencies continue to learn from the Swiss system. It is also recommended that these agencies pursue the goals that they outlined at the end of the 2022 SwissCal conference that can be applied to the Los Angeles region including:[40]
1. Setting effective roles and responsibilities
2. Service-led network design principles (a structured timetable)
3. Phased implementation (long-term development).

# Monterey Salinas Transit: A Case for Piloting Fare Payment Equity

Monterey-Salinas Transit (MST) in Northern California recently partnered with Caltrans and Visa to implement contactless fare payment on their fixed route bus service. MST is the first transit agency in California to introduce contactless payment solutions as part of the California Integrated Travel Project (Cal-ITP). This partnership led to a six-month

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[40] South California Association of Governments (SCAG). (2022). *SwissCal Conference on the Swiss Public Transportation Ecosystem*.

pilot to assess the feasibility of seamless contactless payments aboard transit. Additionally, responses from the MST Rider Survey conducted in 2020 revealed that customers preferred a contactless fare payment option over cash. In line with this trend, MST joined the growing list of cities that offer open, contactless fare payments in transit.[41] The pilot program also addresses Cal-ITP's initiative to automate customer discounts through the Cal-ITP benefits program. The benefits program allows older adults (65 +) to electronically verify their identity with a state- issued ID and receive reduced fares on MST without the burden of paperwork.[42]

The pilot project also recognized equity issues in an open-loop system by proving that contactless pay can be expanded to both banked and underbanked users. Riders who are underbanked or unbanked may not participate in a contactless payment system. This idea was explored in the MST contactless payment pilot to provide information about low-cost, easy-access payment options to transit customers using the Square Cash App and Visa Cash App Debit Card[43].This regional transit campaign resulted in fare payments made by riders who were not tied to bank accounts and their expenditures expanded from transit to other essentials like food. MST provided low-cost, accessible payment options using Square Cash App and Visa Cash App Debit Card.

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[41]*Mst Announces a New Partnership with Caltrans, Visa Introducing Contactless Fare Payment Demonstration | Monterey-Salinas Transit*, n.d.)

[42] *Cal-itp benefits | monterey-salinas transit*. (n.d.). Retrieved June 3, 2023, from https://mst.org/fares/contactless-payment/benefits/

[43] *Payments for mobility: A gateway to transportation access and financial inclusion*. (n.d.), https://www.enotrans.org/article/payments-for-mobility-a-gateway-to-transportation-access-and-financial-inclusion/

# Findings

# Findings

## Metro 2022 Customer Experience Survey Data

This report used the Metro Customer Survey Data from 2022 to review rider's experience on Metro Bus and Rail and to identify potential burdens that impact a rider's journey. This data was also consulted to see how riders reported their ease of making payments or transfers which would inform recommendations. Additionally, the data collected on equity statistics related to access to smartphone technology, enrollment in discounts, and income were also relevant to this study. According to Metro 2022 Survey Data According to the 2022 Customer experience survey, 79% of Riders own smartphones with available data, and 73% of riders pay using TAP* [44]. This is an important statistic because it emphasizes the success of the TAP card and shows that a large share of Metro riders does pay with TAP. These riders will be among the rider population who will benefit from the fare capping; however, Metro should continue to focus its efforts on supporting the remaining 27% of riders who do not use TAP cards. When asked if they received a discount on fares and what time of discount it was, 41.2% responded that they did receive a discount and of that 41.2%, 37.8% reported receiving a Senior/Disabled/Medicare discount. Additionally, nearly 40% of riders make under $15,000 annually which emphasizes the need to create equity-based integration solutions to service Metro's low-income riders. *(Figure 7)*

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[44], Metro, L.A. (2022, October 27). Results of our 2022 customer experience survey. *The Source*. https://thesource.metro.net/2022/10/27/results-of-our-2022-customer-experience-survey/
*Note: 63% Pay with TAP Card and 10% Pay with TAP App*

A Blueprint for Connected Public Transport in Los Angeles County

**Figure 7: Total Household Annual Income (Source: ETC Institute)**
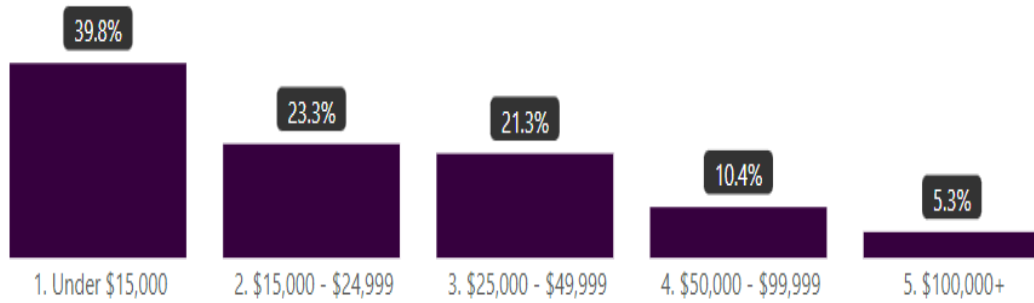


**Figure 8: Discount Type (Source ETC Institute)[45]**
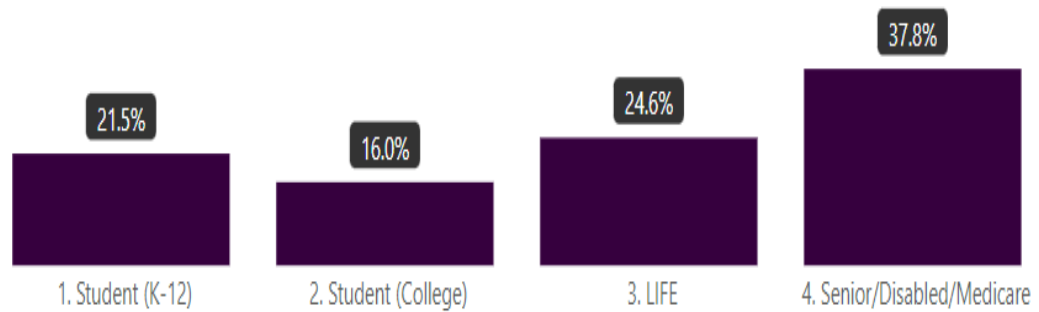


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[45] 2022 la metro customer survey. (n.d.). ETC Institute. Retrieved May 29, 2023, from
https://etcinstitute.com/communityplanning/transportation/la-metro-bus-customer-survey/

**Table 3. Top Five Rider Improvements on Metro Bus and Rail[46]**

| Top Five Improvements: Bus | Top Five Improvement Rail |
|---|---|
| 1. More busses arriving on time<br>2. More frequent buses<br>3. How Metro addresses homelessness on buses<br>4. Safety from crime<br>5. Cleaner bus stops | 1. Cleanliness inside trains<br>2. How Metro addresses homelessness on trains<br>3. Safety from crime<br>4. More trains running on time<br>5. More frequent trains |

While questions regarding fare payments and transfers were answered, responses showed that customers are most concerned with frequency, cleanliness, and safety of buses and rail system wide. Ultimately, this data shows where riders would like to see improvements. However, it doesn't reveal as much about challenges with fares and transfer. Therefore, this data was slightly limited, but the following findings from the interview fill in the gaps between these responses.

# Metrolink 2022 Rider Survey

The Metrolink Rider survey collected 12,666 online responses from riders across all six counties in the Metrolink Service Area. Like the Metro Survey, Metrolink's survey highlights that nearly 40% of its rider's report household incomes below $50,000. Metrolink has addresses potential economic barriers for lower-income riders by creating more flexible ticket options such as the 5-Day Flex Pass, 10-Day Flex pass, the $15 Summer Day Pass and offering a Kids Ride Free Weekend pass.[47] Another important takeaway from the Metrolink Survey is that there is almost a 50/50 ridership spilt between commuters and non-commuters. While 52% of the current ridership base commutes to work or school, the other half uses Metrolink for social visits or leisure trips. *(Figure 9).*

| **52%** | **23%** | **19%** | **5%** |
|---|---|---|---|
| Work/School | Social Visit | Leisure | Other |

**Figure 9: Metrolink Commuters and Non- Commuter (Source: Metrolink)**

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[46] Metro, L. A. (2022, October 27). Results of our 2022 customer experience survey. *The Source*. https://thesource.metro.net/2022/10/27/results-of-our-2022-customer-experience-survey/
[47] *Rider survey 2022 | metrolink*. (n.d.). Retrieved May 31, 2023, from https://www.metrolinktrains.com/about/agency/rider-survey-2022/

Additionally, in 2022 non-commute trips are up more than double the number of trips reported in 2018. These trips increased from 20% in 2018 to 48% in 2022. Lastly, 83% of Metrolink's current riders are long term riders and have been riding with Metrolink for more than 2 years. [48]

These findings reveal that like Metro, Metrolink should continue to prioritize equitable fare policies for low-income riders across the system. With a growing non-commuter ridership base, Metrolink can look to improve its customer service interfaces and intermodal connections to support those who may be first time or occasional riders. Non-commuters may be less familiar with the system so orienting customer experience to those riders will make the system more accessible and easier to understand for all riders. Lastly, Metrolink is in a great position to continue to harness its long-term riders and invite new riders onto its systems. Therefore, Metro and Metrolink should find more ways to collaborate to align goals and make connections across Metro and Metrolink even more seamless.

# Interview Findings

Eight Interviews were conducted with individuals from the following departments of LA Metro: TAP, Customer Experience, Office of Strategic Innovation, and Local Programming. The other three interviews were with employees of SCAG, Caltrans, and LOSSAN. The intention of the interviews was to collect perspectives on fare integration from LA Metro employees and from external agencies to understand how they interact and what their respective challenges are with integration. The interviews largely focused on the barriers of creating a more integrated transit system in Los Angeles and revealed the following themes.
- Role of Government
- Discount Eligibility Requirements
- Consolidating Fare Structures
- Equity
- Customer Experience

## Role of Government

The SCAG respondent who attended the SwissCal conference discussed how the Swiss federal government plays a far different role in coordinating public transit than the federal government in California. The Swiss government coordinates system-wide goals and standards for the transit system which streamlines how goals are met. The respondent shared the various initiatives of Cal-ITP which made me consider the possibility for more state involvement in Southern California's regional integration efforts. However, the

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[48] *Rider survey 2022 | metrolink*. (n.d.). Retrieved May 31, 2023, from https://www.metrolinktrains.com/about/agency/rider-survey-2022/

Caltrans respondent explained that there are limitations to Cal-ITP's efforts because most of the technical implementation is out of Caltrans's control unless written into legislation. The Caltrans respondent explained that objectives of Cal-ITP like enabling contactless payments and standardizing trip information are slowly being realized into legislation but in the meantime, Caltrans can make the case for why agencies should integrate and then assist them with the process. Ultimately, interviewees from SCAG and Caltrans agreed that the state will play a larger role in integrating local and regional transit systems if legislation is enacted to require coordination among all transit service providers.

## Discount Eligibility Requirements

A key challenge to achieving a more open system of fare payment is the eligibility screening method for discounted passes across transit providers. TAP agencies, Metrolink/SCRRA and LOSSAN all have different ways to verify and distribute discounts to riders based on their qualifying status. Therefore, interviews with Metro, SCAG, and Caltrans discussed the challenges of aligning discount eligibility across agencies. The respondent from LA Metro Office of Strategic Innovation (OSI) explained that Metro Bike Share integrated EBT Cards with the Metro Bike Share customer interface to verify eligible EBT users for discounts on bikes directly through the Metro Bike App. Additionally, for the Metro Go-Pass, there are ways to check if students are eligible through student IDs and emails; however, there is an opportunity to make a more streamlined validation process at the state level. Another optimal way of limiting the barriers individuals face to gaining eligibility for discounts is to use the honor system. Currently, Metro's Low-Income Fare Is Easy program (LIFE) allowing self-attestation and then audits on the backend. This discussion led to the OSI respondent posing the following questions: "What is the cost to the agency of self-attestation for all discounted services versus the cost of keeping all our eligibility screening services? and "what is the State's role in coordinating eligibility screenings for transit?" Both questions should be further explored by LA Metro.

## Consolidating Fare Structures

When asked if creating a unified base fare across all TAP agencies was possible, a respondent from Metro TAP Department raised concerns that such a system could be challenging because operators have different budgets and operational costs that could be impacted by changing their base fare. Based on the size of the agency and its ridership base, it might be burdensome for smaller local operators to change their fares. However, the TAP respondent revealed that Foothill Transit is changing its fares to match Metro which may make fare payments across these two operators more convenient for riders. In addition, TAP respondents expressed that implementing a consolidated base fare may result in LA Metro being responsible for managing the entire region's fare structure which may be a cumbersome task for the agency to take on.

Respondents from TAP shared that previous attempts were made to consolidate fares among the larger operators in TAP including Santa Monica Big Blue Bus, Foothill Transit, Culver City Transit, and Long Beach Transit. However, it was unsuccessful and made clear that agreeing on discounts for seniors and child ages is a major challenge. Currently, there are three senior ages: 60, 62, and 65. The age for children to ride for free varies from 4-6 years old. Since these operators are part of their cities, the city would have to change their senior or child age which affects more than just transit; it would impact all their other operations.

Revenue is another major element of deciding fare structures. As previously mentioned, smaller agencies may be unable to afford to change their base fares as it would impact on their operations. The OSI respondent included that the TAP backend has rules on how much municipal agencies make for transfers. Therefore, changes to TAP, like fare capping, affect all municipalities. On the other hand, the Metro Local Programming respondent shared that the current fare structure of the agencies need not to be changed as it is a factor in an agency's Formula Allocation Procedure. They explained that the Formula Allocation Procedure is one of the agency's strengths as it provides the most accurate amount of funding to each agency. If more TAP agencies changed their fare structures, it could impact their funding allocation.

## Equity

Almost all respondents acknowledge that equity is at the core of integration. A primary challenge of creating equity while integrating transit is making benefits available to cash-paying riders. Firstly, differences in fares and payment structures can disproportionately benefit riders. For example, fare capping will be implemented by July 2023, but it only helps riders pay with TAP on Metro Bus and Rail. When discussing the equity implications of fare integration, the OSI respondent replied that those planning the fare integration policies should consider "who are we integrating for and who is going to use an integrated system? This respondent asked," If 38% of riders don't use a TAP card

currently, how can they benefit from an integration that may rely more on credit cards or cell phones?" Multiple Metro respondents agreed that since not all riders currently use TAP, the agency must address this gap in our existing service first, then we can explore more ways to establish integration and, eventually, interoperability.

## Customer Experience

Respondents from LOSSAN, LA Metro Customer Experience, OSI respondents explained how customer experience is key to integration because it simplifies the transit experience. On an Intercounty level, a goal of LOSSAN is to create an integrated ticketing system that will connect people from Surfliner to Metro Rail turnstiles. Since Amtrak manages LOSSAN, Surfliner cannot try and integrate with the TAP program, making it challenging to create its app-based user interface. However, LOSSAN is currently trying two projects that would establish its app and better trip planning. The following two efforts would provide them with the ability to have more flexibility and freedom in tracking ridership.

1. Regional Rail App that would be a collaboration between Metrolink
2. Direct Management of Surfliner by LOSSAN, but Amtrak would remain the ticket provider and fare collector. In this scenario, LOSSAN would have more control of the customer experience on the Surfliner.

Both LA Metro and LOSSAN respondents explained that their 2022 Customer Experience Surveys indicated that riders want more real-time data. LOSSAN respondents reported that they received real-time arrival updates while traveling. Amtrak trains nor the Amtrak app currently use GTFS. The respondents requested that the Amtrak app include multi-modal directions or information on first/ last mile connections.

The LA Metro respondent explained that a November 2022 Metro Board motion to Consolidate Metro Transportation App to create a single app that Bike Share, Metro Micro, TAP, Metro Parking, and more is a step in the right direction for Metro to remove the hassle of using multiple apps to coordinate a rider's journey on transit[49]. The goal of this motion is to create a more user-friendly interface and improve overall customer experience.

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[49] *Consolidate Metro Transportation App Motion* (Board Report No. 2022–0789). (2022). LA Metro.

# Recommendations

# Recommendations

The following recommendations aim to incorporate findings from my interviews and quantitative data review to enhance fare policy, fare integration and ticketing, and timed connections between services, and seamless transfers in the Southern California Region.

The recommendations are divided into the following three categories:

1. Establishing initiatives for equitable fare policies
2. Analyzing current governance structures
3. Enhancing physical infrastructure at station areas

## Establishing Initiatives for Equitable Fare Policies

### Explore diversified payment methods on the TAP App

To support the ongoing efforts of the "Cash to TAP" Marketing campaign, new payment options on the TAP app should be explored. Market research conducted to better understand Metro's cash-paying customers found that 64% of LA Metro bus riders are unbanked or underbanked (Metro Fare Payment Survey, 2022)[50]. However, the Metro 2022 Customer experience survey revealed that 79% of Riders own smartphones with available data. Therefore, it may be beneficial to add service to both demographics by providing payment methods on the TAP App that are not linked to bank accounts. For example, partnering with companies like Venmo or Cash App could serve as an alternative payment method for those without formal bank account or bank cards and allow them to reload their TAP card on the mobile TAP app.

Currently, the TAP App only accepts credit cards or Apple Pay. Venmo provides a debit card that has no monthly fee or necessary minimum balance. The Venmo Debit Card lets you spend the money in your Venmo account anywhere Mastercard® is accepted.[51] Cash App is another mobile payment service that does not require a bank account to create and use an account. [52] The TAP App should also accept forms of prepaid debit card payment from companies like Visa or Mastercard.

### Partner with Caltrans to standardize discount verification

Metro's TAP Department should continue to partner with Cal-ITP to provide streamlined eligibility screenings for students, older adults, low-income riders, and veterans. One of Cal- ITP's goals is to establish a statewide program to verify eligibility for reduced fares

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[50] Metro Board Report, "Fare Capping Marketing Updates, Cash to TAP Conversion Update and CAL-ITP Open Payment Efficacy", File # 2023-0002, Apr 19, 2023

[51] *Venmo mastercard debit card | venmo.* (n.d.). Venmo Mastercard Debit Card | Venmo from https://venmo.com/about/debitcard/

[52] *Cash App—A faster, simpler way to bank.* (n.d.). from https://cash.app/bank

will alleviate cumbersome processes for both transit providers and riders.[53] If more riders who are eligible for discounted fare are encouraged to switch to TAP, the TAP App should also provide a way to verify discounts on the app. Metro can use the MST Contactless Pilot as an example for the benefits of standardizing discount eligibility with state-issued IDs.

### Encourage more TAP agencies to adopt fare capping

Fare capping will be implemented on Metro Bus and Rail in July 2023, but the remaining 25 TAP agencies do not use fare capping. Therefore, TAP should conduct a feasibility study to expand fare capping capabilities to the other agencies. The study could facilitate opportunities to create a fare capping system wide which would benefit more riders. The study should include how fare capping could benefit all TAP riders.

## Analyzing Current Governance Structures

### Utilize SCAG as a regional integration leader

It is recommended that TAP explore partnering with SCAG to lead fare integration efforts. The SwissCal report explains the Swiss Rail Network is successful due to identifying a system leader to guide decision making that would impact transportation across the country. In the Bay Area, the Metropolitan Transportation Commission (MTC) is a system leader as it acts as a Clipper program manager on behalf of the transit operator and host of Clipper Program Governance[54]. Los Angeles County could emulate the governance structure of the Bay Area Transportation System by utilizing SCAG's position as an MPO to oversee regional fare integration efforts. While the Bay area's model is unique because it is the only region where a transit fare payment system contract is not managed by a transit operator. If SCAG were to take a larger role in coordination, Metro would not have to be the sole host of the fare payment systems. Leveraging SCAG as a regional agency could make opportunities for SCAG to lead other efforts like setting data sharing standards to transit such as General Transit Feed Specification (GTFS), coordinating eligibility standards, or developing customer experience standards across the region. SCAG could also support Metro and other transit providers with coordination at the statewide level with Cal-ITP.

### Create a Regional Transit Integration Task Force

Metro could recommend the creation of a Regional Transit Integration Task Force (Task Force) to collaborate on intercity and intercounty transit integration efforts and focus on strategies to integrate fare payments countywide. Task force members could include Local elected officials, representatives from all 26 TAP agencies, representatives of the

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[53] *Cal-itp: California integrated travel project*. (n.d.) from https://www.calitp.org

[54] *Clipper® executive board | metropolitan transportation commission*. (2021, March 17). https://mtc.ca.gov/about-mtc/committees/interagency-committees/clipperr-executive-board

remaining Southern California County Transit providers: including Orange, Riverside, San Bernardino, and Ventura, Imperial, San Bernadino, and transit justice advocates. The task force could coordinate equity goals, long-term initiatives to increase ridership through transit integration and improve governance structures to facilitate streamlined transit service delivery. One of the priority goals of this task force could involve further integration of Metrolink with the TAP card. The Regional Transit Integration Task Force would also address integration of future transit services including the Inglewood Transit Connector in 2028 and the California High Speed Rail once completed.

The Task Force could be modeled after AB 761 Transit Transformation Task Force (Friedman, 2023) which is being enacted at the state level. The legislature declares that the task force will develop a structured, coordinated process for early engagement of all parties to develop police to grow transit ridership and improve the transit experience for all users of those services.[55] The task force will provide recommendations for fare coordination, scheduling, wayfinding and service between transit agencies.[56] The bill would require that the secretary form the task force on or before July 1, 2024, with representatives from the department, Controllers office, various local agencies, academic institutions, non-government organizations and other stakeholders.[57]

## Enhancing Physical Infrastructure at Transit Station Areas

This recommendation is twofold as it includes investing in improvements for Metro Bus and Rail that enable first/last mile connections and connecting riders to more everyday purchases. First, Metro is recommended to prioritize more first/last mile improvements at existing stations especially in anticipation for upcoming events like the 2026 World Cup and 2028 Olympic and Paralympic games. Investing in first/last mile connections will increase customer safety, satisfaction, and comfort while on their transit journey.

Second, Metro should prioritize making more opportunities for TAP customers to receive discounts and perks at various commercial locations. Since transportation functions as an everyday essential for many riders, there are opportunities to make a seamless connection between transportation and other essential daily purchases or amenities. To make these connections, Metro should consider reinstating its Destination Discount Program which encourages riders to take metro to various locations and receive

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[55] California State Assembly, Transit Transformation Task Force. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202320240AB761. AB 761. Amended 13 February 2023.
[56] Ibid
[57] Ibid

discounts by presenting their TAP card.[58] Metro could also invest in station designs that support commercial activity by enhancing rail stations with vendors. Not only would vendors make transit and daily amenities more connected, but the presence of vendors can increase visibility in rail stations and potentially make riders feel safer while waiting and onboard transit.[59] The case studies from Japan and Taipei outlined earlier in this report can be used as an example of how best to implement this recommendation.

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[58] *Destination discounts*. (2018, May 14). The Source. https://thesource.metro.net/category/lifestyle/destination-discounts-lifestyle/
[59] Brozen, M. (2023, April 27). *Opinion: How can L.A. Metro make train service safer? Look to what's working on buses*. Los Angeles Times. https://www.latimes.com/opinion/story/2023-04-27/los-angeles-metro-bus-train-transit-public-transportation-service-safety-crime

# Conclusion

# Conclusion

Creating a more integrated transit system in Los Angeles County is challenging but achievable. The barriers to integration examined in this report include complex governance structure, inconsistent fare structure, lack of seamless connections and need for equity-focused integration goals. However, the recommendations in this report aim to be a steppingstone for future integration policy implementation that can advance equity and improve coordination across regional transit providers. Looking ahead, LA Metro can leverage its relationships with its partners ranging from regional transit providers, MPOs, and State Transportation agencies, to continue to define how the agency will approach equitable regional integration.

Fare integration will remain a timely issue as new services are introduced to Los Angeles, like the Inglewood Transit Connector that will make connections from the Metro K Line to entertainment venues like the Sofi Stadium and Kia Forum. Aside from local connections, integration at the state level will need to be considered with the future completion of the California High-Speed Rail. However, soon, milestones like the implementation of fare capping on Metro Bus and Rail and the opening of the Regional Connector will solidify Metro's role as a regional connector. The momentum from these events should encourage further integration across the region to prepare for upcoming events like the 2026 World Cup and 2028 Olympic and Paralympic Games. Defining equitable integration goals will be essential to the 2028 Olympic goals since roughly 90% of the future venues are within Equity Focus Communities (EFCs)[60] Also, establishing opportunities to connect venue access passes and promotional discounts at tourist destinations with countywide transit agencies will be crucial to moving game attendees across the region, while facilitating opportunities for tourism. Furthermore, Metro is recommended to continue looking outside the agency, especially to transit systems abroad, for best practices on integration. With the support of local and state agencies, Metro has the potential to influence regional transit connectivity and should move with urgency to reach new integration goals and be a world-class example of equitable regional integration and connected public transport.

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[60] *Mobility Lessons Learned from World Sports Events* (Board Report No. 2022–0770). (2022). LA Metro.

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