# Nevada Freight Advisory Committee (FAC)

## Meeting Summary

The FAC is made up of representatives from private sector companies and public agencies. Together, the Committee discusses topics that impact freight transport in Nevada, and provide NDOT with guidance. Meetings are held in video conference rooms across the state with a webinar link available to those not conveniently located near a meeting site. This meeting was held primarily to discuss one ongoing study: the Truck Parking Implementation Plan. Brief updates were also provided for the following studies by those listed below:

- I-11 Northern Nevada Alternatives Analysis Planning and Environmental Linkages – Kevin Verre, NDOT Assistant Chief, Multi-Modal and Program Development
- One Nevada Plan – Tim Mueller, NDOT Transportation Planner, Transportation/Multimodal Planning
- State Rail Plan Update – Lee Bonner, NDOT State Railroad Coordinator
- Hazardous Commodity Flow Study – David Willauer, Cambridge Systematics

The date, time, and locations of the meeting are indicated below, followed by a list of participants. A summary of the discussion held on various topics is recorded below, and the complete presentation is attached at the end.

DATE: November 6, 2018
TIME: 9:00 – 11:00 am (Pacific Time)

LOCATIONS:

**Carson City**
NDOT HQ, Room 302
1263 S. Stewart St.

**Sparks**
NDOT District II
Main Conference Rooms (north & south)
310 Galletti Way

**Las Vegas**
NDOT District I
Bldg. D Conference Room
123 E. Washington Ave

**Tonopah**
NDOT District I, Conference Room
805 Erie Main

**Elko**
NDOT District III, Conference Room
1951 Idaho St.

**Winnemucca**
NDOT District III, Conference room
725 W. Fourth St.

**Ely**
NDOT District III, Conference room
1401 East Aultman Street

**Webinar**

## *Meeting Participants*

| Company/Agency | Name | Meeting Location |
|---|---|---|
| Atkins | Mike Lawson | Webinar |
| ATRI | Alexandra Shirk | Webinar |
| Cambridge Systematics | Dan Andersen | Las Vegas |
| Cambridge Systematics | Mark Jensen | Webinar |
| Cambridge Systematics | Brian Stewart | Webinar |
| Carson MPO | Dirk Goering | Webinar |
| Cast Transportation | Pat Locasto | Las Vegas |
| CBRE Brokerage Services | JJ Peck | Webinar |
| Churchill County | Dean Patterson | Webinar |
| City of Henderson | Eric Hawkins | Webinar |
| City of Las Vegas | Rick Schroder | Webinar |
| City of North Las Vegas | Tera Anderson | Webinar |
| City of North Las Vegas | Mike Hudgeons | Las Vegas |
| Clark County | Jennifer Robinson | Webinar |
| Dielco Crane Service, Inc. | David Dieleman | Las Vegas |
| National Association of Truck Stop Operators | Tiffany  Wlazlowski Neuman | Webinar |
| NDOT | Emil "B.J." Almberg | Ely |
| NDOT | Lee Bonner | Carson |
| NDOT | Mark Costa | Carson |
| NDOT | Juan Hernandez | Carson |
| NDOT | Jason Love | Webinar |
| NDOT | Dean Morton | Carson |
| NDOT | Tim Mueller | Carson |
| NDOT | Coy Peacock | Webinar |
| NDOT | Sondra Rosenberg | Carson |
| NDOT | Joe Spencer | Webinar |
| NDOT | Bill Story | Carson |
| NDOT | Bill Thompson | Carson |
| NDOT | Kevin Verre | Carson |
| NDOT | Dwayne Wilkinson | Las Vegas |
| NDOT | Mark Wooster | Carson |
| Nevada Highway Patrol | Clay Madsen | Las Vegas |
| Nevada Highway Patrol | Donald Plowman | Carson |
| Nevada Trucking Association | Kim Yaeger | Sparks |
| Nye County | Steve Rosenbaum | Las Vegas |
| RTC of Southern Nevada | Beth Xie | Webinar |
| RTC of Washoe County | Amy Cummings | Sparks |
| RTC of Washoe County | Daniel Doenges | Webinar |
| Travel Centers of America | Tom Liutkus | Webinar |
| TSPS | Scott Grenerth | Webinar |
| TSPS | Carl Rundell | Webinar |
|  | Mac Potter | Webinar |

## *Summary of Discussion*

The parking demand estimate for Reno is much higher when I-80 is closed over Donner Pass.

Will the study estimate future demand for parking?

- Yes. We first need to establish current demand, and then will expand that based on projected truck volumes.
- The Statewide travel demand model includes truck volumes, but it is not comprehensive.

North Carolina built a single rest area in the center median of an interstate, in lieu of one on either side, reducing capital and maintenance costs. Truck drivers like it.

- FHWA generally discourages center-median sites due to the safety concerns with entering/exiting from the higher speed lane.

Can we expand parking through partnerships with Walmart and other big boxes?

- In some cases the property may not be owned by Walmart or the big box. To make those arrangements you may need to discuss with large real estate companies.
- On a previous study, the consultant contacted Walmart headquarters and were told that the decision to allow truck parking was up to each individual store.

Could stadiums, schools, or other public venues with large parking lots be used?

- Yes, that is an option. Caltrans paved the Auburn Fairgrounds in exchange for allowing trucks to park there, especially when Donner Pass is closed.

We have heard that warehouse distribution facilities are opposed to adding truck parking on-site due to liability concerns. This could likely be an obstacle with any big box or public facility parking lot.

Driver safety and cargo theft are very important considerations for any parking facility

The Virgin River Mart in Mesquite has 100 parking spaces that they charge drivers to use.

**Open Discussion**

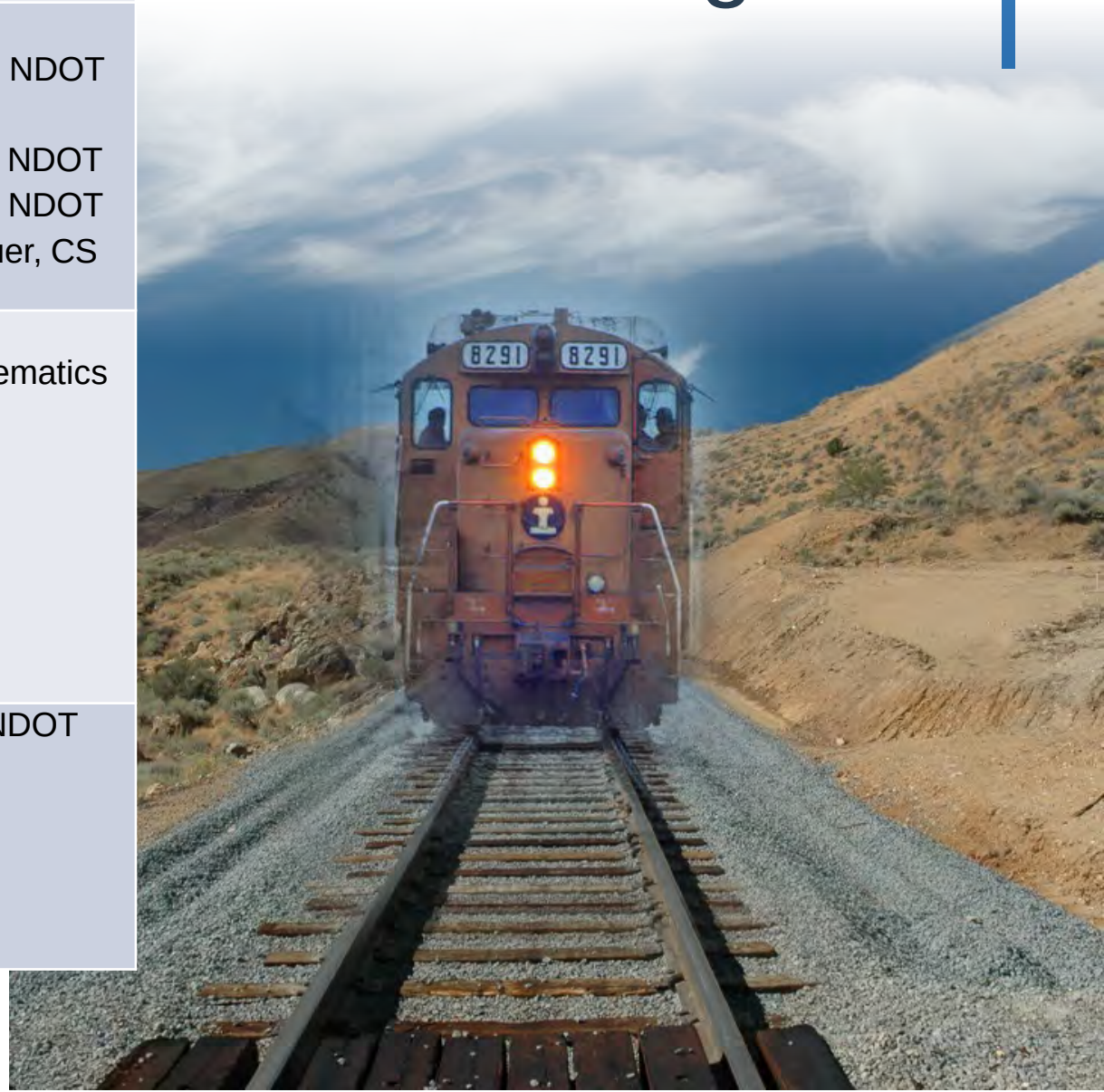
A request was made to discuss rail in Eastern Nevada at the next FAC meeting.


# Freight Advisory Committee Meeting

November 6, 2018

# Agenda

| Agenda Items (with approximate times) | | |
|---|---|---|
| **Time** | Topic | Facilitator(s) |
| **9:00** | **Welcome and Introductions** | Bill Thompson, NDOT |
| **9:10** | **Project Updates**<br>· I-11 Northern Nevada Alternatives Analysis Planning and Environmental Linkages<br>· State Rail Plan Update<br>· One Nevada Plan<br>· Hazardous Commodity Flow Study | · Kevin Verre, NDOT<br>· Lee Bonner, NDOT<br>· Tim Mueller, NDOT<br>· David Willauer, CS |
| **9:30** | **Truck Parking Implementation Plan**<br>· FHWA Truck Parking Roundtable, Nov. 15 in Las Vegas<br>· Review and discuss assessment of needs<br>o Supply, demand, and gap analysis of long haul, short-term, and emergency needs<br>· Review and discuss a broad range of possible solutions | Dan Andersen, Cambridge Systematics |
| **10:45** | **Open discussion**<br>· Additional freight-related topics or questions,<br>· Next Meetings | Bill Thompson, NDOT |



# I-11 Northern Nevada Alternatives Analysis Planning and Environmental Linkage

## Freight Advisory Committee Meeting

November 6, 2018

# I-11 Corridor Background


### Intermodal Surface Transportation Efficiency Act (ISTEA)
The CANAMEX Trade Corridor, connecting Mexico and Canada, was outlined in the ISTEA highway bill, which established a series of High Priority Corridors to as part of the proposed National Highway System, including corridor #68 Washoe County, which outlined a route connecting Las Vegas and Reno.

1991

### North American Free Trade Agreement (NAFTA)
Establishes trade and manufacturing opportunities between the U.S., Canada, and Mexico, increasing the importance of creating a north-south connection in the Intermountain West.

1994

### National Highway System
As proposed in ISTEA, Congress formally established the National Highway System, which allowed individual states to receive funding for interstate improvements.

1995

### I-11 Corridor Tier 1 EIS
Formal National Environmental Policy Act environmental review process begins on the I-11 Corridor Study, from Nogales to Wickenburg, Arizona, with the goal of identifying a Preferred Corridor Alternative.

### Mike O'Callaghan-Pat Tillman Memorial Bridge
Bridge bypassing the Hoover Dam eliminates a major bottleneck on the CANAMEX corridor.

2010

### Moving Ahead for Progress in the 21st Century Act (MAP-21)
Future I-11 from Phoenix to Las Vegas is designated in federal transportation legislation.

2012

### I-11 and Intermountain West Corridor Study
Arizona and Nevada validate the I-11 Corridor on US 93 between Wickenburg and Las Vegas, and define a wide corridor for further study from Wickenburg to Nogales, and from Las Vegas to I-80.

2014

2015

### Fixing America's Surface Transportation (FAST) Act
The future I-11 designation is officially extended south to Nogales and Las Vegas to I-80 in federal transportation legislation.

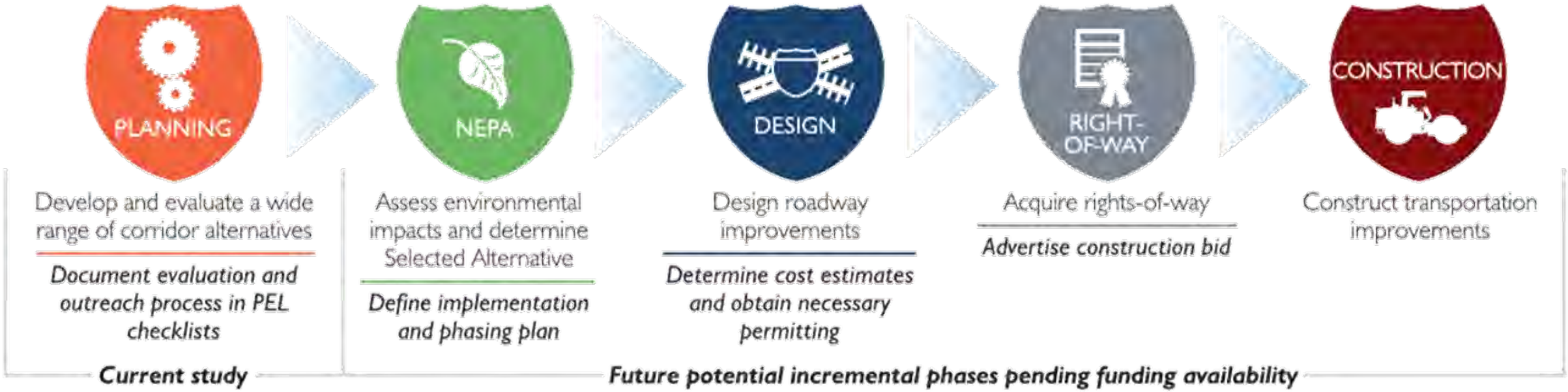
2016

### I-11 Northern Nevada Alternatives Analysis
Advanced study of the Northern Nevada connectivity option recommended in the I-11 and Intermountain West Corridor Study. This includes alternatives development, analysis, and evaluation of corridor options between Las Vegas and I-80, including an updated Planning and Environmental Linkages (PEL) document, with the goal of identifying recommended corridor(s) to advance into future NEPA studies.

WE ARE HERE

2018

# Project Development Process



# The Big Picture – Study Goals

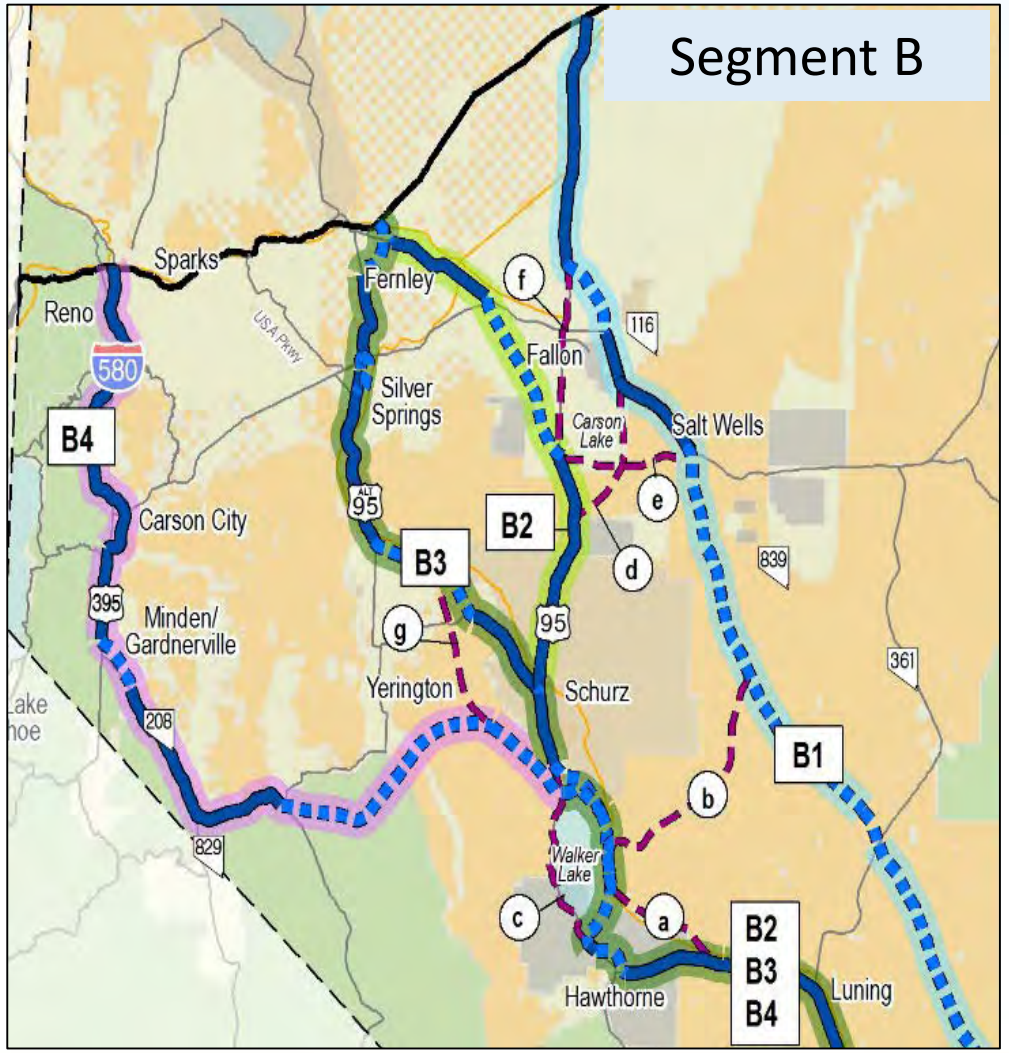
**Advance** I-11 through a federally recognized, collaborative process to identify the most promising potential corridors

**Document** issues and opportunities to inform and streamline future NEPA processes

**Formulate** a plan to advance I-11 over the next 10-20 years

**Prepare** Nevada with identified corridors for preservation should a federal lands bill advance

# Initial Corridors & Evaluation Criteria


1. MODAL INTERRELATIONSHIPS
2. CAPACITY/TRAVEL TIMES AND SPEEDS
3. ECONOMIC VITALITY
4. TRANSPORTATION PLANS AND POLICIES
5. ENVIRONMENTAL SUSTAINABILITY
6. LAND USE AND MANAGEMENT
7. COST
8. TECHNOLOGY
9. COMMUNITY ACCEPTANCE

We held **6 community** meetings
with over **400 attendees** back in March.

We held **7 community** meetings
with over **300 attendees** in July/August.

Consistent Topics:

- Corridor alternative concerns
- What happens to my town?
- What happens north of I-80?

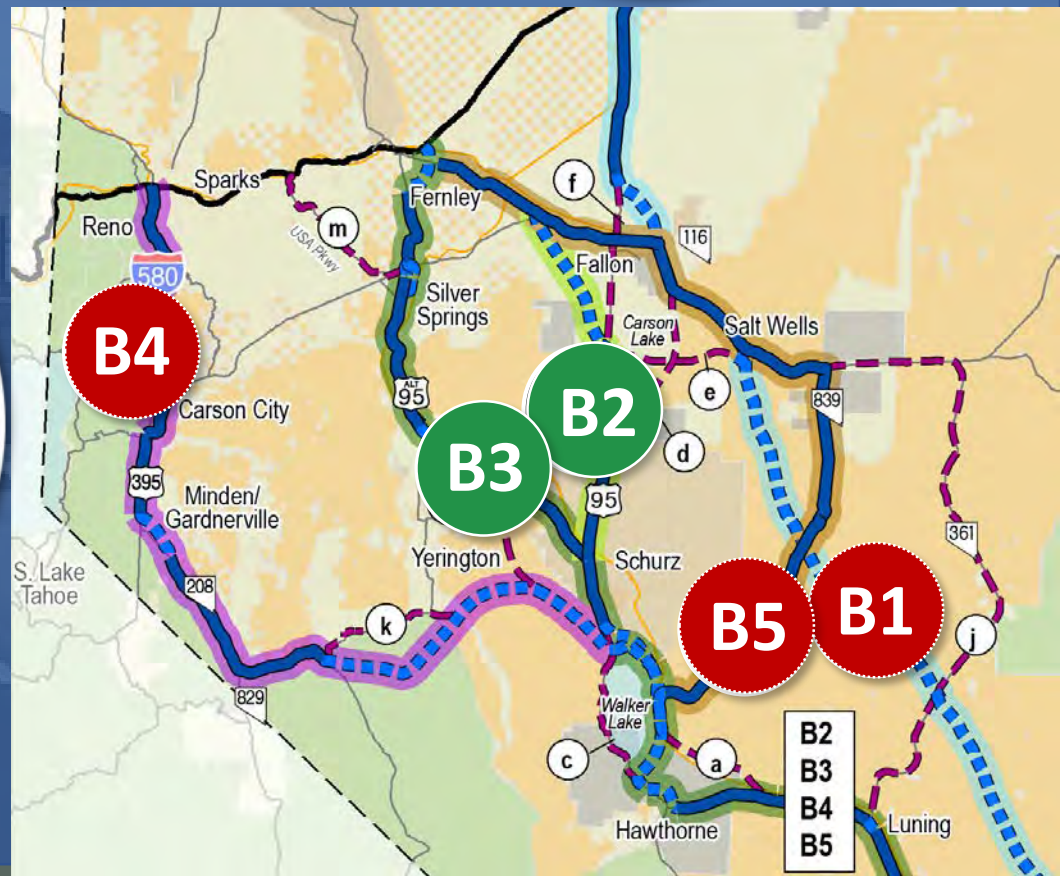


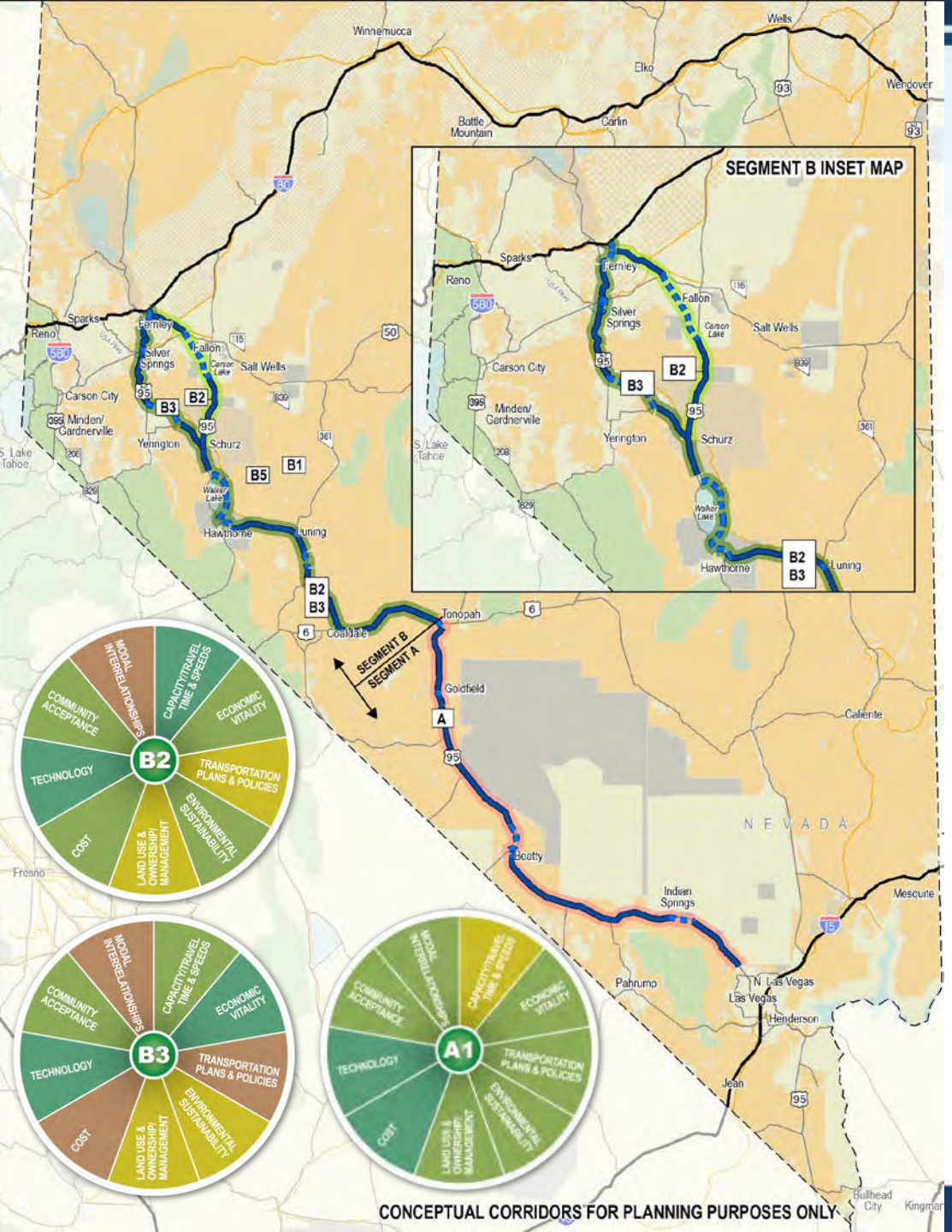




RATING SCALE

| | |
|---|---|
| 1 | Most Favorable |
| 2 | Somewhat Favorable |
| 3 | Moderately Favorable |
| 4 | Less Favorable |
| 5 | Least Favorable |






**Corridor A1, B2** and **B3** provide an excellent future link into the I-80 system complementing existing facilities.

These corridor recommendations will help state and local communities supplement the economic development plans that target community investments.

# Next Steps:

- Public comment period for the Alternatives Analysis Report ends November 8th
- State Transportation Board and Federal Highway Administration approvals
- Continue to work with communities along the alignment to help them plan for the future

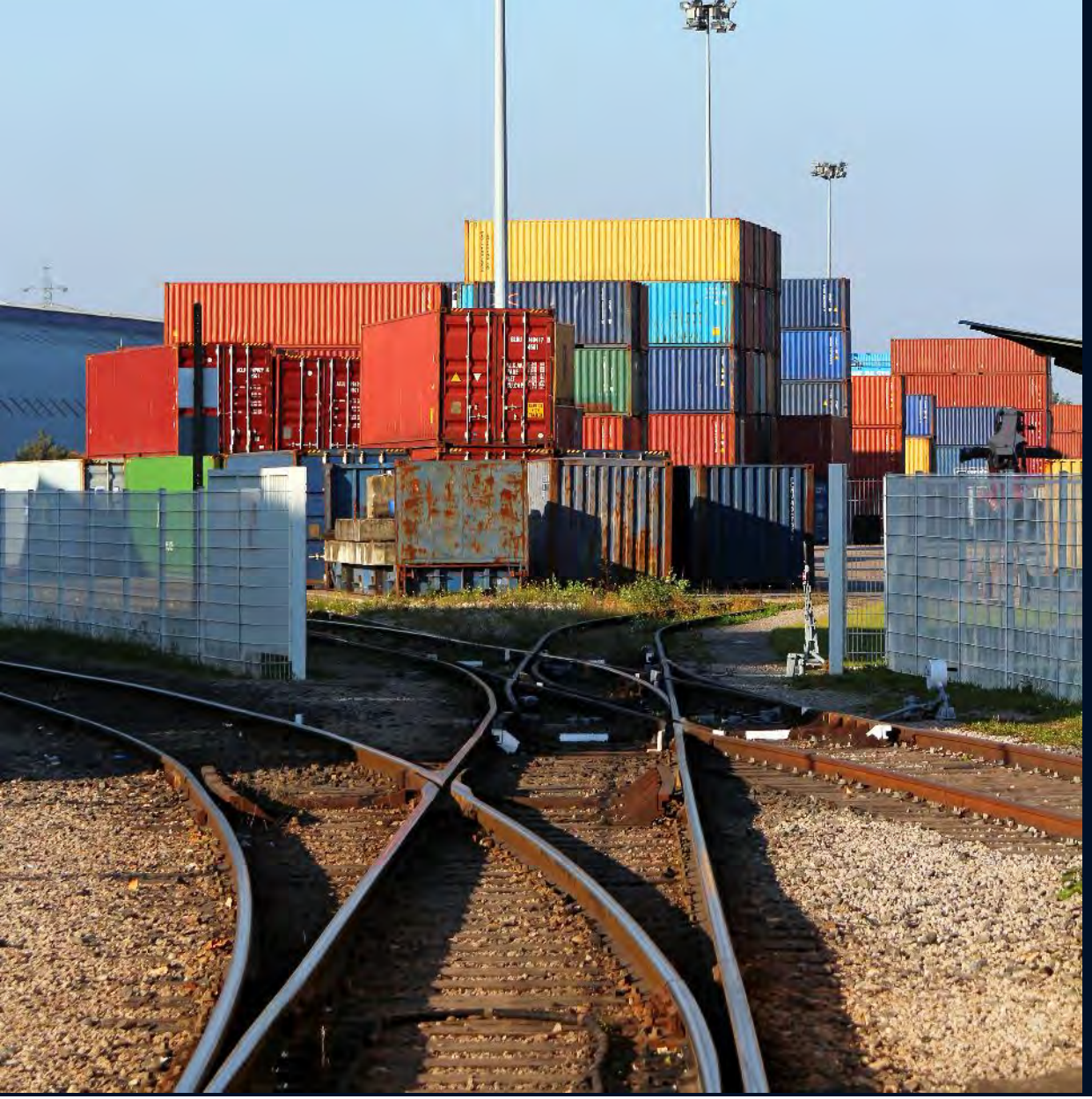
**i11study.com**


# 2020 State of Nevada State Rail Plan Update

**Lee Bonner**
**Nevada Department of Transportation**

NEVADA DOT

zero Fatalities
Drive Safe Nevada



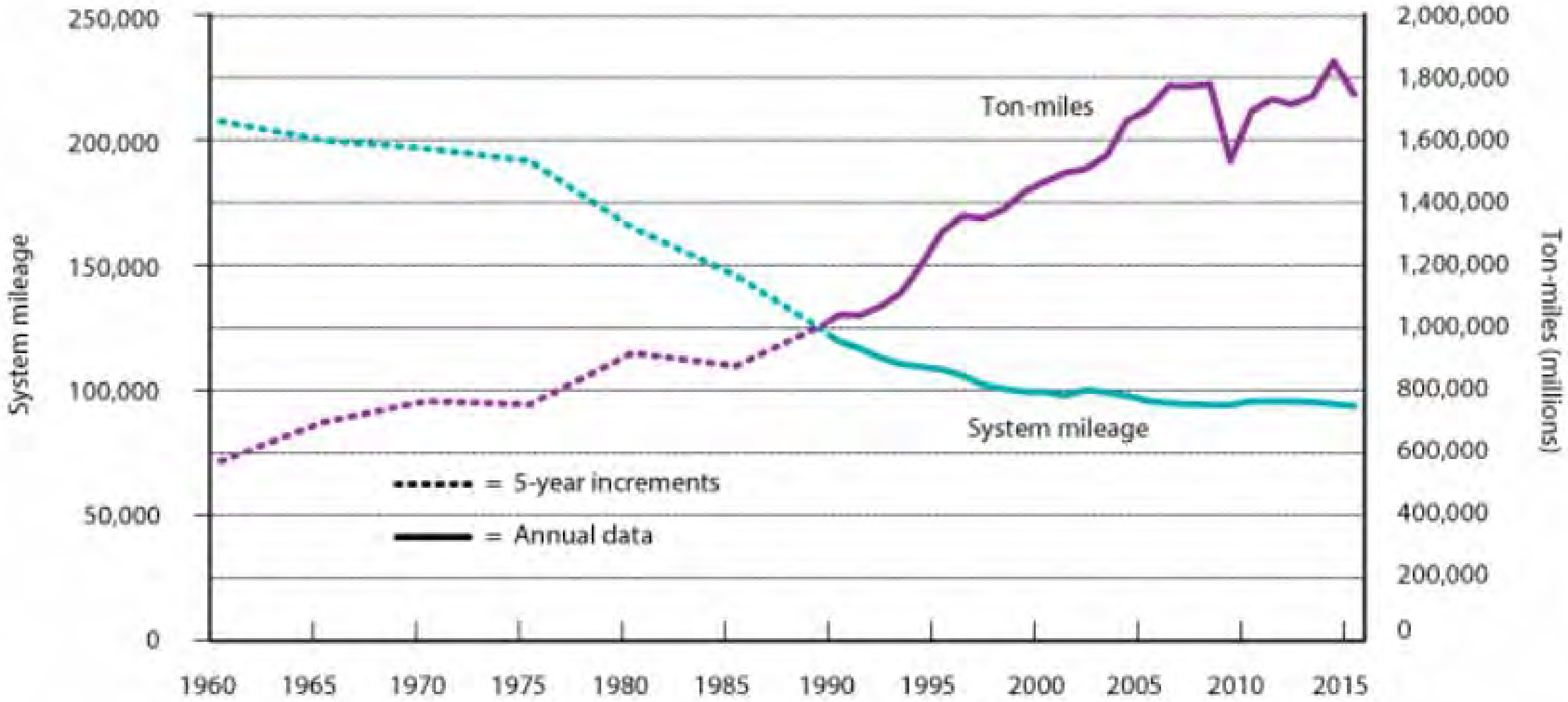
## Feasibility Study

- TRI Center Development
- Fernley Multimodal Transportation Center

## Rail Plan Update

- 2045 Vision for Rail Nevada
- Evaluate freight flows
- Evaluate passenger needs
- Identify future rail asset needs
- Possible change to NRS

# Class 1 Railroad System Mileage vs Ton-Miles of Freight



# Corridors

- Los Angeles to Las Vegas
- Bay Area to Reno
- Reno to TRI Center
- Bay Area to Truckee

# Light Rail Passenger

- Urban Commuting
- McCarran Airport
- Tourism
- Reno to TRI

NEVADA DOT

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Drive Safe Nevada

# Freight Focus

- Multimodal Facilities
- Improved access to facilities
- Shift freight off roads
- Dismantled Rail Program
- Rural Nevada

NEVADA DOT

zero Fatalities
Drive Safe Nevada

# Additional Thoughts

## Connect State Plans

One NV / Freight / Corridor

## Evaluate High Speed Rail

## Expand Rail Economic Drivers

## Rail Crossing Safety

NEVADA DOT

zero Fatalities
Drive Safe Nevada

# Rail Plan Direction

- Next Phases
- New Studies
- Freight Opportunities
- New Partners
- Passenger

There is a light
at the end
of the tunnel...

NEVADA DOT

zero Fatalities
Drive Safe Nevada

# … lets hope its a train!

Contact Lee Bonner
775.888.7122
lbonner@dot.nv.gov

NEVADA DOT

zero Fatalities
Drive Safe Nevada

# Freight Advisory Committee (FAC)

November 6, 2018

# Public Involvement


**1,780**
PUBLIC SURVEY RESPONSES

**107**
MEETING PARTICIPANTS

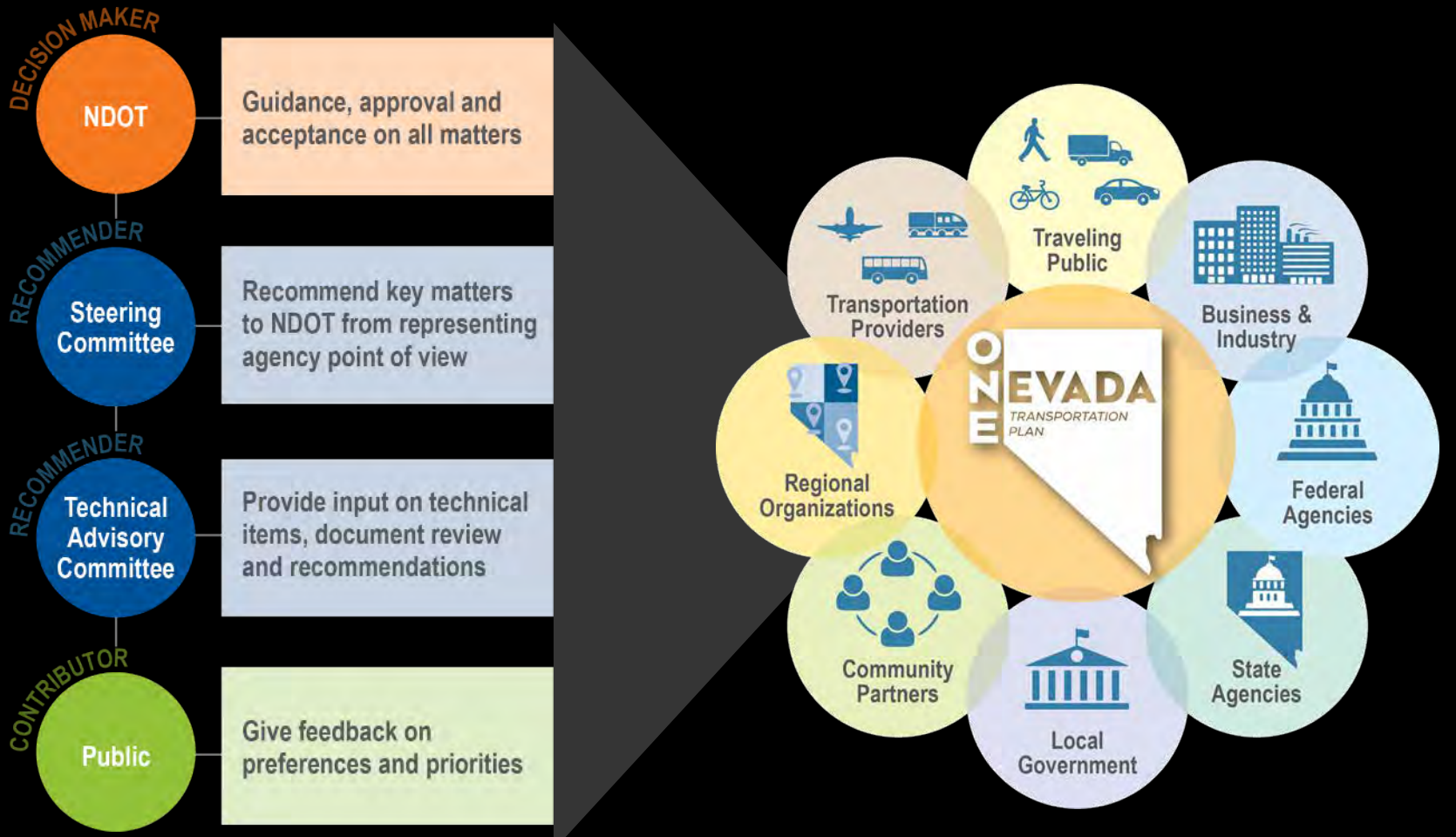
**40**
ADVISORY PARTNERS

**13**
MOBILE WORKSHOPS

**6**
GOALS

**1 VISION**

# Agency Engagement



# One NV Transportation Plan Goals

Enhance Safety

Preserve Infrastructure

Optimize Mobility

Transform Economies

Foster Sustainability

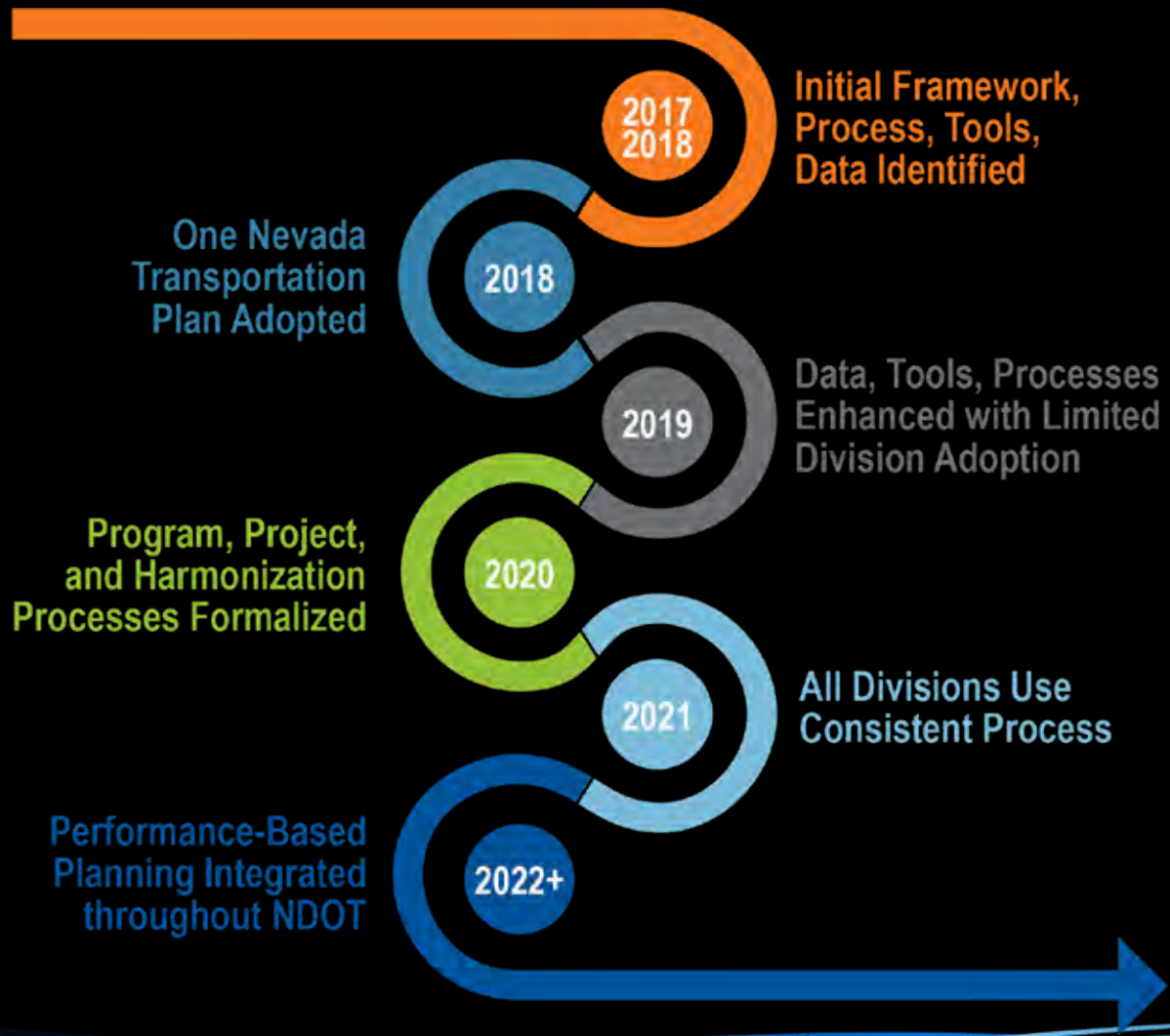
Connect Communities

# Performance & Prioritization

*Aligning projects to One Nevada Transportation Plan Goals*

# Implementation Roadmap

*Shifting the planning process takes time*



# Nevada Department of Transportation Hazardous Commodity Flow Study

## Nevada FAC Meeting - November 6, 2018

November 6, 2018

*presented by*

David Willauer, Cambridge Systematics, Inc.

NEVADA DOT SAFE AND CONNECTED

CAMBRIDGE SYSTEMATICS Think Forward

# Chemical Selection Process

*Details*

## Purpose

- Facilities reported over 18,000 toxic and flammable chemicals stored at more that 2,300 locations in Nevada. With so many chemicals in transport, the CS Team focused on priority chemicals that pose the greatest health and safety hazards to the public.

- Identifying priority chemicals also helps to determine which facilities to contact for additional hazmat routing, frequency and volume data.

# Proposed Top Ten Chemicals

| | Chemical Name | Score | Chemical Uses | Facilities | EHS |
|---|---|---|---|---|---|
| **1** | Ammonia, Anhydrous | 4 | Refrigerant, fertilizer | 18 | Yes |
| **2** | Butane | 4 | Fuel and blending | 6 | No |
| **3** | Chlorine | 7 | Water treatment | 6 | Yes |
| **4** | Ethanol | 1 | Biofuel | 5 | No |
| **5** | Hydrofluoric acid | 4 | Manufacturing | 8 | Yes |
| **6** | Nitrogen Dioxide | 6 | Catalyst, oxidizing agent | 2 | Yes |
| **7** | Potassium Cyanide | 4 | Mining and electroplating | 2 | Yes |
| **8** | Propane | 3.5 | Fuel and heating | 7 | No |
| **9** | Sodium Cyanide | 4 | Mining operations | 18 | Yes |
| **10** | Titanium tetrachloride | 4 | Titanium, whitening | 4 | Yes |

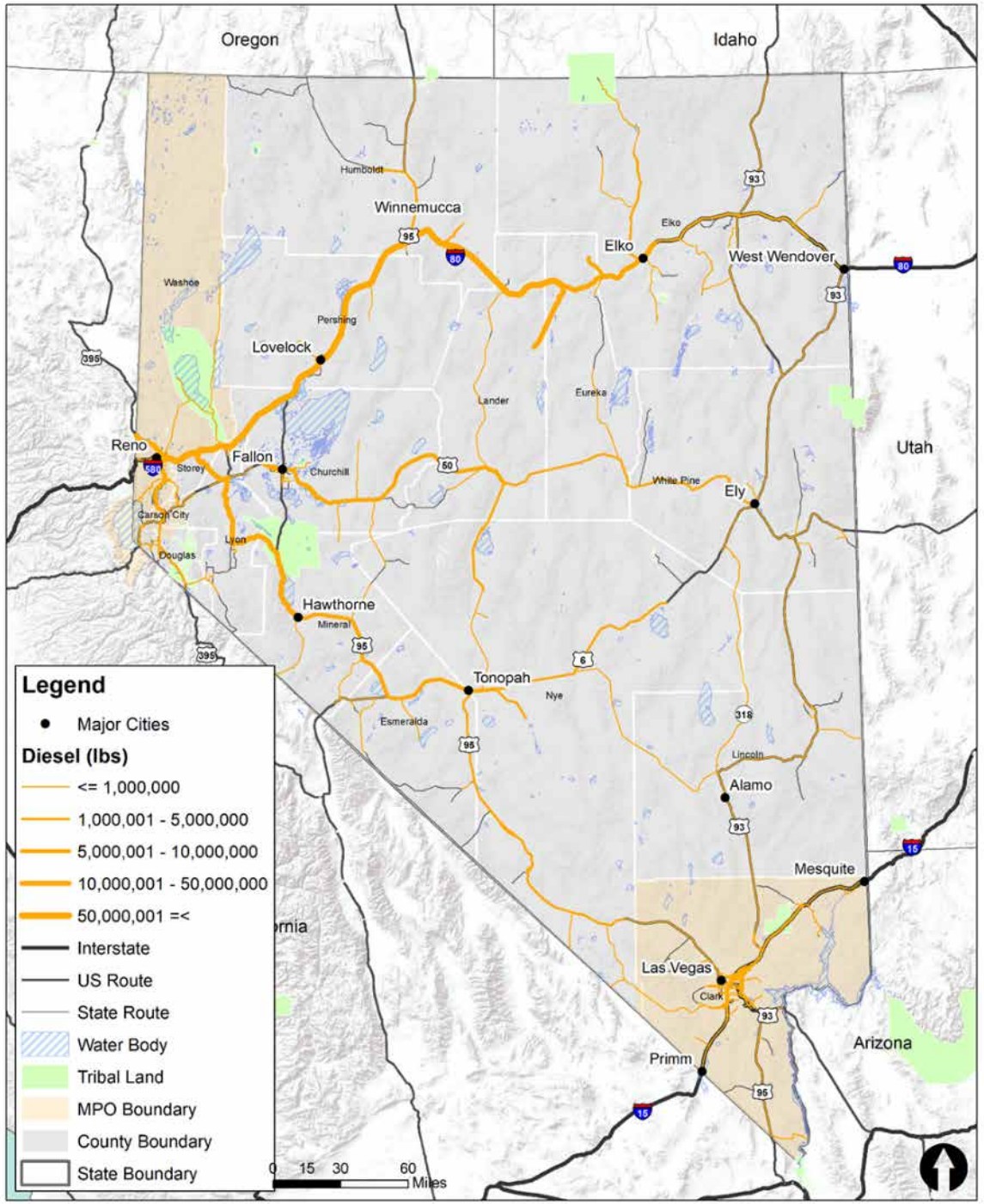
# Next Steps for Top Ten Chemicals

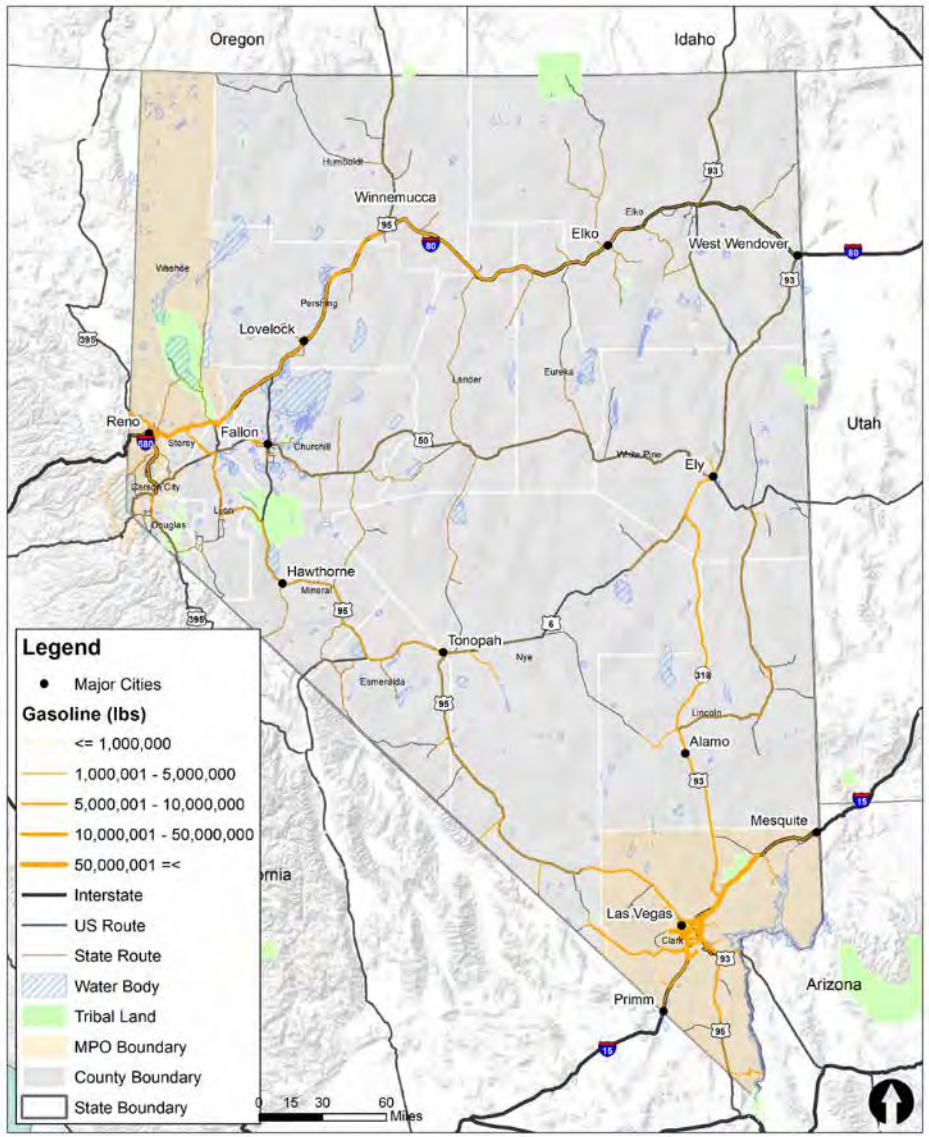
- Identify hazmat facilities storing top ten chemicals
- Identify distribution centers and manufacturers
- Conduct outreach to top ten hazmat facilities
- Obtain origin-destination information from multiple sources
- Develop top ten chemical maps

# Petroleum Supply Chain Methodology

- Nevada refined petroleum is produced in California and Utah
- Refined Petroleum is transported to Nevada via pipelines.
- Petroleum is primarily stored in Reno and Las Vegas
- Trucks transport refined petroleum to retail facilities

# Petroleum Distribution



# Questions

**THANK YOU!**

Contacts:


## Bill Thompson

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## David Willauer

dwillauer@camsys.com

301-347-9135

# Truck Parking Implementation Plan

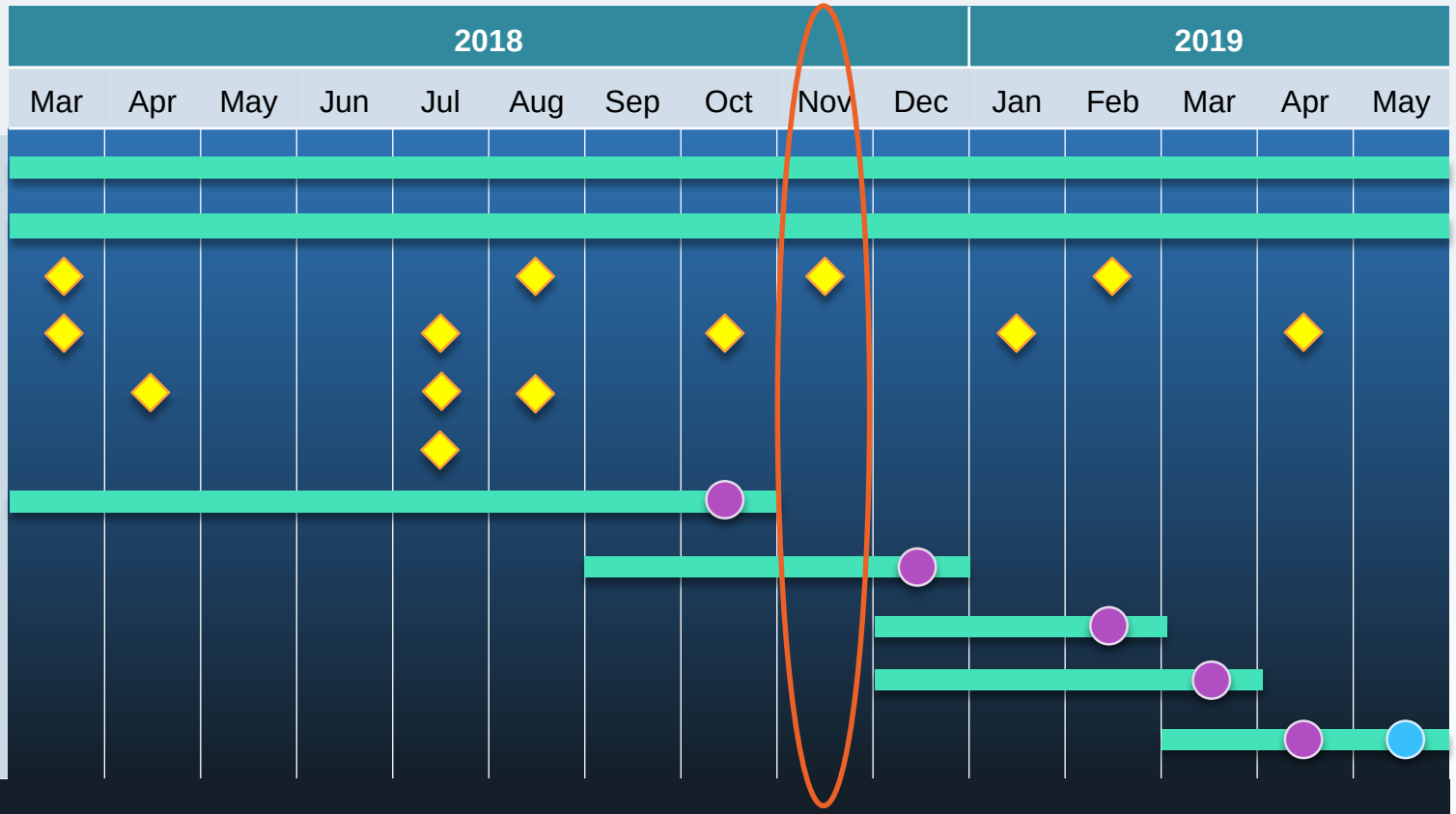
# Project Objectives

## Develop an implementation plan for expanding, improving and integrating freight truck parking and communications systems

- Once complete, these improvements will provide adequate and safe public truck parking where it's most needed, full-service private truck facilities, and real-time truck parking availability information
- Response to rising demand, changing hours of service requirements and safety standards defined in Jason's Law

# Project Schedule

| Task | Meeting/Deliverable |
|---|---|
| 1. | Project Management |
| 2. | Stakeholder Outreach and Coordination |
| | FAC |
| | WSFC and Subcommittee |
| | Interviews |
| | Survey |
| 3. | Data Collection |
| 4. | Needs Assessments |
| 5. | Recommendations |
| 6. | Implementation Plan |
| 7. | Final Report |



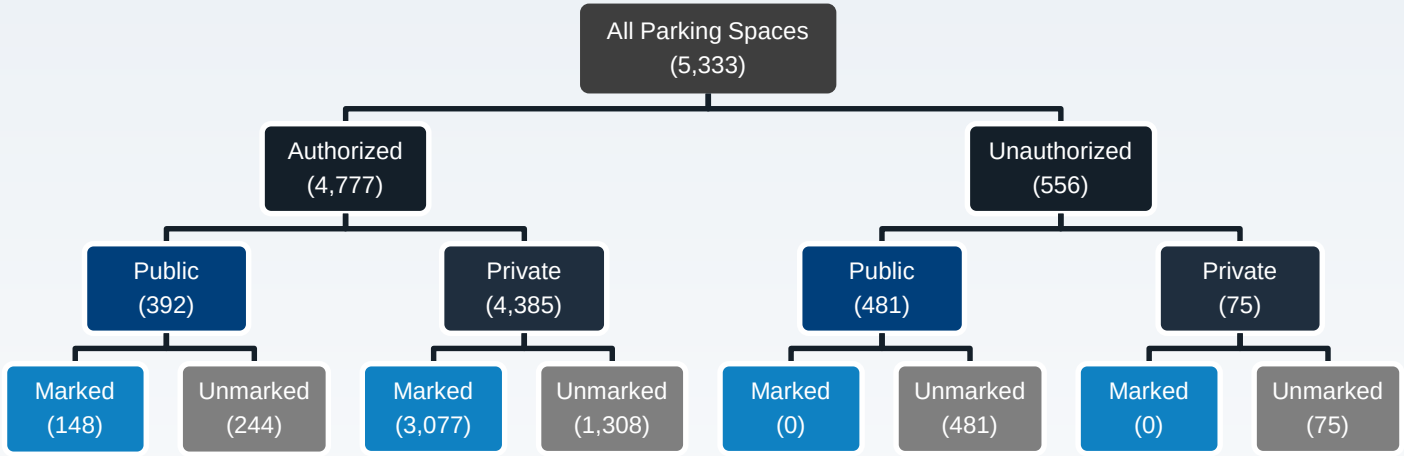

Meetings  Early Action Project  Draft Deliverable  Final Deliverable

# Project Progress – Needs Assessment

# Needs Assessment

## Parking Supply

- Truck parking supply – approximately 5,333 spaces at 170 locations

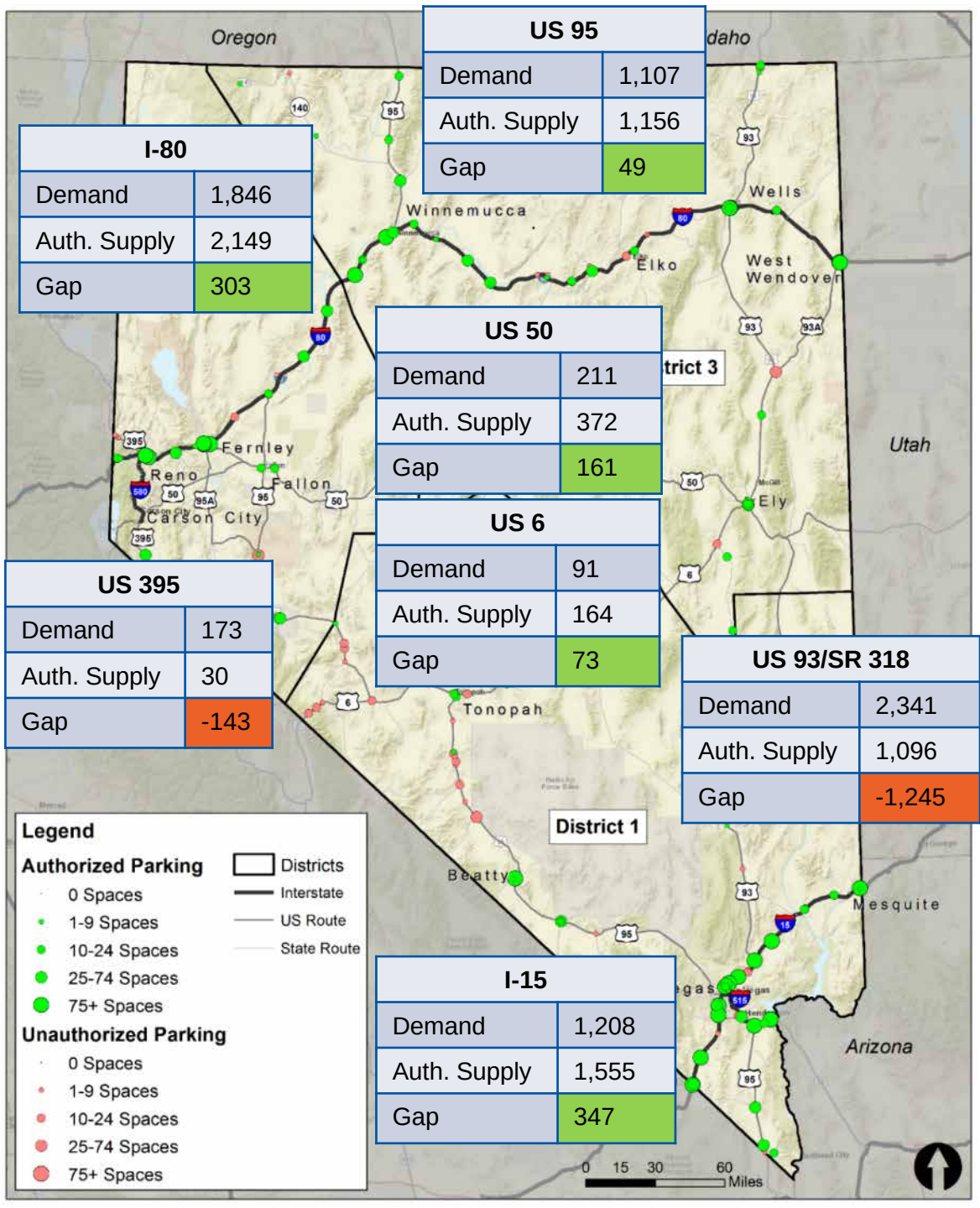





# Parking Demand

- FHWA Model
  - » Limitations
    - – Single average speed
    - – Corridor average volume may cause over-estimate due to urban area volume
    - – Demand spread evenly along corridor
    - – Limited ability to account for entry/exit points mid-corridor

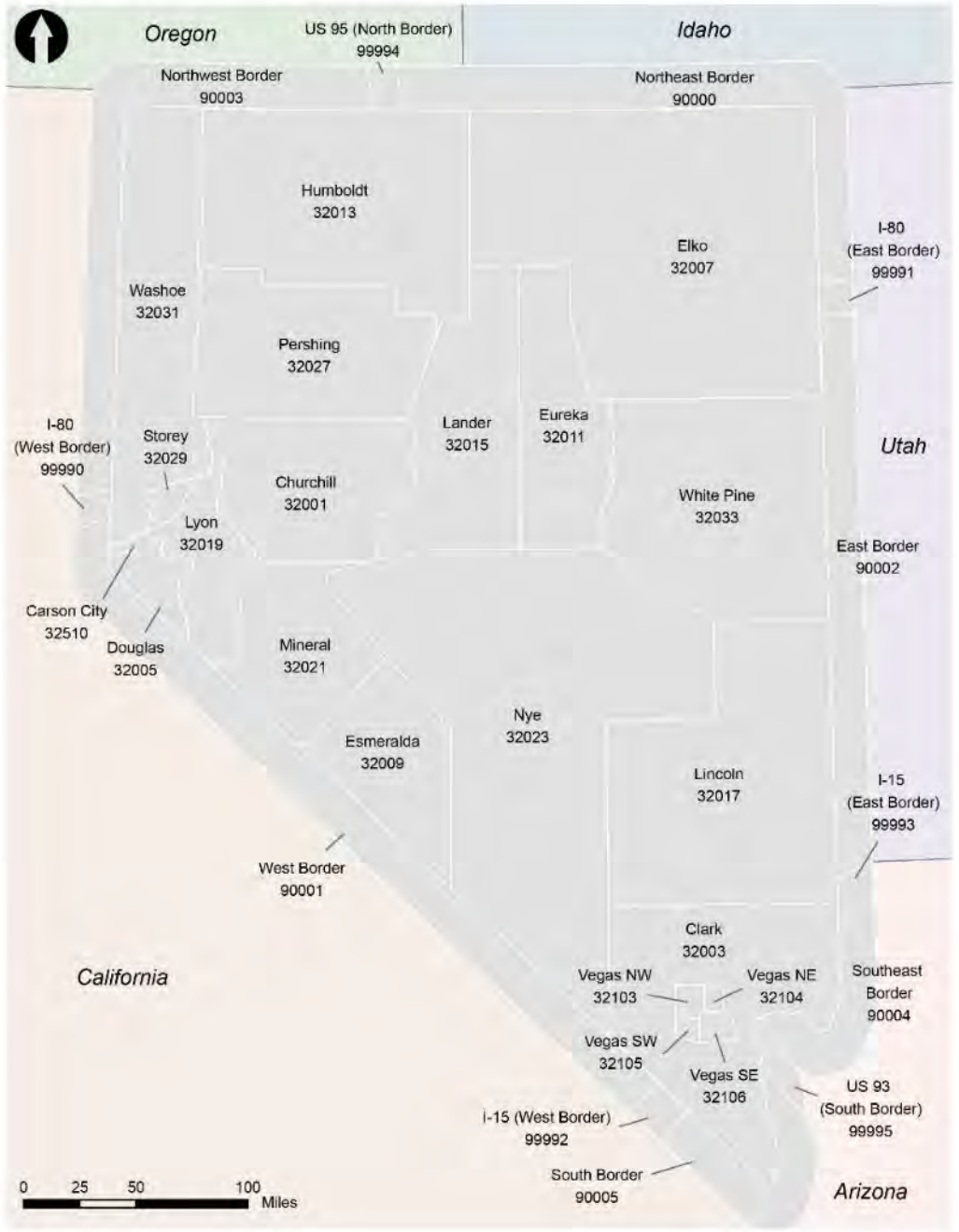
| Measure | Truck Parking Spaces |
|---|---|
| “Total” Demand | 6,976 |
| Supply by Corridor | 7,156 |
| Actual Spaces Statewide | 5,333 |
| Actual Authorized Spaces | 4,777 |
| Statewide Gap (authorized) | -2,199 |
| Statewide Gap (all) | -1,643 |

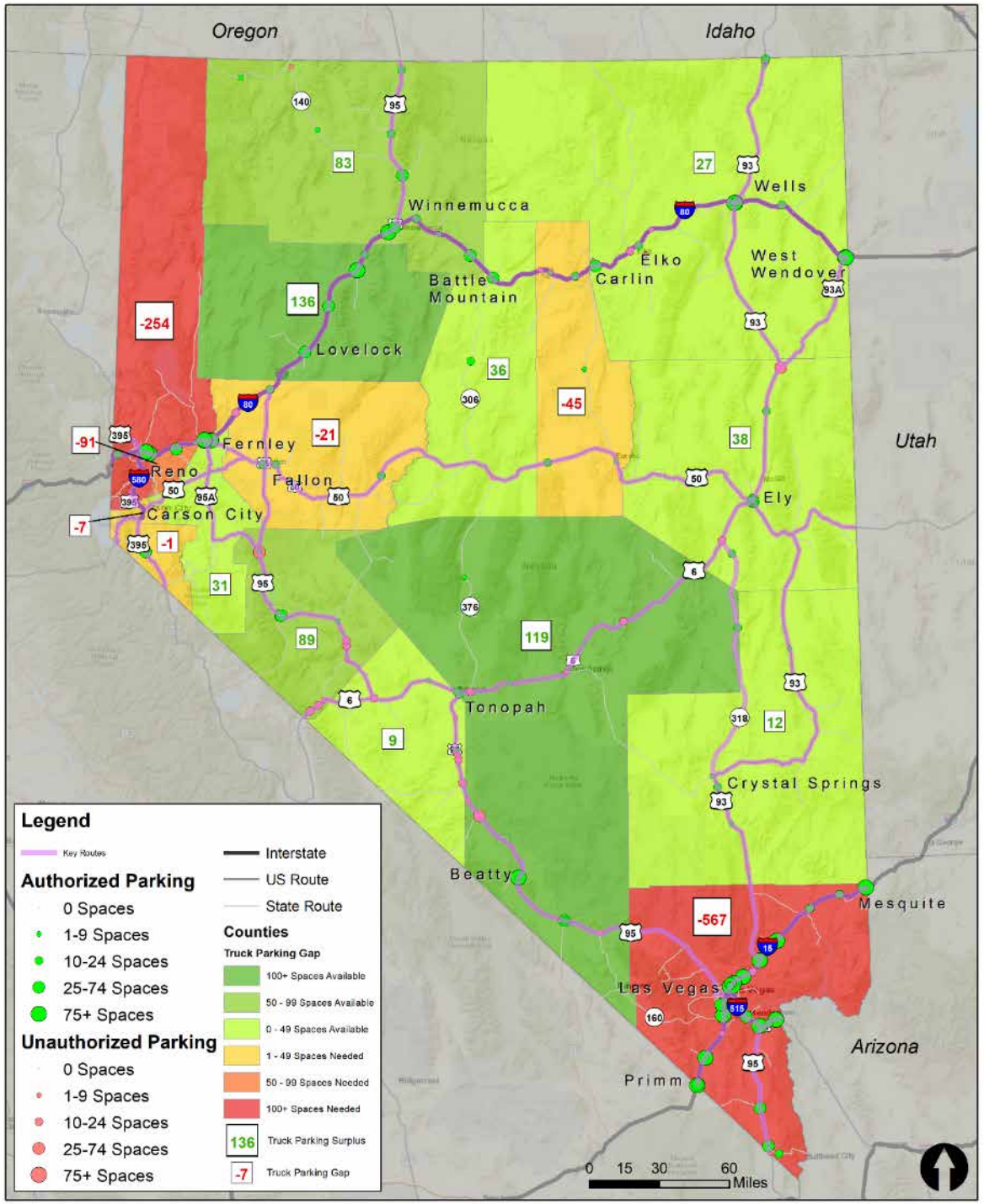


# Needs Assessment

## Parking Demand

- ATRI Origin/Destination Analysis
  - » County zones (except Clark County) and entry/exit buffer zones
  - » Identify trucks that enter the state on I-15, I-80, US 93 and US 95
  - » Identify stops of 4+ hours by county, calculate % of stops in each county for each route
  - » Apply % to NDOT Truck Volumes on those routes to determine where in Nevada trucks are stopping
  - » Also examined if trucks starting in the largest volume areas (Clark, Washoe counties) should have trips distributed on corridors:
    - – Over 99% of the trucks originating in Clark County are either exiting the state or have their next stop of 4+ hours in Clark County
    - – Over 96% from Washoe County either exit the state or have their next stop in Washoe County
    - – Very few trucks starting a trip within Nevada require long-term parking on one of the corridors






# Needs Assessment

## Parking Demand

- Truck Parking Gap by County using ATRI O/D analysis (based on authorized parking locations only)
  - » 567 spaces needed in Las Vegas Metro
  - » 254 spaces needed in Reno Metro
  - » 91 spaces needed at TRIC
  - » 45 spaces needed between Carlin & Battle Mountain
  - » 21 spaces needed between Fernley & Lovelock
  - » 136 surplus in Pershing County
  - » 119 surplus in Nye County

# Needs Assessment

## Gap Analysis

| | I-80 | I-15 | US 93 (SR318) | US 95 |
|---|---|---|---|---|
| FHWA Demand | 1,846 | 1,208 | 2,341 | 1,107 |
| O/D Demand (4+ hour stop) | 1,986 | 1,716 | 1,065 | 105 |
| O/D Demand (all stop) | 4,902 | 5,297 | 1,621 | 285 |
| Parking Supply (authorized)* | 2,149 | 1,555 | 1,096 | 1,156 |
| Parking Supply (all)* | 2,315 | 1,971 | 1,211 | 1,522 |

*Supply is identified by corridor. Total supply is lower due to some facility's location on multiple routes

- FHWA model uses corridor average – includes high volumes where US routes are concurrent with Interstates

# Needs Assessment

## Gap Analysis

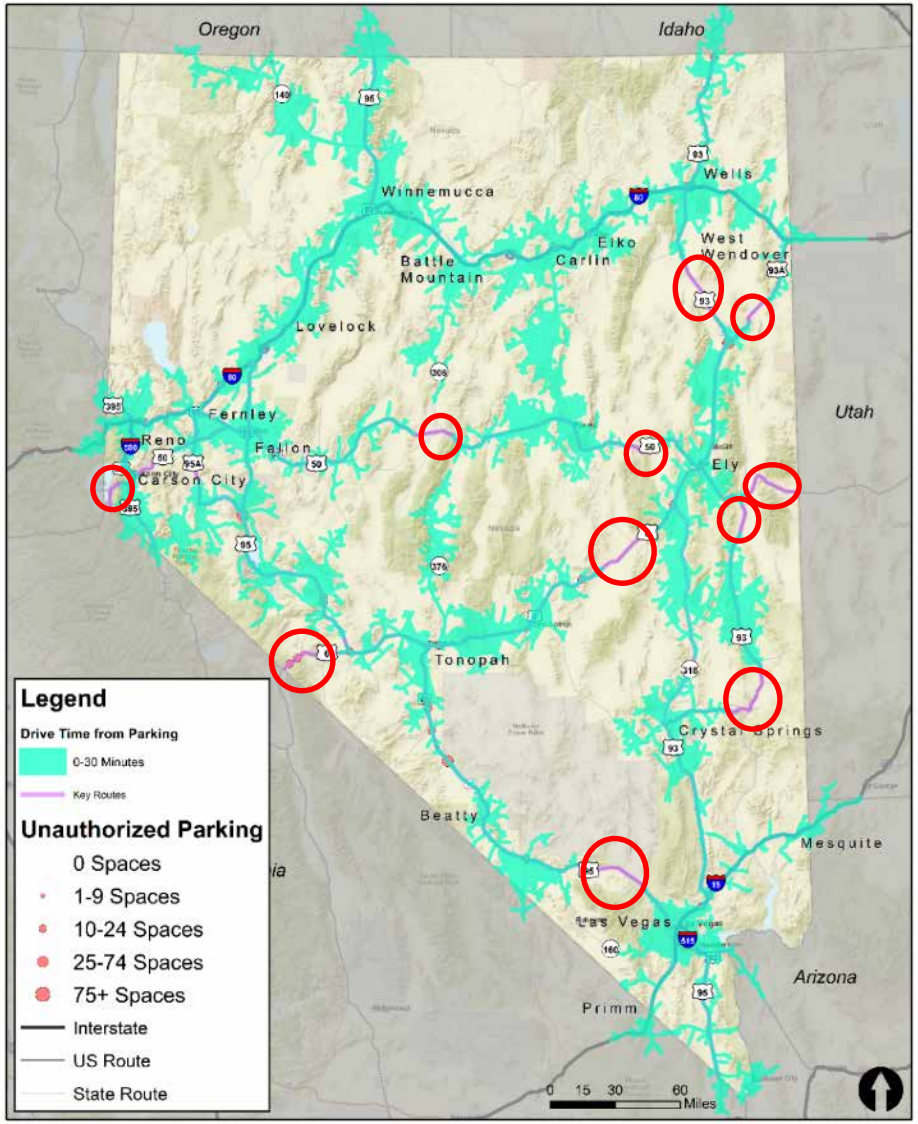
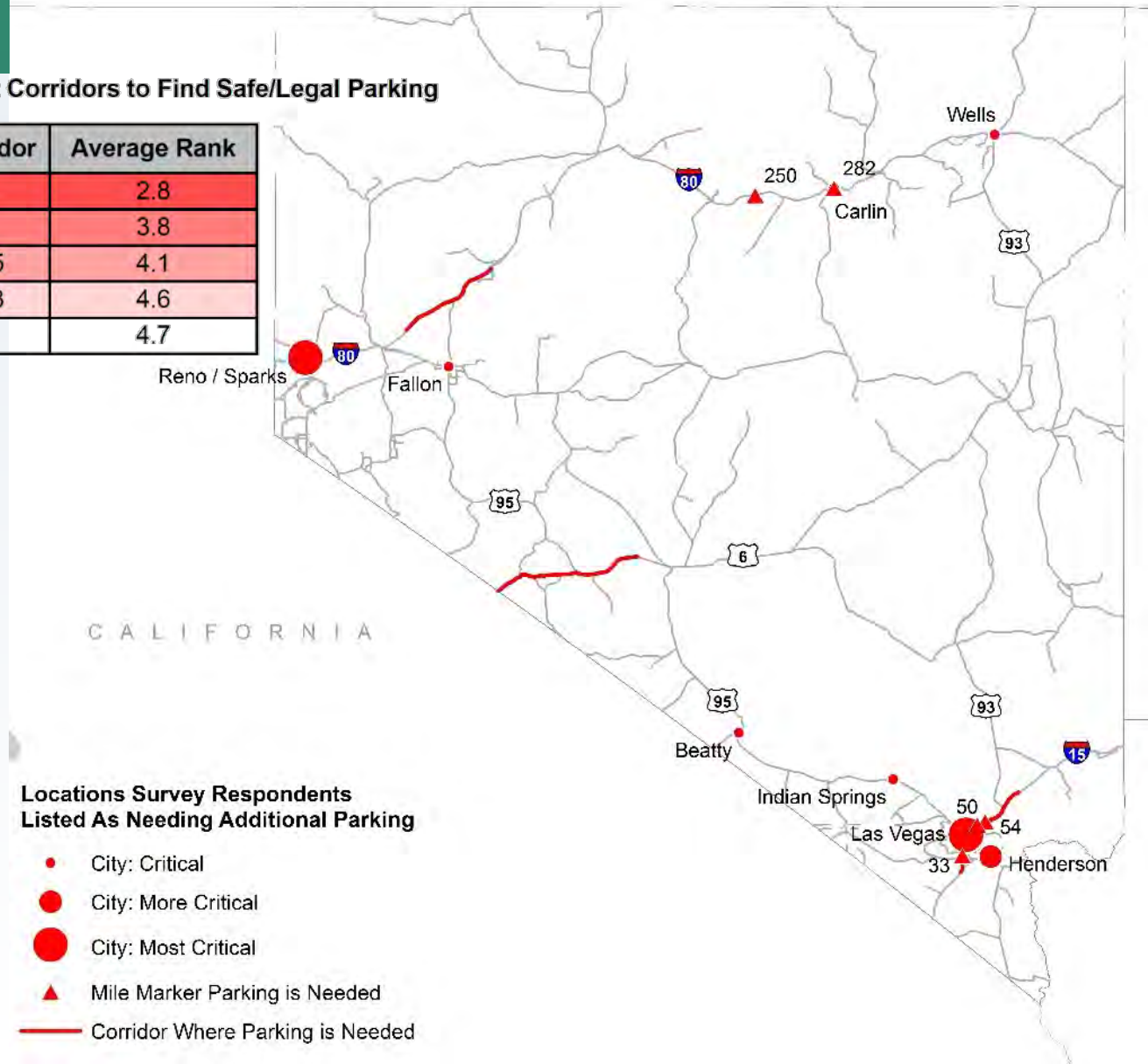



**Table 6: Most Difficult Corridors to Find Safe/Legal Parking**

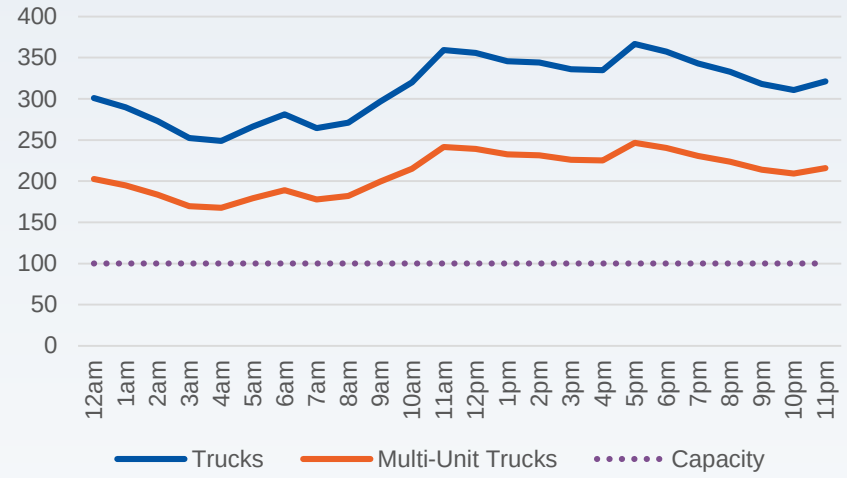
| Corridor | Average Rank |
|---|---|
| I-15 | 2.8 |
| I-80 | 3.8 |
| US 95 | 4.1 |
| US 93 | 4.6 |
| US 6 | 4.7 |



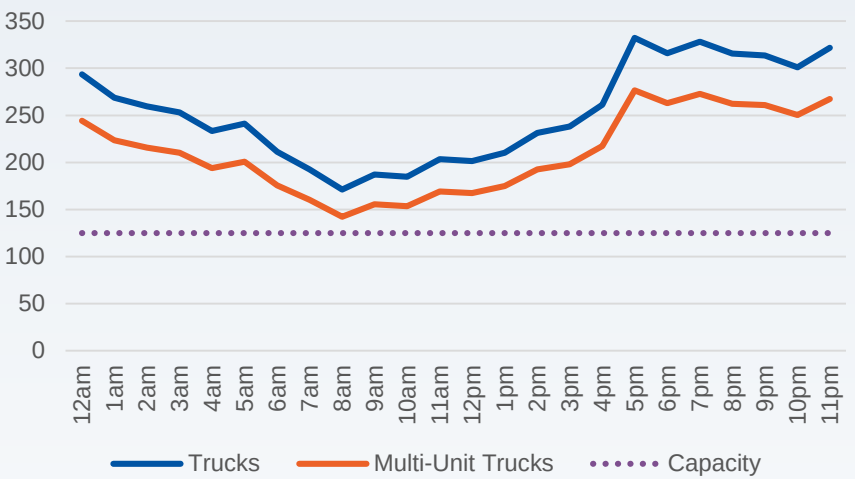
# Needs Assessment

## Parking Utilization

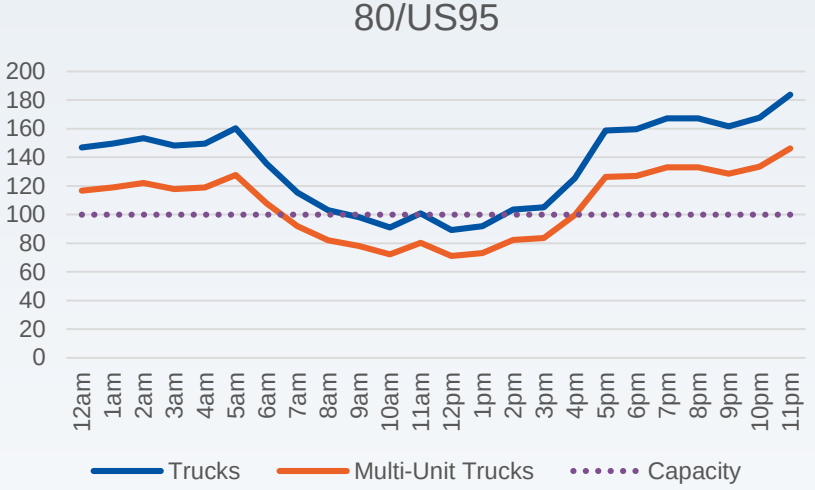
TA Travel Center (Las Vegas) - I-15



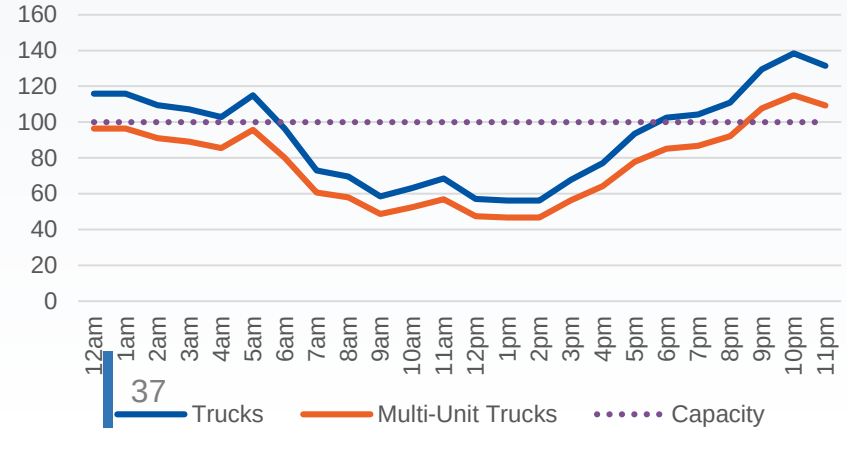

Whiskey Petes/Flying J (Primm) - I-15



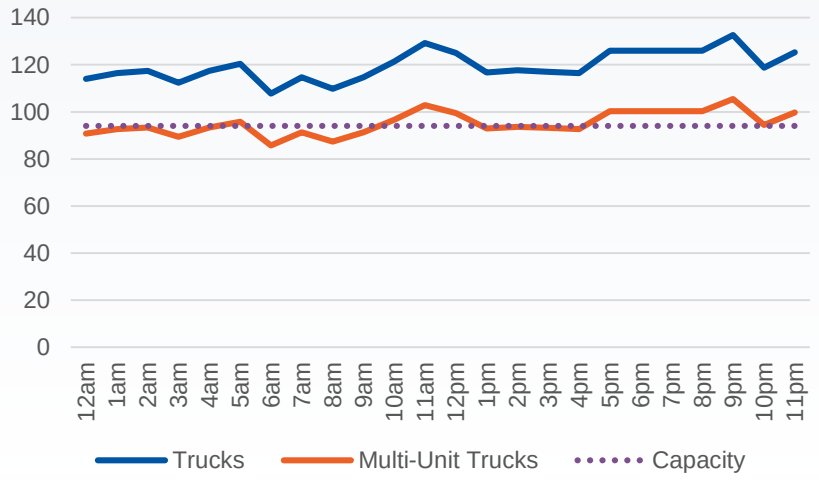

Flying J Travel Center (Fernley) - I-80/US95



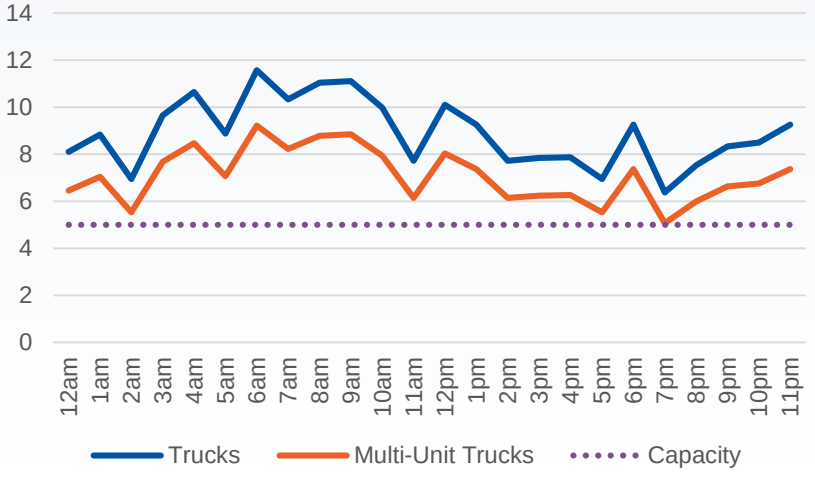

Gold Strike Truck Plaza/Shell Station/Terrible Herbst (Sloan) - I-15



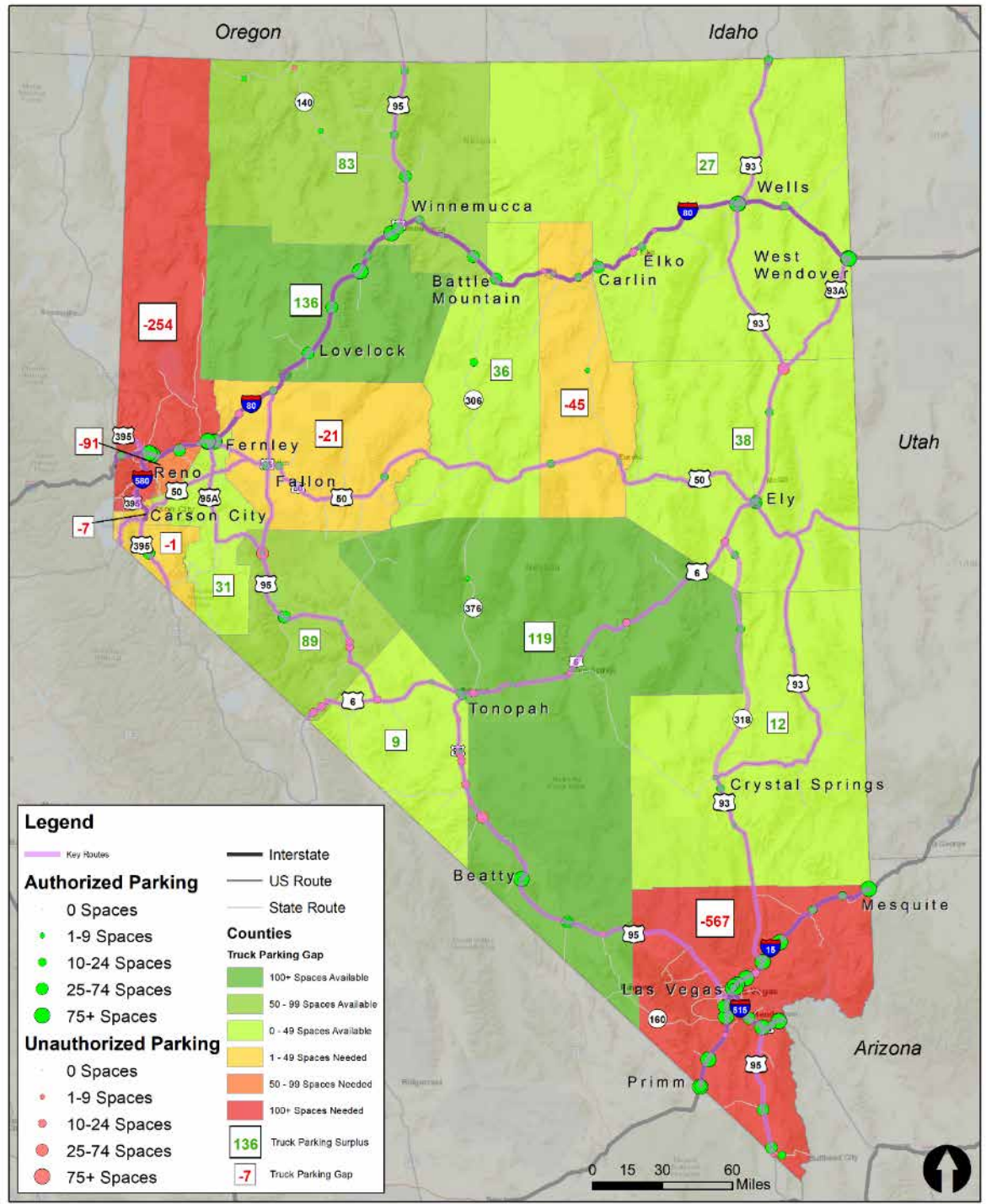

Loves (Fernley) - I-15/US 95




Wadsworth Rest Area - I-80 WB



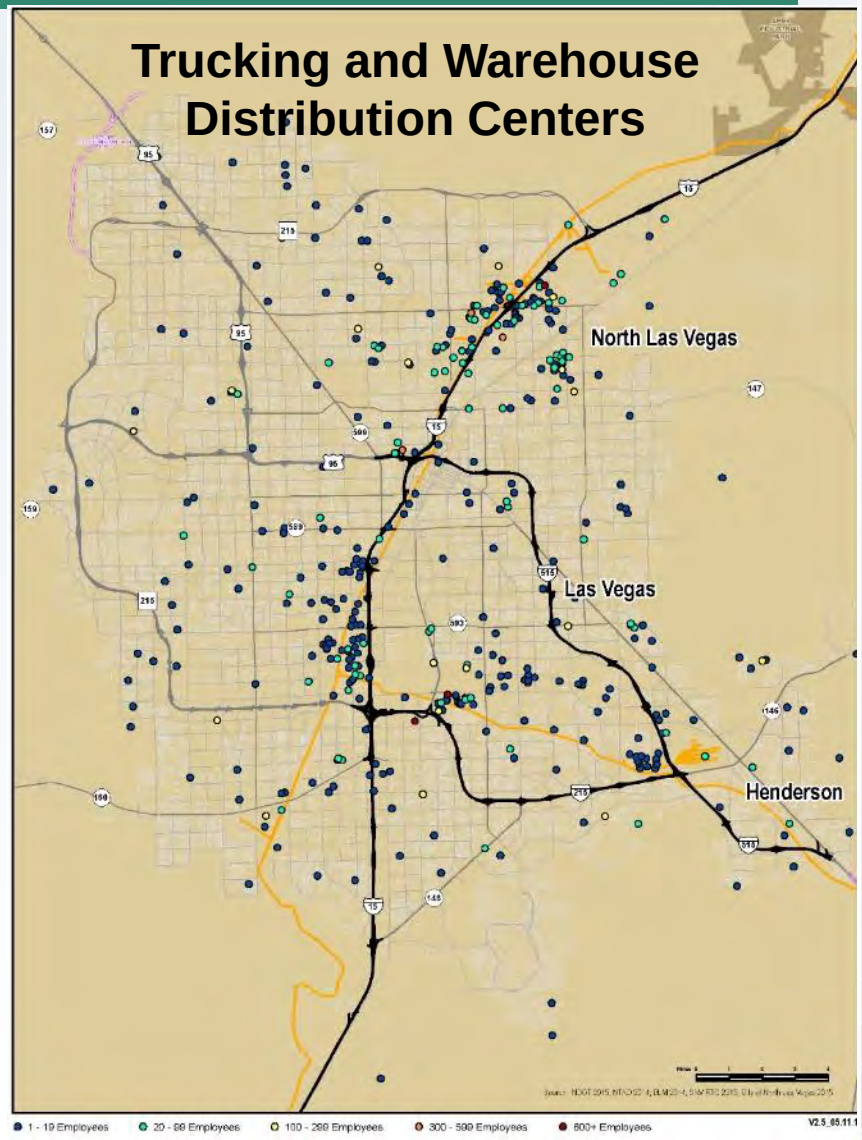
# Needs Assessment

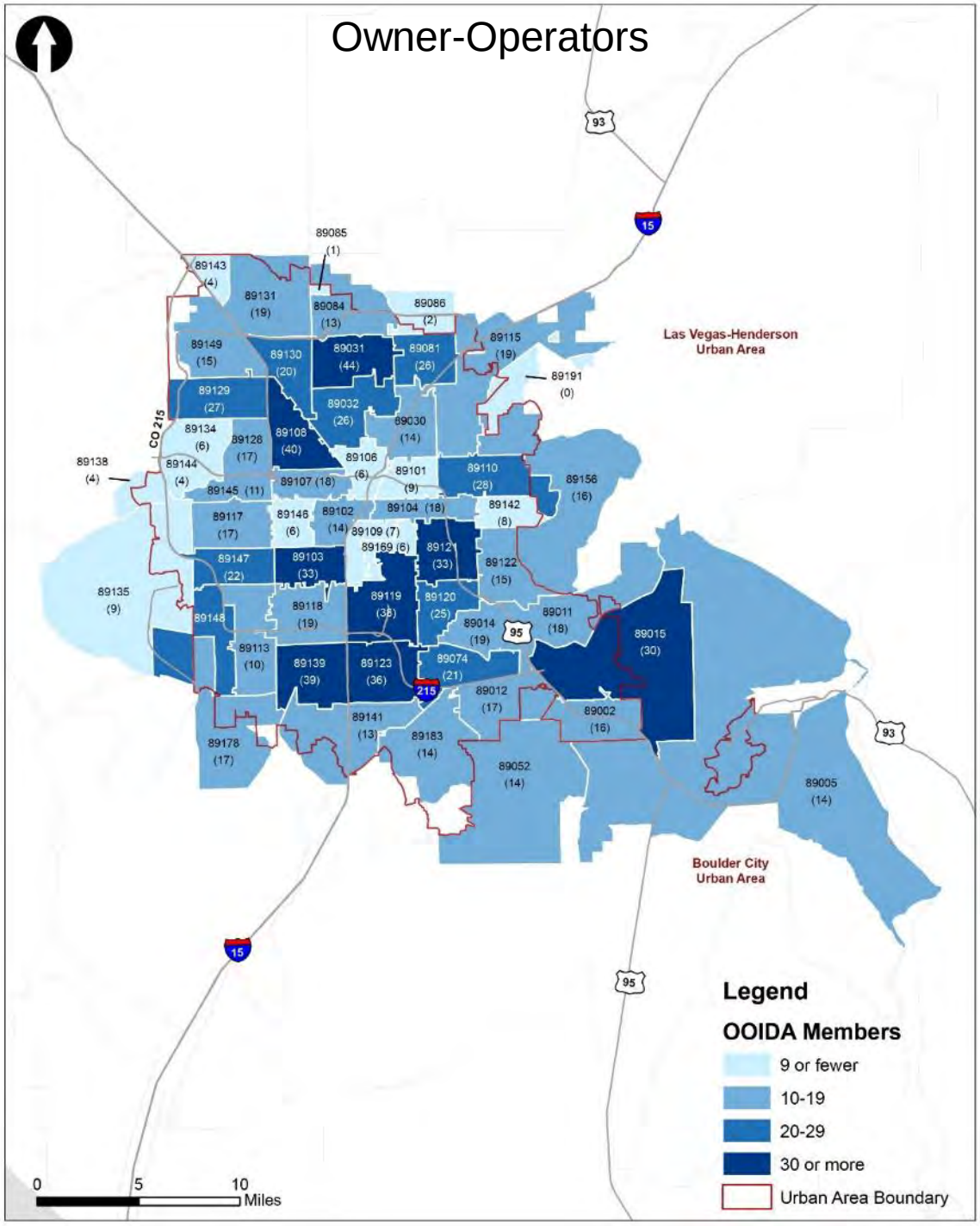



# Needs Assessment

## Urban Parking

- Short-term staging
- Long-term for owner-operators
- Overnight



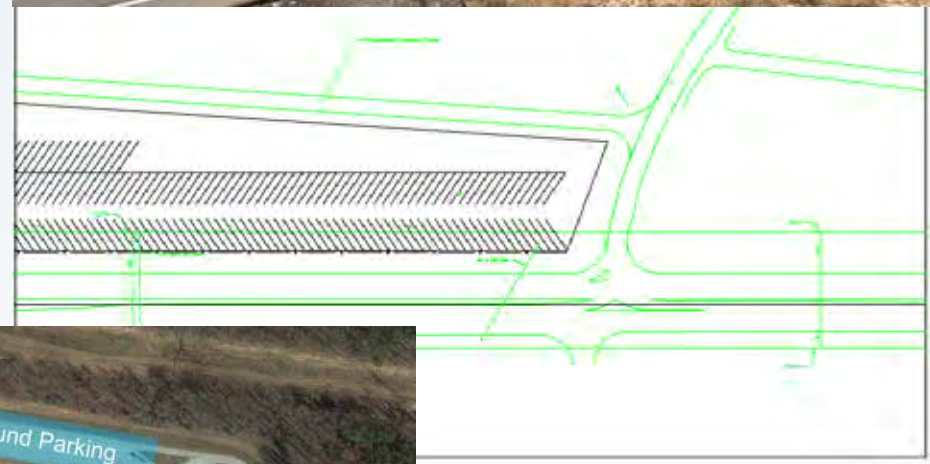



# Range of Solutions

# Range of Solutions

## Lower-cost Rural Solutions

- Improve existing authorized public lots
  - » Additional spaces
  - » Features (pave/grade, bathrooms, lighting, fencing)
- If needed, improve/convert unauthorized locations to authorized
  - » Improve entry/exit
  - » Features (pave/grade, bathrooms, lighting, fencing)
- Utilize existing ROW
  - » Construction staging, abandoned rest areas
- Possible design template for improving Interstate on/off ramps
- Convert any existing rest areas (at risk of closure) to truck-only
- Add parking to weigh stations


Parking at Weigh Stations I-40/I-85 (North Carolina) Source: CS

# Range of Solutions

## Urban Parking: Short-term/Staging and Long-term Owner-operator

## Who pays for it??

- Private truck stops
  - » No business case for having multiple facilities in the same market
  - » Adjacent land for expansion is either too costly or not available
- Public
  - » Transportation funds over-burdened
- Drivers
  - » Slim margins

Detroit, MI (Source: Google Maps)


Elmira, NY Public Truck Stop (Source: Google Maps)

# Range of Solutions

## Urban Parking: Short-term/Staging and Long-term Owner-operator

- Land Use/Zoning Requirements
  - » Example from Lehigh Valley, PA
- Common/shared Lot
  - » Pooled fund approach – industrial areas
    - – Staging area in Brampton, Canada for rail intermodal
    - – Each business has X reserved spots – help pay towards O&M.
    - – Share a single dispatcher between multiple companies to coordinate movements between lot and businesses
  - » Industry tax per bay or sq ft
  - » Driver usage fee
  - » Public land

Chapter 27: **Zoning**
└ Part 6 **OFF-STREET PARKING AND LOADING**

§ 27-601 **Required Number of Parking Spaces.**

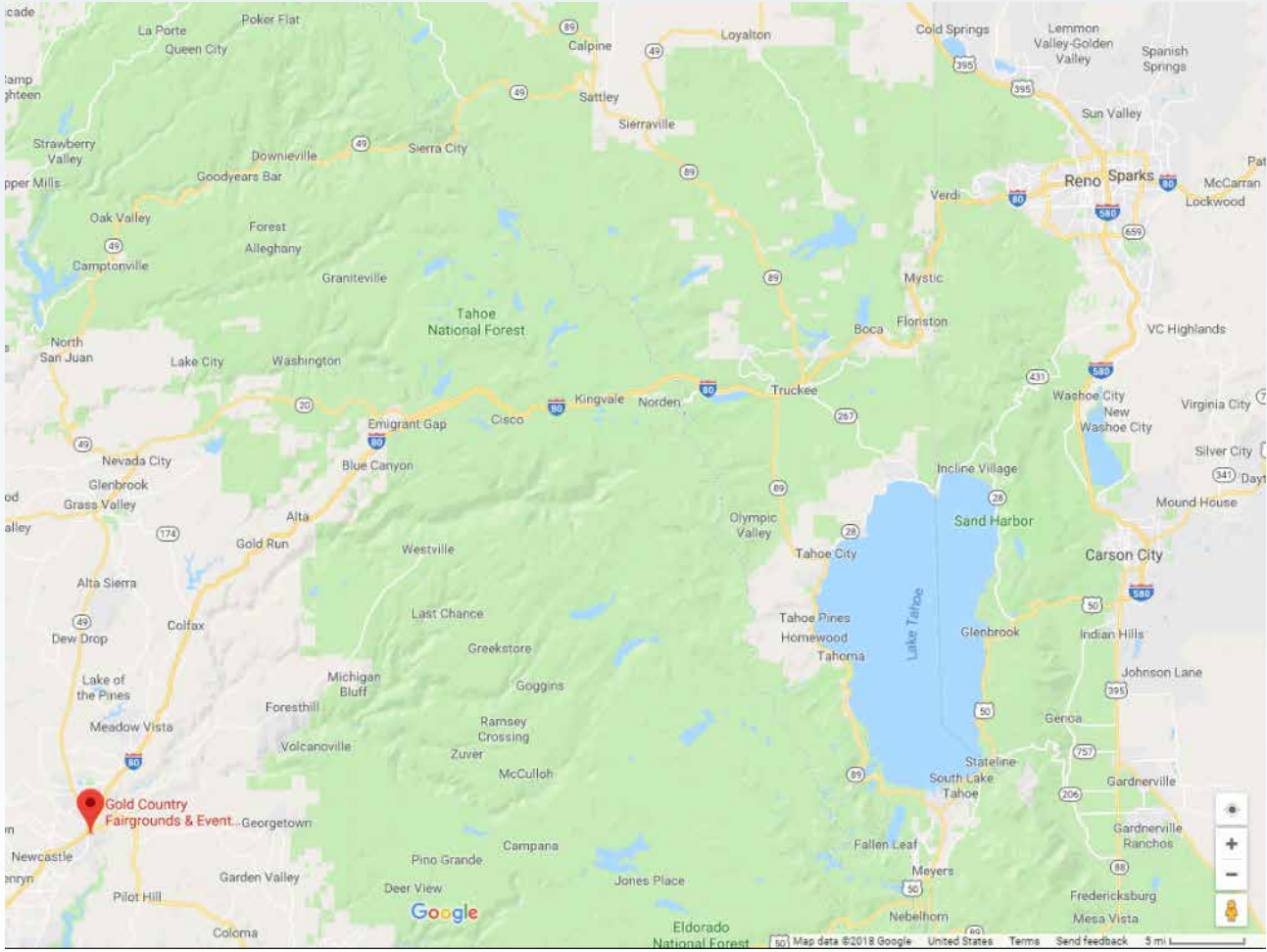
| Use | Number of Off-Street Parking Spaces Required | Plus 1 Off-Street Parking Space for Each: |
|---|---|---|
| E. Industrial Uses: All industrial uses (including warehousing, distribution, truck terminals and manufacturing) | In addition to parking or storage needed for maximum number of vehicles stored, displayed or based at the lot at any point in time, which spaces are not required to meet the stall size and aisle width requirements of this Chapter: 1 per 1.2 per employee, based upon the maximum number of employees on site at peak period of times (including any overlapping shifts) plus ten-foot by eighty-foot truck staging parking space for each 1/2 of a required loading space | 1 visitor space for every 10 managers on the site |
| Self-Storage Development | 1 per 15 storage units | employee |

https://ecode360.com/14517474

# Range of Solutions

## Solutions – Emergency Parking

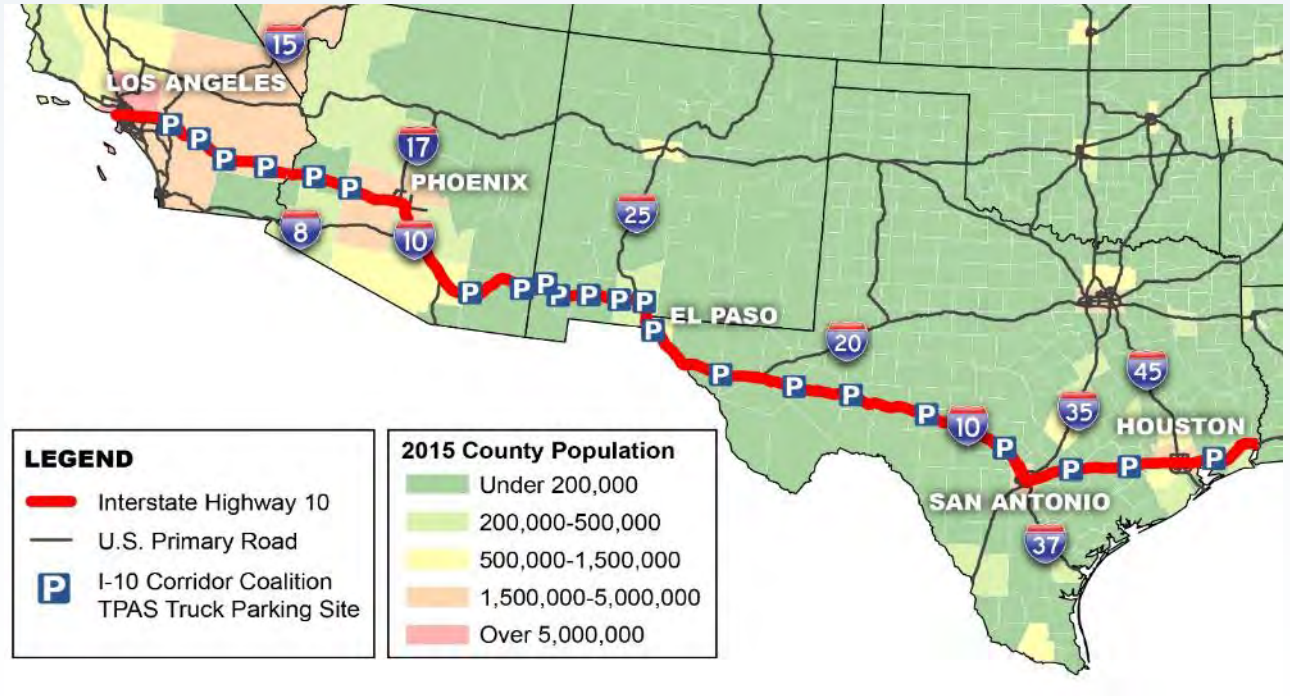
- Maryland allows commercial vehicles to use commuter and park and ride lots when there is 6+ inches of snow
- Colleges/sports stadiums – especially if public money was used to help construct them
- Caltrans has an arrangement with the Fairgrounds in Auburn to allow trucks to park when Donner Pass closes



# Technology Solutions

- Recent Technology Examples of Interest
  - I-10 Corridor Truck Parking Availability System
  - NDOT I-15 DMA Project Freight Information Test
  - Elements of FRATIS
- Conceptualizing a Technology Solution
  - Potential System Elements
  - Operational Scenario

# I-10 Corridor Coalition's Truck Parking Availability System (TPAS)

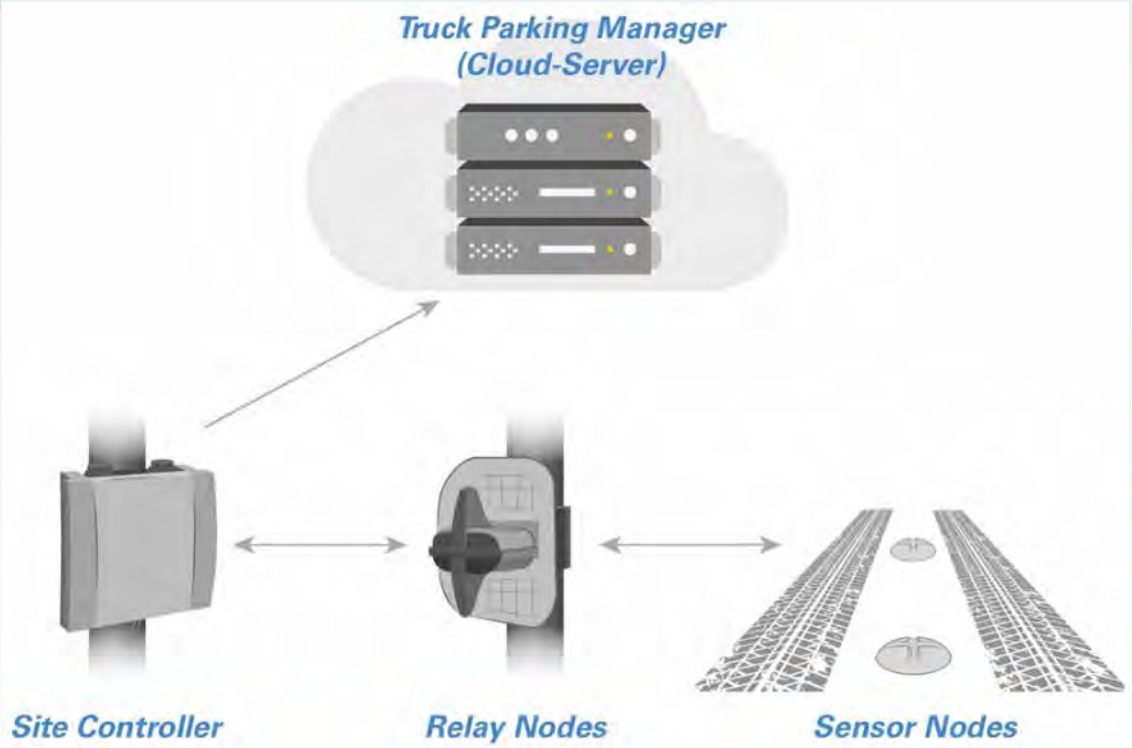




***The I-10 Corridor Coalition includes four state DOTs (CA, AZ, NM, and TX) that are organized under a charter and operating agreement.***

***The I-10 Corridor Coalition has developed a ConOps for the TPAS, and has submitted and 2018 ATCMTD Grant Application to support TPAS Deployment***

# TPAS
# Truck Parking System Technology

- **In-Ground Sensor Nodes:** Wireless, lithium battery (with a life of 7 to 10 years) powered in-ground sensors to determine space occupancy. Two deployed per truck parking space to improve accuracy in detecting smaller trucks;
- **Relay Nodes**: Wireless, lithium battery powered. Attached to poles at site to collect data from sensors. The number required depends on site layout;
- **Data Collector**: Powered, one per site. Aggregates all data from relay nodes and transmits to a central location for processing; and
- **Truck Parking Management System**: Off-site. Data processing, performance and system management, and connection to information dissemination system



# TPAS
# Dynamic Parking Capacity Signs

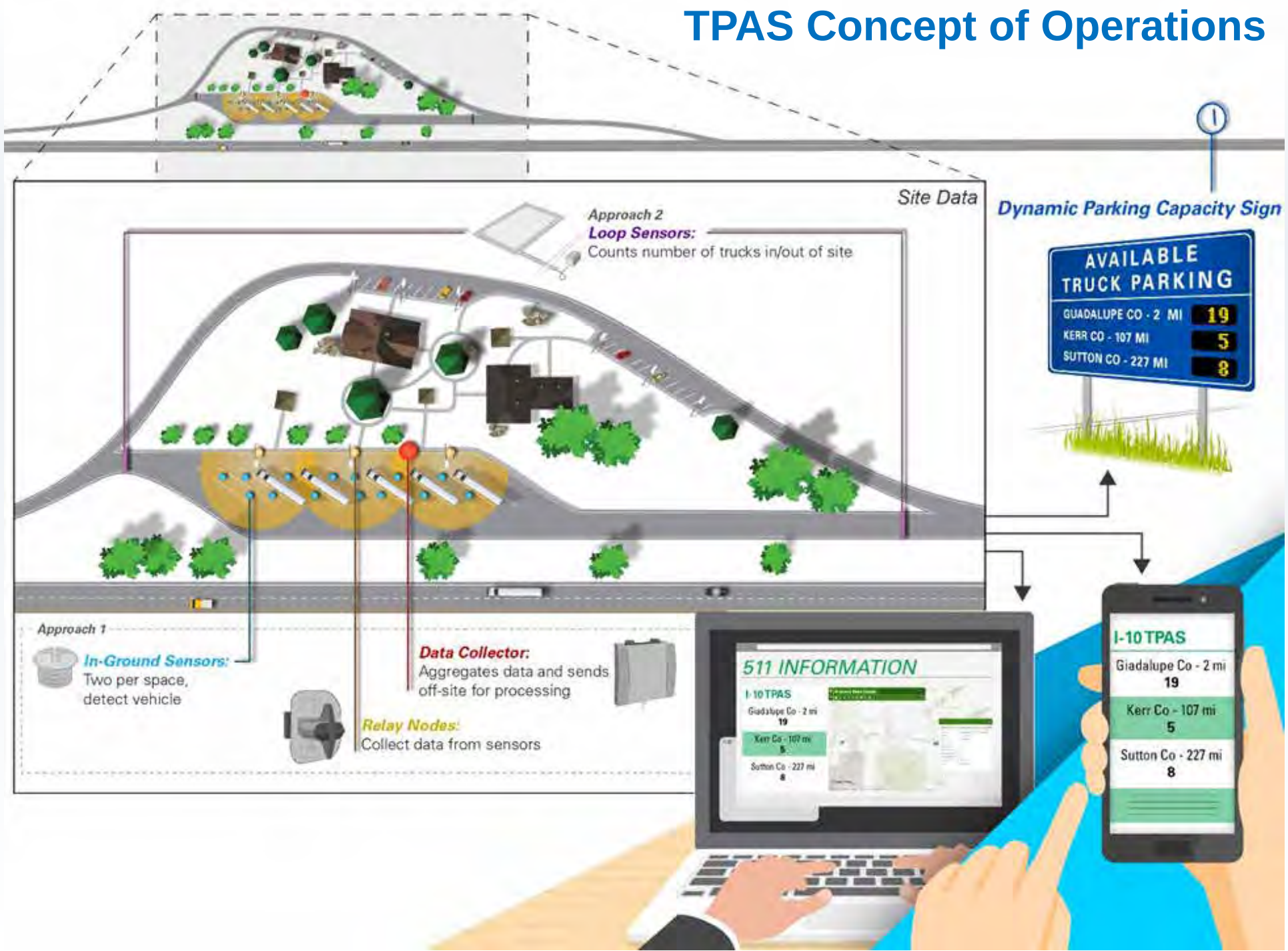
- Dynamic Parking Capacity Signs are the preferred communication method for drivers seeking truck parking availability information. (ATRI)
- Best practice is to locate one DPCS within 3 miles of the site and one approximately 20 to 30 miles prior to a site.
  - » Provides advanced warning of space availability to allow drivers to consider alternative plans if a location is full

# TPAS
# Mobile Application For Drivers

- The mobile application will automatically display any truck parking spots open in the locations along the Corridor.
- The mobile application pulls GPS coordinates from the smartphone and generates a web service request that includes geo-coding data. The request is sent to the I-10 Corridor Coalition TPAS.
- The mobile application then calculates the estimated distance to each identified facility and displays this information along with location and available spaces.
- The service could be expanded in the future to include privately owned truck stops and serve as the base for additional technology deployments in the I-10 Corridor

***Application to include "hands-free" features such as audible alerts and commands to mitigate driver distraction***

# TPAS Concept of Operations



# TPAS Information Dissemination

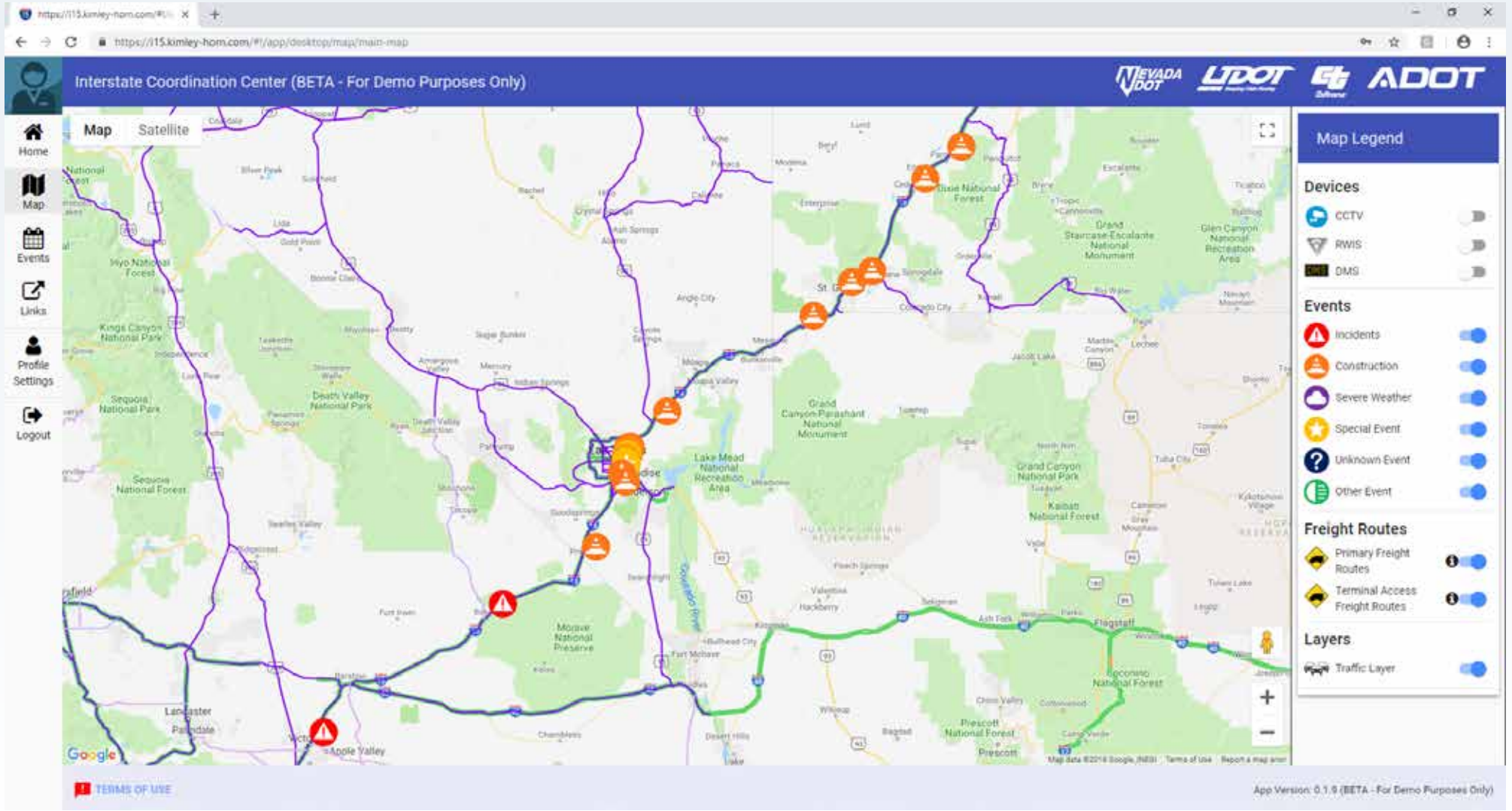
# I-15 Dynamic Mobility Application Freight Information Application (FIA)

- Deployment based on a cooperative agreement between NDOT, UDOT, Caltrans and ADOT
  - NDOT is Lead Agency
- Provides the following capabilities:
  - A simple registration web site that allows trucking company participants to enter preferences in term of what types of real-time transportation alerts that they would like to receive, with the ability to select geographic portions of the corridor for tailored alerts.
  - Real-time transportation alerts to be provided to trucking company participants via email and text
  - Provides alerts to cover: longer-term incidents, congestion, weather, closures/restrictions (e.g. work zones), etc.

***The goal of the I-15 DMA project is to facilitate inter-state and inter-agency communication for improved operations and management of I-15 during planned and unplanned events. .***

***The FIA component of this project that is now undergoing testing focuses on a basic "freight transportation traffic alert" concept, which will be targeted at trucking industry dispatchers/operations managers and truck drivers***

# I-15 Freight Traveler Information Prototype Test – Web View



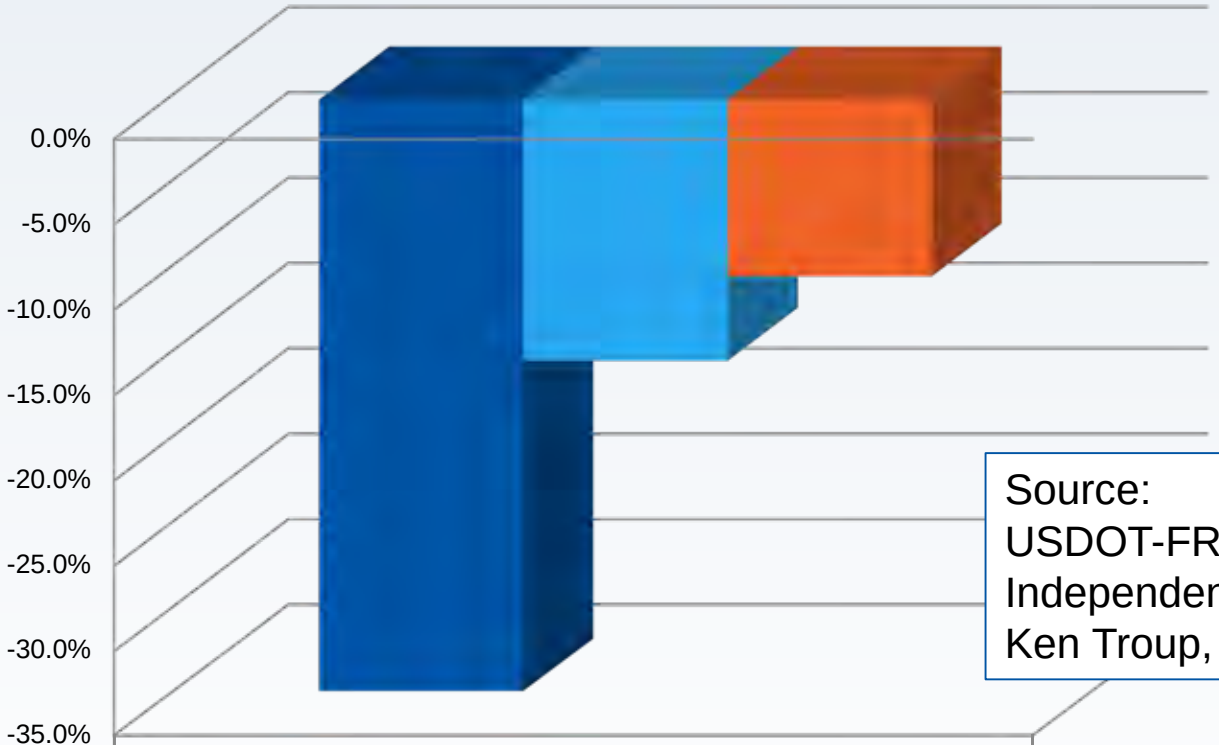
# Freight Advanced Traveler Information System (LA Metro)

- FRATIS should include:
  - » Real-time data integration (TMS, TOS, appointments)
  - » Truck trip route optimization based on real-time data
  - » Port container pickup and delivery metrics and analytics
  - » Leverage regional traveler information data (RIITS)
  - » Ability to integrate CV/AERIS applications
  - » API-based open architecture

# FRATIS Optimization Preliminary Results

## Two-month Comparison - Metrics Per Order

**FRATIS LA Data Comparison: Sept 2013 vs. June 2014**




| | Sept 2013 vs. June 2014 |
|---|---|
| Daily Miles/Order | -34.7% |
| Time/Order | -15.3% |
| Stop Time/Order | -10.4% |

Source:
USDOT-FRATIS
Independent Evaluator
Ken Troup, NRCG

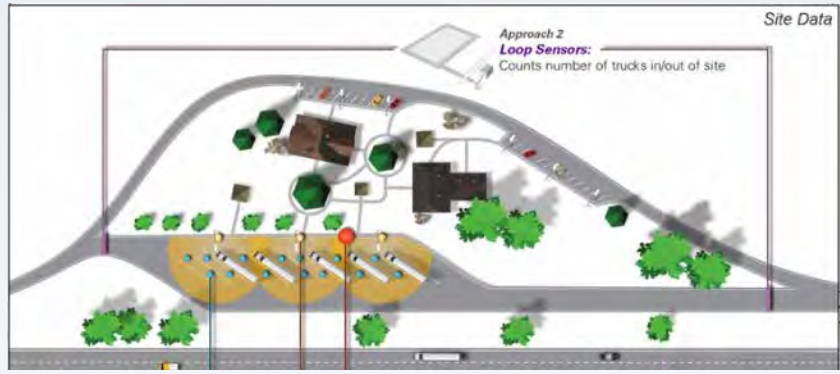
# I-35 FRATIS Workzone Application

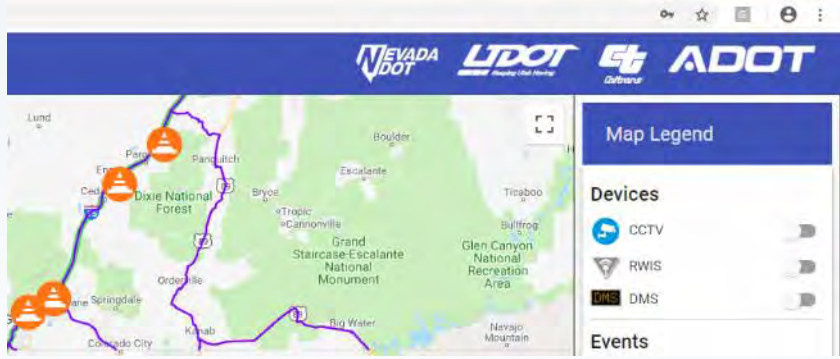

Source: FHWA

# FRATIS Geofencing Technology: WiFi-based Terminal Queue Measurement

# Conceptualizing a Technology Solution for Nevada

- Truck Parking Availability Technology – use I-10 Corridor Defined TPAS
  - » Real-time parking availability at all public rest stops; integrate private truck parking info where available
  - » Dissemination through mobile app, web app and dynamic parking capacity signs
- I-15 DMA Project Freight Information Application
  - » Deploy as basis for traveler information and alert information to be provided to the trucking fleets through the truck parking application
- FRATIS – use the geofencing of freight terminals concept and develop geofences around all warehouses, DC's and other freight facilities that do not provide for truck parking
  - » Add TPAS technology to truck parking facilities near these facilities, if not already deployed

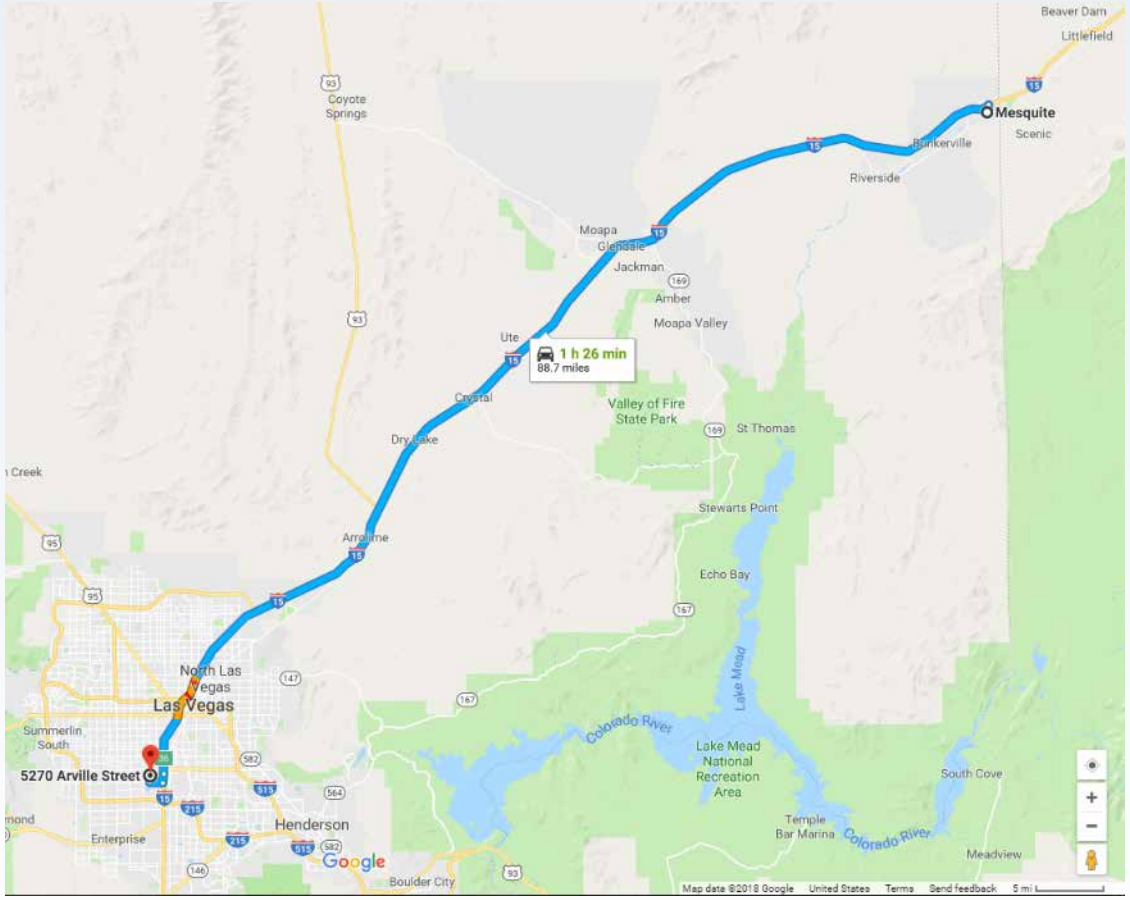



# Potential Operational Scenario (1 of 3)

1) John is a user of the new Nevada Truck and Parking Information (TPI) application, and has it installed on his iPhone, which is mounted for hands-free operation in his cab. He always inputs his destination when beginning a trip.

2) It's 7:00 PM, and John is heading south on I-15 past Mesquite, and is less than 100 miles north of Las Vegas.
   - » He is getting concerned about making his freight delivery on time at Good Buys Distribution Center (DC) near Hacienda & Arville in Las Vegas, as their loading dock closes at 9:00 PM.
   - » He is also concerned in that he has only 2.5 hours of his HOS limit for the day left, and he is worried he may have to park illegally on a city street near the warehouse, as they do not allow overnight truck parking



# Potential Operational Scenario (2 of 3)

3) John receives a TPI audible alert at 8:00 PM of substantial congestion in the southbound lanes of I-15 at Russell, and the TPI audibly recommends, "*exit onto westbound Flamingo and then left onto Arville*."

4) At 8:45 PM John can see the Good Buys DC ahead of him. He is going to make his delivery, but is concerned he will have little time to find overnight parking before his HOS limit…***however:***

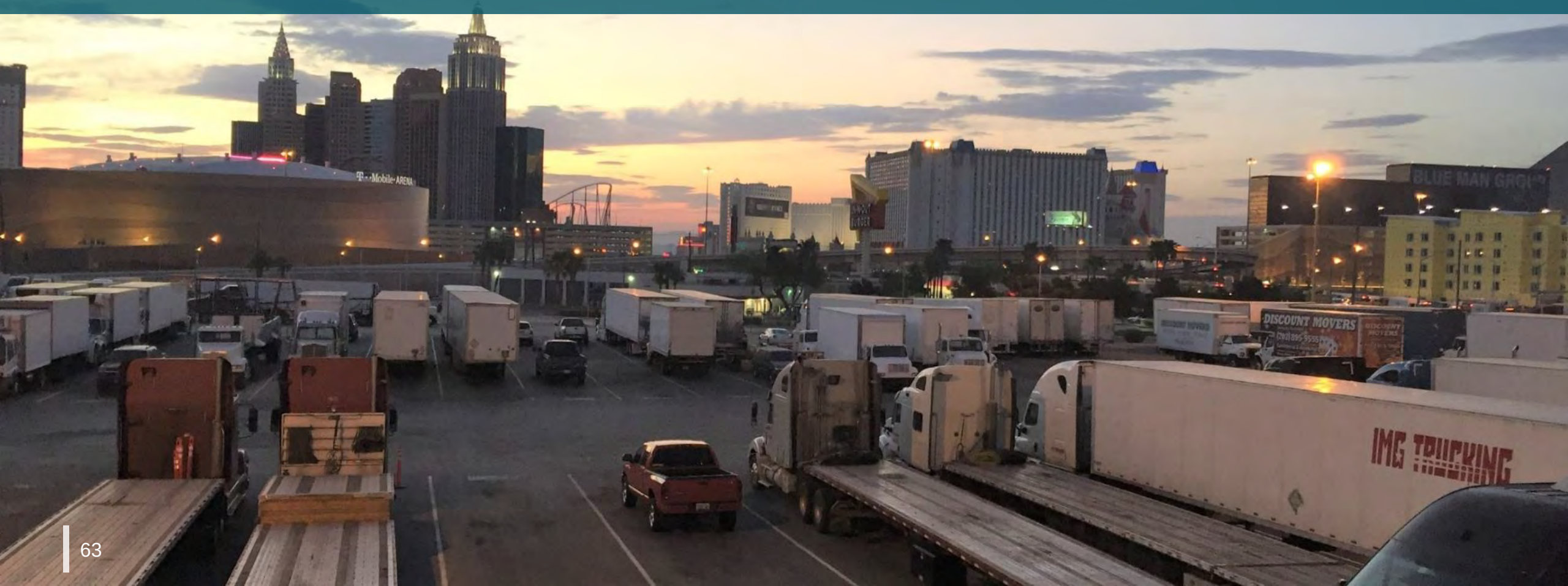
   - Unbeknownst to John, Clark County has just partnered with NDOT to implement of new feature of the TPI – ***Urban Overnight Truck Parking***
   - With this new capability, based on the TPI knowing John's location, and having geofenced the Good Buys DC facility, John is provided and automated audible alert, "*overnight parking available after Good Buys delivery at 7000 S Decatur Blvd*."

# Potential Operational Scenario (3 of 3)

5) John pulls into the loading dock, 4 of his pallets are removed by warehouse staff, and he drives 2.5 miles to the parking location, and arrives at 9:20 PM, enters a 4 digit code at the lot gate that the TPI app has texted him, and parks with 5 minutes to spare on his HOS limit. He is also able to access vending machines and a restroom at the lot, before going to sleep in his cab.
   - In an automated back-office TPI transaction, the system knows that John has made a delivery to Good Buys, and also accessed the nearby automated trucking parking facility.
   - Based on this, TPI bills Good Buys $25 for John's use of the overnight facility – because Good Buys is subject to the new Clark County ordinance that requires warehouses and freight facilities with over 10 truck deliveries per day to either provide adequate overnight and staging truck parking and minimal rest facilities, or to pay the City $25, which the City then uses to set up a number of unmanned, automated satellite lots – with API integration with the NDOT TPI system.

# Final Truck Parking Discussion

# Meeting Wrap-up



# Wrap-up

## Open Discussion

- Participants may introduce additional freight-related topics or questions, however, discussion will be limited to a few minutes per topic, and may be tabled for a future meeting.

- Next Meetings
  - » FHWA Truck Parking Roundtable, Nov. 15 in Las Vegas
  - » FAC: February 5, 2019
  - » FAC: May 7, 2019

# THANK YOU!

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