Appendix L: Transportation Safety and Security

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Introduction

Transportation safety and security are integral components of the planning and programming that SANDAG facilitates and develops on behalf of the region. The 2025 Regional Plan builds upon strategies from prior plans to implement the plan's vision. Safety is included in the 2025 Regional Plan as one of its four goal areas which help guide the plan's development and subsequent implementation. The 2025 Regional Plan furthers the planning of transportation safety with the insights gained from the Regional Vision Zero Action Plan. Technology-enhancing strategies will have beneficial outcomes for transportation operations and safety. The additional uses of technology and associated data require attention to the security of data and the systems that use them.

Security of the transportation system for its users includes technology and evacuation planning. Technology and the use of data are most prominent in transportation system management, transit, and Complete Corridors. Transportation system management advances and leverages underlying technology to allow people to connect to transportation services and digital platforms that allow for dynamic management of roadways and transit services. Transit services utilize technology to enhance existing services, incorporate new modes, and add transit priority technologies. Additionally, the Complete Corridors strategy uses technology and real-time data to dynamically manage the flow of traffic and offers safe space for all roadway users. These technologies further support evacuation planning with real-time operational information and system flexibility when demand is high due to movements related to an evacuation. The following sections provide an overview of SANDAG efforts relating to transportation safety and security.

Transportation Safety

SANDAG continues to pursue and expand regional transportation safety efforts. Safety bridges planning, programming, and project implementation. Safety is central to the design and construction activities SANDAG develops for the region. These include active transportation projects such as bicycle, pedestrian, and transit facilities. In addition to safe roadways, SANDAG has incorporated the other elements of the Safe System approach with initiatives on safe speeds, safe road users, and coordination on safe vehicles and post-crash care. Highlighted below are several planning efforts that support continued improvements in transportation safety.

Development of Regional Vision Zero Policy

The Vision Zero Policy was introduced with the 2021 Regional Plan. Vision Zero rejects the idea that traffic crashes are inevitable and instead views them as preventable incidents. This policy's goal is to keep all roadway users—especially vulnerable users—safe through the use of data, prioritizing projects, education, and community engagement. Furthering that policy the Board of Directors adopted a **Regional Vision Zero Resolution** in 2022 with steps toward eliminating all traffic fatalities and serious injuries while increasing safe, healthy, and equitable mobility options for all.

The 2025 Regional Plan builds on those efforts with implementation steps to achieve zero fatalities and serious injuries by 2050 and includes updates to the Vision Zero: 2025 Regional Plan Programs and Policies. Updates include the incorporation of Safe System principles which are:

- Humans are vulnerable; the human body has limits to the amount of force it can survive
- Humans make mistakes; the transportation system needs to account for human behavior
- Responsibility is shared; roadway users of all modes, roadway owners, and regulators all have a role in safety
- Safety is proactive; address opportunities to improve safety before a crash occurs
- Redundancy is critical; multiple layers of protection are necessary for the transportation system to safely function
- Death and serious injuries are unacceptable, the use of the transportation network should never cost bodily injury.

SANDAG developed a **Vision Zero Action Plan** to address the complex problem of traffic safety for all roadway users. Finalized in 2024, the data-driven action plan is modeled on national and international best practices and includes implementation actions to support the region's progress to zero. The plan defines a Safety Focus Network for the region to capture where the highest concentration of fatalities and serious injuries are occurring. This network identified that 6% of the transportation network accounts for 54% of fatal or serious injury crashes. Also included in the plan is the Systemic Safety Network, which takes a more proactive approach to identifying opportunities for safety improvement before a severe crash occurs. Additionally, the plan recommends proven roadway safety strategies including:

- Context-sensitive designs to better accommodate a mix of people walking, biking, using transit, and driving; accommodate human mistakes; reduce impact forces; and provide additional reaction time and visibility
- Safer speeds for everyone traveling on our roads
- More responsible travel behavior on our roads and strategies that enable safer operation of vehicles and devices using local roads

Safety Supporting Planning Efforts

Traffic safety continues to be integrated with internal and external planning efforts. Below are examples of how safety is integrated into the 2025 Regional Plan network development, subregional Comprehensive Multimodal Corridor Plans, Federal Performance Management activities and statewide Strategic Highway Safety Plan development and implementation.

- 2025 Regional Plan Network Development: Safety data were applied to project evaluation during the network-development process through evaluation criteria. See **Appendix N: Network Development Methodology** for more information.
- Comprehensive Multimodal Corridor Plans (CMCPs): These subregional plans develop groupings of transportation projects, including safety and active transportation improvements. See the SANDAG **Comprehensive Multimodal Corridor Plans page** for more information.
- Federal Transportation Performance Management: Planning and programming are informed by five safety performance targets for all public roads and seven transit safety performance targets that the agency monitors and updates on a regular schedule. See **Appendix P: Federal System Performance Report** for more information.
- Strategic Highway Safety Plan: The 2025 Regional Plan is consistent with the 2020 Strategic Highway Safety Plan (SHSP) and complements the 2023 Vulnerable Road Users Safety Assessment. The SANDAG regional VZAP informs the 2025 Regional Plan and is complementary to the vision, mission, and goals of the 2020 SHSP that acknowledge the need for safety for all modes and achieving zero fatality and serious injuries. The SANDAG regional VZAP follows the SHSP guiding principles with an equity lens to safety, focus on proven safety solutions, use of technology, and implementing the Safe System approach. SANDAG supported the development of the statewide SHSP and continues support of plan implementation through SHSP Challenge Area Teams. See the **Caltrans SHSP** project page for more information.

Transportation Security

Intelligent Transportation Systems, Transportation Security, and Evacuations

In addition to transportation safety planning and coordination, the development of Intelligent Transportation Systems (ITS) emergency evacuation technologies applies and follows standardized methodologies. This includes adhering to the Systems Engineering (SE) principles, which is a well-established and formalized process to deliver highly complex transportation software and ITS development projects. The U.S. Department of Transportation requires federally funded ITS projects to follow the SE process.

If a widescale evacuation of the region were necessary, the following strategies could be deployed using both existing and future transit and roadway projects:

- Signaling: Traffic signals could be extended for up to four minutes, either red or green, to allow larger numbers of vehicles or pedestrians to move in one direction.
- Traffic Control Guides: Traffic control personnel could be deployed to problem intersections where they could manually direct traffic.
- Roadblocks and Barricades: Various assets such as portable signs, cones or barrels could be deployed.
- Electronic Signage: Changeable message signs have been installed along several major corridors, and these could be used to provide information to evacuees.
- Lane Expansion: Road shoulders could be used to increase the vehicle capacity of evacuation routes.
- Contra-flow Lanes: Traffic could be directed to use lanes in both directions (a practice called contra-flow or lane reversal) in order to move a large number of vehicles in one direction.
- Improvements in Traveler Information Services: Improvements could be made to traveler information services and an application that will link to San Diego's Office of Emergency Services (OES) to provide real-time roadway conditions and information to commuters during typical commuting periods and guidance in terms of emergency staging/routing information during evacuations.[1]

[1] The OES coordinates the overall county response to disasters. For evacuations and emergencies, the OES coordinates with the transit agencies and other providers of transportation services to use fleet vehicles, in the event that they are needed. During large-scale events, the OES also is poised to coordinate with transit agencies outside of the county in the event that additional vehicles are needed for disaster relief.

The San Diego region is home to 17 sovereign tribal nations with jurisdiction over 18 reservations. Although the Federal Emergency Management Agency and other federal agencies coordinate directly with the tribal nations, the 2003 and 2007 firestorms highlighted the need for more interagency coordination. The County of San Diego's OES has been coordinating with the Intertribal Long Term Recovery Foundation to identify interjurisdictional gaps in service and strategies to close them. Additionally, OES works with providers of transportation services throughout the County of San Diego, and these providers can be called upon in emergencies to help during evacuations. Additionally, airports can be used as staging areas for medical and food supplies, as well as evacuation.

As part of an agreement between SANDAG and the Southern California Tribal Chairmen's Association, tribal leaders hold advisory seats on the Board and committees, including the SANDAG Public Safety Committee, which helps coordinate with tribal nations on this issue. For more details on emergency preparedness and tribal nations, see **Appendix J: Public Involvement Program**.

Implementation of ITS is focused on advancing the delivery of these systems which will be managed by SANDAG under the Technology Project Management Office (PMO). The PMO coordinates strategic efforts across multiple projects and programs and delivers the management tools to ensure consistent delivery of complex projects that are technical in nature and require significant system or software development. The PMO will help coordinate planning and execution of the program projects throughout the development of all ITS project concepts that will help advance the delivery of Regional Plan technology components. In addition, to ensure the successful delivery of the ITS project components, as part of the transportation planning process, SANDAG also coordinates transportation security issues with Caltrans through its Transportation Management Center and with transit operators. The region is also supported by the San Diego County Emergency Operations Plan, which serves as a guide to the County's Emergency Operations Center and other jurisdictions responding to major emergencies.

Information Security Program Overview

The SANDAG Information Security Program documents the agency's information security policies, procedures, controls and selected frameworks. This program provides a roadmap for effective security management, ensuring the confidentiality (ensuring information does not reach unauthorized people), integrity (protecting information from being modified by unauthorized individuals) and availability (ensuring systems and services are accessible to those who need it) of SANDAG technology, services, and data.

Government agencies' data and systems—which could be sold, manipulated, or taken as ransom—are an attractive target for attackers. As a result, government agencies and their staff are a target from nation states, hacktivists, disgruntled employees, and organized cyber criminals. Many cities and governments have recently experienced costly attacks. This program prepares SANDAG to handle an attack as a routine event rather than a prominent crisis.

The SANDAG Information Security Program will guide the agency's policies and processes that will protect the agency. Programs like the SANDAG Incident Response Program, Security Awareness Program, Patch Management Procedure, and Vulnerability Management Program are all components that will help SANDAG understand where data resides and what policies are followed to protect it.

Philosophy of the SANDAG Information Security Program

Cyber security is the assessment of threats and the mitigation of those risks. The SANDAG program is guided by frameworks, policies, procedures, controls, and partnerships. SANDAG will use the Center for Internet Security's (CIS) v8 to guide efforts in securing the agency's data and services.

Data and System Security Requirements

When SANDAG engages with external service providers (e.g., contractors, partners, vendors, developers, and Software as a Service), the agency must assess potential risk and understand how data is transited, processed, and/or stored. SANDAG Data and System Security Requirements are based on CIS Controls v8 and will mitigate the most widely used attacks against the agency's data and systems. External service providers that design, create, deliver, and/or maintain data or systems on behalf of SANDAG shall meet or exceed these guidelines. Which controls and sub-controls are implemented are determined by the necessity of compliance based on laws and regulations (e.g., Health Insurance Portability and Accountability Act, Payment Card Industry/Data Security Standard, Federal Highway Administration) contractual/Memorandum of Understanding, and best practices (e.g., CIS Controls v8, Open Web Application Security Project Top 10 Proactive Controls project).

To see a complete list of the CIS Controls v8, visit **learn.cisecurity.org/control-download.**

Continuity of Operations Plan

Resiliency of the Regional Plan and SANDAG as the Metropolitan Planning Organization and Regional Transportation Planning Agency must be planned for in the modern age. One of the key tools utilized by SANDAG to support transportation safety and security for the region's tolling system is a Continuity of Operations Plan (COOP). A COOP ensures that unexpected events or risks to operations are continuously reviewed, tested and updated. Further, the COOP ensures that personnel and assets are protected and able to continue and function quickly, and with minimal impact, in the event of an unexpected disruption or disaster.

Key steps to drafting a plan include the identification of critical services and processes; the risks to these services and processes, whether the risks are political, economic, natural, or technological; mitigation steps to minimize the effects of a disruption; and continual exercising of the plan for effectiveness and relevance. This process is a comprehensive review of the processes, assets, human resources, and business partners that may be affected by unexpected disruptions and tests the plans and assumptions made for continued relevance and effectiveness.