Bay Area Fare Coordination and Integration Study and Business Case
Initial Findings
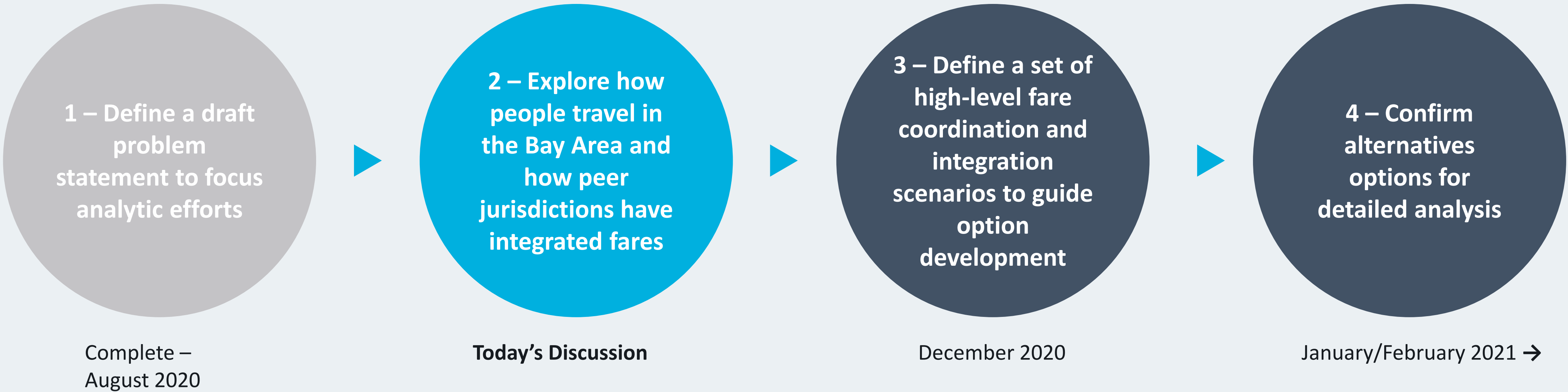
Metropolitan Transportation Commission

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Overview: Bay Area Fare Coordination and Integration Study Progress

		What we have done	In progress	What is next
1	**Problem Statement + Goals**	Problem statement Key issues		Goal setting Map of benefits
2	**Existing Conditions and Background Research**	Market research (NHTS) Previous studies Peer agencies review	Supplemental data analysis (onboard surveys, MTC travel model, boardings)	
3	**Barriers to Transit Ridership**			Synthesis of user research and existing conditions
4	**Alternatives Development**			Development and selection of alternatives
5	**Alternatives Analysis/ Business Case**		Development of business case methodology note	Performance comparison
6	**Recommendations and Implementation Plan**			Recommendations and implementation plan
7	**Stakeholder Engagement and User Research**	Stakeholder approach plan Pilot user research workshop		Follow up workshops and 1-1 interviews

Fare Integration Task Force Meeting Overview

This meeting is part of a series of workshops, project work, and discussions to advance fare coordination and integration analysis:

1 – Define a draft problem statement to focus analytic efforts

2 – Explore how people travel in the Bay Area and how peer jurisdictions have integrated fares

3 – Define a set of high-level fare coordination and integration scenarios to guide option development

4 – Confirm alternatives options for detailed analysis

Complete – August 2020

Today's Discussion

December 2020

January/February 2021 →

Future meetings will incorporate feedback, refine existing conditions, and focus on analyzing options and assessing the business case for fare coordination and integration (FC&I).
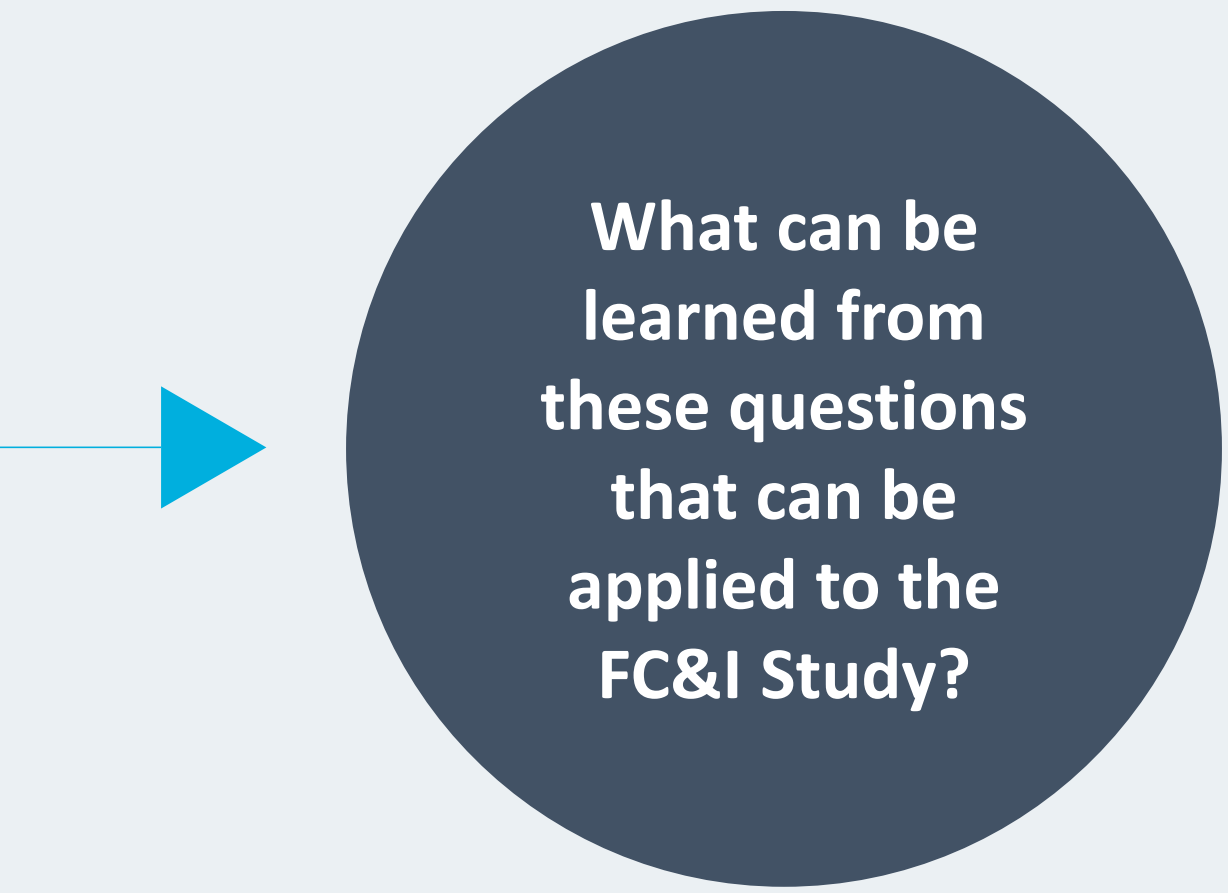
Focus of Today's Discussion

Today's discussion will focus on three thematic areas with a focus on key insights for Fare Coordination and Integration in the Bay Area:

1. How do people travel in the Bay Area?

2. What are customer experiences with the current approach to fares in the Bay Area?

3. How do other multi-operator and multi-jurisdictional regions set fares?

What can be learned from these questions that can be applied to the FC&I Study?

1. How do people travel in the Bay Area?

Photo: Paul Chinn

Setting the Stage – Market Analysis Background

The Bay Area is one of the largest Metropolitan Areas in the USA and is a key global cultural and industrial center.

It is home to over 8 million people and nearly 4 million jobs spread across nine counties.

Each day there are nearly 1.8 million trips across the region's 27 transit agencies/operators.

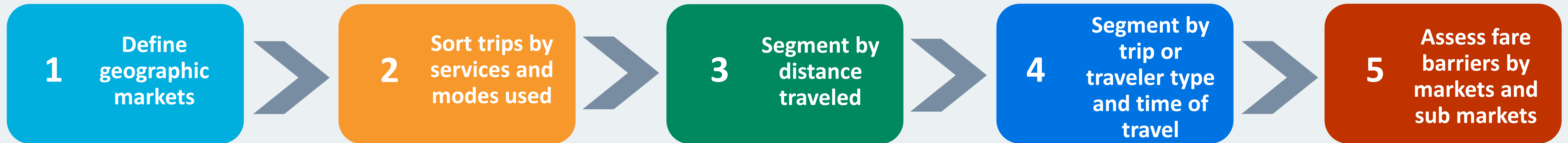Of these trips ~1 million are typically made using Clipper.

Agency Policy Review
Each of the 27 agencies has a specific strategic plan and set of priorities. However, the following common themes were identified in most agency plans:

1. Improve the accessibility/desirability of transit use

2. Leverage transit to advance regional sustainability (including reducing transportation emissions), augment quality of life, and support economic activity

3. Robust financial management – including active management of fares and fare revenues

How do people travel in the Bay Area?

A comprehensive travel market analysis is underway to further explore the regional context – including local travel on one agency and travel on multiple agencies across boundaries – today we will discuss preliminary findings and insights:

| 1 Define geographic markets | 2 Sort trips by services and modes used | 3 Segment by distance traveled | 4 Segment by trip or traveler type and time of travel | 5 Assess fare barriers by markets and sub markets |

Example Questions

- Which geographies best define the Bay Area (e.g. counties, superdistricts?)
- How many trips occur between different parts of the region?
- How many trips occur within and between each geography?

- How many trips are made on each agency and between agencies?
- How are the agencies represented across different service types?

- What are meaningful distance 'bins' for the market analysis (Example: 0-5 miles, 5-10 miles)?
- How many trips in each market and service combination are in each distance bin?

- What trip types need to be captured?
- What volume of trips are made, by time of day and trip type, in each market (including sub division by distance and services used)?

- How do fares vary by services, distances, trip types, and time of day?
- Do changes in fares correspond to changes in mode split (example: one trip type with a higher fare has a lower mode share)?

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Data used in the analysis

Note – all data used in this deck is pre COVID-19.

|				
Macroscopic Regional Travel Patterns	**NHTS-California Add-on (2017)**	Where are people traveling from/to?	When do people travel?	Why do people travel?
	MTC Travel Model	What modes do people use?	How long do people travel for?	
Transit Specific Travel Patterns	**Clipper Data**	What agencies are being used?	What payment types are used?	
	Boardings and Alightings	Which stop/routes are the busiest?	How does ridership vary (by agency/ time of day)?	Where are there overlaps between agencies?
	Onboard Survey Data	What routes do people take?	How do they transfer?	How much does travel cost? How do they pay?

Travel Patterns – at a High-Level

Travel patterns have been broken down into the following geographic categories in order to understand how people travel across the Bay Area and the potential untapped transit market that Fare Integration could support:

Market Type	Description	Rationale for Inclusion
Trips between counties	• Includes all trips that begin and end in different counties	• Illustrates travel patterns between medium sized geographies (many of which are served by one transit agency) to assess if certain 'Inter-County markets' are more impacted by fares than others
Trips within a county	• Includes trips that begin and end in the same county	• Illustrates how use of transit within set geographic areas varies compared to 'cross boundary' travel

Future analysis will analyze travel patterns at the Super-district level (as used in the MTC Travel model).

**Bay Area Counties and Super-districts by Sub Region**
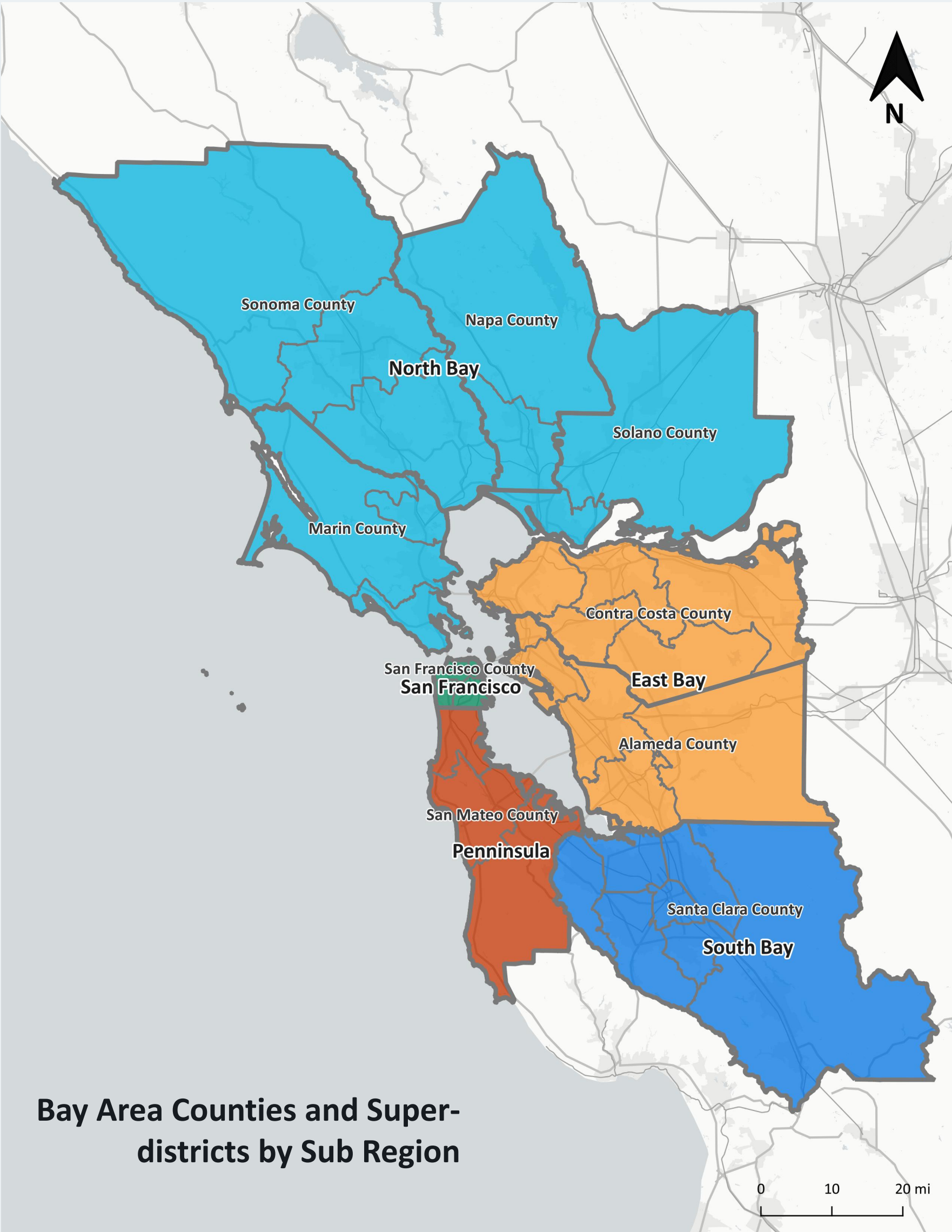
Pre-COVID-19 Travel Patterns – at a High-Level

Based on the NHTS California Add-on, 2017:
- 27 million trips made daily in the Bay Area.
  - 1.8 million (or 6-7%) made on transit.
  - 20% of all trips in San Francisco were made on transit, but transit was only used for 5% or less of all trips in all other counties

- 4.7 million daily trips by all modes crossed county boundaries (17% of daily trips).
  - Of those inter-county trips, 740,000 (16%) were made on transit – this is equal to nearly half of all transit usage in the region

This means that pre COVID-19, the transit mode share for inter-county trips was higher than the mode share for trips within a county – this is largely driven by the high transit share to/from San Francisco.
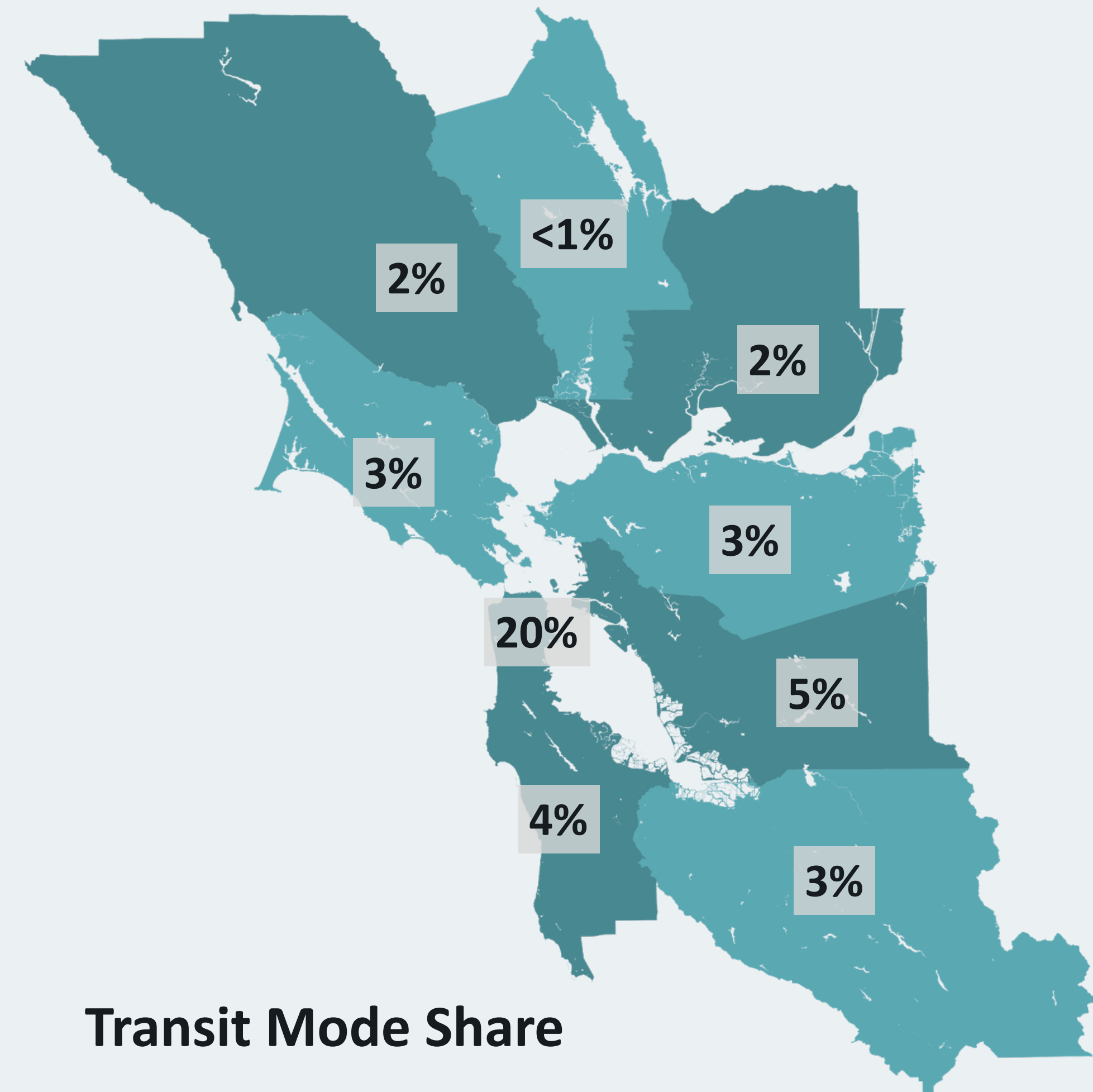
Transit Mode Share

Initial Finding 1: The five busiest county pairs in the region accounted for nearly 45% of all inter-county travel

The five busiest county pairs in the region accounted for 45% of all inter-county travel and nearly 63% of all inter-county transit use in the Bay Area.

Key considerations:

- Each of these county-pairs is connected by one or more inter-county operator (BART, AC Transit, Caltrain)

- Over 1/3 of all inter-county transit demand in the region was between San Francisco and Alameda (Transbay trips)

- The Alameda to San Francisco market had a transit mode share of ~65%

- Despite being some of the strongest transit markets in the Bay Area, the other top 5 markets have a relatively small transit mode-share (7% to 17%); there may be opportunities to grow transit ridership

Top 5 Inter-County Travel Markets in Region

■ Non-Transit Daily Demand   ■ Transit Daily Demand
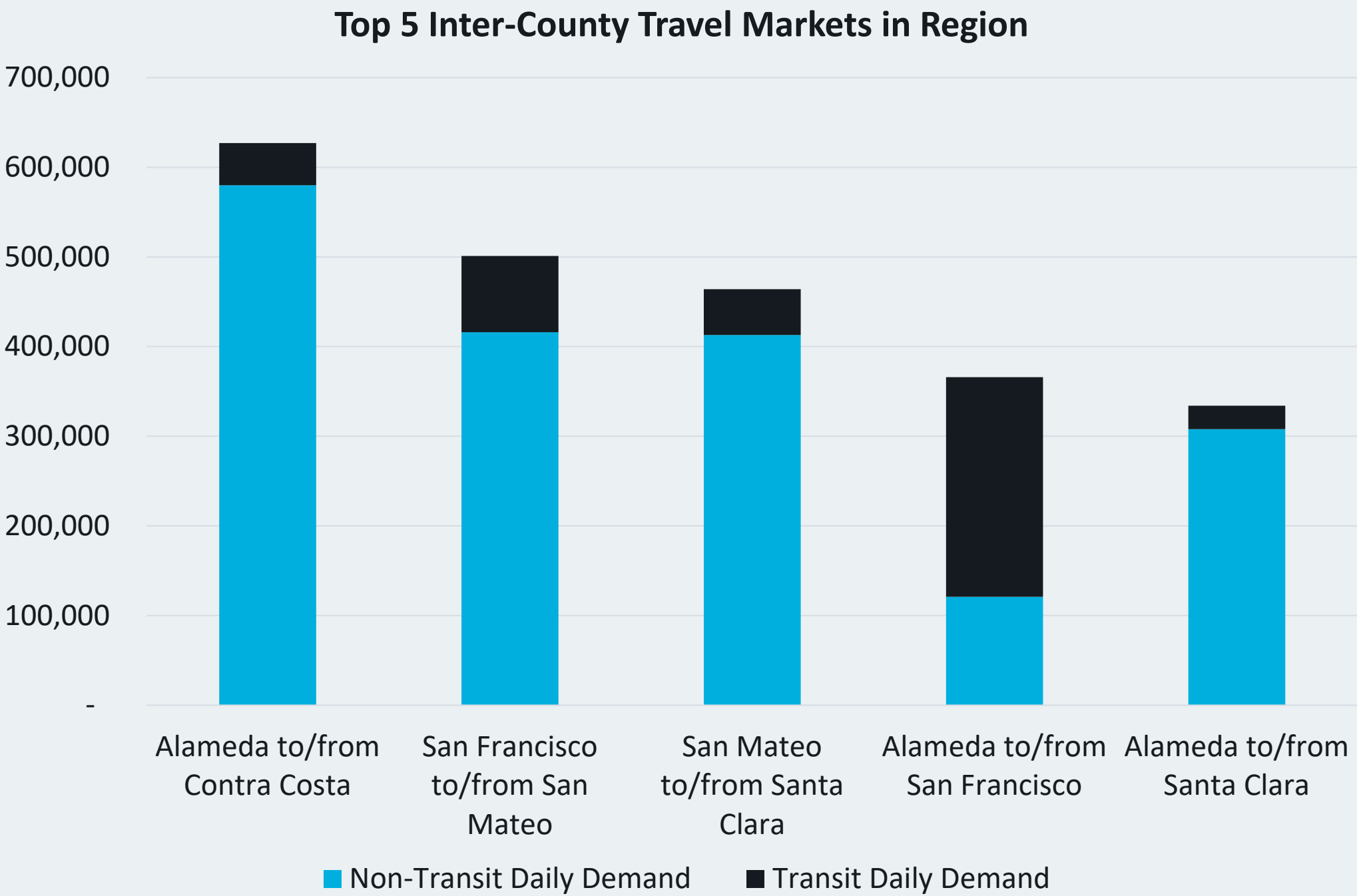
	% of Daily Demand	% of Daily Transit Demand (inter-county)
Alameda to/from Contra Costa	14%	7%
San Francisco to/from San Mateo	10%	12%
San Mateo to/from Santa Clara	10%	7%
Alameda to/from San Francisco	3%	34%
Alameda to/from Santa Clara	7%	4%

Initial Finding 2: Most inter-county transit trips begin and end in just a few counties

- A high share of transit trips originated in Alameda and San Francisco Counties, especially when compared to shares of trips by all modes.

- This pattern was also reflected in trip destinations. More than 50% of inter-county transit trips arrived in Alameda and San Francisco, whereas these destinations accounted for roughly 40% and 30% of all inter-county trips.

- Contra Costa, San Mateo and Santa Clara also had a high share of inter-county transit trips.

- This pattern suggests that fare integration even among a few operators could capture the majority cross boundary transit trips.
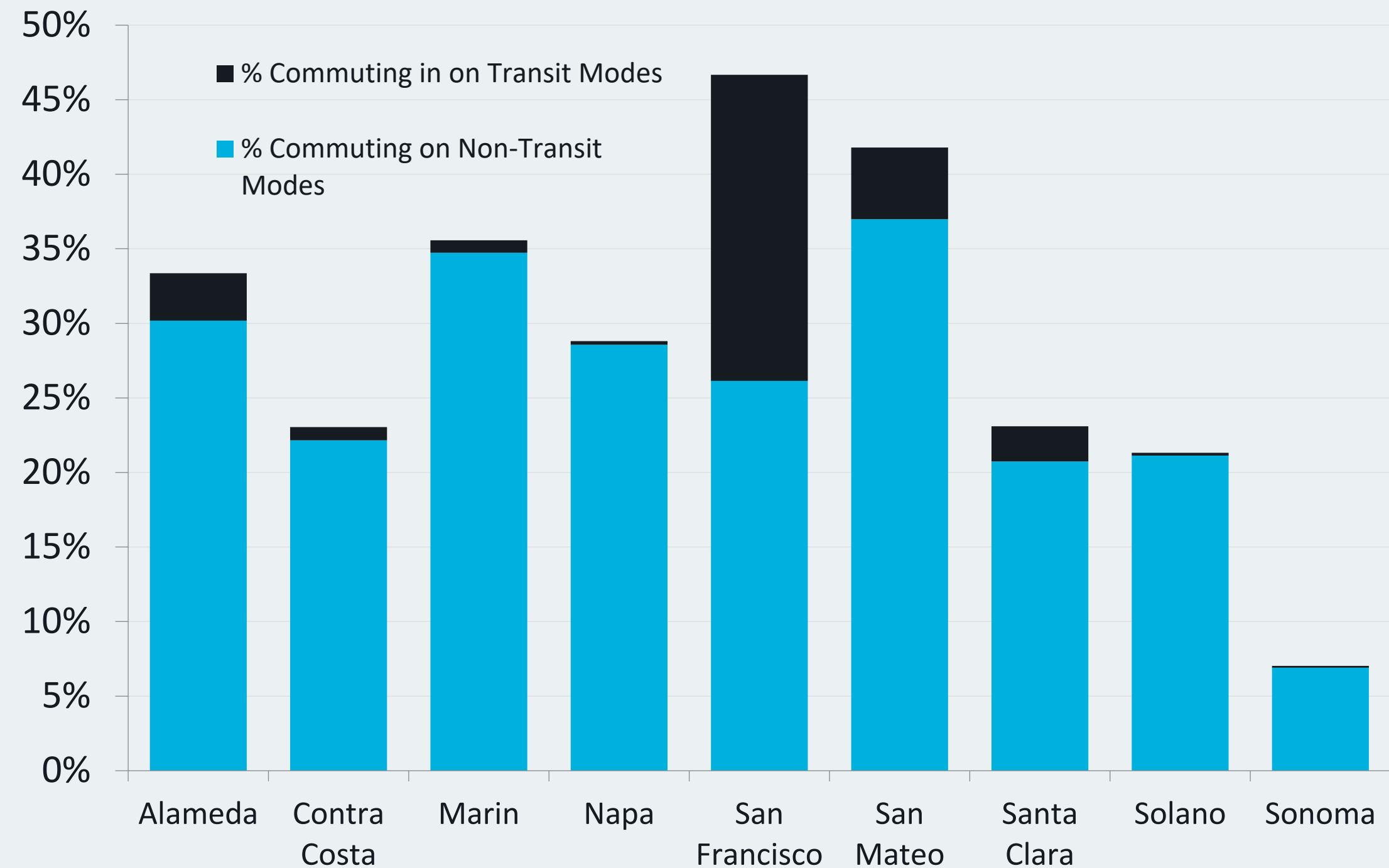

■ Non Transit ■ Transit
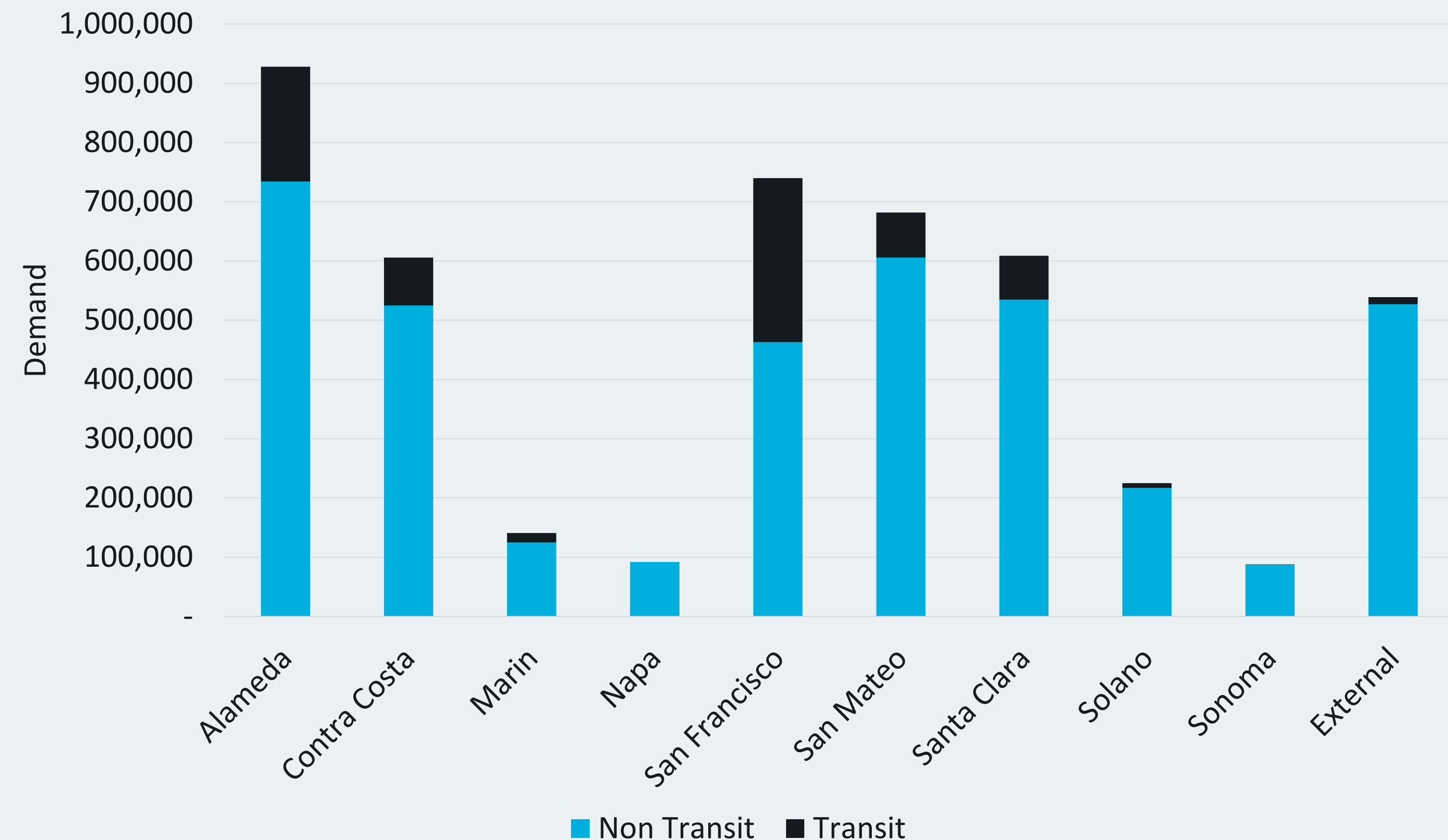
Initial Finding 3: The Bay Area is an integrated economy, but transit is not integrated for commuters in all markets

- Employers in most Bay Area counties relied on out of county employees for 30% or more of their workforce – illustrating the degree of interconnectedness in the Bay Area

- San Francisco County has the strongest connectivity to other counties via BART, Caltrain, and multiple bus and ferry service.

- Aside from San Francisco County, no county had more than 10% of workers commuting in via transit

- This data highlights the potential mode-share for well connected transit markets. The study will consider whether there are other markets where improved integration (service, fares) could generate increased transit ridership

% inter-county commute trips by county for all modes (Source: NHTS California Add-on, 2017)

Chart legend:
- ■ % Commuting in on Transit Modes
- ■ % Commuting on Non-Transit Modes

	2016 Employment
Alameda	702,330
Contra Costa	376,230
Marin	126,399
Napa	74,255
San Francisco	677,155
San Mateo	382,005
Santa Clara	1,029,390
Solano	141,729
Sonoma	217,139

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Initial Finding 4: AM peak period transit trips in the Bay Area use a single agency

- 2019 AM Peak Clipper data was used to explore how individuals made use of Bay Area transit services. This snapshot of morning travel patterns shows:

  - 92% of AM peak (7-10am) travelers using Clipper (roughly 210,000) use only one agency

  - Approximately 7.6% (17,500) travelers use two agencies

  - Fewer than six hundred travelers use three or more agencies

- **This 'single morning peak period' contrasts with monthly behavior where 40% of Clipper cards have been observed using multiple agencies at some point during the month**

2019 Morning Rush Hour – Number of Operators Used by Travelers

Chart: Number of Cards Using Transit in the AM Peak (7-10 am)

| Operators	Percentage
1 Operator	92%
2 Operators	7.6%
3 Operators	0.25%
4 Operators	0.003%
5 Operators	0.0004%
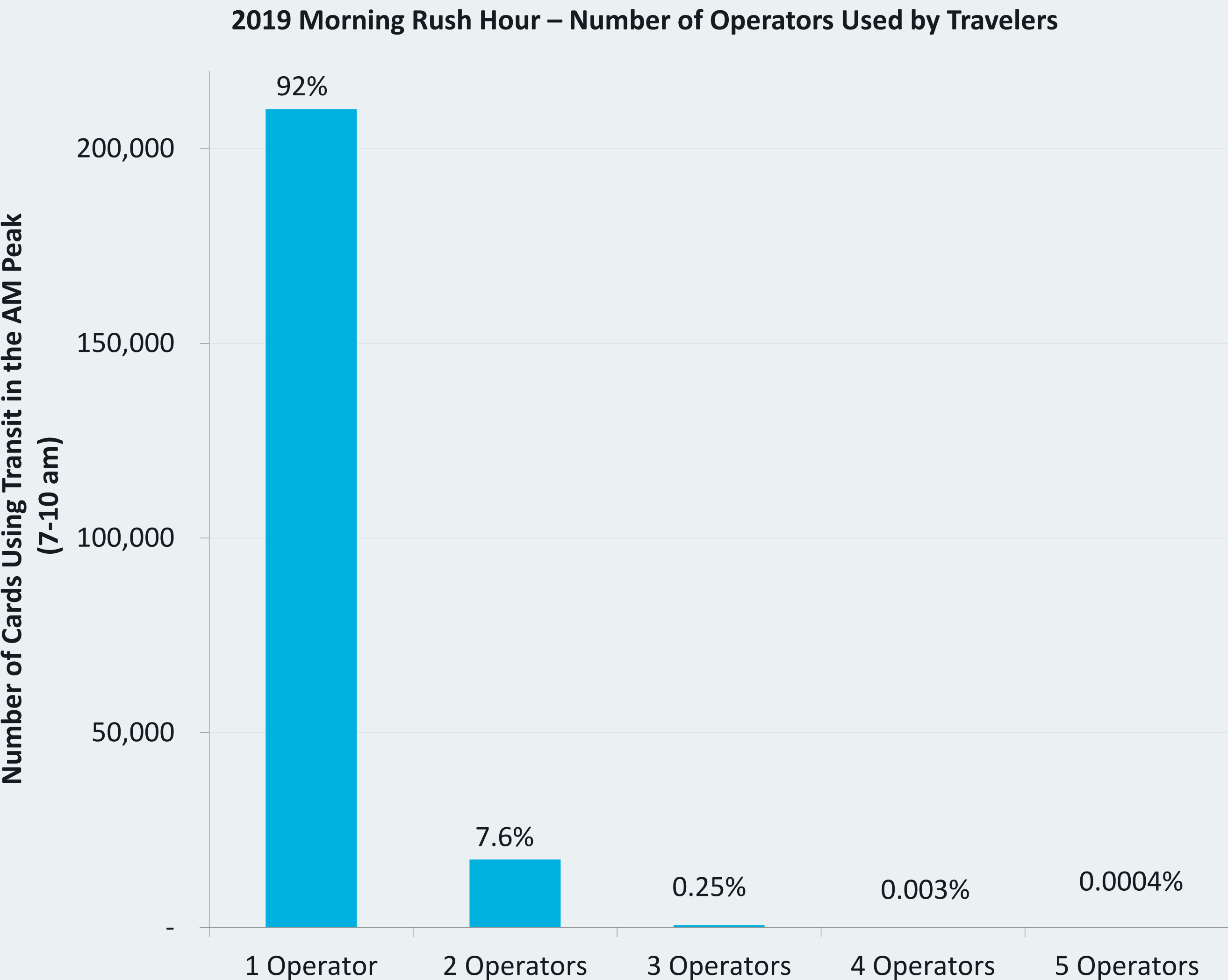
Initial Finding 5: Integrated transit use was focused to specific agency pairs

Clipper data was used to sort agency use by the number of travelers served in the AM Peak. This analysis focused on e-purse trips only and excludes passes, which will be included in the next phase analysis. This is especially relevant for Caltrain.

This analysis noted that of the ten highest volume uses of transit:

- Seven are on one operator – totalling 195,000 trips

- Two use two operators (BART-Muni and BART-AC Transit) totaled 10,000 trips.
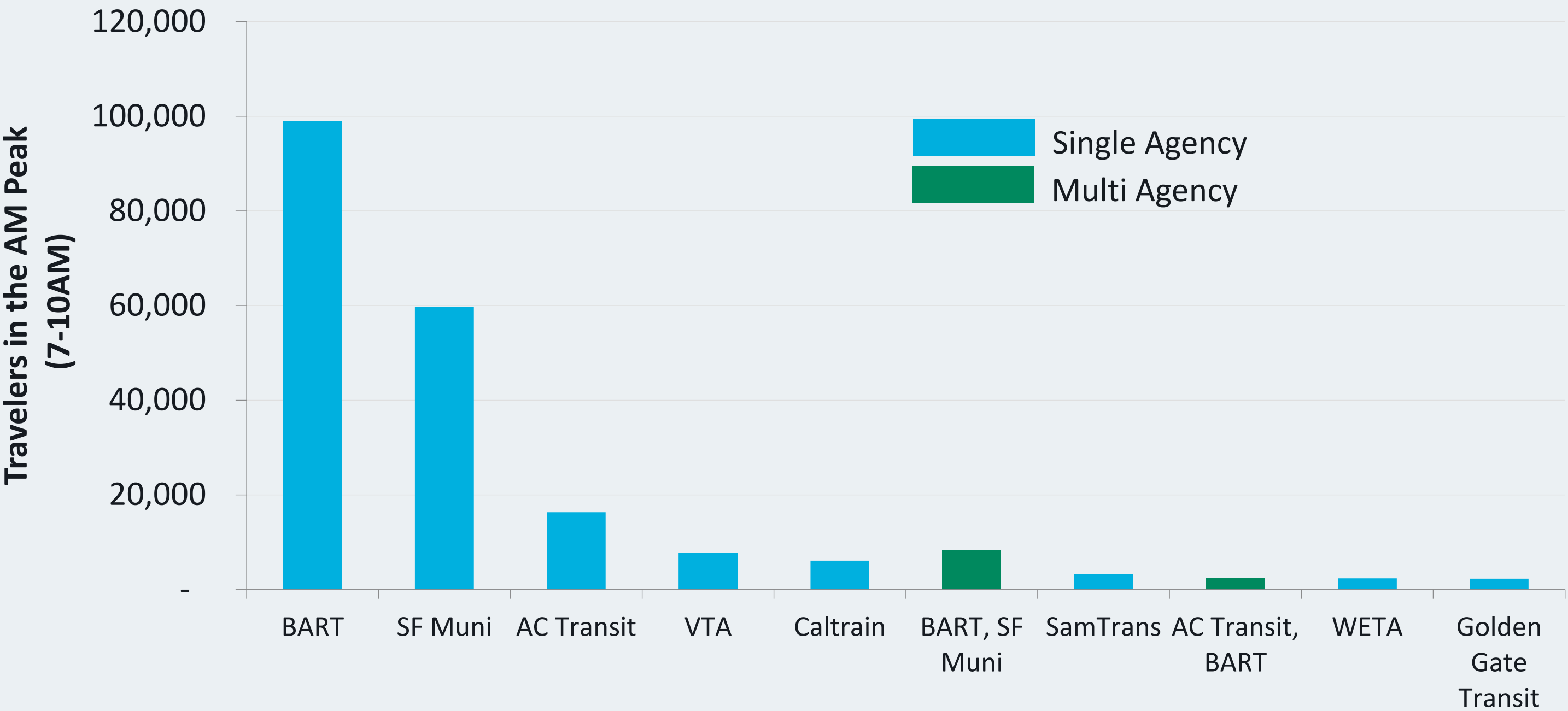
Agency Pair	Number of Travelers (measured by Clipper cards using agencies)	Existing Integration
BART and SFMTA	8,200	A Pass (includes SFMTA/BART)
BART and AC Transit	2,500	Transfer discount ($0.50 off first bus trip)

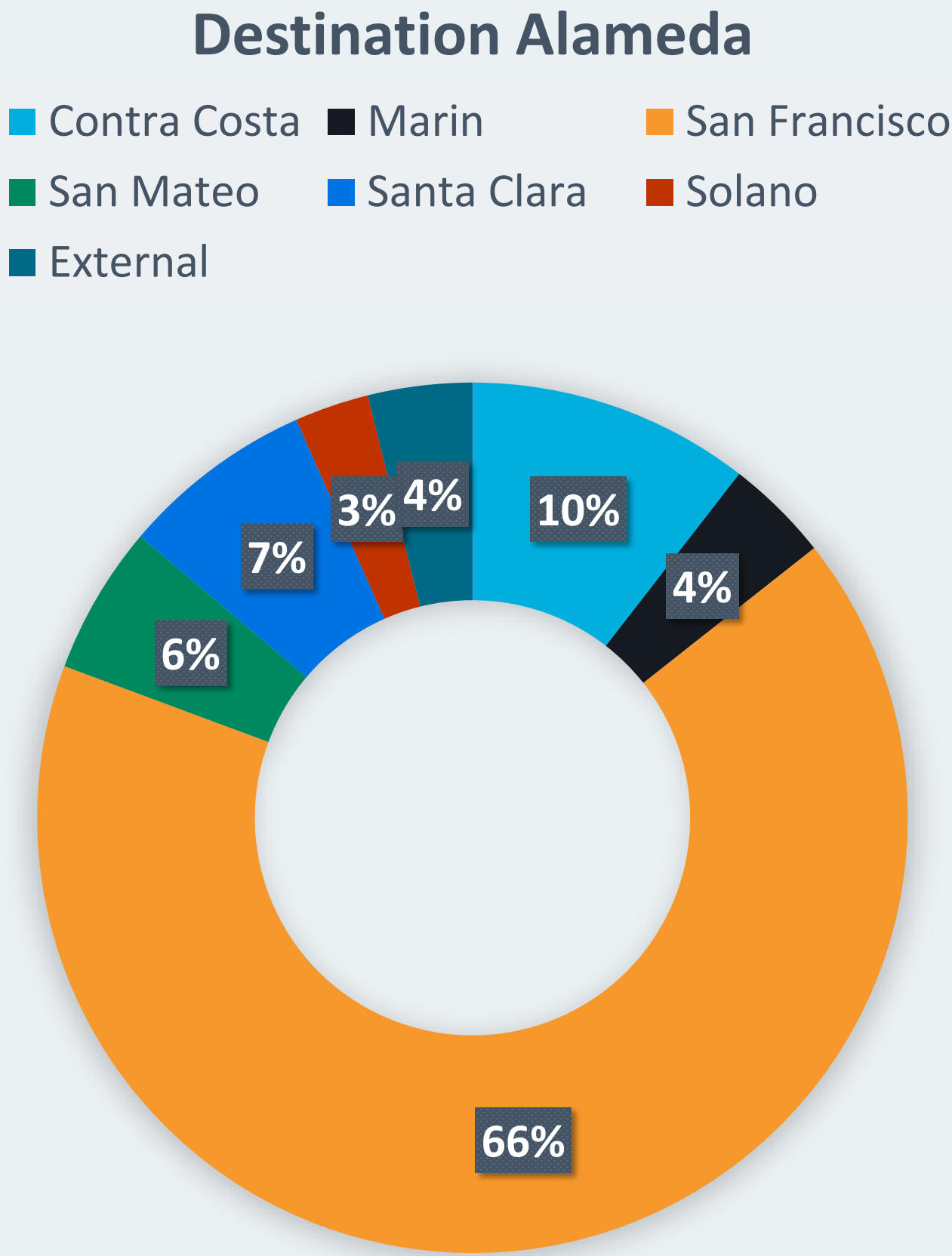METROPOLITAN TRANSPORTATION COMMISSION

Initial Finding 6: San Francisco had the highest transit mode share for inter-county trips, but there was still room to grow

- **50% of Bay Area transit trips either began or ended within San Francisco County.**

- **Most trips that came to San Francisco elsewhere originate in Alameda and Contra Costa.** Travelers from Marin, Santa Clara, and San Mateo also used transit to access San Francisco. Combined, these markets reflect nearly 30% of all inter-county transit use.

- While the largest share of San Francisco's inter-county transit trips were Transbay trips to Alameda, the other key counties that use transit to journey to/from San Francisco could be a source of growth.

- **Fare integration analysis will consider opportunities to further grow Transbay markets as well as other markets to/from San Francisco to build on the largest transit market in the region.**

Share of origins for inter-county transit trips arriving in San Francisco and Alameda Counties. (Source: NHTS California Add-On, 2017)

Destination San Francisco

- ■ Alameda
- ■ Contra Costa
- ■ Marin
- ■ San Mateo
- ■ Santa Clara
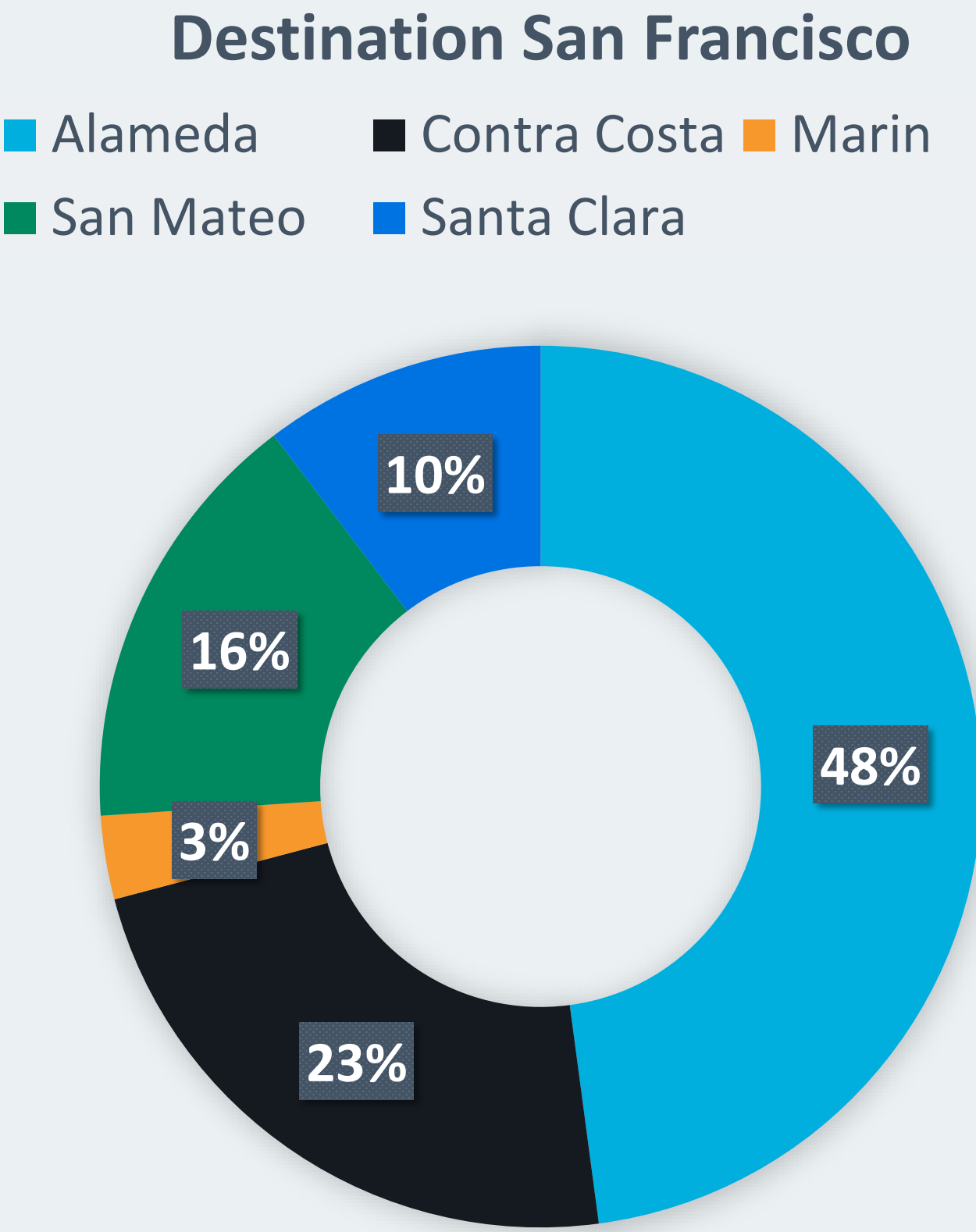
Non-Alameda transit markets to/from San Francisco could be augmented.

Destination Alameda

- ■ Contra Costa
- ■ Marin
- ■ San Francisco
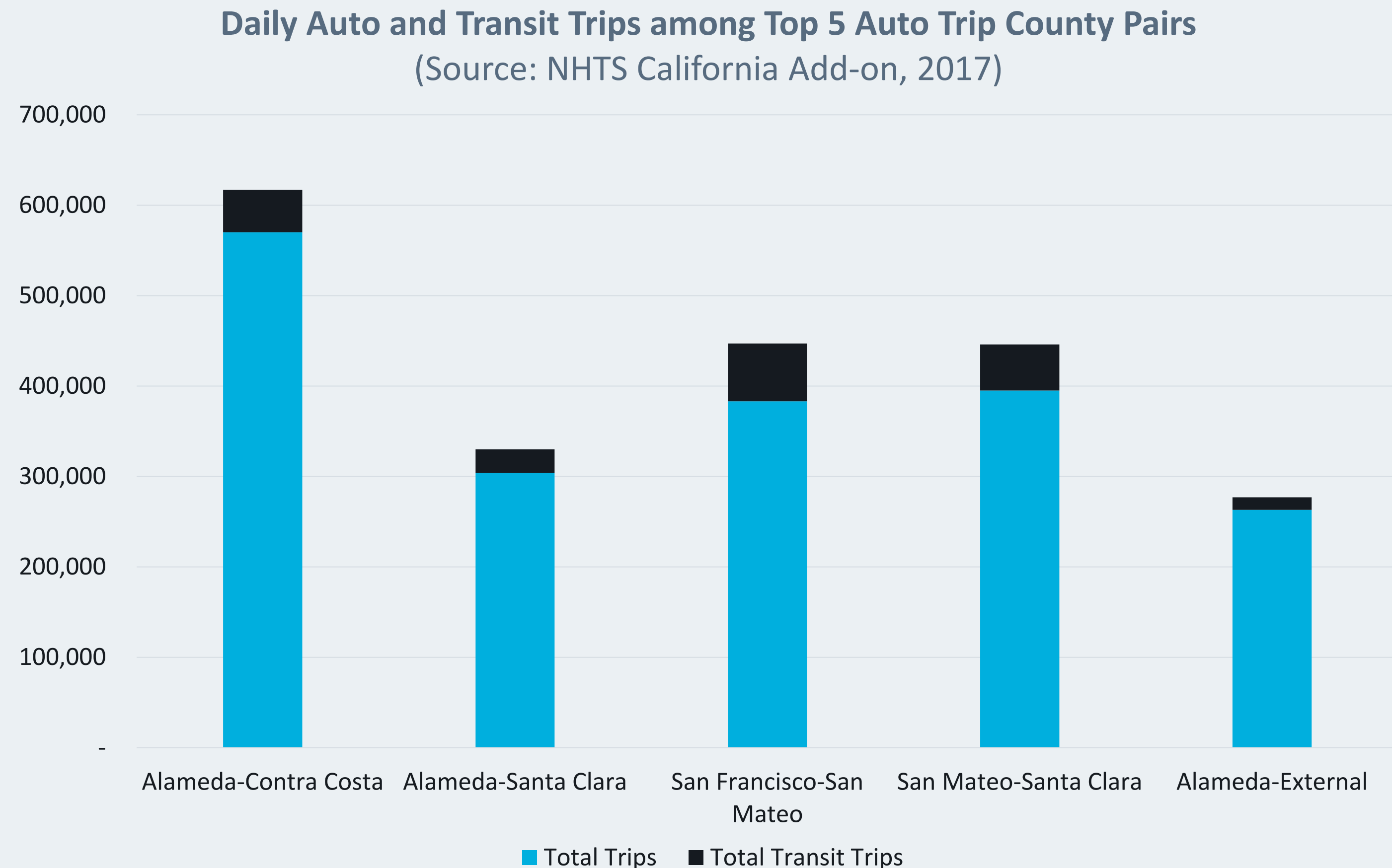- ■ San Mateo
- ■ Santa Clara
- ■ Solano
- ■ External

Conversely, non SF transit markets to/from Alameda could be a source of growth in the future.

Initial Finding 7: High volume travel markets with low transit mode-share may be an opportunity for improved coordination and integration

- Five county-county pairs accounted for <u>more than half of all inter-county auto trips.</u>

- Notably, these pairs also have generally low transit mode share.

- Alameda-Contra Costa, for example has more than 500,000 daily auto trips, roughly 15% of all inter-county trips, but less than 7% of inter-county transit trips.

- Inter-county markets with high auto volumes but less transit trips could have room for growth through better fare coordination and integration, among other potential improvements such as transit service enhancements.

Daily Auto and Transit Trips among Top 5 Auto Trip County Pairs
(Source: NHTS California Add-on, 2017)

■ Total Trips ■ Total Transit Trips

Key Travel Market Insights

These initial market findings and insights will be used as the foundation for more detailed analysis in October-November.

This analysis will include a 'deeper dive' on issues discussed today as well as the identification of further issues.

Early Finding	Suggested Next Steps for FC&I Study
1. The five busiest county pairs in the region accounted for nearly 45% of all inter-county travel	• Explore potential 'untapped' or supressed demand in the four OD pairs with low transit mode share.
2. Most inter-county transit trips began and ended in just a few counties	• Explore 'what works' in high transit mode share markets and see if these elements are 'missing' in low transit mode share markets
3. The Bay Area is an integrated economy, but transit is not integrated for commuters in all markets	• Explore low transit mode share commuter markets and sort based on fare barriers, service barriers, and fare/service barriers
4. Most peak period trips used a single agency 5. Integrated transit use was focused to specific agency pairs	• Explore the highest performing agency pairs and identify common characteristics including service and fares • Explore low performing pairs and identify differences
6. San Francisco had the highest transit demand, but there was still room to grow	• Explore opportunities to optimize the Transbay travel market as well as other transit markets to San Francisco
7. High volume travel markets with low transit mode-share may be an opportunity for improved integration	• Prioritize exploration of high volume (total trip) markets with lower transit mode share and characterize root cause of lower share

2. What are customer experiences with the current approach to fares in the Bay Area?

Photo: Jim Maurer

Overview of Customer Research

Overview

Customer research explores the four issues identified during in the FCIS problem statement:

- Customer value - how does the customer perceive the price of their trips
- Payment experience – explore satisfaction with current fare offering
- Equity – affordability, fairness and impacts to vulnerable populations
- System – understanding of the transit system and fare system as a whole

Methods

1. A **narrative workshop** to gather information from customers via sharing of stories and anecdotes.

2. **One-on-one interviews** encouraging participants provide their point of view, using their language and terms.

Role of Pilots

Pilots have been used to trial user research, which is a relatively new practice in fare integration analysis for the Bay Area.

These pilots were intended to:

- Generate initial insights and findings to support future fare analysis in the Bay Area

- Capture lessons learned and emergent practice to build into future stages of FC&I and other transit planning activities

Narrative Workshop

Recruitment

A two stage recruitment survey was distributed by multiple agencies via email and on social media platforms.

Participants were chosen to best represent the diversity in the Bay Area as much as possible.

The goal was to recruit 12 to 20 participants for this first workshop.

The project team is focused on ensuring the user research tasks of the project are inclusive of the diversity of the Bay Area.

Workshop

Participants engaged in two story circles:

Think back to the times when you were going to embark on a journey on transit. When you were considering the cost of those trips,
when did you feel most **confident**, **confused** or **exhausted**?

Now let's think back to the amount you paid for your transit trips (either recently or prior to the pandemic). When did you feel that you **got a deal**, **got ripped off**, or **surprised**?

Each breakout room gathered between 15 to 20 stories across the duration of the workshop.

Issues & Themes

Facilitators worked with participants to refine the stories into distinct issues and themes, which were further refined

OXD then reviewed the content, extracted issues and themes, and performed an affinity mapping exercise to group and cluster similar items.

The workshop identified approximately **80 issues** grouped roughly into **11 initial issue categories** related to our **4 areas of inquiry** for the study.

Emerging Findings

Eleven key issues were identified, which will be explored in further detail:

1. The Bay Area transit system on the whole is perceived as hard to learn and complex

2. Specifically, customer payment issues (among wayfinding, navigability, and other issues) lead to reduced usability

3. Riders set the value of transit in relative terms – to other modes and other experiences with transit

4. Reliability is a key determinant of the value customers put on transit – including trip duration, arrival time, and price

5. Transit is perceived as a tool to 'unlock the region' and enable people to make the most of their time in the Bay Area

6. Transit can make travel easier and productive, allowing time to read or listen to music

Emerging Findings Continued

7. Technology is an enabler for more transit use for some, but also can discourage transit use for others

8. Current fare media can be perceived as opaque – customers don't always understand their balance or know how to make best use of the system

9. Some customers noted it took multiple trips and unexpected situations to fully value transit

10. Other customers have concerns about choosing the wrong mode or paying the wrong fare – whether it means being late for their trip or fare enforcement for a mistaken fare

11. Most customers agreed that transit is a connector to 'what comes after transit' (the original trip purpose)

Emerging Findings - Themes

In addition, an initial 80 themes were refined into 8 broad theme categories related to:

1. Uncertainty and stress of riding transit, especially for new or changed trips
2. Customers relate Bay Area transit to other regions
3. Individual negative experiences can shape overall perception of Bay Area Transit
4. Some perceive fares as unfair
5. Others perceive transit to be a good deal
6. Some customers regret overpaying due to lack of complete information
7. Fares are a meaningful way customers 'understand' Bay Area transit
8. Customers understand the pandemic has changed transit

Next Steps

- Stories, issues and themes identified in the narrative workshop will be used to develop interview questions

- One-on-one interviews will be 60-minutes in length and involve deeper conversations.

- Interviews will provide opportunity to explore stories that are missing from the workshop and address gaps in demographic representation.

- The end result of this work will connect to a refined market review to test, challenge, and refine then study's understanding of fare issues and barriers and integration opportunities.

3. How do other multi-operator and multi-jurisdictional regions set fares?

Sydney. Photo: Mark Reddie

Overview

The Bay Area has a unique governance model, urban form, and transit service needs. However, it also has similarities to other city-regions in the USA and in other countries.

A set of city-regions with different degrees of fare integration and approaches to setting fares were studied to identify key insights to support the exploration of Fare Coordination and Integration in the Bay Area.

The goals of this analysis include leveraging peer jurisdiction experience to:
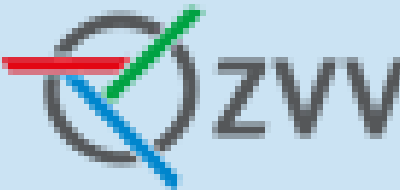
1. Articulate how transit prices can be integrated across larger city-regions with respect to price and degree of integration

2. Explore how peer jurisdictions have been able to apply a range of governance and management tools to integrate fares across multiple operators

Peer USA Jurisdictions Included in the Review

Representative Agency	City-Region	Type of Fares	Approach to Integration	Rationale for Inclusion
Metro (logo)	**Washington, D.C. Metropolitan Area**	• Distance fares (Metro Rail) and off-peak fares • Flat fares	• Bilateral fare agreements	• Multi operator (11) metropolitan area in USA without a central fares governing body but with some degree of integration (primarily agency to agency)
Metro (logo)	**Los Angeles County**	• Flat • Distance (commuter rail, Metrolink)	• Bilateral fare agreements • Regional EZ pass	• Multi operator (26) metropolitan area in USA without a central fares governing body but with some degree of integration (primarily agency to agency))
SoundTransit (logo)	**Seattle and Puget Sound Region**	• Flat • Distance (Rail, LRT)	• Regional passes • Transfer based integration (customers only pay highest fare on multi-fare trips)	• Multi operator (8) metropolitan area in USA with some central funding and a high degree of integration for individual trips and passes across all major agencies

Peer International Jurisdictions Included in the Review

Representative Agency	City-Region	Type of Fares	Approach to Integration	Rationale for Inclusion
	New South Wales (Sydney Metropolitan Area), Australia	• Fare by distance (all modes) with off-peak fares	• Overall integrated fare structure administered by single body (pricing set by independent commission) • Multimodal caps (by day of week, week, and weekend)	• Case study of how multiple modes in a wider city-region can be managed by a single entity (Transport for New South Wales) using a single regional fare structure (with mode specific pricing)
	Greater Montreal, Canada	• Flat • Distance (commuter rail,)	• Proposed zones for trips across region to integrate fares on multiple operators	• Case study of a jurisdiction that is advancing towards a hybrid pricing model (cross boundary trips use one structure, trips within one service area have another) using enabling legislation
	Zürich	• Zones for all modes	• All fares are integrated using a common zonal structure	• Case study of a 40+ multi-operator region where operators are independent but a set of consistent fare rules, financial planning, and customer experience is set through an 'alliance model' (ZVV is the regulator) – unlike Sydney, each operator retains a degree of independence

What lessons can be learned from each case study?

How are trips priced?

An overarching structure for all trips in the region (example: zones or fare by distance)

Operators or individual modes have unique fares, but are integrated with transfer discounts or caps per trip

What is the regional extent of integration?

All agencies in the region are integrated under one set of rules

Integration is focused on specific agency pairs (or groups)

How are integration and pricing decisions made?

One agency or government is responsible for pricing(and transit service) across the region

A body is created by multiple operators and/or governments to integrate fares and other elements of transit service across multiple operators

Integration is created through ad-hoc bilateral and multilateral rules

Exploring Peer Pricing Models in the Bay Area

How are trips priced?	Key Consideration for Bay Area	What could this look like in the Bay Area?
Some or all modes fit into overarching pricing model	TNSW (Sydney) – illustrates how all modes could be priced the same (in this case, by distance, unique distance prices per mode, multimodal trips use combined fare curve) ZTA (Zürich) – illustrates how all modes priced by zones with variation by time of day	All integrated operators would use a single fare structure (example, zones or fare by distance) This structure would apply to all trips and be considered 'universal' to all transit trips – whether they are single or multi-operator trips.
Dual systems, one integrated with all/most modes in one pricing system alongside system of local fares	ARTM (Montreal) – proposed integrated metropolitan fare structures are based on system of concentric zones for cross-boundary (multi-municipality) trips and local fares for the 16 operators that only provide access to their respective networks.	A regional wide fare structure that applied to any trips that use one or more operator. Fares for single operator trips would remain unchanged.
Each mode priced individually, integration delivered by transfer rules	Seattle/Puget Sound – all modes have unique fare structure (example: distance vs. flat), passengers using ORCA only pay highest fare of trip (essentially free transfers), with some integration funding coming from Sound Transit. ORCA fares include options for regional passes, agency-specific passes or electronic purse.	A region wide fare structure where customers only pay the 'most expensive' fare for trips on multiple operators – for example, a customer uses two operators. The first costs $2.00 and the second costs $4.50 – the customer only pays $4.50.

Zürich – A single Zonal Structure is used for all modes in the region
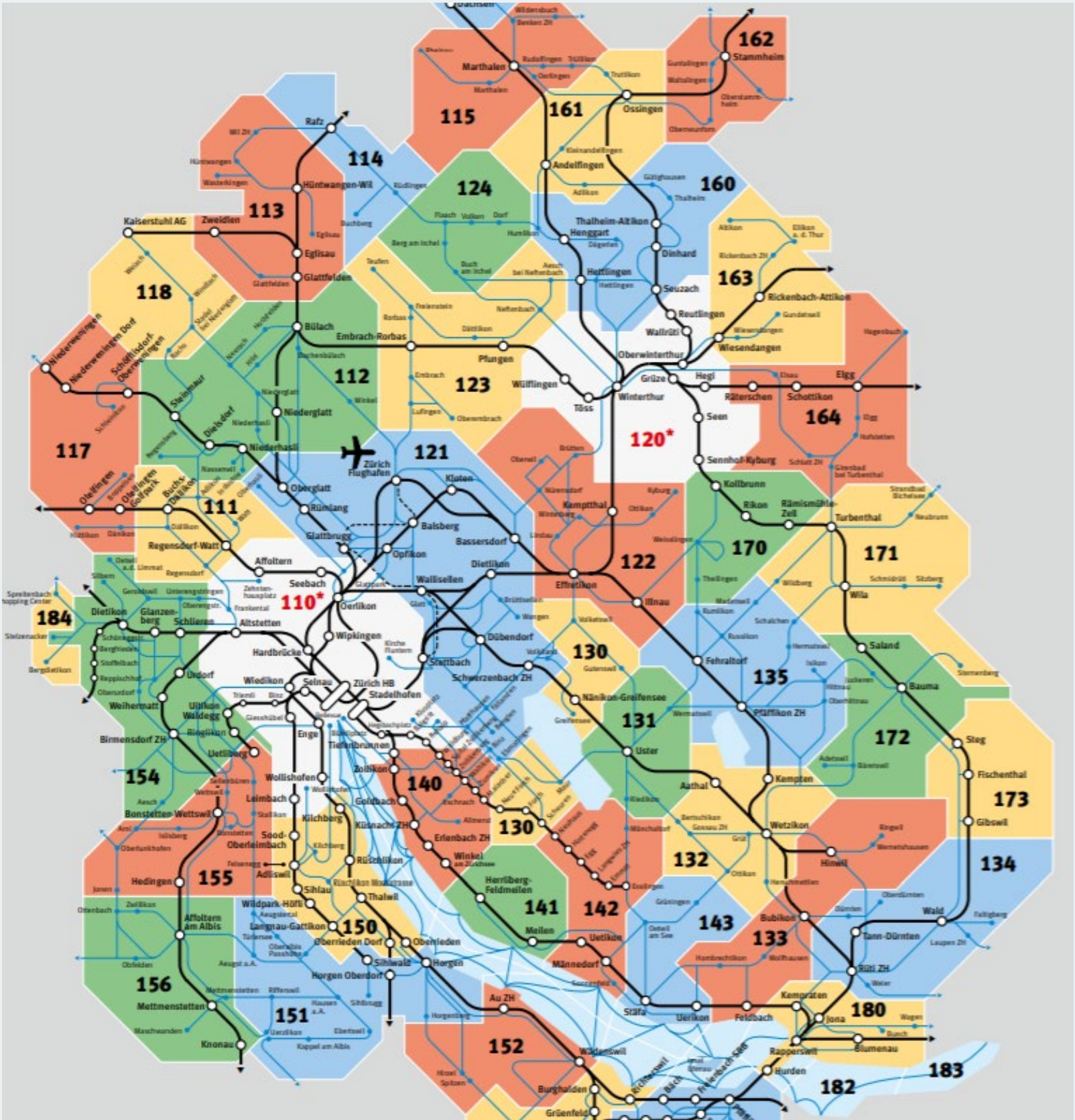
Exploring the Extent of Integration from Peer Models in the Bay Area

What is the regional extent of integration?	Key Consideration for Bay Area	What could this look like in the Bay Area?
Whole region	**Seattle/Puget Sound** – Illustrates how all modes and operators use a single approach to integration. ORCA card covers buses, ferries and rail for the entire Puget Sound region (however some agencies have now begun to explore broader fare alignment on a one to one basis – Sound Transit and King County Metro). **ZTA (Zürich)** – illustrates how an entire geographic region with over 40+ operators can be integrated with a single (zonal) fare structure.	All operators in the region would have a consistent approach to fare integration.
Only select agencies (agency by agency, or limited multi agency integration)	**LA County** – Illustrates how fare integration can occur at a sub-regional or even operator to operator level. In LA County 23 operators participate in the monthly (zonal) EZ pass program) – however, this does not extend to agencies from neighboring counties.	This approach would generate passes, single trip fares, or other fare products that would only be applicable on specific agencies (Example: a SamTrans to BART pass). This model would not lead to an overall integrated fare structure across the Bay Area.

Exploring Decision Making Processes from Peer Jurisdictions in the Bay Area

How are integration and pricing decisions made?	Key Consideration for Bay Area	What could this look like in the Bay Area?
Central Coordination	**TNSW (Sydney)** – a single agency that was developed to manage all transportation in New South Wales, including the following entities: Sydney Ferries, State Transit Authority, Sydney Trains, NSW Trains, Residual Transport Corporation, and Sydney Metro. Prices are controlled by independent panel of government appointed members as well as advisors from cross cutting policy areas. **ARTM (Montreal) –** a new agency created by provincial legislation to advance the delivery of an integrated transit system in the Montreal Metropolitan Area, which is served by a range of municipal and regional operators.	A single body would operate, plan, deliver, and finance transit. This body would set up a series of operating companies (typically based on mode and/or geography) and set prices to allow seamless/integrated use of the regional transit network. In peer jurisdictions, these bodies are established with state legislation. Fare setting could be conducted by this body or supported by an independent panel or council.
Alliance Model	**ZTA (Zürich)** – organizes 40+ transit operators and sets fares for all trips. Provides financing support and redistributes revenue to operators based on level of demand and service provided. Operating companies maintain a degree of independence but can rely on consistent funding and operational planning, marketing, and customer engagement support.	A single body (new or modified existing) would set fares and potentially support financing and financial management of the region. Operators would maintain a level of independence, but would be part of an overarching alliance for transit service delivery, financing, fare and service integration, and planning for the Bay Area.
Bilateral and Multilateral Agreements	**LA County Metro** – Illustrates how individual agreements can be used to advance integration. Metro maintains separate agreements with various operators based on specific opportunities for integration.	Similar to today, fare integration would be advanced through direct bilateral or multi-lateral agreements. In the long term, this could mean that integration occurs in an opportunistic manner - for example, two agencies today with high volumes of transfers could develop an integration model that works for a specific integration need but does not include other operators.

Key Considerations for Future Work

Core Case Studies and Other Jurisdictions Mapped Against Extent of Integration and Governance Model

The preceding analysis identified the following key insights to inform future work:

1. City-regions in the USA and elsewhere have used both 'transfer' based and structural (example zones or fare by distance) approaches to integrate fares – however, transfer oriented approaches are most common in the USA

2. There are multiple governance models used to advance fare integration – typically alliance models or centralized agencies(with central government support) are required to manage a region-wide structure, while bilateral and multilateral agreements are may be better suited for transfer based solutions

Decision Making Model (Degree of Centralization)

- Centralized Agency
- Alliance
- Bilateral and/or Multi-Lateral arrangements

Hong Kong
Greater London Area (TfL)
ARTM
NSW Government / Transport
Vancouver, Canada
Portland Metropolitan Area
Hamburg (Germany)
ZVV
Rhine Ruhr (Germany)
Greater Toronto Hamilton Area
Tokyo
SoundTransit
Metro
Mmetro
NYC Region

Transfer Based Solutions
Each operator has unique pricing, with integration provided by transfers, products, or passes

Structure Based Solutions
Single Integrated Fare Structure

Type of Integration

Recap from Today's Conversation

1. How do people travel in the Bay Area?

Early market analysis identified seven initial findings across the following themes:

- The Bay Area is economically integrated – however transit is not fully integrated as noted by low mode shares in key travel markets
- High volume travel markets with low transit mode-share may be an opportunity for improved integration
- Fare barriers may contribute to low transit mode share in high travel volume markets

Next step – expand market analysis with additional data sources to identify specific transit and fare barriers in each market and high level estimate for supressed demand.

2. What are customer experiences with the current approach to fares in the Bay Area?

Fares were flagged as:
- A key determinant of a customer's overall experience with transit
- A key element of a customer's understanding of the Bay Area transit system
- Unfair or good value – depending on the trip

Next step – expand upon this analysis with more user research and a focus on understanding fare barriers.

3. How do other multi-operator and multi-jurisdictional regions set fares?

Peer jurisdiction analysis noted that:
- Region-wide structures (such as zones for all modes/operators) tend to be delivered by central agencies with a clear mandate and powers or the development of an alliance model
- Bilateral and multilateral fare integration tends to leverage products/passes or transfers to integrate between operators (either one to one, groups, or at a regional scale)

Next step – generating fare structure prototypes and scenarios for review and user research based on findings from the peer review and (1) and (2)

Next Steps

The feedback from this workshop will be integrated into the next conversation to be held in December with an emphasis on setting out high-level strategic scenarios based on structure, extent of integration, and governance:

1 – Define a draft problem statement to focus analytic efforts

Complete
August 2020

2 – Explore how people travel in the Bay Area and how peer jurisdictions have integrated fares

Today's Discussion

3 – Define a set of high-level fare coordination and integration scenarios to guide option development

Next Discussion
December 2020

4 – Confirm options for analysis

January/February 2021 →

Future meetings and discussions as part of next phase of analysis beyond Jan. 2021

Blue Ribbon Transit Recovery Task Force

Policymaker Forum on Fare Integration

Appendix A:
Additional Resources and Data

Index

Appendix A includes:

Total Travel:
- County to County OD Table with all trips
- County to County OD Table with only inter-county trips

Travel by Transit:
- County to County OD Table with only transit trips
- County to Count OD Transit Mode Share Table (intra and inter-county trips)
- County to County OD Table with only inter-county transit trips
- County to County OD Transit Mode Share Table for inter-county trips

High-Level Travel Patterns: Total Trips by Origin and Destination County

Daily trips by county for all modes and all trip purposes
(Source: NHTS California Add-on, 2017)

Origin	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano	Sonoma	External	Total
Alameda	5,105,000	315,000	16,000	4,000	187,000	78,000	170,000	9,000	6,000	143,000	**6,033,000**
Contra Costa	312,000	3,582,000	14,000	8,000	95,000	18,000	17,000	84,000	1,000	57,000	**4,188,000**
Marin	27,000	11,000	739,000	4,000	49,000	7,000	9,000	1,000	28,000	5,000	**880,000**
Napa	1,000	17,000	7,000	291,000	2,000	-	-	47,000	11,000	7,000	**383,000**
San Francisco	179,000	88,000	45,000	1,000	3,292,000	255,000	98,000	8,000	12,000	54,000	**4,032,000**
San Mateo	81,000	32,000	7,000	-	246,000	2,289,000	239,000	2,000	8,000	67,000	**2,971,000**
Santa Clara	164,000	17,000	9,000	-	77,000	225,000	5,285,000	11,000	2,000	104,000	**5,894,000**
Solano	11,000	75,000	3,000	41,000	9,000	7,000	1,000	783,000	3,000	75,000	**1,008,000**
Sonoma	4,000	2,000	28,000	11,000	13,000	4,000	2,000	1,000	1,291,000	23,000	**1,379,000**
External	158,000	51,000	10,000	20,000	42,000	71,000	106,000	58,000	23,000	-	**539,000**
Total	**6,042,000**	**4,190,000**	**878,000**	**380,000**	**4,012,000**	**2,954,000**	**5,927,000**	**1,004,000**	**1,385,000**	**535,000**	**27,307,000**

Which counties generate the most trips (including inter and intra county)?

1. **Alameda**
2. **Santa Clara**
3. **Contra Costa**
4. **San Francisco**
5. **San Mateo**

High-Level Travel Patterns: Total Inter-County Trips by Origin and Destination County

Daily trips by county for all modes and all trip purposes, excluding internal trips
(Source: NHTS California Add-on, 2017)

Origin	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano	Sonoma	External	Total
Alameda		315,000	16,000	4,000	187,000	78,000	170,000	9,000	6,000	143,000	928,000
Contra Costa	312,000		14,000	8,000	95,000	18,000	17,000	84,000	1,000	57,000	606,000
Marin	27,000	11,000		4,000	49,000	7,000	9,000	1,000	28,000	5,000	141,000
Napa	1,000	17,000	7,000		2,000	-	-	47,000	11,000	7,000	92,000
San Francisco	179,000	88,000	45,000	1,000		255,000	98,000	8,000	12,000	54,000	740,000
San Mateo	81,000	32,000	7,000	-	246,000		239,000	2,000	8,000	67,000	682,000
Santa Clara	164,000	17,000	9,000	-	77,000	225,000		11,000	2,000	104,000	609,000
Solano	11,000	75,000	3,000	41,000	9,000	7,000	1,000		3,000	75,000	225,000
Sonoma	4,000	2,000	28,000	11,000	13,000	4,000	2,000	1,000		23,000	88,000
External	158,000	51,000	10,000	20,000	42,000	71,000	106,000	58,000	23,000		539,000
Total	937,000	608,000	139,000	89,000	720,000	665,000	642,000	221,000	94,000	535,000	6,787,000

Which counties generate the most inter-county travel?

1. Alameda
2. San Francisco
3. San Mateo
4. Santa Clara
5. Contra Costa

Which counties generate the most trips (including inter and intra county)?

1. Alameda
2. Santa Clara
3. Contra Costa
4. San Francisco
5. San Mateo

The same five counties generate the most total and inter-county trips

High-Level Travel Patterns: Total Transit Trips by Origin and Destination County

Daily trips by county for all modes and all trip purposes
(Source: NHTS California Add-on, 2017)

Origin	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano	Sonoma	External	Total
Alameda	106,000	28,000	8,000	-	125,000	11,000	13,000	2,000	-	7,000	**300,000**
Contra Costa	19,000	29,000	-	-	60,000	1,000	1,000	-	-	-	**110,000**
Marin	7,000	-	13,000	-	8,000	-	1,000	-	-	-	**29,000**
Napa	-	-	-	1,000	-	-	-	-	-	-	**1,000**
San Francisco	120,000	64,000	9,000	-	507,000	44,000	37,000	1,000	1,000	1,000	**784,000**
San Mateo	10,000	2,000	-	-	41,000	30,000	23,000	-	-	-	**106,000**
Santa Clara	13,000	1,000	1,000	-	27,000	28,000	126,000	-	-	4,000	**200,000**
Solano	5,000	1,000	-	-	2,000	-	-	6,000	-	-	**14,000**
Sonoma	-	-	-	-	1,000	-	-	-	24,000	-	**25,000**
External	7,000	1,000	-	-	2,000	-	2,000	-	-	-	**12,000**
Total	**287,000**	**126,000**	**31,000**	**1,000**	**773,000**	**114,000**	**203,000**	**9,000**	**25,000**	**12,000**	**1,581,000**

Which counties generate the most transit trips (including inter and intra county)?

1. **San Francisco**
2. **Alameda**
3. **Santa Clara**
4. **Contra Costa**
5. **San Mateo**

METROPOLITAN TRANSPORTATION COMMISSION

High-Level Travel Patterns: Transit Mode Share by County OD Pair

Daily <u>Transit Mode Share</u> by county for all modes and all trip purposes, excluding internal trips
(Source: NHTS California Add-on, 2017)

	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano	Sonoma	External	Total
Alameda	2%	9%	50%	0%	67%	14%	8%	22%	0%	5%	**5%**
Contra Costa	6%	1%	0%	0%	63%	6%	6%	0%	0%	0%	**3%**
Marin	26%	0%	2%	0%	16%	0%	11%	0%	0%	0%	**3%**
Napa	0%	0%	0%	0%	0%			0%	0%	0%	**0%**
San Francisco	67%	73%	20%	0%	15%	17%	38%	13%	8%	2%	**19%**
San Mateo	12%	6%	0%		17%	1%	10%	0%	0%	0%	**4%**
Santa Clara	8%	6%	11%		35%	12%	2%	0%	0%	4%	**3%**
Solano	45%	1%	0%	0%	22%	0%	0%	1%	0%	0%	**1%**
Sonoma	0%	0%	0%	0%	8%	0%	0%	0%	2%	0%	**2%**
External	4%	2%	0%	0%	5%	0%	2%	0%	0%		**2%**
Total	**5%**	**3%**	**4%**	**0%**	**19%**	**4%**	**3%**	**1%**	**2%**	**2%**	**6%**

Which counties have the highest transit mode share for all trips?

1. San Francisco
2. Alameda
3. San Mateo
4. Contra Cost, Marin, Santa Clara (tie)

High-Level Travel Patterns: Total Transit Inter-County Trips by Origin and Destination County

Daily Transit trips by county for all trip purposes, excluding internal trips
(Source: NHTS California Add-on, 2017)

	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano	Sonoma	External	Total
Alameda		28,000	8,000	-	125,000	11,000	13,000	2,000	-	7,000	194,000
Contra Costa	19,000		-	-	60,000	1,000	1,000	-	-	-	81,000
Marin	7,000	-		-	8,000	-	1,000	-	-	-	16,000
Napa	-	-	-		-	-	-	-	-	-	-
San Francisco	120,000	64,000	9,000	-		44,000	37,000	1,000	1,000	1,000	277,000
San Mateo	10,000	2,000	-	-	41,000		23,000	-	-	-	76,000
Santa Clara	13,000	1,000	1,000	-	27,000	28,000		-	-	4,000	74,000
Solano	5,000	1,000	-	-	2,000	-	-		-	-	8,000
Sonoma	-	-	-	-	1,000	-	-	-		-	1,000
External	7000	1000	0	0	2000	0	2000	0	0		12,000
Total	181,000	97,000	18,000	-	266,000	84,000	77,000	3,000	1,000	12,000	739,000

Which counties generate the most inter-county transit travel?

1. San Francisco
2. Alameda
3. Contra Costa
4. San Mateo
5. Santa Clara

Which counties generate the most transit trips (including inter and intra county)?

1. San Francisco
2. Alameda
3. Santa Clara
4. Contra Costa
5. San Mateo

High-Level Travel Patterns: Transit Mode Share by County OD Pair

Daily <u>**Transit Mode Share**</u> **by county for all modes and all trip purposes, excluding internal trips**

(Source: NHTS California Add-on, 2017)

	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano	Sonoma	External	Total
Alameda	N/A	9%	50%	0%	67%	14%	8%	22%	0%	5%	21%
Contra Costa	6%	N/A	0%	0%	63%	6%	6%	0%	0%	0%	13%
Marin	26%	0%	N/A	0%	16%	0%	11%	0%	0%	0%	11%
Napa	0%	0%	0%	N/A	0%	N/A	N/A	0%	0%	0%	0%
San Francisco	67%	73%	20%	0%	N/A	17%	38%	13%	8%	2%	37%
San Mateo	12%	6%	0%	N/A	17%	N/A	10%	0%	0%	0%	11%
Santa Clara	8%	6%	11%	N/A	35%	12%	N/A	0%	0%	4%	12%
Solano	45%	1%	0%	0%	22%	0%	0%	N/A	0%	0%	4%
Sonoma	0%	0%	0%	0%	8%	0%	0%	0%	N/A	0%	1%
External	4%	2%	0%	0%	5%	0%	2%	0%	0%	N/A	2%
Total	19%	16%	13%	0%	37%	13%	12%	1%	1%	2%	16%

Which counties have the highest inter-county transit mode share?

1. San Francisco
2. Alameda
3. Contra Costa
4. Santa Clara
5. San Mateo and Marin (tie)