



**INTERTRIBAL
TRANSPORTATION
WORKING GROUP**

Barona Band of Mission Indians

Campo Band of Mission Indians

Iipay Nation of Santa Ysabel

Jamul Indian Village of California

La Jolla Band of Luiseño Indians

La Posta Band of Luiseño Indians

*Manzanita Band of the
Kumeyaay Nation*

Pala Band of Mission Indians

Pauma Band of Luiseño Indians

Rincon Band of Luiseño Indians

*San Pasqual Band of
Diegueño Indians*

Sycuan Band of Kumeyaay Nation

Viejas Band of Kumeyaay Nation

Interagency Technical Working Group on Tribal Transportation Issues

Wednesday, April 21, 2021

10 a.m. to 12 p.m.

****Teleconference Meeting****

MEETING ANNOUNCEMENT AMIDST COVID-19 PANDEMIC:

The Interagency Technical Working Group on Tribal Transportation Issues meeting scheduled for Wednesday, April 21, 2021, will be conducted virtually in accordance with Governor Newsom’s State of Emergency declaration regarding the COVID-19 outbreak, Executive Order N-29-20, and the Guidance for Gatherings issued by the California Department of Public Health. Members will primarily participate in the meeting virtually, while practicing social distancing, from individual remote locations.

There are a few options for public participation:

- Please click the link below to join the meeting: <https://zoom.us/j/96106201816>
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- US: +16699006833,,96106201816# or +12532158782,,96106201816#
- Or Telephone:
- Dial (for higher quality, dial a number based on your current location):
- US: +1 669 900 6833 or +1 253 215 8782 or +1 346 248 7799 or +1 929 205 6099 or +1 301 715 8592 or +1 312 626 6799
- Webinar ID: 961 0620 1816
- International numbers available: <https://zoom.us/j/96106201816>

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Public Comments: Persons who wish to address the Working Group on an item to be considered at this meeting, or on non-agendized issues, may email comments to the Working Group at clerk@sandag.org (please reference: “April 21 Tribal” in your subject line and identify the item number(s) to which your comments pertain). Comments received by 4 p.m. on Tuesday, April 20, will be provided to members prior to the meeting.

If you desire to provide a live verbal comment during the meeting, please join the Zoom meeting either by computer or phone. At the time for public comments, members of the public will be advised to “Raise Hand” if they wish to provide comments. The “Raise Hand” feature can be found on the Zoom toolbar for those who are joining via computer or by entering *9 for those who joining via telephone only. The Chair will call on members of the public by name for those joining via a computer and by the last three digits of your telephone number for those joining via telephone. All comments received prior to the close of the meeting will be made part of the meeting record.



SANDAG

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SANDAG

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Mission Statement

The 18 cities and county government are SANDAG serving as the forum for regional decision-making. SANDAG builds consensus; makes strategic plans; obtains and allocates resources; plans, engineers, and builds public transit; and provides information on a broad range of topics pertinent to the region's quality of life.

Our Commitment to Equity

We hold ourselves accountable to the communities we serve. We acknowledge we have much to learn and much to change; and we firmly uphold equity and inclusion for every person in the San Diego region. This includes historically underserved, systemically marginalized groups impacted by actions and inactions at all levels of our government and society.

We have an obligation to eliminate disparities and ensure that safe, healthy, accessible, and inclusive opportunities are available to everyone. In 2021, SANDAG will develop an equity action plan that will inform how we plan, prioritize, fund, and build projects and programs; frame how we work with our communities; define how we recruit and develop our employees; guide our efforts to conduct unbiased research and interpret data; and set expectations for companies and stakeholders that work with us.

We are committed to creating a San Diego region where every person who visits, works, and lives can thrive.

San Diego Association of Governments × 401 B Street, Suite 800, San Diego, CA 92101-4231

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Interagency Technical Working Group on Tribal Transportation Issues

Wednesday, April 21, 2021

Item No.		Action
1.	Welcome and Introductions	Information
2.	<p>Public/Member Comments and Communications</p> <p><i>Chair Erica Pinto, Working Group Co-Chair</i></p> <p>Members of the public shall have the opportunity to address the Working Group on any issue within the jurisdiction of SANDAG that is not on this agenda. Anyone desiring to speak shall reserve time by completing a "Request to Speak" form and giving it to the meeting coordinator prior to speaking. Public speakers should notify the meeting coordinator if they have a handout for distribution to working group members. Public speakers are limited to three minutes or less per person. Working Group members also may provide information and announcements under this agenda item.</p>	Information
+3.	<p>Approval Meeting Minutes</p> <p><i>Chair Erica Pinto, Working Group Co-Chair</i></p> <p>The Working Group is asked to review and approve the minutes from January 13, 2021.</p>	Approve
4.	<p>Co-Chairs' Reports</p> <p><i>Chair Erica Pinto, Working Group Co-Chair; Coleen Clementson, SANDAG</i></p> <p>Co-Chairs of the Working Group will share updates from their respective agency's meetings relevant to the mission of the Working Group.</p>	Information
Reports		
+5.	<p>2021 Regional Plan: Moving from Vision to Plan</p> <p><i>Tuere Fa'aola and Allison Wood, SANDAG</i></p> <p>An overview of the development process for the 2021 Regional Plan, initial performance results, key planning assumptions, data used to develop the plan, costs, funding strategies, and milestones for this year will be presented.</p>	Discussion
6.	<p>Intraregional Tribal Transportation Strategy (ITTS) Update</p> <p><i>Mike Connolly Miskwish, SCTCA and Matt Horton, Kimley-Horn</i></p> <p>As part of the collaborative Memorandum of Understanding between SANDAG and the Southern California Tribal Chairmen's Association a consultant has been hired to assist the tribes in the region to conduct a technical update of the ITTS and develop a strategic action plan.</p>	Discussion

7. **Topics/Date for Next Meeting and Adjournment**

Chair Erica Pinto, Working Group Co-Chair, Jamul

The Working Group is asked to discuss potential topics for the next meeting. As a quarterly meeting, the next date should be in July, 2021. As the 2021 Regional Plan will be released for public comment May 28, 2021 the meeting should fall within the comment period to ensure dialogue. Should State/County health directives restrictions be lifted by then the meeting may occur in person.

+ next to an agenda item indicates an attachment



Interagency Technical Working Group on Tribal Transportation Issues

Item: **3**

April 21, 2021

Action: **Information**

January 13, Meeting Minutes

Co-Chair Erica Pinto (Jamul) called the meeting of the Interagency Technical Working Group on Tribal Transportation Issues to order at 10:03 a.m. Meeting was held on the Microsoft Office Teams platform.

1. Welcome and Introductions (Information)

Co-Chair Erica Pinto welcomed the Working Group members and introduced Tribal Chair Raymond Welch (Barona), Raphael Reyes Sr. (Caltrans). Eric LaChappa (La Posta) led the group in a blessing.

Co-Chair Erica Pinto and Senior Regional Planner Jane Clough facilitated self-introductions. Tribal Nations represented were Barona Band of Mission Indians; Jamul Indian Village of California; Pala Band of Mission Indians; Rincon Band of Luiseño Indians; San Pasqual Band of Diegueño Indians; and Viejas Band of Kumeyaay Nation. Absent: Campo Kumeyaay Nation; La Jolla Band of Luiseño Indians.

2. Approval of Meeting Minutes (Approve)

Action: Upon a motion by Eric LaChappa (La Posta) and a second by Shasta Gaughen (Pala), the Working Group approved the minutes from its June 24, 2020, and September 14, 2020 meeting. Yes: Chairman Raymond Welch, Co-Chair Erica Pinto (Jamul), John Beresford (La Jolla Band of Luiseño Indians), Shasta Gaughen (Pala), Andrew Orosco Jr. (San Pasqual), and Ray Teran (Viejas). No: None. Abstain: None. Absent: Campo Kumeyaay Nation, Iipay Nation of Santa Ysabel, La Posta Band of the Kumeyaay Nation, Mesa Grande Band of Mission Indians, Pauma Band of Luiseño Indians, and Sycuan Band of the Kumeyaay Nation.

3. Public Comments/Communications/Member Comments (Information)

Tribal Co-Chair Erica Pinto (Jamul) provided an overview of the recent Cultural Monitoring Subcommittee Meeting and Tribal Symposium with the Borders Committee. Pinto also informed working group members of the upcoming NAAC meeting on March 3rd and upcoming SCTCA Board meeting, which will discuss the review/update process of member agencies. Coleen Clementson (SANDAG) announced the working draft statement and commitment to equity and inclusion that will be presented to the Board on January 22nd.

Chair's Report

4. Co-Chairs' Reports (Information)

Working Group Co-Chair Erica Pinto provided an overview of a subcommittee established by Caltrans Headquarters through the Native American Advisory Committee and Tribal Liaisons for cultural monitoring in relation to construction projects. Director of Regional Planning Coleen Clementson (SANDAG) provided a Regional Plan update on the Midcoast and Del Mar Bluffs projects. She also shared the draft Commitment to Equity Statement SANDAG has been developing to present to the Board on January 22 and asked for feedback from the tribal representatives.

Reports

5. Bridging the Digital Divide: Developing a Regional Strategy for Digital Equity (Discussion)

Antoinette Meyer (SANDAG) presented SANDAG's regional efforts to develop a regional strategy for closing the digital divide, the growing gap between the members of society who do not have access to information and communication technology (ICT) and those who do.

6. Tribal Road Safety Program (Information)

David R. Ragland and Yavari Afsaneh (SafeTrec) provided an overview of the Tribal Road Safety Program (TRSP) along with tools available to tribal nations that can be used for planning and funding for safety improvements.

7. Tribal Transportation Plans – Best Practices (Information)

Andrew Orosco Jr. (San Pasqual) shared his tribe's experience with utilizing grant funding to move a project from concept to construction.

8. The California Federal Lands Access Program (Information)

Robin Owens (Caltrans) announced the 2021 Call for Projects by the California Federal Lands Access Program (FLAP) Planning Decisions Committee (PDC), noting that project proposals will be accepted through May 27, 2021.

9. Sustainable Transportation Planning Grants (Information)

Barby Valentine (Caltrans) announced the release of the Fiscal Year (FY) 2021-22 Sustainable Transportation Planning Grant Application Guide and call-for-applications. Valentine also provided an update on the guide and grant funding budget.

10. Topics for Next Meeting and Adjournment (Discussion)

The next Interagency Technical Working Group on Tribal Transportation Issues meeting will be held in April 21, 2021.

Working Group Co-Chair Erica Pinto adjourned the meeting at 12:01 p.m.

Confirmed Attendance at Interagency Technical Working Group on Tribal Transportation Issues Meeting

January 13, 2021

Jurisdiction	Name	Attended
Jamul Indian Village	Erica Pinto, Working Group Co-Chair Michael Hunter, Alternate	Yes
San Pasqual Band of Diegueño Mission Indians	Andrew Orosco, Jr. Vice Chair Steven Cope	Yes
Barona Band of Mission Indians	Raymond Welch Sheilla Alvarez, Alternate Marcus Cuero	Yes Yes
Campo Kumeyaay Nation	Gary Connolly, Alternate	
Ewiiapaayp Band of the Kumeyaay Nation	William Micklin	
Iipay Nation of Santa Ysabel	Bernice Paipa	
La Jolla Band of Luiseño Indians	Norma Contreras John Beresford, Alternate	Yes
La Posta Band of the Kumeyaay Nation	Eric LaChappa James Hill, Alternate	Yes
Los Coyotes Band of Cahuilla/Cupeño Indians	Ray Chapparosa Alvinia Fletcher, Alternate	
Manzanita Band of the Kumeyaay Nation	Angela Elliott Santos Lisa Haws, Alternate	
Mesa Grande Band of Mission Indians	Mike Linton Jesse Morales	
Pala Band of Mission Indians	Robert Smith Anthony Ravago, Sr. Shasta Gaughen, Alternate Chris Nejo, Alternate	Yes Yes
Pauma Band of Luiseño Indians	Temet Aguilar Venessa Brown	Yes
Rincon Band of Luiseño Indians	Bo Mazzetti John Constantino Joseph Linton	
Sycuan Band of the Kumeyaay Nation	Cody Martinez Adam Day Ania Rzepko	

Viejas Band of Kumeyaay Nation	John Christman	
	Victor Woods	
	Ray Teran, Alternate	Yes

Southern California Tribal Chairman's Association (SCTCA)	Denis Turner	
	Mike-Connolly-Miskwish	Yes
	Chris Devers	

Bureau of Indian Affairs, Southern California (BIA)	Steve Wilkie	
	Leonard Gilmore	Yes

Caltrans (District 11)	Rafael Reyes	Yes
	Anne Fox	Yes

County of San Diego	Richard Chin	Yes
	Scott Chrisman	
	Damon Davis	Yes

Metropolitan Transit System	Beverly Neff	Yes
	Denis Desmond, Alt	

North County Transit District	Karen Hayford	
SANDAG	Coleen Clementson, Working Group Co-Chair	Yes

Other Attendees

SANDAG Staff

Jane Clough
 Tuere Fa'aola
 Tracy Ferchaw
 Catherine Matel

Interagency Technical Working Group on Tribal Transportation Issues

Item: **5**

April 21, 2021

Action: **Discussion**

2021 Regional Plan: From the Vision to Plan

Introduction

In September 2020, staff presented the Vision for the 2021 Regional Plan - a bold new transportation vision that directly addresses traffic congestion, social equity, and state and federal mandates, and could serve the transportation needs of the San Diego region for generations to come. Since then, the team has been sharing the Vision, refining network components, defining key land use and planning assumptions, and completing the modeling and analysis that turns the Vision into the 2021 Regional Plan. Additionally, staff brought forward key components related to the development of the Draft Plan in February and March 2021 to the SANDAG Board of Directors. The reports presented to the Board of Directors are attached. The Working Group is asked to consider and discuss this information in preparation for the release of the Draft Plan in spring 2021.

Discussion

The Vision for the 2021 Regional Plan reimagines the transportation system using a data-driven planning process and the 5 Big Moves—inter-reliant strategies that provide a regional system of Complete Corridors that are managed in real time by the Next Operating System to create capacity and keep the transportation system operating smoothly and safely for all modes. Transit Leap and Flexible Fleet services connect a network of Mobility Hubs that covers the region’s population centers, major employment centers, and other key activity centers across the region.

Next Steps

Next steps prior to releasing the draft 2021 Regional Plan in May 2021 are to bring more information on the following components of the Regional Plan to the SANDAG Board in April 2021:

- Technology Considerations (April 9)
- Social Equity (April 23)
- Alignment of State, Regional, and Local Planning (April 30)

The SANDAG Board will be asked to consider adoption of the 2021 Regional Plan and certification of the final Environmental Impact Report in the fall of 2021.

Key Staff Contact(s): Tuere Fa’aola, (619) 699-1989, tuere.faaola@sandag.org
Allison Wood, (619) 699-1973, allison.wood@sandag.org

Attachment(s):
1. Agenda Item No. 14, Board of Directors Meeting, February 12, 2021
2. Agenda Item Nos. 8A and 8B, Board of Directors Meeting, March 12, 2021

2021 Regional Plan: Moving from the Vision to the Plan

Overview

In August 2020, staff presented the Vision for the 2021 Regional Plan - a bold new transportation vision that directly addresses traffic congestion, social equity, and state and federal mandates, and could serve the transportation needs of the San Diego region for generations to come. Since then, the team has been sharing the Vision, refining network components, defining key land use and planning assumptions, and completing the modeling and analysis that turns the Vision into the 2021 Regional Plan.

Key Considerations

The Vision for the 2021 Regional Plan reimagines the transportation system using a data-driven planning process and the 5 Big Moves—inter-reliant strategies that provide a regional system of Complete Corridors that are managed in real time by the Next Operating System (Next OS) to create capacity and keep the transportation system operating smoothly and safely for all modes. Transit Leap and Flexible Fleet services connect a network of Mobility Hubs that covers the region’s population centers, major employment centers, and other key activity centers across the region.

The 2021 Regional Plan will describe how the transportation system in the Vision can be realized by 2050, with a few refinements from what was presented to the Board of Directors in August 2020. Based on input and further analysis, the commuter rail network is proposed to provide upgrades to the LOSSAN corridor rather than a new parallel route and include improved connections in Sorrento Mesa and University City.

Addressing our Challenges

The Vision laid out three key challenges the region faces – worsening traffic congestion, growing inequities, and aggressive state and federal mandates around climate change and air quality.

The 2021 Regional Plan must comply with specific state and federal mandates, including a Sustainable Communities Strategy (SCS), per Senate Bill 375 (SB 375), that achieves greenhouse gas (GHG) emission reduction targets set by the California Air Resources Board; compliance with federal civil rights requirements (Title VI); and environmental justice considerations, air quality conformity, and public participation.

Capital investments alone cannot fully address social inequities, achieve desired congestion relief, or meet GHG emission reduction mandates. As such, the Regional Plan includes a package of policies and programs focused on transportation technologies, sustainable growth and development, and innovative demand management to complement and enhance the capital investments. It also includes support for on-going operational needs of the overall system. Together, the integrated system of capital investments, policies, and programs influence our ability to achieve these three challenges:

Action: Discussion

An overview of the development process for the 2021 Regional Plan, initial performance results, key planning assumptions, and milestones for this year will be presented.

Fiscal Impact:

Funding for development of the 2021 Regional Plan is included in Overall Work Program Element Nos. 3102000 and 3102005 in the FY 2021 Program Budget.

Schedule/Scope Impact:

The draft 2021 Regional Plan and draft Environmental Impact Report (EIR) are expected to be released for review by the Board of Directors and public comment in spring and summer 2021, respectively.

Congestion: providing alternatives to driving frees up more roadway space for people that need to drive and managing the system with the latest technology can make traffic smoother, prioritize non-solo driving, and create a safer environment for all. Congestion primarily occurs during peak periods when 80% of commuters drive alone and only 3% take transit to work. Initial modeling results show that with implementation of the Regional Plan, commuters are offered a compelling option to driving that increases the use of transit to 15% and decreases driving alone to 56% by 2050.

Social Equity: it takes both land use and transportation planning to fix historic inequities created by all levels of government and to prioritize the ability to access basic needs and economic opportunities for those with the lowest access. Initial performance results show a three-fold increase in social equity focused populations (people with low-income, people of color, and seniors) living within 0.5 miles of a commuter rail, light rail, or *Rapid* transit stop. While currently just 16% of low-income residents can access Tier 1 employment centers in 30 minutes via transit, that number doubles by 2050 with implementation of the Regional Plan. Initial findings of the Regional Plan’s social equity analysis were recently presented to the Social Equity Working Group and are available here: https://sandag.org/uploads/meetingid/meetingid_5780_28672.pdf

State/Federal Mandates: reducing GHG emissions requires both transportation and land use strategies- transportation strategies that reduce reliance on the car as a primary mode of transportation by offering safe, affordable, convenient alternatives to driving and ensuring that people can access jobs and services in shorter trips, and land use strategies that focus growth and development in the region’s urbanized areas where there are existing and planned transportation options. Initial modeling and analysis of the integrated transportation system and accompanying policies shows that the region can achieve its target of 19% reduction in per capita GHG emissions by 2035.

Our Future Success Requires Early Action

The phasing of capital investments, programs, and policies is an important consideration of the Regional Plan. In the first 14 years, the region must demonstrate how it will reduce GHG emissions to meet state mandates. The investments by 2035 are based on the critical connections, project readiness, social equity, anticipated revenues, and the integration of the 5 Big Moves. The proposed projects, programs, and policies by 2035 are centered on advancing our ability to address social equity and congestion while meeting the region’s GHG reduction target and include:

- **Making the most out of our existing transportation system** by developing a system of managed lanes coupled with Next OS technology to support efficient movement of people and goods and increasing transit service hours and frequencies, subsidizing transit fares, and building out an extensive system of *Rapid* transit to make transit more convenient, affordable, and increase access for historically underserved communities.
- **Advancing work on the commuter rail system** by double tracking the LOSSAN 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 improvements, Mobility Hub amenities, electric vehicle charging, local bike projects, and smart intersections including development of the Central Mobility Hub and San Ysidro Mobility Hub
- **Supporting sustainable planning** with local programs to advance efforts on affordable housing, safety, climate resilience, open space preservation, and focus development in mobility hub and transit priority areas
- **Managing system demands** with employer-focused programs to encourage alternative modes and pricing strategies to ease congestion and enhance transportation revenues

Next Steps

Prior to release of the draft 2021 Regional Plan in May 2021, more information on the following components of the Regional Plan will be presented to the Board in March and April 2021:

- Pricing and funding assumptions
- Social Equity
- Technology considerations
- Alignment of state, regional, and local planning

The Board will be asked to consider adoption of the 2021 Regional Plan and certification of the Final EIR in fall 2021.

Hasan Ikhata, Executive Director

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2021 Regional Plan: Overview of the Data Used in the Planning Process

Overview

On February 22, 2019, the Board of Directors unanimously approved an action plan to develop a bold new vision for San Diego Forward: The 2021 Regional Plan (2021 Regional Plan).

From April 2019 through August 2020, staff delivered a series of presentations to the Transportation Committee, Regional Planning Committee, Borders Committee, and Board of Directors on topics related to the Regional Plan. Presentation topics included our regional economy, data-driven planning, Big Data, regulatory requirements, environmental impact reports, transportation modeling, impacts of COVID-19, and concluded with the Vision for the 2021 Regional Plan. On February 12, 2021, staff presented how SANDAG will move from a Vision to a Plan and how the 2021 Regional Plan reimagines the transportation system in the San Diego region. On February 26, 2021, the Board of Directors requested additional details on the data-driven planning process used to develop the draft 2021 Regional Plan.

Key Considerations

Based on previous Board direction, data analysis combined with stakeholder input has guided the development of a comprehensive vision for a transportation system that leverages technology to create a safe, adaptable, and equitable transportation network with fast, fair, and clean choices to move around the region seamlessly. Staff has used a data-driven planning process that began with identifying the region's challenges, collecting data, ensuring the validity and reliability of the data, concept development, network development, and network refinement.

In the early phases of the Five Big Moves development process, staff used Longitudinal Employer-Household Dynamics (LEHD) data from the U.S. Census Bureau and anonymized location-based (cell phone) data aggregated to the census tract level to gain a high-level understanding of the critical connections needed to access jobs, services, education, healthcare, places of recreation and major attractors. Because work commutes are generally the most consistent and predictable trips and are a primary cause of peak-period congestion and delay, staff also analyzed empirical data that revealed how people are traveling to major employment centers and points of interest each day. In addition to the analysis performed using observed data, feedback from residents, employers, and stakeholders across the region has been collected through focus groups, surveys, interviews, and workshops to understand the transportation challenges that our residents and businesses face.

Action: Discussion

The Board of Directors requested additional detailed data underlying the development of the draft 2021 Regional Plan. A panel of SANDAG staff will describe the data and methods used during the planning process.

Fiscal Impact:

Funding for development of the 2021 Regional Plan is included in Overall Work Program Element Nos. 3102000 and 3102005 in the FY 2021 Program Budget

Schedule/Scope Impact:

The draft 2021 Regional Plan and draft Environmental Impact Report (EIR) are expected to be released for review by the Board of Directors and public comment in spring and summer 2021, respectively.

Critical to the development of the 2021 Regional Plan is the iterative process to evaluate and refine the network and verify whether the proposed network and strategies can address the region's needs. This required a series of detailed analyses in which data related to existing population and jobs, regional growth forecasts (population, households, housing units, jobs), land use assumptions, demographics, and more were repeatedly analyzed.

Planning staff, data, analytics and modeling staff, and a team of consultants worked together throughout this iterative process to create key input assumptions for the Activity Based Model 2+ (ABM2+) to evaluate elements of the Plan such as transportation system infrastructure and operations, demand management strategies, pricing strategies, land use assumptions, and integration of regional zero emission vehicle programs. In addition, independent reviews of data, assumptions, and conclusions were conducted through the agency's Peer Review Process (PRP) and Office of Quality Assurance/Quality Control, processes that were created, implemented, and refined as part of the agency's Plan of Excellence.

Next Steps

Prior to releasing the draft 2021 Regional Plan in May 2021, more information on the following components of the Regional Plan will be presented to the Board in April 2021:

- Social Equity
- Technology Considerations
- Alignment of State, Regional, and Local Planning

The Board will be asked to consider adoption of the 2021 Regional Plan and certification of the final environmental impact report in the fall of 2021.

Hasan Ikhata, Executive Director

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Attachment: 1. Vision for the 2021 Regional Plan: Documentation of Presentations and Draft Data Analysis

Vision for the 2021 Regional Plan: Documentation of Presentations and Draft Data Analysis

All data, analysis, and performance results are subject to change prior to the release of the Draft 2021 Regional Plan.

Presentations to SANDAG Board of Directors, Policy Advisory Committees

- April 26, 2019: Introduction of the 5 Big Moves ([Report](#), [PPT](#))
- July 12, 2019: Regional Assessment of Employment Centers, Overview of the 5 Big Moves ([Report](#), [PPT](#))
- September 27, 2019: Airport Connectivity Report ([Report](#), [PPT](#))
- January 10, 2020: Regional Plan: Putting the Pieces Together ([Report](#), [PPT](#))
- January 24, 2020: Big Data: Harnessing the Benefits of Data Powered Governance ([Report](#), [PPT](#))
- February 14, 2020: Greenhouse Gas Emissions and Vehicle Miles Traveled: An Overview of State Requirements and SANDAG Modeling Tools ([Report](#), [PPT](#))
- February 14, 2020: Airport Connectivity MOU ([Report](#))
- March 6, 2020: SANDAG Modeling Tools ([Report](#), [PPT](#))
- June 5, 2020: Comprehensive Multimodal Corridor Plans ([Report](#), [PPT](#))
- July 24, 2020: What We Are Learning from COVID-19 and How it Could Impact Transportation Planning in the San Diego Region ([Report](#), [PPT](#))
- August 14, 2020: The Vision for the 2021 Regional Plan ([Report](#), [PPT](#))

All staff reports and presentations related to the 2021 Regional Plan are available at: <https://sdforward.com/about-san-diego-forward/staff-reports>.

Additional Information on the 5 Big Moves

- [5 Big Move One Pagers](#)
- [Network Development Summary Report](#)
 - https://sdforward.com/docs/default-source/2021-regional-plan/summary.pdf?sfvrsn=15dbfe65_12
- [Data Viewer](#) Applications
 - [A Transformative Transportation Vision](#)
 - [Una Transformadora Visión de Transporte](#)
- Data Viewer Feature Services (access to item description and service URL)
 - [Adopted Regional Bike Network](#)
 - [Complete Corridors - Connectors and Ramps](#)
 - [Complete Corridors - Highway](#)
 - [Complete Corridors - Regional Arterials](#)
 - [Concept Animations](#)
 - [Major Transfer Points](#)
 - [Mobility Hubs and Flexible Fleets](#)
 - [Transit Leap](#)
 - [Transit Leap - February 2021 update](#)
- Data Viewer REST services
 - [Existing Transportation Network](#)
 - [Existing Land Use \(2018\)](#)
 - [SANDAG Population Estimates 2018 and Urbansim Jobs 2016 by MGRA](#)
 - [Employment Centers \(Outlines\)](#)
 - [Origin-Destination Bands](#)
 - [Commercial Vehicle Origin-Destination Lines \(Streetlight\)](#)
 - [Employment Center Hexbins](#)

- Five Big Moves Development Data Archive
 - https://gis.sandag.org/docs/5BM_DevelopmentDataArchive.zip
- Project Evaluation Methodology
 - <https://sandag.maps.arcgis.com/home/item.html?id=8de389d73d98464d9847c42232cc19d5>
- Project Bundle Scoring and Ranking
 - <https://sandag.maps.arcgis.com/home/item.html?id=921e7191e97e4c0b9d5e95ba6cb31009>

San Diego Regional Travel Demand Model (ABM2+) Model Documentation, Survey Reports, Computer Code, Presentations and DRAFT networks and performance metrics

- Technical Methodology to Estimate Greenhouse Gas Emissions for San Diego Forward: The 2021 Regional Plan and Sustainable Communities Strategy from the San Diego Association of Governments, submitted to the California Air Resources Board February 2021
 - https://gis.sandag.org/docs/DRAFT%20Technical%20Methodology%20to%20Estimate%20GHG%20Emissions_with%20appendices_February%202021.pdf
- Key survey reports used to develop ABM2+:
 - 2016-2017 San Diego Regional Transportation Study: Household Travel Behavior Survey https://www.sandag.org/uploads/projectid/projectid_540_26829.pdf
 - 2015 On-Board Transit Passenger Study https://www.sandag.org/uploads/projectid/projectid_494_21412.pdf
- ABM2+ Wiki with description of model structure and methodologies <https://github.com/SANDAG/ABM/wiki>
- ABM2+ Code
 - Model Code Repository: <https://github.com/SANDAG/ABM>
 - Reporting Code Repository: <https://github.com/SANDAG/ABM-Reporting>
- ABM2+ reports with descriptions: <https://github.com/SANDAG/ABM/wiki/Reports-and-Documents>
 - ABM2+ enhancements for 2021 RP and 5BM <https://github.com/SANDAG/ABM/wiki/files/ABM2PReportV2.pdf>
 - ABM2+ sensitivity testing report: <https://github.com/SANDAG/ABM/wiki/files/SensitivityReportV3.pdf>
- Transportation Model Forum Presentations
 - Dec 2020 – Social Equity Analysis [Regional Models \(sandag.org\)](#)
 - Dec 2019 – ABM2+ Model Development [Regional Models \(sandag.org\)](#)
 - July 2019 - ABM2+ development [Regional Models \(sandag.org\)](#)
- Transportation Model Data
 - Model Data Input Sheet
 - <https://sandag.maps.arcgis.com/home/item.html?id=d4b94390fcc448f8ba02869bb8950078>
 - Phased Project List
 - <https://sandag.maps.arcgis.com/home/item.html?id=0a64ddaca78c4d07869ac314b487ff64>
 - Draft output performance measures
 - <https://sandag.maps.arcgis.com/home/item.html?id=a8031ec54dbb47b59e97814b0767c07b>
 - Draft Transportation Networks
 - <https://sandag.maps.arcgis.com/home/item.html?id=f7a2888d08124ad19056bb987ac24654>

Forecast Documentation

- <https://gis.sandag.org/docs/DRAFT%20Regional%20Growth%20Forecast%20and%20LU%20Scenario%20Appendix%20F.pdf>

SCS Land Use Scenario

- <https://sandag.maps.arcgis.com/home/item.html?id=9dc69ab8a4aa497ca91d507a76f2dc2b>

Employment Centers

- [Employment Center Methodology](#)
- [Employment Center Reports](#)
 - <https://www.sandag.org/index.asp?classid=16&subclassid=127&projectid=581&fuseaction=projects.detail>

Information on Goods Movement

The SANDAG team is currently working on the 2021 Freight Gateway Study Update which will provide a look at freight tonnage movements through and within the region. In the meantime, the below information is from datasets that the team pulled together from public and internal sources:

I-5 Highway/Freight Significance:

I-5 is one of two critical North / South Interstate distributions arteries serving San Diego County (I-15 is the other). I-5 is a critical freight distribution corridor because:

- San Diego draws much interregional freight that enters and exists the County on I-5; we also receive truckloads and return empties to the other Southern California counties as well as the Ports of Los Angeles/ Long Beach.
- The majority of our region's population resides along the densely populated coastline served by I-5, and there is a high concentration of retail outlets and home deliveries along the I-5 corridor that is the byproduct of this coastal population density.
- While significant freight gateway truck tonnages from the border ports of entry and the Port of San Diego rely on I-5 as a distribution artery, the majority of goods moving on I-5 are driven by domestic consumption and production.
- Traffic on I-5 varies in density by area and by time of day, but using Caltrans Traffic Census Program/Average Annual Daily Truck Data Source (2018) we have these counts:
 - Basilone Road at I-5 at the County Line = 10,411 Truck AADT
 - Leucadia Road and I-5 which is about mid-county = 13,592 Truck AADT
 - I-5 and SR 15 Merge area near the Port of San Diego = 10,750 Truck AADT
- Using a conversion rate for mixed-freight, that translates to the following tonnage*:
 - Basilone Road at I-5 at the County Line = approximately 148,000 tons
 - Leucadia Road and I-5 which is about mid-county = approximately 193,000 tons
 - I-5 and SR 15 Merge area near the Port of San Diego = approximately 153,000 tons

NOTES:

- AADT= Average Annual Daily Trucks
- *This tonnage assumption is from materials related to the 2016 Freight Gateway Study Update.

North Coast Corridor Rail Freight Significance:

North Coast Corridor freight rail services are also of great significance because it is our only rail distribution corridor and is also our primary passenger rail corridor. It is a shared passenger and freight rail asset. It is the second busiest freight rail corridor in the country (after Northeast Corridor).

It is our only Class I freight rail corridor and is vital for goods movement in general and it is also a strategic distribution corridor for the Port of San Diego as it carries almost half of their imported automobile distribution.

- Using BNSF/NCTD data, we have the following freight rail information:
 - For 2018:
 - Total rail tonnage moving on the LOSSAN Corridor was approximately 4,248,000 tons for 2018
 - There were approximately 1,200 freight trains operating on the LOSSAN Corridor in 2018
 - For 2019:
 - Total rail tonnage moving on the LOSSAN Corridor was approximately 4,448,000 tons for 2019
 - There were approximately 1,100 freight trains operating on the LOSSAN Corridor in 2019

2021 Regional Plan: Cost Estimation Methodology and Funding Strategies

Overview

Last month, staff presented how SANDAG will move from a Vision to a Plan and how San Diego Forward: The 2021 Regional Plan (2021 Regional Plan) reimagines the transportation system in the San Diego region. Development of the Plan uses a data-driven planning process, with inter-reliant strategies to address three key challenges: traffic congestion and safety, social equity, and meeting our state and federal mandates. The result is a transportation system that is faster, fairer, and cleaner.

This report focuses on two key aspects of the 2021 Regional Plan: 1) the methodology used to estimate the cost to implement the reimagined transportation system; and 2) potential funding strategies that could be brought together to implement the Plan.

A Transformational Transportation System

At the February 12, 2021 Board of Directors meeting, the SANDAG team focused on how the 2021 Regional Plan addresses worsening traffic congestion, safety, growing inequities, and aggressive state and federal mandates around climate change and air quality.

The team discussed how land use and transportation planning are required to reverse historic inequities and to prioritize access to basic needs and economic opportunities for those who have the least access. Initial performance results of the vision for the 2021 Regional Plan show that there would be a three-fold increase in the number of people from social equity focused populations (people with low-income, people of color, and seniors) who can reach a commuter rail, light rail, or *Rapid* transit stop within 0.5 miles of where they live. Today, only 16% of low-income residents can access Tier 1 employment centers within 30 minutes via transit, but that percentage doubles by 2050 with the 2021 Regional Plan fully implemented.

The team also shared with the Board that providing people with alternatives to driving will free up more roadway space for other people who still need to drive. Managing the system with the latest technology will make traffic smoother, prioritize non-solo driving, and create a safer environment for everyone. Initial modeling results show that commuters will have compelling alternatives to driving, with the Plan implemented. The result: by 2050, the percentage of commuters who choose to use transit will rise to 15%, while the percentage of commuters who choose to drive alone to work will fall to 56%.

It was also shared with the Board that state-mandated reductions in greenhouse gas (GHG) emissions weigh heavily on this Plan and that both transportation and land use strategies will be important to reduce people's reliance on the car so we can meet our state mandates for lower GHG emissions. Initial modeling and analysis of the integrated transportation system and accompanying policies show that the region can achieve its state target of reducing per capita GHG emissions by 19% (below 2005 levels) by 2035.

Action: Discussion

A discussion of the methodology used to estimate the cost to implement the bold new transportation vision for the 2021 Regional Plan as well as potential funding strategies that could be brought together to implement the Plan by the year 2050.

Fiscal Impact:

Funding for development of the 2021 Regional Plan is included in Overall Work Program Element Nos. 3102000 and 3102005 in the FY 2021 Program Budget

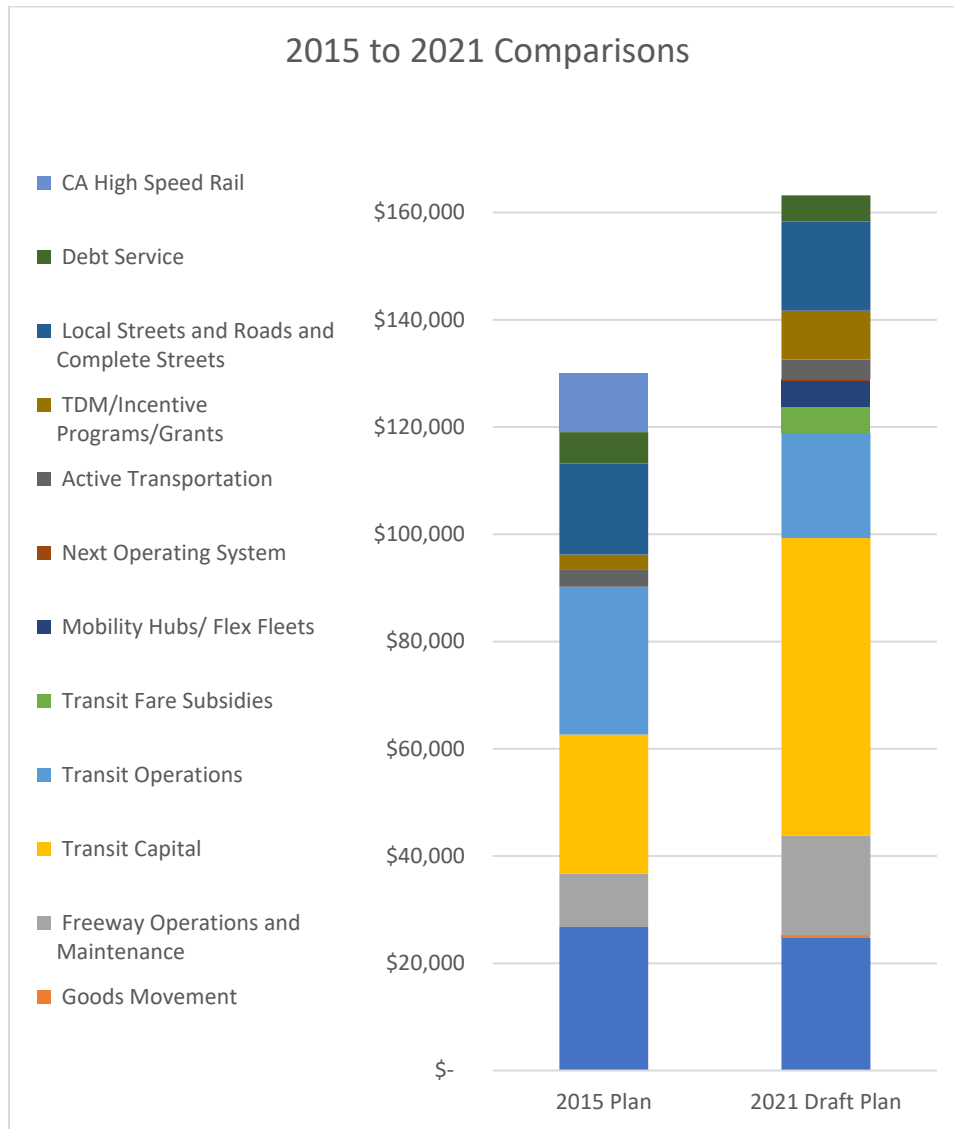
Schedule/Scope Impact:

The draft 2021 Regional Plan and draft Environmental Impact Report (EIR) are expected to be released for review by the Board of Directors and public comment in spring and summer 2021, respectively.

How much will this investment cost?

It is estimated that the total Plan will cost approximately \$163B. This is an important question that SANDAG takes seriously. For that reason, we developed a detailed cost estimation methodology which is documented in Attachment 1. To develop that methodology, staff worked with national experts, Caltrans, the Metropolitan Transit System, the North County Transit District, the County of San Diego, and local jurisdictions to apply their expertise on how much the 2021 Regional Plan would cost. Prior to developing the detailed cost estimates, the team identified all and any efficiencies that could be made at even the earliest planning stages through low-cost approaches. This involved optimizing the current system, costing out those elements, including early implementation of smart intersection signal systems, working within existing rights of way, applying technologies, evaluating assumptions from previous plans, etc. Next, detailed programmatic, capital, and operations cost estimates were applied based on industry leading practices using real project examples in the San Diego region where applicable. Finally, the team applied, tested, and evaluated the results, and phased the transportation network in such a way as to deliver the most benefits to the region as soon as possible.

Based upon that work, the cost estimate is \$14B less than reported in August 2020. The cost is lower because the team refined proposed investments based on performance results; low performing parts of the system not recommended for inclusion in the Draft Plan. By comparison, the Regional Plan approved by the SANDAG Board of Directors in 2015 had an estimated cost of \$130B. The difference between the plans is attributable to the robust multimodal nature of the approach taken in the 2021 Regional Plan which provides real choices for travelers throughout the region. The following chart breaks down the total cost of the Plan into detailed categories. Project details are available in the online Data Viewer here: SDForward.com/envision.



* Dollars shown above in Millions

Some key cost differences between the adopted 2015 Regional Plan and the proposed 2021 Regional Plan are:

- An 8% reduction in roadway costs through efficiencies gained by working within the existing rights-of-way, including a 22% reduction in costs related to the Managed Lanes and Managed Lane Connectors
- Several new categories of projects that will provide better interconnectivity: Mobility Hubs, Flexible Fleets, and Next Operating System
- The addition of Transit Fare Subsidies
- A 17% increase in Active Transportation investments
- New investments in Goods Movement, based on newly available funding
- Similar investments in Local Streets and Roads
- \$6 billion in expanded grants and incentive programs to strengthen connections between land use, housing, and transportation, and execute an enhanced commitment to environmental stewardship and resiliency

Maximizing Space on Our Highways

One key difference between the 2021 Regional Plan and past plans is a greater focus on making our existing highway network more efficient by maximizing use of space. The 2021 Regional Plan envisions tackling this challenge in four ways:

First, the Plan creates a system of Managed Lanes, in which general purpose lanes are repurposed – in certain places and at certain times – into lanes that are open for particular users. These users may include *Rapid* transit vehicles and other transit services enabled by Transit Leap; people who carpool; and rideshare services such as Uber and Lyft. Second, the Plan converts shoulders on highways, where it is safe to do so, into Managed Lanes. Third, the Plan identifies a limited number of places around the region where stretches of highway are physically widened – but only where absolutely necessary and within the existing corridor right-of-way. Fourth, the Plan looks at safety improvements such as curve straightening and interchange improvements to improve circulation and to enhance safety. This approach to improving our highway network saves approximately \$4 billion over previous strategies, largely because it is cheaper to repurpose existing lanes or shoulders than to build new highways or extensively widen existing ones.

Additionally, the 2021 Regional Plan contemplates major technology investments that can help maximize the efficiency of the transportation system by providing connectivity between flexible fleet services and transit. These investments in local streets and corridors can make traffic smoother as non-solo driving is prioritized and the overall transportation environment becomes safer.

Programs and Policies

The 2021 Regional Plan also includes policies and programs that serve as the “glue” to connect the whole system together, and which recognize the close relationship between the transportation system and communities in the region. Attention to how land is used is important in the Regional Plan, because the type and location of places helps determine what transportation services will be most accessible for the largest number of people and enhance mobility for everyone. As a result, the vision supports close connections between projects outlined in the 2021 Regional Plan and existing regional programs that support land use, housing, and transportation connectivity. Accompanying policies and programs are essential components of the required Sustainable Communities Strategy and the region’s ability to achieve its state GHG reduction target. Supporting these connections will help SANDAG achieve regional goals of enhancing environmental stewardship, addressing housing needs, promoting innovative approaches to transportation solutions, and addressing safety concerns. In addition to capital and operational investments, the land use pattern and accompanying policies and programs are essential components of the required Sustainable Communities Strategy and the region’s ability to achieve its state GHG reduction target. Costs related to these efforts are included in Attachment 1.

Plan Funding and Context

One key difference between a “Vision” and a “Plan” is that a plan must demonstrate that funding has been reasonably identified to pay for the projects and programs described in it. Traditionally, regional plans have assumed that some combination of 30-plus revenue sources will pay for them. 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. Also, while 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. Therefore, new sources of funding are needed. Attachment 2 includes all revenue sources anticipated to fund the 2021 Regional Plan, by time period.

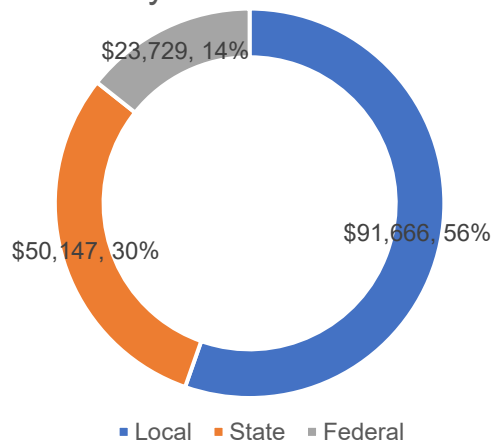
It is also important to understand that while we anticipate receiving about \$165 billion over the next three decades (we estimate slightly more revenues than project costs in order to provide additional flexibility), we do not have all these funds right now. Furthermore, a majority of the funds are 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. The transportation system being developed for the 2021 Regional Plan aligns with those rules.

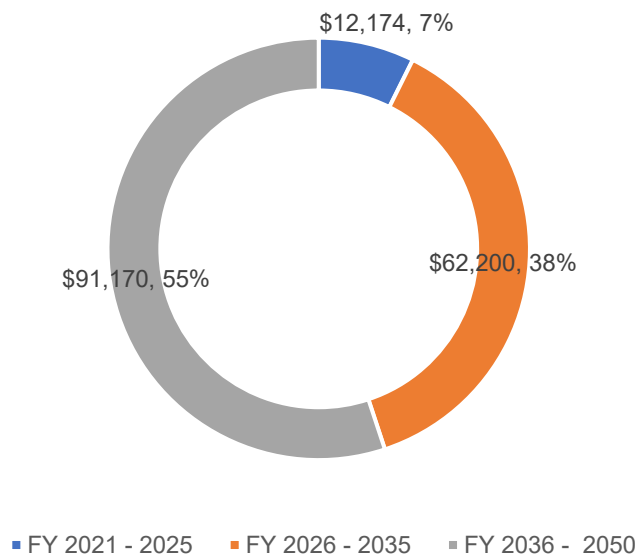
It is also important to recognize that SANDAG does not have purview over all of the funds included in the 2021 Regional Plan. The agency, therefore, must continue to work creatively to best leverage available dollars. SANDAG is constrained by when funds become available during the lifespan of the Regional Plan, and by the fact that some funds are distributed directly to SANDAG, while others are distributed directly to other agencies to maintain, operate, and rehabilitate the transportation network.

For example, the majority of the funds included in the 2021 Regional Plan are distributed directly to agencies such as Caltrans and transit agencies for highway and transit operations and maintenance, and also to the region’s cities and County for their local streets and roads. Partnerships with all these agencies are critical as SANDAG implements the 2021 Regional Plan. The following two charts illustrate the funding by type (local, state, and federal sources) and by time period (2021-2025, 2026-2035, and 2036-2050).

By Fund Source



By Time Period



Pricing and User Fees

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 as a way to minimize the effect of somewhat unpredictable state and federal funding. Fees also address the need for innovative financing mechanisms to make transportation financing in the region sustainable over the long-term in order to achieve SANDAG's 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 the managed lane was opened. Fees can also encourage people to take the bus for a short trip, 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 greenhouse gas emissions, and a higher quality of life.

User fees also apply a “market-based” approach to achieving 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. The inclusion of user fees in the 2021 Regional Plan 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 can also generate sustainable funding to implement the Regional Plan. The pricing strategies under consideration in development of the 2021 Regional Plan are:

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 under way. This will add three miles of new express lane direct connector ramps on SR 78 in both directions that will link the existing Interstate I-15 Express Lanes. Managed lanes are popular and effective in many areas of the U.S., including in Los Angeles, which implemented its first managed lanes system on two highways in 2013.

In the 2021 Regional Plan, SANDAG would take managed lanes to a new level with a regionwide system, and use some of the revenues to reinvest in multimodal projects and programs designed to expand and improve the non-vehicle transportation network. What staff proposes will help create jobs and help people get to them. Staff is committed to ensuring that there is no disproportionate burden on low income, minority, or elderly populations. If implemented according to plan, 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 rates, meanwhile, will be structured so that ridership increases and access to mobility increases.

Road Usage Charge is a direct user fee where motorists pay for use of the roadway network based on distanced traveled. Road usage charging can be an equitable way to generate revenue. 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 vehicle, whether powered by gas or 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 has a Road User Charge pilot program underway. Oregon is also collecting a road usage charge as part of its new program, OReGO. Initial projections for road usage charge programs in San Diego County show that SANDAG could

generate about \$16 billion in revenue annually. A Road Usage Charge program could be implemented as soon as 2026.

Ridesharing company services fees would be per-trip fees for Transport Network Companies, which are ridesharing services such as Uber and Lyft. This includes ride-hailing and on-demand services for passengers. Fees could vary by mileage, occupancy, or other trip factors. Similar fees have been levied in other areas, including Chicago.

Transit fare subsidies and other incentives can also encourage more transit ridership and travel shifts during both peak and off-peak periods. Also, other incentives (e.g., priority parking for shared rides) can be tailored to encourage changes in travel behavior.

If discussions of pricing strategies advance, further analysis and public discussions with the SANDAG Board of Directors, stakeholders, and the general public will take place. The aim would be to further prioritize policy goals such as social equity, and tailor each pricing strategy to meet these goals.

Next Steps

Prior to releasing the draft 2021 Regional Plan in May 2021, more information on the following components of the Regional Plan will be presented to the Board in April 2021:

- Social Equity
- Technology Considerations
- Alignment of State, Regional, and Local Planning

The Board will be asked to consider adoption of the 2021 Regional Plan and certification of the final environmental impact report in the fall of 2021.

Hasan Ikhata, Executive Director

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Attachments: 1. 2021 Regional Plan Cost Estimation Methodology
2. 2021 Regional Plan Estimated Revenues

How SANDAG estimated costs for a bold 21st century transportation system

Our transformative vision for a 21st century transportation system would enhance mobility for people across the San Diego region, support economic growth, and help us achieve important goals for reducing greenhouse gas emissions and protecting the environment.

The San Diego Association of Governments (SANDAG) worked with national experts, Caltrans, the Metropolitan Transit System (MTS), the North County Transit District (NCTD), the County of San Diego, and local jurisdictions to estimate how much the 2021 Regional Plan's vision would cost. This memorandum summarizes how these partners developed cost estimates for major aspects of the Plan's vision.

The total estimated cost for the Regional Plan's vision is about \$163 billion, in 2020 dollars.

The 5 Big Moves

To best communicate what the 2021 Regional Plan vision would cost, this report organizes cost estimates according to five overarching strategies that define the 2021 Regional Plan. These strategies, which SANDAG has publicized over the past several months, are known as the 5 Big Moves. Together, they completely reimagine how people and goods can move throughout San Diego County in the 21st century. These strategies, discussed below along with the cost estimates attached to each, are: Complete Corridors, Transit Leap, Mobility Hubs, Flexible Fleets, and Next OS.

Pursuing the 5 Big Moves would require innovative new investments in the regional transportation network to enhance connectivity, increase safety and sustainability, and improve the everyday lives of millions of people. The vision for the 2021 Regional Plan, which synchronizes the 5 Big Moves so that the success of one depends on the success of the others, would add tremendous capacity to the transportation system and offer people compelling alternatives to driving alone. The ultimate goal is a fully integrated, world-class transportation system.

It is important to recognize that the cost for realizing one Big Move does not take away from realizing another Big Move. On the contrary, investments in one Big Move ensure the success of the others. The overall vision for success in the 2021 Regional Plan is a vision that unifies the 5 Big Moves into a coherent whole.

Complete Corridors

Complete Corridors provide a variety of travel choices and use technology to manage how highways and major roads are used in real time. They provide a balance of dedicated, safe space for everyone, including freight vehicles and people who walk, bike, drive, ride transit, and use Flexible Fleets. In this sense, the success of Complete Corridors is closely aligned with the success of other 5 Big Move initiatives, including Transit Leap, Flexible Fleets, Mobility Hubs, and Next OS.

Achieving Complete Corridors would require several major initiatives along our region's highways and major roads, which are outlined below:

- Maximizing Space on Our Highways
 - Converting General Purpose Lanes to Managed Lanes
 - Converting Shoulders to Managed Lanes
 - Traditional Widening
 - Connectors and Access Ramps

- Highway Operations and Maintenance
- Active Traffic and Demand Management and Smart Intersection Improvements
- Goods Movement
- Rural Corridors
 - Curve Straightening
 - Intersection Improvements
 - Shoulder Widening
 - Other Facility Improvements

Maximizing Space on Our Highways

The effort to enhance mobility must address the region’s highway network, and making it more efficient means maximizing space on highways for travelers. The Regional Plan envisions tackling this challenge in three main ways. First, the Plan creates a system of Managed Lanes, in which general purpose lanes are converted—in certain places and at certain times—into lanes that are open for particular users. These users may include Rapid transit vehicles and other public transportation services enabled by Transit Leap; people who carpool; and rideshare services such as Uber and Lyft. Second, the Plan converts shoulders on highways, where it is safe to do so, into managed lanes. Third, the Plan identifies a limited number of places around the region where stretches of highway are physically widened – but only where absolutely necessary.

SANDAG has estimated the costs associated with maximizing space on our highways using standard Caltrans worksheets. The costs are based on standard Caltrans bid items, with average historical unit costs for Caltrans District 11 (San Diego and Imperial Counties). The cost of improvements along general roadway sections are estimated based on the type (at grade, retained, on structure) and the scope (one lane, two lanes, etc.) of such improvements. These costs are broken down by mile for each type of roadway in a given project.

Per-mile cost analyses consider the following:

- Earthwork
- Pavement Structure
- Drainage
- Specialty Items
- Environmental
- Traffic Items
- Detours
- Roadway Mobilization
- Supplemental Work
- Structures (Bridges, Overpasses, etc.)
- Right-of-Way
- Support Costs
- Contingency

The costs developed for each category of highway improvements are as follows:

- Converting general purpose lanes into managed lanes: \$10.8 million per mile
- Converting shoulders into managed lanes: \$40.2 million per mile
- Physically widening highways: about \$40 million per mile¹
- Connectors and Access Ramps
 - Managed Lane and Freeway Connectors: \$198 million (average per location)
 - Direct Access Ramps: \$48.8 million (average per location)

Cost Estimate: \$18.4 billion (\$2020)

Highway Maintenance and Operations

Maintaining our region’s highway system, and making sure it operates efficiently every day, is vital to personal mobility, the health of our regional economy, and to meeting our state mandates for reducing greenhouse gas emissions. Therefore, the costs associated with maintaining and operating our highway system are included in the Plan, and they have been informed by the State Highway Operations and Protection Program estimates for the San Diego region.

Cost Estimate: \$18.6 billion (\$2020)

Active Traffic and Demand Management and Smart Intersection Systems

As part of the San Diego Regional Transportation System Management and Operations Plan, a sketch-level estimate was completed of Active Traffic Demand Management elements for enhanced traffic management on corridors throughout the San Diego region. Unit prices for freeway, urban arterial, and rural arterial management system elements (also known as Intelligent Transportation System elements) are estimated based on recent projects with similar scopes of work. These include the I-805 / SR-94 Bus On Shoulder project; I-15 and I-80 Integrated Corridor Mobility (ICM) projects; I-880 Express Lane; and I-680 Express Lane and Backhaul. We have also considered recently completed planning-level projects. These include the Caltrans District 10 ICM Plan; the Metropolitan Transportation Commission Regional Communications Plan; and the Sacramento Area Council of Governments Smart Region Future Technology Plan.

Cost Estimate: \$4.8 billion (\$2020)

Goods Movement

The smooth transport of goods into and out of our region, and the delivery of goods to cities and communities within it, fuels our economy and contributes to a high standard of living. SANDAG developed goods movement projects with Caltrans, and in close collaboration with the Port of San Diego, San Diego County Regional Airport Authority, and various agencies that operate or support goods movement corridors and facilities. These goods movement projects focus on our region’s roadways, railroads, seaports, airports, land ports of entry, and pipelines – as well as the relevant software to make this goods movement network function efficiently. Many goods movement projects share infrastructure and benefits with each of the 5 Big Moves. For example, some of the roadways used to move goods are targeted for improvements under the Complete Corridors initiative. Rail projects benefitting goods movement are targeted under Transit Leap. Also, the systems and software included in Next OS projects benefit goods movement.

¹ Will vary by corridor.

Therefore, many of the costs for projects that support goods movement are reflected in the costs for each of the 5 Big Moves.

Cost Estimate: \$0.5 billion (\$2020)

Rural Corridors

Improvement costs for rural travel corridors were based on costs detailed in the Interregional Tribal Transportation Study. These were initially developed using the County of San Diego's unit price list for construction projects and when applicable, along with any cost information included in the 2019 Federal Regional Transportation Plan. Additionally, construction costs assumed in the County of San Diego Transportation Impact Fee (TIF) Transportation Needs Assessment Report (September 2012) and typical unit costs were developed and used for similar projects based on the length of project, the number of intersections, or road type. These typical unit cost were then applied to the applicable projects identified for the rural corridors.

Cost Estimate: \$1.5 billion (\$2020)

Transit Leap

Transit Leap would create a complete network of high-speed, high-capacity, high-frequency transit services that connect major residential areas with employment centers and attractions throughout the San Diego region. Transit Leap would include new high-speed services that cover longer distances with limited stops, and these services would be separated from vehicle traffic with bridges, tunnels, or dedicated lanes. Transit Leap also would include improvements to existing transit services such as the Trolley, COASTER, SPRINTER, and Rapid. These improvements could include additional rail tracks, more frequent service, dedicated transit lanes, and traffic signal priority to keep transit moving quickly.

Overall, Transit Leap services would connect to—and rely on—supporting infrastructure for Complete Corridors, Mobility Hubs, Flexible Fleets, and Next OS.

Estimating costs for Transit Leap considered development options for new commuter rail, light rail/Trolley, and Rapid Improvements to existing transit services. Costs were developed using the Federal Transit Administration (FTA) Capital Cost Database, which is intended for developing order-of-magnitude cost estimates for conceptual transit projects. The cost models are automatically adjusted to account for differences in regional cost levels between locations. The unit costs generated from the Capital Cost Database were compared with known actual project costs for the San Diego region, and they were adjusted as necessary. Capital transit projects include cost estimates for construction (both station and segment per mile), right-of-way acquisition, and other non-construction "soft" costs such as environmental review, planning, and design.

Some examples of transit unit costs, for reference, are:

- Guideway and track elements (at grade, below grade, or above grade)
- Stations, stops, terminals, intermodals
- Support/maintenance facilities, yards, shops, administration buildings
- Sitework and special conditions
- Systems

Transit Leap Capital Cost Estimate: \$55.5 billion (\$2020)

Operation and Maintenance costs for the life of the Plan (2021-2050) are estimated based on outputs of operating hours multiplied by the operating costs per hour for each mode of transit. The operating hours are estimated using outputs from the activity-based travel model while operating costs are estimated using current numbers from MTS and NCTD. Fare Subsidies that would buy down the cost of transit fares are also included in the operating costs. These subsidies, starting in 2029, would be to reduce fares for either all riders or various subgroups of riders like seniors, youth, or low-income.

Transit Leap Operating Cost Estimate: \$24.5 billion (\$2020)

Mobility Hubs

Mobility Hubs are communities with a high concentration of people, destinations, and travel choices. They offer on-demand travel options and supporting infrastructure that enhance connections to high-quality Transit Leap services while helping people make short trips around the community on Flexible Fleets. Mobility Hubs can span one, two, or a few miles based on community characteristics and are uniquely designed to fulfill a variety of travel needs while strengthening sense of place.

Various Mobility Hub amenities improve the user experience while accessing Transit Leap or Flexible Fleets. Additionally, traffic calming measures make it safer to walk, bike, or use other micromobility options on neighborhood streets. Estimating the cost of Mobility Hubs included consideration of the following amenities and improvements:

- Electric vehicle charging infrastructure
- Micromobility charging and secure parking
- Interactive travel kiosks
- Passenger loading zones
- Parcel delivery lockers
- Shared mobility parking
- Complete streets improvements

Estimated costs were developed using industry costs and research from similar projects deploying these amenities and supporting technology. The cost estimates were applied across the regional Mobility Hub network, including the proposed Central Mobility Hub and other potential land acquisition costs, to derive the overall cost estimate.

Cost Estimate: \$5.6 billion (\$2020)

Flexible Fleets

Flexible Fleets are shared, on-demand transportation services that provide convenient and personalized travel options. This includes a broad set of services from on-demand rideshare and bikeshare to neighborhood shuttles and delivery services. These fleets provide services for all types of trips 24 hours a day and seven days a week, which can reduce the need to own a car. They also provide important connections between high-speed Transit Leap services and key destinations such as work or home, making it easier for commuters to choose transit. Flexible Fleets are primarily accessible through mobile apps, and they can be operated by public and private agencies or through partnerships.

Flexible Fleet operations are estimated based on a public-private partnership model in which public agencies may partner with or contract services directly with the Flexible Fleet providers. Research on average operating costs, estimated fleet sizes, and operating service assumptions (e.g., service hours, service days) from various pilots throughout the country informed development of Flexible Fleet operation costs.

The capital cost of infrastructure improvements and amenities that are needed to support Flexible Fleet services are reflected in the Complete Corridors and Mobility Hubs sections. Costs associated with data sharing and integration of these services with existing trip planning tools are reflected in the Next OS estimates.

Cost Estimate: \$1.8 billion (\$2020)

Next OS

Next OS is the “brain” of the entire transportation system. It is a digital platform that compiles information from sources like passenger vehicles, buses, ridesharing vehicles, delivery trucks, e-bikes, and scooters into a centralized data hub. Analysis of this data will improve how transportation is planned, operated, and experienced. 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.

Because Next OS is the “brain” of the entire transportation system, it includes a wide variety of technological components that ensure the fast, efficient, and timely delivery of services in the transportation system. The cost estimate for Next OS includes the cost of gathering data, managing that data with systems and software, and operations.

The data hub is a critical piece of the system, and it provides a digital platform that that can analyze transportation data in real time to make transportation more integrated, more efficient, and most of all more responsive to people’s immediate needs.

Cost Estimate: \$0.2 billion (\$2020)

Transportation Demand Management

Programs that manage demands on the regional transportation system would be broadened with the deployment of the 5 Big Moves under the 2021 Regional Plan. These Transportation Demand Management (TDM) Programs would include a much larger array of mobility services and supporting programs for commuters and employers such as the Regional Vanpool Program, iCommute employer services, telework resources, and incentives for taking transit and carpooling. The cost estimate for these programs is based on prior historical program costs, outputs from TDM off-model calculators, and on funding eligibility.

Cost Estimate: \$0.5 billion (\$2020)

Other Supporting Policies and Programs

The vision presented in the 2021 Regional Plan recognizes the close relationship between the transportation system and how land is used in our region. As a result, the vision supports close connections between projects outlined in the Regional Plan and existing regional programs that support the environment, how land is used, promote innovative approaches to transportation solutions, and promote safety. These existing programs address sustainability and climate change targets, social equity considerations, and safety goals, all requirements of the Plan. Cost estimates for these supporting programs will take shape in coming months as the programs are refined and integrated into the Plan. Assumptions and current cost estimates are based on projections of available funding.

The following chart provides the breakdown of the program assumptions:

Program Categories	\$M (2020\$)	
Land Use	\$	1,170
Climate Action Planning	\$	612
Climate Adaptation and Resiliency	\$	1,058
Housing	\$	2,630
Transportation Demand Management Grants	\$	91
Zero Emission Vehicles and Infrastructure	\$	2,010
Vision Zero	\$	425
Parking Management	\$	148
Other	\$	500

Cost Estimate: \$8.6 billion (\$2020)

Active Transportation

The Active Transportation network in the 2021 Regional Plan goes beyond biking improvements and represents a significant increase in investment in safety and mobility for people who travel the region by foot, bike, scooter, transit, or other means outside of a car. While the plan maintains the adopted network from the 2010 Regional Bike Plan, the costs for each of the projects have been reassessed to reflect the level of investment to make the network comfortable for users of all ages and abilities. This presents itself as infrastructure improvements to either separate motorized and nonmotorized modes or lower speeds and volumes to a level considered safe for mixing traffic modes. Building the network in this way creates an inviting environment for people who are interested in walking, biking, and other forms of micromobility but who may not have felt safe trying those forms of transportation. SANDAG’s current and historic bikeway projects were used to provide a basis for comparison for cost, since the level of investment is similar.

The full Regional Bike Plan can be found here: sandag.org/uploads/projectid/projectid_353_10862.pdf

Further discussion regarding the improved safety and comfort of the network will be developed in Appendix L: Active Transportation of the Draft 2021 Regional Plan.

Cost Estimate: \$2.2 billion (\$2020)

Cost Estimate Local Bike Programs: \$1.4 billion (\$2020)

Total Active Transportation Cost Estimate: \$3.6 billion (\$2020)

Other Plan Costs

Other plan costs include local streets and roads, local bike programs, and debt service. These costs will be further refined as the Plan is developed.

Cost Estimate Local Streets and Roads: \$14.2 billion (\$2020)

Cost Estimate Debt Service: \$4.9 billion (\$2020)

Total Regional Plan Vision Estimated Cost: \$163 billion (\$2020)

Major Revenue Sources/Revenue Constrained Scenario (in millions of 2020\$ dollars)

		FY 2021 -	FY 2026 -	FY 2036 -	
Revenue Category		2025	2035	2050	Total
Local					
TransNet	Sales Tax	\$1,566	\$3,415	\$5,591	\$10,572
TransNet (Bond Proceeds)	Sales Tax	\$53	\$0	\$0	\$53
Transportation Development Act	Sales Tax	\$806	\$1,758	\$2,879	\$5,443
Developer Impact Fees	Impact Fees	\$185	\$417	\$277	\$878
City/County Local Gas Taxes	Fuel Tax	\$438	\$606	\$572	\$1,616
General Fund/Miscellaneous Local Road Funds	Miscellaneous	\$1,162	\$2,375	\$3,672	\$7,209
Toll Road Funding (SR125 Current Limits)	Tolls	\$131	\$292	\$890	\$1,314
Public Private Partnerships/Transit Oriented Developm	Value Capture	\$541	\$302	\$875	\$1,717
FasTrak Net Revenues	Tolls	\$73	\$4,151	\$8,700	\$12,924
Passenger Fares	User Fees	\$450	\$3,887	\$9,158	\$13,495
Motorist Aid Services - Toll Box Program	Fees	\$45	\$62	\$61	\$168
	Subtotal	\$5,451	\$17,263	\$32,675	\$55,390
State					
State Transportation Improvement Program	Fuel Tax	\$145	\$334	\$540	\$1,019
State Transit Assistance Program	Fuel Tax	\$223	\$456	\$826	\$1,506
State Highway Account for Operations/Maintenance	Fuel Tax	\$1,489	\$3,360	\$6,539	\$11,388
Cap and Trade	Carbon Tax	\$298	\$581	\$906	\$1,785
State FASTLANE	Fuel Tax	\$135	\$288	\$535	\$957
State Managed Federal Programs	Fuel Tax	\$226	\$467	\$1,021	\$1,715
High Speed Rail	Financing	\$0	\$0	\$0	\$0
Freeway Service Patrol	Fees	\$23	\$37	\$40	\$100
Road Maintenance and Rehabilitation Account (RMRA)	Fuel Tax	\$1,063	\$4,361	\$6,947	\$12,371
	Subtotal	\$3,603	\$9,885	\$17,354	\$30,842
Federal					
Federal Transit Administration Discretionary	Fuel Tax	\$569	\$3,417	\$5,685	\$9,671
Federal Transit Administration Formula Programs	Fuel Tax	\$618	\$1,228	\$2,018	\$3,863
CMAQ/RSTP	Fuel Tax	\$408	\$967	\$2,115	\$3,490
Federal Highway Administration Discretionary	Fuel Tax	\$44	\$91	\$119	\$254
Other Financing (Grant Anticipation Notes)	Fuel Tax	\$254	\$27	\$0	\$281
Federal Rail Administration	Fuel Tax	\$8	\$42	\$67	\$117
Corridors and Borders Infrastructure/Other Freight Fu	Fuel Tax	\$81	\$219	\$480	\$781
TIFIA Loan Proceeds	Financing	\$525	\$0	\$0	\$525
	Subtotal	\$2,507	\$5,990	\$10,486	\$18,982
NEW					
Future Local Revenues for Transportation	Sales Tax	\$0	\$4,482	\$6,710	\$11,192
Future MTS Local Revenues for Transportation	Sales Tax	\$0	\$3,409	\$3,805	\$7,213
TNC Fees	User Fees	\$0	\$796	\$1,383	\$2,179
Regional VMT Fee	User Fees	\$0	\$7,693	\$8,000	\$15,693
Housing Revenue (SB 795 Grants or similar)	Impact Fees	\$613	\$3,000	\$0	\$3,613
Future State Revenues for Transportation	User Fees	\$0	\$7,693	\$8,000	\$15,693
Future Federal Revenues for Transportation	Fuel Tax	\$0	\$1,991	\$2,757	\$4,747
	Subtotal	\$613	\$29,062	\$30,654	\$60,329
Grand Total Revenue Sources		\$12,174	\$62,200	\$91,170	\$165,543