



# I-15 MOBILITY ALLIANCE

## WORKSHOP SERIES SUMMARY OF FINDINGS



CALIFORNIA NEVADA ARIZONA UTAH

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Prepared by  
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In collaboration with Kimley-Horn and Cambridge Systematics



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## ACRONYMS AND ABBREVIATIONS

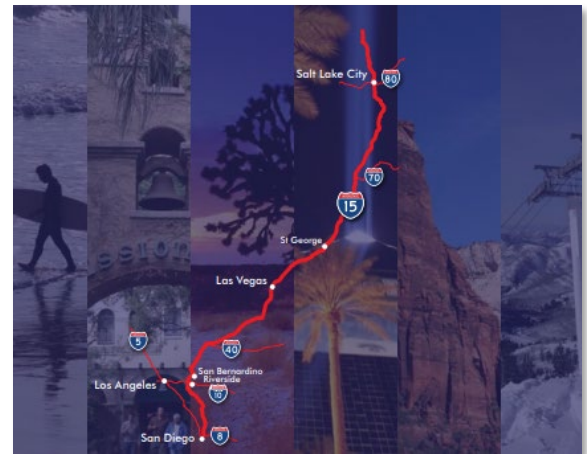
DOTs	Departments of Transportation
PMT	Project Management Team
BIL	Bipartisan Infrastructure Law
LRT	light rail transit
BRT	bus rapid transit
MPOs	Metropolitan Planning Organizations
SMART	Strengthening Mobility and Revolutionizing Transportation
TPAS	truck parking availability system
UAS	unmanned aerial systems



# 1. BACKGROUND

## 1.1 Alliance Background

The I-15 Mobility Alliance (Alliance) began in 2007 as a coalition of four western state departments of transportation (DOTs) – Arizona, California, Nevada, and Utah. At the outset, the goal of the Alliance was to develop a long-range plan to address current and future mobility needs along I-15 from southern California to northern Utah. The states recognized the significance of the I-15 corridor to the economic vitality of the western United States and embraced the collaboration framework that is necessary to advance transportation investments that benefit the multi-state region.



*Image: I-15 corridor between southern California and northern Utah.*

The I-15 Corridor System Master Plan (CSMP) was developed in 2012 and updated in 2017. This plan detailed the importance of the I-15 corridor as an economic lifeline and a mover of people and goods. The plan also outlined a set of performance measures that would be used to evaluate the effectiveness of proposed projects, including congestion, safety, and infrastructure condition.

### 1.1.1 Performance-Based Planning

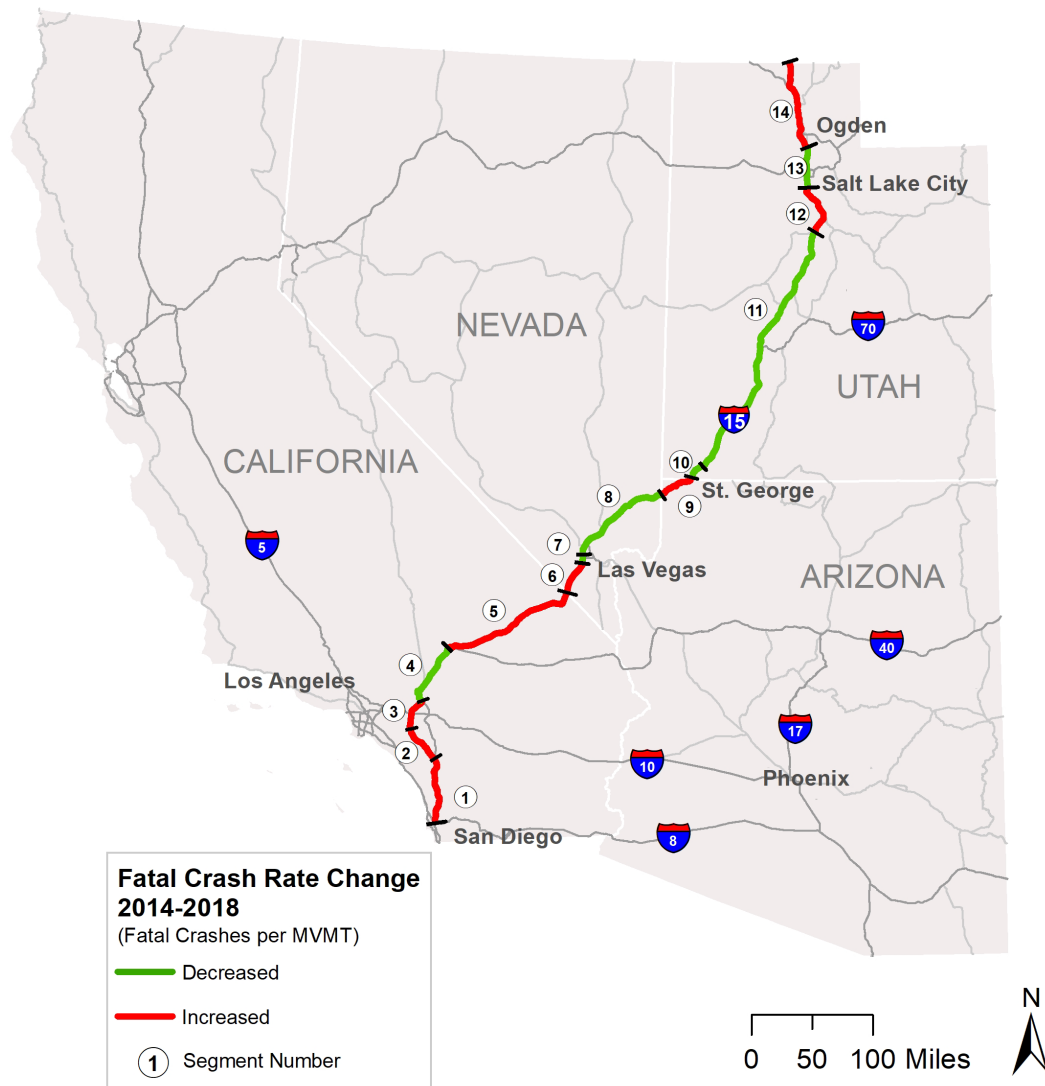
The 2017 CSMP included performance measures for safety, infrastructure condition, and reliability along I-15 in California, Nevada, Arizona, and Utah. The Alliance has continued to focus on data-driven planning and project prioritization, while updating these performance measures with the most current information available:



### 1.1.1.1 Safety

Safety is measured by the fatal crash rate along 14 predefined segments of I-15. This is normally reported in the "expected number of fatalities per 100 million vehicle miles traveled (VMT)" and is calculated by the number of crashes in particular locations compared to the vehicle miles traveled (VMT) in those same locations.

The current safety goal is to maintain a fatal crash rate per MVMT below 0.003. The change in the fatal crash rate between 2014 and 2018 is shown in the map below.





### 1.1.1.2 Infrastructure Condition

The 2017 CSMP used the National Bridge Inventory (NBI) Database to identify structurally deficient and functionally obsolete bridges along the corridor. Since development of the 2017 CSMP, FHWA re-worked their preferred bridge terms to conform to MAP-21.

Going forward, bridge condition performance along the I-15 corridor will now be measured following the Pavement and Bridge Condition Performance Measures final rule, published in January of 2017, and bridges with a "poor rating" will be identified.

The current infrastructure condition goal is to eliminate bridges in poor condition along I-15. The bridges in poor condition along I-15 in 2021 are shown in the map below.



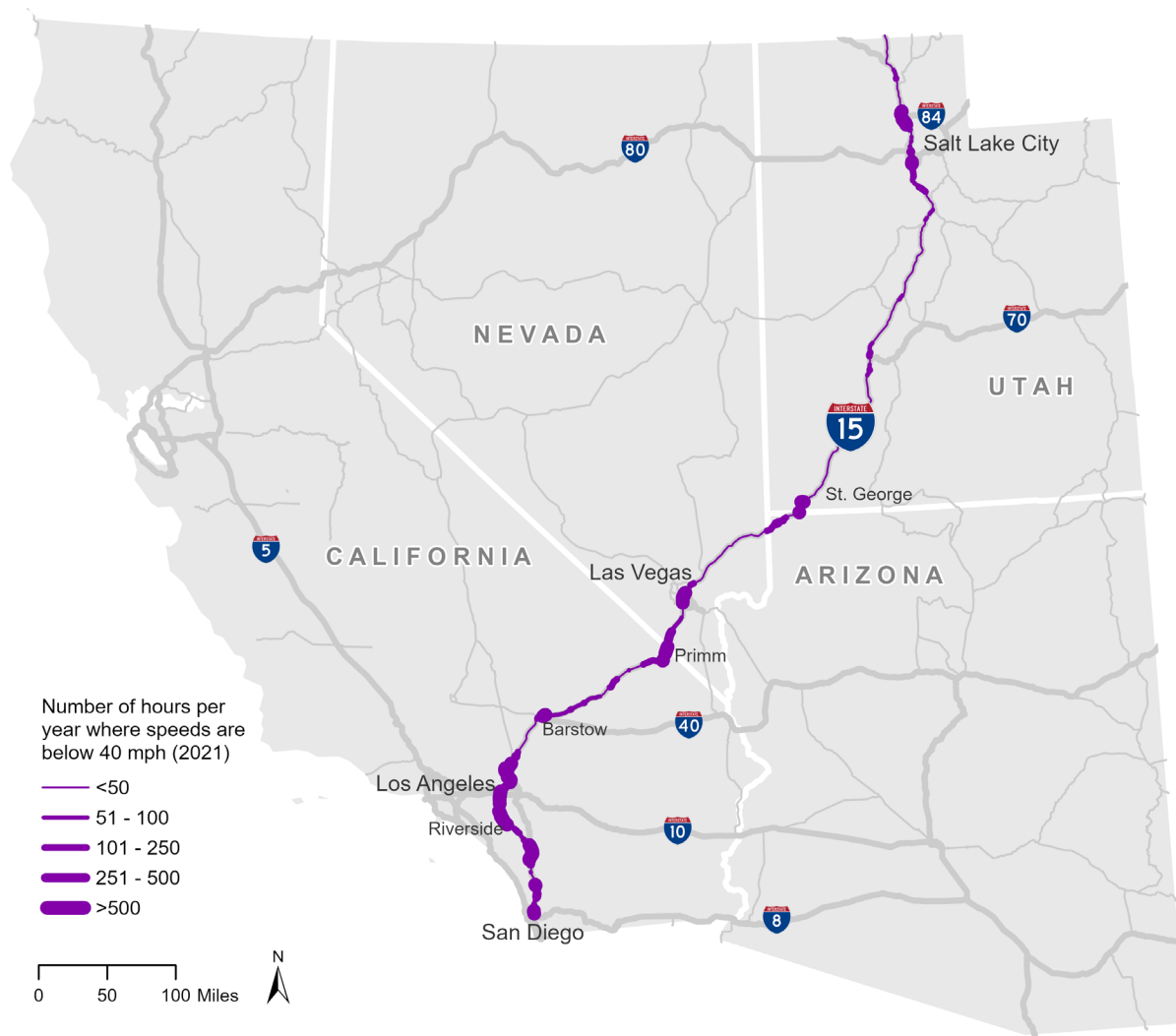


### 1.1.1.3 Reliability

The 2017 CSMP measured congestion by the locations along the I-15 corridor where the peak period travel speed for passenger and freight vehicles is under 40 miles per hour (mph), per direction, with results broken into approximately one-mile segments.

The most recent analysis updated this information to include average peak hour speeds and total number of hours where speeds are below 40 mph.

The current reliability goal is to maintain travel speeds of 40 mph (minimum) throughout the day. The number of hours per year where speeds are below 40 mph is shown in the map below.





### 1.1.2 Immediate Projects of Interregional Significance (IPIRS)

The I-15 Mobility Alliance maintains a list of Immediate Projects of Interregional Significance (IPIRS) that are critical for long-term safety and operational improvements in the corridor. IPIRS projects are defined as those that:

- Are along or systemically connected to I-15
- Have significant interregional impact on moving people and goods
- Have community support

The IPIRS list has been updated to reflect the latest projects that are high priorities for the states and partner agencies. IPIRS prioritizes projects that have environmental clearance activities complete or underway and have substantial commitment of state and local funding. With additional federal investment, these projects can:

- Be substantially implemented within 2 – 5 years
- Create tens of thousands of jobs
- Boost the productivity of business and sustain the quality of life of our communities by improving the reliability of people and goods movement

Since 2011, 25 projects have progressed in some fashion – from completion of environmental documentation to initiation of construction of some or all phases of the program – with eight successfully receiving Federal discretionary funding.

While the tasks and efforts of the Alliance have evolved over the years, the overarching goal is still to preserve or improve mobility along this important stretch of interstate.

### 1.1.3 Partnerships

Partnerships and collaboration are central tenets of the I-15 Mobility Alliance, due to the nature of multi-state work. The four central partners of the Alliance are the Arizona, California, Nevada, and Utah Departments of Transportation (DOTs). Representatives from each of these DOTs have been involved throughout the duration of the Alliance via the Project Management Team (PMT).



The Alliance also includes public and private sector partners, with representatives from:

- MPOs/Transportation Agencies
- Transit Agencies
- Cities and Counties
- Resource Agencies
- Private Industry
- Non-Profit Organizations
- Academics
- Economic Development/Commerce





The Alliance has a history of working closely with its MPO partners (highlighted in the map to the right). Continued input and collaboration with MPO representatives will be key in updating the IPIRS list.

To further strengthen collaboration across these diverse regions, the Alliance developed a series of workshops throughout 2022 to bring partner agencies together and share ideas for critical issues.

This workshop series provided an opportunity for representatives from these agencies to engage with the Alliance and each other, and to discuss key issues facing the I-15 corridor, now and into the future. Bipartisan Infrastructure Law

The BIL recognizes the significance of multi-state collaboration and provides additional resources to invest in infrastructure improvements.



Image: I-15 Mobility Alliance MPO Partners.

### 1.1.4 Bipartisan Infrastructure Law

On November 15, 2021, President Biden signed the Infrastructure Investment and Jobs Act (IIJA) (Public Law 117-58, also known as the “Bipartisan Infrastructure Law” or BIL) into law. It provides \$550 billion over fiscal years 2022 through 2026 in new Federal investment in infrastructure, including in roads, bridges, and mass transit, water infrastructure, resilience, and broadband. The BIL created several new formula and discretionary funding programs. Key priorities for the BIL include safety, equity, and greenhouse gas reduction.

Notably, the BIL adds multistate corridor organizations as an eligible lead applicant in a series of discretionary funding opportunities, specifically calling this out in the Multimodal Planning Discretionary Grant, which combines three opportunities: Mega, INFRA, and Rural to fund multimodal freight and highway projects of national or regional significance; among others.



## 1.2 Purpose of Workshops

A series of workshops were held throughout 2022 to gather agency and stakeholder input about needs and priorities along the I-15 corridor, particularly in light of increased federal funding opportunities via the Bipartisan Infrastructure Law (BIL).

The BIL authorized additional formula and competitive funding for transportation projects over the next five years. This legislation prioritizes transportation projects that bring safety, modernization, climate, and equity benefits to the communities they traverse.

A key objective of the Alliance in embarking upon this workshop series was to help position the partner agencies to apply and be competitive for federal discretionary grant funding. Each workshop topic aligned with one or more grant opportunities (e.g., the Collaborative Technology Implementation Workshop and the SMART grant). The four workshop topics were:

1. High-Speed Rail and High-Capacity Transit (March 2022)
2. Major Infrastructure Projects (May 2022)
3. Freight Mobility (August 2022)
4. Collaborative Technology Implementation (December 2022)

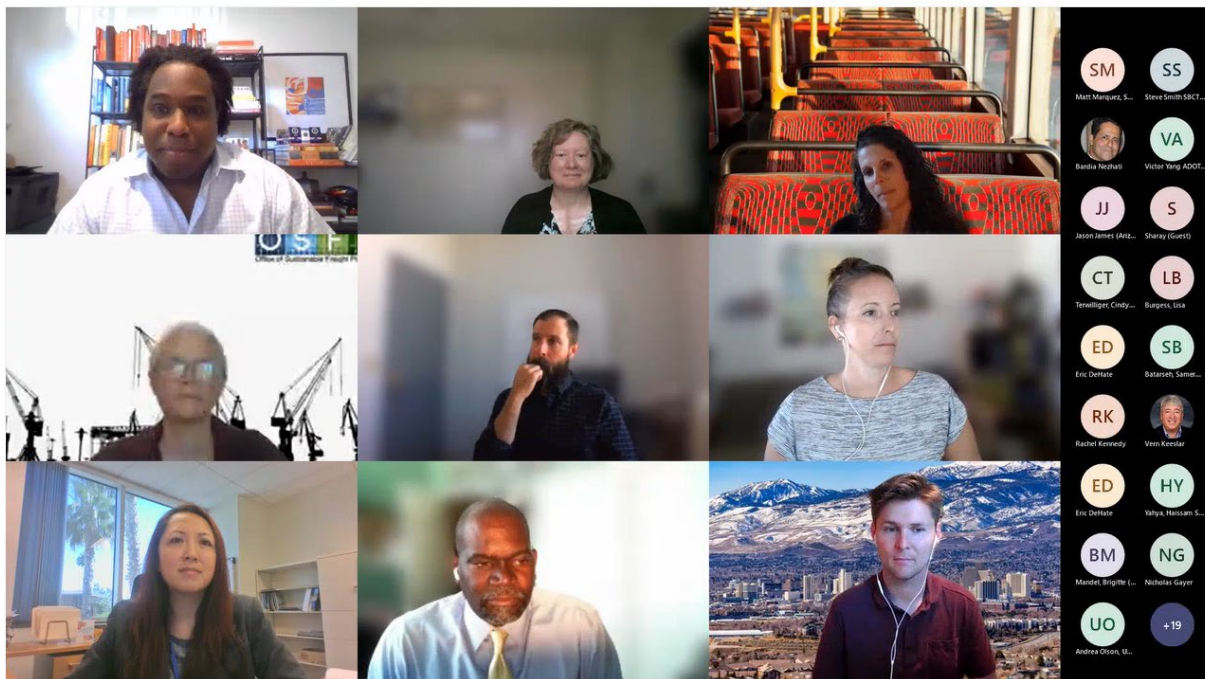


Image: Major Infrastructure Investments Workshop Meeting Recording

Additional supporting information for these workshops, including presentation materials and recordings, can be found at: <https://i15alliance.org/workshops/>

The Alliance has offered to provide support to the four state DOTs on a joint multistate project application for federal funding. A major objective of this workshop series was to identify one or more compelling candidate project(s) in preparation and response to this opportunity.



## 2. HIGH-SPEED RAIL AND HIGH-CAPACITY TRANSIT WORKSHOP

### 2.1 Workshop Overview

The High-Speed Rail and High-Capacity Transit Workshop was held on March 31, 2022, via a [Microsoft Teams meeting](#). The team opted to begin the workshop series with this topic due to substantial interest expressed by partner agencies. It provided an opportunity to bring together major transit providers at the federal and regional levels to discuss the future of transit along the I-15 corridor.

### 2.2 Presentation Topics and Speakers

The High-Speed Rail and High-Capacity Transit Workshop focused on high-capacity transit solutions with the potential to provide redundancy and congestion relief for the I-15 corridor. The workshop format was an interactive presentation including the following featured speakers:

- Ray Tellis – Federal Transit Administration
- Cindy Terwilinger – Federal Transit Administration
- Cheng Yan – Federal Highway Administration
- Juan Carlos Velasquez – Brightline West
- David Swallow – RTC of Southern Nevada
- Janelle Robertson – Utah Transit Authority

#### 2.2.1 National Perspective

The workshop began with an FTA presentation of funding opportunities made available through the BIL, followed by information from FHWA about the Megaregions Program. These presentations helped set the context for more targeted initiatives and opportunities at the regional level.

#### 2.2.2 Amtrak

Following a brief overview of the I-15 Mobility Alliance purpose and history, the consultant team provided a summary of existing Amtrak service in the vicinity of the corridor, including rail and Thruway Connecting Service. The two main rail lines that intersect or run near I-15 are: 1) the line traveling west from San Bernadino, CA through Flagstaff, AZ and Albuquerque, NM; and 2) the line running from Sacramento, CA through Reno, NV, to Salt Lake City, UT. Amtrak Thruway Connecting Service runs along I-15 as a bus service.

I-15 Mobility Alliance partners in Utah and Nevada are collaborating with Amtrak to submit a grant application to the Federal Railroad Administration's Corridor Identification and Development Program. The purpose of the program is to facilitate the development of intercity passenger rail corridors. The Corridor ID Program is a comprehensive intercity passenger rail planning and development program that will help guide intercity passenger rail development



throughout the country and create a pipeline of intercity passenger rail projects ready for implementation.

The states and other partner agencies are seeking to advance a portion of the former Desert Wind intercity passenger route, shown in the map below.

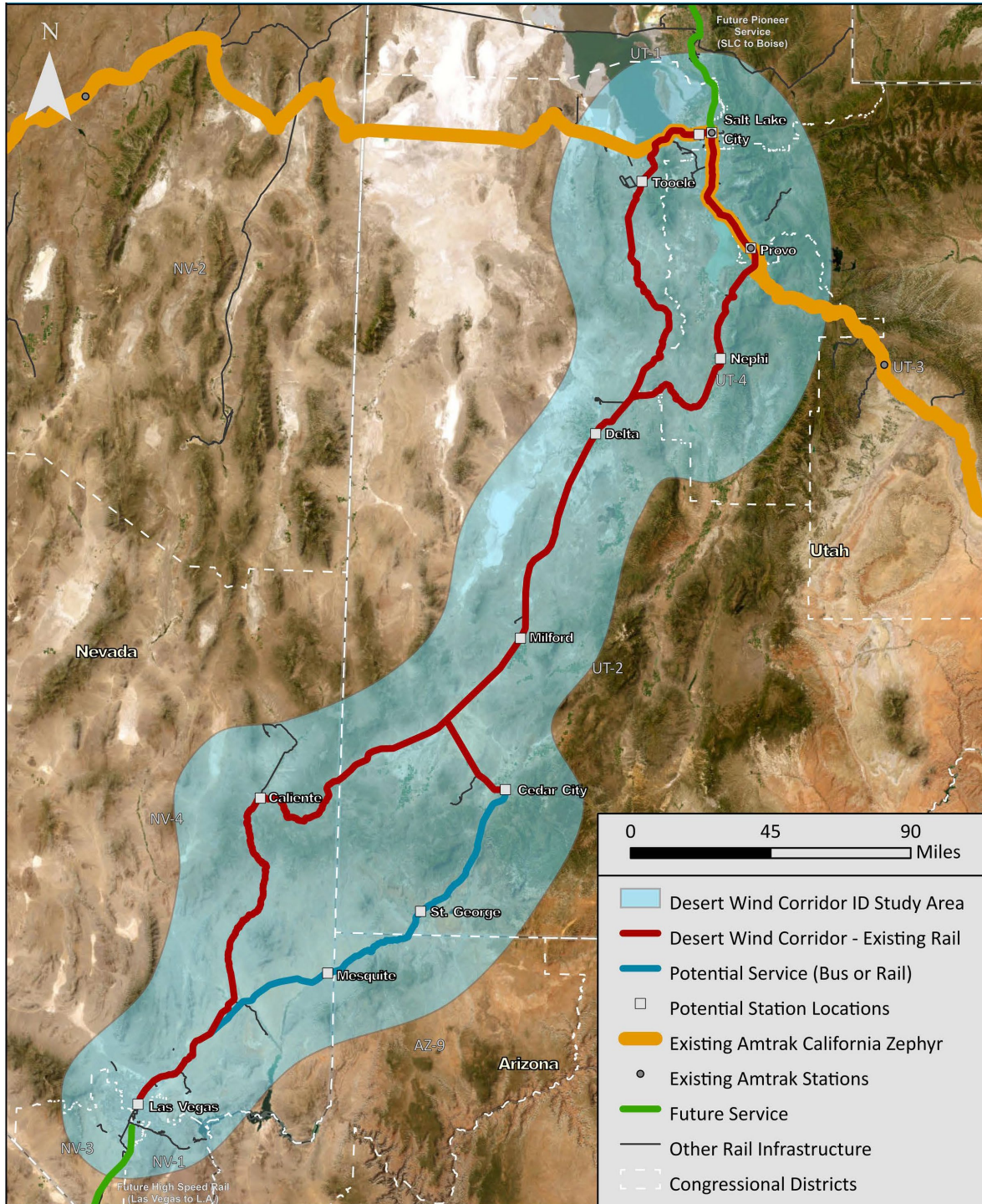


Image: Desert Wind Corridor



This Amtrak line provided a connection between Salt Lake City/Ogden and Las Vegas until it was discontinued in 1997, leaving I-15 and air travel as the only mobility options between these major population centers. The southwest region has grown significantly since this discontinuation. Population in Nevada and Utah grew by 2.1 million residents, a 50% increase, between 2000 and 2020.

Intercity passenger rail can strengthen the Utah and Nevada economies by connecting urban and rural communities and alleviating congestion on I-15. It will offer more mobility options and benefit the environment by reducing vehicle and air trips with higher emissions. This intercity passenger rail service will complement other I-15 Mobility Alliance priorities, including FrontRunner commuter rail service in Salt Lake City, BRT corridor investments in Las Vegas, and high-speed rail between Southern California and Las Vegas. By removing intercity vehicle trips, this investment will further improve safety and mobility for people and freight throughout the I-15 corridor.

### 2.2.3 Regional Transit

Next, the presentation summarized high-speed rail, commuter rail, light rail transit (LRT), and bus rapid transit (BRT) alternatives in specific areas along I-15, including:

#### 2.2.3.1 Southern California

Southern California transit services discussed include: the San Diego RAPID BRT; LA Metrolink; Sprinter Commuter Rail; and future high-speed rail. A representative from Brightline West presented information about plans to connect Southern California with Las Vegas, NV via an all-electric, emission free, high-speed train. Brightline West has the potential to revolutionize transit service provision in the western United States, bringing substantial mobility enhancements and congestion relief along the I-15 corridor.

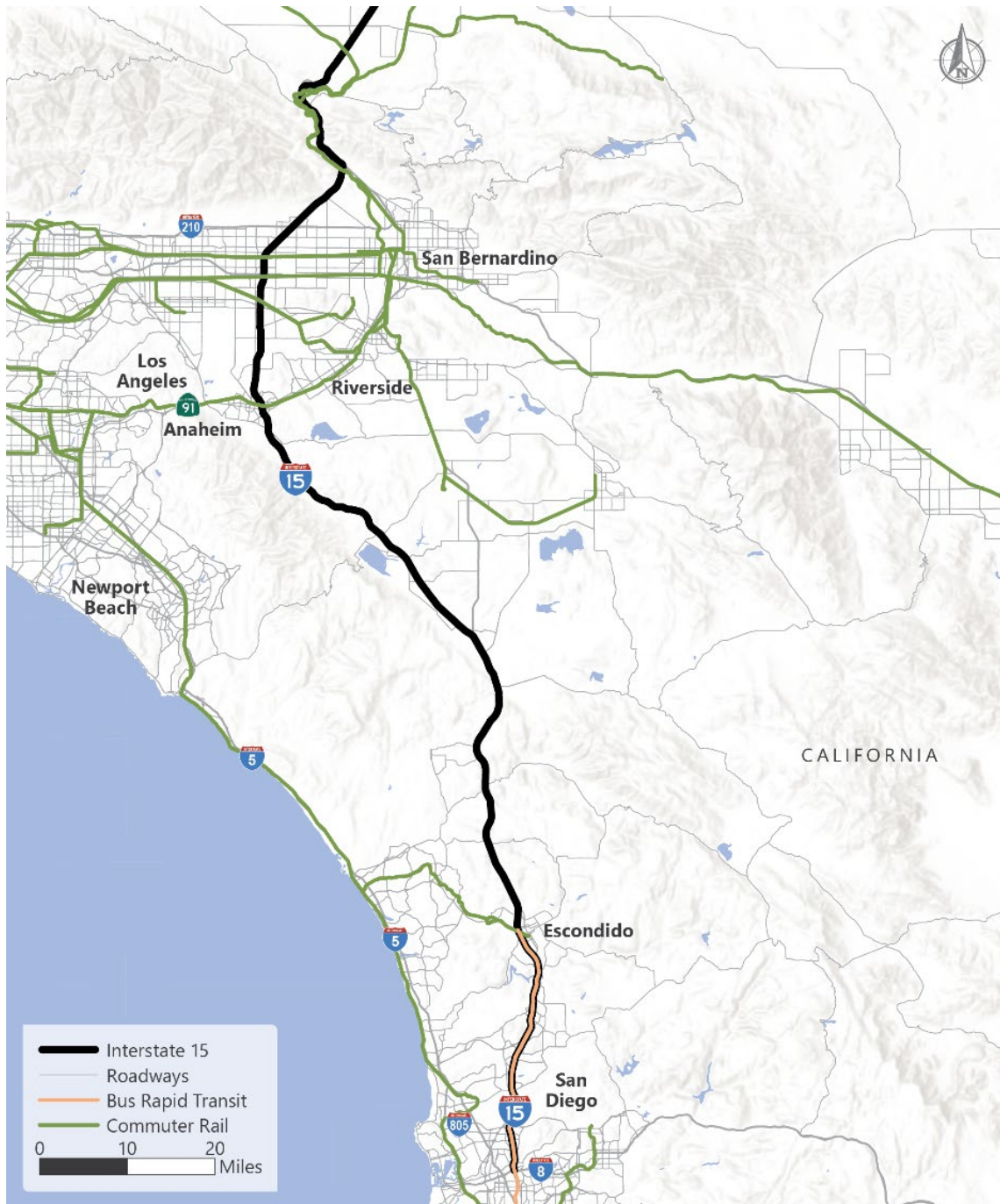


Image: Southern California High-Capacity Transit Adjacent to I-15



### 2.2.3.2 Southern Nevada

David Swallow, Deputy CEO of the RTC of Southern Nevada, provided an overview of growth and development in the Las Vegas area, underscoring the need for a variety of transportation solutions. He also discussed the City of Las Vegas' On Board Mobility Plan and highlighted how the plan aligns with the objectives of the Alliance, including plans for a regional BRT network.

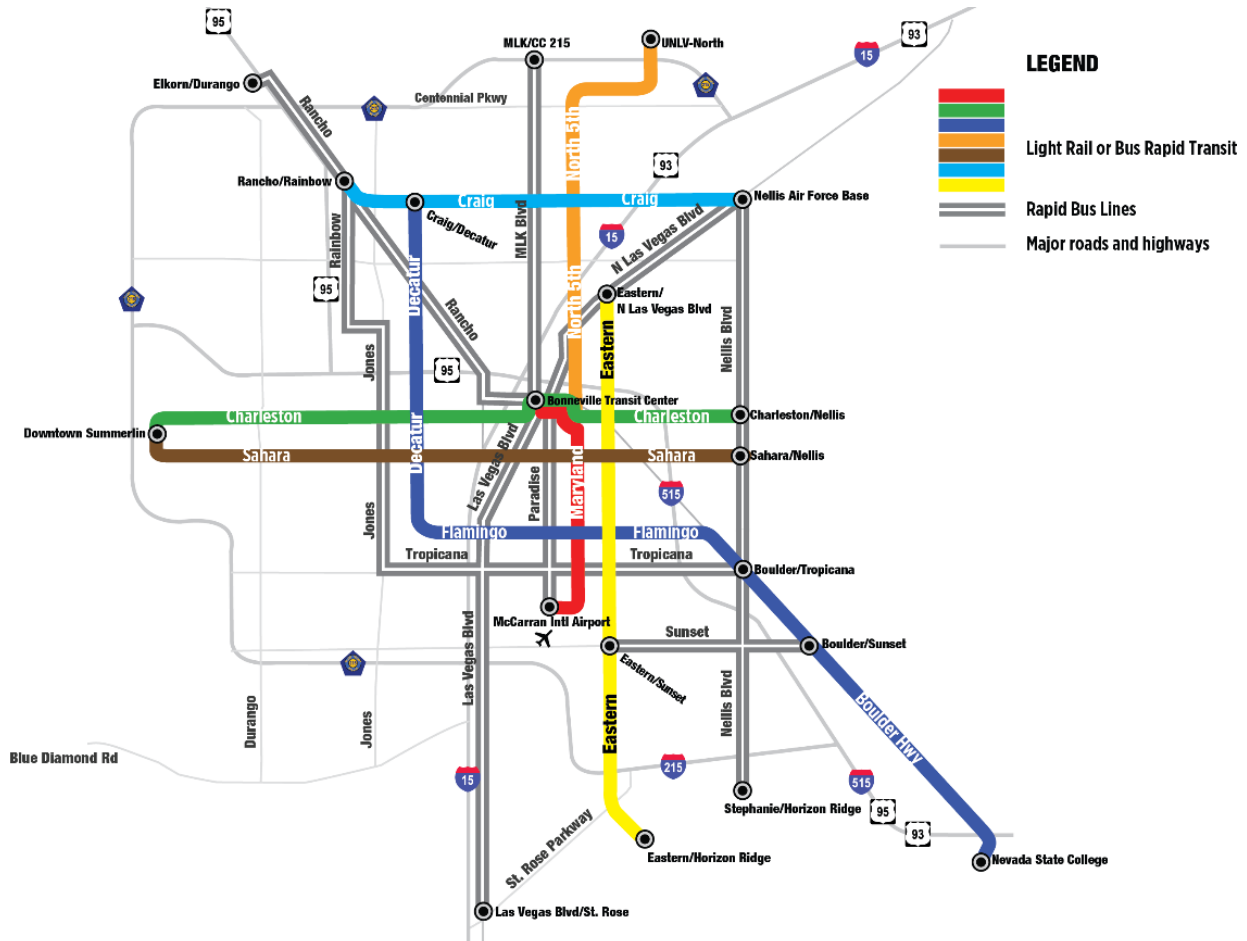


Image: High-Capacity Transit Plans for Las Vegas Metro Area



### 2.2.3.3 Utah

Janelle Robertson with the Utah Transit Authority (UTA) presented information about Utah's FrontRunner commuter rail line. One of the major objectives of the FrontRunner system is reducing congestion along the I-15 corridor, to which it runs roughly parallel for a span of over 90 miles. She highlighted funding opportunities at both the federal and state levels for high-capacity transit improvements.

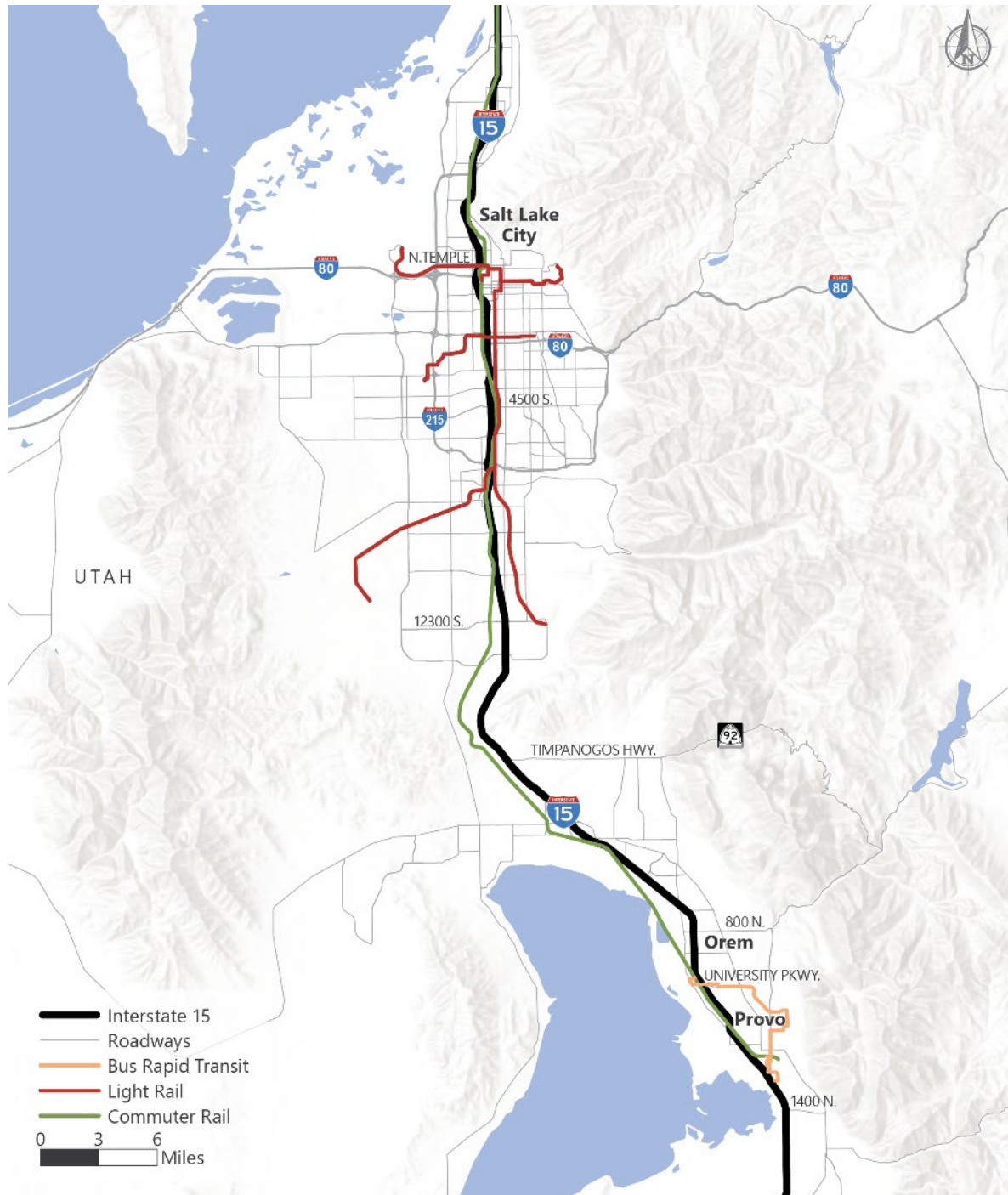


Image: Utah High-Capacity Transit Adjacent to I-15





## 2.3 Key Takeaways

The Bipartisan Infrastructure Law will award \$66 billion in funding to rail projects over the next five years, with the goal of creating safe, efficient, and climate-friendly alternatives for moving people and freight. The BIL also places focus on AMTRAK maintenance, expanding rail service, and the provision of Federal Railroad Administration grants. The funding will position rail to play a much more significant role in the nation's transportation and economic futures.

Given this substantial funding opportunity, Alliance partners agreed to continue to advance regional transit initiatives that have the potential to provide congestion relief and mobility enhancements in the vicinity of the I-15 corridor. While most of this work will be done at the regional/MPO level to preserve mobility in urbanized areas, Brightline West does represent a unique opportunity for western states to further long-distance transit travel.



*Image: I-15 Mira Mesa Direct Access Ramp to San Diego Miramar College Transit Station*



## 3. MAJOR INFRASTRUCTURE PROJECTS WORKSHOP

### 3.1 Workshop Overview

The Major Infrastructure Projects Workshop was held on May 31, 2022, via a [Microsoft Teams meeting](#). This workshop provided each of the four partner states – including DOTs and Metropolitan Planning Organizations (MPOs) – an opportunity to highlight ongoing and future projects along the I-15 corridor.



*Image: Lilac Road Bridge over I-15 in San Diego County..*

### 3.2 Presentation Topics and Speakers

The main objective of this workshop was to discuss and reach consensus on potential changes to the IPIRS list. The conversation focused on the need to remove already-completed projects from the list and add new projects for consideration.

The workshop began with a presentation by Charles Small, the USDOT Deputy Assistant Secretary of Intergovernmental Affairs. Mr. Small discussed the programs available for entities to apply for grant funding for transportation projects. This presentation helped set the framework for national goals and emphasis areas.

Next, each of the four partner states presented their respective priorities for the IPIRS list. Between each state presentation, time was allotted to discuss the projects proposed for the IPIRS list. Speakers and projects discussed for each state included:



**California:**

- Kelly Eagan, California Department of Transportation
- Rachel Kennedy, San Diego Association of Governments
- Stephanie Blanco, Riverside County Transportation Commission
- Steve Smith, San Bernadino County Transportation Authority



*Image: Autonomous ZEV Transit Tunnel to Ontario International Airport (Credit: SANDAG)*

Speakers presented information about the status of relevant projects including those in progress, along with new capital projects and planning studies to consider for the IPIRS list. New projects/studies to consider included:

- RAPID 235 BRT – enhanced service
- RAPID 238 BRT – enhanced service
- I-15 Completed Corridor – Managed Lanes
  - I-5 to I-805
  - I-805 to I-8
  - I-8 to SR 163
  - Valley Parkway to County Line
- Automated ZEV Transit Tunnel to Ontario International Airport (ONTLoop)
- US 395 Freight Mobility and Safety Project (SR 18 to I-15)
- I-15 SB Bottleneck Relief Phase I
- I-15 SB Bottleneck Relief Phase 2

**Nevada:**

Kevin Verre, Nevada Department of Transportation

Speakers presented information about the status of relevant projects including those completed, in progress, along with new capital projects and planning studies to consider for the IPIRS list. New projects/studies to consider included:



*Image: a “first of its kind in Nevada” active traffic management (ATM) system on I-15 through downtown Las Vegas.*

- Brightline High-Speed Rail from Victor Valley to Las Vegas



- I-15 Project NEON NB Ramp Braiding
- I-15 Central Corridor (Sahara to Flamingo)
- I-15 South Package 2 (Sloan Road to Blue Diamond)
- ATCMTD; I-15 N of Spaghetti Bowl

**Arizona:**

- Jason James, Arizona Department of Transportation

Speakers presented information about the status of relevant projects including those in progress, along with new capital projects and planning studies to consider for the IPIRS list. New projects/studies to consider included:

- Virgin River Bridge #5 Replacement or Superstructure
- Virgin River Bridge #7 Replacement or Superstructure
- Pavement rehabilitation, passing lanes, POE improvements



*Image: I-15/Virgin River Gorge Bridge  
(Credit: ADOT)*

**Utah:**

- Andrea Olson, Utah Department of Transportation

Speakers presented information about the status of relevant projects including those in progress, along with new capital projects and planning studies to consider for the IPIRS list. New projects/studies to consider included:

- I-15 Provo/North Interchange
- FrontRunner Double Tracking and First/Last Mile Improvements
- I-15/Bingham Road (MP 4) Roundabout Reconstruction/Reconfiguration

### 3.3 Key Takeaways

There was generally consensus among workshop participants about the new projects proposed for the IPIRS list for each state. The Alliance intends to update the IPIRS list periodically to account for projects being completed and new needs that may arise.



## 4. FREIGHT WORKSHOP

### 4.1 Workshop Overview

The Freight Workshop was held on August 18, 2022, via a [Microsoft Teams meeting](#). This workshop was particularly important given the critical role of I-15 in freight mobility across the western United States.



Image: Truck and rail movements north of Inland Empire at the I-15/I-215 Devore Interchange

### 4.2 Presentation Topics and Speakers

The Freight Workshop brought together speakers and participants from across the entire freight sector, including coastal freight, inland ports, rail freight, and freight logistics. The workshop included a series of presentations by industry professionals, followed by a roundtable discussion on freight needs, concerns, and the future of the I-15 corridor. Featured speakers and presentation topics included:

**Joel Perler**, Marketing and Economic Development Manager at the Port of Long Beach: Mr. Perler discussed the current state of freight movement into and out of the Port of Long Beach, including innovations to optimize operations and overcome shortages. Key points included:

- Forty percent of US imports and exports cross through the Port of Los Angeles (POLA)/Port of Long Beach (POLB), which is the 9<sup>th</sup> largest port complex in the world
- One third of imports stay in Southern California, primarily Inland Port, where all available warehousing space is occupied. There is a need for other regions to fill warehousing demand.
- There is also a lack of available workforce and truck drivers.



- POLB has been taking actions to help improve supply chain challenges, including major infrastructure investments in port, rail, and container capacity, and clean systems (ZE cargo handling and trucks).
- There is a joint agreement with Utah Inland Port and UP.

**Jack Hedge**, President of the Utah Inland Port Authority: Mr. Hedge discussed the movement of freight on the Union Pacific Railroad along the I-15 corridor in Utah. Major topics discussed included:

- The port's goal is to provide smart, sustainable, and equitable supply chain efficiencies
- The Authority takes a statewide approach to moving freight to and through Utah
- The majority of goods coming through POLB/POLA move through Utah
- The Port is undergoing several initiatives to improve data transparency, including:
  - Automating data entry to ensure availability when needed
  - Developing a set of data standards with multiple state, federal, and private partners
  - Building a 5G network for data and deployment of zero emission and autonomous vehicles
- The Port is working to partner with the private sector to move more cargo along I-15 (trucks and rail)
- There is a lack of warehouse space, workforce, and truck drivers across the industry
- Freight is expanding along the I-15 corridor; they are working on a satellite facility in Cedar City, representing the first step in statewide expansion

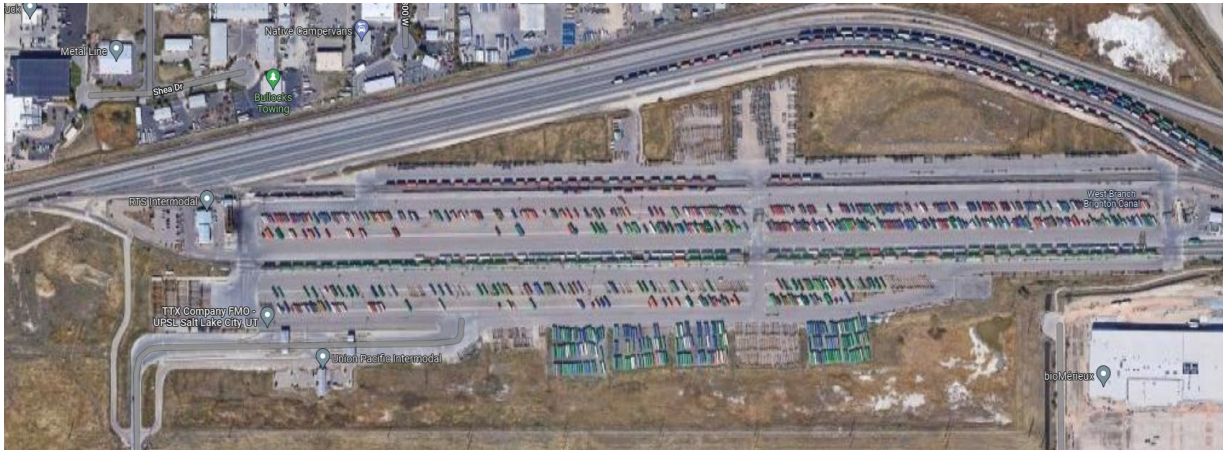


Image: Salt Lake City Intermodal Ramp (Credit: Jack Hedge)

**Jon Panzer**, Senior Vice President of Intermodal Excellence and Union Pacific Railroad: Mr. Panzer discussed the role of rail freight along the corridor, with a focus on intermodal opportunities. Major topics covered included:

- They run about 8 trains per day - primarily mixed freight carrying a wide range of products
- UPRR moves a lot of parcel services for CR England, Schneider, and many other large carriers
- There is capacity to run twice as many trains



- They have plans for additional sidings and Southern California intermodal facilities
- The Salt Lake City Intermodal yard is newer and state of the art, with expansion plans
- “Parallel Systems” is developing ZE, an autonomous system for moving individual containers—great for shorter haul needs. It is not affiliated with UP but would use UP track.

**Nicholas Trujillo**, Walmart Transportation Safety Manager: Mr. Trujillo discussed the freight supply chain along I-15 from Walmart’s perspective, with a focus on safety and operations. He noted:

- A lack of warehousing space is leading to overflow storage at and behind retail stores
- Safety is critical for obvious reasons, but also helps to reduce the cost of shipping.  
Impacts considerations and factors include:
  - Road construction
  - Variable speed limits
  - Driver distractions
  - Fatigue
  - Driver training, hiring, and retention
  - Dash cameras
  - Citations and roadside inspections
  - Weather
  - Holiday travel congestion
- Regulatory variances between states create inefficiencies

## 4.3 State Truck Associations

Representatives from the state trucking associations shared insights and issues important to their members.

- Nevada Trucking Association, Paul Enos
  - Improvements in clean diesel technologies have dramatically reduced emissions
  - Electric vehicle technology requires a tremendous amount of natural resources that will need to be mined to meet demand
  - I-15 is critical to trucking
- Utah Trucking Association, Rick Clasby
  - I-15 could be considered an important east-west corridor moving goods from POLA/POLB to the interior of the country
  - Trucking industry is responding to same day demand
  - Lack of truck drivers
- California Trucking Association, Bernice Creager
  - AB 5 is a challenge for many owner-operators who don’t want to work for large trucking companies



## 4.4 Roundtable Discussion

Following the presentations, the speakers were invited to continue the freight conversation with a roundtable discussion. Questions asked and key points discussed include:

- **Which carbon reducing technologies will be adopted?**
  - An ATRI study indicates that renewable diesel emits less carbon than electric when the entire production/supply chain is considered; however, there are many trade-offs
- **What role should the public sector play to partner with Inland Port and POLA/POLB?**
  - Infrastructure improvements: highway, grade separations, data. Provide the runway for goods movement
  - Additional truck parking
  - Increase and incentivize charging stations
- **What are UP plans for lengthening sidings on I-15 corridor?**
  - Without sufficient length, UP must run more smaller trains, so lengthening sidings adds capacity and efficiency to the system
- **Are there state to state policy differences that impede your ability to move freight efficiently?**
  - Lack of federal standards and policies
  - Federal standards trump state standards in rail. States are typically big supporters and good partners helping to build needed infrastructure
- **Projections for truck volumes along I-15?**
  - POLB not sure but making investments to dramatically increase the use of rail.
  - UIPA planning for SLC to become a larger hub for receiving goods by rail and distributing across the country
- **What can the I-15 Mobility Alliance do to improve freight mobility?**
  - Education
    - Workforce/career path options for youth
    - Importance of I-15
  - Regional planning and cooperation going after federal funding
  - CA considering a state freight office. If CA and other states could do the same, they could work together
  - Appropriate regulations
  - Alternative fuel infrastructure
  - Cross-mode shipment visibility would help prioritize freight movement
  - Support of UIPA data initiative – currently running off UDOT fiber network
  - UIPA noted that they are interested in supporting UP's initiatives
- **Is there value in creating an I-15 autonomous trucking test corridor to evaluate multi-state cooperative policies?**
  - Testing in individual states is sufficient for now
  - POLB have heard from drayage trucks that AV might not be applicable for their short hauls





## 4.5 Key Takeaways

I-15 is a major freight corridor and bringing this group of industry professionals together has been an important step forward in continuing multi-state freight planning for the future. A few key takeaways from this workshop relative to the I-15 Mobility Alliance objectives include:

- **Data Initiative:** Opportunities for multistate, public-private cooperation
- **Infrastructure Improvements:**
  - Opportunities for state DOTs to improve supply chain efficiencies
  - Look for opportunities to collaborate instead of competing for federal funding
  - Make policy and infrastructure safety improvements
- **Mode Shifts:** Desire to move more goods by train through improved data sharing, cooperation, and technology advances
- **Lack of workforce, truck drivers, and warehouse space**
- **Education** on the importance of I-15, and freight logistics career opportunities
- **Regulatory uniformity:** Need for consistent freight regulations and policies across state boundaries
- **Carbon Reduction:** Need for common sense solutions, uniformly applied, and adequately funded



## 5. COLLABORATIVE TECHNOLOGY IMPLEMENTATION WORKSHOP

### 5.1 Workshop Overview

The Collaborative Technology Implementation Workshop was held on December 7, 2022, via a [Microsoft Teams meeting](#). This fourth and final workshop provided an opportunity to share information about emerging technologies and brainstorm future project and partnership ideas along the I-15 corridor.



*Image: a joint California and Nevada pilot project on I-15 southbound from Primm, NV to CA Agriculture Station that utilizes the shoulder into temporary third lane during periods of peak congestion.*

### 5.2 Presentation Topics and Speakers

The goals of this workshop were to provide information on the USDOT Strengthening Mobility and Revolutionizing Transportation (SMART) Grant Program and to discuss the new and emerging technologies outlined in the SMART grant that could align with the objectives of the I-15 Mobility Alliance. An additional objective was to get updates from each state on technologies they are investigating or piloting that could potentially be leveraged as part of a multi-state strategy. The workshop brought together professionals from a range of organizations and specialty areas, including planning, research, technology, system operations and freight. Featured speakers and topics included:

**Tara Lanigan**, USDOT Office of Research & Technology: Ms. Lanigan discussed the Strengthening Mobility and Revolutionizing Transportation (SMART) grant program. This grant program was designed to promote projects that focus on advanced Smart City or Community Technology Systems. The grant provides \$100 million annually from FY2022 – FY2026. Examples



given by Tara for technology areas that the SMART grant is designed to implement are Smart Grid, Connected Vehicles, Sensor-Based Infrastructure, Smart Traffic Signals, Commerce Delivery & Logistics, Coordinated Automation, Innovative Aviation, and Systems Integration.

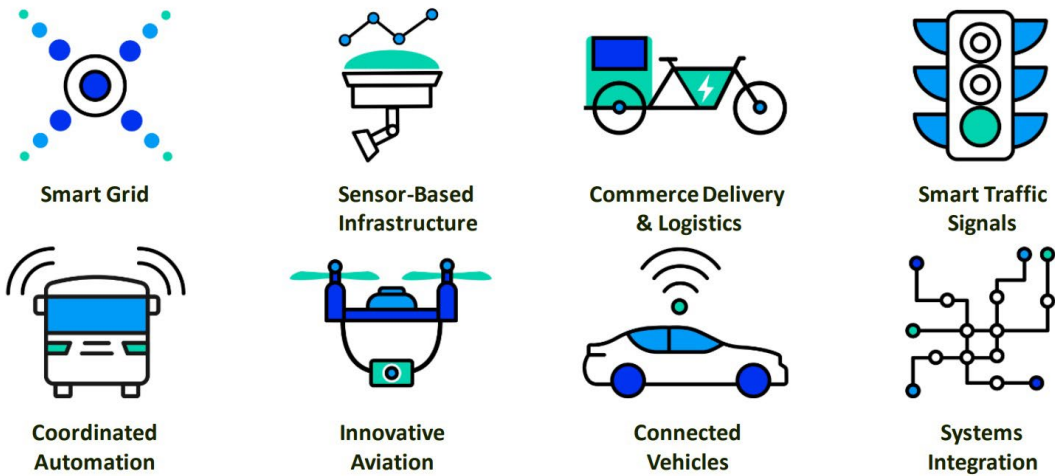


Image: USDOT Technology Focus Areas (Credit: USDOT)

Tara indicated that USDOT is not intending these grants to be used for research but wants to see agencies use proven technologies but also lean toward non-status quo technologies or new uses of mature technologies. The focus is to address real-world challenges, build resiliency into the system and address needs of people – travelers, users, and communities. USDOT wants to fund strategies that will be models for innovation.

Following the presentation, a panel comprised of professionals representing Caltrans and the Utah Department of Transportation discussed the new and emerging technologies in their respective states. Panelists included:

- **Thomas Ainsworth**, Caltrans District 8 Traffic Operations
  - Caltrans District 8 is actively engaged in a part-time shoulder pilot to help alleviate congestion on I-15. This pilot is being implemented through an NDOT and Caltrans partnership.
  - Freight initiatives include truck parking availability system (TPAS) locations on I-10 and truck classification using inductive signatures.
  - Caltrans is advancing broadband implementation throughout the state; I-15 may be a priority route for these communications.
- **Kevin Riley**, Caltrans Division of Traffic Operations (C/AV)
  - California is committed to addressing middle mile broadband needs in addition to the national funds available through IIJA.
  - Caltrans is engaging with many vendors and developers supporting testing of C/AV, and these activities include discussions with various commercial vehicle providers for potential pilot and demonstration opportunities. California is emphasizing the mutual benefit for fleet operators by agencies having enhanced data to support better corridor planning and operations.



- He noted there could be some strong synergies between I-15 initiatives and the real-time operations focus of I-80.
- **Melissa Clark**, Caltrans Division of Research, Innovation and System Information
  - Melissa's role in research can help to support cross-District coordination and activities for initiatives such as freight research, technology, and future pooled fund efforts.
- **Blaine Leonard**, Utah DOT Transportation Technology Engineer (C/AV)
  - Utah DOT has been actively testing and piloting C/AV technologies since 2015.
  - Types of technologies that UDOT is testing and deploying include preemption, curve speed warning systems, weather warnings on I-80, and variable speed limit systems on I-80.
  - There is a CV implementation planned for southern Utah for late next year, and UDOT continues to explore various C/AV applications for both urban and rural corridors.
  - UDOT completed a Road Readiness Assessment for AVs on key corridors to help determine whether Utah's road infrastructure was ready for AV technology.
  - UDOT is exploring a range of technologies, including LiDAR for pedestrian and bicycle detection, vehicle classification, near-miss crashes, and the use of fiber to detect speed measurements, determine crash locations, and detect rock falls and other events.
  - Utah has fiber border-to-border and will be filling some short gaps with fiber communications to provide complete coverage.
  - UDOT is active with the USDOT Work Zone Data Initiative and is using third party traffic data throughout the state.
- **Jared Esselman**, Utah DOT Aeronautics Director
  - Utah's Aeronautics division developed a legislative report on Advanced Air Mobility and is looking at innovative concepts that would take vehicles from the road and utilize airspace for travel.
  - Utah is working on several studies for aerial ports and has a phased implementation plan to make it a reality.

The panelists also discussed potential multi-state technology projects the Alliance may want to consider in 2023, and a plan for future discussions on these topics.

## 5.3 Key Takeaways

New technologies can help address the challenges along the I-15 corridor including safety, alternate routing, and freight mobility. The group collectively agreed to continue working to pursue a SMART grant opportunity, ideally for the next round of applications.

I-15 Mobility Alliance partners are exploring innovative technologies to address a wide range of safety and mobility needs. Examples shared during the discussion include:

- Applications for UAS (Unmanned Aerial Systems) for traffic operations, building on some of the experience using this technology for crash investigations and infrastructure inspections. There is a need to explore ways to get remote UAS video back to Traffic



Management Centers for corridor monitoring and potential predictive applications with video.

- Broadband deployment and expansion are continuing in all the I-15 Mobility Alliance states, and with this expansion of communications infrastructure there should be opportunities to expand technology applications, particularly for rural segments of the I-15 corridor.
- Nevada noted several technology focus areas, including the I-15 Active Traffic Management system in southern Nevada; a new statewide 511 phone and web system; upgrades to digital technology for the state radio system; and implementing new Advanced Traffic Management System (ATMS) software. Pilot programs include wrong-way driving detection systems and TPAS on I-15 and I-80
- There is an opportunity to better mine third-party data – in addition to speeds, there may be some valuable data available about truck volumes, movements, and origin-destination data, among others. If I-15 partners were acquiring data from the same source, that could provide strong continuity of data coverage along the corridor.
- Engaging freight and fleet operators to share data can be challenging, and there is some resistance to sharing data. The Alliance needs to develop and articulate a strong business case for why it is beneficial for fleets and other private entities to share data with the Alliance states. Ongoing engagement and collaboration with freight operators can help to advance technology initiatives. Connected vehicle applications can provide freight with more reliable information about the corridor. There may be opportunities to collaborate with technology developers who are already working with freight.
- California, Arizona, and Nevada have all completed autonomous freight testing. California noted that due to the state’s regulatory environment, these activities are limited to defined test beds and could be challenging to expand to broader corridors in the near-term.
- The nexus of broadband, C/AV, and electrification can be an opportunity to discuss advancing commercial-vehicle focused initiatives. Mobility Alliance partners can look at strategies for aligning broadband plans as well as NEVI plans.
- Charging infrastructure for freight is different than what is required for passenger vehicles and may be challenging in rural environments. Alternative fuels may drive some of the discussions for freight. There are several funding sources in the BIL related to alternative fuels.
- Federal Aviation Administration and National Air Traffic Controller Association needs to be engaged on any discussions about using drones and other unmanned aerial systems (UAS), as well as any future discussions on building aerial corridors.
- Training and education will be critical for agencies to address the range of emerging technologies. I-15 can be a model for workforce development and identifying the range of technical capabilities that are needed.

Panelists and participants also discussed some near-term opportunities for enhanced system operations leveraging technology. These included:

- More options are needed for providing the public and freight operators with information so they can make better decisions on travel, including delays, truck parking, detours and



alternate routes. These options should include an understanding of how people use navigation apps and how agencies can provide better data to navigation app providers.

- Do more with predictive capabilities to provide more precise advisories, alerts, and routing options for travelers.
- There was support for examining alternate routing concepts, potential technology applications for monitoring in rural areas (third party data or aerial technologies), and enhanced information for TMC operations to better manage unplanned routing events. This could provide the basis for a future technology-focused grant.



## 6. CONCLUSIONS AND NEXT STEPS

The workshops were successful in focusing renewed attention on the critical issues facing the I-15 corridor and bringing partner agencies together in collaboration. The workshop series also provided an opportunity for the USDOT, including FHWA and FTA, to share the most current information about policies and funding programs established by the BIL.

A key objective of the Alliance in embarking upon this workshop series was to help position the partner agencies to apply and be competitive for federal discretionary grant funding. Each workshop topic aligned with one or more grant opportunities (e.g., the Collaborative Technology Implementation Workshop and the SMART grant).

The information gathered, relationships strengthened, and new partnerships formed as part of this series helped Alliance leadership identify several multistate project opportunities along the I-15 corridor. The following ideas emerged for multistate project grant opportunities:

This initiative also provides the foundation for a future update to the I-15 Corridor System Master Plan. By assessing performance indicators, it allows the states to identify the key safety concerns, bottlenecks, and infrastructure conditions that are the highest priorities. The Alliance has identified a wide spectrum of solutions that are needed to address these concerns and provide for safety and mobility for decades to come. These long-term investments will draw upon all modes, including transit and innovative technology, to proactively meet the needs of today and future generations.



*Image: Mira Mesa Direct Access Ramp connecting I-15 Express Lanes to San Diego Miramar College Transit Station*