SOUTHERN CALIFORNIA
ASSOCIATION OF GOVERNMENTS
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MEETING OF THE

REGIONAL TRANSIT TECHNICAL ADVISORY COMMITTEE

Wednesday, July 31, 2019
10:00 a.m. – 12:00 p.m.

SCAG OFFICES
900 Wilshire Blvd., Ste. 1700
Policy Room A
Los Angeles, CA 90017
(213) 236-1800

VIDEOCONFERENCE AVAILABLE

VIDEOCONFERENCE	https://scag.zoom.us/j/220315897
CONFERENCE NUMBER	669-900-6833
MEETING ID	220 315 897

If members of the public wish to review the attachments or have any questions on any of the agenda items, please contact Steve Fox at (213) 236-1855 or via email at fox@scag.ca.gov.

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REGIONAL TRANSIT TECHNICAL ADVISORY COMMITTEE AGENDA
Wednesday, July 31, 2019

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

1.0 CALL TO ORDER
(Joyce Rooney, Beach Cities Transit, Regional Transit TAC Vice 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 **Page**

REGIONAL TRANSIT TECHNICAL ADVISORY COMMITTEE AGENDA
Wednesday, July 31, 2019

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4.0 INFORMATION ITEMS

		Time	Page
4.1	**Connect SoCal Outreach** *(Javiera Cartagena, Manager, Regional Services)*	15	53
4.2	**LAX LAMP and APM** *(Glenda Silva, Los Angeles World Airports)*	20	66
4.3	**Bus/Rail Interface Plans for LAX** *(Scott Greene, Manager, Transportation Planning, L.A. Metro)*	20	81
4.4	**Environmental Justice & Connect SoCal** *(Tom Vo, Senior Regional Planner, SCAG)*	20	90
4.5	**Transit Asset Management Performance Target Setting** (Herb Higginbotham, Project Manager, Cambridge Systematics)	10	

5.0 **STAFF REPORT** 5

5

6.0 ADJOURNMENT

The next Regional Transit Technical Advisory Committee meeting is tentatively scheduled for Monday, September 30, 2019.

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

Monday, April 29, 2019

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, OCTA.

Members Present:

Gary Hewitt (Chair)	Orange County Transportation Authority
Joyce Rooney (Vice Chair)	Redondo Beach Transit
Tracy Beidleman	Long Beach Transit
Ron Mathieu	Metrolink
Lori Huddleston	LACMTA
Ralph Martinez	LACMTA
Randy Lamm	LACMTA
Kristen Warsinski	Riverside Transit Agency
Jennifer Nguyen	Riverside Transit Agency

Videoconference:

Martin Tompkins	Antelope Valley Transportation Authority
Geraldina Romo	Antelope Valley Transportation Authority
David Cadena	Antelope Valley Transportation Authority

Teleconference and Web Meeting:

Eric Carlson	Orange County Transportation Authority
Kevin Kane	Victor Valley Transit
Conan Cheung	LACMTA
Claire Grasty	Ventura County Transportation Commission
Josh Landis	Foothill Transit
Herbert Higginbotham	Cambridge Systematics
Kyle Emge	Cambridge Systematics

SCAG Staff:

Philip Law	Stephen Fox
Matthew Gleason	Sarah Dominguez

1.0 CALL TO ORDER

Gary Hewitt, OCTA, called the meeting to order at 10:01 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 January 30, 2019 Regional Transit TAC Meeting
3.2 Transit Ridership Update
3.3 Transit Cooperative Research Program (TCRP) Report 141 and 204
3.4 Agenda Outlook

4.0 INFORMATION ITEMS

4.1 Transit Asset Management Target Setting

Herbert Higginbotham, Cambridge Systematics, reported on Transit Asset Management (TAM) Target Setting. Mr. Higginbotham stated that Cambridge Systematics will be leading a 9-month project for regional transit asset management target setting and his team will work with transit agencies in the region. Further, SCAG will aggregate regional metrics for incorporation into the 2020 Regional Transportation Plan/Sustainable Communities Strategies and the Federal Transportation Improvement Program. Additionally, a structure will be put in place for future transit asset management efforts. He reviewed the final ruling and noted that all transit providers and group TAM plan sponsors are required to produce a transit asset management plan every 4 years. Those must set and track annual performance targets for equipment, revenue vehicles, infrastructure and facilities. Additionally, annual reports are to be forwarded to the National Transit Database (NTD) and ought to include asset inventory and conditions as well as performance targets.

Mr. Higginbotham reviewed the approach to the project including working closely with local stakeholders using TAM performance target methodology with a view to future asset funding and performance scenarios. Additionally, SCAG will develop a database using the TransAM asset management platform to collect, aggregate and report regional TAM data. He reviewed the project schedule and the process of tasks concluding with a draft and final report as well as the database development process and stakeholder participation. First, meetings will be held with the county transportation commissions then with all other transit providers. He reviewed the specific items to be collected from stakeholder agencies such as asset inventories, value and condition and noted next steps for the project.

Gary Hewitt, OCTA, asked staff about future steps and what additional information will be needed from stakeholder agencies. Mr. Higginbotham responded that the data will need to be reviewed to insure completeness. He noted that an inventory as assets, prioritized investments and performance targets are key components to building the database.

Kevin Kane, Victor Valley Transit, asked about reporting to the National Transit Database and the effort needed for that reporting. Mr. Higginbotham responded

that that database has features which will assist that process and can benefit that reporting requirement.

4.2 Metro Next Gen Bus Study Update

Conan Cheung, Los Angeles County MTC, provided an update on Metro's Next Gen Bus Study. Mr. Cheung stated that market research and existing service evaluation has been completed and currently they are developing service concepts. He noted service concepts are a set of policy statements that prioritize new service goals, the design of the system framework, metrics to monitor performance and the evaluation trade-off between different service characteristics. Mr. Cheung reported that a series of well-attended community engagement events have occurred to understand travel choices including 18 3-hour workshops to engage the public and receive comments. He reviewed the concerns expressed during the workshops.

Mr. Cheung noted current system usage including weekday boardings, trip intensity per square mile in addition to trip origin and destinations. He next reviewed the approach to network design and noted it includes the end to end travel time including getting to the transit stop, the wait for a bus and the onboard experience. He reviewed examples of service areas that could be better aligned with local travel patterns. Next, frequency levels and service spans were examined as well as time riders currently need to walk, wait and ride selected lines and he reviewed the concept of hybrid routes that may mix the benefits of both rapid and local service to improve customer service. He noted these can include bus lanes, bus bulbs, transit signal priority, all-door boarding and stop location optimization. He noted the benefits of a well-designed and more efficient system.

Steve Fox, SCAG staff, asked about the bus travel time to car travel time ratio calculation. Mr. Cheung responded that cell phone data indicated travel times which can be used to estimate personal vehicle travel times on Google and compare to bus travel times.

4.3 SCAG Scenario Planning Overview and Update

Sarah Dominguez, SCAG staff, reported on SCAG scenario planning overview. Ms. Dominguez stated that scenario planning is used to support decision making in the face of uncertainty in the short and long term. She noted SCAG uses scenario planning to develop, evaluate and consider distinct pathways the region could take to meet goals of the 2020 Regional Transportation Plan/Sustainable Communities Strategy. Those goals include regional mobility, economic prosperity, healthy environment and communities as well as meeting a mandated 19% reduction in greenhouse gasses by 2035. She noted that data used for the scenarios come from SCAG's local input process to understand a specific jurisdiction's existing land use pattern, what is currently planned for in the area in addition to specific project lists received from the county transportation commissions. Additionally, goals and guiding policies are used to direct the scenarios in additional to stakeholder

outreach and feedback received mainly from the regional planning working groups. She noted that scenarios are decisional tools that can highlight impacts between different growth alternatives and their trade-offs although it is not used to predict the future.

Ms. Dominguez noted the scenarios include; Transit Priority Areas (TPAs), an area within one-half mile of a major transit stop that is existing or planned; High Quality Transit Areas (HQTAs), areas within one-half mile of a high quality transit stop; Livable Corridors, this arterial network is a subset of the high quality transit areas based on level of transit service and land use planning efforts; Neighborhood Mobility Areas (NMAs), areas with high intersection density, low to moderate traffic speeds, and robust residential retail connections and Job Centers or areas with significantly higher employment density. Additionally, there are both absolute and variable constraints. Absolute constraints include military lands, conserved land, existing open space and agricultural areas. Variable constraints include wildland urban interface, 500 year flood plains and areas with severe fire risk.

Ms. Dominguez noted that the scenarios will be presented to the public in a series of outreach workshops in May and June 2019. Further, it is intended that one scenarios will become the preferred scenario for the 2020 RTP/SCS.

Gary Hewitt, OCTA, asked if scenario planning was used for the 2016 RTP/SCS. Ms. Dominguez responded that scenario planning was used in 2016 to analyze different directions.

Joyce Rooney, Redondo Beach Transit, asked where the workshops will be held. Ms. Dominguez responded that multiple workshops will be held in each county and she will forward to the committee the list of workshops.

4.4 Connect SoCal: High-Quality Transit Corridor (HQTC) Future Corridor Identification

Steve Fox, SCAG staff, provided an update on High-Quality Transit Corridor Identification. Mr. Fox stated there has been several discussions with the committee on high quality transit corridors and the methods to be used to identify them for the 2020 RTP/SCS. He noted that recently a list of all HQTCs was distributed with a request for comments. Mr. Fox asked if members had additional comments they can be submitted by May 3, 2019.

4.5 Connect SoCal: Emerging Transit Trends and Challenges

Matt Gleason, SCAG staff, reported on emerging transit trends and challenges for Connect SoCal. Mr. Gleason stated that this part of the appendix will have four key parts, ridership, changes in new mobility, needs assessment and demographic analysis. In addition, regulatory changes will be monitored. He noted the different regulatory changes include ADA compliance and the development of a long range ADA forecast. MAP-21 rulemaking, asset management rule, safety plan rule, metropolitan planning rule and target setting as well as Air Resources Board's clean

transit rule in addition to rules that affect the implementation of new mobility technology. Mr. Gleason reviewed the Air Resources Board clean transit requirements and noted the final rule separated transit agencies by large or small based both on number of vehicles and air basin. For transit agencies operating in the South Coast Air Basin or San Joaquin the threshold is 65 vehicles in service. For agencies operating outside those air basins the threshold is 100 vehicles in service or greater. Mr. Gleason noted that there are 10 agencies in the region that will be subject to the large agency timelines. He noted that there are two components to compliance, the production of zero emissions bus rollout plan and procurement of ZEV busses. Mr. Gleason reviewed the ZEV requirements for agencies and reviewed demographic trends which may affect future transit ridership.

5.0 STAFF REPORTS

5.1 New Technology Off Model Assumptions and Analysis

Matt Gleason, SCAG staff, stated that MPOs have been assigned responsibilities in the next round of regional transportation plans relating to a more thorough quantification of methodologies for greenhouse gas emission estimations. He noted that previously MPOs had been given space to perform off model analysis of potential greenhouse gas reduction estimations. ARB has put out a methodology document and they've asked MPO to commit to a series of emission reduction estimation methodologies by the start of the outreach process mid May 2019 and reviewed the transit implication of these policies.

6.0 ADJOURNMENT

Gary Hewitt, OCTA, adjourned the meeting at 11:45 a.m.

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

Monday, May 29, 2019

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 Vice Chair, Joyce Rooney, Redondo Beach Transit.

Members Present:

Joyce Rooney (Vice Chair)	Redondo Beach Transit
Ron Mathieu	Metrolink
Sara Baumann	Long Beach Transit
Lori Huddleston	LACMTA
Sam Moffit	Flixbus
Joe Eyen	Flixbus
Nate Diaz	Flixbus
Nick Fiorillo	Flixbus

Videoconference:

Kevin Kane	Victor Valley Transit
Cameron Brown	San Bernardino County Transportation Authority
Carrie Schindler	San Bernardino County Transportation Authority
Rebekah Soto	San Bernardino County Transportation Authority
Gustavo Gomez	Imperial County Transportation Commission

Teleconference and Web Meeting:

Rhyan Schaub	Portland TriMet
Tim McHugh	Portland TriMet
Denise Longley	LACMTA
Randy Lamm	LACMTA
Heather Miller	Ventura County Transportation Commission
Martha Masters	Riverside County Transportation Commission
Ariel Alcon Tapia	Riverside County Transportation Commission
Sheldon Peterson	Riverside County Transportation Commission
Eric Carlson	Orange County Transportation Commission
Josh Landis	Foothill Transit
Joe Raquel	Foothill Transit

SCAG Staff:

Philip Law	Stephen Fox
Matthew Gleason	KiHong Kim

1.0 CALL TO ORDER

Joyce Rooney, Redondo Beach Transit, called the meeting to order at 10:05 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 April 29, 2019 Regional Transit TAC Meeting
3.2 ADA Paratransit Demand Forecast
3.3 Southern California Olli Fleet Challenge
3.4 Federal Transit Administration (FTA) Integrated Mobility Innovation Demonstration Program Notice of Funding
3.5 2019 RTTAC Agenda Look Ahead

4.0 INFORMATION ITEMS

4.1 Mobility Solutions

Tim McHugh, Chief Information Officer, Portland TriMet, provided a report on mobility solutions. Mr. McHugh stated that current efforts involve shifting from a transit agency to mobility provider for the region by developing a platform that permits users to interface with other mobility modes including bikeshare, carshare and ride sourcing. He noted the goal is to provide a one-stop platform for mobility users to create door to door trip planning by bringing in other mobility modes under a single payment system and providing links to private mobility providers. He noted TriMet has developed a mobile open source trip planner that goes beyond traditional services for transit by integrating transportation network companies as well as bikeshare and carshare. The trip planner uses real time information to guide travelers toward the quickest route and mobility options available. For example, travelers can get information on the number of available docked and undocked bikes at their destination for those seeking to complete their trip with bikeshare. Mr. McHugh stated the goal is to create a seamless trip service for travelers.

Rhyan Schaub, Director, Fare Revenue Operations and Administration, continued the presentation stating that TriMet's hop fastpass system is a regional system that works on TriMet services, Portland Streetcar and Vancouver, Washington's C-TRAN system. Ms. Schaub noted the hop fastpass uses stored value that is deduced from the user's account as they utilize services. She noted one benefit of the stored value system is it allows fare capping, for example, a user would not be charged greater than the day pass rate of $5 per day or not greater than $100 monthly. She noted the card is linked with retail stores so a user can add transit

value from a network of retail locations. Ms. Schaub stated the hop fastpass system allows easier transit use and payment with inter agency transfers and stored value which builds loyalty through fare capping meeting real time needs of today's customers. Additionally, the retail network is a gateway for unbanked customers to turn cash into electronic mobility currency. This service is conveniently accessed through a mobile phone application positioning TriMet to be the mobility managers in the region.

Carrie Schindler, San Bernardino County Transportation Authority, asked if the trip planner includes carsharing and what was the timeframe and cost in creating the updated user platform. Mr. McHugh responded that the trip planner includes other modes such as bikeshare, carshare, cartogo and in the future scooters, essentially any shared use mobility service in the region. Ms. Schaub noted the conceptual work of the fastpass began in 2010 followed by technical work in 2013 with a launch in 2017. Additionally, infrastructure cost was approximately $36 million.

Joyce Rooney, Redondo Beach Transit, asked if there is an initial fee for the hop card. Ms. Schaub responded that there is a fee of $3 for a physical or virtual card purchased after which the customer can reload without a fee.

4.2 Connect SoCal Transit and Rail Project List

Matt Gleason, SCAG staff, provided an update on the transit element project list for Connect SoCal (2020 RTP/SCS). Mr. Gleason reviewed requirements of the 2020 RTP/SCS noting that it needs to be updated every 4 years and requires at least a 20 year outlook. Further, it ought to demonstrate conformity with the state's greenhouse gas emissions requirements under SB 375 and it need to be financially constrained. He reviewed the major transit and rail capital investment categories and their percent of total investment including bus rapid transit (13%), commuter rail (3%), heavy rail (12%), Sepulveda Pass (20%), light rail (51%) and streetcar (1%). Mr. Gleason next reviewed operations, maintenance, vehicles and facilities projects from each of the counties.

Steve Fox, SCAG staff, next reviewed current and future high quality transit corridors in the region including those submitted by county transportation commissions and Los Angeles Department of Transportation.

Lori Huddleston, LACMTA, asked if Metrolink's SCORE projects are fully funded. Mr. Fox responded that currently only $1 billion is believed to be funded.

4.3 Connect SoCal Modeling Update

KiHong Kim, SCAG staff, provided an update on Connect SoCal modeling. Mr. Kim reviewed the various models used for rail and bus transit routes and noted first steps involve modeling all transit activity in the region. He noted 2016 is the base year referenced and in total thousands of transit routes are modelled. He stated Metro has the greatest number of routes accounting for 34% of the regional total,

OCTA has 8.4%, RTA represents 5.6%, Foothill and Long Beach Transit have 3%. Mr. Kim stated both routes and passenger fare are modeled. He noted that for modeling purposes transit services are grouped in seven transit modes based on service characteristics and fare structure. Additionally, average headways are calculated for different dayparts.

4.4 FAST Act Requirements on Private Sector Providers of Transportation

Joe Eyen, Government Relations Manager, reported on Flixbus operations and service. Mr. Eyen stated Flixbus is a global regularly scheduled long distance bus provider for passengers travelling between cities. He noted Flixbus began in Germany 7 years ago and has since grown to serve 28 European countries becoming the largest long distance bus provider in Europe. Globally Flixbus serves greater than 2,000 destinations and 350,000 daily connections and has served 100 million passengers. He noted service in the United States began in 2018 with routes in California, Nevada and Arizona serving 30 cities and 45 unique destinations. Since then service has been extended to Utah, New Mexico, Louisiana, Texas and Mississippi carrying 700,000 passengers.

Mr. Eyen stated that Flixbus does not own its fleet of busses. It partners with small and medium sized local and regional bus companies who own, manage and operate the busses. Flixbus does marketing, branding, ticket sales, and network design planning. He noted their partners average approximately 20 – 50 busses in their fleet and Flixbus accounts for approximately 25% of their revenue. Further, although different bus providers are used, Flixbus maintains consistent service across the network which include consistent branding, similar driver uniforms, on-board entertainment, Wi-Fi as well as ADA capability. Additionally, Flixbus has a view toward improved emissions and has deployed an all-electric bus on a French route.

Nate Diaz, Flixbus, continued the presentation reviewing the current routes in the SCAG region noting there is interest in expanding service regionally and working with local transit providers to seek complimentary service opportunities.

Philip Law, SCAG staff, asked about the top reasons customers choose Flixbus. Mr. Diaz responded that price and ancillary services such as Wi-Fi are attracting customers to their service.

Joyce Rooney, Long Beach Transit, asked about the fuel type for the busses. Mr. Diaz responded that currently diesel fuel is used.

Ron Mathieu, Metrolink, asked about the origin location for travel from Los Angeles. Mr. Diaz responded that a location near Union Station is currently used although origins can be trip specific so a trip requested from UCLA would be picked up near there.

4.5 Connect SoCal: Emerging Transit Technologies

Item deferred to a future meeting.

5.0 STAFF REPORTS

5.1 Transit Asset Management Performance Target Setting

Matt Gleason, SCAG staff, provided an update on transit asset management performance target setting. Mr. Gleason stated that since the previous RTTAC meeting SCAG staff has met with each of the county transportation commissions and also presented to the FTA's grantees workshop and the bus operators subcommittee at Metro. He noted next steps include reaching out to local agencies to join the pilot group to work through the process of database development and collecting initial target data as well as technical advisory. Mr. Gleason expressed thanks for the agencies' assistance in developing a plan for TAM target setting.

Randy Lamm, LACMTA, commented that transit operators currently input the information required into the National Transit Database and additional reporting to SCAG creates a burden on transit providers. Mr. Gleason responded that there is sensitivity about the burden of additional reporting and the approach is to establish a pilot project to get an early understanding of the impacts on operators.

5.1 Transit Ridership Study Phase 2

Item deferred to a future meeting.

6.0 ADJOURNMENT

Joyce Rooney, Redondo Beach Transit, adjourned the meeting at 12:15 p.m.

Connect SoCal : Emerging Transit Trends

Regional Transportation Plan/ Sustainable Communities Strategy Base Year Existing Conditions

Regional Transit Technical Advisory Committee (RTTAC)

Matt Gleason
Senior Regional Planner
April 29, 2019

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What is an RTP/SCS?
Long-term vision and investment framework

- Federal Requirements
  - Updated every 4 years to maintain eligibility for federal funding
  - Long Range: 20+ years into the future
  - Demonstrated conformity:
    - Regional emissions analysis
    - Financially constrained (revenues = costs)
    - Timely implementation of TCMs
    - Interagency consultation/public involvement
- State Requirements
  - Must meet GHG reduction targets for passenger vehicles

Background:
Previous Presentations

Staff have come to the RTTAC several times to discuss Connect SoCal. Previous presentations have included items on system performance, performance measures, and performance benchmarking

2020 RTP Transit Element

Process

FY2015-16 Transit Existing Conditions Analysis

System Performance	Performance Benchmarking	Implementation Monitoring	Network Development

Emerging Trends

Ridership	Technology	Needs Assessment	Demographic Analysis

Plan

Asset Management Target Setting	Planned Investments	Performance Forecasting

2020 RTP/SCS – Transit Element

Existing Transit ITS Technologies
Intelligent Transportation Systems for Transit

- FTA : ITS are techniques and methods for relieving congestion, improving road and transit safety, and increasing economic productivity.

- The FTA is currently dividing ITS applications into two broad categories. Recently, it has become very common to refer to these categories by the terms connected vehicles and connected infrastructure.

Existing Transit ITS Technologies

ITS by System Location

Infrastructure Systems (Connected Infrastructure)

- Arterial Management
- Freeway Management
- Transit Management
- Incident Management
- Emergency Management
- Electronic Payment & Pricing
- Traveler Information
- Information Management
- Crash Prevention & Safety
- Roadway Operations & Maintenance
- Road Weather Management
- Commercial Vehicle Operations
- Intermodal Freight

Vehicle Systems (Connected Vehicles)

- Collision Avoidance Systems
- Driver Assistance Systems
- Collision Notification Systems

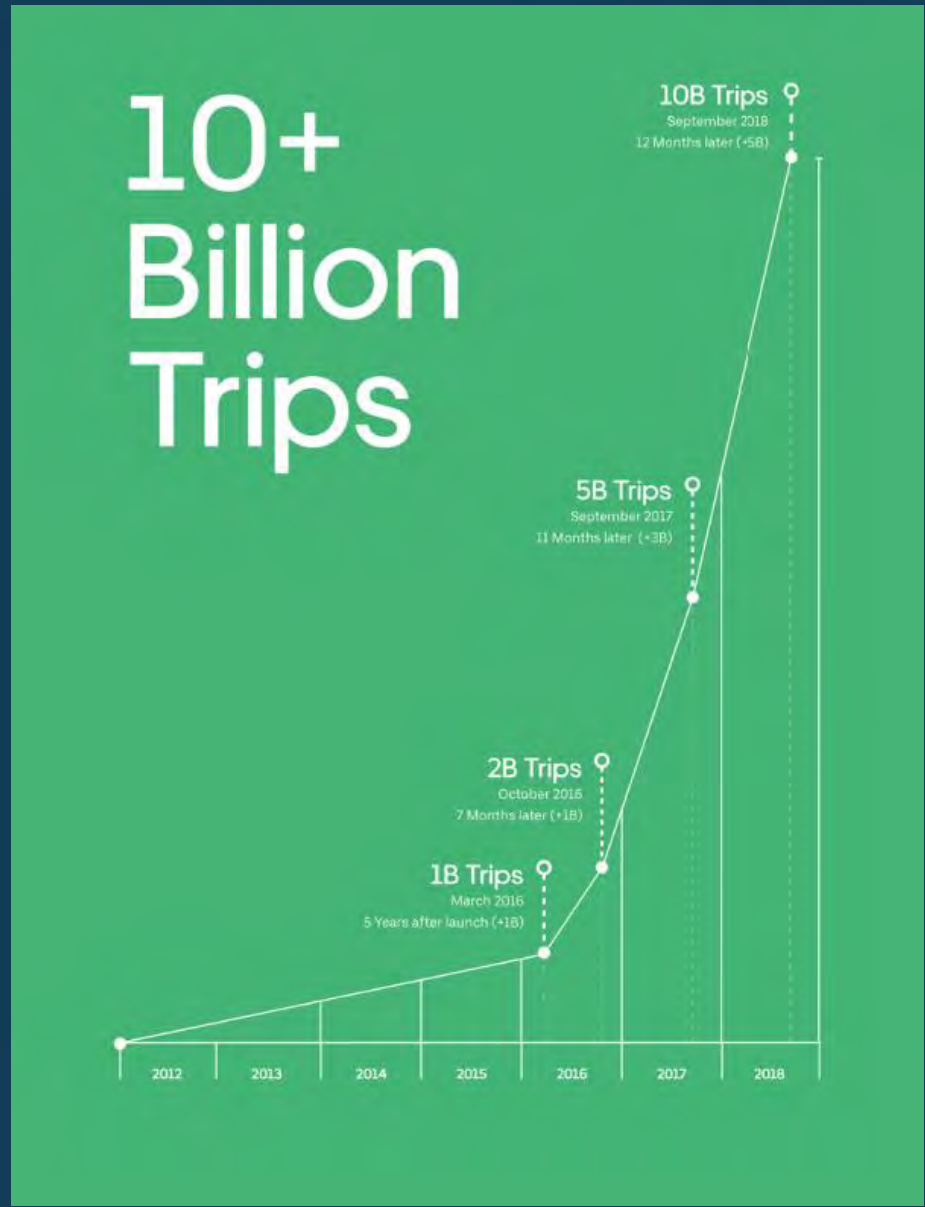
Open Data
Local Agencies Publishing Open Mobility Data

Transit Agencies Publishing Open Transit Data Using GTFS		
Anaheim Resort Transportation	LADOT Transit Services	Palo Verde Valley Transit Agency
City of Santa Monica/ Santa Monica's Big Blue Bus	Laguna Beach Transit	Pasadena Transit
City of Torrance/ Torrance Transit	LA Metro	Pass Transit
Corona Cruiser	Long Beach Transit	Riverside Transit Agency
Culver City Bus	Metrolink	Simi Valley Transit
Duarte Transit	Mountain Transit	Spirit Bus (City of Monterey Park)
El Monte Transit	Norwalk Transit System	Sunline Transit Agency
Foothill Transit	Omnitrans	Thousand Oaks Transit
Glendale Beeline	Orange County Transportation Authority	Ventura County Transportation Commission
Gold Coast Transit	Palos Verdes Peninsula Transit Authority	Victor Valley Transit Authority

Transportation Network Companies

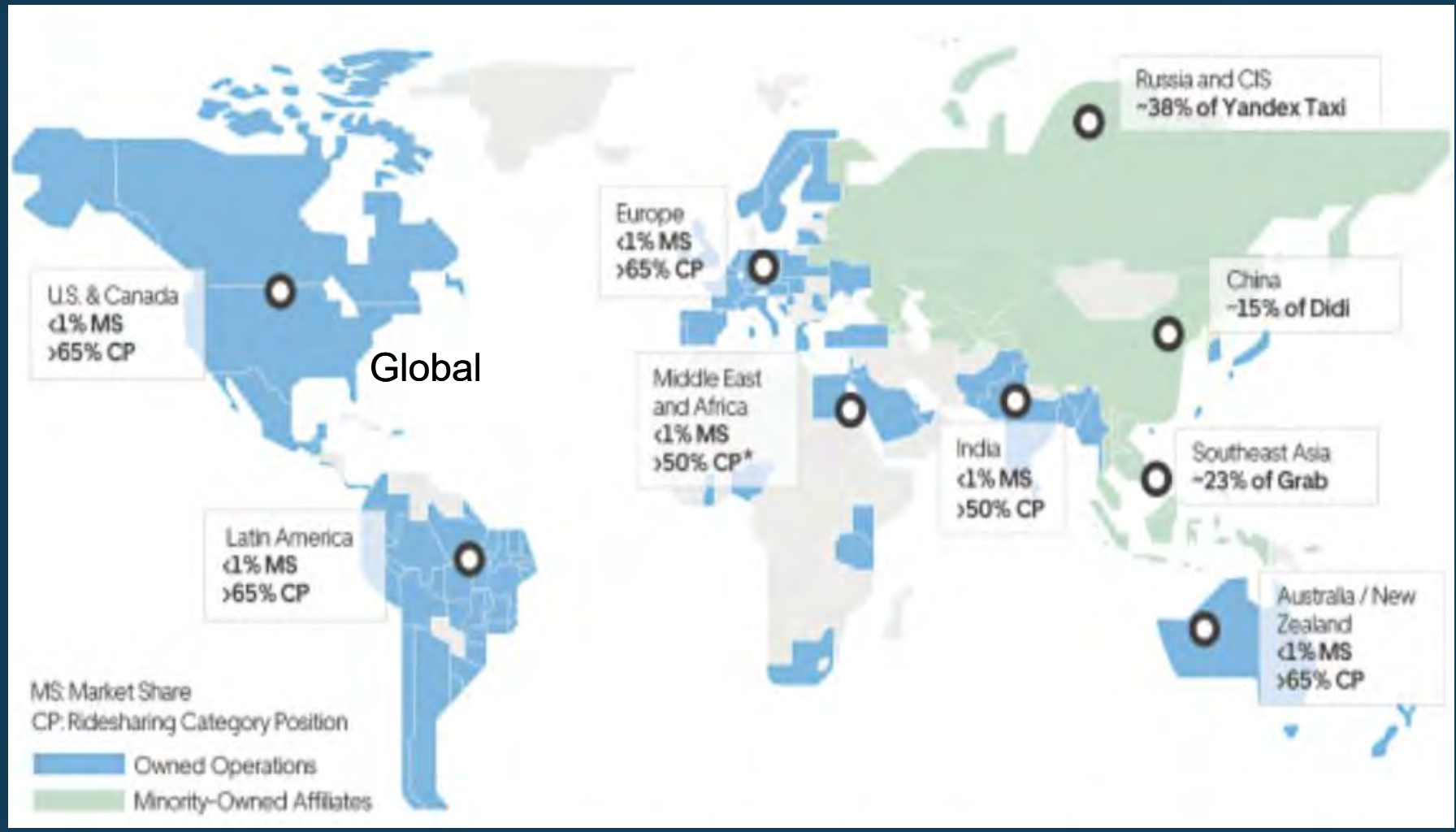
Global Growth at Uber

- Revenue from Uber Ridesharing:
  - $3.5 billion in 2016
  - $9.2 billion in 2018
- Gross Bookings grew from $18.8 billion in 2016 to $41.5 billion in 2018.
- Consumers traveled approximately 26 billion miles on Uber in 2018.
- 2nd Quarter 2018:
  - 1.5 Billion Trips
  - 3.9 Million Vehicle Operators
- $3 billion operational loss in 2018



Transportation Network Companies
Global Growth at Uber

- 24% of Uber's bookings are in 5 Metros:
  - NYC, LA, San Francisco, London, Sao Paolo
  - 65% of business in USA/Canada
- As business models evolve, SCAG Region will be impacted



Transportation Network Companies
Growth at Lyft

Demand for Lyft			
	2016	2017	2018
Revenue (Gross)	$343.3 million	$1.1 billion	$2.2 billion
Year Over Year Growth		209%	103%
Bookings (Net)	$1.9 billion	$4.6 billion	$8.1 billion
Year Over Year Growth		141%	76%

$8.1 billion
Bookings in 2018

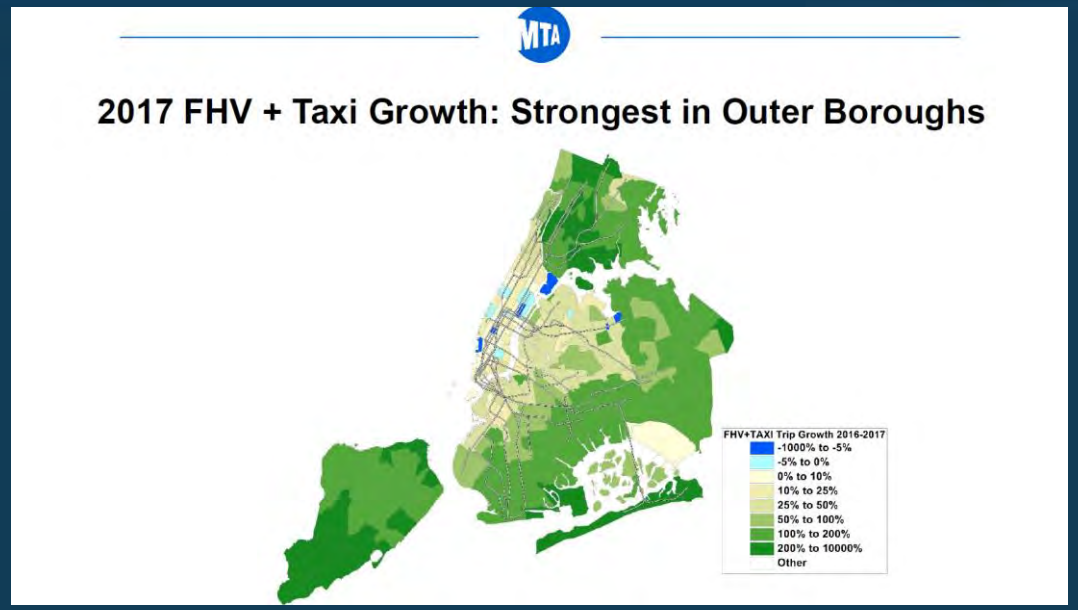
$2.2 billion
Revenue in 2018

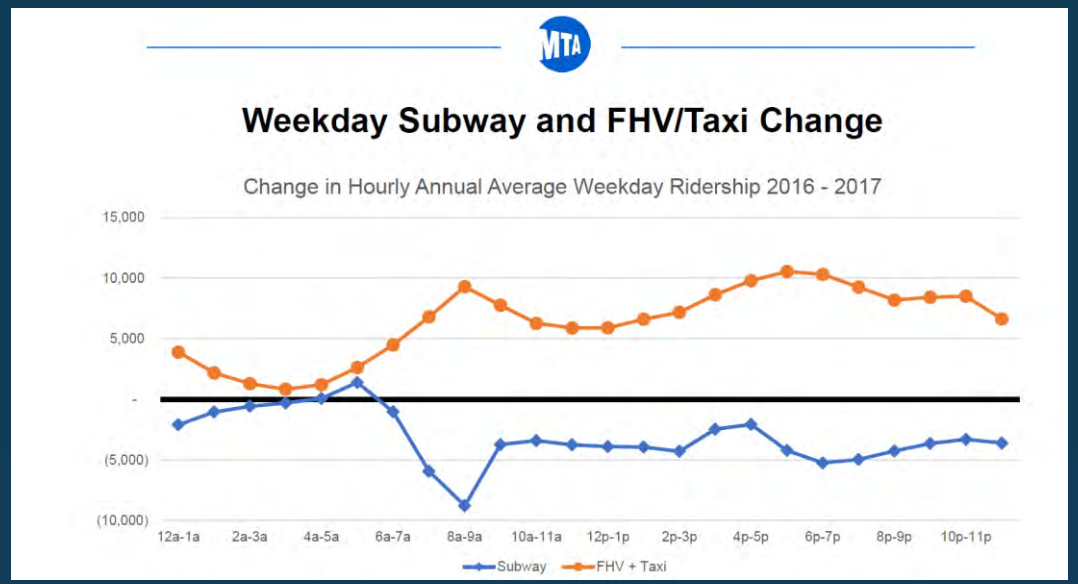
1 billion+
Cumulative rides

300+
Markets in US and Canada

New York Example

- Due to agreements with TNCs, New York has really good TNC data
- TNCs appear to be affecting transit use most in the AM Peak, and in the outer Boroughs
- Bus use rate of decline increasing
  - Down 1.3% in 2016
  - Down 5.1% in 2017
  - May 2018 year to date down 5.8%
  - Student ridership down 10% per MetroCard





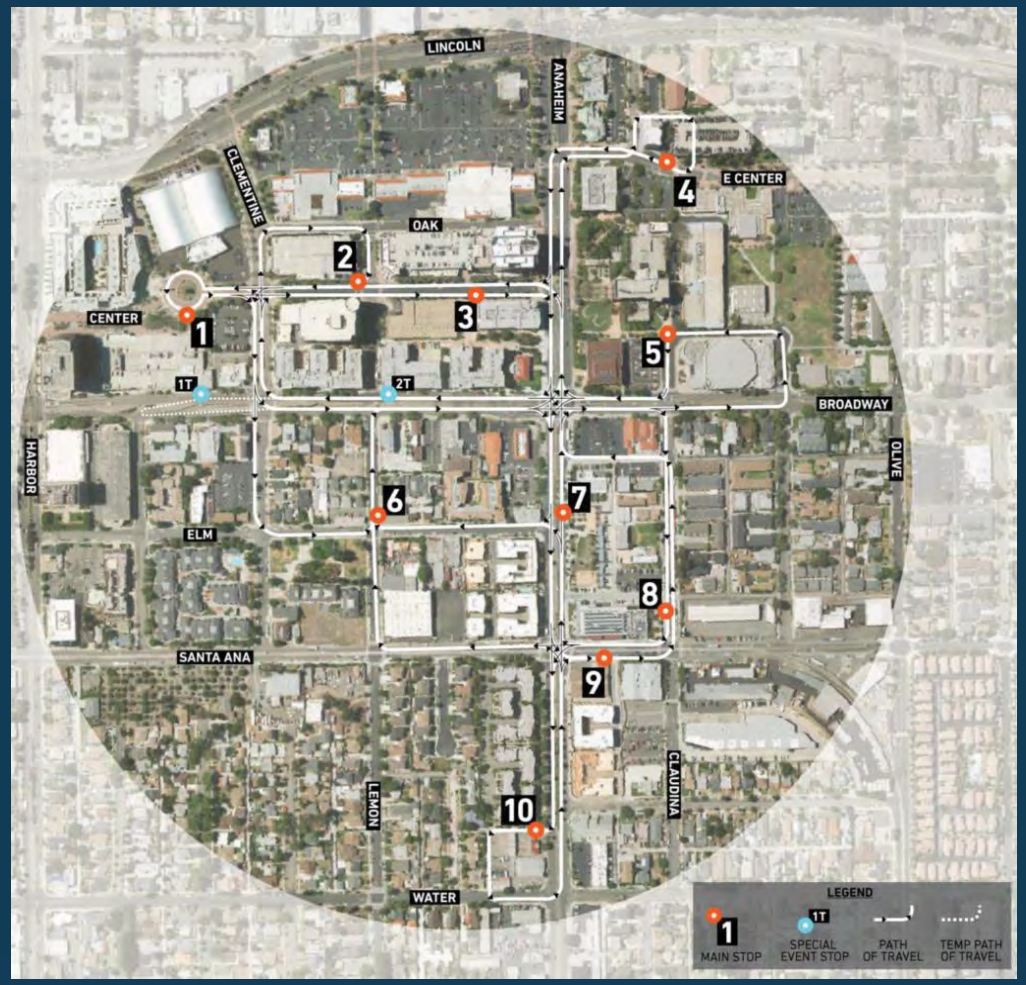
TNC Partnerships

- Many transit agencies are seeking to leverage TNC services as a first mile last mile option
- LAVTA, Metro, OCTA, SMART, TAM, Sacramento RT, and Pinellas SunCoast Transit are among agencies that have partnered with TNCs
- Other agencies have partnered with traditional livery providers -- Santa Monica BBB

Microtransit Performance

Transit Agency	Contract or In house	Cost per Vehicle Service Hour	Passengers per Vehicle Service Hour	Cost per Passenger Trip
AC Transit	In house	$214.00	3	$71.00
NVTA	Contracted	$44.48	2.6	$17.00
NCTD	Contracted	$97.00	2.7	$36.00
OCTA (OC FLEX)	Contracted	$54.00	1.69	$31.95

Microtransit – FRAN



- FRAN: specialty Mircotransit service - operates between a series of clustered designated stops in downtown Anaheim.
- The longest trip served is 0.7 miles.
- FRAN seems to be especially productive

FRAN			
	19-Feb	19-Mar	Total
Passenger Trips per Vehicle Revenue Hour	4.35	5.72	5.2
Total Revenue Hours	383.36	619.09	1002.45
Total Passenger Trips	1666	3544	5210
Total Vehicle Revenue Miles	1002.31	1608.08	2610.39

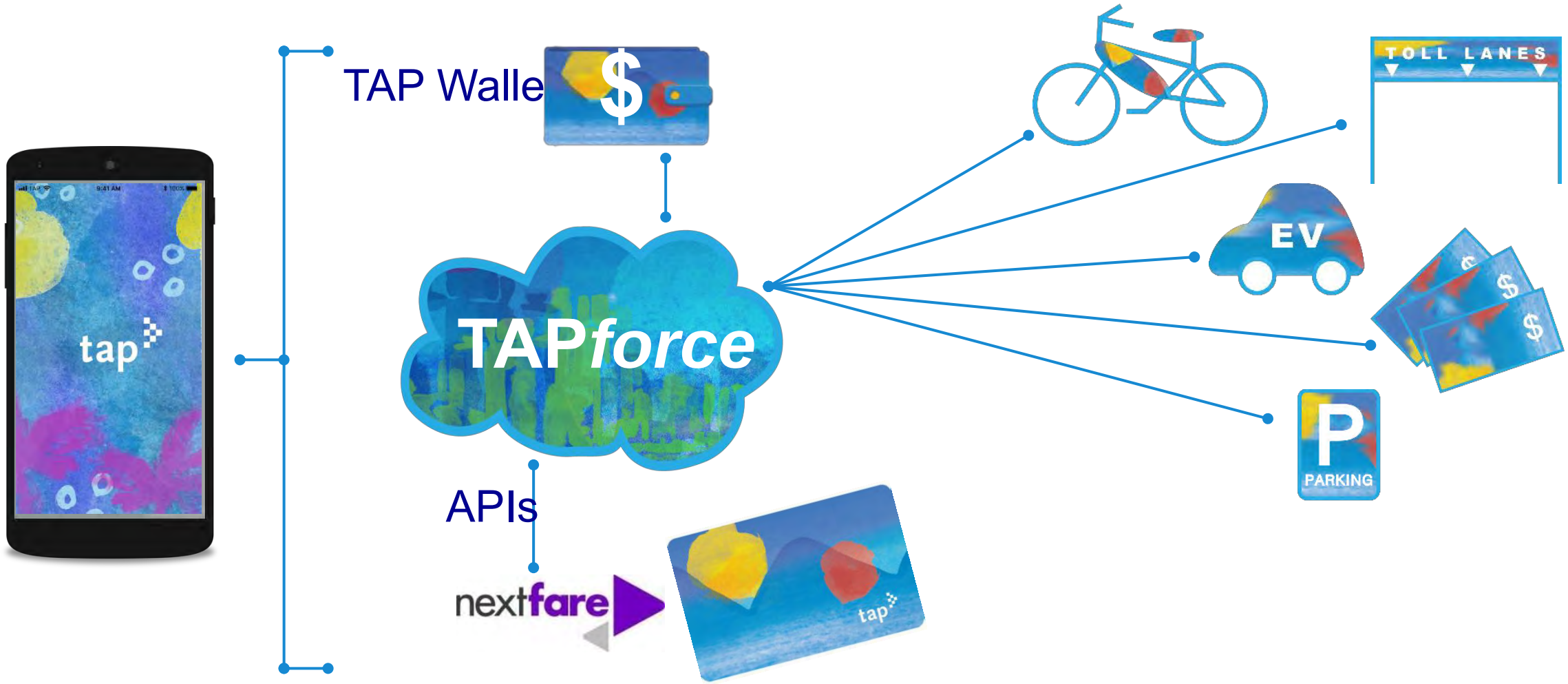
Mobility as a Service (MaaS)

Emerging concept to integrate payment, information, and service

Core Characteristic	Description
1. Integration of transport modes	A goal of MaaS schemes is to encourage the use of public transport services, by bringing together multi-modal transportation and allowing the users to choose and facilitating them in their intermodal trips. Following transport modes may be included: public transport, taxi, car-sharing, ride-sharing, bike-sharing, car-rental, on-demand bus services. Envisioning a service beyond the urban boundaries, it will embrace also long-distance buses and trains, flights, and ferries.
2. Tariff option	MaaS platform offers users two types of tariffs in accessing its mobility services: “mobility package” and “pay-as-you-go”. The package offers bundles of various transport modes and includes a certain amount of km/minutes/points that can be utilized in exchange for a monthly payment. The pay-as-you-go charges users according to the effective use of the service.
3. One platform	MaaS relies on a digital platform (mobile app or web page) through which the end-users can access to all the necessary services for their trips: trip planning, booking, ticketing, payment, and real-time information. Users might also access to other useful services, such as weather forecasting, synchronization with personal activity calendar, travel history report, invoicing and feedback
4.. Multiple actors	MaaS ecosystem is built on interactions between different groups of actors through a digital platform: demanders of mobility (e.g. private customer or business customer), a supplier of transport services (e.g. public or private) and platform owners (e.g. third party, PT provider, authority). Other actors can also cooperate to enable the functioning of the service and improve its efficiency: local authorities, payment clearing, telecommunication and data management companies.
5. Use of technologies	Different technologies are combined to enable MaaS: devices, such as mobile computers and smartphones; a reliable mobile internet network (WiFi, 3G, 4G, LTE); GPS; e-ticketing ANDE-payment system; database management system and integrated infrastructure of technologies (i.e. IoT).
6. Demand orientation	MaaS is a user-centric paradigm. It seeks to offer a transport solution that is best from customer’s perspective to be made via multimodal trip planning feature and inclusion of demand-responsive services, such as taxi.
7. Registration requirement	The end-user is required to join the platform to access available services. An account can be valid for a single individual or, in certain cases, an entire household. The subscription not only facilitates the use of the services but also enables the service personalisation.
8. Personalisation	Personalisation ensures end users’ requirements and expectations are met more effectively and efficiently by considering the uniqueness of each customer. The system provides the end-user with specific recommendations and tailor-made solutions on the basis of her/his profile, expressed preferences, and past behaviors (e.g. travel history). Additionally, they may connect their social network profiles with their MaaS account.

Mobility as a Service: A Critical Review of Definitions, Assessments of Schemes, and Key Challenges: Urban Planning (ISSN: 2183–7635) 2017, Volume 2, Issue 2, Pages 13–25, Peraphan Jittrapirom 1, *, Valeria Caiati 2 , Anna-Maria Feneri 2 , Shima Ebrahimigharehbaghi 1 , María J. Alonso- González 3 and Jishnu Narayan

LA County TAP Platform/MaaS Integration



Other MaaS Integration Projects

Uber

- Personal Mobility
  - Ridehailing
  - E-bikes
  - E-scooters
- Goods
  - Meal Delivery (UberEats)
  - Distribution Management (Uber Freight)
  - 1st Mile/Last Mile (Uber Rush – Discontinued)

Maas In US and Europe

Project	Location
TransitApp	(USA, UK, Canada, Europe, Australia)
Optymod	(Lyon, France)
Mobility 2.0 services	(Palma, Spain)
SHIFT—Project 100	(Las Vegas, USA)
UbiGo	(Gothenburg, Sweden)
Mobility Shop	(Hannover, Germany)
Smile	(Vienna, Austria)
Tuup	(Turku Region, Finland)
My Cicero	(Italy)
Moovel	(Germany)
Whim	(Helsinki, Finland)
WienMobil Lab	(Vienna, Austria)

Innovative Clean Transit

ICT Large Agencies

Large Transit Agencies	2016 Bus Vehicles	2017 Bus Vehicles	Air Pollution Control District	Air Basin
Los Angeles County Metropolitan Transportation Authority dba: Metro(LACMTA)	1935	1916	SCAQMD	South Coast
Orange County Transportation Authority(OCTA)	471	466	SCAQMD	South Coast
Foothill Transit	318	329	SCAQMD	South Coast
City of Los Angeles Department of Transportation(LADOT)	258	262	SCAQMD	South Coast
Long Beach Transit(LBT)	187	189	SCAQMD	South Coast
Riverside Transit Agency(RTA)	164	163	SCAQMD	South Coast
Santa Monica's Big Blue Bus(Big Blue Bus)	167	162	SCAQMD	South Coast
Omnitrans(OMNI)	169	154	SCAQMD	South Coast
Santa Clarita Transit(SCT)	68	68	SCAQMD	South Coast
Montebello Bus Lines(MBL)	67	67	SCAQMD	South Coast

- Per the final rule, a "Large Transit Agency" means either:

A) transit agency that operates either in the South Coast or the San Joaquin Valley Air Basin and operates more than 65 buses in annual maximum service; or

B) a transit agency that does not operate in the South Coast or San Joaquin valley Air Basin and has at least 100 buses in annual maximum service in an urbanized area with a population of at least 200,000 as last published by the Bureau of the Census before 12/31/2017

- A "Small Transit Agency" means a transit agency that is a not a large transit agency.

Vehicle Propulsion
Existing Conditions

- The Region is only beginning the transition to ZEBs
- The Electric Battery category will likely grow to a majority number over the life of the plan

2016 Vehicle Revenue Miles by Propulsion/Fuel Source		
Compressed Natural Gas	172,384,043	64.54%
Gasoline	93,305,569	34.93%
Electric Propulsion (Urban Rail)	21,909,815	8.20%
Diesel (71% Commuter Rail)	17,169,492	6.43%
Other Fuel	10,901,793	4.08%
Liquefied Petroleum Gas	2,311,196	0.87%
Electric Battery	503,703	0.19%
2016 Regional Vehicle Revenue Miles[31]	267,090,533	100%

Vehicle Propulsion
Existing Conditions

2016 Vehicle Revenue Miles by Propulsion/Fuel Source				
County	Gasoline (gal)	Electric Battery	Compressed Natural Gas	Diesel
Imperial	49,154	-	-	1,005,056
Los Angeles	7,019,318	487,521	127,979,901	13,495,100
Orange	2,314,764	1,377	15,340,233	495,536
Riverside	749,656	14,805	13,485,025	-
San Bernardino	1,139,761	-	12,585,685	-
Ventura	64,321	-	2,993,199	2,173,800
Grand Total	11,336,974	503,703	172,384,043	17,169,492

ZEB Pilots in Southern California

- SunLine/NREL Fuel Cell Electric Pilot
- 2010-2013 48,000 vehicle miles, 3,600 fuel system hours
- Problems encountered during the demonstration include some air conditioning issues during the hot desert summer, fuel cell power system issues, traction battery issues, and bus body work.
- Maintenance costs well above CNG control group

- Foothill Transit/ NREL Battery Electric Bus Demonstration
- 2014: 12 Proterra BEBs from through a $10.2 TIGGER grant to utilize on route 291
- 2014-2015: 401,244 vehicle miles; 4,462 vehicle hours
- Maintenance costs below CNG control group

Maintenance Costs Per Mile
NREL Demonstration Projects

	ZEB Evaluation Period Performance	CNG Evaluation Period Performance
Total maintenance, $/mile , Sunline Fuel Cell	$ 0.80	$ 0.48
Maintenance – propulsion only, $/mile, Sunline Fuel Cell	$ 0.60	$ 0.21
Total maintenance, $/mile , Foothill BEB	$ 0.16	$ 0.18
Maintenance – propulsion only, $/mile, Foothill BEB	$ 0.02	$ 0.08

Anaheim Transportation Network (ATN)
Electrify Anaheim Grant (TIRCP)

- 40 electric BYD buses, half 40’ and half 30’ or 60’
- $28.6 Million TIRCP grant
- Capability to double service levels on 8 routes
- Implement new first last mile circulators – Microtransit Pilot
- Maintenance facility with solar panels

AVTA
Electric Bus Fleet Conversion Project

- Goal of converting to clean fuel electric buses.
- February 2016 award contract to BYD $79 million, 85 electric buses between 2018 and 2023
- 3 60’ electric buses already operating on Route 1
- Two rounds of TCIRP Grant Funding
  (one joint grant with LBT)

LADOT
Clean Fuels Program & TIRCP

- Los Angeles City: Leading the
- Transformation to Zero Emission Electric Bus Transit Service
  - Acquire 112 zero-emission replacement and new buses to, in order to
  - increase frequency of all existing DASH routes to 15-minute service and add 4 new routes,

- Council approved (17-0739) motion to convert to 100% ZEB fleet by 2030
  - LADOT directed to:
  - report back on facility needs
  - integrate renewables into fuel mix
  - prioritize implementation in disadvantaged communities
  - Investigate possible transition by 2035

Metrolink
TIRCP

- Purchase of 9 Fuel-Efficient Tier IV Locomotives Project
- $41 million, TCIRP Grant,
  $17 million match
- Replacing 7 locomotives, and also acquiring 2 additional locomotives that will be
- Used to increase service on the Antelope Valley and Ventura County lines within Los Angeles County

City of Santa Monica
TIRCP

- Electric Blue: Electrification of City of Santa Monica's Big Blue Bus
- Purchase 10 zero-emission battery electric vehicles to add new express service and increase ridership on route 7, which connects Santa Monica with the Purple and Expo Metrorail lines and Downtown LA.
- Goal of 100% ZEB by 2030

Questions?

To: Regional Transit Technical Advisory Committee (RTTAC)

From: Philip Law, Transit/Rail Manager, 213-236-1841, law@scag.ca.gov

Subject: Partnerships Between Transit Agencies and Transportation Network Companies

SUMMARY:
A pre-publication draft of Transit Cooperative Research Program (TCRP) Research Report 204 is now available at http://nap.edu/25425.

In this forthcoming TCRP report, researchers investigate both active and former partnerships between transit agencies and Transportation Network Companies (TNCs) to understand project development and structure, and how those were achieved. The research includes transit agency surveys and follow-up interviews, literature review, interviews with TNC policy staff and industry experts, and FTA representatives. The report provides recommendations so that the transit industry can be more deliberate in its approach to partnering with TNCs.

Within the SCAG region, the researchers evaluate LA Metro's Mobility on Demand pilot with Via to provide first/last miles service to select Metro stations, and Omnitrans' RIDE Taxi & Lyft Program providing alternative same-day transportation for seniors and people with disabilities as a supplement to ADA paratransit service at reduced costs.

Key findings include:

- Motivations for engaging in partnerships generally consist of three categories:
  - Use TNCs to provide a specific type of service,
  - Meet or respond to a specific policy goal or challenge, and
  - Demonstrate innovation and flexibility to experiment.
- The most common target audiences are people connecting to transit (first mile/last mile) and customers of ADA paratransit or dial-a-ride (DAR) services. Also represented are people traveling in lower-density environments, people with late-night travel needs, and guaranteed ride home participants.
- The most common design involves transit agencies directly subsidizing TNC trips, but marketing partnerships are also represented.
- Formal partnerships that involve an exchange of funds are generally initiated through a formal request for proposal (RFP) or information (RFI). Informal partnerships are usually initiated through direct engagement with a TNC and do not involve a formal procurement process.

- Marketing and customer outreach consist of collaborative marketing between the transit agency and TNC and transit agency marketing of TNC discount codes.
- Coming to a data sharing agreement is often the biggest hurdle. TNCs have been hesitant to share data due to concerns about privacy, public records requests, and competition. Earlier partnerships, in particular, lacked data sharing agreements.
- "Sunshine laws" require certain information held by governments to be open or available to the public and vary by state, and can affect the data that TNCs are willing to share.
- Per FTA guidance, ADA regulations "apply [to transit agency partnerships with TNCs]…regardless of whether federal funding is involved." Challenges include providing wheelchair-accessible vehicles (WAVs) and ensuring equivalent response times.
- Transit agencies generally address Title VI considerations through a dispatch service for customers without smartphones and through a taxi company, dispatch service, or pre-paid card for unbanked customers.
- Organizational frameworks differ by partnership. The specific organization or working group managing the partnership may be housed within a transit agency's planning, operations, marketing, or other department.

To: Regional Transit Technical Advisory Committee (RTTAC)

From: Philip Law, Transit/Rail Manager, 213-236-1841, law@scag.ca.gov

Subject: When Uber Replaces the Bus: Lessons Learned from the Pinellas Suncoast Transit Authority's Direct Connect Pilot

SUMMARY:
In August 2017, SCAG staff invited Chris Cochran from the Pinellas Suncoast Transit Authority (PSTA) to speak to the RTTAC about his experience developing a public-private partnership with Uber, United Taxi, and Wheelchair Transport Services to provide on-demand services to complement fixed route transit in St. Petersburg, Florida. The PSTA's Direct Connect pilot program was the first ever program in the nation, with groundbreaking partnerships, national recognition, and demonstration of an expandable model. However, there were challenges with respect to data and technology, Americans with Disabilities Act (ADA) equitable service, and policy issues at all levels of government.

The Shared Use Mobility Center and Transit Center have released a case study report that identifies how PSTA responded to internal and external challenges, lists lessons learned, and recommends actions for future pilot projects (see https://sharedusemobilitycenter.org/what-the-first-transit-tnc-partnership-can-teach-us/).

Key findings include:

- Launching the pilot required public champions,
- Rider engagement pays off,
- Maintain options and flexibility to iterate,
- Getting good data is key to good service,
- Pilots should have up-front goals and plans for program evaluation, and
- The pilot model can cut costs, but poses important trade-offs.

The Executive Summary is attached to this staff report. The case study report PDF is available at https://learn.sharedusemobilitycenter.org/wp-content/uploads/SUMC_CaseStudy_Final3_06.21.19-1.pdf.

ATTACHMENT:
Executive Summary from "When Uber Replaces the Bus: Lessons Learned from the Pinellas Suncoast Transit Authority's Direct Connect Pilot"

When Uber Replaces the Bus: Learning from the Pinellas Suncoast Transit Authority's "Direct Connect" Pilot

A First-Last Mile Case Study

SHARED-USE MOBILITY CENTER

Acknowledgements

JUNE 2019

As the leading public interest organization in the mobility sector, the Shared-Use Mobility Center (SUMC) has served as an advisor to cities, transportation agencies, and business leaders since 2014.

Knowledge creation and deployment are vital if we are to achieve a multi-modal transportation system that works for all. To this end, we look forward to sharing lessons learned from pilots such as this that can help us reach our goal.

This report was made possible through the direct project support of TransitCenter, a foundation dedicated to improving urban mobility across the United States.

The authors are grateful to the Pinellas Suncoast Transit Authority, United Taxi, Uber, and Wheelchair Transport, whose willingness to share their insights and operational data made this case study possible. The content and conclusions of this report are solely those of the authors.

This report was written by Colin Murphy and Kevin Karner of SUMC and Zak Accuardi of TransitCenter, with additional editorial oversight and input from SUMC's Sharon Feigon and TransitCenter's Chris Pangilinan. The report was edited by Leslie Gray and designed by Derek Berardi.

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SHARED-USE MOBILITY CENTER

Contents

Executive Summary

The Pinellas Suncoast Transit Authority (PSTA), in Pinellas County, FL, was the first transit agency in the US to sign a service provision agreement with a transportation network company (TNC) to offer joint first/last-mile service subsidized by public dollars. PSTA's "Direct Connect" pilot allows riders to get to and from bus stops in a taxi, wheelchair-accessible vehicle (WAV), or Uber TNC vehicle at a subsidized rate.

Direct Connect was originally conceived in 2015 as a replacement for two under-performing, low-frequency feeder bus routes. Specifically, riders were given a $3 subsidy for rides to or from bus stops in two zones via Uber, United Taxi or the WAV provider, Care Ride. While Direct Connect ridership was minimal during the initial six months of the pilot, low operational costs helped the agency to justify continuing and expanding the service on a provisional basis.

With the goal of increasing ridership, PSTA expanded the Direct Connect service area to eight zones across the county in 2017. Leading up to the expansion, Uber made usability improvements to the in-app experience while PSTA switched wheelchair service providers, increased the per-trip subsidy to $5, and added to the pilot's overall budget. A greater effort towards marketing and outreach by PSTA, Uber, and United Taxi also led to several months of consistent ridership growth, from less than three to around forty rides per day. During that time, PSTA built on their experience and launched two additional on-demand pilots to improve late night and paratransit service.

While the pilot achieved the agency's cost-cutting goals, both overall and on a per-rider basis, there were clear shortcomings. Direct Connect's zone-based service design limited the transit routes available and required some riders to go out of their way to make an eligible trip while wheelchair users were functionally excluded entirely due to the pilot's fixed-subsidy (as opposed to fixed-fare) pricing. PSTA's ability to evaluate Direct Connect's efficacy in providing a desirable service alternative to those riders has been limited by a lack of agency rider surveys, field observations, or detailed trip data from Uber. Thus far, there has been no effective way for PSTA to understand how Direct Connect use interacts with its scheduled service, including which routes Direct Connect users are transferring to or from, or whether they are making a transfer at all.

A new iteration of Direct Connect, launched in April 2018, offers a more flexible service model that allows riders to access the nearest of 24 eligible intersections, rather than a single intersection in their service zone, while the rider subsidy for wheelchair-accessible rides was raised to make Direct Connect fares comparable for WAV and non-WAV trips. In May 2019, the PSTA board voted to establish Direct Connect as a fixture of its transit operations for the near term, funding the service through 2021.

There are different interpretations of success when judging a pilot. However, we can learn from PSTA's willingness to modify the original pilot design and embark on new pilot programs using TNCs.

Important data gaps remain heading forward. In early 2019, PSTA flagged an issue with Uber's app, eventually learning that an overly large geofence had resulted in a significant overstatement of the number of rides made in much of 2018. While the agency was not invoiced for the extra rides, and Uber worked to resolve the problem, the revelation underscores the continued need for transparency from service providers, particularly when pursuing new partnership models. Until a contract revision provides more data access in the wake of the geofencing error, Direct Connect will continue to evolve without the means for basic evaluation and auditing of its largest provider.

While PSTA is currently unable to understand how Direct Connect riders interact with scheduled service (if they do at all), solutions seem attainable in the near future. Since October 2018, Uber has offered a data dashboard for its late-night pilot, which allows PSTA to visualize trip origins and destinations. Additionally, PSTA recently helped launch an account-based fare app and entered into a partnership with the multimodal trip planner Transit App, both developments that offer potential paths to track transfers between fixed-route and on-demand service.

PSTA's overall experience developing, managing, and adapting the Direct Connect pilot provides insight into what transit agencies can expect when working with on-demand service providers. While operating on a larger scale, in a denser environment, or with a different ridership base may have offered different lessons in implementation, the Direct Connect pilot's service design shows what is necessary for a successful launch of a pilot program: good data and transparency from all parties, as well as concrete plans for outreach and evaluation. Though the program faced challenges, PSTA is to be commended for taking the chance on a new service format and for adjusting as they learned more about how it was working for riders and for the agency itself.

In summary:

Launching the pilot required public champions. The fact that a complex, highly-visible pilot developed so soon after a major funding setback for PSTA speaks to the organizational resilience and dedication of key leadership and staff in seeking new ways to provide service.

Rider engagement pays off. Initial ridership gains closely followed ground-based marketing efforts. In a functionally different service design involving new technology, time and energy must be spent engaging and educating potential riders.

Maintain options and flexibility to iterate. While the execution of bringing in new providers or providing equal access has not been seamless, PSTA deserves credit for a willingness to evolve the service design and to keep participation open to multiple providers. The pilot is richer for leveraging the diversity of TNC, taxi and wheelchair-accessible service.

Getting good data is key to good service. Agencies should stand firm in requiring critical data from service providers and be proactive in filling information gaps that exist. Basic aspects of pilot utilization, particularly around equity implications of this service model, remain unknown after several years due to a lack of survey and TNC data.

Pilots should have up-front goals and plans for program evaluation. These data gaps, while also attributable to resource constraints, seem to have stemmed from a lack of service quality goals or subsequent plans for assessment. Pilot iterations and expansion efforts likely would have been better informed had these been articulated.

The pilot model can cut costs, but poses important trade-offs. While successful at cutting costs here, per-ride reimbursements to service providers, transfer discounts provided to riders to keep the pilot appealing, the inability to count single-occupancy vehicle rides towards federal funding, and unresolved risk and labor implications pose trade-offs among fundamental agency goals and likely limit scalability beyond very low performing routes.

Table 1: Estimated Change in Cost Structure by Pilot Phase

	Phase I Feb. 2016 - Jan. 2017	Phase II Feb. 2017 - Mar. 2018	Phase III Apr. 2018 to Present
Avg. Uber Fare* (Pre/Post PSTA Subsidy)	Unavailable	$7.64/$2.64	Unavailable at time of publication
Avg. United Taxi Fare (Pre/Post PSTA Subsidy)**	$8.46/$5.46	$6.23/$1.23	Unavailable at time of publication
Avg. WAV Fare* (Pre/Post PSTA Subsidy)**	$25/$22	$25/$20	$25/$5
Geographic Constraints	Trips must begin or end within 400 feet of four potential transit stops, located between two separate communities.	Trips must begin or end within 800 feet of eight potential transit stops, located in designated zones spread across the county.	Trips must begin or end within 800 feet of 24 eligible bus stops spread throughout the county.
Bus Fare (Pre/Post Subsidy)	$2.25/Free day pass	$2.50/Free for single transfer with Direct Connect receipt	$2.50/Free for single transfer with Direct Connect receipt
Fixed Route Connections**	~12 routes between ~20 stops	~20 routes between ~60 stops	~40 routes between ~200 stops

***Average from August 2017 - March 2018**
****United Taxi data set draws from a much smaller sample and not necessarily equivalent ride distances**
*****As of March 2018 no WAV rides had occurred; subsidized fares are based on staff estimates of trip cost**
******Defined as within a quarter mile of an eligible transit stop**

Regional Transit Technical Advisory Committee
2019 Agenda Look Ahead

The RTTAC meets quarterly on the fifth Wednesday of the month. Additional meetings may be necessary in 2019 leading up to the release of the Draft Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), Connect SoCal, in late 2019. Following is a tentative look-ahead to the proposed RTTAC agendas for 2019. It includes three standing items requested by the Chair and Vice Chair for:

1) Regulatory Compliance – items addressing compliance with MAP - 21 and FAST Act rulemakings, as well as state regulations including SB 375 or ARB fleet rules
2) Performance – items related to understanding why ridership has declined, and highlighting steps local agencies are taking to address these losses
3) Technology and Mobility Innovations – items related to transportation network companies, ITS, advanced technologies, and other mobility innovations

The discussion items below are proposed and speakers have not yet been contacted. Suggestions from RTTAC members are welcome.

Spring 2019 (May 29)

- Regulatory Compliance Standing Item
  - Connect SoCal Transit/Rail Project Submittals & Modeling Assumptions
  - Private Sector Providers Analysis
  - Transit Asset Management Target Setting
- Performance Standing Item
  - Transit Ridership Study Phase 2 (receive & file)
- Technology and Mobility Innovations Standing Item
  - Portland Tri-Met Hop Fastpass*
  - Transit Technology/Service Delivery Innovation
- ADA Paratransit Demand Forecast

Summer 2019 (July 31)

- Regulatory Compliance Standing Item
  - Connect SoCal Environmental Justice Analysis
  - SCAG Transit Asset Management Target Setting
  - Private Sector Providers of Transportation Service outreach findings
- Performance Standing Item
  - Connect SoCal Performance Targets
- Technology and Mobility Innovations Standing Item
  - Santa Monica Big Blue Bus at Night*
  - San Bernardino County 211 Program*
- Connect SoCal Scenario Planning Development
- LAWA Automated People Mover
- SCAG ADA Paratransit Forecasting Tool Development

Fall 2019 (Sept. 30)

- Regulatory Compliance Standing Item
    - SCAG Transit Asset Management Target Setting
    - California ARB Clean Transit Rule
    - Regional Housing Needs Assessment/Growth Forecast
- Performance Standing Item
    - Connect SoCal Draft Plan -- Investments and Plan Performance
- Technology and Mobility Innovations Standing Item
    - Redlands Rail (Arrow Service) Update
- SCAG ADA Paratransit Forecasting Tool Development
- South Bay Metro Green Line Extension*

Connect SoCal Public Outreach

Javiera Cartagena
Regional Services

RTTAC – July 31, 2019

www.scag.ca.gov

INNOVATING FOR A BETTER TOMORROW

Overview of Connect SoCal Outreach

May-June 2019

Activity	Engagement
Public Workshops	500+ people
Tele-town Hall	200-700+ people
Community Org. Partners	1500+ people
Street team intercepts	1300+ intercepts
Surveys	4000+ people
Advertising	49 million (paid)

Public Open House Workshops

600 Attendees

County	Workshops
Imperial	1
Los Angeles	8
Orange	4
Riverside	7
San Bernardino	5
Ventura	3
TOTAL	**28**

Tele-town Hall

- This technology allows constituents to participate from their homes or work, by phone, from anywhere in the region
- Over 30,000 reached
- 200-700 participants throughout the call

Community Based Organization Partners

ACTIVE SGV

ALIANZA COACHELLA VALLEY

ASIAN PACIFIC ISLANDER FORWARD MOVEMENT

BREATHE CALIFORNIA of Los Angeles County®

Climate Resolve

THE Kennedy COMMISSION

Latino Health Access

LOS ANGELES COUNTY BICYCLE COALITION
WWW.LA-BIKE.ORG

LOS ANGELES NEIGHBORHOOD LAND TRUST

PEOPLE FOR HOUSING Orange County

PEOPLE FOR MOBILITY JUSTICE

SAAS
SANTA ANA ACTIVE STREETS

Safe Routes PARTNERSHIP

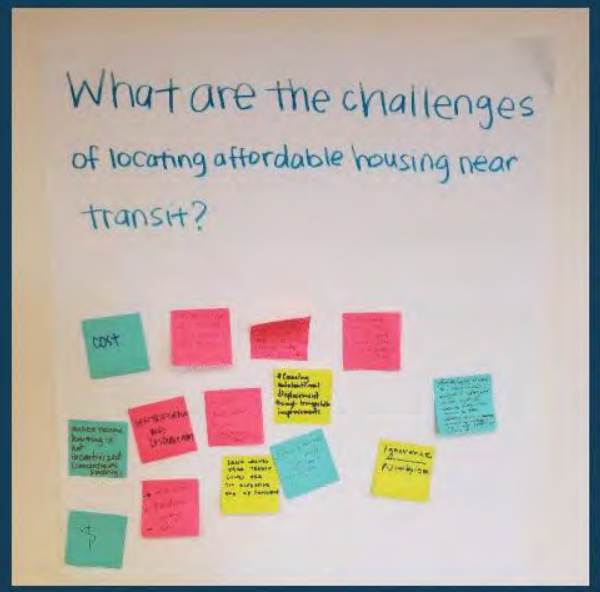
SAJE

T.R.U.S.T. SOUTH LA
TENEMOS QUE RECLAMAR Y UNIDOS SALVAR LA TIERRA

WALK BIKE LONG BEACH

CBO Outreach Purpose & Goals

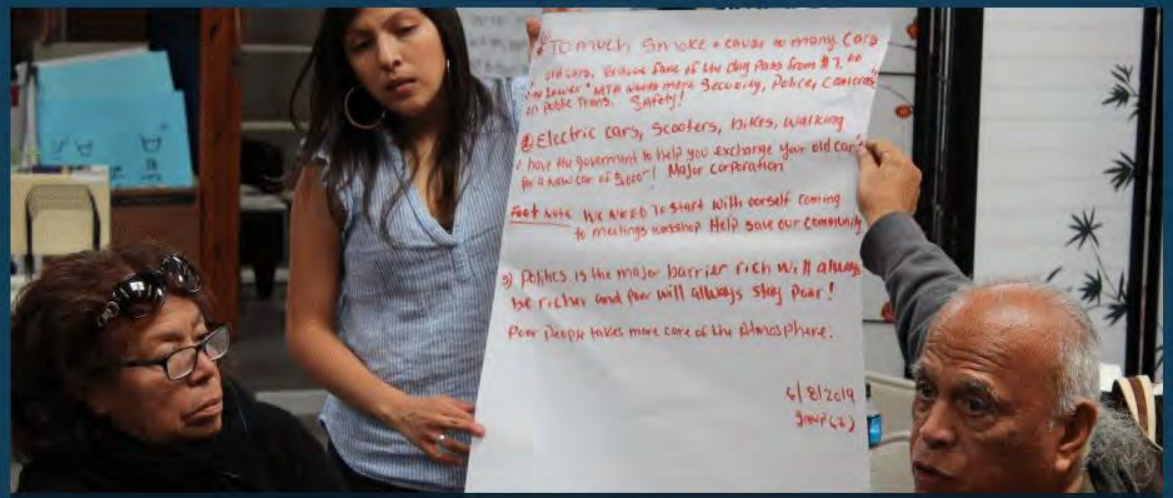
- Work with community organizations to reach historically underrepresented audiences
- Gather community feedback to ground-truth assumptions, strategies, and policies
- Identify local priorities and unmet needs



Outreach Activities

PROMOTION AND MESSAGING

MAKING PRESENTATIONS

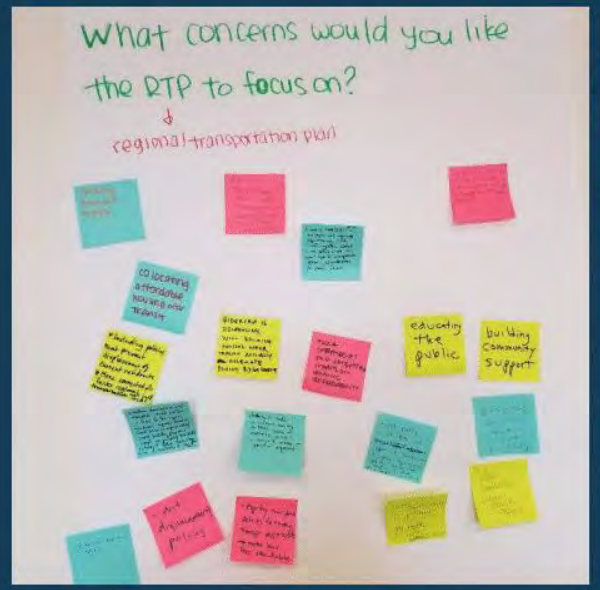


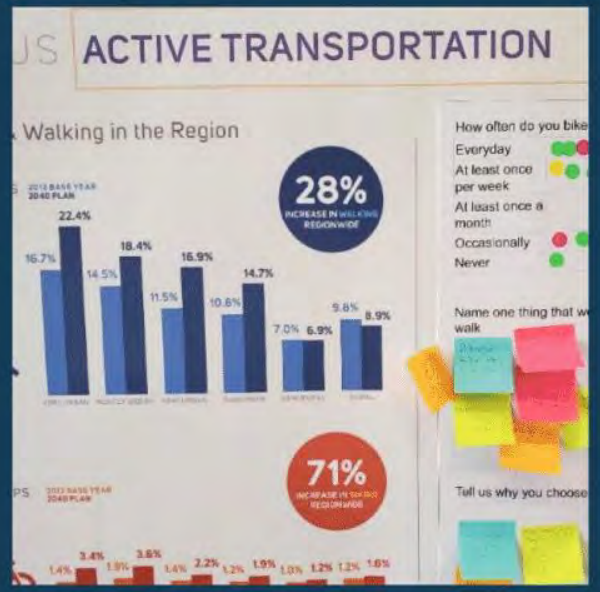
HOSTING CONVENINGS

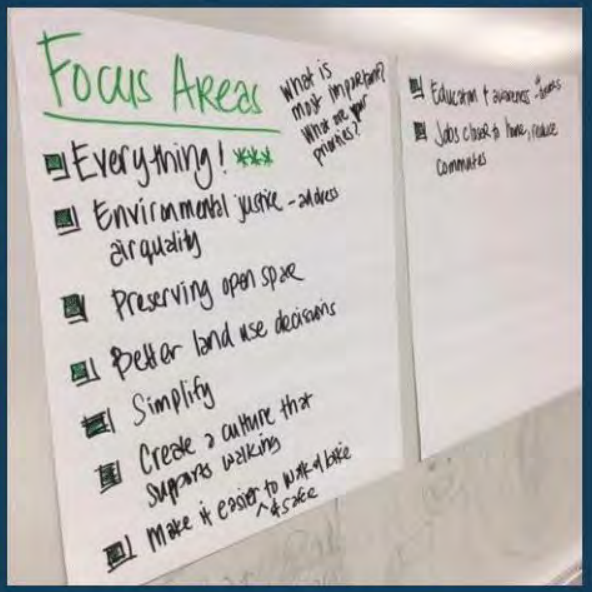
GATHER FEEDBACK VIA SURVEYS

Main Themes

- General alignment with goals and priorities
- Concerns related to:
  - Housing availability and affordability
  - Limited affordable transportation options
  - Displacement and access to opportunity







Survey

SCAG needs your input on Connect SoCal

Connect SoCal, the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy, will present a long-range vision that balances future mobility and housing needs with economic, environmental and public health goals. Connect SoCal will help guide the region's growth, and will include transportation improvements and land use ideas to shape the future of Southern California.

More

Edit

Share your feedback

Edit

Survey

The survey is now closed. Thank you to everyone who participated.

View Results

Scenarios

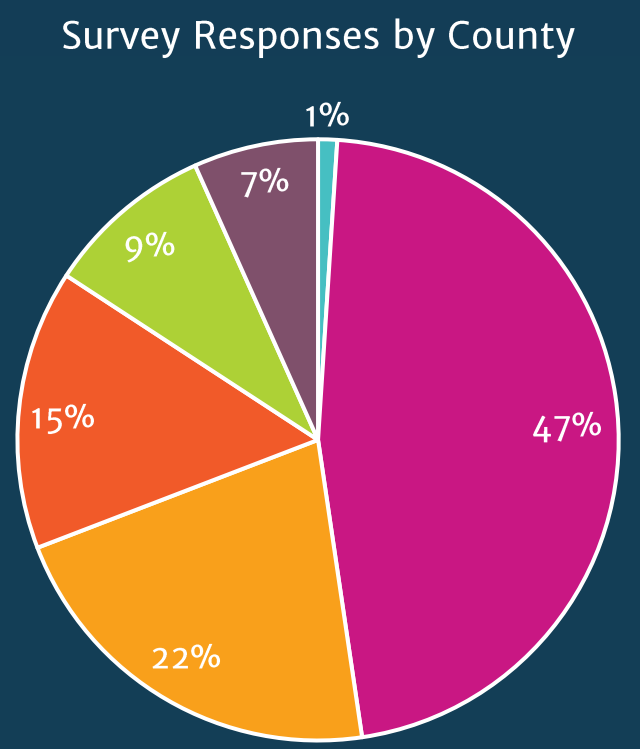
Each scenario is made up of a unique combination of strategies and illustrates a potential future for the region

Comment

Tradeoffs

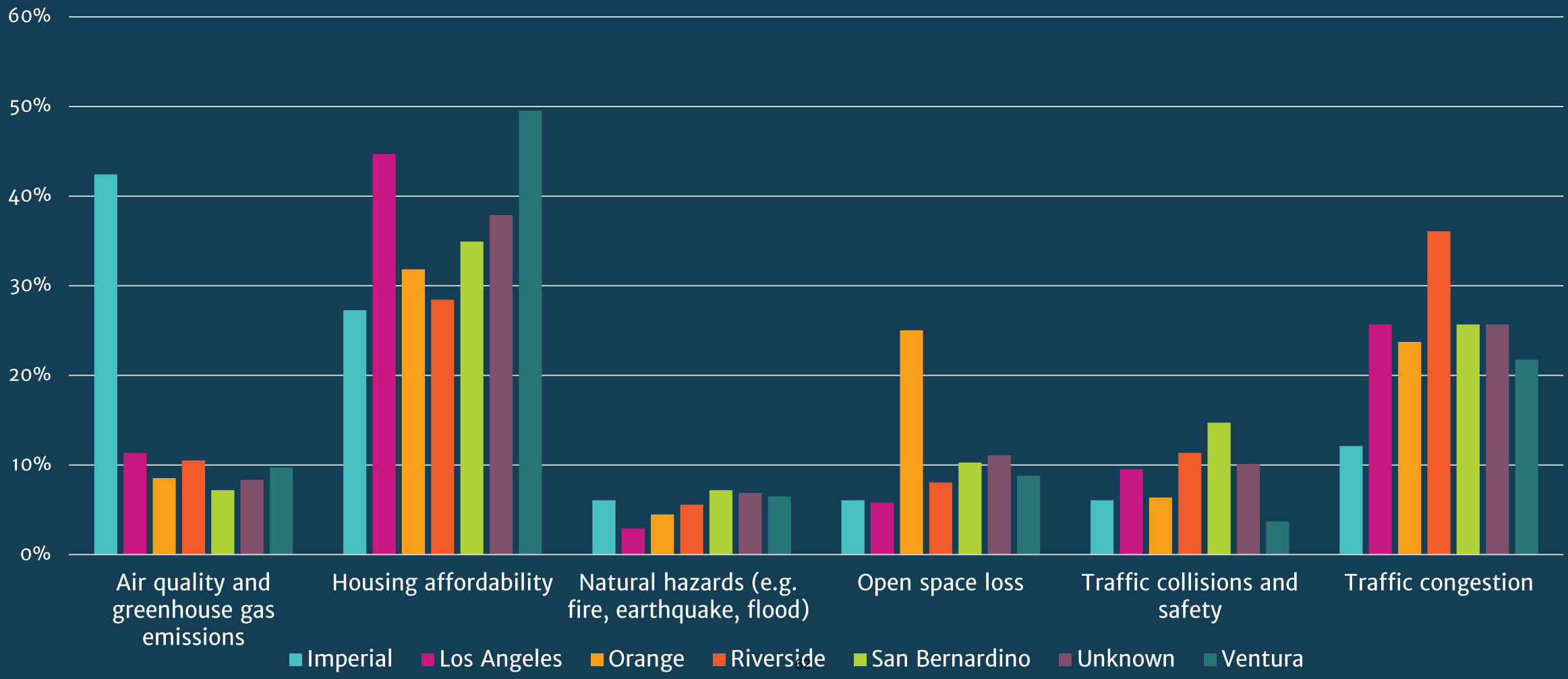
The choices and investments we make in the future can impact how the region grows and how we get around.

Answer



Survey Responses

What is the top challenge our region faces?

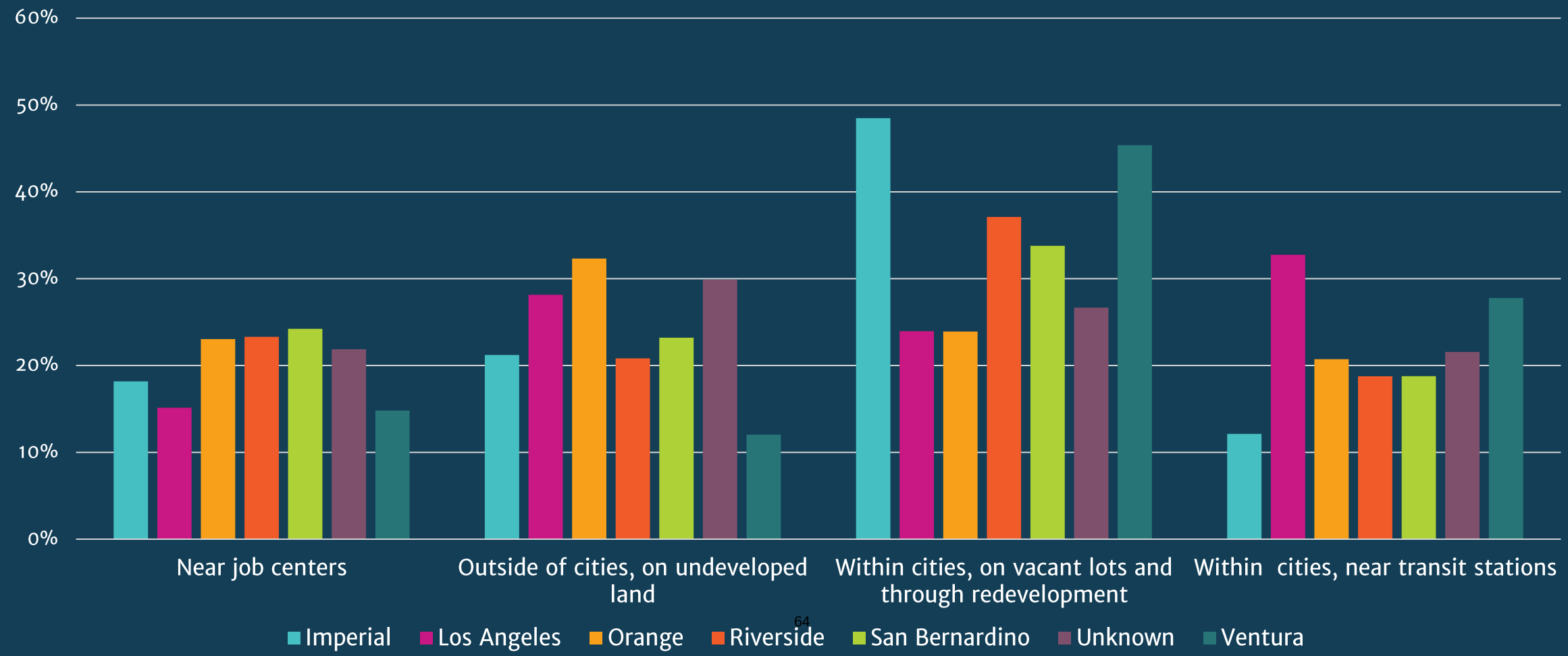


Survey Responses

What transportation improvements are most important in your community?

Survey Responses

What is the best location for new growth?



Questions?

Javiera Cartagena
Cartagena@scag.ca.gov
213-2361980
www.scag.ca.gov

INNOVATING FOR A BETTER TOMORROW

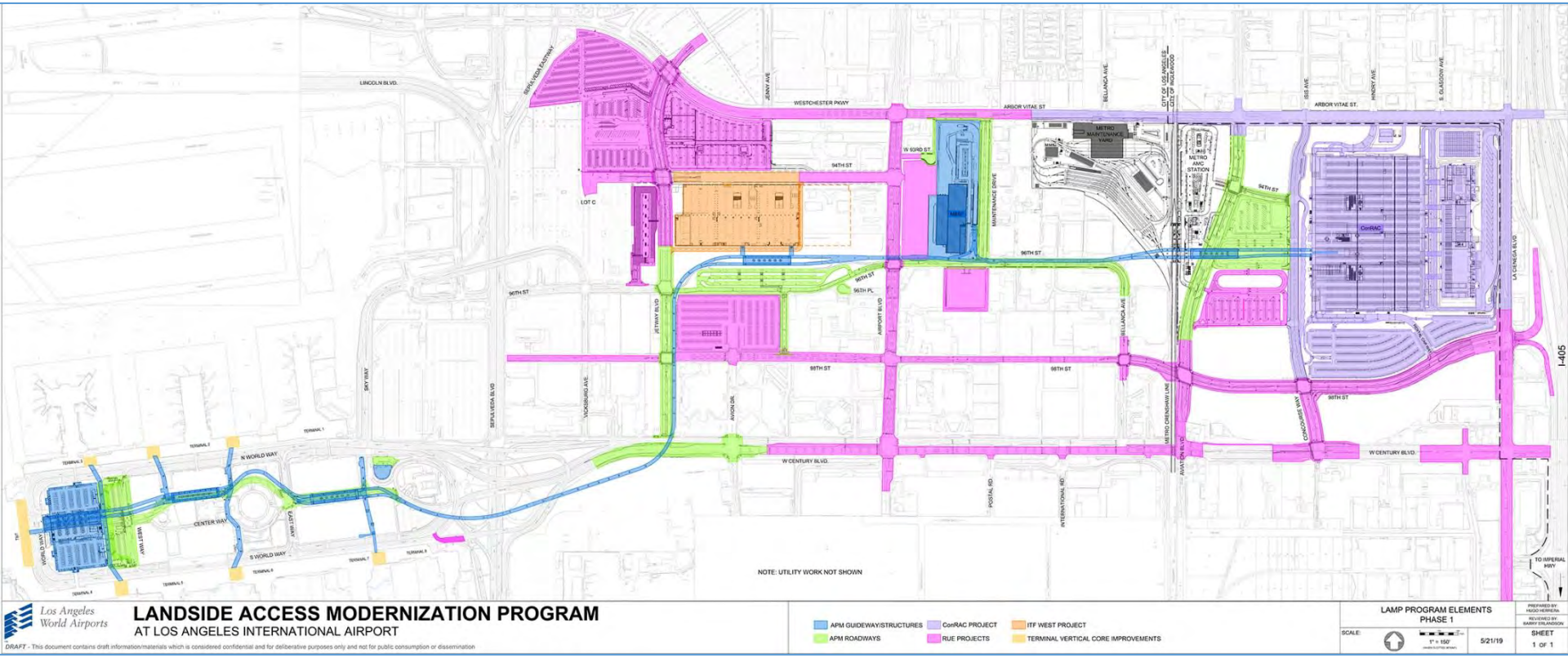
Landside Access Modernization Program (LAMP)

This is LAX

- Passenger Numbers – 87.5M in 2018
- Gateway to the world: No. 1 origin and destination airport in the U.S.
- LAX is in the midst of a $14.3 billion Capital Improvement Program
- $5.5 billion for Landside Access Modernization Program (LAMP)
  - Will help ease traffic congestion
  - Will improve the airport experience
  - Provide the long-awaited connection to the regional transportation system

LAMP Components

- Automated People Mover (APM)
- Consolidated Rent-a-Car (ConRAC) Facility
- Intermodal Transportation Facility – West (ITF-W)
- Connection to Metro light rail
- APM Maintenance & Storage Facility
- Roadway improvements



Automated People Mover (APM)

Brings convenience, reliability and time certain access to terminals

- Developer: LAX Integrated Express Solutions (LINXS)
- Length: 2.25 mile elevated guideway
- Six Stations: Three outside the Central Terminal Area and three inside
- Train Capacity: 200 passengers per train with luggage
- Ride Duration: 10 minutes end to end
- Frequency: Every two minutes
- Train Features: Level boarding, wide doors and windows, seats and handholds
- Cost to Ride: Free
- Operates 24/7; 365 days
- Contract: Public-Private Partnership (P3)
  - Design-Build-Finance-Operate-Maintain

Automated People Mover (APM)

Terminal Cores

What a Terminal Core Does:

- Connect terminals to APM via a pedestrian walkway
- Vertical circulation within terminal
  - Connect passengers to ticketing lobby, baggage claim and security checkpoints
  - Connect deplaning passengers without baggage directly to APM
- Accommodate possible baggage drop at concourse level
- Six cores are being built
- Construction will be completed in early 2022

APM System Construction

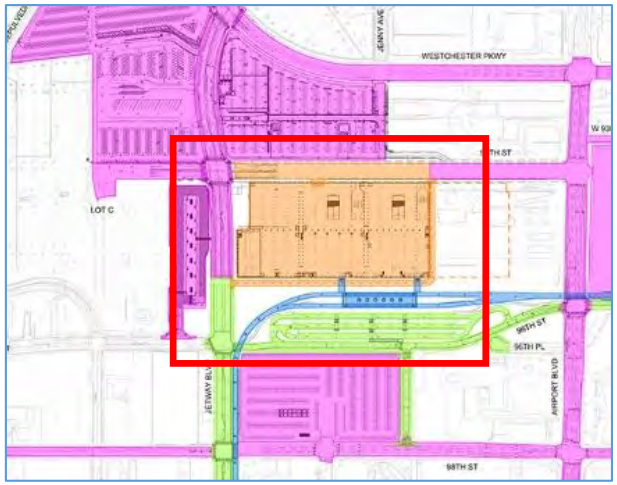
APM Maintenance & Storage Facility

- At-grade maintenance and storage facility for APM
  - Test tracks
  - Storage tracks
  - Vehicle storage and service
  - Train wash
- Control center for the entire APM system
- Security surveillance
- 2 stories tall
- Solar panels
- Structure: LEED Gold
  - Solar panels
  - Employee bike storage
  - Reclaimed water
  - Drought tolerant landscape

Intermodal Transportation Facility – West (ITF-West)

Provides new pick-up/drop-off and parking locations off-airport

- Developer: Swinerton Builders
- 1.7 million square feet
- Opens in 2021
  - Shuttles will transport to/from terminals until APM is online
- Approximately 4,500 parking spaces
  - Short & long term parking
- Meet & Greet area
- LAWA Security & Badging Office
- Contract: Design-Build



Airport Metro Connector (AMC) Station

Provides the long-awaited airport connection to regional transportation

- Located at Aviation Blvd. and Arbor Vitae St.
- Opens in 2023
- Passengers will connect to APM at the Intermodal Transportation Facility – East (ITF-E) station

Schedule for Crenshaw/LAX & Green Lines

- Open in 2020
- Passengers will take shuttles from station at Aviation Blvd./Century Blvd. in to LAX until APM is online

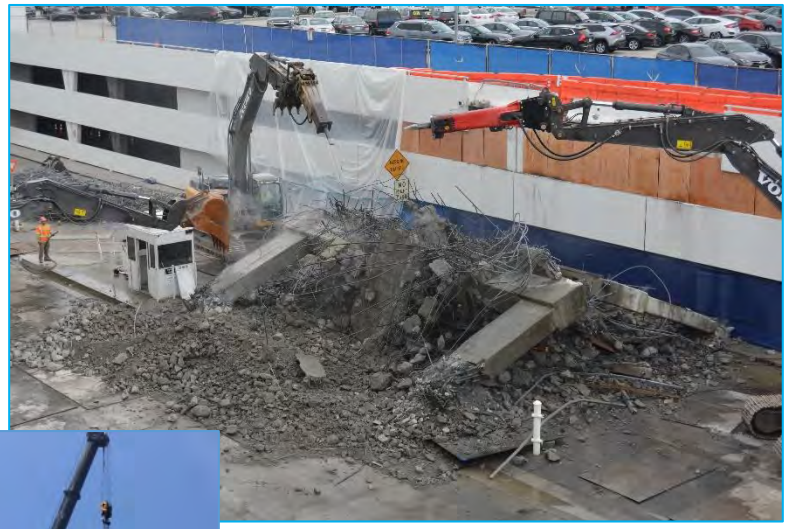
Consolidated Rent-A-Car (ConRAC) Facility

Consolidates rental car operations into one convenient facility and removes rental car shuttle traffic from Central Terminal Area

- Developer: LA Gateway Partners
- 5.3 million square feet facility
- Approximately 17,000 parking stalls
- Quick Turn Around (QTA) facilities
  - Car wash
  - Fueling
  - Light maintenance (oil change)
- Direct connection to the APM
- Direct access to the 405 freeway
- Contract: Public-Private Partnership (P3)
  - Design-Build-Finance-Operate-Maintain

2019 Construction Activities

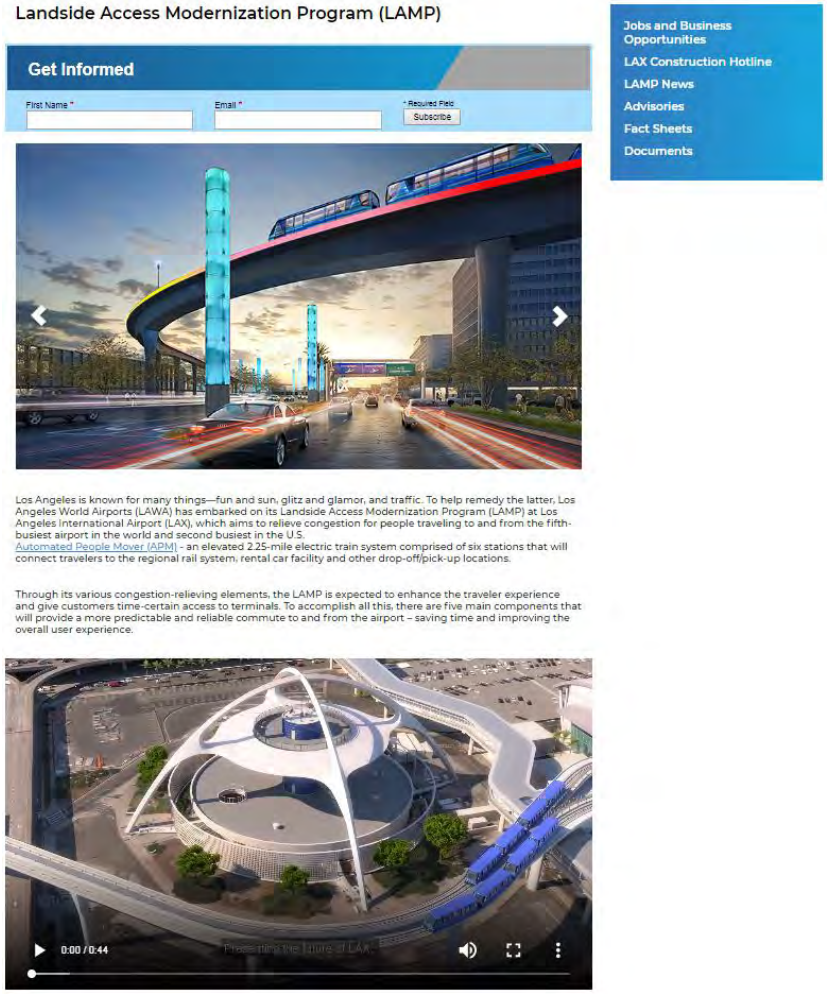
- Utility relocation in preparation for columns being installed 100-feet underground
  - Roadway Impacts: Lane closures
    - Central Terminal Area roadways
    - Century Blvd.
    - 96th St.
    - 98th St.
    - Airport Blvd.
    - Aviation Blvd.
- Demolition of several structures
- Cast in Drill Hole (CIDH) – Rebar 100-feet down for guideway foundation
- Maintenance & Storage Facility construction
- Parking structure reconfigurations



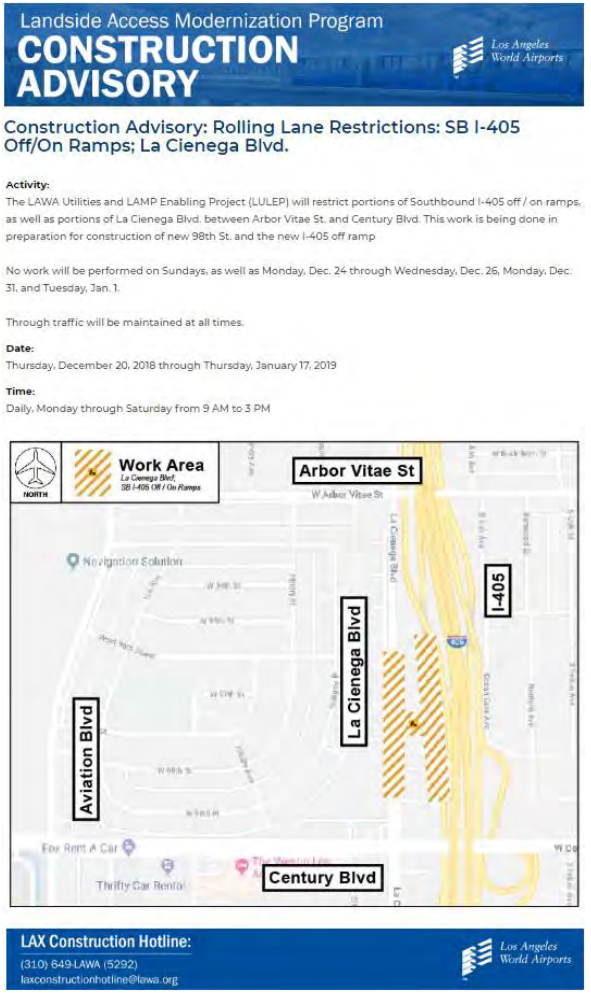
Future Skyline at LAX

Communication Tools

FlyLAX.com/ConnectingLAX



Construction Advisories



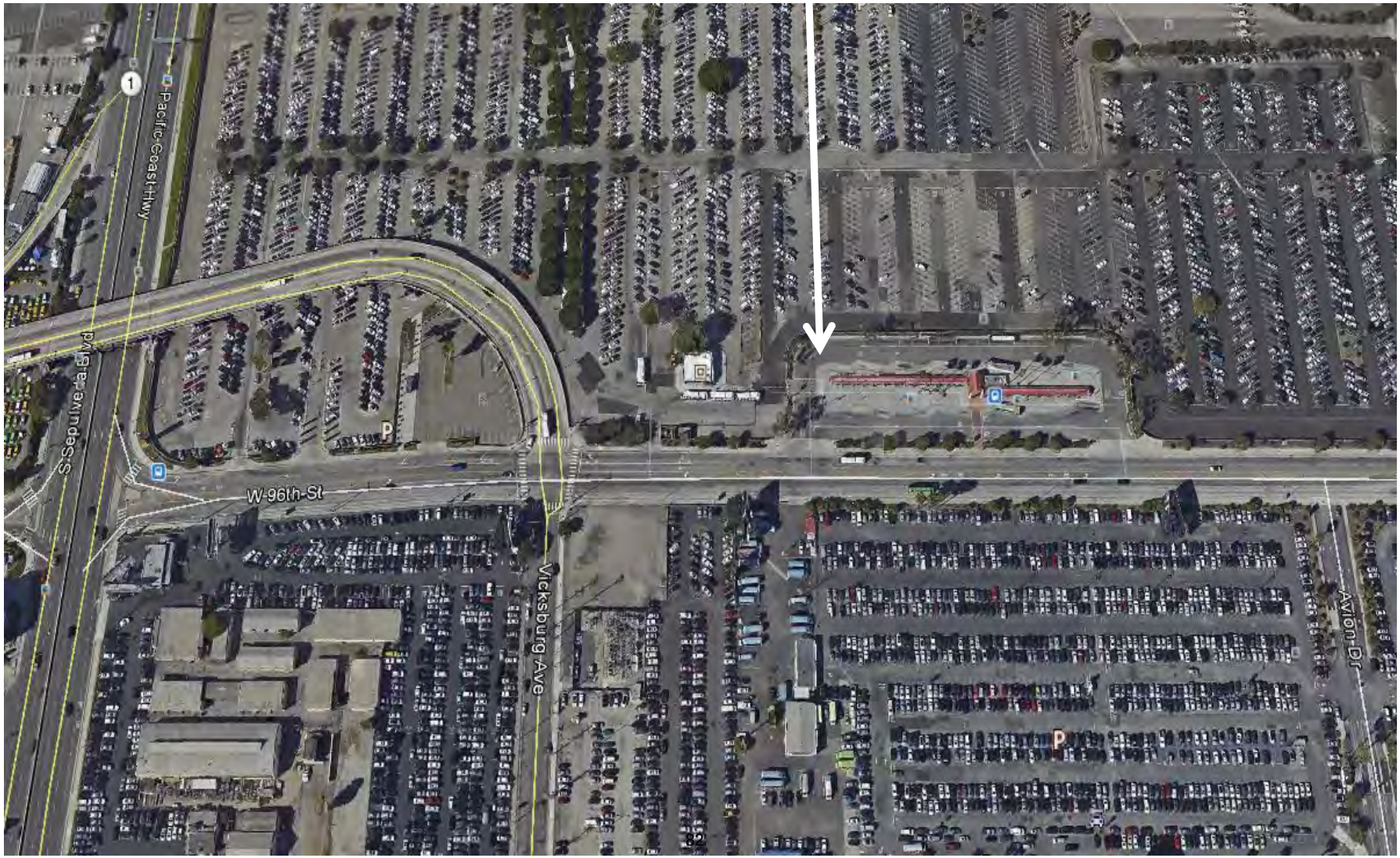
The Future of LAX - 2023

Metro Bus Routes to the New LAX Bus Hub in 2023

SCAG Regional Transit Technical Advisory Committee

July 31, 2019

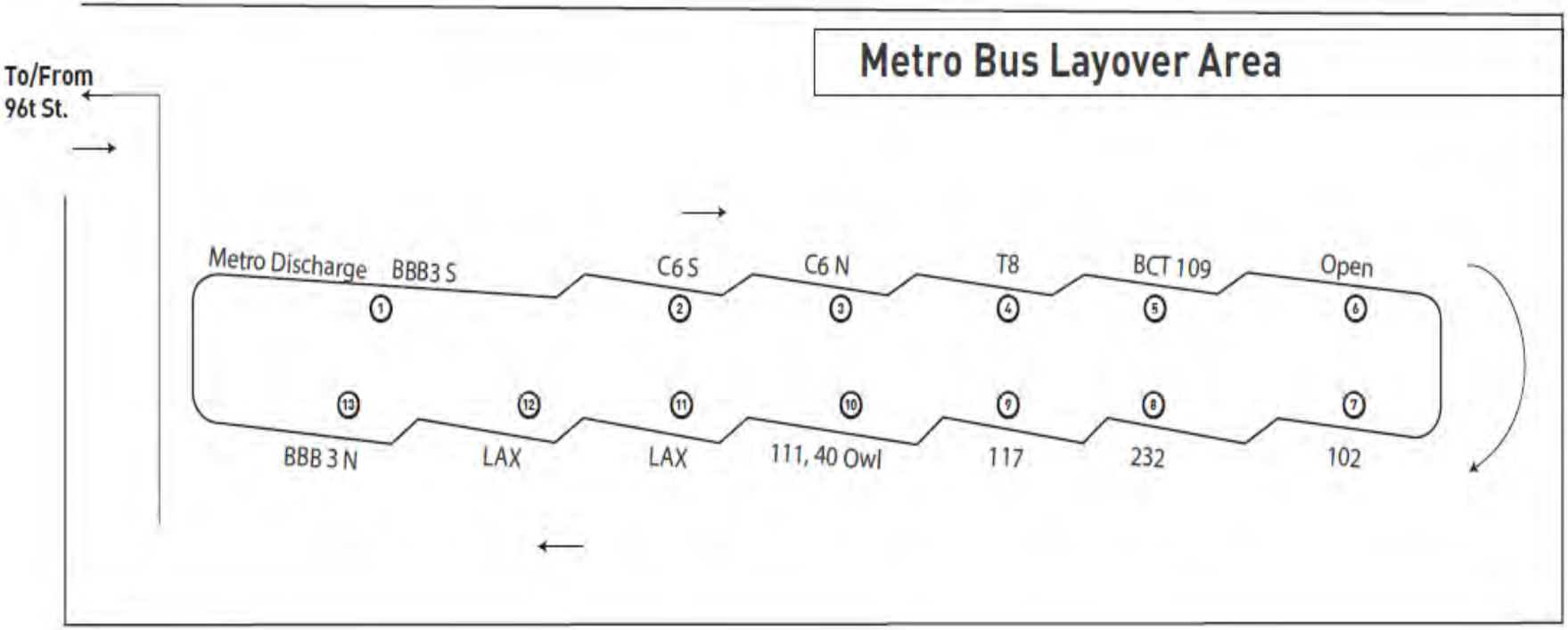
LAX City Bus Center – 6111 W. 96th Street



Relocated
LAX City Bus
Center on 96th

Drawing
Provided by
Big Blue Bus

LAX City Bus Center – Interim Facility Bus Bay Assignments



New Century/Aviation Station Overview

LAWA Shuttle to CTA Boards Here

SB Munis stop here

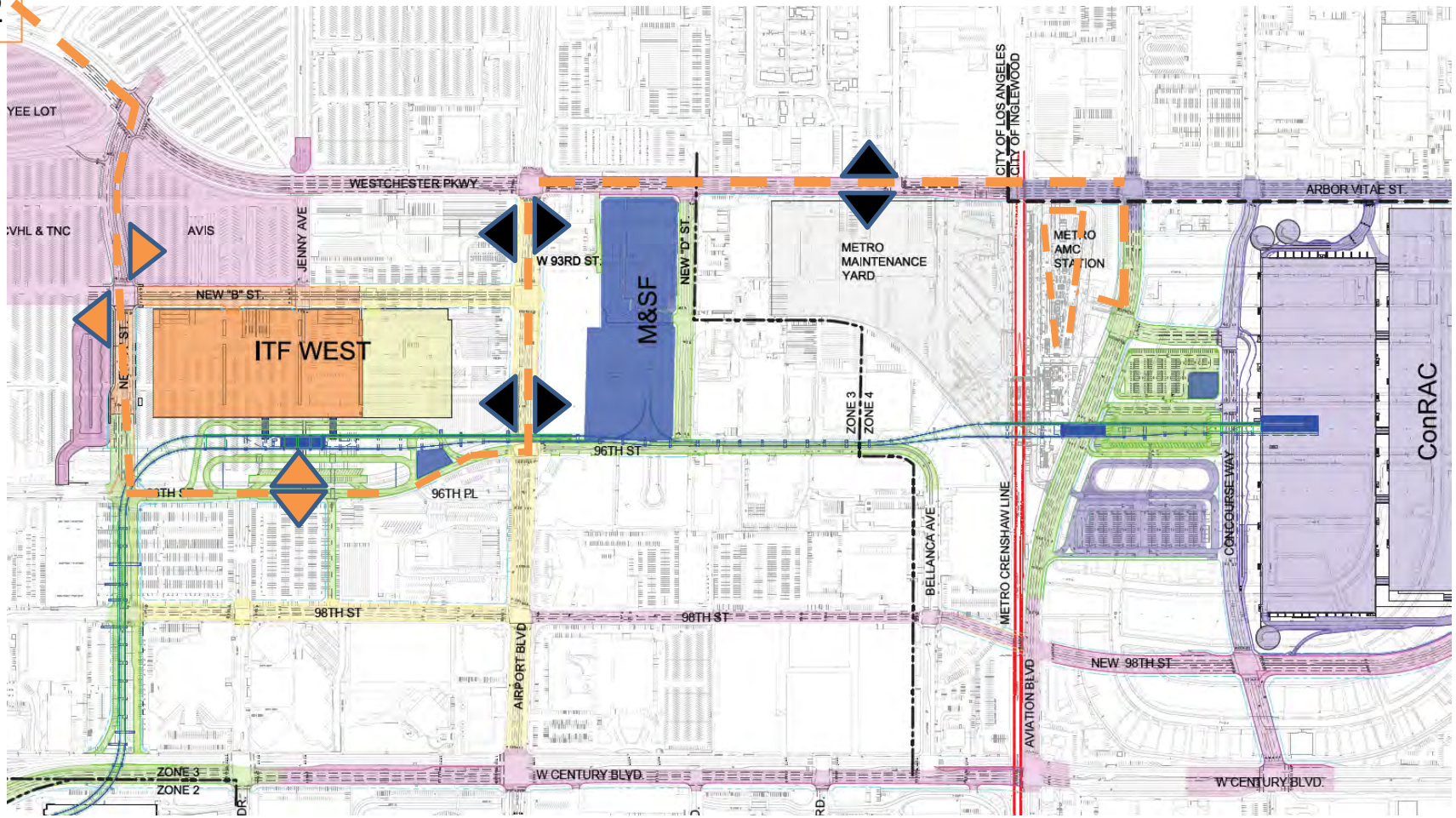
Metro Rail new station

Temporary stop

Permanent stop

Metro Line 102 – Proposed 2023 Route to AMC with APM in service to LAX Terminals

102

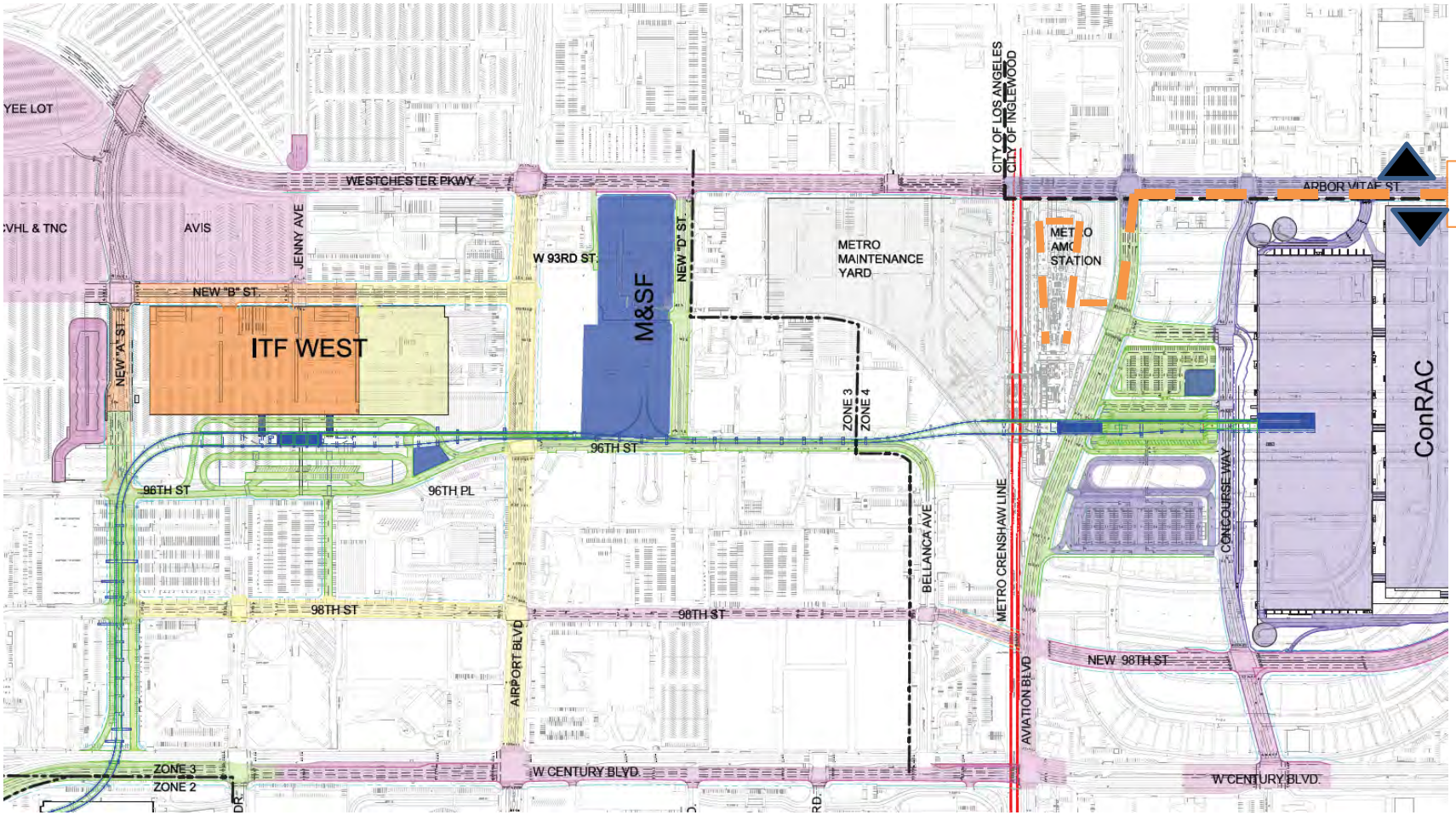


Proposed New Bus Stop

Existing Bus Stop

Proposed Metro Bus Route

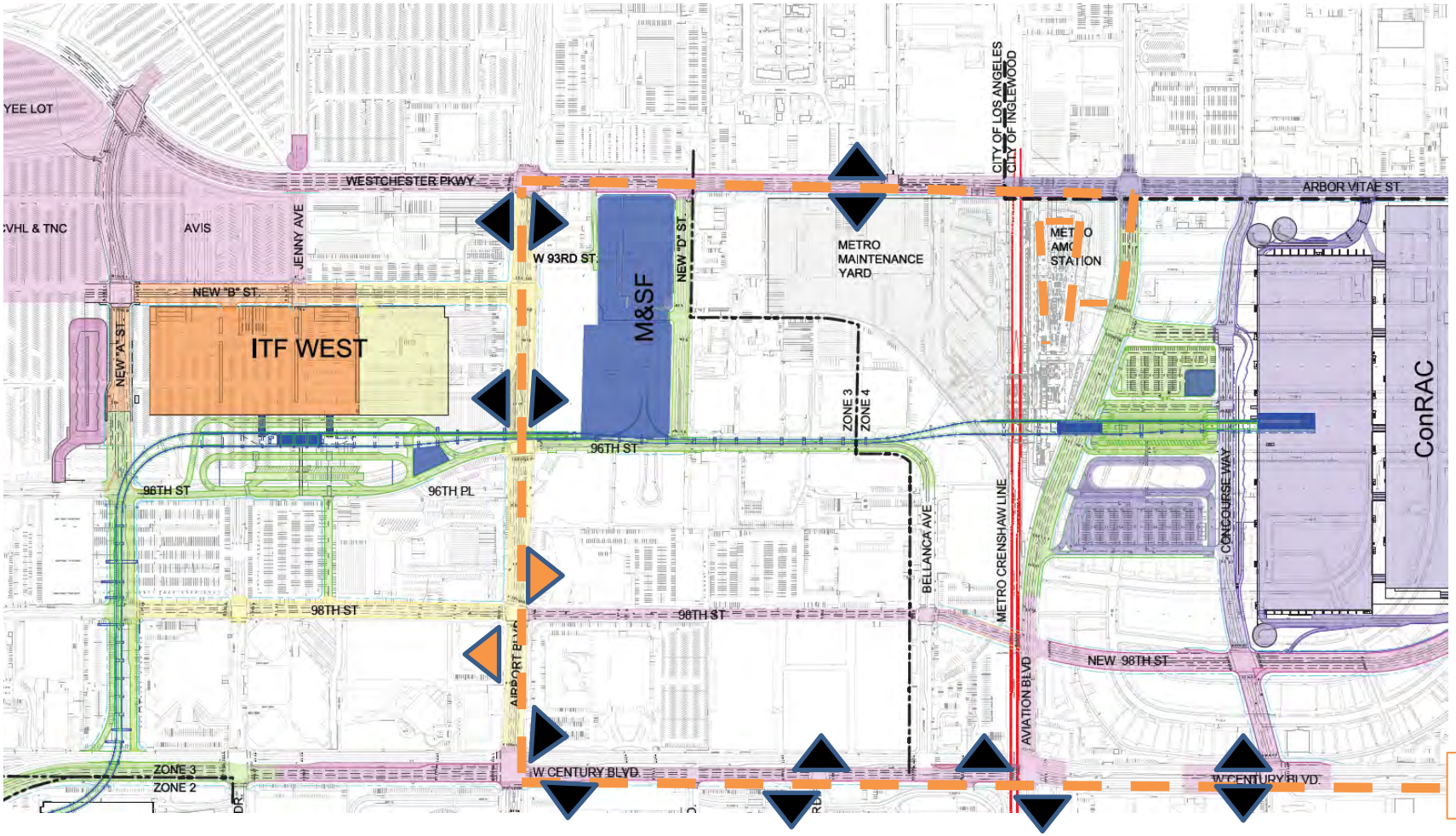
Metro Line 111 - – Proposed 2023 Route to AMC



Existing Bus Stop

Proposed Metro Bus Route

Metro Line 117 - – Proposed 2023 Route to AMC

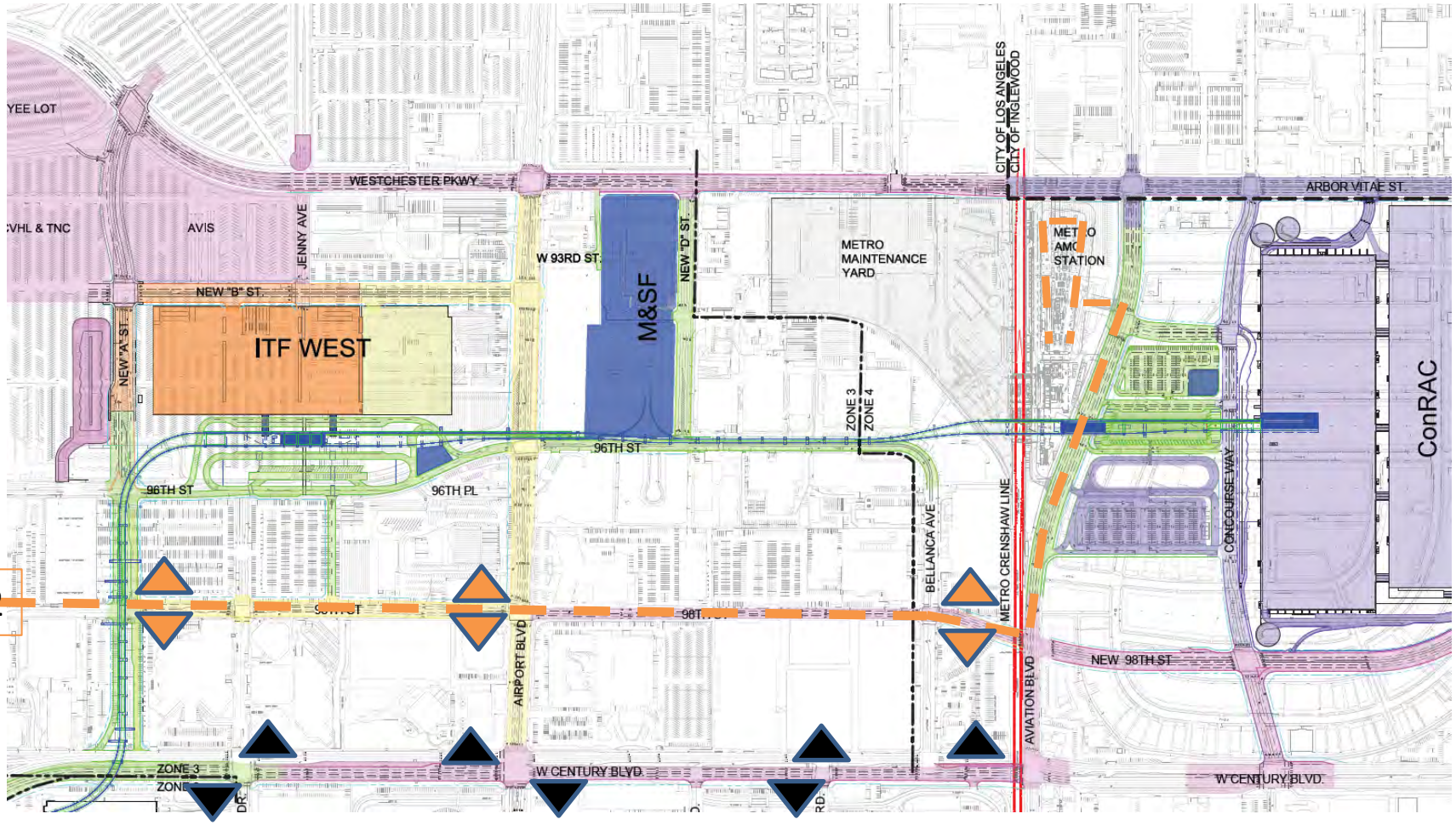


Existing Bus Stop

Proposed New Bus Stop

Proposed Metro Bus Route

Metro Line 232 - Proposed 2023 Route to AMC



Existing Bus Stop

Proposed New Bus Stop

Proposed Metro Bus Route

Environmental Justice Accessibility Performance Metrics

- Accessibility to Essential Services

Tom Vo, Senior Regional Planner

Research & Analysis Department

RTTAC, July 2019

Overview

I. Environmental Justice Introduction
II. SCAG's RTP/SCS and Environmental Justice
III. SCAG's Adopted Environmental Justice Report
IV. Environmental Justice Performance Indicators
V. Accessibility Analysis
    a. Introduction
    b. Methodology
    c. Results
VI. Next Steps

Environmental Justice Fundamental Principles

- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process
- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations

Source: U.S. Department of Transportation, An Overview of Transportation and Environmental Justice

EJ Assessment Process

Public Participation and Guidance

Define Action and Study Area

Develop Community Profile

Analyze Impacts

Identify Solutions

Document Findings

→ Avoid
→ Minimize
→ Mitigate
→ Enhance

Source: National Transit Institute, Federal Transit Administration

SCAG's Environmental Justice Policy

- Identify areas with disproportionately high and adverse impacts on **minority** or **low-income** populations and consider alternative approaches or propose mitigation measures for the SCAG region
- Continue to evaluate and respond to EJ issues that arise during and after the implementation of SCAG's RTP/SCS
- Analyze disproportionate impacts and identify potential solutions to incorporate into the long-range transportation plan

Identifying EJ Population Groups

Minority

- A person who is African American, Hispanic or Latino, Asian American, American Indian, Alaskan Native, Native Hawaiian and Other Pacific Islander

Low-Income

- A person whose median income is at or below the Department of Health and Human Services (HHS) poverty guidelines

Other Groups

- Non-English speakers, Households without vehicles, Population without a high school degree or equivalent, Disabled individuals, Seniors - ages 65 and over, Young children - ages 4 and under

Regional, Local, and Community Analysis

Regional Analysis

- Appropriate when determining system-wide impacts (e.g. Financial Benefits and Burdens, etc.)

Localized Analysis

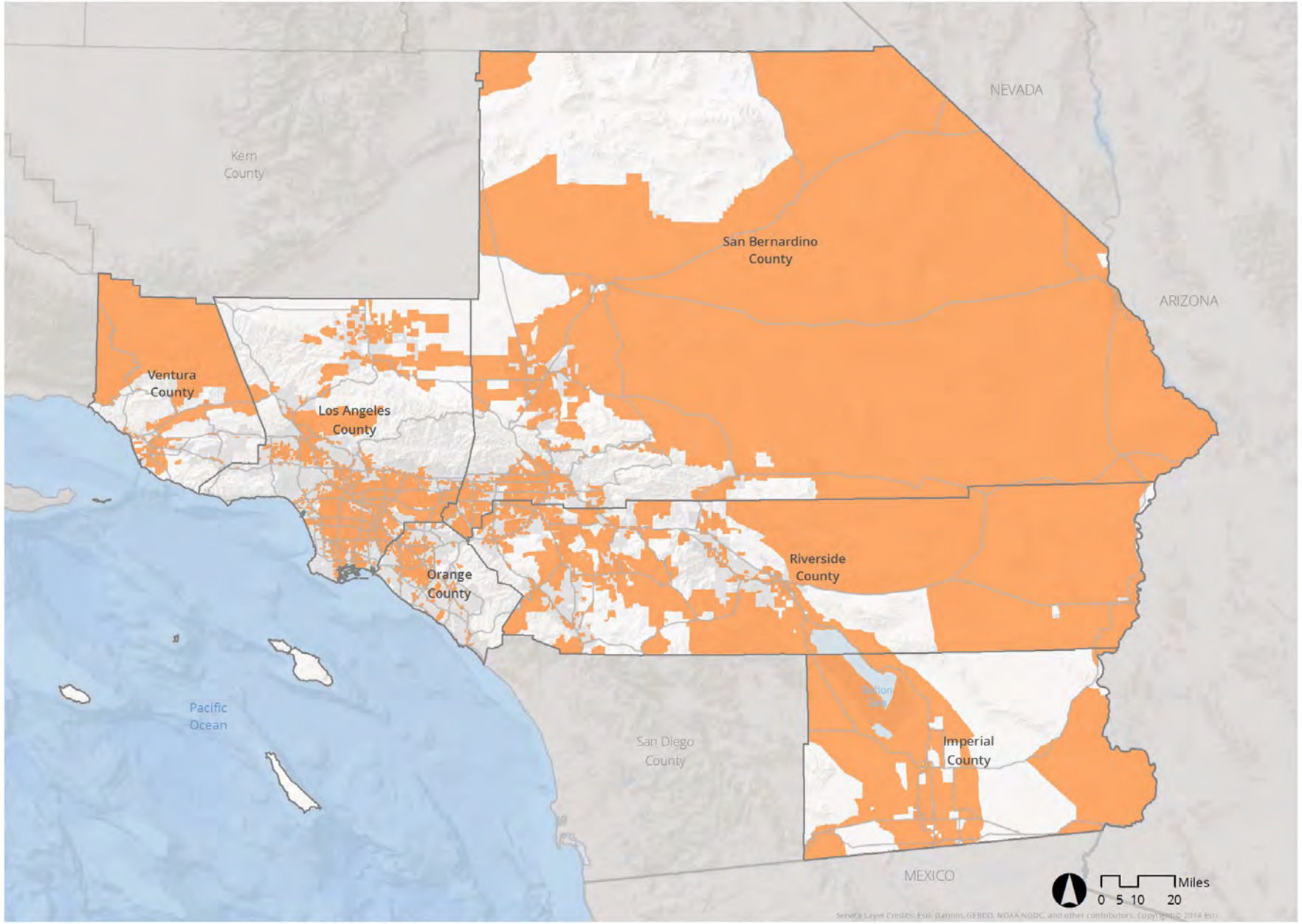
- Appropriate for determining adverse impacts at the community level (e.g. emissions, noise, etc.)

Community Analysis

- Appropriate for tabulating impacts of the RTP/SCS in selected places according to a “Communities of Concern” approach (e.g. accessibility, traffic safety, etc.)

Community-Based Analysis

- **Environmental Justice Areas (EJA)** - ***Transportation Analysis Zones (TAZs),*** which are similar to block groups, that have a ***higher concentration of minority OR low income households*** than is seen in the region as a whole.
- **SB 535 Disadvantaged Communities (DAC)**– ***Census tracts*** that have been identified by ***Cal/EPA as Disadvantaged Communities (top 25% of CalEnviroScreen)*** based on the requirements set forth in SB 535
- **Communities of Concern (COC)** – ***Census Designated Places (CDPs) and City of Los Angeles Community Planning Areas (CPAs)*** that fall in the upper 1/3rd of all communities in the SCAG Region for having the ***highest concentration of minority population AND low income households***



Environmental Justice Areas | County Boundaries | City Boundaries | Freeway

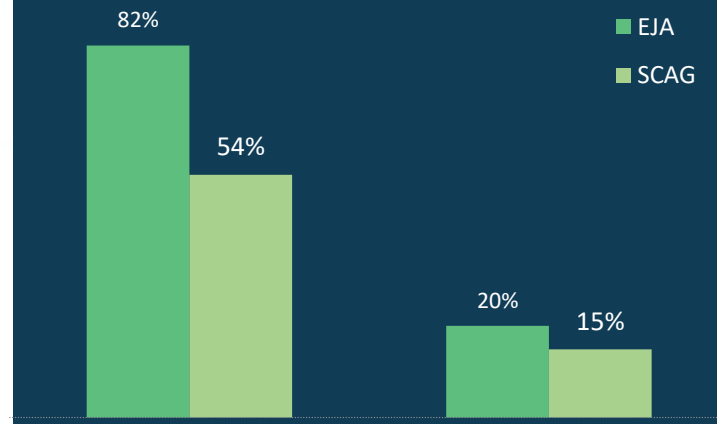
Source: Census PUMS, SCAG, 2019

Map Title: EJ_areas

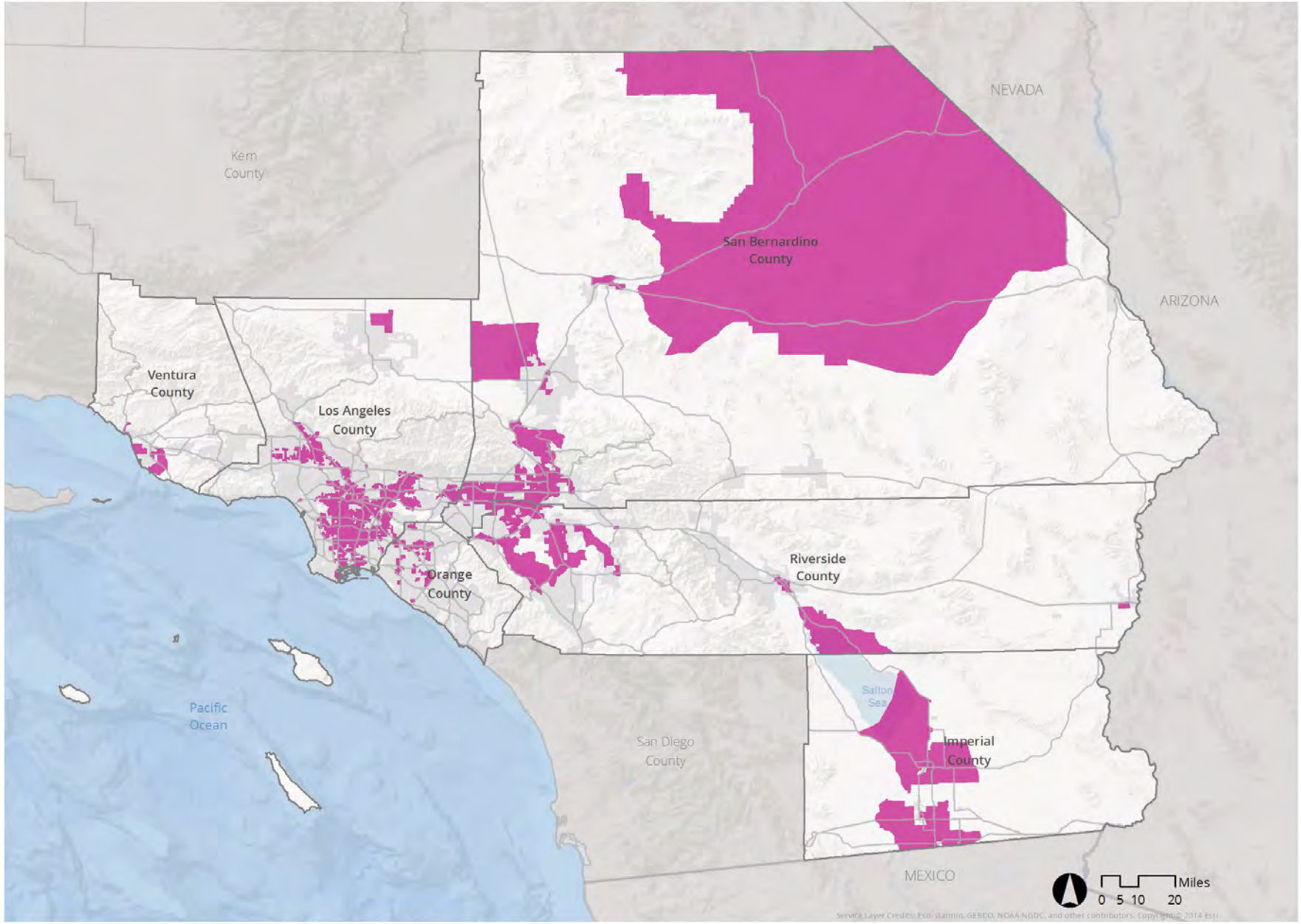
O:\=RTP_EJ\ej2020\mxd\BACKGROUND ON TECHNICAL ANALYSIS\EJ_areas.mxd | Date: 7/24/2019

12.2 Million People

65% of Region



Source: SCAG, Census ACS 2013-2017 5-Year Estimates
***In 2016, per Census, a family of three earning less than $19,105 was classified as living in poverty.**

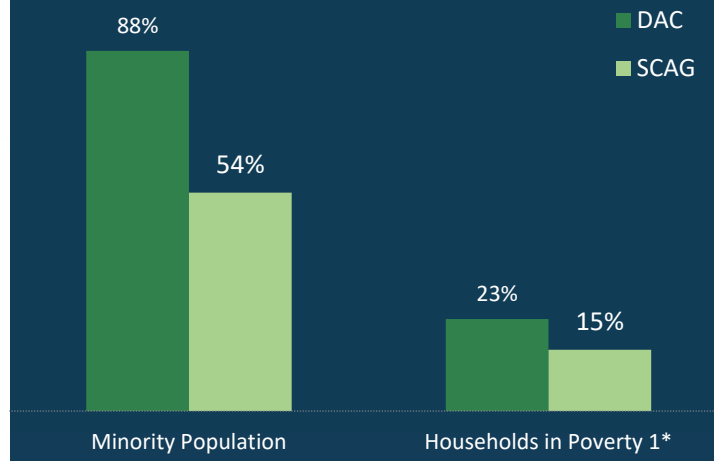


Source: OEHHA, CalEPA, CalEnviroScreen Ver. 3.0, SCAG, 2019

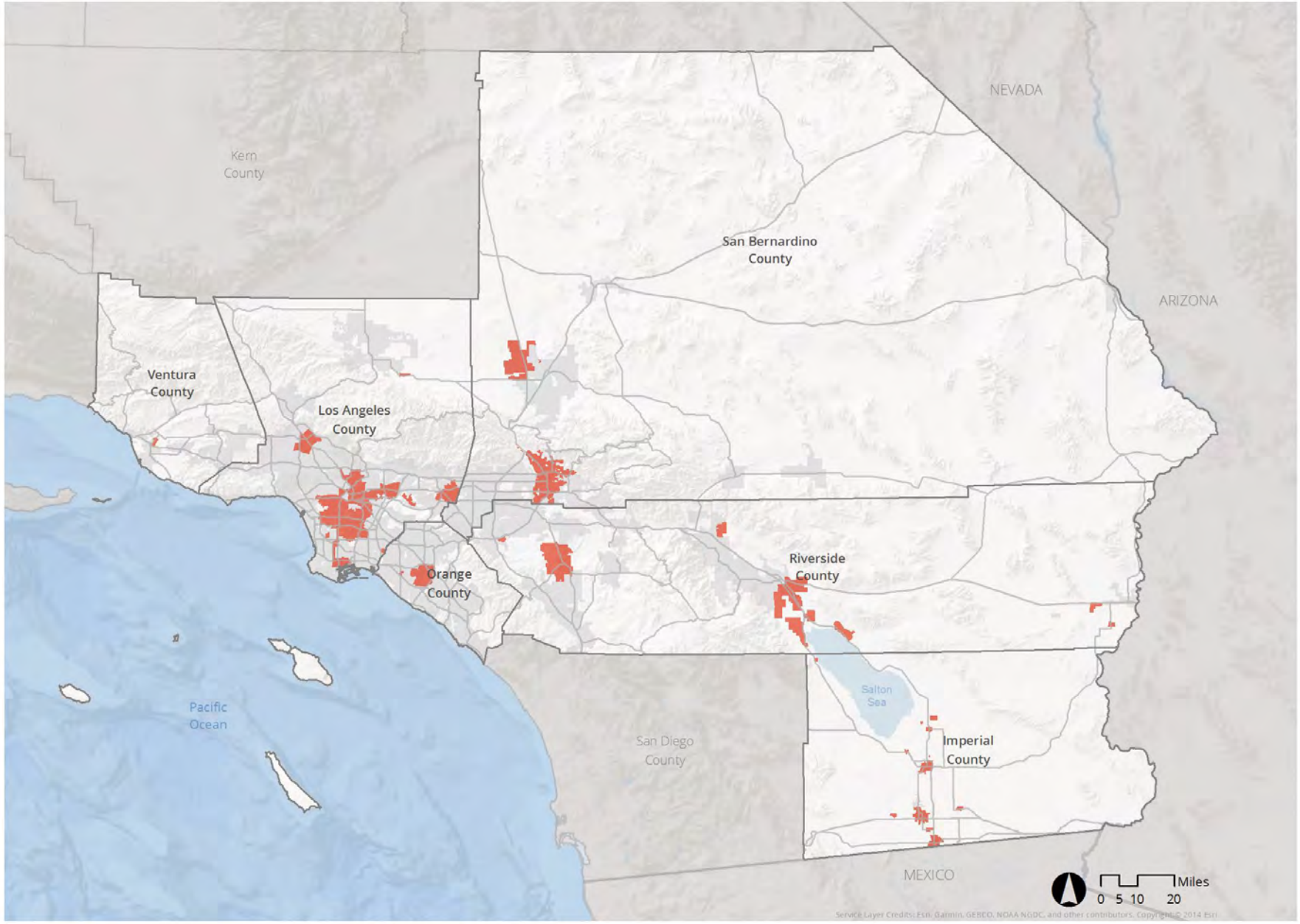
Map Title: SB535_Disadvantaged_Communities O:\=RTP_EJ\ej2020\mxd\BACKGROUND ON TECHNICAL ANALYSIS\SB535_Disadvantaged_Communities.mxd | Date: 7/24/2019

6.4 Million People

34% of Region



Source: SCAG, Census ACS 2013-2017 5-Year Estimates
***In 2016, per Census, a family of three earning less than $19,105 was classified as living in poverty.**



Source: 2013-2017 ACS 5 Year Estimates, City of Los Angeles Community Planning Area, SCAG, 2019

Map Title: Communities_of_Concern

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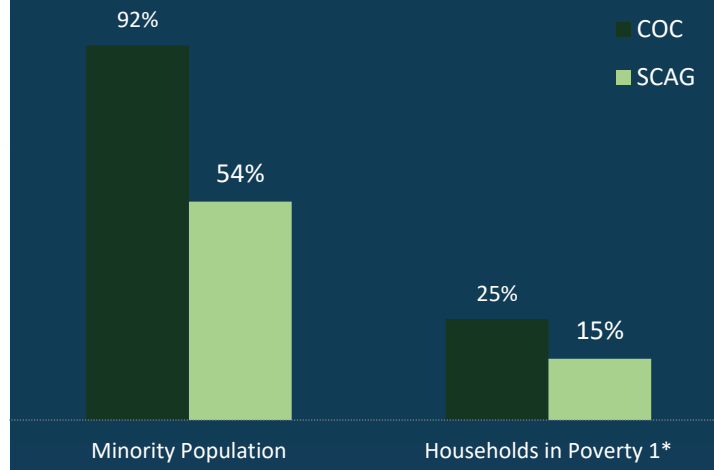
3.9 Million People

21% of Region



Source: SCAG, Census ACS 2013-2017 5-Year Estimates
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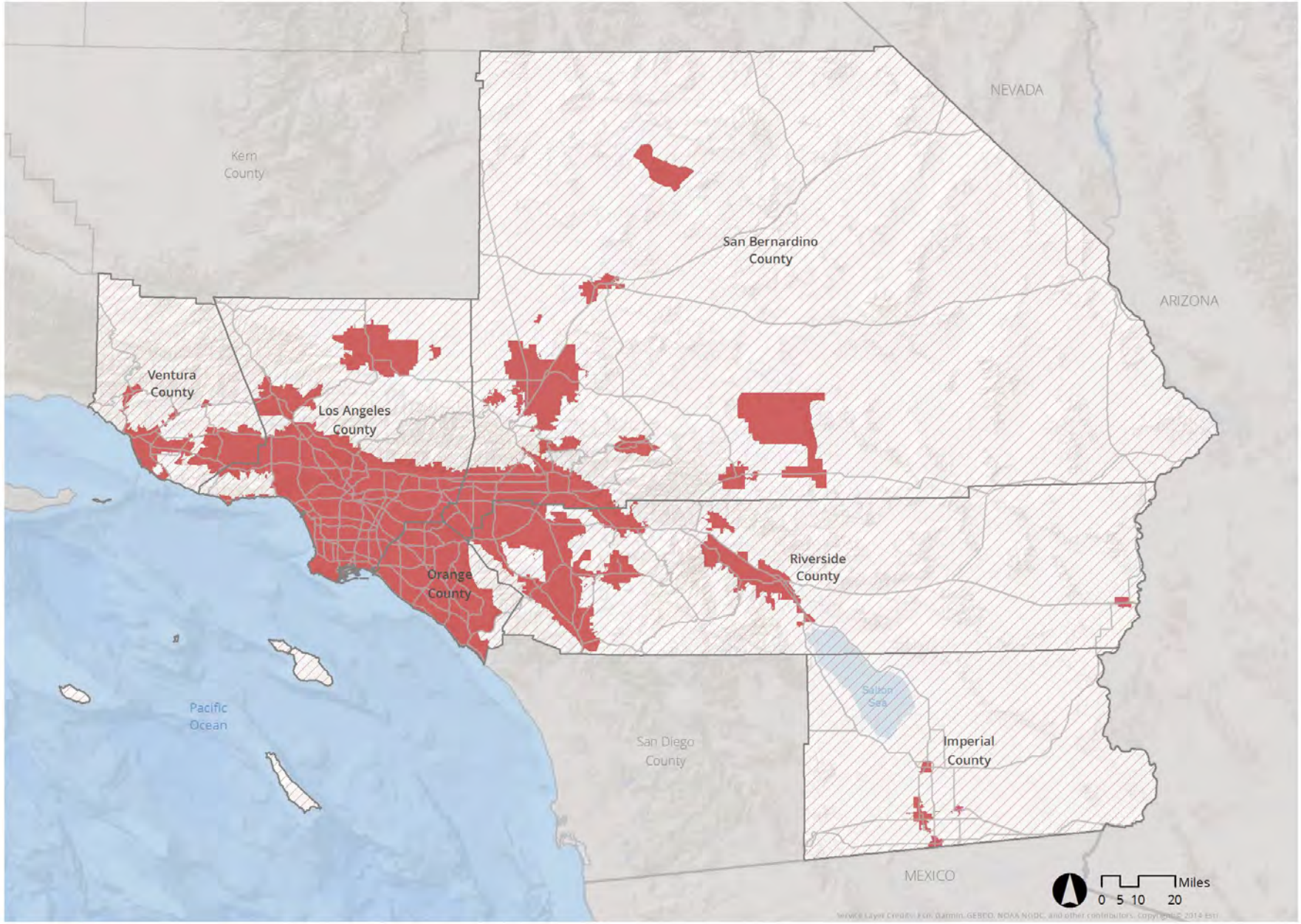
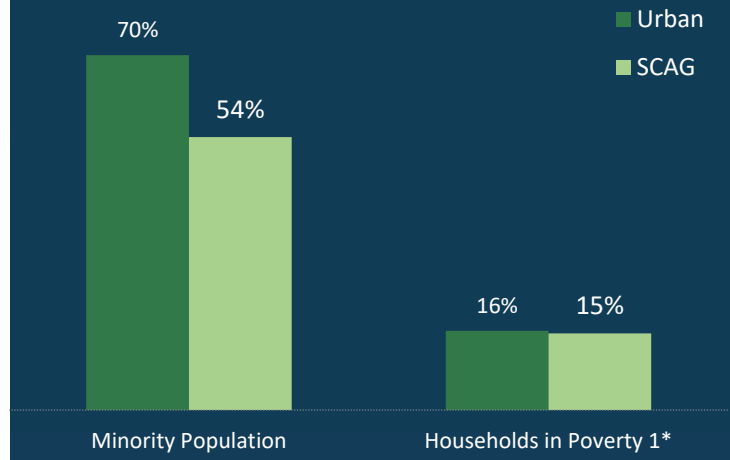


Urban Rural County Boundaries Freeway

Source: Census Bureau, Caltrans, FHWA, SCAG

17.8 Million People

95% of Region



Source: SCAG, Census ACS 2013-2017 5-Year Estimates
***In 2016, per Census, a family of three earning less than $19,105 was classified as living in poverty.**

Map Title: Urban_Rural_Area

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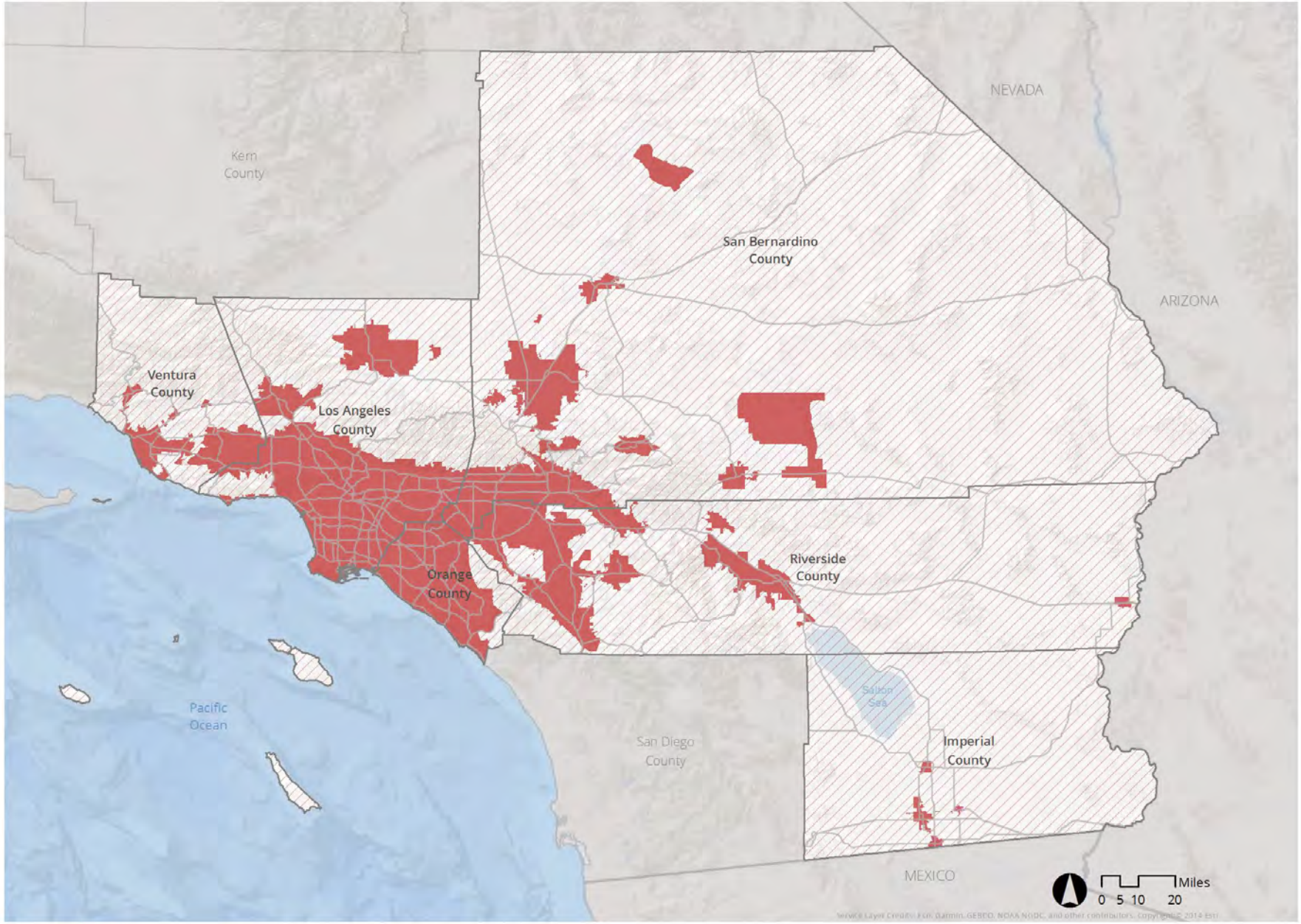

Urban | Rural | County Boundaries | Freeway

Source: Census Bureau, Caltrans, FHWA, SCAG

Map Title: Urban_Rural_Area

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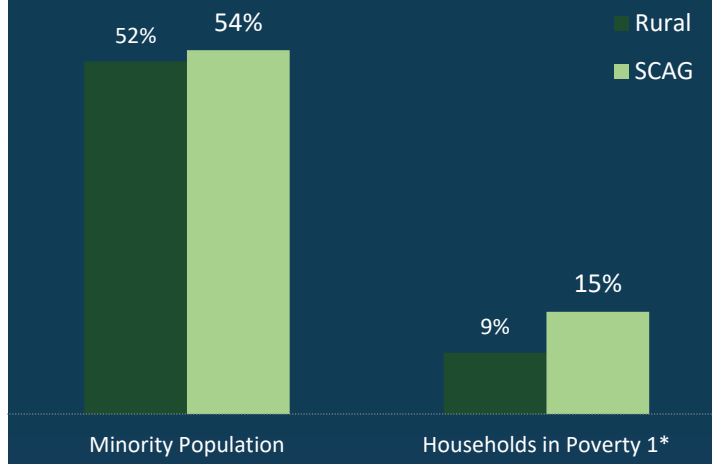
787 Thousand People

5% of Region



Source: SCAG, Census ACS 2013-2017 5-Year Estimates
***In 2016, per Census, a family of three earning less than $19,105 was classified as living in poverty.**

2016 RTP/SCS EJ Report

- www.connectsocal.org

Performance Indicators

1. Benefits and Burdens Analysis
   - RTP Revenue Sources in Terms Of Tax Burdens
   - Share of Transportation System Usage
   - RTP/SCS Investments
2. Distribution of Travel Time Savings and Travel Distance Reductions
3. Geographic Distribution of Transportation Investments
4. Jobs-housing Imbalance or Jobs-housing Mismatch
5. Impacts from Funding Through Mileage-Based User Fees
6. Accessibility to Employment and Services
7. Accessibility to Parks and Schools
8. Gentrification and Displacement
9. Emissions Impacts
10. Emissions Impacts along Freeways
11. Active Transportation Hazards
12. Aviation Noise Impacts
13. Roadway Noise Impacts
14. Public Health Impacts
15. Rail-related Impacts
16. Climate Vulnerability

Performance Indicators

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13. Roadway Noise Impacts
14. Public Health Impacts
15. Rail-related Impacts
16. Climate Vulnerability

Time-Based Parks Accessibility (Introduction)

- Measured by the spatial distribution of potential destinations, the ease of reaching each destination, and the magnitude, quality and character of activities at potential destination sites
  - Number of destinations can be reached within a certain travel time

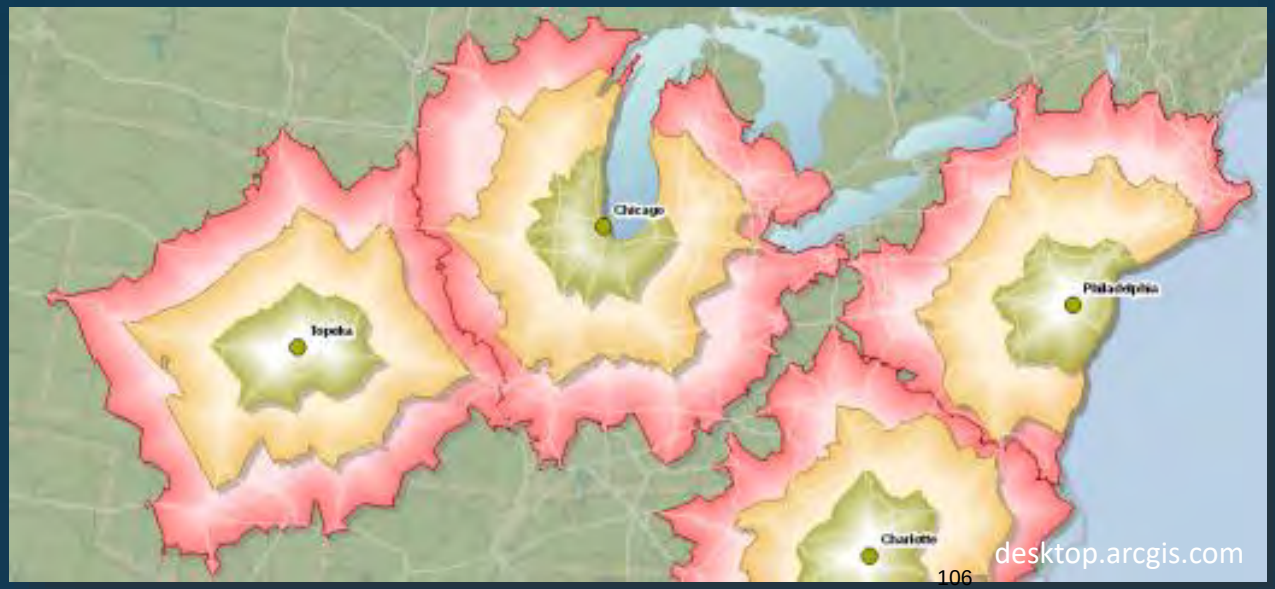


TABLE 1 Demographic Categories

Ethnic/Racial/Other Categories (Persons)
Hispanic (Latino)
White (Non-Hispanic)
African-American (Non-Hispanic)
Native American (Non-Hispanic)
Asian/Pacific Islander (Non-Hispanic)
One or More Race/Some Other Race (Non-Hispanic)
Disabled/Mobility Limited
Seniors, Age 65 and Above
Young Children Age 4 and Under
Children Ages 5-12
Non-English Speakers
Individuals without a High School Diploma
Foreign Born Population
Households without a Vehicle
Income Categories (Households)
Households Below Poverty (Poverty 1)
Households at 1.5x Poverty Level (Poverty 2)
Households at 2x Poverty Level (Poverty 3)
Households by Ranked Income Quintile
Households by Race/Ethnicity and Ranked Income Quintile

TABLE 2 Income Distribution by Quintile

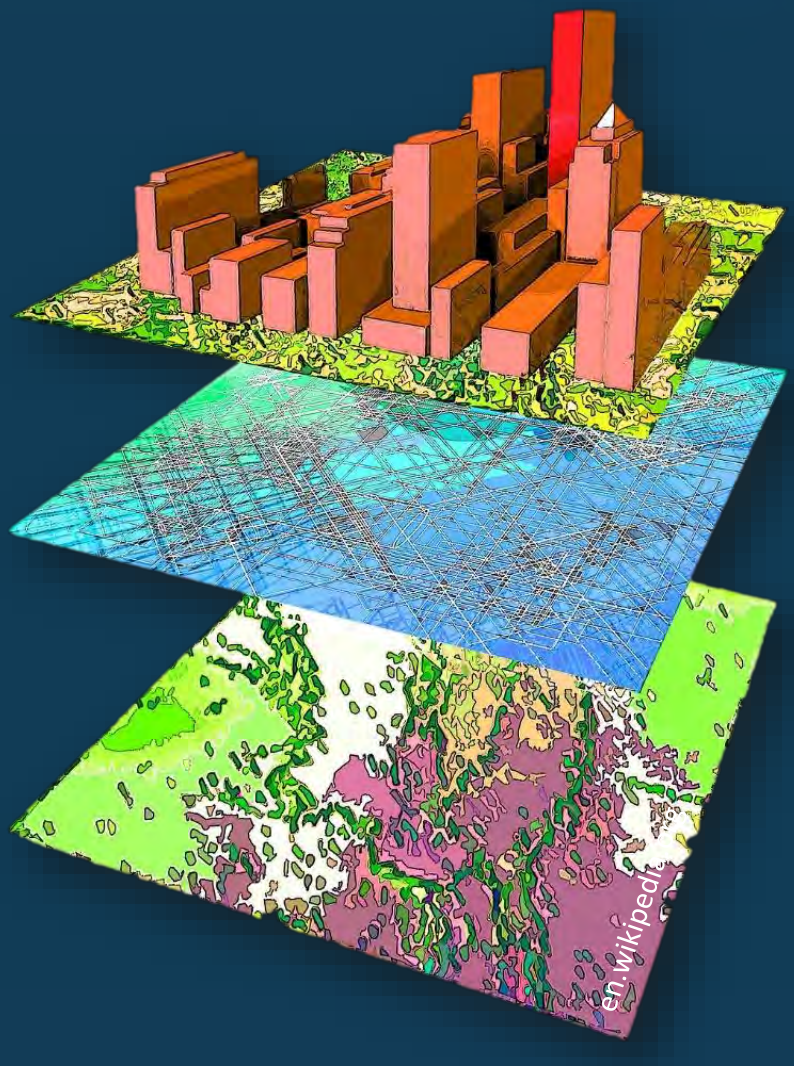
Income Quintiles	Income Range
Quintile 1	$0 to $24,581
Quintile 2	$24,582 to $46,436
Quintile 3	$46,436 to $73,554
Quintile 4	$73,555 to $99,999
Quintile 5	$100,000 and Higher

Source: 2009-2013 American Community Survey

Time-Based Parks Accessibility (Methodology)

Accessibility was estimated based on 1) 2012 existing land use, 2) CPAD, 3) street network, 4) transit network, and 5) EJ variables at each TAZ

1. Percentage of regional park acreage can be reached within 30 minutes by auto and 45 minutes by transit using SCAG's TDM for each TAZ
2. Average weighted accessibility for each EJ-related variables



Time-Based Parks Accessibility (Methodology)

(Equation 1) $$Share\ of\ Park_{taz1} = \frac{Parks\ in\ 30\ mins\ (transit)_{taz1}}{\sum Park\ Acreage}$$

(Equation 2) $$Share\ of\ Hispanic\ HH_{taz1} = \frac{Hispanic\ Households_{taz1}}{\sum Hispanic\ Households}$$

(Equation 3) $$Avg\ Wt\ Parks\ Accessibility = Share\ of\ Park_{taz1} \times Share\ of\ Hispanic\ HH_{taz1} + Share\ of\ Park_{taz2} \times Share\ of\ Hispanic\ HH_{taz2} + Share\ of\ Park_{taz3} \times Share\ of\ Hispanic\ HH_{taz3}$$

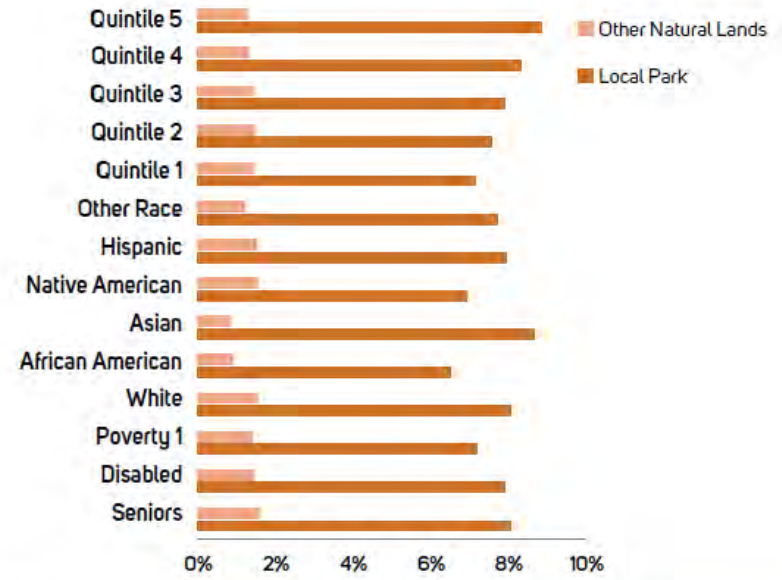
Results

TABLE 45 Local Park Accessibility by Transportation Options and Environmental Justice Variables

Weighted Average Local Park Accessibility by Auto within 30 Minutes (Measured as a Share of the Region's Local Park Acreage Accessible for Each Cohort)																		
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DAC (BY)	DAC (BL)	DAC (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Seniors	8.0%	7.2%	8.6%	6.9%	6.3%	7.9%	7.7%	7.1%	9.0%	7.3%	6.8%	8.3%	8.2%	7.4%	8.9%	4.6%	3.5%	4.1%
Disabled	7.9%	7.0%	8.5%	7.1%	6.4%	7.9%	7.8%	7.1%	8.9%	7.4%	6.9%	8.4%	8.0%	7.2%	8.7%	4.4%	3.0%	3.5%
Poverty 1	7.2%	6.4%	7.9%	6.7%	6.1%	7.6%	7.4%	7.0%	8.8%	7.1%	6.8%	8.4%	7.3%	6.6%	8.2%	3.2%	2.4%	2.8%
White	8.0%	7.3%	8.7%	5.9%	5.5%	6.8%	7.7%	6.8%	8.6%	7.5%	6.5%	7.8%	8.2%	7.5%	8.9%	5.4%	4.3%	4.8%
African American	6.5%	5.6%	7.0%	6.3%	5.5%	7.0%	6.8%	6.5%	8.2%	6.2%	6.3%	7.8%	6.6%	5.7%	7.3%	3.8%	1.9%	2.2%
Asian	8.7%	7.5%	9.1%	8.1%	7.0%	8.6%	8.4%	7.6%	9.5%	8.2%	7.3%	8.9%	8.7%	7.6%	9.3%	8.3%	3.7%	4.0%
Native American	6.9%	6.0%	7.3%	6.0%	5.1%	6.3%	7.7%	6.5%	8.3%	7.3%	5.8%	7.1%	7.6%	6.5%	7.9%	1.6%	1.7%	2.1%
Hispanic	7.9%	6.9%	8.4%	7.7%	6.5%	8.1%	7.8%	7.1%	9.0%	7.4%	6.8%	8.4%	8.1%	7.1%	8.7%	3.6%	2.7%	3.3%
Other Race	7.7%	6.8%	8.2%	6.5%	5.8%	7.2%	7.4%	6.8%	8.6%	7.0%	6.6%	8.0%	7.8%	7.0%	8.4%	5.1%	3.4%	3.8%
Quintile 1	7.1%	6.4%	7.8%	6.7%	6.0%	7.5%	7.4%	6.9%	8.7%	7.0%	6.7%	8.2%	7.3%	6.6%	8.1%	3.1%	2.3%	2.8%
Quintile 2	7.6%	6.7%	8.2%	7.0%	6.2%	7.8%	7.7%	7.1%	8.9%	7.3%	6.8%	8.3%	7.7%	6.9%	8.5%	3.6%	2.7%	3.2%
Quintile 3	7.9%	7.0%	8.4%	7.1%	6.3%	7.9%	7.8%	7.1%	9.0%	7.4%	6.8%	8.4%	8.0%	7.2%	8.7%	4.2%	3.0%	3.5%
Quintile 4	8.3%	7.3%	8.8%	7.3%	6.4%	8.0%	8.0%	7.2%	9.1%	7.5%	6.8%	8.3%	8.4%	7.5%	9.1%	5.5%	3.7%	4.2%
Quintile 5	8.9%	7.9%	9.3%	7.3%	6.5%	8.0%	8.1%	7.2%	9.2%	7.5%	6.8%	8.3%	8.9%	8.0%	9.5%	8.4%	5.4%	5.8%
Average	7.8%	6.9%	8.3%	6.9%	6.1%	7.6%	7.7%	7.0%	8.8%	7.3%	6.7%	8.2%	7.9%	7.1%	8.6%	4.6%	3.1%	3.6%

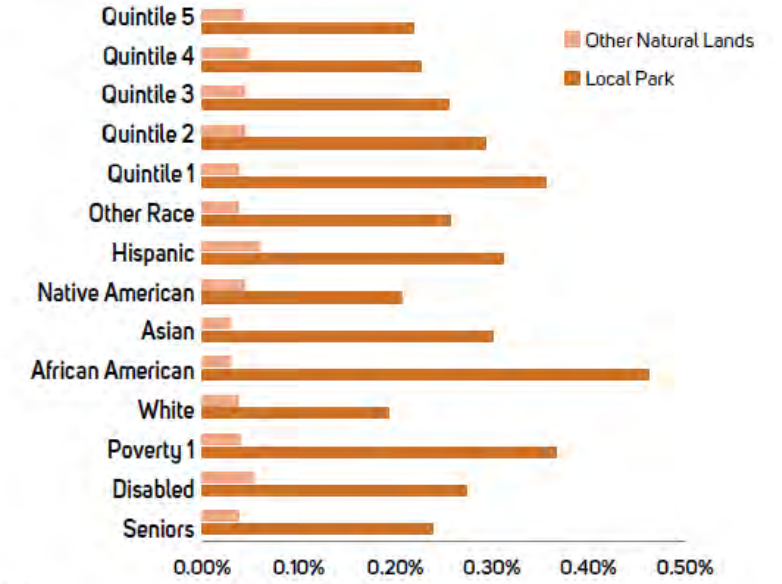
Weighted Average Local Park Accessibility by All Transit within 45 Minutes (Measured as a Share of the Region's Local Park Acreage Accessible for Each Cohort)																		
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DAC (BY)	DAC (BL)	DAC (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Seniors	0.2%	0.3%	0.5%	0.3%	0.3%	0.7%	0.4%	0.4%	0.9%	0.5%	0.5%	1.1%	0.3%	0.3%	0.5%	0.0%	0.0%	0.0%
Disabled	0.3%	0.3%	0.5%	0.3%	0.3%	0.7%	0.4%	0.4%	0.9%	0.5%	0.5%	1.0%	0.3%	0.3%	0.6%	0.0%	0.0%	0.0%
Poverty 1	0.4%	0.3%	0.7%	0.4%	0.4%	0.8%	0.6%	0.5%	1.1%	0.6%	0.6%	1.2%	0.4%	0.3%	0.7%	0.0%	0.0%	0.0%
White	0.2%	0.2%	0.4%	0.2%	0.3%	0.6%	0.3%	0.4%	0.9%	0.3%	0.4%	0.9%	0.2%	0.2%	0.4%	0.0%	0.0%	0.0%
African American	0.5%	0.4%	0.7%	0.5%	0.4%	0.8%	0.6%	0.5%	1.0%	0.7%	0.7%	1.3%	0.5%	0.4%	0.8%	0.0%	0.0%	0.0%
Asian	0.3%	0.3%	0.6%	0.4%	0.4%	0.8%	0.5%	0.5%	1.1%	0.5%	0.5%	1.2%	0.3%	0.3%	0.6%	0.0%	0.0%	0.0%
Native American	0.2%	0.2%	0.4%	0.3%	0.2%	0.5%	0.4%	0.3%	0.8%	0.5%	0.4%	0.9%	0.2%	0.2%	0.5%	0.0%	0.0%	0.0%
Hispanic	0.3%	0.3%	0.6%	0.4%	0.3%	0.7%	0.4%	0.4%	0.9%	0.5%	0.5%	1.1%	0.3%	0.3%	0.6%	0.0%	0.0%	0.0%
Other Race	0.3%	0.3%	0.5%	0.3%	0.3%	0.7%	0.4%	0.4%	1.0%	0.5%	0.5%	1.2%	0.3%	0.3%	0.6%	0.0%	0.0%	0.0%
Quintile 1	0.4%	0.3%	0.7%	0.4%	0.4%	0.8%	0.5%	0.5%	1.1%	0.6%	0.6%	1.2%	0.4%	0.3%	0.7%	0.0%	0.0%	0.0%
Quintile 2	0.3%	0.3%	0.6%	0.4%	0.3%	0.7%	0.5%	0.4%	1.0%	0.5%	0.5%	1.1%	0.3%	0.3%	0.6%	0.0%	0.0%	0.0%
Quintile 3	0.3%	0.3%	0.5%	0.3%	0.3%	0.7%	0.4%	0.4%	0.9%	0.5%	0.5%	1.0%	0.3%	0.3%	0.6%	0.0%	0.0%	0.0%
Quintile 4	0.2%	0.2%	0.5%	0.3%	0.3%	0.6%	0.4%	0.4%	0.8%	0.4%	0.5%	1.0%	0.2%	0.3%	0.5%	0.0%	0.0%	0.0%
Quintile 5	0.2%	0.2%	0.5%	0.3%	0.3%	0.7%	0.3%	0.4%	0.9%	0.4%	0.5%	1.0%	0.2%	0.3%	0.5%	0.0%	0.0%	0.0%
Average	0.3%	0.3%	0.6%	0.3%	0.3%	0.7%	0.4%	0.4%	0.9%	0.5%	0.5%	1.1%	0.3%	0.3%	0.6%	0.0%	0.0%	0.0%

FIGURE 60 Park Accessibility by Auto within 30 Minutes of Travel (2012)



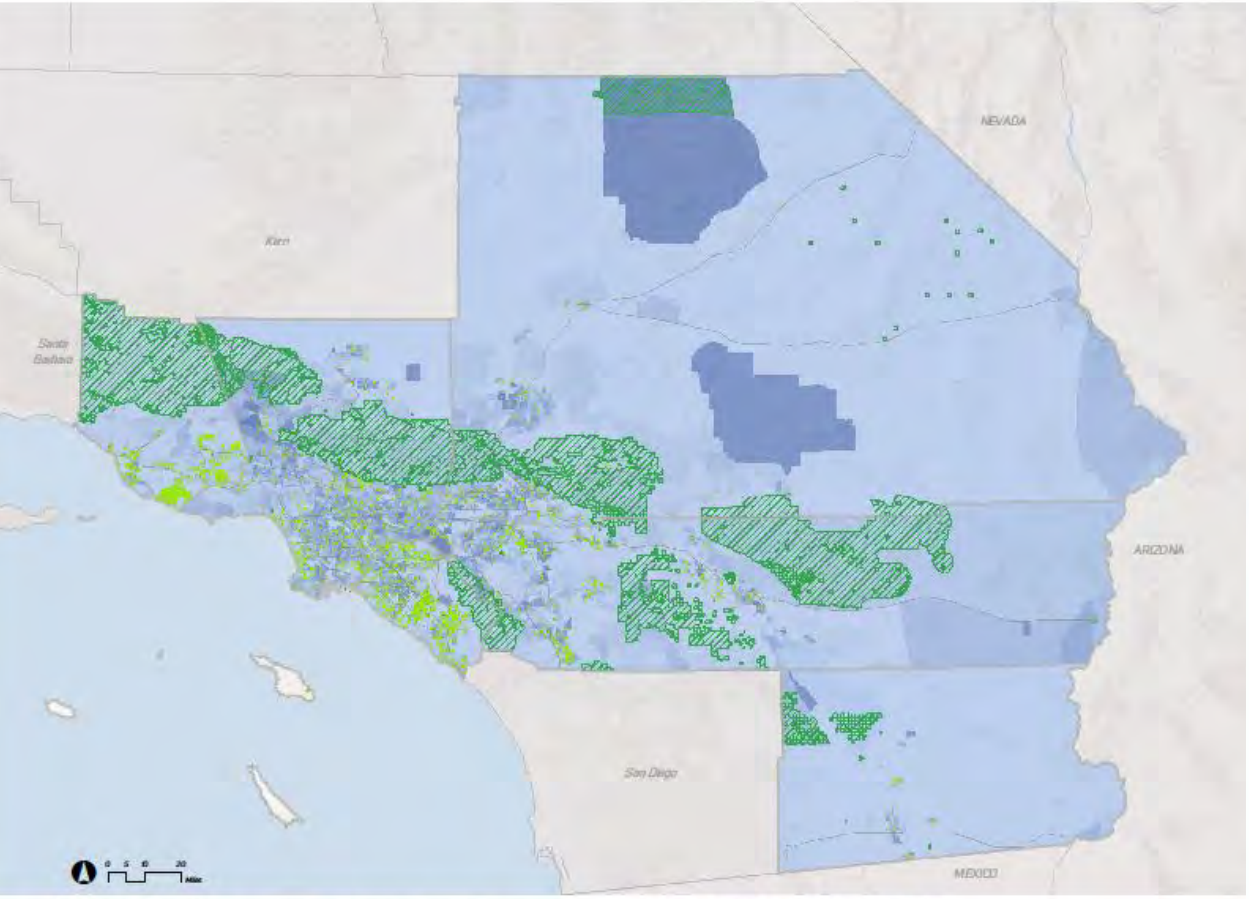
Source: SCAG

FIGURE 61 Park Accessibility by All Transit within 45 Minutes of Travel (2012)



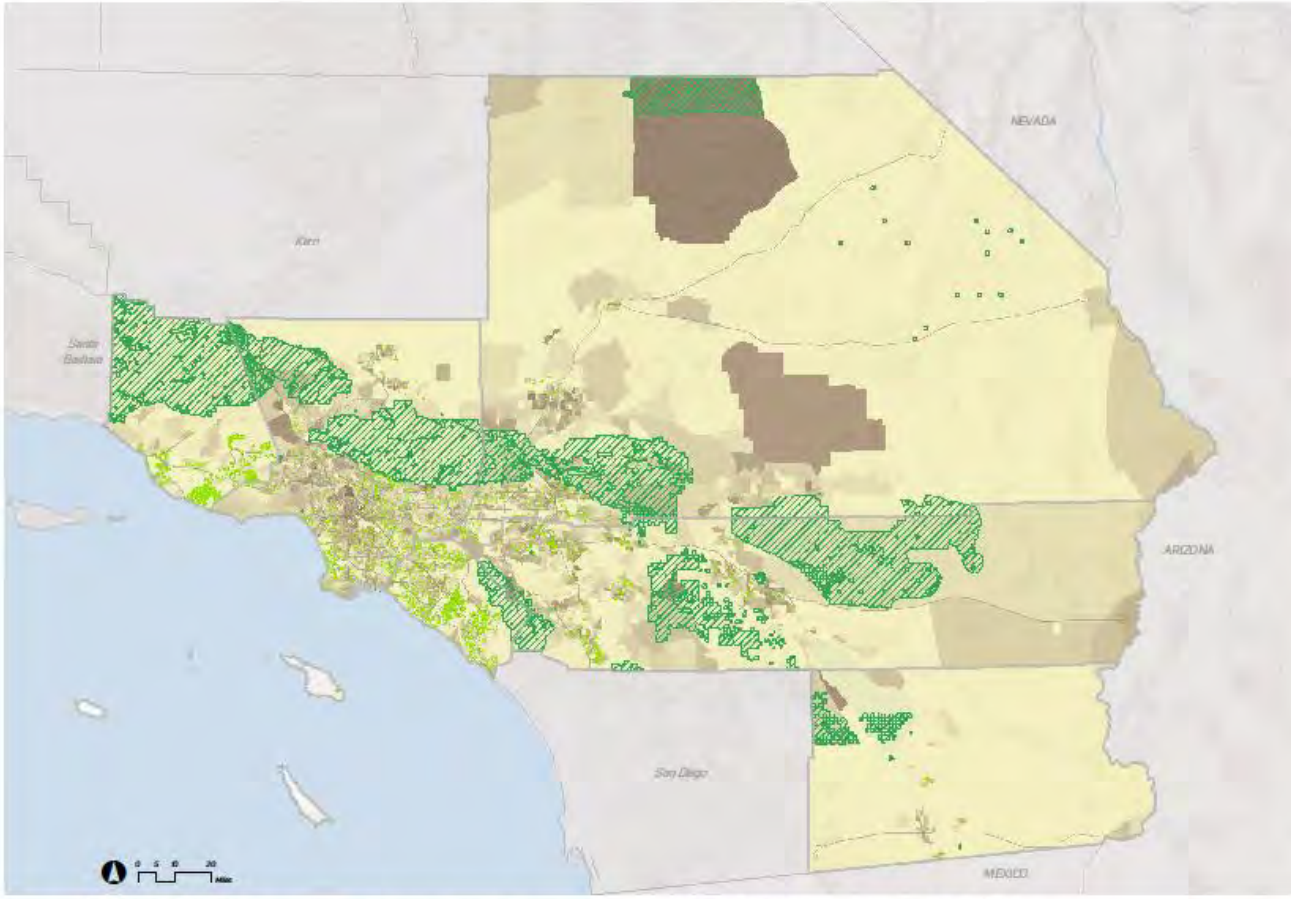
Source: SCAG

Minority Population and Low-Income Household Overlay with Natural Lands



Map: Minority Population in 2012

O:\=RTP_EJ\ej2016\mxds\park\parks_minority_pop.mxd | Date: 10/8/201



Map: Low Income Households in 2012

O:\=RTP_EJ\ej2016\mxds\park\parks_low_income_hh.mxd | Date: 10/8/2015

San Gabriel National Monument Accessibility

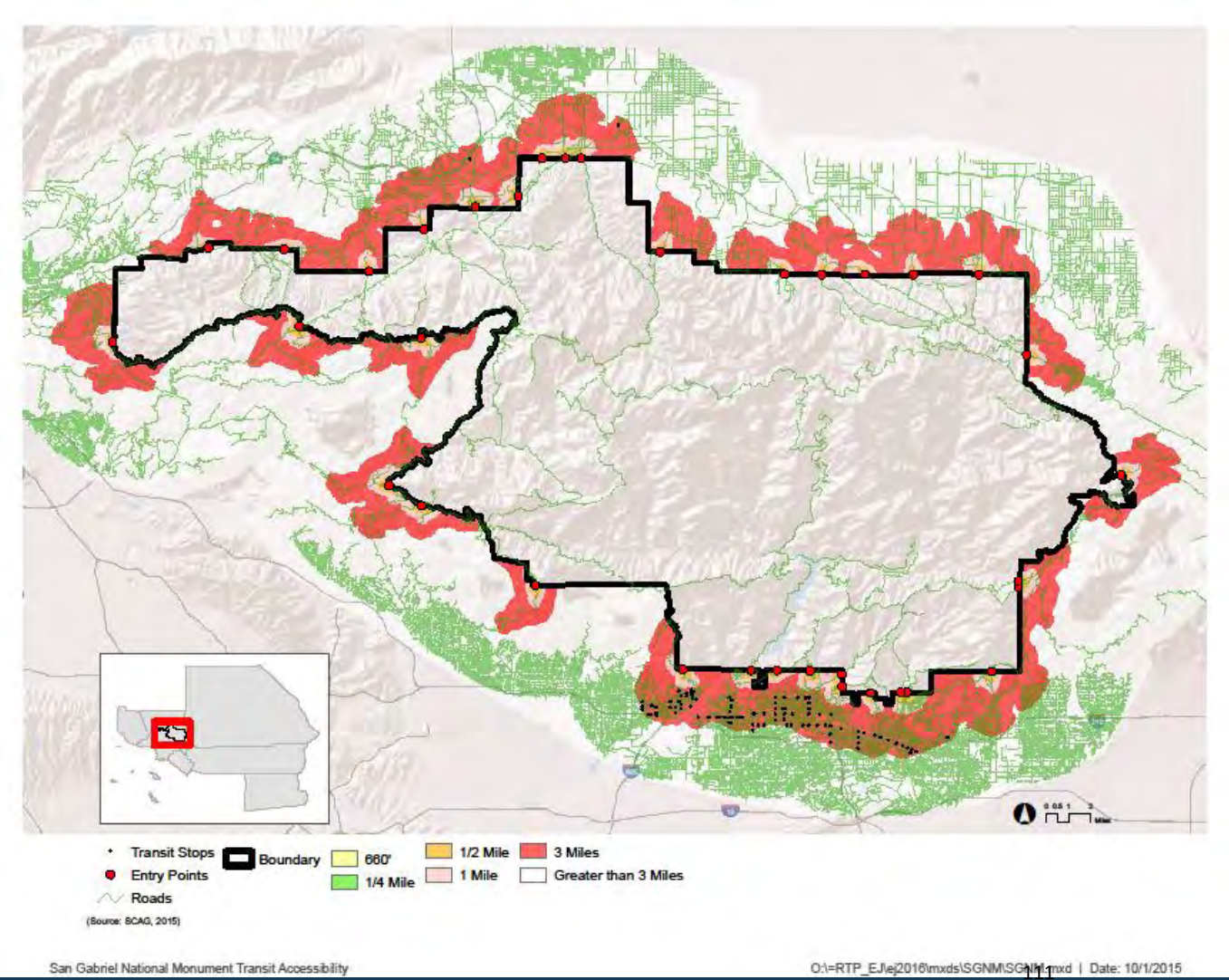


TABLE 50 Travel Time to San Gabriel National Monument

Travel Time to San Gabriel National Monument					
Station	Day of Week	Travel Time (minutes)			
		Average	Max	Min	Stand. Dev.
Union Station	Weekday	90	117	65	12
	Weekend	97	174	69	17
El Monte Station	Weekday	74	100	42	14
	Weekend	80	152	43	22
South LA's Rosa Park Station	Weekday	135	175	91	14
	Weekend	154	210	123	18
North Hollywood Station	Weekday	125	157	93	13
	Weekend	141	210	113	17
Anaheim's ARTIC Station	Weekday	150	201	123	17
	Weekend	166	211	138	15
Downtown Riverside's Metrolink station	Weekday	138	208	74	26
	Weekend	218	300	142	30

Source: SCAG

Next Steps

- 2016 RTP/SCS EJ Report
  - http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS_EnvironmentalJustice.pdf
- Model results from Activity-Based Model (ABM)
- Updated datasets for accessibility analysis
  - Regional existing land use, CPAD, transit network, street network
- EJ working group and public outreach
- Integration between EJ report and other reports (e.g. transit, public health, active transportation, safety, etc.)

Thank You!

Tom Vo

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