



MEETING OF THE

REGIONAL TRANSIT TECHNICAL ADVISORY COMMITTEE

Wednesday, November 29, 2017
10:00 a.m. – 12:00 p.m.

SCAG Los Angeles Main Office

818 W. 7th Street, 12th Floor
Policy Committee Room A
Los Angeles, California 90017
(213) 236-1800

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To join the meeting: <http://scag.adobeconnect.com/rttac/>
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If members of the public wish to review the attachments or have any questions on any of the agenda items, please contact Matt Gleason at (213) 236-1832 or gleason@scag.ca.gov.

SCAG, in accordance with the Americans with Disabilities Act (ADA), will accommodate persons who require a modification of accommodation in order to participate in this meeting. SCAG is also committed to helping people with limited proficiency in the English language access the agency's essential public information and services. You can request such assistance by calling (213) 236-1993. We require at least 72 hours (three days) notice to provide reasonable accommodations. We prefer more notice if possible. We will make every effort to arrange for assistance as soon as possible.

**REGIONAL TRANSIT TECHNICAL ADVISORY COMMITTEE
AGENDA**

Wednesday, November 29, 2017

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The Regional Transit Technical Advisory Committee may consider and act upon TIME PG# any of the items listed on the agenda regardless of whether they are listed as information or action items.

1.0 CALL TO ORDER

(Gary Hewitt, OCTA, Regional Transit TAC Chair)

2.0 PUBLIC COMMENT PERIOD - Members of the public desiring to speak on items on the agenda, or items not on the agenda, but within the purview of the Regional Transit Technical Advisory Committee, must fill out and present a speaker's card to the assistant prior to speaking. Comments will be limited to three minutes. The chair may limit the total time for all comments to twenty (20) minutes.

3.0 RECEIVE AND FILE

3.1 Minutes of the August 30, 2017 Regional Transit TAC Meeting 5 3

**REGIONAL TRANSIT TECHNICAL ADVISORY COMMITTEE
AGENDA
Wednesday, November 29, 2017**

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4.0 INFORMATION ITEMS

4.1	<u>Go Dublin Pilot Project</u> <i>(Christy Wegener, Livermore Amador Valley Transit Authority)</i>	20	9
4.2	<u>City of San Clemente Rideshare Beta Test Rider Program</u> <i>(Tom Frank, City of San Clemente)</i>	20	20
4.3	<u>Transit Patronage Study Update</u> <i>(Mike Manville, UCLA)</i>	30	30
4.4	<u>Draft 2020 RTP/SCS HQTC and Major Transit Stop Methodology</u> <i>(Steve Fox, SCAG)</i>	30	67

5.0 STAFF REPORT

5.1	<u>Metropolitan Planning Agreements</u> <i>(Philip Law , SCAG)</i>	10
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6.0 ADJOURNMENT

The next Regional Transit Technical Advisory Committee meeting is tentatively scheduled for Wednesday, January 31, 2018.

Regional Transit Technical Advisory Committee (RTTAC)
of the
Southern California Association of Governments

August 30, 2017

Minutes

THE FOLLOWING MINUTES ARE A SUMMARY OF ACTIONS TAKEN BY THE REGIONAL TRANSIT TECHNICAL ADVISORY COMMITTEE (RTTAC). AN AUDIO RECORDING OF THE MEETING IS AVAILABLE FOR LISTENING IN SCAG'S OFFICE.

The Regional Transit Technical Advisory Committee held its meeting at SCAG's Downtown Los Angeles Office. The meeting was called to order by Chair Gary Hewitt.

Members Present:

Gary Hewitt (Chair)	Orange County Transportation Authority
Josh Landis	Foothill Transit
Joe Raquel	Foothill Transit
Medford Auguste	LACMTA
Lori Huddleston	LACMTA
Kirk Schneider	Caltrans District 7
Rawan Aljamal	Caltrans District 7
Jad Andari	Caltrans District 7
Rory Vaughn	Metrolink
Tracy Bgidleman	***** Long Beach Transit
Robert Kay	ICF
Ignacio Fernandez	Climate Resolve
Anne Brown	University of California, Los Angeles
Ashley Hand	CityFi

Video Conference:

David Aguirre	Imperial County Transportation Commission
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Teleconference:

Victor Cuate	Omnitrans
Beth Rodehorst	ICF
Martha Masters	Riverside County Transportation Commission
Lorelle Moe-Luna	Riverside County Transportation Commission
Norm Hickling	Antelope Valley Transit Authority
Anita Petke	SunLine Transit Agency
Christopher Cochran	Pinellas Suncoast Transit Agency

SCAG Staff:

Philip Law	Joseph Briglio
Naresh Amatya	Marco Anderson
Matt Gleason	

1.0 CALL TO ORDER

Gary Hewitt, OCTA, called the meeting to order at 10:04 a.m.

2.0 PUBLIC COMMENT PERIOD

No members of the public requested to comment.

3.0 RECEIVE AND FILE

3.1 Minutes of the May 31, 2017 Regional Transit TAC Meeting

3.2 Draft Transit Ridership Decline Factsheet

3.3 Senate Bill 1 Planning Grants

4.0 INFORMATION ITEMS

4.1 LACoMotion Initiative Conference

Ashley Hand, CityFi, reported on the LACoMotion Conference. Ms. Hand invited committee members to attend the first meeting of LACoMotion, an event that explores the future of mobility to be held November 15 – 19, 2017. She noted the first three days will present thought leaders from around the world to discuss mobility. Ms. Hand noted it will be an opportunity to discuss mobility trends and to also see and receive hands on demonstrations and view the technologies that could shape the future of urban mobility. Ms. Hand noted additional information about the conference can be found at LACoMotion.com. The event is sponsored by the New Cities Foundation, an urban think tank focused on mobility.

Lori Huddleston, LACMTA, asked if invitations had been sent to the chief executives of local transit agencies. Ms. Hand indicated that invitations will be sent to transit leadership.

4.2 Public-Private-Partnerships for Innovative Transportation Solutions

Christopher Cochran, Pinellas Suncoast Transit Authority, reported on their public-private-partnerships. Mr. Cochran stated the Pinellas Suncoast Transit Authority (PSTA) is a mid-sized transit agency on the Central West Coast of Florida utilizing a fleet of over 200 buses covering 40 routes serving 13 million yearly customers. He noted in recent years PSTA has examined and utilized emerging technologies to leverage unique opportunities to compliment public transit with a goal to identify and demonstrate business models that create more cost effective and reliable public transportation alternatives. Mr. Cochran noted current efforts seek to demonstrate the benefits of using Transportation Network Companies to compliment public transit.

Mr. Cochran noted their TD Late Shift service has proven highly successful. He noted “TD” refers to “Transit Disadvantaged” and the program provides Uber rides for mostly second and third shift workers when busses are not running. An Uber or

Taxi ride is provided to transit riders from 10:00 p.m. to 6:00 a.m. when those workers return home. The Direct Connect First/Last mile program was reviewed and it was noted that the program started with a small local pilot project then expanded to a county-wide service. The service started with 570 rides in the first 11 months and has provided 4,000 rides since expansion. The service pays the first \$5 of an Uber ride to a bus stop. Mr. Cochran stated the lessons learned include the necessity of having an effective marketing and outreach campaign and to develop a scalable model. Challenges that arose include a limitation on available data and linking technology between the different entities. Also, education needs to be a significant component.

Mr. Cochran stated that PSTA has begun see itself not just as a transit provider but as a mobility manager that has seen a need to link with available resources and technologies to provide a mix of mobility options for riders. Additionally it provides latitude for the agency to enable solutions in a time of continuing budget challenges.

Josh Landis, Foothill Transit, asked if education was targeted to older drivers on how to ride Uber. Mr. Cochran responded that after the service was initially offered and ridership was low Uber placed ambassadors at transit stations to educate and have conversations about using Uber. This effort increased the number of riders using the service.

Gary Hewitt, OCTA, asked if Uber riders using the transit service are dropped off at any location or only at the designated transit stops. Mr. Cochran responded that Uber trips must begin or end at designated transit stops.

4.3 Bus Rapid Transit and Changing Neighborhoods in Los Angeles, California

Anne Brown, UCLA, reported on her current research which examines Bus Rapid Transit (BRT) and its effects on accelerating gentrification in neighborhoods along the route. Ms. Brown stated that while the study focusses on the Orange Line it investigates larger questions of neighborhood change around transit and gentrification's effect on local residents who are transit dependent. Further, the approach of the study is to examine if neighborhoods closer to Orange Line stations experienced change compared to those further from it. Also, to determine if some neighborhoods are more likely to experience displacement so that policy makers can act in advance to protect local transit dependent residents and others as gentrification progresses. It was noted that gentrification can be a slow process where steadily changing conditions cause lower income families to move out while higher income families move in.

Ms. Brown stated her approach was to examine areas one-half mile, two and five miles around each Orange Line station investigating variables such as median household income, median home value, median rent and education levels. Ms. Brown noted that areas within one-half mile of an Orange Line station did experience a greater level of change in these variables than those within two or five miles as well as those in the greater Los Angeles area. It was noted median home

prices and median rents increased in those areas closest to the Orange Line. Further, the racial composition of the neighborhoods did not see significant change. Ms. Brown stated that the Orange Line can be instructive to future policy makers about the effects of gentrification on bus rapid transit routes and it highlights the importance to plan for affordable housing near transit stations. Further, policies such as just cause eviction control, community housing plans and others can be used to preserve affordable housing around transit corridors so that existing residents are not displaced.

Lori Huddleston, LACMTA, asked if the housing stock in the study areas was examined to determine if property and rent increases can be attributed to increasing demand for a restricted housing supply. Ms. Brown responded that housing stock numbers can be provided and it's possible that supply could have affected prices while noting that the study area was also compared to other areas in the county.

4.4 Climate Change Adaptation Assessment

Beth Rodehorst, ICF, introduced the Transit Climate Adaptation and Resiliency Assessment and upcoming workshops. Ms. Rodehorst stated the purpose of the effort is to empower SCAG transit agencies to identify critical assets and routes that could be affected by the effects of climate change and integrate strategies into local and regional planning. Also, to provide a toolbox so agencies can implement adaptation practices to improve transit system resilience while complying with state and federal regulations. Ms. Rodehorst introduced the project team and timeline noting that the first workshop will take place September 25, 2017 and the second February 2018 with the effort concluding June 2018.

Rob Kay, ICF, reported impacts on transit service due to climate change can include coastal sea level rise up to 2 meters as well as 100-year flooding noting that 28 acres of transit yards, 1,790 routes and over 2,500 stops are within a 100-year flood zone. Additionally, extreme precipitation and extreme heat can affect service reliability and agency assets. Mr. Kay reviewed current maps indicating transit routes and assets and their vulnerability to extreme heat, as well as inland and coastal flooding stating that extreme heat can affect transit reliability and speeds and saltwater flooding can permanently disable electrical equipment and make first/last mile conditions harsher for passengers. Further, the goal is to ensure service reliability and workers/passenger safety while also mitigating costs to the agency. Mr. Kay reviewed the upcoming workshops and encouraged all agencies to participate.

Rory Vaughn, Metrolink, asked if an email invite could be sent to member agencies. Staff indicated that would be done.

4.5 FAST ACT Requirements Regarding Private Sector Providers of Transportation

Steve Fox, SCAG staff, reported that a requirement of the Fixing America's Surface Transportation (FAST) Act includes a new programming rule that calls for incorporating intercity private bus operators such as Greyhound, Crucero and

Megabus into the planning process including the opportunity to comment on the Regional Transportation Plan. Additionally, employer-based commuting programs such as carpool, vanpool, transit benefits, parking cash-out, shuttle and telework programs are to be included. The new requirements also mandate that these TDM elements be incorporated into the MPO's federal Congestion Management Process (CPM).

It was noted the benefits include enhanced multi-modal planning, improved connectivity and identification of gaps in service and to quantify benefits of private sector operators and their effects on congestion. Mr. Fox asked for assistance from committee members for information regarding origin and destination points for intercity bus operators in their jurisdictions and he noted the committee will be updated on this effort as it progresses.

Medford Auguste, LACMTA, reported that Metro is currently investigating a mobility on demand or a micro-transit pilot between Union Station and the downtown Greyhound Station.

4.5 Metropolitan Planning Agreements

Philip Law, SCAG staff, updated the committee on Metropolitan Planning Agreements. Mr. Law stated that SCAG is required by the Federal Metropolitan Transportation Planning regulations to enter into cooperative agreements with the State and the region's transit providers regarding development of the Regional Transportation Plan and the Federal Transportation Improvement Program. Mr. Law noted the agenda packet includes the proposed provisions to be added to the agreements. Additionally, the added provisions are taken directly from the federal regulations. Mr. Law reviewed with the committee the updated provisions and noted a draft of the MOUs would be circulated for comments.

5.0 STAFF REPORT

Steve Fox, SCAG staff, updated the committee on the development of High Quality Transit Corridors. Mr. Fox stated that the process is being further developed as work begins on the 2020 RTP/SCS and those updates will be presented to the committee for input as they are developed.

6.0 ADJOURNMENT

Gary Hewitt, OCTA, adjourned the meeting at 11:55 a.m.

Closing the Gap: Innovative First/Last Mile Solutions

Go Dublin Pilot Project
November 29, 2017

Christy Wegener
Livermore Amador Valley Transit Authority

Dublin, California



Go Dublin Pilot

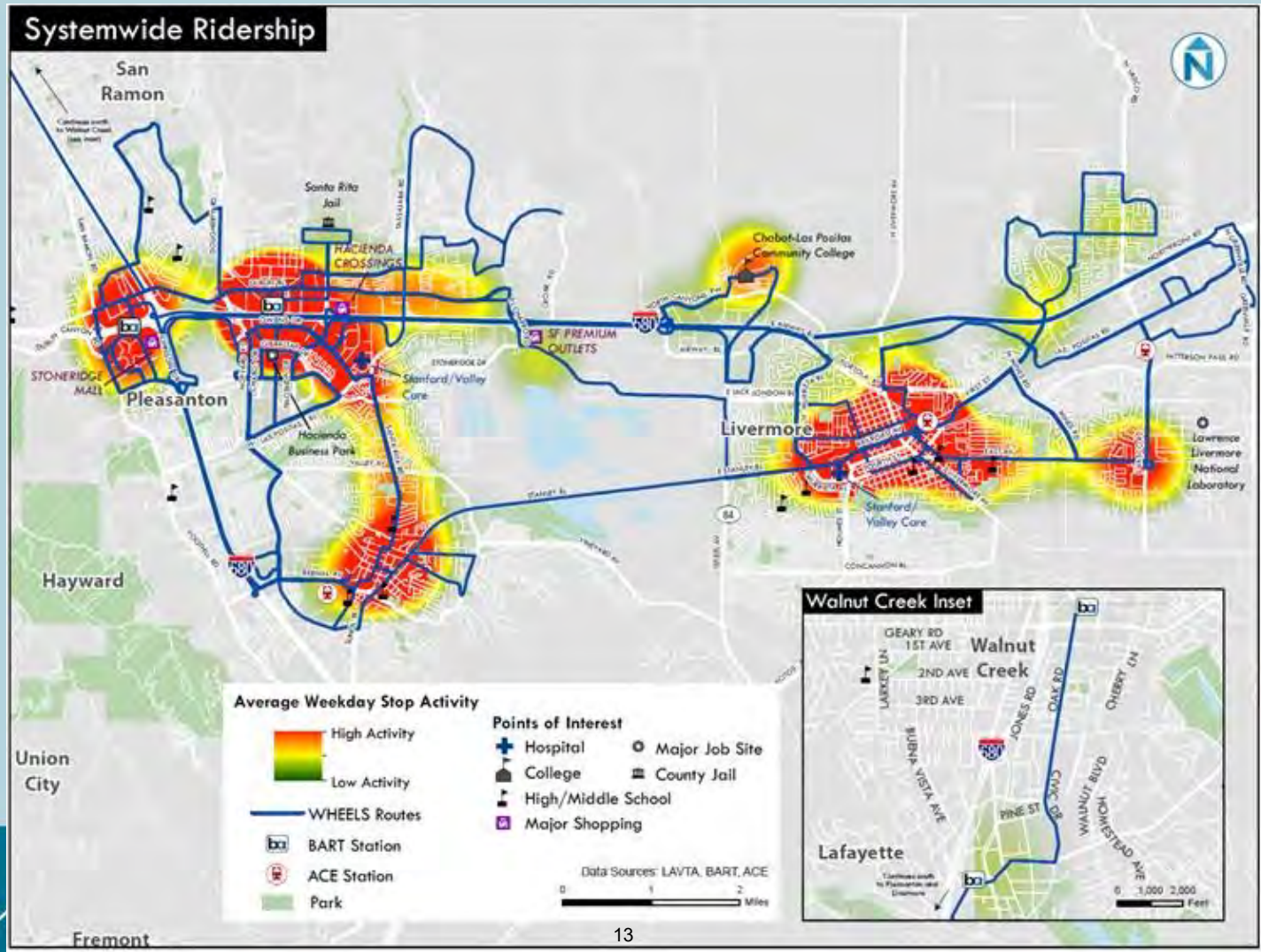
- Partnership with Lyft, Uber, De Soto Cabs
- Go Dublin pays for ½ the fare, up to \$5 per trip, for rideshare trips
 - Launched January 2017
 - Initial pilot through June 2017
 - Extended through June 2018
 - Coupon Code: GODUBLIN



Pilot Development

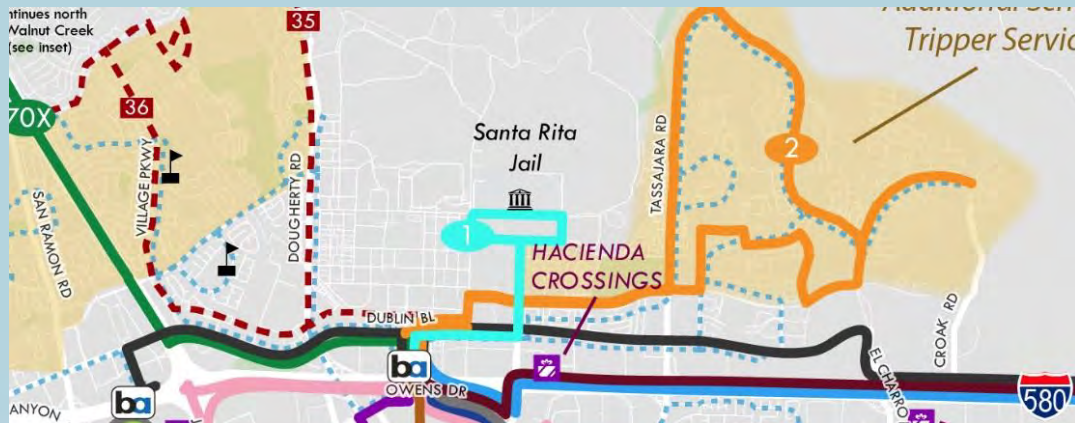
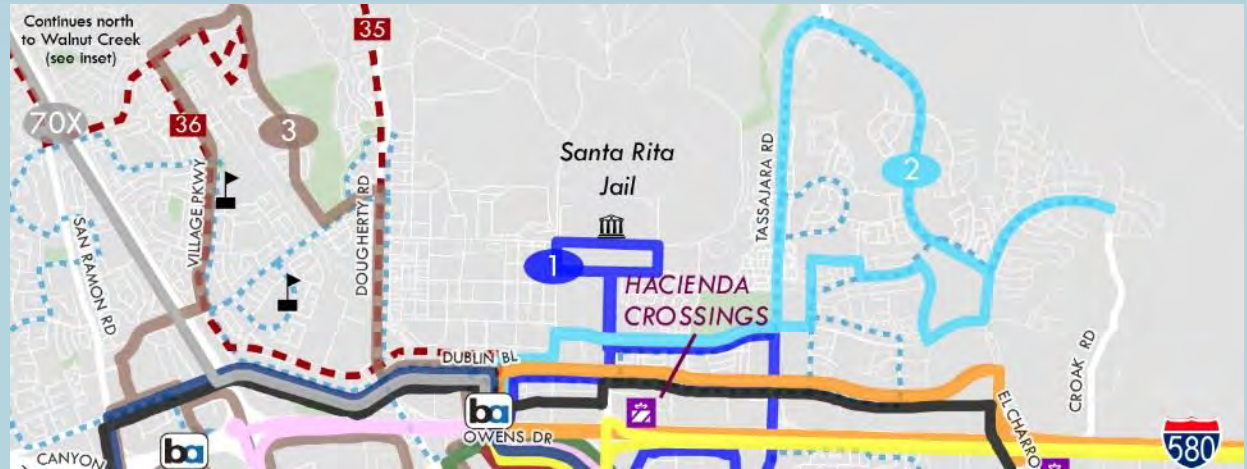
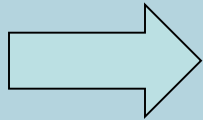
- Go Dublin developed after comprehensive review of Wheels fixed route bus system
 - Unproductive bus service eliminated in Dublin (\$15-\$20 per pax trip); service hours realigned
 - Improved frequency on major lines
 - Left city of Dublin without coverage in some areas
 - Considered alternatives beyond TNCs

Dublin Fixed Route Ridership

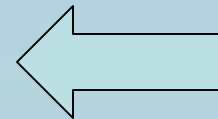


Dublin Bus Service

Before



After



Go Dublin Promotion

- Promotion available city-wide
- ADA vehicles provided through De Soto Cab
- “Unbanked” customers can use De Soto Cab



Lessons Learned So Far

- Fare Structure
 - Cost exposure versus fare equity
- User Experience Decisions
 - Coupon code availability
 - Service area
- Pilot Structure
 - Choice of companies
- Communication with partners can be a challenge
 - Helps to be within a short drive of HQ

Lessons Learned

- Data/National Transit Database
 - Inconsistent across partners
- ADA
 - Vehicle Availability
 - Fare on De Soto versus Lyft/Uber
- Impact on fixed route ridership
 - Appears trips are relatively short. Service area and fixed route implications?

Next Steps

- Project evaluation will occur in fall 2017.
 - Will evaluate ridership trends, cost, VMT impact
- Recommendations will be made to either continue, change, expand, and/or end the pilot.
- Look towards opportunities for mobile ticketing and other technological integrations

Go Dublin Pilot

Thank you!

Christy Wegener

www.wheelsbus.com

www.wheelsbus.com/godublin/

cwegener@lavta.org

925-455-7560

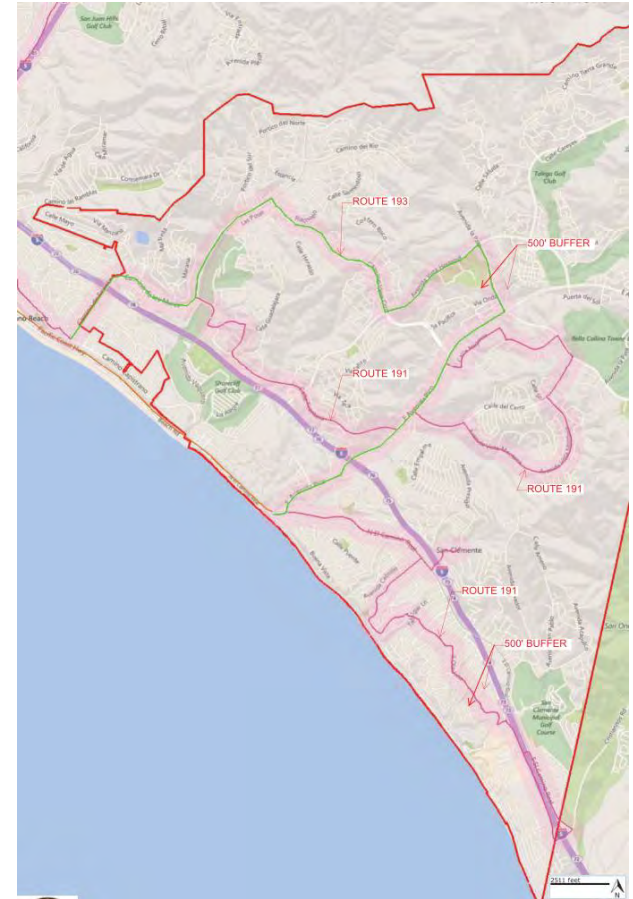
City of San Clemente Rideshare Beta Test Rider Program

November 29, 2017

TOM FRANK, TRANSPORTATION ENGINEERING
MANAGER

Need

OCTA terminated two underutilized bus routes in San Clemente causing a loss of mobility in City.



Alternative Rideshare Option

- Brainchild of Councilmember Tim Brown November 2015
- City Council approve a grant application to OCTA February 16, 2016
- OCTA Approves Grant June 13, 2016
- City approves Cooperative Agreement with OCTA August 2, 2016
- City Solicits RFP August 30, 2016
- City Awards Contract to Lyft October 4, 2016
- 191 and 193 Stops and SC Rides soft start begins October 9, 2017

OCTA Grant

- Through Measure M2 - Project V Grant
- \$914,400 2 year Ridershare Beta Test Rider Grant (90% budget)
- \$101,600 City Funds (10% budget)
- OCTA good partner enabling agreement scope revisions

SC Rides with Lyft






OCTOBER 10, 2016

Reimagining Public Transit in San Clemente

Today, we're proud to launch a historic partnership with the City of San Clemente, ensuring uninterrupted transportation access for San Clemente residents in neighborhoods previously served by the 191 and 193 Orange County Transportation Authority bus routes. Our on-demand ridesharing service offers convenience and efficiency in areas where traditional buses have long been a challenge for residents and transit agencies alike. We are proud to be the City's official ridesharing partner, and to make getting around the city quickly and affordably without a car a reality for residents.

Add payment method

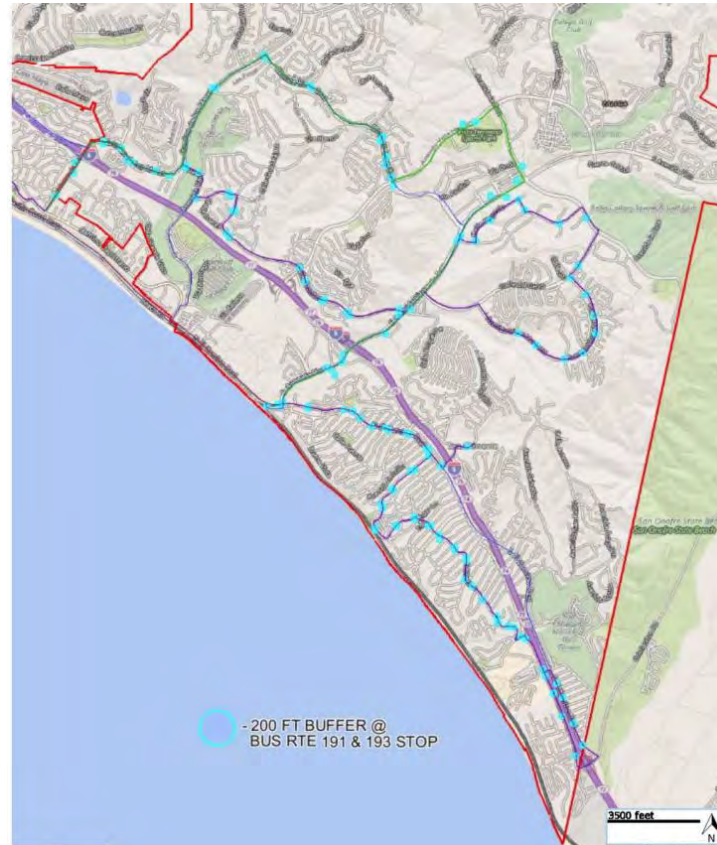
Add credit card >

 SCRIDES APPLY

Ride Fare	Cost to Passenger
\$5	\$2
\$10	\$2
\$12	\$3
\$14	\$5

<https://blog.lyft.com/posts/reimagining-public-transit-in-san-clemente>

Location Map



Soft Launch Usage Report

Month	Lyft Rides
January	2062
December	1641
November	1198
October	485

Current ridership near 70 riders per day.

Future Plans

- Call In and Wheelchair Accessible Vehicle (WAV) options
- Once options operable, City will formally launch program.
- Estimated target launch of formal program before year end.

Questions?

Project Update Meeting

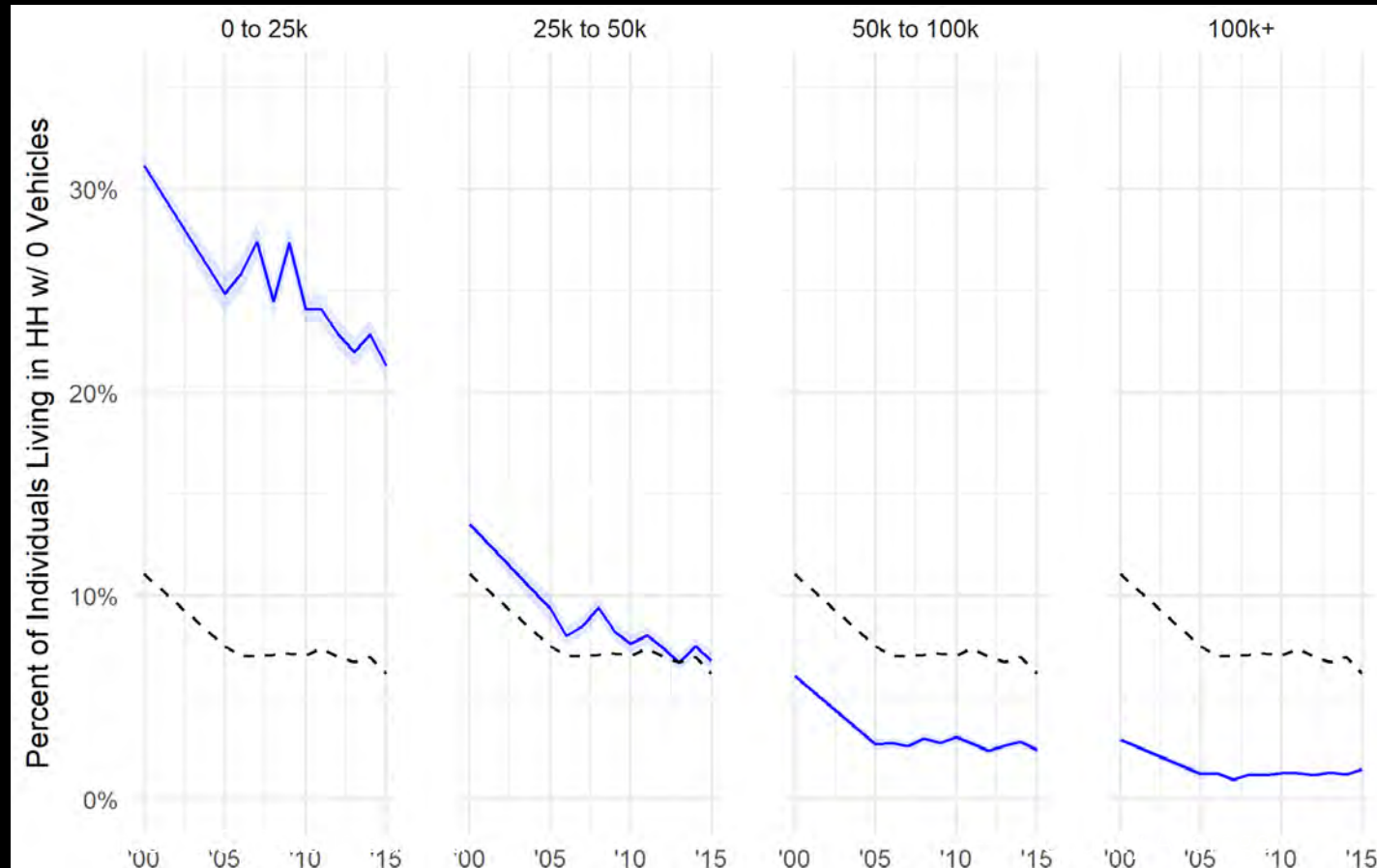
Transit Patronage Study

November 29, 2017

Progress

- Large Increases in Vehicle Ownership
- Spatial Analysis of Transit Commuting
- Transit Fare Analysis

People in Carless Households by Income LA County, 2000-2015



People in Carless Households by Nativity and Years in U.S., LA County, 2000-2015



Source: U.S. Census Bureau

Household Vehicle Increase

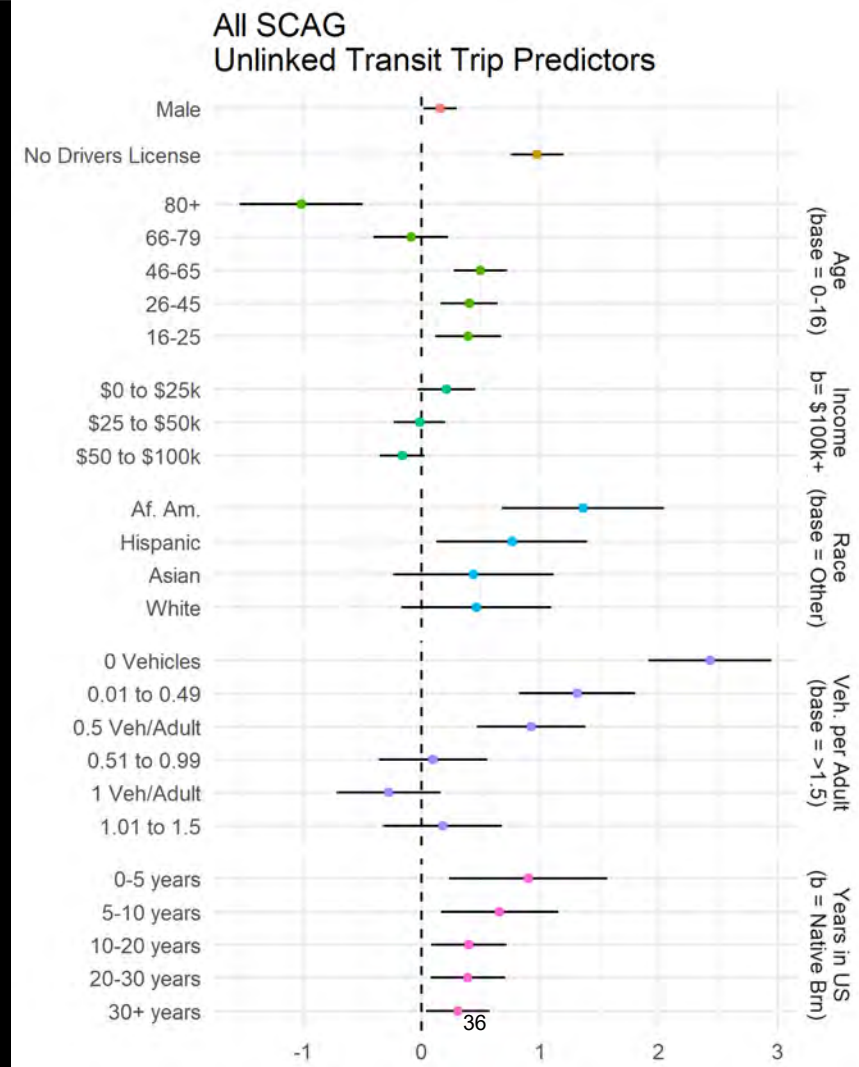
- SCAG region
 - 1990-2000: SCAG region region added 1.8 million people and 456,000 household vehicles (0.25 vehicles/new resident)
 - 2000-2015: Region added 2.3 million people and 2.1 million household vehicles (or 0.95 vehicles/new resident).

Back of the envelope: SCAG residents spent more on these 2.1 million additional vehicles than Metro and Metrolink spent on all rail and BRT over the same period

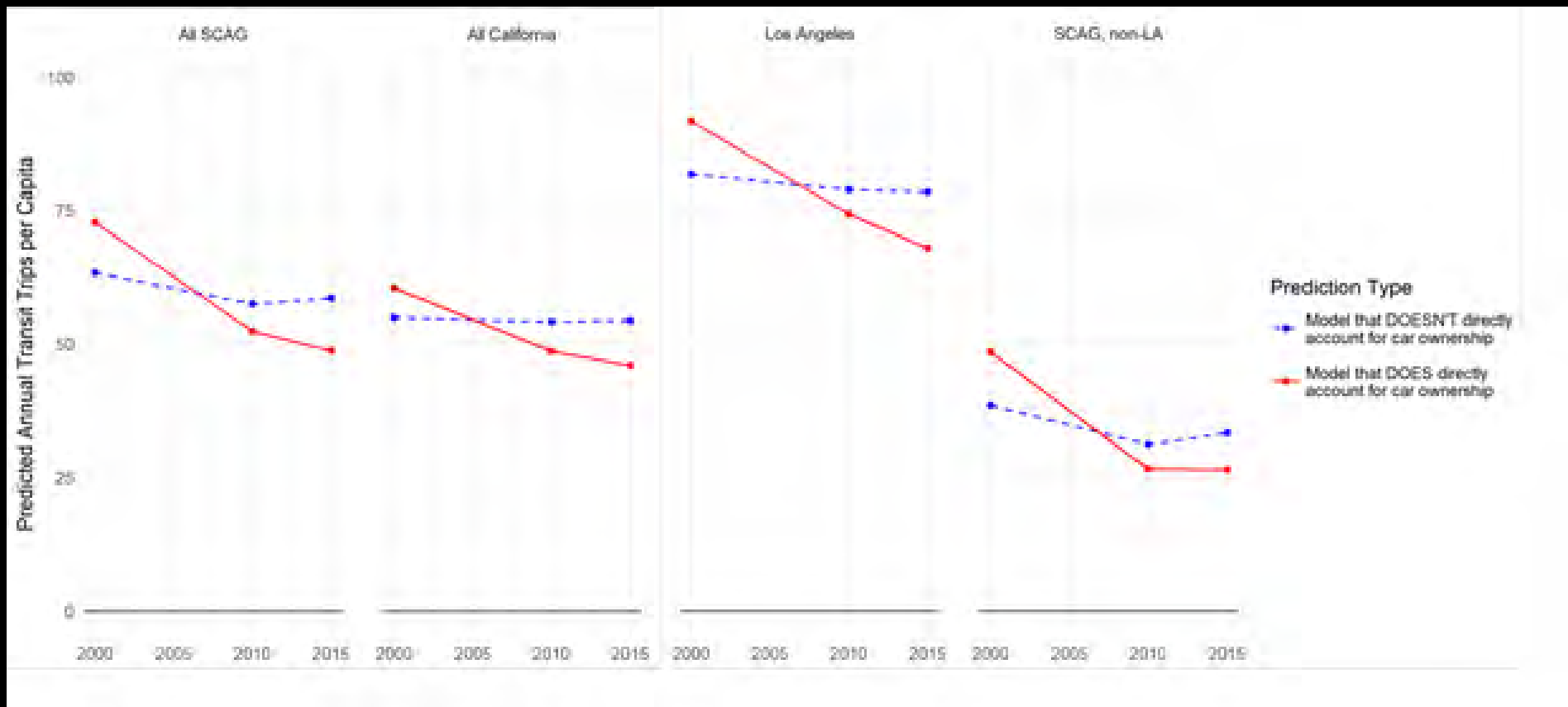
Modeling – Two Purposes

1. Use of the California Household Travel Survey (CHTS) to estimate the relationship between socioeconomic characteristics of individuals and households and transit trips
 - Most transit trips are for non-work purposes
 - Census data include transit commuters – not trips (which more closely approximated “ridership” and only for the commute)
2. The application of the CHTS modeled relationships to the Census microdata to estimate the determinants of transit use over time
 - We have CHTS data for one time period
 - Census data: gold standard

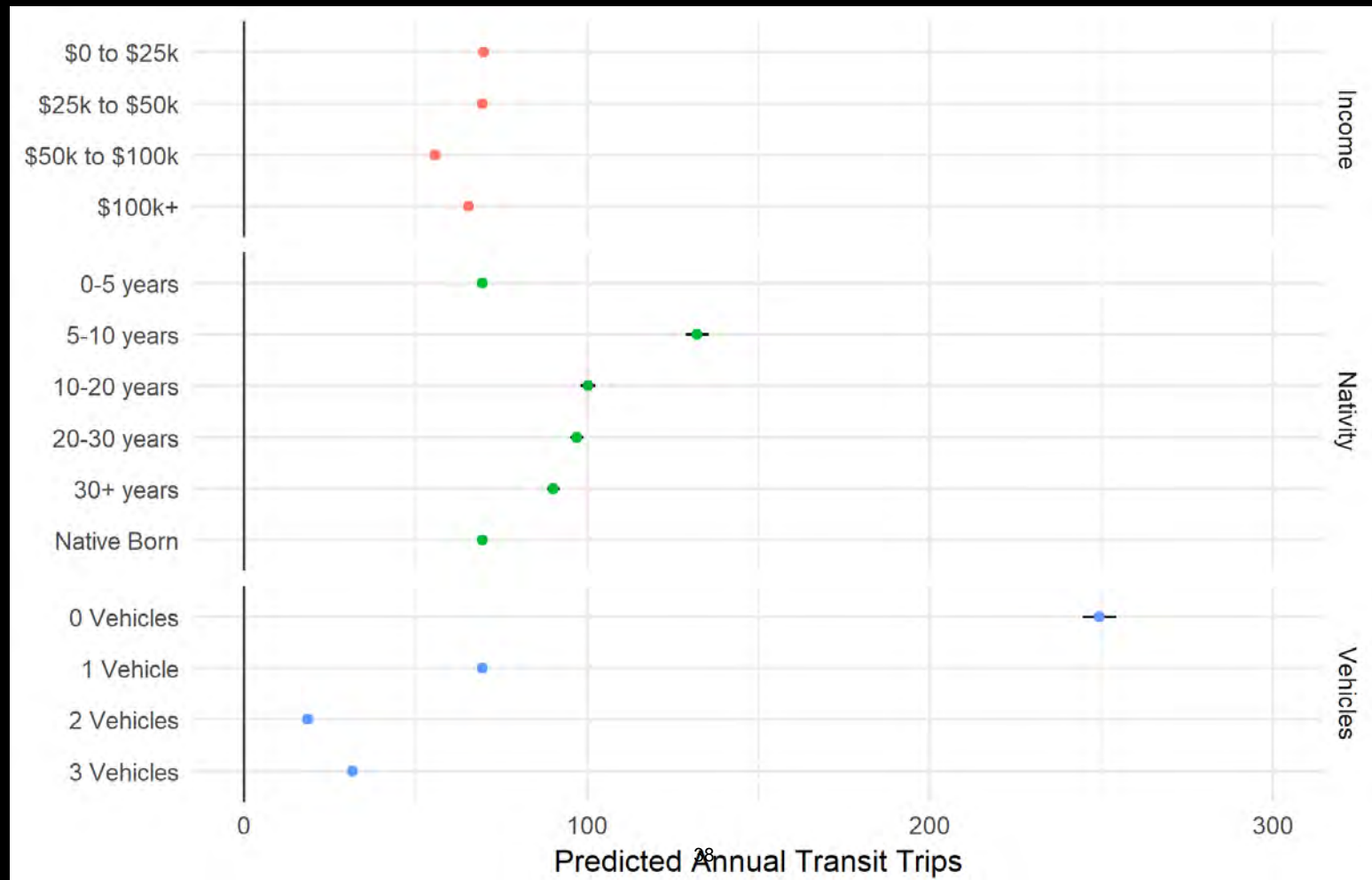
Predicting Transit Trips SCAG Counties



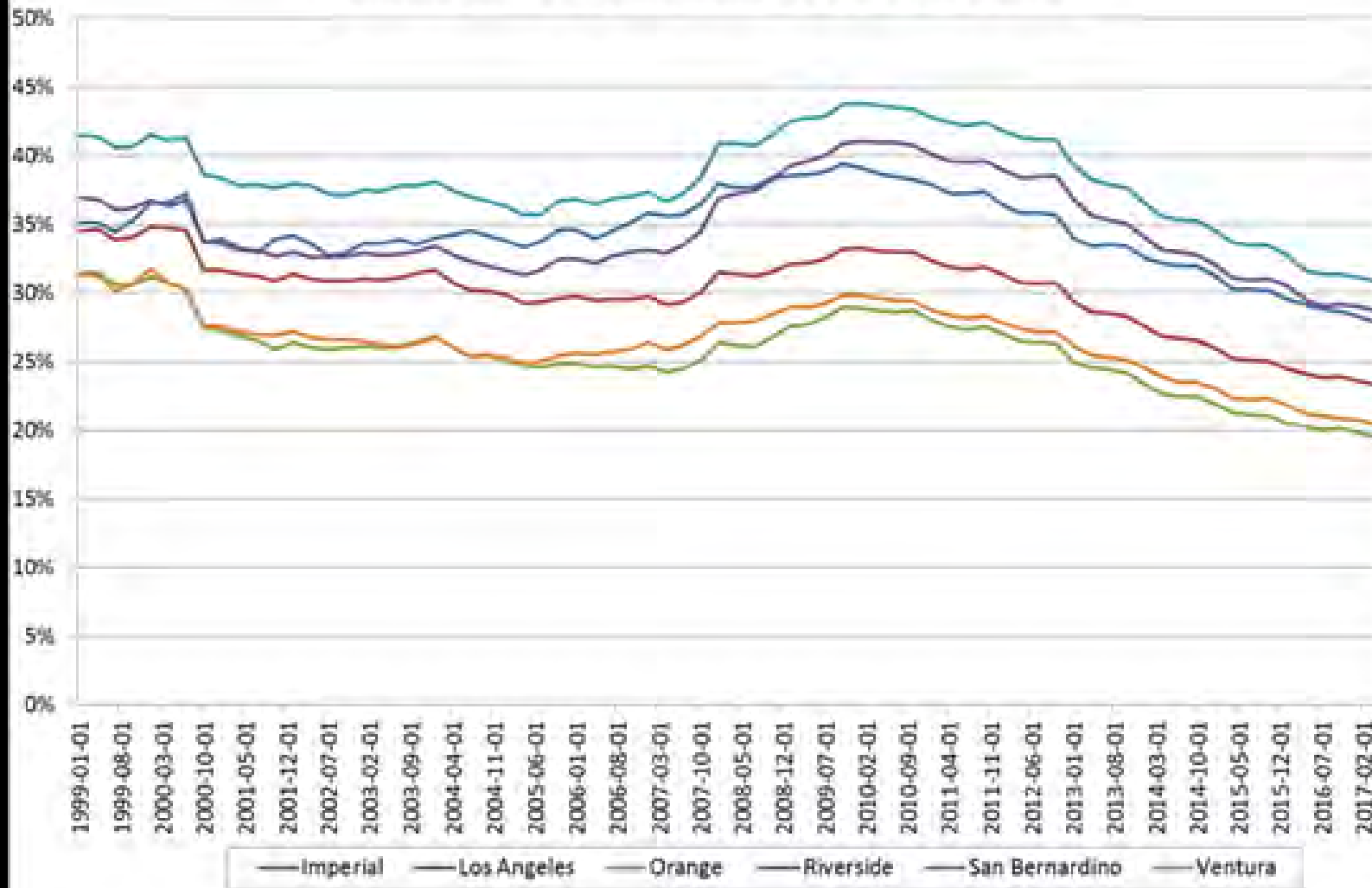
Predicted Annual Per Capita Transit Trips With and Without Vehicle Controls



Model Results



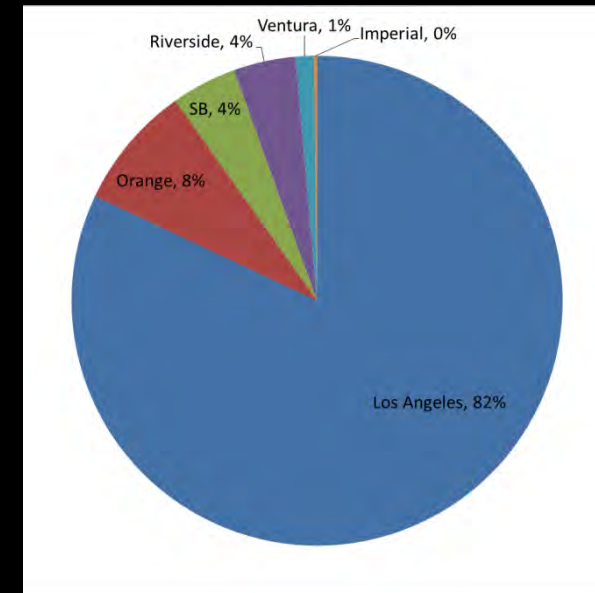
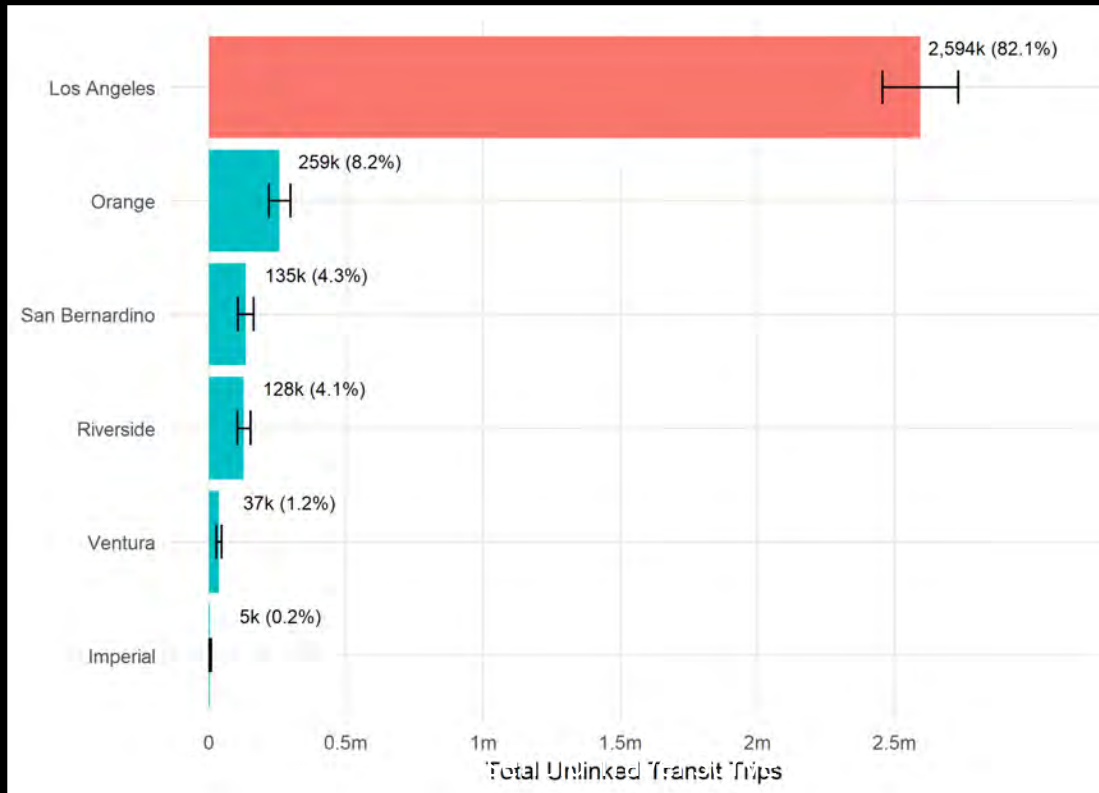
Percent of Sample w/ Credit Scores Below 660 (below prime)



Source: Federal Reserve Bank of St. Louis, Economic Research Division. <https://fred.stlouisfed.org>

Spatial Arrangement of Transit Trips

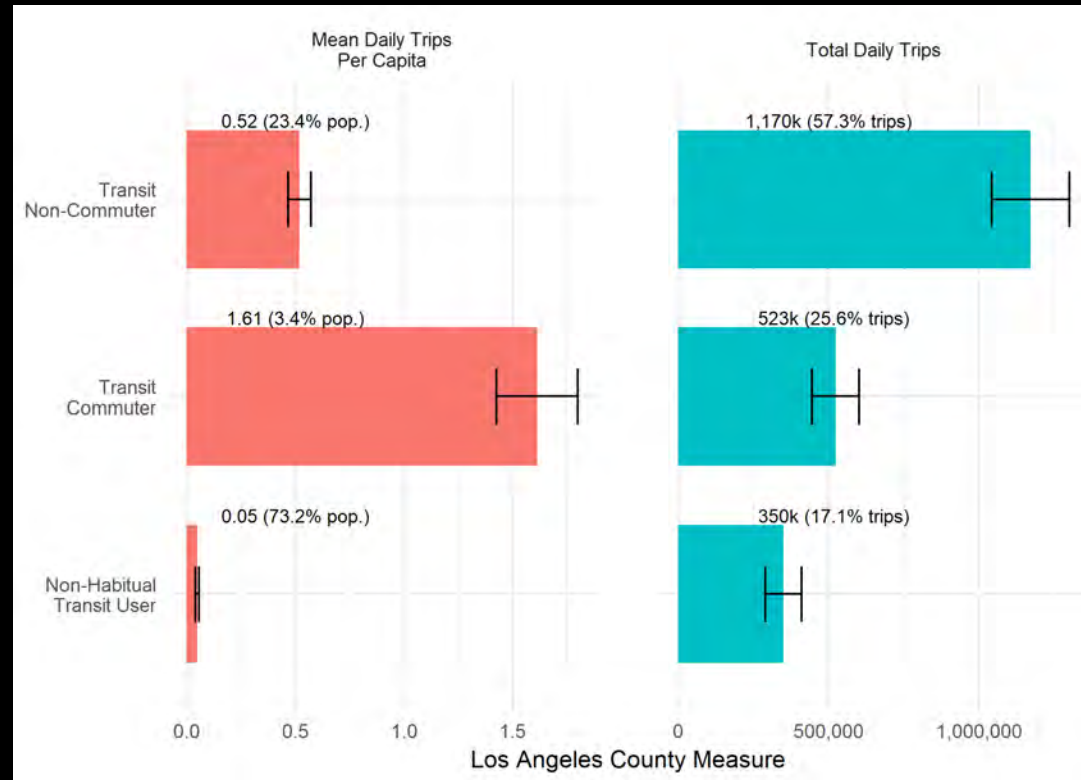
Transit Trips by County (unlinked trips)



Three Transit User Types

- *Transit Non-Commuter*: took at least one transit trip in the last week, but do not report commuting by transit;
- *Transit Commuter*: reports commuting by transit; and
- *Non-habitual users*: did not take a transit trip in the last week; does not report commuting by transit.

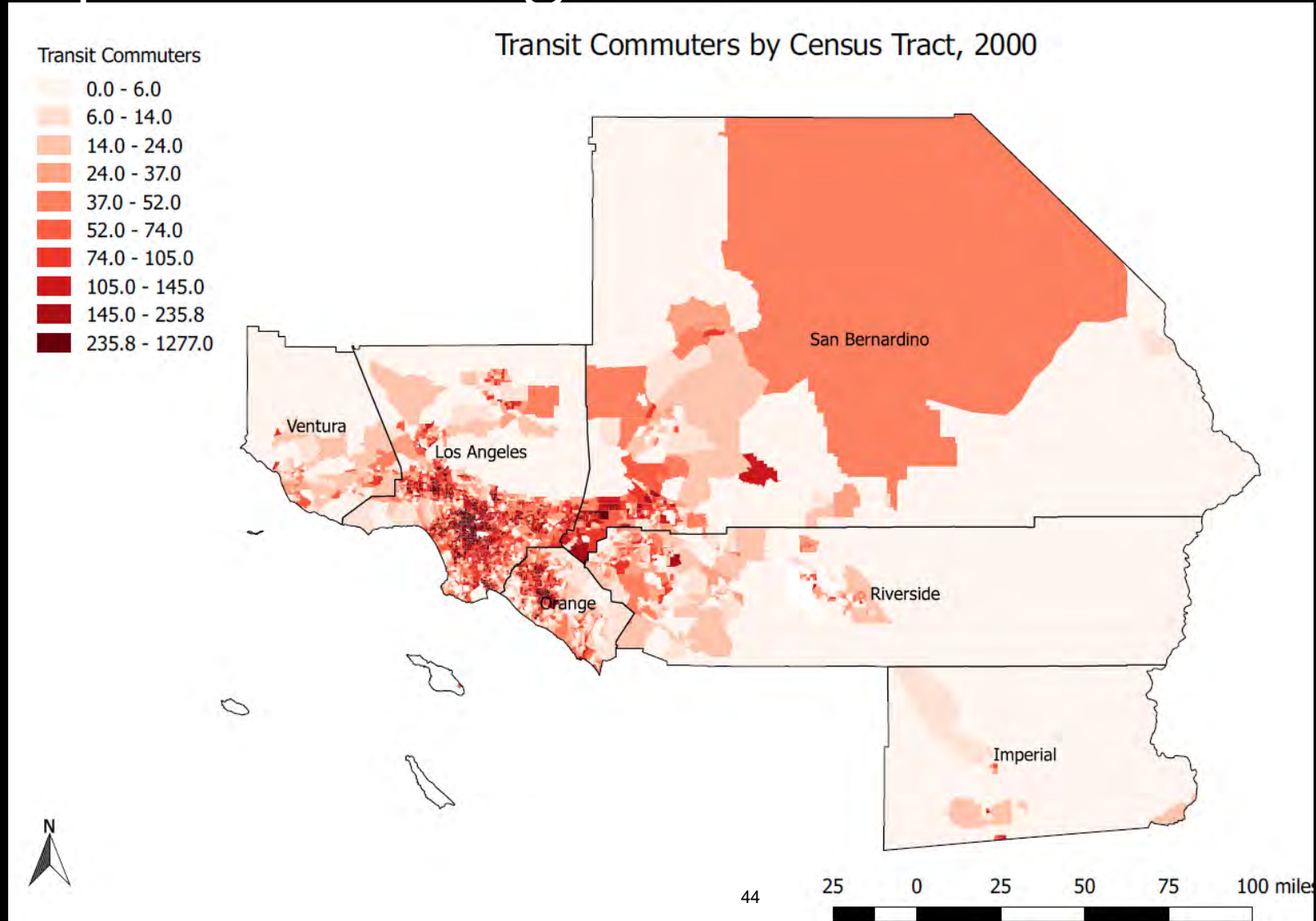
Transit Use by Transit User Type Los Angeles County



Source: 2012 California Household Travel Survey

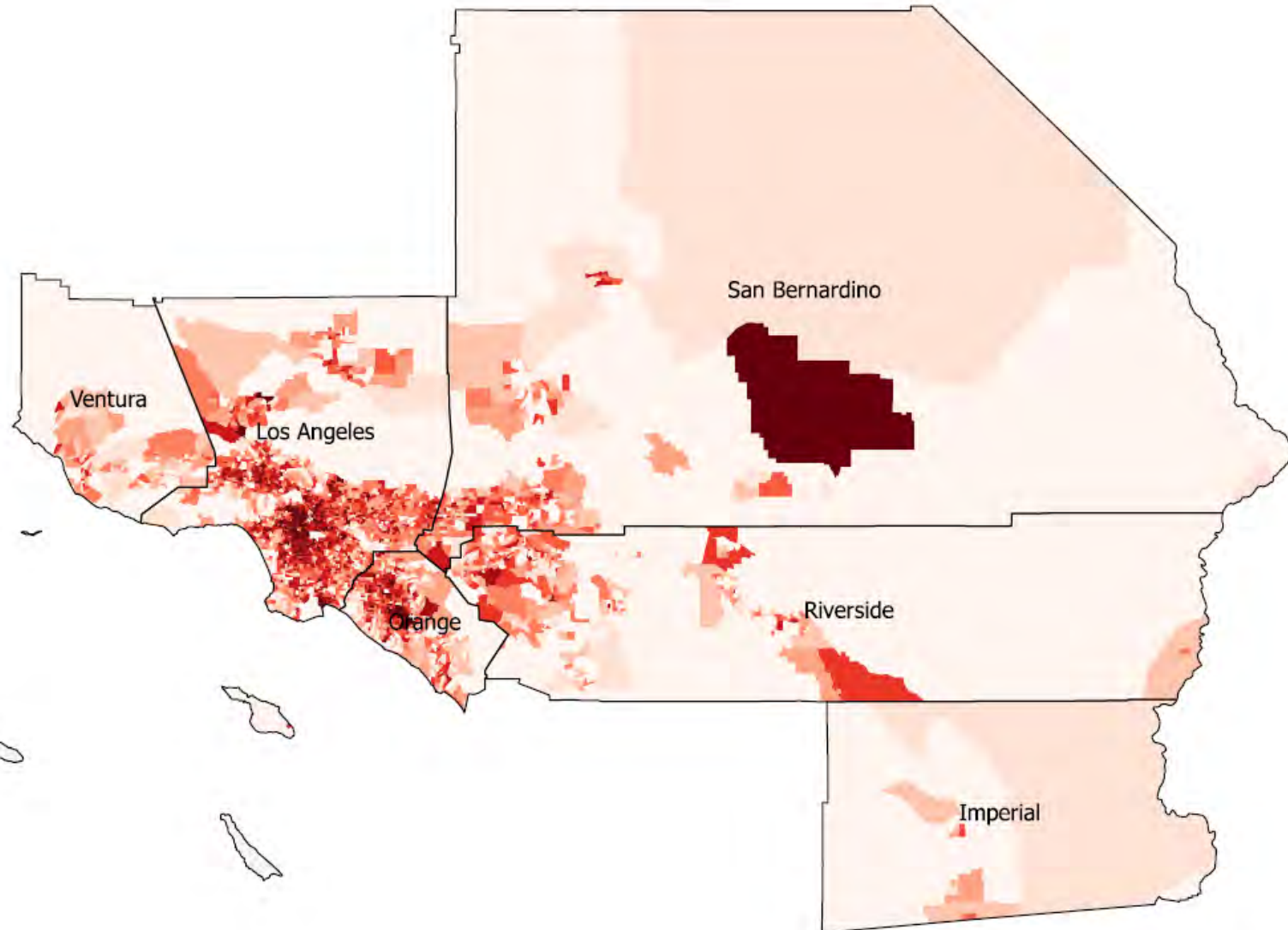
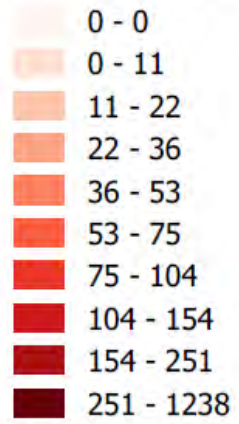
Transit commuters use transit most intensely, but non-commuters take a much larger portion of transit trips, owing to their greater numbers.

The Spatial Arrangement of Transit Use



Transit Commuters by Census Tract, 2010

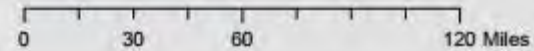
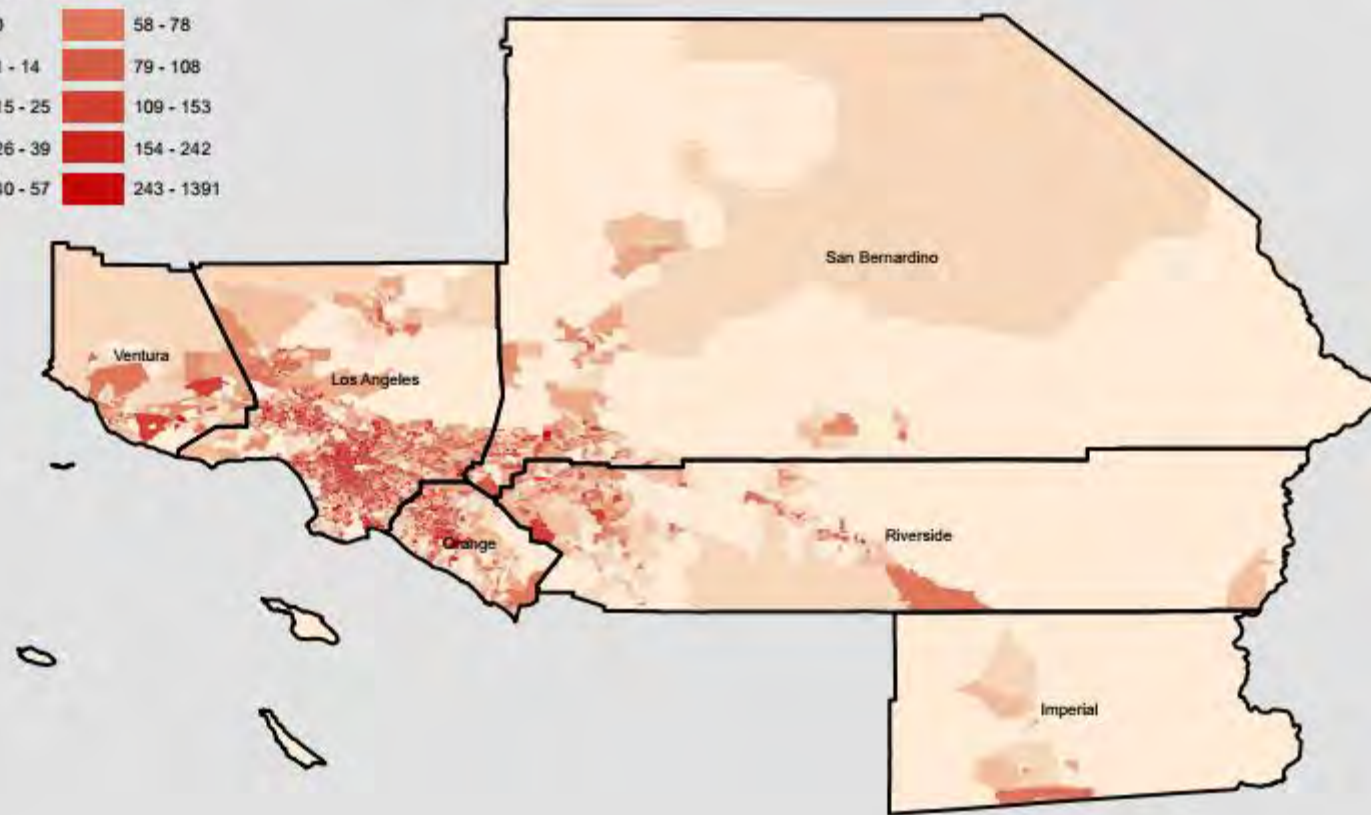
Commuters by Tract



Transit Commuting by Census Tract, 2015

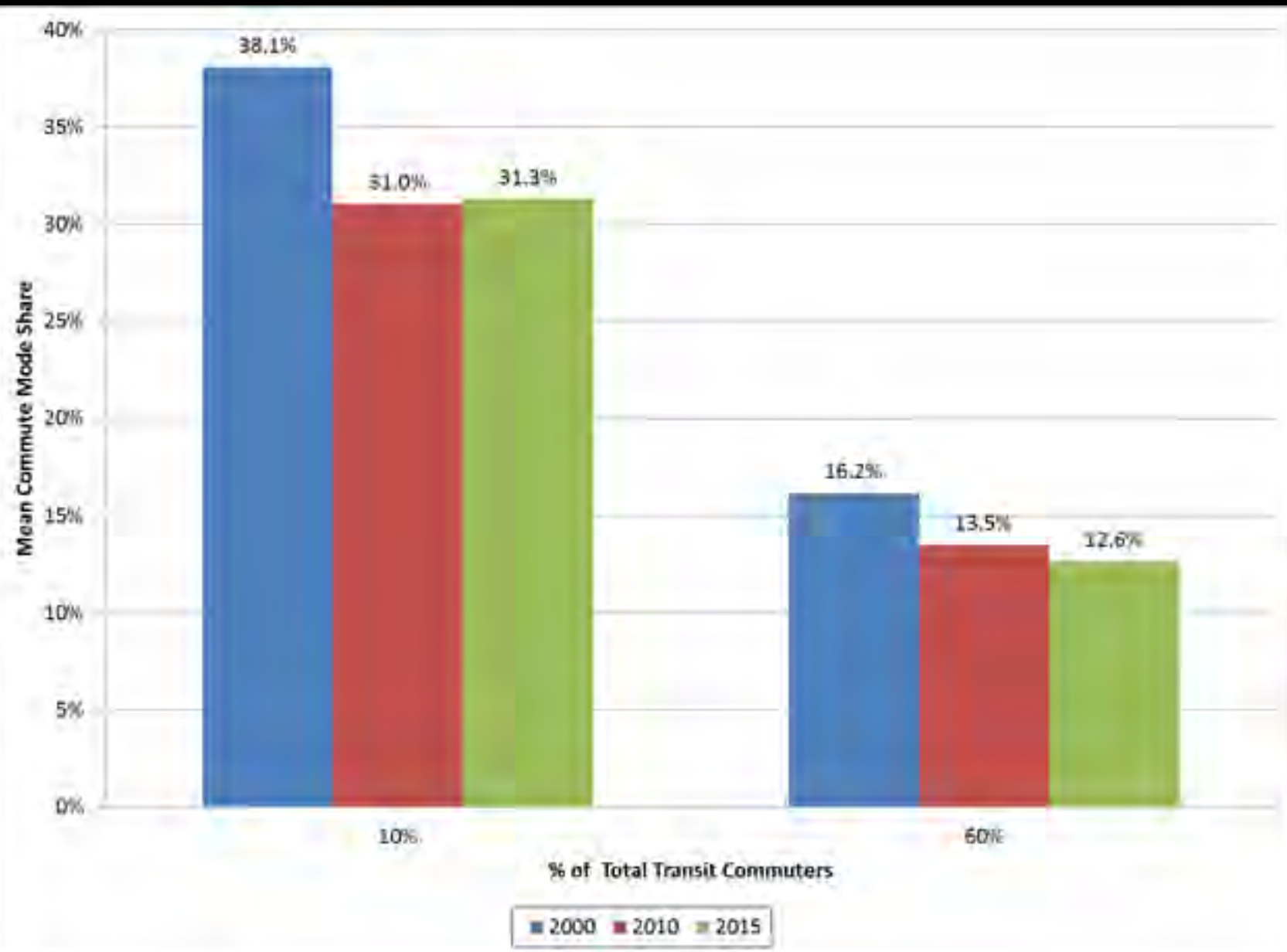


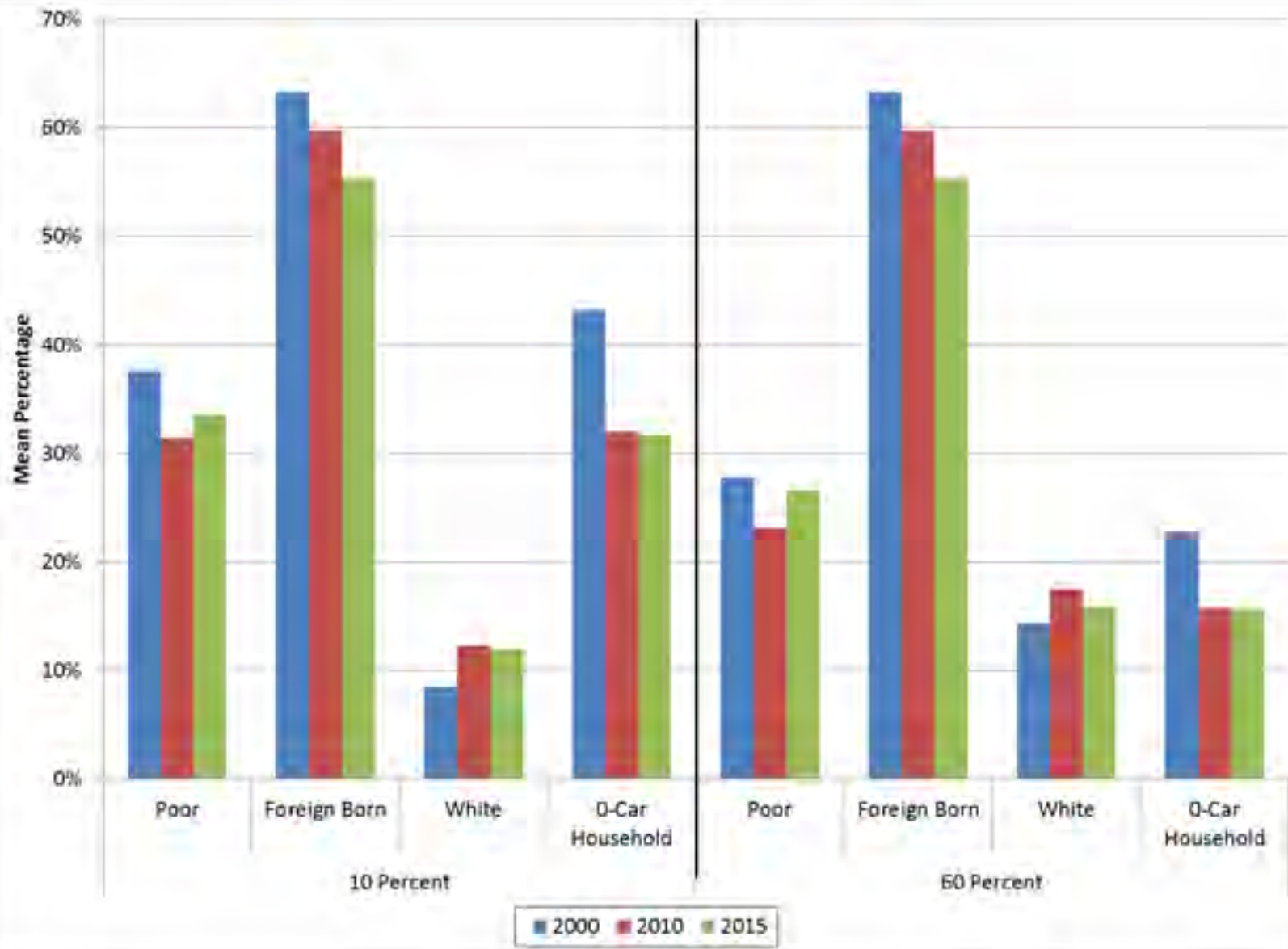
Transit Commuters



Intense Spatial Clustering of Transit Commutes

- In 2000, 2010 and 2015:
 - 10 percent of transit commuters are in less than 1.5 percent of Census tracts, which represent about 1 percent of the population and 2/10ths of 1 percent of the land area
 - 60 percent of transit commuters live in 20 percent of Census tracts, which represent about 20 percent of the population and 1-3 percent of the land area
 - Even in the highest transit use tracts, most commuters do not commute via transit (34-36 percent in tracts holding top ten, 10-11 percent in tracts holding top 60)
 - Tracts are strongly foreign-born and nonwhite
 - High but falling shares of households without vehicles

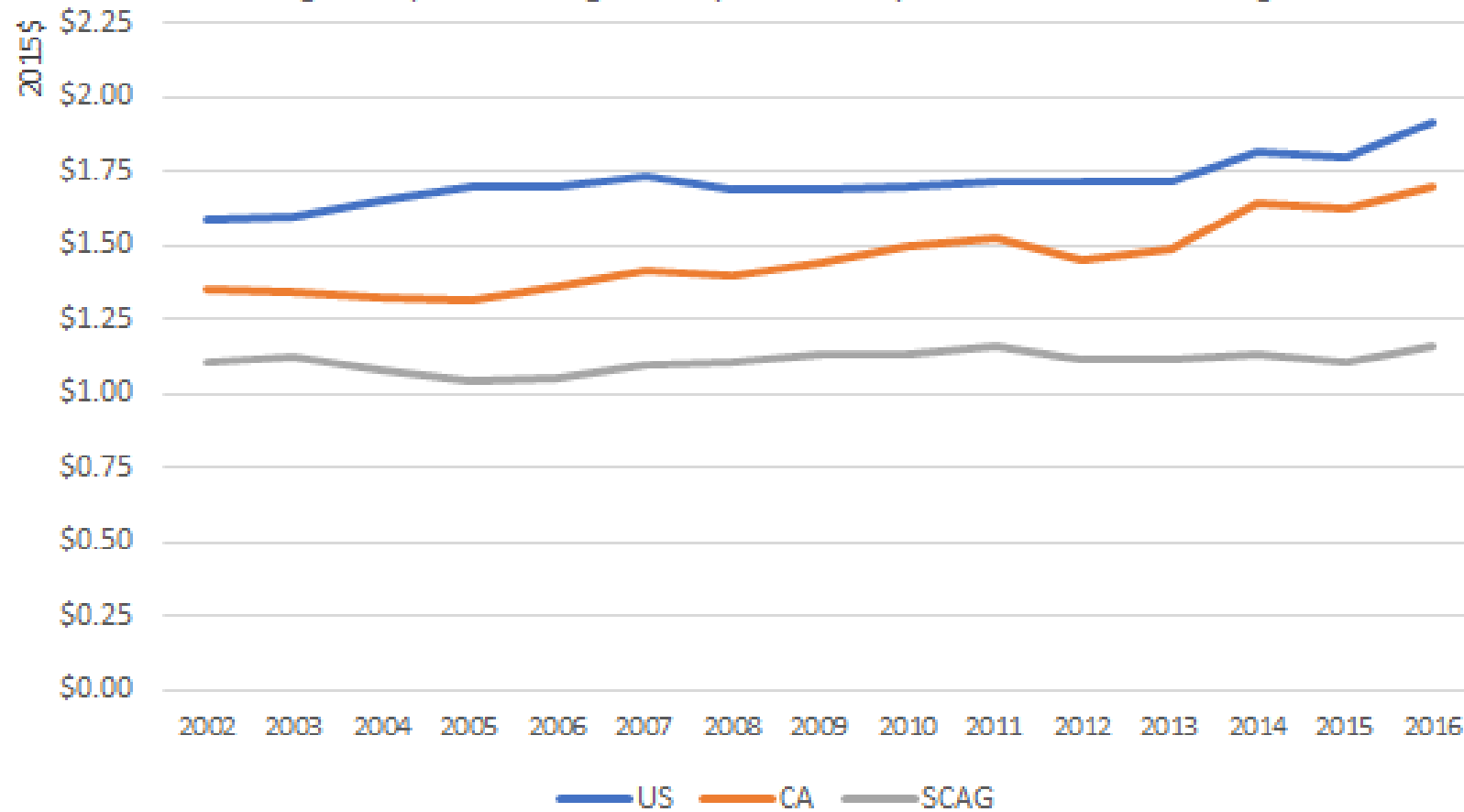




Fares

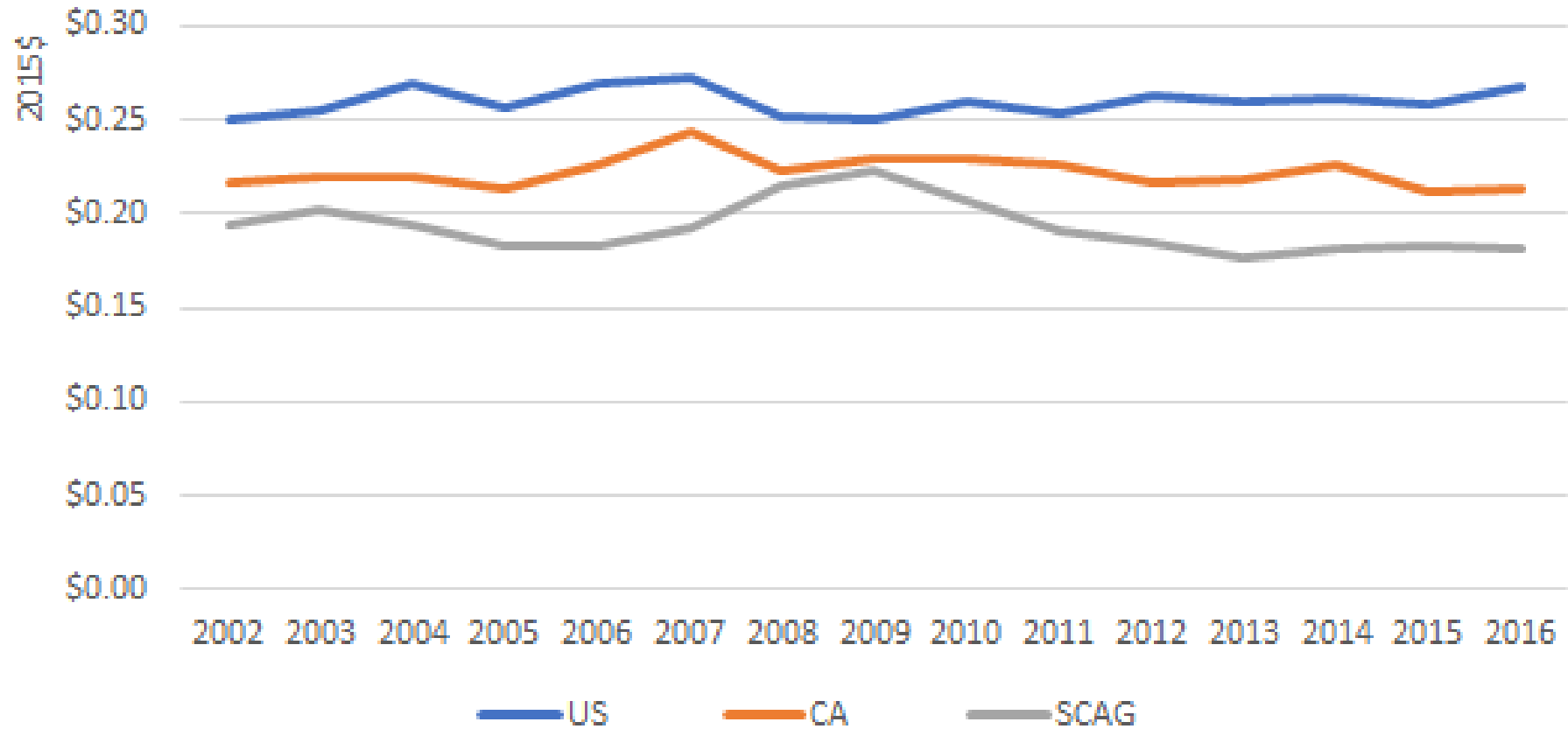
Average Fare per Boarding (2015\$)

Average fare per boarding has stayed relatively constant in the SCAG region



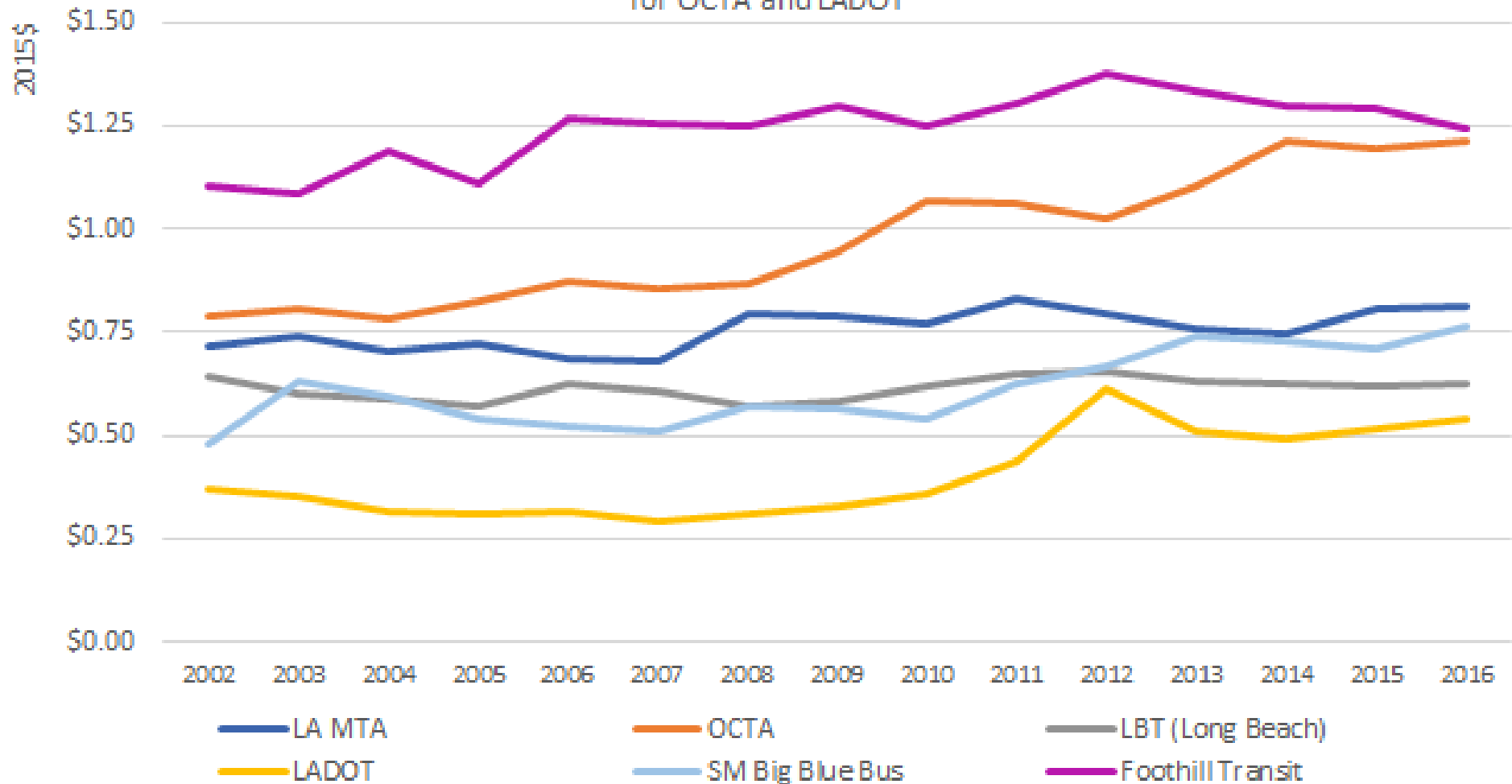
Average Fare per Passenger Mile Traveled (2015\$)

Average fare per PMT remained fairly constant, and even declined a little since 2009.



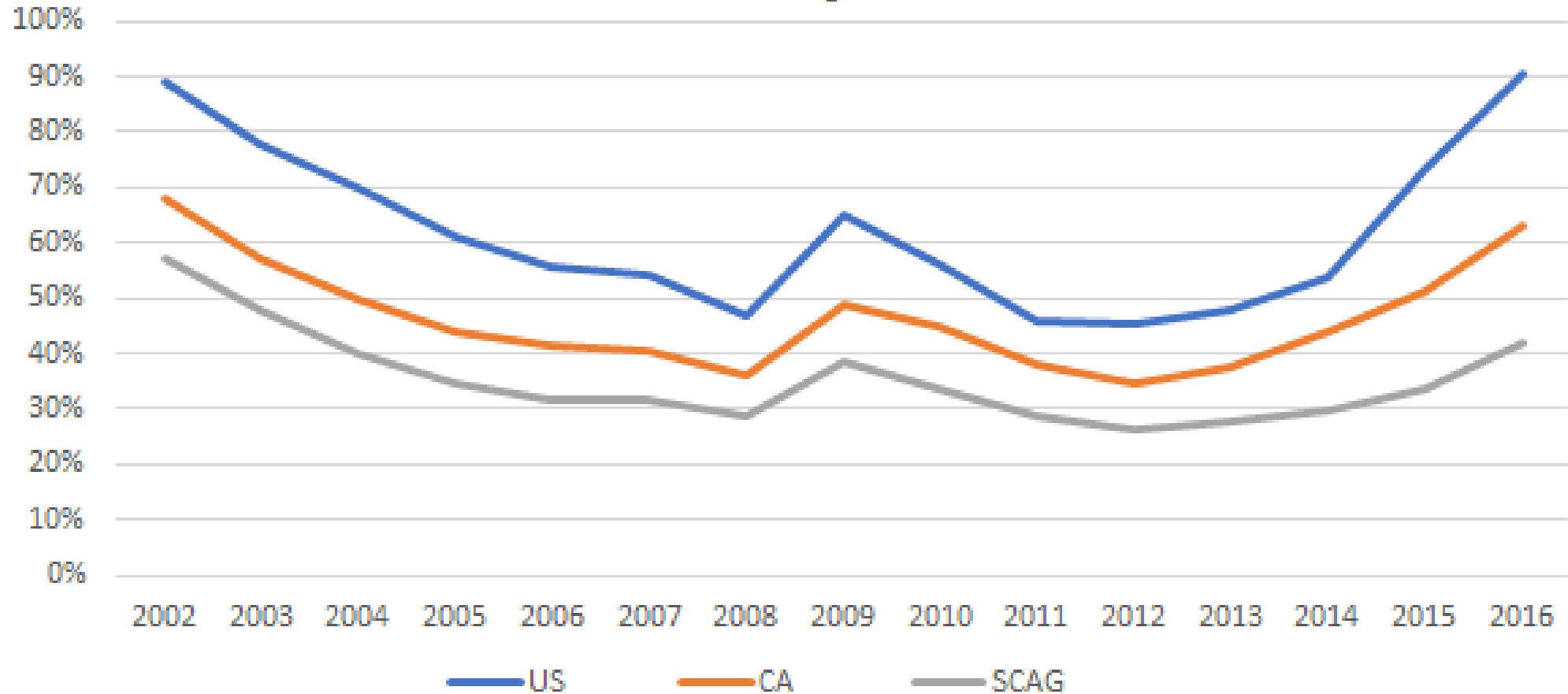
SCAG: Average Fare per Boarding for Largest Operators (2015\$)

Inflation-adjusted average fare per boarding have increased the most rapidly for OCTA and LADOT



Average Fare as a Percent of Region's Average Gas per Gallon

Average fare is consistently less than the cost of a gallon of gas, even as gas prices have been falling since 2014.



Source: NTD, 2002-2016; EIA Average Gas Price (retail regular gasoline), 2002-2016.

Note: Average LA gas prices are used for the SCAG region.

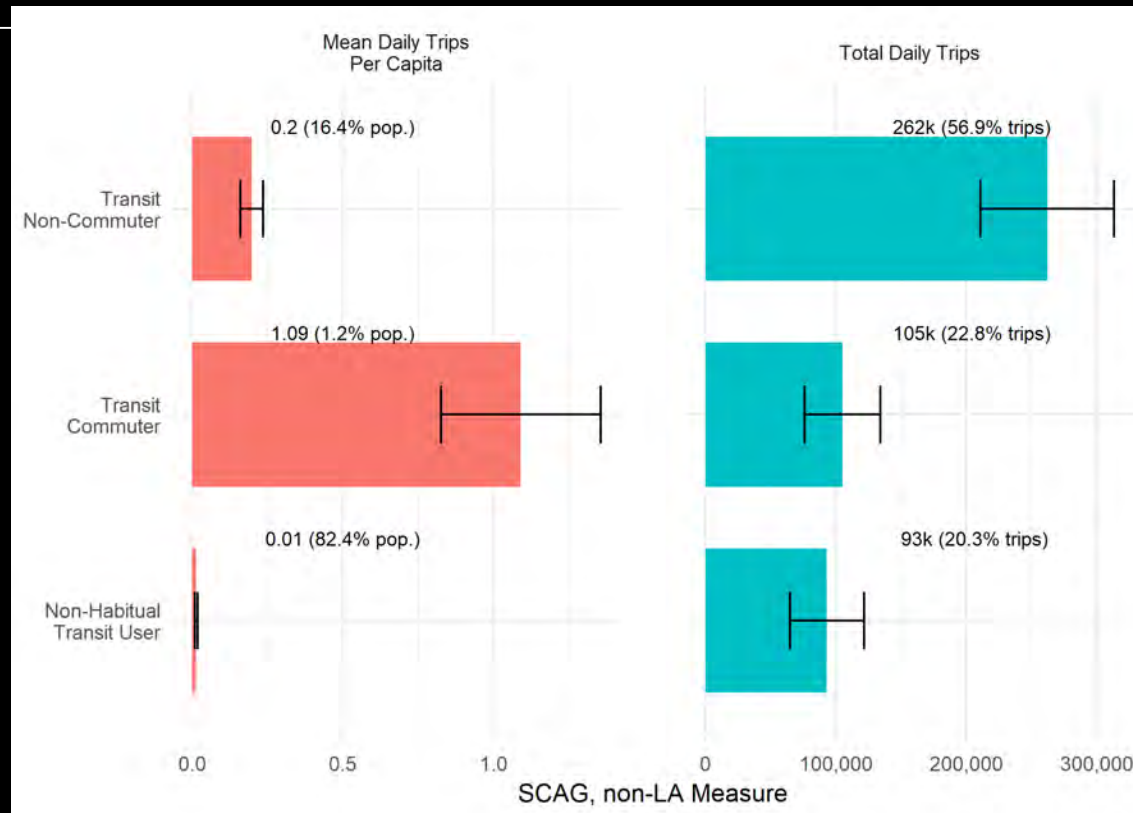
Some Final Questions

- Safety
- Service Levels

Extras

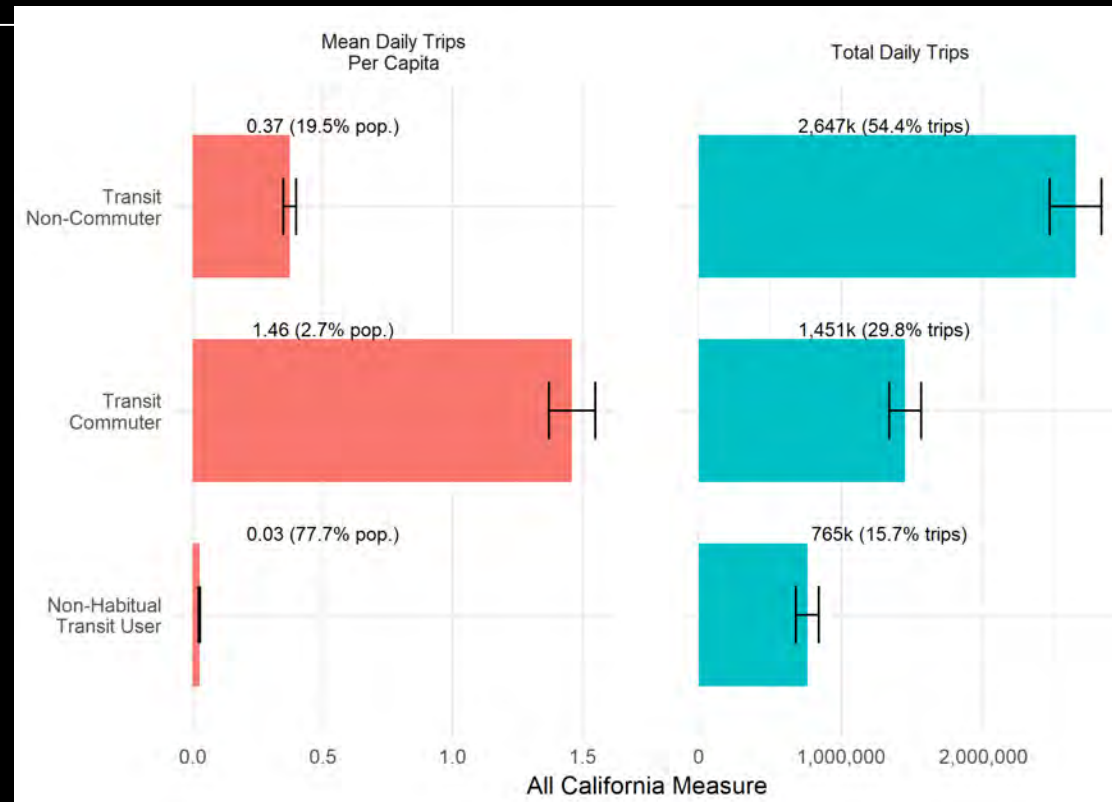
Transit Use by Transit User Type

SCAG, non-LA



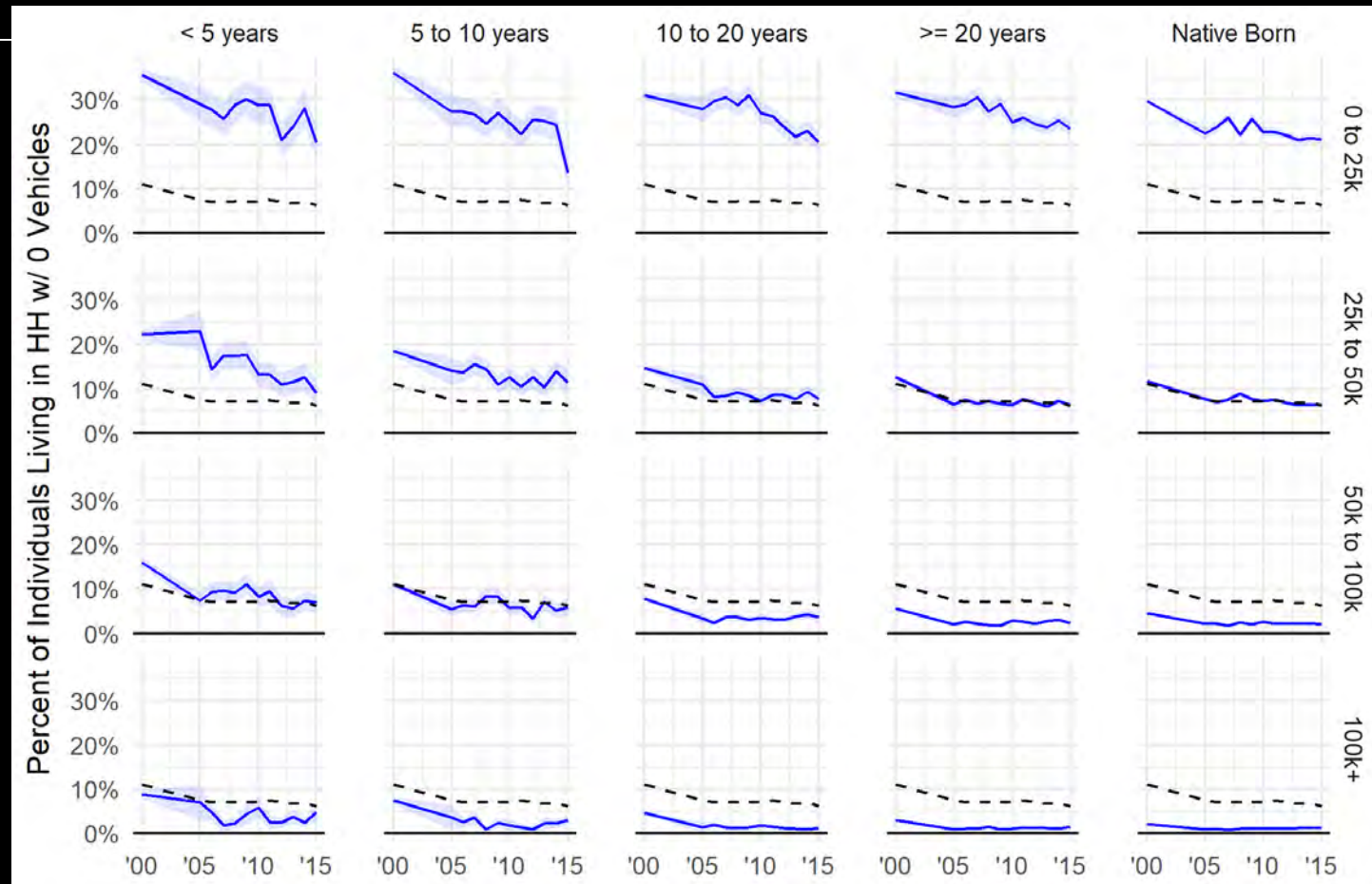
Transit commuters use transit most intensely, but non-commuters take a much larger portion of transit trips, owing to their greater numbers.

Transit Use by Transit User Type California



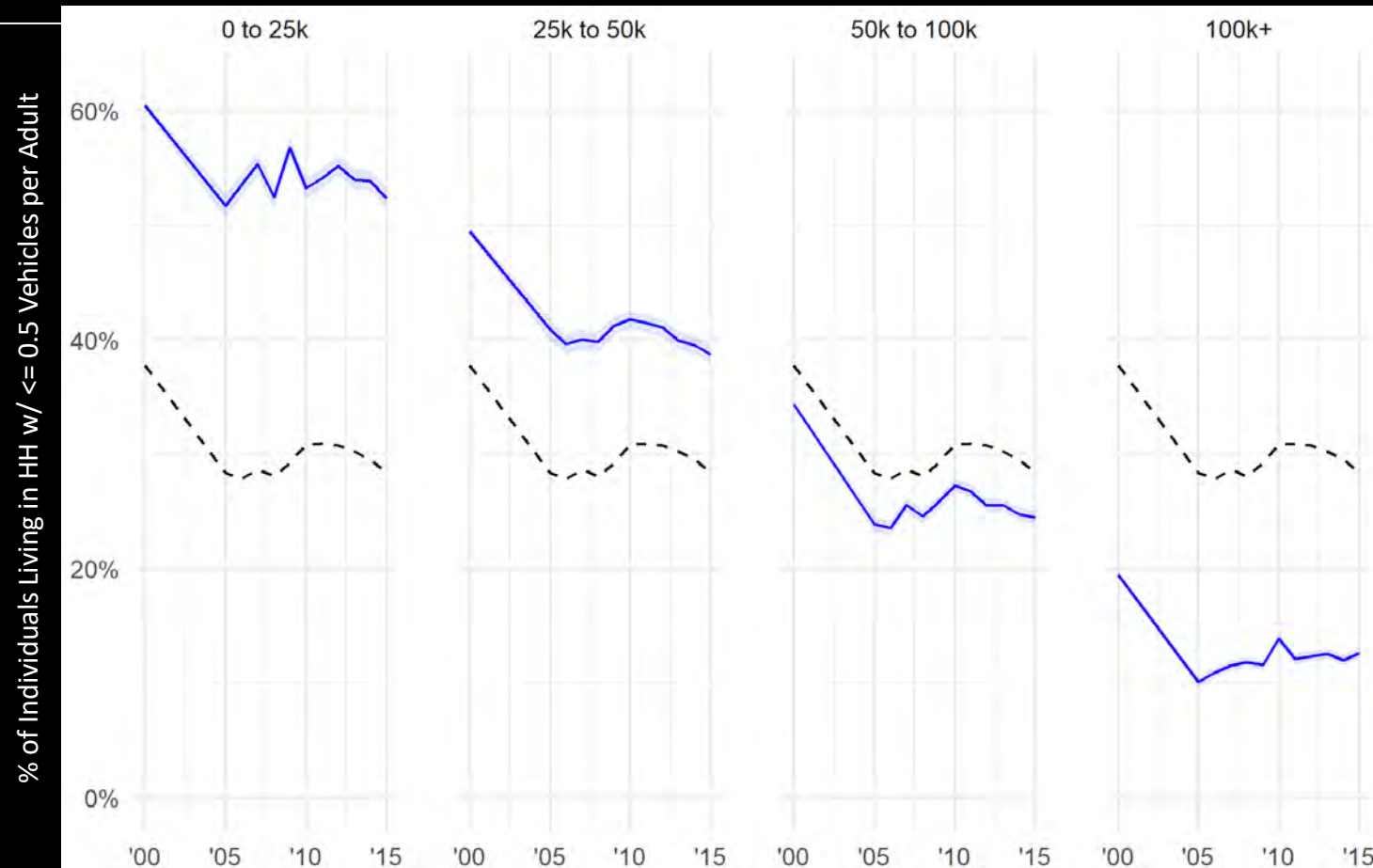
Transit commuters use transit most intensely, but non-commuters take a much larger portion of transit trips, owing to their greater numbers.

People in Carless Households by Nativity, Years in U.S., and Income, LA County, 2000-2015



Source: U.S. Census Bureau

People in Vehicle Deficit Households by Income, LA County, 2000-2015



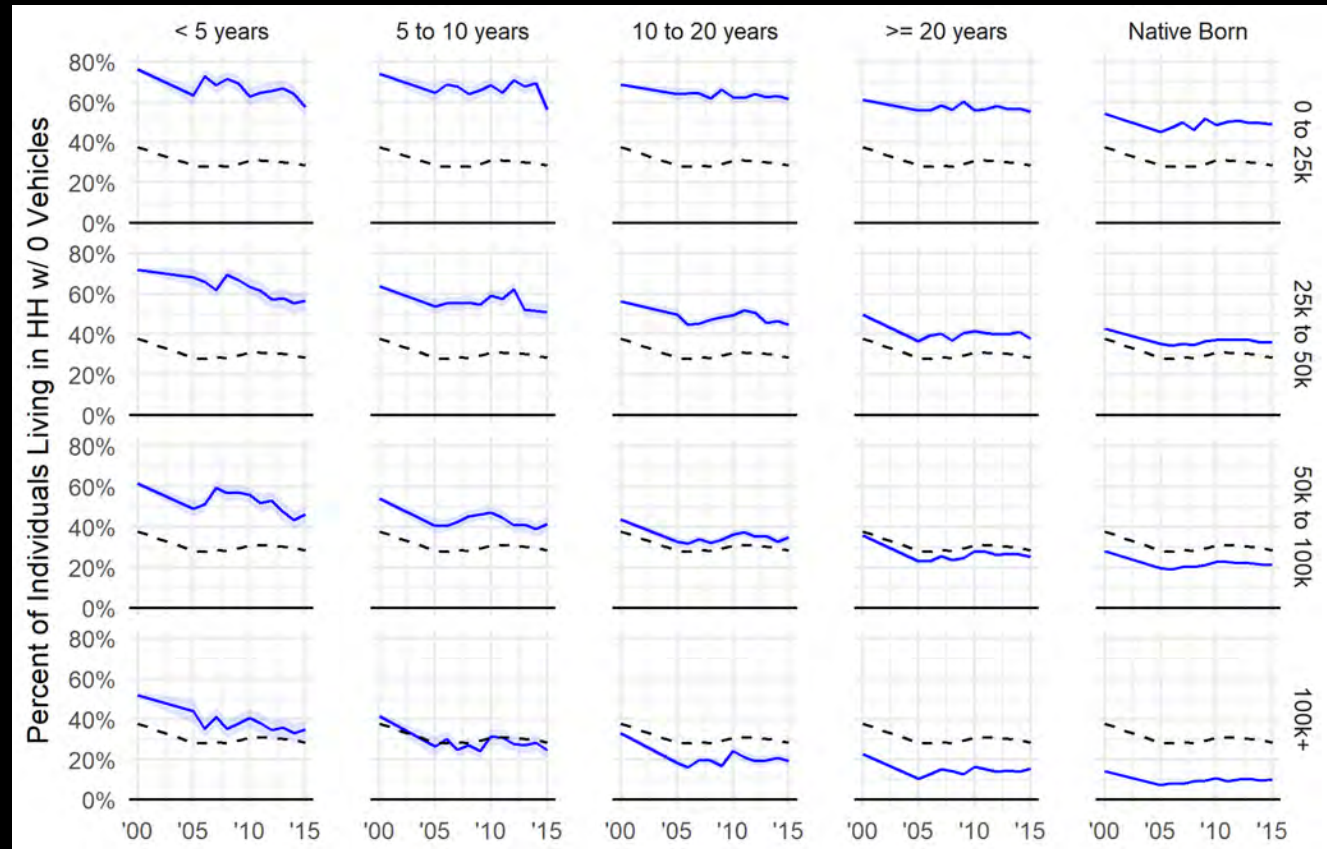
Source: U.S. Census Bureau

People in Vehicle-Deficit Households by Nativity and Years in the U.S., LA County, 2000-2015



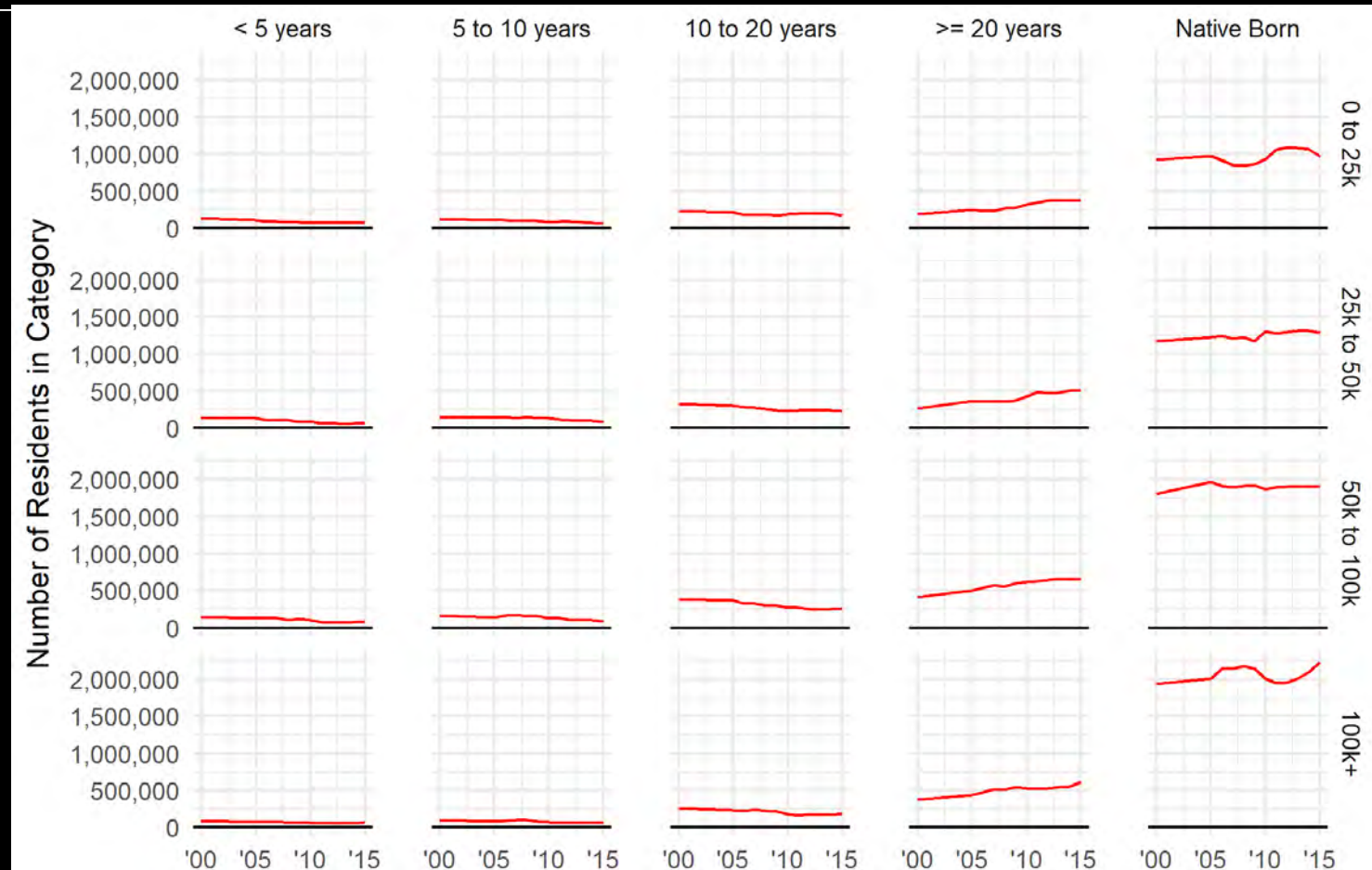
Source: U.S. Census Bureau

People in Vehicle-Deficit Households by Nativity, Years in the U.S., and Income LA County, 2000-2015



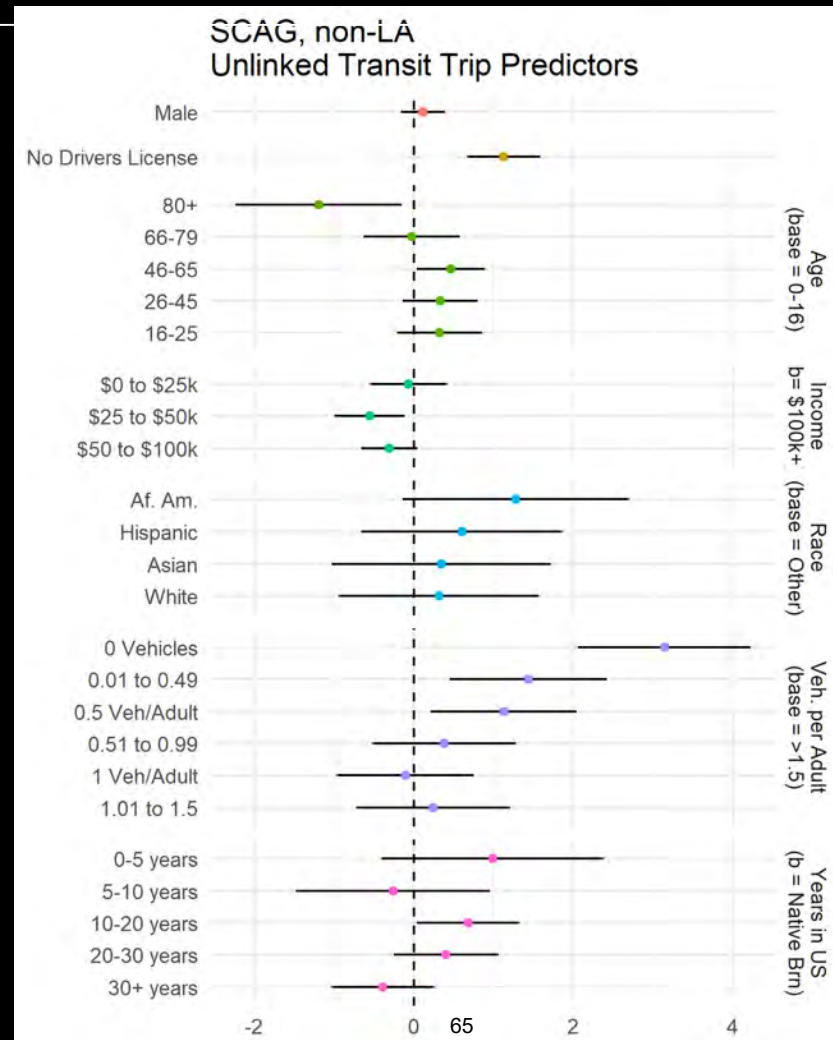
Source: U.S. Census Bureau

Population Size by Nativity, Years in the U.S., and Income, LA County, 2000-2015

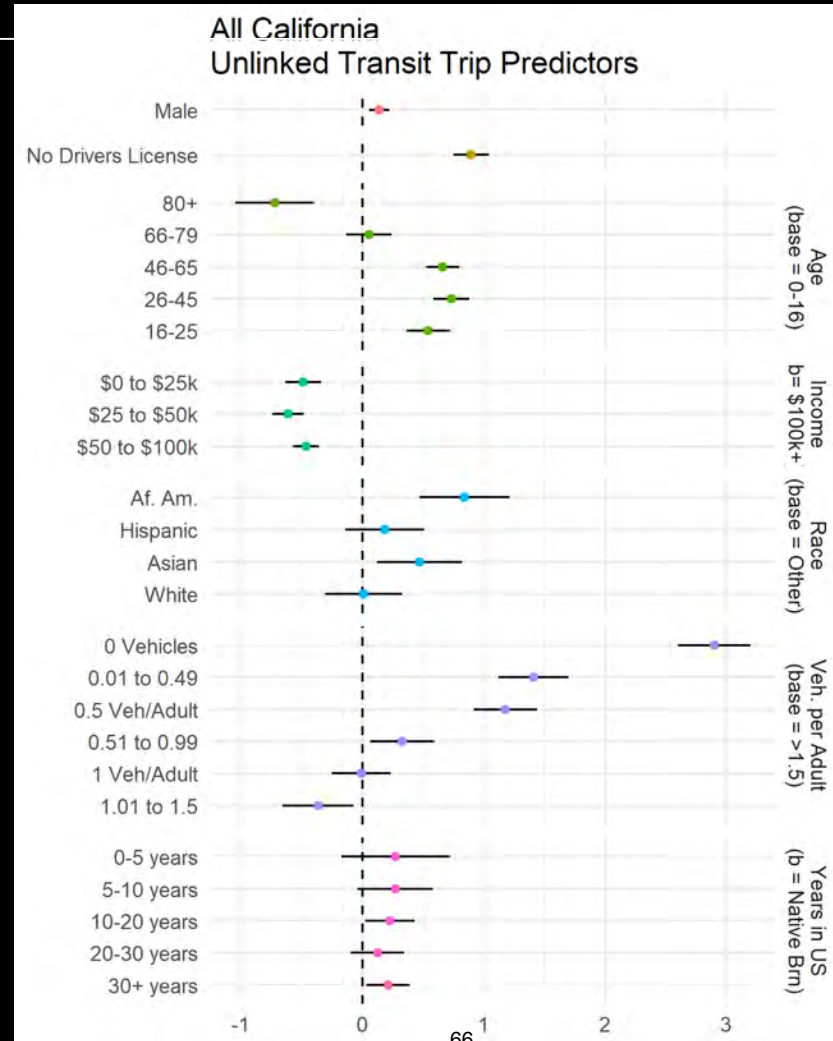


Source: U.S. Census Bureau

Predicting Transit Trips SCAG, not Los Angeles



Predicting Transit Trips California



REPORT

DATE: November 29, 2017

TO: Regional Transit Technical Advisory Committee (RTTAC)

FROM: Steve Fox, Senior Regional Planner, 213-236-1855, fox@scag.ca.gov

SUBJECT: **2020 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) High-Quality Transit Corridor (HQTC) and Major Transit Stop Methodology**

SUMMARY:

This report updates RTTAC members on SCAG’s Draft 2020 RTP/SCS HQTC and Major Transit Stop Methodology and external vetting process. Refinements have been made to the 2016 RTP/SCS process due to inquiries and input from local jurisdictions and transit agencies.

BACKGROUND:

The Sustainable Communities and Climate Protection Act of 2008, SB 375, allows for residential or mixed-use residential projects that may be exempt from, or subject to a limited review of, CEQA. The bill specifically states that these “transit priority projects” should, among other factors, be located within one-half mile of a major transit stop or HQTC.

SB 743 provides further opportunities for CEQA exemption and streamlining to facilitate transit oriented development (TOD). Specifically, certain types of projects within “transit priority areas” (TPAs) can benefit from a CEQA exemption if they are also consistent with an adopted specific plan and the regional SCS. The State Office of Planning and Research (OPR) was tasked to develop guidelines for streamlined CEQA analysis for transportation impacts of projects within TPAs.

Statute Language

Government Code Section 65088.1(e) “High-quality transit corridor” means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

Public Resources Code Section 21064.3 "Major transit stop" means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

Public Resources Code Section 21099 (a)(7) "Transit priority area" means an area within one-half mile of a major transit stop that is existing or planned, if the planned stop is scheduled to be completed within the planning horizon included in a Transportation Improvement Program adopted pursuant to Section 450.216 or 450.322 of Title 23 of the Code of Federal Regulations.

High Quality Transit Areas

“High Quality Transit Areas” or “HQTAs” are a SCAG-defined term. They are defined in SCAG’s 2016 RTP/SCS as areas within one-half mile of a fixed guideway transit stop or a bus transit corridor where buses

arrive at a frequency of every 15 minutes or less during peak commuting hours. HQTAs are not defined in statute; however, they are based on the preceding legal definitions of “major transit stop” and “high quality transit corridor” in the State Public Resources Code.

DISCUSSION:

Draft 2020 RTP/SCS HQTC and Major Transit Stop Methodology

SCAG staff is beginning the process of updating its inventory of existing and planned HQTCs and major transit stops for the 2020 RTP/SCS. The base year transit network for the 2020 RTP/SCS is 2016, and will be based primarily on data from June 2016.

RTTAC members were involved in the 2016 RTP/SCS process, and helped SCAG staff resolve issues involving interpretation of the statute and methodology, and vetting the HQTC network. At that time, SCAG staff also contacted Sacramento Area Council of Governments (SACOG), the San Francisco Bay Area Metropolitan Transportation Commission (MTC), San Diego Association of Governments (SANDAG), and OPR. It was determined that at least a couple of issues--such as whether or not to include express route alignments along freeways as HQTCs, or whether or not to average the combined frequency of multiple-line corridors to determine HQTC eligibility—were being addressed differently among the state’s major MPOs. Based on consultation with OPR, the SCAG staff developed a draft methodology that was reviewed with the RTTAC at its July 2014 meeting.

Since the adoption of the 2016 RTP/SCS, SCAG has received numerous questions regarding the identification of HQTCs and major transit stops, which prompted further development and refinement of the methodology. SCAG staff have incorporated these refinements into a methodology and guidance document (attached) to be shared with transit agencies and local jurisdictions. This methodology will be updated periodically, as needed, and brought forward to the RTTAC for review and input. Following is a discussion of the updated methodology with refinements called out.

High Quality Transit Corridors. High-Quality Transit Corridors are corridors with bus service of every 15-minutes or better in the peak periods. Peak hours are defined as 6:00 AM to 9:00 AM and 3:00 PM to 7:00 PM, based on SCAG’s regional travel demand model. If a transit operator uses a different span of hours for their peak period, SCAG will accommodate a different peak period on a case-by-case basis. The total population of a transit route’s trips during the combined seven-hour AM and PM periods will be used to determine average frequency of service, separately for each direction. Average frequency is calculated by dividing 420 minutes (the seven-hour peak converted to minutes) by the total peak trips.

A transit route’s trip that begins or ends outside of the AM and PM peak hours will only be counted if the trip’s halfway point occurs within the peak period. This is a clarification to the methodology that was not previously discussed with the RTTAC, but is necessary to ensure consistency with how the SCAG regional travel demand model determines peak period trips. Please see Examples #1 and #2 in the attached draft methodology document for more detail.

Additional requirements for a HQTC include:

- For transit routes that have different route patterns, the average frequency of service for each pattern will be calculated. The combined route patterns with common endpoints that meet the 15-minute threshold will be identified as high quality transit corridors. This is a refinement of the methodology that was previously not discussed with the RTTAC, but is necessary to address routes operating with different route patterns. Please see Example #3 in the attached draft methodology document for more detail.
- HQTCs must have at least one bus route with 15-minute or better service. If a certain corridor or arterial has more than one route operating along it for a defined length, and none of the routes has 15-minute or better frequency, then averaging the frequency of the different routes for a given segment along this corridor that would result in arriving at a better than 15-minute service does not qualify as a HQTC and is not within the intent of statute.
- Transit routes that operate in one direction only for the entire route or a portion of the route, and meet the 15-minute threshold, qualify as HQTCs. This includes, but is not limited to, routes operating on either one-way or two-way streets, one-way circulators and routes with one-way terminal loops. This is a refinement to the methodology that was not previously discussed with the RTTAC, but is necessary to include bus routes providing one-way service. Please see Example #4 in the attached draft methodology for more detail.

Route Alignment Buffering. The entire route alignment of a service that operates at better than 15-minute service must be included as a HQTC. This includes express bus services even when they are running along freeways and are not accessible via stops on the freeway right-of-way.

Major Transit Stops and Intersecting Service Transfer Zones. As defined in statute, major transit stops include the intersection of two or more HQTCs. For purposes of transferring between intersecting bus routes, SCAG uses a 500-foot buffer to determine a major transit stop. A 500-foot buffer was chosen as this distance is assumed to be a reasonable limit that a transit patron would walk to transfer between buses. This issue is not addressed in statute, and is at the discretion of the metropolitan planning organization (MPO). For example, MTC uses a 200-foot buffer for this purpose. SCAG will use its GIS database of stop locations to identify major transit stops. A caveat is that the spatial accuracy of bus stop locations is therefore limited to that of the data source. The draft methodology advises local jurisdictions to verify this data using aerial photography, site visits or other methods. Please see Example #5 in the attached draft methodology for more detail.

The intersecting bus routes must diverge into separate corridors or generally be perpendicular to each other. There may be rare instances where two bus routes that operate in parallel for a short distance, but otherwise diverge to separate corridors, may be justified as intersecting bus routes. This clarification to the methodology was not previously discussed with the RTTAC, but was developed in response to questions received from a local jurisdiction.

Lastly, Amtrak stations with only limited long-distance service are not automatically included as a major transit stop unless requested by a local agency. This clarification to the methodology was not previously discussed with the RTTAC, but was developed in response to questions received from a local jurisdiction.

2020 Process Schedule

Below is a tentative schedule for the 2020 RTP/SCS HQTC development and external vetting process.

Identify initial 2016 HQTCs and Major Transit Stops. SCAG staff will identify the 2016 HQTC network based on SCAG base year model network. - November 2017 through January 2018

Verify 2016 Transit Network 15-Minute Frequency Services. SCAG staff will verify 15-minute or better frequency services with transit operators and county transportation commissions (CTCs) to accurately inventory transit services. - January 2018 through March 2018

Complete Draft Data Set and Maps. SCAG staff will complete the draft 2016 HQTC and major transit stop data set and maps, incorporating input received from transit operators and CTCs. – April 2018 through May 2018

Complete External Review of Draft Data Set and Maps. The final draft 2016 HQTC and major transit stop data set and maps will be vetted externally with transit operators and CTCs. – June 2018 through July 2018

Finalize Data Set and Maps. Once all outstanding issues with transit operators and CTCs are resolved, the final 2016 HQTCs and major transit stops will be incorporated into the 2020 RTP/SCS. - August 2018 through September 2018

NEXT STEPS:

SCAG staff will incorporate comments and feedback from the RTTAC and finalize the HQTC and Major Transit Stop Methodology document.

ATTACHMENTS:

1. Draft HQTC and Major Transit Stop Methodology
2. Presentation

DRAFT FOR DISCUSSION – HIGH QUALITY TRANSIT CORRIDOR AND MAJOR TRANSIT STOP
METHODOLOGY

INTRODUCTION

SCAG developed this guidance to assist local jurisdictions and transit agencies in identifying existing major transit stops and high quality transit corridors in accordance with applicable state law and consistent with SCAG’s adopted Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). This guidance is not intended to supersede or replace state law defining high quality transit corridors, major transit stops, and transit priority areas. This guidance may be periodically updated to incorporate revisions or clarifications. Questions regarding the guidance should be directed to Steve Fox, at fox@scag.ca.gov and 213-236-1855, or Philip Law, at law@scag.ca.gov and 213-236-1841.

BACKGROUND

SCAG updates its inventory of existing and planned major transit stops and high quality transit corridors with each full update of the RTP/SCS, once every four years. Data for the “existing” or “base year” condition for the RTP/SCS are typically obtained several years before plan adoption. For example, the base year transit network for the upcoming 2020 RTP/SCS is based primarily on data for June 2016. This inventory of existing major transit stops and high quality transit corridors is therefore only a snapshot in time as of June 2016, and does not reflect the existing levels of transit service for any other timeframe.

Transit agencies make adjustments to bus service on a regular basis. Therefore, given the limits of the base year transit network in SCAG’s RTP/SCS, local jurisdictions are encouraged to consult with their appropriate transit provider(s) to obtain the latest information on existing transit routes and frequencies.

METHODOLOGY

SCAG uses the following definitions of terms and methodology for updating the existing and planned major transit stops and high quality transit corridors in the RTP/SCS.

High Quality Transit Corridor

A “high-quality transit corridor” means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours. (CA Public Resources Code Section 21155(b))

- Peak hours are 6 AM-9 AM and 3 PM-7 PM, based on SCAG’s regional travel demand model. A transit operator may have a slightly different, board-adopted or de facto peak period; in such cases SCAG will accept requests to use operator-specific peak-hour periods on a case-by-case basis.
- The total population of a transit route’s trips during the combined seven-hour AM and PM periods will be used to determine average frequency of service, separately for each direction. Average frequency is calculated by dividing 420 minutes (the seven-hour peak converted to minutes) by the total peak trips. The average frequency in each direction should be 15 minutes

or less in order for the route to qualify. The threshold is strict, at 15.0 minutes. See Examples #1 and #2 for more detail.

- A transit route's trip that begins or ends outside of the AM and PM peak hours will only be counted if the trip's halfway point occurs within the peak period. This is consistent with how SCAG's regional travel demand model distinguishes bus peak period service from off-peak period service.
- For a transit route that has different route patterns (e.g., certain trips begin and/or end at different stops), the average frequency of service for each pattern will be calculated. The combined route patterns with common endpoints that meet the 15-minute threshold are identified as high quality transit corridors. See Example #3 for more detail.
- The corridor must have at least one bus route with average frequency of service interval of 15 minutes or less, in each direction. Separate but overlapping bus routes that do not individually meet the 15-minute threshold may not be combined in order to qualify as a high quality transit corridor.
- The entire alignment of a bus route with average frequency of service interval of 15 minutes or less must be included, such as express bus services that operate along freeways where there are no stops along the freeway right-of-way.
- Transit routes that operate in one direction only for the entire route or a portion of the route, and meet the 15-minute threshold, qualify as high quality transit corridors. This includes, but is not limited to, routes operating on either one-way or two-way streets, one-way circulators and routes with one-way terminal loops. See Example #4 for more detail.

Major Transit Stop and Transit Priority Area

A "major transit stop" means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods. (CA Public Resources Code Section 21064.3)

Note that, regarding implementation of the Sustainable Communities Strategy, CA Public Resources Code Section 21155(b) states, "A major transit stop is as defined in Section 21064.3, except that, for purposes of this section, it also includes major transit stops that are included in the applicable regional transportation plan."

A "transit priority area" means an area within one-half mile of a major transit stop that is existing or planned, if the planned stop is scheduled to be completed within the planning horizon included in a Transportation Improvement Program adopted pursuant to Section 450.216 or 450.322 of Title 23 of the Code of Federal Regulations. (CA Public Resources Code Section 21099(a)(7))

- Where two bus routes intersect, both of the intersecting routes must meet the 15-minute threshold (and therefore, each must be a high quality transit corridor) for the intersection to qualify as a major transit stop.

- For purposes of transferring between intersecting bus routes, SCAG uses a 500-foot buffer to determine a major transit stop. In other words, two intersecting high quality transit corridors must have stops that are within 500 feet of each other to qualify as a major transit stop. A 500-foot buffer is assumed to be a reasonable limit to the distance that a transit patron would walk to transfer between bus routes. See Example #5 for more detail.
- SCAG uses its geographic information systems (GIS) database of stop locations to identify major transit stops. The spatial accuracy of bus stop locations is therefore limited to that of the source data. Local jurisdictions should verify that bus stops are within 500 feet of each other using aerial photography, site visits or other methods.
- The intersecting bus routes must diverge into separate corridors or generally be perpendicular to each other. There may be rare instances where two bus routes that operate in parallel for a short distance, but otherwise diverge to separate corridors, may be justified as intersecting bus routes.
- Amtrak stations with only limited long-distance service are not automatically included as a “major transit stop” unless requested by a local agency.

High Quality Transit Area

“High quality transit areas” or “HQTAs” are defined in SCAG’s 2016 RTP/SCS as areas within one-half mile of a fixed guideway transit stop or a bus transit corridor where buses arrive at a frequency of every 15 minutes or less during peak commuting hours. HQTAs are not defined in statute; however, they are based on the definitions of “major transit stop” and “high quality transit corridor” as identified in the State Public Resources Code.

EXAMPLES

The following examples demonstrate SCAG’s application of the methodology using published bus schedules.

1. High quality transit corridor
2. Not a high quality transit corridor
3. Bus route with multiple patterns
4. Bus routes with one-way directional service
5. Major transit stop

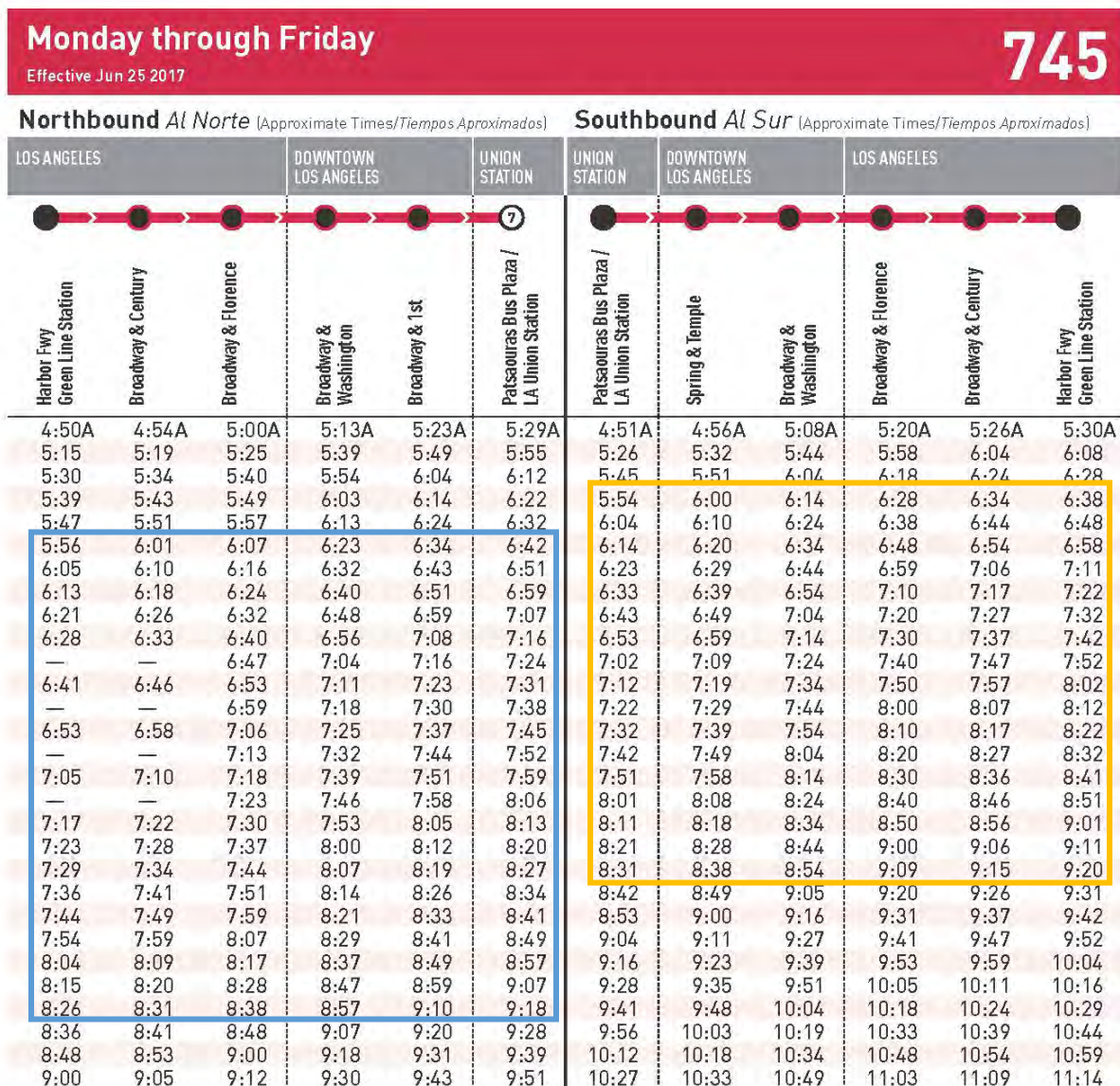
Example 1 – High Quality Transit Corridor

Metro Line 745 qualifies as a high quality transit corridor.

Direction	AM Peak Trips	PM Peak Trips	Total Peak Trips	Average Headway
Northbound	17	22	39	10.8 minutes
Southbound	17	25	42	10.0 minutes

Note that, in the northbound direction, the trip beginning at 8:36am is not counted. That trip ends at 9:28am, with the halfway point occurring at 9:02am, which is outside of the AM peak period. (The four truncated northbound AM trips that begin at Broadway & Florence are not counted – see Example 3 for further discussion of bus routes with multiple patterns.)

In the southbound direction, the trip beginning at 5:54am is counted. That trip ends at 6:38am, with the halfway point occurring at 6:16am, which is within the AM peak period.



Monday through Friday

Effective Jun 25 2017

745

Northbound *Al Norte* (Approximate Times/Tiempos Aproximados)

Southbound *Al Sur* (Approximate Times/Tiempos Aproximados)

LOS ANGELES			DOWNTOWN LOS ANGELES		UNION STATION	UNION STATION	DOWNTOWN LOS ANGELES		LOS ANGELES		
Harbor Fwy Green Line Station	Broadway & Century	Broadway & Florence	Broadway & Washington	Broadway & 1st	Patsaouras Bus Plaza / LA Union Station	Patsaouras Bus Plaza / LA Union Station	Spring & Temple	Broadway & Washington	Broadway & Florence	Broadway & Century	Harbor Fwy Green Line Station
12:13P	12:18	12:25	12:41	12:54	1:02	1:39	1:45	2:03	2:19	2:26	2:31
12:28	12:33	12:40	12:56	1:09	1:17	1:51	1:58	2:16	2:32	2:39	2:44
12:43	12:48	12:55	1:11	1:24	1:32	2:04	2:11	2:29	2:47	2:54	2:59
12:58	1:03	1:10	1:26	1:39	1:47	2:15	2:22	2:41	2:59	3:06	3:11
1:12	1:17	1:24	1:40	1:53	2:01	2:25	2:32	2:51	3:09	3:16	3:21
1:25	1:30	1:37	1:53	2:06	2:14	2:35	2:42	3:01	3:19	3:26	3:31
1:37	1:42	1:49	2:05	2:18	2:26	2:45	2:52	3:11	3:30	3:37	3:42
1:48	1:53	2:00	2:16	2:29	2:37	2:54	3:01	3:20	3:39	3:46	3:51
2:00	2:05	2:13	2:29	2:43	2:51	3:03	3:10	3:29	3:48	3:55	4:00
2:12	2:17	2:25	2:41	2:55	3:03	3:12	3:19	3:38	3:57	4:04	4:09
2:24	2:29	2:37	2:53	3:07	3:15	3:21	3:28	3:47	4:07	4:14	4:19
2:35	2:40	2:48	3:04	3:18	3:26	3:29	3:36	3:56	4:16	4:23	4:28
2:45	2:50	2:58	3:15	3:29	3:37	3:37	3:44	4:04	4:24	4:31	4:36
2:55	3:00	3:08	3:25	3:39	3:47	3:45	3:52	4:12	4:32	4:39	4:44
3:05	3:10	3:18	3:35	3:49	3:57	3:53	4:00	4:20	4:40	4:47	4:52
3:15	3:20	3:28	3:45	4:00	4:09	4:01	4:08	4:28	4:48	4:55	5:00
3:25	3:30	3:38	3:55	4:10	4:19	4:09	4:16	4:36	4:56	5:03	5:08
3:34	3:40	3:48	4:06	4:21	4:30	4:17	4:24	4:45	5:05	5:12	5:17
3:44	3:50	3:58	4:16	4:31	4:40	4:26	4:33	4:54	5:15	5:22	5:27
3:54	4:00	4:08	4:26	4:41	4:50	4:35	4:42	5:03	5:25	5:32	5:37
4:04	4:10	4:18	4:36	4:51	5:00	4:44	4:51	5:12	5:34	5:41	5:46
4:14	4:20	4:28	4:46	5:01	5:10	4:53	5:00	5:21	5:43	5:50	5:55
4:24	4:30	4:38	4:56	5:13	5:22	5:03	5:10	5:31	5:54	6:01	6:06
4:34	4:40	4:48	5:06	5:24	5:33	5:12	5:19	5:41	6:04	6:11	6:16
4:43	4:49	4:57	5:16	5:34	5:43	5:20	5:27	5:51	6:14	6:21	6:26
4:53	4:59	5:07	5:26	5:44	5:53	5:30	5:37	6:01	6:24	6:31	6:36
5:03	5:09	5:17	5:36	5:54	6:03	5:40	5:47	6:11	6:34	6:41	6:46
5:13	5:19	5:27	5:46	6:04	6:13	5:52	5:59	6:22	6:43	6:50	6:55
5:25	5:31	5:38	5:57	6:13	6:22	6:05	6:12	6:34	6:53	7:00	7:05
5:36	5:42	5:49	6:08	6:24	6:32	6:22	6:29	6:46	7:05	7:12	7:17
5:49	5:55	6:02	6:21	6:36	6:42	6:36	6:43	7:00	7:18	7:25	7:30
6:04	6:09	6:16	6:35	6:49	6:55	6:51	6:58	7:15	7:32	7:38	7:43
6:31	6:36	6:43	7:01	7:14	7:20	7:12	7:19	7:35	7:52	7:58	8:02
7:01	7:06	7:12	7:28	7:41	7:47	7:37	7:43	7:58	8:12	8:18	8:22
7:29	7:34	7:40	7:56	8:08	8:14	8:03	8:09	8:23	8:36	8:42	8:46
7:59	8:04	8:10	8:24	8:35	8:41	8:30	8:36	8:50	9:03	9:09	9:13
8:30	8:35	8:41	8:55	9:06	9:12						

Example 2 – Not a High Quality Transit Corridor

Metro Line 218 does not qualify as a high quality transit corridor.

Direction	AM Peak Trips	PM Peak Trips	Total Peak Trips	Average Headway
Northbound	6	7	13	32.3 minutes
Southbound	6	6	12	35.0 minutes

Note that, in the northbound direction, the trip beginning at 6:49pm is not counted. That trip ends at 7:35pm, with the halfway point occurring at 7:12pm, which is outside of the PM peak period.

In the southbound direction, the trip beginning at 2:35pm is counted. That trip ends at 3:25pm, with the halfway point occurring at 3:00pm, which is the beginning of the PM peak period.

Monday through Friday Effective Dec 11 2016						218					
Northbound (Approximate Times)						Southbound (Approximate Times)					
LOS ANGELES	PARK LA BREA	WEST HOLLYWOOD	LOS ANGELES	STUDIO CITY	STUDIO CITY	LOS ANGELES	WEST HOLLYWOOD	PARK LA BREA	LOS ANGELES		
1	2	3	4	5	6	5	4	3	2	1	
Cedars-Sinai Medical Center	Fairfax & 3rd	Fairfax & Santa Monica	Laurel Canyon & Sunset	Laurel Canyon & Mulholland	Ventura Pl & Ventura Bl	Ventura Pl & Ventura Bl	Laurel Canyon & Mulholland	Laurel Canyon & Sunset	Fairfax & Santa Monica	Fairfax & 3rd	Cedars-Sinai Medical Center
6:20A	6:27A	6:34A	6:37A	6:45A	6:53A	5:41A	5:49A	5:56A	6:00A	6:06A	6:14A
6:47	6:54	7:01	7:05	7:13	7:21	6:06	6:15	6:22	6:26	6:32	6:40
7:07	7:15	7:23	7:27	7:35	7:44	6:25	6:34	6:41	6:46	6:52	7:00
7:31	7:39	7:48	7:52	8:00	8:09	6:46	6:56	7:03	7:08	7:15	7:23
7:59	8:07	8:16	8:21	8:30	8:39	7:09	7:21	7:29	7:34	7:41	7:51
8:31	8:39	8:47	8:51	9:00	9:08	7:35	7:49	7:59	8:05	8:13	8:23
9:07	9:15	9:22	9:26	9:35	9:43	8:12	8:24	8:35	8:41	8:49	8:59
9:43	9:51	9:58	10:02	10:11	10:19	8:48	9:00	9:11	9:17	9:25	9:35
10:19	10:27	10:35	10:39	10:48	10:56	9:23	9:34	9:45	9:51	9:59	10:09
10:54	11:02	11:10	11:14	11:23	11:31	9:58	10:09	10:19	10:25	10:33	10:43
11:28	11:37	11:45	11:49	11:58	12:07P	10:33	10:43	10:52	10:58	11:06	11:16
12:02P	12:11P	12:20P	12:24P	12:33P	12:42	11:08	11:18	11:27	11:33	11:43	11:53
12:36	12:45	12:54	12:59	1:08	1:17	11:41	11:51	11:59	12:06P	12:17P	12:28P
1:10	1:19	1:28	1:33	1:43	1:52	12:16P	12:26P	12:34P	12:40	12:51	1:02
1:44	1:53	2:02	2:07	2:17	2:27	12:50	1:00	1:08	1:14	1:25	1:36
2:21	2:30	2:40	2:45	2:56	3:07	1:25	1:35	1:43	1:50	2:01	2:12
2:56	3:06	3:17	3:22	3:34	3:45	2:00	2:11	2:19	2:26	2:37	2:48
3:31	3:41	3:53	3:59	4:13	4:24	2:35	2:46	2:54	3:01	3:13	3:25
4:06	4:16	4:28	4:34	4:48	4:59	3:11	3:22	3:29	3:36	3:48	4:00
4:40	4:50	5:02	5:09	5:25	5:35	3:45	3:56	4:03	4:11	4:21	4:33
5:12	5:23	5:35	5:41	5:57	6:05	4:18	4:28	4:36	4:43	4:52	5:03
5:44	5:56	6:08	6:14	6:29	6:37	4:50	5:00	5:08	5:15	5:24	5:35
6:16	6:28	6:39	6:45	6:59	7:07	5:22	5:33	5:41	5:48	5:57	6:08
6:49	6:59	7:09	7:14	7:27	7:35	5:57	6:08	6:16	6:23	6:32	6:41
7:27	7:36	7:44	7:49	7:59	8:06	6:33	6:42	6:50	6:57	7:04	7:13
8:05	8:13	8:20	8:24	8:32	8:39	7:09	7:18	7:26	7:33	7:40	7:48
8:43	8:51	8:58	9:02	9:10	9:17	7:45	7:53	8:01	8:06	8:13	8:20
						8:20	8:28	8:36	8:41	8:48	8:55

Example 3 – Bus Route with Multiple Patterns

Metro Line 10 has multiple trip patterns, where all trips serve the eastern terminus at Main & Venice in Downtown Los Angeles during the peak period, but not all trips serve the western terminus at San Vicente Blvd in West Hollywood.

During the peak period, certain eastbound trips begin at timepoint 3 at Melrose & Arden, rather than at San Vicente. Also, certain westbound trips terminate at timepoint 4 at Melrose & Vine, rather than at San Vicente.

Counting only those trips serving the western terminus at San Vicente, the line does not qualify as a high quality transit corridor. This is because the eastbound average headway exceeds the 15-minute threshold. Service in both directions must each meet the 15-minute frequency threshold to qualify as a high quality transit corridor. (Refer to the trips encompassed in the light blue and yellow boxes on the next page.)

Direction	AM Peak Trips	PM Peak Trips	Total Peak Trips	Average Headway
Eastbound	15	12	27	15.6 minutes
Westbound	15	14	29	14.5 minutes

Counting those trips serving the line as far west as timepoint 3 at Melrose Ave & Arden Blvd, this section of Line 10 does qualify as a high quality transit corridor. (Refer to the trips encompassed by the dark blue and dark gold boxes on next page.)

Direction	AM Peak Trips	PM Peak Trips	Total Peak Trips	Average Headway
Eastbound	17	21	38	11.1 minutes
Westbound	17	19	36	11.7 minutes

In summary, Line 10 qualifies as a high quality transit corridor between Melrose & Arden and the eastern terminus at Main & Venice. The western section of Line 10 between Melrose Ave & Arden Blvd and the western terminus at San Vicente does not qualify as a high quality transit corridor.

Monday through Friday

Effective Jun 25 2017

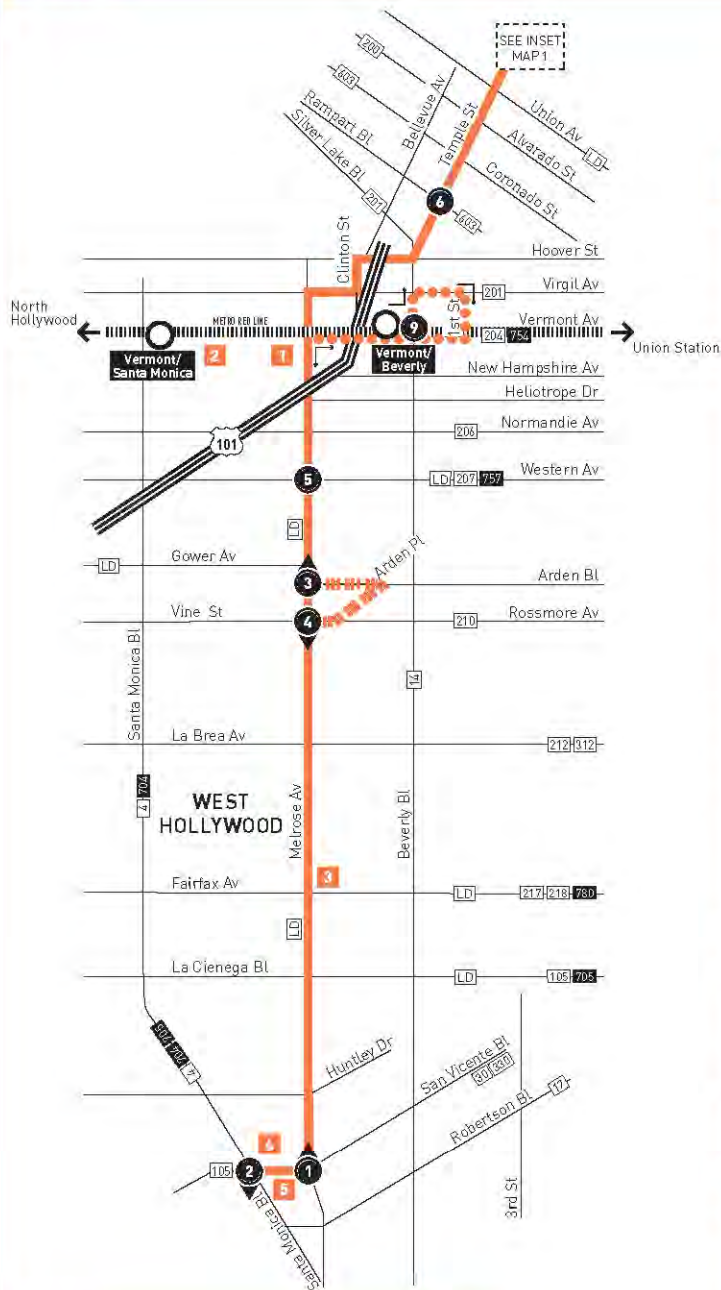
10

Eastbound Al Este (Approximate Times / Tiempos Aproximados)

Westbound Al Oeste (Approximate Times / Tiempos Aproximados)

WEST HOLLYWOOD	LOS ANGELES				DOWNTOWN LOS ANGELES		DOWNTOWN LOS ANGELES		LOS ANGELES	WEST HOLLYWOOD	
1	3	5	6	7	8	8	7	6	5	4	2
San Vicente & Melrose	Melrose & Arden	Melrose & Western	Temple & Rampart	Temple & Figueroa	Main & Venice	Main & Venice	Temple & Figueroa	Temple & Rampart	Melrose & Western	Melrose & Vine	Santa Monica & San Vicente
4:00A	4:10A	4:13A	4:23A	4:30A	4:41A	5:01A	5:14A	5:21A	5:31A	5:35A	5:47A
4:21	4:31	4:34	4:44	4:51	5:02	5:27	5:42	5:49	5:59	6:03	6:16
4:41	4:51	4:54	5:04	5:12	5:24	5:42	5:57	6:05	6:17	6:21	6:34
—	5:11	5:14	5:25	5:33	5:46	5:53	6:08	6:16	6:28	6:33	6:47
5:18	5:28	5:31	5:42	5:50	6:03	6:03	6:18	6:26	6:39	6:44	6:58
—	5:42	5:46	5:57	6:06	6:21	6:13	6:28	6:37	6:50	6:55	7:11
5:43	5:54	5:58	6:10	6:19	6:34	6:20	6:36	6:45	6:58	7:04	7:22
—	6:04	6:08	6:20	6:29	6:45	6:28	6:45	6:54	7:09	7:16	7:36
—	6:14	6:18	6:30	6:39	6:55	6:34	6:52	7:01	7:17	7:25	7:46
6:12	6:23	6:27	6:40	6:49	7:06	6:47	7:06	7:17	7:33	7:41	—
6:20	6:31	6:36	6:50	6:59	7:17	6:59	7:20	7:31	7:48	7:56	8:19
6:28	6:39	6:44	6:58	7:09	7:27	7:15	7:36	7:48	8:05	8:12	8:35
6:37	6:48	6:53	7:08	7:19	7:37	7:23	7:44	7:56	8:13	8:20	8:43
6:44	6:55	7:00	7:16	7:27	7:46	7:32	7:53	8:04	8:21	8:28	8:51
6:51	7:03	7:08	7:24	7:35	7:54	7:42	8:03	8:13	8:30	8:37	9:00
6:57	7:10	7:15	7:31	7:43	8:02	7:52	8:13	8:23	8:40	8:47	9:09
7:04	7:17	7:22	7:39	7:51	8:11	8:03	8:24	8:34	8:51	8:58	9:19
7:12	7:25	7:30	7:48	8:00	8:20	8:14	8:36	8:46	9:03	9:10	9:31
7:20	7:34	7:39	7:57	8:09	8:29	8:27	8:49	8:59	9:14	9:20	—
7:28	7:44	7:49	8:07	8:19	8:39	8:39	9:01	9:11	9:26	9:33	9:52
7:40	7:56	8:01	8:18	8:30	8:50	8:53	9:15	9:25	9:40	9:47	10:06
7:52	8:08	8:14	8:31	8:41	9:01	9:08	9:30	9:40	9:55	10:01	—
8:11	8:27	8:33	8:49	8:59	9:19	9:26	9:48	9:58	10:13	10:19	10:38
8:32	8:48	8:54	9:09	9:19	9:39	9:46	10:08	10:18	10:33	10:39	—
8:52	9:08	9:14	9:29	9:39	9:59	10:06	10:28	10:38	10:53	10:59	11:18
9:12	9:28	9:34	9:49	9:59	10:19	10:26	10:48	10:58	11:13	11:19	—
9:32	9:48	9:54	10:09	10:19	10:39	10:46	11:08	11:18	11:33	11:39	11:58
9:52	10:08	10:14	10:29	10:39	10:59	11:06	11:28	11:38	11:53	11:59	—
—	10:28	10:34	10:49	10:59	11:19	11:26	11:48	11:58	12:13P	12:19P	12:38P
10:31	10:48	10:54	11:09	11:19	11:39	11:46	12:08P	12:18P	12:33	12:39	—
—	11:08	11:14	11:29	11:39	11:59	12:06P	12:28	12:38	12:53	12:59	1:18
11:11	11:28	11:34	11:49	11:59	12:19P	12:26	12:48	12:58	1:13	1:19	1:38
—	11:48	11:54	12:09P	12:19P	12:39	12:46	1:08	1:18	1:33	1:39	1:58
11:49	12:08P	12:14P	12:29	12:39	12:59	1:06	1:28	1:38	1:53	1:59	—
—	12:28	12:34	12:49	12:59	1:19	1:26	1:48	1:58	2:13	2:19	2:38
12:29P	12:48	12:54	1:10	1:20	1:40	1:46	2:08	2:19	2:34	2:40	—
—	1:12:57	1:03	1:19	1:29	1:49	2:06	2:28	2:39	2:54	3:00	3:19
—	1:05	1:11	1:27	1:37	1:57	2:25	2:47	2:58	3:13	3:19	—
1:01	1:22	1:28	1:44	1:54	2:14	2:42	2:64	2:74	2:89	2:95	—
—	1:39	1:45	2:01	2:11	2:31	2:50	3:12	3:22	3:37	3:43	—
1:35	1:56	2:02	2:18	2:28	2:48	3:07	3:29	3:39	3:54	4:00	—
—	2:15:59	2:05	2:21	2:31	2:51	3:10	3:32	3:42	3:57	4:03	—
1:50	2:12	2:18	2:34	2:44	3:04	3:23	3:45	3:55	4:10	4:16	—
—	2:24	2:30	2:46	2:56	3:16	3:35	3:57	4:07	4:22	4:28	—
2:12	2:25	2:32	2:50	3:00	3:20	3:39	4:01	4:11	4:26	4:32	—
2:24	2:47	2:54	3:10	3:20	3:41	3:40	4:02	4:12	4:27	4:33	—
—	2:59	3:06	3:22	3:32	3:53	3:52	4:14	4:24	4:39	4:45	—
2:47	3:11	3:18	3:34	3:44	4:05	4:04	4:26	4:36	4:51	4:57	—
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—	3:30	3:37	3:54	4:04	4:26	4:20	4:42	4:52	5:07	5:13	—
3:05	3:34	3:41	3:58	4:08	4:30	4:20	4:42	4:52	5:07	5:13	—
—	3:44	3:51	4:08	4:18	4:41	4:31	4:53	5:03	5:18	5:24	—
3:30	3:55	4:02	4:19	4:29	4:54	4:44	5:06	5:16	5:31	5:37	—
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3:50	4:16	4:24	4:41	4:51	5:16	5:09	5:31	5:41	5:56	6:02	—
—	4:27	4:35	4:52	5:02	5:27	5:20	5:42	5:52	6:07	6:13	—
—	4:38	4:46	5:03	5:13	5:38	5:32	5:54	6:04	6:19	6:25	—
4:21	4:48	4:56	5:14	5:24	5:49	5:44	6:06	6:16	6:31	6:37	—
—	4:59	5:07	5:25	5:35	6:00	6:02	6:24	6:34	6:49	6:55	—
4:43	5:10	5:18	5:36	5:46	6:10	6:09	6:31	6:41	6:56	7:02	—
—	5:21	5:29	5:47	5:57	6:19	6:27	6:49	6:59	7:14	7:20	—
5:05	5:33	5:41	5:59	6:09	6:31	6:37	7:00	7:10	7:25	7:31	—
—	5:44	5:52	6:11	6:21	6:41	6:57	7:15	7:25	7:40	7:46	—
5:28	5:56	6:04	6:23	6:33	6:51	7:17	7:33	7:43	7:58	8:04	—
5:42	6:10	6:18	6:37	6:46	7:04	7:39	7:53	8:02	8:14	8:18	—
6:07	6:34	6:41	7:00	7:09	7:25	8:05	8:18	8:27	8:39	8:43	—
6:37	7:02	7:09	7:26	7:35	7:49	8:36	8:48	8:56	9:08	9:12	—
7:07	7:29	7:35	7:51	8:00	8:14	9:09	9:22	9:30	9:42	9:46	—
7:44	8:02	8:07	8:21	8:29	8:42	9:10	10:20	10:27	10:38	10:42	—
8:17	8:33	8:38	8:51	9:00	9:17	9:11:00	11:20	11:26	11:36	11:40	—
8:51	9:05	9:09	9:22	9:28	9:39	—	12:12A	12:32A	12:42A	12:46A	—
9:23	9:35	9:39	9:52	10:00	10:17	—	—	—	—	—	—
10:25	10:37	10:41	10:52	11:00	11:17	—	—	—	—	—	—
11:30	11:40	11:43	11:52	12:06A	—	—	—	—	—	—	—
12:30A	12:40A	12:43A	12:52A	12:58A	1:08	—	—	—	—	—	—

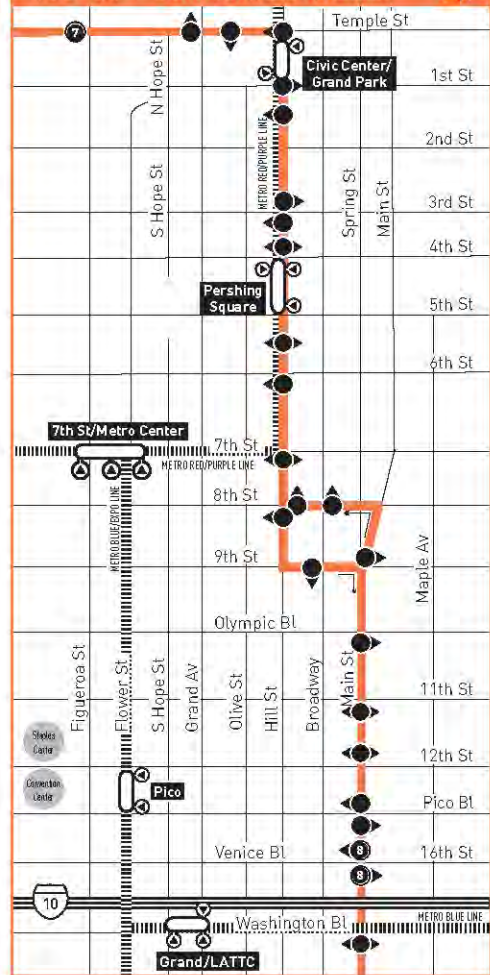
ROUTE MAP



LEGEND

- Line 10 Route
- Line 10 Owl Route to Vermont & Beverly
- Line 10 Turnaround Loop
- Local Stop Timepoint
- Local Stop Timepoint - Single Direction Only
- Metro Rail Station
- LD LADOT DASH

INSET MAP 1 - DOWNTOWN LOS ANGELES



INSET 1 - DOWNTOWN LOS ANGELES

- Line 10 Route
- Local Stop
- Local Stop - Single Direction Only
- Metro Rail Station
- Metro Rail Station Entrance
- Metro Rail

MAP NOTES

- 1** Braille Institute
- 2** LA City College
- 3** Fairfax High School
- 4** Pacific Design Center
- 5** West Hollywood Library

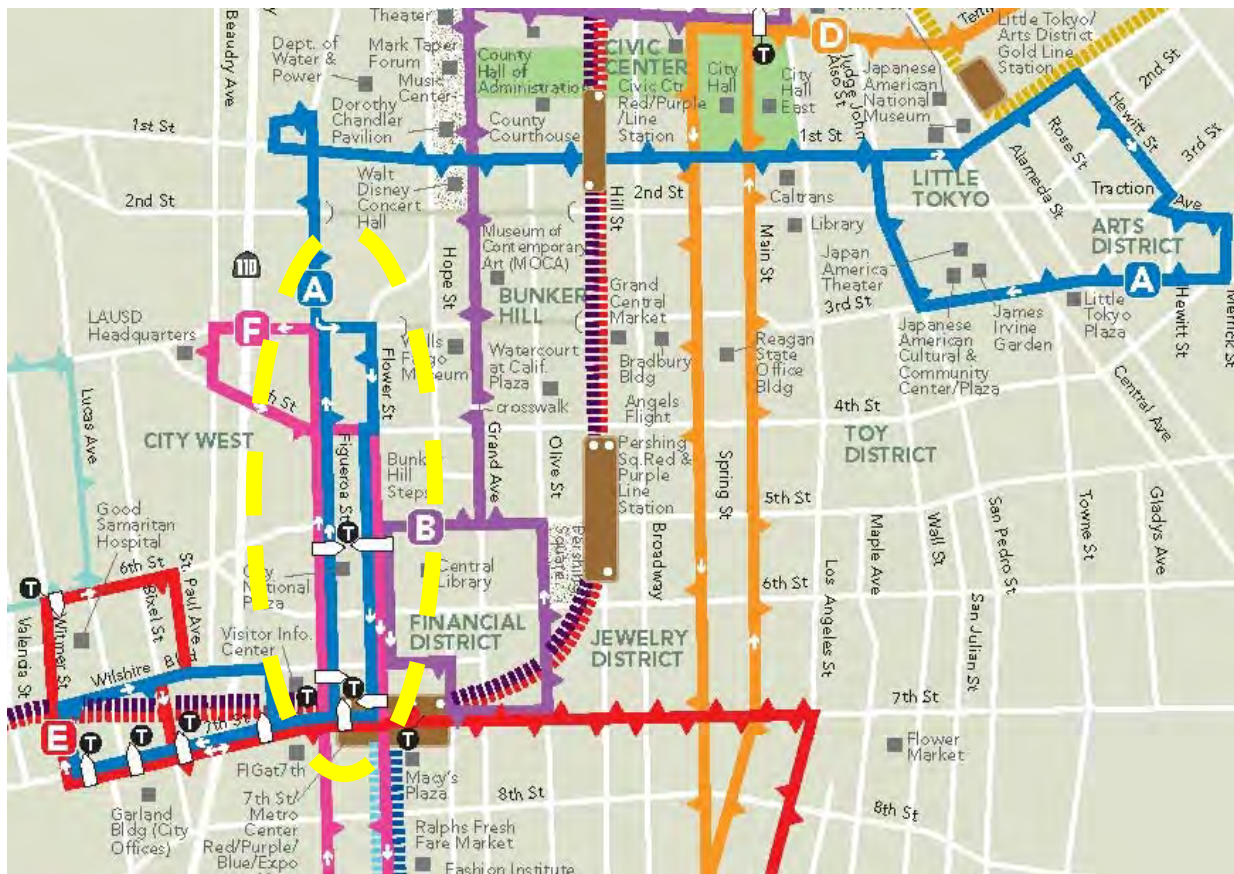
Example 4 – Bus Routes with One-Way Directional Service

To qualify as a high quality transit corridor, a bus route should provide an average frequency of service of 15-minutes or less in both directions during the peak period. However, some routes operate only in one direction on all or a portion of the route.

On one-way streets, it is not possible to operate service in both directions. A bus route (or route pattern) meeting the 15-minute threshold in one direction on a one-way street, qualifies as a high quality transit corridor.

On two-way streets, buses may make a turnaround via a one-way loop at the terminus of the route. This frequently occurs where the street configuration prevents buses from making a u-turn. In this case, a bus route meeting the 15-minute threshold in one direction on a two-way street, qualifies as a high quality transit corridor.

The City of Los Angeles Department of Transportation (LADOT) DASH route A in Downtown Los Angeles demonstrates both of these cases. Along Figueroa and Flower, route A operates on one-way streets (shown in yellow oval below). At the western terminus, buses make a one-way loop using two-way streets including 7th and Wilshire. At the eastern terminus, buses make a one-way loop using two-way streets (1st and Hewitt) and a one-way street (3rd). With service every 7 minutes from 6am to 6:30pm, the entire route A qualifies as a high quality transit corridor.



Bus routes may operate for a segment in only one direction on a two-way street, such as to connect to a transit center or transfer station in the middle of the route. In this case, a bus route meeting the 15-minute threshold with service in only one direction on a two-way street, qualifies as a high quality transit corridor.

Omnitrans Line 61 operates a one-way loop on two-way streets to serve the transfer center at the Ontario Mills Mall (see yellow circle below). Based on the current schedule, Line 61 falls short of the 15-minute criteria in both the eastbound or westbound direction. If it did meet the criteria, the high quality transit corridor would include the one-way service on two-way streets at the Ontario Mills Mall.

Direction	AM Peak Trips	PM Peak Trips	Total Peak Trips	Average Headway
Eastbound	11	15	26	16.2 minutes
Westbound	9	15	24	17.5 minutes



Circular or loop routes operate in one direction along all, or a major portion, of the route, on one-way or two-way streets.

The NoHo to Media District line operated by the City of Burbank is primarily a large one-way circular route that meets the 15-minute threshold. It operates in both directions between the North Hollywood Red Line subway station and the intersection of Magnolia and Hollywood Way, at which point it proceeds in a one-directional loop south on Hollywood Way, east on Olive and Alameda, north on Buena Vista, and west on Magnolia back to the intersection of Magnolia and Hollywood Way. With buses running every 12 minutes from 6:05-9:17am and 2:50-6:38pm, this route qualifies as a high quality transit corridor.



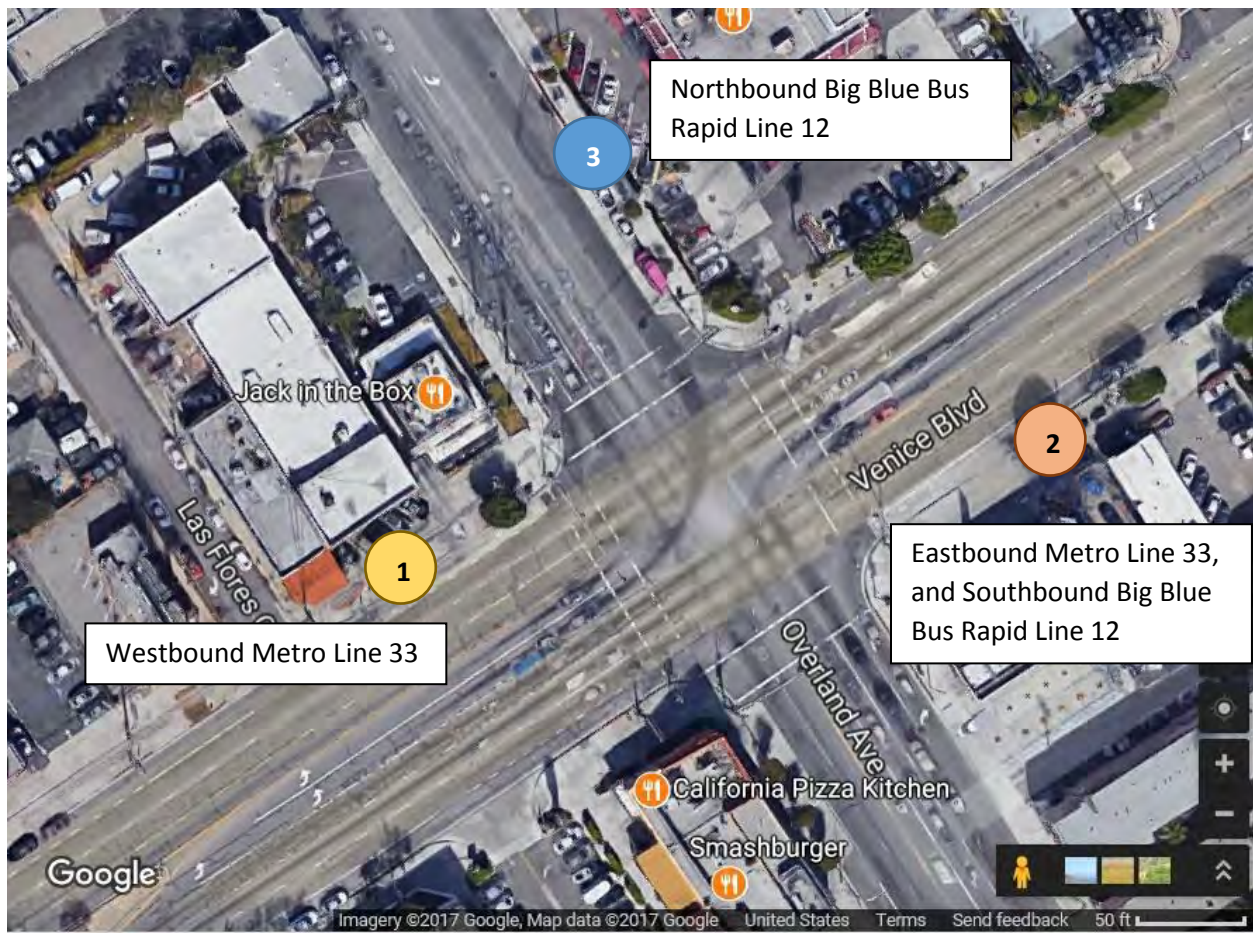
Example 5 – Major Transit Stop

A “major transit stop” as it relates to bus service, occurs at the intersection of two or more high quality transit corridors. The bus stops on the intersecting routes must be within 500 feet of each other to qualify as an intersection.

Metro Line 33 is a high quality transit corridor on Venice Blvd, with far-side stops at Overland westbound (shown as stop 1 below) and eastbound (stop 2).

Santa Monica’s Big Blue Bus Rapid Line 12 is a high quality transit corridor on Overland Ave. Southbound buses turn left onto Venice and serve the far-side stop (stop 2), then make a clockwise loop before heading back north on Overland Ave with a far-side stop northbound at Venice (stop 3).

The stops are within less than 500 feet of each other, therefore this intersection qualifies as a major transit stop.



Draft 2020 RTP/SCS HQTC and Major Transit Stop Methodology

Regional Transit Technical Advisory Committee

November 29, 2017

Steve Fox, Senior Regional
Planner

Draft 2020 RTP/SCS HQTCs/MTSs

- Staff beginning to update its inventory of existing and planned HQTCs and major transit stops for the 2020 RTP/SCS.
- Base year transit network is 2016--based primarily on June 2016 schedules.
- Since the 2016 RTP/SCS, staff received numerous questions regarding identification of HQTCs and major transit stops from local jurisdictions.
- Further development and refinement of the 2016 methodology has been completed in draft format.

Draft 2020 RTP/SCS HQTCs/MTSs

- RTTAC members were involved in the 2016 RTP/SCS process.
- Helped resolve issues involving interpretation of the statute and methodology, and vetting the HQTC network.



2016 Methodology

- High Quality Transit Corridor
 - 15-minutes or better
 - Seven hour peak period (some exceptions)
 - Number of trips beginning in peak period
 - Multi-route corridor cases
- Route Alignment Buffering
 - Express services
- Major Transit Stops
 - Intersection of 15-minute services
 - 500-foot transferring buffer ⁸⁸

2020 Refinements - HQTC

Halfway Point Criterion -

A **transit route's trip** that begins or ends outside of the AM and PM peak hours is counted if **the trip's** halfway point occurs within the peak period. Provides consistency with regional travel demand model.

Monday through Friday							745						
Effective Jun 25 2017													
Northbound Al Norte (Approximate Times/Tiempos Aproximados)				UNION STATION			Southbound Al Sur* (Approximate Times/Tiempos Aproximados)						
LOS ANGELES	DOWNTOWN LOS ANGELES		UNION STATION		UNION STATION	DOWNTOWN LOS ANGELES	LOS ANGELES		LOS ANGELES				
	Halber / Ivy / Green Line Station	Broadway & Century	Broadway & Florence	Broadway & Washington	Broadway & 1st	Pasadena Bus Plaza / LA Union Station	Pasadena Bus Plaza / LA Union Station	Spring & Temple	Broadway & Washington	Broadway & Florence	Broadway & Century	Halber / Ivy / Green Line Station	
4:50A	4:54A	5:00A	5:13A	5:23A	5:29A	4:51A	4:56A	5:08A	5:20A	5:26A	5:30A		
5:15	5:19	5:25	5:39	5:49	5:55	5:26	5:32	5:44	5:58	6:04	6:08		
5:30	5:34	5:40	5:54	6:04	6:12	5:41	5:47	6:00	6:14	6:20	6:24		
5:39	5:43	5:49	6:03	6:14	6:22	5:54	6:00	6:14	6:28	6:34	6:38		
5:47	5:51	5:57	6:11	6:24	6:32	6:04	6:10	6:24	6:38	6:44	6:48		
5:56	6:01	6:07	6:23	6:42	6:42	6:14	6:20	6:34	6:48	6:54	6:58		
6:05	6:10	6:16	6:32	6:43	6:51	6:23	6:29	6:44	6:59	7:06	7:11		
6:13	6:18	6:24	6:40	6:51	6:59	6:33	6:39	6:54	7:10	7:17	7:22		
6:21	6:26	6:32	6:48	6:59	7:07	6:43	6:49	7:04	7:20	7:27	7:32		
6:28	6:33	6:40	6:56	7:08	7:16	6:53	6:59	7:14	7:30	7:37	7:42		
—	—	6:47	7:04	7:16	7:24	7:02	7:09	7:24	7:40	7:47	7:52		
6:41	6:46	6:53	7:11	7:23	7:31	7:12	7:19	7:34	7:50	7:57	8:02		
—	—	6:59	7:18	7:30	7:38	7:22	7:29	7:44	8:00	8:07	8:12		
6:53	6:58	7:06	7:25	7:37	7:45	7:32	7:39	7:54	8:10	8:17	8:22		
—	—	7:13	7:32	7:44	7:52	7:42	7:49	8:04	8:20	8:27	8:32		
7:05	7:10	7:18	7:39	7:51	7:59	7:51	7:58	8:14	8:30	8:36	8:41		
—	—	7:23	7:46	7:58	8:06	8:01	8:08	8:24	8:40	8:46	8:51		
7:17	7:22	7:30	7:53	8:05	8:13	8:11	8:18	8:34	8:50	8:56	9:01		
7:23	7:28	7:37	8:00	8:12	8:20	8:21	8:28	8:44	9:00	9:06	9:11		
7:29	7:34	7:44	8:07	8:19	8:27	8:31	8:38	8:54	9:09	9:15	9:20		
7:36	7:41	7:51	8:14	8:26	8:34	8:42	8:49	9:05	9:20	9:26	9:31		
7:44	7:49	7:59	8:21	8:33	8:41	8:53	9:00	9:16	9:31	9:37	9:42		
7:54	7:59	8:07	8:29	8:41	8:49	9:04	9:11	9:27	9:41	9:47	9:52		
8:04	8:09	8:17	8:37	8:49	8:57	9:16	9:23	9:39	9:53	9:59	10:04		
8:15	8:20	8:28	8:47	8:59	9:07	9:28	9:35	9:51	10:05	10:11	10:16		
8:26	8:31	8:38	8:57	9:10	9:18	9:41	9:48	10:04	10:18	10:24	10:29		
8:36	8:41	8:48	9:07	9:20	9:28	9:56	10:03	10:19	10:33	10:39	10:44		
8:48	8:53	9:00	9:18	9:31	9:39	10:12	10:18	10:34	10:48	10:54	10:59		
9:00	9:05	9:12	9:30	9:43	9:51	10:27	10:33	10:49	11:03	11:09	11:14		

2020 Refinements – Route Patterns

Route Patterns – For transit routes with different patterns, the average frequency of service for each pattern is calculated. The combined route patterns with common endpoints that meet the 15-minute threshold qualify as HQTCs.

Monday through Friday
Effective Jun 28, 2017

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Eastbound Al Este (Approximate Times / Tiempos Aproximados)						Westbound Al Oeste (Approximate Times / Tiempos Aproximados)					
WEST HOLLYWOOD	LOS ANGELES	LOS ANGELES	LOS ANGELES	LOS ANGELES	WEST HOLLYWOOD	LOS ANGELES	LOS ANGELES	LOS ANGELES	LOS ANGELES	LOS ANGELES	WEST HOLLYWOOD
1	3	5	6	7	8	5	7	6	5	4	2
San Vicente & Melrose	Melrose & Ardian	Melrose & Western	Temple & Rampart	Temple & Figueroa	Main & Venice	Main & Venice	Temple & Figueroa	Temple & Rampart	Melrose & Western	Melrose & Vine	Santa Monica & San Vicente
4:00A	4:10A	4:13A	4:23A	4:30A	4:41A	5:01A	5:14A	5:21A	5:31A	5:35A	5:47A
4:21	4:31	4:34	4:44	4:51	5:02	5:27	5:42	5:49	5:59	6:03	6:16
4:41	4:51	4:54	5:04	5:12	5:24	5:42	5:57	6:05	6:17	6:21	6:34
—	5:11	5:14	5:25	5:33	5:46	5:53	6:08	6:16	6:28	6:33	6:47
5:18	5:28	5:31	5:42	5:50	6:03	6:03	6:18	6:26	6:39	6:44	6:58
—	5:47	5:48	5:57	6:06	6:21	6:13	6:28	6:37	6:50	6:55	7:11
5:43	5:54	5:58	6:10	6:19	6:34	6:20	6:36	6:45	6:58	7:04	7:22
—	6:04	6:08	6:20	6:29	6:45	6:28	6:45	6:54	7:09	7:16	7:36
6:12	6:23	6:27	6:40	6:49	7:06	6:34	6:52	7:01	7:17	7:25	7:46
6:20	6:31	6:36	6:50	6:59	7:17	6:47	7:06	7:17	7:33	7:41	—
6:28	6:39	6:44	6:58	7:09	7:27	6:59	7:20	7:31	7:48	7:56	8:19
6:37	6:48	6:53	7:08	7:19	7:37	—	—	—	—	—	—
6:44	6:55	7:00	7:16	7:27	7:46	7:15	7:36	7:48	8:05	8:12	8:35
6:51	7:03	7:08	7:24	7:35	7:54	7:15	7:44	7:56	8:13	8:20	8:43
6:57	7:10	7:15	7:31	7:43	8:02	7:23	7:53	8:04	8:21	8:28	8:51
7:04	7:17	7:22	7:39	7:51	8:11	7:32	8:03	8:14	8:30	8:37	9:00
7:12	7:25	7:30	7:48	8:00	8:20	7:42	8:13	8:23	8:40	8:47	9:09
7:20	7:34	7:39	7:57	8:09	8:29	7:52	8:24	8:34	8:51	8:58	9:19
7:28	7:44	7:49	8:07	8:19	8:39	8:03	8:34	8:44	9:01	9:08	9:29
7:40	7:56	8:01	8:18	8:30	8:50	8:14	8:46	8:56	9:13	9:20	9:41
7:52	8:08	8:14	8:31	8:41	9:01	8:27	8:59	9:14	9:31	9:38	10:00
8:11	8:27	8:33	8:49	8:59	9:19	8:39	9:01	9:11	9:26	9:33	9:52
8:32	8:48	8:54	9:09	9:19	9:39	8:53	9:15	9:25	9:40	9:47	10:06
8:52	9:08	9:14	9:29	9:39	9:59	9:08	9:30	9:40	9:55	10:01	—
9:12	9:28	9:34	9:49	9:59	10:19	9:26	9:48	9:58	10:13	10:19	—
9:32	9:48	9:54	10:09	10:19	10:39	9:44	10:06	10:16	10:31	10:38	10:38

2020 Refinements – One-Way Service

One-Way Service - Transit routes that operate in one direction only for the entire route or a portion of the route at 15 minutes qualify as HQTCs. This includes routes operating on either one-way or two-way streets, one-way circulators and routes with one-way terminal loops.



2020 Refinements – Major Transit Stops

Major Transit Stops - Intersecting bus routes must diverge into separate corridors or generally be perpendicular to each other. There can be rare instances where two bus routes that operate in parallel for a short distance, but otherwise diverge to separate corridors, may be justified as intersecting bus routes.

2020 Refinements – Amtrak

Amtrak Stations - Amtrak limited, long-distance services are not automatically included as a major transit stop unless requested by a local agency.



Next Steps

- Finalize the draft methodology document with RTTAC member input.
- Publish for local jurisdictions, CTCs and transit operators to use as a resource.

2020 Process Schedule

- Identify Initial 2016 HQTCs and Major Transit Stops – November 2017 - January 2018
- Verify 2016 Transit Network 15-Minute Frequency Services - January 2018 - March 2018
- Complete Draft Data Set and Maps - April 2018 through May 2018
- Complete External Review of Draft Data Set and Maps - June 2018 through July 2018
- Finalize Data Set and Maps - August 2018 through September 2018

Thank You

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