



# Arizona State Freight Plan: Project Screening & Prioritization

Prepared for:  
Arizona Department of Transportation  
Freight Advisory Committee

June 1<sup>st</sup>, 2016

Team led by: CPCS

In association with:



And specialty sub-consultants:



Gill V. Hicks & Associates

Chris Caplice Ph.D. (MIT)

# Meeting Goals

- Update FAC on Arizona State Freight Plan
- Discuss project list and prioritization process
- FAC role in defining Arizona's Critical Rural Freight Corridors

# Meeting Agenda

Time	Item	Presenter / Moderator
1:00 – 1:05	Welcome and Introductions	Michael DeMers (ADOT)
1:05 – 1:25	Project Status Report	Donald Ludlow (CPCS)
1:25 – 2:00	Discussion of Initial Issue Screening	Donald Ludlow (CPCS)
2:00 – 2:25	Critical Rural and Critical Urban Freight Corridors Discussion	Michael DeMers (ADOT) & Alex Marach (CPCS)
2:25 – 2:30	Future Meeting and Ongoing Tasks	Donald Ludlow (CPCS) & Michael DeMers (ADOT)
2:30	Adjourn	

# Presentation Overview



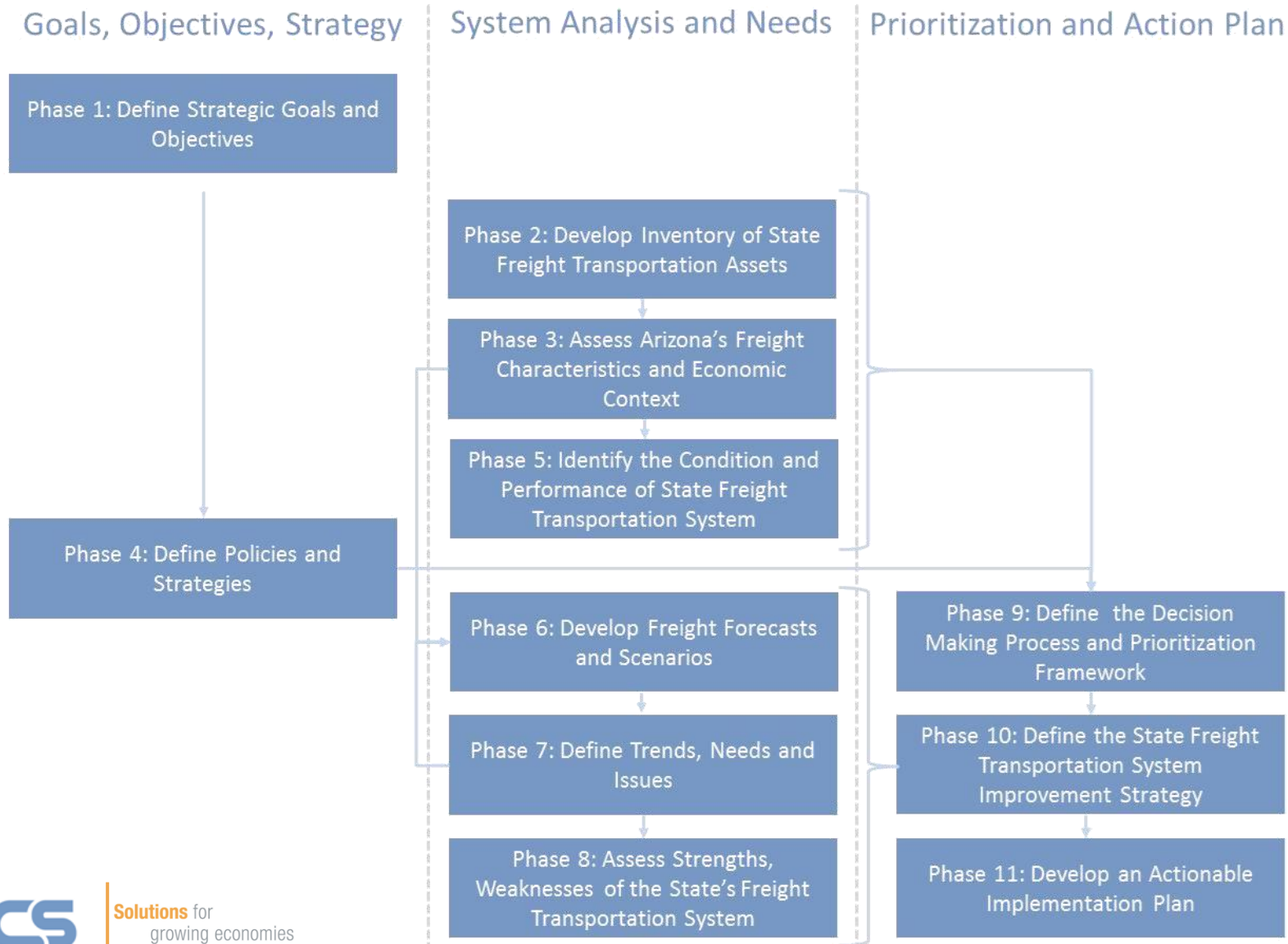
## Project Status Report

Project Prioritization Screens

Critical Rural Freight Corridors Overview

Future Meetings and Ongoing Tasks

# Stepped Approach to the Project



# Where are we Today?

Phase	Deliverable	Consultant	PM	TAC	Public
Phase 1	Arizona's Freight Transportation Goals	✓	✓	✓	✓
Phase 2	Inventory on State Freight Transportation System Assets	✓	✓	✓	✓
Phase 3	Individual WPs on Arizona's Top 10 Sectors	✓	✓	✓	✓
	Phase 3: Economic Context of Freight Movement in Arizona	✓	✓	✓	✓
Phase 4	Policies and Strategies Suggested for Arizona	✓	✓	✓	✓
Phase 5	Proposed Performance Measures, Data and Approach	✓	✓	✓	✓
	Condition and Performance of Freight Transportation System	✓	✓	✓	✓
Phase 6	Arizona Freight Forecasts	✓	✓	✓	□
Phase 7	Potential Freight Scenarios, and Implications	✓	✓	✓	□
	Trends, Needs and Issues, and Policy Responses	✓	✓	✓	□
Phase 8	Freight system strengths, weaknesses and policy priorities	✓	□		
Phase 9	Key Strategic "Screens" to Assess Freight Investments	✓	✓	✓	✓
	Strategic Framework for Decision Making Prioritization Process	□			
Phase 10	Strategic Options, Rationale, Linkage to Goals, Expected Outcomes				
	Arizona Freight System Improvement Strategy				
Phase 11	Funding and Financing Options to Implement the Freight Plan				
	Arizona State Freight Plan - Implementation Plan				

✓ Completed  
□ Underway

# Phase 6: Scenarios to Forecasts

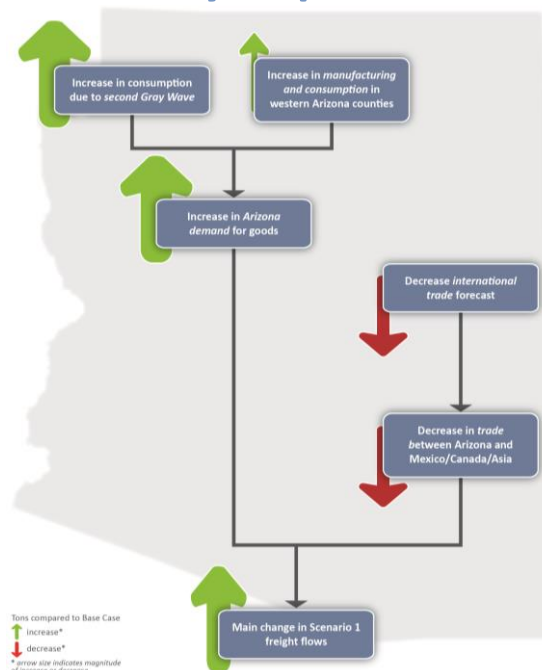
**Conclusion:** Congestion is driven by population & employment

- Scenarios share outcomes
  - Increased congestion, delay, and truck miles

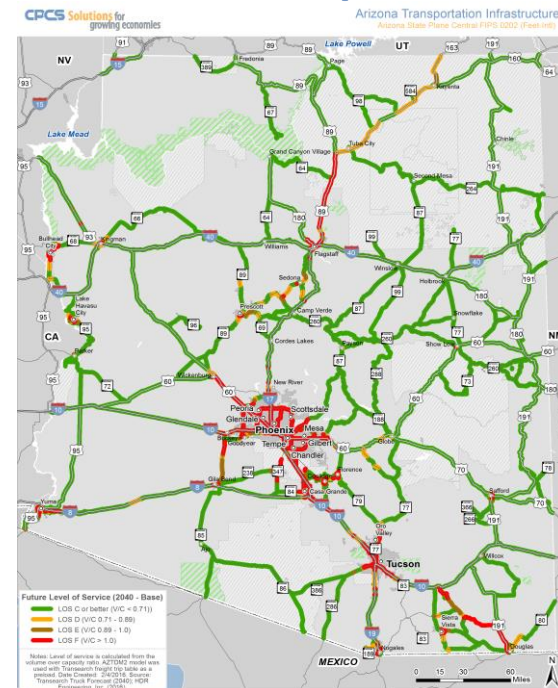
## Scenario Development



## Identify Implications



## Model Impacts



# Phase 7: Trends, Needs and Issues, and Policy Responses

## Trends, Needs & Issues



## Transportation Impacts



## Policy Responses

### Population growth

- Increased car & truck trips (urban)

### Economic recovery

- Increased truck trips

### Variable weather

- Increased extreme weather

### Funding challenges

- Limited funding for freight projects

### Urban congestion

- Primarily Phoenix & Tucson

### Pressure on KCCs

- Border delays

### Disrupted supply chains

- Increased snow & dust closures

### Freight projects not prioritized

- Decreased freight performance

### Focus investment

- Urban areas w/ MPOs
- KCC improvements
- Border infrastructure
- Prioritize maintenance and modernization

### Connect freight plan and LRTP

- Identify freight and passenger benefits

### Leverage FAST Act funding

- FASTLANE and freight formula funds



# Phase 8: Strengths, Weaknesses and Policy Priorities

## Strengths

- System performance is generally good
  - Capacity
  - Reliability
- Effectively supports Arizona's economy
  - Strong links to Mexico, California and Texas

## Weaknesses

- Location specific issues
  - Passing/climbing lanes on KCCs
  - Urban congestion
  - Border delays
- Policy
  - Truck parking
  - Axle weights
  - Freight funding and prioritization
- External
  - Rail, pipeline and airport capacity and service
  - Pass through traffic

# Phase 8: Strengths, Weaknesses and Policy Priorities

Focus on areas where ADOT has control and work in partnership

## Policy Responses

- Planning
- Investment
- Operations
- Regulations

Issue Types
Issues to alleviate re-occurring urban congestion
Improvements to maintenance and operations
Modernization of infrastructure, systems, operations (e.g. ITS)
Expansion of physical capacity (e.g. additional lanes)
Issues to alleviate re-occurring rural bottlenecks
Additional passing/climbing lanes on the highway system
Improvements to highway on/exit ramps to facilitate truck access
Issues to improve border access
Issues that can improve freight system resilience
Truck parking facilities
Issues that enable higher axle loads on certain corridors
Additional road/rail grade separations
Additional rail infrastructure/services
Improve pipeline system storage capacity
Enhanced international air service
Initiatives to make municipal by-laws more truck friendly (off-peak noise, road geometry, etc.)
Initiatives to enable greater supply of truck drivers

# Presentation Overview

Project Status Report



**Project Prioritization Screens**

Critical Rural Freight Corridors Overview

Future Meetings and Ongoing Tasks

# Getting from Long List of Issues to Short List of Priority Projects

Long list of issues  
within ADOT's  
jurisdiction



Project Types	ADOT
Projects to alleviate re-occurring urban congestion	✓
Improvements to maintenance and operations (e.g. ITS)	✓
Modernization of toll infrastructure systems (operations (e.g. ITS))	✓
Expansion of physical capacity (e.g. additional lanes)	✓
Projects to alleviate re-occurring rural bottlenecks	✓
Projects to alleviate re-occurring rural bottlenecks	✓
Additional passing/clearing lanes	✓
Improvements to on/off ramps to facilitate truck access	✓
Projects to improve border access	✓
Projects to improve freight system resilience	✓
Truck parking facilities	✓
Projects that enable higher axle loads on certain corridors	✓
Additional road/road grade separations	✓

**Step 1 - Strategic Filter:** Qualitative assessment of issues against merit-based considerations



Short list of “strategic” issues

**Step 2: Weighted Prioritization:** Quantitative assessment of priorities



**Priority projects**

# A Long List of Issues and then Projects

## Freight Issues v. Projects – Screen issues then explore potential solutions

### Freight Issues

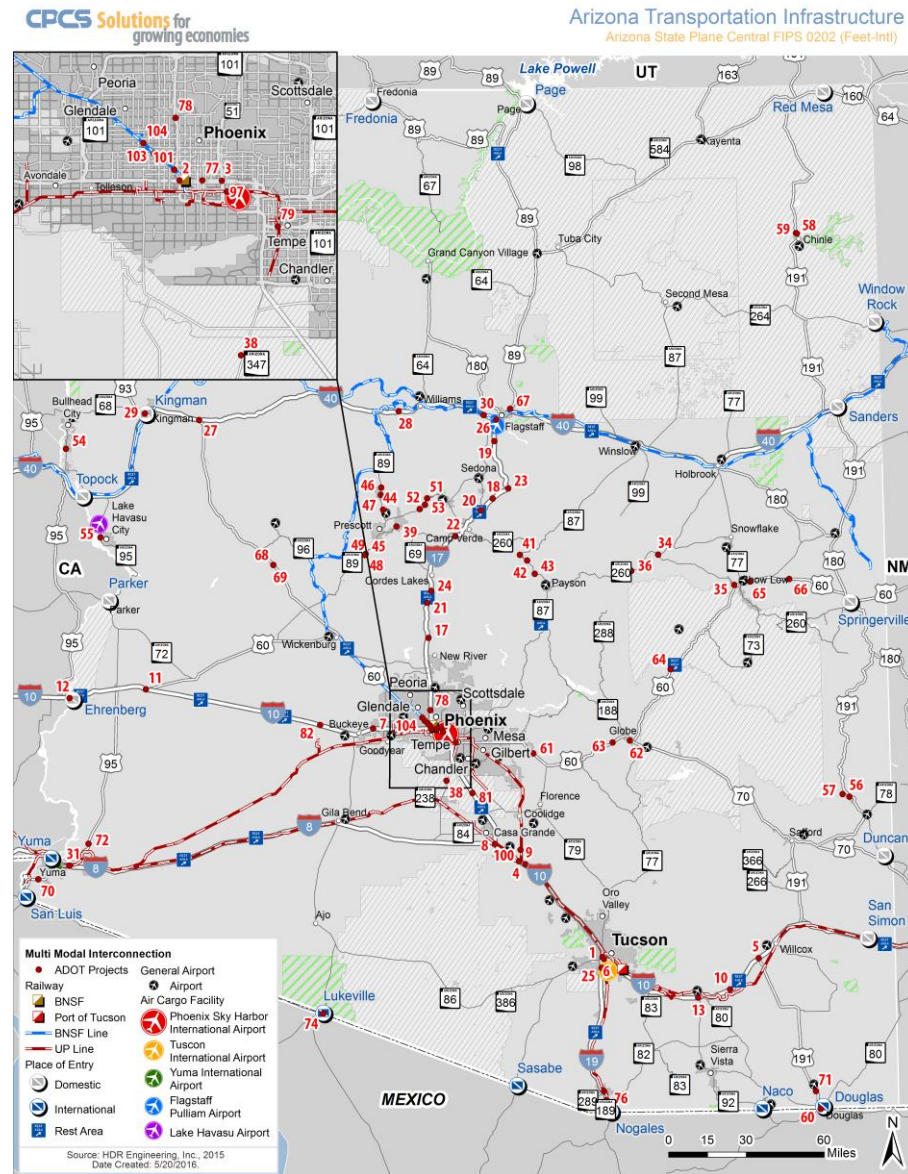
- Issues are impediments to freight movement with many potential solutions

### Freight Projects

- Projects are a specific approach to mitigating a freight issue



Solutions for  
growing economies



# Applying the Strategic Filter

## Merit-based considerations tied to goals, objectives, strategies

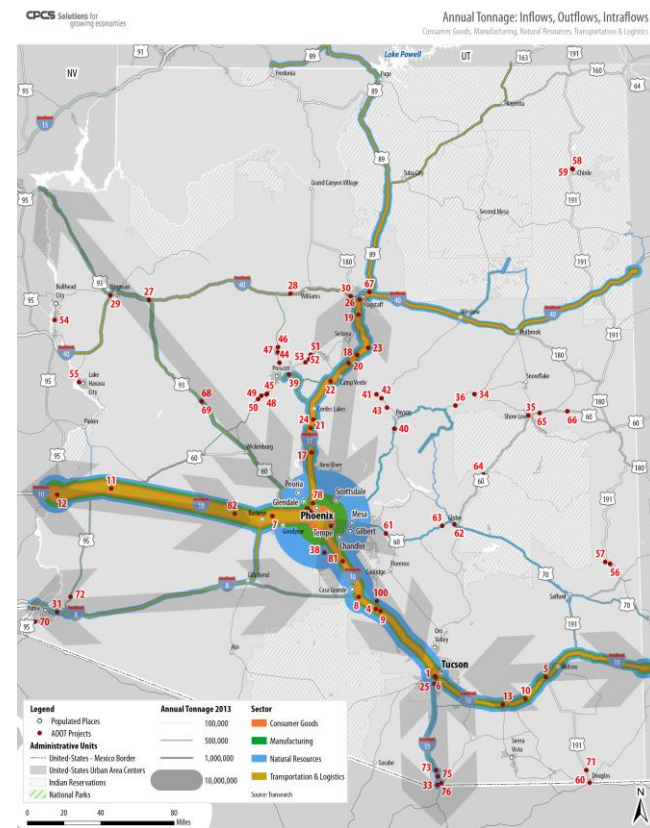
- Simple **Yes/No** approach to assessing merit-based considerations

### Goal 1 - Enhance Economic Competitiveness

- Is the issue on a Key Commerce Corridor (KCC)?
- Are the flows significant?
- Is the issue an impediment to trade?

### Goal 2 – Increase System Performance

- Does the issue improve mobility?
- Does the issue increase reliability?
- Does the issue improve safety?
- Does the issue reduce transportation costs?
- Is the issue in a nonattainment or maintenance area?





# The Short List

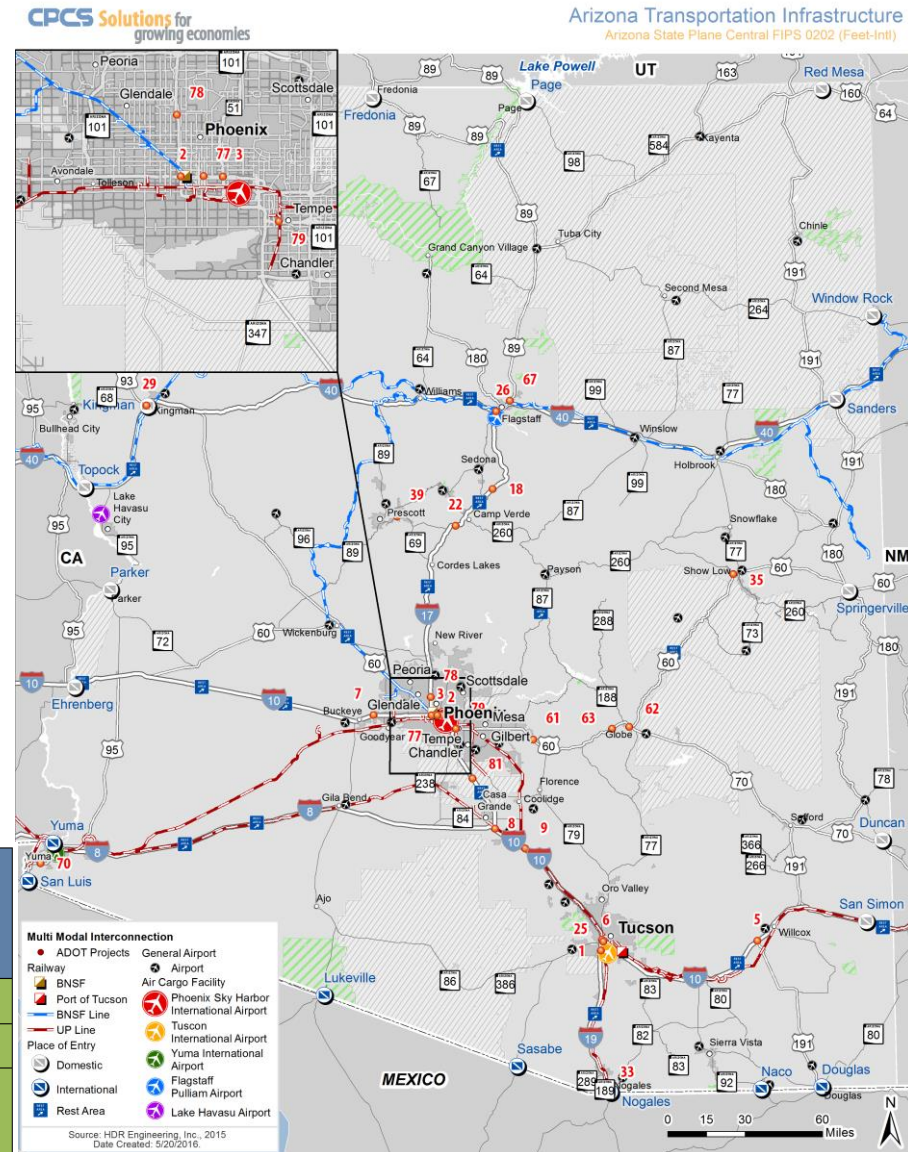
## Strategic filter results

- 30 total issues
- Most issues had five “yes” values

## Next steps

- Develop projects from issues
- Apply project prioritization

Ref	Route (Area)	Issue Segment	Issues “Type” (per classification in Figure 2-2)	G1-KCC	G1-Significant	G1-Export	G2-Mobility	G2-Reliability	G2-Safety	G2-Cost	G2-Emissions
1	I-10	I-10 at I-19 Traffic System Interchange	Projects to alleviate re-occurring urban congestion								
2	I-10	I-10 at I-17 Traffic System Interchange (The Stack)	Projects to alleviate re-occurring urban congestion								
3	I-10	I-10 at SR 202L and SR 51 Traffic System Interchange (The Mini-Stack)	Projects to alleviate re-occurring urban congestion								



# Issues to Projects

## Freight issues have multiple potential solutions (projects)

- Identify and prioritize most efficient projects to address issues

### Economic Competitiveness

Increase Economic Activity, Investment and High Paying Jobs

Increase Trade

### Increase System Performance

Increase Mobility and Multimodal Accessibility

Increase Safety and Security

Increase System Efficiency and Reliability

Minimize Negative Social and Environmental Impacts

### Improve System Management

Ensure System Preservation and Maintenance

Ensure Good Fiscal Stewardship

Link Transportation and Land-Use

Work in Partnership

Increase Effective Performance Monitoring

Increase Smart Network Expansion

Projects  
implement  
and advance





# Next Steps

Long list of issues within ADOT's jurisdiction



Project Types	ADOT
Projects to alleviate re-occurring urban congestion	✓
Improvements to maintenance and operations (e.g. ITS)	✓
Modernization of toll structures, systems, operations (e.g. ITS)	✓
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Projects to alleviate re-occurring rural bottlenecks	✓
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Projects to improve border access	✓
Projects that can improve freight system resilience	✓
Truck parking facilities	✓
Projects that enable higher axle loads on certain corridors	✓
Additional road/road grade separations	✓

**Step 1 - Strategic Filter:** Qualitative assessment of issues against merit-based considerations



Short list of “strategic” issues

**Step 2: Weighted Prioritization:** Quantitative assessment of priorities



**Priority projects**

# Next Steps & Discussion

- TAC review of strategic screen is still in process
- What are your initial thoughts on the strategic screen?
- To inform project weighting:
  - What factors are most important to your business (reliability, travel time, safety)?
  - How is poor transportation performance incorporated into your supply chain?

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Project Prioritization Screens



**Critical Rural Freight Corridors Overview**

Future Meetings and Ongoing Tasks

# FAC Role in CRFC Designation

- FAC is the primary avenue for stakeholder input
  - Identify critical rural roadways and freight generators
  - Supported by ADOT and the consultants
- Approach
  - Use CRFC criteria to develop maps
  - Solicit FAC comment and build network through an iterative process
- Collaboration is key
  - Networks have limited miles and multiple criteria

# National Highway Freight Network

## National Highway Freight Network

### Primary Highway Freight Network (PHFN)

- US DOT defined
- 41,518 total miles
- AZ-1,025 miles

### All interstates not on the PFN

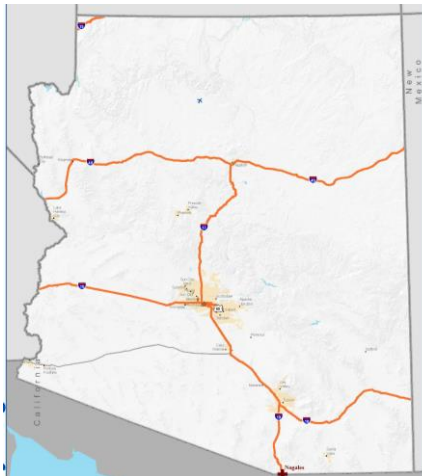
- Automatic
- I-8 adds 179 miles

### Critical Urban Freight Corridors

- State & city defined
- 75 miles or 10% of PHFN
- AZ-102.5 miles
- Must be urban roadway
- Four criteria

### Critical Rural Freight Corridors

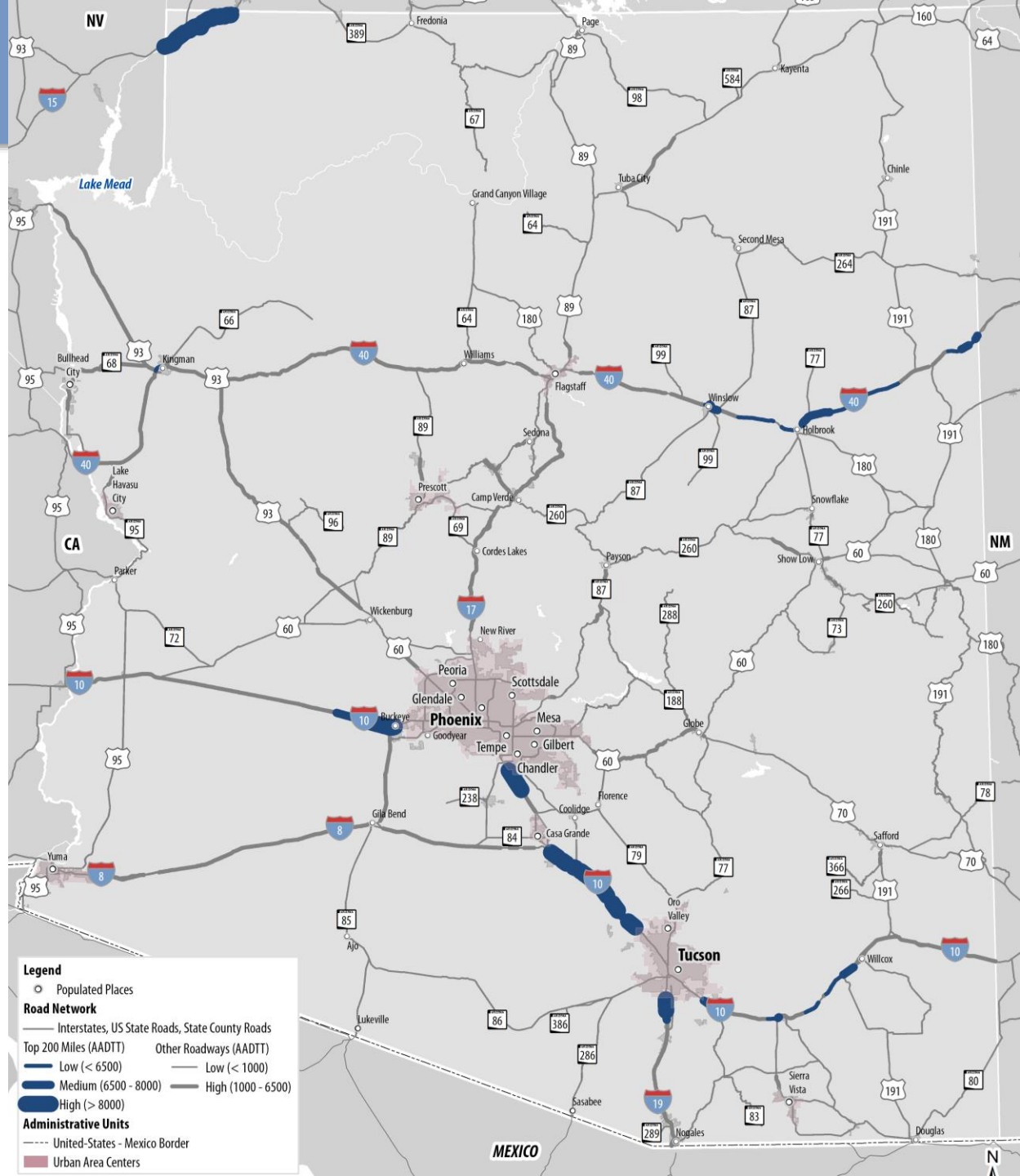
- State defined
- 150 miles or 20% of PHFN
- AZ-205 miles
- Must be rural roadway
- Seven criteria



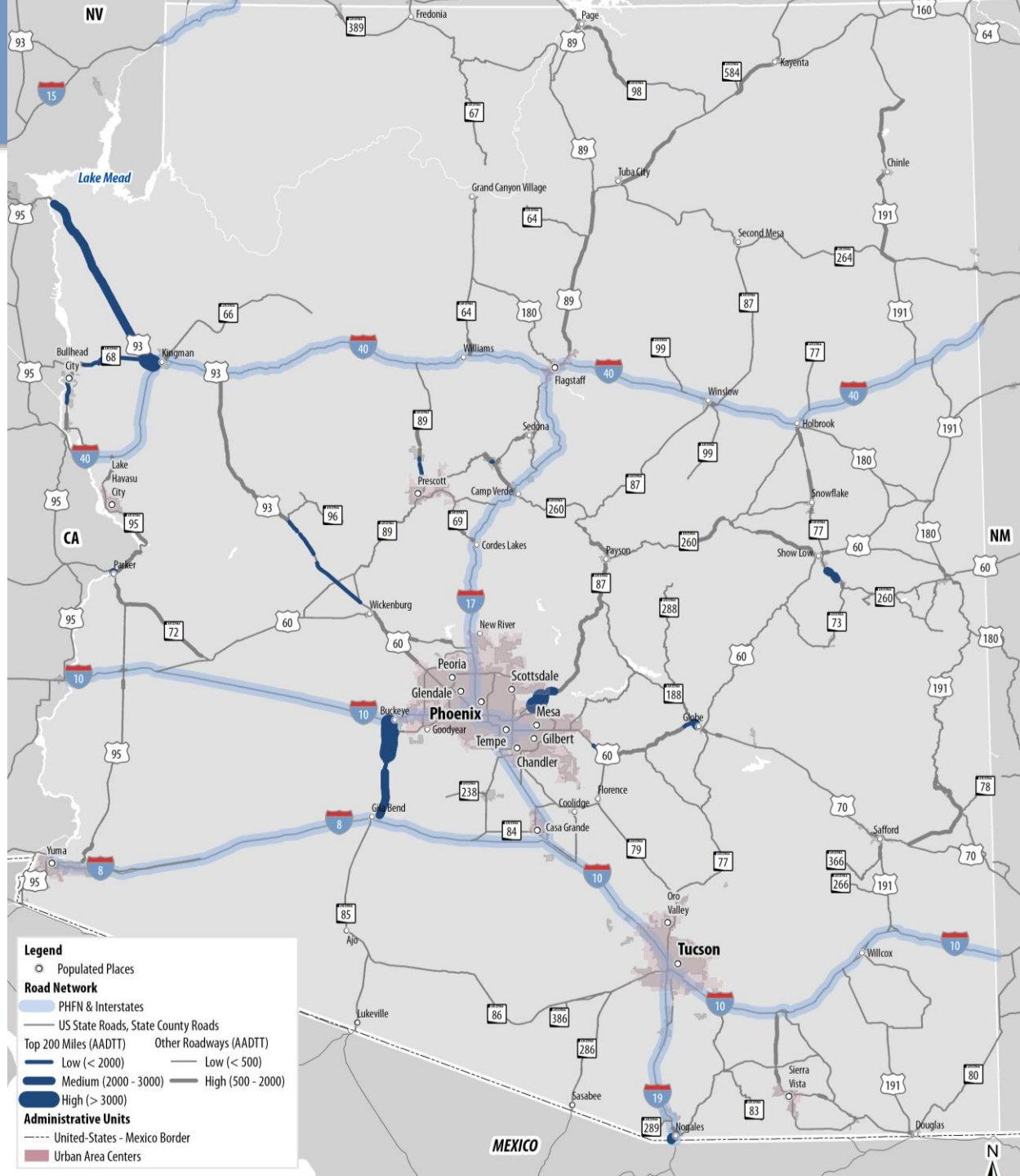
## Critical Rural Freight Corridor Criteria

- 25% truck traffic
- Access to energy production
- Connects an facility handling >50,000 TEU/yr or 500,00 tons of bulk/yr
- Connects to a grain elevator, agriculture, mining, forestry or intermodal facility
- Connects to an international POE
- Connects to a significant air, rail, water or other facility
- Defined by the state as vital to the economy

# Critical Rural Freight Corridor Criteria - AADTT

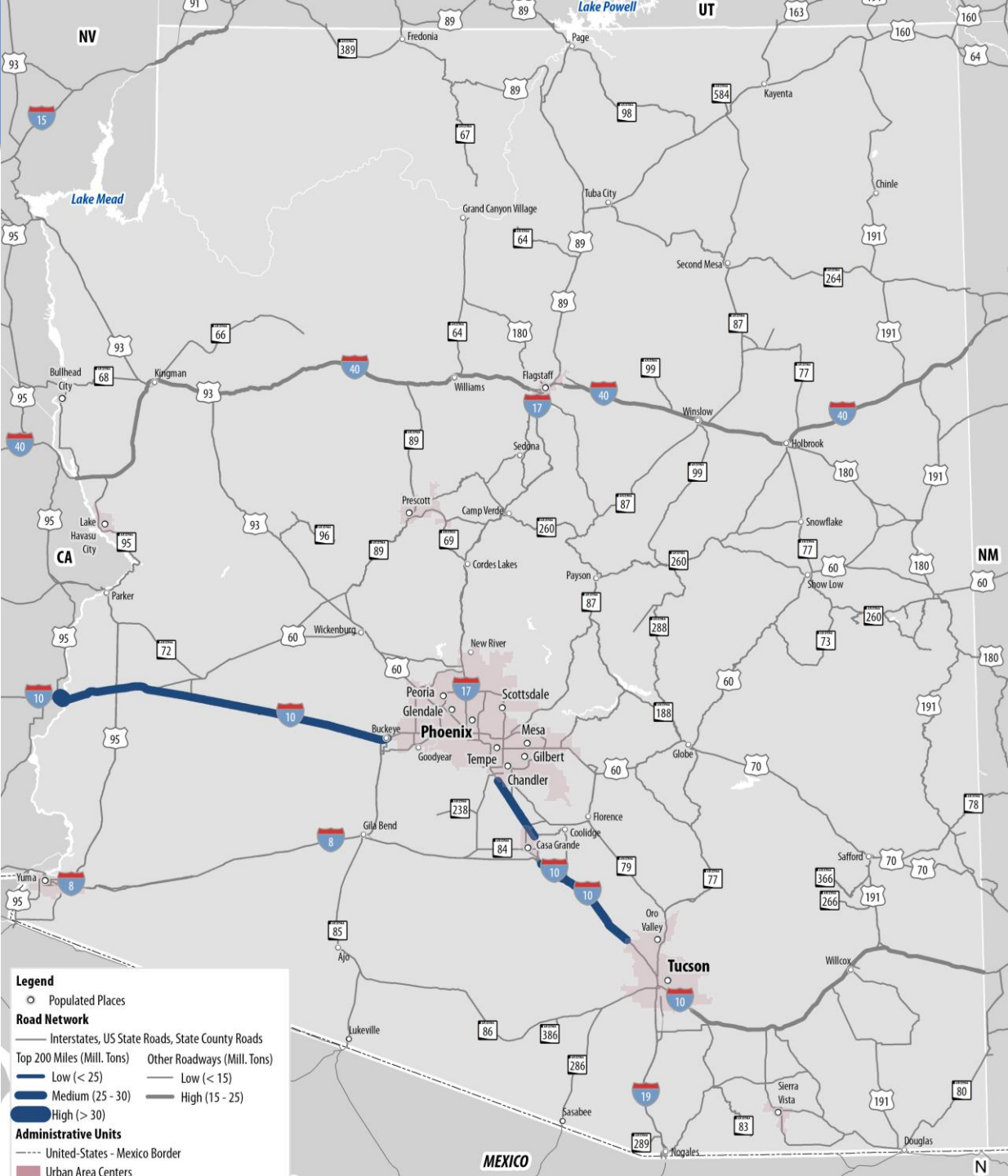


# Critical Rural Freight Corridor Criteria - AADTT

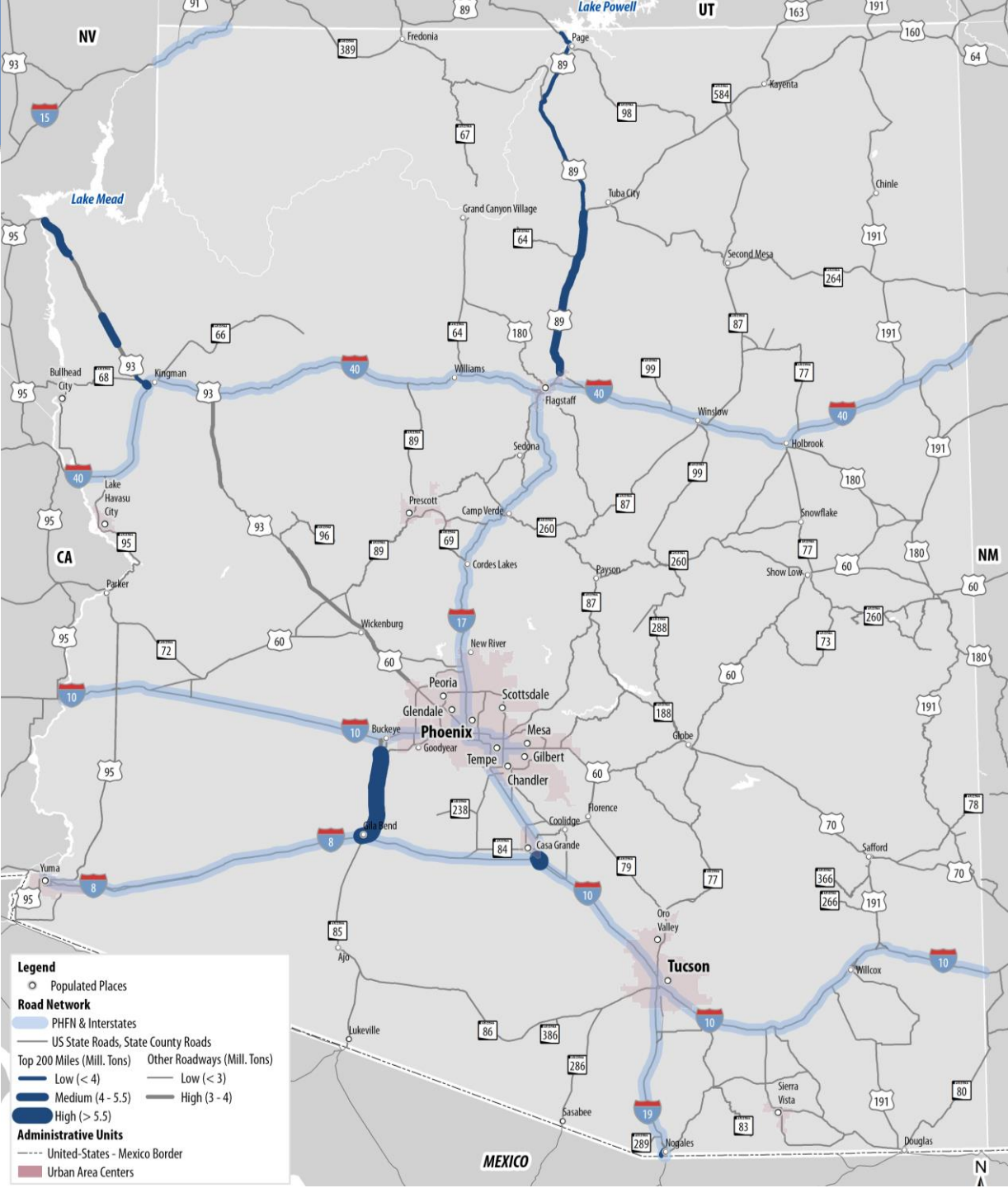




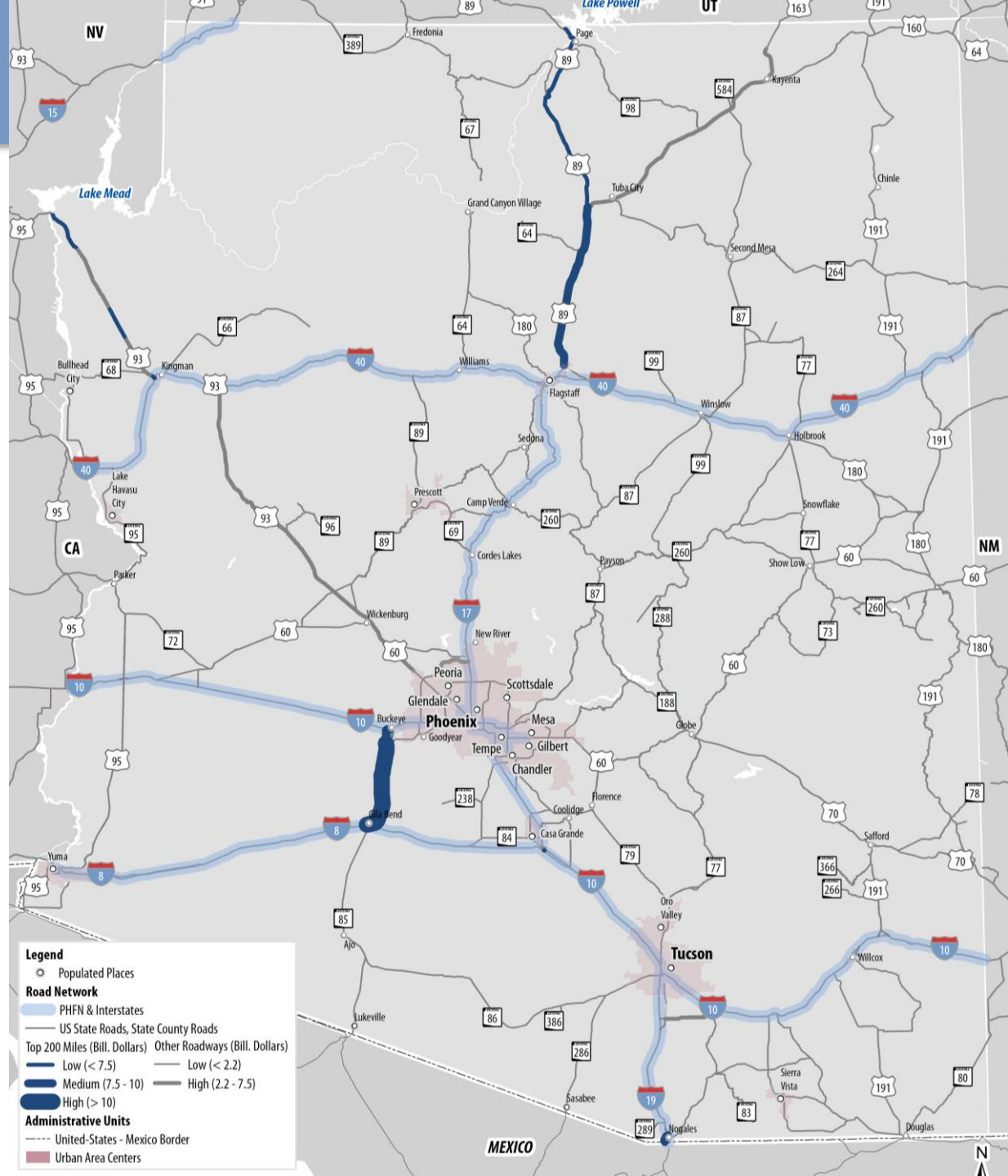
# Critical Rural Freight Corridor Criteria - Tonnage



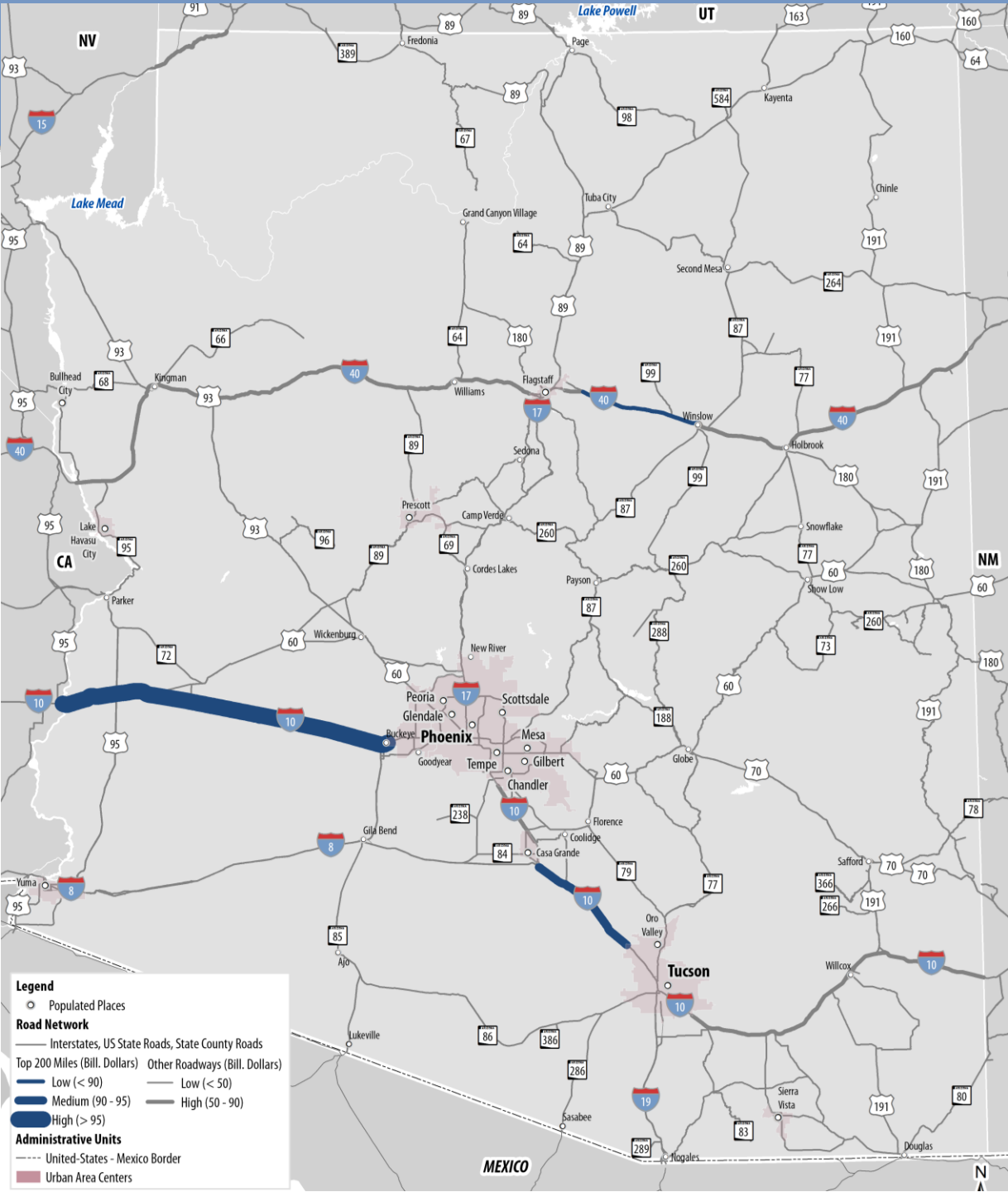
# Critical Rural Freight Corridor Criteria - Tonnage



# Critical Rural Freight Corridor Criteria - Value



# Critical Rural Freight Corridor Criteria - Value



# Discussion

- What other criteria might be included in the designation of CRFC?
- Are there specific facilities that are not included that should be?

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**Future Meetings and Ongoing Tasks**



# Questions and Discussion



**Donald Ludlow, MCP, AICP**  
**Managing Director**

1050 Connecticut Ave. NW, Suite 500, Washington, DC 20036

T: +1 202 772 3368 | C: +1 703 216 2872 | [dludlow@cpcstrans.com](mailto:dludlow@cpcstrans.com) | [www.cpcstrans.com](http://www.cpcstrans.com)



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