



We're planning a better way
to move goods.



Metro®

2021 LA County Goods Movement Strategic Plan

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In Memory

LA Metro honors the memory and legacy of Connie Rivera, the Public Affairs Director for the Alameda Corridor Transportation Authority, who for many years provided tremendous insight, wisdom, leadership and her trademark great sense of humor in many LA County goods movement forums and discussions.

A product of Southern California, Connie resided in Long Beach, attended local schools and earned her bachelor's degree from Cal State University, Long Beach. She was passionate about her family and serving her community through the YMCA and Rotary Club. She will be remembered fondly by her many colleagues, especially the Ladies of Logistics, an informal group of women in non-traditional jobs leading and serving the logistics industry in Southern California.

Connie led with humility and graced Metro as a member of the Freight Working Group – her voice is embedded within the vision, principles and priorities of the LA County Goods Movement Strategic Plan. Metro dedicates this plan to Connie's memory and her unwavering belief that through hard work, collaboration and kindness people can come together to lift up and improve the quality of life for all LA County residents, families and communities.

In Tribute

LA County owes a deep debt of gratitude to the truck drivers, warehouse workers and all essential members of the logistics sector for keeping our homes, businesses and hospitals supplied with food, medicine and other necessities during the COVID-19 crisis. Your dedication and bravery ensured our families would be fed and have access to necessary goods at a critical time in our history. We honor those members of this vital industry that lost their lives during the pandemic and support your steadfast effort to distribute life-saving vaccines and treatments to all in need. Thank you.

In Thanks

LA Metro extends its deepest appreciation and thanks to the many community members, elected officials, agency staff members and executive leaders that came together over many meetings – in person and virtually – to develop the vision, mission and initiatives for the 2021 LA County Goods Movement Strategic Plan. Metro seeks to reflect within this plan the many hours of input you contributed and the collective vision you helped create to improve the goods movement system and the quality of life for all of LA County's residents, businesses and future generations.

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LA County's goods movement system is the backbone of our regional economy. It supports our current standard of living.

Our vibrant system continues to evolve through emerging industries and technologies, generating billions of dollars and thousands of jobs.



Source: Performance Team

Global supply chains are changing and rival ports are expanding, shifting dollars and jobs away from LA County. Growing demand for goods has increased vehicular traffic and decreased air quality, threatening our region's health, mobility and competitiveness.

Worse, a legacy of inequitable policies, displacements and investments has placed freight-related burdens primarily on low-income communities of color.



Source: Jae C. Hong/Associated Press

In response to these local and global challenges, we have a plan that will make LA County more resilient and efficient.

Our transformative plan is economically competitive, environmentally sustainable and socially equitable for our friends and neighbors. *It's a shared vision, a path to better health and prosperity for everyone.*



Source: Port of Long Beach

Letter from the CEO

Dear Friends,

The LA County Goods Movement Strategic Plan sets forth a bold and timely course of action for Metro to lead and partner with our regional stakeholders to create a future LA County that is economically competitive, environmentally sustainable and socially equitable.

The timing of the plan could not be better – as our nation shut down in response to COVID-19, we clearly saw how vital our goods movement industry is to keep our families fed, our businesses open and our hospitals fully stocked. We also witnessed how pre-existing inequities and poor health caused by the movement of freight are further exacerbated by the deadly health and economic impacts of this devastating global pandemic.

This strategic plan is a call to action for LA County stakeholders and our state and federal partners to work together today on behalf of our 10.3 million residents to respond to the many freight-related challenges that will constrain our inclusive, sustainable shared prosperity of tomorrow.

The national and regional importance of the Ports of Long Beach and Los Angeles cannot be understated – approximately 40% of waterborne cargo entering the United States flows through the San Pedro Bay Ports and one-third of all jobs in the region are dependent upon the goods movement industry. Our goods movement system is the lifeblood of an LA County economy that would be the 18th largest in the world if we were considered a nation.

LA County's position as the nation's pre-eminent trade gateway, thanks in large part to our proximity to Pacific Rim markets, faces strong competition from other regions in the country that have invested in their ports and landside infrastructure to siphon discretionary cargo – and the jobs, tax revenues and opportunities for upward social mobility that come with it – from Southern California.

Metro must take an active leadership role working with our goods movement stakeholders to reverse this trend. To do so we must invest in our shared use multimodal transportation system that moves people and goods to produce the requisite efficiencies and capacity that will create an infrastructure inheritance for future generations of LA County residents to enjoy greater mobility, cleaner air, economic prosperity and equitable opportunity. We will seek funding and supportive policies from our state and federal partners that rely so heavily on the economic activity generated by our LA County ports, manufacturing facilities and logistics hubs.

With this looming crisis in mind, Metro convened an unprecedented array of leaders from local communities, the goods movement industry, public agencies and the private sector to help us develop a plan that reflects the current concerns, priorities and goals of LA County as a whole. Our stakeholders confirmed Metro's view that increasing our economic competitiveness must include a commitment to environmental sustainability and regional equity. Metro believes these goals are complementary, not mutually exclusive. With this in mind our colleagues came to a consensus that Metro should promote a sustainable freight competitiveness framework that is **centered on equity**.

From this framework emerged five strategic initiatives our partners identified as near-term equity-conscious strategies to implement the plan's vision: (1) creating a formal, recurring equity freight working group; (2) deploying cleaner truck technology to displace diesel operations on freight-intense highway corridors; (3) forming a high-level freight rail partnership to drive investment into LA County; (4) leading a countywide discussion on the role of goods movement needs in curbside management planning and policies; and (5) partnering across the region to foster workforce development programs that support the freight labor needs of tomorrow.

The goods movement challenges facing LA County require Metro and our partners to work together with urgency and take bold leadership to implement this inclusive, sustainable and equitable strategic plan to engender robust economic growth and shared prosperity. We thank our regional partners and Metro staff for their tireless support to create this dynamic, transformative plan that will guide Metro's goods movement planning activities over the next five years and to achieve together what we cannot accomplish alone.

Delivering the strategies within this plan will catalyze LA County's economic recovery and will position LA County to provide outstanding passenger and freight transportation to the world when we host the 2026 World Cup and 2028 LA Summer Olympic Games, and to make good on our promises to our residents that entrusted us with implementing Measure R (2008) and Measure M (2016).

We have much work to do before then, so let's get moving.

Sincerely,

A handwritten signature in black ink, appearing to read "Phillip A. Washington". The signature is fluid and stylized, with a large initial "P" and a long, sweeping underline.

Phillip A. Washington
Chief Executive Officer

Metro's Call to Action

The 2021 LA County Goods Movement Strategic Plan is Metro's response to the many freight-related transportation planning challenges that undermine our county's efforts to be economically competitive, environmentally sustainable and socially equitable. As the nation's most populous county with the country's busiest seaport complex, LA County reaps tremendous economic and employment benefits from – yet suffers impacts to local communities, mobility and public health due to – the tremendous volume of containers moved through the San Pedro Bay Ports annually, the thousands of trucks and trains that distribute goods daily throughout the region and the facilities that support the region's goods movement industry.

These challenges have only intensified since Metro last convened regional freight stakeholders and developed the Multi-County Goods Movement Action Plan (2008) with partner agencies in Southern California. Since that time four major developments of great importance to LA County have emerged in the world of goods movement.

- > First, the level of funding for goods movement projects has reached its highest level ever, thanks in large part to LA County's recent passage of two transportation sales taxes in 2008 (Measure R) and 2016 (Measure M), the state's passage of the Road Repair and Accountability Act of 2017 (Senate Bill 1) – and its component discretionary grant programs – and the federal passage of the Fixing America's Surface Transportation Act of 2015 (FAST Act) and its new freight-focused grant programs.
- > Second, the state and federal governments have recently released new freight plans (the California Freight Mobility Plan 2020 and the National Strategic Freight Plan, respectively) meant to guide policy and investment decisions that will ultimately affect LA County.
- > Third, the long-standing concerns raised by equity-focused communities regarding the impacts of goods movement on their vulnerable residents – coupled with the overlapping goal to improve air quality through reducing harmful emissions attributed to freight – have crystallized into aggressive action by state agencies and the Governor in the form of new regulations, mandates and executive orders affecting aspects of goods movement planning.

- > Fourth, the COVID-19 pandemic that began in 2020 has exposed and exacerbated existing health and economic disparities that will require LA County to develop an economic recovery plan that fully supports investment in goods movement infrastructure, technology and workforce development to improve equity and economic opportunity throughout the county.

The 2021 LA County Goods Movement Strategic Plan represents the results of Metro's leadership in bringing together myriad stakeholders from the community, private and public sectors to develop a shared vision for how the county should work together over the next five years to advance common goals and assert itself at the state and federal levels. Central to the plan is the strategic framework developed collaboratively with these stakeholders to achieve inclusive growth that supports the county's economic competitiveness, environmental sustainability and social equity goals. By creating a vision for goods movement needs in LA County, Metro seeks to engage our regional, state and federal partners to develop and enrich planning efforts at these levels of government with the priorities of the county in mind.

Metro's Goods Movement planning division in the Countywide Development and Planning department developed this plan and will lead its implementation. This plan aligns with Metro's Vision 2028 Strategic Plan and 2020 Long Range Transportation Plan and sets forth the strategic initiatives and priorities for Metro's goods movement planning activities over the next five years.



Goods Movement Vision

Metro endeavors to serve LA County as:

- > A **national leader** and **regional partner** in implementing a modern, responsive, coordinated and effective freight transportation system through policies, programs and projects that support a competitive global economy; and as
- > A steward of **equitable and sustainable investment** and **technological innovation** that will increase regional economic competitiveness, advance environmental goals and provide access to opportunity for county residents.

Guiding Values

Equity and Sustainability: The Goods Movement Strategic Plan is founded on the values of equity and sustainability. The strategies and initiatives developed through the plan seek to elevate and engrain these values into its priorities and strategic initiatives.

Guiding Priorities

A Strong Labor Force: Do existing policies and programs position the local labor force of today to support the goods movement industry of tomorrow? What are the education and skill gaps that need to be addressed? Where are the opportunities to partner across industries and regions to enhance the labor force? Does the regional transportation system provide adequate mobility options to connect existing and future workers to these jobs and industries?

A Safe and Efficient Multimodal System: As the population grows how can we ensure the shared use system safely meets future demand for capacity? Will the multimodal system be able to respond to changes in the way people and goods move? Are mitigations and improvements scheduled to be implemented to reduce impacts associated with greater use of the system?

Strong Markets and Reliable Supply Chains: Do we have a strong, articulated and coherent economic strategy to develop a vital mix of businesses and policies to foster a vibrant and inclusive economy? Are we aware of and protecting against external threats that can disrupt our markets and supply chain?

A Culture of Investment and Innovation: Is the mix of regional leadership, policy environment and available capital sufficient to support investments in infrastructure and technology? How do we balance our unique regulatory and policy environment with the need for private sector investment?

Strategic Goods Movement Initiatives

Metro developed the following strategic initiatives and strategies to operationalize the plan's guiding values and priorities. These initiatives reflect input and feedback Metro received from goods movement stakeholders and partners, presenting an opportunity for Metro to take a leadership role addressing LA County goods movement issues, while partnering and collaborating with local, regional, state and federal partners.

Figure 1

Strategic Goods Movement Initiatives

Initiatives	Strategies
1. Equity for Goods Movement Initiate a recurrent goods movement-focused task force comprising equity-focused stakeholders as a forum to give and receive input to guide Metro's planning efforts on goods movement related issues.	1.1 Engage in meaningful, ongoing dialogue with equity-focused and goods movement stakeholders and experts to develop a deeper understanding of equity issues, risk factors and disparities in LA County so that equity considerations are mainstreamed in Metro's Goods Movement planning efforts. 1.2 Develop a list of equity risk factors most affected by goods movement activities and create performance measures to track progress and support accountability for Metro's equity promises. 1.3 Develop an information clearinghouse on goods movement equity strategies and programs in partnership with other departments within Metro in support of an agencywide Equity Program.
2. LA Metro Countywide Clean Truck Initiative Develop a Countywide Clean Truck Initiative to accelerate the deployment of near-zero and zero emission trucks in the region to address air quality and public health concerns, particularly for our most vulnerable communities along major freight highway corridors.	2.1 Establish a formal, recurring Countywide Clean Truck Initiative Working Group consisting of representatives from community groups, local/state/federal agencies, the trucking industry, air quality regulators, the ports, utilities, Caltrans, researchers and manufacturers. 2.2 Develop an information clearinghouse in partnership with other agencies for Countywide Clean Truck Initiative programs. 2.3 Establish revenue streams to fund the Countywide Clean Truck Initiative. 2.4 Develop scope, funding eligibility, funding methods, evaluation processes, performance metrics and performance monitoring mechanisms for programs developed through the Countywide Clean Truck Initiative. 2.5 Develop and implement the 710 Clean Truck Program on the I-710 corridor.
3. Southern California Rail Investment Partnership Craft a public-private framework for a collaborative freight rail investment partnership focused on improving the region's shared use freight rail corridors.	3.1 Develop a freight rail investment partnership for LA County. 3.2 Assess and implement opportunities to realize equity and sustainability goals. 3.3 Develop an LA County Freight Rail Investment Legislative Platform. 3.4 Support regional mobility goals through the improvement of shared use transportation infrastructure.
4. Urban Freight Delivery Mainstream urban delivery and curbside demand issues across other planning efforts within Metro and LA County jurisdictions to achieve coordinated solutions to address these challenges.	4.1 Understand the scope and magnitude of issues surrounding urban delivery issues across the county. 4.2 Continue the curbside mobility forum as a recurring event. 4.3 Develop Metro's Curbside Mobility Policy platform. 4.4 Create a countywide data portal for curbside demand management. 4.5 Pursue pilot projects to test findings from all the aforementioned efforts.
5. Logistics Workforce and Competency Ensure that LA County has a strong labor pool to support its economy through research and initiatives to identify and address workforce skillset gaps and investment needs.	5.1 Partner with academic and research institutions to pursue applied research to understand gaps in skills and competencies of the region's logistics workforce that are sought by employers. 5.2 Expand Metro's partnership with trade schools, community colleges and major employers to offer opportunities to experiment and validate existing workforce development programs. 5.3 Expand Metro's local and targeted hiring policies to benefit members of historically disadvantaged communities. 5.4 Expand Metro's current training programs with the foresight to train the workforce of the future to ensure it will be equipped to respond to changing technologies in the transportation and transit industry. 5.5 Advocate for regional, state and federal funding programs for building and enhancing workforce development and competency to ensure that workers in LA County will be able to capitalize on employment opportunities. 5.6 Improve the countywide transit service network offered by Metro and regional partners to meet the needs of the goods movement workforce and enhance its ability to access desirable jobs and training sites.

Goods movement is the lifeblood of our regional economy.

LA County's extensive goods movement transportation network, which includes deep water ports, airports, railways and freeways, has positioned the region as one of the most dynamic and competitive markets in the entire world. We are the gateway of choice for international trade and our system supports the everyday need of local residents and the economies of California and the United States.





Where goods flow, the economy grows.

Successful societies across the history of civilization share similar hallmarks – in particular, their economic competitiveness and quality of life depend greatly on a strong transportation system that allows for the efficient movement and delivery of goods. This flow of goods serves as a physical manifestation of the millions of consumer economic choices and production activities that fuel our daily lives.

Unsurprisingly, the rise of LA County as the 18th largest economy in the world (2020)¹ – and as a regional, national and international economic, industrial and manufacturing powerhouse – traces its genesis directly to the development of its regional, multimodal freight system. The arrival of the Santa Fe Railroad in 1885, the founding of the Port of Los Angeles in 1907 and the Port of Long Beach in 1911 and the post-war development of the region's extensive freeway system connected local and regional industries to national and global markets. These developments fostered the county's growth in economic opportunity, attracted westward migration and improved the quality of life for all Southern Californians. This symbiotic relationship remains true today, even as the LA County freight network has expanded into a sophisticated system of marine terminals, railroads, highway corridors and air cargo facilities, while the industries supported by this system have evolved beyond dairy, citrus and oil production to include aerospace and defense, bio-science, technology, entertainment, manufacturing and logistics.

Today, LA County's goods movement system is the backbone of the regional and national economy. This "system of systems" is the lifeblood for industries that contribute billions to the regional economy and provide thousands of jobs nationwide. This system has helped the county become the gateway of choice for international trade and is key to the attraction, retention and growth of county businesses and their attendant employment opportunities. At the local level this multimodal network facilitates a robust and convenient urban quality of life by allowing residents and businesses to access goods from across town or around the world, all delivered to their doorsteps, sometimes in a matter of hours.

LA County's goods movement system is the lifeblood for industries that contribute billions to the regional economy and provide millions of jobs nationwide.

Existing conflicts and looming problems threaten LA County's economic competitiveness. These factors include high costs of conducting business, recurrent congestion, local to national policies and regulations that create uncertainty over benefits of operating business through the county and intensifying competition from East Coast, Gulf Coast and West Coast ports in North America. Most recently, in 2019, LA County's preeminence in attracting discretionary international cargo into the United States was endangered as the laden container volume at the Port of Long Beach dropped from second to third place in national container port rankings.²

As productivity and efficiency improvements to support a healthy goods movement system have materialized, oftentimes the prosperity brought by robust economic activities has been shared unevenly across communities, thus resulting in a series of challenges that increasingly threaten the county's ability to ensure quality of life for everyone. Historically underserved communities, particularly those near goods movement corridors and facilities, lose community cohesiveness and suffer displacement due to freeway construction, bear disproportionate exposure to pollutant emissions and their associated health impacts and lack sufficient means to realize upward mobility as a result of long-standing adversarial public policy and investment decisions.



Source: Performance Team

We find ourselves at an important juncture in LA County's history. Rival North American trade gateways have invested heavily to vie for discretionary cargo and gain market share, leading to the siphoning away of our region's economic prosperity. To fend off these competitors, LA County must also invest in its multimodal freight system – an effort to be conducted within the policy parameters of achieving future mobility goals and air quality mandates, while acknowledging and addressing past inequitable policies and investment decisions. LA County must rise to meet these challenges and steer a course toward economic recovery, prosperity and opportunity that is built on equity, inclusion and sustainability.

This 2021 LA County Goods Movement Strategic Plan (the plan) will help guide that course. Through the development and implementation of this plan, Metro has an opportunity to lead the region in identifying and addressing goods movement challenges and to partner with myriad regional goods movement stakeholders to allow the nation's most populous county to make progress toward its economic, mobility, environmental and equity goals.

LA County Goods Movement at a Glance

The multimodal freight system serves the goods movement and mobility needs of the nation's most populous county – with **over 10 million residents** – and an estimated **50 million visitors** annually.

In 2018, the San Pedro Bay Ports together ranked as the largest container port complex in the United States and the **9th largest in the world.**³

From 2019 to 2020 **34% of all U.S. containerized cargo** flowed through the San Pedro Bay Ports. The Ports of LA and Long Beach handled **38% of containerized imports** and **25% of containerized exports** (volume in TEUs) during this two-year period.

In 2018, **29.5% of intermodal containers** flowing through the ports were moved by BNSF Railway and Union Pacific Railroad.⁴

In 2018, Los Angeles International Airport (LAX) was ranked the **4th busiest cargo airport** in the United States and **10th in the world.**⁵

In 2019, the LA region, the nation's top-ranked customs district, registered **\$486 billion worth of exports** and imports transported through the San Pedro Bay Ports and LAX.⁶

In 2019, LA County housed nearly **495 million square feet** of manufacturing space and nearly **568 million square feet** of warehouse space.⁷

LA County is the “food capital” of the United States, serving as the core of the nation's food supply chain. In 2012, LA County **ranked 1st** (by county) in both food outflow and inflow, **shipping 33% and receiving 78% more tons of food** than the #2 county.⁸



PHOTO CREDIT: Los Angeles World Airports

Source: Los Angeles World Airports

This plan is a new strategic direction.

Metro's mission is to provide a world-class transportation system that enhances quality of life for all who live, work and play within LA County. How Metro will achieve this broad mission over the next 10 years is guided by two key planning initiatives.

Vision 2028

Adopted by the Metro Board in June 2018, this is the agency's big picture plan for improving mobility across LA County. As outlined in the *Vision 2028 Strategic Plan*, Metro's visionary outcome is to double the share of transportation modes other than solo driving. Its five goals underpin all of Metro's activities, including this Goods Movement Strategic Plan:

- 1 Provide high-quality mobility options that enable people to spend less time traveling
- 2 Deliver outstanding trip experiences for all users of the transportation system
- 3 Enhance communities and lives through mobility and access to opportunity
- 4 Transform LA County through regional collaboration and national leadership
- 5 Provide responsive, accountable, and trustworthy governance within the Metro organization

Long Range Transportation Plan (LRTP)

This plan serves as the blueprint for how Metro will spend anticipated revenues in the coming decades to operate and maintain both our existing and planned system.⁹ This blueprint will be informed by a variety of other Metro plans, including this Goods Movement Strategic Plan.

This Goods Movement Strategic Plan is Metro's response to the many freight-related challenges we face. It defines the vision of Metro and the goods movement stakeholders, and aligns that vision with Metro's overall mission and goals. The plan describes how Metro should work with local, regional, state and national partners to improve LA County's competitiveness in an equitable and sustainable manner, delineating which initiatives Metro should lead, partner and support. Altogether, this plan provides a strategic framework to guide Metro's goods movement-related planning activities, investments, partnerships and decision-making over the next five years.

Our Goods Movement Vision

Metro's Goods Movement vision is that the implementation of this plan will allow Metro to become:

- > A **national leader** and **regional partner** in implementing a modern, responsive, coordinated and effective freight transportation system through policies, programs and projects that support a competitive global economy; and
- > A steward of **equitable and sustainable investment** and **technological innovation** that will increase regional economic competitiveness, advance environmental goals and provide access to opportunity for county residents.

Metro's Goods Movement vision fits squarely within these existing frameworks.

Access to Opportunity

Well-planned goods movement activities foster sustainable economic competitiveness and create job opportunities that offer access to upward mobility.

Complete Streets

Integrating urban goods movement needs into complete streets planning helps create safe and thriving communities by reducing conflicts between people and freight activities.

Less Congestion

Efficient freight movements on shared use rail and highway corridors reduce congestion, create additional opportunities for transit and support the timely movement of goods.

Figure 2

Metro's Framework for Improving Mobility in LA County

We're guided by our *Strategic Plan* goals.

 *Vision 2028 Strategic Plan*

We're creating

① *Faster Travel Options* ② *Better Trips* ③ *Thriving Communities*

Better Transit

Providing more transit options with improved quality and service

- *Transit Projects*
- *Bus Improvements*
- *New Mobility Options*

Less Congestion

Managing the transportation system to reduce the amount of time spent in traffic

- *Roadway Improvements*
- *Congestion Management*
- *Improved and Efficient Goods Movement*

Complete Streets

Making streets and sidewalks safe and convenient for everyone, to support healthy neighborhoods

- *Bike and Pedestrian Projects*
- *Local Street Improvements*
- *Station and Stop Access Enhancements*

Access to Opportunity

Investing in communities to expand access to jobs, housing and mobility options

- *Workforce Initiatives*
- *Support for Local Businesses*
- *Transit Oriented Communities*

 *Long Range Transportation Plan*

We're committed to

④ *Leadership* ⑤ *Accountability*



Collaboration



Continuous Improvement



Customer Focus



Innovation



Inspired and Inclusive Workforce



Safety



Customer Experience Plan



COVID-19 Recovery Plan

We're intentionally focused on

eliminating racial and socioeconomic disparities and advancing sustainable practices in everything we do.



Equity



Sustainability



Equity Plan



Moving Beyond Sustainability Plan

Metro can't do it alone.

The movement of goods within and through LA County depends upon, impacts and supports many communities, businesses, organizations, public agencies and private companies. Numerous agencies plan, fund and regulate the “economy in motion” at the local (municipal and county), regional, state and federal levels. Metro must rely on a robust and diverse network of these vital stakeholders to develop a Goods Movement Strategic Plan that is relevant, impactful and forward-looking. The plan was established on the principle of equity, and focuses on implementing priorities to advance LA County’s sustainable freight competitiveness that aligns with regional, state and federal planning efforts. Accordingly, Metro cannot implement and advance sustainable freight competitiveness priorities alone. To be successful Metro must foster a strong collaboration and partnership with our partner communities, agencies and organizations.

Metro must rely on a robust and diverse network of these vital stakeholders to develop a Goods Movement Strategic Plan that is relevant, impactful and forward-looking.

Policy and Institutional Framework

Metro’s LA County Goods Movement Strategic Plan must be responsive to planning efforts developed by many agencies at the county, regional, state and federal levels. As more funding opportunities and regulatory requirements are established for the goods movement sector, these planning efforts will need to intersect and support each other in a coordinated manner. Convening stakeholders, engaging in dialogue and developing areas of overlapping priorities will be vital to ensuring that Metro’s plan is coordinated with and funded by the many stakeholder agencies involved with advancing goods movement policy and projects.

Figure 3 lists local stakeholders who contributed to the development of the plan. Figure 4 documents the coordination efforts and corresponding plans and funding programs offered at the regional, state and federal levels.

Figure 3

LA County Stakeholders

Category	Organization
California Transportation Commission (CTC)	Commissioners Fran Inman, Hilary Norton and Dr. Joseph Lyou
Community-based Organizations	BREATHE California of Los Angeles County Coalition for Environmental Health and Justice (CEHA) Communities for a Better Environment East Yard Communities for Environmental Justice Long Beach Alliance for Children with Asthma
Delivery Service	FedEx United Parcel Service (UPS)
Economic and Workforce Development	Bizfed International Brotherhood of Electrical Workers, Local 11; National Electrical Contractors Association, Los Angeles; LMCC International Brotherhood of Teamsters, Local Union 848 Labor For Sustainability Los Angeles Area Chamber of Commerce Los Angeles County Economic Development Corporation
Equity, Health and Environmental Advocacy	California Endowment Coalition for Clean Air Environmental Defense Fund Natural Resources Defense Council (NRDC)
Freight Industry	FuturePorts LA Customs Brokers & Freight Forwarders Association, Inc.
Freight Railroads – Class I	BNSF Railway Union Pacific Railroad (UP)
Freight Railroads – Class III (Short Line)	Los Angeles Junction Railway (LAJ) Pacific Harbor Line (PHL)
Highway/Auto Policy	Automobile Club of Southern California (AAA)
Local Jurisdictions and Councils of Governments (COGs)	City of Long Beach City of Los Angeles City of Palmdale County of Los Angeles (Department of Public Works) County of Los Angeles, Supervisorial Districts 1, 4 and 5 Gateway Cities Council of Governments North Los Angeles County Transportation Coalition San Gabriel Valley Council of Governments South Bay Cities Council of Governments
Marine Terminals	APM Terminals Pier 400 Los Angeles Long Beach Container Terminal Pacific Merchant Shipping Association (PMSA) TraPac West Basin Container Terminal (WBCT), Yang Ming (America) Corp.
Original Equipment Manufacturers (OEMs)	BYD Motors Cummins Westport Toyota Motor Company US Hybrid

Category	Organization
Ports	Los Angeles World Airports (LAWA) Port of Long Beach Port of Los Angeles
Public Utilities Commission	California Public Utilities Commission
Real Estate Industry	Majestic Realty, Inc. The Commercial Real Estate Development Association (NAIOP) Watson Land Company
Regulatory Agency	California Air Resources Board (CARB) South Coast Air Quality Management District (SCAQMD) U.S. Environmental Protection Agency Region 9
Research/Academic	Calstart CSULB Center for International Trade & Transportation (CITT) METTRANS Transportation Consortium (USC/CSULB) UCLA Luskin Center for Innovation USC Program for Environmental and Regional Equity (PERE)/Equity Research Institute (ERI): Data and Analysis to Power Social Change
Technology	Clean Energy Fuels Los Angeles Cleantech Incubator
Transportation and Planning Agencies	Alameda Corridor Transportation Authority (ACTA) Caltrans District 7 Los Angeles Department of Transportation (LADOT) Metrolink (Southern California Regional Rail Authority) Southern California Association of Governments (SCAG)
Trucking Industry	California Fleet Solutions/Velocity Vehicle Group California Trucking Association Harbor Trucking Association NEXT Trucking
Utilities	Los Angeles Department of Water and Power (LADWP) Southern California Edison Southern California Gas

Figure 4

Regional, State and Federal Relationships

	Agency	Plans	Funding Programs
Regional	LA Department of Water and Power, Southern California Edison		Charge Ready Transport Program
	Metrolink (Southern California Regional Rail Authority)	Southern California Optimized Rail Expansion (SCORE) Program	
	Mobile Source Air Pollution Reduction Review Committee (MSRC)		Regional Goods Movement Program
	Orange, Riverside, San Bernardino and Ventura Counties		
	Southern California Association of Governments (SCAG)	Regional Transportation Plan/ Sustainable Communities Strategies (RTP/SCS)	
	South Coast Air Quality Management District (SCAQMD)	Air Quality Management Plan (AQMP)	Goods Movement Emission Reduction Projects (Proposition 1B Program)
State	California Air Resources Board (CARB)	California Sustainable Freight Action Plan	Carl Moyer Memorial Air Quality Standards Attainment Program
		The Climate Change Scoping Plan	Clean Off-Road Equipment (CORE) Voucher Incentive Program
		The State Implementation Plan	Hybrid & Zero-Emission Truck & Bus Voucher Incentive Project (HVIP) AB617-Community Air Protection Funds
	California Department of Transportation (Caltrans)		Truck Loan Assistance Program
			Volkswagen Environmental Mitigation Trust
	California Department of Transportation (Caltrans)	California State Rail Plan	State Highway Operation and Protection Program (SHOPP)
		Southern California Freight Strategy	
	California Energy Commission (CEC)	Integrated Energy Policy Report (IEPR)	Electric Program Investment Charge (EPIC) Program
			Natural Gas Program
			The Clean Transportation Program
	California Public Utilities Commission (CPUC)		Section 130 Grade Crossing Hazard Elimination Program
			Section 190 Grade Separation Program
	California State Transportation Agency (CalSTA)	California Freight Mobility Plan (CFMP)	Transit & Intercity Rail Capital Program (TIRCP)
		Climate Action Plan on Transportation Infrastructure (CAPTI)	
	California Transportation Commission (CTC)		Senate Bill 1 Solutions for Congested Corridors Program (SCCP)
			Senate Bill 1 Trade Corridor Enhancement Program (TCEP)

	Agency	Plans	Funding Programs
Federal	United States Department of Energy (DOE)		Office of Energy Efficiency and Renewable Energy (EERE)
	United States Department of Transportation (USDOT)		Better Utilizing Investments to Leverage Development (BUILD) Grant Program
			Infrastructure for Rebuilding America (INFRA) Grant Program
	<i>Federal Aviation Administration (FAA)</i>		
	<i>Federal Highway Administration (FHWA)</i>		Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Grant Program
			National Highway Freight Program
	<i>Federal Maritime Administration (MARAD)</i>	National Maritime Strategy	Port Infrastructure Development Program (PIDP)
	<i>Federal Railroad Administration (FRA)</i>		Consolidated Rail Infrastructure and Safety Improvements (CRISI) Program
			Railroad Rehabilitation and Improvement Financing (RRIF) Program
	United States Environmental Protection Agency (EPA)		Diesel Emission Reduction Act (DERA) Program
			Targeted Airshed Program

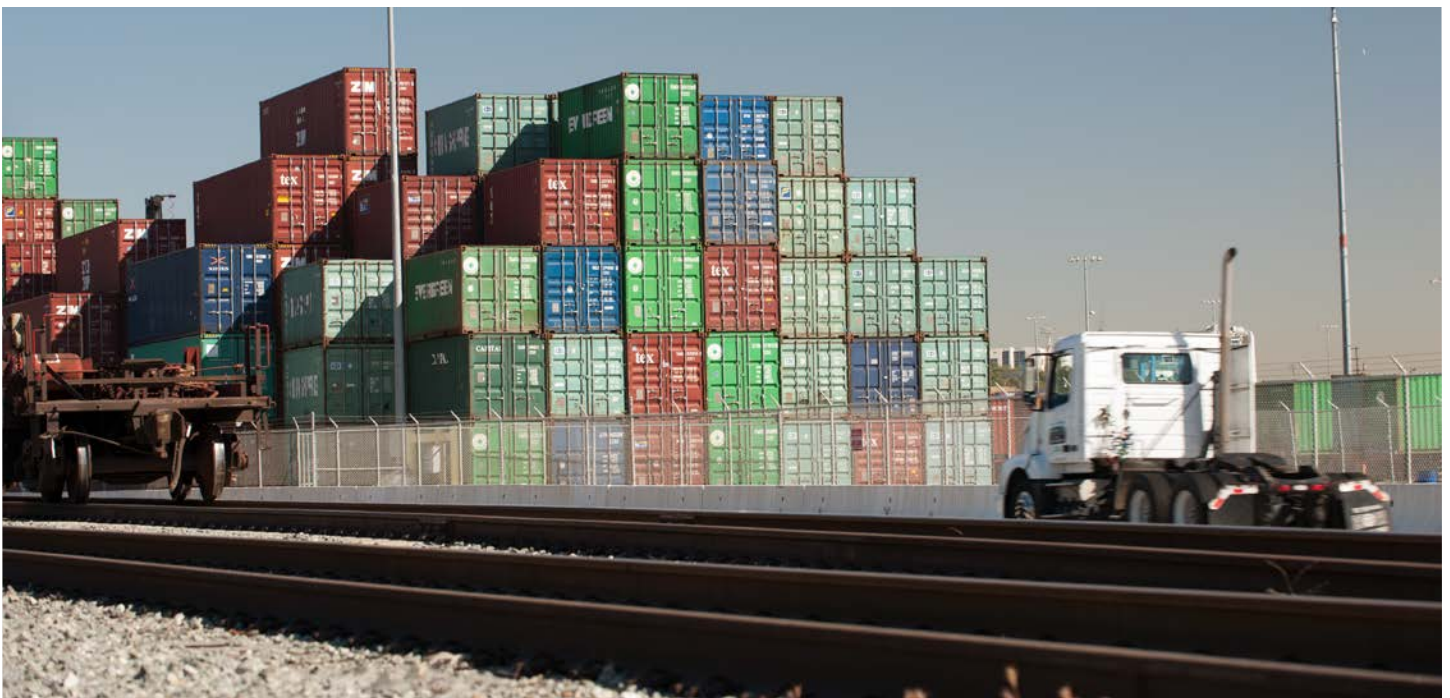
Our multimodal network drives a global powerhouse.

LA County's robust, multimodal goods movement network drives and sustains the region's status as a global economic powerhouse. This extensive transportation network – comprising deepwater ports, airports, railways and myriad freeways (Figure 5) – fuels the region's standing as one of the most dynamic and competitive markets in the entire world. LA County serves as a national and international goods movement hub, connecting producers and consumers around the globe. Nearly 115 million tons of imports and exports worth \$375 billion moved through the San Pedro Bay Ports (the SPB Ports) in 2019 (although the following years saw declines due to trade war tariffs and COVID-19 impacts).¹⁰ This sum represents nearly three-quarters of the overall west coast containerized import/export market and nearly one-third of the nation's total throughput. Similarly, the Los Angeles International Airport (LAX) handled two million tons of air cargo in 2019, with the value of these exports and imports worth nearly \$121 billion.¹¹

LA County's arterial and local street networks provide vital first and last mile access to all types of businesses and residential units. These networks are highly developed so that trucks can make deliveries to fulfill demand from ever-growing population and business activities.

More than 29,000 retail establishments, 24,000 businesses providing accommodation and food services and hundreds of residential neighborhoods generate demands for truck deliveries on daily basis.¹² These roads are also shared with other travel modes, including buses, passenger cars, active transportation users and Transportation Network Companies such as Lyft and Uber. The impacts of trucks traveling on shared use corridors, operational conflicts between trucks and passenger and transit vehicles and pedestrian and bicyclist safety on these local streets cannot be underestimated.

Much of the county's freight rail network is also a shared mobility corridor with passenger and commuter rail services. Accommodating growth in both freight rail and passenger rail volumes within limited system capacity to support a global powerhouse while ensuring personal mobility and accessibility is a challenging task. Across the county a significant portion of our multimodal goods movement network is a shared system that offers mobility and accessibility to residents and businesses. Accordingly, the performance of our shared multimodal network influences the global competitiveness of our goods movement system at the same time that it impacts personal mobility.



Map of Southern California showing freight rail main lines, national highway freight corridor segments, and intermodal facilities. The map includes labels for Ventura County, Los Angeles County, San Bernardino County, Orange County, and Riverside County. Key features include the Pacific Ocean, Port of Los Angeles, Port of Long Beach, and various airports (LAX, BUR, LGB, PMD). A legend identifies symbols for intermodal facilities, freight rail main lines, national highway freight corridor segments, Alameda Corridor, parcel warehouse use, parcel manufacturing use, airports, and seaports. A north arrow is also present.

Legend:

- Intermodal Facilities
- Freight Rail Main Line
- National Highway Freight Corridor Segments
- Alameda Corridor
- Parcel: Warehouse Use
- Parcel: Manufacturing Use
- Airport
- Seaport

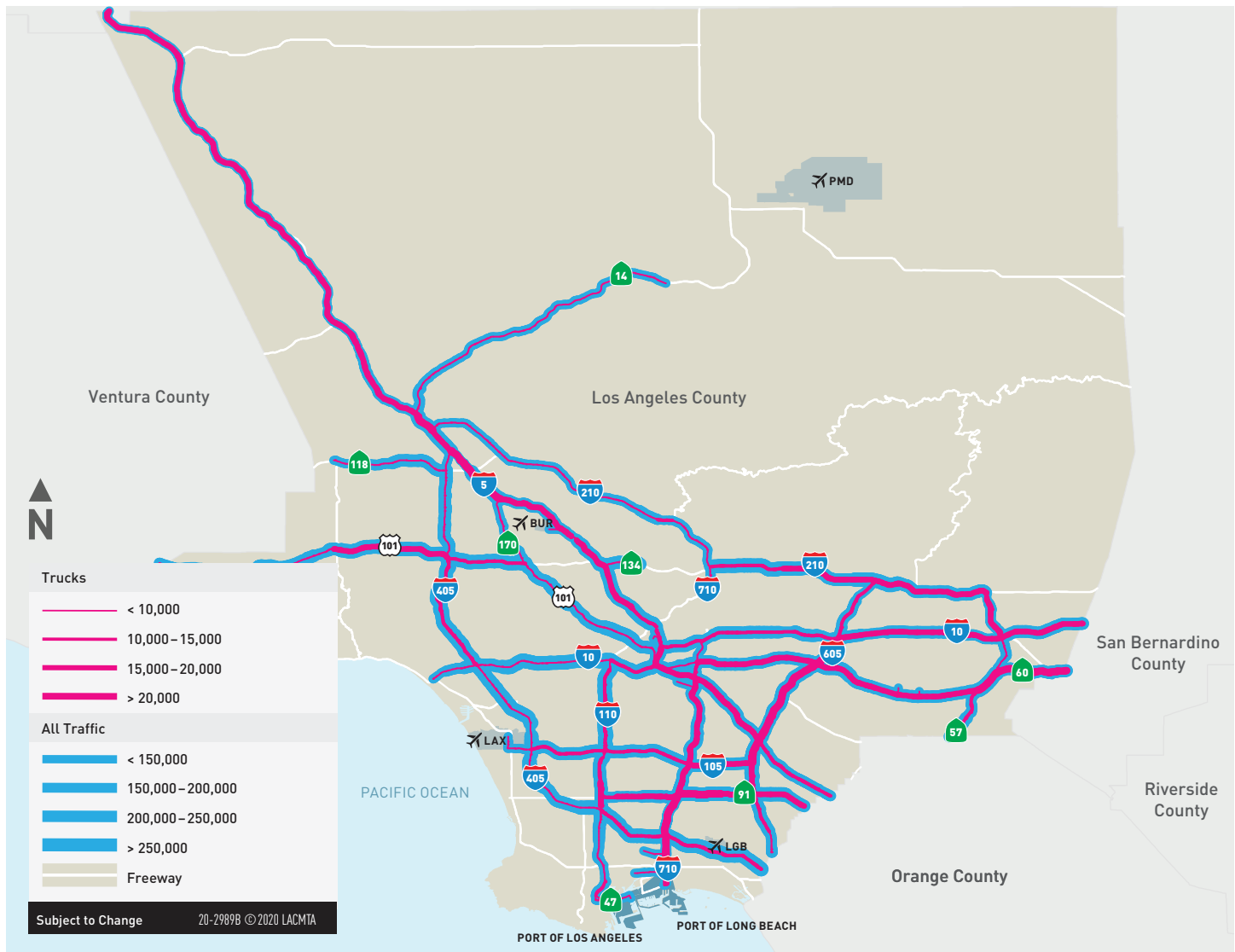
Subject to Change 20-2989A © 2020 LACMTA

Freight rail is an efficient and effective way of moving a large volume of goods over long distances. In 2018, 29.5% of containerized consumer goods imported through the SPB Ports was moved by rail.¹³

Across the county in 2019, nearly 495 million square feet of manufacturing space and nearly 568 million square feet of warehouse space supported production activities and the flow of goods to meet consumer demand throughout the greater LA region and the nation.¹⁴ Together with the seaports and airports, these industrial spaces and intermodal hubs are connected through the vast network of roadways to form one of the nation's most developed freight transportation systems.

Figure 6

VOLUMES ON THE NATIONAL HIGHWAY FREIGHT NETWORK



LA County is known for its expansive highway system that serves the goods movement and personal mobility needs of over 10 million county residents.¹⁵ This system is also a shared regional, state and national freight resource, connecting adjacent counties, states and national markets to the SPB Ports and local freight facilities – 485.15 miles of LA County's system are included in the National Highway Freight Network, representing nearly 14% of the designated miles in California.

Several freeways (I-710, I-605, SR-60 and SR-91) carry upwards of 25,000 trucks a day on some segments – with SR-60 carrying more than 51,000 daily trucks during its peak traffic hours. Other highway corridors (I-5, I-10, I-15 and I-210) carry on a daily basis more than 20,000 trucks (Figure 6).

These freeways also serve as key commute corridors, handling volumes of up to half a million vehicles per day in some locations.¹⁶ These constrained corridors will only see increased demand from trucks and vehicles as LA County's population, goods consumption and port-related container traffic increase in the coming years.

In LA County BNSF and UP provide freight rail services that connect the SPB Ports to places east of the Rocky Mountains, including many Midwest states and Chicago. Goods moved by rail include imported consumer goods through the SPB Ports and exported items like recycled materials, petroleum products and agricultural products from the Midwest.

[illegible]

At the SPB Ports the Pacific Harbor Line (PHL) provides on-dock rail service to both BNSF and UP traffic that travels through the Alameda Corridor to access primary intermodal railyards near downtown Los Angeles. The Los Angeles Junction Railway, located near the LA River in the City of Vernon, provides manifest train service to industrial and merchandise customers that are located in the vicinity.

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Freight is our economy in motion.

Freight movements are often described as the “economy in motion.” The LA County multimodal freight system not only moves the local economy, but also sustains the vitality of Southern California and the nation. Collectively, the trade and logistics industry in the greater LA County area generates nearly \$225 billion in economic output annually, supported by direct spending of \$132 billion, which includes \$44 billion in labor income paid to its employees in 2016.¹⁹

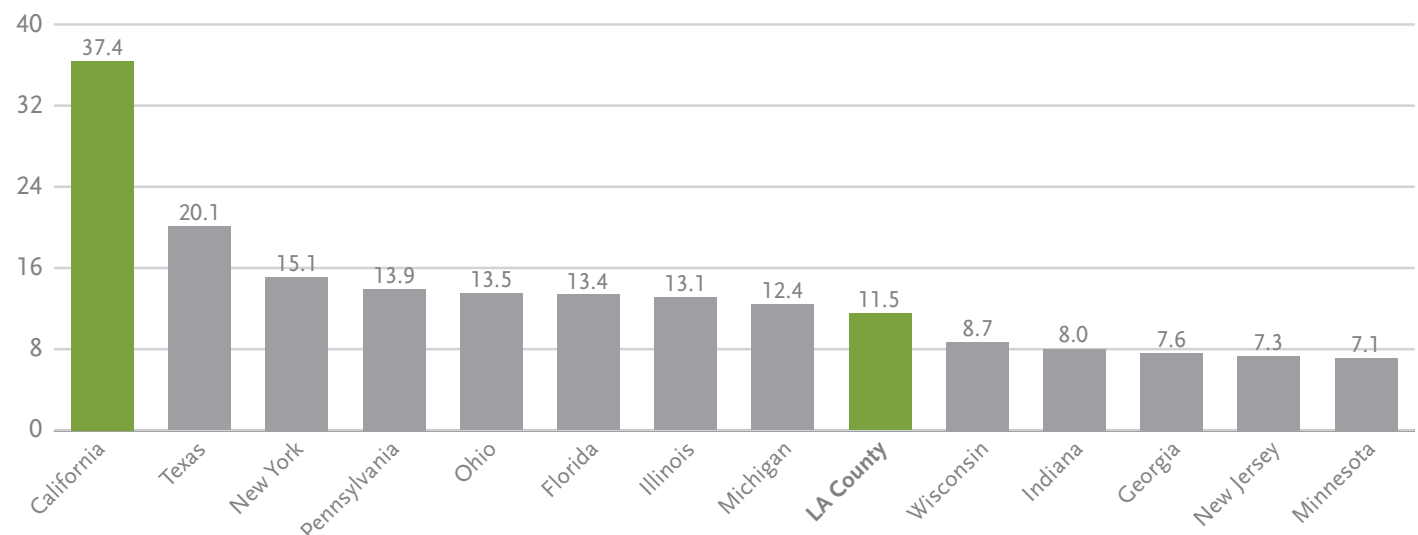
LA County’s unparalleled strength in international trade benefits not just large, multi-national companies, but also underpins the success of the more than 244,000 small and mid-sized businesses in LA County – particularly those that rely on an efficient goods movement system, like restaurants, construction, manufacturing and markets.²⁰

LA County is one of the top manufacturing hubs in the nation. In fact, if LA County were a state, it would be the ninth largest manufacturing state in the nation by the number of firms in 2018, following the state of Michigan with close to 11,500 manufacturing firms (Figure 8). In fact, roughly one quarter of all cargo coming through the SPB ports are intermediary goods that support local, regional and national manufacturing activities. The top five manufacturing sectors in LA County are in 1) fabricated metal product, 2) apparel, 3) food, 4) printing, and 5) miscellaneous product.²¹

Grouping all industries nationwide into four sectors of 1) manufacturing, 2) retail, 3) service, and 4) merchant wholesale trade, then analyzing the value of these shipments, sales and revenues, provides a better understanding of the role of manufacturing in our economy. At the national level the total value of manufacturing shipments in 2018 was \$5,954 billion, following service (\$16,196 billion) and merchant wholesale trade (\$8,192 billion); however, the manufacturing sector’s share of e-commerce shipment value is the highest among the four sectors at 67.3% (Figure 9).²² Compared to the retail sector that oftentimes receives a great amount of attention associated with delivery demand, the manufacturing sector actually generates a significantly higher value in e-commerce shipments – a value that increased at an average annual growth rate of 10.27% between 2000 and 2018. While this growth rate was statistically smaller than that of the retail sector (17.95%), the sheer magnitude of the manufacturing sector’s growth in the value of these shipments and sales merits noting (Figure 10). Although it is premature to link the value of shipments to the demand for delivery trucks, assuming this national trend can be similarly observed in LA County, the role of manufacturing and its contribution to the local economy and associated impact on local delivery demand is quite significant.

Figure 8

Top 13 U.S. States by Number of Manufacturing Firms, 2018 (in thousands)



Source: U.S. Census, County Business Pattern, 2018

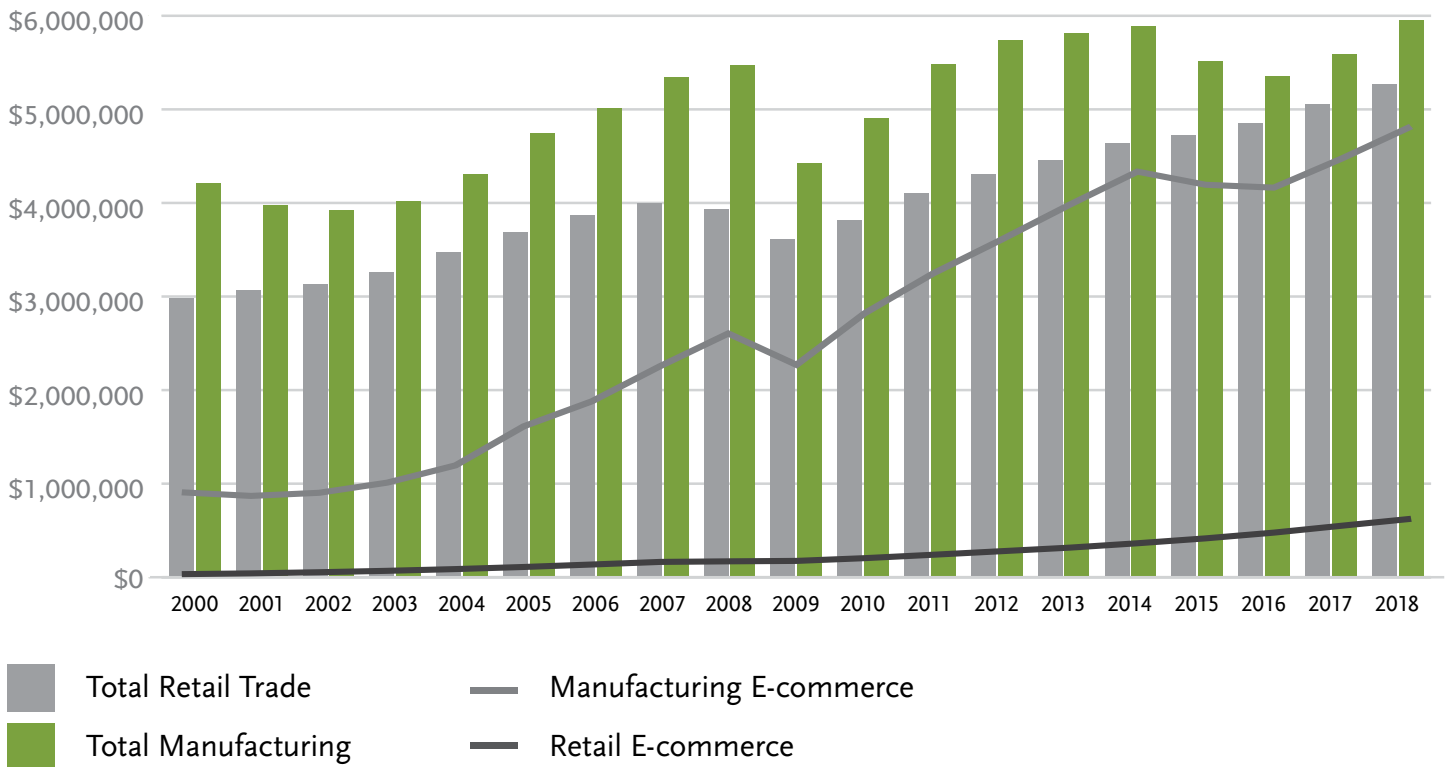
Figure 9

Total U.S. Value of Shipments/Sales/Revenues and E-commerce Share (2018) (\$ in millions)

Industry Category	Total	E-commerce or Revenue from Electronic Sources	Share Of E-commerce/ Electronic Sources
Total for Service Industries	\$16,195,954	\$1,151,736	7.1%
Total Merchant Wholesale Trade	\$8,192,344	\$2,642,374	32.3%
Total Manufacturing	\$5,954,927	\$4,010,570	67.3%
Total Retail Trade	\$5,269,468	\$519,635	9.9%

Source: U.S. Census, 2018 E-commerce Multi-Sector Data Tables

Figure 10

Total U.S. Value of Shipments/Sales and E-commerce Share Trend (2000-2018) (\$ in millions)

Source: U.S. Census, E-commerce Multisector Data Tables

In LA County some manufacturers receive their shipments via trucks and others via rail with direct rail spurs serving their facilities, highlighting the important role that the freight transportation system – across all modes – plays in keeping our economy in motion.

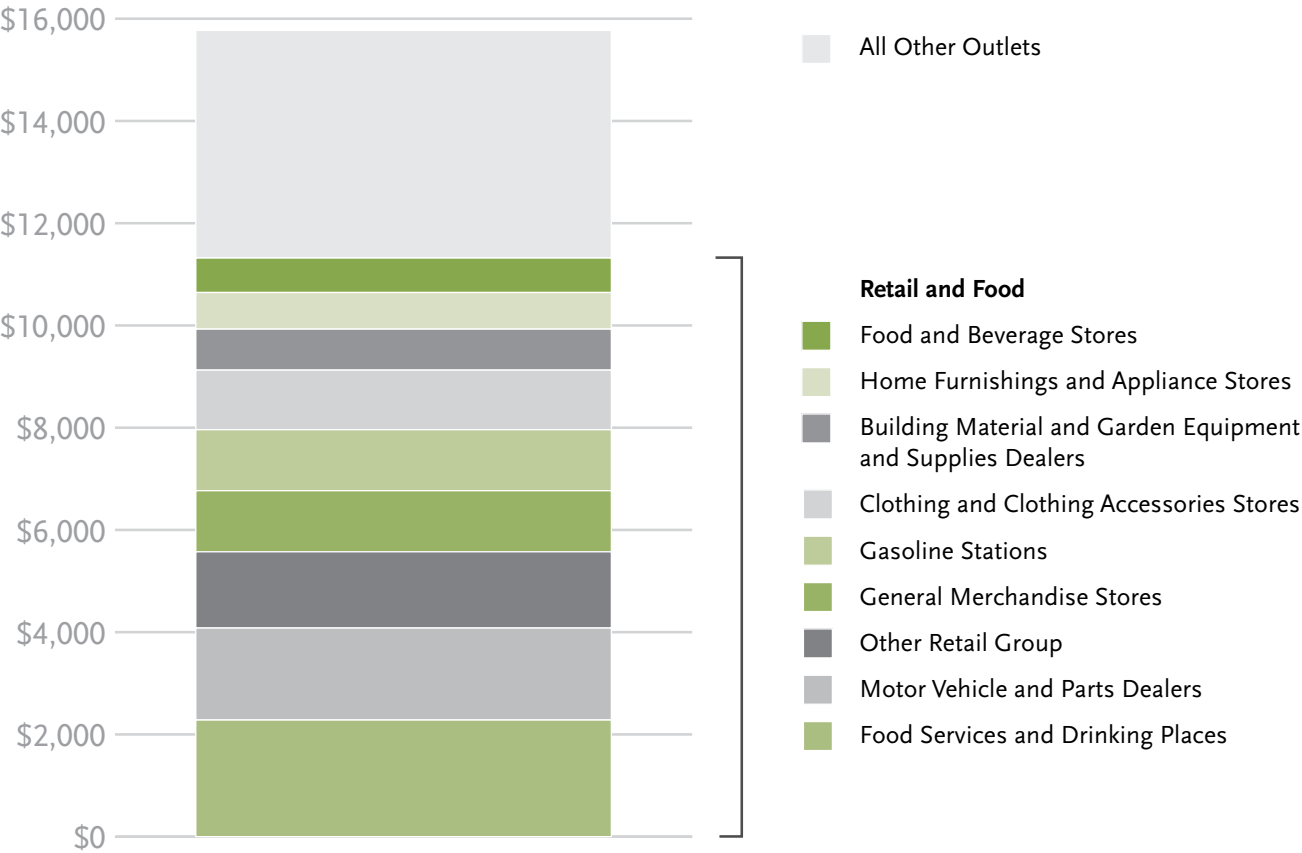
Collectively, businesses in LA County – along with their customers and employees – help drive property and sales tax revenue, which is used to support critical needs across the county like law enforcement, fire protection, health care, transportation and education.

In 2018, LA County recorded taxable sales transactions over \$166 billion. Using the lowest sales tax rate in LA County (9.5%) as the standard, these transactions generate a minimum of \$15.8 billion in sales taxes for the county. Although the sales tax amount generated by the trade and logistics sector is low because of its nature as a service provider, it provides essential support to the retail and food service sectors whose contribution to sales tax

revenue is tremendous (Figure 11). These industries rely on consistent, safe and efficient deliveries of goods to sustain their operations and maintain their own competitiveness. Altogether, these retail and food sectors generated approximately \$11.3 billion in sales taxes for LA County.²³

LA County's goods movement sector plays an oversized role in supporting and driving the local economy – especially for Metro, whose annual budget depends heavily on the sales tax receipts generated through the county's four 1/2-cent sales tax measures. Metro's core services – building the county's transit system and operating bus and rail service – are funded primarily through the sales taxes generated by LA County's robust economy and goods movement industry. As LA County develops its recovery plans to emerge from the COVID-19 crisis, the importance of the goods movement sector must be kept front and center in regional policy discussions on how to revitalize and expand the county's economic opportunities for its residents.

Figure 11
LA County Sales Taxes Generated by Business Type, 2018 (\$ in millions)



Source: California Department of Tax and Fee Administration



GOODS MOVEMENT IN LA COUNTY

Source: Performance Team



Source: Port of Los Angeles

Goods movement drives our quality of life.

A reliable and responsive goods movement system is essential to maintaining the region's collective quality of life, not only allowing access to basic items, such as fresh food, medicine and jobs; but also supporting the events, activities and destinations that make Southern California an attractive place to live, work and visit. By connecting producers and consumers, supplying power plants, hospitals and gas stations and providing a wide range of employment opportunities, the freight system contributes to our quality of life in LA County in a number of ways. Here are a few examples:

Food Supply Chain Ecosystem

For local food manufacturers like Farmer John – famous for their Dodger Dogs sold at Dodger Stadium – or Huy Fong Foods, the maker of the Sriracha Hot Chili Sauce, LA County is an epicenter for the food production industry. LA County drives the nation's food supply chain, ranking first by a large margin among all other counties for food outflow and inflow. Food processing and manufacturing created more than \$16 billion of economic output in 2012 and employed over 36,800 employees in LA County as recently as June 2020.^{24/25} The local industry thrives because of a large concentration of suppliers, distributors, access to an abundance of fresh produce and ingredients, national distribution centers and a transportation and logistics infrastructure that serves regional, national and international markets. These producers offer an incredible variety of products to customers around the country and the globe.²⁶

Supplying an Island Getaway

Just 22 miles off the coast of Southern California, Catalina Island is a tourist hotspot known for its natural beauty, outdoor activities and seaside charm. With an estimated one million visitors every year and 3,500 yearly residents, the island relies on daily overnight deliveries such as food, fuel, raw materials and consumer goods to support its way of life. For small businesses such as Abe's Liquor Store, which has been supplying groceries for the island since 1933, business would not exist without the supply shipment that runs almost daily between the Port of Los Angeles and the island.²⁷

Supporting International Events

LA County is preparing to host the 2028 Summer Olympic and Paralympic Games and anticipates the arrival of hundreds of thousands of fans that will watch over 10,000 athletes compete in about 300 events taking place throughout the region. The U.S. is also a co-host for the 2026 World Cup, with the LA region likely to play host to multiple games during that event. Next year Inglewood's SoFi Stadium will host LA County's first Super Bowl in 29 years. LA County's success in hosting the athletes and visitors for these major sporting events will rely heavily on efficient transportation and logistics to transport tons of goods to sites and venues scattered across the region. Leading up to the Games, massive amounts of equipment to support athletes, coaches and game operations from around the world will be shipped, stored, delivered and returned. For example, at the 2012 Summer Olympic Games in London, 30 million items were moved in and out of the city.²⁸ A reliable goods movement system will allow the upcoming Olympic Games to increase the prestige of the region and bring an enjoyable event to LA County residents and visitors.

Responding to a Global Pandemic

The outbreak of the novel coronavirus and the disease it causes (COVID-19) first began as a regional crisis in Wuhan, China, but quickly became a worldwide threat to health, travel and commerce due to the virus' highly contagious nature. Throughout much of 2020, with the entire nation under "shelter in place" orders, the global pandemic created sweeping impacts on manufacturing and production, consumer demand and supply chains. The effects of COVID-19 have rippled through global distribution networks and reduced the volume of goods, with direct impacts on LA County. At the SPB Ports pandemic effects created an erratic trade flow. At the end of July 2020, the container volumes for the calendar year 2020 at the Port of Los Angeles and the Port of Long Beach were 15% and 3%, respectively, lower than the same period in calendar year 2019. However, the monthly container volumes at the Port of Long Beach in July and at the Port of Los Angeles in August both surpassed those from the same month in the prior calendar year. For both ports combined the container volumes for July, August and September 2020 increased year-over-year by 5%, 10% and 13%, respectively.



Source: Ergin Yalcin/iStock/Getty Images Plus

This level of unpredictability in trade volumes requires flexibility in operational capacity, modernized equipment, landside capacity outside of the ports and a competent workforce.

In the midst of this crisis, the logistics industry has provided critical, life-saving services to LA County and the rest of the country by delivering essential supplies, such as food, paper products, personal protective equipment (PPE) and sanitation supplies. In March 2020 the City of Los Angeles and the Port of Los Angeles implemented a medical supply chain program to procure and provide equipment to the medical field and first responders. The program, entitled Logistics Victory Los Angeles (LoVLA),²⁹ was initiated by City of Los Angeles Mayor Eric Garcetti and is being managed and led by the Port of Los Angeles executive director Gene Seroka. The LoVLA effort has enlisted the aid of the entire supply chain, including PPE manufacturers, the hospital community and logistics service providers, and formed a working group comprising many key supply chain stakeholders. These efforts have raised public awareness and appreciation for the vital role that logistics workers and the supply chain play in daily life.

During the pandemic, goods movement by air proved to be critical in transporting PPE, particularly those that were imported from overseas. While passenger traffic volumes declined by 80 to 90% across the 10 busiest U.S. cargo airports following March 2020, some airports recorded growth in air cargo volumes despite the economic downturn. Typically, air cargo volumes are directly correlated to GDP and goods trade growth, but in this case the increase in overall air cargo volumes during pandemic highlighted the dramatic growth in e-commerce activities and the need for PPE.³⁰

The absolute centrality that goods movement plays in the life of America's citizens shone most clearly on December 12, 2020, as national media broadcasted logistics workers at Pfizer's Portage, Michigan facility packing refrigerated containers filled with the first batch of COVID-19 vaccine. The indelible scene of FedEx and UPS trucks rolling out, carrying these life-saving vaccines destined for quick distribution to all 50 states, brought hope to the nation that we had finally reached the beginning of the end of this global pandemic.

Goods movement sectors provide pathways to sustainable employment.

The health of the region's goods movement industry reflects and drives the health of its overall economy. Nearly one-third of jobs in LA County are in goods-producing and freight-dependent industries.³¹ The SPB Port Complex alone accounts for one in every 12 jobs in Los Angeles and Long Beach, nearly one million jobs in the six-county Southern California Association of Governments (SCAG) region and almost three million jobs throughout the United States.³² In total, the trade and logistics industry (which includes wholesale trade, transportation and warehousing) accounts for nearly 600,000 jobs in LA County – and the industry continues to expand. Between 2008 and 2017, LA County's employment in the transportation and warehousing sectors increased by more than 300,000 workers, reflecting a growth rate of 38%, the highest growth rate of any industry during this time period.³³

The goods movement industry serves as a stable employment base for low- and middle-skill workers with limited education attainment, offering opportunities for advancement and social mobility. The industry includes several opportunity occupations, which are defined as employment accessible to workers without a bachelor's degree and typically paying above the national annual median wage. These occupations include heavy and tractor-trailer truck drivers, general and operations managers, sales representatives, wholesale and manufacturing.³⁴ Since most of the entry-level positions in this sector provide the workforce on-the-job training, these jobs are the most advantageous to candidates with low educational attainment with a high school diploma or high school equivalency diplomas obtained through General Educational Development (GED) or High School Equivalency Test (HiSET) exams.

Furthermore, the five-year outlook of the transportation and warehousing sector from 2015 to 2020 forecasted that about 42% of the jobs would require a high school diploma without job experience, approximately 26% could be occupied by applicants without a high school diploma and 16% of the jobs would be filled by applicants with a bachelor's degree.³⁵ Given the small to medium sizes of many logistics firms, many opportunities exist to advance from technician to supervisor through training or to become a small business owner.

Figure 12

Jobs Generated through the San Pedro Bay Port Complex



1 in 12 Jobs in
Los Angeles/Long Beach

190,000
total jobs



1 in 9 Jobs in Five-County
Region

992,000
total jobs



Jobs Throughout
United States

2,800,000
total jobs

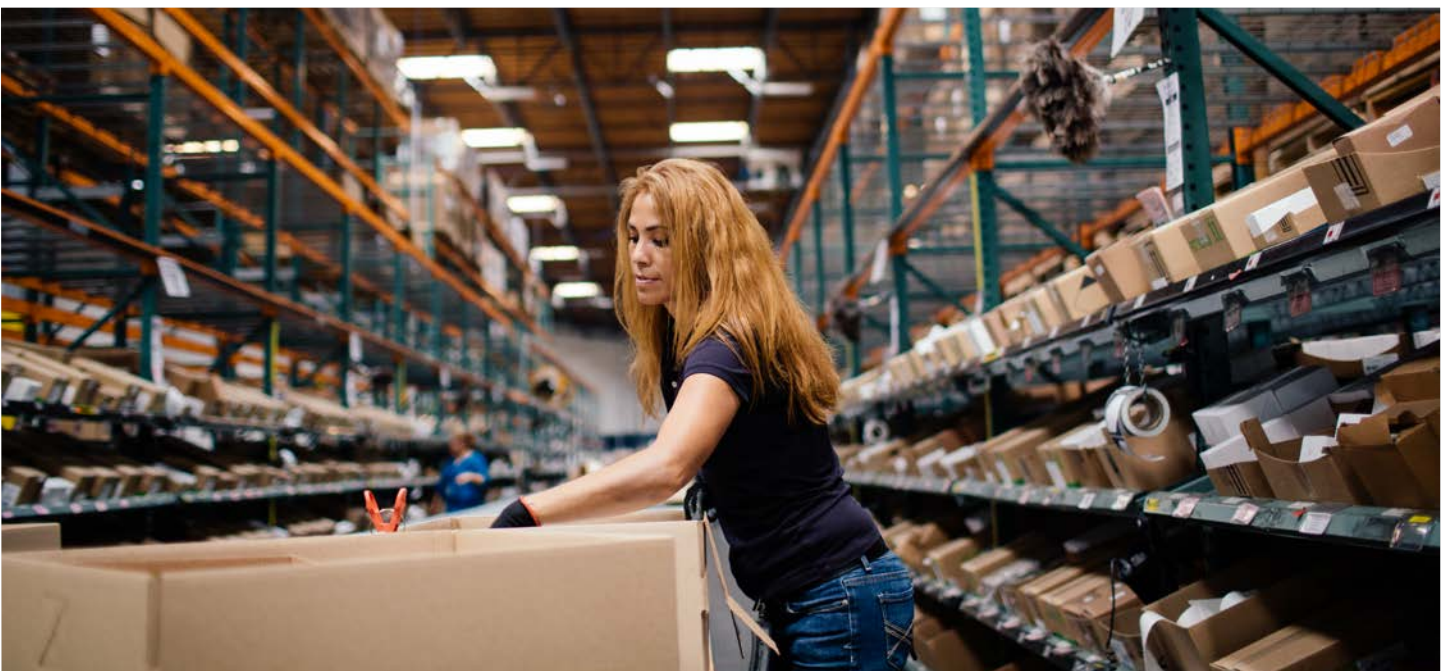
Whereas disparities and negative impacts of goods movement activities commonly affect disproportionately low-income and non-white communities, jobs in this sector have historically required relatively few specialized skillsets, providing ladders of opportunities to a broad segment of the population with lower to middle levels of education. In considering sustainable employment and equitable opportunities, worker safety, worker protections and living wages also need to be included in our discussions about economic competitiveness and sharing benefits.

Like many sectors in the economy, the goods movement industry is also experiencing significant change and disruption largely due to widespread adoption of technology and changes in supply chain operations. As a result workers with current technical credentials will continue to need on-the-job training and professional development to adapt to and use new systems.³⁶

Recognizing the all-important need to build and maintain a skilled workforce pipeline, Metro established the Workforce Initiative Now-Los Angeles (WIN-LA) to promote diversity and inclusion in LA County, provide access to education and training programs to increase the participants' workforce readiness and contribute to the development of their transportation career pathways in construction and non-construction careers.³⁷ The program's priority – which aligns with Metro's diversity, equity and inclusion initiatives – is to accept participants from historically underrepresented communities, including single parents, veterans, homeless and unemployed residents of the county.

Since its launch in 2017, the program has registered a total of 117 participants, of which 31 participants have successfully secured jobs within the transportation industry³⁸. Furthermore, to build and strengthen the local labor pool, the Port of Los Angeles and the Port of Long Beach have formed partnerships with local high schools to cultivate an interest in the trade and logistics sectors and to build connections between the classroom and the port terminal. For incumbent workers the International Longshore and Warehouse Union and the Pacific Maritime Association use the High Road Training Partnership offered through the California Workforce Development Board to upskill, reskill and transition longshore workers. The International Brotherhood of Electric Workers – National Electrical Contractors Association's (IBEW-NECA) collaborative offers the Electric Vehicle Infrastructure Training Program (EVITP) to provide advanced training for licensed electricians on electric vehicle equipment installation and maintenance. A program like the EVITP is vital to accelerated deployment of Zero-Emission electric trucks in LA County.

Similarly, the Professional Designation Program for Global Logistics Professional (GLP) certification provides conceptual learning and skillset development on international trade and supply chain management. This program, offered online and in person, was established in partnership with the Center for International Trade and Transportation (CITT) and the California State University – Long Beach (CSULB) College of Professional and International Education (CPIE).



Source: Performance Team

We have challenges to solve.

LA County's current goods movement system creates challenges and hurdles for LA County residents. Growing demand has increased congestion and worsened air quality. A history of inequitable investment has placed the impacts of freight-related burdens disproportionately on low-income communities of color.





We have compounding challenges.

The short- and long-term economic competitiveness of LA County relies on the level of productivity of its multimodal system, access to a skilled and competent labor force, collaborative institutional partnerships and freight infrastructure that can adapt to fast-changing supply chain strategies and logistics networks. Several key issues and challenges face the region's goods movement system that could threaten its overall competitiveness as a premier gateway for freight traffic.

In 2018 LA County moved over 740 million tons of goods on its multimodal freight system.³⁹ Trucks, including single-unit and combination trucks, carried the vast majority of this traffic – over 500 million tons with a combined value of over \$1 trillion (Figure 13 and 14). These trucks operate on a system that is already incredibly congested. The Los Angeles metro area has the second slowest average truck speeds in the U.S. (second only to the San Francisco Bay Area) and LA County is home to two of the nation's top 10 worst truck bottlenecks.⁴⁰ Truck congestion in urban areas within the SCAG region resulted in approximately \$2.6 billion in costs due to wasted labor hours and fuel in 2010.⁴¹

The region's freight rail system is equally strained, as much of the freight rail system shares tracks with passenger rail. Close to 30% of intermodal containers at the SPB Ports utilize these shared use regional rail corridors to deliver goods to their next destination, while Metrolink moves nearly 40,000 passengers each weekday.⁴²

The Ports of Los Angeles and Long Beach are the two largest container ports in the U.S. – combined they are the 9th largest in the world. Although market share has declined in the past two years due to trade war tariffs and more recently with the COVID-19 pandemic, the ports handled a combined 17 million 20-foot equivalent units (TEUs) in 2018 (Figure 19).⁴³

Air cargo volumes at LAX – already the nation's fourth largest cargo airport – have been dropping slightly, but have increased recently in the wake of COVID-19. LAX recorded moderate decreases in air cargo volumes from January to April of 2020 compared to the same period in 2019. The air cargo volumes in LAX then surpassed the 2019 volumes in May and June with a 13% increase in July, compared to 2019, yielding more than one million total air cargo tonnage for the first seven months of 2020 while only 0.2% down from the same period in 2019 (Figure 15).⁴⁴

Figure 13

Total Flow of Goods by Trucks and All Modes (in million tons)

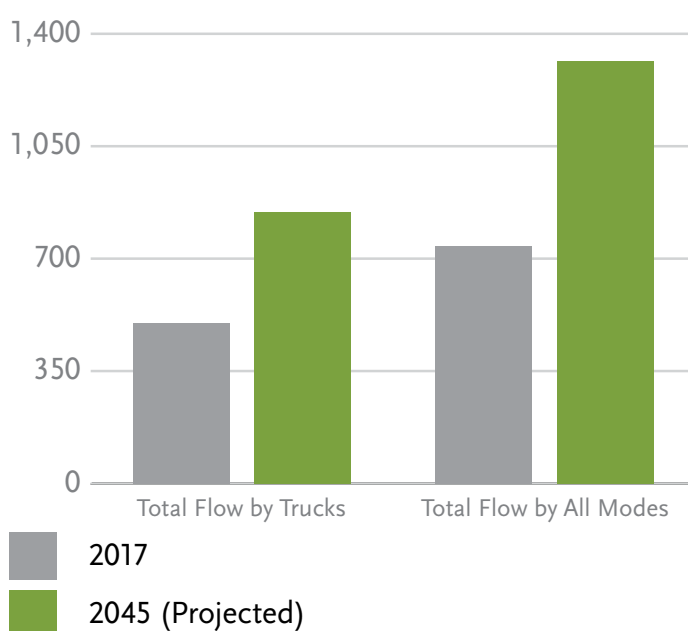
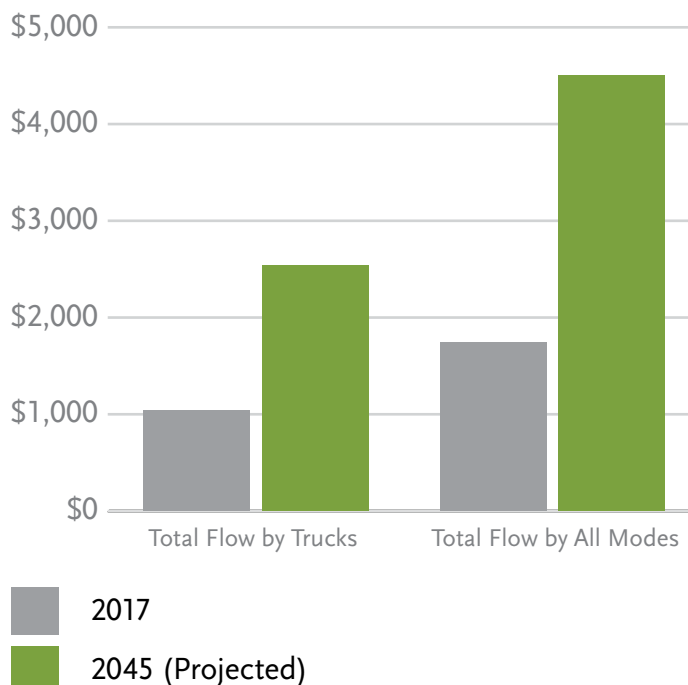


Figure 14

Value of Goods Movement by Mode in the LA Region (\$ in billions)

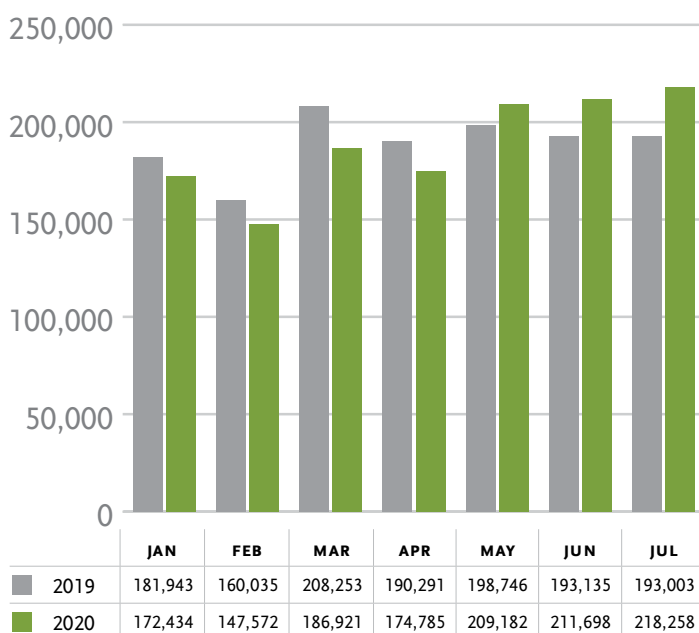


In addition to the recent volatilities of air cargo volumes due to the pandemic, LAX also suffers from congestion on and around the airport caused by its decades-old cargo handling facilities that cannot accommodate today's larger aircraft and that have only one entrance/exit area.⁴⁵

These existing issues will be magnified by expected growth in freight traffic. By 2045, an estimated 1.3 billion tons of goods (Figure 13) valued at \$4.5 trillion (Figure 14) are projected to be moved by all modes through the Southern California region annually, representing an increase of 78% by weight and 159% by value. Trucks are estimated to be moving 846 million tons of goods valued at \$2.5 trillion in 2045 (Figure 13 and 14).⁴⁶ Further, more than one and a half million people will be added over the next 25 years to the six-county Southern California region.⁴⁷ Combined, the vast increase in freight movement and regional population growth will exacerbate existing congestion on key local trade corridors and arterials that already rank among the most congested in the nation.

Figure 15

LA International (LAX) Airport Air Cargo (in tons, Freight and Mail Cargo)



Source: Los Angeles World Airports (LAWA), Traffic Comparison (TCOM)

Summary of Our Challenges

- > Volumes are increasing and supply chains are changing but the shared use infrastructure capacity remains the same. Both trucks and freight rail are competing for the strained capacity against other users.
- > LA County serves as the gateway for national commerce – while the benefits are broadly distributed through the regional and national economy, the impacts and externalities disproportionately affect local communities. A history of inequitable policies and investments has worsened these issues.
- > The goods movement industry provides jobs to a range of demographics and skill levels, but prospective employers' needs are changing rapidly as they strive to keep up with industry practices and disruptions. This trend means that there will need to be a closer coordination amongst employers and institutions providing skills and job training to ensure investments are placed in the manner that closes the gap in skills and competency of our workforce and employer needs.
- > The South Coast Air Basin faces a major challenge in meeting the federal Clean Air Act standards for ozone and particulate matter. Promising vehicle technologies to help the region meet these standards are emerging, but their implications on goods movement operators and our region's competitiveness within global supply chains make this challenge even harder to address.
- > Competing priorities severely impact constrained resources for investment, both nationally and locally.
- > All of these challenges, separately and combined, result in the deterioration of LA County's economic competitiveness, ability to attract an optimal share of discretionary cargo and capacity to support the efficient movement of goods throughout the region.

Anticipated Growth Will Affect Every Mode

Freeways

Freeways link goods movement facilities to destinations both within and outside of the county along the interstate highways. Trucks can be largely categorized into those that serve either domestic markets or international markets. Contrary to popular perception the majority of trucks that operate in and through the county are serving domestic markets, including manufacturing, warehousing, retail, food services, local delivery and construction. In LA County, 90.7% of truck trips are associated with the movement of domestic markets, and the remaining 9.3% of truck trips are associated with international markets, including the trips to the ports and intermodal facilities.

Of the trucks that serve domestic markets, the lion's share (92.0%) operates within the county, meaning these trips originate and end within the county. The remainder (8.0%) of these trips either starts or ends outside of the county.

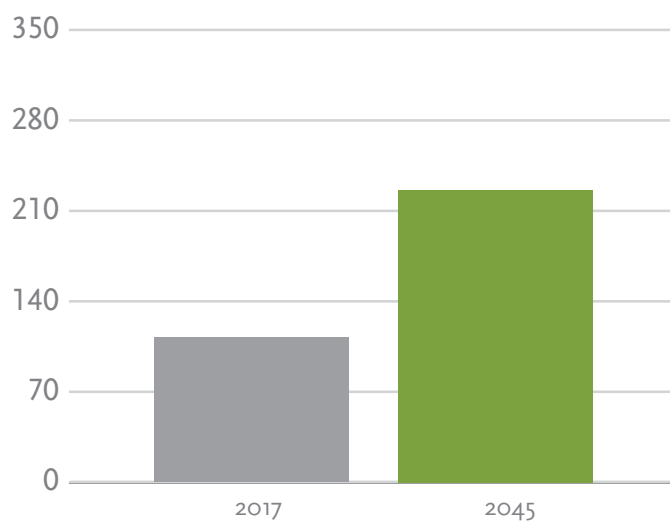
Trucks serving international markets include drayage trucks that either originate or end their trips at the SPB Ports or international air cargo facilities. These trucks take international cargo to and from the SPB Ports or LAX and bring it to or from intermodal rail yards, transloading facilities, import warehouses, regional distribution centers or points of productions. Drayage trucks constitute a 7.4% share of all trucks in the county, while intermodal truck trips account for a share of 0.8%. One percent of truck trips in the county is considered secondary port trips, representing the movement of international cargo that was moved by drayage trucks, but are now moved by domestic trucks after going through transloading processes.⁴⁸ Contrary to popular belief, trucks draying international cargo to and from the ports represent less than 10% of LA County truck trips.

The growing commerce associated with population growth and the dynamic nature of logistics practices will lead to increased truck traffic in the county. Truck volumes on some interstate segments are expected to increase by up to 60% by 2045, which translates to more than 50,000 trucks per day.⁴⁹ Heavy-duty truck hours of delay will more than double to 223 hours of delay annually (Figure 16).

With a growing demand for goods, truck traffic is expected to grow at a much higher rate than passenger auto growth. This trend means that the increased truck traffic on the county's highway network will further deteriorate the system performance that is already under strain (Figure 17). Out of 57 high priority heavy-duty truck bottlenecks identified by SCAG, 43 of them were fully or partially in LA County. The 10 worst heavy-duty truck bottlenecks from the list, all of which are located in LA County, accounted for close to 25% of all truck congestion in the SCAG region in 2016.⁵⁰ Delays and congestion experienced by trucks will result in an increase in transportation costs, which will be reflected in the price of goods that consumers purchase, as well as exacerbate congestion experienced by commuters who share the road.

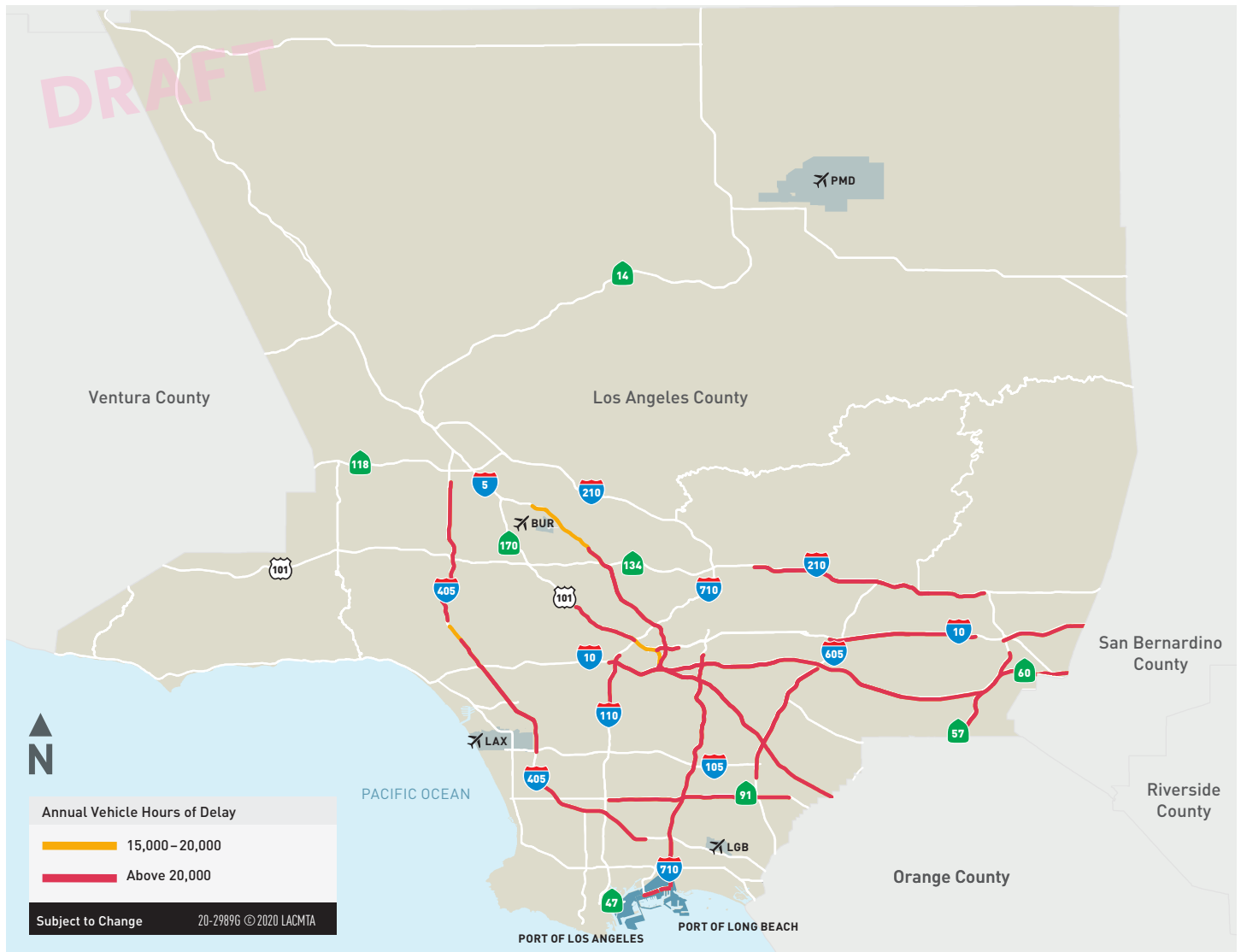
Figure 16

Daily Heavy-duty Truck Hours of Delay



Contrary to popular belief, trucks draying international cargo to and from the ports represent less than 10% of LA County truck trips.

Figure 17

TRUCK SPEED DELAY LOCATIONS

Source: Southern California Association of Governments

Ports

The SPB Ports forecast container volume demand to double or more before 2045, indicating that additional capacity will be required to accommodate this expected demand that is generated in Southern California and throughout the U.S. Such capacity will need to be provided by a combination of physical improvements within the existing footprint of the ports and efficiency improvements supported by technology or in the end-to-end supply chain outside of the ports' physical periphery. Efficiency improvements supported by technology and modernization, combined with port expansion projects, could help accommodate forecasted growth. The global trend towards using larger container ships further compounds the demand and infrastructure capacity challenge. With larger container ships higher volumes of goods arrive at once, straining the handling capacity of port infrastructure, labor and the surrounding road and rail infrastructure. These challenges further highlight the need for coordinated planning and real-time information sharing enabled by digital infrastructure among the many agencies and stakeholders involved with moving freight through the region.

Addressing infrastructure capacity challenges is not an easy task. Similar to many areas across the county, the SPB Ports are landlocked by residential communities, leaving very little land available to expand. Many of the surrounding communities are low-income communities of color that continue to experience negative impacts of goods movement activities more severely than other parts of the county. These circumstances pose challenges in accommodating the ports' cargo growth through physical expansion in a sustainable and equitable manner. For example, BNSF proposed to build a near-dock facility, the Southern California International Gateway (SCIG), four miles north of the Port of Los Angeles to enhance its Southern California operation. However, given the project's proximity to residential communities and anticipated impacts from its operation, safety concerns from the trucks that would serve the facility and air pollution concerns from the truck and rail operations, the project has received a number of challenges during the environmental impact report review. Upon completion the SCIG is projected to eliminate approximately 1.3 million truck trips annually on I-710 that would otherwise dray ocean containers between the SPB Ports and intermodal rail yards nearly 20 miles away near downtown Los Angeles.⁵¹

Rail

The anticipated growth in all freight rail traffic, combined with a projected increase in Metrolink passengers by as much as 95% by 2025, will constrain rail system capacity, causing bottlenecks and increased delays on the shared system.⁵² This is particularly true on the UP Alhambra and Los Angeles subdivisions, which will have up to 110 freight trains daily by 2040, and the BNSF segment from Los Angeles to San Bernardino, which could have as many as 125 freight trains by 2040. Without operational and physical capacity improvements, rail mainline capacity will be severely oversubscribed, reducing overall freight and passenger mobility countywide. Strategic investment partnerships with the freight and passenger rail operators – such as Metrolink's SCORE program – will be important to address these constraints.⁵³

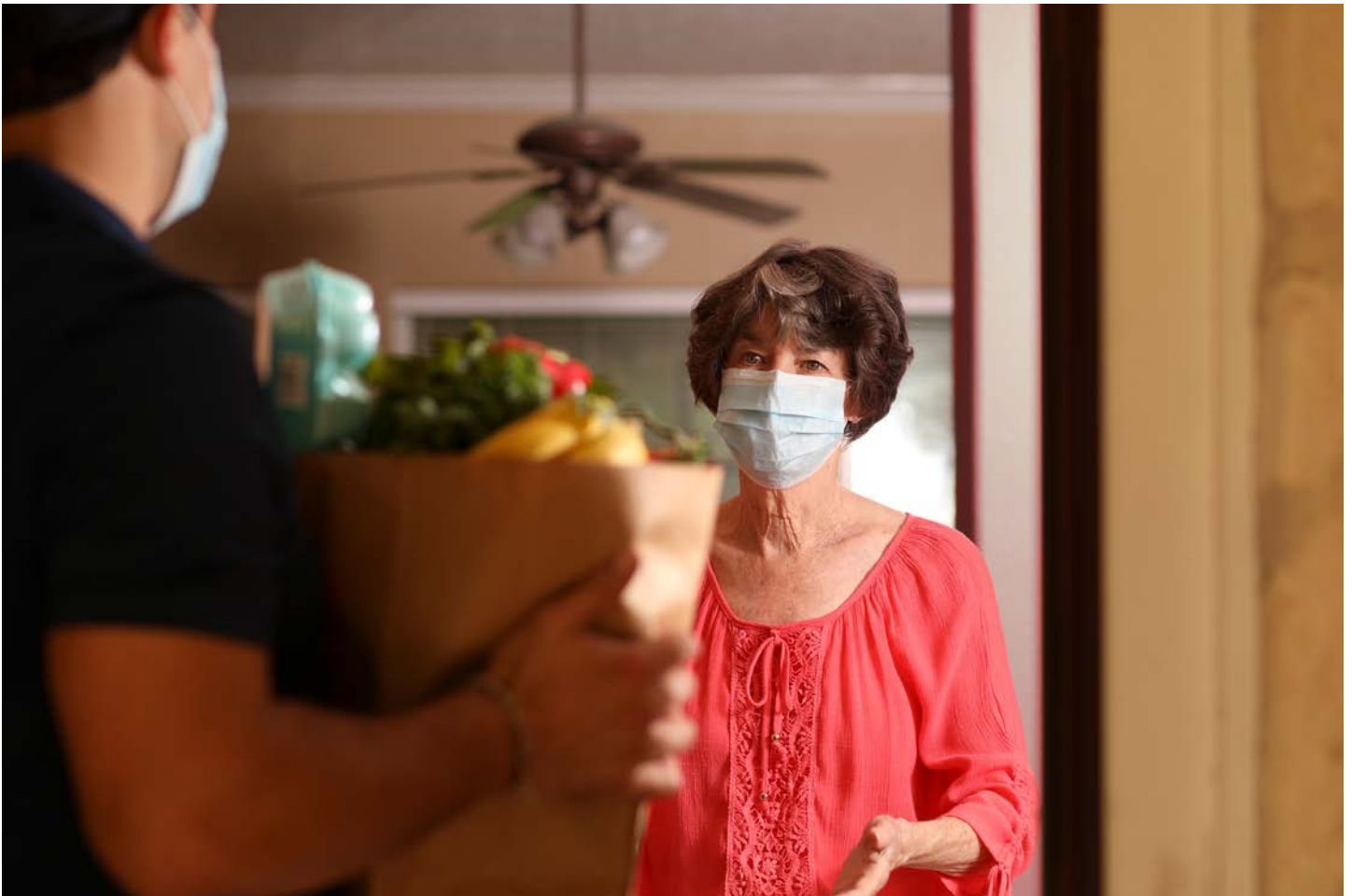
Streets

Local streets serve various accessibility and mobility functions, including transit service, bicycles and pedestrian mobility, parking, passenger loading and unloading, and last mile delivery and emergency vehicle access. Trucks that use local streets fulfill the delivery needs of many industries and individuals, ranging from local retail, food services, manufacturing, hospitality, construction, waste collection to home deliveries. Without access to local streets to complete delivery, the logistics system does not function, and our economy will disintegrate. These streets – whether local, residential streets or major arterials – can be a contested venue for various travel modes and uses all vying for the limited space available. The level of competition is generally more intense in the urban core, particularly in high-density, vibrant mixed use areas that offer various destinations and attract many street users.

Since the year 2000 total U.S. retail trade value has been steadily increasing, except during the Great Recession (2008-2009). Between 2000 and 2018, the e-commerce portion of the total U.S. retail trade value grew at an average annual growth rate of 17.95%. In 2018, the e-commerce share of the total U.S. retail trade value was 9.9%, or \$519.6 billion of the total \$5,269.5 billion in retail trade value.⁵⁴

The majority of e-commerce retail sales is associated with home deliveries, and the steady increase in e-commerce trade value is a reasonable indication that the demand for delivery trucks also increased in a similar manner. As noted earlier (Figure 8) LA County would be the ninth largest manufacturing hub in the country, if it was a state. Local manufacturing firms depend on receiving material for their production and shipping finished goods via trucks that travel on local streets. Neither the long-term economic impact of COVID-19 on purchasing power nor the resulting demand for home delivery and overall manufacturing is yet to be determined. Assuming the economy follows a similar recovery path as it did after the Great Recession, the demand on local street capacity by delivery trucks and the need to accommodate mobility and accessibility of all modes will continue to be an important transportation topic for LA County policymakers.

Before the COVID-19 pandemic, only 3.7% of grocery shopping was conducted online in the U.S. By the end of May 2020, the share of online grocery shopping had increased to 21.2%, representing a 570% growth rate.⁵⁵



Source: fstop123/E+/Getty Images

Losing National Market Share

LA County's standing as the nation's trade gateway of preference cannot be taken for granted. Ranked as the top two busiest ports in the United States for several decades, the Ports of Long Beach and Los Angeles are suffering steady erosion of national market share despite moving more cargo than before – as the nation grows economically and international trade continues to burgeon, LA County risks exclusion from the prosperity, employment and economic benefits associated with capturing new discretionary cargo destined for the rest of the country.

Rival North American gateways in Canada, the West Coast, the East Coast and the Gulf Coast have invested heavily in their infrastructure to capitalize on international trade developments – such as the widening of the Panama Canal – to attract more port cargo traffic, national market share and the resulting economic and employment benefits – all at the great expense of LA County.^{56/57}

From 2006 to 2019 the SPB Ports' growth has sputtered at only 8% in total container volumes (Figure 18), while rival ports have grown at rates of 47% (New York/New Jersey), 86% (Houston), 102% (Canada's West Coast ports) and 113% (Savannah).

Many of these ports enjoy a strong vision for growth and prosperity supported by the entire state – from the Governor down to the local level – to implement cohesive plans to deepen ports, build on-dock rail and improve the surrounding surface transportation system to attract bigger ships and move more cargo at a faster pace. This unified support also generates federal investment through focused advocacy.

The eroding market share does not mean that LA County is doing nothing to improve the productivity of its freight transportation system. The SPB Ports have been heavily investing in on-dock rail and rail access projects, including the \$2.4 billion investment to build the Alameda Corridor. In just the last 10 years alone, the Port of Los Angeles has invested more than \$500 million in railway-roadway grade separations, roadway, and rail system projects to reduce truck trips, roadway delays and optimize the flow of cargo. To keep cargo flowing efficiently, the Port of Los Angeles and GE Transportation launched the Port Optimizer, which enhances supply chain performance through real-time, data-driven insights in a single portal.



Source: Port of Long Beach

Figure 18

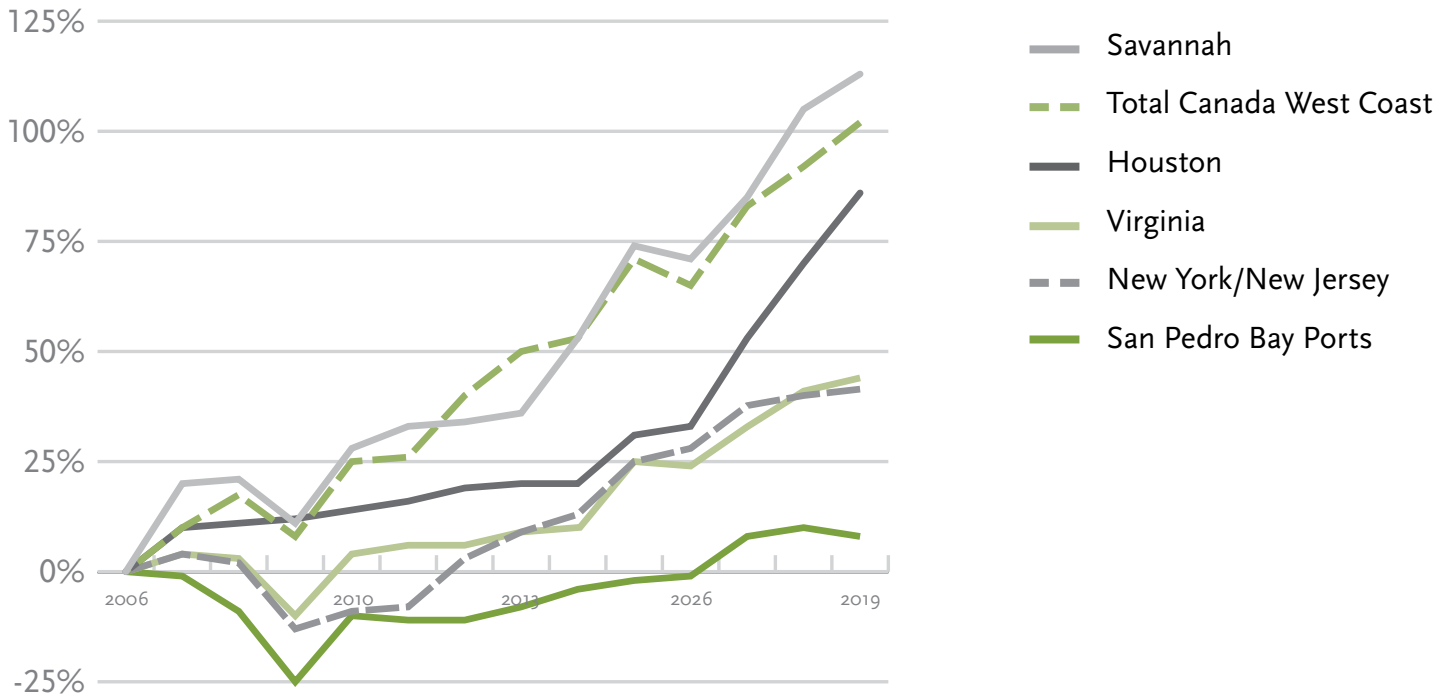
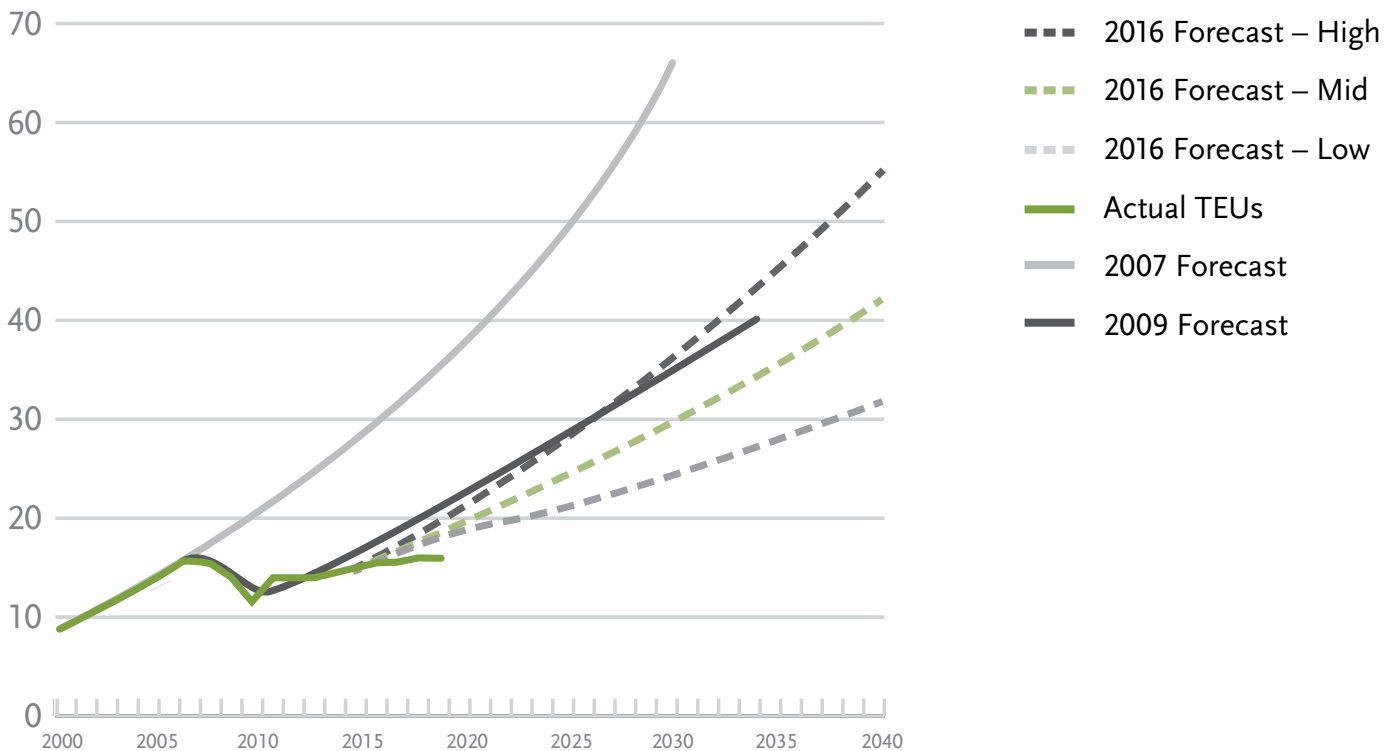
Port Cargo Growth (2006 – 2019)

Figure 19

TEU Container Forecasts for San Pedro Bay Ports (in millions)

Cargo Race to Chicago

The Port of Long Beach has made a similar, if not larger, level of investment to improve the efficiency and productivity of the operations inside and outside of the port periphery, including the \$1.56 billion investment to replace the Gerald Desmond Bridge (see Figure 28). All these projects are located on the most important highway and rail line segments of the federally designated National Multimodal Freight Network (NMFN), including the Primary Highway Freight System (PHFS).

Many landside variables can impact the productivity of our freight transportation system. These factors include gate hours (i.e. PierPass), chassis dislocations, chronic freeway congestion across the entire county, truck driver shortages, hours of service restrictions, freight rail mainline capacity, shortage of cargo-handling space near the ports and potential operational disruptions over labor agreements. Various studies also found that port demand elasticity can change quickly, particularly on discretionary cargo that is consumed outside of the greater Los Angeles region. The cost of rail shipping and drayage due to fees and regulations can influence importers' decisions on diverting discretionary cargo to other ports to minimize the overall transportation cost.⁵⁸

In addition, other macroeconomic trends pose challenges to the LA County's ability to acquire national market share. These externalities include trade tariff wars with China, recent trends of federal freight investment that have favored rural jurisdictions and developing ports, emerging U.S. agriculture export routes that involve Latin America, shifting global manufacturing activities towards locations west of India (which makes the Port of New York and New Jersey a more attractive option) and global consumption patterns due to a transition of previously emerging economies into developed, more consumption-based economies.

Chicago is North America's trade crossroads – over 80% of rail container traffic moving across the U.S. moves through the “Windy City.” The total transit time spent moving a container from the port of origin to Chicago by sea and land is one of the decision variables for nationwide importers to determine which North American port to use to import cargo. The SPB Ports' primary advantages for capturing the majority of Asian imports are 1) their proximity to Asia and the resulting shorter ocean transit time and 2) the large population base in the southwest U.S. where the SPB Ports serve as the closest container ports. For imports destined to Chicago, the ocean transit time to arrive at other West Coast ports is shorter, and the transit time by rail from other West Coast ports to Chicago is either the same or shorter than via the SPB Ports. Although the ocean transit time to East Coast ports takes longer, the land transit time by rail from these ports to Chicago takes two fewer days than from the SPB Ports (Figure 20).

Meanwhile, the widening of the Panama Canal in 2016 allowed larger ships to transit through the canal to East Coast ports, thus improving the economy of scale of connecting directly to the East Coast and Gulf Coast ports. Other container ports on both coasts have made significant investments in capacity and efficiency enhancements, thus gaining a competitive edge over the SPB Ports by offering an improved operational productivity to move Asian imports faster, cheaper and more reliably. The natural transit time advantages enjoyed by the SPB Ports in moving cargo by ship and train between China and Chicago dissipate with every delay in docking a ship, offloading containers or building and moving trains through over-congested freight rail corridors.

The total transit time spent moving a container from the port of origin to Chicago by sea and land oftentimes determines which North American port will receive this discretionary cargo.

Figure 20

NORTH AMERICA TRADE GATEWAY: CHICAGO

Should these problems become chronic due to a lack of sufficient port or landside infrastructure, be deemed riskier due to labor disputes (such as in 2002 and 2015) or become more expensive due to additional fees, shippers and businesses will expand their reliance on the “four corners strategy” that mitigates risk incurred by depending primarily on the SPB Ports by sending discretionary cargo to other North American ports that offer greater overall reliability and efficiency despite longer intrinsic cargo transit times.

To remain economically competitive in securing discretionary cargo, LA County stakeholders must work together to accelerate the movement of cargo through the Ports of LA and Long Beach by making strategic investments in on-dock and off-dock freight rail capacity, optimizing data sharing, implementing operational improvement measures, increasing terminal efficiency, reducing risk associated with labor disputes and avoiding excessive fees and costs to handle cargo. Investments in port and landside freight rail infrastructure that increase capacity and reduce transportation costs pay off at the regional level, supporting economic vitality and employment opportunities in numerous goods movement industries all while protecting LA County’s position as the preeminent national freight gateway of choice.

Major Safety Concerns

Roadway Safety

Robust goods movement activities can heavily impact roadway safety. During the five-year period between January 1, 2014, and December 31, 2018, there were 9,612 truck involved collisions on roadways in LA County. Of these, 287 individuals were killed and 12,971 reported injury. The three most common reasons for accidents were unsafe speed (35.35%), unsafe lane changes (17.3%) and improper turning (14.39%). A majority of these collisions resulted in rear-end (3,899) or sideswipe (2,677) impacts.⁵⁹

Truck involved collisions are concentrated on major freeways with heavy truck traffic. These hotspots include the SR-57/-60 confluence, SR-60 between I-605 and SR-57, I-605, I-710 and I-5 near downtown Los Angeles (Figure 21).⁶⁰ Based on the most recent traffic count information available from Caltrans (2014-2017), I-710 at the SR-91 interchange and the SR-57/-60 confluence consistently ranked as having the heaviest truck volumes in Southern California.⁶¹

Every year more delivery trucks are using local streets to serve growing last mile delivery needs for residential, business and manufacturing purposes alike. The frequent lack of consideration for last mile delivery vehicle needs in the planning, design and implementation of complete streets



Source: San Gabriel Valley Council of Governments

has resulted in unintended consequences and safety hazards for vulnerable roadway users and truck operators. By integrating freight vehicle considerations into all aspects of planning, designing and executing local road improvements, these conflicts can be avoided or mitigated more easily.

Rail Safety – Grade Separations

At-grade crossings (where freight rail lines and roadways cross at grade) have consistently ranked as a major safety concern for communities adjacent to freight rail corridors. In LA County the majority of the UP Railroad mainline travels through dense urban areas of the San Gabriel Valley. This rail corridor carries imported containerized cargo, domestic cargo, exports to be shipped out of the SPB Ports and commuter rail traffic. Freight trains are generally longer in length and travel slower than commuter trains, resulting in longer gate downtime at the crossings, which in turn causes traffic delays, congestion and major barriers for emergency vehicle access and response times. The severity and frequency of collisions between trains and vehicles at several of these at-grade crossings merited a high national ranking for hazardous conditions. To address these issues the San Gabriel Valley Council of Governments established the Alameda Corridor-East (ACE) Construction Authority in 1998 to develop and implement a series of grade separations and at-grade crossing improvements to eliminate collisions and mitigate vehicle delays and emissions caused by at-grade train/vehicle conflicts. This commitment led to a program budgeted at over \$1.6 billion to implement 18 rail/highway grade separations and over 45 at-grade mitigation improvements between downtown Los Angeles and San Bernardino County.

As of 2020 the ACE Project has completed safety improvements at 40 at-grade crossings and constructed 14 rail-roadway grade separations. Four more grade separation projects are under construction with three more in the design phase. Two of the grade separation projects currently underway, the Montebello Boulevard Grade Separation Project and the Turnbull Canyon Road Grade Separation Project, are included in the California Public Utilities Commission's Fund Priority List for the fiscal year 2020-2021. The ACE Project has for over two decades stood as a nationally-recognized model of effective collaboration among multiple jurisdictions aligned through a single-purpose agency to address a regional safety, health and economic concern of national significance. Accordingly, Metro strongly supports the ACE Project with funding raised through its local sales tax measures and applications for state and federal funding.

Figure 21

HIGHWAY TRUCK COLLISIONS (JANUARY 2014 – DECEMBER 2018)



Metro has also partnered with the Gateway Cities Council of Governments, local cities, BNSF Railway, Caltrans, Amtrak, Metrolink, the CPUC, the FRA and the California High-Speed Rail Authority to deliver the much needed grade separation at the Rosecrans Avenue/Marquardt Avenue intersection in the City of Santa Fe Springs. This project on the BNSF mainline will improve the safe operation of freight rail, Metrolink, Amtrak and future high-speed rail service in southeast LA County by eliminating conflicts between trains and vehicles at what was deemed the CPUC's highest priority crossing in need of a grade separation.

As the costs to implement full highway/rail grade separations increase and the most dangerous crossings are addressed, Metro will work with its partners to identify additional cost-effective methods of improving safety at crossings that may not have the highway traffic volume necessary to justify a major capital improvement project. The introduction of Positive Train Control (PTC) on the region's freight rail system in the wake of the 2008 Metrolink / UP crash in Chatsworth along with growing dependence upon driver navigation apps such as Waze could yield technological means of alerting drivers to avoid delays associated with anticipated train traffic and grade crossing closures by diverting vehicles to a grade-separated route, for example.

Evolving Workforce Needs

Nearly one-third of jobs in LA County are in goods-producing and freight-dependent industries. The opportunities for employment in the goods movement sector are diverse – ranging from trucking to rail transportation, stocking to crane operation, waste material collection and moving to transportation supervision. These jobs were previously believed to provide above average wages with low barriers of entry for workers with low to middle level skills; however, that conventional wisdom has shifted in recent years. For example, the typical annual salary in 2019 for transportation and material moving occupations in the Los Angeles area was \$31,328 – this income is below the living wage for one adult, and not sufficient to support a household with two adults (one working) without children in the same area (Figure 22).⁶²

While the Los Angeles area offers an abundance of transportation and material moving jobs as indicated by the location quotient – the ratios of regional concentration of jobs in a given industry as compared to the national average for the industry – only certain goods movement jobs provide above a living wage income to meet one's basic needs. These jobs are also more scarce, with the ratio of less than one, as indicated by the location quotient (Figures 23 and 24),⁶³ and they have historically relied on experience and knowledge gained in the workplace or in apprenticeship programs.

In recent years the logistics industry across the board is transforming its operations in pursuit of higher efficiency and productivity to remain competitive amidst growing consumer demand and changing supply chain practices. Increasingly, employers in this industry are citing skill gaps and a need for expanded, multidisciplinary training among mid-level technicians that juggle new supervisory responsibilities, technical requirements, compliance and contracting issues. To address the wage versus the cost of living issue and to stay abreast of evolving skillset needs, regional stakeholders should develop comprehensive policies and target investments necessary to ensure workforce competency and employee career pathways that form the foundation of a sustainable economic competitive framework.

The growing demand for skilled workers will create pressure on logistics companies to ramp up their recruitment and hiring pipelines as they respond to another challenge: a growing number of retirees. Like many other parts of the economy, the goods movement sector is confronting a “silver tsunami” of upcoming retirements. For example, to meet the nation's freight demand, the industry will need to hire 1.1 million new truck drivers over the next decade – an average of 110,000 per year – to replace retiring drivers.⁶⁴

The global demand for goods has also transformed the industry into a 24-hour sector, with workers needed to fill orders and process shipments around the clock. This schedule creates a need for continual access to these employment locations, many of which are outside of LA County in the Inland Empire, where land is more affordable and suitable parcels can be larger and located adjacent to mainline highway and rail corridors. These shifting dynamics stretch out the jobs/housing balance for freight-related industries and create a number of mobility and workforce-related challenges.

Increased Interest In Advanced Technology

The “fourth industrial revolution,” which emphasizes modernization of equipment and processes and data exchange, the “internet of things,” cloud computing, robotics and artificial intelligence, is already reshaping and restructuring supply chains, logistics practices and jobs. While these trends can improve the efficiency, security and transparency of supply chain networks, they also will require new skills in the workforce, such as data interpretation and visualization, forecasting, programming and compliance. Further, various initiatives in California that aspire to accelerate fleet and equipment transitions to zero-emission technologies are creating an increasing demand for entry and mid-level technicians to have at least some foundational understanding of energy systems.

Mobility Concerns

LA County's increasing housing costs are pushing the logistics workforce farther away from the county's employment centers toward the outer reaches of the region. In LA County the average commute time has increased every year since 2013, with an average commute of 31 minutes in 2017.⁶⁵ Mobility for the logistics workforce is particularly challenging – only 3.3% of goods movement jobs are accessible within a one-hour transit trip.⁶⁶

Equity Impacts

The combination of the growing jobs/housing imbalance and the lack of mobility options can create significant equity impacts by preventing some county residents from accessing the jobs and resulting ladders of opportunity that the goods movement sector provides. Further, worker safety, worker protections, living wages, local hiring policies and strengthening pipelines to increase accessibility to stable and sustainable jobs and career pathways are important considerations for bringing goods movement benefits to the most impacted communities.

Figure 22

Annual Median Earnings and Annual Living Wage, 2019

Figure 23

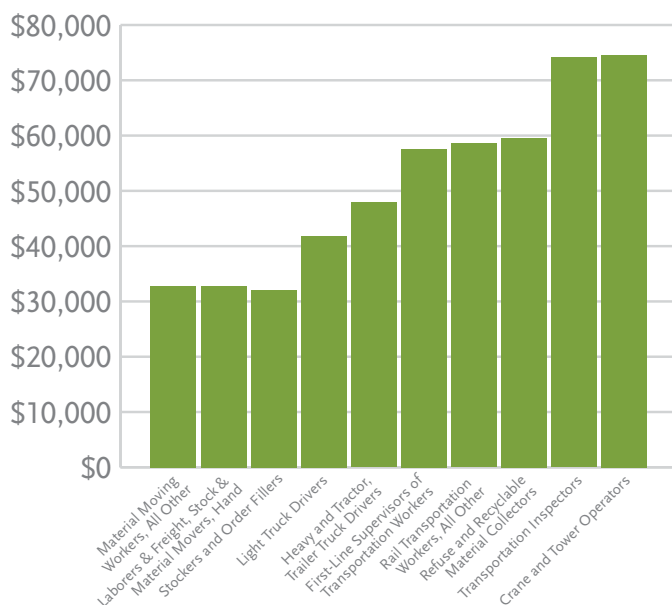
Annual Average Wage by Goods Movement Jobs, 2019

Figure 24

Location Quotient by Goods Movement Jobs, 2019

Jobs	Location Quotient
Material Moving Workers, All Other	3.84
Laborers and Freight, Stock, and Material Movers, Hand	1.23
Stockers and Order Fillers	0.96
Light Truck Drivers	1.04
Heavy and Tractor-Trailer Truck Drivers	0.59
Rail Transportation Workers, All Other	2.27
Refuse and Recyclable Material Collectors	0.83
Transportation Inspectors	0.78
Crane and Tower Operators	0.81
First-Line Supervisors of Transportation Workers, Except Aircraft Cargo Handling Supervisors	0.96

Air Quality Challenges and Implications

Air pollutant emissions from goods movement sources – in particular from ships, trucks, train locomotives, cranes and other equipment that moves goods – are major sources of regional air pollution. Much of LA County (except for the Antelope Valley) falls within the South Coast Air Basin (SoCAB), which exceeds federal Clean Air Act standards for ozone and particulate matter (PM_{2.5}). If the SoCAB region fails to demonstrate air quality conformity by target attainment dates for criteria pollutants, federal sanctions may be imposed, jeopardizing transportation funds and making the permitting of stationary facilities more burdensome. The federal government may also take over local air quality regulation if state plans are not adequate to meet federal standards.

Along with San Joaquin Valley in Central California, the SoCAB region is currently one of only two areas in the nation classified as “extreme” nonattainment for the 1997, 2008 and 2015 eight-hour ozone standards. The target attainment dates to meet these standards are June 2024, July 2032 and August 2038 – by those years, the SoCAB region must reduce ozone concentrations to 80 parts per billion (ppb), 75 ppb and 70 ppb, respectively. Ozone is formed when volatile organic compounds (VOC) and nitrogen oxides (NO_x) react in the presence of ultraviolet sunlight, thus making the reduction of NO_x the key strategy to meet ozone standards.

NO_x emissions from goods movement sources constituted approximately 52% of the total NO_x emissions for the SoCAB region in 2016. Heavy-duty trucks contributed 58% of these goods movement-related NO_x emissions, or 30% of total NO_x emissions in the SoCAB region. Locomotives also played a role in generating NO_x emissions, with 7% of goods movement-related NO_x emissions and 3.6% of total NO_x emissions in the SoCAB region. To meet the 1997 and 2008 eight-hour ozone standards by target attainment dates, the SoCAB region needs to reduce NO_x emissions by 45% above and beyond the existing regulations by 2023, and 55% by 2031 – a daunting task for the region.

The SoCAB is also a serious nonattainment area for the 2012 Annual PM_{2.5} standards, with an attainment deadline of December 2025. However, in scenarios run by the South Coast Air Quality Management District (SCAQMD), the basin is expected to meet this deadline by 2025.

To meet the National Ambient Air Quality Standards for the eight-hour ozone, we need to significantly reduce NO_x emissions from all sources, with a focus on the large share of NO_x emissions generated by the goods movement industry.

California state law requires a substantial reduction in greenhouse gas (GHG) emissions – 40% below 1990 levels by 2030 and 80% below 1990 levels by 2050 – through Executive Order B-30-15 and Executive Order B-16-12. Many criteria pollutants, such as NO_x, sulfur oxides (SO_x) and particulate matter (PM_{2.5} and PM₁₀) are precursors to the formation of GHGs. Reducing criteria pollutants from goods movement sources to meet the federal Clean Air Act standards also helps in reducing GHGs.^{67/68}

Air pollution – particularly NO_x, diesel particulate matter and GHGs – is known to impair human health. These negative health impacts are felt by our residents in the following ways:

- > reduced visibility
- > increased episodes of respiratory infections and other illnesses
- > increased number of days of discomfort
- > absent days from work and school
- > increased symptoms related to respiratory disease, including asthma
- > slowed lung function growth and increased asthma risk in children
- > heart disease
- > shortened life spans⁶⁹

Figure 25

NOx Reduction Amount Needed to Demonstrate the Eight-Hour Ozone Standards Attainment (Tons/Day)

Source: 2016 AQMP Appendix iii, Attachment A, Annual Average Emissions by Source Category in South Coast Air Basin

One of the tragedies of the COVID-19 pandemic is that many people suffering from these health conditions associated with highway and freight-related emissions were also made vulnerable to being at a higher risk of death and serious health effects caused by COVID-19, according to a study by the Harvard School of Public Health.⁷⁰ In particular the study found that “long-term exposure to PM_{2.5} is associated with higher COVID-19 mortality rates”. The urgency to act to reduce these harmful emissions for the sake of public health could not have been made more clear during the pandemic.

In addition to the aforementioned Executive Orders, a number of near- and long-term technological solutions prospectively could reduce GHG and other emissions reduce GHG emissions in the South Coast Air Basin. Although most environmental policies foresee the deployment of near-zero and zero-emission trucks as a long-term solution to reduce emissions, other near-term improvements – including cleaner-fuel trucks, hybrid-electric trucks and combustion engine improvements – are currently available commercially to help the region meet the attainment deadline by 2025.⁷¹

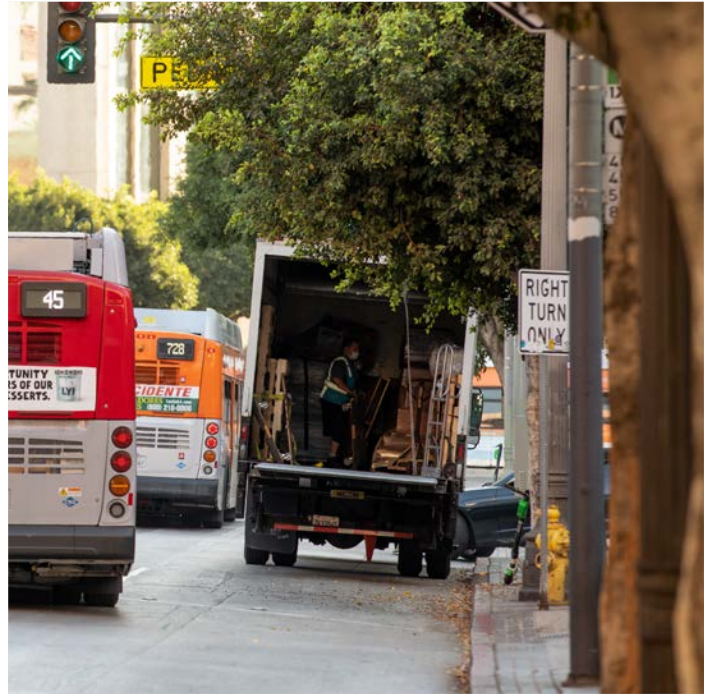
Meeting the federal Clean Air Act standards and reducing particulate matter, NOx and GHGs will require substantial reduction in criteria pollutants. These challenges call for the creation of regional partnerships and collaboration to identify effective strategies and secure funding for implementation. Fortunately, LA County has a precedent for such leadership. The SPB Ports have led the way by implementing the Clean Air Action Plan, the latest version of which set forth aggressive goals to reduce particulate matter, NOx, SOx and GHG from port-related emissions and sources at levels that far exceed volumes and schedules found in existing state and federal regulations. LA Metro will partner with the SPB Ports on this effort through its development of the I-710 South Clean Truck Program, a programmatic element of the overall I-710 South Corridor project prioritized by LA County residents in Measures R and M.

Congestion at the Curb

An “urban renaissance” has shaped the goods movement space for urban areas like those throughout LA County. Moving and delivering goods efficiently, safely and reliably becomes increasingly more challenging as more people and businesses move back into cities, creating a denser and more vertical environment. Consumer-generated activities – such as dining at restaurants and shopping for groceries and clothing – generate the need for goods to be brought in and out of urban areas, otherwise known as urban freight. Further fueling urban freight is the advent of online shopping, leading retailers to strive to provide quick and on-time delivery, resulting in an increase in freight movements in urban areas. These deliveries are increasingly being made by a variety of smaller vehicles, including vans, pickup trucks, passenger vehicles and bicycles, with autonomous vehicles and drones starting to emerge as viable delivery options. These new vehicles have smaller payload capacity, so more vehicles are required to handle an increasing volume of deliveries.

These urban freight trends all converge at the curb – the new arena for urban freight and mobility needs to spar and compete for limited “real estate”. From parking to bus stops and loading zones to bike lanes (and now outdoor and on-street dining during the COVID-19 pandemic), curbside assets play many roles within a city. Yet, curb space policy issues have not historically received as much attention from transportation planners as the roads and highways on which vehicles travel, even though congestion or lack of space at the curb impacts freight movements and deliveries, leading to roadway congestion and slower transit service. Spillover impacts, such as double parking and other forms of illegal parking, also negatively impact safety, accessibility and mobility for many users. Particularly, small business owners without adequate off-street parking near their businesses experience these impacts more severely as they rely on foot traffic and on-street parking for business.

With 88 individual cities and over 100 unincorporated communities, LA County faces a daunting task to achieve coordinated delivery practices, maintain infrastructure and manage curbside parking across the multitude of jurisdictions. As demand increases and diversifies, and as urban landscapes densify, managing curbside assets in ways that allow space for vital economic activities, protect sensitive users like bikes and pedestrians from trucks and vehicles and encourage mobility, public transit usage and traffic flow throughout urban areas will become even more vital. Public planners are demonstrating an increasing interest to understand factors that affect driver decisions, including where to park on the



block, whether to park at loading bays or how long to drive around the block in search of a desirable parking space before moving on. These inquiries could yield a benefit to the overall roadway performance and safety in support of economic activities and personal mobility. The “final 50 feet” of urban deliveries will continue to grow as a focus for researchers and innovators alike.⁷²

Moving and delivering goods efficiently, safely and reliably becomes increasingly more challenging as more people and businesses move back into cities, creating a denser and more vertical environment.

Competing Investment Priorities and Funding Challenges

Substantial investment in the multimodal freight system is needed to ensure that goods move efficiently and in a socially responsible manner. Unfortunately, the amount of available funding across local, state and federal sources to allow the region to continue investing effectively in the shared use system is limited (Figure 26). The 2020 SCAG Connect SoCal – 2020-2045 Regional Transportation Plan and Sustainable Communities Strategies estimates the costs of all regional transportation projects from FY2020-21 to FY2044-45 to be \$638.9 billion, compared with reasonably available resources estimated at only \$493.1 billion.⁷³ The constrained nature of transportation funding places considerable weight on project priorities and benefits in making investment decisions. While LA County generates locally-controlled transportation investment funds through proceeds from four sales taxes (for a combined 2%), the vast majority of those funds is dedicated through expenditure plans and categorical limits to support transit capital and operational improvements, with very little funding expressly dedicated to goods movement-related projects. State and federal grant

programs provide some amount of funding for freight projects, but the competition for these funds is intense and subject to political influence. From 2010-2020, federal funding for East Coast and Gulf Coast gateways combined outstripped investment in West Coast gateways at a rate of 10 to one. For example, USDOT received 173 applications for funding from across the country in the FY2020 cycle for federal INFRA grants, yet only 20 awards were made. For the five-year INFRA/FASTLANE program inaugurated in the Fast Act, only four California project applications received funding out of the 148 submitted by the state. The Ports of Long Beach and Los Angeles did not receive a single dollar of the \$500 million set aside for port and intermodal infrastructure projects, despite submitting quality applications for important improvements. With limited funding to meet transportation needs, identification of priorities, strategic investment decisions and persistent advocacy by a unified legislative delegation are needed to improve the freight transportation system while advancing equity, sustainability and mobility goals.

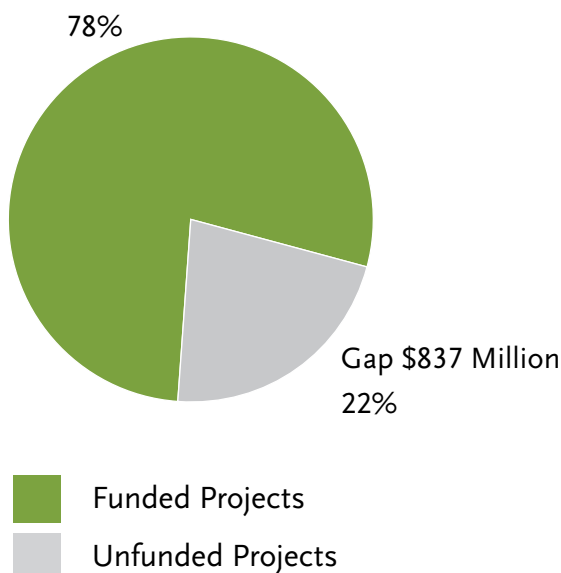
Figure 26

State and Federal Funding Requested and Awarded for California Freight Infrastructure Projects

TCEP FY2018 and FY2020

Total Funding Requested: \$3,747 Million

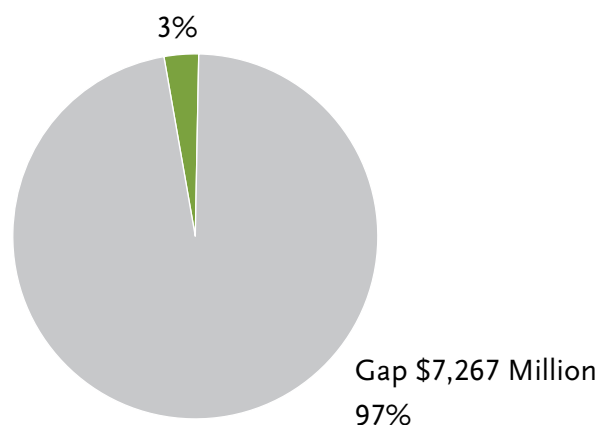
Total Funding Awarded: \$2,910 Million



INFRA/FASTLANE FY2016-FY2020

Total Funding Requested: \$7,463 Million

Total Funding Awarded: \$196 Million



Case Study: What it Takes to Deliver an Infrastructure Mega-Project

Delivering major freight infrastructure projects requires strong partnerships, time, a mix of funding sources and effective leadership. The opening of the Gerald Desmond Bridge Replacement Project to traffic on October 5, 2020, culminated over a decade of work to realize this important project.

The Gerald Desmond Bridge at the Port of Long Beach is one of the most freight-critical pieces of infrastructure in the nation, as 15% of the nation's imported waterborne cargo travels over the towering span by truck. The bridge also serves as an important access route that connects the Port of Long Beach to downtown Long Beach and surrounding communities. Built in the 1960s the original bridge was neither designed to accommodate the level of truck volume that has increased steadily over the past decades, nor the larger ships that require higher clearance over the channel to pass under.

Although first considered in the 1990s, the bridge replacement project did not begin until the Long Beach Harbor Commission allocated \$26.4 million to develop replacement plans in May 2009. The initial cost estimate in 2008 for the replacement was \$950 million.

The final environmental impact report was adopted in August 2010, with a groundbreaking in January 2013. Nearly eight years later, the Gerald Desmond Bridge Replacement Project celebrated its completion with a Grand Opening on October 2, 2020 (Figure 27).

Securing enough funding to deliver this major capital project was a tremendous task. Since its inception the Port of Long Beach leadership worked tirelessly to secure funding from various sources, including Transportation Infrastructure Finance & Innovation Act (TIFIA) loans, federal and state grants and local funds including Metro's contribution from the Proposition C County sales tax revenue funds for transportation projects. The bridge replacement project, which arrived at a final cost of \$1.561 billion, was paid for with \$1.042 billion in federal sources, \$170 million in state sources and \$349 million in local sources (Figure 28). Since the time the Harbor Commission allocated the initial funding to develop the bridge replacement plan in 2009, it took over 11 years to fully fund and deliver this nationally significant project.



Source: Port of Long Beach

Figure 27

Gerald Desmond Bridge Replacement Project Major Milestones

May 2009	Long Beach Board of Harbor Commissioners allocated \$26.4 million to develop a plan for the bridge replacement project
February 2010	Port of Long Beach released the draft environmental impact report (EIR)
August 2010	Final EIR adopted by the Long Beach Board of Harbor Commissioners
July 2012	Design-build contract awarded
January 2013	Official groundbreaking ceremony
October 2014	Construction starts on the bridge project foundations
December 2017	Completion of the two 515-foot-high towers, the tallest structures on the bridge project
October 2, 2020	Grand opening
October 5, 2020	The bridge opened to traffic

Sources: Port of Long Beach, *About the Bridge*, Bridge History newgdbridge.com/about-the-bridge/bridge-history/ and FHWA Approved

Figure 28

Gerald Desmond Bridge Replacement Project Funding by Sources (\$ in Thousands)

	Preliminary Engineering	Right-of-Way	Construction	Total
Federal				
Highway Bridge Replacement and Rehabilitation-Local (HBRR-L)	\$10,000	\$40,000	\$161,800	\$211,800
Project of National and Regional Significance (SAFETEA-LU PNRS)	\$22,078	\$64,715	\$4,207	\$91,000
Surface Transportation Program (STP)	\$5,782			5,782
STP-Local Regional (STPL-R)			\$11,315	11,315
SHOPP/Federal			\$97,500	97,500
TCIF/Federal			\$299,800	299,800
Transportation Infrastructure Finance & Innovation Act (TIFIA)	\$1,834	\$190,665	\$132,501	\$325,000
State				
Corridor Mobility Improvement Account (CMIA)			\$153,600	153,600
State Cash			\$16,207	16,207
Local				
Port Funds, Includes Capitalized Interest	\$11,880	\$14,640	\$305,580	\$332,100
Metro Contribution			\$17,306	17,306
Total Programmed	\$51,574	\$310,020	\$1,199,816	\$1,561,410

Source: FHWA Approved Gerald Desmond Bridge 2019 Financial Plan Annual Update Port of Long Beach

We must remedy negative impacts.

While LA County's role as a global trade gateway contributes significantly to the national and regional economy, goods movement activities that support this international trade directly impact local communities. Freight-related activities negatively impact the region's quality of life, generating air pollutants that threaten public health, as well as traffic, noise pavement deterioration and "visual pollution" or blight.

Economic Disparities

The economic benefits associated with goods movement jobs are not distributed equally across the communities of LA County, particularly not for those most affected by freight activity. The goods movement sector offers many jobs for both skilled and unskilled workers, which may or may not include benefits, such as health insurance, retirement packages or pensions. These jobs tend to be located near cargo distribution centers. However, since these employees live all over the area, the region's economy benefits from these jobs. Money spent by employees on housing, food and day-to-day living supports jobs for others and generates further revenues for local communities. As a result, some communities may bear the brunt of goods movement environmental impacts without fully experiencing the economic benefits of jobs associated with freight.⁷⁴

Air Quality Impacts

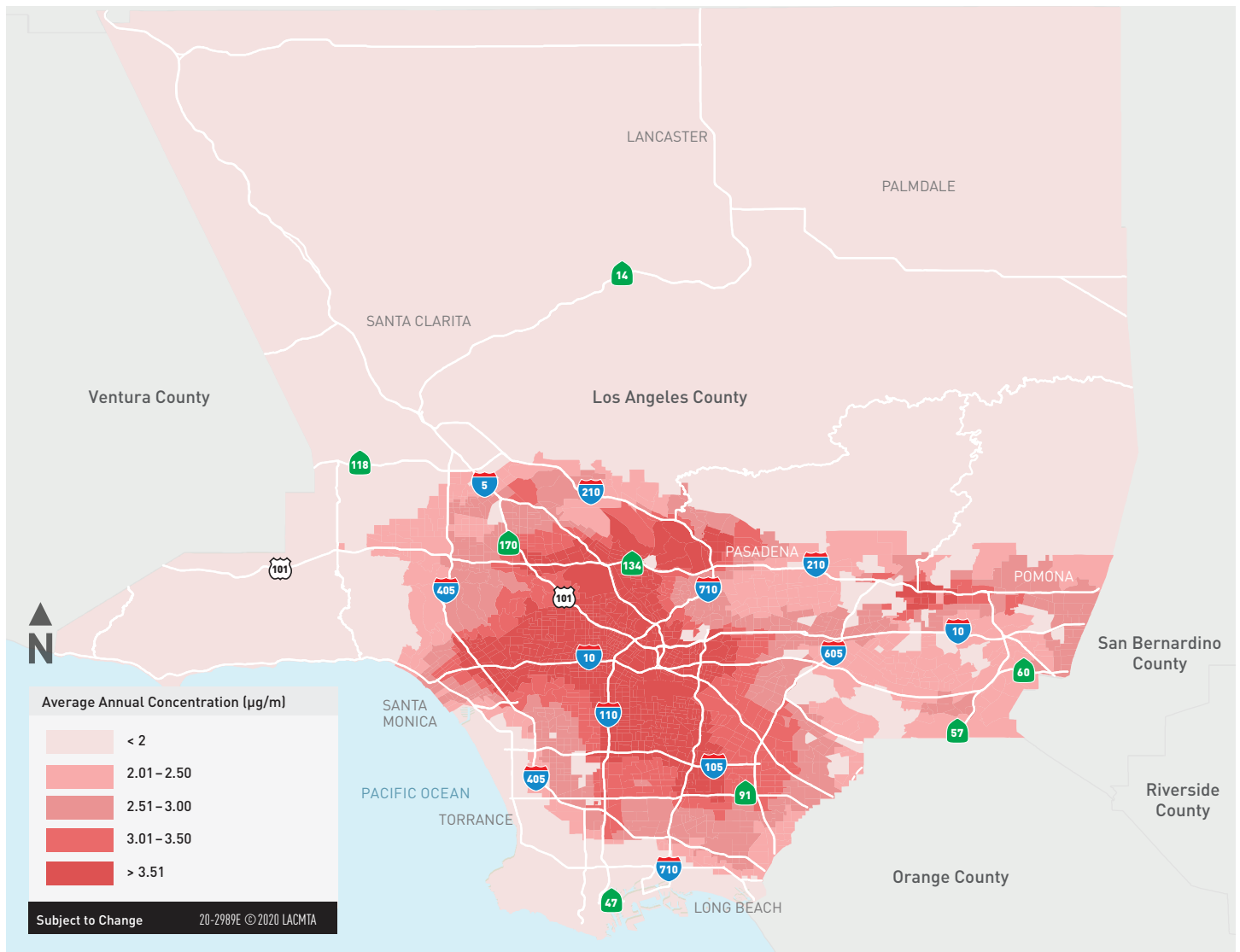
According to the National Ambient Air Quality Standards, LA County is classified as an extreme non-attainment area for pollutants, of which goods movement sources are significant contributors.⁷⁵ Residents of LA County are exposed to 60% more vehicle pollution than the state average, with the lowest-income households exposed to more than those with the highest incomes (Figure 29). Exposure to tailpipe emission leads to increased risk of premature death, lung cancer, heart and lung diseases and asthma. This public health crisis is particularly true for disadvantaged communities located next to highway and rail corridors where the impacts of poor air quality are disproportionately experienced.



Source: Shtrunts/iStock/Getty Images Plus

LA County is also a majority-minority county, with nearly one-half of residents being Hispanic or Latino. Pollutant emissions have a pronounced impact on air quality, the health of residents living near freight routes and facilities, livability and the environment, often impacting underserved or minority communities located close to emission sources more so than others. Negative health and community impacts on families and neighborhoods include asthma, missed days of school, trips to the hospital, families dying of cancer and other illnesses related to air pollution, including greater risk of death caused by COVID-19. Additionally, the proximity to highways and rail corridors also bring with it exposure to daily noise and disruption caused by trucks and trains.

Figure 29

EXPOSURE TO AIR POLLUTION FROM ALL VEHICLES IN LA COUNTY

Source: ucsusa.org/resources/inequitable-exposure-air-pollution-vehicles-california-2019

Traffic and Safety Impacts

The freight transportation network is a system shared with other users. Truck travel on local streets to access ports, warehouses and railyards affects pedestrians and bicyclists that traverse these same roads. Shared use, multimodal streets – particularly those with complete streets treatments – can create unintended consequences that pose challenges for trucks to operate safely in the urban environment. For example, trucks have difficulty navigating restricted turns, narrow lanes and curved or circular travel paths. A high risk for dangerous collisions occurs in areas where pedestrians and bicycles have a higher propensity to travel in truck drivers' blind spots. Often, lane reduction and installation of dedicated infrastructure for pedestrians, bicyclists and transit can result in reduced capacity, loss of redundancy or changes in directionality on shared or even designated freight routes, often with limited alternative routes available.⁷⁶ These problems have only been compounded by the growing use of rideshare services like Uber and Lyft operating on local streets. Disadvantaged communities adjacent to freight highways oftentimes experience the comprehensive impacts of greater truck traffic on local roads accessing freight facilities – and fewer resources available to keep these roads in a state of good repair. The overall magnitude of impacts on truck operations from complete streets treatments and resulting traffic and safety impacts throughout the county is not yet well understood, but this area of inquiry merits future analysis and understanding.

Freight rail and highway crossings are another major safety concern stemming from goods movement activities. At-grade crossings pose risks for collisions with freight rail and other modes, typically resulting in fatalities and severe damages. In comparison to commuter trains, freight trains are usually longer and travel more slowly; consequently, a mile-long train rumbling through an at-grade crossing will close the highway crossing for longer times, resulting in longer time delays and increased emissions as drivers are idling as they wait for the train to clear. A long train blocking multiple parallel roadways in the same city for an extended period of time also poses a public safety problem as these closures impede emergency vehicle access. While LA County can count the Alameda Corridor project and Alameda Corridor-East program as major efforts to invest in safety improvements and grade separations at high priority rail/highway crossings, many more will require improvement in future years.

Noise Impacts

Noise coming from trucks, locomotives and loading/unloading activities can negatively affect local residents. The greatest noise impacts come from roads and rail lines, which often run through or adjacent to residential neighborhoods that predominately represent minority and low-income communities. Excess noise can be a health risk for nearby residents, possibly leading to hearing impairment. Most ports, railyards and cargo distribution centers are intentionally located in industrial areas, where their noise has less impact. Yet even the fringes of industrial areas can have impacts where they meet the edges of residential areas if the land uses are not compatible.

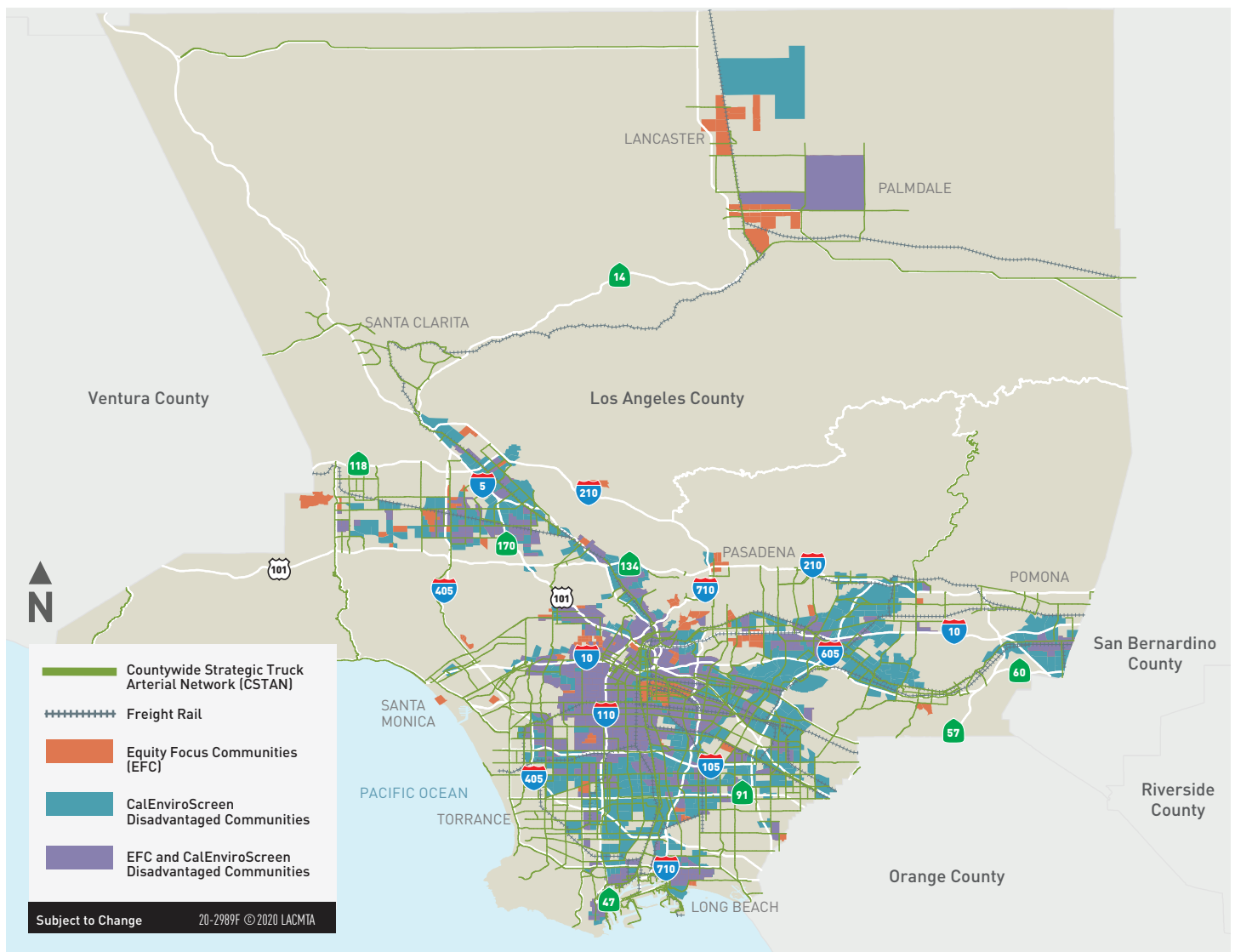
Aesthetic Impacts

Depending upon the location, local conditions and facility design, goods movement facilities can have varying aesthetic impacts on communities. Some facilities may be the result of redevelopment and provide an improved use for the local community, replacing blight or other undesirable uses with attractive architecture, building design and landscaping. However, goods movement facilities can also cause aesthetic or visual impacts during and after construction, including degrading the appearance of an area, restricting views, illuminating neighborhoods with excess light and glare, or featuring building and landscape designs that are not well-suited to a surrounding community's design.

All of the aforementioned impacts fall predominantly on low-income communities and communities of color; they generally can be traced to racial discrimination in housing, its impact on the design and growth patterns of Los Angeles and the inequitable distribution of improvement funds throughout the region.

Members of disadvantaged communities – through which many truck and rail corridors traverse – describe past local transportation investments and proposed mitigations as non-responsive to their needs. The many impacts of goods movement on these communities is an important issue to address and correct moving forward.

Figure 30

INEQUITABLE IMPACTS

We acknowledge past wrongdoings.

Redlining

Nearly a century of residential racial segregation practiced and enforced by law and public policy impacted tremendously the site and alignment selections of many of the freeways on which goods are moved today. These public policies also resulted in the degradation of service qualities and limited access to financing mechanisms, open space and basic needs such as food, safety and transportation. Over time the impacts of such government policies and actions have created severe, enduring effects on equity – and the gap in disparities continues to widen.⁷⁷ Many of the negative impacts from goods movement activities that harm LA County's residents are tied to locations of communities and their proximity to freeways and goods movement facilities. Metro has established equity and inclusion as an agency-wide goal; for us to improve the future quality of life for all, we must understand the past and its impacts still felt today.

Racial discrimination in housing was legal until 1968 in the United States. Legally-sanctioned redlining policies created inequitable impacts on the patterns of development, financial investment, infrastructure and social dynamics in LA County communities.

The legacy and ongoing ripple effects of these discriminatory policies constitute an integral part of any discussion about transportation and the county's goods movement system. Redlined communities across the county struggled to receive federally-backed home loans due to such policies, which made home ownership a challenge. These policies also made loans for home improvement difficult for homeowners in these communities. "Neighborhoods fell into a circle of decline: the inability to access capital led to disrepair and the physical decline of a community's housing stock, which in turn reinforced the redline designation."⁷⁸

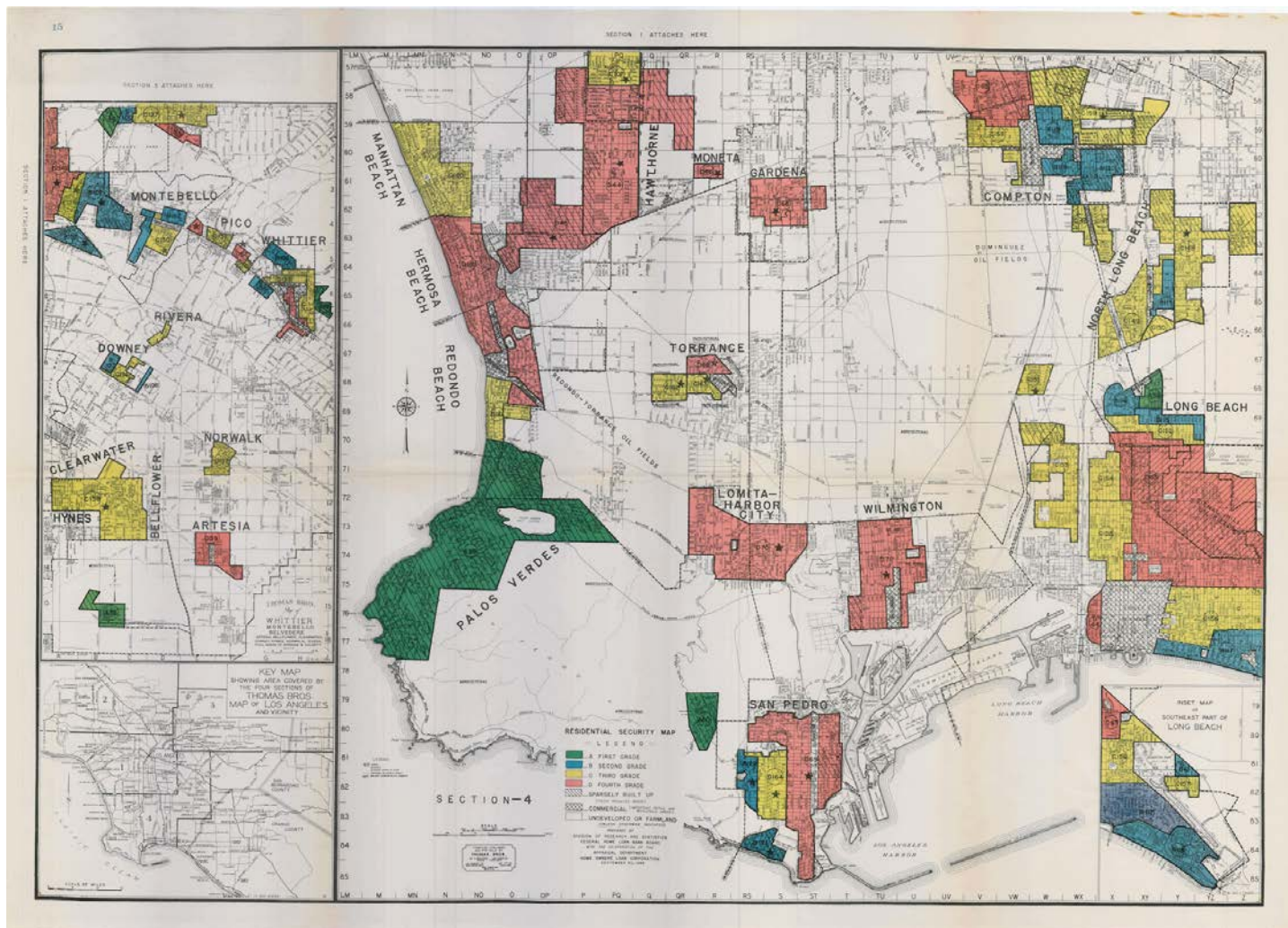
Freeway Construction and Displacement

The federal Home Ownership Loan Corporation (HOLC), a government-sponsored corporation created as part of President Franklin D. Roosevelt's New Deal, created a rating system to assess mortgage risk for various communities, with an A-rating reserved for communities representing the best investments and a D-rating identifying communities deemed "hazardous". These ratings then in turn led to neighborhoods assigned a D-rating to be designated as an area through which to construct new freeway projects, creating greater community impacts.



Source: John Humble. Construction of I-105 on-ramp in Lennox neighborhood of LA County.

Figure 31

HISTORICALLY REDLINED COMMUNITIES IN SOUTH LA

Source: kcet.org/shows/lost-la/segregation-in-the-city-of-angels-a-1939-map-of-housing-inequality-in-la

In Boyle Heights, for example, proposed freeway projects were approved leading to the neighborhoods on the Eastside being bisected and disrupted by six freeways, displacing 10,000 people and destroying the cohesive nature of the community.

The residual influence of redlining, officially brought to an end by the Fair Housing Act of 1968, could still be felt in LA County with the construction of the 105 Freeway between Norwalk and El Segundo. By the time the \$2.2 billion freeway opened on October 15, 1993, approximately 25,500 people were displaced, and 8,000 structures were destroyed or removed along a wide swath that cut through predominantly minority communities adjacent to Imperial Highway.

Unlike previous freeway projects, the final 105 Freeway project received multiple mitigations as the result of a lawsuit and a preliminary injunction that halted freeway construction in 1972, leading to a federal consent decree that included “a housing program, jobs program, jobs training program, affirmative action program” and, eventually, the Metro C Line (Green).⁷⁹

As Metro seeks to implement Measures R and M – and as we work with our partners to improve LA County’s goods movement system – we must remain conscious of these historical inequities, engage in meaningful dialogue with impacted communities and work toward addressing these issues purposefully through our policies, programs and projects.

What is COVID-19 teaching us about goods movement?

When LA County Supervisor Kathryn Barger (in concert with City of Los Angeles Mayor Eric Garcetti, City of Long Beach Mayor Robert Garcia and City of Pasadena Mayor Terry Tornek) announced the Safer-at-Home Public Health Order on March 19, 2020, in response to the rapidly growing COVID-19 pandemic, daily life changed dramatically for over 10 million residents in LA County.

As the nation's largest county grappled with an unprecedented "black swan" event that shut down the economy and imperiled the health of its residents, our goods movement system strained but did not break in the critical effort to connect people to fundamental needs such as food, medicine and supplies.

The vital importance of simultaneously moving goods and people attracted national attention during the COVID-19 pandemic, illustrated by the Trump Administration identifying transportation and logistics workers as essential critical infrastructure workers in guidance issued by the Cyber & Infrastructure Security Agency on March 19, 2020.⁸⁰ The logistics industry now plays a crucial role in ensuring the fast and efficient national distribution of life-saving vaccines and treatments.

When the supply chain flows the movement of goods can seem "invisible" and easily be taken for granted. In contrast, COVID-19 demonstrated that a resilient, reliable and flexible supply chain can help society remain stable in the face of global disruption. As the pandemic continues to impact transportation planning and supply chain management, we anticipate policymakers will need to consider and adapt to new goods movement trends and challenges going forward.

Online Shopping – from Trend to Necessity

COVID-19 established as a necessity the growing trend for consumers to shop using e-commerce. Millions of LA County residents began or expanded their use of online shopping – a shift reflected nationally as U.S. consumers spent \$347.26 billion via online shopping over the first six months of 2020, a 30.1% increase over the same period in 2019 (\$266.84 billion), despite the pandemic not taking hold until mid-March of 2020.⁸¹ Similarly, nationwide grocery online shopping volume increased by 570% over the first few months of the pandemic.⁸²

Large and small businesses alike have struggled to stay open, with many closing permanently, contracting their number of stores, or filing for bankruptcy – as 21 major North American retailers did over the first five months of the pandemic.⁸³ With customer traffic at brick-and-mortar locations drying up, businesses – particularly restaurants – suddenly found themselves needing to adapt by accommodating or expanding online pickup and delivery options.

The opportunity to acquire goods through online shopping not only helped businesses stay afloat and prevent additional job losses, but also provided a safe and secure method to acquire groceries, meals, medical supplies and PPE for some of our most vulnerable residents unable to drive or risk public exposure to COVID-19.

Integration of Goods Movement Needs into First/Last Mile, Sidewalk and Curbside Planning

Experts predict that the current level of online shopping will likely remain even after vaccines become available and people begin to work in offices again – a "new normal" that will drive more home deliveries and curbside pickups, creating new public policy decisions for local jurisdictions. Many cities have adapted to COVID-19 by temporarily replacing parking spaces with loading zones and allowing outdoor sidewalk and on-street dining (such as Los Angeles City's "L.A. Al Fresco program")⁸⁴ to support commercial activity, create safer dining environments and meet the public's desire to acquire goods in a contactless manner. The continued surge in home deliveries – aided by companies like Amazon, UPS, Uber Eats and DoorDash – will lead to increasing truck traffic on residential streets as more purchases and goods will be delivered to the doorstep.

Too often city and regional planners have developed plans overseeing curbside mobility, sidewalk usage and first-last mile connectivity without adequate consideration for the needs of residents acquiring goods at home or at the curb. COVID-19 has illustrated quite clearly that transportation planning is strongest when it integrates and balances the movement of people and goods to support vital commercial activity, public health, personal mobility and quality of life needs.

Supply Chain Management Practices

COVID-19 exposed as vulnerabilities the efficiencies that allowed companies to reduce costs through just-in-time delivery and leaner inventories, leading to delivery delays and depleted store inventories that created shortages of food, medical supplies and PPE.

U.S. farmers especially had a challenging time getting their fresh produce to market, due to the design of the pre-pandemic distribution network to move 40% of food to restaurants and fast food establishments for consumption.⁸⁵ These shortages and supply chain breakdowns, coupled with abnormal consumer behaviors like panic buying and hoarding early on in the pandemic, created indelible images of half-empty stores being picked over as people snapped up essential items such as toilet paper, hand sanitizer, bottled water, beef and eggs. Additionally, person-to-person interactions within the supply chain led to outbreaks of COVID-19, such as those that shut down major meat suppliers like JBS and Tyson Foods Inc.⁸⁶

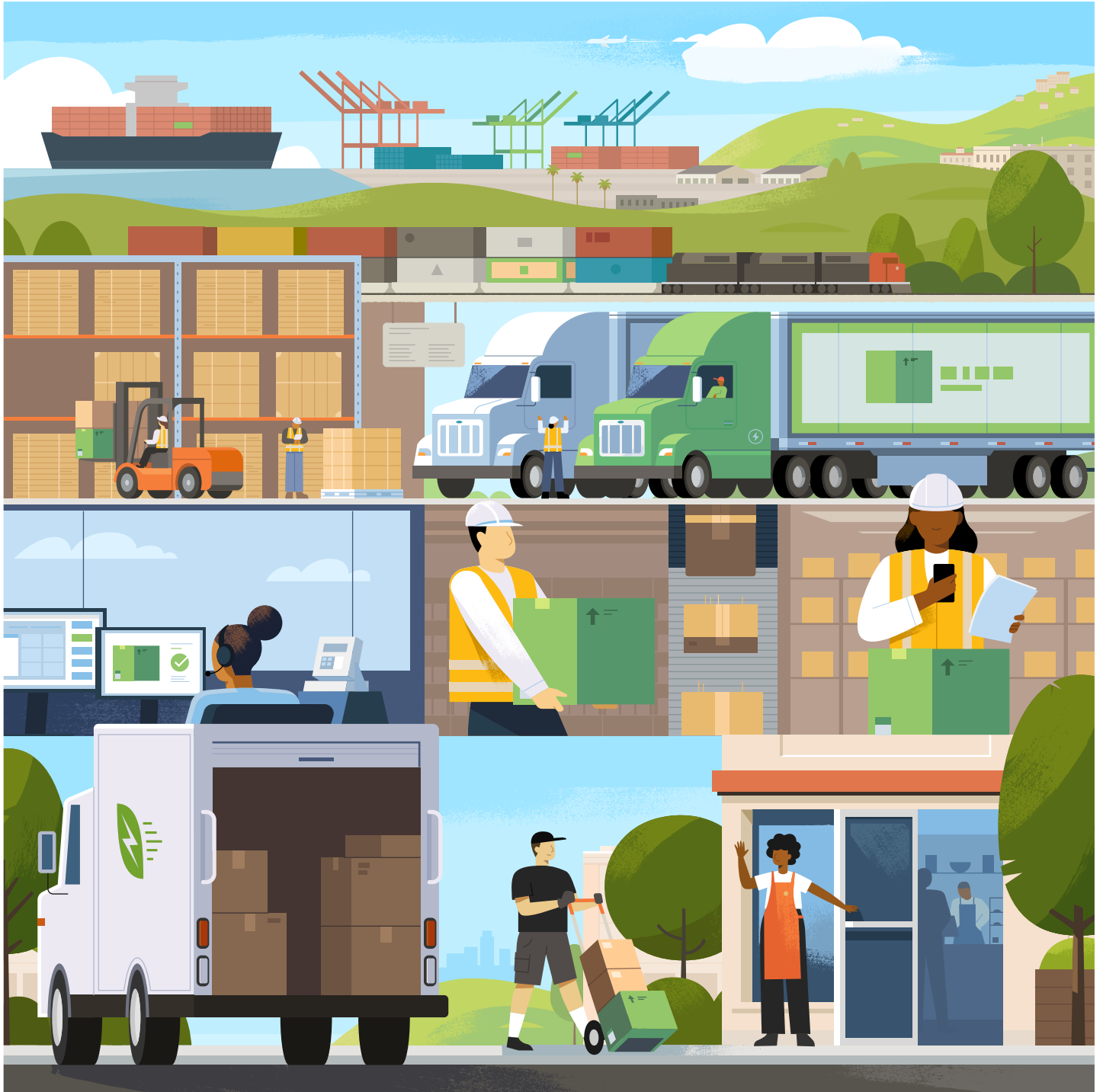
To protect better against disruptions to the global supply chain caused by future pandemics, businesses may need to consider storing more inventory and sourcing items more locally to protect against future shortages. The logistics industry may also move to reduce person-to-person contact within supply chain interactions and facilities, such as filling out forms when entering a port complex, through technology and automation.

We Must Keep Equity in Mind

As communities adapt to life during and after the pandemic, we must remain vigilant to recognize and mitigate unanticipated impacts to vulnerable communities caused by changes in the supply chain or new barriers to accessing goods. COVID-19 has exposed existing racial and economic inequities in goods movement-affected communities – home to many essential logistics workers – as demonstrated by higher mortality rates linked to health impacts caused by long-term exposure to freight emissions.⁸⁷ Metro, as a leader in reducing disparities and improving equity throughout LA County, must also develop policies and funding strategies to respond to existing and new goods movement equity problems created or exacerbated by COVID-19.



LA County's competitiveness is at risk.



The compounding challenges and troubling trends facing us – including a history of inequitable investments and impacts, increasing freight demand on a congested shared use highway and rail system, rapidly evolving industry and workforce needs and competing demands for limited funding sources – will, if left unabated, undermine the competitiveness of LA County as a place that offers a skilled and knowledgeable workforce, safe and healthy living and a strong multimodal transportation network that collectively position our county as the nation’s gateway of choice.

The region’s commitment to and success in enhancing our county’s economic competitiveness in a sustainable and equitable fashion will empower Metro and its partners to achieve LA County’s much-needed and long-awaited economic, mobility, environmental and public health goals.

To pursue comprehensive and holistic approaches to addressing these interconnected challenges, Metro worked collaboratively with goods movement stakeholders to identify challenges and opportunities facing LA County that should inform the purpose of the plan. Metro convened a Freight Working Group – comprising representatives from public agencies, the private sector and community groups – to guide our planning process and ensure that a broad range of perspectives was reflected therein.⁸⁸ Metro neither controls, operates nor maintains many aspects of the regional goods movement system. Convening and seeking input from myriad leaders and stakeholders involved with or impacted by this vast “system of systems” helped to ensure the plan reflects and meets the needs of the various public and private agencies, community groups and entities that plan, operate, use, depend on, are affected by and live near our essential countywide goods movement system.

What is economic competitiveness?

The World Economic Forum (WEF) defines economic competitiveness as “the set of institutions, policies and factors that determine the level of productivity of a country” and tracks 114 performance indicators to evaluate a nation’s productivity. If LA County were a nation, its Gross Domestic Product of \$867 million would rank 18th in the world.^{89/90}

Why is it important?

Sustained economic growth remains a critical pathway out of poverty, a core driver of human development and a crucial catalyst for improving living standards.

Can we achieve economic competitiveness, equity and sustainability concurrently?

Decades of focus on economic growth without equal focus on inclusion and environmental impacts have resulted in uneven, inequitable consequences that impact society at the local and global level. Growth and shared prosperity started to decouple in most of the world’s advanced economies in the 1970s. Over the last 50 years, this trend has been accelerated by factors such as globalization, technology, increased market concentration, a decline in public and private productivity-enhancing investments, an inequality of opportunities that limit social mobility and hysteresis effects of economic downturns that disproportionately affect the poor. All of these factors have created forms of inequality that we experience today.

As further elucidated by the effects of COVID-19 exacerbating existing equity fault lines, achieving economic competitiveness, equity and sustainability simultaneously becomes less a question and more a necessity. These goals must be merged into a single sustainable and inclusive economic growth agenda. The WEF’s 2019 Global Competitiveness Report explores the relationship between competitiveness, shared prosperity and environmental sustainability and demonstrates how no inherent trade-off exists among building competitiveness, creating more equitable societies, providing opportunity for all and transitioning to environmentally sustainable systems.⁹¹

We're creating an economically competitive LA County by moving goods in a sustainable way.

Figure 32

Our Framework





Metro asked goods movement stakeholders to describe the most critical challenges facing LA County and identify priority areas to address the challenges. Through workshops, focus groups and one-on-one interviews, these stakeholders emphasized that LA County's economic competitiveness is at risk, and shaped values and priorities that should serve to improve our competitiveness. These values and priorities transformed into the elements of a Sustainable Freight Competitiveness Framework.

Guiding values:

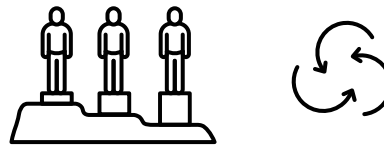
- Equity
- Sustainability

Guiding priorities:

- A Strong Labor Force
- A Safe and Efficient Multimodal System
- Strong Markets and Reliable Supply Chains
- A Culture of Investment and Innovation

This framework (*Figure 32*) provides a structure through which to evaluate and make improvements to LA's freight competitiveness in a sustainable manner that is consistent with the stated priorities and values of Metro and the regional stakeholders. These elements will serve as the framework for Metro's goods movement planning activities as we pursue integrated and holistic approaches to improve mobility, accessibility, safety and quality of life, while supporting economic sustainability, equity and prosperity.

We embed our guiding values into everything we do.



Equity and Sustainability

How can we achieve competitiveness that is founded on equity and sustainability?

This question – and challenge – is the foundation of the Sustainable Freight Competitiveness Framework. It reflects Metro's commitment to correct inequity within the county while balancing environmental, economic and social goals. As core values, equity and sustainability must permeate the four priorities of the Sustainable Goods Movement framework and create observable impacts on their development. This plan recognizes that countywide prosperity needs to be based on equity and inclusion. To do so both equity and sustainability need to be considered as a starting point and foundation for any goods movement planning activities and resulting policies, strategies and project concept development. Each of the framework's priorities, described next, will consider and incorporate equity.

Equity Considerations:

- > What are the measurable outcomes and benchmarks for equity?
- > How do we track progress and accountability?

Priorities to advance LA County's competitiveness.



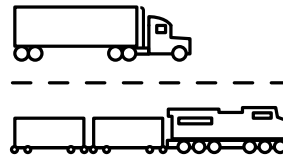
A Strong Labor Force

Do existing policies and programs position the local labor force to support the goods movement industry of tomorrow? What are the education and skill gaps and opportunities for partnership? Does the regional transportation system connect workers to goods movement jobs?

LA County must capitalize on new employment opportunities by investing in education and training. Local training institutions emphasized the gap in employer desired skills and our current workforce skillsets, particularly in heavy equipment handling, welding, automotive technology and certified automotive electricians. The types of employment opportunities in the logistics sector are changing rapidly, with an increasing number of technology intensive jobs that require special skills. The increasing jobs-housing imbalance across the county and a lack of quality accessibility to these jobs within an hour by public transit or reliable transportation are important equity determinants that hinder quality of life and LA County's competitiveness. Ensuring pathways for our workforce to harness opportunities is a key to LA County's quality of life and economic sustainability.

Equity Considerations:

- > What are the mechanisms for inclusive employment, particularly for those who have been underserved, and how do we establish them?
- > How can Metro support educational and training institutions to offer wraparound services, including food, shelter and childcare, to benefit students who are struggling?
- > Does LA County provide reliable and convenient transportation means to help people get to jobs and training programs, particularly those that neither own personal vehicles nor can afford one?



A Safe and Efficient Multimodal System

How can we ensure the shared use multimodal system safely meets future demand as the population grows and responds to changes in the way people and goods move?

The ability of the county's multimodal freight transportation infrastructure to move goods safely, efficiently and effectively has significant implications for LA County's freight competitiveness and Metro's ability to meet the mobility needs of LA County residents and businesses. The majority of the freight transportation system in the county is shared infrastructure that also accommodates passenger mobility needs. Some areas of the county's goods movement transportation system are already operating at capacity or are expected to reach capacity in the foreseeable future. An efficient multimodal system is a prerequisite for minimizing negative impacts to the mobility of both freight and passengers, while ensuring sound economic activities that are supported by transportation services.

Equity Considerations:

- > What is the role of technology in improving system productivity and safety to benefit us all?
- > What are the quantifiable goods movement impacts in communities of color and low income that have not received much attention?
- > What are the remedies and benefits that should be prioritized for the most impacted communities, and what performance metrics can be used to track the progress?
- > What can Metro do to facilitate inclusive economic growth through a multimodal system investment lens?
- > How can we work with communities and avoid unnecessary displacement and impacts when upgrading regionally-significant infrastructure facilities?



Strong Markets and Reliable Supply Chains

Do we have a strong, articulated and coherent economic strategy to develop a vital mix of businesses and policies to foster a vibrant and inclusive economy? Are we aware of and protecting against external threats that can disrupt our markets and supply chain?

For LA County to thrive it must have a strong economic strategy that supports the needs of our businesses, industries and residents. A reliable, responsive and socially responsible goods movement system is a foundation that supports such a strategy. This priority reflects the relationship of LA County's existing diverse markets, large workforce size and well-developed logistics system to global supply chains, and contemplates the best ways for the county to pursue competitiveness as part of a sustainable and inclusive growth agenda. Our investment decisions must support a strong economic strategy that is committed to providing all residents access to and the benefits generated by a prosperous, equitable economy.

Equity Considerations:

- > What can Metro do to facilitate inclusive economic growth by supporting local businesses and workforce investment?
- > What are the measurable outcomes that we can use to assess effectiveness of our investments in building strong, diverse markets and supply chains that support progress towards equitable and inclusive economic growth?
- > How can Metro partner with local communities and businesses to concentrate economic opportunities and sustainable practices in areas most affected by the movement of goods?



A Culture of Investment and Innovation

Is the mix of regional leadership, policy environment and available capital sufficient to support investments in infrastructure and technology? How do we balance our unique regulatory and policy environment with the need for private sector investment?

To develop fully the ecosystem of complementary industries that stimulate transportation infrastructure investment and innovation, LA County must desire to invest in both catalytic infrastructure and intellectual capital. LA County is already a well-established incubator for emerging transportation technologies. The county can also take advantage of four voter-approved half-cent sales tax measures to invest in its multimodal transportation system and serve as local match to attract state and federal discretionary funding. This culture of investment and innovation must be further nurtured to facilitate a full suite of investment, infrastructure improvements and technology advancement to reap further benefits.

Equity Considerations:

- > What are the mechanisms to ensure the benefit of such innovation and investments are also felt across the county, and by everyone, equitably?
- > What is the role of Metro in investing in capacity building of organizations that advocate for inclusive economic growth?
- > How can Metro anticipate and mitigate potential unintended impacts on equity as a result of new, disruptive technologies and innovations in the goods movement sector?

How will we get to better?

Metro has developed the LA County Goods Movement Strategic Plan to facilitate an equitable, sustainable, robust and economically competitive goods movement system throughout the county. This plan provides a framework to guide Metro's goods movement-related activities, investments, partnerships, policies and decision-making over the next five years.





Source: PeopleImages/E+/Getty Images

Here's our roadmap.

Goods Movement Vision

Metro's Goods Movement Vision was developed in consultation with various goods movement stakeholders that actively engaged in the development of the plan. It sets a direction for Metro as a leader and partner in shaping a more competitive and equitable LA County by serving as:

- > A **national leader** and **regional partner** in implementing a modern, responsive, coordinated and effective freight transportation system through policies, programs and projects that support a competitive global economy; and
- > A steward of **equitable and sustainable investment** and **technological innovation** that will increase regional economic competitiveness, advance environmental goals and provide access to opportunity for county residents.

Metro will implement this vision by undertaking a series of activities that will allow the region to preserve and enhance LA County's competitiveness in an equitable and sustainable manner. This package of recommendations, summarized in Figure 33 and detailed in the next section, presents an opportunity for Metro to take a leadership role in addressing

goods movement issues in the county, working in partnership with local, regional, state and national partners. Each of the following focus areas will be supported by specific implementation steps.

Freight movements generate impacts across boundaries – jurisdictional boundaries between individual cities in LA County and beyond our county borders; interest boundaries among the public, private and community sectors; and institutional boundaries, both among and within agencies, including myriad divisions within Metro. Implementing this plan will require Metro to work across these boundaries, both within and outside the agency, to help the region make progress on its mobility, economic, environmental and equity goals.

Building Equity as a Foundation

In August 2020 the Metro Board adopted an agency-wide definition for equity to guide Metro's work in this space and create project-specific equitable outcomes. This plan recognizes that disparities and challenges exist in our current goods movement system throughout LA County, and they will persist if we do not intentionally work to eliminate them.

Figure 33

Strategic Goods Movement Initiatives

INITIATIVES	DESCRIPTION	LEAD	PARTNER
1. Equity for Goods Movement	Initiate a recurrent goods movement-focused task force comprising equity-focused stakeholders as a forum to give and receive input to guide Metro's planning efforts on goods movement related issues.	●	
2. LA Metro Countywide Clean Truck Initiative	Develop a Countywide Clean Truck Initiative to accelerate the deployment of near-zero and zero emission trucks in the region to address air quality and public health concerns, particularly for our most vulnerable communities along major freight highway corridors.	●	●
3. Southern California Rail Investment Partnership	Craft a public-private framework for a collaborative freight rail investment partnership focused on improving the region's shared use freight rail corridors.	●	●
4. Urban Freight Delivery	Mainstream urban delivery and curbside demand issues across other planning efforts within Metro and LA County jurisdictions to achieve coordinated solutions to address these challenges.	●	●
5. Logistics Workforce and Competency	Ensure that LA County has a strong labor pool to support its economy and fill the jobs of tomorrow through research and initiatives to identify and address workforce skillset gaps and investment need.		●

Metro's Equity Platform is a policy framework which was adopted by the Board in February 2018. It defines steps for Metro to maximize its transportation authority as a lever to evaluate and address disparities in accessing opportunities that lead to upward social and economic mobility. Equity Focus Communities (EFCs) – defined by the Board in 2019 through the assessment of non-white populations, car ownership rates and annual income – are those communities most heavily impacted by gaps in equity throughout the county.

To establish a more comprehensive framework that considers goods movement impacts, we enhanced the EFC definition by incorporating air and water pollution impacts, the presence of hazardous wastes and the rates of asthma and heart disease using CalEnviroScreen data (Figure 30). This expanded definition will be used throughout this strategic plan to ensure our activities are consistent with Board policies while reflecting the real impacts of goods movement on our most vulnerable communities. Through ongoing dialogue with equity stakeholders, we will further refine and ground truth this definition with input from the Equity Freight Working Group.

*CalEnviroScreen identifies California communities by census tract that are disproportionately burdened by, and vulnerable to, multiple sources of pollution.

Metro's Definition of Equity

Equity is both an outcome and a process to address racial, socioeconomic and gender disparities, to ensure fair and just access – with respect to where you begin and your capacity to improve from that starting point – to opportunities, including jobs, housing, education, mobility options and healthier communities. It is achieved when one's outcomes in life are not predetermined, in a statistical or experiential sense, on their racial, economic or social identities. It requires community informed and needs-based provision, implementation and impact of services, programs and policies that reduce and ultimately prevent disparities.



Initiative 1: Equity for Goods Movement

Over the past few years, Metro has acknowledged and embraced the need to understand equity issues and incorporate recommendations into its various planning processes. Metro initiated the LA County Goods Movement Strategic Plan in the wake of this heightened commitment and sought from the onset to understand better the relationship between goods movement and equity – including how best to acknowledge past impacts, mitigate existing issues and identify future opportunities to improve the lives of county residents most affected by the movement of goods through the region. The plan and the Sustainable Freight Competitiveness framework that emerged through dialogue with the mosaic of goods movement stakeholders in LA County reflect our collective commitment to establish equity as the fundamental driver for shaping policies, initiatives and projects that are intended to result in inclusive economic competitiveness.

In recent years Metro has formed the Policy Advisory Committee (PAC), worked with various stakeholders to assist in the creation of the Board-approved Equity Platform and put forth its definition of what equity means to the agency. These actions demonstrate how Metro is investing considerable effort and resources to understand equity concerns and risk factors to address impacts to vulnerable communities in its major planning initiatives and programs.⁹² Metro should also broaden and institutionally formalize its communication channels to seek regular input from and dialogue with community-based organizations (CBOs) and equity-focused non-profit groups to better understand LA County's diverse ecosystem and existing health disparities. Metro will work to center our most impacted communities in the process of planning, identifying benefits and benchmarks and developing and implementing solutions to our equity challenges so that transportation and economic investments in the LA County goods movement system will result in outcomes that elevate the well-being and environmental conditions of our most impacted communities.

More than just a symbolic gesture of support for equity issues, Metro's designation of equity as the core value of the LA County Goods Movement Strategic Plan's Sustainable Freight Competitiveness Framework reflects the consensus support of our stakeholders and will serve as an ever-present reminder that implementation of strategies developed through the framework must be achieved in a way that lifts up those communities most marginalized and impacted by the movement of goods through the nation's most vital seaports and trade corridors. Metro must see through the lens of equity and sustainability as we develop programs, projects and policies that create safer and more efficient multimodal freight systems, maintain a resilient supply chain, generate a strong labor force and foster a culture of investment and innovation all in support of maintaining LA County's economic competitiveness in the national and global economy.

Actively and frequently engaging affected communities in the development, refinement and implementation of the plan's programs and strategies will be crucial for Metro to achieve its goal of creating a relevant, effective and forward-thinking LA County Goods Movement Strategic Plan that serves the needs of the entire county – today and for generations to come.



Source: Rick Loomis/Los Angeles Times/Getty Images

Strategy 1.1

Engage in meaningful, ongoing dialogue with equity-focused and goods movement stakeholders and experts to develop a deeper understanding of equity issues, risk factors and disparities in LA County so that equity considerations are mainstreamed in Metro's Goods Movement planning efforts.

ACTION	LEAD	PARTNER
1.1a Establish a formal, recurring Goods Movement Equity Initiative Working Group comprising representatives from community-based organizations (CBOs), non-profits, universities, health agencies and foundations to elevate the comprehensive understanding of equity issues within Metro's planning work.	●	●
1.1b Develop communication channels with residents and local businesses to fully understand how they are impacted by goods movement activities. Establish on-going coordination mechanisms with other equity-focused committees and activities within Metro and with other regional efforts to ensure effective, consistent and collaborative planning, development and deployment of goods movement equity goals throughout Metro and within LA County.	●	●
1.1c Include representation from the Goods Movement Equity Initiative Working Group at the Policy Advisory Council.	●	

Strategy 1.2

Develop a list of equity risk factors most affected by goods movement activities and create performance measures to track progress and support accountability for Metro's equity promises.

ACTION	LEAD	PARTNER
1.2a Apply Metro's Equity Platform to work with CBOs, public health, environmental and academic partners to identify equity risk factors and disparities that are most affected or exacerbated by goods movement activities in LA County to serve as focus areas for Metro's goods movement planning initiatives.	●	
1.2b Develop performance measures in consultation with affected communities, advocacy groups and subject matter experts to be used to track progress on disparities associated with goods movement impacts.	●	●
1.2c Create a linkage between Metro's budget and funding priorities and equity risk factors to ensure that Metro investments support closing identified equity gaps.	●	
1.2d Collaborate with other Metro departments to develop a mechanism to provide just compensation for CBOs to meaningfully engage in Metro's planning processes and seek to make it part of Metro's agency-wide policy.	●	

Strategy 1.3

Develop an information clearinghouse on goods movement equity strategies and programs in partnership with other departments within Metro in support of an agency-wide Equity Program.

ACTION	LEAD	PARTNER
1.3a Work with Metro's Office of Equity and Race and other departments to develop a collaborative system to disseminate information on Metro's initiatives on equity through updates provided to the public and within Metro.	●	
1.3b Collect, maintain and distribute information on LA County goods movement equity programs (e.g., scope, eligibility, available funding) to impacted parties.	●	
1.3c Develop and distribute a white paper on goods movement equity issues for use by Metro and its partners to advance understanding of these issues.	●	

Initiative 2: LA Metro Countywide Clean Truck Initiative

Metro should lead a Countywide Clean Truck Initiative to reduce toxic emissions from the movement of goods transported by diesel-powered trucks throughout LA County. To accomplish this goal the initiative must secure funding, develop and advocate for supportive policies and programs and foster partnerships to accelerate the delivery and use of clean medium- and heavy-duty trucks. Investing in cleaner truck technologies and supporting infrastructure, particularly around high volume trade corridors in LA County, will help improve air quality and public health in equity-focused communities and the region as a whole. The initiative is consistent with Governor Newsom's Executive Order N-19-19, which calls for aligning transportation investments with the state's emissions goals through a wide deployment of clean vehicles, and Executive Order N-76-20, which sets as a state goal that 100% of medium- and heavy-duty vehicles in California be zero-emission by the year 2045 for all operations where feasible, and by 2035 for drayage trucks.^{93/94}

A successful Countywide Clean Truck Initiative will feature several hallmarks. First, the initiative will be built upon Metro's partnership with local communities and regional, state and federal agencies; private entities, such as the trucking industry; original equipment manufacturers for vehicles and charging infrastructure; and energy suppliers. Second, the initiative will attract federal and state investment into LA County, lower the total cost of ownership of zero-emission trucks and facilitate the development of a market environment that further stimulates the acceleration and market penetration of clean vehicle technology. Third, the implementation of the initiative will help advance a variety of individual clean truck programs – starting with the programmatic element of the I-710 Environmental Impact Report/Environmental Impact Statement (EIR/EIS), which would unlock additional transportation enhancements along critical trade corridors and accelerate the delivery of public and private benefits. Finally, the initiative will help cement Metro's position as a leader in developing and implementing innovative solutions that address community, sustainability, public health, transportation and goods movement challenges.

This Countywide Clean Truck Initiative will complement, enhance and leverage existing efforts already underway in LA County. These efforts include the Ports of Los Angeles and Long Beach Clean Air Action Program (and associated Clean Truck Program), LA Cleantech Incubator programs, Mobile Source Air Pollution Reduction Review Committee investments, the AQMD Community Air Protection Program (AB617) and other emerging efforts. Metro should also find opportunities to link the work of this initiative with existing efforts to transition transit fleets to zero-emission technologies in the region, including Metrolink's fleet modernization strategy and Metro's Board-adopted goal to electrify its bus fleet and divisions by 2030.

Metro's countywide leadership role in transportation and sustainability provides an opportunity to convene stakeholders across the region, develop collaboration in support of the initiative and complement and enhance existing programs – all while incorporating the input and needs of affected communities, the market readiness of clean fuels and technology and the operating requirements and financial constraints of the trucking industry. Through the initiative, Metro will strive to eliminate some of the greatest health and air quality impacts – particularly for equity-focused communities – caused by the transportation and goods movement industry in LA County.



Strategy 2.1

Establish a formal, recurring Countywide Clean Truck Initiative Working Group consisting of representatives from community groups, local/state/federal agencies, the trucking industry, air quality regulators, the ports, utilities, Caltrans, researchers and manufacturers.

ACTION	LEAD	PARTNER
2.1a Ensure affected communities are actively engaged in the design, development and implementation of the program throughout its lifespan.	●	
2.1b Working with Metro's Office of Equity and Race, identify equity issues related to the development and implementation of the initiative, focusing on avoiding unnecessary financial, operational and quality of life burdens on equity-focused communities.	●	
2.1c Develop subcommittees to focus on equity implications, coordination with existing regional efforts, technology and funding/financing.	●	
2.1d Ensure that planning, development and deployment of vehicle technologies and supporting infrastructure take place in a concerted and simultaneous manner.	●	●
2.1e Work with regional partners to ensure that LA County will have a sufficient labor pool with appropriate skillsets to meet the increasing demand for new technology-based vehicle and infrastructure maintenance and operations.	●	●
2.1f Identify and prioritize specific clean truck programs to be developed through the initiative.	●	●
2.1g Propose governance and delivery mechanisms to oversee and implement the initiative's various programs.	●	

Strategy 2.2

Develop an information clearinghouse in partnership with other agencies for Countywide Clean Truck Initiative programs.

ACTION	LEAD	PARTNER
2.2a Develop a collaborative structure for maintaining an information clearinghouse with local, regional, state and national partner agencies.		●
2.2b Collect, maintain and distribute information on local, regional, state and national truck programs (e.g., scope, eligibility, available funding) to impacted parties.	●	
2.2c Develop a white paper in partnership with key stakeholders focusing on the characteristics, challenges and opportunities facing the trucking industry in LA County.	●	

Strategy 2.3

Establish revenue streams to fund the Countywide Clean Truck Initiative.

ACTION	LEAD	PARTNER
2.3a Secure Metro-controlled funding as seed funding.	●	
2.3b Identify opportunities to leverage seed funding.	●	
2.3c Develop or advocate for augmented or new revenue streams to support ongoing implementation of clean truck technology countywide.	●	●

Strategy 2.4

Develop scope, funding eligibility, funding methods, evaluation processes, performance metrics and performance monitoring mechanisms for programs developed through the Countywide Clean Truck Initiative.

ACTION	LEAD	PARTNER
2.4a Coordinate with other established programs.	●	
2.4b Define eligibility requirements and evaluation process.	●	
2.4c Finalize funding levels, financing options and funding strategies.	●	
2.4d Identify delivery mechanisms and governance needs.	●	
2.4e Develop performance metrics to measure success.	●	
2.4f Develop a performance monitoring system.	●	
2.4g Identify opportunities to work with and leverage existing regional efforts to develop and implement zero-emission transit fleets and infrastructure, including co-locating zero-emission charging and fueling infrastructure to serve public and private sector operations.	●	●

Strategy 2.5

Develop and implement the 710 Clean Truck Program on the I-710 corridor.

ACTION	LEAD	PARTNER
2.5a Create and initiate the 710 Clean Truck Program Steering Committee.	●	
2.5b Develop program parameters and evaluation process.	●	●
2.5c Receive and incorporate feedback and input from community groups into the design of the program.	●	
2.5d Coordinate the implementation and evaluation of the program with Metro's Highway Program, the Gateway Cities COG, local, regional, state and national stakeholders from the public and private sectors, including utility and supporting infrastructure providers.	●	
2.5e Identify lessons learned and recommend modifications to the Countywide Clean Truck Initiative and other clean truck programs developed by or coordinated with Metro.	●	

Initiative 3: Southern California Rail Investment Partnership

LA County's historical role as the nation's pre-eminent freight gateway heavily relied upon the continual development of its expansive freight rail system connecting the SPB Ports to intermodal yards, manufacturing centers, farms, businesses and markets throughout the region and country. To continue competing in an ever-changing global economy and supply chain landscape, LA County's past investment in its freight rail system must serve as prologue if we are to handle effectively the oft-dueling demands of an anticipated increase in national container cargo set to flow through the SPB Port Complex and for a more environmentally-responsible and equity-conscious movement of goods through our local communities.

Improving the region's freight rail network – primarily owned and operated by Class I freight railroad companies Union Pacific Railroad (UPRR) and BNSF Railway – will help secure LA County's future competitiveness as a gateway for global trade by supporting vital container movements to and from the ports at the requisite volumes and speeds to keep up with demand for goods generated or consumed in every congressional district in the United States.⁹⁵ Targeted investment in safety, capacity and efficiencies will help the SPB Port Complex stave off competition from rival North American ports that siphon vital economic and employment benefits generated by the handling of discretionary cargo.

Expanding the throughput and upgrading the safety of the region's freight rail system will also create opportunities to augment passenger rail service that improves mobility and air quality throughout Southern California by shifting long-distance commuter trips from car to train. The Southern California Regional Rail Authority (Metrolink) and Amtrak operate commuter and intercity rail service (respectively) in LA County, often on shared use freight rail corridors owned by UPRR and BNSF. In particular, Metrolink's goal to increase service, per its Southern California Optimized Rail Expansion (SCORE) program, must meet the challenge posed by constrained rail capacity with strategic investment in and partnership with the freight railroads to secure additional tracks, grade separations and supporting technology. Additional freight rail capacity will also support a regional goal to move more cargo by train versus truck – where possible – to reduce highway congestion and improve regional mobility.

Metro keenly understands that adding more freight rail capacity – and thereby more passenger and freight locomotive activity – must also come with a commitment to mitigate and eliminate externalities (e.g., localized diesel particulate matter and rail/highway at-grade crossing conflicts) to ensure that increasing rail traffic – through natural or incentivized demand – will not inflict additional public health and equity impacts on residents adjacent to freight rail rights-of-way.

The enormity and complexity of goods movement in LA County – and in Southern California – creates challenges to the development of a strategic optimization of the regional freight rail system. While freight, intercity and commuter rail services operate on shared tracks throughout much of the region, no formal institutional arrangement currently coordinates investment priorities across these public and private entities that serve different stakeholders. Despite the new federal funding opportunities provided by the 2015 FAST Act, including \$4.5 billion authorized in discretionary INFRA (formerly FASTLANE) grants, LA County received only one award (\$47 million) in the five-year program, despite our importance to the United States as a national economic engine and international trade gateway. LA County would be well-served to develop a coordinated effort to influence federal policy, expand funding opportunities and advocate for its fair share of discretionary grant awards.

Current conditions on the existing regional rail system, operational performance and limited capacity will require dramatic improvement to meet our county's aggressive air quality, sustainability, public health and mobility goals. As the regional transportation planning agency, leading provider of public transportation and major funder for transportation infrastructure that facilitates goods movement in LA County, Metro should serve as the catalyst to transform the regional freight railroad network. To accomplish this goal Metro should convene major freight rail stakeholders to develop a formal rail partnership program that will identify project priorities and create a strategic investment plan to modernize the existing regional rail system while keeping equity and public health as important goals to achieve together. Such an effort could be modeled after and built upon successful programs in Chicago (Chicago Region Environmental and Transportation Efficiency [CREATE] Program), the mid-Atlantic states (Mid-Atlantic Rail Operations [MAROps] Task Force) and here in LA County with the Alameda Corridor Transportation Authority (ACTA) and Alameda Corridor-East Construction Authority (ACE).



Strategy 3.1

Develop a freight rail investment partnership for LA County.

ACTION	LEAD	PARTNER
3.1a Identify and convene major freight rail stakeholders in LA County to develop an investment strategy to advance the investment needs of LA County's freight rail system.	●	
3.1b Develop principles for organizing the partnership and guiding collaboration among stakeholders.		●
3.1c Identify a collective work plan to identify investment priorities collectively, clear public policy objectives and deliver key milestones for the partnership.		●
3.1d Update the LA County Goods Movement Strategic Plan when necessary with the realization of key milestones and adoption of additional scope of work.	●	

Strategy 3.2

Assess and implement opportunities to realize equity and sustainability goals.

ACTION	LEAD	PARTNER
3.2a Work with necessary stakeholders to determine areas where the partnership should work together to develop and implement programs and projects that support regional and local equity and sustainability goals, while supporting LA County's economic competitiveness.		●
3.2b Incorporate community-focused benefits, such as vocational training, workforce development and employment opportunities.	●	●

Strategy 3.3

Develop an LA County Freight Rail Investment Legislative Platform.

ACTION	LEAD	PARTNER
3.3a Working with partnership stakeholders, develop and implement a legislative platform and advocacy strategy that articulates a consistent message for investment in LA County freight rail infrastructure.	●	●
3.3b Identify existing funding sources, seek opportunities for new funding sources and develop a strategy to secure the investment necessary to realize partnership priorities.		●
3.3c Seek opportunities to influence federal legislation and secure funding for partnership priorities.	●	●

Strategy 3.4

Support regional mobility goals through the improvement of shared use transportation infrastructure.

ACTION	LEAD	PARTNER
3.4a Develop a compelling narrative to support and communicate the benefits to freight and passenger rail through investment in the LA County freight rail system.	●	●
3.4b Evaluate multimodal projects and programs that could provide benefit to the LA County freight rail system.	●	●
3.4c Humanize transportation infrastructure through public outreach and discussion on the myriad benefits of investment in the LA County freight rail system for local residents.	●	●
3.4d Assess rail multiple unit technology usage on the Metrolink system (i.e., the Antelope Valley Line ZEMU pilot and Redlands Passenger Rail Project) to determine the feasibility for using this technology to provide transit connectivity on freight rail corridors.	●	●
3.4e Integrate freight and commuter rail planning elements and priorities into ongoing and future multimodal highway corridor planning studies and implementation strategies.	●	●

Initiative 4: Urban Freight Delivery

The volume in urban freight delivery is rapidly growing due to a burgeoning population in the urban core and demand for faster deliveries, considerably generating congestion on local streets. Increasing demand for the same curb space from other uses, including bike share and other shared mobility services, residential street parking, transit services and pedestrian access, adds to the competition for the limited space. Given the multitude of activities that demand the use of limited real estate along the curb, figuring out optimal use cases and demand management strategies that will ensure safe and efficient urban delivery – while enhancing accessibility and providing high-quality mobility service through a world-class transportation system – is a daunting task.

The relationship between how urban delivery demand is generated and how it is fulfilled, along with associated operational requirements and deficiencies, needs to be understood and analyzed before public agencies establish related policies and strategies. In vibrant urban environments many activities require frequent deliveries, including those associated with retail stores, restaurants, grocery stores, the hospitality industry, offices, medical clinics and residential buildings. Many cities across the country have embraced the concept of complete streets and road diets to enhance pedestrian and bicyclist experience and safety in pursuit of creating vibrant communities. The lack of consideration for freight vehicles in such concepts has, however, created unintended consequences such as conflicts and dangerous conditions for both freight vehicle operators and other roadway users.⁹⁶ These instances highlight the pressing need to approach urban mobility, accessibility and safety in a comprehensive manner that truly includes all users, including urban delivery service providers.

Metro's Vision 2028 calls for a travel speed improvement on the countywide bus network by 30% as one of Metro's mobility and accessibility goals. Metro buses operate in a complex urban environment with other users including delivery trucks. Achieving this goal will require Metro to collaborate and coordinate in a robust manner with divisions across the entire agency, including Operations, Program Management, the Office of Extraordinary Innovation, Countywide Planning & Development and others.

Local streets and curb space are primarily managed and maintained by local jurisdictions, many of which rely on multiple departments to oversee all aspects of this work. Within the City of Los Angeles, for example, the entities that exert responsibility for curb space regulation and usage

include the LA Department of Transportation (LADOT), the Department of Water and Power (LADWP) and the Department of Public Works, which includes the Bureaus of Engineering, Sanitation, Street Lighting and Street Services. Involvement of various city departments over curb space is a common practice among the 88 cities and over 100 unincorporated communities in LA County. Understanding local jurisdictions' needs, processes, regulations and their mobility and accessibility goals is a crucial factor in developing policies and strategies aimed to facilitate efficient and effective practice for curb space uses throughout the county.

Within this complex environment Metro recognizes an opportunity to play an influential role in curbside demand management across LA County, both within Metro and in collaboration with its jurisdictional partners, delivery companies and local businesses. Metro's countywide reach through its extensive service and multimodal approach to transportation investments well positions the agency to lead initiatives through partnerships with local agencies and stakeholders to develop efficient curbside use practices. Through its existing governance and institutional structures, Metro should vet how best to utilize its strength as a regional convener and policymaker to coordinate curbside demand management approaches with its regional partners and users. For example, Metro's Freight Working Group comprises members that represent industry stakeholders engaged in urban delivery. This group provides a foundation for Metro to understand common challenges experienced by service providers, identify best practices and explore collaborative solutions to curbside conflicts. In 2019 Metro led a major effort to bring a countywide awareness of curbside demand management concerns by partnering with the Federal Highway Administration (FHWA) to convene the LA Metro Curbside Demand Management Symposium, drawing participation from several Metro departments and cities across the county. With all five county supervisors and representatives for all of LA County's 88 cities on its Board of Directors, Metro wields unique political power to benefit local, regional, state and federal partners by creating a platform to develop best practices and policy recommendations, secure grant funding and conduct pilot programs to test concepts and generate data.

Metro should build upon the success of the Freight Working Group, synthesize lessons learned from the FHWA-sponsored symposium and use existing governing and institutional structures to develop policies and strategies to help Metro meet its Vision 2028 goals through the lens of efficient and effective urban delivery and curbside demand management.



Strategy 4.1

Understand the scope and magnitude of issues surrounding urban delivery issues across the county.

ACTION	LEAD	PARTNER
4.1a Initiate research efforts to understand the types of issues that are experienced by urban delivery service providers and receivers through data collection and analysis; also, identify directly impacted stakeholders.	●	
4.1b Identify hotspots and root causes.	●	
4.1c Coordinate with local jurisdictions, Metro's Office of Equity and Race, other Metro departments and community groups to identify and develop strategies to overcome equity challenges related to curbside mobility and first/last mile goods movement issues.	●	●
4.1d Develop potential solutions to be tested through pilot projects.	●	
4.1e Work with industry and local stakeholders to develop a review of near-term and long-term impacts to and best practices for curbside mobility as a result of COVID-19.	●	●

Strategy 4.2

Continue the curbside mobility forum as a recurring event.

ACTION	LEAD	PARTNER
4.2a Serve as a platform to exchange information on challenges and issues, the current state of practices and best practices on curbside demand management operations, plans and policies by various organizations and users.	●	
4.2b Maintain a robust membership featuring local jurisdictions, Metro departments and local curb space users.	●	
4.2c Develop a countywide curbside mobility partnership strategy.	●	
4.2d Develop best practice guidance for LA County's curbside demand management, including equity considerations.	●	●

Strategy 4.3

Develop Metro's Curbside Mobility Policy platform.

ACTION	LEAD	PARTNER
4.3a Document and understand operational issues and challenges faced by Metro Bus Divisions with respect to existing conditions at curbside approaches.	●	
4.3b Document and understand operational issues and challenges faced by Metro's mobility groups that manage mobility programs, such as bike share, on-demand services and first/last mile connectivity.	●	
4.3c Engage with Metro's groups involved with Complete Streets Policy, Active Transportation Policy, Transit Corridor Planning, First/Last Mile Planning and Sustainability Planning to explore ways to incorporate urban delivery considerations to minimize unintended consequences of minimizing or excluding freight needs.	●	●
4.3d Develop an equity-focused element in partnership with the Office of Equity and Race and key stakeholders to be included in this platform.	●	
4.3e Create linkages between this platform and other technology-focused efforts, such as the Countywide Clean Truck Initiative and regional transit operations, to assess opportunities to reduce emissions associated with curbside mobility operations.	●	

Strategy 4.4

Create a countywide data portal for curbside demand management.

ACTION	LEAD	PARTNER
4.4a Serve as a clearinghouse for curbside asset inventory.	●	
4.4b Serve as a clearinghouse for regulations and ordinances that govern curb space use case at the local, regional and state level.	●	

Strategy 4.5

Pursue pilot projects to test findings from all the aforementioned efforts.

ACTION	LEAD	PARTNER
4.5a Develop pilot project concepts and select candidate locations based on the work from Strategy 4.1.	●	●
4.5b Seek partnerships within Metro and with external partners for funding and implementation.	●	●

Initiative 5: Investment in Logistics Workforce and Competency

The continued success of LA County as a global freight gateway not only depends on the quality of the multimodal freight infrastructure and the connections among its industries, gateways and supply chain service providers, but also on the quality, quantity and mobility of the regional workforce. The labor pool required to support the goods movement sector is diverse and evolving in order to fulfill many roles required within myriad supply chain activities. Moreover, changes in technology and supply chain strategies to respond to ever-changing delivery expectations are increasing the complexity and sophistication of logistics operations, thereby creating new demands on and expectations of worker skills and knowledge.

Consequently, cultivating and supporting this workforce requires careful coordination across many partners, from workforce development entities and academic institutions that identify and train workers to the employers that hire them. Training the goods movement workforce with the right skills to meet evolving industry needs is critical to maintaining the Los Angeles area's competitiveness as the nation's gateway of choice and sustaining the region's economic vitality. Further, investing in the nurturing of the local workforce through targeted hiring and pathway provisions for members of LA County's underserved communities is an effective tool to correct disparities witnessed in race, income and educational attainment.

As the transportation planner, coordinator, designer, builder and operator for LA County, Metro takes the importance of investing in workforce development to heart. Metro has institutionalized training programs, developed career pathways and instituted targeted hiring policies in the public transit field. Specifically, Metro established the Workforce Initiative Now-Los Angeles (WIN-LA) program; the Expose, Educate & Employ (E3) initiative and associated Metro Transportation School; and the Project Labor Agreement and Construction Careers Policy (PLA/CCP) to provide exposure, educational programming and career pathways in construction, operations/maintenance, administration and professional services both within Metro and throughout the transit industry. Many of the skills developed as part of Metro's programs – particularly related to project management, data visualization, forecasting and compliance – also apply broadly across industry sectors, including goods movement and logistics. Consequently, Metro's workforce development efforts in the transportation sector and other agencies in the logistics sector are ripe to be paired together to create overlapping and mutually reinforcing efforts in support of regional equity and economic growth.

Some existing workforce development programs like the Electric Vehicle Infrastructure Training Program (EVITP) offer the potential to bridge and link multiple priorities for this plan. The EVITP provides advanced training and certification for electrical workers who install electric vehicle charging infrastructure, which will be vital to supporting the success of the Countywide Clean Truck Initiative as it seeks to deploy Zero-Emission electric trucks in LA County. Through partnerships with entities like the International Brotherhood of Electrical Workers (IBEW), Metro can also promote the inclusion of county residents from disadvantaged communities impacted by freight to provide opportunities to acquire the skills, training and certification needed to participate in a growing job sector that supports the future of goods movement, combats climate change, improves public health and promotes regional equity.

The industry's recognition of the impact of mobility and accessibility on employment and one's economic and upward social mobility continues to grow. In LA County only 3.3% of goods movement jobs are accessible within a one-hour transit trip. Students in trade schools have identified the lack of a reliable means of transportation as a major barrier to access apprenticeship and internship locations to obtain work experience and complete training programs. Metro and its regional transit partners should consider linking their transit services to goods movement-related industrial locations to help close equity gaps created by a lack of transportation opportunity.

A well-trained and competent labor pool is a necessary foundation for a region that embraces innovation and strives to be competitive. While the provision of goods movement-specific workforce development training may not seem to be Metro's core purpose, its relevance becomes clear once one considers that Metro serves important roles as an employer, workforce development partner, regional mobility provider and policymaking body. Through dialogue with key stakeholders, several opportunities were highlighted where Metro could serve as a regional leader and partner in advancing workforce competency goals.



Strategy 5.1

Partner with academic and research institutions to pursue applied research to understand gaps in skills and competencies of the region's logistics workforce that are sought by employers.

ACTION	LEAD	PARTNER
5.1a Inventory existing regional workforce development and training programs managed by regional stakeholders, like METTRANS, the SPB Ports, the International Brotherhood of Electrical Workers (IBEW), Long Beach City College, Los Angeles Unified School District and other community colleges to identify institutional resources in this effort.	●	●
5.1b Work with the partners mentioned in 5.1a to further Metro's understanding on workforce skill and competency gaps in detail (e.g., at job classification levels).	●	●
5.1c Fully understand transferable skills between the transit and logistics industries and their benefits to articulate Metro's workforce investment priorities.	●	

Strategy 5.2

Expand Metro's partnership with trade schools, community colleges and major employers to offer opportunities to experiment and validate existing workforce development programs.

ACTION	LEAD	PARTNER
5.2a Assess whether existing workforce development programs meet worker and employer needs, and draw suggestions for Metro's workforce development programs.	●	

Strategy 5.3

Expand Metro's local and targeted hiring policies to benefit members of historically disadvantaged communities.

ACTION	LEAD	PARTNER
5.3a Evaluate existing Metro policies on local and targeted hiring to gauge enhancement areas to ensure that Metro's hiring policies are designed to close equity gaps. These considerations may include CalEnviro disadvantaged communities' designation, access to reliable transportation, income, race and education attainment.	●	
5.3b Consult communities, labor and business groups to discuss and develop details of this strategy and implementation steps.	●	●

Strategy 5.4

Expand Metro's current training programs with the foresight to train the workforce of the future to ensure it will be equipped to respond to changing technologies in the transportation and transit industry.

ACTION	LEAD	PARTNER
5.4a Define skills and competencies needed to operate and maintain clean technology trucks in conjunction with the Countywide Clean Truck Initiative.	●	
5.4b Institutionalize training and apprenticeship programs to build a consistent pipeline to fulfill regional workforce needs.	●	●
5.4c Join Metro's Workforce Development Working Group led by the Human Capital & Development Department to ensure gaps in skills and competencies in logistics industries are integrated as opportunity areas for Metro's workforce development initiatives.	●	
5.4d Assess potential near-term and long-term impacts to the goods movement workforce caused by disruptive technology, innovation and COVID-19 impacts, working in partnership with key stakeholders to develop a countywide perspective.	●	●

Strategy 5.5

Advocate for regional, state and federal funding programs for building and enhancing workforce development and competency to ensure that workers in LA County will be able to capitalize on employment opportunities.

ACTION	LEAD	PARTNER
5.5a Understand existing policies surrounding workforce development investment to set a foundation for creating funding-focused policies.	●	●
5.5b Establish a regional partnership around funding for workforce investment to develop local and regional revenue streams to provide LA County's match contribution for any regional/state/federal grants opportunities.		●
5.5c Establish a regional funding advocacy campaign in coordination with key partners to call for increased/targeted funding for goods movement workforce development programs.		●
5.5d Define workforce skills and competency needs to support the LA Metro Countywide Clean Truck Initiative to maintain supporting infrastructure.	●	

Strategy 5.6

Improve the countywide transit service network offered by Metro and regional partners to meet the needs of the goods movement workforce and enhance its ability to access desirable jobs and training sites.

ACTION	LEAD	PARTNER
5.6a Understand disparities in access to jobs and trainings for workers and students who use transit services or lack reliable transportation means through a gap analysis of Metro's transit service to identify opportunities to better serve future populations of workers.	●	
5.6b Develop recommendations to improve access to jobs and trainings throughout the day. For example, assess Metro's ability to provide "third-shift" service and other nontraditional commute services for the goods movement workforce.	●	●
5.6c Partner with regional municipal operators to address these mobility issues in areas that are wholly or partially served by other transit agencies.		●

Implementing the Plan: Internal Next Steps for Metro

Metro serves as the regional transportation planning agency and the predominant operator of public transportation for LA County. Over the years as community and regional needs have evolved – and as the public prioritized and established a wide range of transportation priorities through the approval of two half-cent sales tax measures over the past 13 years – Metro has expanded its focus beyond constructing transit projects and operating bus and rail service to the larger collective goal of providing mobility across all modes and improving the quality of life for all communities.

Accordingly, Metro CEO Phil Washington created the Office of Goods Movement Planning within the Countywide Planning & Development (CPD) Department in 2016 to centralize planning functions within the agency related to goods movement and to meet the planning challenges facing and seize funding opportunities available for LA County freight programs and projects. The auspicious timing of this action prepared Metro to respond to the federal government's adoption of the Fixing America's Surface Transportation (FAST) Act of 2015, which created the nation's first freight-focused discretionary grant program (the Nationally Significant Freight and Highway Projects [NSFHP] program) and initiated a call for state freight plans to be created as a requirement to receive formula funding through the National Freight Highway Program.

In the wake of this new legislation more freight-related opportunities emerged at the regional and state levels to advance goods movement planning activities and projects. LA County voters overwhelmingly approved Measure M in 2016, which provided funding for major goods movement infrastructure needs, such as the Alameda Corridor-East (ACE) program and the State Route 57/60 Confluence project. California then approved Senate Bill 1, the Road Repair and Accountability Act of 2017, which reconstituted and provided \$300 million per year for a goods movement discretionary grant program now called the Trade Corridor Enhancement Program (TCEP).

Metro's recently committed focus on goods movement has had an instant impact, helping the agency in 2018 secure a \$47 million NSFHP grant for truck and High-Occupancy Vehicle lanes on Interstate 5 in the Santa Clarita Valley and \$473.6 million in TCEP Cycle 1 funding for projects across LA County – \$354 million for Metro projects, \$78 million for ACE projects⁹⁷ and \$41.6 million for SPB Ports projects. Most recently in 2020 Metro received an additional \$335.9 million in funding from TCEP Cycle 2 for critical infrastructure improvements for the SR-57/60 Confluence (\$217.9 million) and the SR-91 Goods Movement Corridor (\$118.0 million).⁹⁸

Securing funding for infrastructure projects is only part of Metro's vision for goods movement in LA County. Metro is focused on engaging its myriad partners across the region to build a stronger, cohesive and powerful voice to communicate LA County's many goods movement needs to our state and federal partners. Metro also will work with its partners across the community, public and private sectors to advance our collective vision to achieve our broader, concurrent goals of economic competitiveness, environmental sustainability and social equity.

For Metro to be an effective partner to implement the LA County Goods Movement Strategic Plan and realize its ambitious goals for the region, we must also continue to work diligently within the agency to harness the expertise and talent of our colleagues and mainstream goods movement planning within Metro. Doing so will not only support the work of this plan but also help the agency achieve its Vision 2028 goal of moving people and goods efficiently and safely throughout the region.

Next Steps within Metro

Metro began the development of the LA County Goods Movement Strategic Plan by meeting with representatives from across CPD planning divisions and other Metro departments to determine (1) the goods movement impacts and opportunities that affected their work and (2) how the plan could help them meet their respective goals. What became clear during these discussions is that – given the shared use nature of our multimodal transportation system – goods movement issues do affect many aspects of Metro’s day-to-day work, including the safe operation of buses; development of complete streets and active transportation plans and programs; implementation of workforce development, sustainability and equity goals and construction of Measure R and M transit and highway projects.

Metro staff remained engaged throughout the development of the plan by participating in the Freight Working Group meetings, providing input and helping craft the plan’s vision, goals and strategic initiatives. With the plan now complete, it is time to re-engage our colleagues and continue the work to mainstream goods movement planning needs within the agency in support of a more holistic and seamless regional transportation system that moves people and goods efficiently and safely.

Recommendations

1. Re-engage departments and staff that provided input into the plan to identify opportunities to mainstream goods movement planning needs within the agency.
2. Work within the CPD framework to integrate, update or expand goods movement-related planning goals and needs within existing and future planning documents.
3. Convene a quarterly meeting and provide online opportunities for Metro staff to remain aware of current trends and relevant issues related to goods movement.
4. Support efforts to explore, develop and implement new goods movement-related technologies, including the zero-emission pilot project for the Antelope Valley Line and the Metrolink Fleet Management Plan update.
5. Support multimodal corridor planning efforts and develop a cohesive CPD planning effort that integrates goods movement, highway, regional rail, congestion reduction and transit corridor planning efforts holistically.
6. Work within CPD to develop a formal and regularly recurring curbside mobility working group that will bring together and support transit corridor, active transportation, goods movement, complete streets and other related planning efforts that deal with curbside management.
7. Work with relevant departments to identify and prepare goods movement-related projects that will be competitive for future discretionary grant opportunities to ensure that Metro will have sufficient projects eligible and ready to compete for funding from constrained state and federal competitive funding programs.
8. Explore the feasibility of deploying freight-compatible transit vehicles on existing freight rail corridors to enhance regional transit connectivity for disadvantaged communities adjacent to active rail corridors.
9. Work within CPD and with the Office of the CEO to advance the goals of Vision 2028, the Long Range Transportation Plan and the Office of Equity and Race through future goods movement-related planning activities.

Let's get moving.

LA County has served as “America’s Global Freight Gateway” for many decades, linking consumers, markets, farms and manufacturers across the country to suppliers, customers and economic opportunities around the globe. More importantly, county residents and businesses have benefited from the employment, prosperity and quality of life offered by a vibrant goods movement system serving the nation’s most populous county and all of Southern California.

As international trade grows and the needs of our businesses and homes shift, the goods movement system and workforce must adapt and evolve to remain agile and ready to meet new demands brought on by disruptive trends, such as e-commerce and just-in-time shipping. Meanwhile, LA County continues to grow in population and need more goods, placing a greater emphasis on the efficient use of our existing highway, rail and curbside infrastructure to allow the increased movement of goods to flow unimpeded by and make room for other demands on the same facilities.

LA County will face many challenges – external and internal – to keep its standing as the nation’s dominant trade gateway. Focused and coordinated competition from other freight gateways in Canada and on the East, West and Gulf Coasts has undercut LA County’s economic position and eroded the SPB Port Complex’s national market share for the movement of imports and exports. Increasing traffic congestion on constrained shared use highway and rail corridors reduces the speed – and increases the cost – to move goods within and through the region. Recent labor disputes at the ports have led to shippers moving discretionary cargo through other ports to reduce risks to the supply chain and bringing products to market. LA County’s size – at times a boon – also creates additional layers of institutional conflicts and coordination problems as 88 cities and over 100 unincorporated communities offer differing priorities, visions and policies affecting the movement of goods.

Most importantly, LA County must overcome a long history of equity impacts to many communities adjacent to freight corridors by reducing displacement, implementing mitigations, creating employment opportunities and improving public health for those residents most burdened by the movement of trucks and trains through the region. Additionally, the county faces stringent mandates to reduce truck and locomotive emissions and improve regional mobility to attain federal standards for air quality conformity.

Meanwhile, international trade wars, tariffs and COVID-19 remind us that not every peril can be expected or planned for at the regional level – but creating a resilient freight system will help protect LA County from major – and unforeseen – external disruptions to its supply chain, economy and workforce.

Moving LA County forward – together – toward a future marked by greater equity, economic opportunity and public health for all will require a concerted effort across the spectrum of stakeholders involved with, dependent upon and impacted by the movement of goods through the region.

Metro has convened these stakeholders – public agencies and private businesses, community groups and elected officials, universities and non-profits, manufacturers and technology experts, truck drivers and warehouse workers, to name a few – to identify a common vision and purpose for the LA County Goods Movement Strategic Plan. Our partners have spent many months helping us develop the plan’s Sustainable Freight Competitiveness Framework, which is grounded in the principle of equity. In the many workshops and conversations we held in-person across the county, virtually and by telephone, our stakeholders have identified five priorities to be implemented as strategic initiatives to advance our collective equity, economic and environmental goals in support of a shared LA County vision for goods movement in the 21st Century.

Through these partnerships Metro seeks to engage communities more directly to understand and address equity issues, to create strategies to improve the highway and rail infrastructure across the county, to deploy cleaner truck and train technology as soon as possible to improve air quality and public health, to help provide the necessary training and education to generate the local logistics workforce of tomorrow and to support our communities’ management of local freight conflicts at the curb and on city streets. By creating a more resilient and efficient goods movement system, LA County will support regional, state and national economic growth even in the face of trade tariffs, COVID-19 and the disruptions of tomorrow. Implementing the priorities of our plan will require a unified regional voice as we work with our state and federal partners to develop pilot programs, supporting legislation and funding opportunities to advance the economic, environmental and equity goals of LA County and its goods movement stakeholders. Together, we can achieve this future. Let’s get moving.



Source: Port of Long Beach

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