Expediting Project Delivery Webinar - Streamlining Decision Making in Project Delivery

Kate Kurgan, AASHTO
David Williams, FHWA
Jacque Annarino & Tim Hill, Ohio DOT
Denise McClafferty & Jami Dennis, Maricopa Association of Governments

March 23, 2016
Safety: Fostering safer driving through analysis of driver, roadway and vehicle factors in crashes, near crashes, and ordinary driving.

Renewal: Rapid maintenance and repair of the deteriorating infrastructure using already-available resources, innovations, and technologies.

Capacity: Planning and designing a highway system that offers minimum disruption and meets the environmental, and economic needs of the community.

Reliability: Reducing congestion and creating more predictable travel times through better operations.
SHRP2 Implementation: INNOVATE. IMPLEMENT. IMPROVE.

$130 million - FUNDING ASSISTANCE

63 - SHRP2 SOLUTIONS

430+ - PROJECTS IMPLEMENTED

- DOT: 52 Recipients
- MPO/LOCAL: 30 Recipients
- UNIVERSITY: 10 Recipients
- FEDERAL/TRIBAL: 7 Recipients

- RENEWAL: 230+
- CAPACITY: 100+
- RELIABILITY: 90+
- SAFETY: 11
SHRP2 Implementation:
INNOVATE. IMPLEMENT. IMPROVE.

- **224,761** Participants Engaged
- **8,939** Outreach Activities
- **14,961** Hours Technical Assistance

- **8,286** Trainings
- **463** Workshops
- **81** Peer Exchanges
- **62** Demos
- **47** Showcases
SHRP2 at a Glance

- **SHRP2 Solutions** – 63 products
- **Solution Development** – processes, software, testing procedures, and specifications
- **Field Testing** – refined in the field
- **Implementation** – 430+ transportation projects; adopt as standard practice
- **SHRP2 Education Connection** – connecting next-generation professionals with next-generation innovations

13 agencies were selected to implement C19 strategies.
Expediting Project Delivery

- *Expediting Project Delivery* identifies 24 strategies for addressing or avoiding 16 common constraints in order to speed delivery of transportation projects.

- Strategies Grouped Under Six Objectives:
  - Improve internal communication and coordination;
  - Streamline decision-making;
  - Improve resource agency involvement and collaboration;
  - Improve public involvement and support;
  - Demonstrate real commitment to the project; and
  - Coordinate work across phases of project delivery.
## Expediting Project Delivery

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Early Planning</th>
<th>Corridor Planning</th>
<th>NEPA</th>
<th>Design/ROW/Permitting</th>
<th>Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Change-control practices</td>
<td></td>
<td></td>
<td>●</td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>2. Consolidated decision council</td>
<td>O</td>
<td>●</td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Context-sensitive design and solutions</td>
<td>O</td>
<td>O</td>
<td>●</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>4. Coordinated and responsive agency involvement</td>
<td>O</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>5. Dispute-resolution process</td>
<td>O</td>
<td>●</td>
<td>●</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>6. DOT-funded resource agency liaisons</td>
<td>O</td>
<td>●</td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Early commitment of construction funding</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>8. Expedited internal review and decision-making</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>9. Facilitation to align expectations up front</td>
<td>O</td>
<td>●</td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Highly responsive public engagement</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>O</td>
</tr>
<tr>
<td>11. Incentive payments to expedite relocations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>12. Media relations manager</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>13. Performance standards</td>
<td>O</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>14. Planning and environmental linkages</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Planning-level environmental screening criteria</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Programmatic agreement for Section 106</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>17. Programmatic or batched permitting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>18. Real-time collaborative interagency reviews</td>
<td>O</td>
<td>O</td>
<td>●</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>19. Regional environmental analysis framework</td>
<td>O</td>
<td>●</td>
<td>●</td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>20. Risk management</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>21. Strategic oversight and readiness assessment</td>
<td>O</td>
<td>●</td>
<td>●</td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>22. Team co-location</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>23. Tiered NEPA process</td>
<td>O</td>
<td>●</td>
<td>●</td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>24. Up-front environmental commitments</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
<td>●</td>
</tr>
</tbody>
</table>
Implementation Award
Recipients

- Arizona Department of Transportation (ADOT)
- Arkansas State Highway and Transportation Department (AHTD)
- Association of Monterey Bay Area Governments (AMBAG)
- California Department of Transportation (Caltrans)
- Florida Department of Transportation (FDOT)
- Idaho Transportation Department (ITD)
- Maricopa Association of Governments (MAG)
- Massachusetts Department of Transportation (MassDOT)
- Nebraska Department of Roads (NDOR)
- South Carolina Department of Transportation (SCDOT)
- South Dakota Department of Transportation (SDDOT)
- Vermont Agency of Transportation (VTrans)
AASHTO & FHWA Contacts

Kate Kurgan, AASHTO
kkurgan@aashto.org
202-624-3635

David Williams, FHWA
david.Williams@dot.gov
202-366-4074

American Association of State Highway and Transportation Officials

U.S. Department of Transportation
Federal Highway Administration
SHRP2 on the Web

• GoSHRP2
  www.fhwa.dot.gov/GoSHRP2
  – Apply for Implementation assistance
  – Learn how practitioners are using SHRP2 products

• SHRP2 @AASHTO
  http://SHRP2.transportation.org
  – Implementation information for AASHTO members

• SHRP2 @TRB
  www.TRB.org/SHRP2
  – Research information

• FHWA C19 Website
  https://www.environment.fhwa.dot.gov/strlng/shrp2-c19/default.asp
Streamlining With NEPA Assignment at ODOT

Office of Environmental Services
Tim Hill, Administrator
Jacque Annarino, NEPA Assignment Coordinator

March 2017
Streamlining at ODOT

- ODOT’s need to integrate and streamline
- How ODOT changed approach to project development
- Accomplishments and Benefits of new approach
Why the need to Integrate and Streamline?
ODOT’s Approach to Project Development

- Project Development Process
- Consultant Scoping Fees Guidance
- Online Environmental Documentation System (EnviroNet)
ODOT’s Approach to Project Development

- **Programmatic Agreements**
  - Farmlands
  - Coastal
  - Ecological
  - Indiana & Northern Long-Eared Bat
  - Cultural Resources
  - Categorical Exclusion (CE)
  - Scenic River
  - Section 6(f)
  - Section 4(f)
  - Environmental Justice (guidance approved by FHWA- similar to an MOA)

- **Future Programmatic Agreements**
  - Emergency Projects
  - Endangered Species
NEPA Assignment Potential Benefits for Ohio

- Estimated 20-25% time savings to program
- Estimated savings of up to **$23 million annually**
  - Reduced project inflation
  - Project user delay costs
- Low risk - maybe 1 lawsuit every 8-10 years
Potential Streamlining Opportunities with NEPA Assignment

For projects under $20 million

- FHWA reviews 4(f) and other support documents = 15-30 days
- 40 per year = 1,000 review days per year
- 35% performed concurrently = 650 project review days
- Out of the 650, only 15% result in critical path reviews = 98 days
- 3.9% inflation and delay cost = $500,000 per year
Potential Streamlining Opportunities with NEPA Assignment

For projects $20 million to $149 million

- FHWA performs reviews on:
  - Purpose and Need = 30 days
  - Feasibility Study = 30 days
  - Alternative Evaluation Report = 30 days
  - Section 4(f) actions = 45 days
  - Review and approval of the CE = 60 days
  - ...plus multiple reviews (drafts, etc.)
Potential Streamlining Opportunities with NEPA Assignment

For projects $20 million to $149 million

- FHWA review for a medium sized project - 390 days
- 30% performed concurrently = 273 project review days
- ODOT averages 12 projects per year = 3,276 review days
- Out of this, 25% results in critical path reviews
- = 819 days of delay
- 3.9% inflation and delay cost = $5.7 million per year
- User costs/crash reduction benefits = $13.2 million per year
Potential Streamlining Opportunities with NEPA Assignment

For biggest projects...
ODOT’s *New* Approach to Project Development

- NEPA Assignment
  - For environmental actions on transportation projects
  - Does *not* include FTA or FRA
Implementation of NEPA Assignment

- 10/21/14 - Letter of Interest submitted
- 12/01/14 - Brief ODOT Executive Leadership & Agencies
- 12/15/14 - Draft Application submitted
- 12/15/14 - Begin district visits and meetings with Associations
- 12/24/14 - Letters to Tribes sent
- 04/12/15 - Draft Application Public Notice
- 04/22/15 - Draft MOU submitted
- 05/28/15 - Final Application submitted
- 10/15/15 - MOU Public Notice
- 12/28/15 - MOU Effective Date
Updated Agreements

- Section 106 Programmatic Agreement
- Ecological Memorandum of Agreement
- Categorical Exclusion Programmatic Agreement
- Indiana Bat Programmatic Agreement
- Tribal Letter Agreement
- Sole Source Aquifer Agreement

- Section 106 Consulting Party Guidance
- Section 4(f) Manual
- Section 6(f) Manual
- Farmlands Letter Agreement
- Federal National Scenic River Agreement
- Cover Letter for Other Agreements
New Guidance Documents

- Escalation Procedures
- 4(f) Guidance
- CE Guidance
- Emergency Projects Guidance
- File Management & Documentation Guidance
- Internal Communication Guidance
- Legal Sufficiency Review Guidance
- QC/QA Guidance
- Records Retention Guidance
- Self-Assessment Guidance
- Self-Assessment Checklists
- Signature Authority Guidance
- Statute of Limitations Guidance
Other New Items

- Performance Measures
  - Goals
  - Baseline Data
- Training Plan
NEPA Assignment Benefits for Ohio

- Opportunity to “refresh” environmental staff
  - Updated manuals and guidance
  - Updated process improvements Department wide
  - Updated training

NEPA Assignment removes “personal preferences”

- 1st Quarter Actual Savings was $4.6 million
NEPA Assignment Audit Results

Audit Report

- Eleven Observations (mostly positive)
- Three successful practices
  - Dedicated legal counsel as part of environmental team
  - Pre-qualified consultants for environmental work
    - Required to take same training as ODOT environmental staff to be prequalified
  - Required, on-going training of all environmental staff and consultants
Lessons Learned

- Good team is important
- Dedicate time
- Push FHWA
  - Bi-Weekly Conference Calls with detailed agenda to keep everyone on task
  - Elevate issues quickly and push for resolution
- Proactive outreach
  - Executive Management
  - Districts
  - Partner Agencies
  - Environmental Groups
  - Contractors
  - Locals
  - ACEC
  - Etc.
C19: Expediting Project Delivery

Expediting Planning and Environmental Review of Key Global Transportation Projects in the Intermountain West Region

March 2017
MAG Region
Maricopa Association of Governments

- 27 cities and towns, 3 Indian communities, 2 counties
- Area: 14,590 sq. mile
- Population: 4.4 Million
- Employment: 1.8 Million
Nine Live Applications

http://ims.azmag.gov

✓ Ongoing Data Updates
✓ Constant User Feedback
✓ Hands-on training sessions
  ✓ 381 attendees since Feb 2014
  ✓ 18 events scheduled in 2016
  ✓ 3 regional locations & user sites
C19 SHRP2
PROJECT OVERVIEW
SHRP2 Solutions
Strategic Highway Research Program

- Safety
- Renewal
- Reliability
- Capacity
America’s Trade Corridor
Connecting Canada, the United States, and Mexico
Quick Facts

- 9 states
- 935,000 square miles
- Population:
  - 2010: 29 million
  - 2050: 48 million
- 9.5% of the U.S. population
- 26% of the U.S. land mass
- 13.3% of public road miles
- 46.4% federally managed
- Includes 6 of the top 10 largest states in the nation
FHWA awarded a grant to MAG to advance deployment of multi-objective solutions that expedite transportation project delivery in the broader Intermountain West Region.
• Communications Network across the Intermountain West Region includes:
  o GIS/Technical
  o Transportation
  o Policy contacts

• Extend connection to other key contacts as the GIS Tool is developed.
  o Federal, Tribal, State, local agencies, non-profits, and Universities
Surveyed Partners

GIS Survey; reviewed analytics; assessed available data in region; and conducted follow up interviews with 14 agencies for data gathering.

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 information sharing and decision making.

Section One: Contact Information

<table>
<thead>
<tr>
<th>Your Name:</th>
<th>Agency:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Title:</td>
<td>Work Phone:</td>
</tr>
<tr>
<td>Email Address:</td>
<td>Web Address:</td>
</tr>
</tbody>
</table>

Section Two: Data Related Questions

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

Section Three: Socioeconomic Projections Related Questions

<table>
<thead>
<tr>
<th>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.</th>
<th>Which agency develops these projections?</th>
<th>Contact information of agency developing projections</th>
<th>Please describe this dataset - including the geographic extent and detailed attributes if available</th>
<th>When were the most recent socioeconomic projections developed? How often are the projections updated?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Population</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Housing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Results

- High level of similarity in data sets being collected and maintained
- Differences in scope and schedules due to size and resources
- Highlighted the need for collaboration in data purchase and tools

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

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

✓ Held over 12 Webinars
  ✓ Participants: ADOT, UDOT, DRCOG, MAG, MRCOG, Pikes Peak, Spokane RTC, RTC of Southern Nevada, WRP, WGA, FHWA, WECC
  ✓ Information sharing on data resources, tools, challenges

✓ Surveyed Partners
  ✓ Reviewed analytics
  ✓ Assessed available data
  ✓ 14 follow-up interviews

✓ Key Meeting Held (Denver)
  ✓ 26 technical staff attended
  ✓ 14 different agencies represented
The Denver Meeting
August 2015

- First time meeting face-to-face
- Roundtable discussion highly effective
- Diverse Perspectives
  - Shared Best Practices
  - Discussion on common data purchase
  - Sharing of local resources and tools
- Input into common GIS tool
  - Needs/users
  - Incorporate local resources and practices
- One size may not fit all
Aligning Expectations

• Tiered approach
  o **Tech**: working with GIS/technical experts to develop GIS Common Operating Vision/Platform
  o **Executive**: highlight technical efforts to transportation and policy makers to get their input
  o **Policy**: inform policy makers of efforts, lessons, and tools. Highlight importance of IMW region

• More fully address critical infrastructure needs
  o Need to work across political boundaries; collaborate and leverage efforts
  o Identify: stakeholder expectations, issue priorities, areas of commonality, potential areas of conflict, and methods of reducing or resolving areas of conflict
Report with Risk Register

- Vision: *Intermountain Transportation vision that will focus on moving people and freight efficiently*
- Constraints and Opportunities
- Stakeholder expectations
- GIS data layers
- Public engagement and communication best practices
- Lessons Learned
Risk Register

Expedite planning and environmental review of key transportation projects

- Proof of concept for the Risk Register is: ~450 miles
- International border crossing at Nogales to Las Vegas (Connecting Las Vegas to Phoenix)
## Risk Register

<table>
<thead>
<tr>
<th>Thematic Area</th>
<th>Subject</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Land</strong></td>
<td><strong>Land ownership</strong></td>
<td>BLM, National Forest, National Monument, National Park, Other Protected, Military, Native American, State Trust, State Park, Park, Railroad Right of Way (ROW)</td>
</tr>
<tr>
<td></td>
<td><strong>Topography</strong></td>
<td>0-15%, 15%-20%, 20% +</td>
</tr>
<tr>
<td></td>
<td><strong>Land Cover</strong></td>
<td>Developed, Forest, Barren/Scrub/Grassland, Pasture/Crops, Water/Wetlands</td>
</tr>
<tr>
<td></td>
<td><strong>Future Land Use</strong></td>
<td>Open Space/Undevelopable, Remaining Uses</td>
</tr>
<tr>
<td></td>
<td><strong>Hydro</strong></td>
<td>Lakes/Rivers/Streams</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thematic Area</th>
<th>Subject</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental</strong></td>
<td>ACEC</td>
<td>Areas of Critical Environmental Concern (ACEC)</td>
</tr>
<tr>
<td></td>
<td>Critical Habitat</td>
<td>Critical Habitat</td>
</tr>
<tr>
<td></td>
<td>Superfund Sites</td>
<td>Superfund Sites</td>
</tr>
<tr>
<td></td>
<td>National &amp; State Parks</td>
<td>National &amp; State Parks</td>
</tr>
<tr>
<td></td>
<td>Herd Management</td>
<td>Herd Management</td>
</tr>
<tr>
<td><strong>Population</strong></td>
<td>Proximity to population</td>
<td>Population</td>
</tr>
<tr>
<td></td>
<td>Proximity to housing</td>
<td>Housing</td>
</tr>
<tr>
<td><strong>Infrastructure</strong></td>
<td>Electricity</td>
<td>Electrical lines</td>
</tr>
<tr>
<td></td>
<td>Education Institutions</td>
<td>Proximity</td>
</tr>
<tr>
<td><strong>Public Policy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fiscal Policy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Economic Development Policy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Economic Conditions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Geographical Location/Economic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** The table provides a risk register format for various thematic areas, including land ownership, topography, land cover, future land use, hydrological conditions, population proximity, and infrastructure. Each category lists specific examples or terms under each thematic area, facilitating a structured approach to risk identification and management.
# Common GIS Platform

<table>
<thead>
<tr>
<th>Agency</th>
<th>Name</th>
<th>Site</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Regional Data Catalog</td>
<td><a href="http://gis.drcog.org/datalocatlog/">http://gis.drcog.org/datalocatlog/</a></td>
</tr>
<tr>
<td></td>
<td>Metro Vision</td>
<td><a href="https://drcog.org/planning-great-region/metro-vision">https://drcog.org/planning-great-region/metro-vision</a></td>
</tr>
<tr>
<td>CDOT</td>
<td>Online Transportation Information System (OTIS)</td>
<td><a href="http://otdapps.coloradodot.info/otis">http://otdapps.coloradodot.info/otis</a></td>
</tr>
<tr>
<td></td>
<td>Crosswalk Cooperative Planning (AECOM)</td>
<td><a href="http://www.cooperativeplan.com">http://www.cooperativeplan.com</a></td>
</tr>
<tr>
<td>Colorado Springs</td>
<td>Interactive Maps</td>
<td>[<a href="http://gis">http://gis</a> springs gov](<a href="http://gis">http://gis</a> springs gov)</td>
</tr>
<tr>
<td>COMPASS</td>
<td>Mapping and GIS</td>
<td><a href="http://www.compassidaho.org/prodserv/mapgis-maps.htm">http://www.compassidaho.org/prodserv/mapgis-maps.htm</a></td>
</tr>
<tr>
<td>Ada County</td>
<td>Mapping Services</td>
<td><a href="https://adacounty.id.gov/Mapping-Services">https://adacounty.id.gov/Mapping-Services</a></td>
</tr>
<tr>
<td>Ada County Highway District</td>
<td>RITA</td>
<td><a href="http://sdiidaho.org/rita">http://sdiidaho.org/rita</a></td>
</tr>
<tr>
<td>Canyon County</td>
<td>Interactive Map</td>
<td><a href="http://gis.canyonco.org/Flexviewers/Text/">http://gis.canyonco.org/Flexviewers/Text/</a></td>
</tr>
<tr>
<td>Mountainland AOG</td>
<td>MAG GIS Data</td>
<td><a href="https://mountainland.org/site/categories/view/128">https://mountainland.org/site/categories/view/128</a></td>
</tr>
<tr>
<td>Utah County</td>
<td>County Maps and GIS Data</td>
<td><a href="http://www.co.utah.uit.us/OnlineServices/maps/index.asp">http://www.co.utah.uit.us/OnlineServices/maps/index.asp</a></td>
</tr>
<tr>
<td>UDOT</td>
<td>Uplan UDOT Map Center</td>
<td><a href="http://uplan.maps.aggis.com/home">http://uplan.maps.aggis.com/home</a></td>
</tr>
<tr>
<td>Arizona</td>
<td>Travel Data and Forecasting</td>
<td><a href="http://www.pagnet.org/RegionalData/TravelDataandForecasting/tabid/370/Default.aspx">http://www.pagnet.org/RegionalData/TravelDataandForecasting/tabid/370/Default.aspx</a></td>
</tr>
<tr>
<td>Tucson</td>
<td>ZoomTucson</td>
<td><a href="http://maps.tucsonaz.gov/zoomtucson">http://maps.tucsonaz.gov/zoomtucson</a></td>
</tr>
<tr>
<td>Map Resources</td>
<td><a href="http://tucsonmaps.aggis.com/map-resources">http://tucsonmaps.aggis.com/map-resources</a></td>
<td></td>
</tr>
<tr>
<td>University of New Mexico</td>
<td>Earth Data Analysis Center</td>
<td><a href="http://edac.unm.edu/">http://edac.unm.edu/</a></td>
</tr>
<tr>
<td>Clark County</td>
<td>OpenWeb</td>
<td><a href="http://gisgate.co.clark.mv.us/openweb/">http://gisgate.co.clark.mv.us/openweb/</a></td>
</tr>
<tr>
<td>RTCWashoe</td>
<td>Map Warehouse</td>
<td>[<a href="http://www">http://www</a> rtcwashoe com/planning-34](<a href="http://www">http://www</a> rtcwashoe com/planning-34)</td>
</tr>
<tr>
<td>SRFC</td>
<td>Maps</td>
<td><a href="https://srfc.maps.arcgis.com/home">https://srfc.maps.arcgis.com/home</a></td>
</tr>
<tr>
<td>Spokane County</td>
<td>SCOUT</td>
<td><a href="http://maps.spokanecounty.org/">http://maps.spokanecounty.org/</a></td>
</tr>
<tr>
<td>WSDOT</td>
<td>WSDOT GeoData Distribution Catalog</td>
<td><a href="http://www.wsdot.wa.gov/mapsdata/geodatacatalog/default.htm">http://www.wsdot.wa.gov/mapsdata/geodatacatalog/default.htm</a></td>
</tr>
</tbody>
</table>
GIS Common Operating Platform

• Input from Stakeholders
  o Assessed relevant available data
  o Identified data gaps
  o Potential users & political realities
  o Provided input on story map

Goal: Provide decision makers with better situational awareness of the region and be able to make more fully informed decisions
Resources

http://www.azmag.gov/information_services/shrp2-expediting-project-delivery-grant.asp

Story Map
GIS data sets & Common formats
http://arcg.is/1MThxpp
MAG Team Members

Anubhav Bagley  
Amy Duffy  
Denise McClafferty  
Jami Dennis  
Jason Howard  

Jim Rounds  
Mark Roberts  
Natalia Cuneo  
Tim Strow  

Contact:  
Denise McClafferty  
Regional Program Manager  
dmcclafferty@azmag.gov  
602-254-6300
Questions?

Please remember to type in your questions to the question prompt.

Thank you for participating!
Kate Kurgan, AASHTO
kkurgan@aashto.org
202-624-3635

David Williams, FHWA
david.Williams@dot.gov
202-366-4074

Denise McClafferty, Maricopa Association of Governments
DMcClafferty@azmag.gov
602-452-5033

Jacque Annarino, Ohio DOT
Jacque.Annarino@dot.ohio.gov
614-466-1484