July 24, 2006

NEW DIRECTIONS

Charting the course for Orange County's future transportation system

Orange County Transportation Authority
2006 Long-Range Transportation Plan

OCTA

OCTA

Dear Friend of Transportation:

Through the years, Orange County has evolved from a suburban to a thriving metropolitan community. This dramatic change brings the challenges of utilizing an aging infrastructure and meeting the demand for increased mobility by steadily increasing population and employment. The challenge is compounded by the sunset in 2011 of Measure M, Orange County's one half-cent sales tax, which will end a significant funding source for essential transportation projects.

New Directions is a long-range transportation plan designed to provide answers to key questions about the future: What will Orange County look like in 25 years? How will our population change and how will this affect commuting patterns and choices? Where will jobs and homes be concentrated and how will this affect congestion? What transportation services will be needed and what is the most cost-effective way to meet them? *New Directions* charts a course and establishes milestones to measure progress and refine strategies when needed along the way as we move toward improving mobility, protecting Orange County transportation resources and enhancing our quality of life. The plan outlines a future with and without funding from a renewed Measure M one half-cent sales tax. OCTA invites you to read *New Directions* and share the vision for our transportation future.

Sincerely,

Arthur T. Leahy
Chief Executive Officer

America's Number 1 Transportation System

Orange County Transportation Authority
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Executive Summary

Orange County has a mature transportation network that provides residents, workers, and visitors with a high level of mobility and quality of service. In fact, in 2005, Orange County's transportation system was rated number one among major transit agencies across the nation. New Directions, the Orange County Transportation Authority's (OCTA's) 2006 Long-Range Transportation Plan (LRTP), is the blueprint for maintaining this quality system in environmentally sensitive ways that ensure mobility for the next generation. Through the LRTP, we take stock of the existing network, project the future needs of our population, and develop a plan to ensure that in 2030 the transportation system continues to contribute to a thriving Orange County.

To accomplish this charge, the LRTP lays out three overarching goals: improve mobility; protect our transportation resources; and enhance the quality of life. It also outlines performance measures by which we can gauge our progress and refine our strategies along the way.

Public outreach

OCTA solicited public input to the LRTP through the environmental review process and public opinion research. A Program Environmental Impact Report (PEIR) was prepared, and a series of public meetings were held for the public to learn about and provide input to the plan alternatives. Additionally, OCTA conducted an online survey and met with representatives of each Orange County city, the County of Orange, and interested parties. In order to understand residents' priorities for the future of transportation in Orange County, OCTA also conducted a series of telephone surveys and held several focus groups. These efforts produced a comprehensive picture of the top regional and local transportation issues of most concern to residents and local government. The results included a renewed emphasis on freeway improvements, roadway maintenance, expanded bus and Metrolink service, improved local transit connections, signal synchronization, and enhanced mitigation of storm water runoff.

"Public outreach results produced a comprehensive picture of the top regional and local transportation issues of most concern to residents and local government."

Trends affecting transportation

Orange County continues to grow and change. Over the past 50 years, Orange County has evolved from a rural suburb to a flourishing metropolitan community. Over the next 30 years our population is projected to grow by 24 percent and employment will grow by 27 percent. Our population is also aging: the number of residents 65 years and older nearly doubles between 2000 and 2030. These projections are based on forecasts developed by the Southern California Association of Governments (SCAG) through a growth visioning process that emphasizes a better jobs-housing balance, including higher employment growth rates in developing areas, and greater housing density in older urban areas.

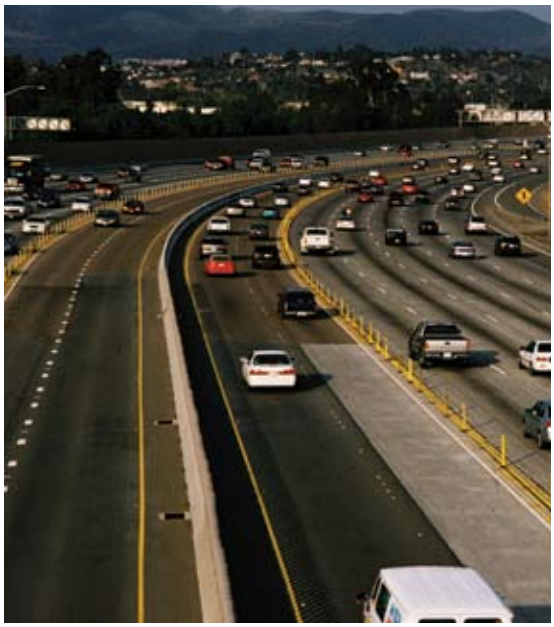
Even through the projections assume increased use of "Smart Growth" policies that place new jobs and housing close together, the miles traveled by vehicles in Orange County will grow by nearly 40 percent between now and 2030, faster than both population and employment. Furthermore, by 2030 we will add almost three million more person trips per year to the transportation system, with most of them starting and ending within Orange County. Without improvements to the system, this will translate into more traffic congestion so that by 2030, during the morning rush, about half of the roadways in Orange County would be operating at speeds of less than 25 miles per hour and most of the freeways will be consistently or severely congested.

Orange County's freeways and roadways

Orange County's freeway and roadway networks are nearing build-out, in terms of available right-of-way. There are many constraints to physical expansion of these facilities, such as environmental impacts, lack of right-of-way, lack of funding, and community concerns with major widening projects. With travel demand continuing to grow, we must employ multiple strategies to improve our networks and relieve congestion at specific locations. This will improve air quality, make streets more efficient and keep them maintained so that Orange County residents, workers, and visitors experience a safe, smooth, and minimally congested commute to their destination.

Orange County's managed lanes — including the carpool lane network, toll roads, and the 91 Express lanes — seek to provide consistent traffic flow during congested periods. However, the carpool lane network is nearing capacity during peak hours and operational changes must be considered to maintain efficiency and reap air quality benefits. Given the physical constraints of the freeway system and the maturing of the managed-lane network, the plan for future freeway projects must focus on balancing improvements throughout the County, getting the most out of the existing system, and minimizing right-of-way impacts.

Local jurisdictions have built about 95 percent (or roughly 1,450 of 1,527 centerline miles) of Orange County's planned roadway network, known as the Master Plan of Arterial Highways (MPAH). In those areas where there are significant challenges to building the remaining lanes, local jurisdictions and OCTA have identified other strategies to improve efficiency and expand capacity on the roadway network, such as intersection improvements, traffic management strategies, grade separations, or transit improvements.



"Without improvements, the average daily commute will take 20 minutes longer."

"Expansion of Metrolink service in Orange County is a critical component of the LRTP."

Signal synchronization is another tool that can be used to increase roadway capacity without major new construction. There are currently over 3,000 signals in Orange County, managed by various agencies. Signal synchronization technology synchronizes green lights along a corridor to improve flow. A countywide signal synchronization program could synchronize traffic signals for over 750 miles of roadway and 2,000 signals.

In addition to building the roadway network, all Orange County local agencies have invested significantly in maintaining these facilities. Despite this investment, there are additional street repairs and maintenance efforts that must be completed to bring our roadway network up to acceptable conditions. If pavement is kept in good condition, it will function better, last longer, and be less expensive to maintain.

Orange County's bus and rail systems

Our transit system serves both short and long distance travelers, with an extensive network of local bus routes, community shuttles, several express bus routes, and a well-developed commuter rail service. Orange County is top-ranked among peers for having an effective and well-used bus system, based on the number of passengers per hour and boardings per dollar of operating expense. Demand for local bus service has increased steadily over the past 30 years and a new component of the fixed route bus service, known as bus rapid transit (BRT), is being developed. BRT combines the flexibility of a bus system with some of the features that are typical of rail transit, such as signal priority and fewer stops.

Curb-to-curb paratransit service (ACCESS) is provided for people unable to use the fixed-route bus service due to a disability. OCTA anticipates that demand for ACCESS-type services will increase substantially over the next 25 years, partially due to the needs of our growing senior population.

Metrolink commuter rail ridership has also grown every year since service began in 1993. In fact, the Metrolink Orange County line is one of the most productive in the regional Metrolink system. Expansion of Metrolink service in Orange County, including rail feeder service, is a critical component of the LRTP.

OCTA is also exploring its role in various high-speed rail and Maglev proposals that would connect Orange County with surrounding counties and regions.

"The Balanced Plan provides a multi-modal package of projects and programs."

Alternatives for the Long-Range Transportation Plan

To formulate a LRTP that is responsive to Orange County's needs and is also cost-effective, OCTA developed a cumulative set of improvement alternatives, with varying levels of investment. The performance of these alternatives were then compared against the Baseline, a scenario that assumes few new funds are available.

The alternatives are:
- Constrained Alternative
- Balanced Plan
- Unconstrained Alternative

The Constrained Alternative suggests that transportation funding will decline considerably in the future if the current Measure M one half-cent sales tax program sunsets in 2011. The Balanced Plan assumes major new multi-modal transportation capacity is added to the system, and Orange County voters approve a 30-year extension of the current Measure M transportation sales tax. The Unconstrained Alternative imagines a future where even more transportation capacity is added, but funding is not a limiting factor.

The improvements in the Constrained Alternative result in slightly improved freeway and roadway speeds, compared to the Baseline, and delay due to traffic congestion is moderately reduced (see comparison table below).

"The Balanced Plan is projected to reduce delay due to congestion by 37 percent."

However, the Balanced Plan provides a multi-modal package of projects and programs that includes a significant expansion of transit services (bus, rail, and senior programs), freeway improvements (concentrating on correcting operational problems and expanding capacity, generally within the existing right-of-way), and an extension of the current Measure M programs for local street improvements and maintenance. Major components of the Balanced Plan include:

- Improving performanc of the freeway system to remove bottlenecks and add new capacity primarily within the existing freeway rights-of-way
- Pursuing an innovative freeway environmental mitigation effort that provides higher value environmental benefits in exchange for streamlined permitting
- Increasing bus service levels
- Coordinating traffic signals across cities to improve traffic flow
- Fixing major bottlenecks by expanding street capacity to move traffic and reduce emissions
- Building over- or underpasses at key railroad crossings on high-volume arterials
- Encouraging cities to pursue transit-friendly planning and zoning
- Expanding the Metrolink commuter rail system with high-frequency service to Los Angeles

Figure 1: effectiveness of alternative (compared to Baseline)

Measure of Effectiveness	Constrained Alternative	Balanced Plan	Unconstrained Alternative
Delay due to congestion	Delay reduced by 9%	**Delay reduced by 37%**	Delay reduced by 43%
Average peak period freeway speed (AM)	Speed increased by 5%	**Speed increased by 22%**	Speed increased by 30%
Average peak period roadway speed (AM)	Speed increased by 7%	**Speed increased by 27%**	Speed increased by 39%
Daily transit trips	Increased by 16%	**Increased by 26%**	Increased by 26%

- Improving local connections to and from Metrolink stations, and expanding community shuttles
- Connecting Metrolink service to new regional transportation systems and centers
- Improving transit options for seniors and the disabled
- Improving water quality by dedicating funds to further enhance mitigations of water runoff from freeways and roadways

The Balanced Plan is projected to reduce delay due to congestion by 37 percent, compared to the Baseline, and improve morning peak freeway speeds by 22 percent. Morning peak arterial street speeds are projected to improve by 27 percent over the Baseline. Transit trips are expected to increase by 26 percent, compared to the Baseline, with a moderate expansion of transit systems in the County.

While the Unconstrained Alternative performs well, the projects require further study and funding. In addition, the community and environmental impacts of the Unconstrained alternative are greater than that of the Balanced Plan. As a result, the Balanced Plan provides the highest level of improvement, within a reasonable resource assumption, and is the preferred strategy for the 2006 LRTP.

Financing the Balanced Plan

The level of improvement provided in the Balanced Plan is only possible if additional local revenues become available. Why is this the case? The way that transportation projects and services are funded has changed in recent years. For many years, state and federal taxes on gasoline were the main source of funds for regional transportation projects. These sources, however, have not kept up with the costs of building new freeway lanes, roadways, and transit projects, thus eroding their buying power.

Recognizing the uncertainty of state and federal funds, many counties across California, including Orange County, asked voters to approve local sales taxes with the specific purpose of funding transportation projects and services. Orange County's one half-cent sales tax, Measure M, was approved by voters in 1990 to provide improvements in three major areas-freeways, roadways, and transit. However, Measure M expires in 2011.

Orange County can expect to receive $28 billion (2005 dollars) over the next 36 years to maintain, enhance, and operate the transportation system, without an extension of Measure M. While $28 billion is a significant future investment, 96 percent of these funds are committed to mandated projects and services. Only about 4 percent of these funds could be used to address future mobility problems in Orange County, which is not sufficient to meet future countywide transportation needs.

An extension of the highly-effective Measure M would add $11.8 billion for new transportation projects and services. These new Measure M funds, along with other sources, would increase total transportation revenues to almost $40 billion (2005 dollars). This would allow OCTA and local agencies to implement the level of improvements defined in the Balanced Plan.

Conclusion

The continued mobility of residents, workers, and visitors is paramount to sustaining Orange County's robust quality of life. With the support of the community, OCTA and local agencies are poised to apply environmentally appropriate tools to implement transportation projects and services that will improve mobility, protect our existing transportation resources, and further enhance our quality of life. The Balanced Plan meets these goals and is proposed as the preferred approach for Orange County's future.

"Orange County's one-half cent sales tax, Measure M, was approved by voters in 1990 and sunsets in 2011."

INTRODUCTION

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- growth brings new challenges
- facing the future
- goal: improve mobility
- goal: protect our transporation resources
- goal: enhance the quality of life
- public outreach
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  public opinion research: a gauge of priorities

Decades of investment used by today's commuters

In 2005, Orange County was rated America's number one transportation system — above New York City, Chicago, San Francisco and Portland — by peers comparing transportation in communities across the nation. That is no small accomplishment, and it reflects Orange County's ingenuity in building and maintaining our transportation system.

As an example of this ingenuity, Orange County, along with Caltrans, built the most extensive freeway carpool lane network in the nation. When state and federal funding for much-needed roads was unavailable, we continued working on our system by building toll roads. Knowing the importance of mobility to our quality of life and the economy, Orange County voters approved a one half-cent sales tax in 1990 that is currently funding transportation projects in all reaches of the County. These include freeway, roadway, and transit projects found throughout the County. Furthermore, local developer fee programs are in place in every city within the County so that new developments pay for their share of regional traffic improvements.

Orange County's bus system is an efficient, technologically up-to-date fleet. Applying sound business principles to transportation, we created endowment accounts to provide ongoing funds for operating public transit. Moreover, by taking advantage of existing railways and partnering with neighboring counties, we established a successful commuter rail system with ridership growing every year.

All in all, we have a transportation system to be proud of — one that reflects Orange County's high quality of life, ingenuity, and entrepreneurial spirit.

Growth brings new challenges

Despite all the positives, traffic congestion exists today on every Orange County freeway and major portions of the roadway system. Orange County's population and employment will keep growing, and traffic congestion will worsen unless we continue to enhance our transportation facilities and services.

Over the years, Orange County has evolved from a rural suburb to a thriving metropolitan community. This transformation brings challenges such as how to best utilize an aging infrastructure and how to minimize maintenance costs. Most freeways and roadways have little available right-of-way remaining, leaving limited room to grow. Yet demand for these facilities is projected to keep growing along with population and employment. At the same time, traditional funding sources for transportation projects such as street maintenance, new freeway construction, and bus and rail service are not keeping pace with growth. Orange County's local answer to funding needs — the one half-cent sales tax known as Measure M — will sunset in 2011, ending a significant funding source for essential transportation projects.

Facing the future

In addition to the daily activities required to keep Orange County mobile in 2006, the Orange County Transportation Authority (OCTA) is planning for the future. That is the purpose of the Long-Range Transportation Plan (LRTP): developing long-term mobility and continued transportation options for residents, workers, employers, and visitors.

The LRTP allows Orange County residents, businesses, and elected officials to look at the big picture and ask key questions about the future. What will Orange County look like in 25 years? How will our population change and how will this affect our commuting patterns and choices? Where will jobs and homes be concentrated and how will this affect congestion? What transportation services and facilities will residents and workers need to get around? What are the gaps in planned services? And what is the smartest and most cost-effective way to meet the needs?

"The Long-Range Transportation Plan charts a course for mobility for the next generation."

"Progress equals better travel time and more people using transit."

"Progress equals systemwide efficiency and investment in maintenance."

With the LRTP, we chart a course for mobility for the next generation, and establish milestones that allow us to measure our progress and refine our strategies along the way.

Goal: improve mobility

Every resident, worker, and visitor needs the ability to travel an integrated and seamless Orange County transportation network safely and with minimal congestion. Mobility is the ultimate purpose of Orange County's transportation system. Improving mobility is the cornerstone of the Long-Range Transportation Plan (LRTP), and its primary goal.

Objectives

- Offer safe and reliable choices
- Provide an accessible transportation network
- Minimize congestion
- Develop an integrated transportation network

We accomplish the goal and objectives by:

- investing in many modes, such as freeways, buses and vans, commuter rail, local streets, and bikeways;
- making transit more efficient, by transitioning high ridership bus lines to Bus Rapid Transit (BRT), or limited stop service, and using express buses on the carpool lane network;
- fixing problem areas such as freeway chokepoints;
- expanding Metrolink to provide a fast, high frequency, high capacity transit backbone within Orange County;
- informing people of available services and their respective travel time reliability; and
- continuing integrated transportation solutions, such as coordinating bus and Metrolink schedules, reciprocal bus or rail passes between counties and between Metrolink and Amtrak, and expanding transit centers that serve multiple modes of transportation.

How do we measure progress?

If we can maintain or reduce the average time it takes someone to get to their destination — whether traveling by automobile or transit — then we are making progress. For automobiles, travel time is typically measured by freeway peak speeds, non-freeway travel speeds, and average trip length.

Goal: protect our transportation resources

Orange County residents have invested in building one of the Nation's premiere transportation systems. Protecting our transportation resources by maintaining this system, and finding cost effective solutions to improve its efficiency, is a key goal of the LRTP.

Objectives

- Use the existing transportation network efficiently
- Maintain our infrastructure
- Promote cost effective and multi-modal solutions
- Explore creative solutions

We accomplish this goal and objectives by:

- coordinating regional traffic operations/signals using adequate and ongoing maintenance staffing and resources to provide reliable operations;
- expanding Metrolink service;
- funding local street repairs;
- supporting continued state funding for freeway maintenance;
- funding/supporting projects that incorporate innovative technology and integrate between modes;
- ensuring that we get our fair share of state and federal dollars for transportation; and

"Progress equals transportation improving Orange County's quality of life."

- to the extent possible pursue private sector funding and public/private partnerships in order to better supplement and leverage state and federal transportation dollars.

How do we measure progress?

Growth of projects that maximize and maintain the existing system will be evidence of progress in protecting our resources, such as expansion of signal synchronization and adequate maintenance for optimal operation along major travel routes, or added Metrolink services on Orange County's three rail lines. Additionally, we will see local dollars designated for pavement maintenance and new local funds to match state and federal dollars.

Goal: enhance the quality of life

Most residents believe Orange County is a good place to live. In a recent poll conducted by the Public Policy Institute of California, 90 percent of Orange County residents stated "things are going well," when asked if they are satisfied with how their lives are going. However, traffic congestion was listed as the top issue faced by residents in 2004 (Orange County Community Indicators, 2005). Not only is mobility integral to quality of life, but the actions of improving mobility have a ripple effect on issues such as job creation, better goods movement, and community enhancement. Therefore, enhancing the quality of life in Orange County is an important goal of the LRTP.

Objectives

- Promote coordinated transportation and land use planning
- Minimize community impacts
- Support economic growth
- Protect the environment

We accomplish this goal and objectives by:

- working together with key stakeholders such as the public, cities, the County of Orange, state and federal agencies, transportation partners, planning organizations, and special interest groups;
- mitigating project impacts where possible;
- supporting transportation enhancements such as landscaping;

"All 34 Orange County cities and the County of Orange provided input into the Long-Range Transportation Plan."

- supporting regional efforts to improve goods movement;
- promoting a balance between transportation and land use;
- providing choices for how people get around; and
- participating in regional transportation solutions.

How do we measure progress?

We will know we have done our part to enhance quality of life if residents and businesses continue to perceive Orange County as a good place to live and work. Marks of progress will be that commute times hold steady or improve and transit ridership continues to grow. Also, communities will want to partner with OCTA, and the number of collaborative transportation-related projects with local jurisdictions and transportation partners will increase.

Public outreach

Without the input and support of the community, it would be difficult to create a vision for the future of transportation in Orange County, and impossible to carry it out. To find out what residents think — what they need, want, and are willing to support to keep them moving — OCTA used two distinct, yet complementary tools: an environmental assessment process and public opinion research.

Environmental assessment: comparing alternatives

A Program Environmental Impact Report (PEIR) was prepared for the Long-Range Transportation Plan (LRTP). We followed the process mandated by the California Environmental Quality Act (CEQA) for seeking public input into planning and environmental assessment. The first step was to hold public "scoping" meetings in North, Central, and South Orange County. OCTA staff laid out several broad alternatives for a long-range transportation plan and asked participants what projects should be included in the plan, and what potential environmental impacts needed to be assessed. Individual meetings were also held with each of Orange County's 34 cities, and the County of Orange, to gain their unique perspectives about the long-term transportation needs of local jurisdictions. A survey seeking similar input from the public was available on OCTA's website.

OCTA then completed the technical work of preparing the LRTP. This included projecting the range of revenues that will be available for

transportation projects and services over the next 25 years and analyzing how the different alternatives would perform in terms of travel speeds, transit use, and congestion on the transportation system. The required environmental analysis was also conducted at this time. This analysis included many areas, such as, the impact of the plan alternatives on air quality, natural habitats, water quality, and open space resources. Public input on the plan and its alternatives was incorporated into the Final Program Environmental Impact Report, and became part of the public record through the response to comments.

Public opinion research: a gauge of priorities

In addition to obtaining feedback on the LRTP alternatives developed through technical analyses, OCTA wanted to generate new ideas for transportation solutions, and to discover what matters most to residents, employers, key stakeholders, and local governments. It was critical to gauge the public's priorities for mobility in the future because we are preparing a transportation investment plan proposal for a potential 30-year extension of the Measure M one half-cent sales tax (which sunsets in 2011).

To gather this broad level of input, OCTA met with cities, the County of Orange, business leaders, environmental groups, civic organizations, and community groups. We also conducted three opinion research polls and held five focus groups. To further engage residents' imaginations, we created an "Extreme Makeover" for transportation where people submitted their ideas for transportation solutions through an online contest.

The feedback from the public, which was gathered through the outreach described above, is summarized in Figure 2.

Figure 2: public outreach results

Top regional issues

- Maintain streets
- Improve State Route 91
- Improve the "Orange Crush" Interchange
- Improve Interstate 5
- Coordinate traffic signals countywide
- Improve pedestrian safety near schools
- Enhance transit for seniors and disabled persons
- Expand Metrolink

Top local government issues

- Prioritize pavement maintenance
- Improve transit: for seniors, bus stops/safety, local circulators
- Ensure adequate funding for local projects
- Continue with signal synchronization and intersection widening
- Address storm drainage/water runoff

Top issues for residents

Freeways and interchanges:

- Add lanes on Interstate 5 from State Route 55 to State Route 57 and from Alicia Parkway to Crown Valley Parkway
- Add lanes on State Route 55 from State Route 22 to Interstate 405
- Improve interchanges and add lanes in each direction on State Route 91 from State Route 241 to State Route 71 and a westbound lane from State Route 57 to Interstate 5
- Add lanes on Interstate 405
- Add lanes on State Route 57 from the "Orange Crush" to Los Angeles County
- Connect carpool lanes at the Interstate 405/605/ State Route 22 interchange
- Improve Interstate 5 interchange at Ortega Highway

Streets:

- Improve major streets that intersect with State Route 22
- Create Smart Streets
- Improve major road interchanges with Interstate 5

"Opinion research polls and focus groups helped OCTA plan and prioritize transportation improvements."

TRENDS

- 50 years ago...rural orange county
- 25 years ago...suburban life
- Today...major metropolitan community
- by year 2030

50 years ago... rural Orange County

Imagine Orange County 50 years ago. Disneyland recently opened. Only about 500,000 people live here. There are already 16 cities and in the year 1955 the 17th city-once known as Dairyland-officially becomes La Palma. The aerospace industry, which will become a major economic force, is just beginning to discover Orange County. There is no commercial airport, and limited bus service is provided by several small companies and the Metropolitan Coach Lines, which the Los Angeles Metropolitan Transit Authority soon assumed control of. State Route 91 and State Route 55 are two-lane roads and the Santa Ana Freeway is under construction. There is major debate about whether or not the planning of Interstate 405 should extend south of State Route 22, since development has yet to occur there.

25 years ago...suburban life

All of Orange County's freeways have been built, except the southern portion of the Costa Mesa Freeway (though not all to their ultimate width). The number of people living here has soared to almost two million, and 10 more cities have incorporated. Employment has increased by 13-fold since 1950, and Orange County has the look of a thriving, growing community.

We have several universities and community colleges. The Angels baseball team has made the Anaheim Stadium its home. Orange County has its own airport, public bus system, and extensive freeway network (although the County is still part of Caltrans District 7, lumped in with Los Angeles County). Home building is booming, traffic congestion is becoming a serious issue, and the slow-growth movement is gaining speed.

Today...a major metropolitan community

At more than 100 years old, Orange County has come of age. Over three million people live in 34 cities, including the state's only "over-55 city." With a few exceptions, the major planned communities (an Orange County hallmark) are built. Most new development will be redevelopment or "infill" in small undeveloped parcels.

The number of workers in Orange County has topped 1.5 million, nearly double that of 1980, and more than San Diego, Sacramento, and Santa Clara Counties. The economy has shifted

"At more than 100 years old, Orange County has matured into a flourishing urbanized community."

1. Historic Data from ORANGE COUNTY — THE GOLDEN PROMISE An illustrated History by Pamela Hallan-Gibson www.orangecountyhistory.org/Timeline.html

"Orange County needs creative solutions to keep up with growing travel demand."

from manufacturing to service and financial hubs, ranging from technical and professional jobs to retail and tourism industry jobs. People are working in mega job centers and multiple downtowns, rather than one central business district.

We have a performing arts center, internationally known shopping centers, and several amusement parks. John Wayne Airport has expanded, and residents have weathered a military base closure controversy.

Freeways have expanded to include toll roads and the most comprehensive carpool lane network in the Nation. Orange County has its own Caltrans District. A voter-approved one half-cent sales tax for transportation has been in place 16 years, resulting in nearly every freeway being improved. The bus system is one of the most efficient in the United States. Commuter Rail is going strong with three lines and 10 stations in Orange County.[1]

By year 2030...

What does the future hold for residents, businesses, and visitors to Orange County? In short, more people, more jobs, and more homes. That means more demand for transportation, and a need for more creative solutions and mobility options.

Every few years at the California State University, Fullerton, the Center for Demographic Research (CDR) works with Orange County cities to prepare socioeconomic growth projections for the County. The most recent projections, the Orange County Projections 2004 (OCP-2004), provide information on expected growth in population, employment, and housing between the years 2000 and 2030.

More people

The OCP-2004 projections show population growing by 24 percent, and leveling off over the 30-year period (Figure 3). The working-age population (ages 20 to 64) continues to grow, and the 65+ population nearly doubles (Figure 4), increasing from 10 percent of Orange County's total population in 2000 to 15 percent by 2030. While our current population is concentrated in North and Central Orange County, population growth will be concentrated in Central and South County, as shown in Figures 5 and 6. More residents will place more demand on the transportation system, and the aging population may need a range of options for transit service.

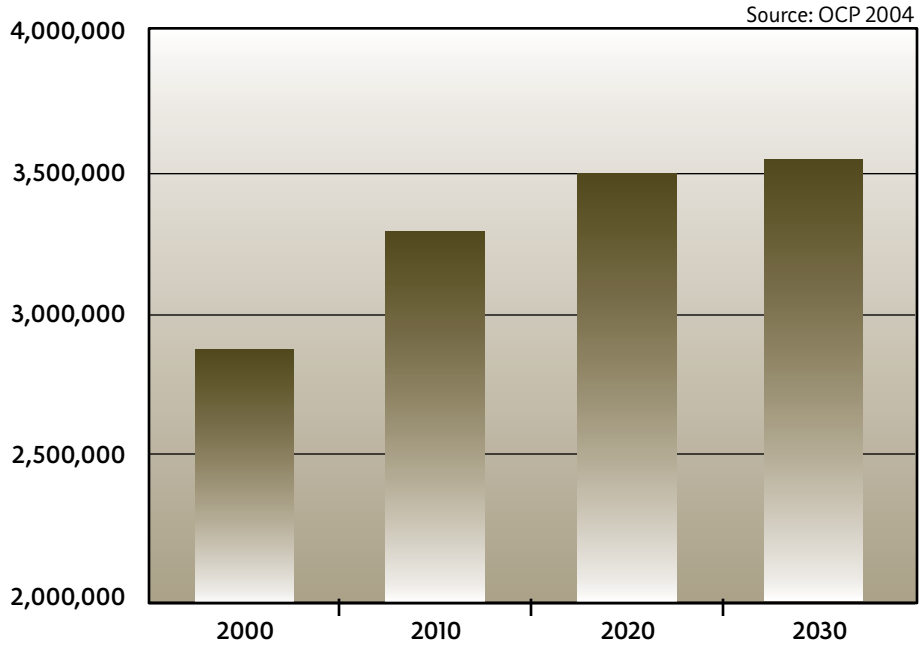
More jobs

OCP-2004 projects employment to increase by 27 percent, between 2000 and 2030, before it plateaus (Figure 7). This is slightly more growth than the projected growth in population. Employment tends to be concentrated around the freeway network and interchanges, and this trend will most likely continue (Figures 9 and 10).

More housing

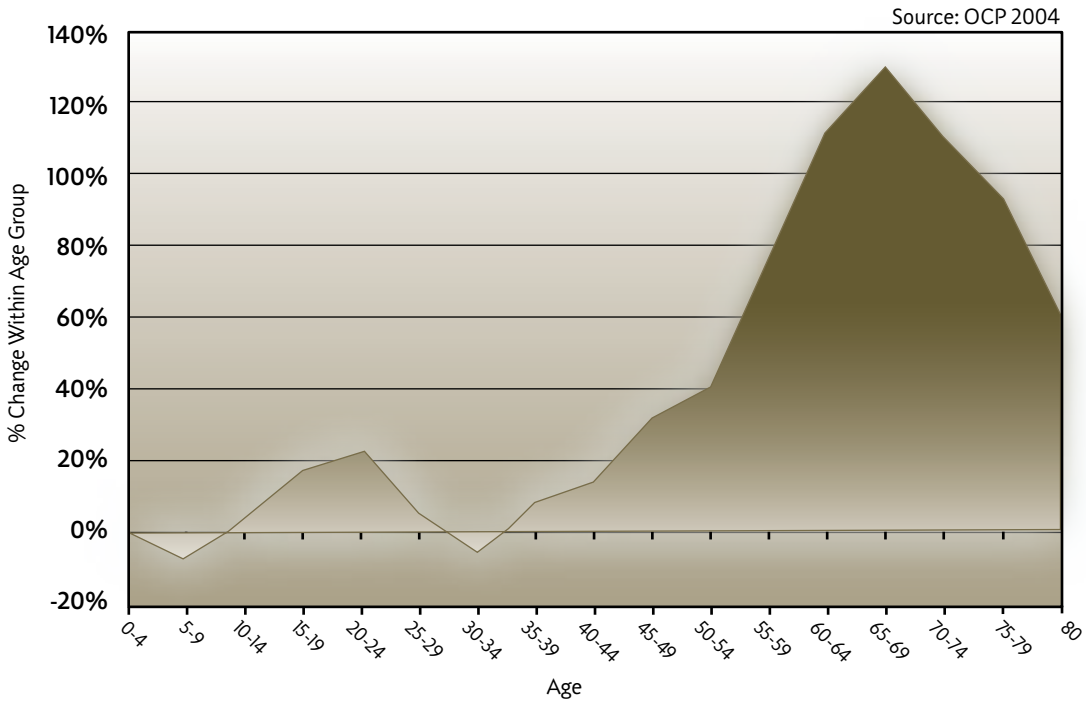
According to the OCP-2004, housing will grow by 15 percent (Figure 8). Historically, housing growth has not kept pace with population or job growth. This trend looks likely to continue, resulting in greater household densities and more people driving into Orange County for work.

Figure 3: Orange County population growth 2000-2030



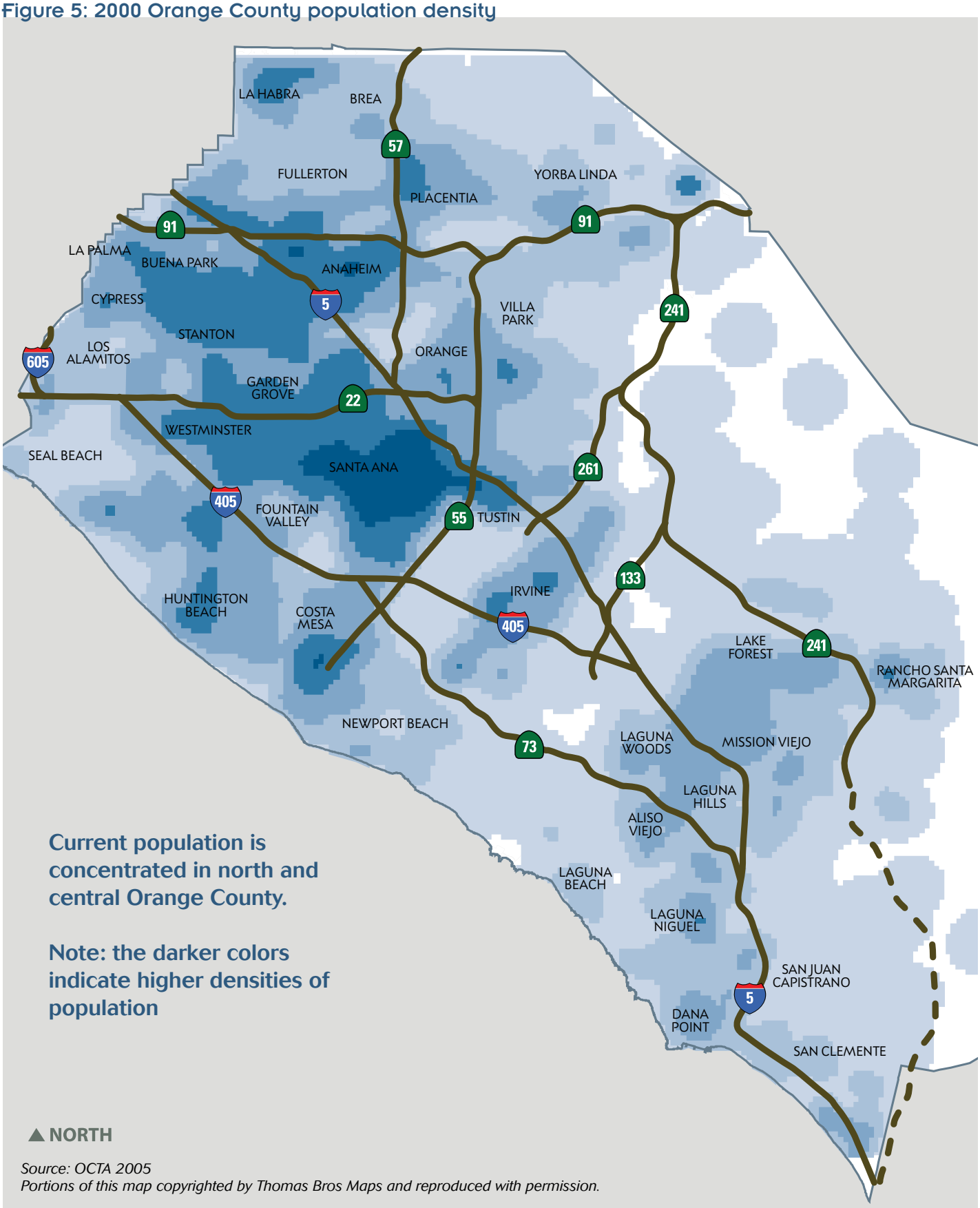
" Orange County's population will grow by 24 percent."

Figure 4: Orange County percent change in age of population 2000-2030



" Orange County's population is aging. The number of residents 65 years and older nearly doubles between 2000 and 2030."

Figure 5: 2000 Orange County population density



Source: OCTA 2005
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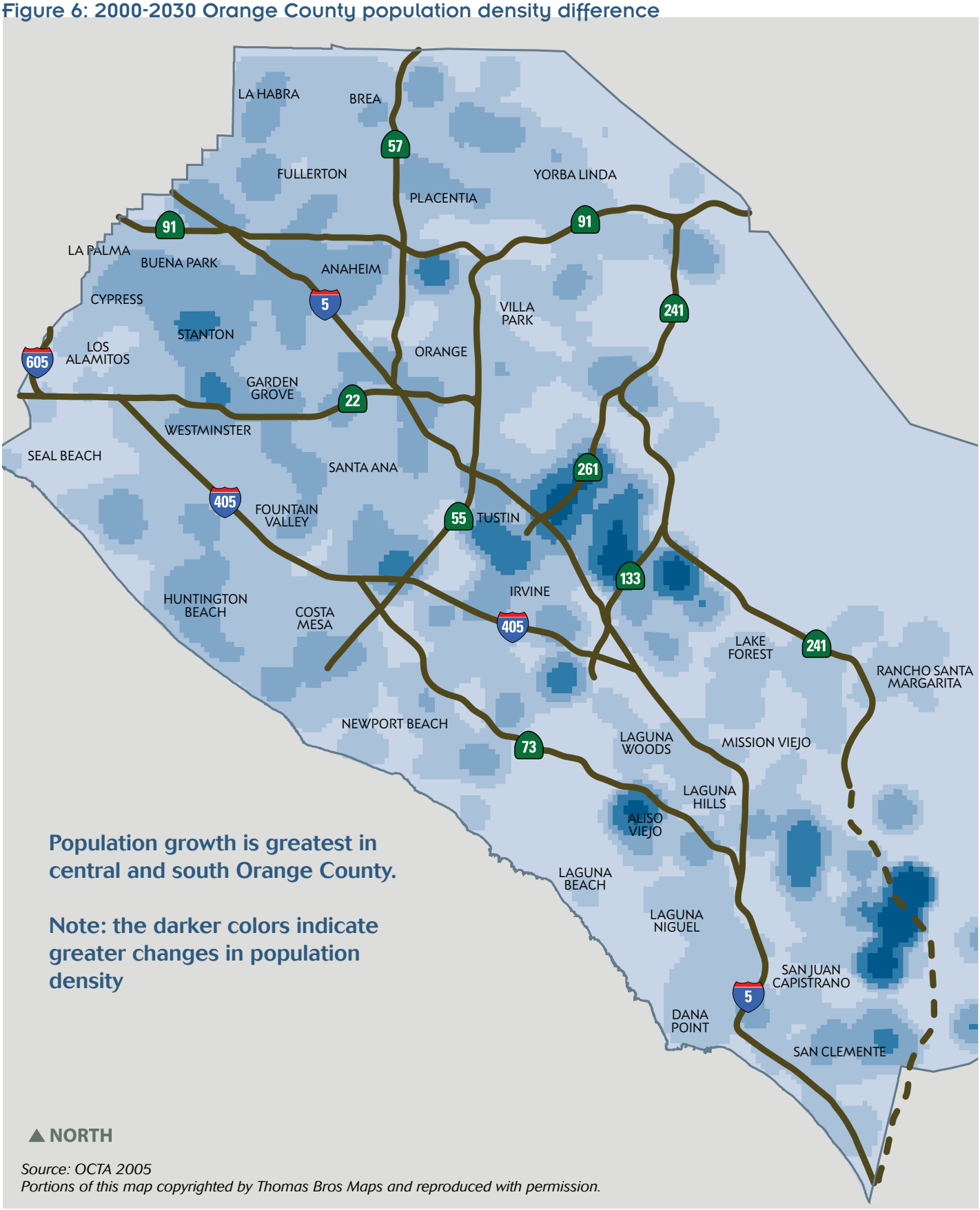
Figure 6: 2000-2030 Orange County population density difference



Source: OCTA 2005
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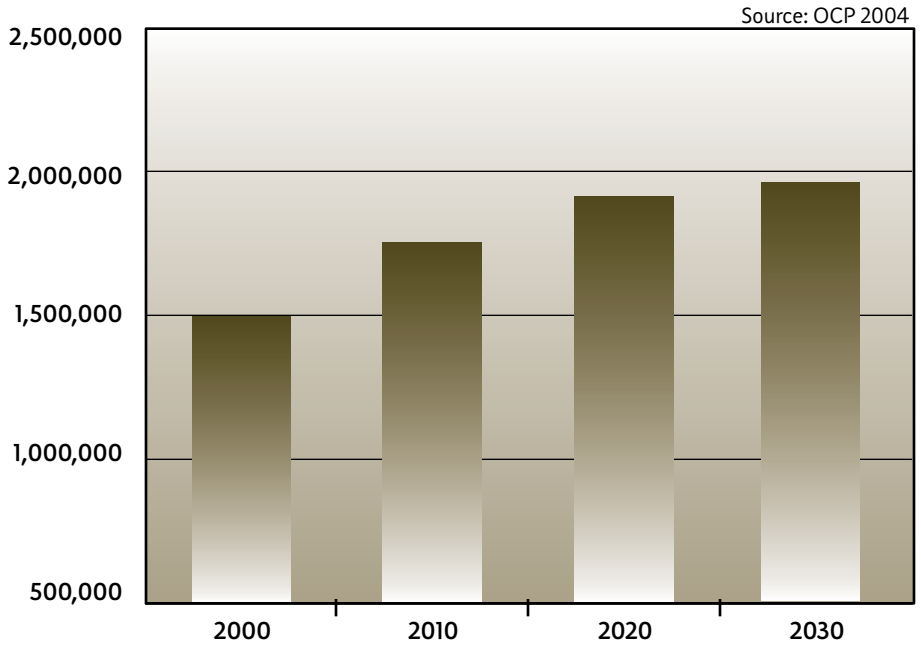
"Orange County's employment will grow by 27 percent."

Figure 7: Orange County employment growth 2000-2030



"Housing grows by 15 percent."

Figure 8: Orange County housing growth 2000-2030

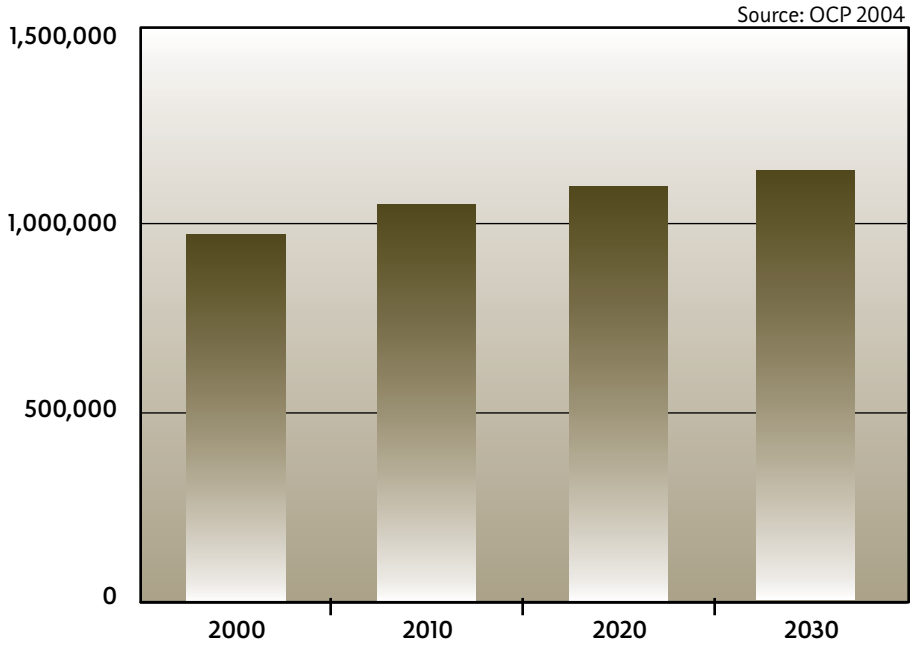


Figure 9: 2000 Orange County employment density

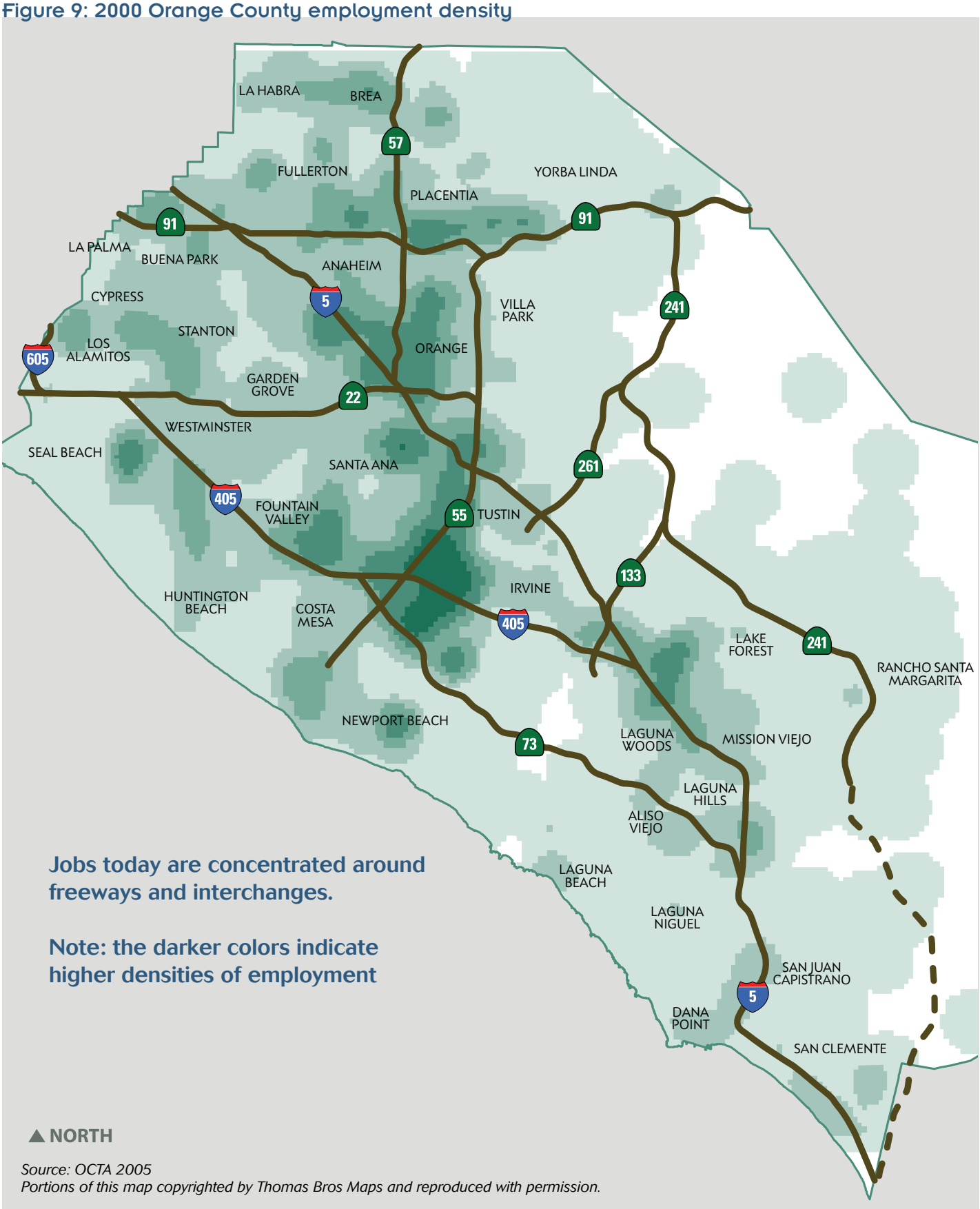


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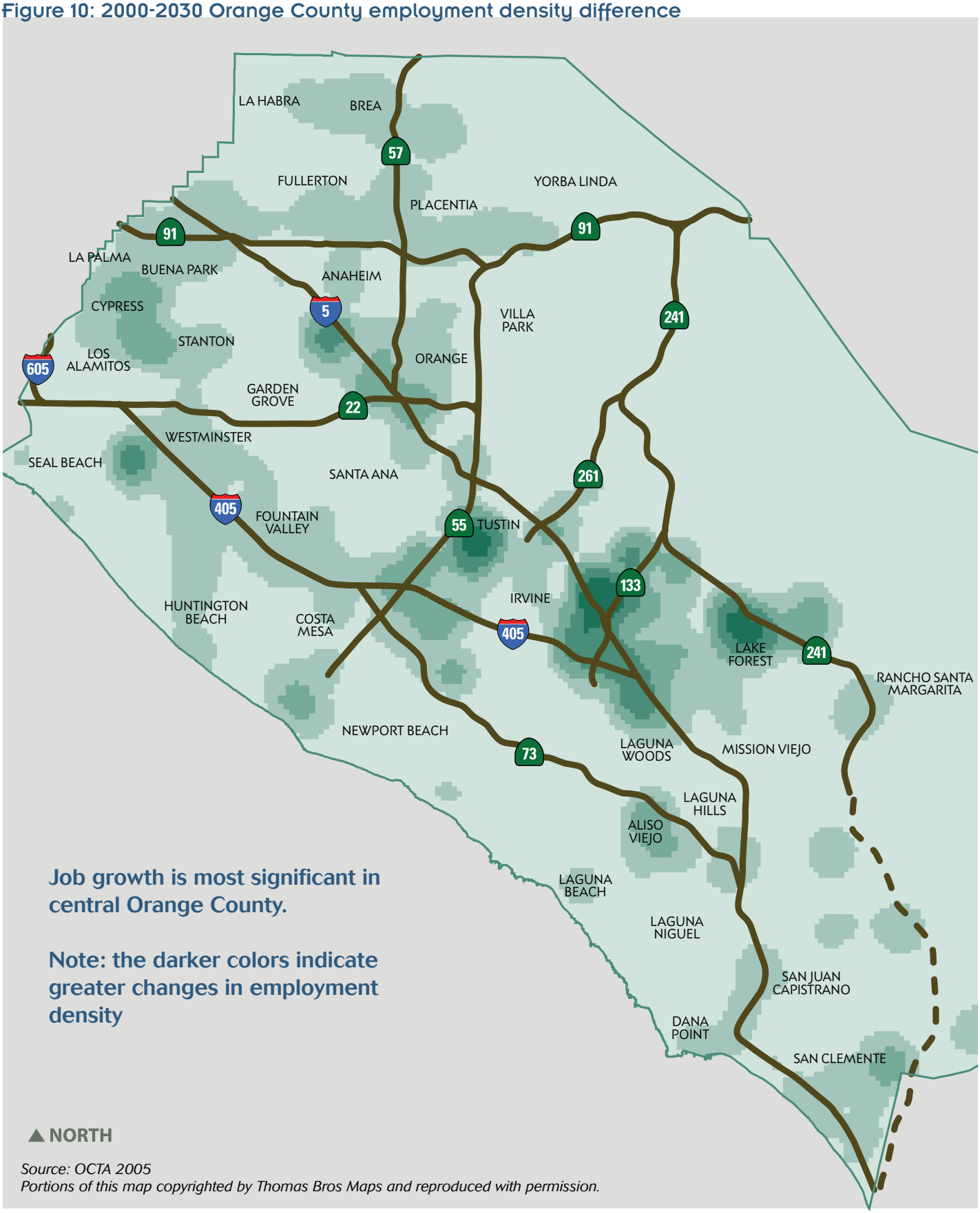
Figure 10: 2000-2030 Orange County employment density difference



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More demand for transportation

OCTA uses a transportation analysis model (OCTAM 3.2) that uses the population and employment projections and a baseline transportation network to assess how Orange County's growth will affect the transportation system. The model calculates that people in Orange County made over 13 million daily person trips in the year 2000. It projects that by 2030, the number of trips will increase to almost 16 million daily person trips. Most of these trips (79 percent) will be internal to Orange County, meaning they both start and end within the County's borders. More trips are also coming from and/or going to neighboring counties compared to year 2000 data. Figure 11 illustrates this growth in "daily person trips."

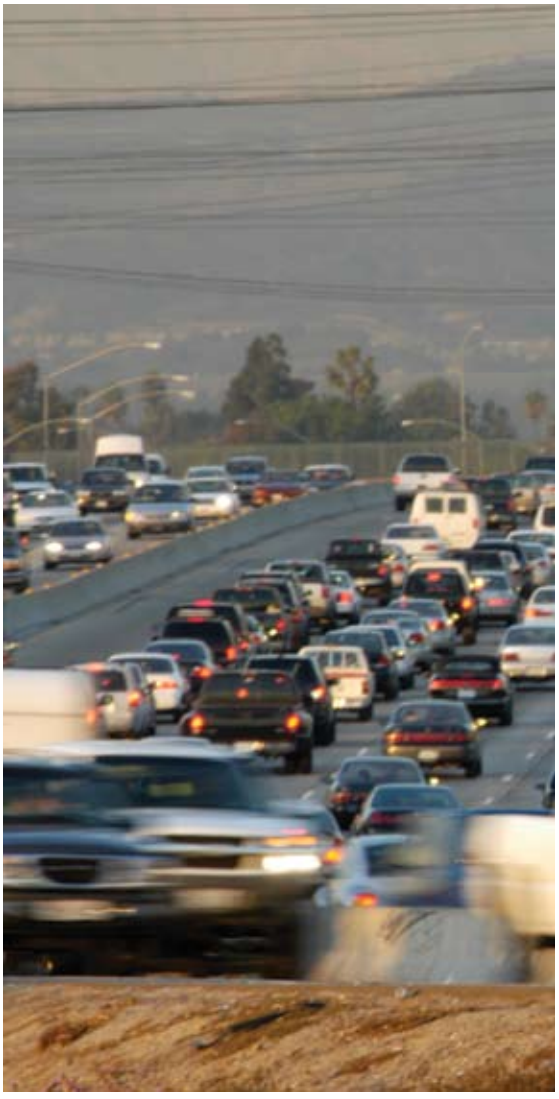
The model also projects how many transit trips on bus or rail will be made; how many miles will be traveled by vehicles; and average speeds on the County's roadways and freeways. By 2030, daily transit trips are projected to increase by 45 percent. Daily vehicle miles traveled (VMT) are expected to increase by 39 percent, while speeds on roadways in the morning peak hours will drop by almost 40 percent, and freeway speeds in the morning peak will drop by 30 percent (Figure 12). The high growth in VMT suggests not only that more trips will be made, but also that average trip lengths will be longer in the future than today.

If, for example, your daily trip to work in 2000 consisted of 10 minutes on roadways to get from your home to the freeway, 15 minutes on the freeway, and five minutes back on roadways to reach your job, in 2030 this same 30 minute trip would take you 40 minutes. If 20 extra minutes a day (to and from work) does not sound too bad, think of it this way: that is like spending an additional five work days each year sitting in traffic.

Travel demand will continue to be the highest in Central and North Orange County, but South Orange County will see the greatest increase in demand. In 2000, only 18 percent of the County's arterial roadways had speeds below 25 miles per hour (Figure 13); however, by 2030, 62 percent of the County's arterial roadways will be so congested that vehicle speeds are less than 25 miles per hour (Figure 14).

Freeways exhibit similar congestion patterns and growth. In 2000, 16 percent of the freeway system was severely congested, during morning peak hours (Figure 15). This number is expected increase to 36 percent severely congested by 2030 (Figure 16).

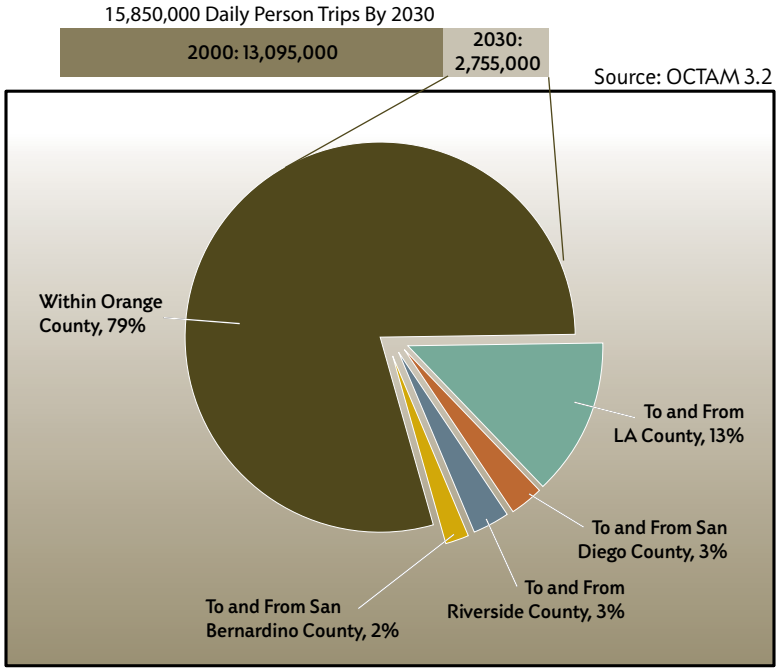
Finally, besides greater traffic congestion and travel delays, more trips mean more wear and tear on Orange County's freeways and roadways, resulting in greater maintenance costs.



"Without improvements, an average daily commute will take 20 minutes longer."

"By 2030, we will add almost three million more person trips per year to our transportation system — most of them starting and ending within Orange County."

Figure 11: Orange County daily person trip growth



"By 2030, roadway speed will drop by 40 percent and freeway speed will drop by 30 percent."

Figure 12: traffic congestion 2000-2030

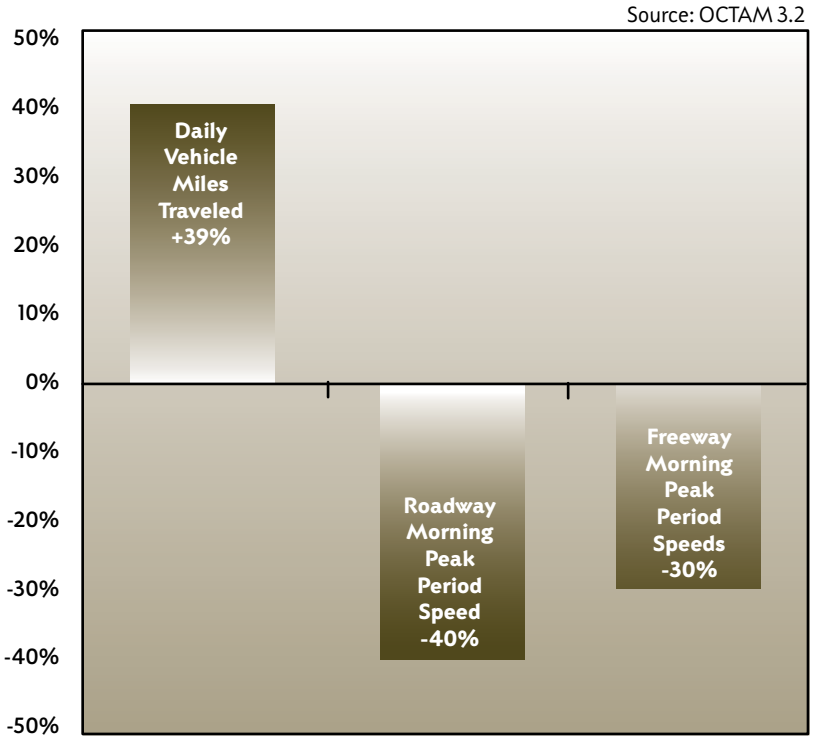


Figure 13: 2000 AM peak period average arterial speed

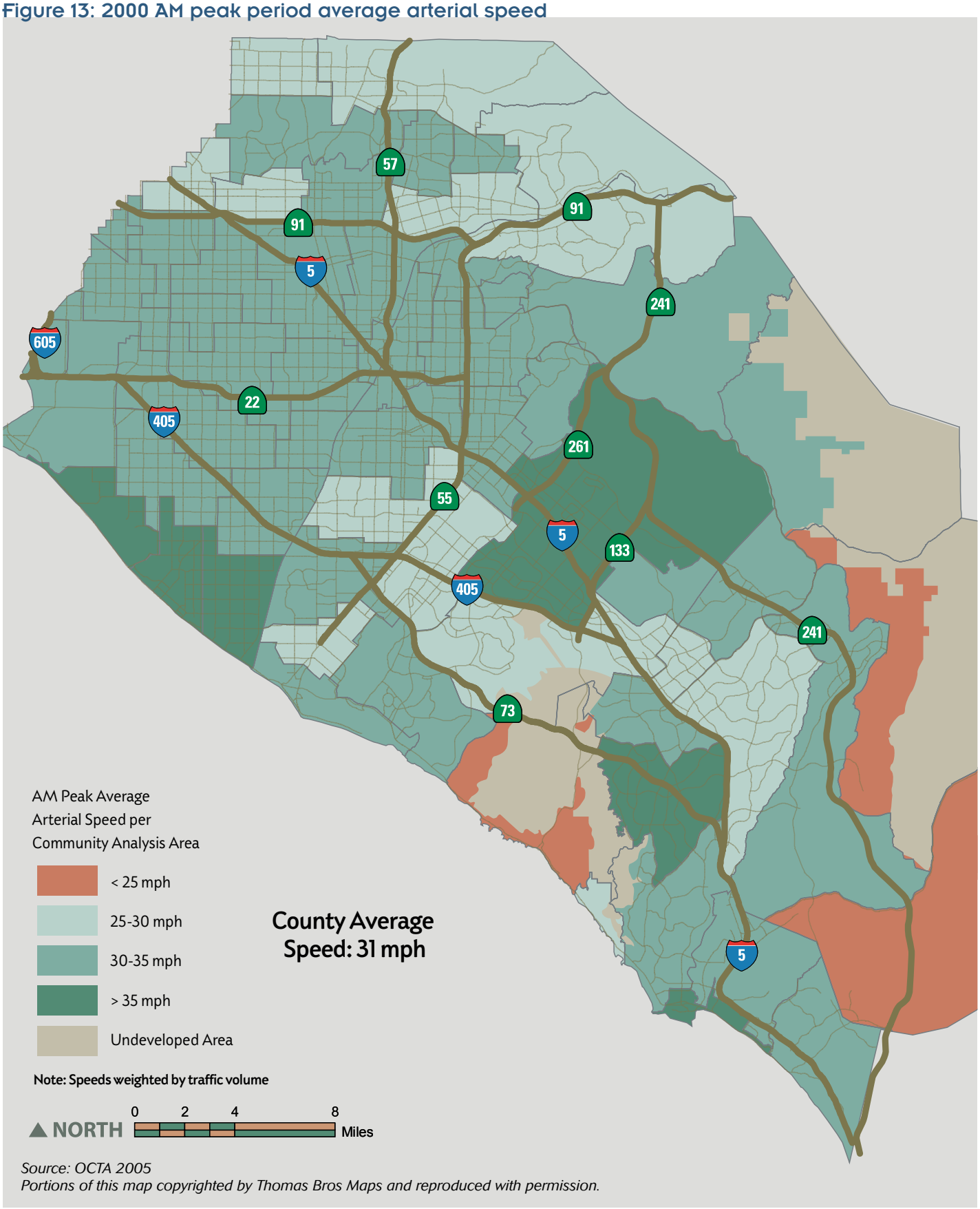


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Figure 14: 2030 AM peak period average arterial speed

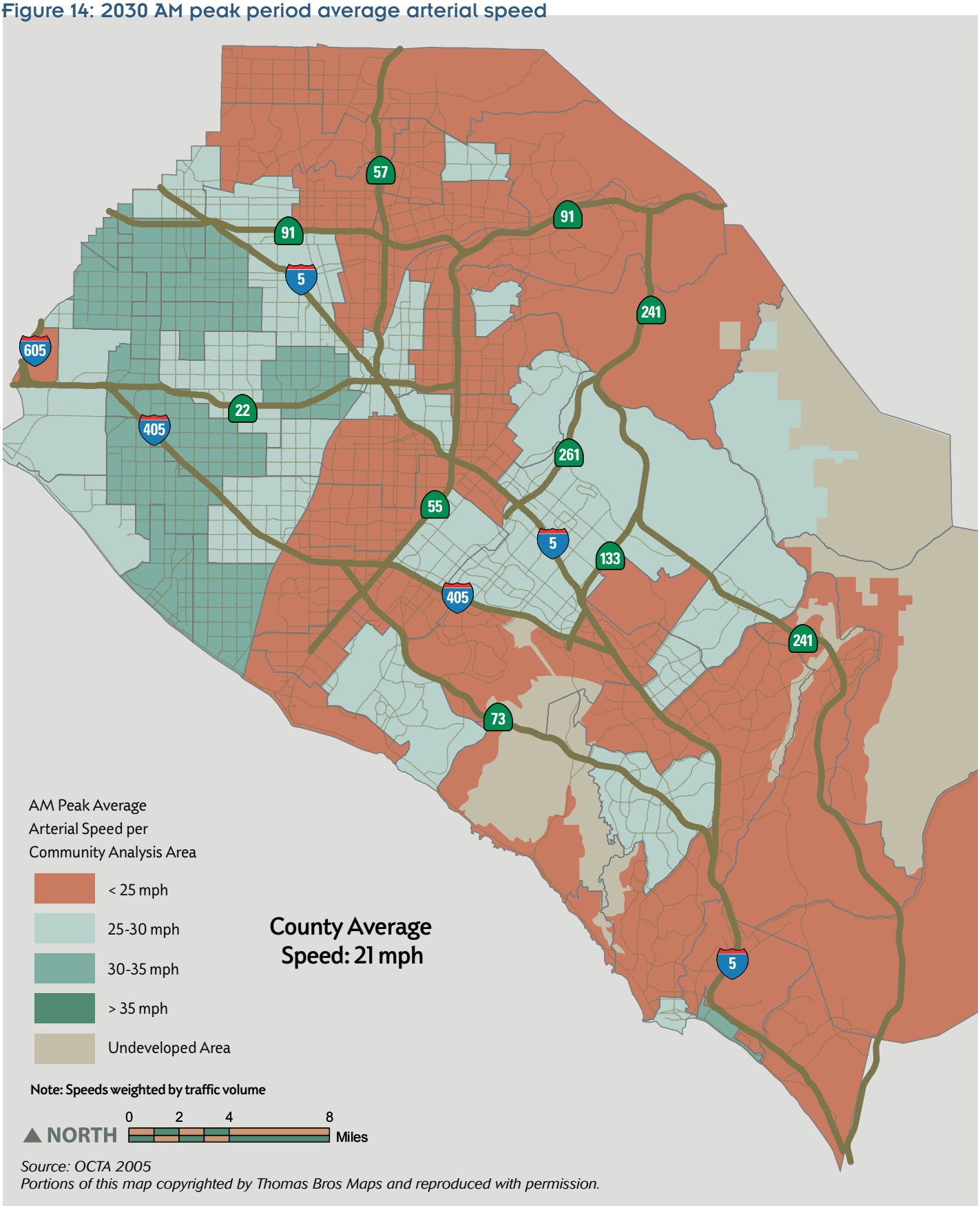

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Figure 15: 2000 AM peak hour freeway congestion levels

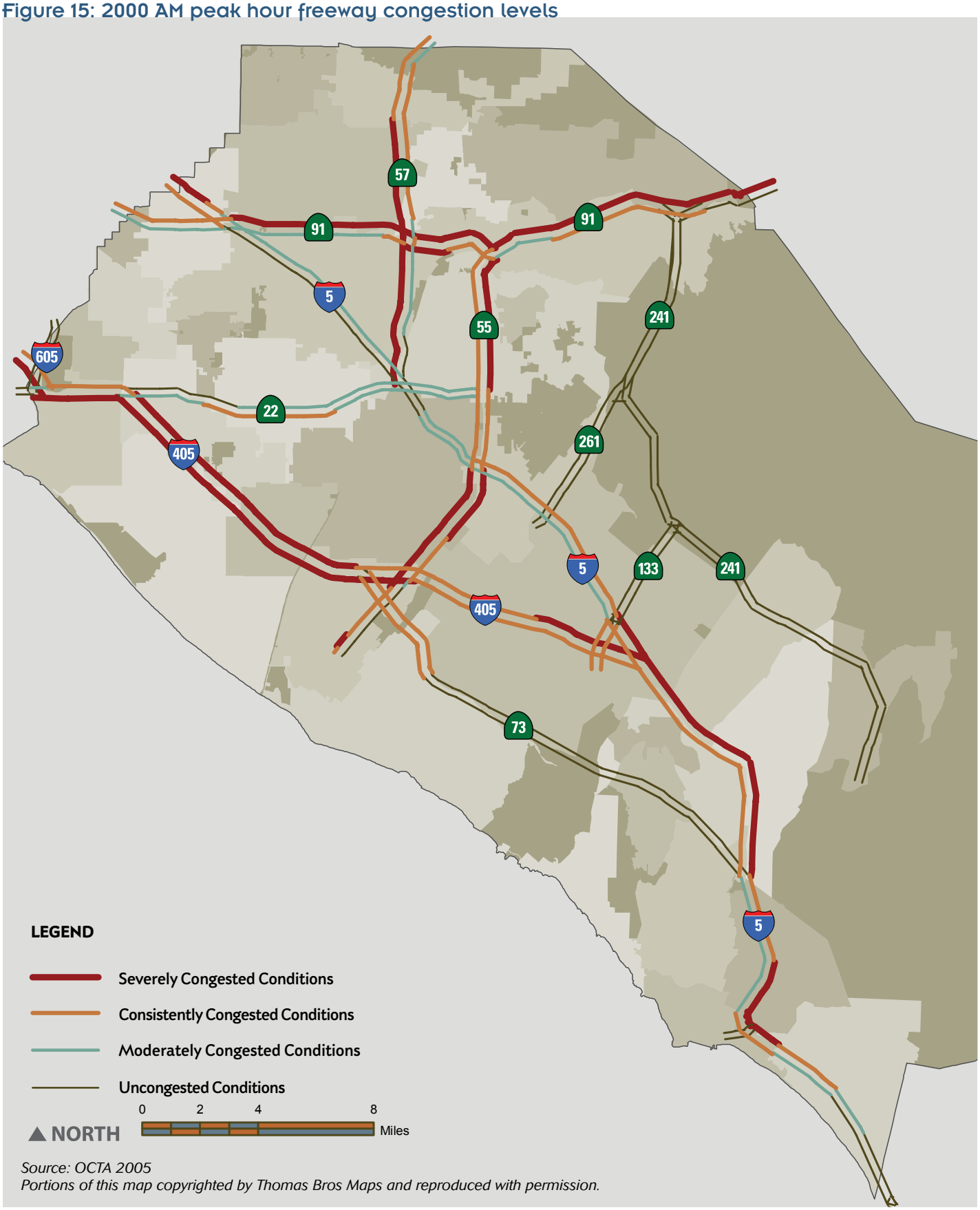

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Figure 16: 2030 AM peak hour freeway congestion levels

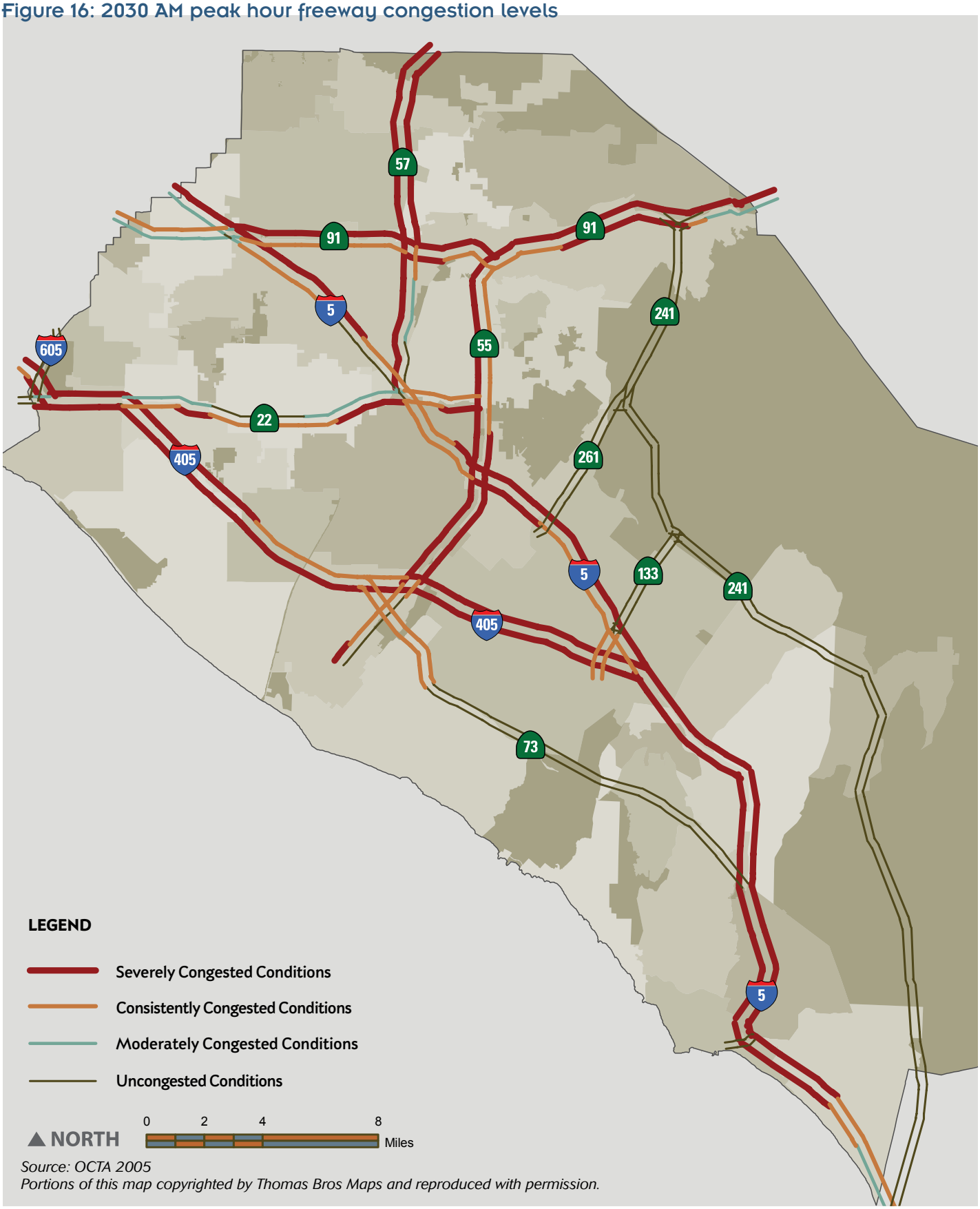

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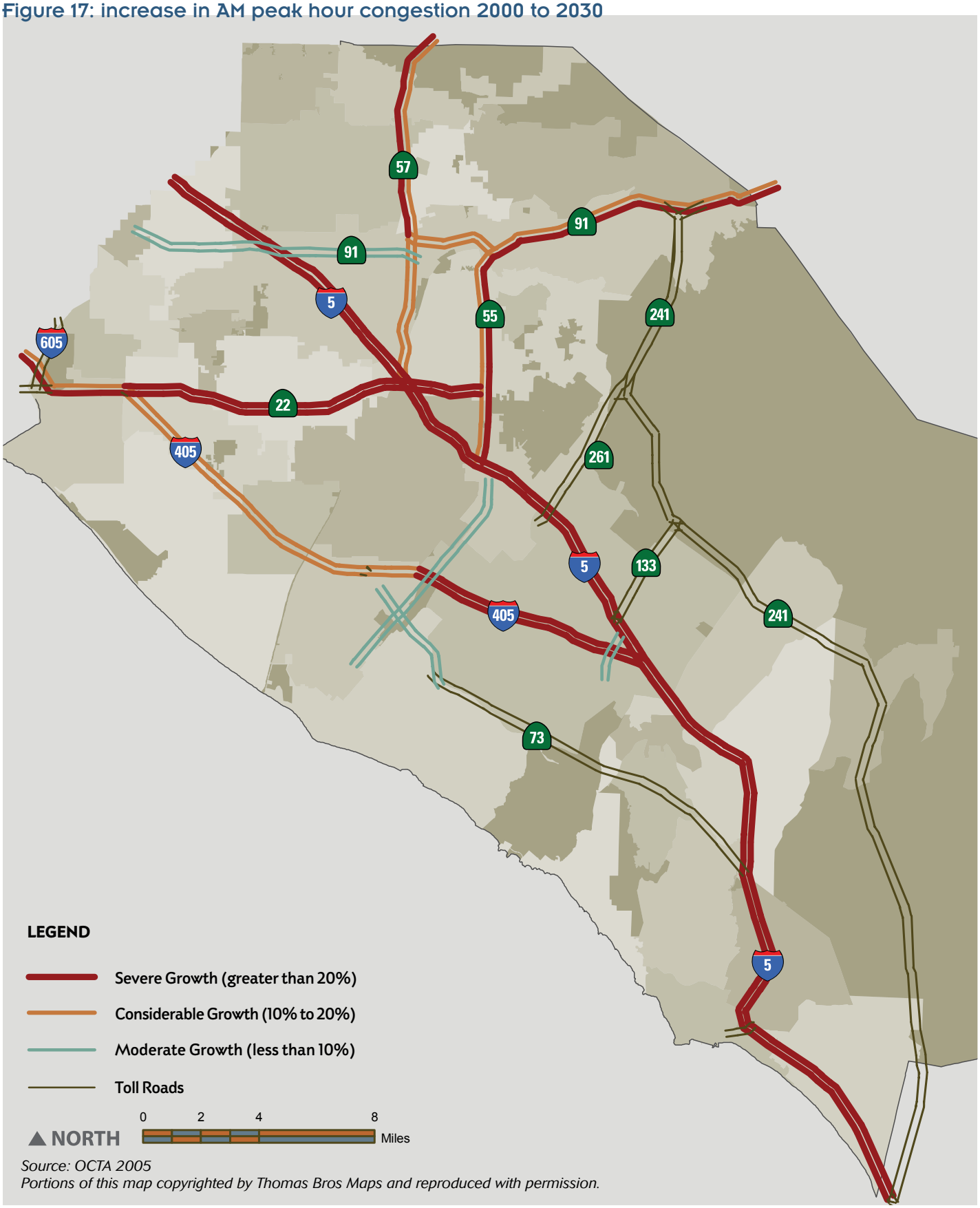
Figure 17: increase in AM peak hour congestion 2000 to 2030



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THE SETTING

- overview
  - freeways
  - roadways
  - transit
  - transportation-related environmental conditions
  - other programs
- defining the future
  - freeways
  - roadways
  - transit
  - transportation-related environmental improvements
- strategies for success

Freeways...roadways...buses...rail...these are the key elements of Orange County's transportation system. When we update the Long-Range Transportation Plan (LRTP), we take a fresh look at ways to keep our system working and Orange County residents mobile, while protecting the natural environment and setting. Many factors must be considered, such as the changing trends in Orange County's population and workforce, where we live, how we commute, the dollars available to carry out transportation solutions, environmental priorities, and the policies and programs that foster mobility. Other factors are not as easy to quantify, but are important to include; such as transportation-related projects that improve the environment, and the many support programs that foster mobility. The first step in our analysis is to review existing conditions, and the trends that will influence the system over time, to develop strategies that will ensure the system maintains mobility for future residents.

Overview

Freeways

Roughly half of all miles traveled by vehicles in Orange County occur on the freeways. Orange County's freeway network provides major transportation linkages internal to the County. Our freeways carry the majority of the area's regional trips, including travel between Orange County and other areas of Southern California. At the same time, freeways makeup only 18 percent of the freeway and roadway network. As such, it is important that we make it a high priority to optimize the efficiency of this system.

Orange County's freeways have developed into a mature system, which has been significantly expanded over the past 20 years. This expansion, from a total of 944 lane miles in 1986 to 1,354 lane miles in 2005 (a 43 percent increase), was critically needed to catch the system up with population and employment growth that occurred over the prior 30 years. Much of this work was completed through Measure M, including most of the carpool network (172 of the total 246 lane miles).

Orange County's freeway system is nearing build-out, in terms of available right-of-way. With travel demand continuing to grow, we must employ alternative strategies to generate more capacity. One proven strategy, known as managed lanes, is being used in Orange County, Southern California, and other parts of the country. The concept of a managed lane is to increase efficiency by designating specific freeway or roadway lanes for use with operational actions that can include: designating the type of vehicles that can use the lanes, such as carpools, buses, or trucks; assigning use according to the time of day, such as reversible lanes that can be switched according to peak traffic times; and managing use through pricing, such as charging motorists for access to lanes, or charging different tolls based on levels of congestion. One key to the success of managed lanes is their flexibility, since they provide the ability to alter the operations of the lanes over time in ways that keep traffic flowing.

Orange County's managed lanes

Orange County's High Occupancy Vehicle lanes (referred to as HOV or carpool lanes) are an example of a network of managed lanes. Since the first HOV lanes were opened on State Route 55 in 1985, the County's HOV system has evolved to encompass five freeway corridors and 246 lane miles. With more dedicated connectors and direct access ramps than any other area, it has grown to be the most extensive HOV system in the country. Figure 18 shows the existing and planned managed lanes network, followed by Figure 19 that shows the locations of HOV direct access on and off ramps and HOV connectors that provide a direct connection from one freeway's HOV lane to another.

Orange County also has four toll road facilities that use pricing strategies to manage lane capacity. Three of these toll roads, the Foothill (SR-241), Eastern (SR-261), and San Joaquin Hills (SR-133) Transportation Corridors are operated by the Transportation Corridors Agencies. The fourth, known as the 91 Express Lanes, is now owned and operated by OCTA, once it was purchased from the private corporation that built the lanes.

"Freeways, roadways, buses, and rail are the key elements of Orange County's transportation system."

"Orange County's carpool lane network consistently carries as many or more people than the adjacent general purpose freeway lanes during commuting hours."

The 91 Express Lanes are some of the most technologically advanced roadways in the world. Breakthrough electronic toll collection technology made the 91 Express Lanes the first fully automated toll facilities in the United States, and one of the first in the country to use value pricing to manage traffic. Today, more than 175,000 automated transponders are in use.

Orange County's HOV network is a success story. During the morning and evening peak periods, the HOV lanes consistently carry as many, if not more, passengers than the adjacent general purpose freeway lanes.

Similarly, the tolls roads help to keep freeway traffic flowing; offering an alternative to commuters, and taking thousands of cars off of the crowded freeway network. In 2005, the 91 Express Lanes carried an average weekday volume of 34,000 vehicles ; and the Foothill, Eastern, and San Joaquin Transportation Corridors carried an average weekday volume of 50,000, 52,000, and 75,000 vehicles, respectively.

One of OCTA's goals in designing the toll policy for the 91 Express Lanes was to increase the average vehicle occupancy (AVO) rate of vehicles traveling along State Route 91 (SR-91). As a result, Express Lane access is free for carpools of three or more individuals, except during peak commuting hours in the eastbound direction.

"The 91 Express Lanes carry an average weekday volume of 34,000 vehicles."

During peak commuting hours, carpools receive a 50 percent discount from the standard toll. This policy has been successful in helping OCTA achieve a higher AVO rate.

Freeway Service Patrol

Another tool to reduce freeway congestion and improve safety is the prompt clearing of traffic accidents. In November 1992, through a collaboration between OCTA, Caltrans, and the California Highway Patrol, a Freeway Service Patrol (FSP) was created for Orange County. This service helps motorists that break down, run out of gas, or need similar assistance along Orange County freeways. FSP is managed by OCTA, while the California Highway Patrol dispatches the FSP tow trucks and provides field supervision.

The FSP program started with 15 tow trucks along five segments of freeway on SR-91, Interstate 5, Interstate 405, and State Route 57. It has since expanded to serve all major freeways during peak hours with 35 tow trucks. In 2003, mid-day service was added for the five busiest interchanges in Orange County.

Here's how it works: To respond quickly to breakdowns, each FSP truck is assigned a route, typically nine miles long, which they continuously travel. When they spot a breakdown, they offer assistance, free of charge. FSP trucks also respond to call box callers, as dispatched by the CHP. FSP tow trucks also target various freeway construction projects throughout Orange County. Service to construction areas includes towing and repair assistance to help keep traffic flowing freely in areas where no shoulder exists.

In 1996, the CHP and OCTA jointly funded improvements to the computerized dispatch system to improve FSP response time. As a result, over 85 percent of the 4,700 motorists assisted each month receive help within ten minutes of breakdown. OCTA calculates the benefit-cost-ratio to be 13:1 from savings due to reduced freeway congestion.

Figure 18: Orange County managed lanes network

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Figure 19: Orange County HOV access ramps and connectors

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Roadways

The other half of the total miles traveled by vehicles in Orange County is on our arterial roadway network. As with freeway travel, demand on roadways is expected to increase significantly over the next 25 years, and will be influenced by development patterns and changing travel behavior. Orange County's plan for the network of roadways to meet regional traffic needs is called the Master Plan of Arterial Highways (MPAH). It was created in 1956 and has been updated regularly. Similar to the freeway system, the planned network of roadways is mostly built (about 95 percent of the planned centerline miles), which is not surprising since the County itself is considered to be generally "built-out", from a land development perspective. When complete, the MPAH will consist of 1,527 centerline miles; however, many of these roadways have fewer lanes than are called for in the MPAH. In fact, only about 86 percent of the planned lanes are complete.

OCTA coordinates with Orange County cities and the County of Orange to ensure roadways are built according to the MPAH (Figure 20). In order for cities and the County to receive funds from today's Measure M competitive programs, they must validate that the general planning documents for their city and county are consistent with the MPAH and must agree to reserve the necessary rights-of-way to complete all MPAH lanes.

There are currently over 3,000 signals in Orange County, managed by multiple agencies. Each agency differs, somewhat, in the goals for their signal system, as well as their management approach and specific signal technologies. As a result, there is great potential for improved coordination among agencies, and great need for interagency cooperation.

In addition to completing the planned roadway system and maximizing its use through improved signal synchronization, the facilities must be maintained to provide smooth and safe roadways for residents, workers, and visitors. OCTA, local cities, and the County of Orange have invested significantly in building Orange County's roadways. Maintaining this investment is a key element of the 2006 LRTP. If pavement is kept in good condition, it will function better, last longer, and be less expensive to maintain. If it is allowed to deteriorate, then instead of a simple resurfacing, it will require more extensive and expensive repairs, or even reconstruction, to function well. Maintaining the roadway system, through pavement management, will ensure that the public gets the greatest value from their investment.

"There are over 3,000 traffic signals in Orange County, with great potential for improved coordination and interagency cooperation."

Figure 20: Orange County MPAH network

North County

South County

ARTERIAL HIGHWAYS

ESTABLISHED ALIGNMENT | PROPOSED ALIGNMENT

- PRINCIPAL
- MAJOR
- PRIMARY
- SECONDARY
- COLLECTOR

- SMART STREET 8 LANE
- SMART STREET 6 LANE
- SMART STREET 4 LANE

- FREEWAY
- TRANSPORTATION CORRIDOR

0 2 4 8 Miles

NORTH

Transit

The transit system in place today includes an extensive network of local bus routes that provide service to most residential and employment areas of the County. There are also several express bus routes, and a well-developed commuter rail service, with stationlink local shuttles, that provide for longer distance travel within the County and to neighboring counties.

Bus

There are currently 77 bus routes operating throughout Orange County, with the majority of the local bus service operating in the northern half of the County. When compared to the southern half of the County, the northern section is more densely developed, has lower median incomes, has more households without an automobile, and a more consistent grid-pattern of roadways that lend to an efficient bus routing pattern.

In addition to traditional local bus service, OCTA provides a shared-ride service, called ACCESS, for people unable to use the regular bus service because of a disability. This curb-to-curb service operates in response to requests by qualifying individuals and groups, and meets the requirements of the Americans with Disabilities Act.

Orange County's express buses combine the use of freeways and limited stops to provide commuters with faster service over longer distances. There are currently nine express bus routes in place using the Interstates 5 and 405, and State Routes 91 and 57, to connect major employment centers and park and ride lots. OCTA also provides shuttle service timed with commuter rail schedules to carry passengers from the train stations to their places of work in the morning, and back to the stations in the evening. There are currently 13 shuttles operating in the Stationlink system.

Demand for local bus service has increased steadily over the past 30 years, reaching the current level of 67.5 million riders (2004). Between 2001 and 2005, transit service hours increased over 23 percent, and new bus routes have been added in several areas that include four Night Owl Service routes (24-hour bus service). In response to rider surveys, all OCTA bus stops now have route maps, time schedules, phone numbers, and Web site address information.

In 2003, OCTA ranked at the top, among six peer transit agencies, for the average number of passengers per hour on a public bus; with each bus carrying an average of 39 passengers per hour (Figure 21). Our system is also efficient, as evidenced by how much ridership is produced for each dollar invested in operating the bus system. For this measure of efficiency, OCTA was second only to San Diego for the highest number of boardings per dollar of operating cost (Figure 22).

Rail

Commuter rail includes both Metrolink and Amtrak. Metrolink provides weekday service on three routes through Orange County: the Orange County Line from Oceanside to Los Angeles (19 trains per day); the Inland Empire Line from San Bernardino to San Juan Capistrano (12 trains per day); and the 91 Line from Riverside to Los Angeles (nine trains per day). There are 11 stations in Orange County that feed these lines, with another to be added in Buena Park this year (Figure 24). Amtrak service, which runs 12 times a day in each direction through Orange County from San Diego to Los Angeles, complements Metrolink; although Amtrak trains do not stop at every Orange County station. Metrolink and Amtrak have created a reciprocal program called Rail-to-Rail, wherein, Amtrak will accept Metrolink's monthly pass for travel on Amtrak trains within the limits specified on the pass.

In just over 10 years since service began, the number of Orange County riders on Metrolink commuter rail has increased from less than 145,000 passengers in 1993/94 to over 3,000,000 passengers in 2003/04. In fact, the Orange County Line, which operates trains both peak and reverse directions between Oceanside and Downtown Los Angeles, remains one of the most productive in the Metrolink system.

"Metrolink's Orange County Line is one of the most productive in the regional rail system."

"OCTA ranked at the top, among six peer transit agencies, for the average number of passengers per hour on a public bus."

Figure 21: bus passengers per hour

Source: 2003 National Transit Database

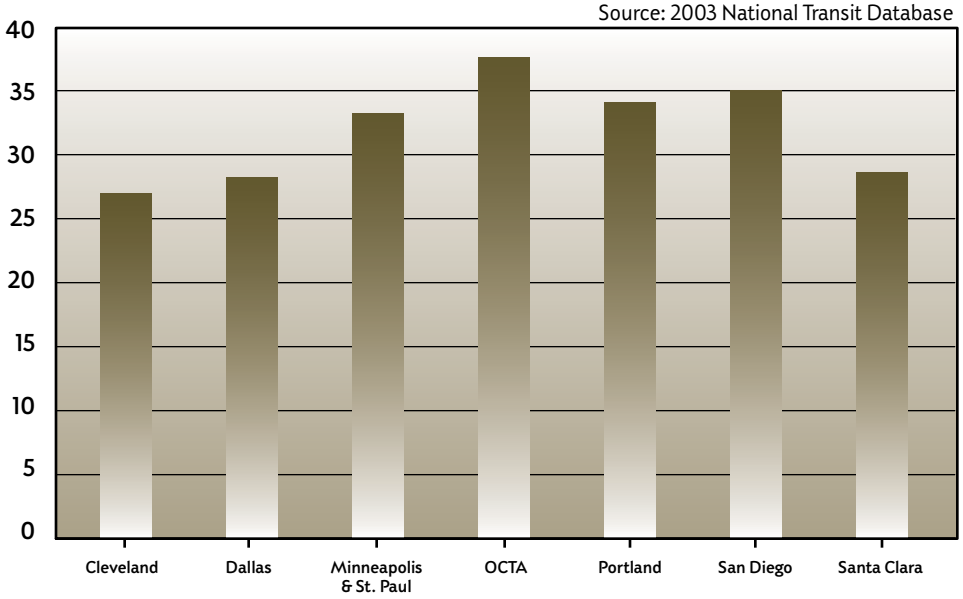


Figure 22: bus boardings per dollar of operation cost

Source: 2003 National Transit Database

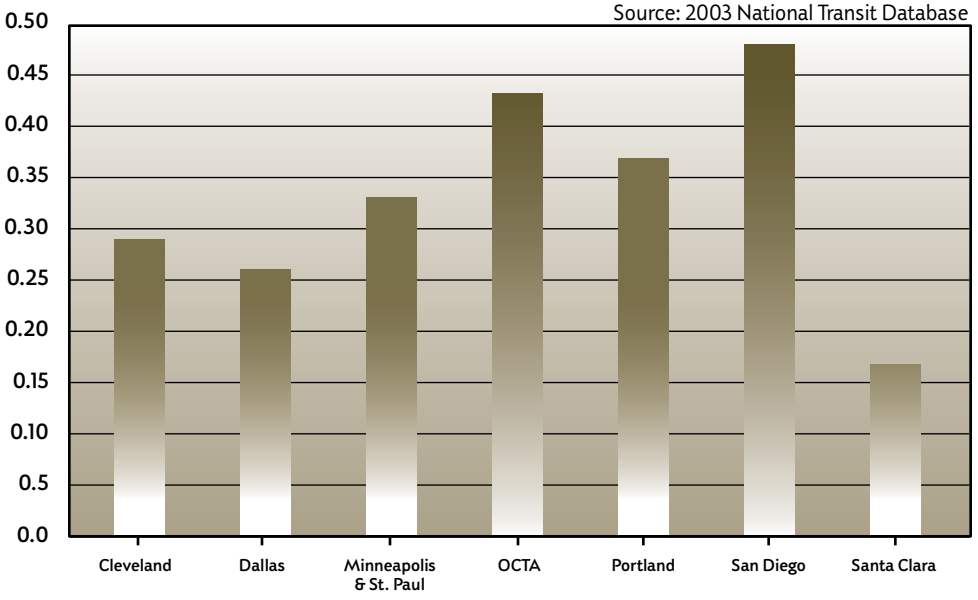
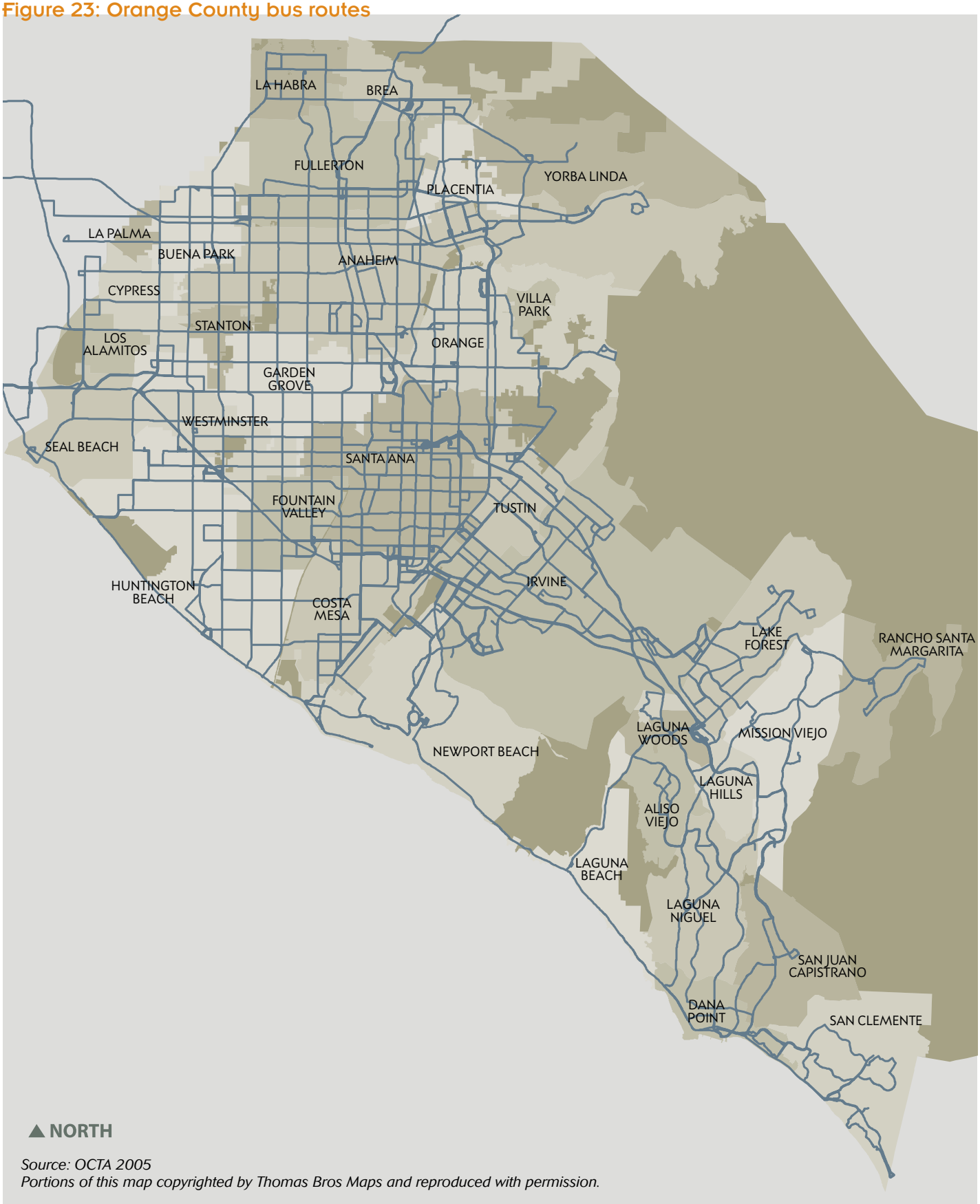


Figure 23: Orange County bus routes



Source: OCTA 2005
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Figure 24: commuter rail lines

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Transportation-related environmental conditions

There are many environmental issues that concern OCTA and the residents, employees, and visitors of Orange County; including air quality, reduced native habitat areas, increased energy consumption, and increased noise pollution. OCTA works daily to meet these challenges and comply with all of the environmental regulations.

Storm water runoff

Of particular concern to OCTA is storm water runoff and the related impacts to Orange County waterways and coastal water quality. Paved freeways and roadways are major contributors to polluted storm water runoff. Paved surfaces collect pollutants from tailpipe emissions and brake linings, along with other contaminants. When storm waters travel along these paved surfaces, they pick up the pollutants and wash them into waterways, lakes, and the ocean. The paved surfaces also prevent rainfall from soaking into the ground, which changes the local hydrologic conditions.

In Orange County, there are numerous federal, state, and local water quality programs and policies, however, beach closures and ground water contamination continue to be significant issues.

Air Quality

OCTA recognizes the need to seriously address the air quality issues within the region, and has taken proactive steps to do so. These include converting the bus fleet and expediting purchase of CNG buses, adding Prius hybrids to our motor pool, designing maintenance facilities with "cool roofs", and encouraging local jurisdictions to pursue transit-friendly designs. In addition, the freeway, roadway, and transit improvements helped to compensate for the increased travel demand that has come with growth in population, employment, and tourism. These improvements help to reduce travel times, emissions, and energy consumption. However, the South Coast Air Basin continues to not meet federal, state, and local air quality standards. Progress has been made in meeting these standards, but more needs to be done to improve air quality.

Other Programs

There are many programs that OCTA administers, or promotes, to provide extra benefits for Orange County travelers. These programs include administering the Commuter Bikeways Strategic Plan, helping manage the movement of goods throughout Orange County, centralizing a taxicab permitting program, providing employers with rideshare assistance, and more. Such programs help to enhance safety, reduce congestion, foster choices for travelers, and improve Orange County's environment and quality of life. Appendix A provides detailed descriptions of these programs.

Defining the future

The next step in developing this LRTP was to establish strategies that consider the future needs of our transportation system, and meet the set goals and objectives.

Freeways

Beyond today's needs, projections for 2030 indicate that vehicle miles traveled (VMT) will increase faster than population and employment, mostly because of longer trips or commutes. To meet future travel demand, freeway capacity will need to grow if it is to remain the backbone of our transportation system.

"Freeway capacity must grow to meet future demand."

A significant challenge to increasing freeway capacity in Orange County is that the freeway improvement projects completed over the last 15 years, as part of the existing Measure M, left little existing freeway right-of-way for further expansion. Therefore, acquisition of extensive right-of-way would be expensive and likely to generate community opposition.

The HOV system is also experiencing the effects of a maturing system. As more and more cars shift to using the managed lanes, traffic congestion levels increase, diminishing the time savings they

originally provided to travelers. In fact, many HOV lanes are currently operating at capacity during peak hours. Given increasing congestion, and considering it has been 20 years since the first HOV lane opened, it is time to consider operational changes and facility modifications for the HOV network, including:

- Should single occupant vehicles be allowed during non-peak hours?
- Should second HOV lanes be added?
- Should the current access points in to the HOV lanes be modified?
- Should HOV on-ramp bypass lanes be eliminated?

For the 91 Express Lanes, we are considering switching from the current congestion pricing to a dynamic (real-time) pricing approach. This will maximize efficiency of both the Express and general purpose lanes, and improve the link between the toll travelers pay and the travel time and speed along the facility.

Roadways

Master plan of arterial highways

In 2001 OCTA, Orange County cities, and the County of Orange conducted a comprehensive assessment of the MPAH to determine if it was adequate to meet future roadway travel needs. The MPAH Strategic Plan developed from this assessment made the following findings.

- Many of the roadways in the central and northern part of the County were built in the 1940s and 1950s and were not built to current standards. In cities such as Fullerton, Orange, Santa Ana, and Anaheim, existing land use often makes it infeasible to improve these older streets to accommodate traffic growth.
- Some congestion problem areas are on streets that are already completed to full MPAH standards. These imbalances on the completed MPAH will continue to occur in the future as travel demand grows.
- Primary concentrations of projected capacity imbalance occur in the northernmost part of the County, along State Route 91, the South Coast Metro/airport area, and in the South County.

- There are a number of locations with constraints impeding the completion of the MPAH as planned. Examples include land use conflicts such as historic districts, and physical constraints such as severe topography or unstable ground.

Despite these challenges, if the MPAH system is not completed, much of the roadway network will be severely congested in the future (operating at a level of service "F," meaning that the demand exceeds the available capacity of the road). So, in addition to promoting completion of the MPAH system, the MPAH Strategic Plan identified a range of alternative strategies that cities and the County can use to meet the capacity requirements of the MPAH, in lieu of only widening streets to their ultimate MPAH number of lanes. These strategies include intersection improvements, grade separations, one-way couplets, non-MPAH roadway improvements, and transit improvements, such as Bus Rapid Transit (BRT) on congested roadways. Examples of BRT improvements are discussed beginning on page 43.

Countywide signal synchronization

Even with completion of the MPAH, or the alternative strategies mentioned above, greater capacity on the roadway system will be needed. Signal synchronization is a cost-effective way to increase roadway capacity and throughput without major new construction. Signal synchronization technology provides more green lights along a series of traffic signals to improve traffic flow. When implemented, drivers in a coordinated signal corridor can often pass through a series of green lights before stopping. Coordinated traffic signals:

- reduce overall stops and travel delays;
- allow for large groups of vehicles to efficiently flow through many traffic signals; and
- reduce vehicle emissions and air pollution.

A Countywide Signal Synchronization Program would synchronize traffic signals across Orange County local streets and freeways and provide drivers a greater number of green lights for daily commuting. The program would:

- upgrade traffic signal communications equipment;
- provide new equipment for detection and monitoring of traffic conditions;
- upgrade computer systems to replace old technology;
- provide for more frequent updates of signal timing plans to keep signal settings current;
- improve signal maintenance by quickly replacing malfunctioning equipment; and
- implement regional traffic operations centers to continuously monitor traffic conditions and respond to special events.

To implement such a program would require $450 million from a 30 year extension of the local one half-cent sales tax, Measure M, plus local matching funds provided by Orange County local agencies.

With these funds, over 750 roadway miles and 2,000 signals could be coordinated countywide. Average traffic speeds on the coordinated network would increase by five percent overall, resulting in over six million travel hours saved every year, countywide. The program could be implemented immediately with new funding.

Roadway maintenance

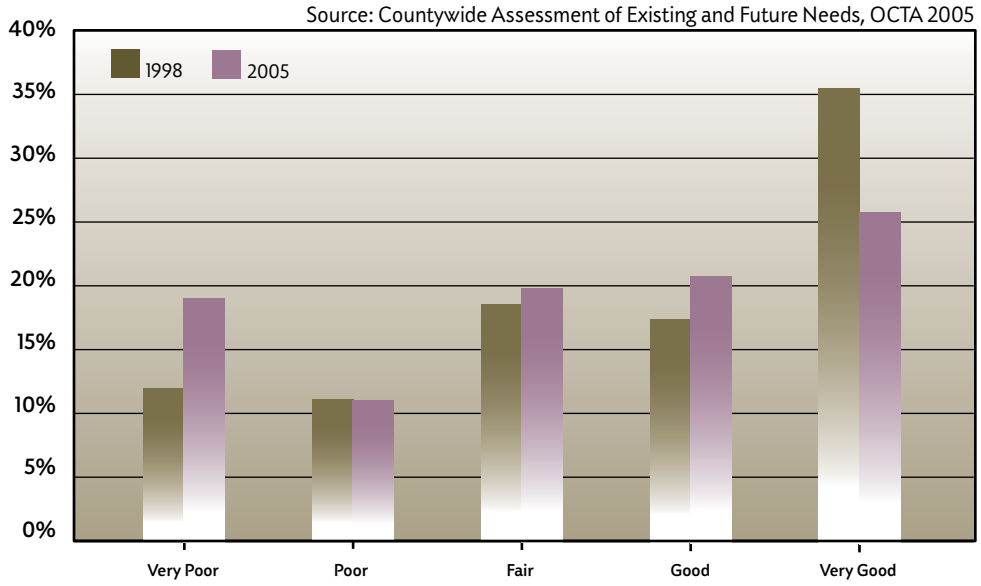
Realizing the importance of roadway maintenance, OCTA, Orange County cities, and the County have implemented an ongoing pavement management program. Orange County's one half-cent sales tax for transportation, Measure M, includes substantial funds for pavement repair and rehabilitation. As part of receiving Measure M funds, each city and the County must have a certified Pavement Management Plan, which includes an inventory of pavement conditions, identification of needed pavement rehabilitation or replacement, and a budget to complete the required maintenance. The Pavement Management Plans are updated every two years. As of 2005, each city and the County has an updated, certified Pavement Management Plan in place, showing their continued commitment to spending their local,

"Even with build-out of Orange County's planned roadway network, greater capacity on our roadways will be needed."

"Countywide signal synchronization could save over six million travel hours a year without requiring major new construction."

"A goal of the Long-Range Transportation Plan is to stem further deterioration of pavement conditions."

Figure 25: countywide pavement conditions (based on pavement area)



non-Measure M dollars on pavement maintenance. Despite this commitment, more maintenance work is needed on Orange County roadways.

In 1998, OCTA conducted a study of pavement conditions for all roadways countywide. This study showed 55 percent were in good or very good condition and another 19 percent were in fair condition. A similar study was completed in 2005. While pavement conditions remained relatively stable for major roadways, the condition of residential roads declined. In 2005 only 48 percent of all roadways were in good or very good condition and 21 percent were in fair condition. Roadways rated poor or very poor increased from 26 percent in 1998 to 31 percent in 2005 (Figure 25).

A goal of the 2006 LRTP is to stem further deterioration of pavement conditions and provide the option for local agencies to improve the conditions. Given the importance of major arterials to the roadway network, past Measure M funding was targeted toward these roadways. In the future, to raise the overall network pavement conditions, the maintenance emphasis will need to be two-pronged. First, the investment in repair and rehabilitation for major roadways must be sustained. Second, a new emphasis on residential roads is critical to avoid the cost and extensive roadwork that comes with deferred maintenance. A cost estimate was prepared as part of the 2005 pavement study. To maintain existing pavement conditions will take an investment of $1.64 billion over the next 15 years, 2006-2020.

There are a variety of revenue sources for pavement maintenance including federal funds (STP and AHRP), gas tax revenues, Proposition 42 funds, and local fees and general funds. Despite these multiple revenue sources, additional funds will be needed to maintain our pavement conditions. If Orange County voters were to approve an extension of Measure M, it would generate a significant stream of additional funds for roadway maintenance.

Transit

There are two goals for the transit system of the future. First is to improve transit for existing riders and the future transit-dependent (including our aging population). Second is to attract new riders to bus or rail, which will allow the transportation system to carry more people with less roadway congestion overall.

"The demand for special needs curb-to-curb transit service is projected to double by 2030."

There are several trends that will affect the demand for transit in the future. Most significant are the anticipated increases in population and employment (24 percent and 27 percent respectively). This growth will drive demand for increased transit services. It is noteworthy that the number of Orange County residents 65 years and older is projected to nearly double between 2005 and 2030. While this segment of our population is not necessarily frail and transit-dependent as a whole, it is likely that many 65 and older residents will require greater, specialized transit. Based on demographic and travel demand projections, OCTA anticipates the demand for ACCESS-type services to increase 100 percent by 2030.

Bus Rapid Transit

As part of a continuous effort to explore transportation alternatives for passengers that use the bus system, a new component of the fixed route bus service, known as Bus Rapid Transit (BRT), is being introduced. The first of the initial 3 lines to open will be on Harbor, followed by a line on Westminster/17th, and finally a line running from Brea to Irvine. BRT combines the flexibility of a bus system with some of the features that are typical of rail transit, such as transit signal priority (extends green lights several seconds to allow BRT vehicles to pass through the intersection), queue jump lanes (give BRT vehicles a separate lane at intersections that allows them to enter the intersection prior to regular through traffic), and dedicated mid-block lanes for BRT service. Figure 26 shows currently planned BRT routes. An expanded BRT system is integral to Orange County's 2006 LRTP, providing passengers with improved travel time and better connectivity for easier and more convenient access to the bus system and other modes.

Figure 26: proposed Bus Rapid Transit lines

High speed rail and Maglev systems

There are currently three magnetic levitation (Maglev) system proposals and one high speed rail system proposal under consideration by other agencies that could have a connection to Orange County (Figures 27 and 28).

The high-speed rail system, being proposed by the California High-Speed Rail Authority (CHSRA), would serve Sacramento, San Francisco, the San Joaquin Valley, Los Angeles, the Inland Empire, Orange County, and San Diego (via Riverside County or the LOSSAN Corridor). Within Orange County, the high-speed electrified rail system may operate as far south as the Irvine Transportation Center (ITC).

A Joint Powers Authority (including one Orange County city — Los Alamitos) has been created to oversee the planning and development of the proposed Orangeline Maglev line, proposed to travel from Los Angeles' Union Station (Union Passenger Terminal), generally along Union Pacific's Stanton Branch and the Pacific Electric right-of-way into Orange County, to a terminus yet to be determined. The system, which is proposed as an elevated high-speed Maglev system, might go as far north as Palmdale and as far south as Irvine.

The Southern California Association of Governments (SCAG) completed the LAX - Orange County Maglev corridor study in October 2004. The corridor is proposed to travel along the I-405 Corridor and have stations at Union Station, West Los Angeles, LAX, Carson, Long Beach, Seal Beach, Huntington Beach, John Wayne Airport, ITC, Santa Ana, and Anaheim.

The California-Nevada Maglev project received an earmark for funding in the new Federal Transportation Act ($45 million over five years). A state environmental impact assessment is about to begin for the Anaheim - Ontario Maglev project that would eventually connect Orange County to Las Vegas.

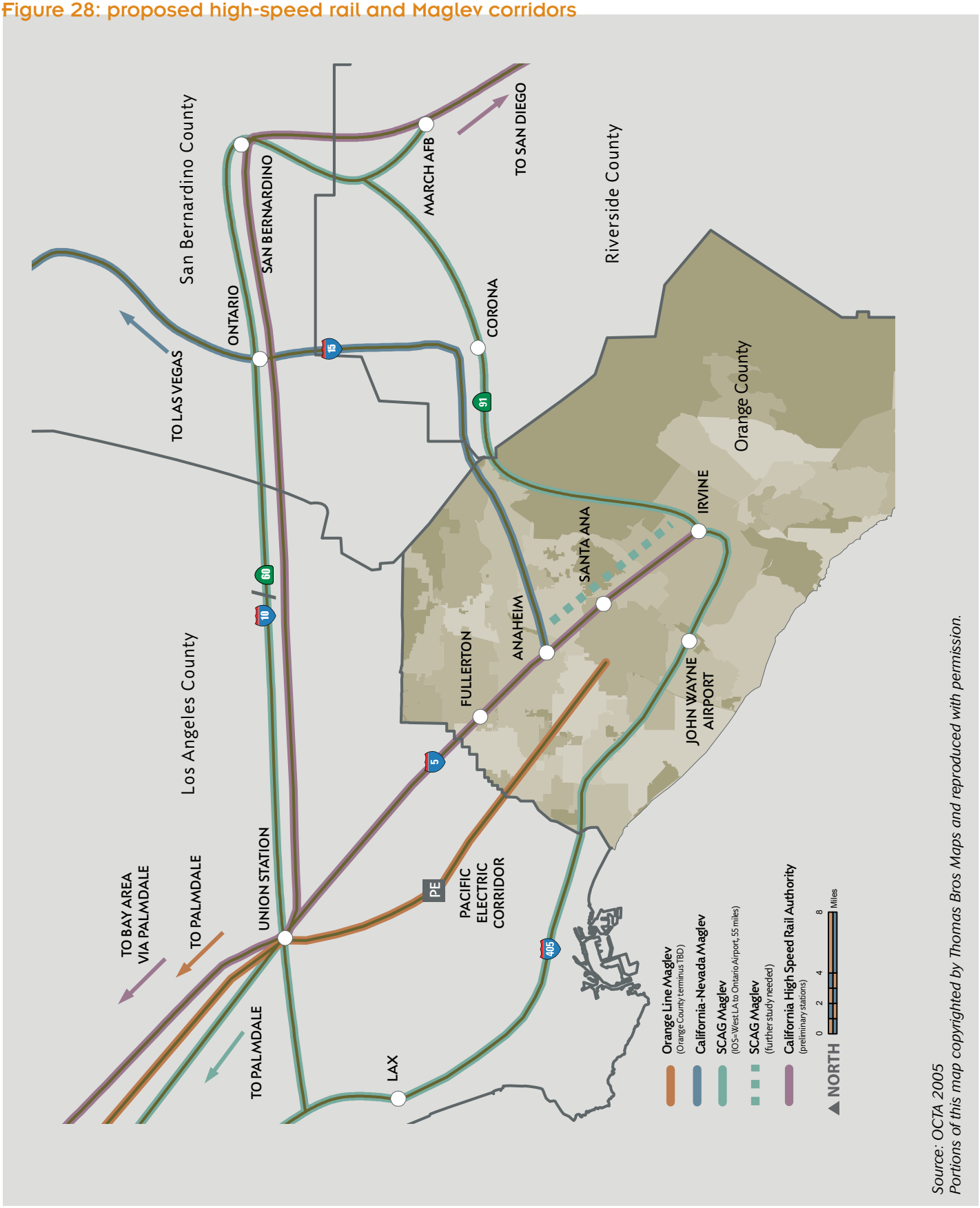
Orange County may have a regional transit center by the time any of the above services are in operation. This regional transit center would serve as a connecter between these long-distance services and more local transit services. Possible sites for this regional transit center are in Anaheim, near the current Metrolink station, and the ITC.

Figure 27: high speed rail and Maglev systems proposed for Orange County

System	Weekday Ridership Est. 2025	Distance (miles)	Stations	Capital Cost (year 2000 $)	OC Part of Initial System
California High-Speed Rail Authority	150,000 to 230,000	700	Union Station, Norwalk and O.C. stations: Anaheim, Irvine, and maybe, Fullerton	$33-37 Billion (statewide)	TBD, proposed legislation has the initial operating segment (IOS) in the Bay Area
Orangeline Maglev	55,300	33-100	Union Station to Orange County (terminus to be determined), and perhaps, Palmdale	$3.6-$11 Billion	Depends on use of ROW by OCTA
LAX-Orange County Maglev	147,000	87	Union Station, West Los Angeles, LAX, Carson, Long Beach Airport (or I-405 Blue Line Station), Seal Beach, Huntington Beach, John Wayne Airport (JWA), Anaheim, Santa Ana, and Irvine Transportation Center (ITC)	$8.4 Billion	TBD
Anaheim-Ontario Maglev	39,000	32	Anaheim, Ontario International Airport	$2.8 Billion	N/A (LV-Primm is the IOS)

Ridership projections were provided by each respective sponsor agency.

Figure 28: proposed high-speed rail and Maglev corridors



Source: OCTA 2005
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Transportation-related environmental improvements

Bus fleet replacement

OCTA is continuously seeking ways to help improve Orange County's air quality. Therefore, OCTA is replacing the entire large bus fleet with Compressed Natural Gas (CNG) buses. The new CNG buses will be similar in design to OCTA's existing fleet of 40-foot New Flyer diesel buses, but will run on clean-burning compressed natural gas. The buses will be able to travel approximately 400 miles between re-fueling. Twenty-four of the first 50 CNG buses are proposed for the Bus Rapid Transit service on Harbor Boulevard, which is scheduled to begin service in 2008.

Remaining concerns

Even after the above projects are implemented, there will still be challenges facing Orange County concerning the quality of the environment. For example, storm water runoff is a major pollutant of our coastal waters and ground water. While these projects may help to limit increases in environmental impacts, more aggressive programs are needed to improve certain environmental conditions, such as those in the areas impacted by storm water runoff.

Strategies for success

Given the physical constraints of the freeway system and the maturing of the managed lane network, the future program of freeway projects must focus on balancing improvements throughout the County, getting the most out of the existing system, and minimizing right-of-way impacts. Strategies for increasing freeway capacity include:

- expand freeway capacity within existing right-of-way, to the extent possible;
- fix chokepoints or operational constraints that prevent the existing freeway system from attaining its designed throughput;
- complete the carpool/transitway system to maximize the person carrying capacity of the freeways;
- balance improvements throughout the freeway network, so that traffic is smoothed countywide for a consistently acceptable level of service;
- continue to work with neighboring counties on inter-county travel solutions; and
- reduce incident- or construction-related traffic congestion by continuing to provide Freeway Service Patrol on Orange County freeways.

"Adding capacity, maximizing the existing system, expanding service and maintaining the network are hallmarks of the Long-Range Transportation Plan."

Maintaining the existing roadway system, and providing for future roadway travel demand, requires concerted efforts on multiple fronts. The strategies for sustaining a high quality roadway network include:

- expand street capacity within existing right-of-way, to the extent possible, including completing the Master Plan of Arterial Highways;
- implement creative alternatives to road widening, working with Orange County cities and the County of Orange, in order to increase capacity when land use or physical constraints prevent build out of the ultimate MPAH-planned lanes;
- maximize the use of the existing street system by using a regional or corridor approach;
- employ technology wherever possible to improve operations, such as signal synchronization; and
- continue investment in pavement maintenance to ensure roadways remain in good condition, last longer, and are less expensive to maintain over time.

To accomplish our transit goals of improving service and adding riders, the following strategies will be used:

- improve bus frequency, thereby reducing headways on major routes within the core service area, including those zones with the highest transit demand;
- expand local bus service into areas outside the urbanized core;
- accomodate Orange County's growing and aging population
- implement new Bus Rapid Transit routes;
- expand Express Bus service routes;
- increase rail feeder service to complement anticipated increases in Metrolink rail service; and
- increase speed, reliability, and frequency of commuter rail service through improved infrastructure (i.e.; adding rail track, building new strategically located stations, adding more daily and reverse service trains, and increasing parking supply at Metrolink stations).

The condition of the environment has a significant impact on the quality of life that can be offered to Orange County's residents, workers, and visitors. The following strategies help to ensure that environmental conditions within the County will not only be maintained, but see an overall improvement:

- continue to maintain and improve existing facilities;
- use Intelligent Transportation Systems (ITS) to increase the efficiency of existing facilities;
- continue to expand transit options;
- support the growth of the regional bikeway system and pedestrian walkways;
- continue to comply with federal, state, and local regulations;
- implement a storm water runoff program above and beyond the existing mitigation measures required by federal, state, and local governments;
- coordinate with local environmental organizations to develop an innovative environmental mitigation program for use with future freeway improvements.

With the existing conditions and future needs as a backdrop, along with these strategies for meeting our needs, OCTA tested different combinations of improvements — or alternatives — to see how they perform compared with a baseline set of projects. This alternative comparison is described in the following chapter.

THE PLAN

How do we best maintain the current system? Where are the most strategic locations to expand facilities and add service? When is it more effective to modify operations, improve connectivity between services and facilities, or make minor changes to improve capacity? Is it feasible to use technology to increase traffic flow or to improve service?

Asking questions like these helps OCTA formulate a cost-effective long-range plan that accomplishes the long-term goals for future transportation in Orange County. Accordingly, OCTA developed a set of alternatives that were assessed as part of the planning process. Each alternative identifies additional revenue sources; thereby allowing the projects presented in any single alternative to be added to preceding alternatives' proposed projects. While each alternative strives to meet the established goals and objectives, this document recommends a preferred plan that best accomplishes these. This recommended Plan requires a 30-year renewal of Measure M, Orange County's half-cent sales tax. The following pages present these alternatives.

Baseline (no project)

The Baseline is our starting point. It is comprised of projects or services that have secured funding. The Baseline includes the set of Orange County projects that are in the Regional Transportation Improvement Program or "RTIP," the Southern California region's six-year capital programming document that has been adopted by the Southern California Association of Governments (SCAG), as well as other locally funded projects. In essence, the Baseline is a "No Project" alternative, being made up of projects that would occur if no preferred Long-Range Transportation Plan was approved.

The Baseline includes the following major projects:

Freeways

- Widening and improvements on the I-5 North from SR-91 to the Los Angeles County Line
- Widening of the SR-22 from SR-55 to I-605; and interchange improvements, including Magnolia Avenue
- Auxiliary Lanes on I-405 from Magnolia Avenue to Beach Boulevard and from SR-133 to Jeffrey Road
- On SR-73, add one HOV lane in each direction between I-405 and MacArthur Boulevard
- Completion of the southern portion of the Foothill Transportation Corridor and widening of the toll road system to its planned width (Eastern/Foothill Transportation Corridor Agency Project)

Roadways

- Widening of Bristol Street

Transit

- Initiation of a Bus Rapid Transit program on the Harbor, Westminster, and 28-Mile (Brea-Irvine) lines
- Expanded Metrolink service to provide frequent, all day service between Fullerton and Laguna Niguel

"Baseline projects are derived from regionally-approved financial plans."

Figure 29: Baseline 2030 congestion levels freeways and roadways

North County

South County

LEGEND

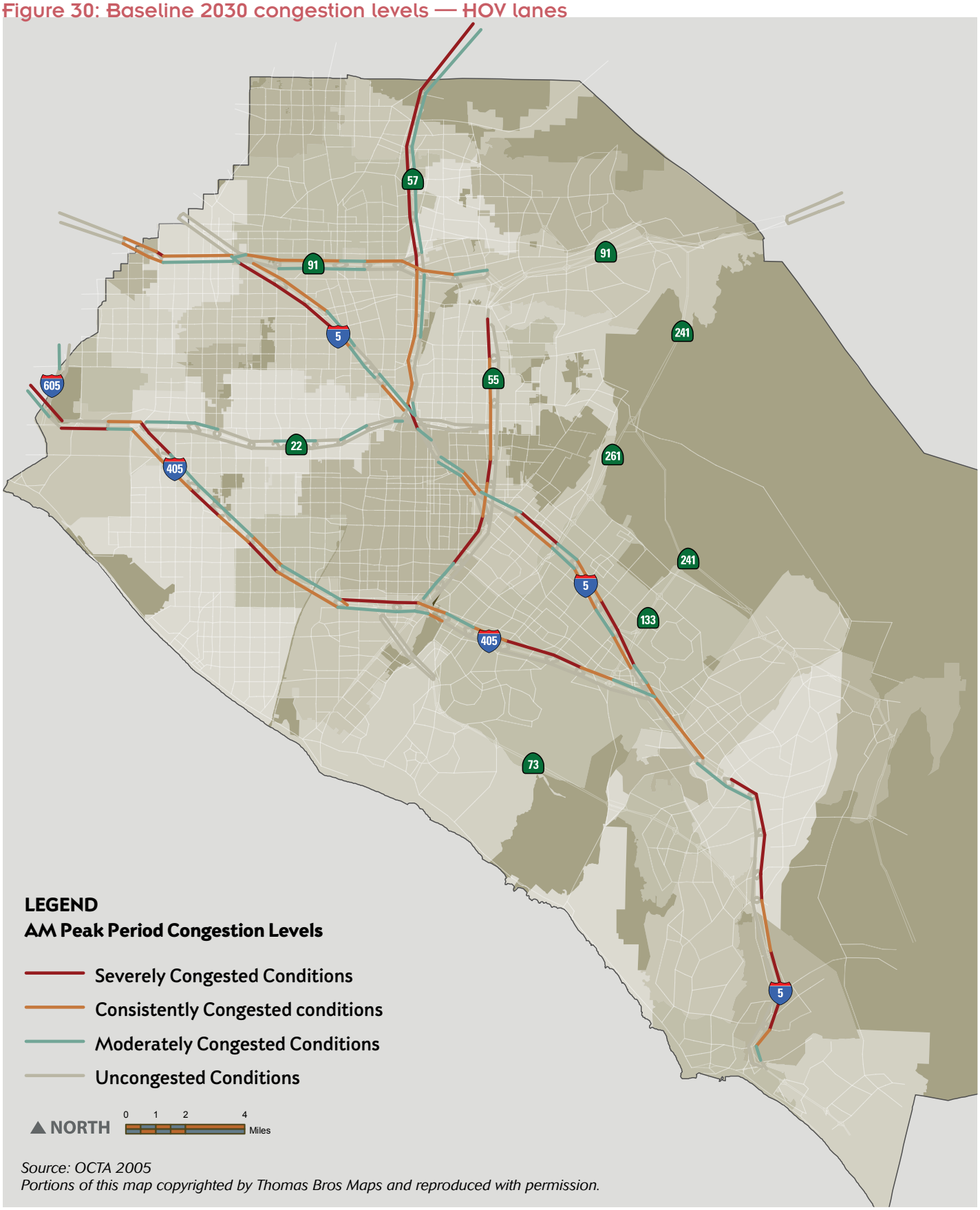
AM Peak Period Congestion Levels

- Severely Congested Conditions
- Consistently Congested Conditions
- Moderately Congested Conditions
- Uncongested Conditions
- SR-91 Express Lanes (dashed line)

NORTH

0 2 4 8 Miles

Figure 30: Baseline 2030 congestion levels — HOV lanes



Source: OCTA 2005
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Constrained Alternative

The Constrained Alternative is a set of projects and services that can be carried out within Orange County's traditional revenue sources for transportation improvements. It assumes that the current Measure M one half-cent sales tax sunsets in 2011. The improvements in the Constrained Alternative include the following major projects, in addition to the Baseline projects mentioned previously.

Freeways

- On the I-405, add HOV lanes between SR-22 and I-605, and add auxiliary lanes and replace the bridges from Euclid Avenue to Magnolia Avenue
- On the SR-91, widen from SR-241 to SR-71
- Construction of HOV drop ramps and HOV connectors on I-405 (Bear Street drop ramps, Von Karman Avenue drop ramps, a connector to SR-73, and a connector to I-605), SR-22 (connector to I-405), SR-55 (Alton Parkway drop ramps), and SR-57 (Cerritos Avenue drop ramps)
- Accelerate capacity improving projects on the Eastern Transportation Corridor (SR-133, SR-241, and SR-261)
- On the I-5, widen from SR-57 to SR-91; improve access from Crown Valley Parkway to Avery Parkway; and improve interchanges at the El Toro "Y" area (Barranca and Alicia Parkways), Culver Drive, Oso Parkway, Avenida Pico, Camino Capistrano, and Stonehill Drive (southbound)
- Continue to operate Freeway Service Patrol to 2010
- Fix future major chokepoints
- Continue maintenance and operations efforts

Roadways

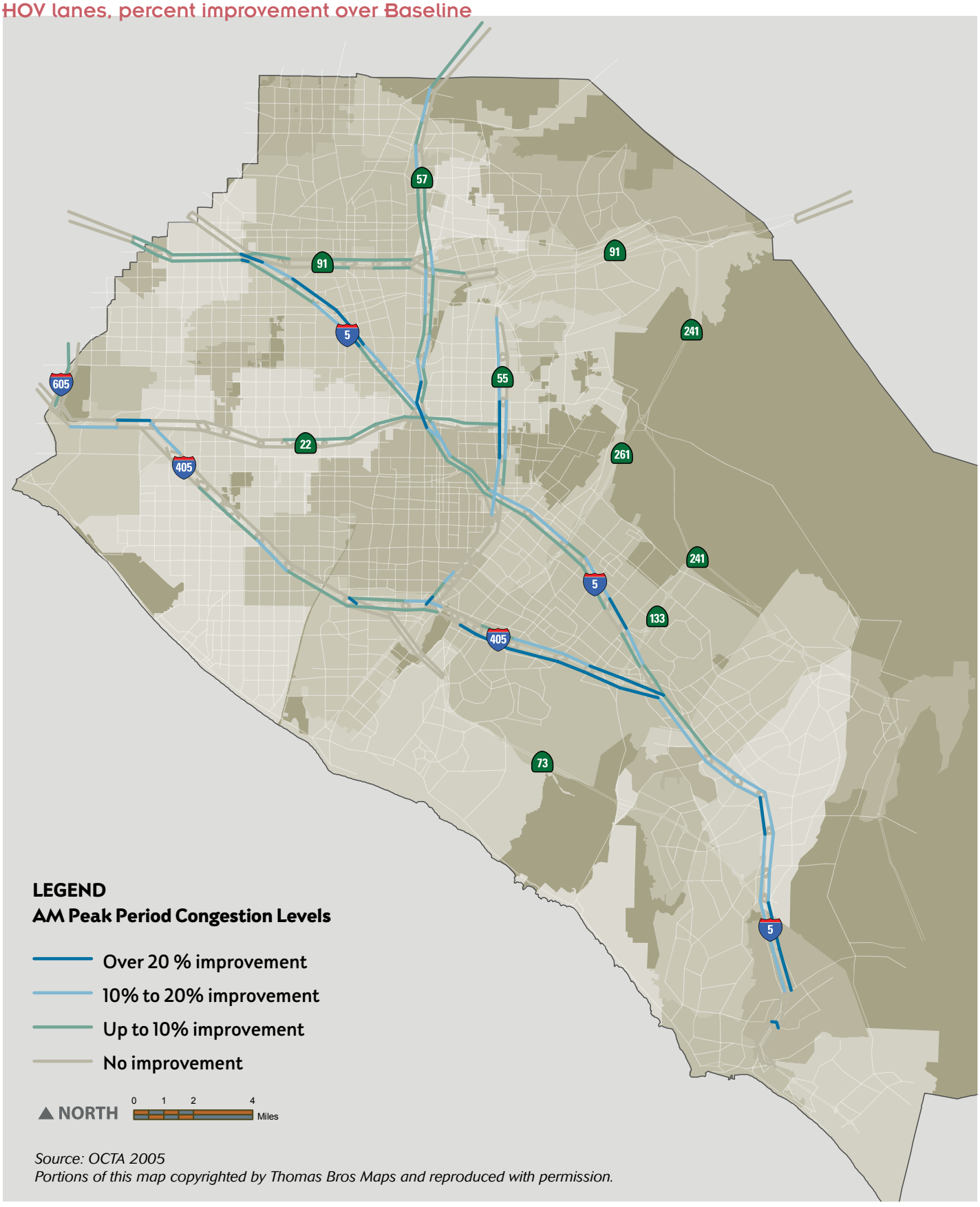
- Street maintenance with available funds
- Completion of Measure M roadway projects
- Implementation of developer fee-funded roadway projects
- Limited street widening with available funds

Transit

- Expanded countywide bus service, including express buses
- Expansion of the Bus Rapid Transit program on Orange County roadways

"The Constrained Alternative is limited to traditional funding sources."

Figure 31: Constrained Alternative 2030 congestion levels HOV lanes, percent improvement over Baseline



Source: OCTA 2005
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Figure 32: Constrained Alternative 2030 congestion levels — freeways and roadways, percent improvement over Baseline

North County

South County

LEGEND
AM Peak Period Congestion Levels

- Over 20% Improvement
- 10% to 20% Improvement
- Up to 10% Improvement
- No Improvement
- SR-91 Express Lanes

NORTH

0 2 4 8 Miles

Balanced Plan

The Balanced Plan provides greater improvement to the transportation system. It includes projects and services that can be implemented with a higher level of investment, which is achieved if the traditional funds are supplemented with a 30-year, voter-approved extension of Measure M, the local one half-cent transportation sales tax, beyond 2011. The Balanced Plan includes the projects in the Baseline and Constrained Alternatives, and adds the major improvements listed below. The projects added by the Balanced Plan constitute the proposed program of projects for the extension of Measure M.

Freeways

Santa Ana Freeway (I-5) Improvements between Costa Mesa Freeway (SR-55) and "Orange Crush" Area (SR-57)

Reduce freeway congestion through improvements at the SR-55/I-5 interchange area between the Fourth Street and Newport Boulevard ramps on I-5, and between Fourth Street and Edinger Avenue on SR-55. Also, add capacity on I-5 between SR-55 and SR-57 to relieve congestion at the "Orange Crush". The project will generally be constructed within the existing right-of-way. Specific improvements will be subject to approved plans developed in cooperation with local jurisdictions and affected communities.

The project will increase freeway capacity and reduce congestion. The current daily traffic volume on this segment of the I-5 between SR-55 and SR-57 is about 389,000. The demand is expected to grow by more than 19 percent by 2030, bringing the daily usage to 464,000 vehicles per day. Regional plans also include additional improvements on I-5 from the "Orange Crush" to SR-91 using federal and state funds.

Santa Ana Freeway (I-5) Improvements from the Costa Mesa Freeway (SR-55) to El Toro "Y" Area

Build new lanes and improve the interchanges in the area between SR-55 and the SR-133 (near the El Toro "Y"). This segment of I-5 is the major route serving activity areas in the cities of Irvine, Tustin, Santa Ana and north Orange County. The project will also make improvements at local interchanges, such as Jamboree Road. The project will generally be constructed within the existing right-of-way. Specific improvements will be subject to approved plans developed in cooperation with local jurisdictions and affected communities.

The project will increase freeway capacity and reduce congestion. The current traffic volume on this segment of I-5 is about 356,000 vehicles per day and is expected to increase by nearly 24 percent, bringing it up to 440,000 vehicles per day. In addition to the projects described above, regional plans include additional improvements to this freeway at local interchanges, such as Culver Drive, using federal and state funds.

San Diego Freeway (I-5) Improvements South of the El Toro "Y"

Add new lanes to I-5 from the vicinity of the El Toro Interchange in Lake Forest to the vicinity of SR-73 in Mission Viejo. Also add new lanes on I-5 between Coast Highway and Avenida Pico interchanges to reduce freeway congestion in San Clemente. The project will also make major improvements at local interchanges. The project will generally be constructed within the existing right-of-way. Specific improvements will be subject to approved plans developed in cooperation with local jurisdictions and affected communities.

The project will increase freeway capacity and reduce congestion. Current traffic volume on I-5 near the El Toro "Y" is about 342,000 vehicles per day. This volume will increase in the future by 35 percent, bringing it up to 460,000 vehicles per day. Regional plans also include construction of a new freeway access point between Crown Valley Parkway and Avery Parkway as well as new off ramps at Stonehill Drive using federal and state funds.

Santa Ana Freeway/San Diego Freeway (I-5) Local Interchange Upgrades

Update and improve key I-5 interchanges such as Avenida Pico, Ortega Highway, Avery Parkway, La Paz Road, El Toro Road, and others to relieve street congestion around older interchanges and

"The Balanced Plan has more funds to work with and achieves a higher level of improvement."

on ramps. Specific improvements will be subject to approved plans developed in cooperation with local jurisdictions and affected communities.

In addition to the project described above, regional plans also include improvements to the local interchanges at Camino Capistrano, Oso Parkway, Alicia Parkway and Barranca Parkway using federal and state funds.

Garden Grove Freeway (SR-22) Local Interchange Upgrades

Construct interchange improvements at Euclid Street, Brookhurst Street and Harbor Boulevard to reduce freeway and street congestion near these interchanges. Specific improvements will be subject to approved plans developed in cooperation with local jurisdictions and affected communities.

Regional plans also include the construction of new freeway-to-freeway carpool ramps to the SR-22/I-405 interchange, and improvements to the local interchange at Magnolia Avenue using federal and state funds.

Costa Mesa Freeway (SR-55) Improvements

Add new lanes to SR-55 between Garden Grove Freeway (SR-22) and the San Diego Freeway (I-405), generally within existing right-of-way, including merging lanes between interchanges to smooth traffic flow. This project also provides for freeway operational improvements for the portion of SR-55 between SR-91 and SR-22. The project will generally be constructed within the existing right-of-way. Specific improvements will be subject to approved plans developed in cooperation with local jurisdictions and affected communities.

The project will increase freeway capacity and reduce congestion. This freeway carries about 295,000 vehicles on a daily basis. This volume is expected to increase by nearly 13 percent, bringing it up to 332,000 vehicles per day in the future. In addition to the projects described above, regional plans also include a new street overcrossing and carpool ramps at Alton Avenue using federal and state funds.

Orange Freeway (SR-57) Improvements

Build a new northbound lane between Orangewood Avenue and Lambert Road. Other projects include improvements to the Lambert interchange and the addition of a northbound truck climbing lane between Lambert and Tonner Canyon Road. The improvements will be designed and coordinated specifically to reduce congestion at SR-57/SR-91 interchange. These improvements will be made generally within existing right-ofway. Specific improvements will be subject to approved plans developed in cooperation with local jurisdictions and affected communities.

The project will increase freeway capacity and reduce congestion. The daily traffic volume on this freeway is about 315,000 vehicles. By 2030, this volume will increase by 15 percent, bringing it up to 363,000 vehicles per day. In addition to the project described above, regional plans include new carpool ramps at Cerritos Avenue using federal and state funds.

Riverside Freeway (SR-91) Improvements from the Santa Ana Freeway (I-5) to the Orange Freeway (SR-57)

Add capacity in the westbound direction and provide operational improvements at on and off ramps to the SR-91 between I-5 and the Orange Freeway (SR-57), generally within existing right-of-way, to smooth traffic flow and relieve the SR-57/SR-91 interchange. Specific improvements will be subject to approved plans developed in cooperation with local jurisdictions and affected communities.

The current daily freeway volume along this segment of SR-91 is about 256,000. By 2030, this volume is expected to increase by nearly 13 percent, bringing it up to 289,900 vehicles per day.

Riverside Freeway (SR-91) Improvements from Orange Freeway (SR-57) to the Costa Mesa Freeway (SR-55) Interchange Area

Improve the SR-91/SR-55 to SR-91/SR-57 interchange complex, including nearby local interchanges such as Tustin Avenue and Lakeview, as well as adding freeway capacity between SR-55 and SR-57. The project will generally

be constructed within the existing right-ofway. Specific improvements will be subject to approved plans developed in cooperation with local jurisdictions and affected communities.

Current freeway volume on this segment of the SR-91 is about 245,000 vehicles per day. This vehicular demand is expected to increase by 22 percent, bringing it up to 300,000 vehicles per day in the future.

Riverside Freeway (SR-91) Improvements from Costa Mesa Freeway (SR-55) to the Orange/Riverside County Line

This project adds capacity on SR-91 beginning at SR-55 and extending to I-15 in Riverside County.

The first priority will be to improve the segment of SR-91 east of SR-241. The goal is to provide up to four new lanes of capacity between SR-241 and Riverside County Line by making best use of available freeway property, adding reversible lanes, building elevated sections and improving connections to SR-241. These projects would be constructed in conjunction with similar coordinated improvements in Riverside County extending to I-15 and provide a continuous set of improvements between SR-241 and I-15. The portion of improvements in Riverside County will be paid for from other sources. Specific improvements will be subject to approved plans developed in cooperation with local jurisdictions and affected communities.

This project also includes improvements to the segment of SR-91 between SR-241 and SR-55. The concept is to generally add one new lane in each direction and improve the interchanges.

Today, this freeway carries about 314,000 vehicles every day. This volume is expected to increase by 36 percent, bringing it up to 426,000 vehicles by 2030.

San Diego Freeway (I-405) Improvements between the I-605 Freeway in Los Alamitos area and Costa Mesa Freeway (SR-55)

Add new lanes to the San Diego Freeway between I-605 and SR-55, generally within the existing rightof- way. The project will make best use of available freeway property, update interchanges and widen all local overcrossings according to city and regional master plans. The improvements will be coordinated with other planned I-405 improvements in the I-405/SR-22/I-605 interchange area to the north and I-405/SR-73 improvements to the south. The improvements will adhere to recommendations of the Interstate 405 Major Investment Study (as adopted by the Orange County Transportation Authority Board of Directors on October 14, 2005) and will be developed in cooperation with local jurisdictions and affected communities.

Today, I-405 carries about 430,000 vehicles daily. The volume is expected to increase by nearly 23 percent, bringing it up to 528,000 vehicles daily by 2030. The project will increase freeway capacity and reduce congestion. Near-term regional plans also include the improvements to the I-405/SR-73 interchange as well as a new carpool interchange at Bear Street using federal and state funds.

San Diego Freeway (I-405) Improvements between Costa Mesa Freeway (SR-55) and Santa Ana Freeway (I-5)

Add new lanes to the freeway from SR-55 to the I-5. The project will also improve chokepoints at interchanges and add merging lanes near on/off ramps such as Lake Forest Drive, Irvine Center Drive and SR-133 to improve the overall freeway operations in the I-405/I-5 El Toro "Y" area. The projects will generally be constructed within the existing right-of-way. Specific improvements will be subject to approved plans developed in cooperation with local jurisdictions and affected communities.

This segment of the freeway carries 354,000 vehicles a day. This number will increase by nearly 13 percent, bringing it up to 401,000 vehicles per day by 2030. The project will increase freeway capacity and reduce congestion. In addition to the projects described above, regional plans include a new carpool interchange at Von Karman Avenue using federal and state funds.

I-605 Freeway Access Improvements

Improve freeway access and arterial connection to I-605 serving the communities of Los Alamitos and Cypress. The project will be coordinated with other planned improvements along SR-22 and I-405. Specific improvements will be subject to approved plans developed in cooperation with local jurisdictions and affected communities.

Regional plans also include the addition of new freeway-to-freeway carpool ramps to the I-405/I-605 interchange using federal and state funds. This improvement will connect to interchange improvements at I-405 and SR-22 as well as new freeway lanes between I-405 and I-605.

Innovative Environmental Mitigation

A minimum of 5% of the total cost for freeway projects and programs included in the Balanced Plan will be available, subject to a Master Agreement, to provide for comprehensive, rather than piecemeal, mitigation of the environmental impacts of freeway improvements. Using a proactive, innovative approach, the Master agreement negotiated between the Orange County Local Transportation Authority and state and federal resource agencies will provide higher-value environmental benefits such as streamlined project approvals for the freeway program as a whole.

Freeway projects will also be planned, designed, and constructed with consideration for their aesthetic, historical and environmental impacts on nearby properties and communities using such elements as parkway style designs, locally native landscaping, sound reduction, and aesthetic treatments that complement the surroundings.

Freeway Service Patrol

The Freeway Service Patrol (FSP) provides competitively bid, privately contracted tow truck service for motorists with disabled vehicles on the freeway system. This service helps stranded motorists and quickly clears disabled vehicles out of the freeway lanes to minimize congestion caused by vehicles blocking traffic and passing motorists rubbernecking.

Figure 33: Balanced Plan freeway costs

Freeway	Freeway Project (Project Limits)	Cost (in Millions)
I-5	SR-55 to SR-57	$470.0
	SR-55 to El Toro 'Y' Area	$300.2
	El Toro Road to SR-73 Area	$627.0
	Key I-5 Interchanges	$258.0
SR-22	Key SR-22 Interchanges	$120.0
SR-55	SR-91 to I-405	$366.0
SR-57	Katella Avenue to Lambert Road	$258.7
SR-91	I-5 to SR-57	$140.0
	SR-57 to SR-55	$416.5
	SR-55 to Riverside County Line	$925.0
I-405	I-605 to SR-55	$500.0
	SR-55 to I-5	$319.7
I-605	Key I-605 Intersections & Arterial Connections	$20.0
Freeway Programs		**Cost (in Millions)**
Freeway Service Patrol		$150.0
Total Cost for Freeway Projects and Programs		**$4,871.1**

Currently Freeway Service Patrol is available on Orange County freeways Monday through Friday during peak commuting hours. This project would assure that this basic level of service could be continued through 2041. As demand and congestion levels increase, this project would also permit service hours to be extended throughout the day and into the weekend.

Roadways

Regional Capacity Program

This program, in combination with local matching funds, provides a funding source to complete the Orange County Master Plan of Arterial Highways (MPAH). The program also provides for intersection improvements and other projects to help improve street operations and reduce congestion. The program allocates funds through a competitive process and targets projects that help traffic the most by considering factors such as degree of congestion relief, cost effectiveness, project readiness, etc.

Local jurisdictions must provide a dollar-for-dollar match to qualify for funding, but can be rewarded with lower match requirements if they give priority to other key objectives, such as better road maintenance and regional signal synchronization.

Roughly 1,000 miles of new street lanes remain to be completed, mostly in the form of widening existing streets to their ultimate planned width. Completion of the system will result in a more even traffic flow and efficient system.

Another element of this program is funding for construction of railroad over or underpass grade separations where high volume streets are impacted by freight trains along the Burlington Northern Santa Fe railroad in northern Orange County.

Synchronize Traffic Signals Across Jurisdictions

This program targets over 2,000 signalized intersections across the County for coordinated operation. The goal is to improve the flow of traffic, and reduce auto emissions, by developing and implementing regional signal synchronization programs that cross jurisdictional boundaries.

Most traffic signal synchronization programs today are limited to segments of roads or individual cities and agencies. For example, signals at intersections of freeways with arterial streets are controlled by Caltrans, while nearby signals at local street intersections are under the control of cities. This results in the street system operating at less than maximum efficiency. When completed, this project can increase the capacity of the street grid and reduce the delay by over six million hours annually.

To ensure that this program is successful, cities, the County of Orange and Caltrans will be required to work together and prepare a common traffic signal synchronization plan and the necessary governance and legal arrangements before receiving funds. In addition, cities will be required to provide 20 percent of the costs. Once in place, the program will provide funding for ongoing maintenance and operation of the synchronization plan. Local jurisdictions will be required to publicly report on the performance of their signal synchronization efforts at least every three years. Signal equipment to give emergency vehicles priority at intersections will be an eligible expense for projects implemented as part of this program.

Local Fair Share Program

This element of the program will provide flexible funding to help cities and the County of Orange keep up with the rising cost of repairing the aging street system. In addition, cities can use these funds for other local transportation needs such as residential street projects, traffic and pedestrian safety near schools, signal priority for emergency vehicles, etc.

This program is intended to augment, rather than replace, existing transportation expenditures and therefore cities must meet the following requirements to receive the funds.

1. Continue to invest General Fund monies (or other local discretionary monies) for transportation and annually increase this commitment to keep pace with inflation.
2. Agree to use Measure M funds for transportation purposes only, subject to full repayment and a loss of funding eligibility for five years for any misuse.
3. Agree to separate accounting for Measure M funds and annual reporting on actual Measure M expenditures.
4. Develop and maintain a Pavement Management Program to ensure timely street maintenance and submit regularpublic reports on the condition of streets.
5. Annually submit a six-year Capital Improvement Program and commit to spend Measure M funds within three years of receipt.
6. Agree to assess traffic impacts of new development and require that new development pay a fair share of any necessary transportation improvements.
7. Agree to plan, build and operate major streets consistent with the countywide Master Plan of Arterial Highways to ensure efficient traffic flow across city boundaries.
8. Participate in Traffic Forums with neighboring jurisdictions to facilitate the implementation and maintenance of traffic signal synchronization programs and projects. This requires cities to balance local traffic policies with neighboring cities — for selected streets — to promote more efficient traffic circulation overall.
9. Agree to consider land use planning strategies that are transit-friendly, support alternative transportation modes including bike and pedestrian access and reduce reliance on the automobile.

The funds under this program are distributed to cities and the County of Orange by formula once the cities have fulfilled the above requirements. The formula will account for population, street mileage and amount of sales tax collected in each jurisdiction.

Transit

High Frequency Metrolink Service

This project will increase rail services within the county and provide frequent Metrolink service north of Fullerton to Los Angeles. The project will provide for track improvements, more trains, and other related needs to accommodate the expanded service.

This project is designed to build on the successes of Metrolink and complement service expansion made possible by the current Measure M. The service will include upgraded stations and added parking capacity; safety improvements and quiet zones along the tracks; and frequent shuttle service and other means, to move arriving passengers to nearby destinations.

The project also includes funding for improving grade crossings and constructing over or underpasses at high volume arterial streets that cross the Metrolink tracks.

Figure 34: Balanced Plan roadway costs

Roadway Programs	**Cost (in Millions)**
Regional Capacity	$1,132.8
Traffic Signal Synchronization	$453.1
Flexible Local Funding	$2,039.1
Total Cost for Roadway Programs	**$3,625.0**

Transit Extensions to Metrolink

Frequent service in the Metrolink corridor provides a high capacity transit system linking communities within the central core of Orange County. This project will establish a competitive program for local jurisdictions to broaden the reach of the rail system to other activity centers and communities. Proposals for extensions must be developed and supported by local jurisdictions and will be evaluated against well-defined and well-known criteria as follows:

- Traffic congestion relief
- Project readiness, with priority given to projects that can be implemented within the first five years of the Plan
- Local funding commitments and the availability of right-of-way
- Proven ability to attract other financial partners, both public and private
- Cost-effectiveness
- Proximity to jobs and population centers
- Regional as well as local benefits
- Ease and simplicity of connections
- Compatible, approved land uses
- Safe and modern technology
- A sound, long-term operating plan

This project shall not be used to fund transit routes that are not directly connected to or that would be redundant to the core rail service on the Metrolink corridor. The emphasis shall be on expanding access to the core rail system and on establishing connections to communities and major activity centers that are not immediately adjacent to the Metrolink corridor. It is intended that multiple transit projects be funded through a competitive process and no single project may be awarded all of the funds under this program.

These connections may include a variety of transit technologies such as conventional bus, bus rapid transit or high capacity rail transit systems as long as they can be fully integrated and provide seamless transition for the users.

Convert Metrolink Station(s) to Regional Gateways that Connect Orange County with High-Speed Rail Systems

This program will provide the local improvements that are necessary to connect planned future high-speed rail systems to stations on the Orange County Metrolink route.

The State of California is currently planning a high-speed rail system linking northern and southern California. One line is planned to terminate in Orange County. In addition, several magnetic levitation (MAGLEV) systems that would connect Orange County to Los Angeles and San Bernardino Counties, including a link from Anaheim to Ontario airport, are also being planned or proposed by other agencies.

Expand Mobility Choices for Seniors and Persons with Disabilities

This project will provide services and programs to meet the growing transportation needs of seniors and persons with disabilities as follows:

- One percent of net revenues will stabilize fares and provide fare discounts for bus services, specialized ACCESS services and future rail services
- One percent of net revenues will be available to continue and expand local community van service for seniors through the existing Senior Mobility Program
- One percent will supplement existing countywide senior non-emergency medical transportation services

Over the next 30 years, the population age 65 and over is projected to increase by 93 percent. Demand for transit and specialized transportation services for seniors and persons with disabilities is expected to increase proportionately.

Community Based Transit/Circulators

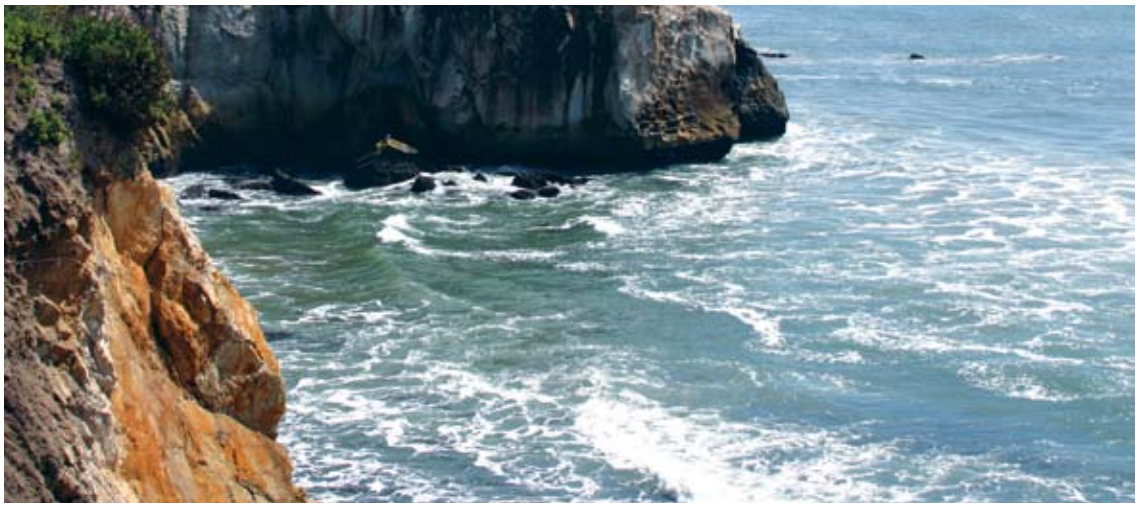
This project will establish a competitive program for local jurisdictions to develop local bus transit services such as community based circulators, shuttles and bus trolleys that complement regional bus and rail services, and meet needs in areas not adequately served by regional transit. Projects will need to meet performance criteria for ridership, connection to bus and rail services, and financial viability to be considered for funding. All projects must be competitively bid, and they cannot duplicate or compete with existing transit services.

Safe Transit Stops

This project provides for passenger amenities at 100 busiest transit stops across the County. The stops will be designed to ease transfer between bus lines and provide passenger amenities such as improved shelters, lighting, current information on bus and train timetables and arrival times, and transit ticket vending machines.

Figure 35: Balanced Plan transit costs

Transit Projects	**Cost (in Millions)**
High Frequency Metrolink Service	$1,014.1
Metrolink Gateways	$226.6
Community Based Transit/Circulators	$226.5
Transit Programs	**Cost (in Millions)**
High Capacity Transit Extensions to Metrolink	$1,000.0
Safe Transit Stops	$25.0
Expand Mobility Choices for Seniors and Persons with Disabilities	$339.8
Total Cost for Transit Projects and Programs	**$2,832.0**



Environmental Cleanup

Implement street and highway related water quality improvement programs and projects that will assist Orange County cities, the County of Orange and special districts to meet federal Clean Water Act standards for urban runoff. The Environmental Cleanup monies may be used for water quality improvements related to both existing and new transportation infrastructure, including capital and operations improvements such as:

- Catch basin screens, filters and inserts
- Roadside bioswales and biofiltration channels
- Wetlands protection and restoration
- Continuous Deflective Separation (CDS) units
- Maintenance of catch basins and bioswales
- Other street-related "Best Management Practices" for capturing and treating urban runoff

This program is intended to augment, not replace existing transportation related water quality expenditures and to emphasize high-impact capital improvements over local operations and maintenance costs. In addition, all new freeway, street and transit capital projects will include water quality mitigation as part of project scope and cost.

The Environmental Cleanup program is subject to the following requirements:

- Development of a comprehensive countywide capital improvement program for transportation related water quality improvements
- A competitive grant process to award funds to the highest priority, most cost-effective projects
- A matching requirement to leverage other federal, state and local funds for water quality improvements
- A maintenance of effort requirement to ensure that funds augment, not replace existing water quality programs
- Annual reporting on actual expenditures and an assessment of the water quality benefits provided
- A strict limit on administrative costs and a requirement to spend funds within three years of receipt
- Penalties for misuse of any of the Environmental Cleanup funds

Cost:

The estimated cost for the Environmental Cleanup program is $237.2 million. In addition, it is estimated that new freeway, road, and transit projects funded by the Renewed Measure M Transportation Investment Plan will include more than $165 million for mitigating water quality impacts.

Figure 36: Balanced Plan 2030 congestion levels freeways and roadways, percent improvement over Baseline

North County

South County

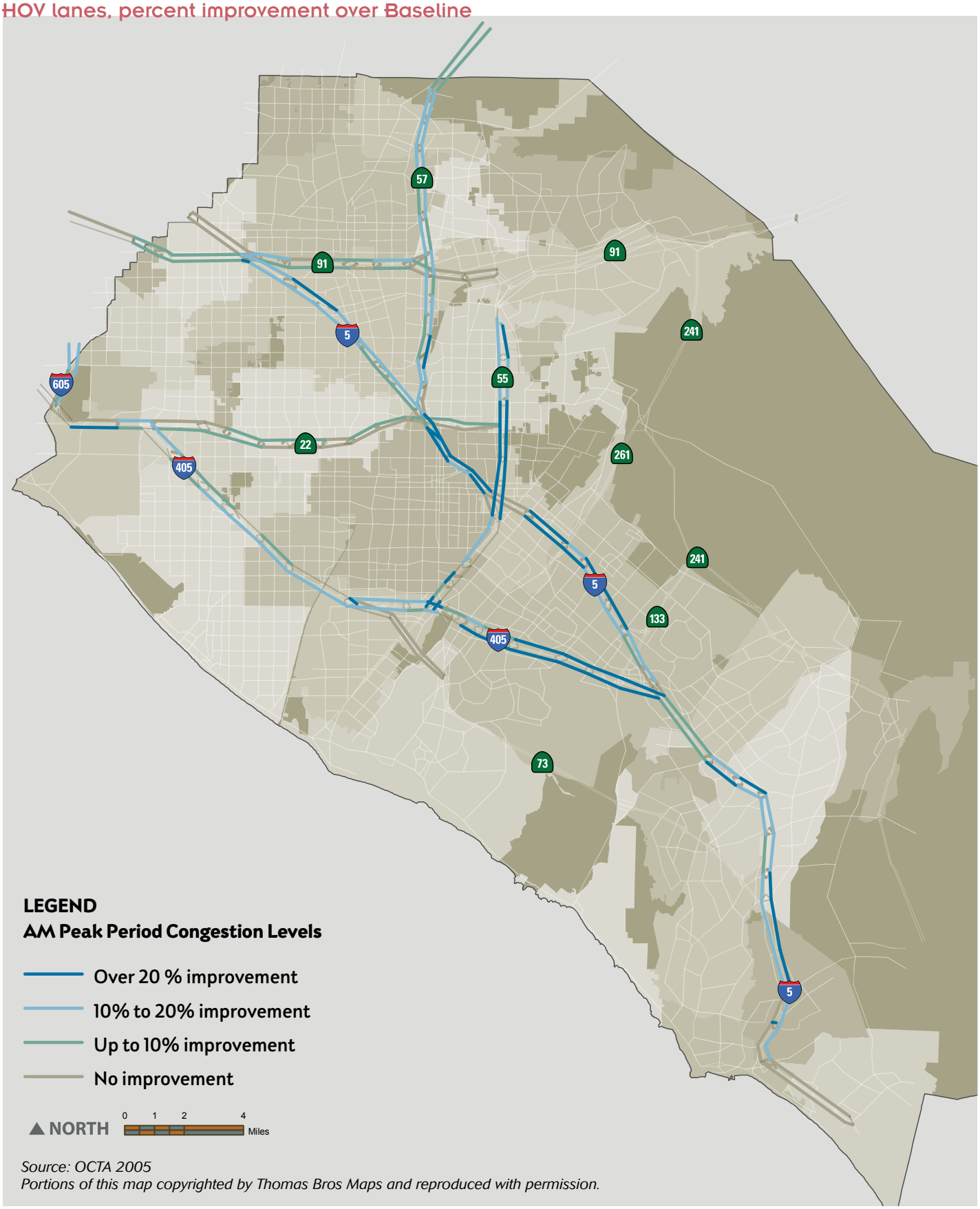
LEGEND
AM Peak Period Congestion Levels

- Over 20% Improvement
- 10% to 20% Improvement
- Up to 10% Improvement
- No Improvement
- SR-91 Express Lanes

NORTH

0 2 4 8 Miles

Figure 37: Balanced Plan 2030 congestion levels HOV lanes, percent improvement over Baseline



Source: OCTA 2005
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Figure 38: major freeway projects in Balanced Plan

Source: OCTA 2005
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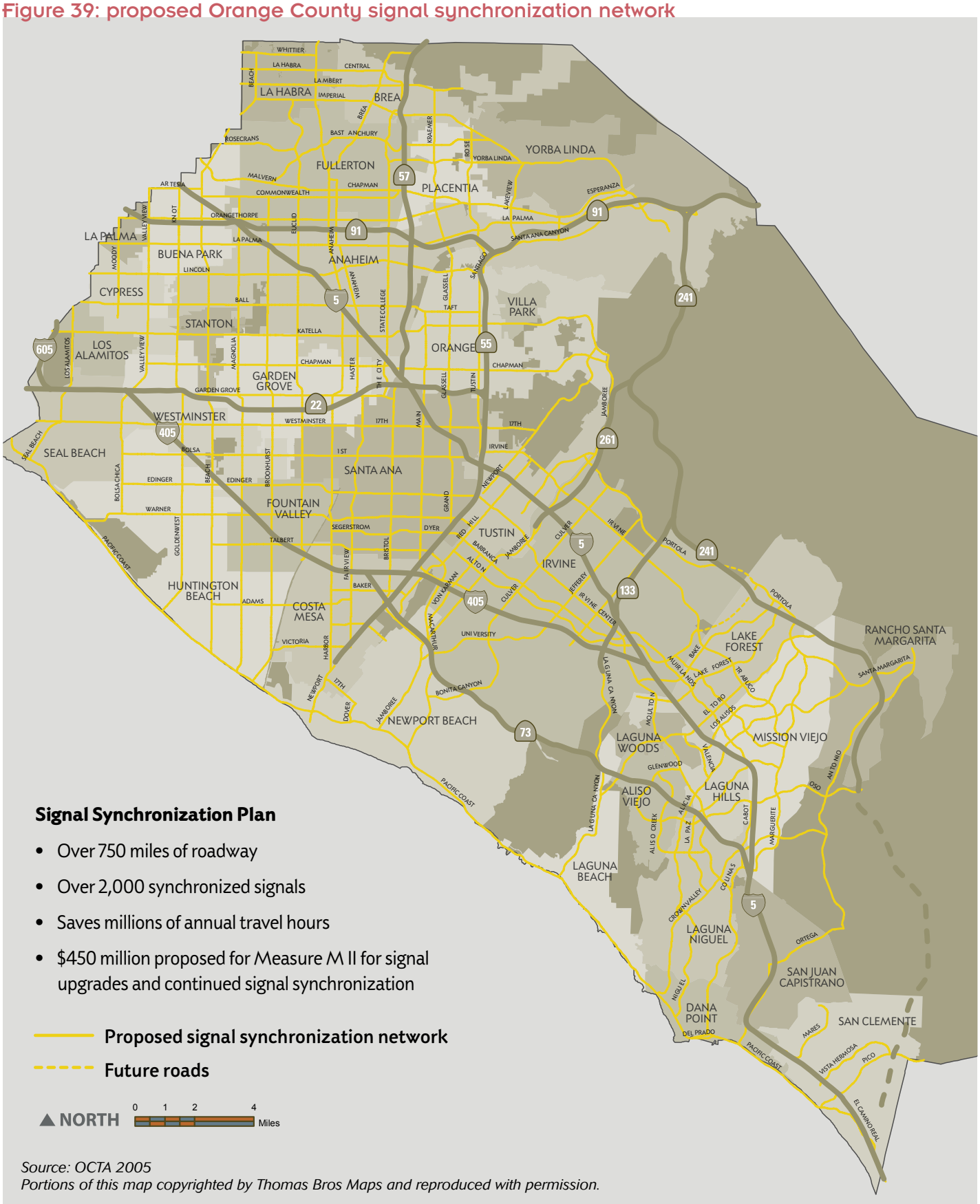
Figure 39: proposed Orange County signal synchronization network



Source: OCTA 2005
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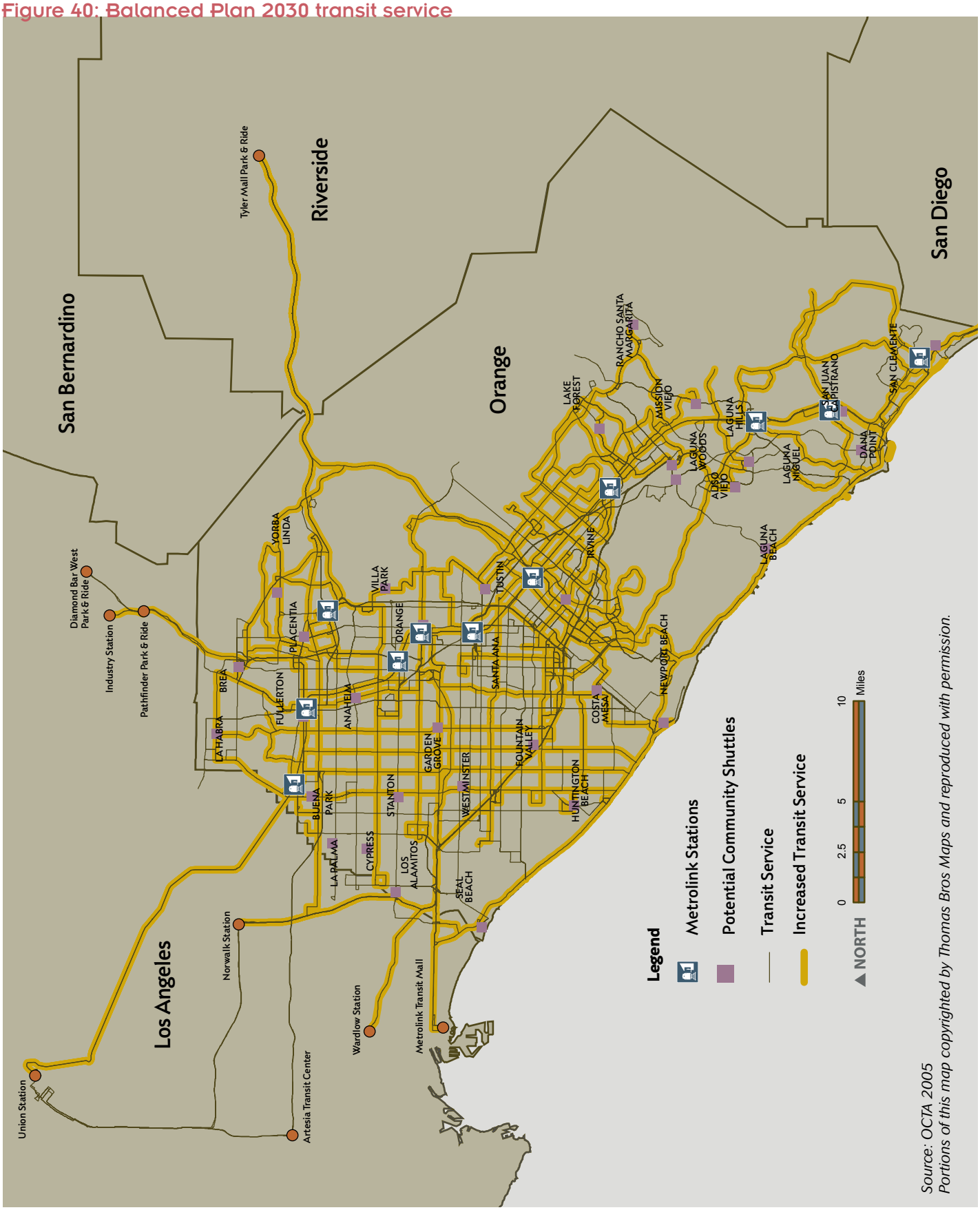
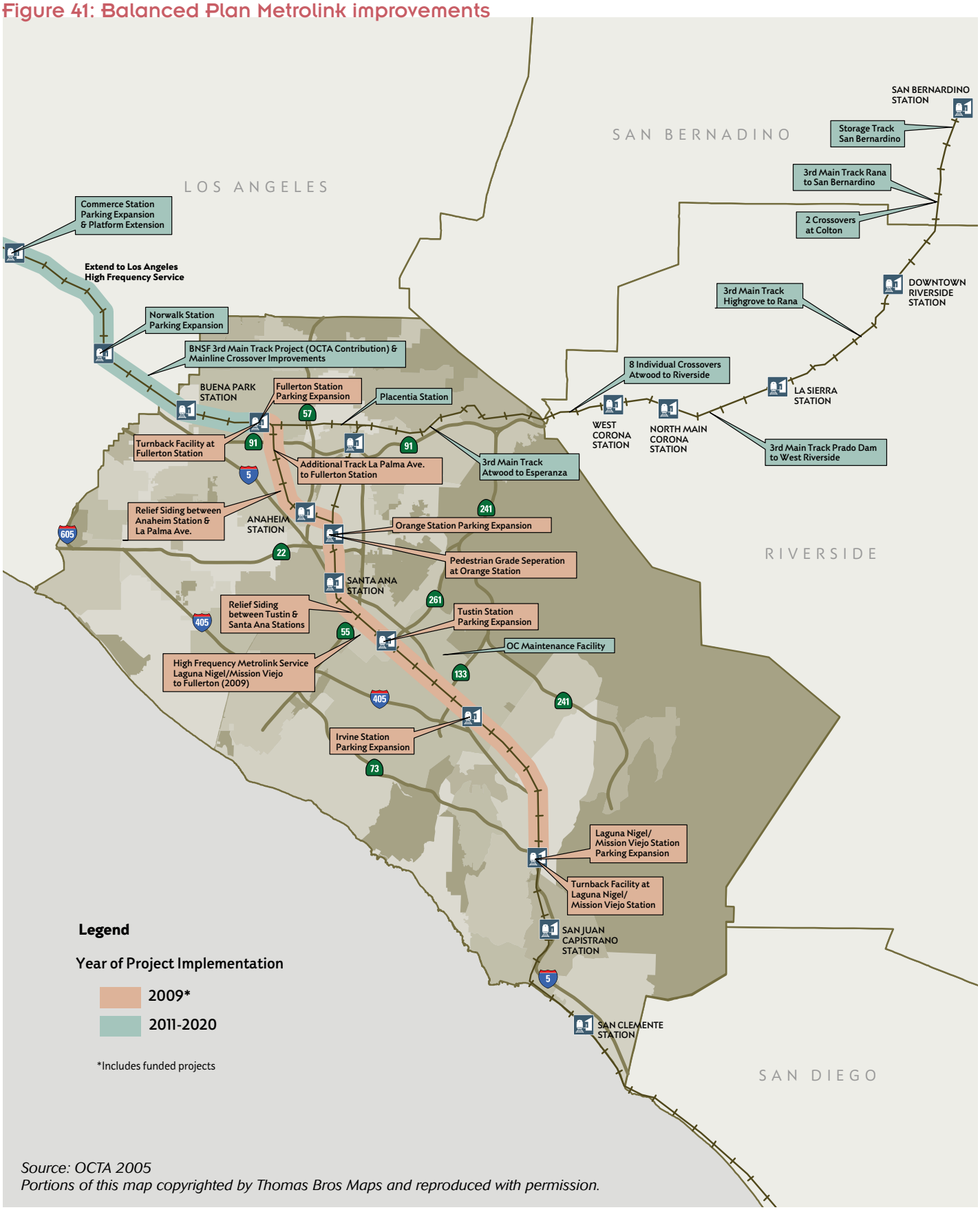
Figure 40: Balanced Plan 2030 transit service



Source: OCTA 2005

Figure 41: Balanced Plan Metrolink improvements



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"The Unconstrained Alternative shows what we could accomplish if funds weren't a limiting factor."

Unconstrained Alternative

The Unconstrained Alternative represents the highest level of investment in the transportation system, a look at combinations of projects and services that could be implemented to meet Orange County's travel demand, if funds were not an issue. In essence, the Baseline and Unconstrained Alternatives are "bookends" providing the lowest and highest level of improvement. The Unconstrained Alternative includes all the previously mentioned projects plus the following:

Freeways

- Further widening of I-405 from SR-73 to I-605
- Complete SR-55 via a highway or expressway tunnel in Costa Mesa
- Implement recommendations from the Riverside-Orange County Major Investment Study
- Widen SR-57 to SR-60 (funded by Los Angeles County)
- Widen SR-91 from I-5 to Los Angeles County Line and further widen SR-91 between I-5 and SR-57
- Build a connection between SR-73 and future SR-241
- Extend SR-57 to I-405 along the Santa Ana River

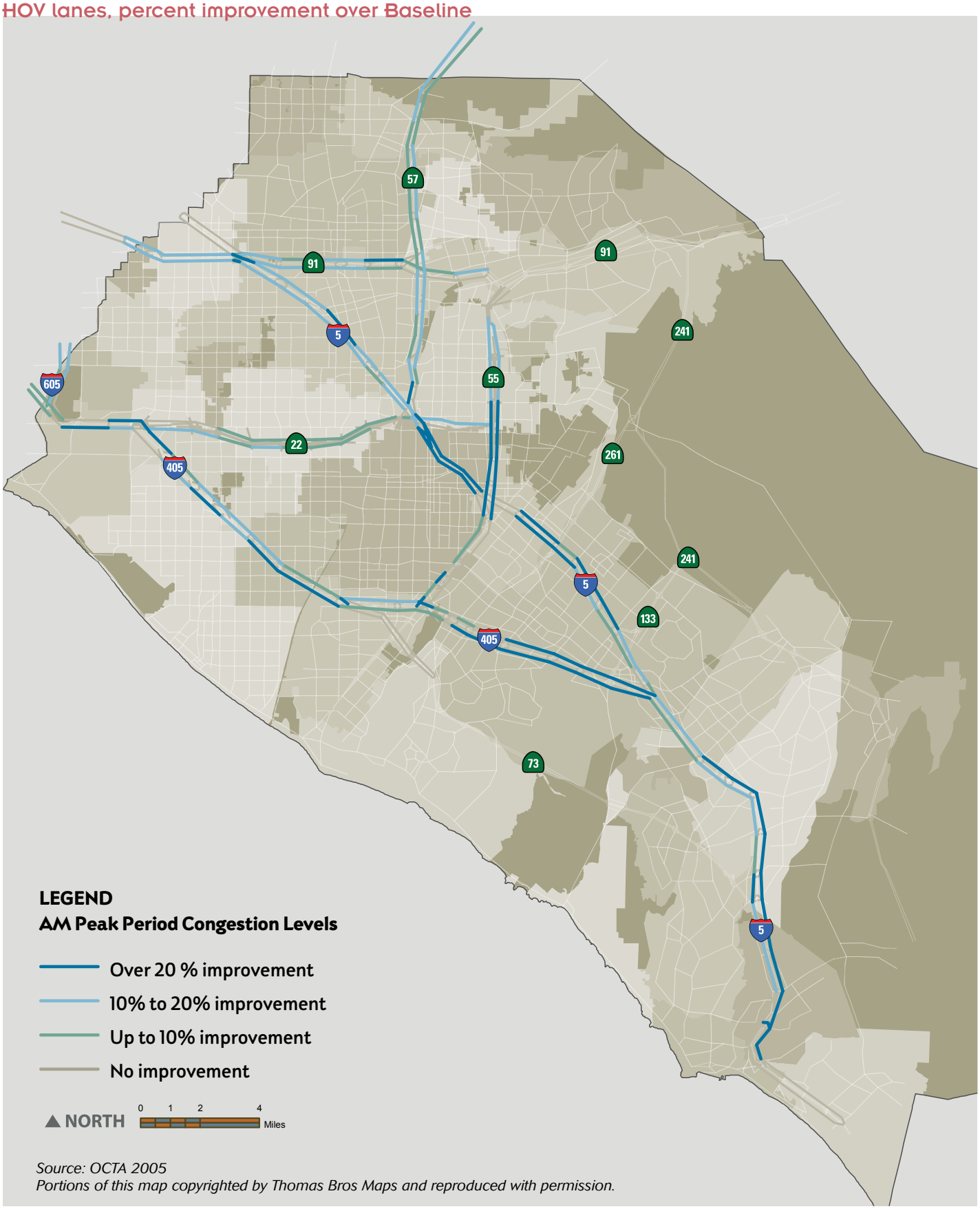
Roadways

- Further expand countywide traffic signal synchronization
- Continue grade separation of the Burlington Northern Santa Fe freight railway

Transit

- Construct additional railroad grade separations and quiet zones
- Provide funding for high speed rail/Maglev systems
- Expand transit extensions to Metrolink
- Provide funding to relocate railroad tracks south of Laguna Niguel to allow for expanded Metrolink service and extend high frequency service to San Clemente

Figure 42: Unconstrained Alternative 2030 congestion levels HOV lanes, percent improvement over Baseline



Source: OCTA 2005
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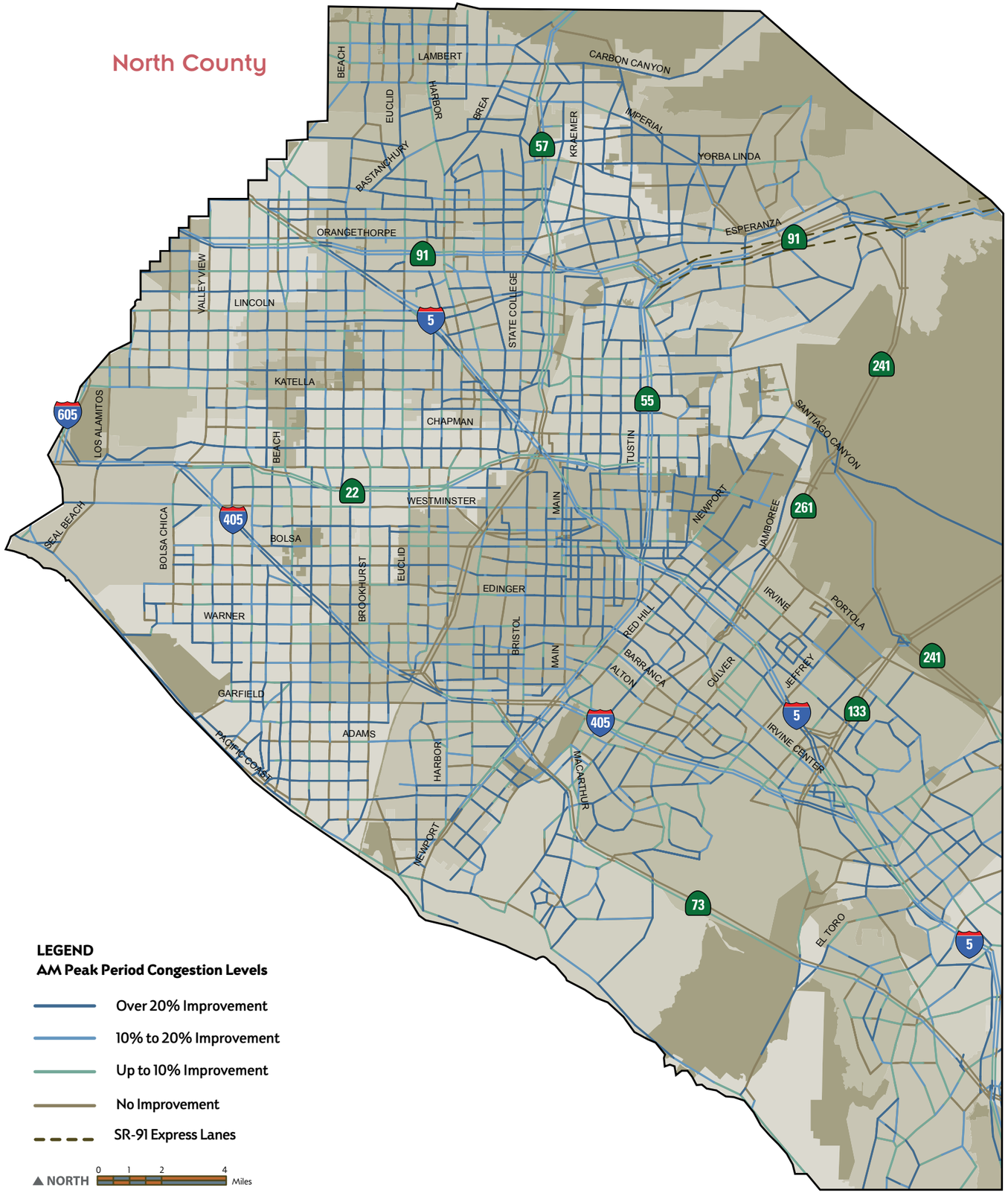
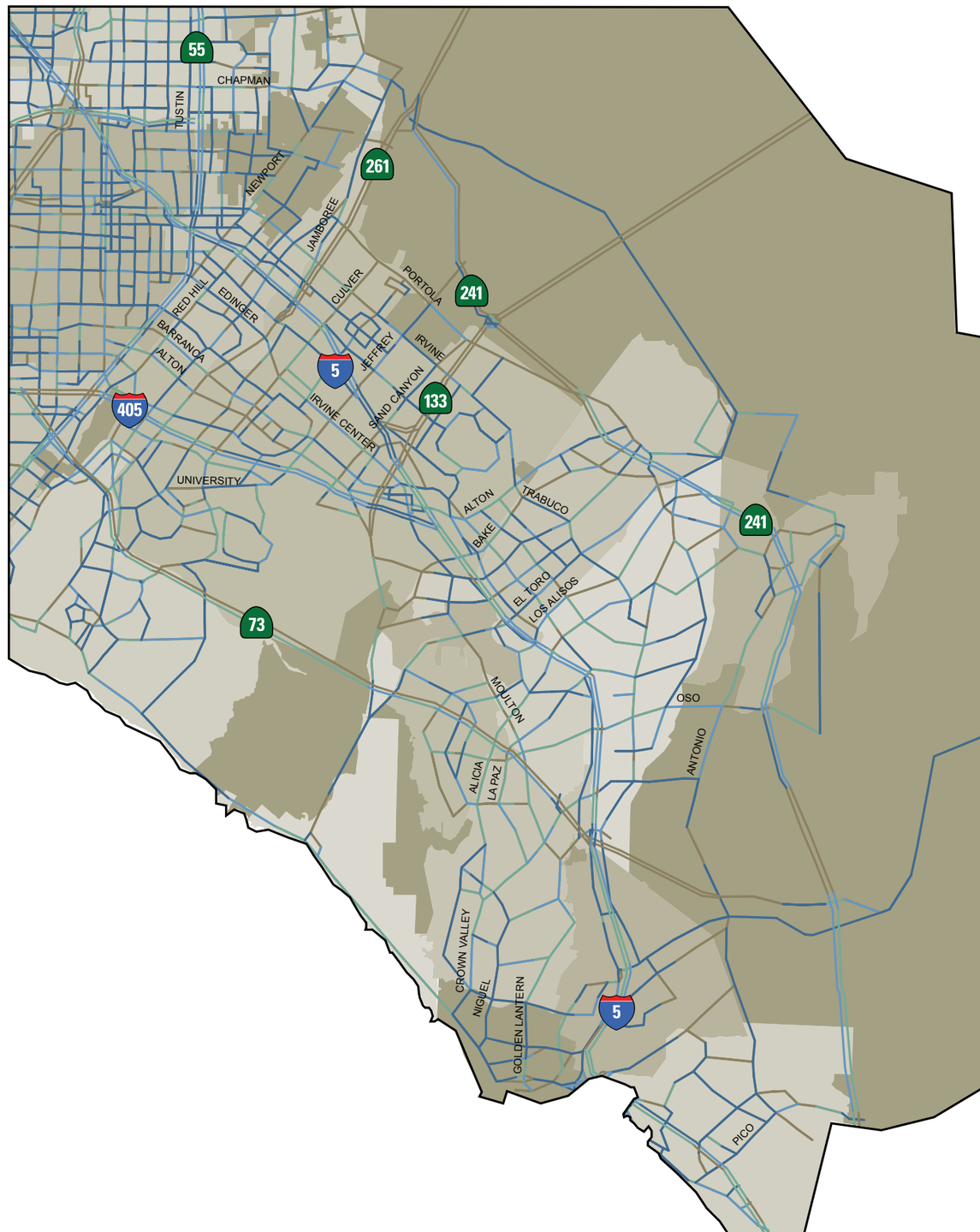
Figure 43: Unconstrained Alternative 2030 congestion levels — freeways and roadways, percent improvement over Baseline





Assessing the alternatives

One major goal of the Long-Range Transportation Plan is to maintain or, better yet, reduce the average time it takes Orange County residents, workers, and visitors to reach their destination. Using Orange County's transportation analysis model (OCTAM 3.2), OCTA is able to compare the alternatives with the Baseline and assess how they perform under future (2030) conditions. In other words, we can compare daily delay reductions, travel speeds on freeways and roadways, and increases in transit ridership between the various alternatives.

If nothing but those projects and services included in the Baseline are implemented, Orange County residents, workers, and visitors will collectively experience over 967,000 hours of delay every day, due to traffic congestion. A traveler's average speed during the morning peak will drop 30 percent on our freeways and 39 percent on our roadways, compared to 2005 conditions.

As shown in the following matrix (Figure 44), the improvements in the Constrained Alternative result in minimally improved freeway and roadway speeds, and delay due to traffic congestion is slightly reduced, compared to the Baseline. This is noteworthy considering that without the Constrained Alternative improvements, the congestion and speeds worsen considerably over time. With increases in available revenues, the Balanced Plan, and Unconstrained Alternative, provide further increases in average freeway and roadway speeds, as well as additional reductions in congestion-related delay.

As far as transit performance, the Constrained Alternative provides 14 and 30 percent increases, over Baseline, in bus and commuter rail trips, respectively. Whereas the Balanced Plan provides 16 percent more bus trips and 100 percent more commuter rail trips (Figure 45).

The Preferred Plan

The Baseline and Unconstrained Alternatives provide points of reference for analysis. If nothing but the Baseline projects were carried out between now and 2030, the level of service on Orange County's transportation networks would decline dramatically. While the Unconstrained Alternative set of projects perform the best, projects beyond those in the Balanced Plan require further study and are not currently feasible given projected revenues. Comparing the projected performance of the remaining alternatives, the Balanced Plan provides the highest level of improvement for Orange County travelers and is the preferred Long-Range Transportation Plan Alternative. It is important to note that this level of improvement

Figure 44: congestion relief by alternative (compared to Baseline)

Measure	Constrained Alternative	Balanced Plan	Unconstrained Alternative
Delay due to congestion	Delay reduced by 9%	Delay reduced by 37%	Delay reduced by 43%
Average freeway speed: morning peak period	Speed Increased by 5%	Speed Increased by 22%	Speed Increased by 30%
Average roadway speed: morning peak period	Speed Increased by 7%	Speed Increased by 27%	Speed Increased by 39%

"The Balanced Plan is the Preferred Alternative for the 2006 Long-Range Transportation Plan."

"The cost of providing transportation has outpaced traditional revenues like state and fedearal gas taxes."

is only possible if additional local revenues become available — a reasonable assumption, but critically dependent on voter approval of a 30-year extension to the one half-cent sales tax for transportation, Measure M.

Financing the plan

Major funding challenges and trends

The way that transportation projects and services are funded in the new century is evolving. For many years, state and federal taxes on gasoline were the main source of funds for regional transportation projects. Unfortunately, state and federal gas taxes have not kept up with the costs of building new freeway lanes, roadways, or transit projects. Inflation has eroded this traditional source of transportation funds.

At the same time, the number of miles traveled each year by vehicles in California, the Southern California region, and Orange County has increased as households own more cars and drive further to work and recreational areas. This trend is expected to continue in the future as the distance between major job centers and residential areas grow. This is compounded by more people and more jobs moving into the region.

While traditional revenues are declining, the need for new transportation projects continues, and maintenance needs increase because of increased wear and tear on the existing transportation system.

Local solutions through Measure M

Recognizing the uncertainty of state and federal funds, many counties across California, including Orange County, asked voters to approve local sales taxes with the specific purpose of funding transportation projects and services. Many such measures passed and have become a significant source of funds for roadway, highway, and transit projects, allowing local residents to better control their own transportation destiny.

In 1990, Orange County voters approved Measure M, a 20-year program for transportation improvements funded by a one half-cent sales tax. Measure M allocates all sales tax revenues to specific Orange County transportation improvement projects in three major areas- freeways, roadways, and transit. Completed major Measure M projects include:

- new lanes added to the I-5, SR-55 and SR-91 Freeways;

Figure 45: transit ridership increases by alternative (compared to Baseline)

Measure	Constrained Alternative	Balanced Plan	Unconstrained Alternative
Daily Local Bus Trips	Increased by 14%	Increased by 16%	Increased by 17%
Daily Commuter Rail Trips	Increased by 30%	Increased by 100%	Increased by 98%
Daily Total Transit Trips (including express bus)	Increased by 16%	Increased by 26%	Increased by 26%

- a smoother and wider "El Toro Y," where the I-405 and I-5 join;
- the launch of Metrolink commuter rail service and building of new stations;
- bus discounts for seniors and the disabled; and
- about $1.5 billion allocated for roadway widening and street repair.

Measure M is currently funding the construction of a wider 12-mile section of the SR-22 and the northern section of the I-5 from the SR-91 to the Orange/Los Angeles County line.

Measure M expires in 2011 unless renewed by voters. By 2011, Measure M will have made possible nearly $4.2 billion (escalated dollars) worth of transportation improvements.

Constrained alternative revenues (without future Measure M)

Orange County can expect to receive $28 billion (2005 dollars) over the next 36 years to maintain, enhance, and operate the transportation system without an extension of Measure M. While $28 billion is a significant future investment, most (96 percent) of these funds are committed to mandated projects and services including maintaining freeways, roadways, and running bus service. Only about four percent of these funds could be used to address future mobility problems in Orange County. That four percent equates to improving just a few major projects in Orange County and is not sufficient to meet countywide transportation needs by 2030.

A mixture of federal, state, and local sources comprise the future transportation revenues for the $28 billion Constrained Alternative. Local sources comprise 65 percent of these sources, and state and federal monies comprise the remaining 35 percent. These funds will be used for a combination of purposes including continued investment in freeway operations, road maintenance, capacity increases, and continued operation of the bus and Metrolink systems.

Balanced plan revenues (with Measure M extension)

Under the Balanced Plan, total transportation revenues increase to about $41 billion (2005 dollars). Implementation of the Balanced Plan relies on Orange County voters approving an extension of Measure M from 2011 to 2041 that would include a series of voter safeguards related to the continued funding.

A mixture of federal, state, and local sources comprise the future transportation revenues for the $41 billion Balanced Plan. Local sources comprise 76 percent of these sources, and state and federal monies comprise the remaining 24 percent.

The increase in the Balanced Plan local share from the Constrained Alternative is due to the addition of $11.862 billion (gross revenues) of new Measure M funds, an increase in cities' local general fund revenues for transportation purposes, and continued operation of the 91 Express Lanes as a toll facility.

The new funds from a Measure M extension would be used for:

- expanding the Orange County freeway system to remove bottlenecks and add new capacity primarily within the existing freeway rights-of-way;
- enhancing street maintenance programs to reduce wear and tear on cars, buses, and trucks;
- synchronizing traffic signals across cities to improve traffic flow;
- expanding street capacity at major bottleneck locations;
- add grade separations on roadways at key railroad crossings;
- expanding the Metrolink commuter rail system with high-frequency service to Los Angeles;
- providing new transit connections to and from Metrolink stations;
- connecting Metrolink service to new regional transportation systems and centers;

"An extension of Measure M will generate $11.8 billion for future transportation improvements in Orange County."

- improved transit service for seniors and the disabled;
- expanding community-based shuttles to link people to shopping, medical facilities, and job centers; and
- improving water quality by augmenting existing strategies and further addressing Orange County's transportation system water runoff.

These dollars would be a stable, dedicated source of funds for transportation. Orange County has a history of self-help, evidenced by the current Measure M and local developer fee programs. Coupled with a healthy local economy, these characteristics suggest Orange County would do well to continue dedicating local sales tax revenues to transportation.

Figure 46 provides a summary of the estimated costs of implementing the Constrained Alternative and the Balanced Plan, while Figure 47 provides a summary of transportation revenues by alternative. The Unconstrained Alternative costs and revenues are not shown in these figures due to uncertainty with project costs and funding sources.

Conclusion

By implementing the Balanced Plan, we achieve the three fundamental goals of New Directions: improving mobility, protecting Orange County's transportation resources, and enhancing our quality of life. The projects and services in the Balanced Plan offer visitors, residents and workers safe and reliable transportation choices, and greater accessibility because of increased service and improved system wide efficiency. The Balanced Plan also includes considerable investment in maintaining our transportation networks.

Collectively, the projects in the Balanced Plan will minimize increases in congestion and travel time. By involving local jurisdictions, other agencies, and the public in the development and implementation of the Plan, we promote mobility and economic growth while minimizing community and environmental impacts. As the elements of the New Directions Balanced Plan become reality, each project-whether a new bus line, rail car, coordinated signal, carpool lane, or pavement repair project-will contribute to our quality of life and help make Orange County a great place to live, work, and visit.

Figure 46: Long Range-Transportation Plan alternative costs (in millions)

	Constrained Alternative	Balanced Plan
Freeways	$6,409	$11,580
Roadways	$8,758	$13,004
Transit	$13,297	$16,129
Environmental Cleanup	—	$237
Total	**$28,464**	**$40,950**

Note: costs from the constrained alternative to the balanced plan are cumulative. Includes $921 million of non-Measure M funds (91 Express Lanes revenues and city maintenance of efforts).

Figure 47: 2006 Long-Range Transportation Plan sources summary (2005 dollars)

Sources of Funds	Constrained Alternative	Balanced Plan
Local Sources:		
Measure M to 3Q FY 2011	$ 1,486,504,110	$ 1,486,504,110
Net Measure M 4Q FY 2011 to 2041	—	11,565,450,000
General fund *(cities' Maintenance of Effort; 36 yrs.)*	1,557,036,436	2,178,179,715
Transportation Development Act/Local Transp. Fund	6,281,593,267	6,281,593,267
Property Tax Revenue	431,913,599	431,913,599
Transit Fares	2,942,701,826	2,942,701,826
Gas Tax Exchange to OCTA	161,452,920	161,452,920
Gas Tax Subventions	2,641,011,158	2,641,011,158
Service Authority for Freeways and Expressways (SAFE)	66,085,877	66,085,877
Tolls *(TCA system and 91 Express Lanes)*	1,618,000,000	1,918,000,000
Developer fees *($25 m. a year * 36 yrs.)*	900,000,000	900,000,000
Misc	$ 374,300,000	$ 374,300,000
Subtotal Local Sources:	**$ 18,460,599,193**	**$ 30,947,192,472**
State Sources:		
Prop 42 Subventions	$ 2,003,225,440	$ 2,003,225,440
State Transit Assistance Fund (STAF)	675,037,891	675,037,891
State Transportation Improvement Program (STIP)	2,150,089,774	2,150,089,774
State Highway Operations& Protection Program (SHOPP)	1,083,946,022	1,083,946,022
Unfunded	—	—
Subtotal State Sources:	**$5,912,299,128**	**$5,912,299,128**
Federal Sources:		
Regional Surface Transportation Program (RSTP)	$ 985,471,405	$ 985,471,405
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	1,191,620,311	1,191,620,311
Section 5307, Federal Transit Formula Funds	1,783,356,136	1,783,356,136
Section 5309, New Starts	111,441,497	111,441,497
Other Demonstration Projects	18,538,763	18,538,763
Unfunded	—	—
Subtotal Federal Sources	**$ 4,090,428,112**	**$ 4,090,428,112**
Total All Sources	**$ 28,463,326,433**	**$ 40,949,919,712**

Notes:

Measure M II forecast per Board direction 10/17/2005
MOE for for Balanced Plan adjusted to CPI beginning 2011
Measure M 2011–2041 net of state fees and audits

APPENDIX

- appendix a: other programs

  intelligent transportation systems (its)
  - why invest in its?
  - using common technologies
  - implementing its in orange county

  goods movement
  - moving goods: from manufacturer to market
  - goods movement trends
  - goals: increase capacity and decrease impacts
  - strategies for goods movement

  bikeways
  - a comprehensive bikeways plan
  - from planning to implementation

  support programs
  - freeway call boxes
  - soundwall retrofit program
  - orange county taxi administration program (octap)
  - transit police
  - rideshare services
  - transit-oriented development (tod)
  - service authority for abandoned vehicles (saav)

- appendix b: the planning process

Appendix A: other programs

OCTA's core services include planning, funding, and building the region's key transportation facilities — roadways, freeways, bus, and rail. These services are coordinated with Orange County cities and the County, Caltrans, the U.S. Department of Transportation, Metrolink, and other transportation-related agencies. While these core services are essential, there are many support programs administered by OCTA that provide extra benefits to Orange County travelers. These benefits help to increase traffic flow, improve safety, promote travel choices, and enhance Orange County's quality of life.

For example, OCTA has built one of the most extensive carpool lane networks in the nation. To support this investment, we administer a rideshare program to link carpoolers who will use the lanes and increase overall efficiency of the existing freeways. Another example is OCTA's Transit Police. This group of security officers has the express purpose of improving safety on OCTA's buses and along rail rights of way.

Strategic elements supported by OCTA include:

- Intelligent Transportation Systems (ITS) Support
- Goods Movement Planning
- Commuter Bikeways Support
- Freeway Call Box Program
- Soundwall Retrofit Program
- Orange County Taxi Administration Program (OCTAP)
- Transit Police
- Rideshare Services
- Transit-Oriented Development Support (TOD)
- Service Authority for Abandoned Vehicles (SAAV)

Intelligent transportation systems (ITS)

We live in an age of technology. In some way, it touches every aspect of our lives from the food we eat to the ways we work, play, keep in touch with others, and, of course, the way we travel. Technology has long played a role in transportation, from communication and scheduling systems for buses and rail to vehicle detection sensors under the pavement that control traffic signals. More and more agencies are using technology and applying it regionally so that their systems of freeways, roadways, and transit vehicles operate more smoothly and carry more people without needing more asphalt or buses or rail cars. These systems that use technology to improve the operational efficiency, effectiveness, and safety of ground transportation are referred to as Intelligent Transportation Systems (ITS).

Why Invest in ITS?

The most basic reason to invest in ITS is that it reduces travel time. Reducing both recurring and non-recurring congestion accomplishes this reduction in travel time. Recurring congestion happens virtually every day, during the morning and evening peak commute periods, when there are simply more vehicles on a roadway than it can carry. One way to reduce this type of congestion is to add more lanes to roadways. Alternatively, ITS technologies including ramp metering, bus fleet management and signal priority, and computerized traffic signal systems can improve the operational efficiency and effectiveness of existing facilities. The result is an increase in the effective capacity of the facility, increased safety, increased speeds, and a reduction in travel time without adding more pavement.

The United States Department of Transportation's ITS Joint Program Office keeps a national database to track the benefits of ITS projects over time (www.itsbenefits.its.dot.gov). Field studies in several cities have shown that advanced traffic signal control systems can reduce peak period travel time between five percent and 11 percent. Computer Aided Dispatch and Automatic Vehicle

Location technologies have improved on-time bus performance between nine percent and 23 percent in cities across the country.

Traffic accidents, stalled vehicles, weather-related congestion, and special events at major attractions are all examples of occurrences that can cause non-recurring congestion. Since instances of non-recurring congestion are not always predictable, traditional solutions such as adding lanes are not always effective. ITS solutions can help relieve this type of congestion by identifying the type of incident and developing a response plan, such as dispatching assistance or providing information to motorists.

Using common technologies

The greatest benefits from ITS projects occur when we can link systems together. However, linking systems may mean many different agencies are involved in a project. Different agencies could have different technologies. It is critical to recognize up front that a common technology is important, so that agencies can coordinate their management strategies, incident responses, transit schedules, and basic system information.

Orange County has developed a framework for coordinating all future ITS projects, called the Orange County Regional ITS Architecture. OCTA, Caltrans, the Federal Highways Administration, and Orange County cities have collaborated on this foundational plan, which has a 10-year time frame. Orange County's ITS plan is integrated with the Southern California Regional ITS Architecture, completed by the Southern California Association of Governments (SCAG). It is part of a nationwide mandate to establish national standards and common or interchangeable technologies for transportation management.

Implementing ITS in Orange County

OCTA is currently using ITS technologies for a number of purposes ranging from supervising bus fleets to managing traffic on the State Route 91 Express Lanes. In addition, OCTA is in the process of identifying opportunities to further implement ITS throughout the County within the Orange County Regional ITS Architecture framework. As a result, we have identified four possible near-term projects:

1. Regional traffic signal synchronization

The synchronization of traffic signals along major arterials is an important ITS component that has already been implemented to some degree in many major metropolitan areas, including Orange County. Typically, city governments or Caltrans, depending on which agency controls the signals, have performed independent signal synchronization projects. OCTA can play a role in assisting the cities with their coordination efforts, and more importantly, helping the cities and Caltrans to work together to develop a regional system of coordinated arterials. Of all the possible short-term ITS projects, countywide traffic signal synchronization is the most developed, as described in The Setting chapter and the Blanced Plan section of The Plan chapter of this report.

2. Advanced vehicle detection/traveler information

Obtaining accurate, real-time traffic information is a goal of many ITS projects. This information is very useful to manage traffic congestion and continuously inform drivers of conditions along their planned route. Caltrans maintains an existing set of vehicle detection devices on Orange County freeways. These devices provide some real-time traffic information; however, they can only roughly estimate regional traffic information, such as the expected travel time on long stretches of freeway. Several entities, including a collaboration between Caltrans and the University of California, Irvine, are developing strategies to gather a larger set of data and improve the accuracy of data obtained by the existing detection devices. OCTA will evaluate advanced vehicle detection and traveler information strategies and assist with implementation throughout the County where feasible.

3. Regional transportation management centers

Should several ITS projects be implemented, the development of one countywide or several regional Transportation Management Center(s) might

become useful. The primary function of such centers would be to manage the regional network of coordinated arterials. They could also work with the Caltrans traffic management center to help process the regional travel time information obtained from the freeway system and operate the variable message signs to post travel time information or special event information. OCTA will coordinate with Caltrans and local agencies in the construction of one or more regional centers that can direct many of Orange County's regional ITS projects.

4. Bus Rapid Transit

As OCTA expands the use of bus rapid transit to address the growing need for travel options, the use of ITS technologies to manage the transit system components will become crucial. OCTA will develop ITS strategies for managing the transit systems, such as real-time schedule information at bus stops, and signal priority/queue jumping for transit vehicles.

Goods movement

Moving goods: from manufacturer to market

Another important use of the transportation system is moving products from their places of origin to the consumer, referred to as goods movement. Often there are one or more stops between manufacturer and consumer at warehouse facilities along the way. Orange County's proximity to the burgeoning warehousing and logistics centers in Los Angeles County and the Inland Empire (Riverside and San Bernardino Counties), combined with our well-developed freeway system, make the County an attractive locale for warehousing activities. In fact, Orange County is currently the 10th largest market in the country for warehousing with an inventory of over 270 million square feet (Figure 48).[1]

Region-wide, there are primary rail lines used for moving goods throughout Southern California. These lines, which link with the national freight rail system and the Ports of Los Angeles and Long Beach, include the Union Pacific Railroad, the Alameda Corridor, and the Burlington Northern Santa Fe Rail Lines (BNSF). The BNSF is the primary freight line in Orange County, crossing the northern part of the County in an east-west direction (Figure 49).

The freeway system is the other way that goods move throughout Orange County, with the greatest truck volumes currently on the Interstate 5 and State Routes 91, 57 and 55 (Figure 50). The path for goods movement over the freeway network is fluid because there are several alternate freeway routes for a truck to reach its destination.

Goods movement trends

Freight and passenger rail service on the BNSF rail line is projected to more than double over the next 25 years (Figure 51). In a similar trend, truck traffic in Southern California is expected to double the year 2000 levels by 2030 (Figure 52).

Goals: increase capacity and decrease impacts

More freight rail capacity is needed for goods movement. The line that crosses Orange County, which is currently double-tracked, does not have enough capacity to handle both the additional passenger usage planned by OCTA and any future freight usage. Since goods and passengers use the same line, this growth will result in increased schedule conflicts resulting in delays for both passenger and frieght trains.

Within Orange County, there are multiple at-grade crossings of the BNSF rail line, which is also known as the Orangethorpe Corridor. An increased number of freight trains will exacerbate the amount of traffic delay at these at-grade crossings, which raises a variety of community concerns including traffic congestion and environmental issues such as noise, vibration, and air pollution.

On the freeway side, increasing truck traffic will have a direct impact on the levels of congestion on freeways and local roadways (one truck is essentially equivalent to 2.5 automobiles). This is especially true if there are grades that a truck must

1. Society of Industrial and Office Realtors, 2005 Market Review and Outlook.

Figure 48: warehousing & industrial related land use

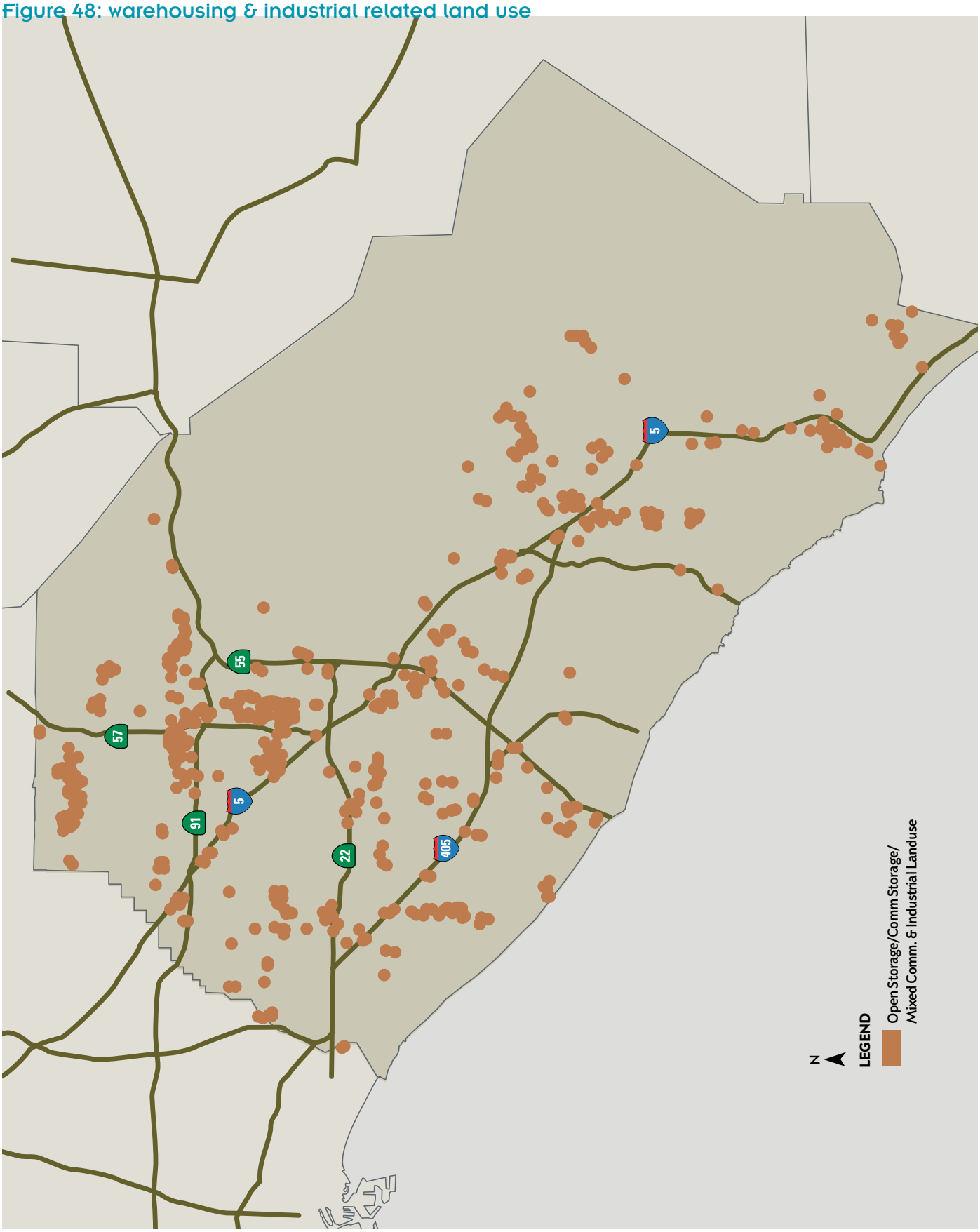


Figure 49: Southern California freight lines

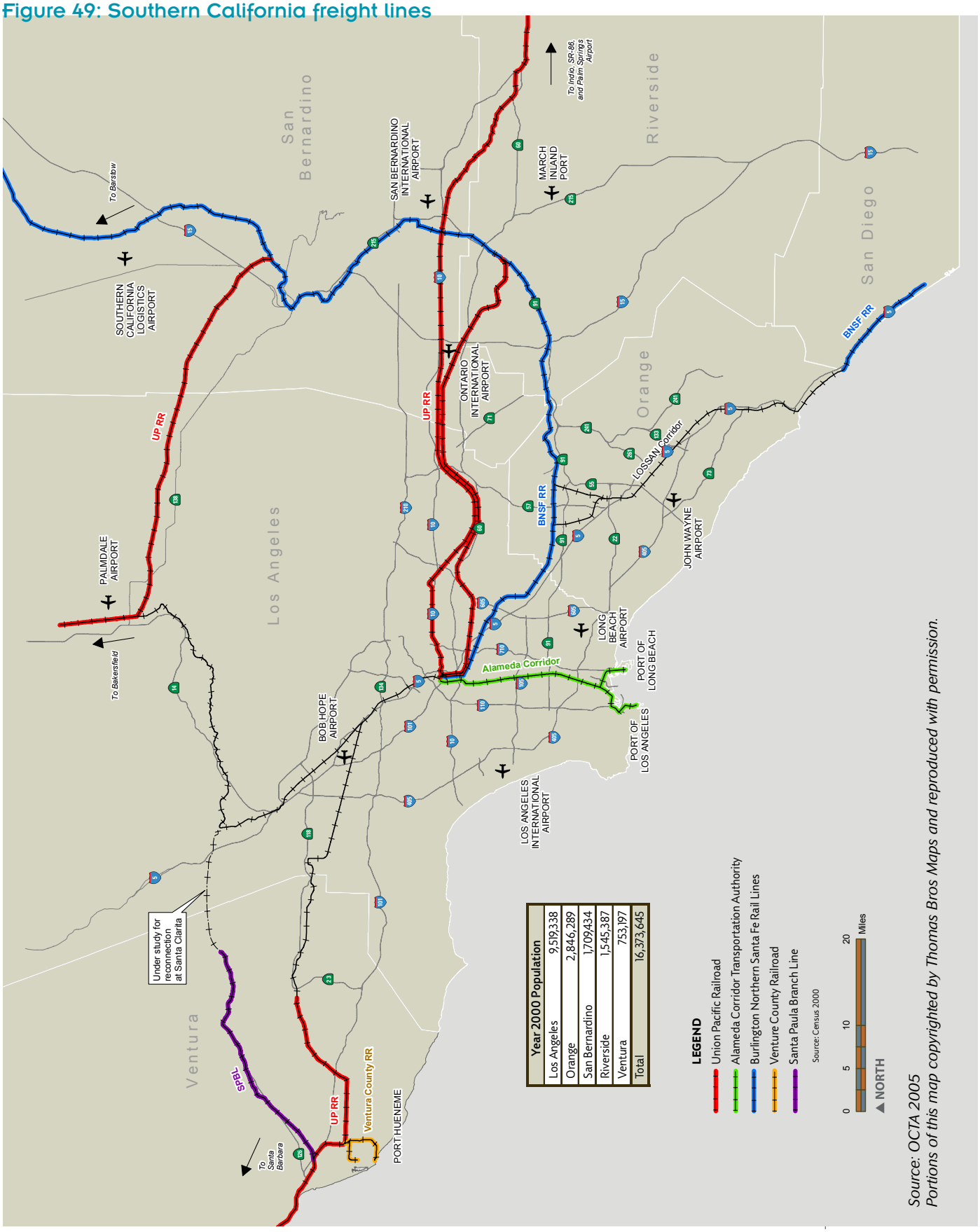
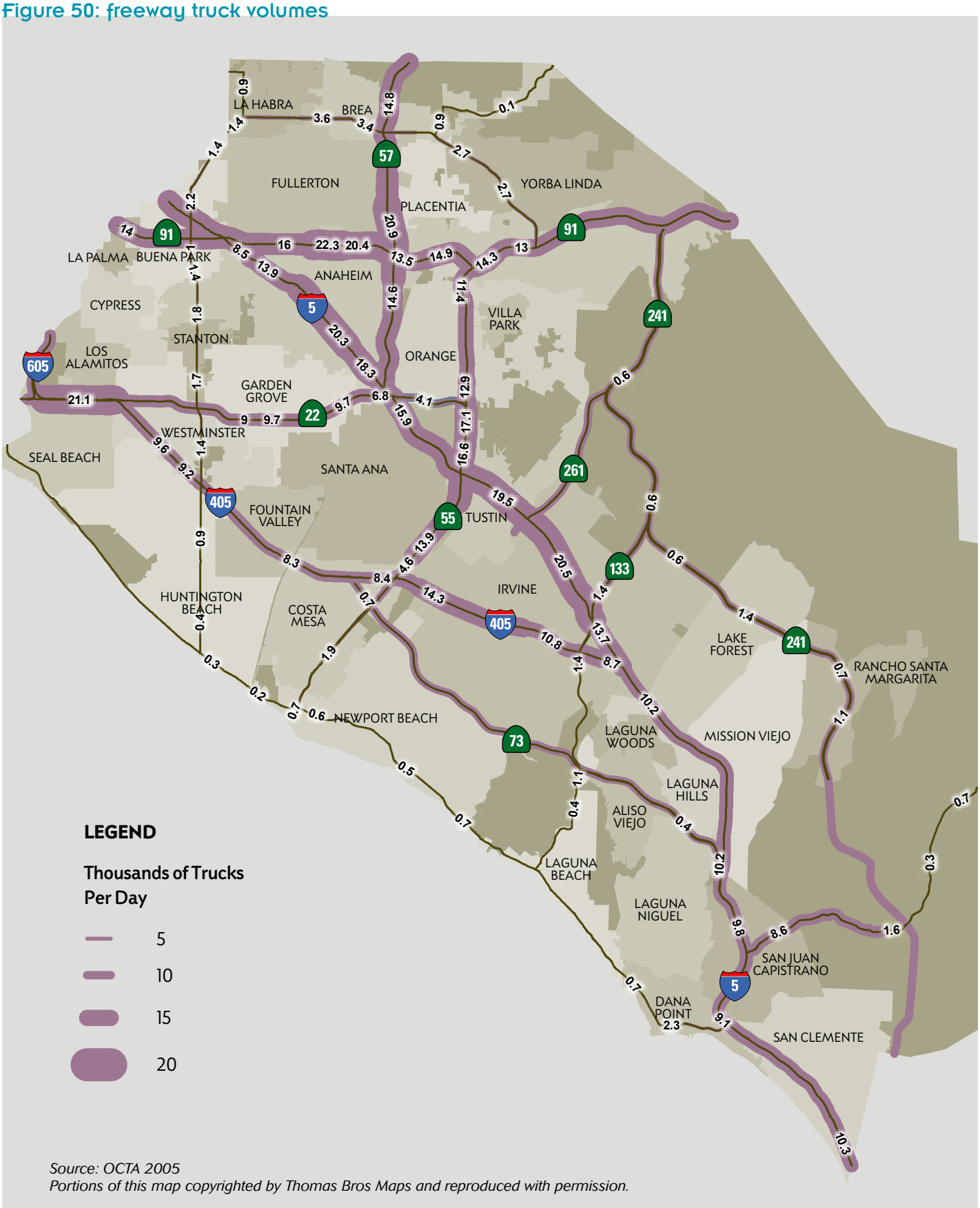


Figure 50: freeway truck volumes



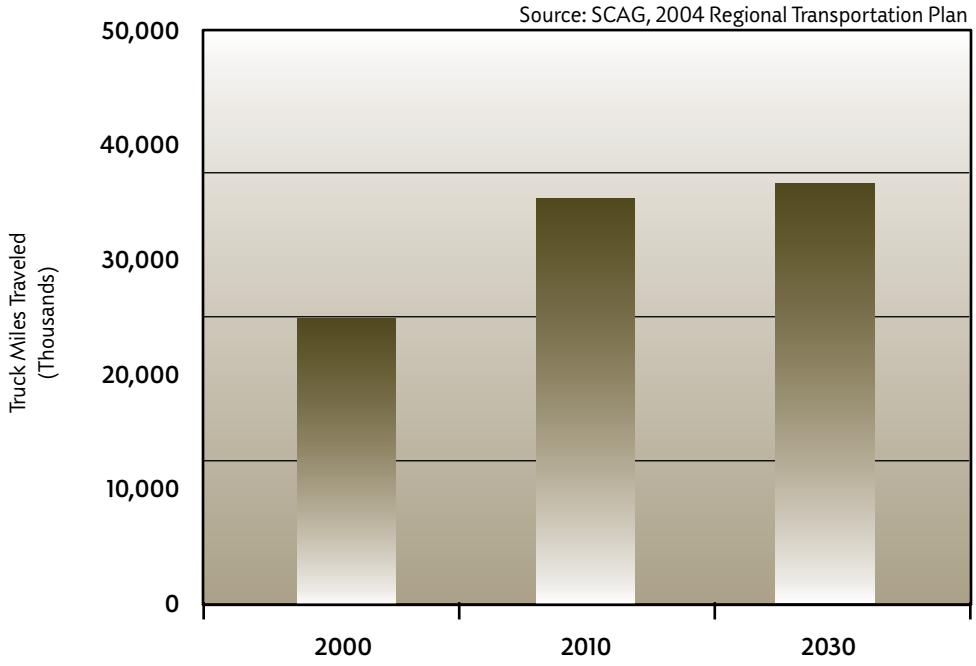
Source: OCTA 2005
Portions of this map copyrighted by Thomas Bros Maps and reproduced with permission.

Figure 51: Burlington Northern Santa Fe (BNSF) right-of-way demand forecast

Average Daily Trains	2000	2010	2030
Frieght	57	80	136
Passsenger	46	75	113

Source: SCAG, Los Angeles -Inland Empire Railroad Mainline Advanced Planning Study, 2002

Figure 52: SCAG region truck travel trends



Note: The SCAG region includes Orange, Los Angeles, Ventura, Riverside, Imperial, and San Bernardino Counties.

climb or descend at slower speeds. Trucks also generate noise and air pollution and are harder on pavement than automobiles. Therefore, a greater number of trucks on the system means greater wear and tear on pavement and increased public maintenance costs. These truck-related impacts to the transportation system need to be carefully weighed against the economic and consumer benefits of goods movement to find solutions that both increase capacity and decrease impacts.

Strategies for goods movement

The following are Long-Range Transportation Plan strategies for goods movement:

- The Balanced Plan includes funding for grade separations where streets intersect with the BSNF rail line (Orangethorpe Corridor).
- The Balanced Plan includes improvements for truck-related freeway chokepoints (such as the need for climbing lanes or storage lanes/merge improvements at the SR-91 truck scales) and implement improvements.

- Support regional efforts to secure public-private funding partnerships for goods movement projects.
- Aid in completing the Multi-County Goods Movement Action Plan by early 2007, which will describe and model goods movement growth and trends, identify possible partnerships with the private sector, highlight strategies, and identify possible projects.
- Conduct a study for Orange County that would include an assessment of current freight and truck traffic volumes, future needs and trends, operational issues, and strategic actions to increase capacity and decrease impacts related to goods movement.
- Continue to work with the Orange County congressional and state delegation to explore innovative financing options.

Bikeways

Biking is an important mode of transportation in Orange County. According to the 2000 Census Transportation Planning Package, over 7,500 Orange County workers report that they use a bicycle as a means of transportation to work. For bicycling to be an effective travel choice, a regional bikeway system, linking residential communities with jobs, activity centers, and transfer points to other types of transportation, is essential. The OCTA Commuter Bikeways Strategic Plan is a policy document that works toward such an end by helping guide cities and the County of Orange in their bikeways planning, implementation, and maintenance efforts. It was developed in cooperation with cities, the County, public agencies, businesses, and bicycle groups. OCTA provides support for bikeways development, including help with coordinating community involvement, accessing resources, designing facilities, integrating various modes of transportation and support facilities, and promoting bicycle safety and education.

A Comprehensive Bikeways Plan

The Commuter Bikeways Strategic Plan compiles the blueprints of existing and proposed regional bicycle facilities and local connector routes from Orange County cities and the County of Orange (Figure 52). About 56 percent of the bikeways in the Strategic Plan have been built (905 miles out of 1,617 miles planned). Bikeways include a range of facilities, which are divided into three classifications:

- Class I - off-road, paved paths;
- Class II - on-road, signed and striped bicycle lanes; and
- Class III - on-road, signed bicycle routes.

There are also two different classes of bicycle parking facilities:

- Class I - intended for long-term parking and may be a bicycle locker or a secure area like a 'bike corral' that may be accessed only by bicyclists.
- Class II - generally racks, which are best used for short-term parking.

Having a secure place to park bicycles is a key factor in promoting bicycling as a way of commuting to work or school.

From planning to implementation

Establishing a countywide system of bikeways is a collaborative effort. Local jurisdictions are generally responsible for planning and constructing bike routes and implementing bicycle amenities, such as storage lockers and bicycle signage, within their communities. Often, cities will work together to plan and implement bikeways that cross city boundaries.

Local jurisdictions work with OCTA to produce the Commuter Bikeways Strategic Plan, and to obtain bikeway funding from Measure M, State, and Federal programs designed to improve regional transportation. Cities, the County of Orange, OCTA, and certain non-profit organizations are also eligible to apply for funding, from a number of state and federal programs, to improve the regional bikeways network.

OCTA has contributed to the development of the regional bikeway system by equipping all of our large buses with bicycle racks. This has the effect of expanding the functional bikeways network by connecting bicycle routes with bus routes. In fact, during peak hours, OCTA buses provide enough capacity to carry up to 940 bikes at once, countywide. The racks are located at the front of the bus and can carry up to two bicycles at a time. Bicycle lockers have also been installed at Metrolink stations in Anaheim, Fullerton, Irvine, and Orange, as well as at all OCTA park-and-ride lots, which provide safe and secure storage and make bicycling a more attractive mode option

The LRTP supports implementation of the Commuter Bikeways Strategic Plan, including amenities, to promote bicycle commuting. Looking to the future, OCTA encourages cities and the County to adopt policies that promote investment in bicycle amenities by private property owners in order to encourage their employees to bike to work, rather than drive.

Support programs

Freeway call boxes

In 1987, OCTA pioneered a system of solar powered cellular call boxes for Orange County freeways. Call boxes provide a vital link between motorists in distress and the California Highway Patrol (CHP), reducing congestion on Orange County highways by helping to clear traffic incidents such as accidents, fires, or road hazards.

The system consists of 1,225 call boxes installed on 200 miles of freeways and toll roads in the County. Call boxes are located at one-quarter to one-half mile intervals in each direction on the shoulder of the roadway, and have Tele Typewriter (TTY) devices for the hearing impaired. Caltrans reviews and approves the installation of call boxes, and a private contractor maintains the system. In March 2006, the entire call box system will be upgraded from the outdated analog cellular service to digital cellular service to ensure better communications to the CHP dispatcher.

The call box program provides improved freeway and toll road safety because individual drivers can receive timely roadside assistance (currently about 64 callers a day) and allows efficient use of CHP resources by providing a way to expedite resolution of routine traffic incidents, often without requiring the direct assistance of uniformed patrol officers.

Funding to operate the freeway call box program comes from a $1.00 annual fee on vehicles registered in Orange County. The total number of daily call box calls is declining due to the increased use of personal cellular phones. In fact, the volume of calls has dropped 65 percent over the past 10 years. As this trend continues, the need for call boxes along most of Orange County's freeways will decline.

For the future, OCTA proposes to:

- Reduce the number of call boxes in service, thereby, reducing costs of the program
- Consider alternate uses for the current call box infrastructure, such as remote data collection and other transportation uses in the future
- Consider developing an Adopt-A-Highway Call Box program

Soundwall retrofit program

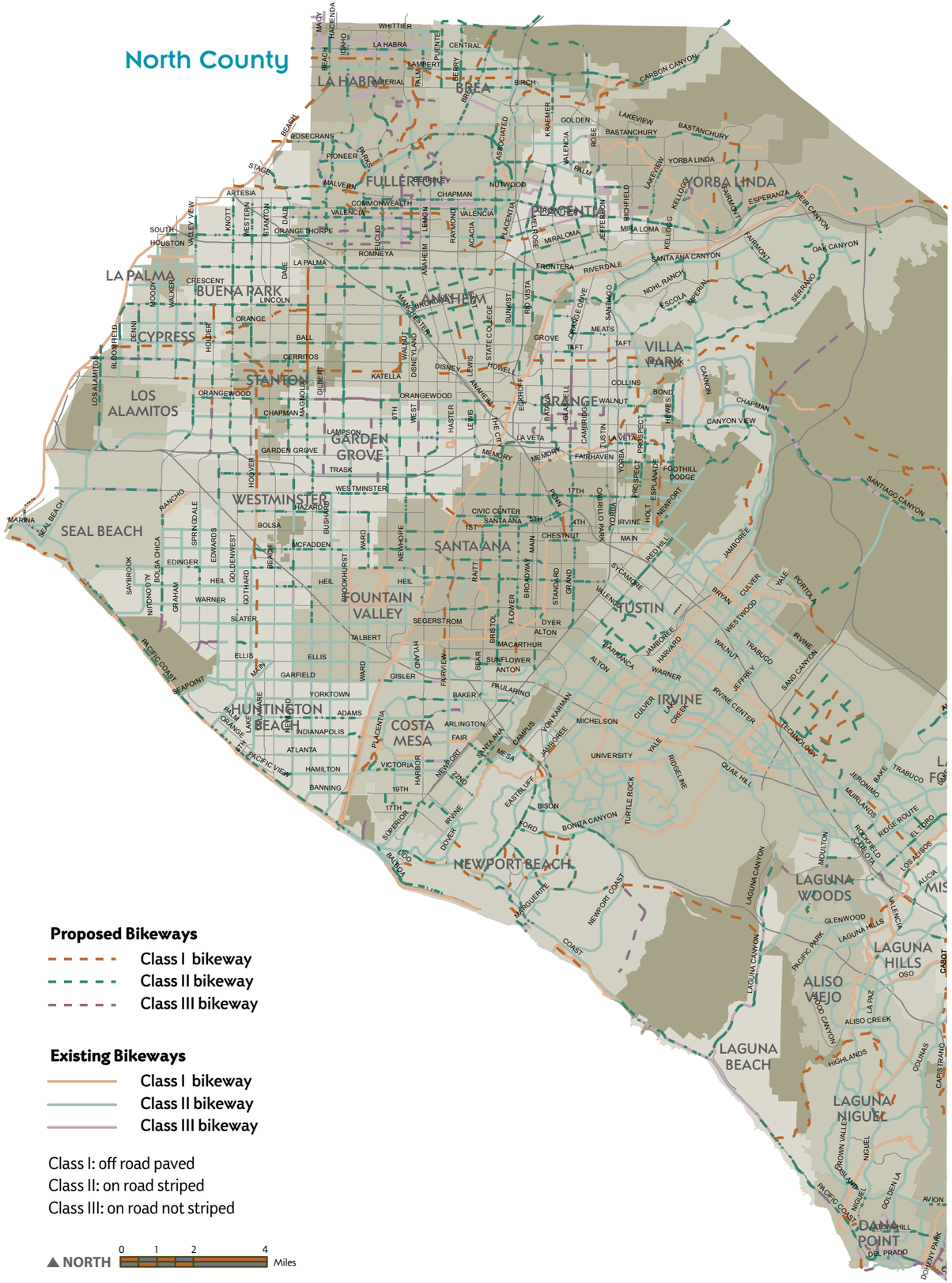
When a freeway is built or improved, and there are related noise impacts to a neighboring community, noise mitigation measures, such as sound walls, are generally constructed as an integral part of the project. Unlike typical soundwalls built in conjunction with freeway construction projects, retrofit soundwalls serve as noise mitigation for neighborhoods that do not predate the freeway. The Orange County Freeway Retrofit Soundwall Program is a voluntary program created by OCTA to address noise concerns from residential neighborhoods next to freeways.

The Soundwall Retrofit Program includes screening (to determine if noise levels exceed acceptable standards), noise studies, proposed noise mitigation measures, and construction of those measures as appropriate. The screenings are completed by Caltrans, followed by a noise

Figure 53: Orange County bikeways

North County

South County



study funded by OCTA. The noise study is the basis for preliminary engineering and environmental analysis work called a Noise Barrier Scope & Summary Report or NBSSR, completed by OCTA. Finally, noise mitigations identified in an NBSSR are eligible for funding from the State Transportation Improvement Program (STIP). As of October 2004, there were three NBSSRs approved and their mitigation measures programmed to receive STIP design or construction funding.

Orange County Taxi Administration Program (OCTAP)

Taxicab service plays an important role in the County by providing on-demand, curb-to-curb service to the general public. Taxis also provide convenient travel options for tourists and business travelers. As a whole, Orange County benefits through increased access to retail, recreation, and other activity centers.

The Orange County Taxi Administration Program (OCTAP) was created in 1998 to centralize the regulation of taxi services. OCTAP services include administering permits for taxi companies, drivers, and vehicles; conducting safety and security checks; and monitoring insurance compliance. As of 2005, there are 17 taxicab companies, 974 drivers, and 671 taxicabs permitted and tracked.

City and County participation in OCTAP is voluntary, and currently all Orange County cities and the County of Orange are members. While OCTAP coordinates the regulation of taxis in Orange County, each public agency retains their authority to require business license fees, determine the number of permitted companies that can operate within its jurisdiction, enforce the regulations, and adopt requirements that are more stringent.

One main safety goal is the elimination of illegal taxicabs and un-permitted drivers in Orange County. This is accomplished through a joint effort between OCTAP and local jurisdictions. OCTAP permits and inspects taxicab companies, drivers, and vehicles. Each jurisdiction regulates and enforces OCTAP compliance within their borders. City and County police departments and code enforcement personnel are the primary tools for enforcing compliance with OCTAP regulations.

To help guide the program, OCTAP has two administrative committees: the Steering and Safety Committees. The Steering Committee meets quarterly to advise OCTAP on taxi regulation implementation. It is made up of the city manager or designee from each agency, two representatives from the permitted taxi companies, and one representative from the Orange County Tourist Industry. The Safety Committee meets quarterly to advise OCTAP and the Steering Committee on public safety issues. It is made up of the chief of police or designee from each participating agency.

OCTAP operates as an enterprise program. Permit fees and fines generate revenues that cover administrative costs of the program. OCTA will maintain the current level of administration with funding from participating agencies and registration fees from taxicab companies and drivers.

Transit police

Orange County's transit system is one of the safest in the nation. One of the reasons is OCTA's Transit Police, made up of officers from the Orange County Sheriff's Department. Orange County's Transit Police have been in place over 10 years, and the specially trained and assigned officers are responsible for security and law enforcement for OCTA patrons, employees and property — 24 hours a day and seven days a week. The Transit Police currently consist of one Lieutenant, two Sergeants, 20 Deputy Sheriffs, and four Sheriff's Special Officers.

Their jobs include responding to incidents in the field, such as a disturbance on a bus. They also protect and patrol transit terminals, and patrol the 47 miles of OCTA-owned rail right-of-way properties to enforce trespassing laws and search for criminal activities that could compromise rail safety along the route. Officers also work to discourage vandalism and graffiti — for both safety and aesthetic reasons.

The ongoing public demand for transportation and OCTA's continued expansion of transit services means there will be a continuing need for safe and secure public transit. Nationally, the average cost for providing transit security and law enforcement ranges from two to five percent of a transit agency's operating budget. Currently, OCTA and the Sheriff's Department achieve effective law enforcement for less than three percent of OCTA's operating budget. OCTA will maintain Transit Police Service at the current level (less than 3 percent of OCTA's operating budget).

Rideshare services

"Ridesharing" describes transportation that involves multiple people in a vehicle or "high occupancy vehicles" (HOV) as opposed to an individual driving a car. Rideshare includes carpooling, vanpooling, fixed-route bus service, and commuter rail (Metrolink). Other alternative modes of commuting such as biking, walking, telecommuting, and alternative work schedules are often grouped with ridesharing as alternatives to the individually-driven car. The industry term for a car with only one person is "single occupant vehicle" or SOV.

OCTA's Rideshare Program supports both employers and commuters. The range of services include a cross-county database used to link individuals for carpools and vanpools, a rideshare call center, networking meetings and training for Employee Transportation Coordinators, rideshare marketing materials and promotions, and an employer annual bus pass program. A new vanpool program is anticipated for Fall 2006, which will offer companies an extra resource for their rideshare programs.

In addition, a new Rideshare team was introduced in fiscal year 2005/06 to enhance the program's efficiency and customer service. The key focus of the new team is "one-stop" service to assist employers with all their rideshare-related needs.

Along with the projected increases in population and vehicle miles traveled in Orange County, demand on the transportation system will increase. Rideshare will continue to play an important role in reducing SOVs, thereby reducing demand and congestion. OCTA will maintain Rideshare support services for employers and commuters.

Transit-oriented development (TOD)

Transit-oriented development (TOD) combines a variety of land uses such as homes, jobs, shopping, and entertainment in a compact area that is within easy walking distance of a transit station (generally within a quarter-mile). Using pedestrian- and transit-friendly design, TOD can help make transit a more convenient and attractive option for commuters. Furthermore, as developers build more TOD in Orange County, it will create a much more functional and efficient transit system, alleviating traffic congestion and reducing air pollution.

Across the nation, and in Orange County, cities and developers are recognizing that TOD not only improves the transportation system, but promotes a more physically, socially, economically, and environmentally healthy community. This is a result of the associated features, mentioned above, that define TOD. Such benefits are the reason for TOD's recent gains in popularity seen across the United States.

There are several examples of transit-oriented development in Orange County including the Santiago Street Lofts in Santa Ana, the University Gables project in Buena Park, and Fullerton's City Pointe, Fullerton Transit Village, and Pinnacle at Fullerton, with more on the horizon. OCTA's role is to support local communities and developers, as land is being developed or redeveloped around bus and rail stations in Orange County. OCTA will continue to develop new transit services, such as Bus Rapid Transit, expand existing services, and support the integration of these services with transit-oriented development.

For more information about transit-oriented development in Orange County, see the Orange County Council of Governments website at www.occities.org/occog/.

Service Authority for Abandoned Vehicles (SAAV)

Abandoned vehicles along local streets and highways are unsightly. More importantly, they can create hazardous conditions for pedestrians and motorists, and potentially increase traffic congestion. Therefore, OCTA began a program in 1992 called SAAV, Service Authority for Abandoned Vehicles, to remove them. OCTA allocates funds to all 34 cities, and the County of Orange, based on population and the number of abandoned vehicles removed. To date, SAAV has removed approximately 300,000 such vehicles from streets and highways in Orange County.

Funding for this program comes from a $1.00 fee on annual vehicle registration, collected by the California Department of Motor Vehicles. This program was set to sunset in January 1997, but it received an extension to May 2002. Senate Bill (SB) 106 again extended the sunset of the program to 2012, and allowed OCTA to work directly with local jurisdictions to extend the program even further. OCTA will continue to administer the SAAV program, maintaining annual program costs within the amount of revenue available from the annual vehicle registration fees and interest earned, (currently approximately $2.4 million).

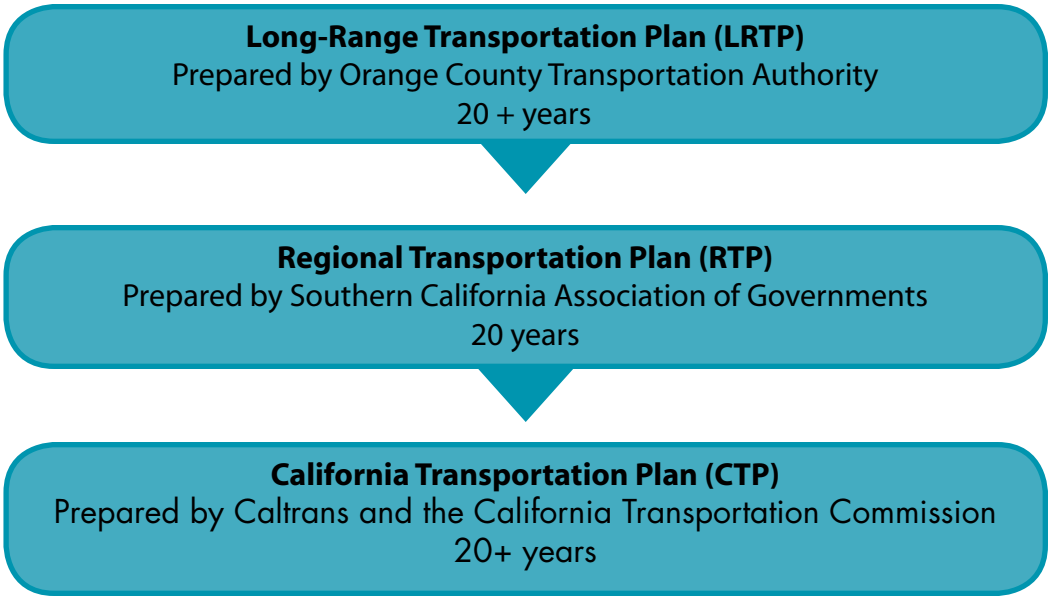
Appendix B:
The planning process

OCTA is part of a complex network of local, regional, state, and federal agencies – each with a role to play in transportation planning. At the most grass roots level, OCTA prepares the Long-Range Transportation Plan (LRTP) for Orange County, and leads the preparation of local projects for inclusion into regional, state, and federal transportation plans.

Orange County's long-range plan feeds into the Regional Transportation Plan (RTP), the California Transportation Plan (CTP), and the Federal Transportation Improvement Program (FTIP). The Southern California Association of Governments (SCAG), which is the federally designated Metropolitan Planning Organization, prepares the 20-year RTP for the Southern California region. This region includes Orange, Los Angeles, Riverside, San Bernardino, Ventura, and Imperial Counties. The RTP consists of policies, programs, and a list of specific projects needed to meet long-range transportation needs. SCAG updates the RTP every four years to ensure that it is financially constrained, as well as analyzed to conform to air quality regulations. SCAG last adopted the RTP in April 2004.

SCAG also prepares Regional Transportation Improvement Program (RTIP), the region's six-year capital programming document, in coordination and cooperation with transit operators, transportation planning agencies, local agencies, and the public. To qualify for state funding, projects and programs must be consistent with, and included in, SCAG's RTP and adopted RTIP.

At the state level, the State Department of Transportation (Caltrans) prepares the long-range CTP and the shorter-range programming document, the State Transportation Improvement Program (STIP), which represents each states component of the Federal Transportation Improvement Program (FTIP). Projects seeking state and/or federal funding must be included in the STIP.



GLOSSARY

Glossary

ACCESS (Curb-to-Curb service)
ACCESS is OCTA's shared-ride curb-to-curb service for people who are physically unable to use the fixed-route bus service.

Americans with Disabilities Act of 1990 (ADA)
Prescribes federal requirements to transportation providers, as well as other entities, guaranteeing accommodations for individuals with disabilities.

Arterials
A through street or highway.

Arterial Highway Classifications
Descriptors indicating travel demand in terms of capacity and number of through lanes.

Principal:
Eight-lane divided roadway, able to accommodate approximately 45,000-60,000 trips per day at a Level-of-Service 'C'.

Major:
Six-lane divided roadway, able to accommodate approximately 30,000-45,000 trips per day at a Level-of-Service 'C'.

Primary:
Four-lane divided roadway, able to accommodate approximately 20,000-30,000 trips per day at a Level-of-Service 'C'.

Secondary:
Four-lane undivided roadway, able to accommodate approximately 10,000-20,000 trips per day at a Level-of-Service 'C'.

Collector:
Two-lane undivided, unrestricted access roadway, able to accommodate approximately 10,000 trips per day at Level-of-Service 'C'.

Smart Street:
A Principal or Major arterial with enhanced traffic-carrying capacity.

Arterial Highways Rehabilitation Program (AHRP)
Funds pavement rehabilitation projects on Orange County's Master Plan of Arterial Highways.

Auxiliary Lanes
A relatively short lane that assists with through traffic movement on strategically selected segments of freeways.

Average Vehicle Occupancy (AVO)
The ratio of private vehicle drivers and passengers to total private vehicles (drivers + passengers)/ vehicles.

Balanced Plan
The plan preferred by OCTA that provides the most attractive cost to benefit ratio, when compared to the alternatives.

Baseline (No Project)
Comprised of projects or services that have been assessed for their environmental impacts and approved to be implemented; also it is used as a benchmark that all the alternatives are compared against.

Build-out
The completed status of any given planned project.

California Environmental Quality Act (CEQA)
A statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible.

Caltrans
California Department of Transportation - State agency responsible for the design, construction, maintenance, and operation of the California State Highway System, as well as that portion of the Interstate Highway System within the State's boundaries.

Center for Demographic Research (CDR)
Develops demographic and socioeconomic projections for Orange County, known as the Orange County Projections, or OCP, the most recent series was adopted in September 2005.

Centerline Miles
The length of any given transportation corridor segment(s).

Chokepoint
A segment of a transportation corridor that consistently averages a significantly lower Level-of-Service during peak-hours as compared to the corridor's previous segments.

Commuter Bikeways Strategic Plan
This plan compiles the blueprints of existing and proposed regional bicycle facilities and local connector routes from Orange County cities and the County of Orange. Bikeways include a range of facilities, which are divided into three classifications:

- Class I bikeways are off-road, paved paths;
- Class II bikeways are on-road, signed and striped bicycle lanes;
- Class III bikeways are on-road, signed bicycle routes.

Commuter Rail
Any of several types of passenger rail systems that serves peak period commuter travel.

Connector Ramp
A segment on a freeway that provides access to another freeway.

Constrained Alternative
A set of projects and services that can be carried out with a restricted revenue source, providing minimal transportation improvements over the Baseline.

Corridor
A broad geographical band that follows a general directional flow or connects major sources of trips. It may contain a number of streets and highways, and transit lines and routes.

Direct Access Ramp
An on- or off-ramp that provides direct access between an arterial and an HOV lane on a freeway.

Environmental Impact Report (EIR)
A detailed report that identifies the environmental effects and considerations pertaining to a project as specified in the California Environmental Quality Act.

Express Bus
Relatively long-distance fixed-route buses that utilize high-occupancy vehicle (HOV) lanes on Orange County Freeways.

Express Lane
An additional lane(s) on a freeway that requires an access toll.

Fastrak Transponder
A transponder used to charge drivers using Orange County toll facilities, without the need for them to stop or slow their vehicles.

General Purpose Lane
Lanes accessible by all passenger vehicles, without toll or minimum passenger requirements.

Goods Movement
The shipping of consumer products from their places of origin to the consumer.

Grade Separation
Facilities that are either elevated above or trenched below the surface elevation.

High Speed Rail
Public transport by rail at speeds over 125 miles per hour.

High-occupancy Vehicle Lane (HOV)
A lane, or lanes, that are dedicated to passenger vehicles carrying two or more passengers, with a few exceptions such as single passenger motorcycles.

Incident Management
The use of intelligent transportation system (ITS) technology to track incident identification, incident response, and provide real-time traffic diversion to motorists.

Infrastructure
The basic facilities, equipment, services and installations needed for the growth and functioning of a community.

Intelligent Transportation Systems (ITS)
Technologies that are used to increase the level of service provided by the existing network of transportation facilities.

Lane-miles
The sum of the distance of each lane in a segment of a transportation corridor.

Magnetic Levitation (Maglev) Systems
A transportation technology that utilizes electromagnetic force to propel vehicles on a guide-way without the need for rails or wheels.

Managed Lanes
Designated freeway or roadway lanes that use a variety of operational actions to move traffic more efficiently.

Glossary

Master Plan
A plan for a regional system of facilities that ensures consistent standards and coordinated planning efforts.

Measure M
Half-cent sales tax, currently set to sunset in 2011, that allocates its revenues to specific Orange County transportation improvement projects in four major areas — freeways, streets, roads and transit.

MPAH Level-of-Service (LOS) Ratings
A letter grade indicating an arterial or highway facility's ability to provide unimpeded travel to drivers.

'A' – No physical restriction on operating speed.

'B' – Stable flow with few restrictions on operating speed.

'C' – Stable flow, higher volume, and more restrictions on speed and lane changing.

'D' – Approaching unstable flow, little freedom to maneuver, and conditions intolerable for short periods.

'E' – Unstable flow, low operation speeds, and momentary stoppages.

'F' – Forced flow operation at low speeds where the highway acts as a storage area and there are many stoppages.

Off-peak
Periods in the day when the majority of commutes are not being made.

One-way Couplet
Two one-way thoroughfares that direct traffic in opposite directions and are located in the same transportation corridor, but are separated by a physical obstruction of sorts (river, freeway, shopping center, etc…).

Orange County Transportation Authority (OCTA)
Formed in 1991 by the consolidation of six separate transportation agencies to develop and implement unified transportation programs and services for Orange County.

Park-and-Ride Lot
A parking area that permits drivers to park for the day in order to carpool or access transit, in an effort to reduce congestion.

Pavement Management
The assessment of pavement and identification of necessary maintenance required keep roadways and freeways in good condition.

Peak
Periods in the day when the majority of commutes are being made.

Person Trip
A trip made by a person using any transportation mode, or combination of modes, for any purpose.

Proposition 42
Allows for revenues from the State's share of the sales tax on gasoline to go towards transportation projects.

Public Transit
Public Transit (also called Mass Transit) includes various services using shared vehicles to provide mobility to the public.

Rail-to-Rail
A cooperative program wherein Amtrak will accept Metrolink's monthly pass for travel on Amtrak trains within the limits specified on the pass.

Ramp Metering
Signals placed on on-ramps that help to coordinate drivers merging onto freeways by spacing them according to the predicted congestion status.

Reversible Lanes
Lanes that change their directional flow according to traffic demand.

Rideshare
Multiple people in a vehicle, including carpooling, vanpooling, fixed-route bus service, and commuter rail.

Right-of-Way (ROW)
Land designated for use with transportation systems.

Segment
An arbitrarily selected section of a transportation corridor.

Shared-Ride Service
see Access.

Signal Synchronization
Synchronized timing of signals in order to optimize traffic throughput along roadways.

Signal Management
Optimizing signal efficiency through the use of ITS.

Single Occupant Vehicle (SOV)
Vehicles with one occupant.

Smart Street
See Arterial Highway Classifications.

Southern California Association of Governments (SCAG)
The Metropolitan Planning Organization (MPO) for six counties: Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. As the designated MPO, the Association of Governments is mandated by the federal government to produce plans for transportation, growth management, hazardous waste management, and air quality.

Toll Roads
Facilities that require a toll from users.

Transportation Corridor
A passage designated for use with transportation systems.

Traveler Information
Traffic information provided to travelers by traffic management centers through the use of intelligent transportation systems (ITS).

Unconstrained Alternative
Provides a look at what projects and services would be implemented to meet Orange County's travel demand if funds were not an issue.

Vehicle-Miles Traveled
A measurement of the total miles traveled by all vehicles. It is calculated by multiplying the number of vehicles by the miles traveled on a link or route.

NEW DIRECTIONS

Charting the course for Orange County's future transportation system

Orange County Transportation Authority
2006 Long-Range Transportation Plan

OCTA