

# 2021 regional plan DECEMBER 2021















# 2021 regional plan **DECEMBER 2021**

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# CHAPTER 1

# A Bold New Vision for the 2021 Regional Plan

If the current pandemic has taught us anything, it's that human connections matter. At work. At school. In our neighborhoods and in our larger communities.

San Diego Forward: The 2021 Regional Plan (2021 Regional Plan) is designed to make sure that San Diego County residents have the flexibility to travel to what matters most—the people we want to see and the places we want to go.

How do we do that? By creating a transportation system that prioritizes people and connections like never before.

### A transportation plan that offers us choices enabled by technology

The 2021 Regional Plan offers a vision for a transportation system that gets us to our jobs, our homes, and to the neighborhoods and places we visit. It does not rely on any single mode of transportation but instead offers a complete and integrated system to ensure that all San Diego County residents have access to safe transportation choices that protect the environment and support the regional economy.

Advancements in cell phones, electric cars, and smart roadways have led to a fundamental shift toward on-demand mobility. The convenience of hailing a ride from your phone took off more quickly than anyone could have imagined. In just a few years' time, you'll be able to tell a digital assistant such as Alexa or Siri where you want to go, and they'll plot your best trip in a matter of seconds.

Shared ride services, electric scooters, and bikes have transformed the idea of personal mobility in recent years. But the 2021 Regional Plan envisions an even bigger expansion of these types of on-demand options. Fleets of vehicles will provide us vital links between homes and transit stops, work and school, and family and friends. Made up of vehicles large and small, autonomous and shared, they will be tailored to our specific needs and be available when and where we need them. And they'll make the most of the transportation infrastructure we already have today.



### Where mobility options converge

In the 2021 Regional Plan, we embrace the neighborhood hubs in each of our communities where we live, work, shop, and connect to mobility options whether it be transit, rideshare, shuttles, scooter or bikeshare, walking, or biking. By building out from these centers of activity to an even broader system of smart roadways and transit services, the 2021 Regional Plan makes the most of the transportation system we have now while building a foundation for the larger system that we know we'll need for tomorrow.

The 2021 Regional Plan designates roadway lanes for different purposes single drivers, carpools, transit, and emergency vehicles, for example—and manages the system based on demand to keep traffic free-flowing.

The 2021 Regional Plan also includes the ability to price lanes according to demand and alternative options. Like the express lanes on the I-15, if you want to continue to drive alone, you will be able to do so. But, as more shared, fast, and affordable alternative options become available to everyone, the 2021 Regional Plan proposes a regionwide network of priced lanes to reduce congestion and improve safety.

Those expanded options will greatly improve upon what's currently available. Existing services will be more frequent and reliable, and new ones will increase connections throughout our region.

# Let's get there together

The 2021 Regional Plan is the smartest, most equitable, ambitious, and transformational transportation vision the San Diego region has ever embarked on. It pairs on-demand, right-size options, rail, smart lanes, and better transit with intentional land use policies. It is an integrated system that lays out solutions for many of our region's biggest challenges. It is an investment in us and our future. And it will require all of us to make it happen.

Let's get there together.

### **5BIG I INTEGRATED TRANSPORTATION SYSTEM**

The success of the 2021 Regional Plan will rest on the successful implementation of the 5 Big Moves. They are:

### **NEXT OS**

The underlying technology that allows people to connect to transportation services and a digital platform that allows for dynamic management of roadways and transit services.

### **COMPLETE CORRIDORS**

Roadways that offer dedicated, safe space for everyone, including people who walk, bike, drive, ride transit, and use Flexible Fleets, as well as those who drive freight vehicles. Complete Corridors use technology to dynamically manage the flow of traffic.

### FLEXIBLE FLEETS

Transportation services of many forms, varying in size from bikes to scooters to shuttles, that offer firstand last-mile connections to transit and alternatives to driving alone.

### **MOBILITY HUBS**

Vibrant centers of activity where transit and on-demand travel options, supported by safe streets, connect people with their destinations and businesses with their customers. Mobility Hubs are also planned to accommodate future growth and development.

### TRANSIT LEAP

A complete network of fast, convenient, and reliable transit services that connect people from where they live to where they want to go.

# THE CHALLENGES

Our region faces three primary challenges that are impacting our quality of life today and that will threaten our ability to play a leading role in our nation's next era of economic innovation. These challenges, as we have mentioned, are safety and congestion, social inequities, and federal and state mandates for reducing greenhouse gas (GHG) emissions and air pollution.



A few key statistics point to the urgent need to reimagine our regional transportation system so that we can tackle these pressing challenges:



### A NEW ERA OF ECONOMIC OPPORTUNITY

### A new era of economic opportunity is dawning, and the San Diego region is poised to lead

The San Diego region faces big challenges, but it is also entering a period of great opportunity. A new era of economic innovation promises exciting advances in biotechnology, renewable energy, cybersecurity, and automation that will change the way people live around the world. Our region can play a leading role in these fields when individuals who live here can connect, collaborate, and create.

More than ever, our region's future prosperity will depend on mobility—the ability of people to travel quickly and easily from communities where they live to centers of innovation where they work. La Jolla, Sorrento Valley, the South Bay, and other areas where companies and talent congregate are places where prosperity will be created and sustained well past 2050. These places are attractive to innovators, and they will continue to be drawn to our region because key measures of a high quality of life—personal mobility, affordability, and widely shared opportunities for advancement—are present and supported.





### How increased mobility can improve life in our region

While increased mobility will be vital for our innovation economy, it will also be essential to the overall quality of life for everyone who lives here regardless of their background. Enhanced personal mobility allows us to attend to basic needs: pursuing an education; obtaining health care; accessing shopping, dining, and entertainment; getting to and from work; and caring for our families. Mobility needs to be widely accessible, affordable, easy to use, and tailored to a person's individual needs. In short, mobility must be viewed as a basic human right.

Our vision for a transformed regional transportation system is centered on the fundamental idea that increased personal mobility can help drive future economic prosperity regionwide, create opportunities for advancement for more people across our region, and improve the overall quality of life for everyone. Of all the households in our region, 35% of them (equal to roughly 1.1 million people) earn less than \$45,000 annually and are considered low income. Owning and operating a vehicle in San Diego County is a significant expense and typically costs more than \$10,000 per year. The 2021 Regional Plan offers multiple choices for affordable transportation, on demand and when and where people want it—essential requirements for upward economic mobility as well as creating new social connections and maintaining existing ones.

To realize our vision, we need to reimagine what true mobility means and what it requires. Our 20th-century car culture, where driving alone dominates over public transit, carpooling, and other forms of shared rides, will not help us achieve our 21st-century goals: reducing congestion and improving safety, meeting state and federal mandates for reducing GHG emissions and air pollutants, making a more socially equitable region, and improving the overall quality of life for everyone.



# OUR UNIQUE REGION

Natural treasures, a compelling history, a rich diversity of peoples and cultures, and a dynamic binational economy The San Diego region enjoys a special place on the North American continent. Located in the southwest corner of the United States, it is graced by a Mediterranean climate and a spectacular 70-mile coastline that stretches from the Mexican border in the south to Marine Corps Base Camp Pendleton in the north. Coastal bluffs and an intricate network of shallow canyons, rivers, wetlands, bays, and lagoons sculpt the coastal topography. Inland valleys and hills blanketed with chaparral and oak give way to mountains that rise more than 5,000 feet above sea level before dropping precipitously into Anza-Borrego Desert, where the largest state park in California protects a stark and beautiful landscape.

While grappling with suburban sprawl, traffic, and other challenges that many metropolitan areas face, planners have worked hard to preserve and protect the region's natural beauty. With development concentrated in coastal regions, inland, mountain, and desert lands remain largely untouched. Intelligent planning at the coast, meanwhile, has preserved a network of natural corridors for wildlife and native vegetation to thrive. Weather and beautiful landscapes draw Californians all over the state outdoors, and San Diegans in particular love to live outside, whether hanging out at the beach or catching a wave offshore, hiking and biking in the hills behind their neighborhoods, camping at Palomar Mountain or in the Cuyamaca Mountains near Julian, or stargazing in the desert.











### Our region's Native American heritage

People have been drawn to the region's natural beauty and pleasant climate for millennia. Humans have inhabited the San Diego region for at least 12,000 years. Today, the Kumeyaay, Cupeño, Cahuilla, and Luiseño comprise the four most prominent ethnic groups of Native Americans that span the region. There are 17 federally recognized tribes with jurisdiction over 18 reservations in San Diego County—the most in any single county in the United States.

Before Europeans arrived, Native Americans thrived here by harvesting food from the sea; maximizing resources in inland, mountain, and desert landscapes throughout the year; and establishing close bartering relationships among different geographic groups to sustain themselves. Some of our region's most prominent roadways found their origins in ancient trade routes connecting tribal groups. Native tribes developed their own astronomy, mastered the botanical characteristics of native plants, and developed novel ways to store water, food, and other resources. Their deep connection to the natural environment sustained them over thousands of years and characterizes many aspects of their culture today. Conservation efforts by individuals, advocacy groups, government agencies, businesses, and other organizations in our region have often found their inspiration in our region's Native American culture and history. Governmental agencies, meanwhile, have increasingly sought the partnership and knowledge of tribal communities to better plan for development and increased mobility, conservation, equity, and environmental sustainability.<sup>1</sup>

### A binational region like none other

The San Diego region's history would never be complete, or its potential fully realized, without the invaluable and indispensable influence of our shared border with Mexico and the close ties between the San Diego and Tijuana metropolitan areas. For many people in the United States and Mexico, crossborder travel is essential for visiting friends and relatives, shopping, receiving medical care, working, vacationing, and going to school.

The historic, familial, cultural, linguistic, culinary, and educational connections between people on both sides of the border have grown stronger by the economic ties that bind us. Today, Mexico is California's number one trading partner, fueling commerce and economic opportunity throughout a binational region that encompasses the Tijuana and San Diego metropolitan areas.

In 2019, more than **90% of California–Mexico trade** was moved by truck across the international border, and more than **\$47.4 billion worth of goods** passed through the

Otay Mesa–Mesa de Otay Port of Entry alone.<sup>2</sup>

- 1 Appendix I: Tribal Consultation Process: Communication, Cooperation, and Coordination; Appendix EE: Intraregional Tribal Transportation Strategy
- 2 U.S. Department of Transportation, Bureau of Transportation Statistics, TransBorder Freight Data; Appendix J: Megaregion and Borders Planning and Collaboration

### **Focus on Equity**

As with many areas across the country, inequities created at all levels of government in the past have left a lasting impression on communities today. Systemic racism, the practice of redlining, and the taking of tribal lands by settlers have resulted in inequities throughout our region. In developing and implementing the 2021 Regional Plan, SANDAG has a responsibility to listen to the communities we serve, prioritize equitable solutions in the transportation system, and analyze the burdens and benefits of this system for historically underserved communities.

In the 2021 Regional Plan, historically marginalized communities include people with low incomes, seniors, people with disabilities, communities of color, and federally recognized Native American tribes. Coordination with community-based organizations and tribal governments throughout the planning process has resulted in a Regional Plan that can guide our region toward a more inclusive and equitable future.



















# PLANNING FOR THE REGION'S FUTURE

By 2050, we anticipate that 3.7 million people will be living in the San Diego region, about 13% more than today. With this population growth, we expect there will be a need for 440,000 more jobs and 274,000 more homes by 2050. Figure 1.2 shows forecasted population, job, and housing growth for the San Diego region.

Our population is aging and growing more diverse. From 2016 to 2050, nearly 60% of our population growth will be among those who are 75 years old and older. By 2050, people of color will comprise 60% of our total population.

One of the major goals of the 2021 Regional Plan is to develop a safe, equitable, and accessible transportation system that improves everyone's access to basic needs, opportunities, and major destinations. Basic needs include access to retail, parks, and healthcare, while opportunities include access to job centers and educational institutions. While the places and communities that make the San Diego region special are here to stay, we know that this increase in people and jobs means that we will have more people living in and moving around the region. Therefore, we must address existing issues while planning for the future.

### Figure 1.2

**Forecasted Growth in the Region** 2016 to 2050



# 2021 REGIONAL PLAN

Given the challenges, anticipated growth, and opportunities that technology can provide to transform our region, the 2021 Regional Plan is guided by a Vision and three primary goals.

The 2021 Regional Plan provides a framework for meeting these goals with coordinated land use and transportation planning strategies. Implementation actions related to projects, policies, and programs will confirm SANDAG's commitment to fully realizing the strategies in the 2021 Regional Plan.

Land use and transportation system decisions influence our ability to achieve each goal:

### The efficient movement of people and goods

Providing people with alternatives to driving frees up more roadway space for individuals who need to drive and transport goods. Managing the system with the latest technology can make traffic smoother, prioritize non-solo driving, and create a safer environment for everyone. Congestion today primarily occurs during peak periods, during which 79% of commuters drive alone and only 3% take transit.

With the 2021 Regional Plan implemented, commuters will be offered compelling alternatives to driving alone. By 2050, this could result in 13% of commuters using transit (up from 3% today) and a substantial decline in commuters driving alone to work (from 79% today to 62% in 2050).<sup>3</sup>

### Access to affordable, reliable, and safe mobility options

It takes both land use and transportation planning to fix historic inequities created at all levels of government and prioritize improved access to basic needs and economic opportunities for people with the least access.

2021 Regional Plan performance results show a threefold increase in social-equity-focused populations (people with low incomes, people of color, and seniors) living within a half mile of a commuter rail, light rail, or Rapid transit stop. Currently, only 25% of low-income residents can access the region's largest employment centers (Sorrento Valley, Kearny Mesa, and Downtown) in 30 minutes via transit. With the 2021 Regional Plan implemented, that percentage will increase to 42% by 2050.

### Healthier air and reduced GHG emissions

Reducing our reliance on the automobile as a primary mode of transportation requires that safe, affordable, and convenient alternatives are available. It also requires that people can access their jobs and other destinations by taking shorter trips. This can be achieved by focusing growth and development in the region's urbanized areas, where there are existing and planned transportation options.

The 2021 Regional Plan reduces per capita GHG emissions from cars and light-duty trucks to 20% below 2005 levels by 2035, exceeding the region's state-mandated target of 19%. The 2021 Regional Plan also meets federal air quality conformity requirements.<sup>4</sup>

### VISION

A fast, fair, and clean transportation system and a resilient region.

### GOALS

- The efficient movement of people and goods
- Access to affordable, reliable, and safe mobility options for everyone
- Healthier air and reduced GHG emissions regionwide

### The 2021 Regional Plan is organized around the following hierarchy:

### VISION

This describes the desired future for the San Diego region and guides the 2021 Regional Plan.

### GOALS

These are broad statements of desired outcomes that guide the development of the 2021 Regional Plan's strategies and performance measures.

### STRATEGIES

Projects, policies, and programs developed to achieve the 2021 Regional Plan's goals are organized around three core strategies: a reimagined transportation system, sustainable growth and development, and innovative demand and system management.

### IMPLEMENTATION ACTIONS

These are specific steps taken to bring projects, policies, and programs to reality, and each one supports the 2021 Regional Plan's defined strategies. There are ten Priority Implementation Actions, and each one has near-term and continuing actions that support their full implementation. Projects, policies, and programs are phased from now to 2050. Each one has an estimated cost, and their collective impacts are reflected in the performance measure results.

<sup>3</sup> Appendix T: Network Development and Performance

<sup>4</sup> Appendix C: Air Quality Planning and Transportation Conformity

### 2021 REGIONAL PLAN CONTENTS

The 2021 Regional Plan is a 30-year plan that considers how we will grow, where we will live, and how we will move around the region. It combines the Regional Transportation Plan, Sustainable Communities Strategy (SCS), and Regional Comprehensive Plan.<sup>5</sup> As such, the 2021 Regional Plan must comply with specific state and federal mandates. These include an SCS, per California Senate Bill 375 (Steinberg, 2008) (SB 375), that achieves GHG emissions reduction targets set by the California Air Resources Board; compliance with federal civil rights requirements (Title VI); environmental justice considerations; air quality conformity; and public participation.<sup>6</sup>

# Key state goals, policies, and Executive Orders considered in the 2021 Regional Plan:

- SB 375 and SCS Program and Evaluation Guidelines (2019)
- California Assembly Bill 805 (Gonzalez Fletcher, 2017): Identification of disadvantaged communities, inclusion of strategies to reduce pollution exposure in those communities, and use of a skilled and trained workforce
- 2017 Regional Transportation Plan Guidelines for Metropolitan Planning Organizations<sup>7</sup>
- California Transportation Plan (CTP) 2050 (2021): Alignment of 2021 Regional Plan strategies and implementation actions with cross-cutting recommendations identified in the CTP 2050
- Climate Action Plan for Transportation Infrastructure (2021)
- California Assembly Bill 617 (Garcia, 2017): Community Air Protection
   Program
- California Senate Bill 32 (Pavley, 2016): Reduce GHG emissions 40% below
  1990 levels by 2030
- Executive Order (EO) B-55-18: Carbon neutrality by 2045
- EO S-3-05: Reduce GHG emissions 80% below 1990 levels by 2050
- EO N-79-20: 100% zero-emission passenger vehicle sales by 2035
- EO N-82-20: Conserve at least 30% of California's land and coastal waters by 2030



<sup>5</sup> The 2021 Regional Plan includes the mandatory policy, action, and financial elements required for the development of regional transportation plans—in addition to the SCS as identified in California Government Code Section 65080 and detailed in Chapter 2 and various appendices. The 2021 Regional Plan also includes the elements required by numerous other policy documents and regulations, such as the Regional Comprehensive Plan (Public Utilities Code Section 132360 et seq.) and the Regional Housing Needs Assessment. Given the interrelated nature of these requirements, they are integrated into various chapters of the 2021 Regional Plan.

<sup>6</sup> Appendix G: Public Involvement Program

<sup>7</sup> The 2017 Regional Transportation Plan Guidelines for Metropolitan Planning Organizations report includes both federal and state requirements for preparing regional transportation plans.

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**D:** Sustainable Communities Strategy Documentation and **Related Information** 

E: Performance Monitoring

F: Regional Growth Forecast and Sustainable Communities Strategy Land Use Pattern

G: Public Involvement Program

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I: Tribal Consultation Process: Communication, Cooperation, and Coordination

**J:** Megaregion and Borders Planning and Collaboration

K: Regional Housing Needs Assessment Plan

### L: Active Transportation

M: Progress on Near-Term and Continuing Actions from San Diego Forward: The 2015 Regional Plan and the 2019 Federal Regional Transportation Plan

N: SANDAG Federal Congestion Management Process

**O: Federal System Performance Report** 

P: Travel and Tourism

Q: Transportation Security and Safety

**R: Stormwater and Resilience** 

S: Travel Demand Modeling

T: Network Development and Performance

**U: Cost Estimation** Methodology

Tools

V: Funding and Revenues

W: California Coastal Trail

X: 2016 Greenhouse Gas **Emissions Inventory and Projections for the San Diego** Region

Y: Goods Movement Planning and 2021 San Diego and Imperial Counties Freight **Gateway Study Update** 

Z: California State Wildlife Action Plan

AA: Regional Habitat **Conservation Vision** 

**BB: Regional Aviation Strategic** Plan and San Diego Airport Multimodal Accessibility Plan

CC: The 2020 Coordinated Plan

DD: 2021 Regional ITS Architecture Update

**EE: Intraregional Tribal** Transportation Strategy

Glossary

# CHAPTER 2

# Sustainable Communities Strategy-A Framework for the Future

San Diego Forward: The 2021 Regional Plan (2021 Regional Plan) envisions a transportation system that is **fast, fair, and clean**, as well as a region that is resilient to economic and environmental changes.

### The 2021 Regional Plan's goals are straightforward and ambitious:

### fast

The efficient movement of people and goods

### fair

Access to affordable, reliable, and safe mobility options for everyone

### clean

Healthier air and reduced greenhouse gas (GHG) emissions regionwide



Achieving our goals requires regional coordination and partnerships. A package of projects, policies, and programs will be organized and implemented around three core strategies:

# Invest in a reimagined transportation system

Build a network and fund services that include multimodal roadways; an expanded network of fast, frequent, and low-cost transit; 21stcentury technology that manages the entire transportation system and connects people to on-demand services; and zero-emission options for vehicles and micromobility

# Incentivize sustainable growth and development

Collaborate with local jurisdictions and fund programs to accelerate housing production while also addressing equity, climate resilience, and mobility.

### Implement innovative demand and system management

Reduce solo driving and congestion through increased remote work, carsharing, vanpooling, pricing strategies, and parkingmanagement programs that leverage partnerships and technology.

# Sustainable Communities Strategy

The 2021 Regional Plan includes a Sustainable Communities Strategy (SCS), as required by California Senate Bill 375 (Steinberg, 2008) (SB 375), for the San Diego region. This SCS describes coordinated transportation and land use planning that exceeds the state's target for reducing per capita GHG emissions set by the California Air Resources Board. The statemandated target is a 19% reduction—compared with 2005—in per capita GHG emissions from cars and light-duty trucks by 2035. The 2021 Regional Plan achieves a 20% reduction by then.

The 2021 Regional Plan also puts forth a forecasted development pattern that is driven by regional goals for sustainability, mobility, housing affordability, and economic prosperity. SB 375 requires the SCS to include a pattern for forecasted growth and development that accomplishes the following

- 1. When combined with the transportation network, the SCS will achieve the regional GHG emission–reduction targets.
- 2. The SCS accommodates the Regional Housing Needs Assessment (RHNA) Determination.
- 3. The SCS utilizes the most recent planning assumptions.

The SCS uses areas in the region called Mobility Hubs to concentrate future development. Mobility Hubs are communities with high concentrations of people, destinations, and travel choices. They offer on-demand travel options and supporting infrastructure that enhance connections to highquality Transit Leap services, while also helping people make short trips to local destinations around the community using Flexible Fleets. Mobility Hubs can span one, two, or a few miles based on community characteristics, and they are uniquely designed to fulfill a variety of travel needs while strengthening a sense of place. In the SCS land use pattern, forecasted growth for housing and jobs are within these areas of the region. Additionally, this SCS land use pattern identifies areas within the region that are sufficient to house the 6th Cycle RHNA Plan allocations.

**Appendix D** provides additional SCS documentation for the 2021 Regional Plan. **Appendix F** discusses the Regional Growth Forecast and provides additional information about the SCS land use pattern.







# Air Pollution Exposure Reduction Strategies

California Assembly Bill 805 (Gonzalez Fletcher, 2017) (Chapter 658, Statutes of 2017) requires our Regional Plan to identify disadvantaged communities and include transportation strategies to reduce pollution exposure within these communities. As the 2021 Regional Plan's projects, policies, and programs were developed, their benefits in relation to disadvantaged communities were considered.

**Appendix A**, Attachment 2 describes how disadvantaged communities were defined in coordination with the Social Equity Working Group and how strategies in the 2021 Regional Plan reduce pollution exposure in these areas.



### A REIMAGINED TRANSPORTATION SYSTEM

The San Diego region is at a turning point. We need to address many regional transportation challenges that are deeply connected to larger societal issues that impact everyone's quality of life. These include economic and social inequities, climate change, public health, and safety. To address the many challenges that confront our region, we need a new vision for our transportation system that is built to increase individual choices for getting around. This expanded system will use technology to better connect people so they have more choices for travel and increased safety. The outcome will be more mobility options for everyone and a shift away from overloading our roadways with single-occupancy vehicles.

This vision is anchored in the 5 Big Moves, which were introduced in Chapter 1 and will be discussed in detail in this chapter. Together, the 5 Big Moves will result in a transportation system that is greater than the sum of its parts. Each of them will tackle an aspect of the total system, but the success of each will rely on the success of the others. They will be inextricably linked. Each of the 5 Big Moves is detailed here: **Complete Corridors** will act as the backbone of the entire regional transportation system, using technology, infrastructure improvements, pricing, and connectivity to support all forms of movement.

**Transit Leap** will offer people a network of high-capacity, high-speed, and high-frequency transit services that will incorporate new modes of transit while also providing improved existing services.

**Mobility Hubs** will be centers of activity where a high concentration of people, destinations, and travel choices converge. They will offer on-demand travel options and safe streets to enhance connections to high-quality transit while also making it easier for people to take short trips without needing a car.

**Flexible Fleets** will offer people a variety of on-demand, shared vehicles, including microtransit, bikeshare, scooters, and other modes of transportation that will connect them to transit and make travel easy within Mobility Hubs.

**Next Operating System (Next OS)** will be the "brain" of the transportation system—an integrated digital platform that ties the transportation system together. Next OS will enable the transportation system to be managed in real time so that people can be connected immediately to the modes of transportation that work best for them for any given situation and at any time. Complete Corridors, Transit Leap, Mobility Hubs, and Flexible Fleets describe transformed *physical* transportation networks. Next OS will be the *digital* network that analyzes data in real time from the region's physical networks, making them all work better—more integrated, more efficient, and most of all, more responsive to people's immediate needs.

**Appendix T** details the Network Development and Performance of the 5 Big Moves.



### STRATEGIES DESIGNED TO WORK TOGETHER

Each of the 5 Big Moves is a strategy designed to accomplish certain goals, but as previously stated, each one will be closely linked with the others. Each of the 5 Big Moves will also be linked to other critical policy and program areas, such as zero-emission vehicles, land use and housing, habitat conservation, and demand management.

Flexible Fleets will be more convenient and available on demand when they are powered with Next OS technology that connects the right ride with the person who needs it. Infrastructure improvements associated with Complete Corridors and Mobility Hubs will ensure that Flexible Fleets have safe spaces to use streets and places to charge and park vehicles at key destinations.

As envisioned by Transit Leap, public transit—including buses, light rail lines, and commuter trains—will be easier to access, faster, and more convenient for people. Mobility Hubs, central locations with safe connections in neighborhoods where people live and work, will offer that accessibility. Meanwhile, Flexible Fleets will connect people to transit and other destinations within the Mobility Hub areas.

Complete Corridors will also provide people with safe and comfortable spaces to get around whether they are on foot, riding a bike, using a Flexible Fleet vehicle, or using some other mode of transportation. Complete Corridors will use Next OS technology to help people travel efficiently with real alternatives to driving alone.

Complete Corridors will also provide people with safe and comfortable spaces to get around whether they are on foot, riding a bike, using a flexible fleet vehicle, or using some other mode of transportation. Complete Corridors will use Next OS technology to help people travel efficiently with real alternatives to driving alone.

The 5 Big Moves are designed to promote the increased use of zero-emission vehicles and to encourage people to walk, ride bikes, and pursue other forms of active transportation. Safe and convenient places to park as well as charging stations for electric vehicles, e-bikes, scooters, and other electric rideables will be offered. Incentives to purchase those vehicles will also be offered. New zero-emission buses and initiatives to promote more environmentally sustainable freight vehicles will also be a priority. The result will be a cleaner and fairer transportation system.

# Complete Corridors

### **Key features include:**

### MANAGED LANES

Managed Lanes, such as those along the I-15 corridor, offer priority access to people using transit, carpooling, or vanpooling and are expanded to all urban and interregional highway corridors in our region, as shown in Figure 2.1. Existing infrastructure is maximized by repurposing shoulders or existing travel lanes to create Managed Lanes where shoulders, high-occupancy vehicle travel lanes, or general-purpose travel lanes exist today.

### RURAL CORRIDORS

Rural corridors provide access and connectivity for rural towns and lands to the interstate system. These roadways are improved with a focus on safety through shoulder widening, curve straightening, and technology features, such as Active Transportation and Demand Management (ATDM) and smart intersections, defined below.

### REGIONAL ARTERIAL NETWORK

Regional arterials provide access for local commuting, connecting employment and industrial centers to residential neighborhoods. The network includes operational and technological improvements, including smart infrastructure and smart intersections. The adopted **Regional Bike Network supports** the regional arterial network and includes both on- and off-street improvements to create a safe and comfortable space for people to walk, bike, and ride micromobility options. Figure 2.2 shows both the regional arterials and Regional Bike Network facilities.



# ACTIVE TRANSPORTATION AND DEMAND MANAGEMENT (ATDM)

ATDM enables transportation operators to change how infrastructure and services are used as traffic conditions change. As a result, existing roads can have their capacity maximized through technology instead of being physically widened or building new roadways altogether. Technology also provides people with real-time travel information to help them decide how, where, and when to travel.

### SMART INFRASTRUCTURE AND CONNECTED VEHICLES

High-speed communication networks allow data to be shared among connected vehicles, travelers' smartphones, and digitally-connected roadways. This connectivity can promote a reduction in the number of vehicle collisions, expanded capacity on the transportation network, and faster travel times, benefiting all users of the roadways including passenger vehicles, buses, and trucks.

### PRIORITY FOR TRANSIT, ACTIVE TRANSPORTATION, AND SHARED MOBILITY SERVICES

Smart intersections use sensors, connected vehicle technology, and mobility applications to facilitate communication among users, improving situational awareness, signal operations, and intersection safety. Dedicated lanes for transit and micromobility vehicles and separate space for people who walk and bike make traveling safer, faster, and more comfortable for everyone.

### CURB MANAGEMENT

Curb space is dynamically managed to accommodate different users throughout the day. This can lead to fewer traffic jams, more efficient deliveries, less idling, and improved safety.

# ELECTRIC VEHICLE

Public charging facilities for electric vehicles and hydrogen-fueled vehicles help support California's overall shift to electric vehicles, including e-bikes, electric scooters, passenger cars, goods movement vehicles, and transit vehicles.



### ENVIRONMENTAL CONSIDERATIONS

Highway projects are limited to existing footprint. Any exception will be thoroughly analyzed from an environmental and equity perspective to limit and mitigate impacts to surrounding areas. Transportation infrastructure captures and channels stormwater, improving water quality and reducing flooding. The design of transportation infrastructure plans for the anticipated impacts of continued climate change, which include a rise in sea levels, more frequent and larger wildfires, and longer and hotter heat waves. As a result, transportation infrastructure is built to be more resilient to these anticipated impacts. Cost estimates for Complete Corridor projects include funding for environmental mitigation, including biological resources mitigation.

# Transit Leap

### **Key features include:**

### NEW AND EXPANDED TRANSIT SERVICES

Figure 2.3 shows the 2050 Transit Network, which includes the following services:

### **Commuter Rail** Every 5 to 10 minutes all day

New commuter rail service with high-speed trains that are fast and convenient and serve the most traveled corridors. All day service would operate 22 hours per day and connect major residential areas with employment centers, commercial areas, and other popular destinations.

### **Light Rail** Every 7.5 to 10 minutes all day

New tram services and improved light rail services with grade separations and double tracking to increase frequencies. All day service would operate up to 22 hours per day.

### Next Gen Rapid Bus Service Every 10 minutes all day

Faster and more reliable *Rapid* bus service with more comfortable, hightech vehicles operating in priority lanes and making use of better signal technology. All day service would operate 20 hours per day.

### California High-Speed Rail

Potential alignments for the San Diego segment are shown in the 2021 Regional Plan, as reflected in the 2018 California State Rail Plan. The project would be implemented and funded by the California High Speed Rail Authority.



### Local Buses and Microtransit Services

Local bus service is improved with increased frequencies and microtransit (described in Flexible Fleets) offers on-demand services that extend the reach of fixed-route transit, thus completing the Transit Leap network.



### AN AFFORDABLE AND CONVENIENT SERVICE

Transit fare subsidies for people with low incomes, seniors, students, and youth make transit more affordable for more people. More frequent service that starts earlier and runs later makes transit more convenient for more people. Additional detail on service frequencies and spans is included in **Appendix A**, Attachment 1. As a near-term action, SANDAG will complete a Regional Transit Fare Impact Study, including evaluation of the transition to free public transit.

### TRANSIT PRIORITY

Transit vehicles travel in dedicated lanes along roadways and receive priority at traffic signals during peak travel hours. Transit vehicles also travel on bridges and through tunnels that are separated from other vehicle traffic.

### BETTER INTEGRATION

Transit schedules are more integrated with one another and with other transportation services so that transfers are closely timed, and as a result, people save time.

### ENVIRONMENTAL CONSIDERATIONS

New and existing transit services transition from being powered by fossil fuels to being powered by renewable sources of energy, such as electricity. This reduces GHG emissions and air pollution. Transit facilities are built to withstand the impacts of climate change, including flooding and heat waves; and incorporate features such as shade and urban greening. Cost estimates for Transit Leap projects include funding for environmental mitigation, including biological resources mitigation.



# **Mobility Hubs**

Mobility Hubs are whole communities that feature a convenient mix of travel choices, safer streets, and supporting amenities. Mobility Hubs help people get to and from Transit Leap services while making it easier to make shorter trips without relying on a car. A fully connected network of regional Mobility Hubs ensures seamless connections to major work, school, shopping, health care, and leisure destinations using Transit Leap and Flexible Fleets.

### *Key features include:* SAFE STREETS

Safe Streets, which offer people wider walkways, more visible crossings, slower speeds, and protected bikeways—all of which provide safe and comfortable spaces for people of all ages and abilities to walk, bike, scoot, use a wheelchair, and more.

### FLEXIBLE FLEETS

Flexible Fleets, which offer people shared, on-demand transportation services that provide convenient and personalized travel options for all types of trips at all times of day. Flexible Fleets offer people numerous alternatives to owning a car.

### COMPLEMENTARY LAND USE

Complementary Land Use, which offers people a healthy mix of jobs, housing, shopping, and recreation that supports a variety of Transit Leap and Flexible Fleet services within Mobility Hubs. These communities are also key to accommodating our region's growth over the next 30 years.

### SUPPORTING AMENITIES

Supporting Amenities, which include interactive trip-planning kiosks, complimentary WiFi, mobile device charging options, electric vehicle charging, parcel delivery lockers, mobile retail services, convenient passenger loading areas, and secure parking and e-charging for bikes and other personally owned rideables.

### INTELLIGENT TRANSPORTATION SOLUTIONS

Intelligent Transportation Solutions, which include wireless electric vehicle charging, smart parking solutions, infrastructure supporting automated and connected vehicles, and dynamically managed curbs.

As shown in Figure 2.4, Mobility Hub areas encompass our region's urban core and 30 other communities throughout the region. Appendix T, Attachment 1 describes the propensity analysis used to define the regional Mobility Hub areas. They will be accessible via a wide variety of Transit Leap and Flexible Fleet services. Neighborhoods situated in between or beyond the regional Mobility Hub areas would also benefit from safer and more Complete Streets as well as convenient Flexible Fleet access to and from the hubs. Additionally, some Flexible Fleets can operate everywhere, given that they can be hailed on demand. With nearly half of our region's trips being three miles or less, Mobility Hubs offer a unique opportunity to transform how we move around our communities using pedal bikes, e-bikes, mopeds, and more.

# **Flexible Fleets**

# **Key features include:** MICROMOBILITY

Micromobility options, which offer people small, low-speed vehicles to use for short trips within a neighborhood instead of driving a car. Micromobility devices can be personally owned or part of a shared fleet. Examples include bikes, scooters, and other rideables.

# 📇 RIDESHARE

Rideshare options, which offer multi-passenger vehicles for people with common origins or destinations so they can share rides. Lyft Shared and Uber Pool are examples of ridehailing services that use technology to bring travelers together. These kinds of services can thrive along with traditional carpools and vanpools.

### 🔁 MICROTRANSIT

Microtransit options, which offer people smaller transit vehicles that can carry up to 15 individuals. Microtransit vehicles use technology to travel the most efficient routes between a person's doorstep and their final destination. Microtransit options can include smaller shuttles powered by electricity; people typically use these lower-speed shuttles for shorter pooled trips within a community.



# RIDEHAILING

Ridehailing options, which offer people on-demand vehicles for short- and long-distance trips. Ridehailing and carshare services will be automated in the future, and they could operate as subscription-based services. This would allow people to reserve a vehicle that best serves the needs of their trip.

# CAST-MILE DELIVERY

Last-Mile Delivery options, which offer people a variety of ways that they can have goods delivered to them. These may include vehicles that are semi- or fully automated, e-bikes, drones, and sidewalk delivery bots that deliver a range of small goods to homes and smart lockers situated throughout Mobility Hub areas. Shared vehicle trips can become more efficient by carrying passengers and goods at the same time.



### Next OS

Next OS is the digital network that maximizes the efficiency and effectiveness of the other Big Moves—Complete Corridors, Transit Leap, Mobility Hubs, and Flexible Fleets—to make the entire transportation system work at its peak potential. SANDAG would develop and operate Next OS with a focus on four smart system platforms that align with current regional project priorities.

### **Smart System Platforms**



SMART INFRASTRUCTURE Developing a smart intersection system for the entire region will improve safety and efficiency for freight trucks; emergency vehicles; people who walk, bike, and ride transit; and other users.



SMART BORDERS A comprehensive system to manage crossborder trips will make travel and trade easier and safer at all ports of entry in the San Diego–Tijuana/ Tecate binational region.



SMART CORRIDORS

Integrating infrastructure and services into a system that manages multiple modes of transportation will make it possible for traffic to be managed in real time; for first responders to quickly respond to incidents; and for police, fire, and other authorities to effectively coordinate emergency evacuations.



SMART MOBILITY A single smartphone app will bundle numerous mobility options with information on travel conditions and services provided by Transit Leap and Flexible Fleets. This app will enable travelers to effectively plan their trips as they use incentives and improved tools to plan, book, and pay for rides.

### **Next OS Users**

### RESIDENTS AND BUSINESSES

Next OS will enable people to browse, book, and pay for mobility services through travel kiosks and other applications and services.

### TRANSPORTATION OPERATORS AND SERVICE PROVIDERS

Next OS will support the use of electronic dashboards that provide those who manage elements of the regional transportation system with real-time data. The result: optimized services for the traveling public.

### PLANNERS AND POLICYMAKERS

Next OS will help inform local and regional decision making with data that provide planners and policymakers with a clear perspective on how the transportation system is functioning and what improvements might be needed and where.



The ultimate goal of Next OS is to provide individual travelers with the information they need to travel efficiently throughout the region's transportation system and to equip local governments and mobility service providers with the data they need to better deliver transportation services, improve policies governing regional mobility, and enhance the overall experience of travelers across the region.

### Typical trip options today

### Expanded trip options with Next OS



# Active Transportation

Whether walking, biking, using a wheelchair, or riding a scooter, Active Transportation is an accessible, equitable, and universal form of transportation. The Active Transportation network is interwoven through the 5 Big Moves. The network includes critical connections along Complete Corridors and other streets, providing people with safe and convenient ways to connect to and from Transit Leap services and many other destinations within and between Mobility Hubs. Flexible Fleets include easily accessible Active Transportation vehicles, and Next OS includes technological improvements that make it easier and safer to walk, bike, scoot, and roll.

### In the San Diego region, almost half of all trips are three miles or less, and most every day trips are made within neighborhoods using local streets.



### Key features include:

### REGIONAL BIKE NETWORK

### (part of Complete Corridors)

Initially adopted in 2010, the Regional Bike Network includes regionally significant Active Transportation facilities implemented through multifaceted street retrofits including bikeway, walking, drainage, lighting, signal, transit, and landscaping improvements. The network represents a system of Complete Street makeovers across communities to create safe space for people of all ages and abilities to get around on foot, by bike, and using other small mobility devices.

### COMPLETE STREETS IN MOBILITY HUBS

Complete Street makeovers in Mobility Hubs will support Active Transportation and Flexible Fleets and focus on connections to Transit Leap and neighborhood destinations such as schools, shopping, dining, parks, and grocery stores.

### PARKING AND AMENITIES

Regional Bike Network projects include convenient bike parking, and Mobility Hubs will include enhanced bike and micromobility parking with electric device charging options.

### VISION ZERO

### A commitment to end all trafficrelated deaths and serious injuries

The aim of a regional Vision Zero policy is to protect everyone who uses the roads, especially the most vulnerable children, seniors, individuals with disabilities, and all people who walk, bike, and ride micromobility. The 5 Big Moves will result in people having more travel options. By implementing safe street designs, slow speeds, and policies that promote safe movement, more people will feel comfortable choosing to walk, bike, and ride micromobility to get around their communities.

On average, **One person** is killed or seriously injured in traffic violence every day in the region.

In 2019, pedestrian fatalities in the United States had reached the highest level in 30 years.<sup>1</sup> Through Vision Zero programs, SANDAG will collect, analyze, and interpret crash data and work with regional and state partners to implement actions to reach Zero.

Further information on the Active Transportation program can be found in **Appendix L** and information on the California Coastal Trail is included in **Appendix W**.

1 ghsa.org/resources/pedestrians20

### Goods Movement

From the manufacturer to your doorstep, the Goods Movement system supports the local, interregional, and international movement of goods. The region's Goods Movement system will rely heavily on several of the 2021 Regional Plan's 5 Big Moves, since they will be essential for the successful transport and delivery of goods throughout our region. SANDAG also monitors and partners with agencies such as the San Diego County Regional Airport Authority (SDCRAA) and the Port of San Diego (Port) in their efforts to improve freight movement.

Appendix Y includes an overview of goods movement in the San Diego region and the 2021 San Diego and Imperial Counties Freight Gateway Study.

### Key features include:

Encompassing elements from each of the 5 Big Moves, key features of the Goods Movement system, highlighted below, support sustainable, innovative strategies to foster trade and reduce freight-related GHG emissions and air pollution.

### ROADWAYS

### (Intersects with Complete Corridors)

Roadway improvements will optimize our region's local, regional, interregional, and international movement through Complete Corridor elements such as Managed Lanes, bottleneck improvements, priority signals for trucks, measuring border wait times, additional dynamic truck parking, near-zero/zero-emission infrastructure, and critical bridges. Transitioning commercial vehicle fleets to near-zero/zero-emission technologies will reduce freightrelated emissions while improving the quality of life in our communities.

# BORDER SYSTEM

Improvements to our existing regional land ports of entry and the surrounding transportation network will facilitate the flow of crossborder commercial vehicles, which handled \$48.3 billion in goods in 2019. The region's new Otay Mesa East–Mesa de Otay II Port of Entry will provide reliable crossing times to commercial and passenger vehicles through variable tolling.

### RAILROADS (Intersects with Transit Leap)

Transit Leap initiatives, as they relate to rail improvements, will support freight rail operations along the region's Class I railroad and short-line railroads. Transit Leap initiatives will include track reconfigurations, bridge replacements, grade separations, and rehabilitation projects. Completing the last doubletracking projects along the Los Angeles – San Diego – San Luis Obispo (LOSSAN) Rail Corridor will provide additional rail capacity for freight operators, potentially shifting some interregional truck trips to rail moves.

### AIR CARGO SYSTEM IMPROVEMENTS

SDCRAA's improvements to cargo storage and handling facilities will support the movement of high-value and time-sensitive goods. Additional airport roadway improvements will provide better truck access for air cargo pick-up and delivery. Last-mile delivery innovations, such as developing drone deliveries, will be explored through Flexible Fleets.

# MARITIME SYSTEM

The Port's improvements at the Tenth Avenue and National City Marine Terminals will optimize maritime operations, reduce emissions, and facilitate truck and rail access. Truck parking and staging opportunities at various local or state sites supporting the Port's operations will be explored. The Harbor Drive 2.0 concept of prioritized signals for trucks between the two marine terminals, coupled with near-zero/ zero-emission trucks, will reduce emissions for nearby residential communities.

### NEXT OS

The Next OS digital network will support drivers picking goods up and delivering goods to businesses and residents. Truck routing and permitting information, truck parking availability, and border wait time data will be some of the applications found within Next OS that benefit those who move goods.

URBAN AREAS.



### SUSTAINABLE GROWTH AND DEVELOPMENT

Details of the Regional Growth Forecast and Land Use Pattern are included in **Appendix F**.

Figure 2.5 Sustainable Communities Strategy Land Use Pattern Future Growth Areas

### development that reflects smart growth, transit-oriented development, preserving natural resources and agricultural lands, and building communities that are resilient to the consequences of climate change and other environmental changes. Ensuring social equity and the availability of housing that is affordable for everyone are also top priorities. Mobility Hubs will be places of activity where many of the 2021 Regional Plan's transportation investments will come together along with strategic decisions about how we use land. Transit and other mobility options within Mobility Hubs will support surrounding communities where future housing and jobs are envisioned. As these places grow, more people will be able to get to work, school, shopping, and other destinations without having to travel long distances. Focusing growth in these areas will also help preserve the region's natural habitat areas and natural resources. This growth pattern will be an important part of making the region more resilient to the impacts of climate change, including wildfire and extreme heat. As shown in Figure 2.5, the region's major employment centers and urban core Mobility Hubs would take on the most housing and job growth in the region over the next 30 years.

The 2021 Regional Plan envisions a regional pattern of growth and

### San Diego Region in 2050

### **Total Projections**

 Population:
 3,746,073

 Jobs:
 2,086,318

 Households:
 1,374,840

2016–2050 Growth Projections

Population: +436,563 Jobs: +439,899 Households: +239,991



# Accelerating Sustainable Communities

Accelerating the sustainable communities envisioned in the 2021 Regional Plan requires SANDAG to leverage partnerships with cities and the County of San Diego. Land use authority is reserved for local jurisdictions under state law, and because they understand the unique needs of their communities and geographies. Mobility Hubs are general areas defined by a set of regional criteria (the analysis to define Mobility Hubs is described in **Appendix T**, Attachment 1). To refine and implement Mobility Hubs, the 2021 Regional Plan includes near-term actions to update local government grant programs, provide funds for transportation-related improvements, update Mobility Hub areas to align with latest planning assumptions, and partner with jurisdictions on planning efforts that support sustainable communities in Mobility Hub areas and Transit Priority Areas. Figure 2.6 depicts the regional Mobility Hub areas and Transit Priority Areas based on the 2035 transit network.



### Regional Mobility Hub areas are classified into the following types:

**Coastal:** popular seaside and recreational destinations for the region's residents and visitors. While scale of future development in these areas may be smaller compared with other Mobility Hubs, there is a genuine need to improve multimodal connections to these neighborhoods bordering one of the region's most precious natural resources.

**Cateway:** key entry points into the 5 Big Moves network. For example, the U.S./Mexico Border Mobility Hub offers a unique opportunity to improve the regional travel experience for people and vital goods crossing the International Border in both directions daily.

**Major Employment Center:** the region's existing top commute destinations, many of which offer mixed use development opportunities to help accommodate future growth.

**Urban Core:** includes Downtown San Diego and surrounding higher density, mixed-use residential and commercial areas—everything from Mid-City to Barrio Logan to the Midway community. The Central Mobility Hub will serve as a true "anchor" transit station within this Mobility Hub area.

**Suburban:** moderately dense residential neighborhoods spliced with some commercial destinations that are situated near Transit Leap routes.

### **Transit Priority Areas**

Senate Bill 743 (Steinberg, 2013) provides for streamlined environmental review for projects within Transit Priority Areas, which is an area within a half mile of a "major transit stop." A major transit stop, as defined in Public Resources Code 21064.3, is a site that contains any of the following:

- An existing rail or bus rapid transit station
- A ferry terminal served by either a bus or rail transit service
- The intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

Chapter 2: Sustainable Communities Strategy – A Framework for the Future

# **Habitat Conservation Vision**

The San Diego region is one of richest biodiversity areas in the United States. Due to its diverse topography, geological conditions, and moderate climate, the region contains many rare, threatened, and endangered species. Over the last three decades, the region has identified and conserved lands to protect rare, threatened, and endangered species and their habitats, while also accommodating future population growth. These habitat conservation planning efforts have also helped to improve water quality and sequester carbon.

Similar to the Mobility Hub concept, regional habitat conservation efforts have envisioned "hubs" of protected natural lands that are connected by wildlife movement corridors. This will allow the entire ecosystem to adapt to changing ecological conditions associated with climate change, and to be resilient to wildfire and invasive species. Investments identified in the 2021 Regional Plan would conserve and manage lands identified in local habitat conservation plans, mitigate impacts on habitats from transportation projects, and implement nature-based climate solutions.

**Appendix AA** of the 2021 Regional Plan describes the history and current status of the habitat conservation planning efforts in the region and sets forth a vision for future implementation. As described in **Appendix Z**, the 2021 Regional Plan is consistent with the overall goal of the California State Wildlife Action Plan.

The vision for regional habitat conservation is to **Protect**, **Connect**, and **Respect** species and their natural habitats to prevent their extinction in San Diego County:

- **Protect** existing native species through the strategic acquisition, management, and monitoring of critical habitat areas identified in the regional habitat conservation plans.
- **Connect** habitat areas through wildlife corridors and other linkages, and connect people to local species and San Diego's natural habitats by enhancing access, where appropriate, to natural habitat areas.
- **Respect** local native species and habitat. We can balance demands for recreation with the desire for intact, natural landscapes and together create a higher quality of life for everyone in San Diego. We can encourage community respect for natural lands through increased public outreach and by building awareness of San Diego's unique biodiversity. This understanding will help the public connect to and deepen their respect for nature, furthering conservation efforts in the region.


# **Regional Housing**

The State of California faces a persistent housing crisis, and San Diego County is no exception. As shown in Figure 2.7, the housing supply has not kept pace with the growing population of the San Diego region, resulting in rising housing prices. More than 70% of San Diegans say that housing affordability is a big problem across the region, especially for low-income families and younger residents.



Addressing the availability and affordability of housing requires action at the local, regional, and state levels. For example, cities in the San Diego region have taken steps to increase affordable housing by making the development process faster and easier. The State of California offers grants to accelerate the production of housing and has approved legislation that allows for more types of homes, such as accessory dwelling units, to be built statewide. Regionally, government agencies are considering how to better align housing policies with transportation initiatives. Both contribute substantially to the region's cost of living, access to basic needs, and overall quality of life.

#### REGIONAL HOUSING NEEDS ASSESSMENT

The RHNA, mandated by state law, quantifies the need for housing and informs land use planning efforts to identify existing and future housing needs resulting from the growth in population, jobs, and the size of households. SANDAG, as the region's council of governments, is responsible for overseeing the RHNA process for the San Diego region.

The SANDAG Board of Directors adopted the 6th Cycle RHNA Plan on July 10, 2020, with the final housing unit allocation. The RHNA Plan furthers the objectives in state law by allocating housing to jurisdictions based on the availability of transit and jobs. This provides people with opportunities to take more trips by bus or train and live closer to where they work, reducing vehicle miles traveled (VMT) and GHG emissions. The methodology to distribute the regional housing need is designed to allocate more housing units to low- and very-low-income residents in places where this type of housing has not been available in the past. The methodology also makes low-income housing a priority in high-opportunity areas that feature better schools, more economic opportunity, and fewer environmental hazards.

The RHNA Plan informed development of the SCS land use pattern, setting forth a forecasted development pattern for the region. The SCS land use pattern identifies areas within the region sufficient to house the projection of regional housing need determined by the California Department of Housing and Community Development, considers state housing goals, includes housing unit assumptions for each jurisdiction that meet the housing unit allocations in the RHNA Plan, and prioritizes Mobility Hub areas and Smart Growth Opportunity Areas for future development.

#### HOUSING PROGRAM

SANDAG has begun developing a housing incentive program as an implementation measure of the 2021 Regional Plan, which will support jurisdictions as they develop and adopt policies and process improvements to accelerate the development of housing in areas with access to transit, jobs, and other amenities. The SANDAG housing incentive program will also explore ways to leverage funding from the state to provide people with more housing in our region and meet the goals of the 2021 Regional Plan.

The RHNA Plan is included in **Appendix K**.

# **Climate Strategies**

The San Diego region will be increasingly impacted by the consequences of climate change. These impacts will contribute to existing vulnerabilities and create new ones for our regional transportation system, as summarized in Figure 2.8. Measures to mitigate climate change and adapt to inevitable impacts will make our region more resilient. Resilience is defined as "the ability to prepare for changing conditions and withstand, respond to, and recover rapidly from disruptions" (Federal Highway Administration Order 5520).



#### Figure 2.8 Climate Impacts in the San Diego Region

Temperature	Water	Sea-Level Rise	Wildfires	Habitat
Increase of 5–10° F	Supplies of water will	<b>2.5 feet</b> by 2050	Longer and less	All of these will
in annual average	be highly variable, with	and <b>6.6 feet</b> by	predictable fire seasons,	threaten the
temperature by	wetter winters, drier	2100	larger and more	health of
2100; increased	springs, and more		catastrophic fires,	coastlines and
frequency, intensity,	frequent and severe		and a higher number of	beaches,
and duration of heat	droughts that end with		poor air quality days as	wetlands, and
waves	periods of <b>intense rainfall</b>		a result	plants and animals

In the San Diego region, climate action planning to date has focused on reducing GHG emissions, particularly from those sectors in the Regional Greenhouse Gas Emissions Inventory, to lessen the impacts of climate change.

**Appendix X** contains the methodology document for the Regional Greenhouse Gas Emissions Inventory and Projections.

As shown in Figure 2.9, transportation is the largest source of GHG emissions in the San Diego region; in 2016, on-road light-duty vehicles accounted for 41% of emissions. Reducing emissions from all sectors is critical for the state to meet its goal of "carbon neutrality" by 2045. Implementing the 2021 Regional Plan, while also facilitating the development and implementation of local Climate Action Plans (CAPs) across our region, will help everyone—the state, SANDAG, cities, and other public agencies achieve their climate goals.

#### Figure 2.9

#### 2016 Regional Greenhouse Gas Emissions Inventory





#### CLIMATE ACTION PLANNING

In the San Diego region, 17 out of 19 local jurisdictions have adopted a Climate Action Plan. SANDAG develops technical resources, grants, and templates to support regionally consistent climate action planning. Resources include the Regional **Climate Action Planning Framework** (ReCAP) and the Climate Action Data Portal,<sup>2</sup> which houses GHG inventory and CAP monitoring data ("ReCAP Snapshots") to help jurisdictions monitor progress toward CAP goals. These resources help jurisdictions use consistent approaches, methodologies, and data, while also preserving their flexibility to form their own local policies. SANDAG also facilitates coordination among jurisdictions to help them implement their CAPs. The agency also continues to explore opportunities to advance local CAP implementation through regional initiatives, such as carbon sequestration.

#### CLIMATE ADAPTATION AND RESILIENCE

The ongoing impacts of climate change are challenging our region's transportation system and regional connectivity. SANDAG and many of the region's local jurisdictions, public agencies, and special districts are developing vulnerability assessments, climate resilience plans, and implementation strategies to identify and adapt to these challenges. Adaptation planning develops actions to manage risks and reduce vulnerabilities to the impacts of climate change. This type of planning focuses on how to best adapt to the anticipated rise in sea levels, increases in temperature, and the elevated risk of wildfires. Adaptation planning builds capacity to better prepare San Diego communities for these impacts.

**Appendix R** includes additional information on Stormwater and Resilience.

#### CLIMATE EQUITY

Efforts to mitigate and adapt to the impacts of climate change and develop communities that are more resilient to these impacts must consider equity. Vulnerable communities are more at risk of experiencing the negative impacts of climate change and have fewer resources to cope with, adapt to, and recover from impacts. The disproportionate impacts of climate change that vulnerable populations face are caused by many factors, including the physical environments where people live and work and their social, political, and economic backgrounds.3

SANDAG is preparing an Adaptation Equity Guidance Document that will identify equity indicators and metrics for adaptation, as well as guide the integration of equity into adaptation and resilience planning and implementation. The Adaptation Equity Guidance Document will also include a training curriculum for local planners and decision makers.

#### Priorities for Adaptation Planning

- Develop a Regional Resilience Framework for the San Diego region.
- Prioritize resilience projects in communities that are most vulnerable to climate impacts.
- Develop innovative solutions to address the need for evacuation and rapid mobility in transit corridors.
- Address vulnerabilities to the region's transportation infrastructure.
- Protect natural lands to absorb carbon and protect communities from the impacts of climate change.
- Serve as a resource for local agencies and the general public on the impacts of climate change and how to best prepare.

<sup>2</sup> Climate Action Data Portal: climatedata.sandag.org/

<sup>3</sup> Executive Order B-30-15 Resiliency Guidebook, Vulnerable Populations, opr.ca.gov/docs/20180312-Vulnerable\_Communities\_Descriptions.pdf



## INNOVATIVE DEMAND AND SYSTEM MANAGEMENT

Innovative demand and system management strategies are programs that encourage and support people to choose alternatives to driving alone. These alternatives include working remotely, carpooling, vanpooling, and choosing transit or active transportation. Next OS will make traditional transportation demand management strategies more effective by supporting a system that offers people incentives to choose alternatives to driving alone, facilitating integrated payment options for these alternatives, and helping planners learn and integrate results into future planning and program design.

#### **Impacts of COVID-19**

In March 2020, the global coronavirus pandemic forced governments to issue stay-at-home orders to protect the general public and reduce the spread of disease. The abrupt closure of communities across the country has had widespread impacts on the national economy, the travel behavior of Americans, and the social well-being of people young and old. SANDAG has been closely monitoring the impacts of the COVID-19 pandemic and has generally observed an increased need to address social inequities in the region, the potential for more opportunities but also limitations for people to work remotely, and a return to previous levels of travel activity when stay-at-home orders were lifted. The experience during the pandemic has reaffirmed the need for a transportation system that offers choices for traveling around the San Diego region and the need to leverage technology in ways to improve flexibility and adaptability to future changing conditions and disruptions.



### Transportation Demand Management

The region cannot build enough capacity on its roadways to alleviate all congestion. Therefore, the 2021 Regional Plan includes transportation demand management (TDM) strategies that encourage people to use the regional transit network, an array of Flexible Fleets, and safe streets for biking, walking, and rolling. SANDAG, local jurisdictions, employers, and land developers can all play a role in implementing effective TDM solutions.

#### EMPLOYER OUTREACH PROGRAM

Many TDM programs are implemented with employers because commuting to and from work generates the most daily congestion on roadways and because employers can offer policies and programs that influence their employees' commute choices. Employer policies could include commuter benefits; financial incentives; effective marketing, education, and outreach; parkingmanagement strategies; and more flexible work schedules that offer telework options. Through iCommute, the San Diego region's TDM program, SANDAG has offered complimentary assistance to employers throughout the region for decades. However, the 2021 **Regional Plan envisions a regional** TDM policy that requires employers and developers to provide transportation benefits and on-site amenities that encourage people to use sustainable transportation choices. SANDAG also leads regional telework pilot programs that help local employers improve telework practices and that measure impacts of pilots on regional VMT while determining regional scalability.

#### SUSTAINABLE TRANSPORTATION ENCOURAGEMENT

As the transportation network and services envisioned by the 2021 Regional Plan are brought to fruition, it is important to have marketing, education, and other creative outreach strategies to raise public awareness and encourage people to choose alternatives to driving alone. This includes longstanding bike encouragement programs, which celebrate Bike Month every May, and the SANDAG GO by BIKE brand that is used in campaigns repeated throughout the year. To encourage people to try alternatives to driving alone, the 2021 Regional Plan includes programs and grants to support pilot projects and collaborative partnerships. Projects could expand beyond traditional TDM strategies and include shared streets, shared mobility pilots, micromobility incentives, technology-based solutions, and more.



# **Regional Pricing Strategy**

The region's roadways are a public good, but they do not have an infinite capacity and increasing demands have been placed on the transportation system. The results have been severe and persistent congestion, air pollution and increased GHG emissions, deteriorating regional economic competitiveness, and a diminished quality of life for everyone. The Regional Pricing Strategy proposes a variety of tools to manage demands on the system, give people incentives to use alternative modes of transportation, and ensure that individuals with low incomes are not overburdened with transportation costs. These tools include:

- Dynamic tolling on Managed Lanes: Similar to the I-15 Managed Lane system, the region's expanded system of Managed Lanes will combine with Next OS to allow tolling rates to fluctuate depending on the time of day and the level of congestion. SANDAG partners with Caltrans to build and operate the Managed Lane system.
- Transit fare subsidies: Complementing the expanded transit system, transit fare subsidies will reduce the cost of transit fares and therefore will make transit a more affordable and attractive alternative to driving alone. Tailored subsidies for individuals with low incomes, youth, and seniors will make transit more accessible for those who rely on low-cost transportation. SANDAG will work with the transit operators to offer fare subsidies.
- Parking and curb pricing: Combined with the availability of convenient alternatives to driving alone and effective parking-management strategies, charging for parking encourages vehicular turnover and reduces congestion as drivers search for a parking spot. Better management of valuable curb space also includes pricing to encourage a rapid turnover by commercial vehicles, rideshare services, shuttles, and parcel-delivery vehicles. The result: access is maximized for a wider range of popular services. Local jurisdictions are responsible for managing parking and curb space. SANDAG will provide resources and technical support to jurisdictions in developing parking and curb pricing strategies.
- Road usage charge: More people are driving more fuel efficient and zero-emission vehicles, and as a result, gas tax revenues are declining. To make up for this loss in revenues and to manage congestion, California is exploring the idea of charging people who use roads. As California selects an approach for technology, collection methods, and account management, SANDAG will work with member agencies, California metropolitan planning organizations, and other stakeholders to determine how to best leverage the statewide system for a regional road usage charge that will benefit the San Diego region by improving air quality and managing congestion systemwide while generating flexible revenue for local projects.





### Our Future Success Requires Bold Action Today

The 2021 Regional Plan puts forth a long-term vision for 2050. However, projects, policies, and programs will be phased in over time to meet certain state and federal requirements. For example, by 2035 the region must demonstrate how it will reduce GHG emissions to meet targets set by the state. The 2021 Regional Plan's investments between now and 2035 were identified based on project readiness, timing of anticipated revenues, consideration of social equity, and integration of the 5 Big Moves to ensure critical connections are made as a system. Projects, programs, and policies by 2035 are centered on advancing our ability as a region to address social equity and congestion while meeting the region's GHG-reduction target. They include:

- Making the most out of our existing transportation system by developing a system of Managed Lanes, coupled with Next OS technology, to support the efficient movement of people and goods; increasing transit service hours and frequencies; subsidizing transit fares; and building out an extensive system of Rapid transit. The overall goal is to make transit more convenient and affordable and to increase access for historically underserved communities.
- Advancing work on the commuter rail system by double-tracking the LOSSAN Rail Corridor, relocating tracks off the Del Mar Bluffs, and building a critical commuter rail connection from South Bay to Sorrento Valley.
- **Investing in communities** to support mobility options and close the first/last-mile gap with Flexible Fleet pilots, Complete Street makeovers, Mobility Hub amenities, electric vehicle charging, local bike projects, and smart intersections, including the development of the Central Mobility Hub and San Ysidro Mobility Hub.
- **Supporting sustainable planning** with local programs that help make housing more affordable, improve safety, make communities more resilient to the impacts of climate change, preserve open space, and focus development in Mobility Hub and Transit Priority Areas.
- Managing system demands with employer-focused programs that encourage people to choose alternatives to driving alone and pricing strategies that ease congestion and enhance transportation revenues.

Details on the phasing of projects are included in **Appendix A** and **Appendix T**.

# Performance of the Regional Plan

How well does this package of projects, policies, and programs help us achieve our goals? What are the benefits to social equity populations? What are the economic benefits?

SANDAG uses computer models to understand how changes to the transportation system, land use, and new mobility services will impact our region. These models calculate travel times, trip distances, the use of different transportation options, and much more. Performance measures help structure model data for review across multiple years and between the Regional Plan network and the current network. From these models and performance measures. the future performance of the transportation system can be better understood.

#### ACCESS TO BASIC NEEDS AND OPPORTUNITIES

To understand the performance and benefits of the 2021 Regional Plan, we focused on access, or the ability of people to use the transportation system to travel to a destination. The current transportation system is well-built to provide accessibility by car; however, the 2021 Regional Plan expands the system to provide people with other travel options. The 2021 Regional Plan focuses on access (measured by time) to different types of destinations, some defined as basic needs and others as opportunities. Figure 2.10 shows the percent of regionwide population with access to basic needs and opportunities for 2016 and milestone years of 2035 and 2050.

- Access to Basic Needs: Some destinations, such as shopping, open space, and healthcare, are necessities. The 2021 Regional Plan improves access to all these necessities regionwide and within Mobility Hubs by offering people access to transit, bicycle infrastructure, and other modes of micromobility.
- Access to Opportunities: Access to regional employment centers and higher education is also an important function of the transportation system because this access helps people advance economically. The 2021 Regional Plan dramatically increases the percentage of people regionwide that can access these areas by transit. With the 2021 Regional Plan, the percentage of the region's population that can access Tier 1 employment centers (highest employment concentrations containing more than 20% of the region's jobs) within 30 minutes using transit will grow from 21% today to 36% in 2050. The percentage that can access these employment centers within 45 minutes using transit will grow from 37% today to 58% by 2050.

#### Figure 2.10 Access to Basic Needs and Opportunities via Transit (% regionwide population):



Note: Tier 2 Employment Centers consist of the second highest employment concentrations containing approximately 20% of the region's jobs.

#### Regional Plan Performance Measures

The technical methodology for the Performance Measures and results are contained in **Appendix T**.

- Access to Basic Needs: the ability of people to use various modes of transportation to access shopping, open space, and healthcare.
- Access to Opportunities via Transit: the ability of people to access regional employment centers and higher education via transit.
- GHG Emissions: the degree to which the 2021 Regional Plan meets state-mandated targets for reducing GHG emissions.

#### GREENHOUSE GAS EMISSIONS

Vehicles traveling on our public roadways are significant contributors to GHG emissions. Several efforts are underway to reduce GHG emissions regionwide. One of the requirements of the 2021 Regional Plan is to reduce GHG emissions from passenger vehicles. Unlike the other performance areas, GHG emission reductions under SB 375 have a required target. For the San Diego region, the 2035 target is a 19% per capita reduction in GHG emissions compared with 2005 emissions. The 2021 Regional Plan achieves this target with a reduction of 20% per capita.

CO2 20% reduction in per capita CO2 emissions from 2005 levels by 2035 (exceeding 19% target)

#### SOCIAL EQUITY ANALYSIS

A critical component of reviewing the impacts of the 2021 Regional Plan is evaluating the effects on historically underserved and systemically marginalized groups. This evaluation is known as a social equity analysis and focuses on communities of color, residents with low incomes, and seniors. While the 2021 Regional Plan delivers improvements to the entire region, this review ensures that the benefits are shared by everyone and that the burdens of the 2021 Regional Plan's changes are not disproportionally shouldered by any social equity focus population.

The social equity analysis confirms there is no disparity with the distribution of benefits from the 2021 Regional Plan between social equity focus populations and non–social equity focus populations. Where differences do exist, they are small—within 3%—and favor the social equity focus populations. An increase in access to destinations by transit for social equity focus populations is a particular strength of the 2021 Regional Plan.

Thirty-minute transit access to Tier 1 employment centers increases from 22% to 36% for minorities and increases from 25% to 42% for residents with low incomes by 2050. This improvement will provide important economic opportunities to these communities. Convenient transit access to higher education is also crucial for historically underserved and systemically marginalized groups. By 2050, the percentage of minorities and residents with low incomes that can access higher education within 30 minutes by transit increases by 10% or more regionwide. Similar improvements are also found in 15-minute access to retail via transit. All social equity focus populations gain significant access to destinations regionwide. Seniors living near transit grows by more than 25% by 2050.

See **Appendix H** for more information on the Social Equity Engagement and Analysis.

### CHAPTER 3

# Paying for the Regional Plan, Forming Partnerships and Taking Action, and Monitoring How the Plan Performs

San Diego Forward: The 2021 Regional Plan (2021 Regional Plan) puts in place a framework for the future. It envisions a transformational transportation system supported by policies and programs that will help the San Diego region meet its goals, but it will require hard work, which this chapter details.

This chapter describes a strategy for funding the 2021 Regional Plan and details key project costs, describes the partnerships that will be essential for the 2021 Regional Plan to succeed, and reviews how the 2021 Regional Plan's performance will be monitored to ensure that it achieves its goals.



# A long-term financial strategy for the 2021 Regional Plan

Each update of our Regional Plan improves upon the previous one, reflecting new ambitions, new opportunities, and new realities. As a result, the cost of each successive Regional Plan also changes. The 2021 Regional Plan and its 5 Big Moves mark a dramatic departure from our last Regional Plan, which was adopted in 2015.<sup>1</sup>

The 2015 update of the Regional Plan was projected to cost \$130 billion in 2020 dollars. The 2021 Regional Plan is projected to cost \$163 billion. Why the higher cost? As we have detailed in Chapters 1 and 2, the 2021 Regional Plan completely reimagines our transportation system—what mobility can mean for all people who live and work in our region, no matter where they reside, where they work, how old they are, and regardless of their economic, racial, or ethnic background. The 5 Big Moves, as envisioned in the 2021 Regional Plan, will be engines of economic opportunity, social equity, and an elevated quality of life for everyone. As we stated in our introduction, the 2021 Regional Plan is the smartest, most equitable, ambitious, and transformational transportation vision the San Diego region has ever embarked on.

The 2021 Regional Plan dreams big, but it is also fundamentally designed to meet new and aggressive state mandates to reduce our regional emissions of greenhouse gases (GHG). Our region simply cannot meet these mandates without reducing the number of miles that people drive on our roadways (an indicator known as "vehicle miles traveled" or "VMT"). Transportation, as we have shown, accounts for a huge percentage of overall carbon emissions in our region. We must act to reduce these emissions.

Our \$163 billion price tag reflects several years of planning projects and programs. All of these projects and programs have been scrutinized and reconsidered, and those that did not move our region toward meeting the goals and mandates driving this new Regional Plan were eliminated or scaled back. The process followed to build the 2021 Regional Plan ensures that the funds raised to implement it will be maximized to achieve its many goals and objectives. Among the most important objectives is to meet our state requirement to reduce GHG emissions by 19% below 2005 levels by the year 2035.

<sup>1</sup> On October 25, 2019, the SANDAG Board of Directors adopted the 2019 Federal Regional Transportation Plan, which complies with federal requirements. California Assembly Bill 1730 (Gonzalez, 2019) provided a two-year extension through December 31, 2021, to update San Diego Forward: The 2015 Regional Plan and its Sustainable Communities Strategy for the San Diego region through 2021.

## HOW THE BUDGET IS BUILT

So, where will \$163 billion come from? The funding strategy for the 2021 Regional Plan considers all reasonably anticipated revenues to be received over the life of the 2021 Regional Plan-out to 2050. Estimated revenues total \$172 billion, which exceeds total costs and allows flexibility in the funding strategy to address uncertainties with various sources. These funds will come with constraints. A majority of the anticipated funds will be tied to certain types of projects (for example, transit infrastructure or highway operations and maintenance), and we do not have the authority to interchange them. These constraints come with specific provisions from Congress or the state Legislature, and our investment strategy for the 2021 Regional Plan is aligned with those rules. Figure 3.1 summarizes the funding for the 2021 Regional Plan by source.

SANDAG is also constrained by when funds will become available over the 30-year life of the 2021 Regional Plan. As shown in Figure 3.2, more than half of anticipated revenues are not expected to become available until the 2036–2050 timeframe. This means that to meet state mandates to cut regional GHG emissions by 2035, investments targeted at reducing those emissions must be made between now and then.

# FEDERAL, STATE, AND LOCAL REVENUES

As shown in Figure 3.1, revenues for the 2021 Regional Plan can be divided into three sources: Federal, State, and Local. These are discussed below.

**Federal sources** of revenues include Federal Transit Administration discretionary funds, Federal Highway Administration funds, and funds from other sources.

**State sources** of revenues include Road Maintenance and Rehabilitation Account funds, State Highway Operation and Protection Program funds, and funds from other sources.

**Local sources** of revenues include TransNet funding, Managed Lane tolls, farebox revenues, and general local funds from other sources.

Assumptions related to new revenues are discussed on the following page.

#### Figure 3.1 2021 Regional Plan Funding Sources

(in billions of \$2020)



housing revenue

#### Figure 3.2 Anticipated Revenues by Time Period

(in billions of \$2020)

revenue

ridehailing service fees,

and road usage charge



#### NEW REVENUE SOURCES

Traditionally, regional plans have been drafted with the assumption that some combination of 30-plus revenue sources will pay for implementation. The San Diego region has always excelled at leveraging state and federal funds to maximize the potential of every dollar generated locally. However, state and federal transportation funding has declined in recent years; the federal gas tax has not changed since 1993, and fuel tax receipts have declined due to increased vehicle efficiencies and adoption of electric vehicles. Also, while California Senate Bill 1 (Beall, 2017) funding has provided additional funds through a gas tax increase and other new fees, those revenues are primarily dedicated to a backlog of existing operations and maintenance projects.

These realities point to a single conclusion: new sources of funding will be needed to fully implement the 2021 Regional Plan. The 2021 Regional Plan's financial strategy proposes several options to raise the needed funds. Below is a discussion of these options and the revenues they could raise over the life of the 2021 Regional Plan.

**Appendix V** contains details on the revenue sources estimated at \$172 billion (\$2020).



### VALUE PRICING AND USER FEES

An Essential Source of New Revenues





The practice of charging travelers fees for the transportation infrastructure they use is becoming more commonplace nationwide. This is seen as a way to optimize performance of the transportation system while managing congestion and to minimize the effect of somewhat unpredictable state and federal funding. User fee revenues provide a modern, sustainable, long-term funding source to achieve the SANDAG goal of a fast, fair, and clean transportation system; support the region's infrastructure needs (to preserve and improve the system); and promote a balanced transportation system moving forward.

Charging fees for the transportation infrastructure that people use—for example, charging users for each mile they drive on the highway can change travel behavior. In the San Diego region, an increase in carpooling was observed on the I-15 corridor once Managed Lanes were opened. Fees can also encourage people to take the bus for short trips or take the train to work instead of driving alone. Funds raised from user fees can help the region build a complete transportation system that provides travelers with more alternatives to driving alone wherever and whenever they need them. Once it is built, the convenience of the new system could, in effect, sustain changes in travel behavior. The result for everyone would be more mobility, less congestion, less air pollution, lowered GHG emissions, and a higher quality of life.

User fees also apply a "market-based" approach; user fees are paid primarily by those who use the transportation infrastructure the most or derive the most benefit. They can be designed to achieve environmental, equity, and economic goals and can put a hand on the scale to redress decades of unbalanced investment in roads by making funds available for alternative modes and transit. People who want to drive alone will continue to be able to, but user fees can encourage travelers to choose more sustainable travel options that improve mobility and access regionwide, reduce carbon emissions, and create greater transportation equity. These fees simultaneously generate sustainable funding to implement the 2021 Regional Plan. The pricing strategies under consideration in development of the 2021 Regional Plan are detailed below.

#### MANAGED LANES

Managed Lanes can charge variable tolls based on congestion levels and other operating metrics, providing a faster trip to solo drivers if they choose to pay a fee while providing free access to emergency vehicles, transit vehicles, carpoolers, and others. This concept is not new to the region. SANDAG currently operates priced Managed Lanes on I-15, which allow solo drivers to receive a congestion-relief benefit if they choose to pay a fee. Another Managed Lanes project, the I-15/SR 78 Express Lanes Direct Connector Project, is underway. This project will add three miles of new Express Lane direct connector ramps on SR 78 in both directions that will link to the existing I-15 Express Lanes. Managed Lanes are popular and effective in many areas of the United States, including in Los Angeles which in 2013 implemented its first Managed Lanes system on two highways. In the 2021 Regional Plan, SANDAG would take Managed Lanes to a new level with a regionwide system. The agency would use some of the revenues to reinvest in multimodal projects and programs designed to expand and improve the transportation network. As implemented, the region's transit and other alternative transportation will be in place to provide people with alternatives to driving alone. Frequency, reliability, better choices, and safety will be defining features of our regional transportation system. Transit fares, meanwhile, will be structured so that ridership and access to mobility both increase.

#### ROAD USAGE CHARGES

Road usage charges are direct user fees that motorists pay to use the roadway network based on the distance they travel. Road usage charging can be an equitable way to generate revenue. Leveraging Next Operating System (Next OS) technology offers the capability to provide discounts to certain populations. As electric and hydrogen-powered personal vehicles become more affordable and revenue from fuel taxes continue to decline, road usage charging is also a way to make up for the loss in those revenues. Finally, road usage charging is a recognition that any type of vehiclewhether powered by gas, electricity, or hydrogen—causes congestion and places wear and tear on transportation infrastructure. Road usage charging is an emerging strategy for rapidly growing metropolitan areas, including those in California where Caltrans is now testing a road usage charge program. Oregon is also collecting a road usage charge as part of its new program, OReGO. A road usage charge program is expected to be implemented by SANDAG in 2030 to align with the anticipated implementation at the state level, and it would require new legislation or another mechanism.

#### RIDEHAILING COMPANY SERVICE FEES

Ridehail company service fees are per-trip fees charged for on-demand passenger and ridehailing services such as Uber and Lyft. Fees may vary by mileage, occupancy, or other trip factors. Ridehailing service fees have been levied in Chicago, Seattle, Portland, New York, the District of Columbia, and other areas. As a near-term action, SANDAG will pursue a ballot measure or another mechanism to assess a fee on the fares charged for rides provided by ridehailing service companies that encourages ridehailing.

# TRANSIT FARE REVENUES AND TRANSIT FARE SUBSIDIES

The fares that riders pay for transit contribute to the operating budgets of the transit agencies (roughly 30% of their budgets pre-COVID). Incentives such as transit fare subsidies can encourage more people to use transit, shifting travel from the personal automobile to shared rides on transit vehicles throughout the day.

A pilot program to provide free fares for all youth 18 and under is expected to start in 2022 and will help inform these pricing discussions. As a nearterm action, the 2021 Regional Plan includes a Regional Transit Fare Impact Study that will evaluate the transition to free public transit.



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# BUILDING AN INVESTMENT STRATEGY

Investments in the 2021 Regional Plan are assigned to a handful of key categories, and together, these investment areas add up to a summary of investments that make up the 2021 Regional Plan. These categories are capital investments, operations investments, local streets and roads investments, program investments, and debt service, and are shown in Figure 3.3.

#### CAPITAL INVESTMENTS

The capital investments in the 2021 Regional Plan are made up of those projects that represent anticipated construction of infrastructure, including new facilities or the expansion, renovation, or replacement of existing ones. However, given that the anticipated investment covers the next 30 years of needs, this category is primarily associated with new construction. This represents the largest investment budgeted in the 2021 Regional Plan. Primarily, these investments include infrastructure projects associated with Transit Leap, Complete Corridors, Mobility Hubs, and Next OS. More details are included below.





**Transit Leap Capital Investments** are made up of those projects that create a complete network of high-speed, high-capacity, and high-frequency transit services that connect major residential areas with employment centers and attractions throughout the San Diego region. New high-speed transit services—covering longer distances with limited stops—may be separated from vehicle traffic with bridges, tunnels, or dedicated lanes. Improvements to existing transit services—such as the Trolley, COASTER, SPRINTER, and Rapid—may include additional rail tracks, dedicated transit lanes, and traffic signal priority to keep transit moving quickly in addition to supporting the movement of goods by rail. Other transit capital projects include People Movers, Trams, and transit center development or reconstruction, as well as vehicle costs for the entire transit fleet (including local bus services).

Complete Corridors Capital Investments will provide the region with a variety of travel choices and will use technologies that will help manage how people use highways, local streets, and roadways in real time. They will provide dedicated, safe spaces for everyone, including freight vehicles and people who walk, bike, drive, ride transit, and use Flexible Fleets. Key features and benefits of Complete Corridors include Managed Lanes that offer priority access to transit, carpool, and vanpool users, as well as access to single-occupant drivers for a fee; Active Transportation and Demand Management technology that enables transportation operators to modify how both arterial and highway infrastructure and services are used based on changing traffic conditions; high-speed communication networks that allow connected vehicles, smartphones, and smart roads to share data to reduce collisions, increase network capacity, and improve travel times; priority access to roadways for public transit, active transportation, and shared mobility services; managed curb space that accommodates different uses based on levels of traffic at varying times of the day; and electric vehicle (EV) infrastructure, including public charging and hydrogen fueling stations. Complete Corridors capital investments will also include curve straightening, intersection improvements, and shoulder widening in rural corridors. Finally, Complete Corridors investments will address the growing needs of goods movement and freight infrastructure in our region.

#### **Mobility Hub Capital**

**Investments** will ensure Mobility Hubs offer people on-demand travel options and supporting infrastructure that enhance their connections to Transit Leap services, while also helping people make short trips around the community using Flexible Fleets. Mobility Hub investments include EV infrastructure, micromobility e-charging and parking, convenient passenger loading zones, interactive travel kiosks, parcel delivery lockers, and carshare parking. The geographic area of Mobility Hubs may span one, two, or a few miles based on community characteristics. Mobility Hubs will be uniquely designed to fulfill a variety of travel needs while strengthening sense of place. Complete streets makeovers intended to facilitate safe and comfortable travel for active transportation and Flexible Fleets within hubs and to/from Transit Leap are included in the Mobility Hub capital investment strategy. Mobility Hub investments also include land acquisition and on-site amenities for the San Ysidro and Central Mobility Hubs. Both of these "anchor" Transit Leap stations will boast a high convergence of many Transit Leap and Flexible Fleet services that offers a seamless transfer experience between modes while transforming these stations into new "live-work-play" destinations.



#### OPERATIONAL INVESTMENTS

Operational investments will provide our region with the resources necessary to run and maintain the capital investments discussed above. These include resources to run and maintain the transit system (including the provision of fare subsidies), operations and maintenance needs of the Complete Corridors system, and costs associated with facilitating Flexible Fleets. These fleets will be a combination of shared. ondemand transportation services that provide people with convenient and personalized travel options. Flexible Fleets build on the popularity of services such as rideshare, bikeshare, and scootershare, but can also include neighborhood shuttles and delivery services. These fleets will provide services for all types of trips, 24/7, which can reduce the need to own a car. They also will provide important connections between highspeed Transit Leap services and key destinations such as work or home, making it easier for commuters to choose transit. Flexible Fleets will be primarily accessible through mobile apps and can be operated by public and private agencies or through partnerships.

#### LOCAL STREETS AND ROADS INVESTMENTS

Investments in local streets and roads will serve a critical need to support municipal roadway infrastructure to facilitate mobility, accessibility, and the implementation of the regional transportation system. Local streets and roads improvements will address capital, rehabilitation, operations, and maintenance needs of the local roadway system managed by the region's 18 municipalities as well as the County of San Diego. Local streets investments will help transportation system operators manage the roadway needs of all users, including those who use the region's local bikeways.

#### PROGRAM INVESTMENTS

#### Supporting Policy and Program Investments

Policy and program investments include those pertaining to land use, housing, climate action planning, climate adaptation and resilience, EVs, parking and curb management, transportation demand management, and Vision Zero. These investments will support programs that complement the capital and operational investments of the transportation system, encourage sustainable growth and development, and implement innovative demand strategies. Local programs include grants and resources to support capital and planning activities for local jurisdictions. Regional programs support the adoption of new technologies and encourage residents, businesses, and community organizations to use transportation alternatives to driving alone.

#### **Next OS Investments**

Next OS investments include creation of a regional digital platform that will compile information from passenger vehicles, buses, ridesharing vehicles, delivery trucks, bikes, scooters, and other sources into a centralized data hub. Analysis of these data will improve how people plan, operate, and experience transportation. Transportation operators will be able to better manage supply and demand by modifying how infrastructure and services are used throughout the day. The result will be a modernized transportation system with roads and transit services that operate smoothly and serve people better.

#### DEBT SERVICE

Debt service includes the cost to service debt previously incurred based on the borrowing instruments and financing tools put into place to fund existing projects or those currently under construction.

Appendix A contains detailed tables describing the investments estimated for each project and program. The detailed cost estimation, its methodology, and the summary of investments are included as Appendix U.

# PARTNERING FOR **SUCCESS**

The 2021 Regional Plan is a plan for the entire San Diego region, and its success depends on partnerships and collaboration among SANDAG; local jurisdictions; tribal nations; other federal, state, regional, and local agencies; Mexico; service providers; communitybased organizations; and residents.

**Appendix M** describes ways that SANDAG has utilized partnerships to implement prior regional plans, including San Diego Forward: The 2015 Regional Plan and the 2019 Federal Regional Transportation Plan.







#### LOCAL JURISDICTIONS

Changing our urban form takes time, and local planning is critical to aligning regional projects and concepts of the 2021 Regional Plan with local communities. To support local jurisdictions with this planning work and to advance regional collaboration, 2021 Regional Plan investments include grant programs and technical assistance focused on housing, climate action planning, climate adaptation and resilience, habitat, parking and curb management, and Vision Zero. These programs build upon the success of current TransNet grant programs by offering more resources for local planning, technical studies, and projects. The housing incentive program can help local governments update their plans and ordinances to accommodate increased housing density, new employment opportunities, and enhanced community spaces within Mobility Hubs.

#### TRIBAL NATIONS

The 2021 Regional Plan focuses transportation investments within densely populated areas of the western third of the region, but the regional transportation system also must support the needs of our tribal nations, whose reservations are in sparsely populated, rural areas of the region. SANDAG and the Southern California Tribal Chairmen's Association (SCTCA) continue to coordinate projects and initiatives through a government-to-government framework. Together, SANDAG and the SCTCA implement strategies to address issues of significance to tribal nations, such as transportation, cultural resource management, environmental preservation, energy, and economic development. Using funding from a Caltrans Partnership Planning Grant, the two organizations have collaborated on the first-ever effort to collectively assess tribal mobility issues in a regional context. The result was the development of the Intraregional Tribal Transportation Strategy, included as Appendix EE, which provides a framework for supporting tribal transportation needs in the region through interagency cooperation at the federal, state, and regional levels. On July 1, 2020, the SCTCA and SANDAG signed a memorandum of understanding (MOU) to establish a coordinated effort to implement strategies borne out of governmentto-government dialogues and regional planning efforts. In particular, the resources provided through the MOU will allow the SCTCA to advance the Intraregional Tribal Transportation Strategy, building capacity to prioritize and pursue transportation projects of interest to tribal nations.

**Appendix I** describes the tribal consultation process conducted for the 2021 Regional Plan.



#### MILITARY

The San Diego region is home to the largest concentration of military forces in the country. More than 150,000 military personnel are employed here. Our region has a long history of coordinating a variety of initiatives with the military through the San Diego Regional Military Working Group (Military Working Group). The Military Working Group includes representatives of the region's military installations, adjacent local jurisdictions, transit agencies, the Port of San Diego, Caltrans, and SANDAG. The Military Working Group provides a collaborative forum for the various branches of military and SANDAG to address areas of mutual interest, including growth management, habitat preservation, transportation, regional growth, housing, water, energy, and other related topics that can help inform implementation of the 2021 Regional Plan. The Military Working Group developed the San Diego regional Military Multimodal Access Strategy, analyzing the mobility issues for each installation, defining strategies to facilitate discussion and coordination, and developing a set of high-priority transportation projects, operational improvements, and programs that support military, regional, and local concerns. The region has continued to leverage this strong partnership through innovative solutions including the Central Mobility Hub/Navy Old Town Campus Redevelopment Revitalization Agreement, Comprehensive Multimodal Corridor Plans, public-private partnerships for Transportation Demand Management programs, and SANDAG's grant awards from the Office of Local Defense Community Cooperation for San Diego Military Installation Resilience. With the signing of the President's Executive Order on January 27, 2021, "Tackling the Climate Crisis at Home and Abroad," SANDAG and the Military Working Group will continue to leverage, collaborate, and maximize future opportunities from state and federal agencies to contribute to economic growth and improve the regional transportation network.

#### COMMUNITY PARTNERS

As the 2021 Regional Plan is implemented, SANDAG partnerships with community organizations, residents, and businesses will be important to tailor solutions to specific communities and populations. Community engagement will be critical, as the 2021 Regional Plan envisions direct investments to communities. These investments include Flexible Fleet pilots, complete street improvements, Mobility Hub amenities, EV charging, and local bike projects. As SANDAG develops its housing incentive program, collaborating with nonprofit affordable housing developers and other pro-housing organizations will help SANDAG determine how to best incentivize affordable housing development in the region.



#### BORDERS

Our region's successes today and its future prospects for cultural and economic prosperity are linked to its relationships with neighboring counties (which include Orange, Riverside, and Imperial counties), Mexico, and the 17 sovereign tribal governments within the region. Each adds a dynamic element to the region's profile and requires SANDAG to pursue ongoing collaboration to build understanding, identify challenges, and prioritize solutions. For this reason, SANDAG created the Borders Committee in 2001 to bring together elected officials and representatives from all neighboring jurisdictions. The Borders Committee addresses joint challenges related to regional planning and collaborates across jurisdictional and international boundaries to develop and implement strategies within the broader context of the megaregion. Megaregions reflect the symbiotic nature of adjacent urban areas that share economic, environmental, and social features as well as infrastructure and geographic connections. It is important, then, to consider how planning decisions at local and regional levels can resonate at the megaregional level.

The California–Baja California border region experiences high levels of interregional and crossborder commuting and goods transport. There are also many industries that are linked across borders. This larger region is an increasingly important trade and travel corridor, and it has a distinct global competitiveness with unique advantages.

The 2021 Regional Plan is designed to build on the close working relationships among partners throughout the California–Baja California binational megaregion. Efforts will include completing the Otay Mesa East–Mesa de Otay II Port of Entry project and implementing the Regional Border Management System and related border wait time monitoring components. These and other initiatives will help create the momentum needed to improve interregional and crossborder mobility.

Partnerships with public agencies in Mexico are critical for the successful implementation of the 2021 Regional Plan—for our region and for the larger binational megaregion in which we live.

**Appendix J** includes more information on planning in the megaregion and across borders.

#### PRIVATE-SECTOR COORDINATION

Establishing collaborative public-private partnerships (P3s) enables SANDAG to harness innovations, new ideas, and technological advancements that are driven by the private sector to implement projects, policies, and programs in the 2021 Regional Plan. SANDAG can leverage participation from the private sector to accelerate the delivery of projects, mitigate risks, expand services, or support the financial viability of 2021 Regional Plan projects. This includes tapping into privatesector expertise through alternative P3 procurement models to design and build complex new capital projects such as high-frequency commuter rail services or a Central Mobility Hub or to activate Mobility Hubs by providing supportive transit-oriented land uses, housing, and hub amenities such as EV charging infrastructure in the region. This also includes forming partnerships to launch and operate on-demand Flexible Fleet services, expanding access to broadband in the region to close the digital divide, and establishing regional data-sharing initiatives to operationalize the Next OS. Proactively forming partnerships with the private sector will be critical to ensure that services and projects envisioned in the 2021 Regional Plan are implemented in support of regional mobility, equity, and sustainability goals.



### IMPLEMENTATION OF THE 2021 REGIONAL PLAN

# Actions that Will Place the Region on a Course to Succeed

With a financial strategy in place and essential partnerships guiding our work, implementing the 2021 Regional Plan will require specific and deliberate steps. Taking these steps will ensure that the 2021 Regional Plan advances on a firm footing and is primed for success. Implementation actions are specific steps taken to bring projects, policies, and programs to reality, and each one supports the 2021 Regional Plan's defined strategies. There are ten priority implementation actions, and each one has near-term and continuing actions that support their full implementation.

All near-term and continuing actions are described in Appendix B.

#### PROGRAMS, PLANNING, AND POLICIES

Eleven policy and program areas were identified for the 2021 Regional Plan. These policies and programs complement the projects described in Chapter 2 and support the ten priority implementation actions.

- 1. Land Use and Habitat
- 2. Housing
- 3. Climate Action Planning
- 4. Climate Adaptation and Resilience
- 5. Electric Vehicles
- 6. Parking and Curb Management
- 7. Transportation Demand Management
- 8. Vision Zero
- 9. Fix It First
- 10. Transportation System Management and Operations
- 11. Value Pricing and User Fees

Detailed information on the implementation actions, program costs, and social equity considerations for each are included in **Appendix B**.

# PRIORITY IMPLEMENTATION ACTIONS

- 1. Apply the Social Equity Planning Framework and ensure that equity is considered throughout 2021 Regional Plan implementation.
- 2. Develop Comprehensive Multimodal Corridor Plans to refine 2021 Regional Plan projects at the corridor level and qualify the region for future funding opportunities.
- Update SANDAG policies, including the TransNet Ordinance, to reflect 2021 Regional Plan projects and priorities.
- **4.** Evaluate the transition to free public transit and develop a Value Pricing and User Fee Implementation Strategy.
- **5.** Seek new local funding in addition to pursuing state and federal funding opportunities.
- **6.** Advance Next OS by preparing technical and planning studies and initiating pilot opportunities.
- Implement the Regional Transportation Improvement Program and near-term projects.
- 8. Partner with local jurisdictions, tribal governments, agencies in Mexico, the military, and other agencies on collaborative efforts to implement the 2021 Regional Plan.
- **9.** Expand regional programs and seek funding to fully support low-carbon transportation options, roadway safety and maintenance, habitat conservation, and nature-based climate solutions.
- **10.** Advance a data science program to better understand travel behavior in the region, update travel demand modeling tools, and improve transparency and reporting on program effectiveness and project delivery.

## PERFORMANCE MONITORING

The 2021 Regional Plan provides a bold new vision for transportation, land use, and infrastructure investment for the region. The 2021 Regional Plan summarizes where the region is, where the region wants to be by 2050, and what the region needs to do to get there. Historically, SANDAG plans have included performance indicators to monitor the region's progress in a number of areas.

The performance monitoring indicators for the 2021 Regional Plan follow the overall vision and goals of the 2021 Regional Plan and are grouped into five goal categories: healthy environment, energy and water, housing, quality of life, and transportation planning. The indicators are meant to capture a snapshot of regional areas of importance-in other words, how the region is doing in these general areas. Other monitoring reports, such as the SANDAG Annual State of the Commute, or resources provided by the San Diego County Water Authority, for example, provide more detailed information on subjectspecific areas. Pursuant to California Assembly Bill 1730 (Gonzalez, 2019), SANDAG is also required to monitor implementation of the Sustainable Communities Strategy on a two-year cycle; this report is submitted to the California Air Resources Board and complements the performance monitoring of the 2021 Regional Plan.

**Appendix O** is the required Federal System Performance Report.

Table 3.1 shows the performance indicators for the 2021 Regional Plan and the data sources for each of the indicators. New indicators not included in the 2015 Regional Plan are marked with "NEW" in bold font. SANDAG will prepare performance monitoring reports for the 2021 Regional Plan on a four-year cycle, with the next monitoring report due in 2023. The data sources listed in Table 3.1 are the best sources identified as of the completion of the 2021 Regional Plan and are subject to change if new data sources are identified before the completion of the Performance Monitoring Report. When data are available, the monitoring report will review the indicators' impact on equity in the region. Reviewing key outcomes every several years will provide a foundation for preparing future updates to the Regional Plan.

#### Table 3.1 Performance Indicators for the 2021 Regional Plan

# INDICATOR DATA SOURCE

#### Healthy Environment

Air quality	San Diego County Air Pollution Control District
Beach widths	SANDAG Regional Beach Monitoring Program Annual Report
Habitat conserved within designated preserve areas	U.S. Fish and Wildlife Service Annual Monitoring Report, Conserved Lands Database, local jurisdictions

#### **Energy and Water**

Water consumption	San Diego County Water Authority
Diversity of water supply	San Diego County Water Authority annual reports
Impaired waterbodies	San Diego Regional Water Quality Control Board
Diversity of energy supply and use	San Diego Gas & Electric Power Content Label
Electric and natural gas consumption by sector	California Energy Commission

#### Housing

Share of new housing units and jobs located in Smart Growth Opportunity Areas	Longitudinal Employer- Household Dynamics Origin- Destination Employment Statistics Workplace Area Characteristics
Housing units permitted by income category – NEW	Local government annual housing progress reports
Percentage of households with housing costs greater than 35% of income	American Community Survey
Annual income needed to afford fair market rent	National Low-Income Housing Coalition

**Appendix E** includes additional information on performance monitoring for the 2021 Regional Plan.

#### INDICATOR

### **Quality of Life**

Unemployment – NEW	California State Employment Development Department	
Social equity – NEW	California Office of Environmental Health Hazard Assessment CalEnviroScreen	
Telework – NEW	Annual SANDAG Telework Survey	
Homelessness – NEW	San Diego Regional Task Force on Homelessness	
Drug use – NEW	Criminal Justice (CJ) Clearinghouse annual Substance Abuse Monitoring reports	
Crime	CJ Clearinghouse Annual Crime Report	
Real per capita income, compared with California and the United States	U.S. Bureau of Economic Analysis	
Regional poverty rate, compared with California and the United States	American Community Survey	

DATA SOURCE

#### **Transportation Planning**

Fatalities/serious injuries (total and per vehicle mile traveled)	California Highway Patrol Statewide Integrated Traffic Records System, and National Highway Traffic Safety Administration Fatality Analysis Reporting System
Travel time to jobs	American Community Survey
Travel times and volumes for all modes	Caltrans Performance Measurement System
Commute mode share	American Community Survey
Bike lane miles – NEW	SANDAG and local jurisdictions
Annual transit ridership – NEW	Annual boardings data from Metropolitan Transit System (MTS), North County Transit District (NCTD), and SANDAG
Annual transit boardings	Annual boardings data from MTS, NCTD, and SANDAG
Border wait times	U.S. Customs and Border Protection
Vehicle miles traveled	Caltrans Performance Measurement System



# What will we leave for the region's next generations?

Our region has been built by people with vision—people with a long view toward the future and the foresight to understand that what we do today will shape the quality of life for future generations. As we head toward mid-century, we have a lot to be proud of and a lot to protect: our beautiful beaches; our coastal canyons, mesas, and estuaries; and our unique communities and neighborhoods. The San Diego region thrives from a vibrant international border, a rich cultural history of Native American peoples, some of the finest higher education institutions in the world, and a culture of innovation and invention. We are home to the U.S. Navy's prestigious Pacific Fleet, and we are a focal point of Marine Corps training and readiness. We share a love for the San Diego region for many reasons, and it is up to us—right now—to ensure that our region is the place where future generations of people want to call home.

For this to happen, we will have to overcome some significant challenges—challenges that have to do with enhancing mobility, providing adequate housing, making our region a more equitable place, protecting the natural spaces we love so much, and reducing our GHG emissions and air pollution to comply with state and federal mandates.

With the COVID-19 pandemic passing into history, traffic congestion is once again dominating our roadways. While many people are once again on the move, many others still do not have equitable access to jobs, housing, education, healthcare, and transportation. As our region moves to narrow this gap between those who are benefitting from a revived economy and those who are still left behind, we also must build a recovery that reduces air pollution everywhere and does not exacerbate the consequences of global climate change.

The long-term well-being of our region depends on us—people living in this day and age, right now—to make meaningful changes.

The 2021 Regional Plan reflects a bold new vision for this wonderful place that we call home. Our success tomorrow will depend on investing in our future—today.



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Bruce Lieberman, Editor









