



Creating GIS Partnerships to Support Transportation Planning

SHRP2: Expediting Project Delivery

History

PROJECT BACKGROUND



Safety



Renewal



Reliability



Capacity

Intermountain West



America's Trade Corridor

Connecting Canada, the United States, and Mexico



Project Goals



Creating Partnerships

THE PROCESS

Gathering Partners



Surveyed Partners

Intermountain West Region Survey

Identifying Key Data Resources to Develop Common GIS Vision/Platform

Your input is greatly needed on this survey of the Intermountain West Region. We are using a SHRP2 grant to conduct outreach; develop a GIS Common Operating Vision/platform for easier data information sharing; develop a report with Risk Register. We are seeking your critical input to identify available data resources that are used/can be used to assist with current and planned transportation corridors and projects. We believe in information sharing and decision making.

Section One: Contact Information

Your Name: _____ Agency: _____
 Title: _____ Work Phone: _____
 Email Address: _____ Web Address: _____












































Section Two: Data Related Questions

| Please provide details on what GIS data sets your organization has access to. For each data set, identify: | Primary agency that maintains the data (if other than your agency) | Contact information of agency maintaining the data (if other than your agency) | What is the geographic extent for this dataset? What is the scale for this dataset (state/county/city/parcel)? | What is the most current data available (Year)? |
|--|--|--|--|---|
| a. Current Land Use | | | | |
| b. Planning/Zoning | | | | |
| c. Development Projects (pipeline projects) | | | | |
| d. Employment Inventory | | | | |
| e. Housing (dwelling units inventory) | | | | |
| f. Land Ownership (private, federal, state, military, etc.) | | | | |
| g. Demographic Data (other than Census) | | | | |
| h. Open Space | | | | |
| i. Natural Constraints (terrain, wildlife corridors, floodplain, etc.) | | | | |
| j. Current and future transportation networks (highways, major roads, rail, airport, etc.) | | | | |
| k. Buildings and landmark location (education, facilities, etc.) | | | | |
| l. Other (please specify) | | | | |
| m. Other (please specify) | | | | |
| n. Other (please specify) | | | | |

Section Three: Socioeconomic Projections Related Questions

| Do you have access to county and sub-county socioeconomic projections for your region? If Yes please provide details, otherwise skip to the next section. | Which agency develops these projections? | Contact information of agency developing projections | Please describe this dataset - including the geographic extent and detailed attributes if available | When were the most recent socioeconomic projections developed? How often are the projections updated? |
|---|--|--|---|---|
| a. Population | | | | |
| b. Housing | | | | |

Results

| Survey Responses | Available | | Sharable | | Data Source | | | |
|--|-----------|----|----------|----|--|---|---|---|
| | Yes | No | Yes | No | MPO/Member Agency | State | Multiple | Other |
| Section Two: Data Related Questions | | | | | | | | |
| a. Current Land Use | 11 | | 11 | |  9 | |  2 | |
| b. Planning/Zoning | 11 | | 11 | |  11 | | | |
| c. Development Projects (pipeline projects) | 7 | 4 | 7 | |  6 | | |  1 |
| d. Employment Inventory | 11 | | 8 | 3 |  5 |  5 |  1 | |
| e. Housing (dwelling units inventory) | 11 | | 11 | |  10 | |  1 | |
| f. Land Ownership (private, federal, state, military, etc.) | 11 | | 11 | |  7 |  4 | | |
| g. Demographic Data (other than Census) | 6 | 5 | 6 | 1 |  5 | | |  1 |
| h. Open Space | 10 | 1 | 10 | |  9 |  1 | | |
| i. Natural Constraints (terrain, wildlife corridors, floodplain, etc.) | 11 | | 11 | |  5 |  2 |  2 |  2 |
| j. Current and future transportation networks (highways, major roads, rail, airport, etc.) | 11 | | 11 | |  6 |  1 |  4 | |
| k. Buildings and landmark location (education, facilities, etc.) | 8 | 3 | 8 | |  3 |  2 |  2 |  1 |
| Section Three: Projections | | | | | | | | |
| a. Population | 11 | | 11 | |  7 | |  4 | |
| b. Housing | 11 | | 11 | |  8 | |  3 | |
| c. Employment | 11 | | 11 | |  9 | |  2 | |
| Section Four: Transportation | | | | | | | | |
| a. Current and future transportation networks (highways, transit, etc.) | 11 | | 11 | |  10 | | |  1 |
| b. VMT | 11 | | 11 | |  10 | | |  1 |
| c. VHT | 11 | | 11 | |  10 | | |  1 |
| d. TAZ to TAZ travel times | 11 | | 11 | |  10 | | |  1 |
| e. TAZ geography | 11 | | 11 | |  10 | | |  1 |

NOTE : 11 responding MPOs tallied. 4 state DOTs not tallied due to different types of data and organizational responsibilities.

Collecting the Data

*Are there
any missing
pieces?*



Common GIS Platform

MARICOPA ASSOCIATION of GOVERNMENTS | **Employment Viewer** | Find address or place | Maps Legend Reports Markup Tools Print Map Share Help

Maps | Employment Cluster Definitions | Choose a Map: All Industry Clusters, Business Services, Construction, Consumer Goods Manufacturing, Consumer Services, Education, Finance, Insurance & Real Estate, Government, Social & Advocacy Services, Health Care Services, High Tech Manufacturing & Development, Hospitality, Tourism & Recreation | Advanced Map Options | Block Group Options | Employment Point Options

Reports | Choose a report: Region Summary, City/Town Summary, Jobs Center Summary, Foreign Trade Zone Summary, HUBZone Summary, Interactive Summary | Identify a: Point of Interest, Area of Interest, Region of Interest, Corridor of Interest, Buffer Selection, Zoom to Selection | Clear Selection | Data Query

Legend | All Industry Clusters (5+ employees) | Transparency Slider | 0 - 796, 796 - 2,829, 2,829 - 7,280, 7,280 - 17,918, 17,918 - 31,299, No Data | Employers (25+ employees) | Enable Clustering | 25 - 150 Employees, 150 - 500 Employees, 500 - 1,500 Employees, 1,500 - 3,500 Employees, 3500 - 8761 Employees | Data Source: 2014 MAG Employer Database | Layers Options: Employers, Census Tracts, ZIP Codes, HUBZones, MAG Region Boundary, Job Centers 2014, Municipal Planning Areas, Foreign Trade Zones, Streets, Aerial Imagery

Map features include: 10mi scale bar, Home, Zoom In, Zoom Out buttons, and a central map of Phoenix with employment clusters and various geographic layers.

Common GIS Platform

| Agency | Name | Site |
|-----------------------------|---|---|
| COLORADO | | |
| DRCOG | Denver Regional Equity Atlas | http://www.denverregionalequityatlas.org/ |
| | Regional Data Catalog | http://gis.drcog.org/datacatalog/ |
| | Metro Vision | https://drcog.org/planning-great-region/metro-vision |
| CDOT | Online Transportation Information System (OTIS) | http://dtdapps.coloradodot.info/otis |
| RTD Denver | RTD Data Downloads | http://maps.rtd-denver.com/gisdatadownload/datadownload.aspx |
| Pitcon Foundation | Colorado Data Engine | http://codataengine.org/ |
| State of Colorado | Colorado Information Marketplace | https://data.colorado.gov/ |
| NFRMPO | NFRMPO GIS | http://nfrmpo.maps.arcgis.com/apps/OnePane/basicviewer/index.html?appid=1748dc541c40454084c67d2e83a66dba |
| | Crosswalk Cooperative Planning (AECOM) | http://www.cooperativeplan.com/ |
| El Paso County | Geographic Information Systems | http://adm.elpasoco.com/InformationTechnologies/GeographicInformationSystems/Pages/default.aspx |
| Colorado Springs | Interactive Maps | https://gis.springsgov.com/ |
| IDAHO | | |
| COMPASS | Mapping and GIS | http://www.compassidaho.org/prodserve/mapgis-maps.htm |
| Boise | Property Viewer | http://gis.cityofboise.org/ |
| Ada County | Mapping Services | https://adacounty.id.gov/Mapping-Services |
| Ada County Highway District | RITA | http://achdidaho.org/gis/ |
| Canyon County | Interactive Map | http://gis.canyonco.org/flexviewers/Test/ |
| State of Idaho | Highway Info | http://hb.511.idaho.gov/main.jsf |
| UTAH | | |
| Mountainland AOG | MAG GIS Data | https://mountainland.org/site/categories/view/103 |
| Utah County | County Maps and GIS Data | http://www.co.utah.ut.us/OnlineServices/maps/index.asp |
| Utah AGRC | Automated Geographic Reference Center | http://gis.utah.gov/ |
| UDOT | Data Portal | https://www.udot.utah.gov/ugate/f?p=111:2:0::NO:: |
| | Uplan UDOT Map Center | http://uplan.maps.arcgis.com/home/ |
| WFRC | WFRC Map Gallery | http://www.wfrc.org/public-maps-gallery/index.html |
| ARIZONA | | |
| PAG | Interactive Maps | http://www.pagnet.org/RegionalData/GISDataandMaps/InteractiveMaps/tabid/109/Default.aspx |
| | Travel Data and Forecasting | http://www.pagnet.org/RegionalData/TravelDataandForecasting/tabid/87/Default.aspx |
| Tucson | ZoomTucson | http://maps.tucsonaz.gov/zoomTucson/ |
| | Map Resources | http://it.tucsonaz.gov/gis/map-resources |
| Marana Arizona | Marana Map | http://marana.gov.com/webmap3/webmap3.aspx?xml=marana2c.xml |
| Oro Valley Arizona | Oro Valley Maps - GIS | http://www.orovalleyaz.gov/town/departments/maps-gis |
| Pima County | Pima Maps | https://pimamaps.pima.gov/Silverlightviewer/Viewer.html?ViewerConfig=https://pimamaps.pima.gov/Geocortex/Esentials/REST/sites/mainsite/viewers/mainmap/virtualdirectory/config/viewer.xml |
| | | |
| MAG | Interactive Map Viewer | http://ims.azmag.gov/ |
| NEW MEXICO | | |

The Denver Meeting

- ✓ First time meeting face-to-face
- ✓ Diverse Perspectives
- ✓ Shared Best Practices
- ✓ Enhanced Partnerships
- ✓ Furthered the Project Efforts

Meeting Outcome

RISK REGISTER



Intermountain West
SHRP2: Expediting Project Delivery

InterMountain West Regional Geospatial Information for Transportation Planning

Created by Maricopa Association of Governm

Introduction Transportation Demographics Economy Land Environmental

LEGEND

- Intermountain West Boundary
- MPO Boundaries

Regional Geospatial Information for Transportation Planning Efforts in the Intermountain West

As part of the Strategic Highway Research Program (SHRP2), the Maricopa Association of Government (MAG) has compiled data from agencies across Intermountain West. These data are the basis for expediting planning and environmental review of transportation projects in the Intermountain West.

While there are a multitude of factors involved in planning for transportation projects, these data provide a high-level review of information that may be useful for certain transportation projects.

For this project, the Intermountain West is defined as comprising nine (9) states: Arizona, Colorado, Montana, Nevada, New Mexico, Utah, Washington, and Wyoming.

This Story Map highlights the GIS data that were collected for the SHRP2 project. Five separate maps have been identified, as shown in the tabs at the top of the page.

Each map contains layers specific to its theme, and navigation and interaction with the map are the same for all maps.

Tips for Navigating the Maps

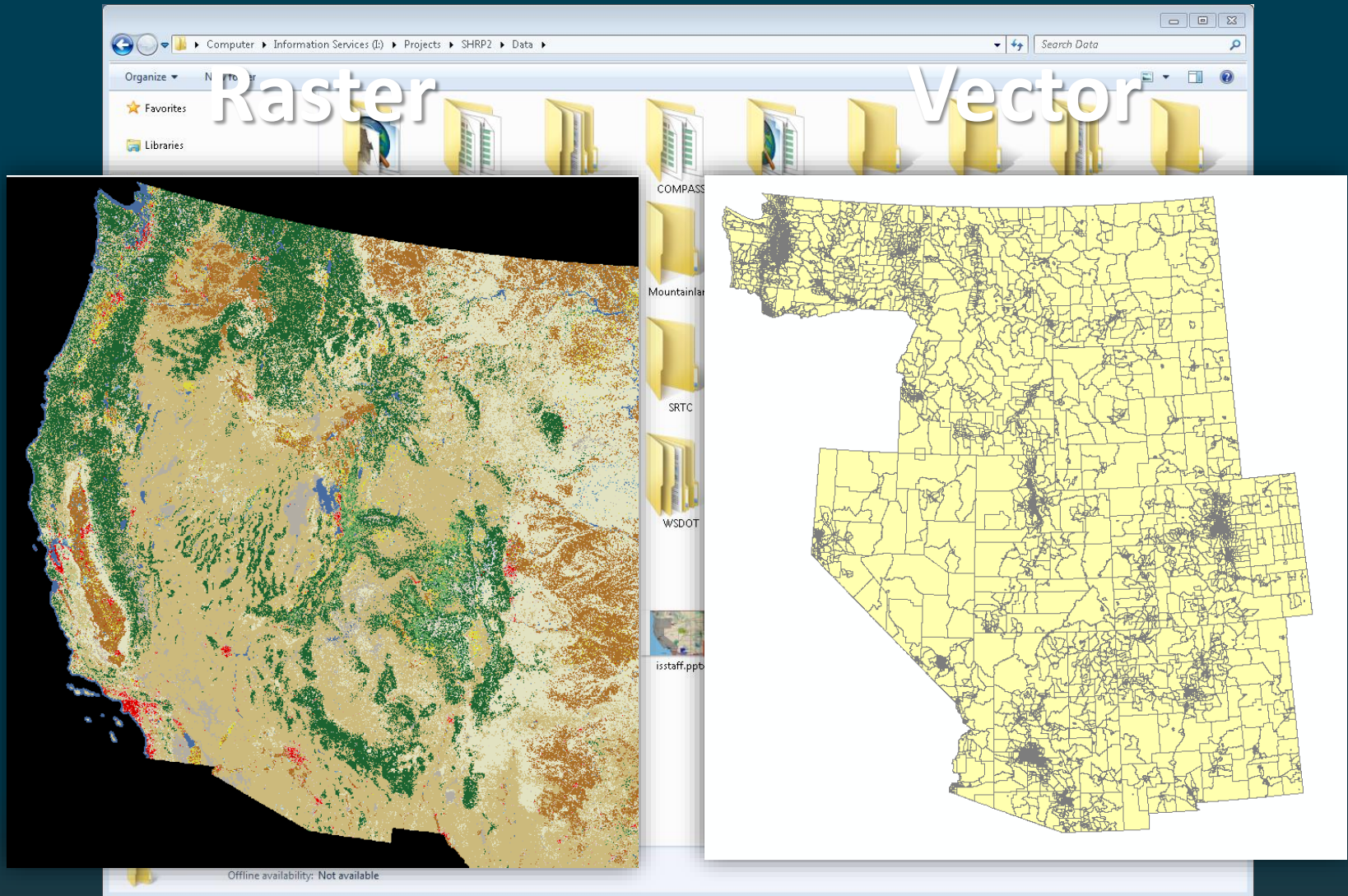
- layer list
- legend
- data table
- info
- help

esri Content may not reflect National Geographic

Sharing the Data

THE PLATFORM

Preparing the Data



Upload

My Content

Folders

NEW DELETE

- jdennis_AZMAG (Home)
- graphics
- SHRP2-Demographics**
- SHRP2-Economy
- SHRP2-Environment
- SHRP2-Land
- SHRP2-Other
- SHRP2-Transportation

Show

- All**
- Maps
- Layers
- Scenes
- Apps
- Tools
- Files

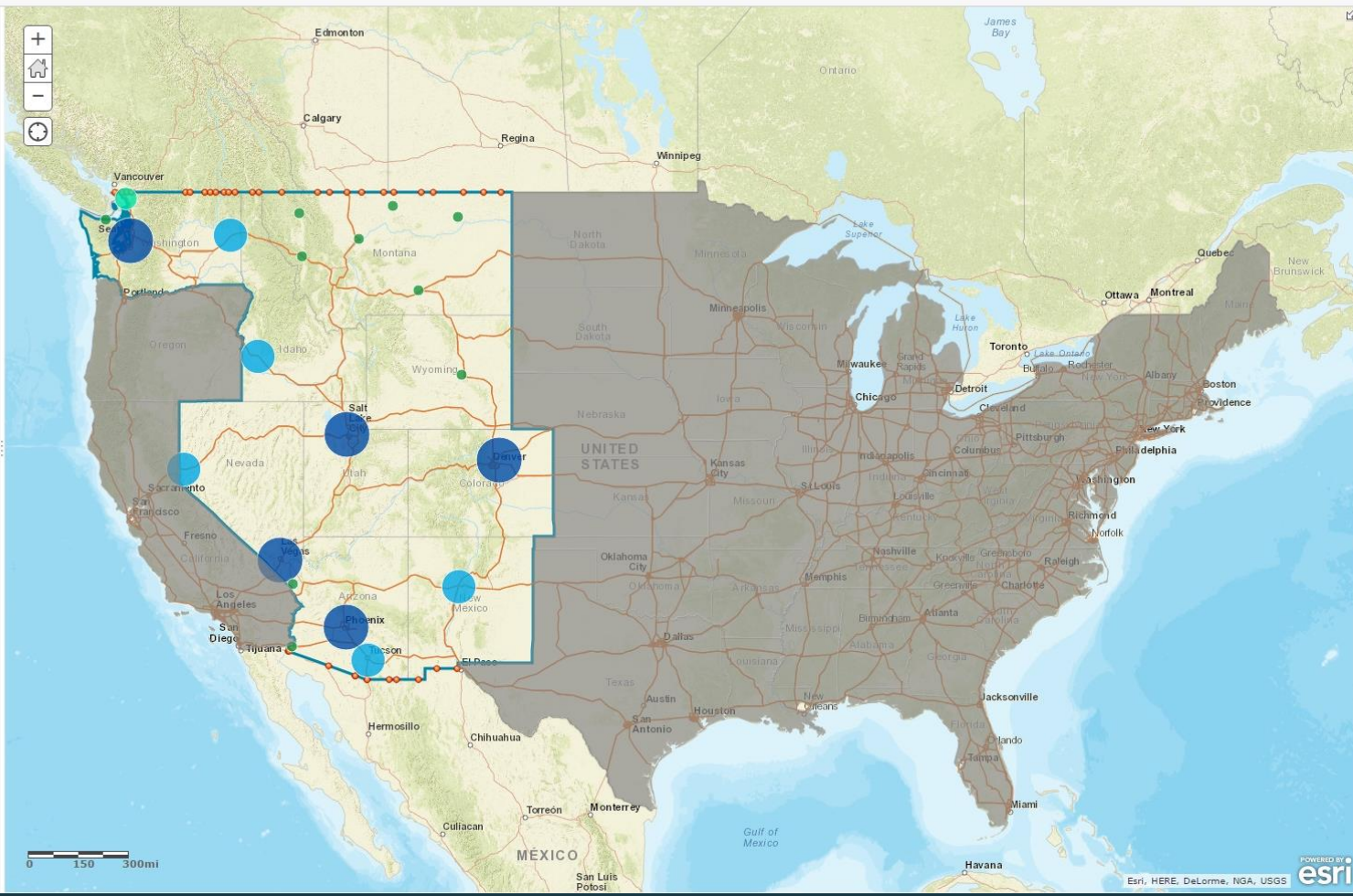
Add Item Create Share Delete Move

| <input type="checkbox"/> | Title | Type | Modified | Shared |
|--------------------------|--|-------------------------|--------------|------------|
| <input type="checkbox"/> | 2010 Block Groups for Intermountain West | Feature Layer | May 11, 2016 | Everyone |
| <input type="checkbox"/> | 2010 Block Groups for Intermountain West | Shapefile | Apr 28, 2016 | Not Shared |
| <input type="checkbox"/> | 2010 Population Concentration | Tile Layer | Apr 25, 2016 | Everyone |
| <input type="checkbox"/> | 2010 Population Concentration | Tile Package | Apr 25, 2016 | Everyone |
| <input type="checkbox"/> | Concentration of 65 and over population | Tile Layer | Apr 18, 2016 | Everyone |
| <input type="checkbox"/> | Concentration of 65 and over population | Tile Package | Apr 18, 2016 | Not Shared |
| <input type="checkbox"/> | Demographics Map | Web Map | May 11, 2016 | Everyone |
| <input type="checkbox"/> | Demographics map viewer | Web Mapping Application | May 22, 2016 | Everyone |
| <input type="checkbox"/> | IMW_Blocks | Feature Layer | May 11, 2016 | Not Shared |
| <input type="checkbox"/> | IMW_Blocks | Service Definition | Apr 30, 2016 | Not Shared |
| <input type="checkbox"/> | Minority Population Concentration | Tile Package | Apr 18, 2016 | Not Shared |
| <input type="checkbox"/> | Minority Population Concentration | Tile Layer | Apr 18, 2016 | Everyone |
| <input type="checkbox"/> | Population Concentration | Tile Package | Apr 25, 2016 | Not Shared |
| <input type="checkbox"/> | Population Concentration | Tile Layer | Apr 25, 2016 | Not Shared |
| <input type="checkbox"/> | Population Data for IMW Counties | Shapefile | Apr 25, 2016 | Not Shared |
| <input type="checkbox"/> | Population Data for IMW Counties | Feature Layer | Apr 25, 2016 | Everyone |

Map

- Contents
- State Mask
 - Projected Truck Volumes 2040
 - Airports
 - Bridges
 - Ports of Entry
 - Arizona AADT 2013
 - Colorado AADT 2013
 - Idaho AADT 2013
 - Montana AADT 2013
 - Nevada AADT 2013
 - New Mexico AADT 2013
 - Utah AADT 2013
 - Washington AADT 2013
 - Wyoming AADT 2013
 - Freeways
 - Intermountain West Boundary
 - Streets

- Zoom to
- Transparency
- Set Visibility Range
- Move up
- Move down
- Rename
- Remove
- Copy
- Hide in Legend
- Remove Pop-up
- Configure Pop-up
- Create Labels
- Refresh Interval
- Route to all Features
- Show Item Details
- Save Layer



Customizing

Theme | Map | Widget | Attribute

Billboard Theme | Box Theme | Dart Theme

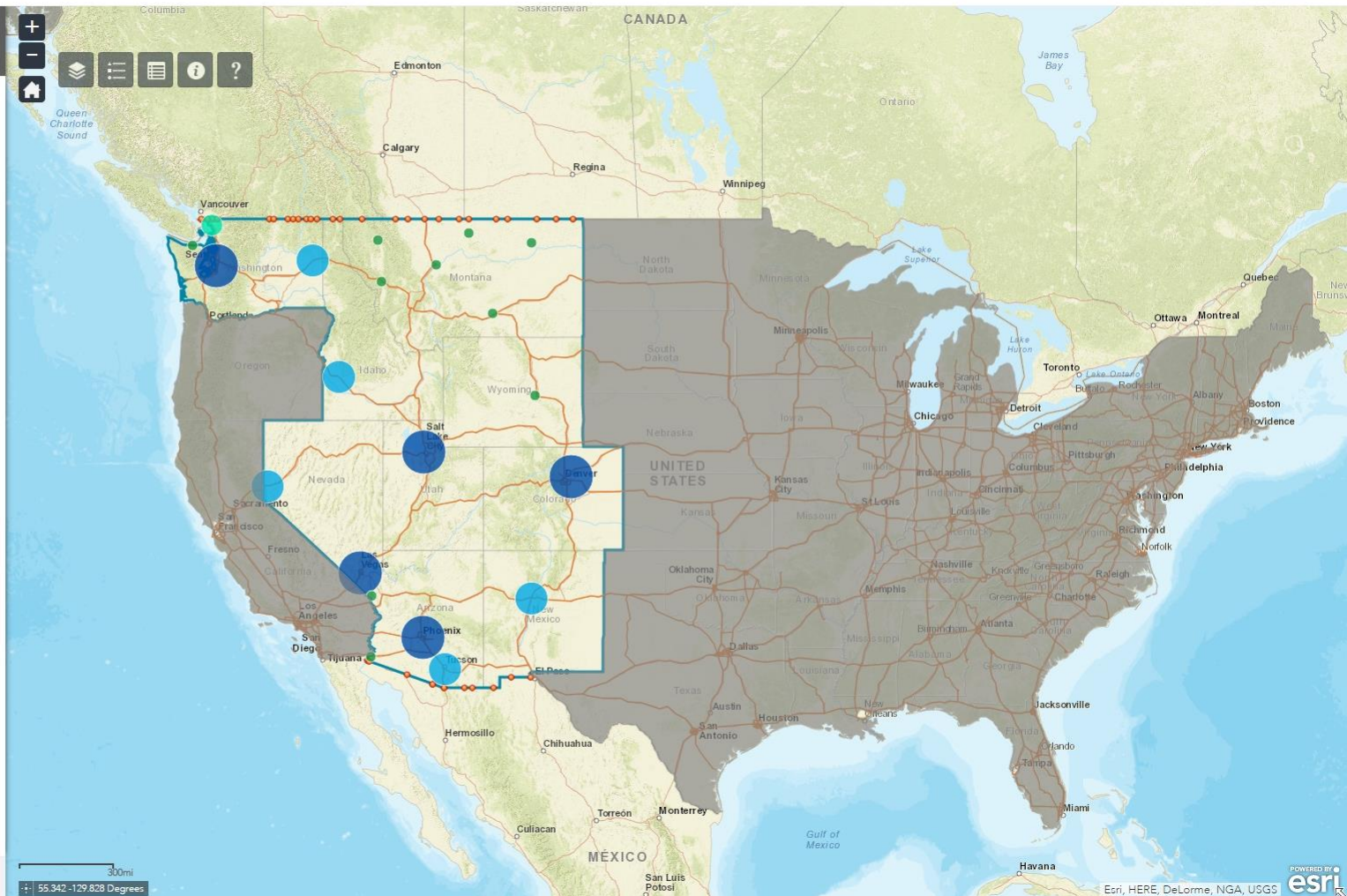
Foldable Theme | Jewelry Box Theme | Launchpad Theme

Plateau Theme | Tab Theme

Style

Layout

Launch | Previews | Saved



Putting it all Together

InterMountain West Regional Geospatial Information for Transportation Planning

No issues detected x

Edit x

Created by Maricopa Association of Governments

- Introduction
- Transportation
- Demographics
- Economy
- Land
- Environmental



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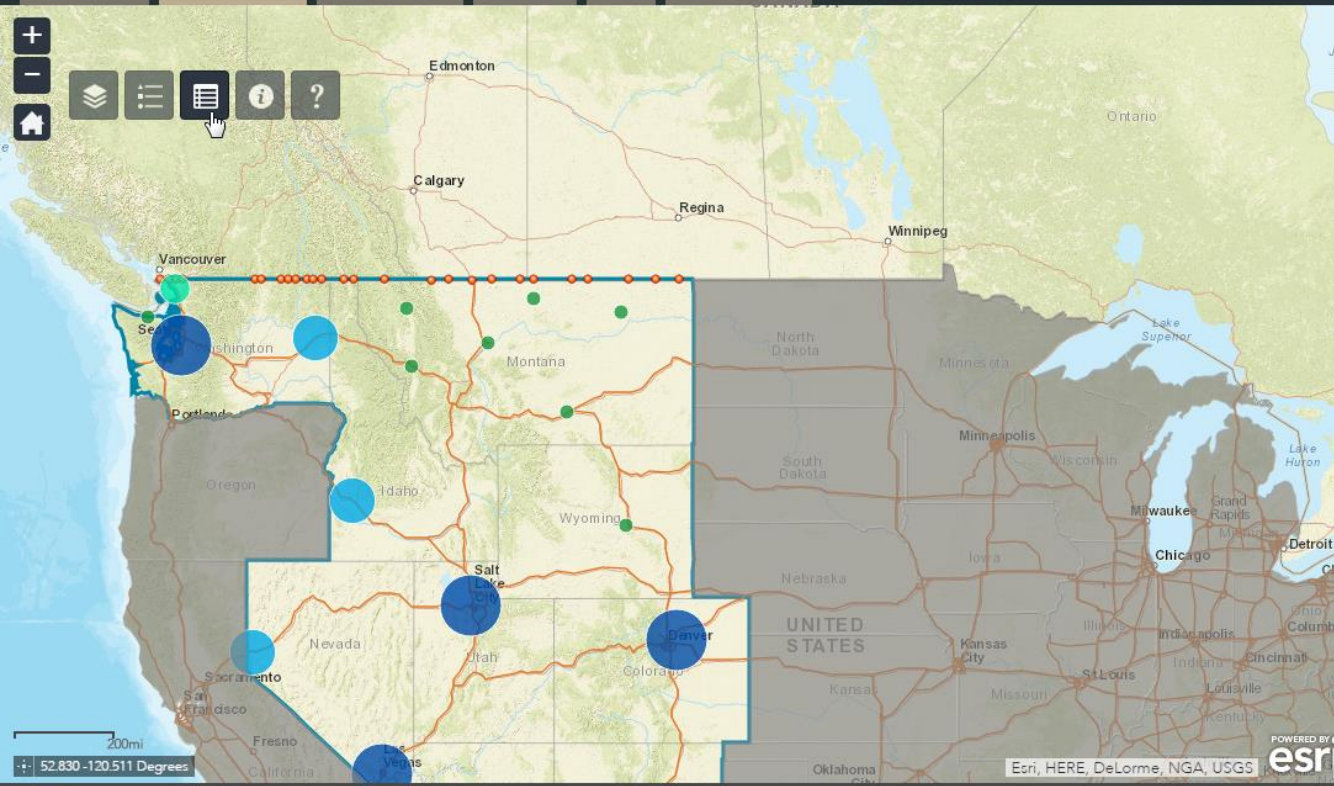
- layer list
- legend
- data table
- info
- help

Each map on the subsequent tabs has navigation icons in the upper left corner that allow you to zoom in/out or return back to the original view (zoom level) using the "home" button.

The other icons provide additional information about the map, display the map legend, show the attribute data table, and give a list of map layers

POWERED BY **esri** Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, ...

- Introduction
- Transportation
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- Environmental



Existing Transportation Infrastructure

Existing transportation infrastructure is used as a baseline for transportation projects. Statewide transportation networks are modeled for capacity to determine if expanding future volumes need to be addressed. Locations of border crossings and airports also need to be analyzed for volume trends to determine if these pose a risk or opportunity for a transportation project.

As a baseline, this map shows the existing transportation network base along with International border ports of entry and International airports. As you zoom in on the map, additional data layers become available including bridges and traffic volumes.

Transportation departments report measured traffic volumes in terms of Average Annual Daily Traffic (AADT). These values vary significantly across the Intermountain West region. For example, the largest reported AADT for 2013 (the most recent year for which data are available) was in the Phoenix, Arizona region along Interstate 10. This segment of roadway reported an average annual daily traffic count of 281,092 vehicles. On the other end, Wyoming's highest reported AADT was just 33,691 on a segment of Del Range Blvd, just north of the Cheyenne Regional Airport. (See table below).

| State | 2013 Max AADT | Location | Metro Area |
|------------|---------------|---|----------------|
| Arizona | 281,092 | I-10 between Southern Ave and Broadway Rd | Phoenix |
| Colorado | 257,000 | I-25 between W 8th Ave and W Colfax Ave | Denver |
| Idaho | 116,500 | I-84 between S Eagle Rd and S Maple Grove Rd | Boise |
| Montana | 48,360 | US 87 between Hilltop Rd and S Airport Rd | Billings |
| Nevada | 264,000 | I-15 between W Sahara Ave and W Desert Inn Rd | Las Vegas |
| New Mexico | 206,768 | I-25 between Candelaria Rd NE and Comanche Rd NE | Albuquerque |
| Utah | 260,552 | I-15 between 2100 S and I-80 | Salt Lake City |
| Washington | 232,373 | I-5 between Lakeview Blvd E (underpass) and Exit 168A | Seattle |
| Wyoming | 33,691 | Del Range Blvd between Converse Ave and Grandview Ave | Cheyenne |

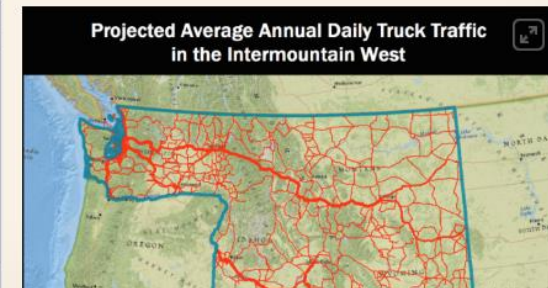
Source: Federal Highway Administration, Office of Highway Policy Information, Highway Performance Monitoring System (HPMS) Public Release Geospatial Data 2013

- Bridges
- Ports of Entry
- Options
- Filter by Map Extent
- Zoom to
- Clear Selection
- Refresh

| NAME | Avg Daily Traffic |
|---|-------------------|
| US 12; US 12 | 10,000 |
| US 101; SOUTH NEMAH RIVER | 2,342 |
| LECH ROAD; JONES CREEK | 15 |
| WAUGAMAN ROAD; ZIEGLER CREEK | 32 |
| MENLO SO.FORK ROAD; RUE CREEK | 180 |
| CO. RD. 90100; NO. FORK GOLDSBOROUGH CK | 1,863 |
| QUEETS VALLEY ROAD; SALMON RIVER | 75 |

99082 features 0 selected

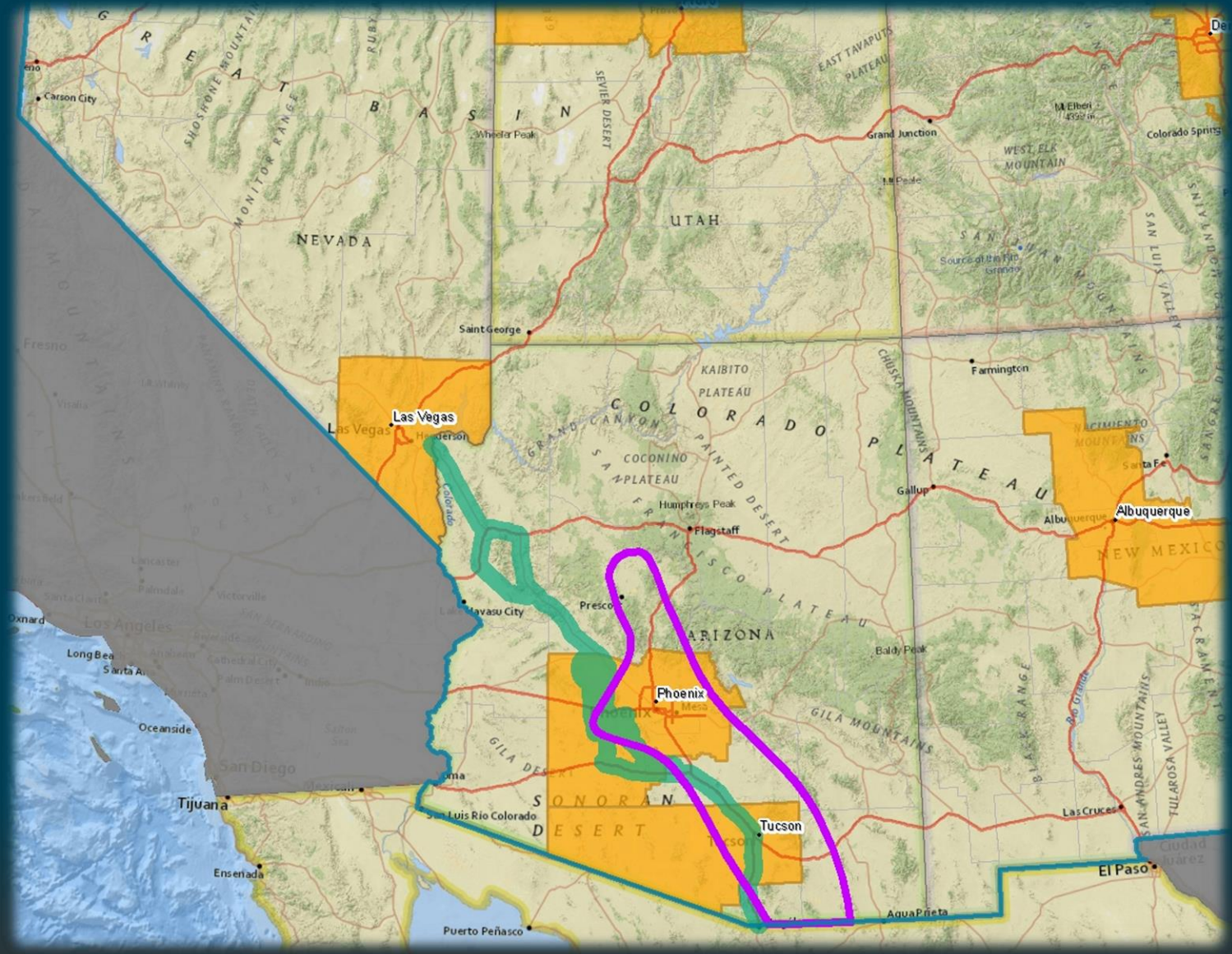
Projected truck traffic can highlight potential areas of concern for capacity along freight corridors. Planners can use this information for a variety of tasks including scenario modeling, alternate route development, and more. To see the projected average annual daily truck traffic data show in the static map below, zoom in on the interactive map on the left.



Moving Forward

THE NEXT PHASE

Pilot Project



“

Engaging stakeholders leads to a better process, greater support and buy-in, more ideas on the table, and, ultimately, a more effective effort.

”





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Jami Dennis

Senior IS Project Manager
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<http://arcg.is/1MThxpp>