

SHRP2 Expediting Project Delivery (C19)

Project Data

AUGUST 28, 2015

Discussion items

- Project Data Needs:
 - Local, state, regional and national data sets identified
 - Data gaps
 - Additional data resources
- Data collected from partners
 - Common data operating platform (codes)
- What factors are included in Risk Scoring Analysis?
- Risk & Develop-ability scores
- Survey results of data purchased and possibilities

The Region



2010 Population Concentration

Source: US Census – 2010 Blocks

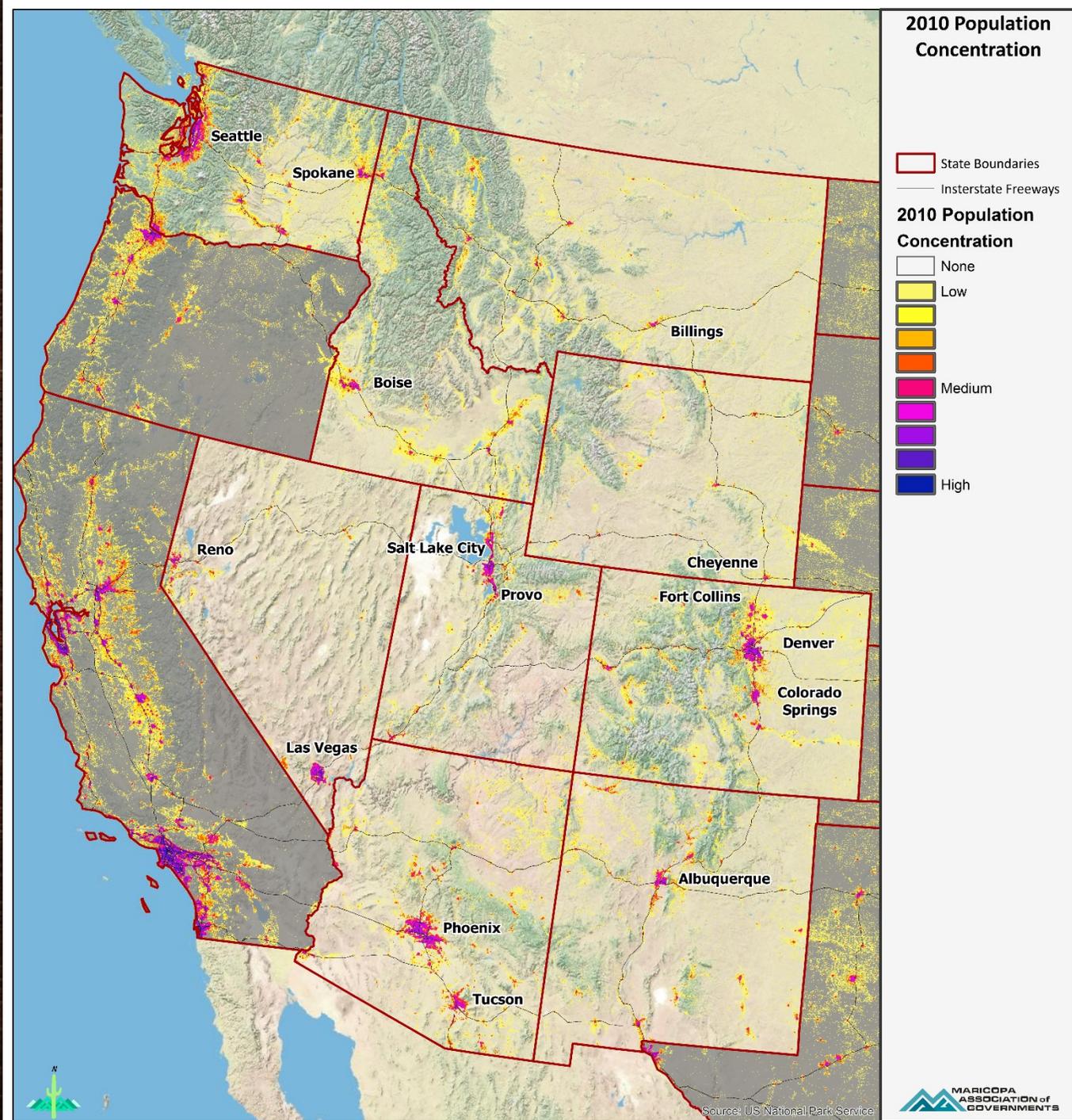
Population: 28,789,991

Percent of US Population: 9.3%

Q: Population access/concentration assessed a risk to a transportation project?

Q: How do you balance need vs. risk?

Demographics



2030 County Population

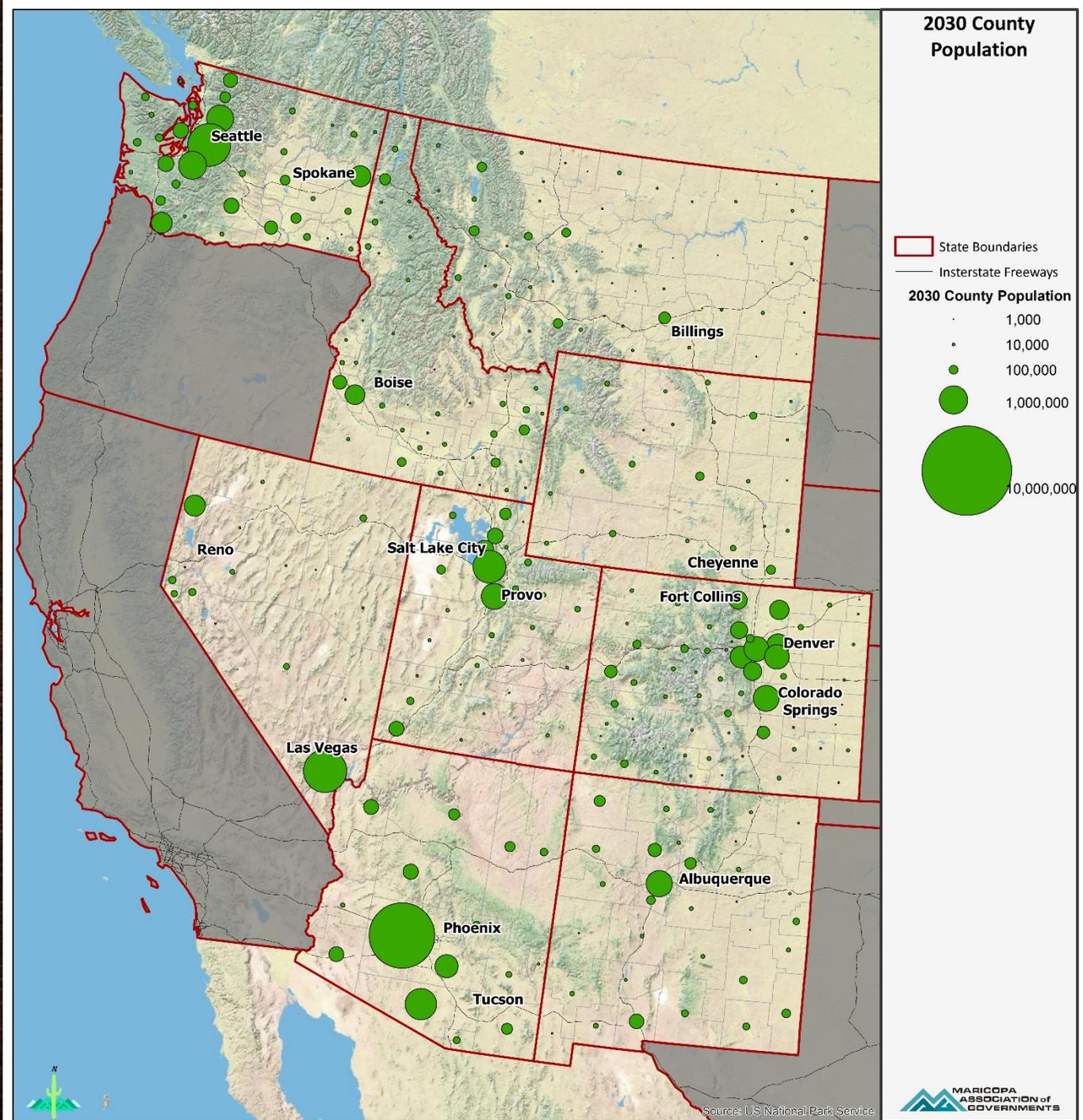
Source: MPOs, States, US Census

2030 Population: 37,323,135
Projected Growth Rate: 29.6%

Q: Population access/concentration assessed a risk to a transportation project?

Q: How do you balance need vs. risk?

Demographics



Population Growth : 2010 to 2030

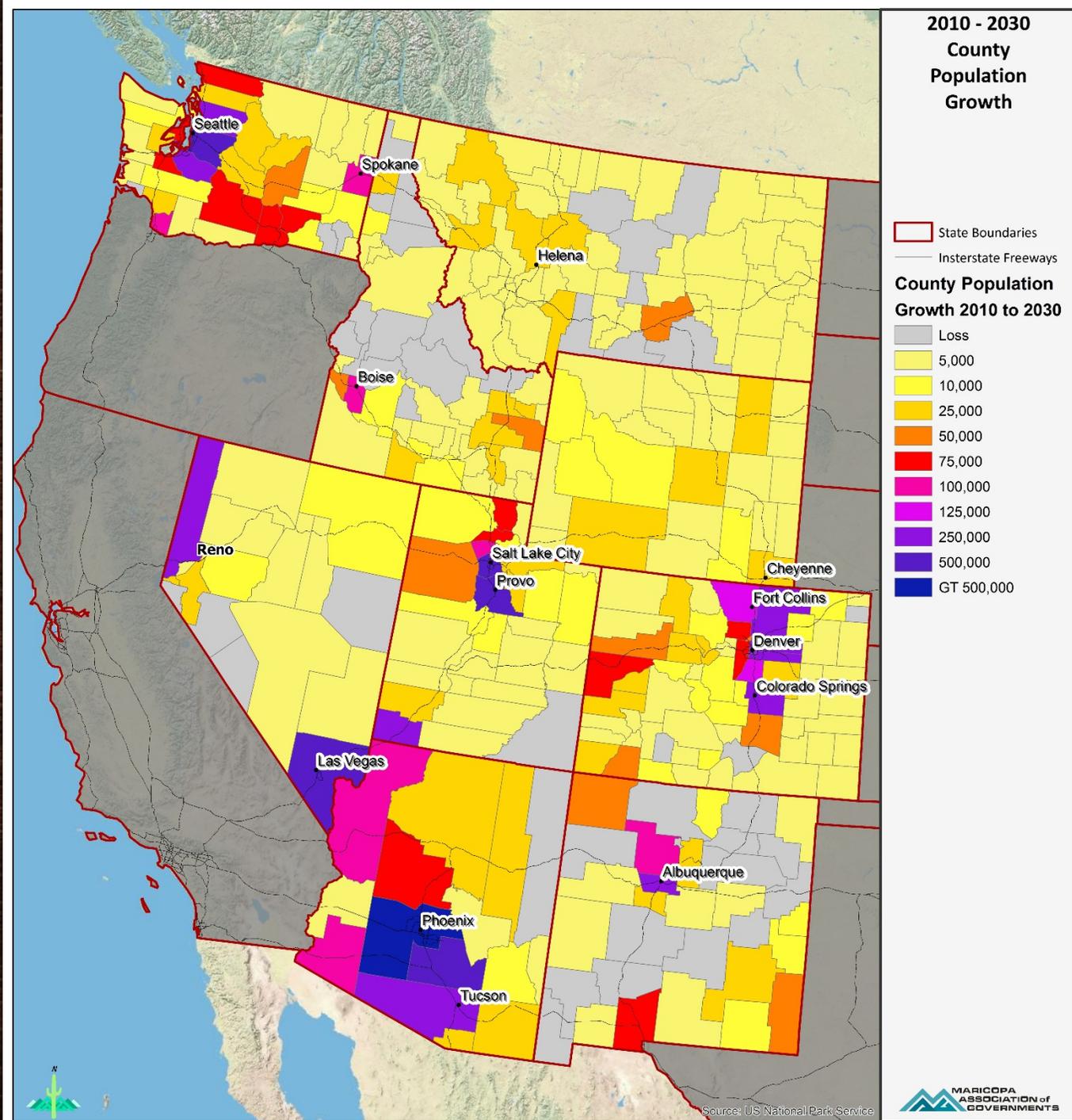
Source: MPOs, States, US Census

2010 - 2030 Population Growth: 8,533,144

Q: Population access/concentration assessed a risk to a transportation project?

Q: How do you balance need vs. risk?

Demographics



Below 100% Poverty Level (2013)

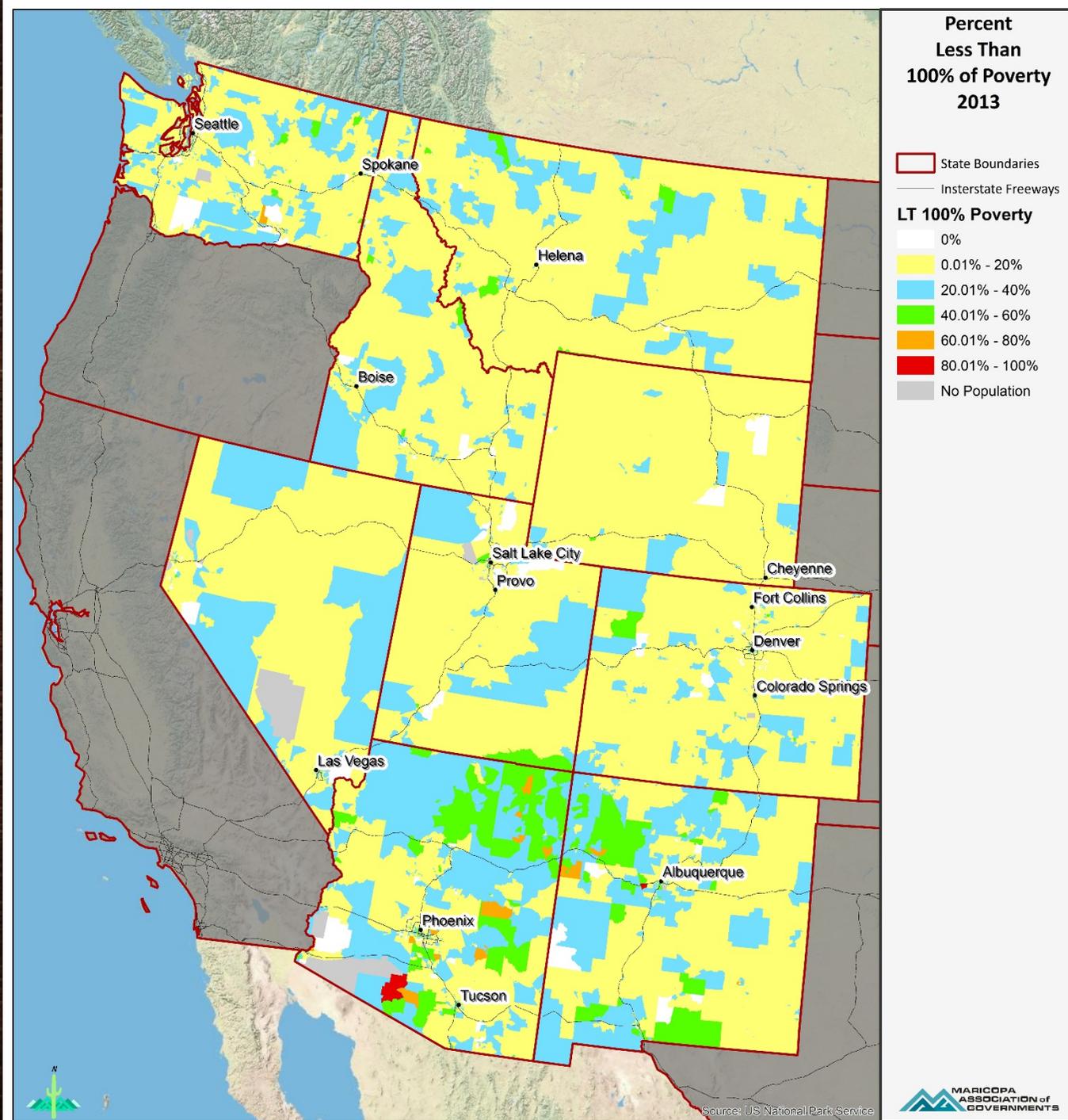
Source: ACS 5 year 2009-2013 Block Groups

Percent Population below 100% poverty: 15.1%

Q: Role of Environmental Justice analysis in Risk Register?

Q: How do you balance need vs. risk?

Demographics



Percent Minority Population (2010)

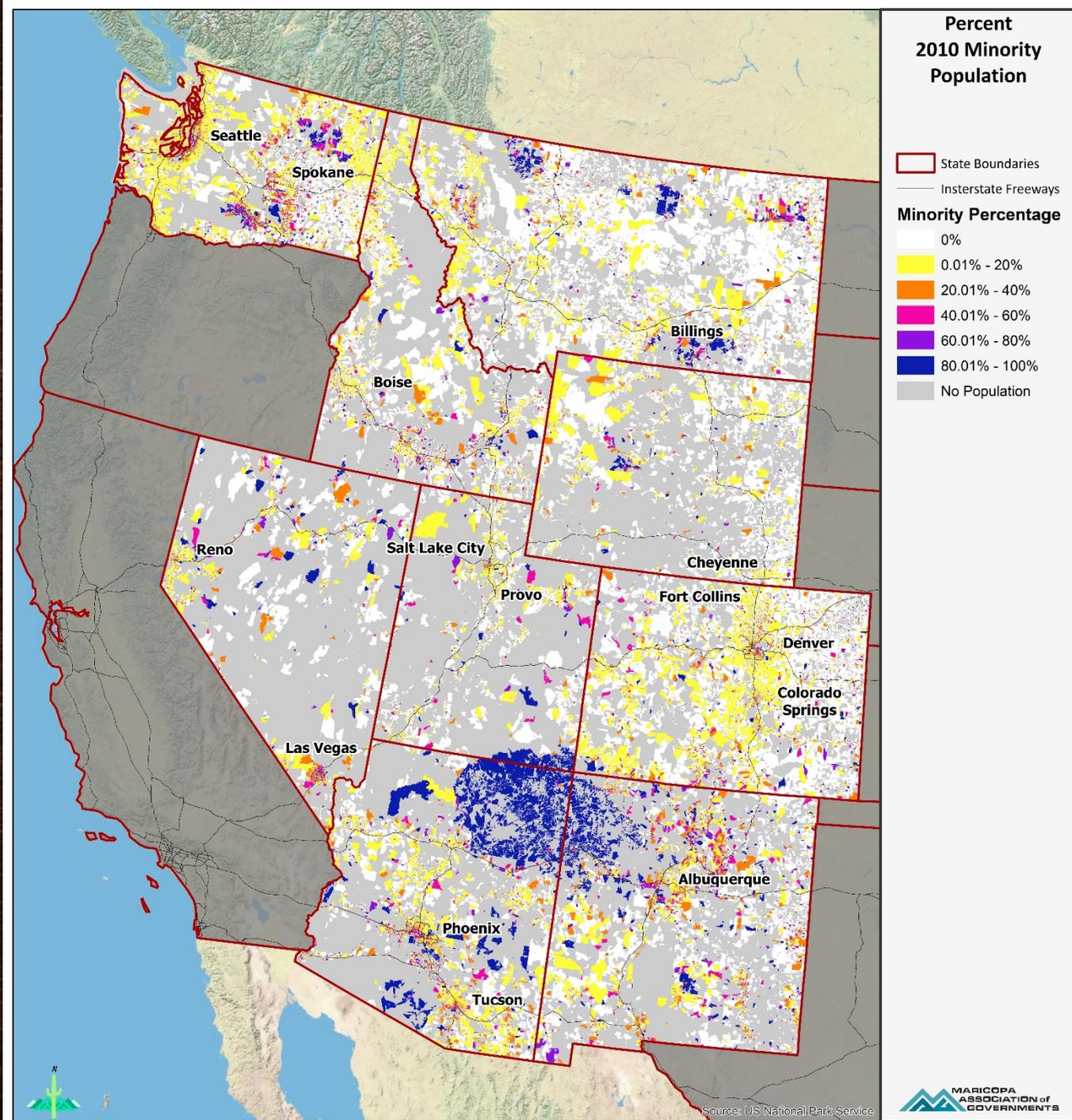
Source: US Census – 2010 Blocks

Percent Minority Population: 23.3%

Q: Role of Environmental Justice analysis in Risk Register?

Q: How do you balance need vs. risk?

Demographics



Age 65+ Population Concentration (2010)

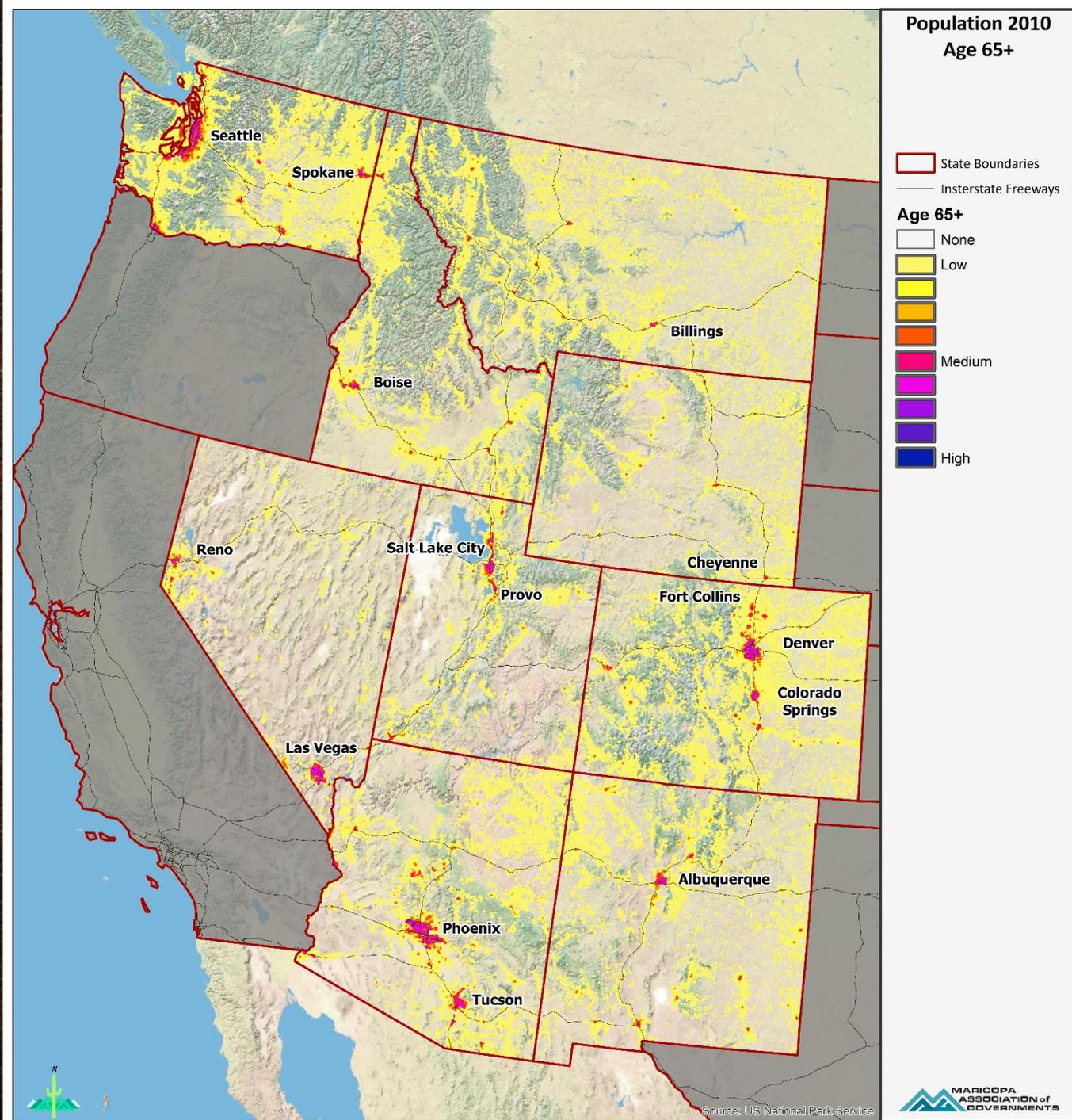
Source: US Census – 2010 Blocks

Percent Population Age 65+: 12.2%

Q: Role of Age characteristics in Risk Register?

Q: How do you balance need vs. risk?

Demographics



Working Age Population Concentration (2010)

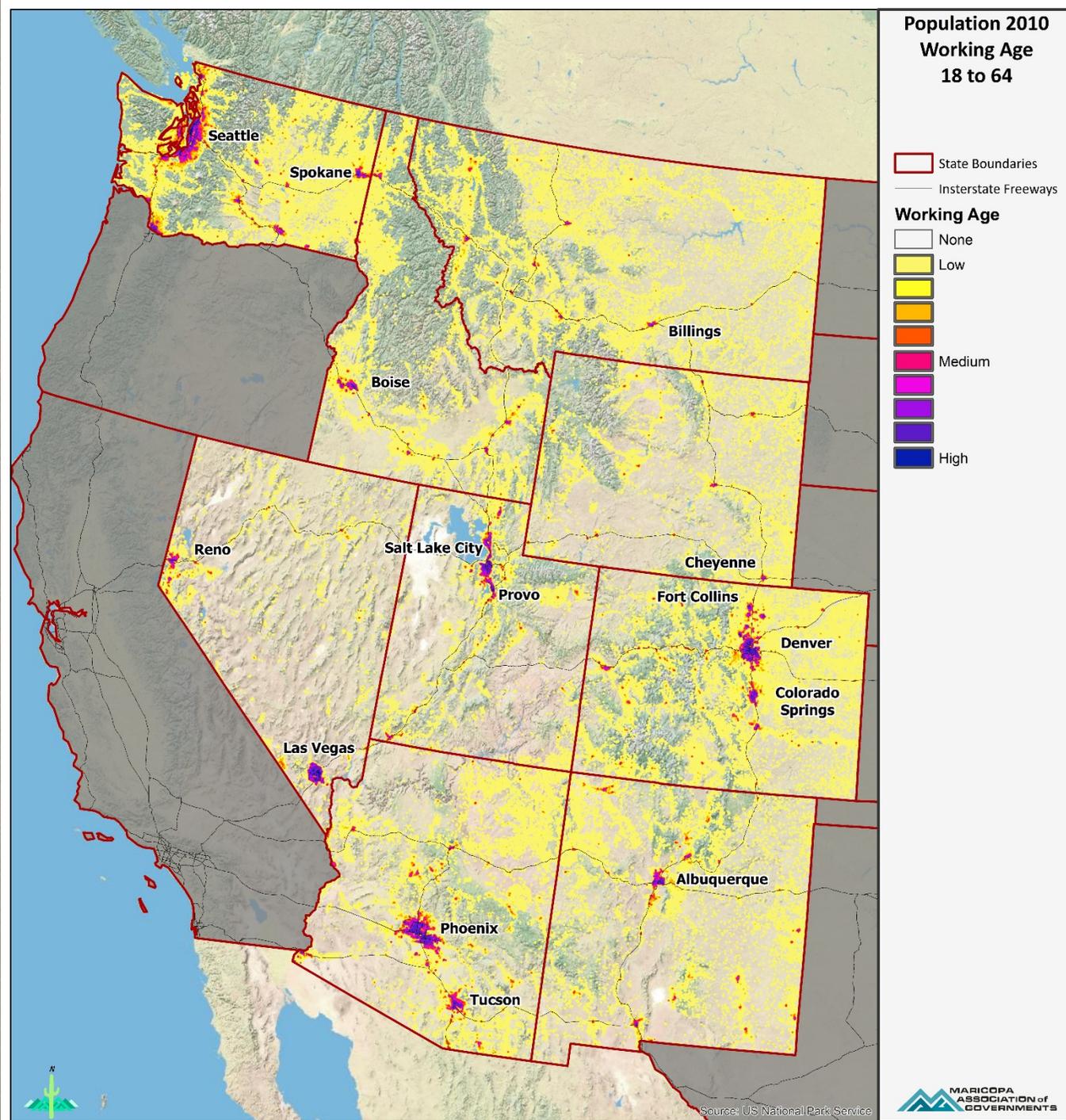
Source: US Census – 2010 Blocks

Percent Working Age Population: 62.5%

Q: Role of work force characteristics in Risk Register?

Q: How do you balance need vs. risk?

Demographics



Land Ownership

Source: Conservation Biology Institute PAD-US (CBI Edition)

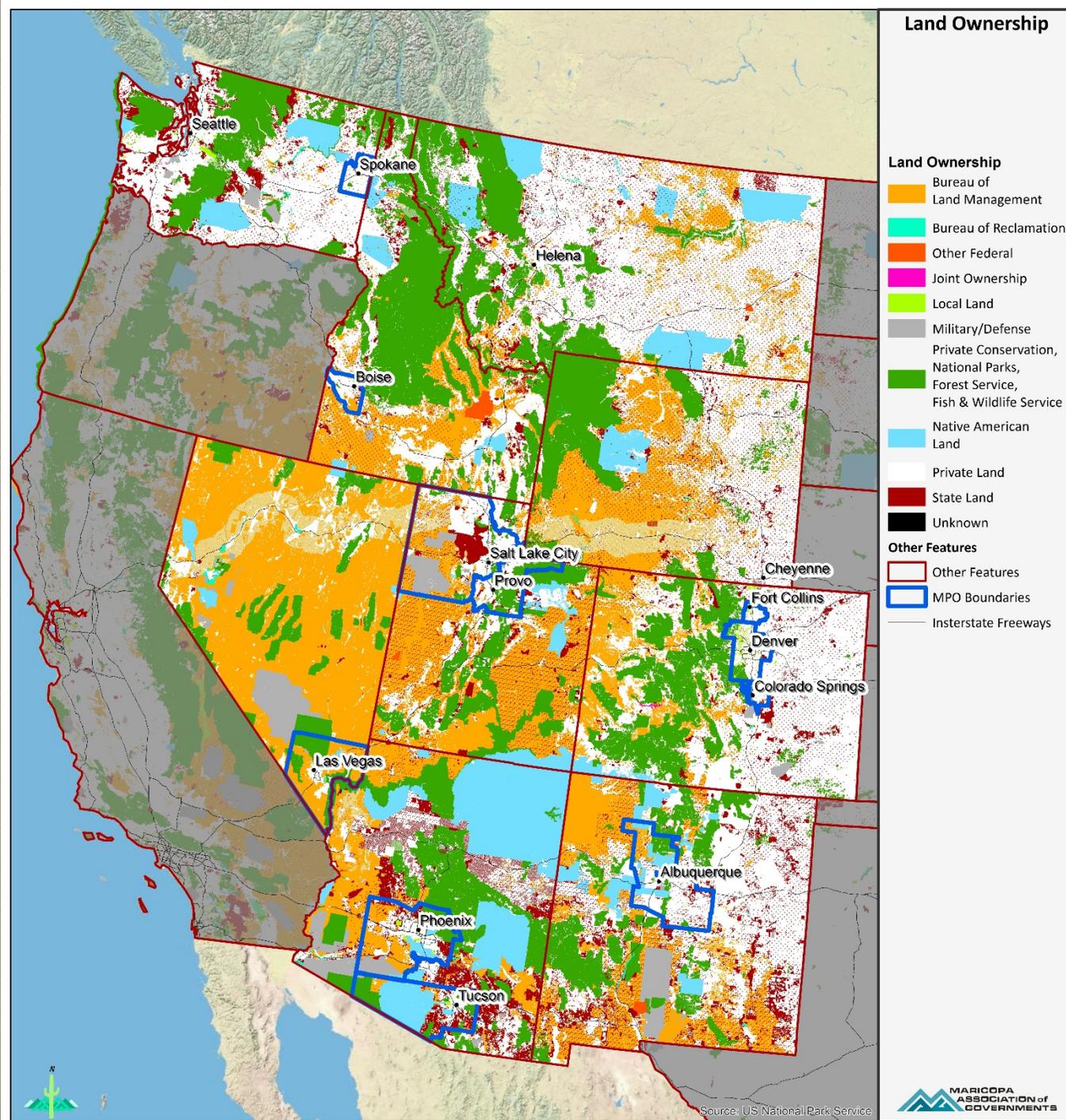
DRAFT Risk and Develop-ability Score:

Categories	Sub-category	Risk Score (0: Low - 5:High)	Developability (0:Low - 5:High)
Federal	BLM	3	3
	Forest/protected	5	0
	Military	5	1
Native American		3	3
State Trust Lands		3	4
Public/Private Conservation		5	0
Private		1	5

Q: Review the scores

Q: Same for all IMW or differ by Region/ County/ State?

Land



Land Cover

Source: National Land Cover Database (NLCD) 2011 – Multi-Resolution Land Characteristics (MRLC) Consortium

DRAFT Risk and Develop-ability Score:

Categories	Sub-category	Risk Score (0: Low - 5:High)	Developability (0:Low - 5:High)
Developed	All	4	2
Forest	All	3	4
Barren/Scrub/Grassland		1	5
Pasture/Crops		0	5
Water/Wetlands	All	5	1

Q: Review the scores

Q: Same for all IMW or differ by Region/ County/ State?

Land



Future Land Use

Source: MPO/COGs

Developed utilizing land use look-up tables

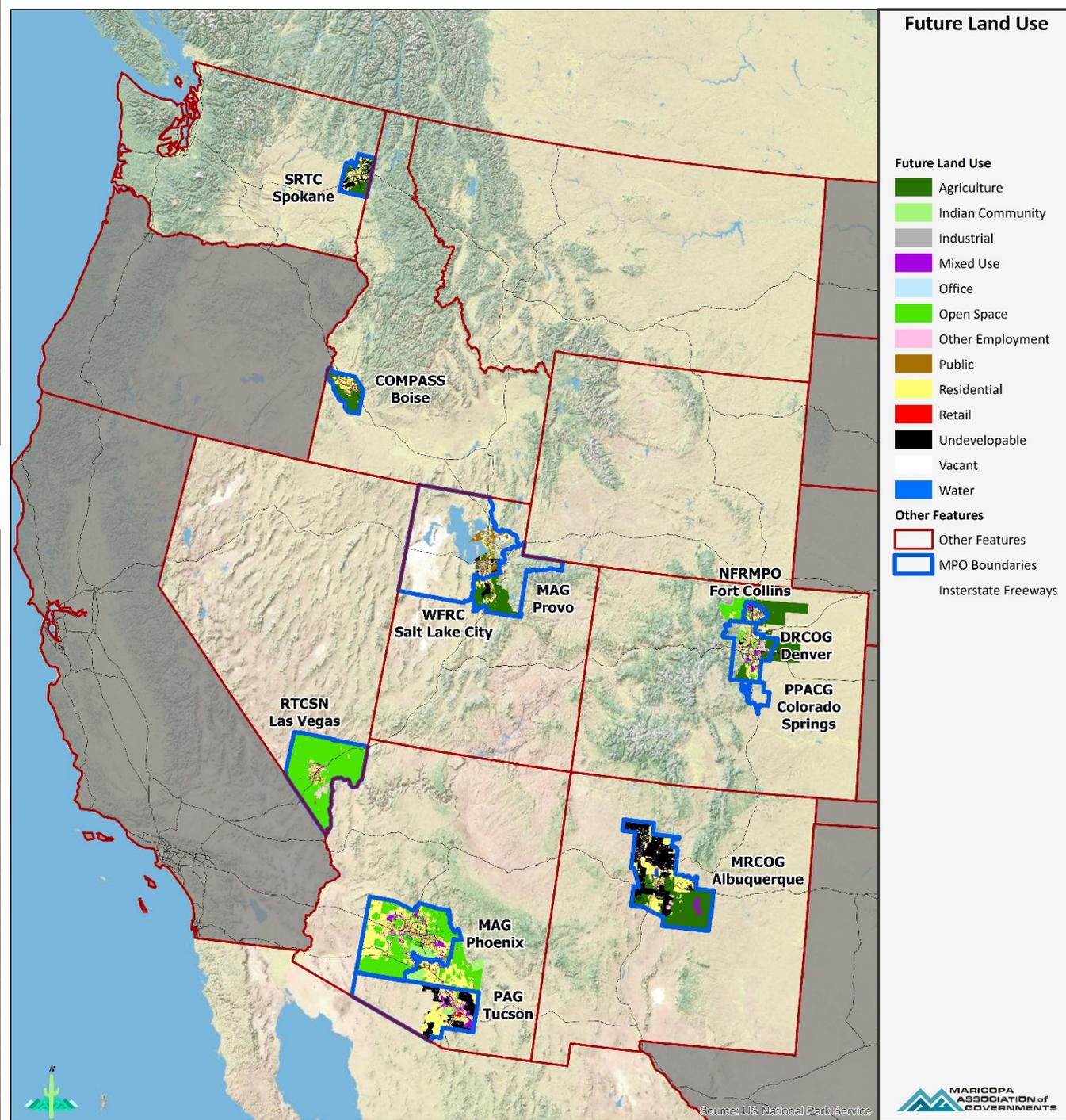
DRAFT Risk and Develop-ability Score:

Categories	Sub-category	Risk Score (0: Low - 5:High)	Developability (0:Low - 5:High)
Open Space/Undevelopable		4	1
Remaining Uses	All	0	5

Q: Review the scores

Q: Same for all IMW or differ by Region/
County/ State?

Land



Topography

Source: ESRI

Slope analysis to be developed

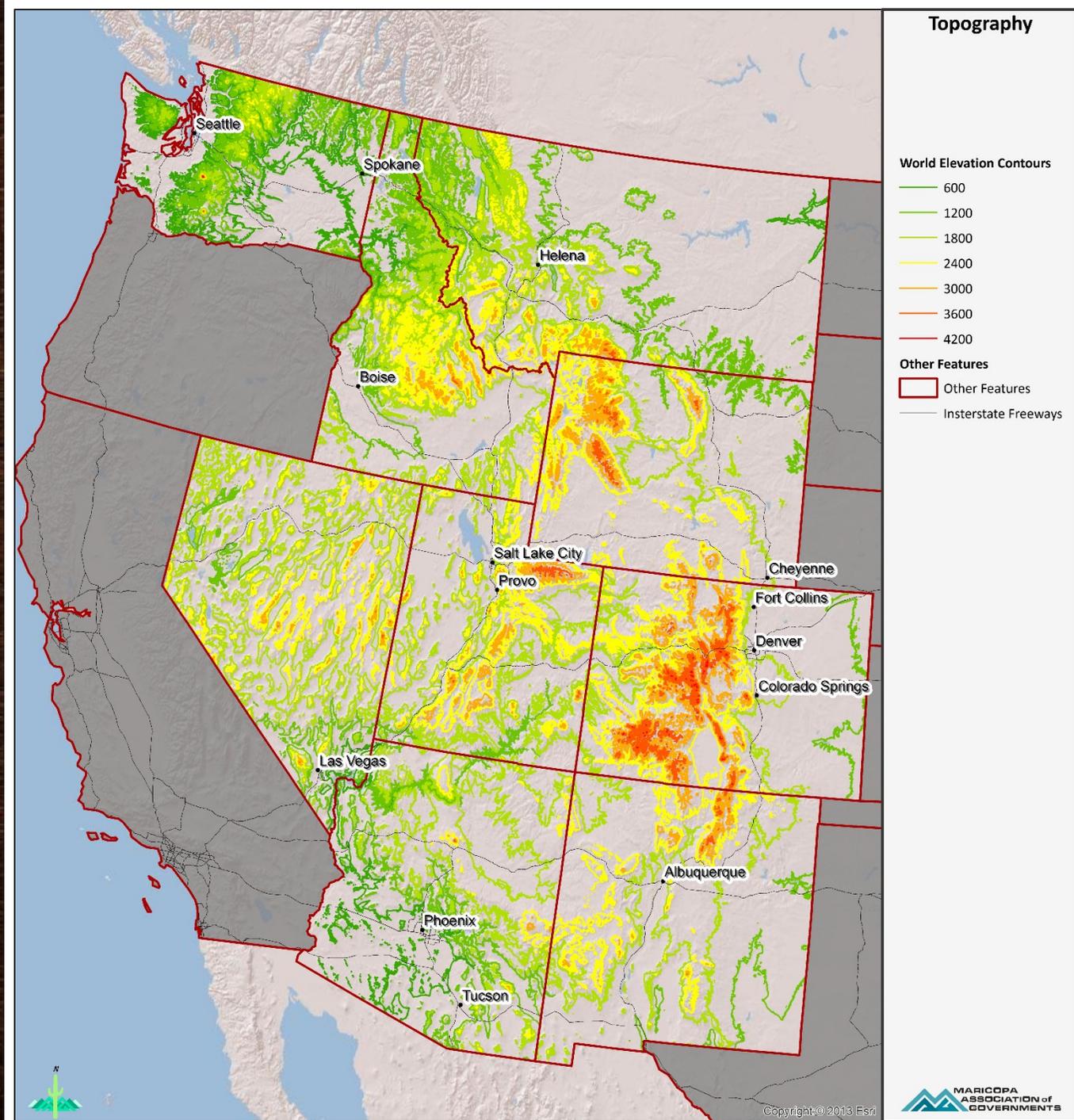
DRAFT Risk and Develop-ability Score:

Categories	Risk Score (0: Low - 5:High)	Developability (0:Low - 5:High)
0-15%	1	5
15% - 20%	2	3
20% +	3	2

Q: Review the scores

Q: Same for all IMW or differ by Region/
County/ State?

Land



Rivers, Streams and Lakes

Source: ESRI

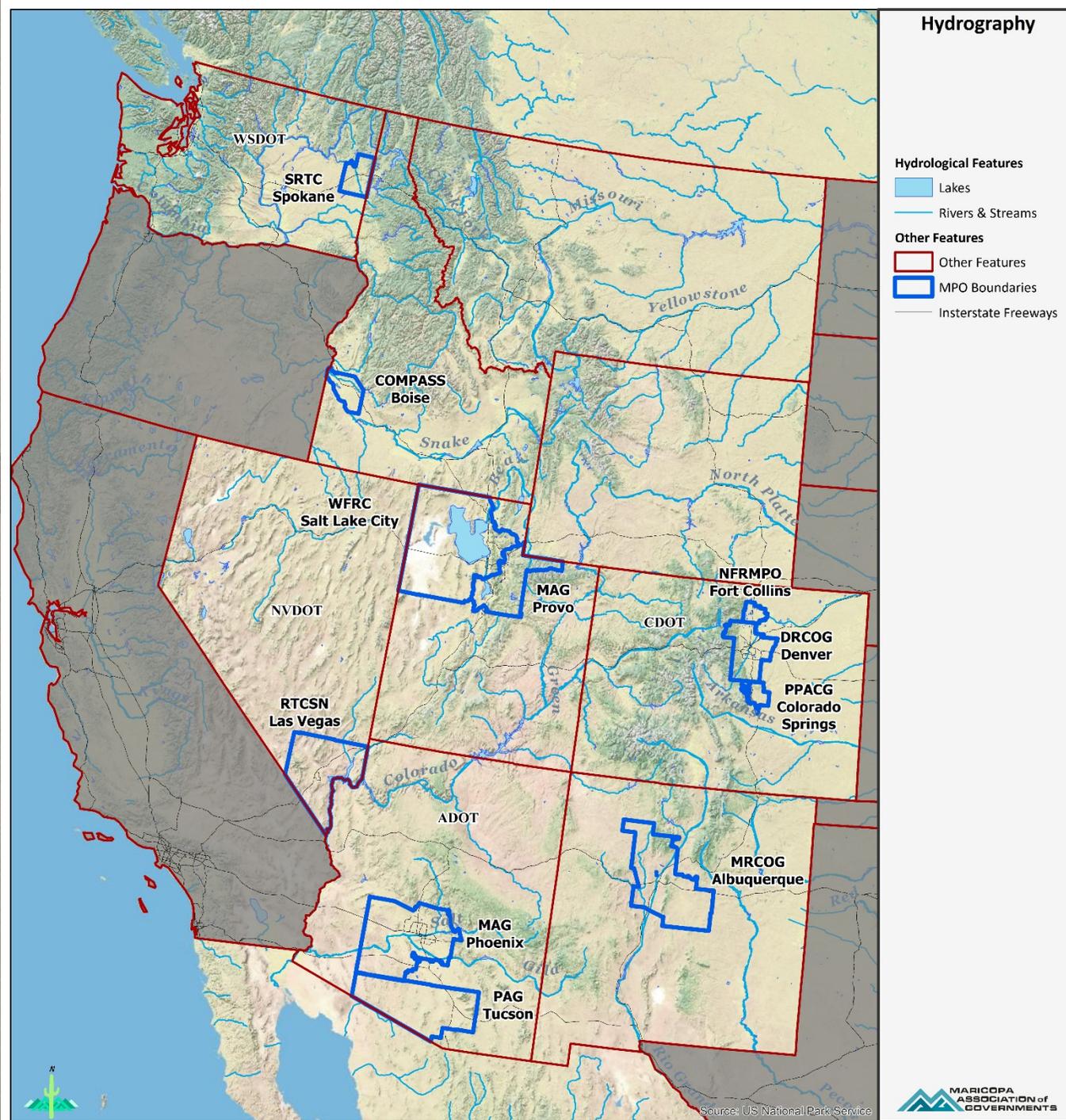
DRAFT Risk and Develop-ability Score:

Categories	Sub-category	Risk Score (0: Low - 5:High)	Developability (0:Low - 5:High)
Lakes/Rivers/Streams		5	1

Q: Review the scores

Q: Same for all IMW or differ by Region/
County/ State?

Hydro



Areas of Critical Environmental Concern

Source: Bureau of Land Management (BLM)

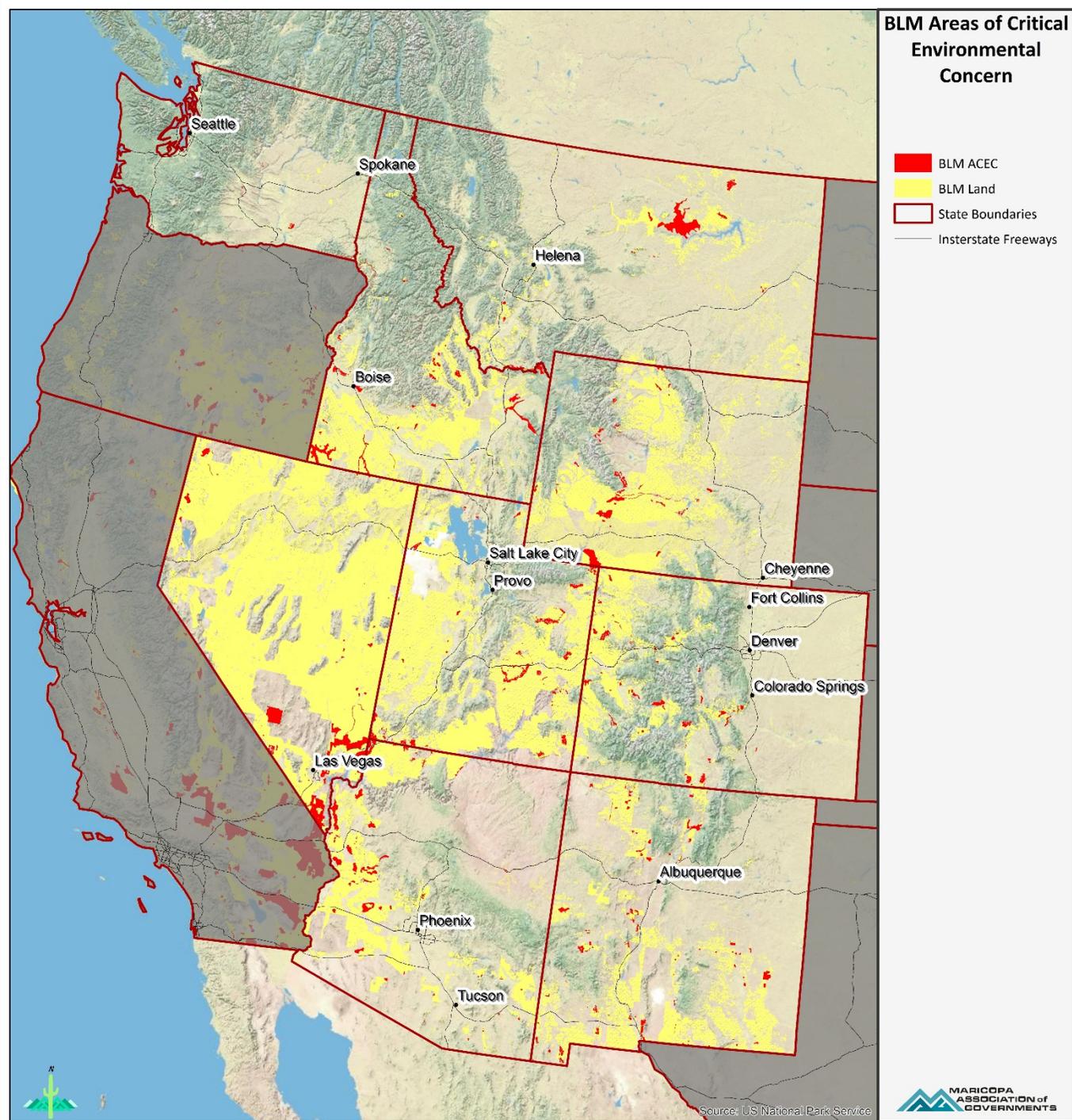
DRAFT Risk and Develop-ability Score:

Categories	Sub-category	Risk Score (0: Low - 5:High)	Developability (0:Low - 5:High)
ACEC		5	0

Q: Review the scores

Q: Same for all IMW or differ by Region/
County/ State?

Environmental



Air Quality Boundaries

Source: Western Regional Partnership (WRP)

Q: How is this included in a Risk Register?



Environmental

Critical Habitat

Source: US Fish & Wildlife Service

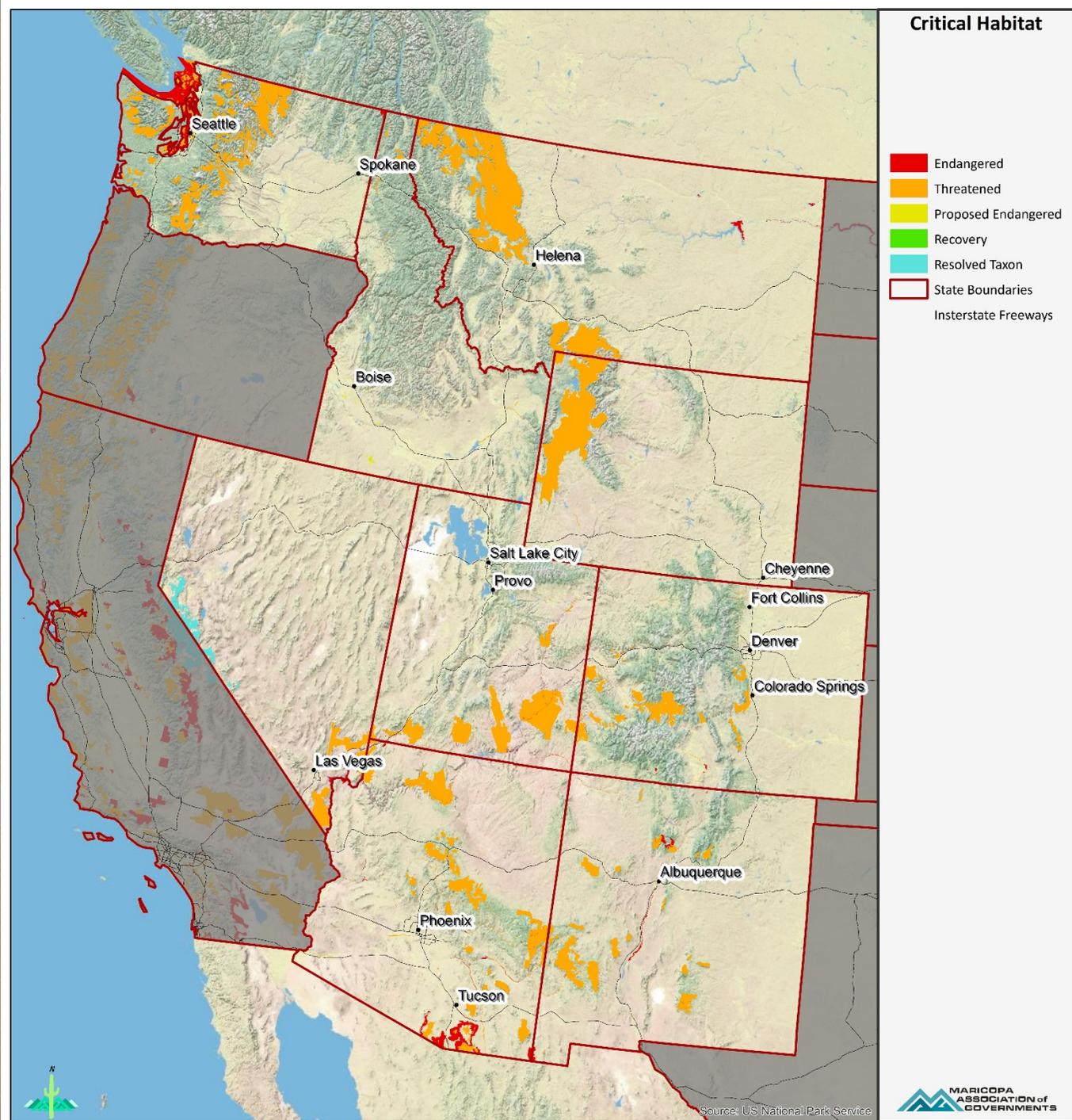
DRAFT Risk and Develop-ability Score:

Categories	Sub-category	Risk Score (0: Low - 5:High)	Developability (0:Low - 5:High)
Critical Habitat		5	0

Q: Review the scores

Q: Same for all IMW or differ by Region/
County/ State?

Environmental



Superfund Sites

Source: Environmental Protection Agency (EPA)

DRAFT Risk and Develop-ability Score:

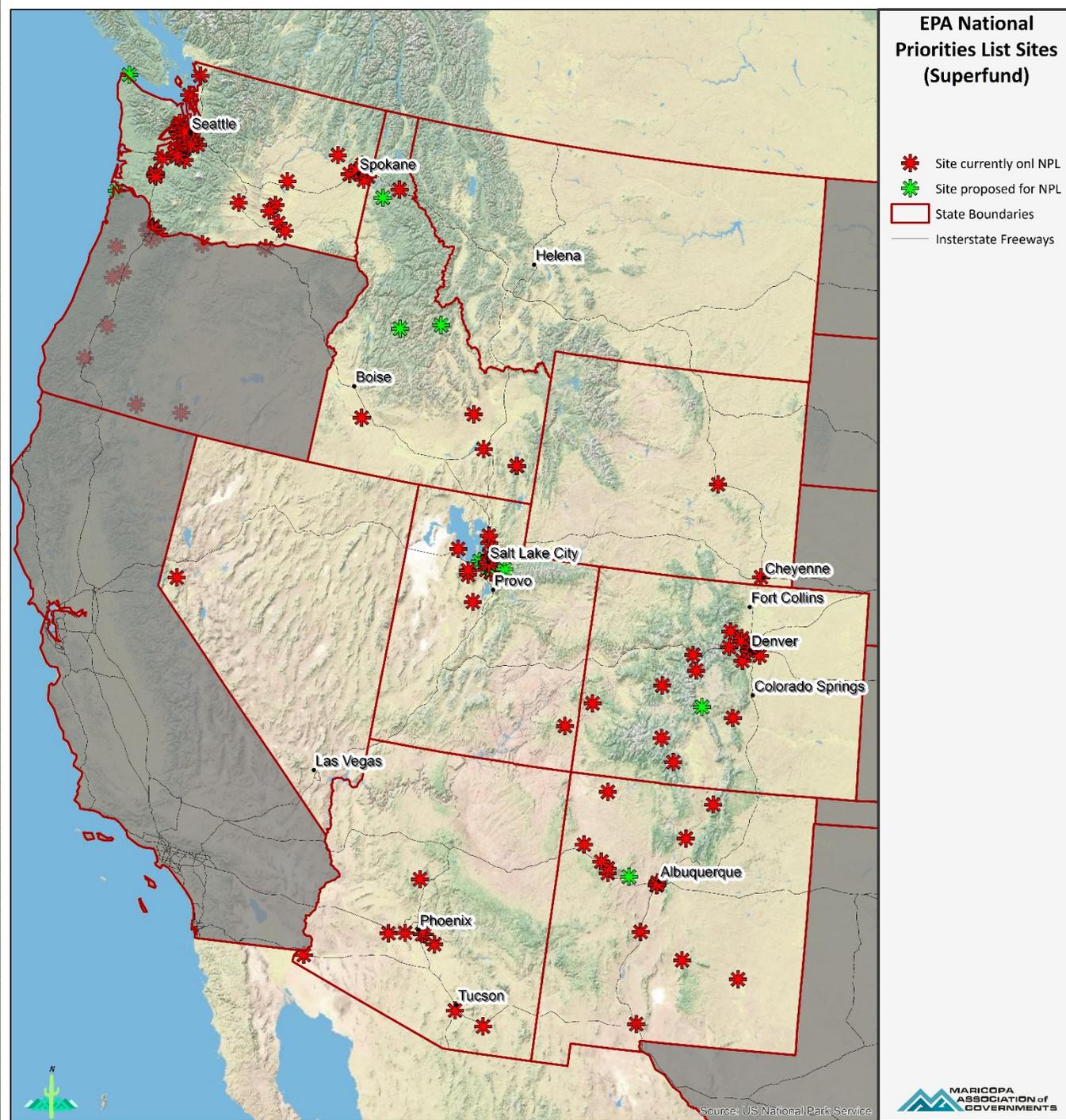
Categories	Sub-category	Risk Score (0: Low - 5:High)	Developability (0:Low - 5:High)
Superfund Sites		3	4

Q: Review the scores

Q: Buffer? 1 mile? 2 mile?

Q: Same for all IMW or differ by Region/ County/ State?

Environmental



National & State Parks

Source: Conservation Biology Institute PAD-US (CBI Edition)

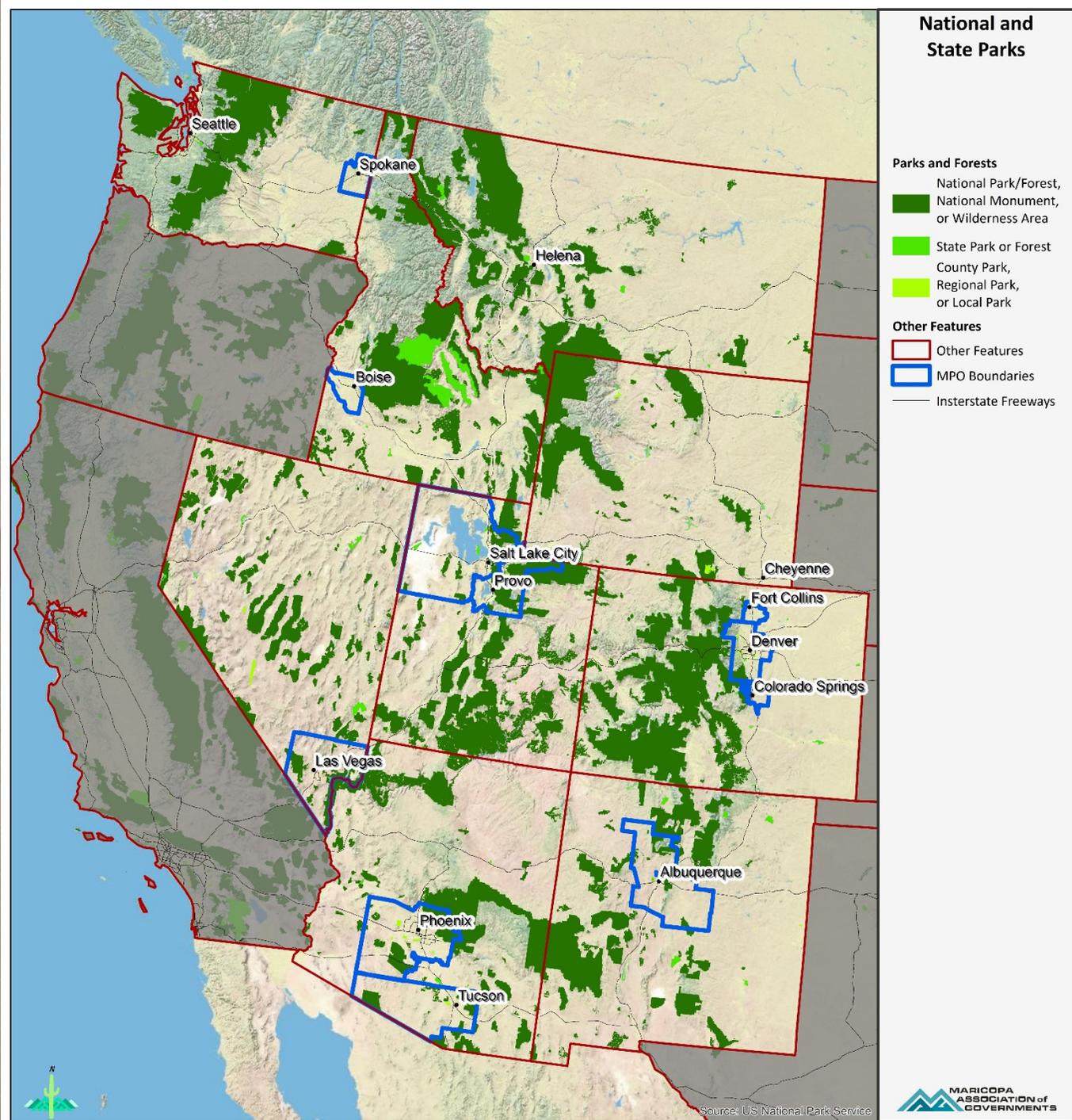
DRAFT Risk and Develop-ability Score:

Categories	Sub-category	Risk Score (0: Low - 5:High)	Developability (0:Low - 5:High)
National & State Parks	All	5	1

Q: Review the scores

Q: Same for all IMW or differ by Region/
County/ State?

Environmental



Herd Management

Source: Bureau of Land Management (BLM)

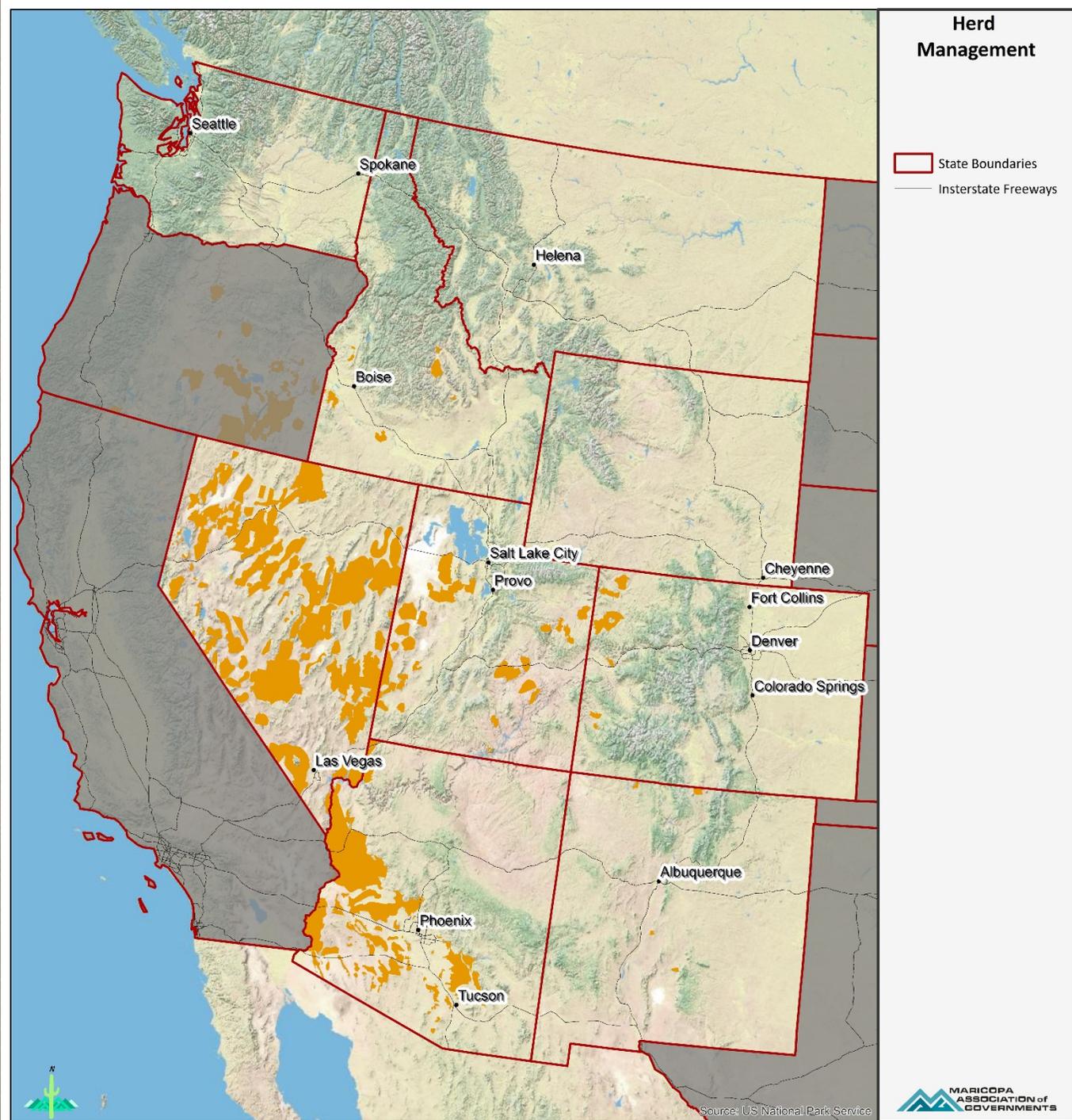
DRAFT Risk and Develop-ability Score:

Categories	Sub-category	Risk Score (0: Low - 5:High)	Developability (0:Low - 5:High)
Herd Management		2	4

Q: Review the scores

Q: Same for all IMW or differ by Region/
County/ State?

Environmental



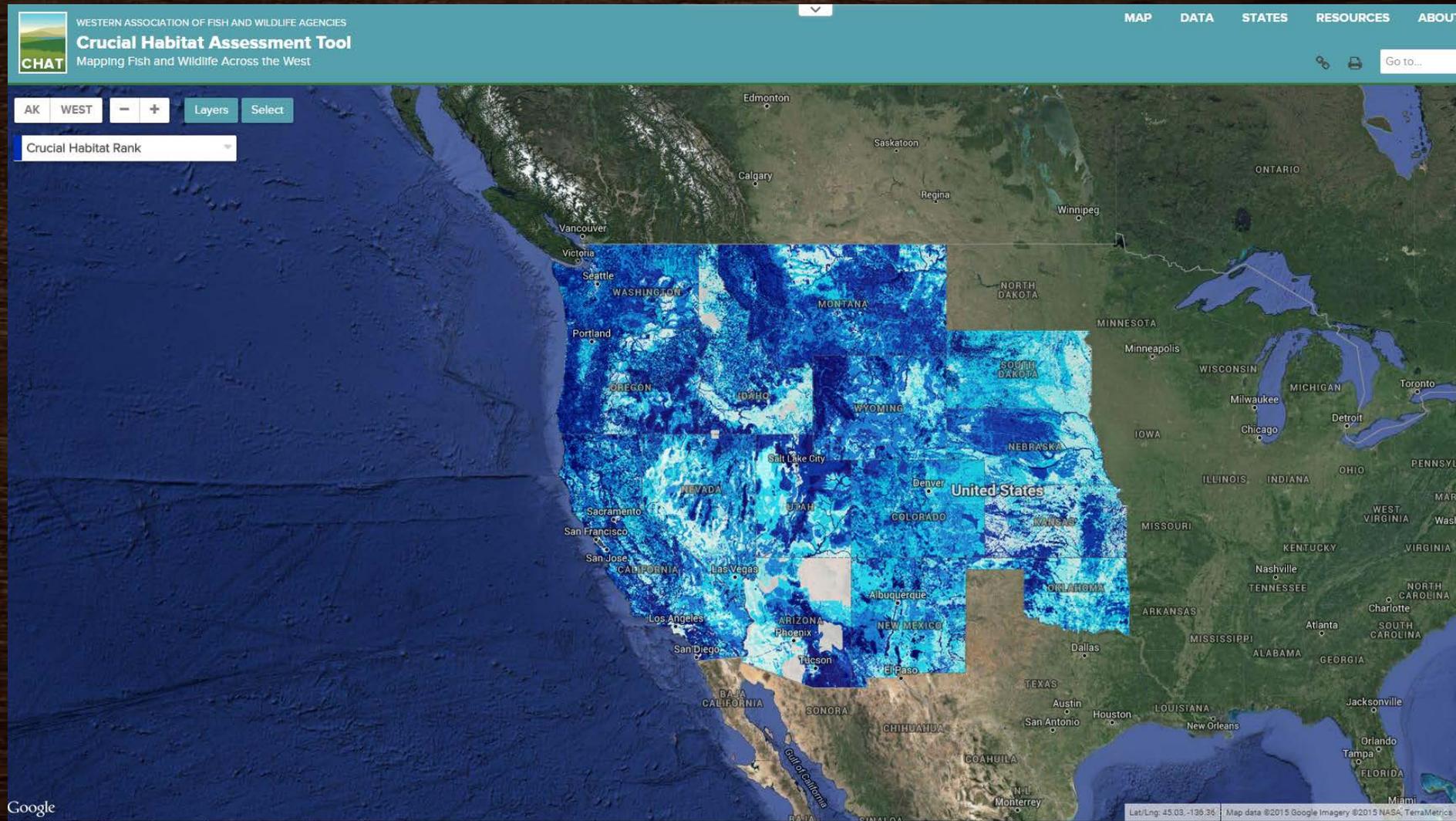
CHAT

Crucial Habitat Assessment Tool

Dark colors more
More crucial

Data to be acquired

Q: Scores?

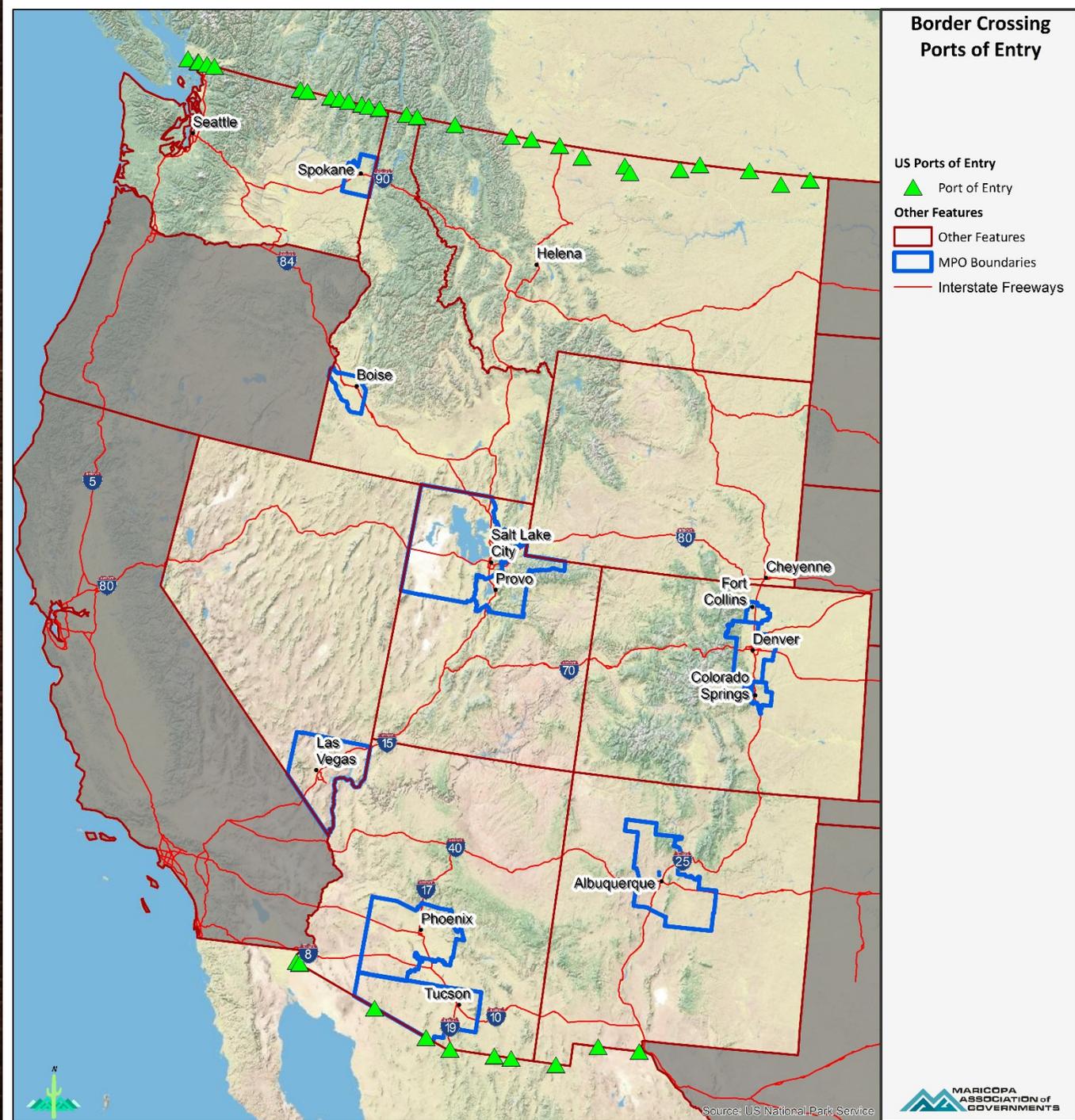


Environmental

Border Crossing / Ports of Entry

Source: US Customs and Border Protection

Q: Proximity to a crossing included as a factor?



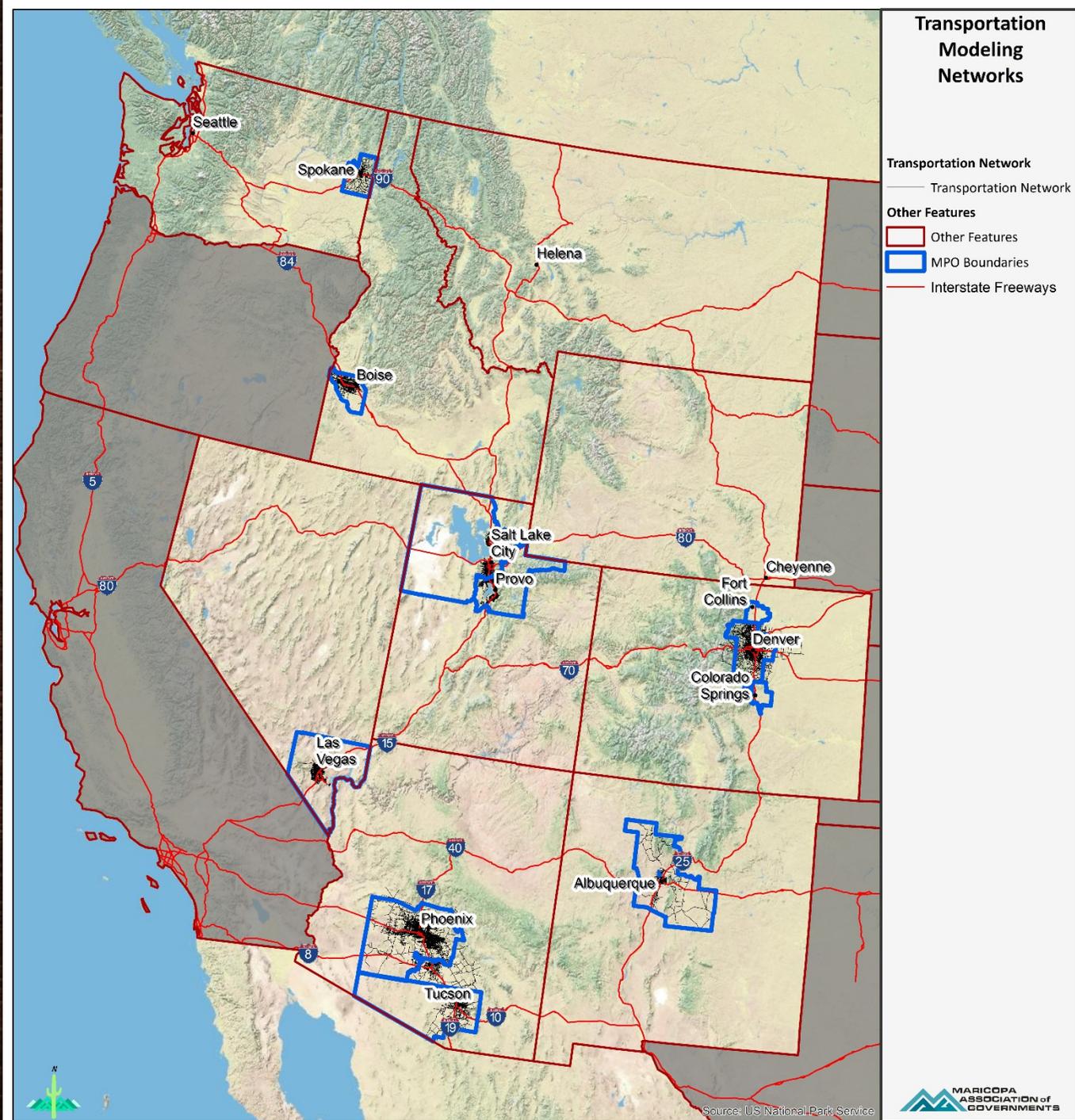
Transportation

Transportation Networks

Source: MPO/COGs

Q: Future modeled volumes a risk?

Transportation

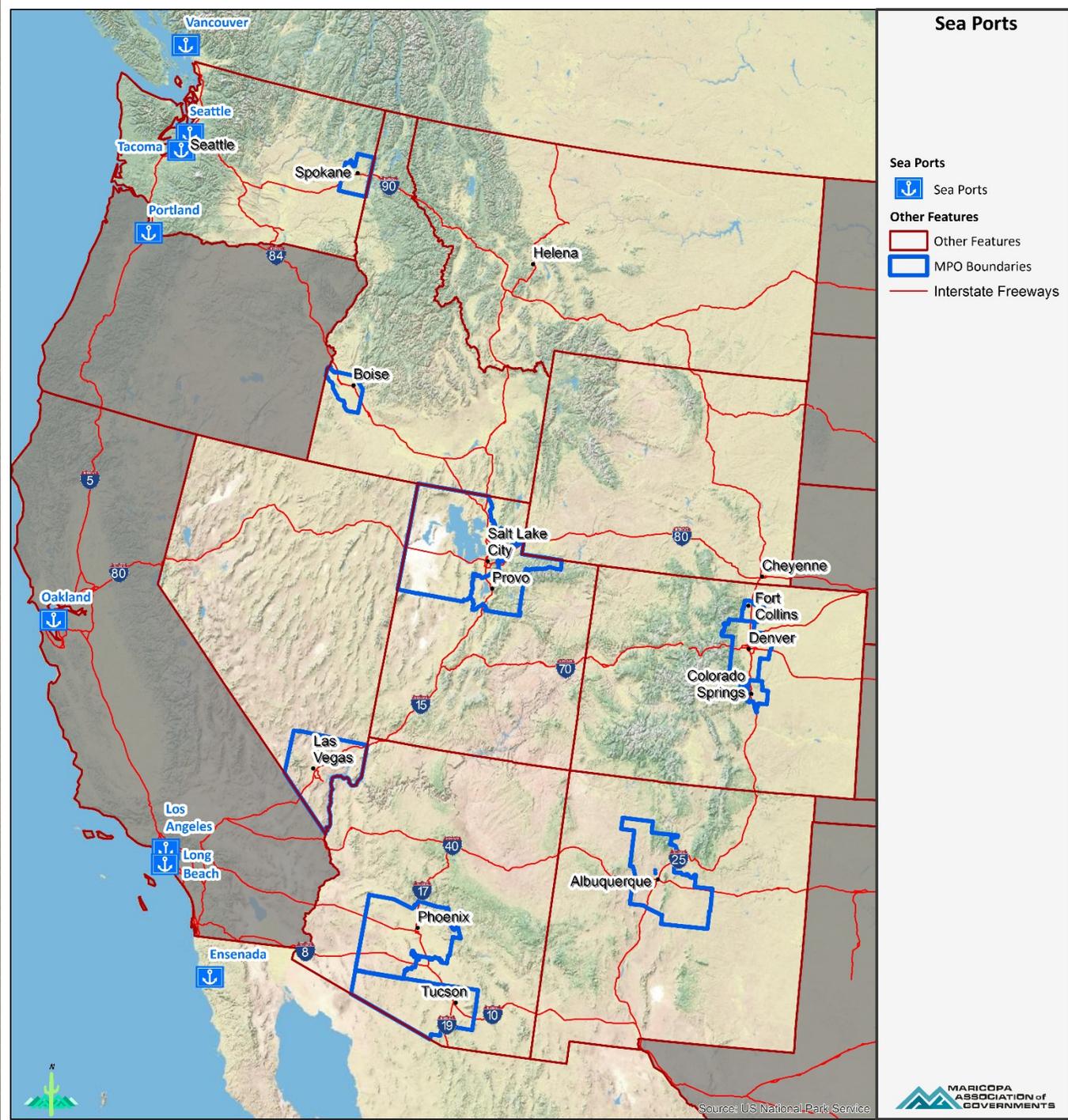


Sea Ports

Source: ESRI

Q: Proximity to a port – risk or opportunity?

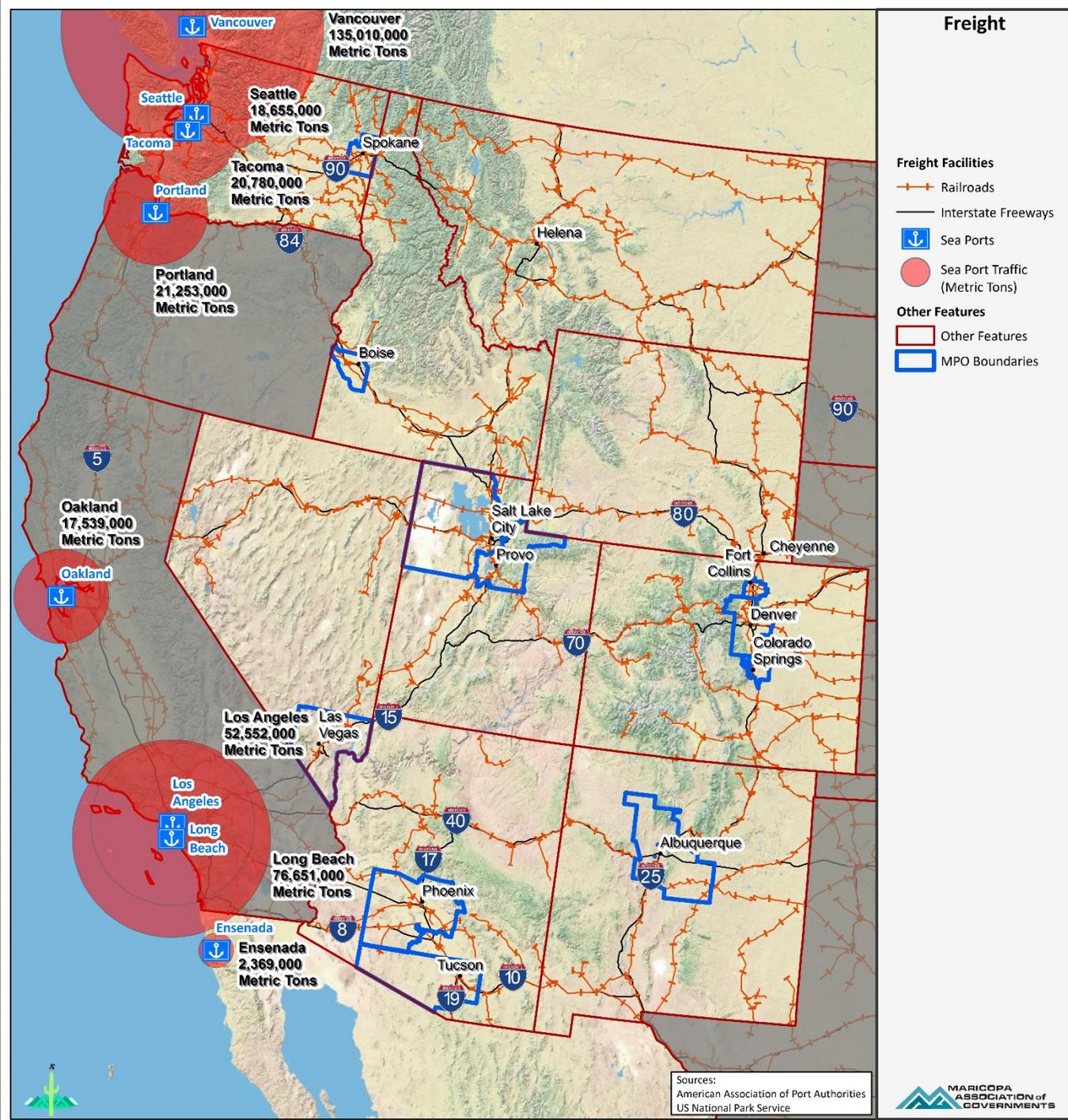
Transportation



Freight

Source: American Association of Port Authorities

Q: Proximity to a port and freight volume/trends – risk or opportunity?



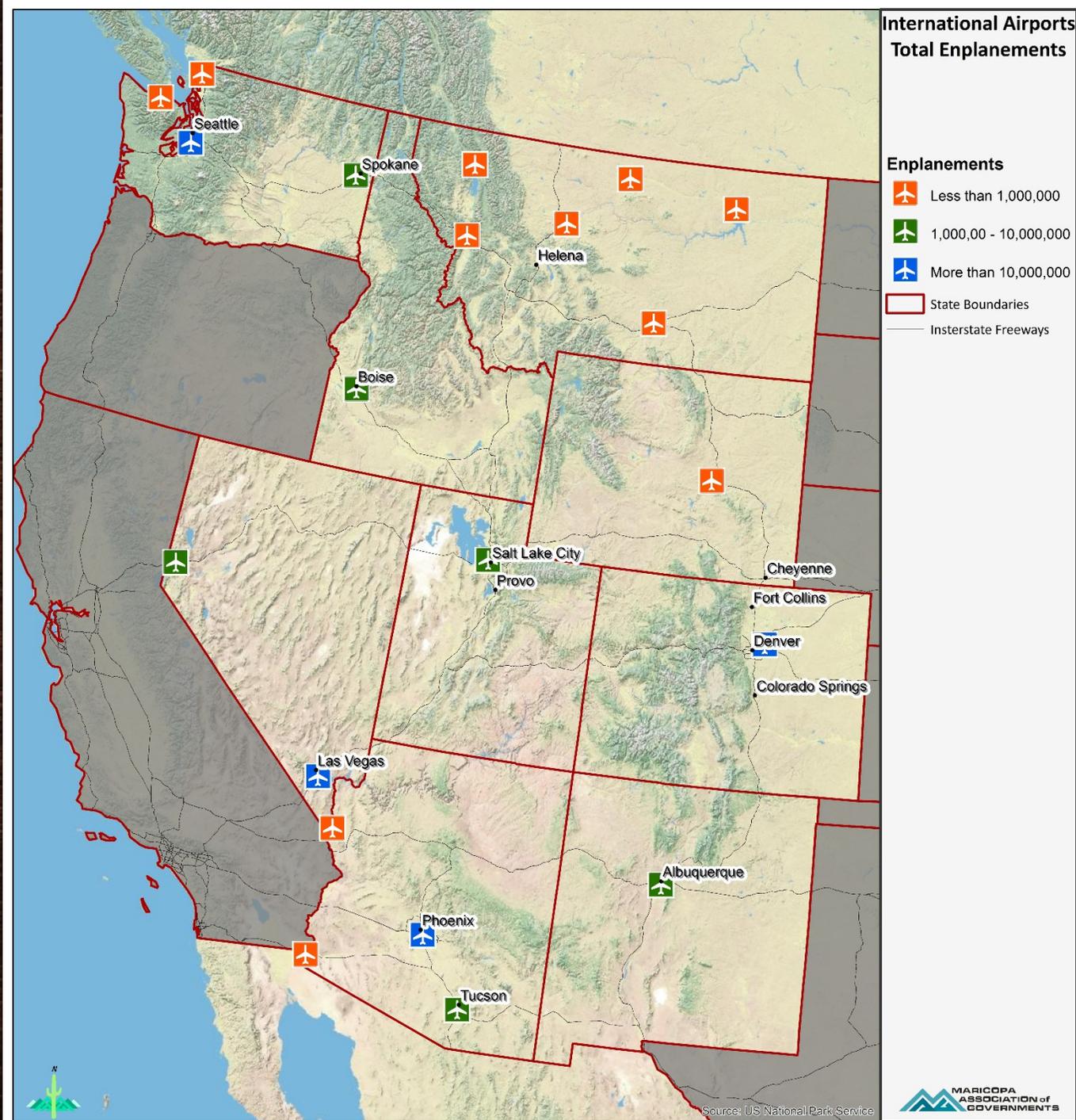
Transportation

International Airports

Source: FAA

Q: Proximity to an airport, type, volume/trends – risk or opportunity?

Transportation

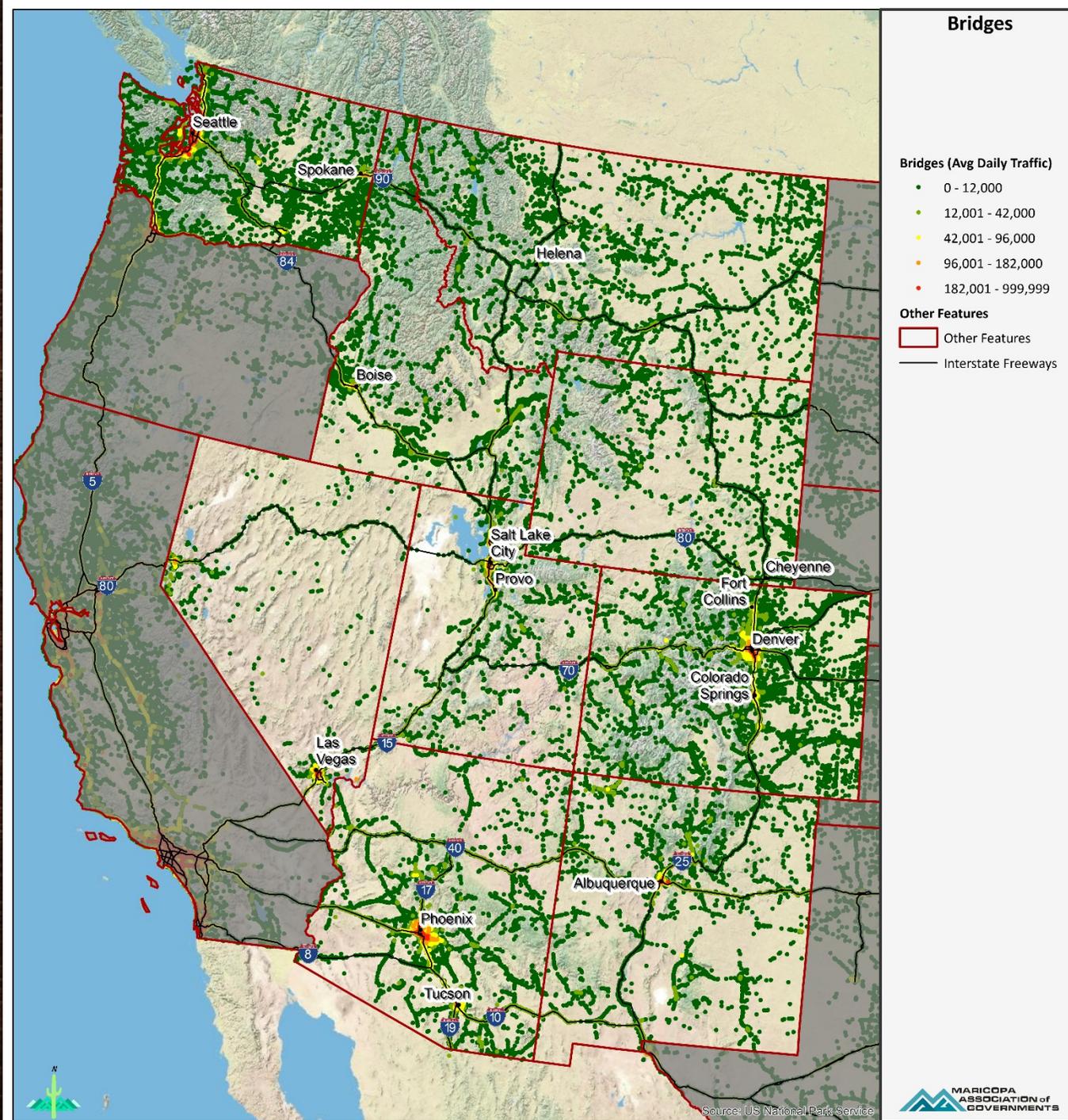


Bridges

Source: USDOT – National Bridge Inventory

Q: Proximity to a bridge, type, volume/trends a risk?

Q: Age of bridge a factor?

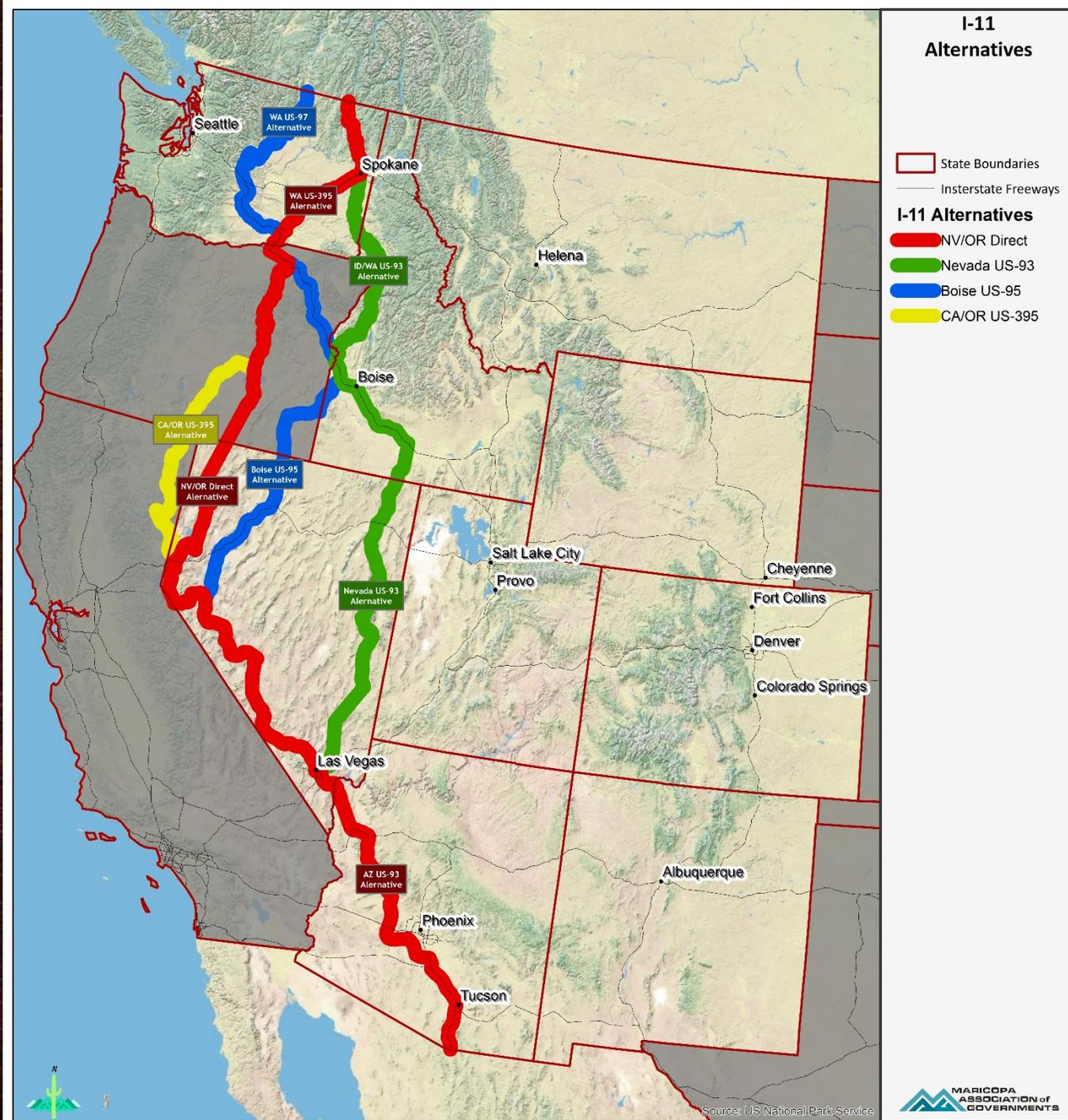


Transportation

I-11 Alternatives

Q: Corridors for Phase I assessment?

Transportation



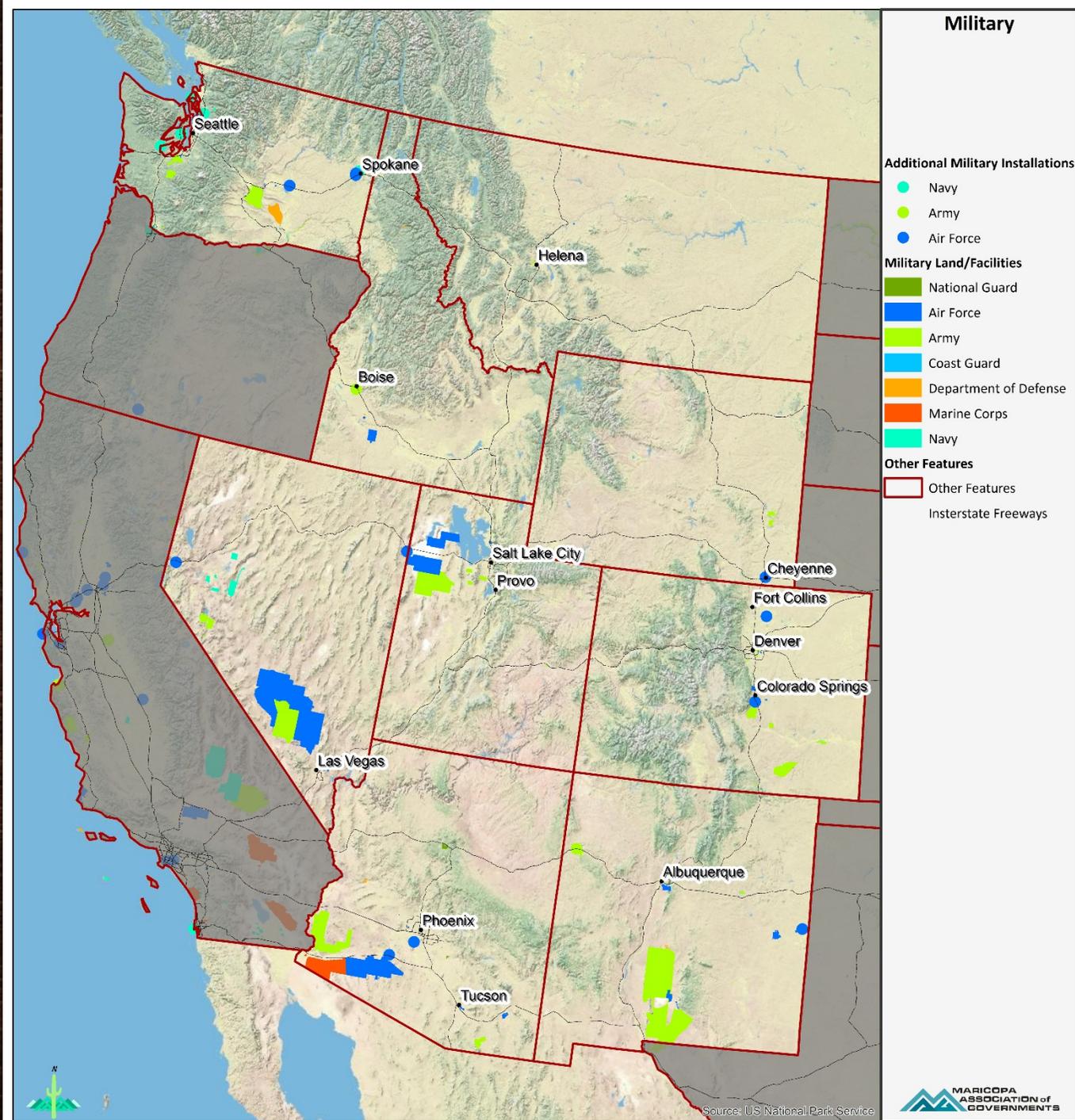
Military

Source: Conservation Biology Institute PAD-US (CBI Edition)

Categories	Sub-category	Risk Score (0: Low - 5:High)	Developability (0:Low - 5:High)
Federal	BLM	3	3
	Forest/protected	5	0
	Military	5	1

Q: Review the score?

Resources



Power Lines

Source: Western Regional Partnership (WRP)

Q: Proximity to power line corridors a potential risk?



Resources

Railroads

Source: National Atlas of the United States

Q: Rail crossings a risk?

Q: Potential for multi-modal partnership?

Resources



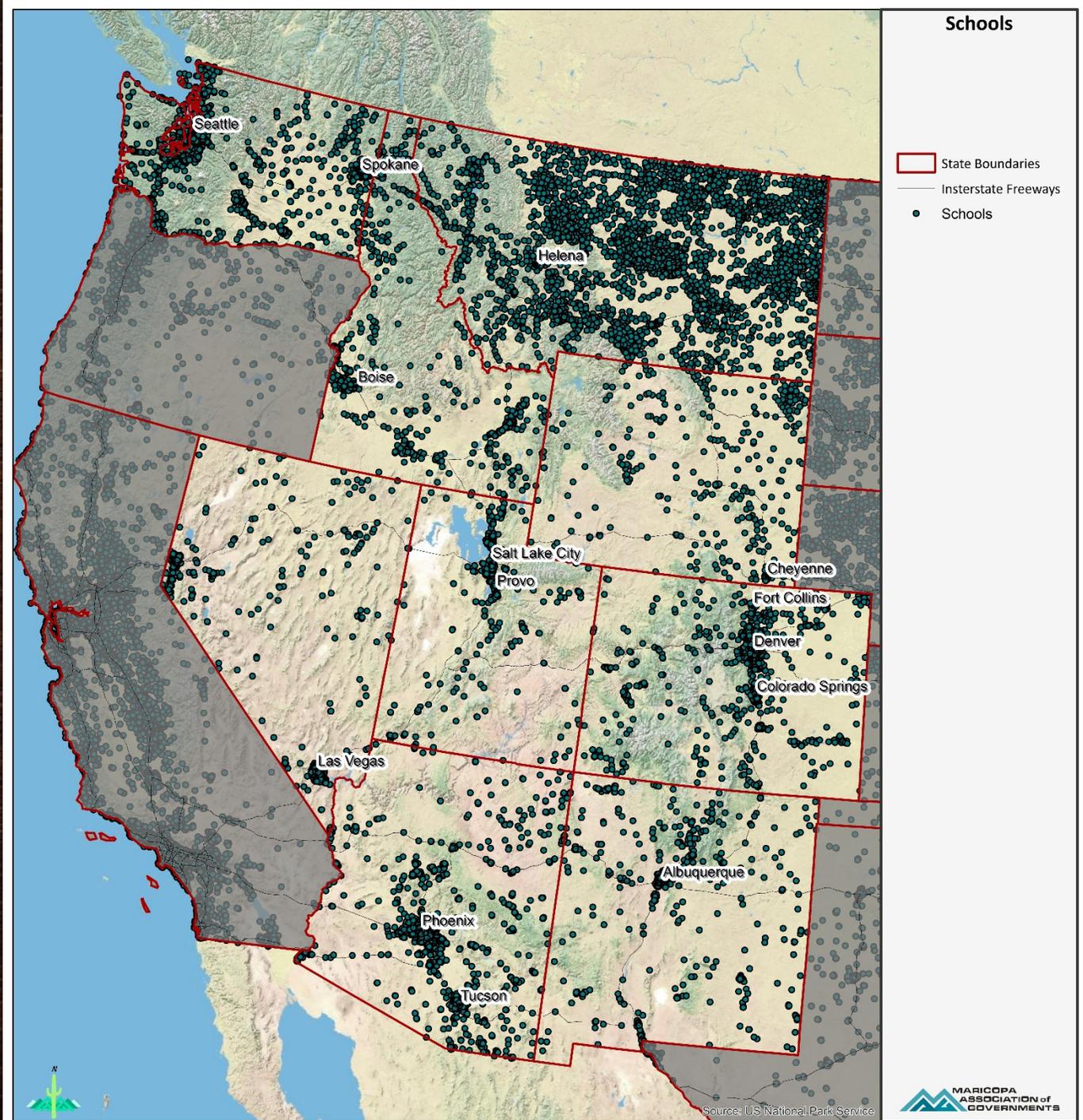
Schools

Source: ESRI

Q: Impacts of construction on schools?

Q: School transportation access a factor?

Resources



Homeland Security – HSIP Freedom Level – Desired Datasets

Data to be acquired

Geodatabase	Description	Geodatabase	Description
Chemicals	Hazardous Materials Routes	Energy	Natural Gas Market Hubs
Chemicals	Solid Waste Landfill Facilities	Energy	Non-Gasoline Alternative Fueling Stations
Communications	AM Transmission Towers	Energy	Nuclear Fuel Plants
Communications	Antenna Structure Registrars	Energy	Outer Continental Shelf (OCS) Pacific Platforms
Communications	Area Code Boundaries	Energy	Pacific Wells
Communications	Broadband Radio Service (BRS) and Educational Broadband Service (EBS) Transmitters	Energy	Radiological Assistance Program (RAP) Regions
Communications	Cellular Service Areas	LawEnforcement	Law Enforcement Locations
Communications	Cellular Towers	Mining	Agricultural Minerals Operations
Communications	FM Transmission Towers	Mining	Construction Minerals Operations
Communications	Land Mobile Broadcast Towers	Mining	Crushed Stone Operations
Communications	Land Mobile Commercial Transmission Towers	Mining	Ferrous Metal Mines
Communications	Land Mobile Private Transmission Towers	Mining	Ferrous Metal Processing Plants
Communications	Microwave Service Towers	Mining	Mines and Mineral Resources
Communications	Paging Transmission Towers	Mining	Miscellaneous Industrial Mineral Operations
Communications	TV Analog Station Transmitters	Mining	Nonferrous Metal Mines
Communications	TV Broadcast Contours	Mining	Nonferrous Metal Processing Plants
Communications	TV Digital Station Transmitters	Mining	Refractory, Abrasive and Other Industrial Mineral Operations
Education	Colleges and Universities	Mining	Sand and Gravel Operations
Education	Day Care Centers	Mining	Uranium and Vanadium Deposits
Education	Private Schools	Mining	U.S. Coal Fields
Education	Public Schools	National Flood Hazard	Flood Hazard Areas - High Risk
Education	Supplemental Colleges	National Flood Hazard	Flood Hazard Areas - Moderate to Low Risk
EmergencyServ	Emergency Medical Service (EMS) Stations	NaturalHazards	Landslide Regions
EmergencyServ	Fire Stations	NaturalHazards	Plate Boundaries
Energy	Environmental Protection Agency (EPA) Facility Registry Service (FRS) Power Plants	NaturalHazards	Quaternary Fault Lines
Energy	Natural Gas Liquid Pipelines		

Resources

Employer Databases

Source: NFRMPO, RTCSN, MAG

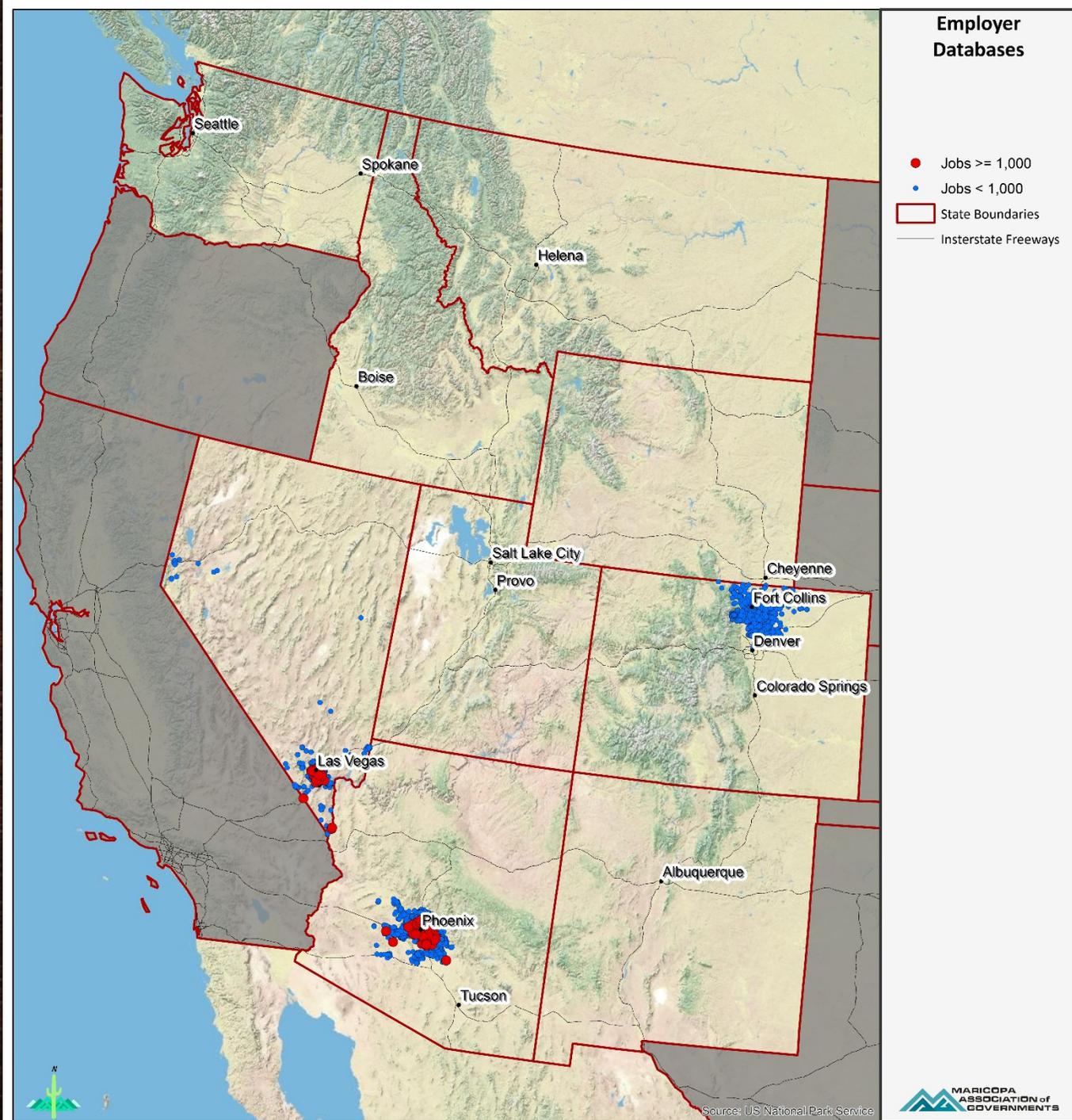
Evaluating ESRI Data National Employer Database

Q: Effect of employment clusters on roadway demands? By Sector?

Q: New employment following roadway projects a factor?

Q: Employer location related to freight traffic?

Economy

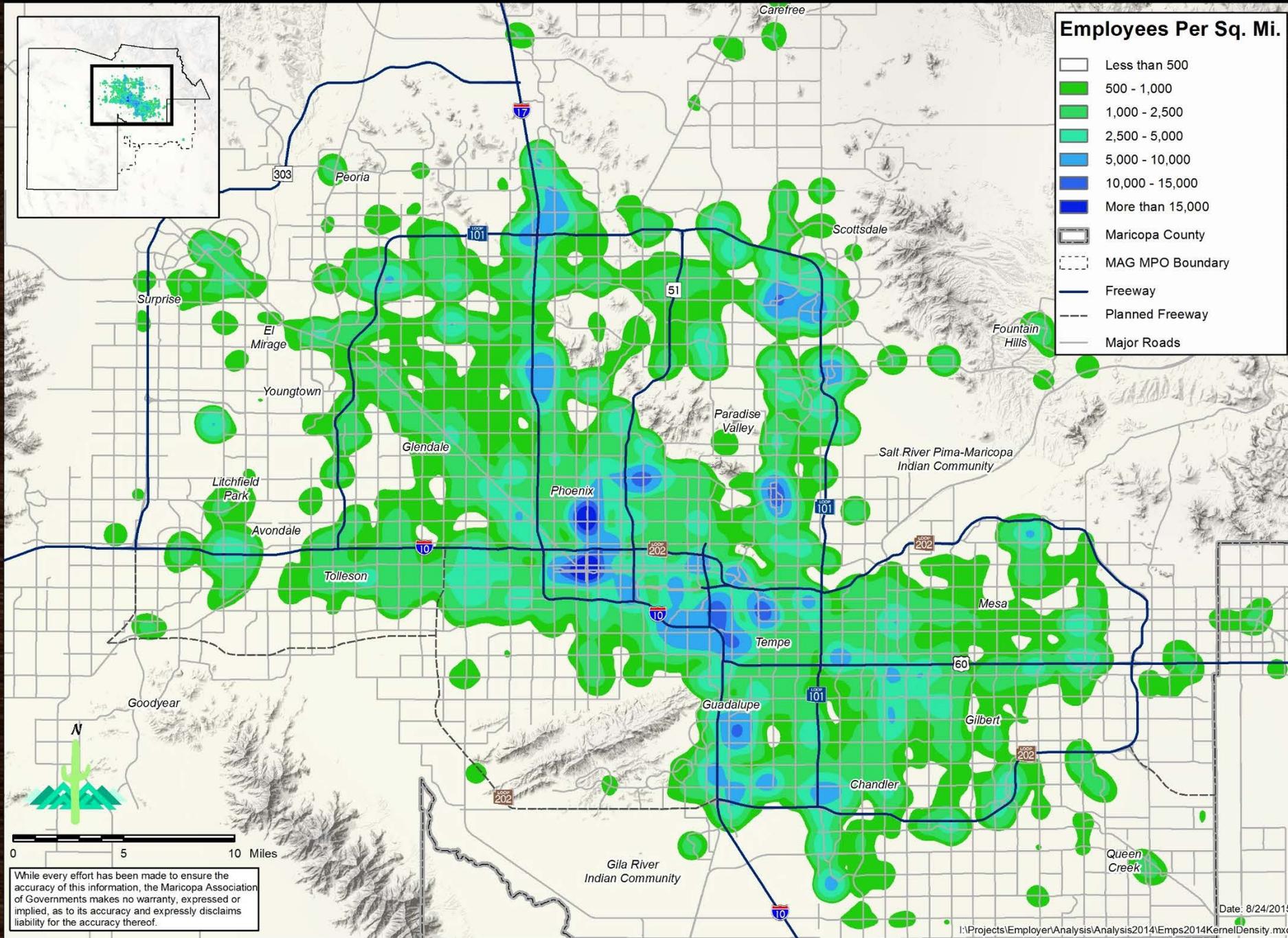


2014 Regional Employment Concentration

EXAMPLE

MAG Job Concentration - 2014

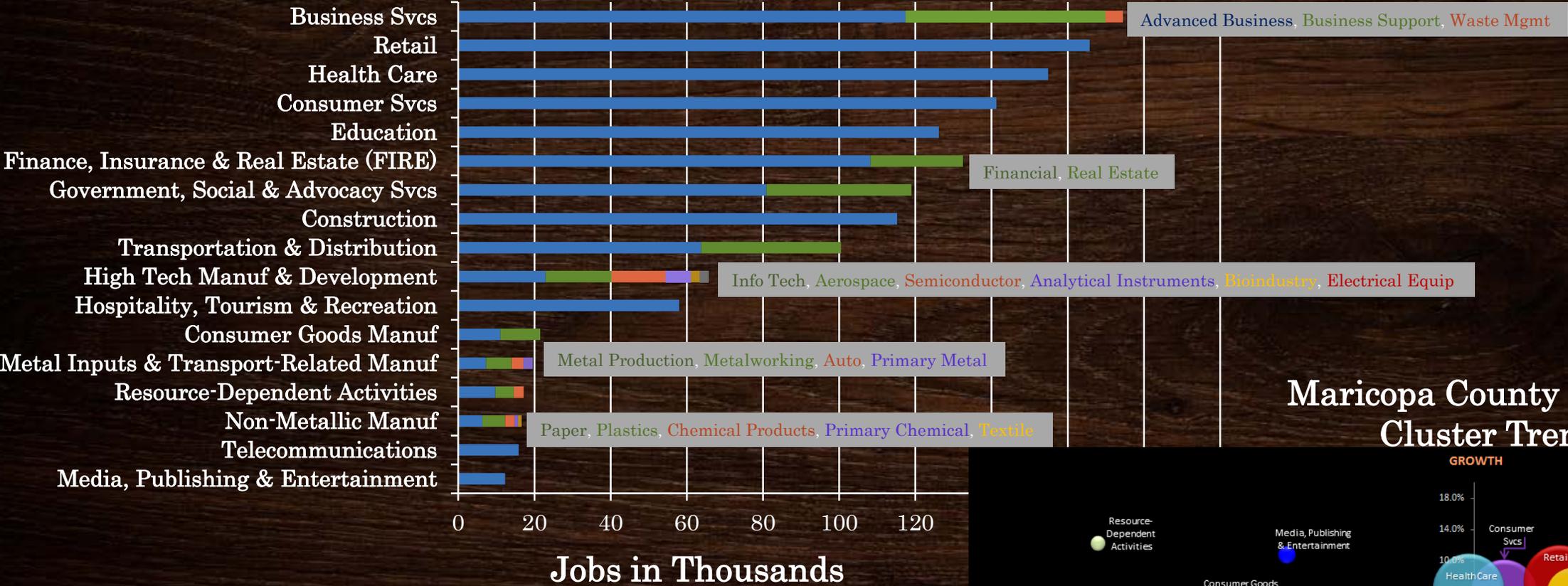
Potential to develop employment sectoral cluster analysis for IMW



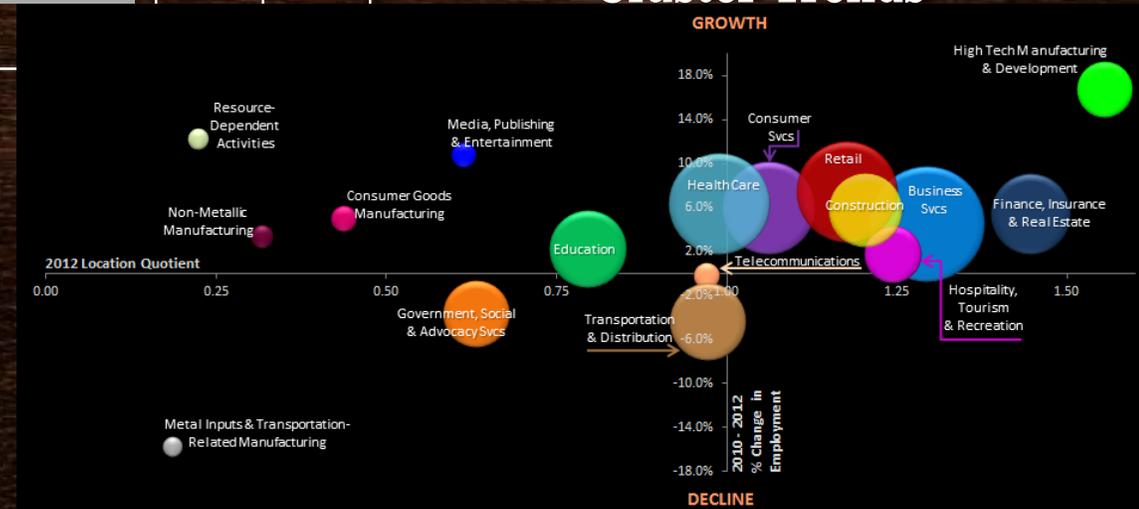
Economy

Opportunity Analytics; Understanding the Economy

Jobs by Cluster & Subcluster



Maricopa County Industry Cluster Trends



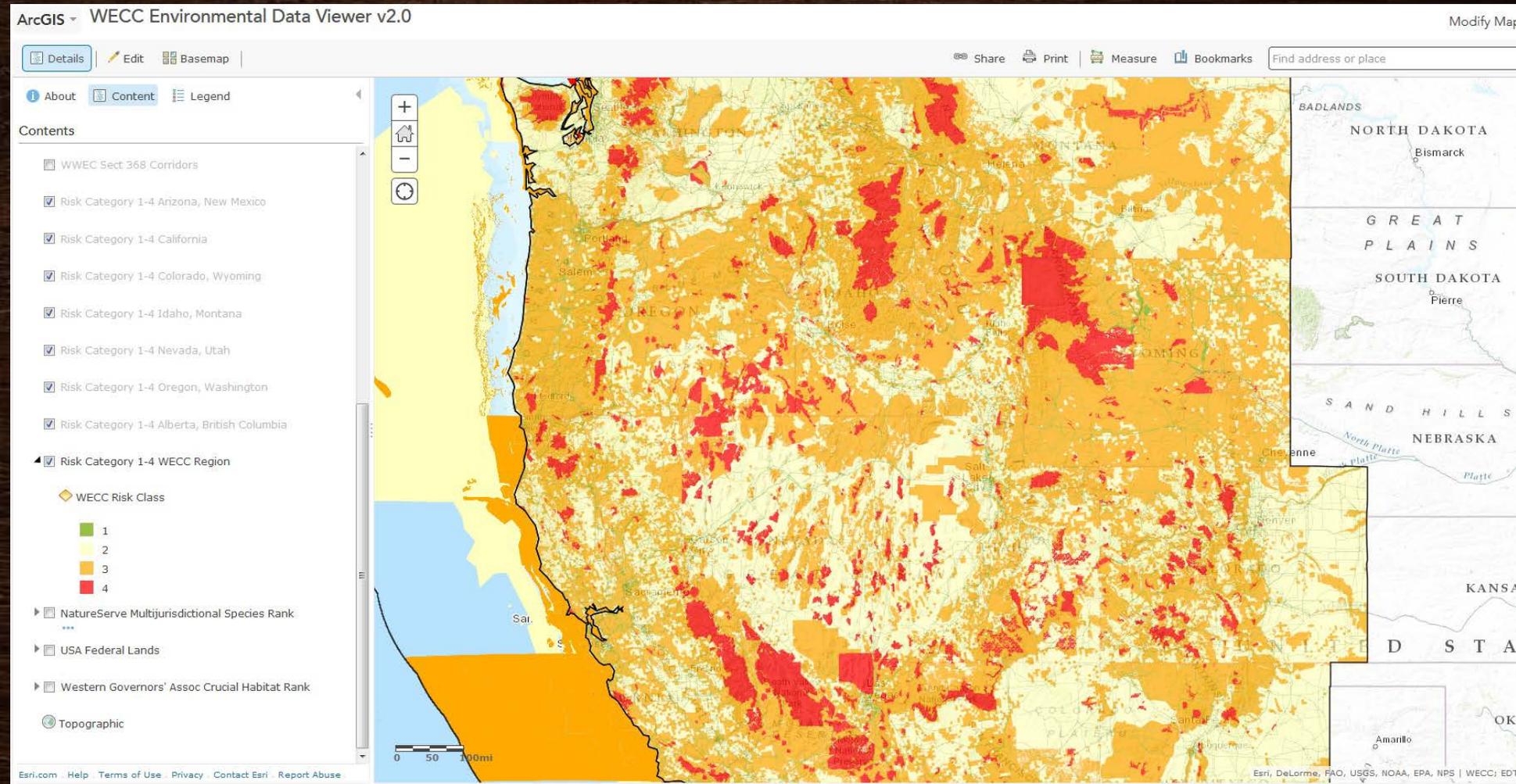
Q: Effect of employment clusters on roadway demands? By Sector?

Economy

WECC Environmental Data Viewer

Risk Categories

Composite of many layers of Data (Example)



Composite

Data and Scores – what's missing?

Draft Developability and Risk Scores					
Thematic Area	Subject	Categories	Sub-category	Risk Score (0: Low - 5:High)	Developability (0:Low - 5:High)
Land	Land ownership	Federal	BLM	3	3
			Forest/protected	5	0
			Military	5	1
		Native American	3	3	
		State Trust Lands	3	4	
		Public/Private Conservation	5	0	
		Private	1	5	
	Topography	0-15%		1	5
		15% - 20%		2	3
		20% +		3	2
	Land Cover	Developed	All	4	2
		Forest	All	3	4
		Barren/Scrub/Grassland		1	5
		Pasture/Crops		0	5
		Water/Wetlands	All	5	1
		Future Land Use	Open Space/Undevelopable		4
	Remaining Uses	All	0	5	
Hydro	Water	Lakes/Rivers/Streams		5	1
Environmental	ACEC	ACEC		5	0
	Critical Habitat	Critical Habitat		5	0
	Superfund Sites	Superfund Sites		3	4
	National & State Parks	National & State Parks	All	5	1
	Herd Management	Herd Management		2	4

Discussion revisited

- Project Data Needs:
 - Local, state, regional and national data sets identified
 - Data gaps
 - Additional data resources
- Data collected from partners
 - Common data operating platform (codes)
- What factors are included in Risk Scoring Analysis?
- Risk & Develop-ability scores

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