

# SR 11 OTAY MESA EAST

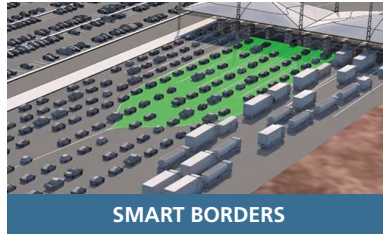
PORT OF ENTRY

Advancing Border Connectivity through Innovation:  
SANDAG's Next OS Implementation

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## Next OS



Next OS will focus on four smart system platforms that align with current regional project priorities including the State Route 11/Otay Mesa East Port of Entry Project.

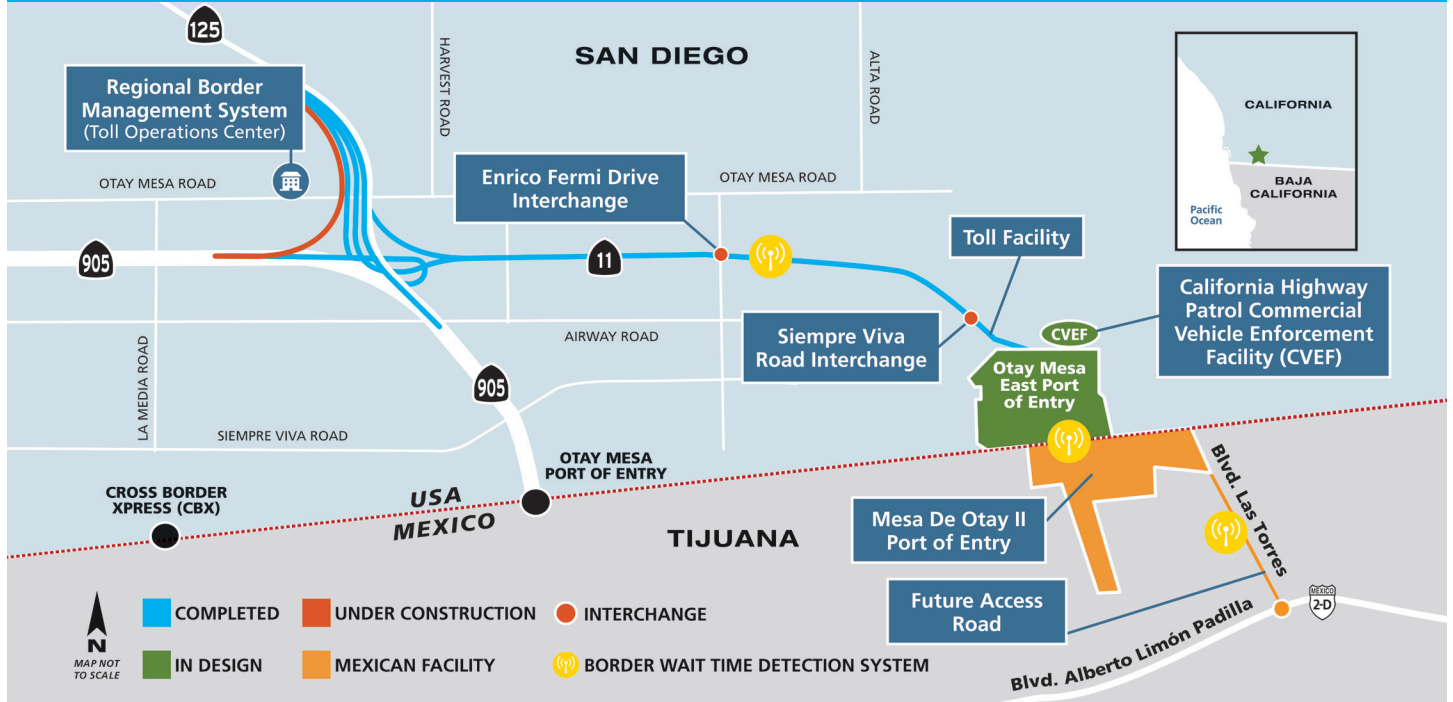
## Project Summary

The San Diego Association of Governments (SANDAG) was a successful recipient in the 2020 Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Program, receiving \$9.29 million to develop and deploy an end-to-end transportation system management solution that integrates security, dynamic tolling, connected vehicle applications, active transportation and demand management, and integrated corridor management technologies.

The Advancing Border Connectivity (ABC) project will focus on the deployment of Next Operating System (OS) components along the U.S.-Mexico Border and throughout the Regional Mobility Hub network to facilitate and optimize passenger and goods movement from the border to the region's major employment centers and freight gateways. The Next OS will serve as the central operational and management platform for transportation in the region, enabling the technological components within the Complete Corridors, Transit Leap, Mobility Hubs, and Flexible Fleets to work seamlessly and optimize the transportation system for all users to enhance safety, efficiency, and reliability.

## State Route 11/Otay Mesa East Port of Entry Project Features

Total cost: **\$1 billion** ✓ Amount invested: **\$592 million** ✓ Grant submission date: **August 2020** ✓ Opening date: **2024**



For more information, visit:  
[KeepSanDiegoMoving.com/SR11](http://KeepSanDiegoMoving.com/SR11)

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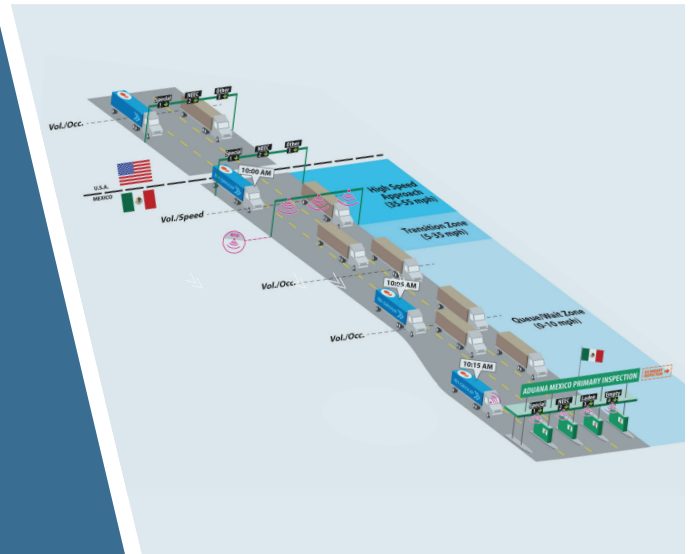
# ABC Project Components Overview and Benefits

The project will focus on the South Bay and US-Mexico Border region including the State Route (SR) 11/Otay Mesa East Port of Entry (OME POE) and Border Mobility Hub. The Next OS concepts will include the design and implementation of the Regional Border Management System (RBMS) for the new port of entry and connected vehicle technologies through the deployment of a Smart Intersection System (SIS) within the Mobility Hubs and corridors that connect them.

## Regional Border Management System (RBMS)

A new Regional Border Management System (RBMS) will integrate functions into the existing a I-15 Integrated Corridor Management System (ICMS) such as dynamic lane management, traveler information, border wait time estimation, and dynamic tolling. The RBMS is part of the larger regional priority project, the SR 11/OME POE project, and will serve as the transportation-management tool for cross border travel, helping to:

- » Improve border travel and wait time
- » Improve border traffic incident management and system resiliency
- » Improve border traveler information notifications
- » Provide a more efficient border network via a tolled approach that will alleviate congestion and help enable safe, predictable, and reliable border crossings
- » Improve air quality by shortening wait times and reducing vehicle idling



## Smart Intersection System (SIS)

Over 20 existing traffic signals are planned to be upgraded with connected vehicle roadside equipment. Additionally, buses and fleet vehicles will be outfitted with onboard units. This will enable communication between vehicles and infrastructure for advanced signal control, transit and freight signal priority, and pedestrian/bicyclist awareness. The SIS may also enable expansion of the existing I-805 bus on shoulder (BOS) connected vehicle system. Together, the SIS will:

- » Improve mobility
- » Decrease congestion
- » Provide transit signal priority treatments
- » Provide system-wide intersection-level situational awareness to include location of transit, pedestrians, and bicyclists to reduce intersection conflicts and improve safety



## Mobility Hub (MoHub) Planned Amenities

Real-time trip planning tools, curb management, zero emission infrastructure, and Flexible Fleet services that connect to transit will be deployed within South Bay communities. A “Next Gen” 511 connected travel app will be developed to improve access and travel connections for all travelers, including low-income residents, seniors, non-English speakers, and disabled individuals. Once deployed, these amenities will:

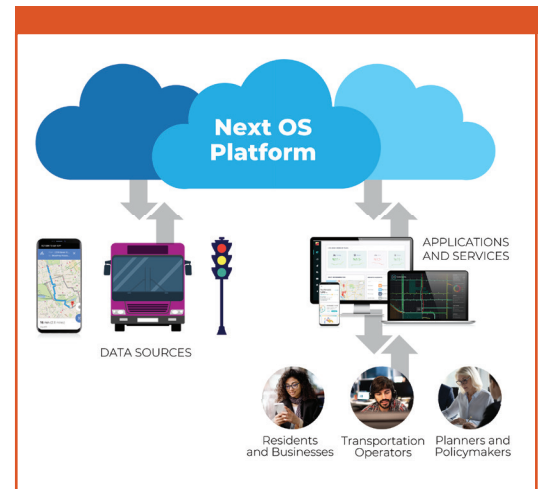
- » Enhance regional mobility and social equity
- » Improve transit access and connectivity
- » Improve the travel planning and booking experience for users, while ensuring accessibility for senior, disabled, and low-income populations
- » Help to manage curb space for picks-ups and drop-offs, commercial uses, and goods services deliveries



## Next OS Benefits

Regional transportation services work best and are the most effective when there is no regard to jurisdictional boundaries. Next OS will knit together the region's numerous transportation management systems and enable operating authorities to perform their management and operational responsibilities in an integrated, holistic, and coordinated manner. This digital integration will allow travelers and commuters to comfortably navigate through the complete transportation ecosystem and will provide seamless connections by using real-time and integrated trip planning tools and transportation options. A network that is coordinated and responsive to real-time conditions will:

- » Maximize efficiency of transportation networks
- » Improve travel time reliability
- » Reduce greenhouse gas emissions/improve community health
- » Improve road safety
- » Enhance regional mobility and equity
- » Fuel economic growth
- » Bolster binational trade
- » Serve as a real-world deployment site and model for the success of Intelligent Transportation Systems (ITS)



Technology improvements will be made in the cities of Chula Vista, National City, and in downtown San Diego, as well as along the corridors and services that connect the border to these communities. These locations were selected because they are popular destinations for people and goods traveling from the border region and will allow us to address the complete trip, creating a seamless travel experience from end to end regardless of the mode of travel.

## Innovative State Route 11/Otay Mesa East Port of Entry Features



**Interchangeable passenger and commercial vehicle primary inspection lanes** at the Otay Mesa East Port of Entry will reduce wait times and maximize efficiency by taking advantage of differing peak travel times for passenger vs. commercial vehicles.



An **advanced traveler information system** will inform border crossers about toll rates, border wait times, special lane conditions, and incidents at all regional land ports of entry.



An **integrated operations system** will intelligently link traffic operations. This seamless system will be instrumental in meeting the **20-minute average wait time goal at the Otay Mesa East Port of Entry**.

## PURPOSE & NEED

### Existing Conditions/Challenges

- Traffic congestion and freeway delays in the San Diego region has increased by approximately 87 percent between 2014 and 2019
- According to a 2019 Border Delays Study, congestion along the California-Mexico border results in significant travel delays for the 2.8 million trucks, 62.7 million personal vehicles, and 43.6 million pedestrian bidirectional crossings at the international border each year
- This congestion harms the region's air quality and has a significant impact on the U.S.-Mexico economy
- In 2016, border delays resulted in an estimated \$3.40 billion in foregone economic output and over 88,000 job losses in the U.S. and Mexico
- With approximately one-third of all northbound trips at San Diego County ports of entry being work purposes, these delays are projected to result in approximately \$5.0 billion in foregone economic output and over 97,000 job losses by 2025
- According to SANDAG estimates, 37.1 percent of households in the project area earn less than \$45,000 a year, which is less than 200 percent of the Federal poverty limit for a family of four
- Comprehensive transit services are available and in high demand, but the existing MTS Blue Line Trolley service (San Ysidro to downtown San Diego route) is at capacity and on-time performance and travel time reliability of buses are impacted by congestion



## Partners

The Project represents a partnership between SANDAG, the California Department of Transportation (Caltrans), the cities of San Diego, Chula Vista, and National City, the San Diego Metropolitan Transit System (MTS), the Port of San Diego, and private sector partners that include Kimley-Horn and Associates and Parsons Transportation Group, to deploy technologies that will make it safe and easy for people and goods to travel to, from, and around the border region.

## Funding

The overall cost of the project is \$28,115,925. Federal Highway Administration awarded SANDAG \$9.29 million of Federal funds under the ATCMTD grant. Symbolizing the strong regional support for the project is the non-federal match contribution totaling \$18,817,625. The committed matching funds include toll bonds, staff in-kind from SANDAG and partner agencies, supporting project investments, and contributions from private technology vendors and consulting firms for software development licensing equaling to \$600,000.

## Deployment Timeline (Planned/Estimated)

The development of the project will be executed in three phases beginning in January 2022, with the final deliverable scheduled for June of 2024.

### Phase 1: System Engineering & Design by winter 2023

Coordination during the project will include monthly meetings with the executive team and regular updates by all private sector partners. The team will develop systems engineering (SE) documents that will guide the activities of all parties including a project management plan (PMP), SE management plan (SEMP), and outreach plan.

- Public Outreach Plan
- Development of Project Management Plan
- Outreach Plan to outline mitigations for potential risks
- ConOps Refinement and SysReq Development
- MoHub/SIS/RBMS Field Element Design
- ATCMTD Evaluation Plan

### Phase 3: Concept Integration & Operations by summer 2024

This phase will integrate the ICMS, RBMS, SIS, Mobility Hub, and traveler information components into the SANDAG Next OS to initiate project turn on date and operations.

- Integration of project components into Next OS
- Performance Monitoring and Reporting
- ATCMTD Final Report

### Phase 2: Concept Deployment by fall 2023

Each system will be developed, tested, and verified in accordance with the documentation in a fully functional prototype of each system.

- SIS
  - » Deployment of SIS
  - » Software/firmware/field and vehicle equipment
- Mobility Hubs
  - » Technology deployment at MoHubs
  - » Equipment (kiosks, dynamic curb lighting, lockers)
  - » Expansion of the I-805 South Bay *Rapid* BOS Concept
- RBMS
  - » Software/Communications Equipment
  - » RBMS Modules (Border Traffic Incident System Module, Border Traveler Information System Module, Approach Lane and Lane Management System Module, Border Tolling System Module)
  - » Inclusion of RBMS into ICMS