



# State of OC Transit **SUMMARY REPORT**



JANUARY 2017

Prepared for the Orange County  
Transportation Authority by:



In collaboration with:



STATE OF OC TRANSIT SUMMARY REPORT

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OCTA is developing the OC Transit Vision to define the future of transit in Orange County.





Image Source: Jonathan Riley

# 1

## Context

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The Orange County Transportation Authority (OCTA) is the primary provider of public transit service in Orange County. OCTA is developing the OC Transit Vision to define the future of transit in Orange County. The Vision will identify the corridors countywide with the greatest demand and potential and will assess which modes of high-capacity or premium transit, such as streetcar or bus rapid transit (BRT), may be appropriate for each corridor. Finally, the OC Transit Vision will prioritize the most immediately needed projects for near-term development.

The OC Transit Vision process is scheduled to be completed in late 2017. The State of OC Transit Report is an important first step in the process, and the most important findings from that report are including in this Summary Report. This chapter sets the context for the Summary Report by introducing the need for the OC Transit Vision; summarizing OCTA's current service, the history of transit in Orange County, and local and national trends in transit ridership; and introducing transit modes that will be important for the Transit Vision.

## WHY A TRANSIT VISION

### Service Today

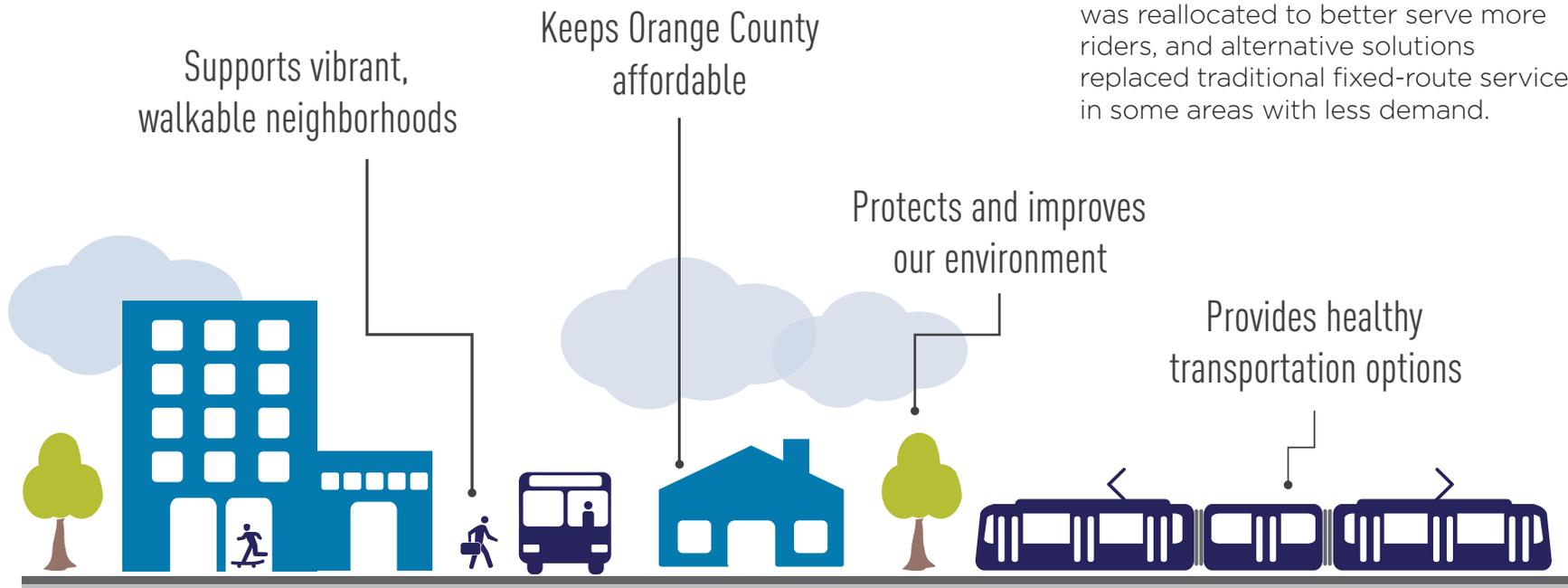
OCTA provides vital transit services across Orange County. OC Bus serves 43 million passengers annually, the most of any Orange County transit provider. Bravo! comprises two rapid bus lines providing higher-quality service than local buses.

The OC Streetcar, which will run from Santa Ana to Garden Grove, is scheduled to open in 2020 as the county's first urban rail line. OCTA also provides special event service, vanpools, and ACCESS service for people with disabilities.

### OC Bus 360°

OC Bus 360° is an OCTA initiative to grow bus ridership by taking a fresh look at the service and making changes including technology innovations, promotional efforts, and service changes. The 2016 Bus Service Plan—a critical piece of the effort—was implemented with the goal of providing higher-quality, more frequent, and expanded service in the highest demand corridors. Service from low-demand corridors was reallocated to better serve more riders, and alternative solutions replaced traditional fixed-route service in some areas with less demand.

### High-quality transit service...



## Addressing Declining Ridership

While funding constraints limit OCTA's ability to address ridership declines, the 2016 Bus Service Plan network restructuring is projected to increase transit ridership by 1.6 million boardings within three years, largely by reallocating bus service to areas where it can be more cost-effective and productive.

OCTA staff continues to work with the board of directors to investigate causes of the decline and to propose creative solutions.

Orange County is experiencing a multiyear decline in transit use: Ridership on OCTA buses has fallen by **37 percent** in the last seven years.

For more on these topics, see **Chapter 2** of the full State of OC Transit Report



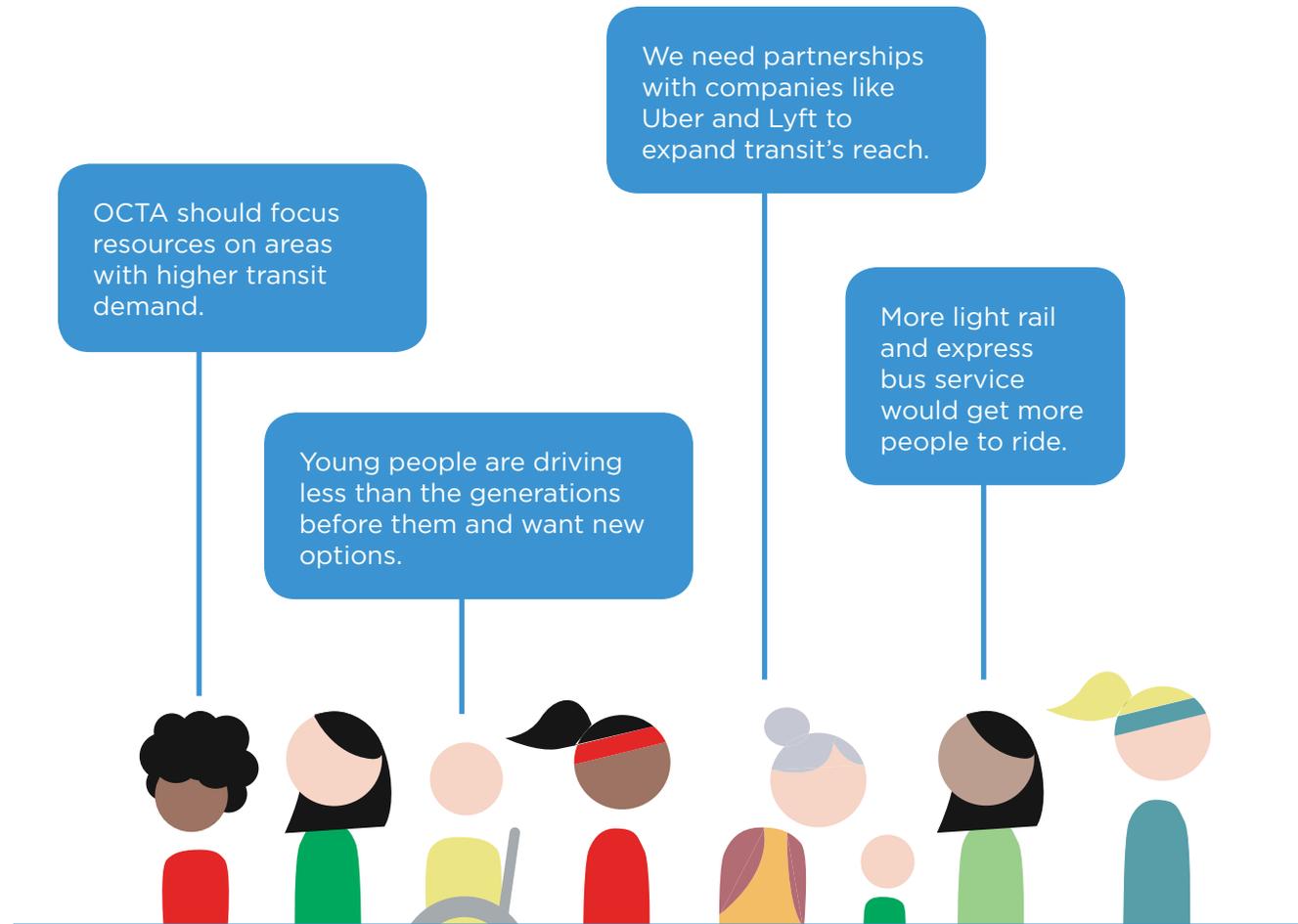
# DEFINING THE OC TRANSIT VISION

## What the Vision Will Do

In the coming decades, public transit is expected to have an increasingly important role in Orange County. Changes in demographics, environmental policy, and development will require additional transportation options for residents, employees, and visitors.

To plan for the future, OCTA is developing a Transit Vision, which will be an integrated bus, rail, and paratransit plan. The Transit Vision will establish the 20-year plan for Orange County's transit future, taking a high-level look at long-term transit needs throughout the county as well as important connections to transit projects from other local transit agencies. The Vision also will identify a series of corridors that could lead to smoother, more efficient journeys on public transportation options like bus rapid transit and streetcar.

## What People Want from the Vision



Source: Fall 2016 OCTA Stakeholder and Focus Group Meetings

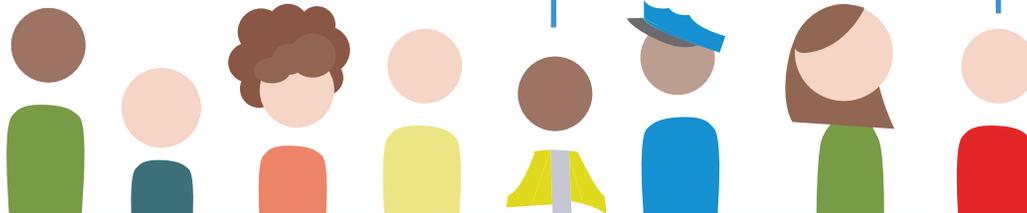
We need more education about transit in Orange County.

There aren't enough evening and weekend services, and not everyone works 9-5.

Transit options need to be diverse and customized to meet people's needs.

As baby boomers reach retirement age, there will be a greater need for transportation tailored to seniors.

OCTA's special services, like the OC Fair Express, are great!



## Foundation for the Vision

A review of previous plans and existing policies helps to set a foundation for the OC Transit Vision by establishing the context for current work and identifying recurring themes in regional and local documents:

- The **importance of collaboration** between agencies and the public and between agencies at all levels of government
- The role transit can play in helping to **reduce greenhouse gas emissions**
- The need for a broad range of **convenient travel choices**
- The importance of **integrating transportation with land use planning**
- The likelihood of continuing **constraints on funding**
- The fundamental **reality of geography**, from space constraints in heavily trafficked corridors to dispersed housing and employment patterns
- The need for **multimodal connectivity** within the transportation network

# TRANSIT TIMELINE



Pacific Electric "Big Red Cars" run from L.A. to Yorba Linda, Fullerton, Santa Ana, and Newport Beach

1904 to 1950

1959

Disneyland Monorail opens



Orange County Transit District is formed by county voters

1972

Orange County Commuter Amtrak line (today's Metrolink Orange County Line) begins service between San Juan Capistrano and Los Angeles

Original Measure M sales tax is passed by voters, leading to formation of OCTA



1990



Formation of OCTA  
87-mile "urban rail" system is proposed, including 47-mile initial network

1991

1994

OCTA Board votes to proceed with studying 28-mile light rail line between Fullerton and Irvine, the "CenterLine"



Due to local opposition, further study is discontinued on CenterLine

2000 to 2005

2006

Measure M2 is approved, including funding for "fixed-guideway" connections to Metrolink



# 69M Boardings

OCTA ridership peaks at 69 million annual boardings



OCTA becomes manager of LOSSAN rail corridor between San Luis Obispo and San Diego



OCTA bus service becomes OC Bus and launches real-time arrival information



OC Streetcar receives federal environmental clearance to proceed with additional design and engineering

OC Streetcar to begin service between Santa Ana Metrolink and Garden Grove

2008 to 2010

Ridership begins to decline due to recession

2013

OCTA launches Bravo! rapid bus service

2014

Anaheim Regional Transit Intermodal Center (ARTIC) opens

2015 to 2016

As part of the OC Bus 360 program, the route network is updated and mobile ticketing is introduced

Harbor Boulevard corridor study begins

2016

2020



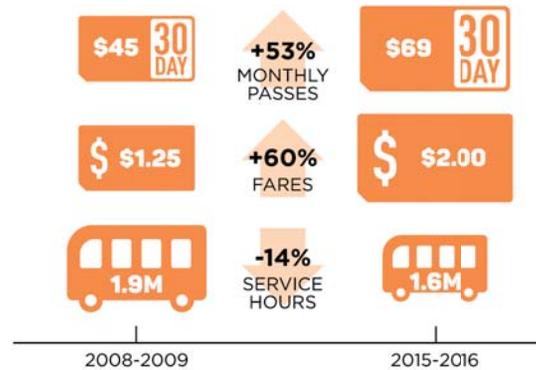
For more on the history of transit in Orange County, see **Chapter 1** of the full State of OC Transit Report.

Source: Images from OCTA, Nelson\Nygaard, and Wikipedia (licensed for reuse)

# TRANSIT TRENDS

## Recent Ridership Trends

Transit ridership in Orange County is declining. Fares have increased as much as 60 percent since 2008, while service hours have fallen 14 percent. Charging more and providing less service has yielded predictable results. OCTA has nearly doubled spending on paratransit during the same period, which has limited funding for additional bus service.



Fares have increased as much as **60 percent** since the Great Recession, while service hours have fallen **14 percent**.

## Causes of Decline

A variety of additional factors have reduced ridership. Rising employment means more people can afford a car, while plummeting gas prices mean people can afford to drive further and more frequently. A new state law allows undocumented immigrants to obtain a driver's license. Between 2009 and 2015, the number of registered vehicles in Orange County grew more than three times faster than the population. Most recent transportation capital investments in the county have focused on reducing auto commute time.



Rising Unemployment



Plummeting Gas Prices



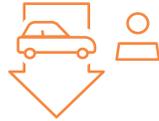
Increase in Registered Vehicles

While OCTA bus fares have increased by **60 percent**, the cost of driving increased by only **7 percent** over the same period.

For more information on transit trends, see **Chapter 4** of the full State of OC Transit Report.

## Optimism for the Future

There are also causes for optimism. Nationally, the overall population is driving less, and young people in particular are driving far less. There is a national trend toward transit-friendly urban living after decades of sprawling suburban growth. A diversifying, aging population also bodes well for transit use. Additional freeway and arterial roadway widenings are unlikely, and transit can play a vital role in using the roadway system more efficiently.



**Young People  
Driving Less**



**Trend Towards  
Urban Living**



**Diversifying and  
Aging Population**

## Opportunities for Growth

Technological developments such as mapping apps, mobile ticketing, and real-time arrival information make public transit an easier and more attractive option. Car sharing, ride sharing, bike sharing, and autonomous vehicles, on the other hand, present both opportunities for increased connectivity and challenges when they replace transit trips.



**Tech Solutions such  
as Mobile Ticketing**



**Bike Sharing  
and Car Sharing**



**Autonomous  
Vehicles**

## WHY DEVELOP A TRANSIT MASTER PLAN?

Transit agencies and cities across the U.S. are developing Transit Master Plans—like OCTA's Transit Vision—to establish how they want their systems and services to grow and change in the next 20 to 25 years.

In 2016, the Nashville Metropolitan Transit Authority's board adopted nMotion, a \$6 billion service improvement and capital investment plan to help meet the needs of more than 1 million new residents expected by 2040. In addition to near-term service improvements, the plan calls for expanded rapid transit to new areas and development of comprehensive regional transit coverage.

Seattle's Transit Master Plan, adopted in 2012 and updated in 2015, resulted in an unprecedented level of consensus on Seattle's mobility future, allowing the city to allocate \$5 million towards its implementation in 2013-2014, promptly attracting \$900,000 in federal support, setting the stage for \$2 million in regional partnership funding, and leading to passage of the \$930 million Levy to Move Seattle in 2015.

To learn more about these and other transit master plans, see **Chapter 3** of the full State of OC Transit Report.

# TRANSIT MODES FOR THE OC TRANSIT VISION

## Transit Modes

The capacity and speed of transit are both highly dependent on the transit mode. A transit mode is not the same thing as a transit vehicle. A mode consists of four elements described below.

To learn more about transit modes, see **Chapter 5** of the full State of OC Transit Report.

### Key Points

The following are critical when considering different transit modes:

- Each element of a transit mode can have a varying impact on performance outcomes such as speed, reliability, capacity, and rider comfort.
- Modes should not be too narrowly defined. Rather, each mode represents a spectrum of characteristics.
- Some characteristics are necessary for (or typical to) certain modes. Others are more-or-less independent of mode.
- Many elements are interdependent, resulting in complex relationships that must be considered carefully in local decision-making processes.



Image Source: Oren's Transit Page

Transit Mode Element		Examples
	<b>Right-of-way design and management</b>	Route alignments, dedicated lanes, grade separation, signal priority
	<b>Stop design and access requirements</b>	Stop design, stop amenities, real-time vehicle information, prepaid boarding zones
	<b>Service model/ operating plan</b>	Vehicle frequency, interlining
	<b>Vehicle type</b>	Bus, light rail train, streetcar

## TRANSIT MODES

### Light Rail

Light rail provides urban rail service that generally operates in an exclusive right-of-way in areas of higher population and employment densities. Light rail vehicles are larger than streetcars (80 to 90 feet long), and are also faster, with top speeds around 65 miles per hour, compared to 45 miles per hour for streetcars. Their greater speed and capacity make them an attractive choice for longer trunk routes, and stations are often a mile or more apart. Cities implementing new light rail lines coordinate land use and development strategies to stimulate economic development, increase density, and improve walkability around new stations.



### Rapid Streetcar

Rapid streetcar is not familiar to many Americans, although the term might be used to describe many European “tram” systems. The rapid streetcar can be thought of as a hybrid of streetcar and light rail, and may be appropriate in very specific contexts. The western segment of the OC Streetcar between Santa Ana and Garden Grove, which will operate in an off-street right-of-way with widely spaced stops, fits the definition of rapid streetcar. Rapid streetcar can combine the modestly designed stops of a typical streetcar and willingness to incorporate some single-track segments with a longer alignment and coupled trains.



### Streetcar

Streetcar vehicles are small railcars (slightly larger than a 60-foot articulated bus) that typically operate in mixed traffic, without any priority at signals, and make curbside stops. Streetcar lines are relatively short, and services run often and make stops every few blocks. While streetcar service is generally not faster than rapid bus service, streetcars provide a smoother ride than most buses and have been shown to attract adjacent development, which can improve access by bringing destinations closer together.



## TRANSIT MODES

### Bus Rapid Transit (BRT)

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BRT is a high-quality bus service that operates much like light rail and uses dedicated transit lanes. When fully implemented, BRT can decrease travel times, improve corridor safety, and spur economic development. Operational and design elements that set BRT apart from traditional local bus service include enhanced stations with pre-payment and level boarding, dedicated transit lanes, wider stop spacing, traffic signal priority, higher capacity vehicles, specialized branding, and more frequent service.



### Rapid Bus (Bravo!)

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Rapid Bus is very similar to BRT, but does not operate in dedicated transit lanes. Instead, most service operates in mixed traffic with targeted measures to provide transit priority, such as queue jump lanes (short bus lanes to bypass backups at traffic signals) and signal priority. OCTA operates two Bravo! rapid bus routes on the Harbor Boulevard and Westminster/17th Street corridors.



### Express Bus

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Express buses make few stops, generally operating from point-to-point rather than along a corridor. Routes are longer than local- or limited-stop bus routes (or streetcar lines), and nonstop segments are often located along freeways or major arterial streets. Stops are curbside or at park-and-ride lots. OCTA operates eight express bus routes.



## Local Bus

Local bus routes serve urban and suburban corridors. Most often, local buses share travel lanes with other vehicles and stop as frequently as every block. Close stop spacing makes local bus routes easily accessible to passengers but reduces travel speed. The speed of some local bus services can be improved with transit priority measures or wider stop spacing, such as OCTA's three Xpress routes that have limited stops. However, these routes do not have unique branding or other service quality improvements like those of Rapid Bus or BRT.



## Paratransit

Paratransit provides service with specially equipped vehicles for people who are unable to use fixed-route transit services. To comply with the Americans with Disabilities Act, transit providers must offer paratransit services within three-quarters of a mile of any fixed-route service. OCTA's paratransit service is called ACCESS and includes standard curb-to-curb service, which requires trips to be requested in advance; subscription service, which schedules recurring trips, such as a commute trip, without requiring an advance request; and same-day taxi service.



## On-Demand

On-demand services vary greatly by community and go by many names, including demand-responsive transit or dial-a-ride. They are characterized by flexible routes served by smaller vehicles that operate according to passenger needs. On-demand services are common in areas of lower transit demand, which are often not easily served by fixed-route transit. Services provided by transportation network companies, such as Uber and Lyft, are offered by the private sector, sometimes in partnership with transit agencies.



Funding constraints have shaped the service that OCTA is able to provide, and reductions in service hours and limited high frequency routes directly impact transit ridership.





Image Source: Jonathan Riley

# 2

## OC Transit Today

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This chapter presents important information about OCTA's current service: the mix of services available, the frequency of those services, ridership by stop, and metrics that help to explain how well the system is performing, including in relation to a number of peer systems. Funding constraints have shaped the service that OCTA is able to provide, and reductions in service hours and limited high frequency routes directly impact transit ridership. Another critical piece of the transit system is access to that system, and it can be challenging for people in Orange County to make seamless connections to transit.

## SERVICE

### Transit Service in Orange County

**OC Bus** is OCTA's largest and most visible service, providing 65 routes and serving 43 million passengers annually throughout Orange County. OC Bus also provides service to major events and destinations, as well as vanpools and ACCESS service for those with disabilities.

OCTA's **Bravo!** comprises two rapid bus lines, providing service that is faster and more reliable, convenient, and attractive than local bus service. Stops serve only the busiest locations, such as transfer points and major destinations.

Scheduled to open in 2020, the **OC Streetcar** will be Orange County's first urban rail line. It will run more than four miles from the Santa Ana Regional Transportation Center to Garden Grove, intersecting with existing Bravo! routes to form a key transit connection. A feeder connection to the Metrolink rail spine, the streetcar is envisioned as the first segment of what could become a larger streetcar network.

Orange County is served by both **Amtrak Pacific Surfliner** and **Metrolink** regional/commuter rail lines. The LOSSAN rail corridor is a north-south rapid transit spine connecting the county to Los Angeles and San Diego. **LA Metro** operates service connecting to 10

OC Bus routes within Orange County. Agencies in neighboring counties also provide limited connections to Orange County transit services.

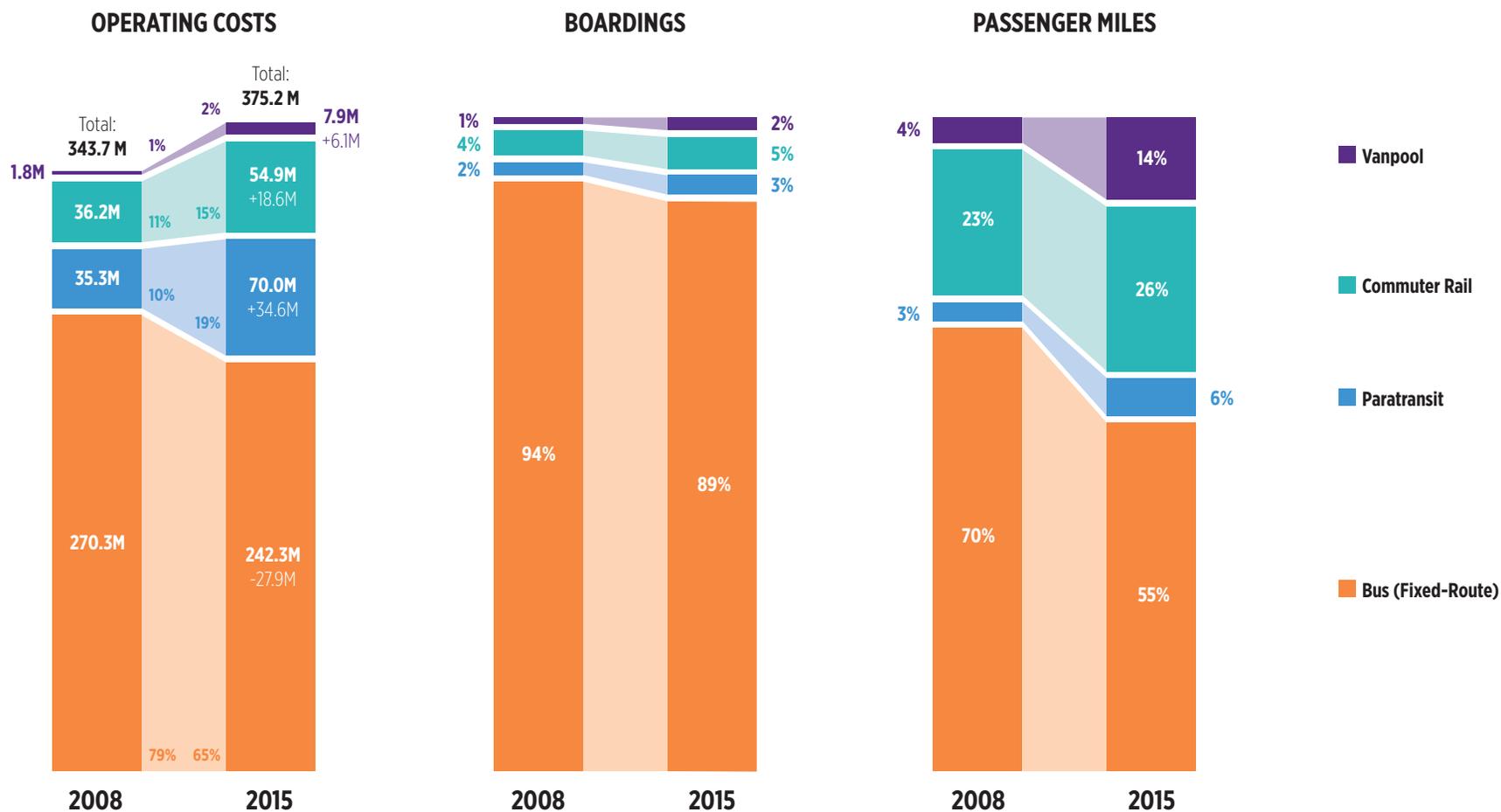
More locally, numerous communities offer a variety of circulators, shuttles, and rideshare products.



For more on transit service, see **Chapter 2** of the full State of OC Transit Report.

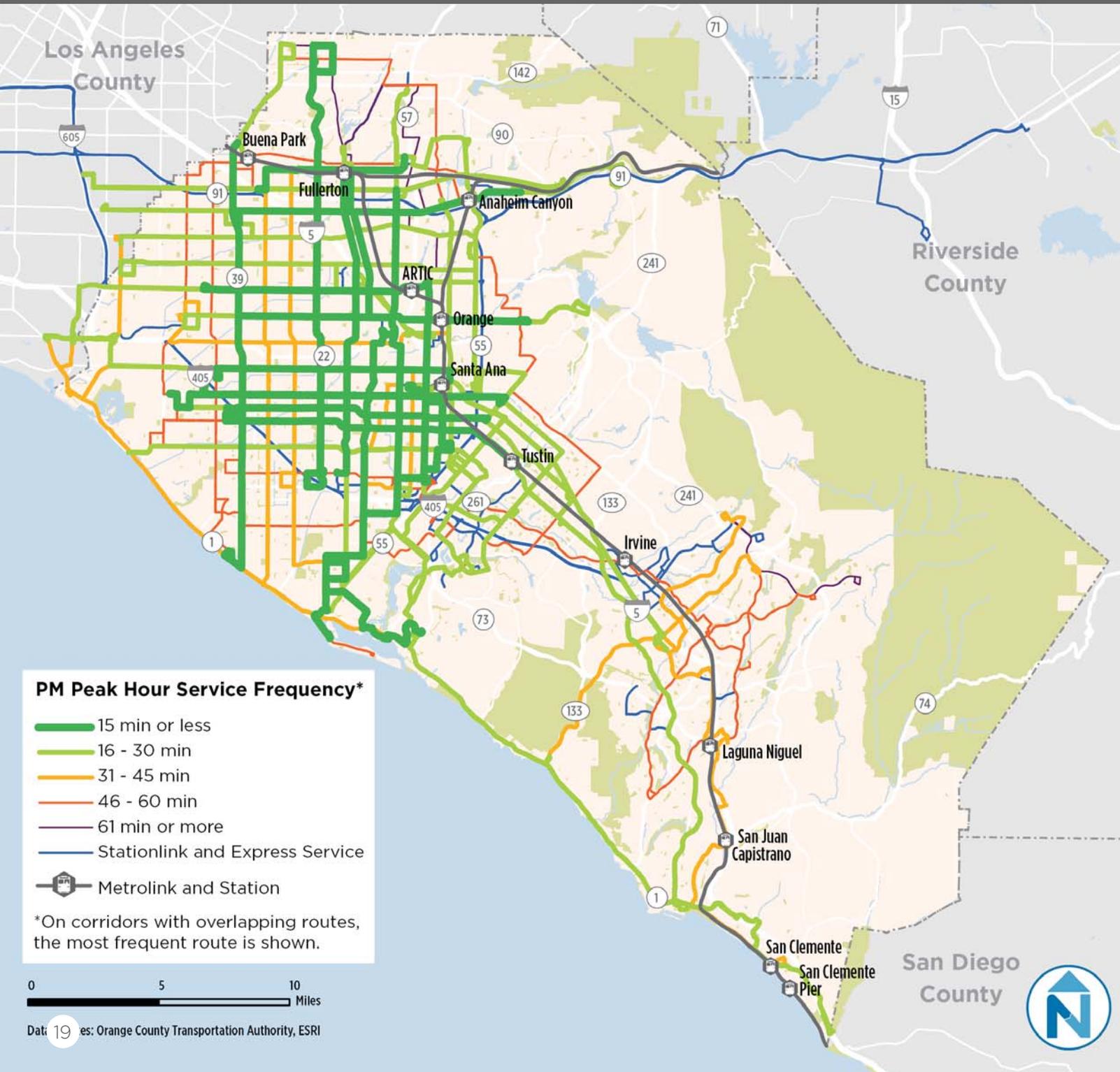
## Transit Service and Costs by Mode

Operating Costs, Boardings, and Passenger Miles by Mode (2008 and 2015)\*



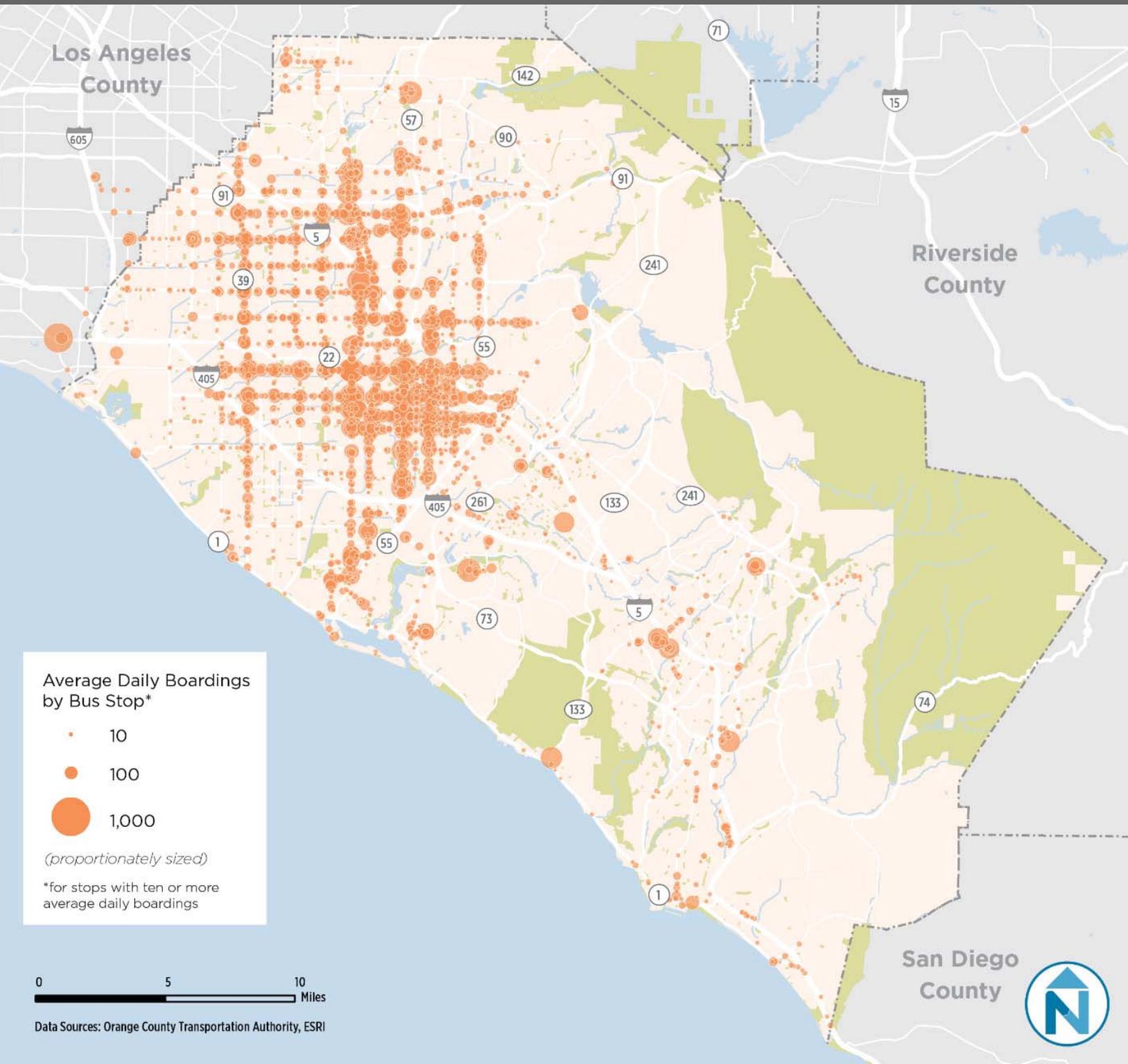
\* Percent totals may not equal 100% due to rounding.

# WEEKDAY PM PEAK HOUR SERVICE FREQUENCY



- The frequency of transit service directly impacts ridership: people are far more likely to use frequent services (those that operate every 15 minutes or better) than services that arrive less often.
- This is particularly true for people who have a choice about whether to ride transit or drive to their destination.
- The map to the right shows weekday afternoon peak frequency on OCTA routes; corridors on which multiple routes operate show levels of service provided by all routes combined.
- Generally, frequency levels match weekday ridership patterns, and OCTA's high ridership corridors are supported by 15-minute or better service.

# WEEKDAY BUS BOARDINGS



Average Daily Boardings by Bus Stop\*

- 10
- 100
- 1,000

*(proportionately sized)*

\*for stops with ten or more average daily boardings

0 5 10 Miles

Data Sources: Orange County Transportation Authority, ESRI

- Ridership is notably higher north of State Route 55 and is concentrated heavily in Santa Ana.
- Ridership is highest where corridors intersect. The Harbor Boulevard and Westminster Boulevard corridors served by Bravo! routes stand out as major spines for the system.
- Beach Boulevard, which is west of the highest ridership concentration, also has a strong ridership market.
- In South Orange County, weekday ridership centers around Metrolink stations and transit hubs such as the Laguna Hills Transportation Center, Saddleback College, as well as local high schools.
- Ridership declines overall on Saturday and Sunday but maintains a similar pattern.



# PERFORMANCE INDICATORS

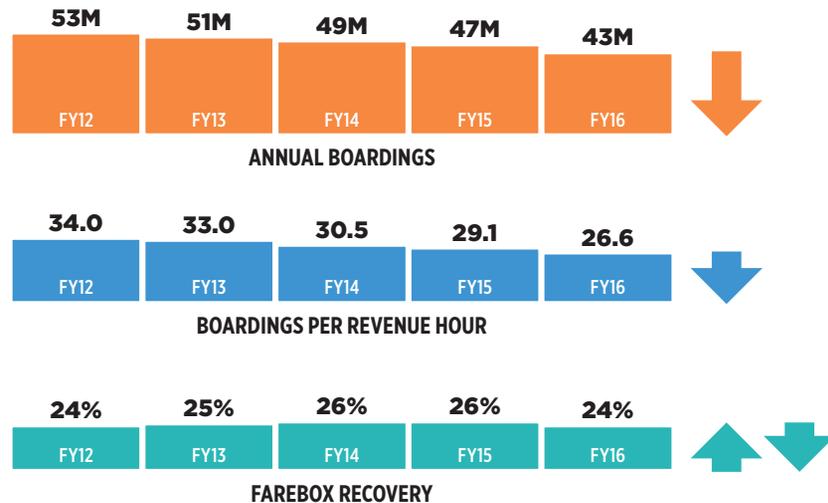
## OC Bus Performance

Over the past five years, annual OC Bus ridership has decreased by about 10 million boardings to 43 million annual riders. System productivity has also decreased from 34 to 27 passengers per revenue hour, following the decline in ridership. Bus farebox recovery has been relatively unchanged, varying between 24 percent and 26 percent.

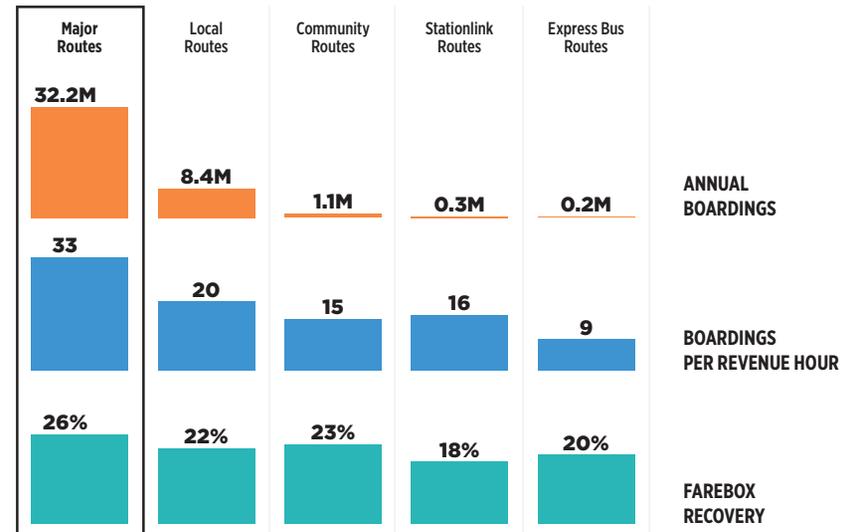
OC Bus operates 65 bus routes, each of which is classified into one of five types of bus service. Each category of service has a different purpose and design characteristics, influencing how the category typically performs. Performance indicators for each category of service in 2016 are shown below.

OCTA’s major corridors—routes that operate seven days a week, nearly every 15 minutes or better in peak periods, and serve the densest parts of the OC Bus service area—carry the majority of passengers and are the most productive routes in the system. **As a group, these 19 routes carry more than three-quarters of the annual system ridership.**

Ridership and Farebox Recovery by Year (2012 to 2016)



Ridership and Farebox Recovery by Category of Service (2016)

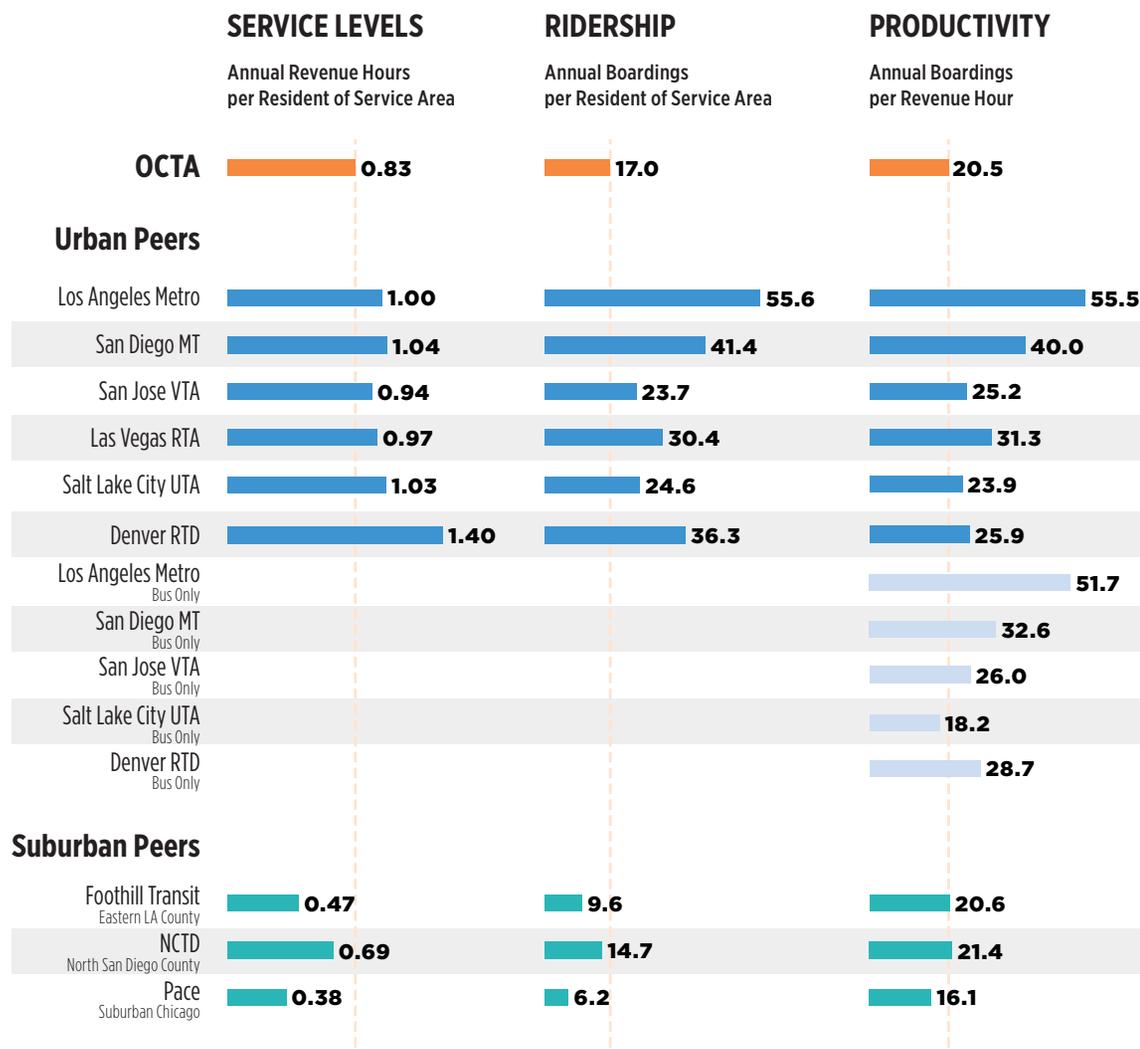


## Peer Comparison

The graphic to the left shows how transit service and use in Orange County compares to select peer cities and regions. **In general, OC Bus performs well relative to other large suburban systems. However, Orange County has characteristics of an urban area—and OC Bus underperforms relative to systems in other western cities.**

OCTA falls behind its more urban peers in the southwest (Los Angeles, San Diego, San Jose, Las Vegas, Salt Lake City, and Denver) when it comes to service productivity, which is the number of riders boarding per revenue hour. However, OCTA does keep pace with suburban operators in the San Gabriel Valley, northern San Diego County, and suburban Chicago. In terms of both annual boardings per person living in the service area and amount of service offered (hours per capita), OCTA falls in between its suburban and urban peers.

For more on transit performance, see **Chapter 2** of the full State of OC Transit Report



## ACCESS AND CONNECTIONS

Seamlessly connecting between routes and modes is an important element of a successful transit system. In Orange County, these connections largely occur at transit hubs such as Metrolink stations.

Easy and convenient access to stops and stations—the first-/last-mile challenge—is fundamental to the success of any transit system. In OCTA’s most recent passenger survey, 81 percent of respondents walked to their stops.

Yet walking to a bus stop in Orange County can be slow, indirect, and unpleasant. A poorly connected street grid often forces people to walk blocks out of their way. Long distances between crosswalks and long waits at signals exacerbate the issue. Uncomfortably close high-speed traffic, poorly designed intersections, and missing sidewalks can make walking disagreeable at best and unsafe at worst.

For more on access and connections, see **Chapter 2** of the full State of OC Transit Report.

Transit access can be improved in many ways, from direct investments in new crosswalks to long-term land use changes creating a more pedestrian-scaled built environment. Targeted investments in the half-mile around major transit hubs could reap outsized benefits.

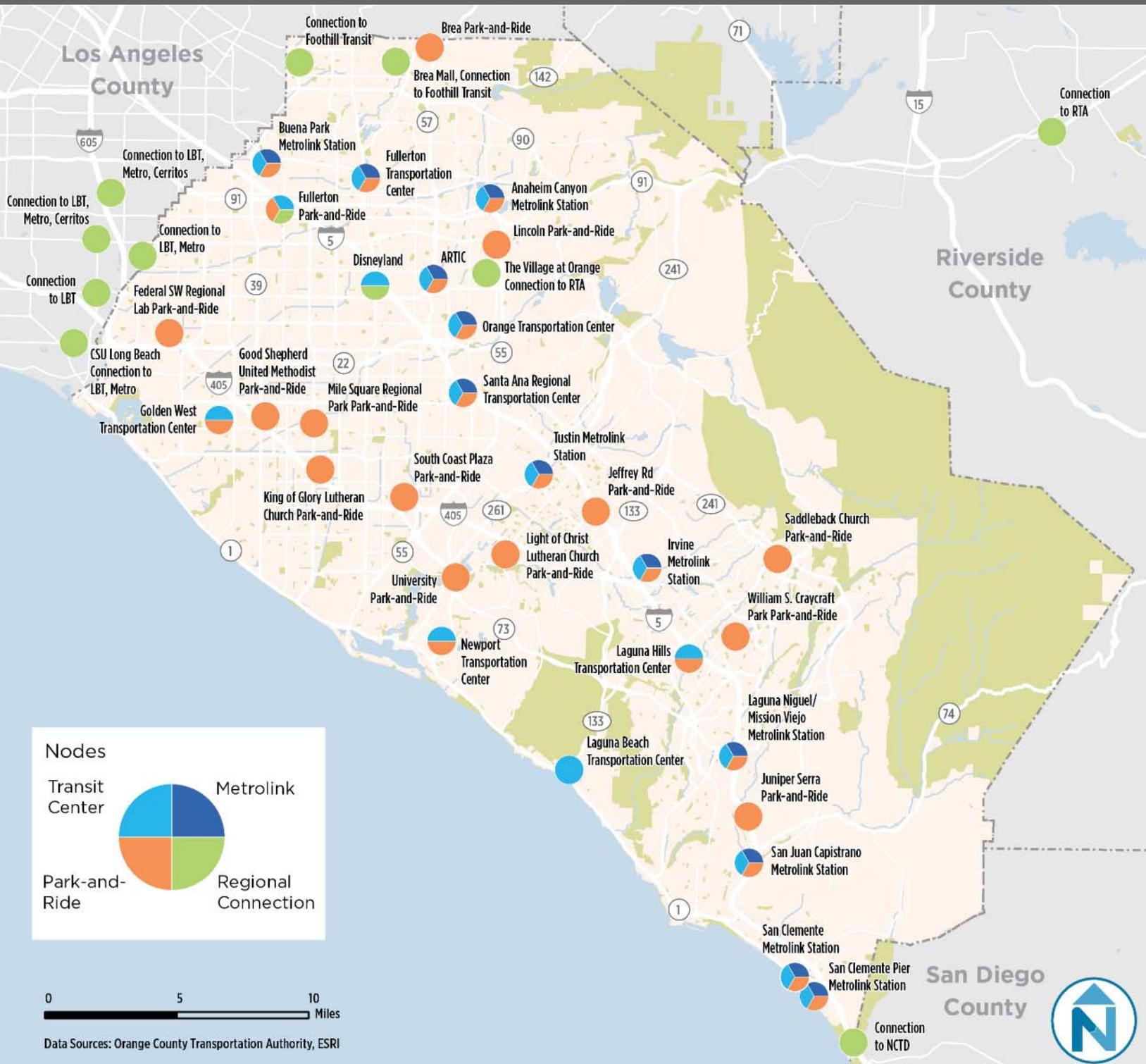
The county’s bikeway network, created and maintained through a partnership between OCTA and local cities, features more than 1,000 miles of designated bike routes. Facilities vary from sharrows and dedicated bike lanes to off-street bike paths such as the Santa Ana River Trail.

Transit access can be improved in many ways, from direct investments in new crosswalks to long-term land use changes creating a more pedestrian-scaled built environment.



Image Source (Both Images): OCTA

# ORANGE COUNTY TRANSIT NODES



**Nodes**

Transit Center  Metrolink

Park-and-Ride  Regional Connection 

0 5 10 Miles

Data Sources: Orange County Transportation Authority, ESRI



- Orange County transit hubs include Metrolink stations, OCTA park-and-rides, and off-street bus transfer centers.
- The hubs serve as major points of connection between transit routes and between transit and other modes of transportation.
- Amenities at Orange County transit hubs include waiting and seating areas, shelters, transit system information, restrooms, bicycle lockers or racks, and vehicle parking.

A blue and white OCbus is stopped at a station. Several passengers are waiting, including a woman with long blonde hair wearing an orange backpack and holding a blue folder, and a woman with brown hair wearing a dark backpack. The bus has "OCbus.com" on the side, a "CNG" logo, and the number "A 43438" near the rear wheel. The OC Transpo logo is also visible on the upper part of the bus.

To understand where transit service is needed both today and in the future, the OC Transit Vision looks at travel patterns and demand for service.



Image Source: OCTA

# 3

## Transit Markets

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To understand where transit service is needed both today and in the future, the OC Transit Vision looks at travel patterns and demand for service by considering the following factors:

- Land use and the built environment, including current and future land uses, current and future population and employment density, and other major trip generators (colleges and universities, for example)
- Demographics, including age, income, and auto ownership
- Travel patterns and transit demand, including origins and destinations for all modes as well as an assessment of future transit demand

This chapter introduces the factors that influence demand and the areas of Orange County where transit service is most likely to be needed in the next 20 years.

## TRANSIT DEMAND

Transit demand is influenced by population and employment density, land use diversity, urban design, regional destinations, distance to quality transit, and demand management.

Orange County evolved around the car, with commercial development located primarily in business parks and residential development located largely in single-family subdivisions. The last few decades have seen a growth in smaller units and multifamily housing as the region's demographics have changed.

Single-family homes still constitute the largest active land use in Orange County, covering 22 percent of the county. Potentially rich transit markets such as multifamily and mixed-use properties tend to be clustered throughout the county, making those centers easier to serve by transit. South County has lower densities and a disconnected street network that does not generate significant transit demand.



“The Depot at Santiago,” located across the street from the Santa Ana Regional Transportation Center, broke ground on 70 units in August 2016.

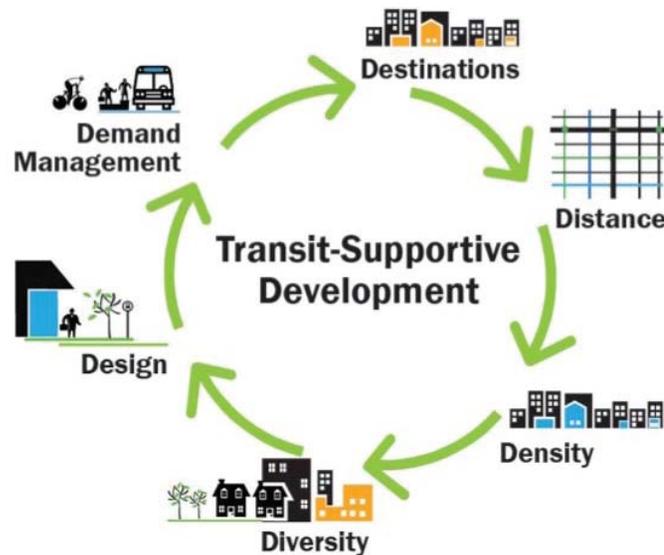
Image Source: Bassenien Lagoni Architects



Orange County is home to major attractions that draw visitors from all over the world.

Image Source: Noel T. Braymer

Recent OCTA surveys of existing customers and people who do not use transit today found that both groups want better service frequency and faster transit travel times. Current riders also expressed a need for expanded weekend and evening service, while non-riders shared preferences for additional express routes and service closer to major destinations.



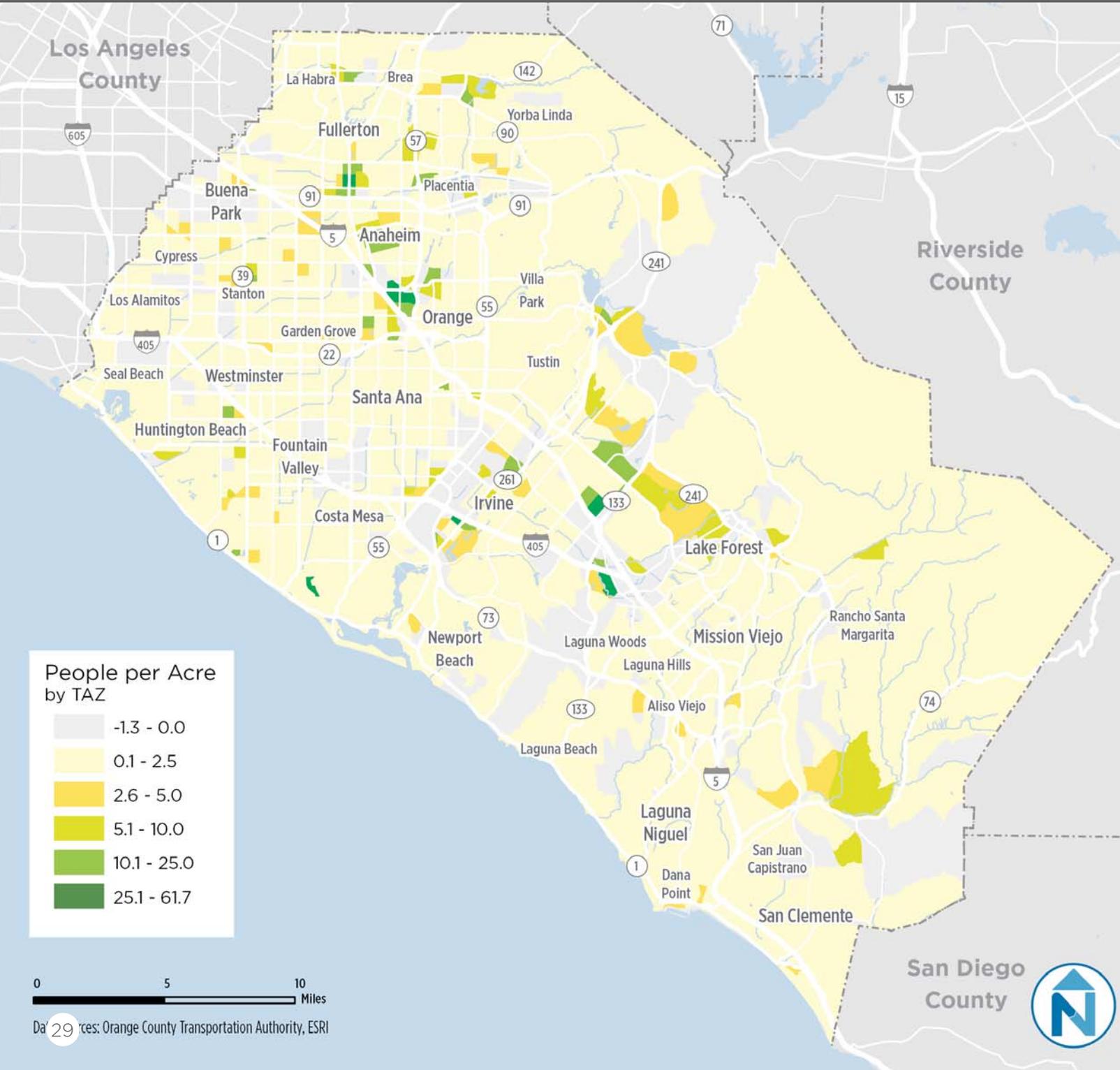
Pedestrian conditions vary across Orange County. While major streets are challenging to cross throughout the county, North/Central County feature a well-connected street grid providing more direct paths to transit stops and other destinations. Pedestrian connections to transit are very limited in newer areas and much of South County.

Key destinations in Orange County include colleges and universities, high schools, shopping malls, medical facilities, and major attractions such as theme parks, beaches, and sports stadiums.

The population of Orange County is just over 3 million people, making it the third most populous county in the state. Over the next two decades Orange County's population is expected to grow to over 3.6 million people, representing an increase of more than 21 percent between 2010 and 2035. Likewise, total jobs are forecasted to reach almost 2 million, an increase of approximately 47 percent between 2010 and 2035.

For more on transit demand, see **Chapter 6** of the full State of OC Transit Report.

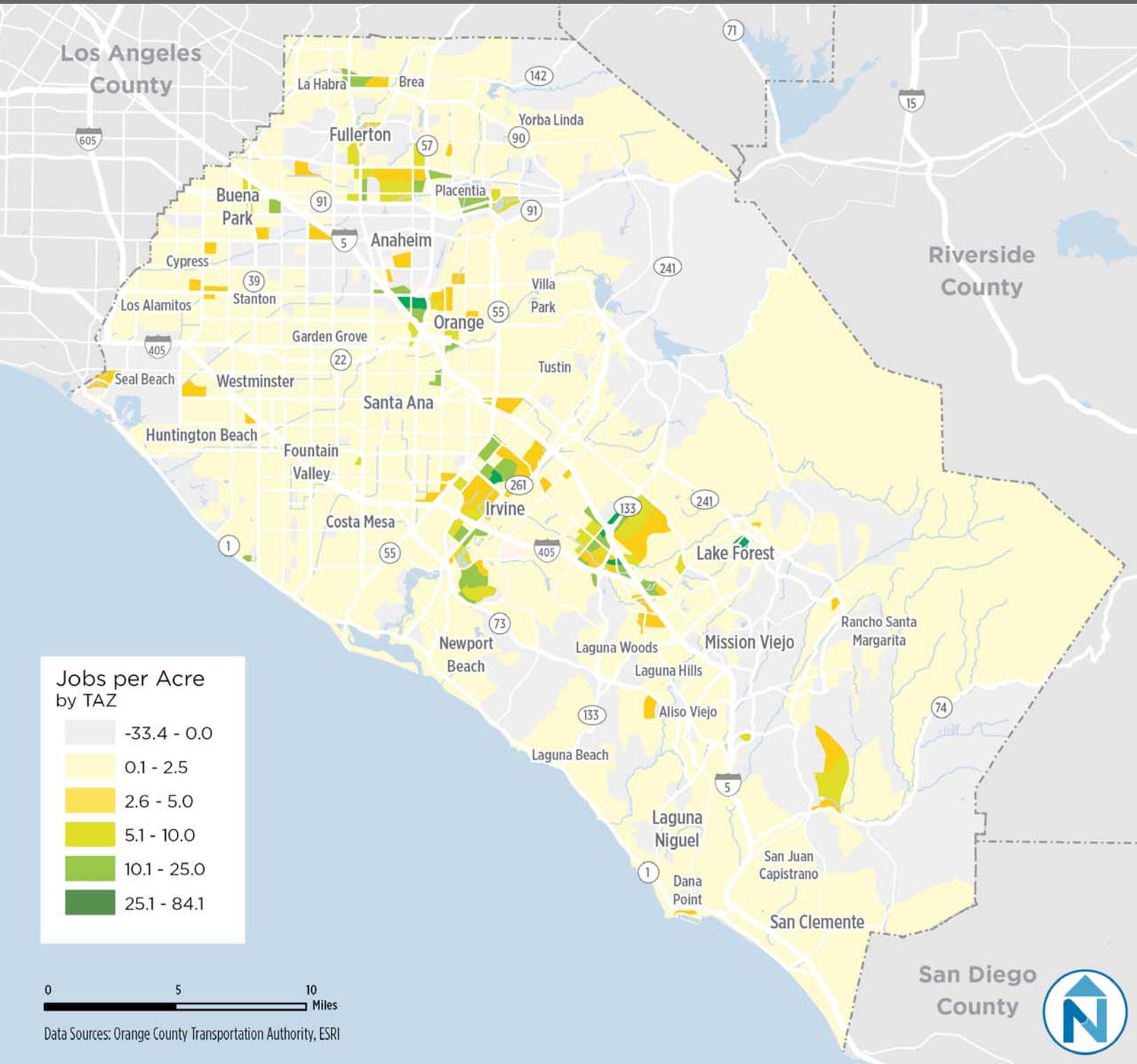
# PROJECTED CHANGE IN POPULATION DENSITY 2010 - 2035



- Neighborhoods with major projected increases in population density are fairly limited. Exceptions include the Platinum Triangle in Anaheim, Laguna Altura and Cypress Village in Irvine, Westside in Costa Mesa, and downtown Fullerton.
- Areas with low existing population density projected to see moderate growth include the western side of State Route 241 north of Lake Forest and the State Route 74 corridor near Rancho Mission Viejo in the southern half of the county.
- As with existing population density, areas with the highest projected population density are found throughout Santa Ana and in Anaheim.



# PROJECTED CHANGE IN EMPLOYMENT DENSITY 2010 - 2035



- Even more so than population density, patterns of projected employment density are relatively unchanged from existing patterns.
- Areas with the highest projected employment density include the Irvine Business Complex, downtown Santa Ana, and major areas of activity like Disneyland and large shopping centers.
- Areas with major projected increases in employment density are limited, with the exception of the Platinum Triangle and areas near the Irvine Business Complex, UC Irvine, and the Irvine Spectrum.

San Diego County



## WHO RIDES TRANSIT

It is impossible to understand transit demand without also understanding who rides transit. Nationally, transit is most heavily used by students and retirees, by people with lower incomes, by those with disabilities, by non-whites and recent immigrants, by larger households, and by those with limited English proficiency. These trends hold especially true in autocentric communities lacking high-quality, high-frequency, all-day transit operating in a walkable environment.

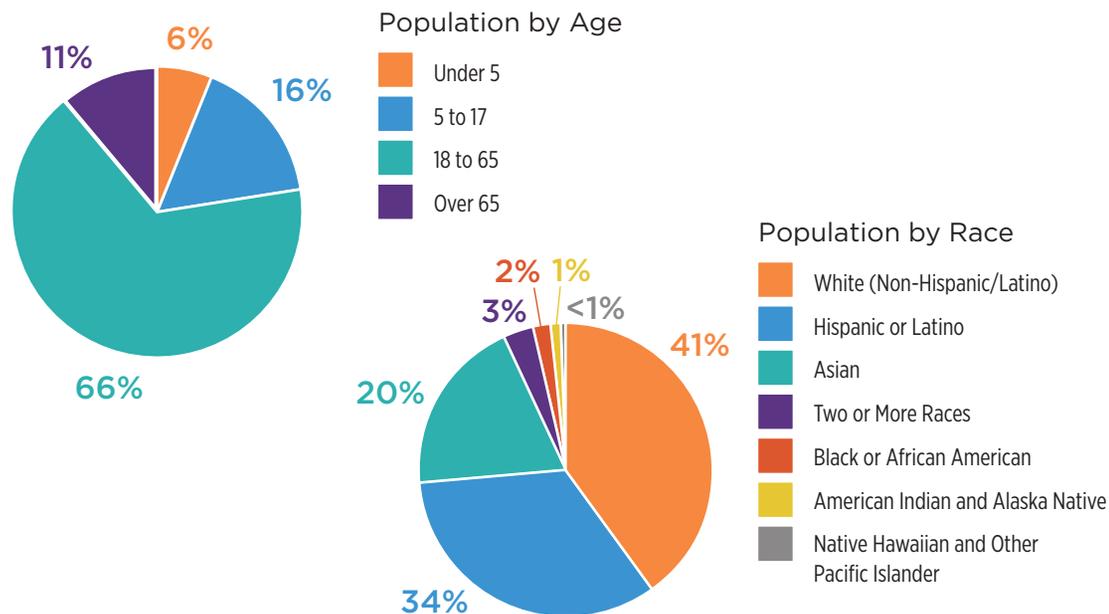
The Transit Vision looks at where there are Orange County concentrations of demographic groups that tend to use transit more frequently. These findings help to inform the analysis of transit markets and will be important factors in identifying priority transit corridors:

- In Orange County, the largest **senior populations** are found in a few distinct clusters, such as gated retirement communities, while moderate densities are widely dispersed throughout residential parts of the county.

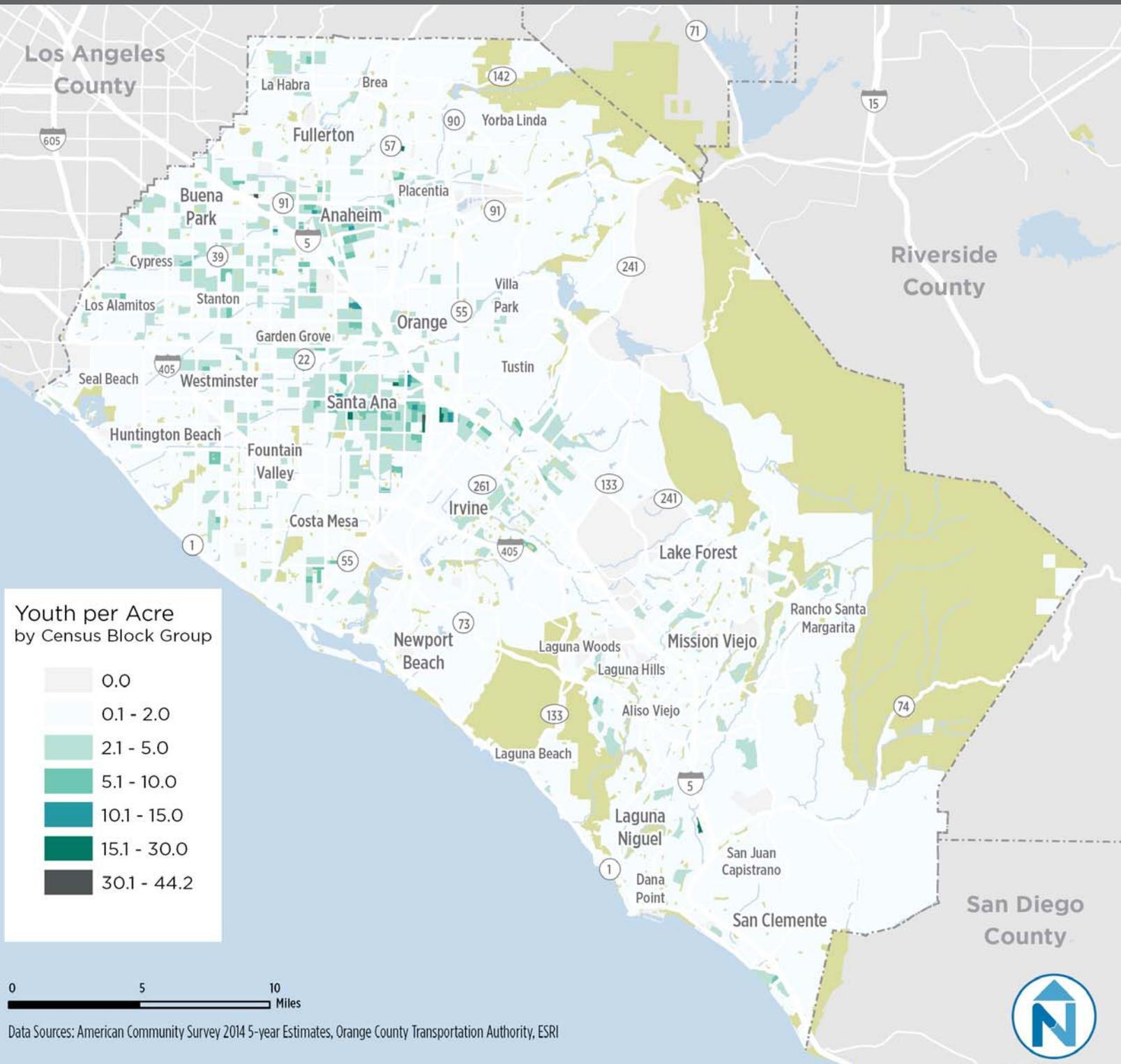
For more on who rides transit, see **Chapter 6** of the full State of OC Transit Report.

- Areas of the county with the highest density of **low-income households** are found in North/Central County, corresponding to the highest population densities.
- Clusters of people with **disabilities** correlate to areas of the county with higher population density, such as Santa Ana. Overall, most census block groups throughout the county have fewer than two residents with a disability per acre.
- White populations are most prevalent along the coast and in the southern half of the county, while **non-white populations** are far more prevalent in the northern half of the county.
- Areas with the greatest density of **large households** (more than five people) and **limited English proficiency** are consistent with the areas of highest population density, such as central Santa Ana.

Demographics of Orange County (2015)



# YOUTH AGE 10 - 17



Youth per Acre by Census Block Group

0.0
0.1 - 2.0
2.1 - 5.0
5.1 - 10.0
10.1 - 15.0
15.1 - 30.0
30.1 - 44.2

0 5 10 Miles

Data Sources: American Community Survey 2014 5-year Estimates, Orange County Transportation Authority, ESRI



- People under 18 are a strong ridership group in many communities. Young people will use transit if it is affordable and meets their educational and recreational transportation needs.
- Today, approximately 22.6 percent of Orange County residents are under the age of 18, which is consistent with state and national percentages.
- The northern half of Orange County, particularly around Santa Ana and Anaheim, has clusters of higher density youth populations.
- In general, areas with higher density youth populations correspond to areas with higher rates of low-income households, households speaking limited English, and large average household size.

# TRANSIT PROPENSITY

## Overview

Transit propensity is the likelihood that an individual will use transit. It is based on a range of factors, from the quality of available transit to demographics and surrounding land use.

Based on extensive data analysis, the following six factors best predict Orange County locations with a high concentration of people likely to use transit:



**Per-Capita Income**



**Intersection Density (Intersections Per Square Mile)**



**Households Making Less Than \$45,000 Per Year**



**Total Employment (Number of Workers)**



**Approach Volumes at Intersections (Average Daily Traffic)**



**Employment Density (Jobs Per Acre)**

For more on transit propensity, see **Chapter 6** of the full State of OC Transit Report.

## Volumes and Intersection Density

Approach volumes at intersections are an indicator of major destinations and trip generators nearby. Areas with heavy traffic include those near job concentrations, as well as retail areas and major destinations such as theme parks.



Harbor Boulevard boasts major and diverse destinations and has high volumes of traffic with people trying to reach those destinations.

Image Source: CNC Engineering

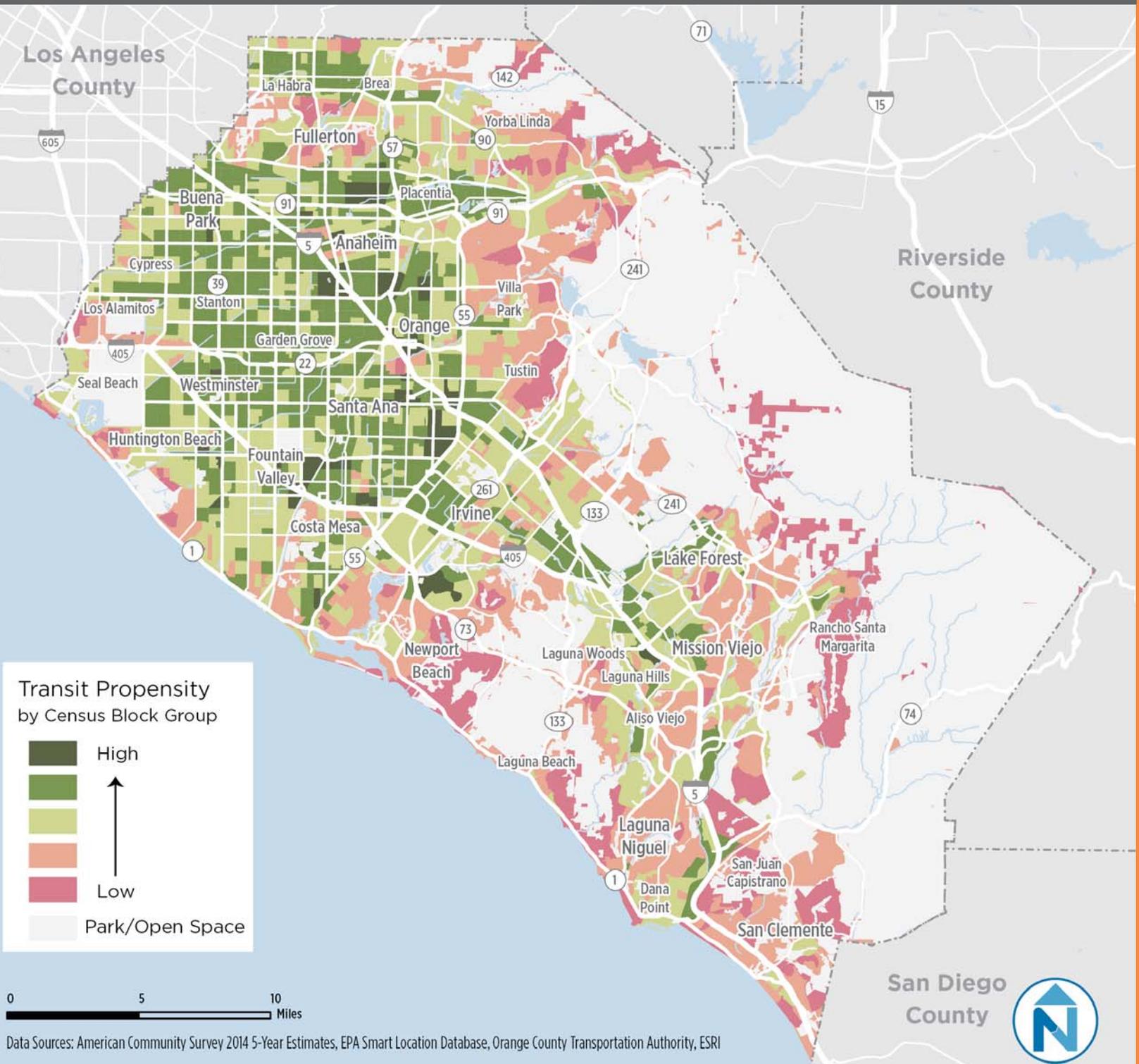
Intersection density is an indicator of both the connectedness of the street network and the presence of small blocks, which combine to reduce walking distances and foster walkable, transit-friendly neighborhoods.



Intersections in downtown Santa Ana are close to one another, promoting easy walking and good transit access.

Image Source: Voice of OC

# TRANSIT PROPENSITY



- In Orange County, most areas of high and medium-high transit propensity are located in the urban core of North/Central County, most notably in Santa Ana and Anaheim. There are, however, areas of relatively high propensity throughout Irvine and south along the I-5 corridor.
- Lower-income individuals and households—those more likely to rely on transit—are highly concentrated in the urban core of North/Central County. The Irvine Business Complex boasts the largest concentration of jobs in Orange County. However, it is located in an especially auto-oriented part of the county, and features white-collar jobs in a suburban office park: it does not currently generate significant transit ridership.
- Wealthier, auto-centric communities along the coast, to the east, and in much of South County demonstrate lower levels of transit propensity.

The State of OC Transit brings together a diverse set of information to inform the OC Transit Vision.





# 4

## Key Findings

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The State of OC Transit brings together a diverse set of information to inform the OC Transit Vision. This chapter synthesizes the findings from preliminary analyses to shape areas of focus for the development of the Vision. The work that informed these key findings is introduced in the first three chapters of this Summary Report:

- An analysis of the existing fixed-route transit system in Orange County
- A review of plans and policies that provide context for the OC Transit Vision
- An overview of recent trends in transit
- A review of industry best practices in the design of high-capacity transit service
- A market analysis of current and projected future travel patterns and demand for transit service in Orange County
- Initial findings from interviews with community stakeholders



# OVERVIEW

The analyses from the previous chapters point to a number of major findings, including notable issues, opportunities, and challenges that together provide a framework for the OC Transit Vision.

For more on key findings, see **Chapter 8** of the full State of OC Transit Report.



The majority of existing OC Bus ridership is concentrated in a few key corridors.



OC Bus service is concentrated during peak periods.



OC Bus service is focused on a select number of hubs, including destinations and connection points.



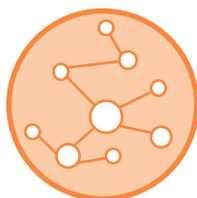
OCTA has begun taking steps to address recent ridership declines.



Limited funding has constrained ridership growth.



Land uses and demographics in Orange County present both challenges and opportunities for effective transit service.



The overall transportation network of Orange County can make operating transit service challenging



Long-term trends offer a mixed message.



Increased transit use can support greenhouse gas reduction targets.



The future OC Streetcar and Bravo! lines provide a template for ridership growth.





## Service Concentrated in Peak Periods

OCTA operates most of its service during weekday peak periods. It provides only limited service on weekend mornings and evenings, or to special events such as Angels games.

OCTA is constrained by funding. It must choose wisely when allocating resources, but might consider providing additional service for late-shift workers, to special events, and to facilitate car-free living. At a minimum, OCTA should explore opportunities to extend frequent service by an hour or two after the evening peak.



Image Source: Photomation



# KEY FINDINGS

## Transit Hub Connectivity

The fixed-route transit system in Orange County is organized around more than 30 major transit hubs.

Expanding first-/last-mile connectivity to these hubs by deploying shuttles and accommodating services such as Uber and Lyft is a cost-effective strategy to expand transit reach and use.

Pedestrian access to transit is a problem throughout Orange County, but targeted investments in the half-mile around major transit hubs could reap outsized benefits.



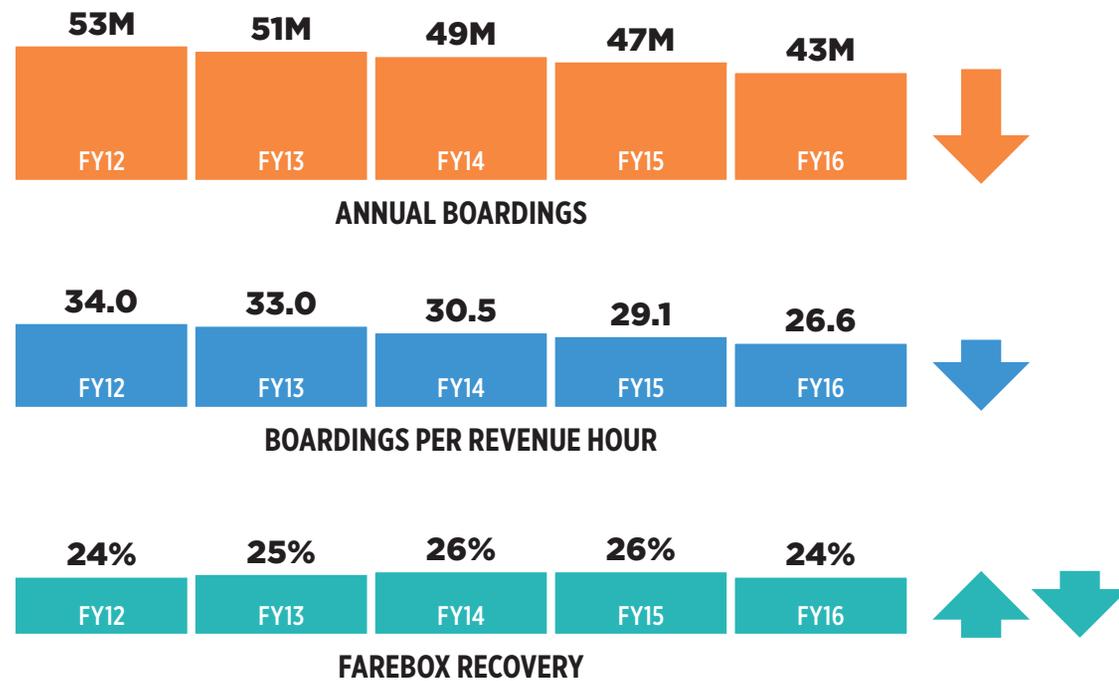


## Addressing Ridership Decline

Ridership is declining in Orange County, and in many communities around the country. While increased service has proven to increase ridership, funding constraints have limited OCTA's ability to add service.

The agency has instead made cost-effective use of existing resources by allocating service to areas of high demand and by exploring alternatives to fixed-route service in areas with lower demand.

OCTA has also sought to better leverage its existing assets by focusing on connectivity, investing in higher-quality service in its highest-demand corridors, and funding the OC Transit Vision and efforts such as the Central Harbor Boulevard study.



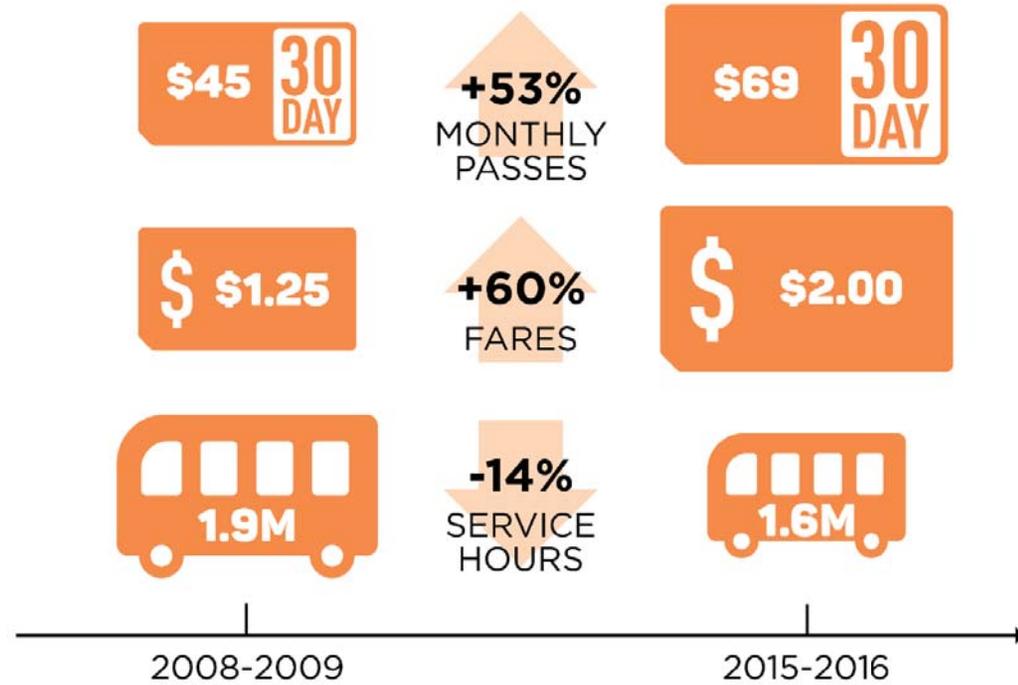


# KEY FINDINGS

## Funding Constraints

Limited funding has constrained OCTA's ability to grow service and avoid fare increases. Declining ridership has only increased public skepticism about transit investments.

It may be easier for OCTA to improve service quality by pursuing federal grants to construct capital projects than to secure local funding for additional operating hours.



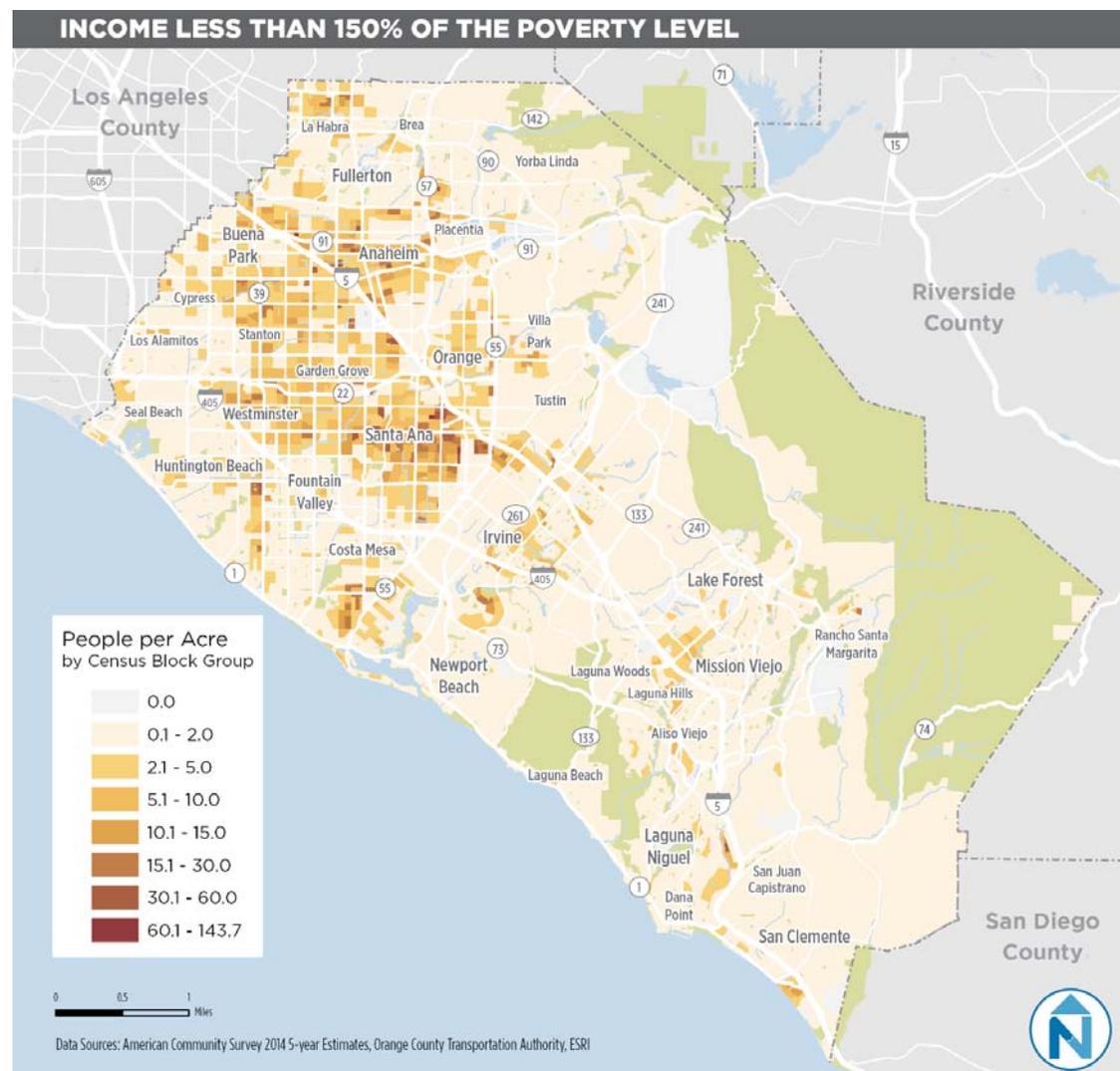


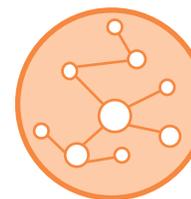
## Land Use and Demographics

Parts of Orange County are much denser and more racially and economically diverse than stereotypical suburbs; this is particularly true in parts of North/Central County, which has greater concentrations of lower-income and non-white populations.

There are also an unusually large number of major destinations for a suburban area, from job centers to stadiums, theme parks, and beaches.

An auto-oriented built environment has made it difficult for transit to attract riders. South County in particular features highly-segregated land uses less conducive to transit.





## KEY FINDINGS

### Transportation Infrastructure

In the northern part of Orange County, pedestrian pathways are relatively direct and buses can run in a straight line, with regular connections to intersecting routes. Even in North County, however, arterials are wide, crosswalks are few and far between, and signal timing is not pedestrian friendly.

Both buses and pedestrians are challenged in South County, where streets tend to be indirect and disconnected. Pedestrians throughout the county are surrounded by cars, parking lots, and sound walls, and may feel both uncomfortable and unsafe.





## Long-Term Trends

Whether OCTA ridership will grow over the long-term is an open question.

Cheap gas, funding constraints, and ride-hailing services such as Uber and Lyft present significant challenges.

On the other hand, increasing density, changing land-use patterns, and the preferences of millennials are just a few of many trends pointing to the potential for increased transit use.

Transit agencies such as OCTA will need to learn to adapt, and to remain nimble and flexible in their thinking.



**Rising Unemployment**



**Young People Driving Less**



**Plummeting Gas Prices**



**Trend Towards Urban Living**



**Increase in Registered Vehicles**



**Diversifying and Aging Population**



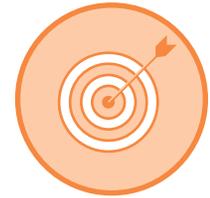
**Technology Solutions**



**Shared Mobility**



**Autonomous Vehicles**



# KEY FINDINGS

## Greenhouse Gas Emissions

The transportation sector is responsible for the largest share of California's greenhouse gas emissions, owing largely to high rates of single-occupancy vehicle travel.

Transit must increase ridership to help mitigate statewide emissions. Improving access to transit by active transportation modes such as walking and cycling can help increase ridership and further reduce emissions.



Image Source: Orange County Register



## High-Capacity Transit Corridors

OCTA's approach to improving key corridors will prove useful as the OC Transit Vision identifies potential high-capacity and rapid transit corridors:

- The modes selected for a corridor should be based on the specific context of that corridor
- Costs should be scaled to available resources and potential demand
- Investments should be made based on technical merit
- Investments should be made in close coordination with local municipalities



Image Source: OCTA

The State of OC Transit Report is the first step in developing the OC Transit Vision.





Image Source: Arellano Associates

# 5

## Next Steps

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The State of OC Transit Report is the first step in developing the OC Transit Vision. Over the next 12 months, the project team will work with the OCTA Board, partner jurisdictions and transit agencies, as well as stakeholders and community members to establish a 20-year vision for transit in Orange County. This chapter describes the elements of the OC Transit Vision.

# DEVELOPING THE OC TRANSIT VISION

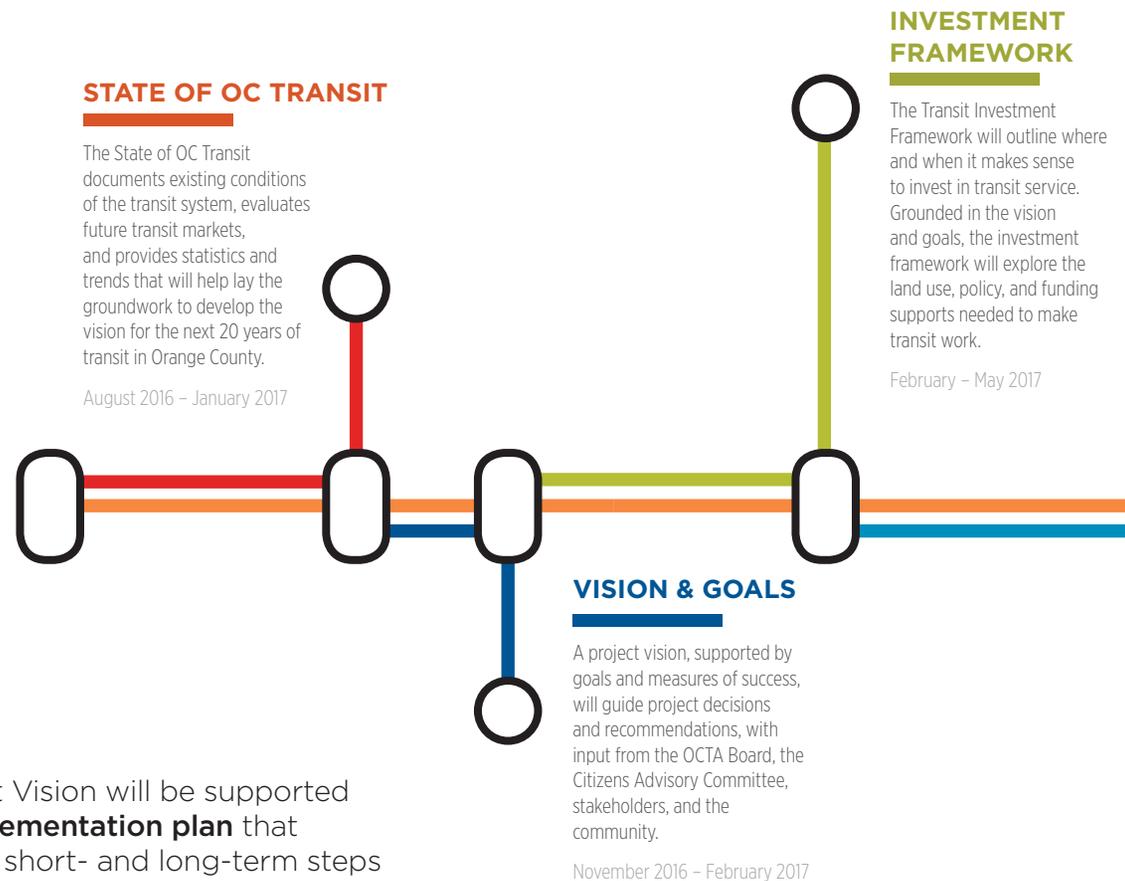
## Elements of a Vision

Building on the State of OC Transit Report, the OC Transit Vision will establish **goals and objectives** that will help to define the project's success. These goals will become the backbone of the project's **evaluation framework**, the tool that will help OCTA make decisions about the highest priority corridors and the transit mode appropriate for each.

An important outcome of this OC Transit Vision is to develop recommendations for new **high-capacity transit in high-demand corridors**. This will require careful, comprehensive thinking about transit modes including design of the right-of-way, stops and stations, service, and vehicles.

To support these priority corridors, the Transit Vision will also focus on related elements needed to make transit successful, including **access to transit** and **land uses around transit stops and stations**. This will result in a **transit investment framework** that helps to explain what is needed in a community or jurisdiction to support transit service.

The Transit Vision will be supported by an **implementation plan** that details the short- and long-term steps that OCTA must take to make the Vision a reality. This will require both realistic and creative thinking about potential **funding options** and a focus on **partnerships**.



## GET INVOLVED

Ideas from stakeholders and the public are essential to create a Transit Vision that serves the needs of residents, employees, and visitors while reflecting the transit potential of Orange County. Throughout the development of the Transit Vision, there will be many opportunities to participate, with focused engagement when transit options are prioritized and transit opportunity corridors are identified. Visit the project website to sign up for updates about future online surveys and public open houses.

### Project Website:

[octa.net/octransitvision](http://octa.net/octransitvision)

To learn more about early feedback from stakeholders and focus groups, see **Chapter 7** of the full State of OC Transit Report.

### TRANSIT PLAN

The OC Transit Vision will establish a long-term vision for transit in Orange County. The plan will document operating, capital, and programmatic priorities; funding and implementation strategies; and land use and other policies to support the growth of OCTA's transit services.

September – December 2017

### COMMUNITY ENGAGEMENT

Community engagement will occur throughout the project to guide the vision for transit in Orange County and ensure the plan meets the community's needs.

Ongoing

### COMPLETE TRANSIT SYSTEM

To ensure the priority corridors are successful, the Transit Vision will identify approaches to integrating the many transit services in Orange County and develop recommendations to support first/last mile connections to transit. This will include recommendations for transit-supportive land uses as well as transit options for lower-demand areas.

April – September 2017

### TRANSIT OPPORTUNITY CORRIDORS

The Transit Vision will identify existing and future priority transit corridors and evaluate them for necessary investments. The project will explore potential modes of transit—rail, bus rapid transit, local bus—for each corridor along with capital projects that can make transit service work better.

April – September 2017



**OC TransitVISION**