



Final Report from the Los Angeles-San Diego-San Luis Obispo (LOSSAN) San Diego Regional Rail Corridor Working Group

Convened by California Secretary of Transportation, David S. Kim

January 2021



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ACKNOWLEDGEMENTS

Thank you to the LOSSAN Regional Rail Corridor Working Group Members.

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Senator Toni Atkins, CA Senate Pro Tem, District 39
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Councilmember Tony Kranz, City of Encinitas & NCTD Chair
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Appendices:

- A. Letter dated March 17, 2020 from David P. Dorfman, U.S. TRANSCOM Regarding STRACNET and the LOSSAN Corridor’s National Defense Significance
- B. Del Mar Bluffs Stabilization Fact Sheet

- C. Members of the LOSSAN San Diego Regional Rail Corridor Network Working Group
 - D. Members of the 1) State Transportation Funding Options Sub Working Group and 2) the Sub Working Group to support alignment of state, regional, and local objectives for the LOSSAN Corridor long-term solution
 - E. Long Term Realignment Fact Sheet
 - F. Key Questions for the Long-Term Sub Working Group
 - G. January 21, 2020 LOSSAN San Diego Regional Rail Corridor Network Working Group Meeting
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 - I. July 15, 2020 LOSSAN San Diego Regional Rail Corridor Network Working Group Meeting
 - J. October 27, 2020 LOSSAN San Diego Regional Rail Corridor Network Working Group Meeting

Foreword By Secretary David S. Kim

This final report summarizes a year-long effort to address critical climate change transportation infrastructure resilience issues in the Los Angeles-San Diego-San Luis Obispo (LOSSAN) Corridor - the backbone of Southern California's rail network. As noted in the *2018 California State Rail Plan*, climate change-induced sea level rise is impacting many of the state's coastal rail corridors, including the Del Mar Bluffs section of the LOSSAN Rail Corridor.



Amtrak's world famous Pacific Surfliner service utilizes the LOSSAN Corridor in San Diego County, as does Metrolink and COASTER commuter rail services, and freight rail serving the Port of San Diego. Approximately 1.7 miles of the LOSSAN Rail Corridor run through the City of Del Mar on bluffs located adjacent to the Pacific Ocean. The Del Mar Bluffs, which support the railroad infrastructure and track-bed, have experienced and continue to be vulnerable to major erosion events that threaten the stability and viability of the route.

After highly publicized Del Mar Bluff failures in late -2019, and at the request of California Transportation Commission Commissioner Christine Kehoe, I convened the LOSSAN San Diego Regional Rail Corridor Working Group (LOSSAN Working Group) to determine the critical pathway needed to secure the stabilization of the Del Mar Bluffs for the coming decades. The LOSSAN Working Group is comprised of federal, state, and local officials, the executive leadership of regional transportation agencies and operators, and representatives from stakeholder organizations and academia.

Through our LOSSAN Working Group, the California State Transportation Agency (CalSTA) led an extremely effective partnership – together we leveraged our collective relationships to raise awareness and bring expertise from across the nation and throughout the state to bear on this critical infrastructure climate resilience issue.

And in just one year, our LOSSAN Working Group accomplished some significant milestones:

- At the outset of the LOSSAN Working Group, the San Diego Association of Governments (SANDAG) and North County Transit District (NCTD) were seeking \$100 million for work to stabilize the Del Mar Bluffs. Over the past year, the Working Group secured funding from the Federal Railroad Administration, CalSTA's Transit and Intercity Rail Capital Program (TIRCP), the California Transportation Commission's Senate Bill (SB) 1 (Road Repair and Accountability Act of 2017) Trade Corridor Enhancement Program (TCEP). Through the efforts of the LOSSAN Working Group, we have successfully identified all the funding needed to completely stabilize the bluffs.
- LOSSAN Working Group member Congressman Mike Levin secured Congressional authorization of funding for a U.S. Army Corps of Engineers (USACE) Feasibility Study for Del Mar Bluffs stabilization work, which is required to fund USACE construction projects. Congressman Levin also worked with USACE and the Office of Management and Budget to administratively include funding for this Study in a future USACE Work Plan. The Working Group also reviewed the USACE Planning Assistance for States program, Scripps Institute of Oceanography coastal mapping project, and the Ocean Protection Council Proposition 68 coastal resiliency grant program.

- The LOSSAN Working Group secured a letter from U.S. Transportation Command (TRANSCOM) documenting the LOSSAN Corridor’s U.S. Strategic Rail Corridor Network (STRACNET) designation and highlighting its national defense significance due to the access it provides Marine Corps Base Camp Pendleton and the Port of San Diego. The U.S. TRANSCOM letter, which can be submitted with grant applications to civilian agencies, states “the national defense benefit of the Los Angeles – San Diego line should make a compelling case for receiving civilian transportation grants for improving its reliability.”
- Per the recently published AB 1282 Transportation Permitting Task Force Final Report recommendations, the LOSSAN Working Group provided a venue to streamline the Del Mar Bluffs stabilization permitting process by strengthening interagency coordination and providing opportunities for early coordination between SANDAG and the California Coastal Commission. As a result, SANDAG and the California Coastal Commission estimate six to nine months in time savings on Del Mar Bluffs stabilization permitting review.

Additionally, the LOSSAN Working Group set the stage for regionally led discussions of long-term solutions for the Corridor. The Working Group responded to key questions and considered key objectives that might be achieved through LOSSAN realignment. These responses were used to scope SANDAG’s Long-Term San Diego Regional Rail Alternative Alignment Study, which is partially funded by a Caltrans Sustainable Transportation Planning Grant and will be completed in 2022. The responses also detailed plans and opportunities for transitioning to cleaner zero- or near-zero emission train set technologies in the Corridor. The LOSSAN Working Group also received briefings from the U.S. Department of Transportation (U.S. DOT) Build America Bureau and the California Infrastructure and Economic Development Bank (I Bank) regarding potential infrastructure financing options for a realignment project.

To ensure the continued success of these efforts, SANDAG intends to form an executive-level task force in 2021, comprised of representatives from many of the agencies that participated in the LOSSAN Working Group this year. A technical level working group of staff from these agencies will support the ability of this task force to explore the key policy decisions that will allow the rail corridor to potentially be moved off the Bluffs.

EXECUTIVE SUMMARY

Los Angeles-San Diego-San Luis Obispo (LOSSAN) Rail Corridor San Diego Subdivision

The Los Angeles-San Diego-San Luis Obispo (LOSSAN) Corridor is the backbone of Southern California’s rail network. The corridor moves nearly 8 million passengers per year and is the second busiest intercity corridor in the nation.

The San Diego Subdivision is the southern section of the 351-mile LOSSAN Rail Corridor. The 60.1-mile subdivision runs south from the Orange County/San Diego County Line to downtown San Diego. The passenger rail services operating on the subdivision are the state-supported Pacific Surfliner intercity service operated by Amtrak between San Diego, Los Angeles, and San Luis Obispo; Metrolink commuter service operated by the Southern California Regional Rail Authority (SCRRA) from Oceanside to Los Angeles, Ventura and the Inland Empire; and North County Transit District’s (NCTD) COASTER commuter service operating south from Oceanside to the Santa Fe Depot in downtown San Diego. The State’s 2018 Rail Plan and San Diego’s Regional Transportation Plan both identify increased passenger and freight service and reduced rail travel times in the corridor as critical components of providing a competitive alternative to Interstate 5 (I-5) and meeting the State’s greenhouse gas goals. Currently, more than 60 trains use the subdivision daily. State, corridor, and regional plans will dramatically increase train frequencies by 2035 based on the current service plans of each operator, with NCTD planning to increase average weekday COASTER frequencies from 22 to 42 in 2023. These strategies require a reliable underlying infrastructure and highlight the importance of addressing the stability of the Del Mar Bluffs.

NCTD owns the LOSSAN Corridor right-of-way from the Orange County/San Diego County Line south to the City of Del Mar/City of San Diego border and has an easement from the Department of Navy for right-of-way on Marine Corps Base Camp Pendleton. The San Diego Metropolitan Transit System (SDMTS) owns the corridor segment in the City of San Diego from the City of Del Mar border to the Santa Fe Depot. NCTD also operates and maintains the entire Subdivision and is designated as a rail common-carrier by the Surface Transportation Board for the movement of interstate commerce by BNSF Railway (BNSF) and the Railroad of Record by the Federal Railroad Administration related to safety responsibility for all activities on the railroad. The San Diego Association of Governments (SANDAG) plans, funds, and implements capital improvements including track, station, and bridge projects along the San Diego Subdivision in coordination with NCTD pursuant to an agreement.

The Burlington Northern Santa Fe Railway (BNSF) is the only freight rail operator in the subdivision, operating trains from the Port of San Diego north, as well as serving various local industries. BNSF owns the right-of-way south of the Santa Fe Depot and currently no revenue passenger trains operate on this segment. In calendar year 2018, approximately 4.8 million tons of freight were moved along the San Diego Subdivision of the LOSSAN Corridor.

The LOSSAN Rail Corridor is also part of the U.S. Strategic Rail Corridor Network (STRACNET), which consists of key railroad lines identified by the U.S. Department of Defense Transportation Command (U.S. TRANSCOM) and the Federal Railroad Administration. In March 2020, California State Transportation Agency (CalSTA) Secretary David S. Kim attained a letter from U.S. TRANSCOM documenting the LOSSAN Corridor’s STRACNET designation and highlighting its national defense significance due to the access it

provides Marine Corps Base Camp Pendleton and the Port of San Diego (Appendix A). The U.S. TRANSCOM letter, which can be submitted with grant applications to civilian agencies, states “the national defense benefit of the Los Angeles – San Diego line should make a compelling case for receiving civilian transportation grants for improving its reliability.”

The Del Mar Bluffs



Figure 1: COASTER train heading north along Del Mar Bluffs

Approximately 1.7 miles of the LOSSAN Rail Corridor runs through the City of Del Mar on bluffs located adjacent to the Pacific Ocean (Del Mar Bluffs). The Del Mar Bluffs, which support the railroad infrastructure and track-bed, have experienced and continue to be vulnerable to major erosion events that threaten the stability and viability of the route. The *2018 California State Rail Plan* discusses the impact of climate change-induced sea level rise on California’s coastal rail corridors, and specifically references the Del Mar Bluffs section of the LOSSAN Rail Corridor.¹

The Del Mar Bluffs are subject to normal bluff retreat and episodic bluff failures. Since summer 2018, at least six major bluff failures have been reported in the Del Mar Bluffs area. Each time a bluff failure occurs, NCTD halts train traffic until inspections are complete, adversely affecting intercity, commuter, and freight traffic.

A significant failure of the Del Mar Bluffs will severely impact the local and regional economy and the ability for individuals to access jobs, school, and other economic activity centers in Southern California. Additionally, a major failure of the Del Mar Bluffs will have detrimental impacts to nationally significant freight rail services on the only viable rail corridor connecting San Diego with the rest of the nation.

Since 2003, SANDAG and NCTD have completed three Del Mar Bluffs stabilization projects between Coast Boulevard and Torrey Pines State Beach. These stabilization projects saw the installation of nearly 250 support columns into the bluffs and critical investments into drainage infrastructure to help reinforce and protect the Del Mar bluffs. At the outset of the LOSSAN Working Group, SANDAG was undertaking the \$6 million Del Mar Bluffs Phase 4 stabilization project to install support columns to stabilize localized areas

¹ *2018 California State Rail Plan* p. 228: <https://dot.ca.gov/programs/rail-and-mass-transportation/california-state-rail-plan>

and sea walls, construct a drainage channel on top of the bluffs, repair concrete channels, and stabilize storm chute outfalls and an existing headwall. This project was completed in late 2020.

The final two phases of the stabilization effort will be Del Mar Bluffs Stabilization Phase 5 and Phase 6 (Appendix B). Phase 5 will install additional columns to support the railroad and reinforce the bluffs and install retaining walls, drainage improvements including outlets to the beach, and other stabilization and erosion control measures on the upper bluffs. Phase 6 is anticipated to include minor slope grading and landscaping and installation of bluff toe protection. Mitigation may also be required through the environmental review process for Del Mar Bluffs Stabilization efforts, such as sand replenishment and construction of crossings to provide access to the beach. Mitigation costs have been budgeted in the estimated costs of Del Mar Bluffs Phases 5 and 6, but additional costs may also be required.

LOSSAN San Diego Regional Rail Corridor Working Group

After highly publicized Del Mar Bluff failures in late -2019,² and at the request of California Transportation Commission Commissioner Christine Kehoe, CalSTA Secretary David S. Kim travelled to Del Mar to inspect damage to the bluffs and in January 2020, convened the LOSSAN San Diego Regional Rail Corridor Working Group (LOSSAN Working Group). Recognizing the immediate need to stabilize the bluffs, the LOSSAN Working Group formed to determine the critical pathway needed to secure the stabilization of the Del Mar Bluffs for the coming decades.

Comprised of federal, state, and local officials, the executive leadership of regional transportation agencies and operators, and representatives from stakeholder organizations and academia, the LOSSAN Working Group members engaged in fact-finding activities, reviewed subject matter expert presentations, and leveraged their collective networks to bring attention to the LOSSAN Rail Corridor for the purpose of stabilizing the Del Mar Bluffs. Appendix C provides the list of members of the LOSSAN Working Group.

Additionally, the LOSSAN Working Group undertook preliminary work setting the stage for regionally led discussions of long-term solutions for the Corridor, which include moving the LOSSAN Corridor off the Del Mar Bluffs. The planned long-term realignment of the Corridor is the topic of a more in-depth study, led by SANDAG in coordination with NCTD and in conjunction with LOSSAN Working Group members, called the San Diego Regional Rail Corridor Alternative Alignment and Improvements Conceptual Engineering Study (SD-LOSSAN), and is currently underway and scheduled to be completed in 2022.

Over the course of approximately one year, the LOSSAN Working Group met four times. Each of these meetings is summarized below and Appendices G through J provide the meeting notes and presentations provided at each LOSSAN Working Group meeting. Moreover, two Sub Working Groups were formed, which met and provided updates to the larger LOSSAN Working Group (Appendix D provides Sub Working Group members):

² Phil Diehl, “Storm runoff blamed for railroad track washouts on fragile Del Mar bluff” Los Angeles Times, December 2, 2019: <https://www.sandiegouniontribune.com/communities/north-county/del-mar/story/2019-12-02/storm-runoff-blamed-for-del-mar-track-washout>; see also, KGTV, “Travel nightmare for train passengers after Del Mar bluff collapse”: <https://www.10news.com/news/local-news/travel-nightmare-for-train-passengers-after-del-mar-bluff-collapse>

- The Sub Working Group to identify state transportation funding options for Del Mar Bluffs Phases 5 and 6 (State Transportation Funding Options Sub Working Group)
- The Sub Working Group to support alignment of state, regional, and local objectives for the LOSSAN Corridor long-term solution (Long-Term Sub Working Group)

Additionally, of the 351-miles that the LOSSAN Rail Corridor stretches, nearly half of the corridor runs adjacent to the Pacific Ocean. The proximity of the railroad to the ocean creates several locations where erosion and slope stabilization are becoming concerns. While the Del Mar Bluffs are the most critical of these locations, it is important to note that the work done by the LOSSAN Working Group on this effort can serve as a model for these other segments of the LOSSAN Corridor, which are similarly situated along the coast.

State Transportation Funding Options Sub Working Group

The State Transportation Funding Options Sub Working Group identified state funding programs that could support Del Mar Bluffs stabilization efforts and developed strategies to pursue funding from programs that the Sub Working Group identified.

As a result of the Sub Working Group on State Transportation Funding Options' effort, in April 2020 SANDAG received a \$12.1 million CalSTA Transit and Intercity Rail Capital (TIRCP) Program grant for the SDConnect: San Diego Rail Improvement Program project, which included \$4.9 million in funding for the Del Mar Bluffs Phase 5 stabilization project, in combination with other federal, state, and local funds committed and being pursued for the project.³

In May 2020, the Federal Railroad Administration awarded SANDAG and NCTD an \$11.57 million State of Good Repair program grant (that is matched by an \$11.57 million in non-federal funds) for the Pacific Surfliner Coastal Bluff Track Bed Stabilization and Seismic Improvements Project also funding Del Mar Bluffs Phase 5 stabilization work.⁴ Several LOSSAN Working Group members provided letters of support for SANDAG's application to Federal Railroad Association, and LOSSAN Working Group Member U.S. Representative Mike Levin coordinated U.S. Congressional Delegation support to secure the grant.⁵

³ Transit and Intercity Rail Capital Program Fourth Round Selected Projects – Project Detail Summary April 21, 2020: <https://calsta.ca.gov/-/media/calsta-media/documents/2020-tircp-detailed-project-award-summary.pdf>

⁴ U.S DOT Federal Railroad Administration Press Release, "U.S. Transportation Secretary Elaine L. Chao Announces \$302.6 Million in 'State of Good Repair' Grants": <https://railroads.dot.gov/newsroom/press-releases/us-transportation-secretary-elaine-l-chao-announces-3026-million-state-0>

⁵ Office of U.S. Representative Mike Levin Press Release, "Rep. Mike Levin Announces \$11.6 Million Federal Grant to SANDAG for Del Mar Bluffs Stabilization": <https://mikelevin.house.gov/media/press-releases/rep-mike-levin-announces-116-million-federal-grant-sandag-del-mar-bluffs>



Figure 2: Amtrak Pacific Surfliner train heading south along Del Mar Bluffs

Over the course of several months, the Sub Working Group analyzed the Del Mar stabilization requirements and other goods movement needs within the San Diego Subdivision and crafted a comprehensive grant application for the California Transportation Commission's Senate Bill 1 (SB 1), the Road Repair and Accountability Act of 2017 Trade Corridor Enhancement Program (TCEP). The TCEP program funds infrastructure improvements along corridors that have a high volume of freight movement.

More specifically, the Sub Working Group reviewed the initial findings from the LOSSAN Corridor Optimization Study by the LOSSAN Rail Corridor Agency as well as a subsidiary effort, the NCTD/BNSF Freight Pathing and Passenger Service Extension Study⁶ for capital improvement priority projects, and then rescoped the Del Mar Bluffs Phases 5 and 6 stabilization work for inclusion in a comprehensive grant application package of LOSSAN Corridor freight rail improvements for submission to the 2020 TCEP application cycle. SANDAG, NCTD, and Caltrans submitted the LOSSAN-SD Intermodal Improvement Program grant application in August 2020, a \$202 million program of five projects including a request to complete the funding needed for Phase 5. In December, the California Transportation Commission approved the staff recommendation to award the \$106 million funding request for this application. The projects will not only provide most of the funding needed to complete stabilization of the Del Mar Bluffs, but also foster improvement in commuter rail connections in Oceanside, the extension of passenger rail service to the Convention Center in San Diego, and new capacity for daytime goods movement in and out of the Port of San Diego.

The LOSSAN Working Group also received a briefing from the U.S. Army Corps of Engineers (USACE) Los Angeles District Chief of Planning regarding the Corps' civil works project delivery process. USACE has conducted feasibility studies and recently allocated funding for Planning, Engineering, and Design (PED) for coastal storm damage reduction projects in the cities of Encinitas and Solana Beach. As a result of this briefing, SANDAG and NCTD are coordinating with the USACE to explore the benefits of working together on a feasibility study for Phase 6; several LOSSAN Working Group Members submitted letters supporting the request.

A USACE feasibility study takes approximately three years to complete and must precede U.S. Congressional authorization and appropriation of funding for USACE construction projects. Congressman Levin also secured language in Section 201 of the U.S. House-passed H.R. 7575, *Water Resources Development Act of 2020*, for a USACE feasibility study of Del Mar Bluffs shoreline stabilization, pending

⁶ <https://gonctd.com/new-opportunities-for-expansion-of-rail-services/>

future Congressional action.⁷ On December 27, 2020, this provision was incorporated into H.R. 133, *the Consolidated Appropriations Act of 2021* and enacted into federal law.

Long-Term Sub Working Group

While long-term solutions for the LOSSAN Corridor San Diego Subdivision may involve moving the LOSSAN Corridor off the Del Mar Bluffs, the Long-Term Sub Working Group did not consider new alignments. New potential corridor alignments are being evaluated as part of SANDAG's SD-LOSSAN Study, and ultimately will be decided through an environmental review process (Appendix E) and in coordination with NCTD to ensure compliance with its obligations with the Surface Transportation Board, Federal Railroad Administration, and Shared-Use Agreement with BNSF.

However, the Long-Term Sub Working Group responded to key questions and considered key objectives that might be achieved through LOSSAN realignment. This information will be used to guide the SD-LOSSAN Study, including the Sub Working Group's key considerations that include safety, resiliency and sustainability, service and connectivity, and passenger experience. And through discussion of four Key Questions, the Sub Working Group recommended that SANDAG keep the study findings in context of the *State Rail Plan* and corridor wide transportation plans, consider next generation equipment that is zero-emission for both passenger and freight, and continue to assume that the corridor will be shared with freight in the future. More information is provided in Section 2 and Appendix F.

In September 2019, the SANDAG Board of Directors approved \$3 million and in June 2020, Caltrans awarded a \$220,000 Sustainable Transportation Planning Grant for the SD-LOSSAN study, which includes local match.

Project Delivery Time Savings: California Coastal Commission and SANDAG Early Coordination

Assembly Bill 1282 of 2017 created a CalSTA-led interagency Transportation Permitting Task Force to explore ways to improve the efficiency and effectiveness of permitting for transportation projects while protecting California's natural, historic, and cultural resources⁸. In October 2020, CalSTA published the AB 1282 Transportation Permitting Task Force Final Report. The AB 1282 Task Force Final Report provided several recommendations to streamline the permitting process by strengthening interagency coordination and providing opportunities for early coordination between participating transportation and permitting agencies.

Through the LOSSAN Working Group, monthly coordination calls with the California Coastal Commission have provided the opportunity to prioritize upcoming projects and provide updates on projects that are in the construction phase. Approval for the Phase 4 project was originally received in early 2019. However, during the construction phase of this project, the design team observed a few high-risk areas to the bluffs in locations that previously did not appear to require immediate stabilization. Since the monthly

⁷ Office of U.S. Representative Mike Levin Press Release, "Rep. Mike Levin Hails House Passage of Water Resources Development Act": <https://mikelevin.house.gov/media/press-releases/rep-mike-levin-hails-house-passage-water-resources-development-act>

⁸AB 1282 Transportation Permitting Task Force Final Report 2019: <https://calsta.ca.gov/subject-areas/reports>

coordination calls were already occurring during this time, SANDAG and Coastal Commission staff were able to analyze these modifications together. The time-sensitive modifications were subsequently approved during a Coastal Commission hearing in July 2020, without causing a delay to the construction schedule and saving an estimated six to nine months.

The monthly coordination calls have also provided the opportunity for the design team to develop the Phase 5 project while receiving input from Coastal Commission staff along the way. This early coordination streamlines the permitting process by allowing all parties to work through potential alternatives, challenges, and mitigation ideas together before the application is formally submitted for the Coastal Commission's review in 2021.

U.S. Congressional and California State Legislative Engagement

In February 2020, Secretary Kim traveled to Washington, D.C. with Caltrans Director Toks Omishakin and California Transportation Commission Chair Paul Van Konynenburg to attend the 2020 American Association of State Highway and Transportation Officials (AASHTO) Washington Briefing. During the trip, the state transportation leadership delegation also met with U.S. House Transportation & Infrastructure Committee Chairman Peter DeFazio, U.S. Senator Kamala Harris, and several members of the California U.S. Congressional Delegation, to discuss federal surface transportation reauthorization and the LOSSAN Working Group's efforts on Del Mar Bluffs.

As the U.S. Congress considers federal surface transportation reauthorization, several Congressional transportation leaders have expressed the need to develop programs aimed at making transportation infrastructure more resilient to climate change, potentially presenting new federal funding opportunities for climate change-induced sea level rise resilience projects in the LOSSAN Corridor.

California's transportation leadership delegation emphasized to lawmakers that Del Mar Bluffs stabilization efforts present a prime example for highlighting climate resilience issues and the effects of sea level rise and coastal erosion on a nationally significant transportation corridor.

Additionally, the state transportation leadership delegation met with U.S. Representative Mike Levin who has been instrumental in securing USACE support for the Encinitas-Solana Beach Coastal Storm Damage Reduction Project to secure nearby coastal bluffs.⁹ The San Diego congressional delegation (Congresswoman Davis, Congressman Levin, Congressman Peters, Congressman Vargas) has joined to support the Del Mar Bluffs stabilization efforts over the past year, by submitting individual and joint letters of support for grant opportunities through the U.S. Department of Transportation (U.S. DOT), in addition to the USACE efforts. Of mention, in 2020, Congressman Levin coordinated advocacy with the San Diego congressional delegation to secure Federal Railroad Association funding for Del Mar Bluffs stabilization efforts and continues to play a key role in potentially securing USACE and U.S. Congressional involvement in Del Mar Bluffs stabilization.

Similarly, the San Diego region's state legislative delegation has helped to elevate the importance of the LOSSAN Corridor as part of California's resiliency and goods movement efforts. In 2019, California State

⁹ Office of U.S. Representative Mike Levin Press Release, "Rep. Mike Levin Announces New Federal Funding to Help Secure Coastal Bluffs": <https://mikelevin.house.gov/media/press-releases/rep-mike-levin-announces-new-federal-funding-help-secure-coastal-bluffs>

Senate pro Tem Toni Atkins secured \$6 million for Del Mar Bluffs stabilization work and in 2020.

Many members of the federal and state legislative delegations also have helped to secure grant funding through support of the project, including: Congresswoman Davis, Congressman Levin, Congressman Peters, Congressman Vargas, California Senate pro Tem Atkins, California Assemblymember Boerner Horvath, and California Assemblymember Todd Gloria. Representatives of these officials as well as the offices of Senator Kamala Harris, Senator Dianne Feinstein, California Senator Pat Bates, California Assemblymember Lorena Gonzalez, and California Assemblymember Brian Maienschein also participated in the LOSSAN Working Group meetings.

Working Group Initiatives

Five overall initiatives were priorities for the LOSSAN Working Group during its meetings:

Federal and State Legislative Coordination

The Working Group heard updates from U.S. Representative Mike Levin at each meeting, including updates on relevant legislation (e.g., HR 7575), and federal grant opportunities and outcomes. State agency staff regularly updated the Working Group on relevant state initiatives such as the TCEP program.

Transportation Funding Opportunities

Working Group briefings detailed potential funding and financing options for both the short-term stabilization efforts and long-term realignment, such as TCEP and Ocean Protection Council Proposition 68, federal opportunities through the U.S. DOT Build America Bureau, and alternative strategies such as I Bank.

Interagency Coordination

The Working Group encouraged interagency coordination at each meeting. One example of this was the regular update by SANDAG and California Coastal Commission (CCC) staff on coordination for accelerating specific stabilization project delivery.

Coastal Resiliency Programs

The Working Group also focused on efforts to address sea level rise and coastal resiliency in planning and projects, including the USACE shoreline restoration program and Planning Assistance for States program, Scripps Institute of Oceanography coastal mapping project, and the Proposition 68 coastal resiliency grant program.

Rail Service Plans and Future Corridor Improvements

Working Group discussions on future plans for the LOSSAN Rail Corridor put the need for stabilization and future realignment in context of the larger Southern California transportation network and beyond through discussions on SANDAG's 2021 Regional Plan, the LOSSAN Corridor-wide Optimization Study, and 2018 California State Rail Plan.

Individual meeting summaries are provided in Section 3 of this report and meeting agendas and materials are provided in Appendices G through J.

BACKGROUND AND NEED

Overview and Importance of LOSSAN Rail Corridor

National and Regional Significance

The LOSSAN rail corridor is the economic lifeline for the San Diego region and serves as a crucial link for national and international commerce. The 351-mile rail corridor stretches from San Luis Obispo to Los Angeles and San Diego, connecting major metropolitan areas of Southern California and the Central Coast. The corridor moves nearly eight million passengers per year and is the second busiest intercity corridor in the nation. BNSF Railway runs more than 30,000 freight cars per year along the corridor, carrying about \$1 billion worth of goods. The corridor plays a vital role in our nation's defense by providing rail access to the Pacific Fleet, a network of key military bases throughout San Diego County and the Port of San Diego. The corridor also provides access to the region's 43 miles of beaches and recreational areas.

The 60.1-mile San Diego Subdivision of the LOSSAN Rail Corridor extends from the Orange County line to the Santa Fe Depot in downtown San Diego. The Subdivision passes over six coastal lagoons, Camp Pendleton, and the cities of Oceanside, Carlsbad, Encinitas, Solana Beach, and Del Mar before its final destination in downtown San Diego. As a companion to Interstate -5, the LOSSAN Rail Corridor plays a critical role in the movement of people and goods within the region's North Coast Corridor. It is the only viable freight rail corridor linking San Diego with destination points north and east.

There is strong regional demand for bulk commodities including lumber, steel, cement, and paper to travel via rail. The Port of San Diego import of automotive shipments continues to grow, and bulk commodities moved to northern Baja California are increasing. The regional demand for heavy bulk goods, together with increased consumer demands, is expected to continue to increase and without additional rail services, much of the freight rail traffic will be diverted to truck. Inadequate rail capacity could limit the long-term growth of the Port of San Diego, with new customers and jobs moving to other West Coast Ports.

Train operations include Amtrak's state-supported Pacific Surfliner intercity passenger service; the Southern California Regional Rail Authority's Metrolink and the North County Transit District's COASTER commuter rail services; and BNSF Railway freight rail services. More than 60 trains operate in San Diego County daily, including more than 50 trains operating on the segment south of Oceanside, and more than 8 million passengers use the LOSSAN Rail Corridor services annually.

State and Regional Planning Context

To implement new rail services that will meet both existing customer needs and open new markets for rail, critical improvements are needed in areas that will benefit all users. These improvements build upon the \$884 million in investments made by SANDAG – partnering with the Federal Railroad Administration, CalSTA, Caltrans, NCTD, SDMTS, BNSF, and others – during the past 12 years, primarily to add track capacity. These investments have resulted in the construction of 14 miles of double track. Currently 74 percent of the San Diego Subdivision has been double tracked.

The *2018 California State Rail Plan* establishes a long-term vision for prioritizing state investment in an efficient, effective passenger, and freight rail system. The Rail Plan identifies service goals, capital costs, and a phased strategy for achieving this vision to fundamentally change how passengers make travel choices. The LOSSAN Rail Corridor is a key corridor in attaining the goals outlined in the Rail Plan through an integrated and multimodal rail system that capitalizes on the past and future investments along the San Diego Subdivision.

San Diego Forward: The Regional Plan also includes improvements to the LOSSAN Rail Corridor in San Diego County such as additional track capacity, safety enhancements, and station improvements. This plan was last updated and approved by the SANDAG Board of Directors in 2019, with the next update currently underway and expected to be approved in late 2021. LOSSAN Corridor improvements continue to be an important component of the regional plan.

Goods movement on this corridor is also expected to increase significantly from four to six daily trips currently, to 16 daily trips over the next eight years. In June 2020, NCTD and BNSF completed a detailed study, *Freight pathing between CP Atwood and the Port of San Diego and passenger service extensions south of San Diego*. This study shows how freight service can be increased through key targeted investments to address both current and future needs. The freight pathing study is consistent with state, corridor, and regional goals for additional freight and passenger rail services to meet future demand.

Additionally, improvements to the LOSSAN Corridor provide opportunities to upgrade trainsets to cleaner zero- or near-zero emission technology. For example, NCTD has completed a vehicle technology study and intends to pursue the procurement of zero-emission technology as an option for the new SPRINTER fleet that will be designed to meet Federal Railroad Administration standards to support dual operations on both the coastal and inland railroad.

NCTD anticipates advancing this procurement in the 2028-2030 timeframe. The trainsets will have a 20-year lifecycle. NCTD and BNSF agree that the focus should be on achieving near- or zero-emissions on the locomotive without significant wayside investments such as catenary systems. BNSF is also requesting NCTD and other transit agencies to consider participation in a project to re-power a diesel locomotive with a battery electric propulsion system.

Further, at the July 15, 2020 LOSSAN San Diego Regional Rail Corridor Working Group Meeting, CalSTA Chief Deputy Secretary for Rail and Transit Chad Edison provided a presentation Emerging Technologies for Rail Rolling Stock with a focus on zero-emission technology (Appendix I).

Del Mar Bluffs Track Segment

A 1.7-mile single track railroad segment of the LOSSAN Rail Corridor is in the City of Del Mar and runs on a terrace atop a 50' to 70' high coastal bluff. This segment was originally constructed on the Del Mar Bluffs in 1912. New track material was installed prior to implementing the COASTER commuter rail service in 1995. Currently, the distance from the centerline of the track to the edge of the bluff ranges from 15 feet to 70 feet throughout the project area. This segment is subject to ongoing erosion and localized slope failures, narrowing the distance between the tracks and the edge of the bluff over time and requiring stabilization of the track bed.

Since 1998, NCTD and SANDAG have implemented a multi-phase approach to preserving the track bed along the Del Mar Bluffs (see Figure 3, project area map). Detailed geotechnical studies conducted during this time served as the basis for the first three phases of stabilization construction that occurred since 2001. In general, the bluffs are expected to retreat at an annual average rate of up to 6 inches per year. However, the retreat occurs in episodes - several block failures and surface slides have occurred since August 2018, including significant damage from winter storms in November 2019. After each event, the corridor is closed to all train traffic while an inspection is completed, which causes transportation and economic impacts throughout the San Diego region.

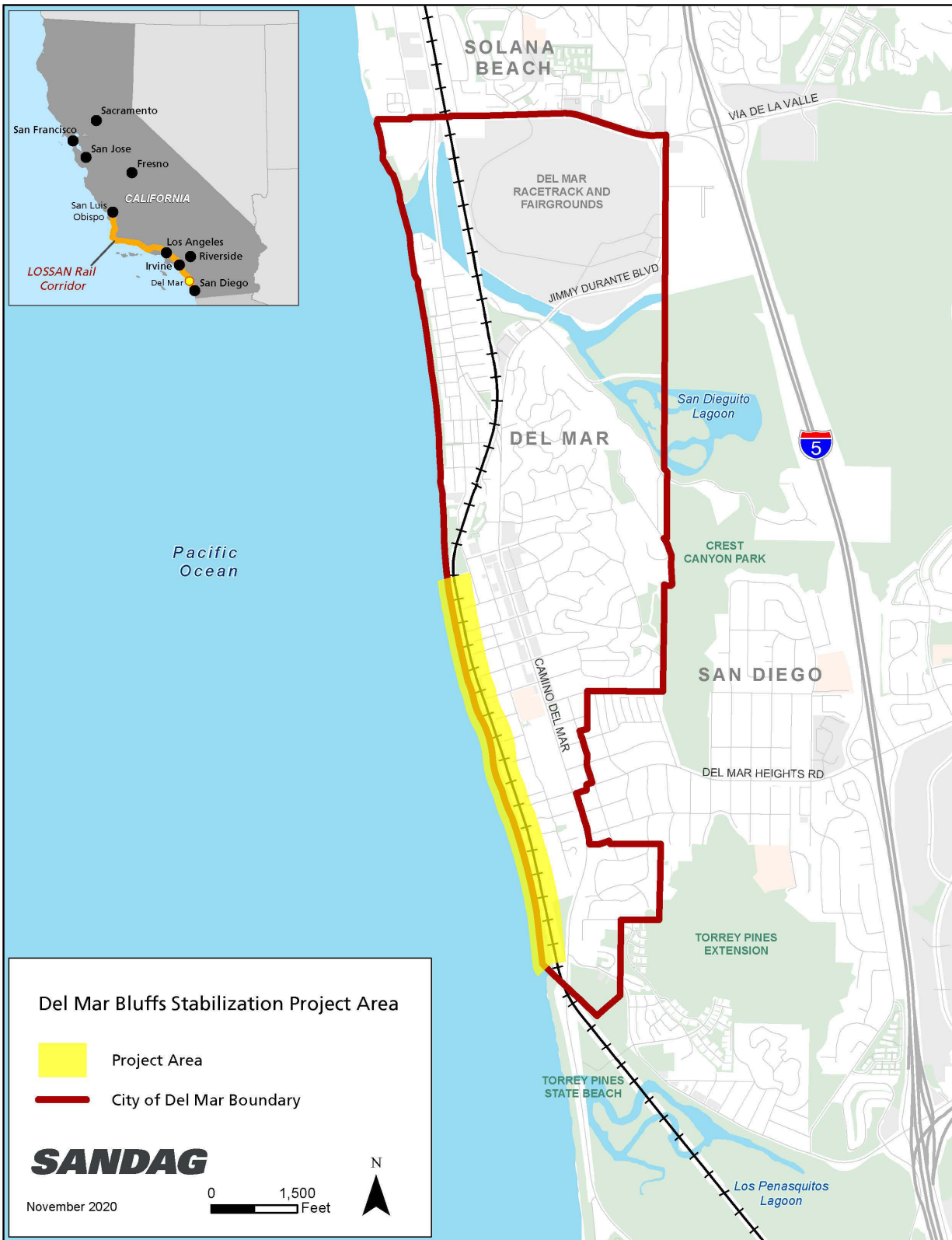


Figure 3: Project Area

In addition to seismic and slope failure concerns, the large storm events that occurred during the winters of 2018/2019 and 2019/2020 have led to multiple bluff slides and train service interruptions. The bluffs are a receiving point for significant storm water runoff coming from Del Mar Hill. Figure 4 shows the bluff slide during a major rain event on Thanksgiving weekend 2019 resulting from surface drainage over the bluffs, and Figure 5 shows recent bluff retreat.



Figure 4: Bluffslide, November 2019

Eventually, bluff retreat could threaten the viability of rail service if measures to preserve the portion of the bluff that supports the tracks are not implemented. As part of this multi-phase approach, NCTD first completed an emergency repair in 2001, followed by drainage improvements and installation of a landslide warning system in 2003, and the installation of soldier piles in 2007 and 2010. These stabilization projects saw the installation of nearly 250 support columns into the bluffs and critical investments into drainage infrastructure to help reinforce and protect the Del Mar Bluffs. SANDAG began construction of the fourth phase of improvements in March 2020. The \$6 million project is installing support columns that will stabilize localized areas and sea walls, construct a drainage channel on top of the bluffs, repair concrete channels and storm chute outfalls, and stabilize existing headwalls. Improvements are expected to be completed in late 2020. Figure 6 shows past and current stabilization efforts.



Figure 5: Bluff retreat

Del Mar Bluffs Past and Future Stabilization Efforts



The LOSSAN Corridor in San Diego also serves as one of the region's main fiber optic corridors that is located alongside the tracks. These are systems used by SANDAG, the State of California (Caltrans), NCTD, SDMTS, and Verizon Wireless. If a slope or seismic failure took out the track and all the fiber optic, communications would be disrupted for all parties listed above, and Positive Train Control, the system that monitors and controls train movements, would not function until the lines were repaired.

Benefit Cost Analysis

Bluff retreat is certain and not only occurs gradually but in specific episodes, which have varying degrees of disruption to rail service, but absent stabilization collapse is predicted. Even when the tracks themselves are not visibly affected, train service is disrupted periodically when areas of the bluff close to the tracks collapse, necessitating an engineering inspection to ensure trains can still safely pass. It is also not easy to accurately estimate how severe a collapse of the bluffs would be, how much track would be affected, and how long the disruption would last. However, the cost of the Project can be compared to the severity of the economic loss that would be potentially incurred if stabilization improvements are not undertaken and the Del Mar Bluffs collapsed at some point. The benefits of the Project are in avoided costs of more serious repairs to the tracks and related infrastructure that would occur should the bluffs fail, and in the economic disruption that such a failure would entail to the second-busiest rail corridor in the United States.

The types of costs associated with a track failure in the bluffs area include:

1. The cost to repair the tracks;
2. The cost to the passenger train operators to operate a "bus bridge" to carry passengers around the failed track;
3. The additional cost to freight haulers to carry cargo by truck;
4. Marginal delay and associated costs in the parallel highway corridor due to re-routed passenger and freight traffic, and the delay to passengers using the "bus bridge";
5. Probable major regional telecommunications disruptions due to the fiber optic cable being in the same right-of-way as the tracks.
6. Probable tourism losses in the immediate area of the bluff failure, due to both the negative safety implications and the disruption from major construction activity in the area, and regionwide due to transportation difficulties.
7. The cost in injuries, loss of life and property damage of a catastrophic bluff collapse while a train is passing, injuring passengers, operators, nearby pedestrians and damaging property and facilities. LOSSAN Working Group members recalled historic instances of bluff collapses resulting in fatalities on Torrey Pines Beach, on the beach in Del Mar (north bluff), and on the beach in Encinitas. In January 1941, a train derailed off the Del Mar Bluffs as due to a bluffs collapse.¹⁰

¹⁰ "ON NEW YEAR'S EVE IN 1940, residents were in a festive mood and there were parties everywhere. "It had rained for several days, and the ground was soaked. "Shortly after 8 p.m., a passenger train passed through the village heading south. Less than 45 minutes later, a northbound freight train plunged down a 65-foot embankment when a bluff collapsed at the foot of Ninth Street:
http://delmarsandpiper.org/Pages/News2012_02/February2012_07.html

Figure 7 shows a COASTER train passing over the emergency repair implemented by SANDAG and NCTD following bluff failure in 2019.



Figure 7: Emergency repairs from November 2019 bluff failure

Short-Term Stabilization

Design for Phase 5 stabilization efforts is underway by SANDAG. This phase will include the installation of additional piles to support the railroad track bed and reinforce the bluffs. The project will also include the installation of lagging and retaining walls, drainage improvements including new or modernized outlets to the beach, and other stabilization and erosion control measures on the upper bluffs. This stabilization effort is especially critical in protecting the bluffs in the event of an earthquake or large rainfall event.

Figure 8 shows an aging drainage structure scheduled to be replaced in Phase 5.

Total project cost is \$66 million and SANDAG has secured funds from the California Natural Resources Agency, Federal Railroad Administration State of Good Repair Program, and the California Transit and Intercity Rail Capital Program and Trade Corridor Enhancement Program. Design is expected to be complete by mid-2022 and construction is expected to be completed by late 2023.

Phase 6 includes additional stabilization of the bluffs and is anticipated to include minor slope grading and landscaping and installation of bluff toe protection (Figure 9). Phase 6 proposes to incorporate replacement and/or



Figure 8: Drainage structure slated for replacement

enhancement of existing toe protection as well as add new toe protection as a means to address the rising sea levels and extend the useful life of the current track alignment. While bluff toe protection fixes the back of the beach, it is a feasible means of protecting the base of the bluffs from wave-based erosion and can be more readily removed when the tracks are relocated in the future. In addition to toe protection, the project proposes regrading of the slopes and slope revegetation to improve overall slope stability. Stability improvements will protect the slopes from surface water runoff and groundwater flowing from the upstream neighborhood to the east. The need for increased protection from storm water runoff was highlighted by rapid slope erosion that occurred at two locations during a rain event on Thanksgiving weekend 2019, causing interruptions in rail service.



Figure 9: Areas of bluff failure to be repaired in Phase 6

Slope stability enhancements and protection of the bluff toe, in conjunction with previous stabilization efforts, will extend the life of the track structure and allow for continued utilization of this portion of the LOSSAN corridor for passenger and freight rail services.

The sea continues to erode the base of the bluffs resulting in bluff slides. California's coast faces a significant risk of experiencing sea level rise of up to 1.0 feet by 2030 and 7.6 feet by 2100.¹¹ With anticipated sea level rise, this retreat is anticipated to accelerate.

The second deficiency is that the existing piles are designed to prevent deep seated landslides under the tracks, and there are limits to the vertical height that can be exposed in the future. The Phase 6 stabilization project proposes to include stabilization of the bluff toe in order to support the long-term protection of the piles. Should the bluff continue to erode at 6 inches per year, then the top 15 feet of the piles will become exposed within 30 years at areas where the bluff edge is currently at the pile line. This is the maximum unsupported height that the pile wall can support as currently designed.

Existing retaining walls at the toe of the bluffs are currently between 80 and 100 years old and are becoming unstable and need to be replaced and/or retrofitted. Additionally, the walls are proposed to be extended as part of Phase 6 to protect all the piles.

¹¹ California Natural Resources Agency (and participating agencies), "Making California's Coast Resilient to Sea-Level Rise: Principles for Aligned State Action": <https://www.slc.ca.gov/press-release/state-lands-commission-adopts-principles-for-aligned-state-action-to-make-californias-coast-resilient-to-sea-level-rise/>

Long-Term Realignment

While multi-agency efforts continue to secure funding to complete bluff stabilization discussed in the previous section, the long-term outlook for this section of the LOSSAN Rail Corridor is to realign the corridor away from the sensitive coastal bluffs by 2050.

In 2017, SANDAG completed the *Conceptual Engineering and Environmental Constraints for Double Track Alignment Alternatives Between Del Mar Fairgrounds and Sorrento Valley*, which evaluated five potential tunnel alignments. Each alignment would include two tracks and run between San Dieguito Lagoon south through Los Penasquitos Lagoon to Sorrento Valley (Figure 10). The study also addressed key aspects such as emergency access and ventilation. Total project cost estimates ranged between \$2.5 billion and \$3.5 billion (in 2017 dollars).

In July 2020, SANDAG initiated the *San Diego Regional Rail Corridor Alternative Alignment and Improvements Conceptual Engineering Study (SD-LOSSAN)* to identify improvements along the entire 60.1-mile subdivision to reduce travel times, enhance safety, and increase track capacity. While the focus of the study is on the southernmost segment of the LOSSAN Rail Corridor, it is important to look to the *State Rail Plan* and other corridor-wide plans to determine the benefits of improvements in San Diego in the context of the larger LOSSAN corridor and Southern California rail network.

One component of the SD-LOSSAN study is to further refine the alternative alignments in the Del Mar segment of the corridor. Specifically, the study will address these components:

- Updated mapping, utilities
- Updated communications, signals
- Updated evaluation criteria and alternatives analysis
- Preliminary drainage report



Figure 10: Realignment alternatives

- Geotechnical
- Noise and vibration
- Right of way requirements
- Rail equipment analysis
- Cost estimates
- Visual simulations
- Environmental approach
- Economic impact analysis

The study is expected to conclude in early 2022; however, the Del Mar alternative alignments analysis is expected to be finalized in mid-2021.

The Long-Term Subcommittee of the LOSSAN Regional Rail Working Group has provided overall guidance and advice for the SD-LOSSAN study including developing these Key Objectives:

- Enhancing safety and resiliency
- Improving passenger and freight capacity
- Reducing travel time and improving passenger service reliability as necessary to meet connectivity and ridership goals
- Providing greater connectivity to mobility hubs and job centers
- Meeting long-term sustainability goals through mode shift to rail from roads
- Protecting the environment and preserving the ecology and natural beauty of the region

Appendix F provides the Key Questions discussions by the Long-Term Sub Working Group.

Funding Outlook to Complete Stabilization Efforts

At the onset of the LOSSAN Regional Rail Working Group in January 2020, there was a need of \$100 million to complete the Del Mar Bluffs Stabilization work (Phases 5 and 6). Through the efforts of the LOSSAN Working Group, this funding has successfully been identified (as shown in the table below).

Funding Identified for Del Mar Bluffs Stabilization (Phases 5 and 6)	
Phase 5	\$Million
California Natural Resource Agency	\$3.1
Federal Railroad Administration	\$11.5
Transit and Intercity Rail Capital Program	\$4.9
Trade Corridor Enhancement Program	\$36.2
NCTD Local Match	\$9.5
Phase Total:	\$65.2
Phase 6	
NCTD	\$10.0
SANDAG	\$10.0
USACE Feasibility and Construction/Other Grants/Project Savings	\$13.5
Phase Total:	\$33.5
Total:	\$98.7

SANDAG will continue to partner with NCTD to seek any remaining needed funding. In addition, SANDAG will continue to work with its state and federal legislative delegations to encourage the creation of dedicated resiliency funding for critical infrastructure needs.

From wildfires to sea level rise and mudslides, some of California's most vital transportation connections are increasingly vulnerable to natural threats. Yet, there is no dedicated funding to proactively protect these systems – and the millions of people and goods they serve – from failure.

SANDAG is also pursuing a partnership with the USACE to support future stabilization work. Earlier this year, SANDAG and NCTD submitted a joint Letter of Intent for the final bluff stabilization project to be considered as a USACE Feasibility Study. Many members of the LOSSAN Working Group submitted letters in support and Congressman Levin scheduled a tour of the project with Commander Julie Balten for December 2020, but the tour was postponed due to the worsening COVID-19 public health situation and the stay-at-home order.

In order to be chosen as a study, the project must be included in the USACE Work Plan with funding that is approved by USACE and the Office of Management and Budget. This decision will likely be undertaken in late-2020/early-2021 after an appropriations bill is signed.

To complement these efforts, SANDAG and NCTD have also submitted a Letter of Interest to the USACE under the Planning Assistance to the States Program for coastal modeling and planning and engineering efforts.

Funding For Long-Term Solution

Erosion of the Del Mar Bluffs has underscored the immediate need to identify a long-term realignment solution for the LOSSAN San Diego regional rail corridor. In 2019, the SANDAG Board of Directors approved \$3 million, and in 2020, the California Department of Transportation (Caltrans) awarded nearly \$200,000, to study ways to reduce travel times, enhance safety, and add capacity along the entire San Diego segment of the corridor. A large component of the study is to evaluate alternative strategies to move the tracks completely off the bluffs. In summer 2020, SANDAG began the San Diego Regional Rail Corridor Alternative Alignment and Improvements Conceptual Engineering Study (SD-LOSSAN), which will further evaluate these alternatives.

The LOSSAN Working Group reviewed several options for funding the long-term solution for the LOSSAN Corridor, including presentations on the Gateway Program, U.S. DOT Build America Bureau, and the California Infrastructure and Economic Development Bank (I Bank).

The Gateway Program is a comprehensive rail investment program to improve current services, add resiliency and create new capacity for a critical section of Amtrak's Northeast Corridor – the most heavily used passenger rail line in the country. Former U.S. DOT Deputy Secretary John Porcari, who also served as Interim Executive Director of the Gateway Development Corporation from July 2016 until early 2019, provided insights gleaned from his experience with the Gateway Program regarding corporate governance, project funding and financing, success factors, and lessons learned.

The Build America Bureau serves as U.S. DOT's single point of contact and coordination for states, municipalities, and other project sponsors seeking federal transportation expertise. As noted on the Build America Bureau's website, the Bureau exists to help project sponsors "leverage available U.S. DOT credit and funding programs, explore innovative project delivery approaches like public-private partnerships (P3s), and navigate project development processes like permitting."¹²

I Bank provides financial assistance to support infrastructure and economic development in California through a portfolio of loans, bonds, guarantees, and other tools. Depending on the transit-oriented development and/or public-private partnership opportunities included in the final design for the project, I Bank or other state programs like the Solutions for Congested Corridors or Transit and Intercity Rail Capital Program could offer funding opportunities for the long-term solution.

Other options for funding could include financing through federal programs such as the Railroad Rehabilitation & Improvement Financing (RRIF) or Transportation Infrastructure Finance and Innovation Act (TIFIA) loan programs. Utilizing loan programs like these could help to leverage other federal and local funds for the project, allowing the overall cost of the project in terms of potential debt service to be significantly less.

Next Steps

As of December 2020, SANDAG has held four Project Development Team (PDT) meetings for the San Diego Regional Rail Corridor Alternative Alignment and Improvements Conceptual Engineering Study, the first of which was held on September 17, 2020. The PDT includes staff from SANDAG, NCTD, BNSF Railway, MTS, LOSSAN Rail Corridor Agency, Southern California Regional Rail Authority (SCRRA), Federal Railroad Administration, and Caltrans.

The draft Project Study Report (PSR) for the Del Mar realignment alternatives will be available in spring 2021 and will include a technical evaluation of potential realignment alternatives, alternatives to be studied further, cost estimates, and potential implementation schedule pending funding. A draft PSR for the Miramar Hill realignment alternatives with similar analyses will be available in summer 2021. Both technical evaluations will be part of the larger corridor wide study, a draft of which is expected to be completed in December 2021. Public outreach is anticipated to be ongoing throughout the study. The final study will also include reports on existing conditions, operational feasibility, basis of design, service plans, operations technical analysis, higher speed technical evaluation, phasing and implementation plan, and economic impact analysis.

Although the timing of when the tracks will be relocated is contingent on available funding, the proposal to move the rails off the Del Mar Bluffs will be included in 2021 Regional Plan which serves as the long-term road map for regional transportation planning. The SANDAG Board of Directors will be asked to adopt this Regional Plan in late 2021.

To continue to build on the incredible success of the LOSSAN Regional Rail Working Group, SANDAG intends to form an executive-level task force in 2021, comprised of representatives from many of the agencies that participated in the LOSSAN Working Group this year. A technical level working group of staff from these agencies will support the ability of this task force to explore the key policy decisions that will allow the rail

¹² <https://www.transportation.gov/buildamerica/>

corridor to ultimately be moved off the Del Mar Bluffs. The multi-agency coordination and collaboration that was initiated under the LOSSAN Working Group will continue to be an integral part of this work, as well as the invaluable contributions of the region's state and federal legislative delegations.

WORKING GROUP MEETING SUMMARIES

January 21, 2020 LOSSAN San Diego Regional Rail Corridor Working Group Meeting

Appendix G includes the agenda, meeting notes and presentations provided at the January 21, 2020 LOSSAN San Diego Regional Rail Corridor Working Group Meeting. The meeting was held at the San Diego Association of Governments Board Room, 401 B St. #800, San Diego, CA 92101.

SANDAG Executive Director Hasan Ikhata, NCTD Executive Director and CEO Matt Tucker and SANDAG Principal Engineer & Corridor Director Bruce Smith provided an overview of Del Mar Bluffs stabilization efforts. The presentation described passenger and freight operations within the LOSSAN Rail Corridor San Diego Subdivision. The presentation also summarized projects undertaken to stabilize the 1.7 mile Del Mar Bluffs stretch of the Corridor since 2000, costing \$15 million for drainage improvements and bluff stabilization on 30 percent of the bluffs. Additionally, the presentation described the \$6 million Del Mar Bluffs 4 project underway, and planned work on Del Mar Bluffs 5 and 6 with an estimated cost of approximately \$100 million.

Caltrans Acting Division Chief of Rail and Mass Transit Angel Pyle provided an overview of state transportation funding programs for which Del Mar Bluffs stabilization projects would be eligible. Many of the programs Ms. Pyle presented, such as the TCEP, were created by Senate Bill (SB)1, the Road Repair and Accountability Act of 2017, and are overseen by the California Transportation Commission. Secretary Kim stated he would reach out to the California Natural Resources Agency (CNRA) regarding other climate resilience and sea level rise programs that might address bluffs stabilization.

SANDAG Director of Government Relations Victoria Stackwick summarized federal funding opportunities for both near-term bluffs stabilization and long-term Corridor realignment. Ms. Stackwick provided information about several U.S. DOT grant programs, including the Federal Railroad Administration's State of Good Repair program and Railroad Rehabilitation & Improvement Financing (RRIF) loan program. She also discussed USACE shoreline preservation efforts, U.S. Congressional surface transportation reauthorization activity and how the LOSSAN Corridor's STRACNET designation might leverage federal grant funding. Secretary Kim offered to contact USACE to request a briefing for the LOSSAN Working Group on USACE's civil works project delivery process and to also contact the U.S. Department of Defense regarding funding associated with STRACNET designation.

SANDAG Principal Regional Planner Linda Culp provided information regarding SANDAG's Long-Term San Diego Regional Rail Alternative Alignment Study to be completed in 2022.

Former U.S. DOT Deputy Secretary and Interim Executive Director of the Gateway Development Corporation (GDC) John Porcari provided lessons learned from the Gateway Program and insights on federal funding and financing programs for infrastructure megaprojects.

April 23, 2020 LOSSAN San Diego Regional Rail Corridor Working Group Meeting

Appendix H includes the agenda, meeting notes, and presentations provided at the April 23, 2020, LOSSAN San Diego Regional Rail Corridor Working Group Meeting. The meeting was conducted via WebEx due to COVID-19 travel restrictions and social distancing requirements.

Secretary Kim updated the LOSSAN Working Group regarding 1) late-February/early-March 2020 meetings in Washington D.C. with members of California's U.S. Congressional Delegation to discuss the Del Mar Bluffs; 2) a \$4.9 million TIRCP grant awarded for Del Mar Bluffs stabilization efforts; 3) a letter from U.S. TRANSCOM explaining the significance of the LOSSAN Corridor's STRACNET designation.

Mark Gold, Deputy Secretary of Oceans and Coastal Policy with the CNRA briefed the *LOSSAN Working Group* on California's Current Efforts on Sea Level Rise and Coastal Resilience. In January 2020, CNRA approved the Strategic Plan for Coast & Ocean for the State of California. The Strategic Plan provides performance targets and an integrated approach for addressing sea level rise. Specific performance targets include:

- Ensure California coast is resilient to 3.5-foot sea level rise by 2050.
- Develop a site-specific infrastructure resiliency plan focused on state roads, wastewater treatment plants, water supply facilities, ports, and power plants by 2023.
- 10,000 new acres of coastal wetlands will be protected, restored, or created by 2025. California coastal wetland acreage will increase by 20 percent by 2030 and 50 percent by 2040.
- Update California's scientific Sea Level Rise Guidance with the best available science in 2023.
- All coastal counties and regions should develop and adopt coastal resilience plans or elements by 2023.
- Identify and fund a variety of pilot coastal resilience projects starting in 2021.

Next steps in the State's sea level rise strategy include a Climate Resilience Bond included in the Governor's 2020-21 Budget¹³. There was also discussion of SB 1100, which would establish a comprehensive sea level rise program in state government.

USACE Los Angeles District Chief of Planning Eduardo T. De Mesa provided a presentation entitled Storm Damage Reduction: Civil Works Project Delivery Process. Mr. De Mesa discussed USACE coastal restoration projects, including Congressionally authorized feasibility studies in Encinitas, Solana Beach, and San Clemente. In San Clemente, Mr. De Mesa noted that potential damage to the LOSSAN Rail Corridor was the primary justification for undertaking the study.

Mr. De Mesa outlined the 36-month USACE SMART feasibility study process, which must precede U.S. Congressional authorization and appropriation of funding for USACE construction projects.

In response to a question from Secretary Kim, Mr. De Mesa stated that Congressional authority for the San Clemente study could be used as a justification to request funding for a study of Del Mar, but for USACE to undertake such a study would require a local sponsor. NCTD's Matt Tucker noted that collaborating with USACE could be an option for specific portions of the Del Mar Bluffs Phases 5 and 6 stabilization projects if not all the funding for both these phases could be secured at once.

Congressman Levin updated the LOSSAN Working Group on U.S. Congressional activity and response to COVID-19, including the possibility of federal COVID-19 recovery legislation that might include infrastructure funding.

¹³ Climate Resilience Bond – Governor's Budget Summary 2020-21: <http://www.ebudget.ca.gov/2020-21/pdf/BudgetSummary/ClimateResilience.pdf>

California Assemblymember Tasha Boerner Horvath provided a State Legislative update, including her work on the Select Committee on Sea Level Rise and the California Economy. Assemblymember Boerner Horvath noted that she was a member of the Climate Resilience Bond Working Group. SANDAG Principal Regional Planner Linda Culp stated that the SANDAG Board previously approved \$3 million for the long-term study, and that a Sustainable Transportation Planning Grant application to fund the long-term study was pending at Caltrans (Note: In June 2020, Caltrans awarded a \$220,000 Sustainable Transportation Planning Grant for the long-term study, which includes local match).

Keith Greer from SANDAG and Kanani Leslie from the California Coastal Commission provided a brief update regarding monthly early coordination meetings between SANDAG and the Coastal Commission to streamline the environmental review process while protecting coastal resources. CalSTA Senior Advisor Giles Giovinazzi noted that CalSTA, CNRA, and the California Environmental Protection Agency (CalEPA) were in the process of finalizing the AB 1282 Transportation Permitting Task Force. Mr. Giovinazzi noted that the Task Force Report would likely emphasize the project delivery time savings benefit of early coordination between project sponsors and resource agencies, and that SANDAG and Coastal Commission coordination through the LOSSAN Working Group may be an opportunity to highlight this point.

CalSTA Senior Advisor Giles Giovinazzi announced to the group that the Long-Term Sub Working Group would be convening to discuss Key Questions and Objectives to support alignment of state, regional, and local objectives for the LOSSAN Corridor long-term solution. LOSSAN Corridor realignment alternatives would not be decided by the Long-Term Sub Working Group, but the Sub Working Group would discuss various operational goals and objectives for the LOSSAN Corridor San Diego Subdivision.

Key Questions for the Long-Term Sub Working Group include: What are the key objectives we hope to achieve through long-term realignment of the LOSSAN Corridor? What purpose do we want the future of LOSSAN Rail service to serve in the San Diego region? (More questions were included in a document sent out to the group).

July 15, 2020 LOSSAN San Diego Regional Rail Corridor Working Group Meeting

Appendix I includes the agenda, meeting notes and presentations provided at the July 15, 2020, LOSSAN San Diego Regional Rail Corridor Working Group Meeting. The meeting was conducted via WebEx due to COVID-19 travel restrictions and social distancing requirements.

Secretary Kim updated the LOSSAN Working Group that the Federal Railroad Administration awarded SANDAG and NCTD an \$11.57 million State of Good Repair program grant (that included an \$11.57 million in non-federal matching funds) for Del Mar Bluffs Phase 5 stabilization work. Additionally, Secretary Kim asked LOSSAN Working Group members to provide support letters for SANDAG and NCTD's request that USACE undertake a feasibility study for the Del Mar Bluffs Stabilization project.

Keith Greer from SANDAG and Kanani Leslie from the California Coastal Commission informed the LOSSAN Working Group that they had been meeting regularly to coordinate on Del Mar Bluffs Phases 4, 5, and 6. The Commission was prepared to start reviewing the emergency work that was performed on the

Bluffs in late-2019. Additionally, SANDAG and the California Coastal Commission discussed setting up a meeting between the Commission, SANDAG, and NCTD to discuss potential mitigation for the project.

University of San Diego Scripps Institution of Oceanography Project Scientist Dr. Adam Young provided a presentation on the Scripps Coastal Mapping Program and data collected in Del Mar. Dr. Young summarized findings based on weekly lidar surveys of the Del Mar coastline starting in March 2017. Dr. Young noted that development along the bluffs such as seawalls and the coastal railway has eliminated 40 percent of cliffs as a sand source, and that damming and urbanization have eliminated 60 percent of the watershed as a sand source. Narrow and thin beaches make the bluffs more vulnerable to erosion and landslides are caused by waves, groundwater, and rainfall. The Scripps study, recently published (Young et al., 2021),¹⁴ examines beach levels, data from wave sensors, and weekly lidar data to quantify the relationship between the waves, rainfall, and bluffs erosion. Comparing the lidar surveys over time enables researchers to detect landslides from week to week. During the three year study period Dr. Young detected over 4000 erosion events ranging up to 1150 yd³.

James Campbell, Deputy Managing Director at LOSSAN Rail Corridor Agency and Ulrich Leister from DB Engineering provided the LOSSAN Working Group a presentation on the LOSSAN Optimization Study and the NCTD/BNSF Freight Pathing and Passenger Service Extension Study (Freight Pathing Study).

The LOSSAN Optimization Study addresses rail service coordination and integration improvements, such as pulse scheduling, to achieve service availability, connection reliability, and schedule consistency goals for the LOSSAN Corridor established in the *2018 California State Rail Plan*. The LOSSAN Optimization Study also identified key infrastructure concerns that restrict the Corridor's capacity needed for achieving *State Rail Plan* goals.

As part of the LOSSAN Optimization Study, the Freight Pathing Study examined freight and passenger service to the Port of San Diego, and service quality improvements that can be delivered through targeted investments.

The State Transportation Funding Options Sub Working Group provided its final strategy for pursuing a TCEP grant for Del Mar Bluffs stabilization. The LOSSAN-SD Intermodal Improvement Program TCEP application was specifically developed to implement portions of the Freight Pathing Study and includes targeted improvements to the LOSSAN San Diego Subdivision highlighted in the Freight Pathing Study. Additionally, the Sub Working Group rescoped Del Mar Bluffs Phase 5 to advance additional stabilization work for funding within the funding years covered by the 2020 TCEP Cycle.

Congressman Levin updated the LOSSAN Working Group on U.S. Congressional activity, and he informed the group that he secured language in section 201 of H.R. 7575, Water Resources Development Act of 2020 for a USACE feasibility study of Del Mar Bluffs shoreline stabilization.

Infrastructure State Revolving Fund (ISRF) Program Manager Lina Benedict provided a presentation on the California Infrastructure & Economic Development Bank (I Bank). Ms. Benedict provided an overview of programs, including Direct Loan Financing, Direct Green Financing, Conduit Revenue Bond Financing, and Small Business Support. I Bank can fund all infrastructure projects except housing. I Bank's primary

¹⁴ Young, A.P., Guza, R.T., Matsumoto, H., Merrifield, M.A., O'Reilly, W.C. and Swirad, Z.M., 2021. Three years of weekly observations of coastal cliff erosion by waves and rainfall. *Geomorphology*.

bond types include exempt facility bonds, which can be used for airports, ports, streets, highways, public transit, water infrastructure, sewage, and other types of infrastructure. Ms. Benedict noted that I Bank recently provided \$15 million in financing for the Del Mar fairgrounds and approved \$3.25 billion in Exempt Facility Bonds for the California portion of the XpressWest Virgin Trains High Speed Rail project.

In response to a question from Secretary Kim regarding I Bank's loan capacity, Ms. Benedict responded that I Bank does not have a maximum capacity for lending. In response to a question from Del Mar City Councilmember Dwight Worden, Ms. Benedict noted that I Bank did not have any defaults to date. In response to another question from City Councilmember Worden, Ms. Benedict stated that security for projects would depend on repayment source.

The Long-Term Sub Working Group's update to the LOSSAN Working Group included a presentation from CalSTA Chief Deputy Secretary for Rail and Transit Chad Edison on Emerging Technologies for Rail Rolling Stock (with a focus on zero-emission technology).

October 27, 2020 LOSSAN San Diego Regional Rail Corridor Working Group Meeting

Appendix J includes the agenda, meeting notes and presentations provided at the October 27, 2020, LOSSAN San Diego Regional Rail Corridor Working Group Meeting. The meeting was conducted via WebEx due to COVID-19 travel restrictions and social distancing requirements.

Secretary Kim recapped the LOSSAN Working Group's progress throughout 2020 and stated that he expected the Working Group to meet one more time in December to review a final report. Secretary Kim noted that the LOSSAN Working Group started 2020 with an urgent need to repair emergency storm damage along the bluffs, with a \$100 million estimated costs to stabilize the bluffs for the next three decades. The Working Group secured grants for Del Mar Bluffs stabilization from the Federal Railroad Administration and through CalSTA's TIRCP program.

This LOSSAN Working Group has also set the stage for regionally led discussions of long-term solutions for the LOSSAN Corridor, which may include realigning the Corridor off the Del Mar Bluffs. To inform future discussions of long-term solutions, which could entail undertaking a multi-billion-dollar investment, Secretary Kim invited representatives from U.S. DOT's Build America Bureau to provide an overview of federal infrastructure financing programs.

SANDAG's Laurie Grover reminded the Working Group that SANDAG submitted a Letter of Interest to partner with USACE on a Feasibility Study for the final phase of the Del Mar Bluff Stabilization efforts. While SANDAG is waiting for a response from USACE on its Feasibility Study Letter of Interest, SANDAG is also pursuing a complementary path to working with USACE through its Planning Assistance for States (PAS) Program. Through the PAS program, SANDAG could receive assistance to aide in some of the technical analyses needed for Del Mar Bluffs Stabilization, such as coastal modeling, and other planning and engineering efforts. Following the Working Group meeting, SANDAG will circulate draft letters of support for its USACE PAS application.

SANDAG also applied to the Ocean Protection Council's Proposition 68 Coastal Resilience Grant Program for the San Diego Region Adaptation Strategy Planning: Regional Beach Sand Replenishment Study (Project). The Project would leverage information from local and regional sea level rise adaptation plans, beach monitoring data from SANDAG's Regional Shoreline Monitoring Program, and interviews with

stakeholders to determine appropriate sites, quantities of sand, and benefit-cost analyses for future beach sand replenishment along the region's coastline. SANDAG will seek support letters from Working Group members for its Proposition 68 Coastal Resilience Grant Program application.

Additionally, since the July 2020 LOSSAN Working Group meeting, SANDAG hosted CTC Chair Hilary Norton and Caltrans Director Toms Omishakin to tour the Del Mar Bluffs.

Kanani Leslie from the California Coastal Commission briefed that Commission staff met with SANDAG and NCTD on July 22, and August 19, to discuss the Del Mar Bluffs 5 project. The Commission also met with SANDAG and the City of Del Mar to discuss potential mitigation opportunities for Del Mar Bluffs 5 and 6, one of which includes the formalization of existing informal public access trails on the east side of the rail corridor. Ms. Leslie noted that early coordination efforts between regional partners to date will make the permitting process easier.

Karl Schwing, Coastal Commission Deputy Director for San Diego and Long Beach made a brief statement regarding NCTD's petition to the Surface Transportation Board to preempt Coastal Commission review of certain work along NCTD's right-of-way. Mr. Schwing said that NCTD's effort to remove itself from the review process based on federal preemption came as a surprise to the Commission. According to Mr. Schwing, NCTD contends that continuing to use the existing Coastal Commission review process would interfere with rail safety and maintenance operations. Mr. Schwing noted that the Coastal Commission has a long history of working with NCTD and others, and that the Commission hopes that NCTD will decide to set its filing aside and work collaboratively with its regional partners.

NCTD's Tony Kranz responded by noting that this issue was not included for discussion on the Working Group meeting agenda. Mr. Kranz stated NCTD acted to preserve its rights as a rail operator but would like to work collaboratively moving forward. [NOTE: In early-November 2020, the NCTD Board authorized NCTD to seek an 120 day stay of action by the Surface Transportation Board so that NCTD and the Coastal Commission can continue discussions.

SANDAG's Coleen Clementson provided an update on SANDAG's Vision for the 2021 San Diego Regional Plan. The 2021 San Diego Regional Plan represents data driven planning utilizing emerging technologies, such as trip making data from cell phones. The Regional Plan was drafted to address three primary challenges— 1) reduce congestion; 2) improve social equity; and 3) meet state and federal mandates (e.g., SB 375, SB 743 and Title VI) to be faster, fairer and cleaner. Ms. Clementson outlined the "5 Big Moves" or key strategies to the 2021 Regional Plan vision:

- Complete corridors: looking at bikeways, highspeed transit, maximizing investments, as already underway on I-5.
- Transit Leap: Providing quality transit alternatives to automobiles.
- Flexible Fleets: Improving first and last mile connections to transit through scooters, e-bikes, rideshare, etc.
- Mobility Hubs: Adding multiple transportation options, connections and transfer points to areas of higher employment.
- The Next Operating System (OS): developing a digital platform that uses technology and data to connect and manage different modes of transportation— passenger vehicles, buses, ride-sharing vehicles, delivery trucks, autonomous vehicles, bikes and scooters, and more— to improve overall efficiency and accessibility for people and goods to move throughout the region.

The proposed 2021 San Diego Regional Plan is expected to cost \$177 billion; the draft Plan will be released in Spring 2021 and adopted in Fall 2021.

CalSTA Chief Deputy Secretary for Rail and Transit Chad Edison reviewed the key objectives developed by the LOSSAN Long-Term Sub Working Group that will inform SANDAG's Long-Term San Diego Regional Rail Alternative Alignment Study:

- Enhancing safety and resiliency
- Improving passenger and freight capacity
- Reducing travel time and improving passenger service reliability as necessary to meet connectivity & ridership goals
- Providing greater connectivity to Mobility Hubs and job centers
- Meeting long-term sustainability goals through mode shift to rail from roads
- Protecting the environment and preserving the ecology and natural beauty of the region

SANDAG's Linda Culp provided an update on the October 16, 2020, Long-Term Sub Working Group Meeting. Ms. Culp noted that a Project Development Team that includes staff from SANDAG, NCTD, BNSF Railway, SDMTS, LOSSAN, SCRRA/Metrolink, Federal Railroad Administration, and Caltrans had been formed to support the SD-LOSSAN Study. The Study will analyze alternatives for the entire 60.1-mile LOSSAN Corridor San Diego Subdivision to reduce travel time, enhance safety, and increase track capacity through addressing factors such as:

- Higher speed operational feasibility analysis
- Technical work on design parameters
- Next Generation Equipment
- Technical evaluation criteria to assist in narrowing down alignment alternatives

Operational considerations that will inform the alternative alignment analysis can be categorized under three themes to address the purpose of the rail system: Service, including frequencies, trip times, stopping policies; Operations, including equipment performance, signaling performance and system performance (dwell times/turn times); and Infrastructure, track speeds, station spacing, single/double track locations.

Ms. Culp noted that public outreach is important to the process, and that the Study will take another year to a year and a half to complete, concentrating on the Del Mar section of the LOSSAN Corridor over the first eight months. In response to a question from Del Mar City Councilmember Dwight Worden, "How do you plan to engage local communities?", Ms. Culp responded that COVID-19 has made public outreach challenging. SANDAG will use standard public outreach tools: information on the web and virtual presentations. Ms. Culp also noted that Social Pinpoint allows SANDAG to provide information via web, including community surveys and other tools - this is a new tool, but effective while working virtually.

Roger Bohnert, Director, Office of Outreach and Project Development in the U.S. DOT Build America Bureau briefed the LOSSAN Working Group regarding the Bureau's function under the U.S. DOT Undersecretary for Transportation Policy. In summary, the Build America Bureau:

- Administers credit assistance and private activity bonds (PABs)

- Serves as the one stop shop for states, municipalities, and other project sponsors exploring public-private partnerships (P3s) and seeking Federal credit assistance
- Develops initiatives and policies to facilitate public and private financing and alternative investments
- Provides technical assistance to help sponsors navigate and accelerate federal permitting, regulatory, and procedural requirements

Mr. Bohnert highlighted key elements of specific federal infrastructure credit programs including:

- Transportation Infrastructure Finance & Innovation Act of 1998 (TIFIA): Finance up to 33 percent of eligible project costs; Long-term repayment period of up to 35 years (repayment can be deferred for five years following substantial completion).
- Railroad Rehabilitation & Improvement Financing (RRIF): Very similar to TIFIA (Long-term, fixed interest, flexible amortization, no pre-payment penalty, etc.); RRIF can finance up to 100 percent of eligible project cost; Borrower responsible for paying Credit Risk Premium.

Mr. Bohnert noted that both TIFIA and RRIF offer low interest rates— 1.52 percent for a 35-year loan (on October 16, 2020). Mr. Bohnert also provided information on comparable financed projects including the Maryland Purple Line Project; the DART Cotton Belt Project; Amtrak III procurement of Acela trainsets.

Congressman Mike Levin provided an update for the LOSSAN Working Group, stating that he felt positive about the USACE feasibility study. In order to be chosen as a study, the project must be included in the USACE Work Plan with funding that is approved by USACE and the Office of Management and Budget. He is attempting to get the project funded legislatively and prioritized administratively through several high-level calls with the Office of Management and Budget and USACE.

Assemblymember Tasha Boerner-Horvath praised the LOSSAN Working Group's federal, state, and local coordination efforts. She stated that the Select Committee on Sea Level Rise and the California Economy hearings have exposed concerns regarding sea level rise and ground water inundation affecting coastline infrastructure, which could cost hundreds of billions of dollars to address.

APPENDICES

Appendices are available here: <https://keepsandiegomoving.com/Lossan-Group/del-mar-bluffs-docs.aspx>