



# Peer Exchanges

Expediting Project Delivery

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July 19, 2015

## Summary

### ***Expediting Project Delivery Peer Exchanges ADC10/30/50 Committees - Transportation Research Board Mid-Year Meeting - Tuesday, July 19***

TRB sponsored the Transportation-Related Environmental Analysis, Ecology and Historic and Archeological Preservation Summer Conference from July 17-20 in Salt Lake City, Utah. The conference explored the laws, regulations, policies, and procedures for managing transportation-related environmental analysis. The theme of the event was "Collaboration and Innovation Leading the Way."

Two peer exchange sessions were scheduled to showcase the results of six Second Strategic Highway Research Program (SHRP2) Expediting Project Delivery (C19) products. Each project funded with Expediting Project Delivery Implementation Assistant Program funds was planned to implement one or more of the identified 24 strategies of this SHRP2 product that address 16 common constraints, and improve the transportation delivery process for their agency.

Moderators:  
Kate Kurgan – AASHTO  
Damaris Santiago – FHWA

#### **Session 1:** 9:00 – 10:30 pm

Introduction (5 minutes): Kate Kurgan/AASHTO and Damaris Santiago/FHWA

**Maricopa Association of Governments** (20 Minutes) Anubhav Bagley: The development of an Intermountain West Region GIS tool to share information and data across a broad geographic area to aid transportation, land use planning and economic development.

**Arizona Department of Transportation** (20 Minutes) Marinela Konomi: Adoption of program management protocols that implement efficient delivery of the Local Public Agency Federal-aid Highway Program.

**Vermont Agency of Transportation** (20 Minutes) Jennifer Fitch and Aaron Guyette: Development of new program management protocols for an Accelerated Bridge Program (ABP), supported by an internal review by a number of departments, peer exchanges with New York, Massachusetts and Maine Departments of Transportation, and interviews with customers and stakeholders.

Panel: Question and Answers – 25 minutes  
Moderated by: Kate Kurgan/AASHTO and Damaris Santiago/FHWA

#### **Session 2:** 10:45 – 12:15 pm

Introduction (5 minutes): Kate Kurgan/AASHTO and Damaris Santiago/FHWA

**Massachusetts Department of Transportation** (20 Minutes) Jose Simo: Integration of MassDOT's Roads & Highways GIS system, developing new data filtering tools, reworking map elements, adding new data, and more.

**Arkansas State Highway and Transportation Department** (20 Minutes) Elisha Wright-Kehner: Development of a process for project delivery that results in fewer project delays, better decisions, and potentially lower project costs.

**Florida Department of Transportation** (20 Minutes) Steve Braun: Implementing streamlining recommendations to develop enhanced schedule templates, identified certain activities to occur prior to PD&E, and options to advance purchase mitigation sites.

Panel: Question and Answers – 25 minutes  
Moderated by: Kate Kurgan/AASHTO and Damaris Santiago/FHWA

# Session 1 Slides



**SHRP2 SOLUTIONS**  
TOOLS FOR THE ROAD AHEAD

## SHRP2 Solutions: C19 Expediting Project Delivery Session 1

Kate Kurgan, AASHTO  
Damaris Santiago, FHWA



 U.S. Department of Transportation  
Federal Highway Administration

 AMERICAN ASSOCIATION  
OF STATE HIGHWAY AND  
TRANSPORTATION OFFICIALS  
**AASHTO**

Thank you for the opportunity for AASHTO and FHWA to co-host these two morning sessions today. I'm Kate Kurgan and am excited to share with you a little about the SHRP2 program. My counterpart at FHWA, Damaris Santiago, will also provide some specific information for you on the product that this the focus of our session today, C19 – Expediting Project Delivery.

After that, we have 3 presenters here to share with you the results of their Expediting Project Delivery projects. We plan to hold all questions until after all of the presentations have been completed. We will hold a panel discussion after the presentations to answer all of your questions.

## SHRP2 at a Glance

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



SHRP2 SOLUTIONS | 2

As many of you know, SHRP2 is a collaborative effort to develop products and processes that can be used by transportation agencies to address key challenges, including safety, aging infrastructure, and congestion.

TRB completed the SHRP2 research, and now FHWA and AASHTO are jointly implementing the resulting SHRP2 Solutions to help the transportation community enhance the Nation's highway system.

The results of SHRP2 research are called “solutions” because, in many cases, the products are processes, software, testing procedures, and specifications are designed to fill knowledge gaps that have prevented innovations from being used more widely.

SHRP2 Solutions fit into existing agency processes and help practitioners advance the state of the practice—by being smarter, using resources more wisely, and engaging key partners in decision making.

## Focus Areas



**Safety:** fostering safer driving through analysis of driver, roadway, and vehicle factors in crashes, near crashes, and ordinary driving



**Reliability:** reducing congestion and creating more predictable travel times through better operations



**Capacity:** planning and designing a highway system that offers minimum disruption and meets the environmental and economic needs of the community



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

SHRP2 products resulted from research in four focus areas.

Safety

Reliability

Capacity -is bringing greater collaboration to road building to minimize delays and disruption while meeting environmental, economic, and mobility needs.

Renewal

## SHRP2 Implementation Assistance Program

- **Round 7:**
  - 13 products or bundles of products
  - 1 capacity; 3 reliability; 9 renewal products
- **42 recipients** just announced in June 2016
  - **37 state DOTs**
  - **4 MPOs**
  - **1 Federal Lands Highway**
- **79 projects** in **37 states**

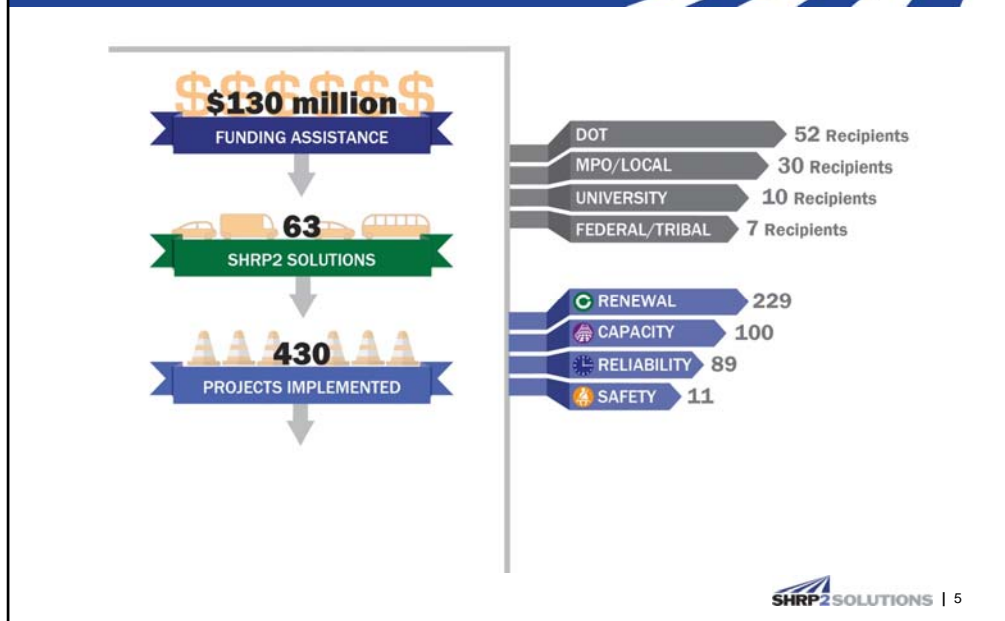


SHRP2SOLUTIONS | 4

To date, there has been **7 rounds** of the Implementation Assistance Program.

Round 7 (last round of assistance) was just announced June 20, 2016.

## SHRP2 Implementation: Moving Us Forward



The next set of slides shows the remarkable activity and achievements we have made in SHRP2 during the past 4-plus years. This slide represents the work anticipated through Round 7, that was just announced.

The goal of SHRP2 implementation is to take the SHRP2 Solutions out of research and move them into practice. As you can see on this slide, implementation efforts have already yielded significant results.

Through various efforts and the 7 previous rounds of IAP, more than \$130 million in funding assistance has been distributed to 99 entities including DOTs, MPOs, local agencies, and universities, as well as Federal and tribal agencies. The research led to 63 implementable solutions, and there are now 430 transportation projects underway, utilizing SHRP2 products nationwide.



## 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.**

SHRP2 SOLUTIONS | 6

- First, *Expediting Project Delivery* identifies 24 strategies for addressing or avoiding 16 common constraints in order to speed delivery of transportation projects. The 16 common constraints are:
  1. Avoiding Policy Decisions Through Continual Analysis
  2. Conflicting Resource Values
  3. Difficulty Agreeing on Impacts and Mitigation
  4. Inability to Maintain Agreement
  5. Ineffective Internal Communication
  6. Inefficient Section 106 Consultation With State Historic Preservation Officer
  7. Inordinate Focus on Single Issue
  8. Insufficient Public Engagement or Support
  9. Issues Arising Late Cause Project Change
  10. Lack of Dedicated Staff
  11. Lengthy Review and Revision Cycles
  12. Negative or Critical Coverage from the Media
  13. Relocation Process Delays Construction
  14. Slow Decision Making

15. Stakeholder Controversy and Opposition

16. Unusually Large Scale of and/or Complex Project or Program

- Within *Expediting Project Delivery*, the strategies are grouped under six objectives:

**1. Improve internal communication and coordination:** Strategies that address a lack of communication, unclear protocols, and unclear roles and responsibilities.

**2. Streamline decision-making:** Strategies to support effective and timely decision-making that maintains project timeframes and avoids later re-evaluations.

**3. Improve resource agency involvement and collaboration:** Strategies that provide ways to build trust and constructive collaboration among transportation and resource and regulatory agencies in order to avoid or minimize unforeseen impacts.

**4. Improve public involvement and support:** Strategies to address the potential for public opposition or controversy, which commonly delay projects.

**5. Demonstrate real commitment to the project:** Strategies to garner support among stakeholders through demonstrations of financial, political, and staffing commitments.

**6. Coordinate work across phases of project delivery:** Strategies to ensure that data, decisions, documentation, and findings from earlier phases are advanced into later phases in order to avoid redundant analysis and decision-making.

- Let's now talk about a few other key features of *Expediting Project Delivery*.

# Expediting Project Delivery

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

- This table (see Table 3.1 in the SHRP2 Report S2-C19-RR-1) shows all 24 strategies and how each are connected (directly or conditionally) to five key stages of project planning or delivery: (a) Early Planning; (b) Corridor Planning; (c) NEPA; (d) Design/Right-of-Way/Permitting; and (e) Construction. The fully-shaded circles show direct applicability, while the unshaded circles show conditional applicability.
- We will next briefly summarize each of these 24 strategies.

## For More Information

### **Kate Kurgan**

Associate Program  
Manager, SHRP2  
Implementation, AASHTO  
[kkurgan@ashto.org](mailto:kkurgan@ashto.org)

### **Damaris Santiago**

Environmental Protection  
Specialist, FHWA  
[damaris.santiago@dot.gov](mailto:damaris.santiago@dot.gov)

### **Additional Resources:**

**GoSHRP2** [fhwa.dot.gov/GoSHRP2](http://fhwa.dot.gov/GoSHRP2)  
**Website:**

**AASHTO SHRP2** <http://shrp2.transportation.org>  
**Website:**

**GoSHRP2** [fhwa.dot.gov/goshrp2/contact](http://fhwa.dot.gov/goshrp2/contact)  
**Alert Sign Up:**

**Email:** [GoSHRP2@dot.gov](mailto:GoSHRP2@dot.gov)



For additional information, please feel free to reach out to me. I also encourage you to visit FHWA's GoSHRP2 website and AASHTO's SHRP2 website, where you can find technical information about the products. In particular, the AASHTO site has quite a bit of detail on the products, from the tools and processes needed to implement the products, to presentations, case studies, and which states are engaged in working to implement a specific strategy.

Both sites offer a variety of helpful resources including fact sheets, videos, and links to product research.

## Session 1 Presentations

- Maricopa Association of Governments - Anubhav Bagley: Intermountain West Region GIS tool
- Arizona DOT - Marinela Konomi: Program management protocols for the Local Public Agency Federal-aid Highway Program.
- Vermont DOT - Jennifer Fitch and Aaron Guyette: Accelerated Bridge Program.
- Panel: Question and Answers



## C19: Expediting Project Delivery

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



July 19, 2016

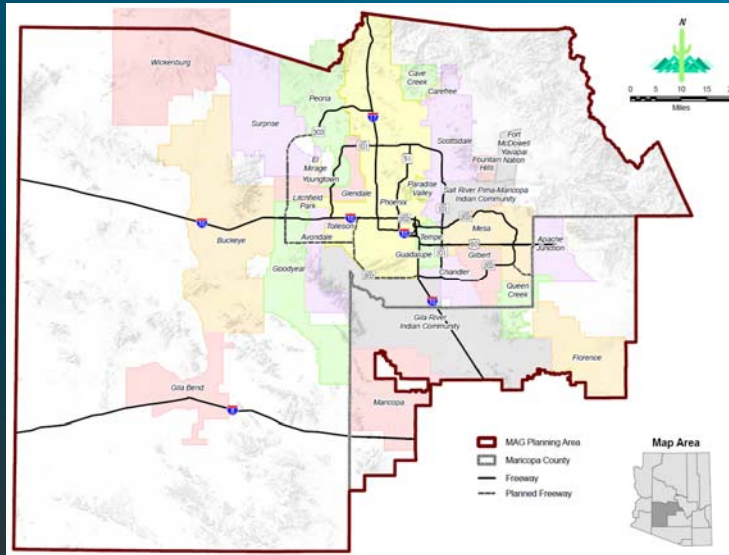


U.S. Department of Transportation  
Federal Highway Administration



# 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

• **27 cities and towns, 3 Indian communities, Maricopa County, and Pinal County**

• **Area: 14,590 sqmi**

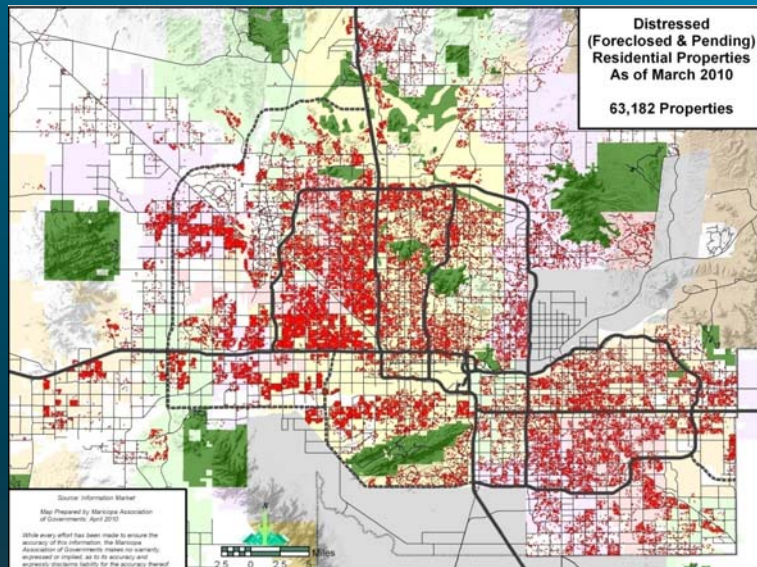
- **MC 9,220 sqmi**
- **PC 5,370 sqmi**

• **Population: 4.4 M**

# Wake up call: 2007 Downturn

Distressed  
Residential  
Properties:  
March 2010

**Second  
Worst in  
the  
Country**



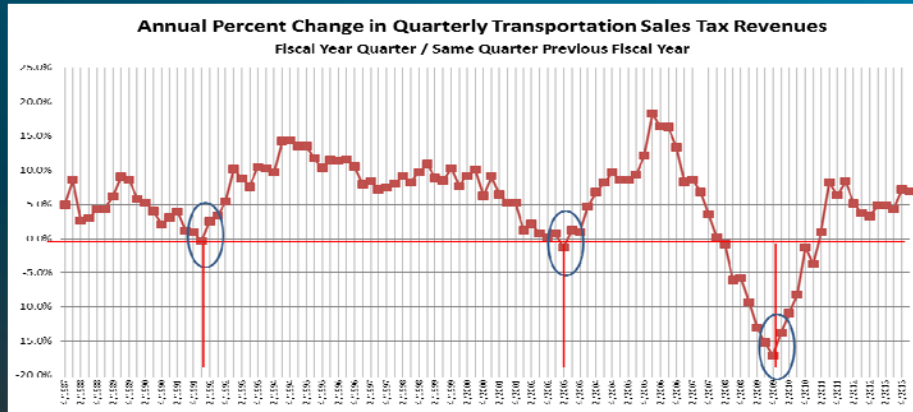
So how did we get there...

In 2010, during the recession, Maricopa County had more than 63,000 pending and foreclosed residential properties...the 2<sup>nd</sup> worst in the country.



# Wake up call: 2007 Downturn

## Annual Percent Change in Quarterly Transportation Sales Tax Revenues



Cities and towns in our region rely largely on Sales Tax Revenues

This slide shows how in 2009, sales tax drop dramatically as a result of the recession.

1987 to 2014

1991-92 = 0% change

2003 drops below the line = a negative % change

2009 show the dramatic impact of the recession.





Pro-business climate



**Business & Economy**

From a skilled labor market to attractive tax incentives, learn more about the Greater Phoenix business climate.



**Population & Housing**

Arizona is the second fastest-growing state in the nation, with some of the lowest housing costs in the country.



**Transportation**

A state-of-the-art freeway system combined with light rail and transit connectivity equates to easy commutes.



**Lifestyle**

Great weather, safe neighborhoods & lots to do. The Greater Phoenix region offers a vibrant lifestyle for all.



**Key Assets**

From military to health and educational facilities, learn more about other important assets and infrastructure.

# Connect - BIEN

[www.connectbien.com](http://www.connectbien.com)

Building an International Economic Network

The image displays two screenshots of the BIEN website. The left screenshot shows the homepage with a navigation bar at the top containing 'Search For A Business', 'About Us', 'Resources', and 'Partners'. Below the navigation is a large image of an airplane fuselage. The main content area is titled 'Promote Ideas and Best Practices' and includes sections for 'What is BIEN?', 'Join', and 'Business Search'. At the bottom, there are logos for Arizona Commerce Authority, ADOT, CABC, Maricopa County, and the State of Arizona. The right screenshot shows a search results page with a map of the United States and a list of filters. The filters include categories such as 'Auto Related Mfg', 'Chemicals', 'Consumer Products', 'Consumer Services', 'Energy', 'Financial Services', 'Food & Beverage Products', 'Manufacturing Services', 'Industrial & Commercial Services', 'Industrial Mfg & Machinery', 'Retail', 'Retailers', 'Retailers & IT Services', 'Tech Equipment & Mfg', 'Transportation', 'Transportation', and 'Wood, Paper, & Packaging'.

## 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



Demographic



Statewide



Employment



MapLIT



Land Use



Bikeways



Building Landmark  
Inventory



Projections

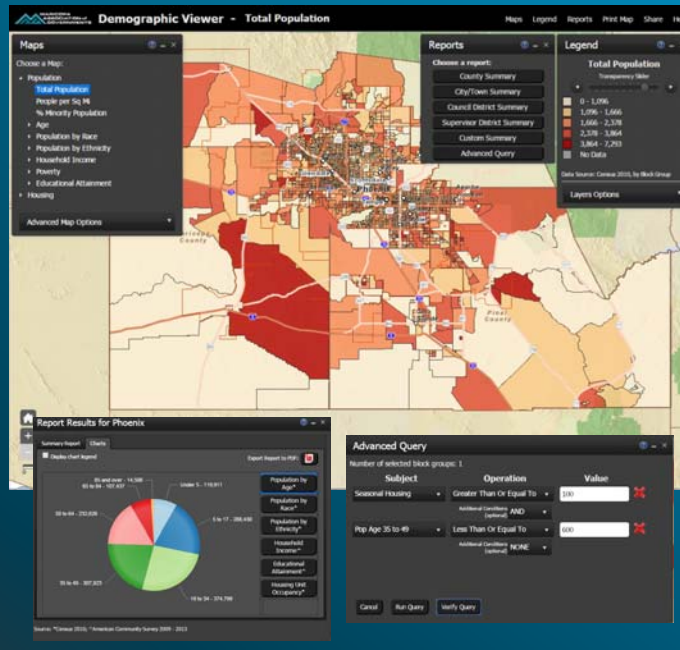


Victim Services

# Interactive Tools

## Beyond Maps

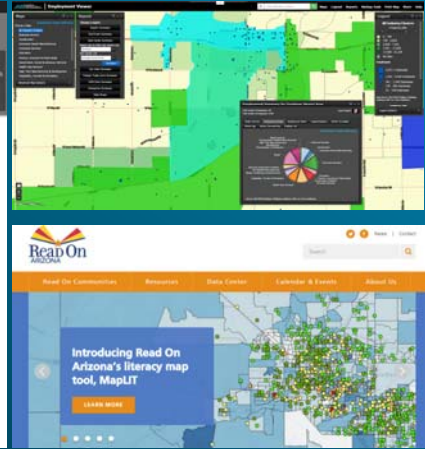
- Interactive reporting
  - *Pre-written reports*
  - *Custom*
- Buffer tools
- Download/Export data and reports
- Census and ACS data
- Mapping:
  - *Colors*
  - *Classification*
- Mobile friendly
- Interactive selection and queries



Development of interactive tools

# Demonstration

<http://ims.azmag.gov>



C19 SHRP2

# PROJECT OVERVIEW





Strategic Highway Research Program (SHRP 2) is a Federal Highway Administration (FHWA) program.

SHRP2 Solutions introduce procedures, practices, and applications to advance the highway system in four key focus areas: Safety, Renewal, Reliability, Capacity

SHRP2 aims to create one resource for the most innovative, practical, and proven tools to help transportation professionals quickly rehabilitate America’s aging highway system, reduce congestion, and save lives by making roads safer both from a driver-behavior and infrastructure perspective. With that in mind each of the four focus areas (Safety, Renewal, Reliability, Capacity) is comprised of a collection of products designed to address the most pressing problems facing the Nation’s highway system.

<CLICK to isolate “capacity” – animated>

To that end, the Maricopa Association of Governments (MAG) applied for and received a Lead Adopter Incentive for the SHRP2 Implementation Assistance Program under the Capacity focus area. Within the Capacity focus area there are 22 different products, also referred to as “solutions.” MAG was selected to work on the Capacity 19 (C19) solution: “Expediting Project Delivery.”

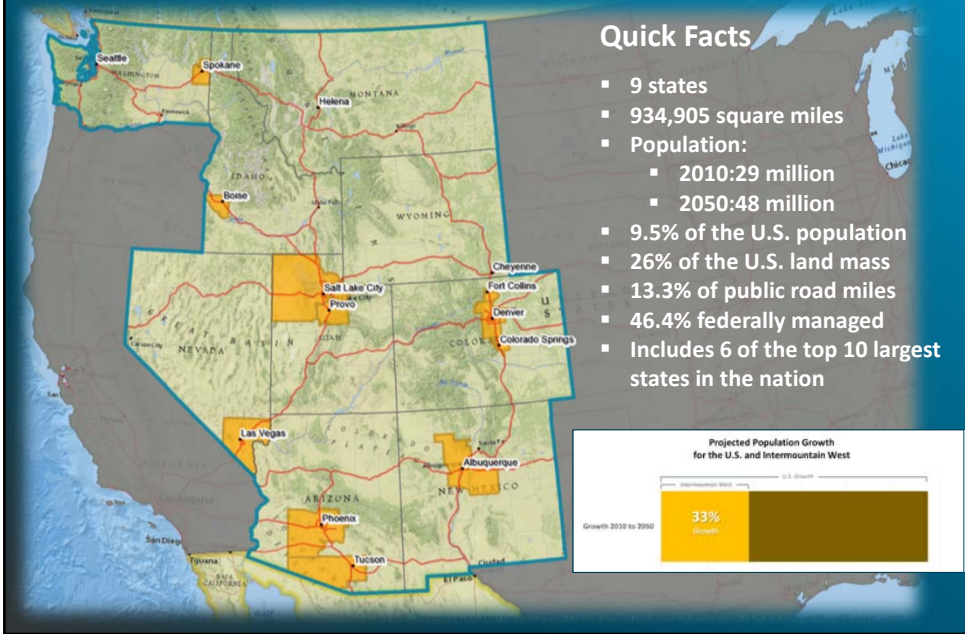
C19: Expediting Project Delivery is a collection of strategies for addressing or avoiding common constraints to speed the delivery of transportation planning and environmental review projects. As a regional planning body, one of MAGs core functions is to foster regional cooperation. These cooperative efforts extend from the MAG and Sun Corridor Mega region into the Intermountain west. On an ongoing basis, MAG coordinates with several western regional planning entities such as the Western Regional Alliance, the Western Governors Association, and the Western Regional Partnership. In addition, MAG meets annually with the other Municipal Planning Organizations (MPOs) in the Intermountain West region. (Shown on the map in gold/orange).

For the SHRP2 project, MAG has been tasked with expanding its cooperative efforts with agencies across the Intermountain West Region in order to advance the deployment of solutions that expedite transportation project delivery across the region. The Intermountain West is a large region, and as you can see from this map, the MPO areas are connected by the transportation network, forming corridors for the movement of freight and people.



Why are these connections important? Taking a larger view at the connections across the Intermountain West, we see what's referred to as America's Trade Corridor that connects Canada, the United States, and Mexico. Keeping trade moving along this corridor and through the region relies on a robust and efficient transportation system. To that end, this project aims to provide planning tools and information to assist planners, engineers, developers, and other stakeholders with both maintaining and improving the system in order to keep up with the burgeoning growth that the west continues to experience and the impact that has on the system. (This growth has somewhat slowed since the recession, but it is still seen and continues, albeit at a slower pace).

# Intermountain West



## Quick Facts

- 9 states
- 934,905 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



# Partners



# SHRP2 Project Goals

FHWA awarded a grant to MAG to advance deployment of multi-objective solutions that expedite transportation project delivery in the **broader Intermountain West Region**

## Project Goals:

- ✓ Outreach to identify needs and potential gaps related to transportation and data resources
- ✓ Develop GIS Common Operating Vision/Platform for easier data information sharing
- ✓ Align expectations for a long-range vision to move people and goods in the Region
- ✓ Develop Report with Risk Register



## Outreach (ongoing)

- Communications Network across the Intermountain West Region includes:
  - GIS/Technical
  - Transportation
  - Policy contacts
- Extend connection to other key contacts as the GIS Tool is developed.
  - 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 to develop a GIS Common Operating Vision/Platform for our data information sharing. 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**

Your Name: \_\_\_\_\_ Agency: \_\_\_\_\_  
 Title: \_\_\_\_\_ Work/Phone: \_\_\_\_\_  
 Email Address: \_\_\_\_\_ Web Address: \_\_\_\_\_

**Section Two: Data Related Questions**

Please provide details on the GIS datasets your organization has access to. For each dataset, 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 program or unit for the dataset? What is the data for the value? (statewide/county level)	What is the most current data available (Year)?
A. Current Land Use				
B. Planning/Zoning				
C. Transportation Projects (provide number)				
a. Employment locations				
b. Housing (including units inventory)				
c. Land Ownership (private, federal, state, military, etc.)				
d. Transportation Data (other than Census)				
e. Urban Sprawl				
f. Natural Corridors (waters, wildlife corridors, floodplains, etc.)				
g. Current and future transportation networks (highways, major roads, rail, airport, etc.)				
h. Mobility and behavior locations (walkable, bicycle, etc.)				
i. OVI or (please specify)				
j. OVI or (please specify)				

**Section Three: Socioeconomic Projections Related Questions**

Do you have access to county and/or 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	When is the data for the geographic extent and/or data available? (submit)	What were the socioeconomic assumptions, projections developed? (have other similar projections updated?)
a. Population				
b. Housing				

Having made initial connections and developed a working relationship with our partners, we put together a survey to identify key data resources in order to create an data inventory that would be needed to develop the common GIS platform.

# 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

Survey Responses	Available		Sharable		Data Source			
	Yes	No	Yes	No	MPO/Member Agency	State	Multiple	Other
<b>Section Two: Data Related Questions</b>								
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
<b>Section Three: Projections</b>								
a. Population	11		11		7		4	
b. Housing	11		11		8		3	
c. Employment	11		11		9		2	
<b>Section Four: Transportation</b>								
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.

The results were tallied – 11 MPOs responded and 4 state DOTs. For the most part the data were available and able to be shared. Also the originating agency – data source- for most of the data – is the MPO or their member agencies.



## 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

In August 2015 the SHRP2 team held a meeting in Denver, Colorado with 26 technical staff from 14 different agencies. The goal of the meetings was to review the project efforts to date and get input from the varied technical staff in attendance.

<ANIMATED SLIDE – Click to have bullet points come up>

This meeting was, by all accounts, a success. While there had been webinar-style meetings this was the first time this group had meet face-to-face. What's more is that there was a varied background among attendees – some work solely with GIS, others were more concentrated on the data - socioeconomic, data analysis, etc – and then, of course, there were some with a strong transportation background. This helped to bring a unique and diverse perspectives to the project – engineering, GIS, data – and smaller region needs vs. larger region needs.

The meeting helped to enhance the partnerships among the group, building on a technical network for sharing and collaboration within the Intermountain West region. Attendees shared best practices used for projects at there agency. This collaboration served to enhance the partnerships that were created through the webinar meetings.

Additionally, the MAG SHRP2 team was able to lay out the vision for the project and get critical input on the development of the Risk Register report and the common GIS platform. The input from the group was key to furthering the project efforts and moving forward in a direction that works for all involved.

# Aligning Expectations

- Tiered approach
  - **Tech:** working with GIS/technical experts to develop GIS Common Operating Vision/Platform
  - **Executive:** highlight technical efforts to transportation and policy makers to get their input
  - **Policy:** inform policy makes of efforts, lessons, and tools. Highlight importance of IMW region
- More fully address critical infrastructure needs
  - Need to work across political boundaries; collaborate and leverage efforts
  - Identify: stakeholder expectations, issue priorities, areas of commonality, potential areas of conflict, and methods of reducing or resolving areas of conflict



# Common GIS Platform

## 35+ tools identified

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

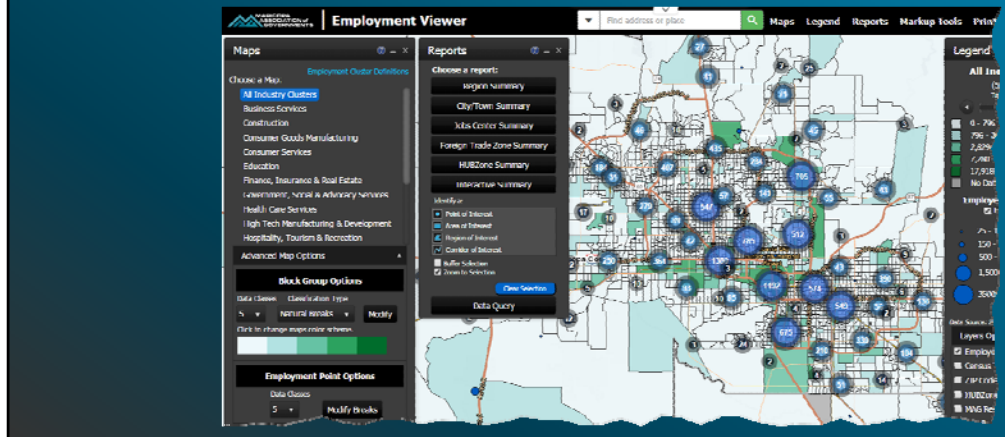
In addition to what MAG has built, there are a variety of online data tools that partner agencies have built and maintain, as shown here. Many of these tools had been shared in the online meetings (or webinars) with the group. So the next thing was to get everyone together in person to meet face-to-face.

<ANIMATED SLIDE – click to see the list scroll up>

# GIS Common Operating Platform

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

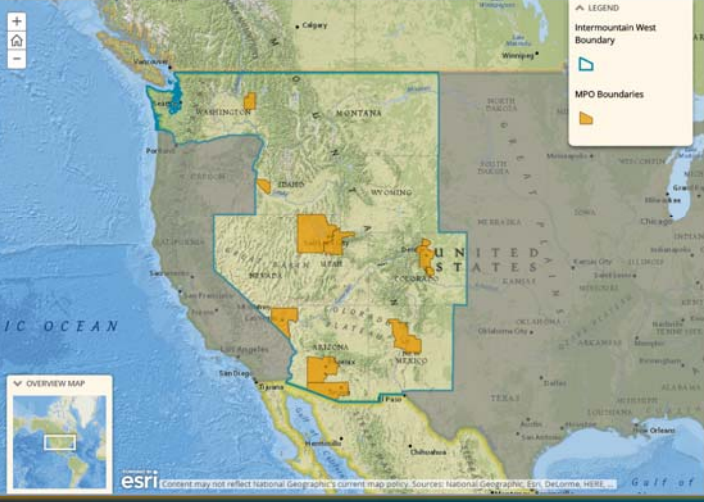
Goal: Provide decision makers with better situational awareness of the region and be able to make more fully informed decisions



# Putting it all Together

InterMountain West Regional Geospatial Information for Transportation Planning View source Edit Created by Maricopa Association of Governments

Introduction Transportation Demographics Economy Land Environmental



**Regional Geospatial Information for Transportation Planning Efforts in the Intermountain West**

As part of the Strategic Highway Research Program (SHRP2), the Maricopa Association of Governments (MAG) has compiled data from agencies across the 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 allow for a high-level review of information that may affect certain transportation projects.

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

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

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

**Tips for Navigating the Maps**

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.

<http://arcg.is/1MThxpp>

Live Demo of Story Map <http://arcg.is/1MThxpp>

Intro – Data Themes

Custom widgets – how to use the maps

Information on right side panel – some basics info and stats from the data

<http://arcg.is/1MThxpp>

**InterMountain West Regional Geospatial Information for Transportation Planning** Created by Maricopa Association of Governments

Introduction Transportation Demographics Economy Land 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 281,292 vehicles. On the 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	Location	AADT
Arizona	Phoenix	281,292
California	San Francisco	150,000
Colorado	Denver	100,000
Idaho	Boise	50,000
Montana	Billings	30,000
Utah	Salt Lake City	20,000
Wyoming	Cheyenne	33,691

**Highest Average Annual Daily Traffic (AADT) for Intermountain West States (2013)**

State	Location	AADT
Arizona	Phoenix	281,292
California	San Francisco	150,000
Colorado	Denver	100,000
Idaho	Boise	50,000
Montana	Billings	30,000
Utah	Salt Lake City	20,000
Wyoming	Cheyenne	33,691

**Bridges** | Ports of Entry

NAME	Avg Daily Traffic
OCEAN LAKE WAY, GRAND CANAL	2,258
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
1802 Features	0 selected

**Projected Average Annual Daily Truck Traffic in the Intermountain West**

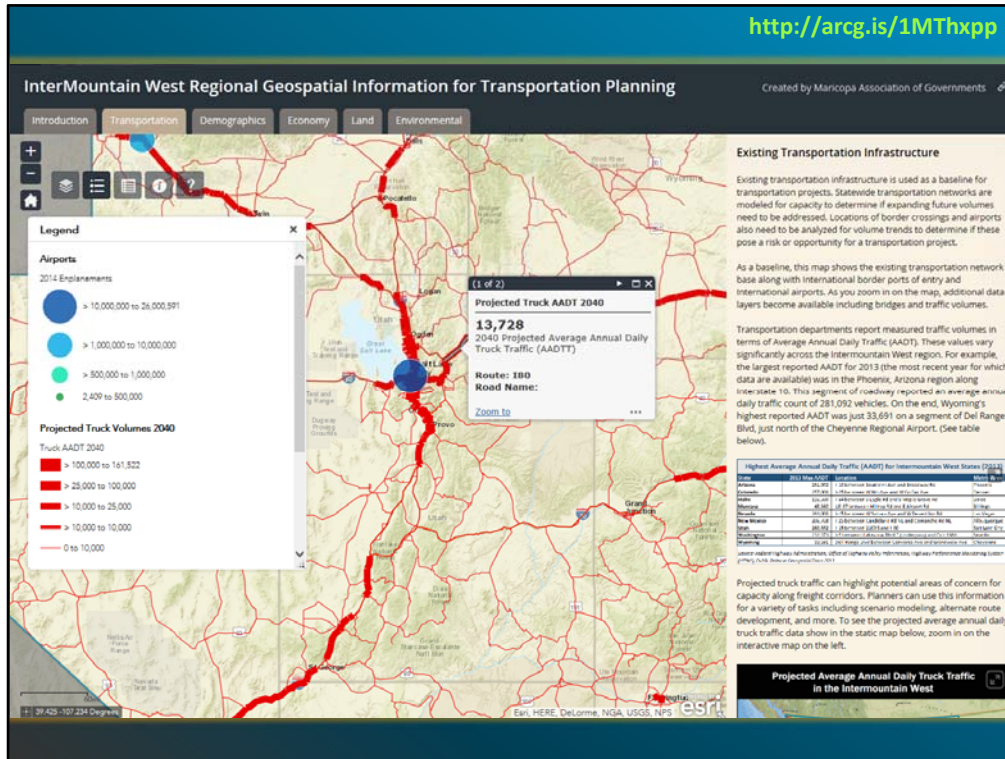
Web Appbuilder embedded into a tab of the Story Map gives additional functionality.

Standard functionality:

- Pan/zoom the map
- Click attribute to open pop-up box of information
- View legend

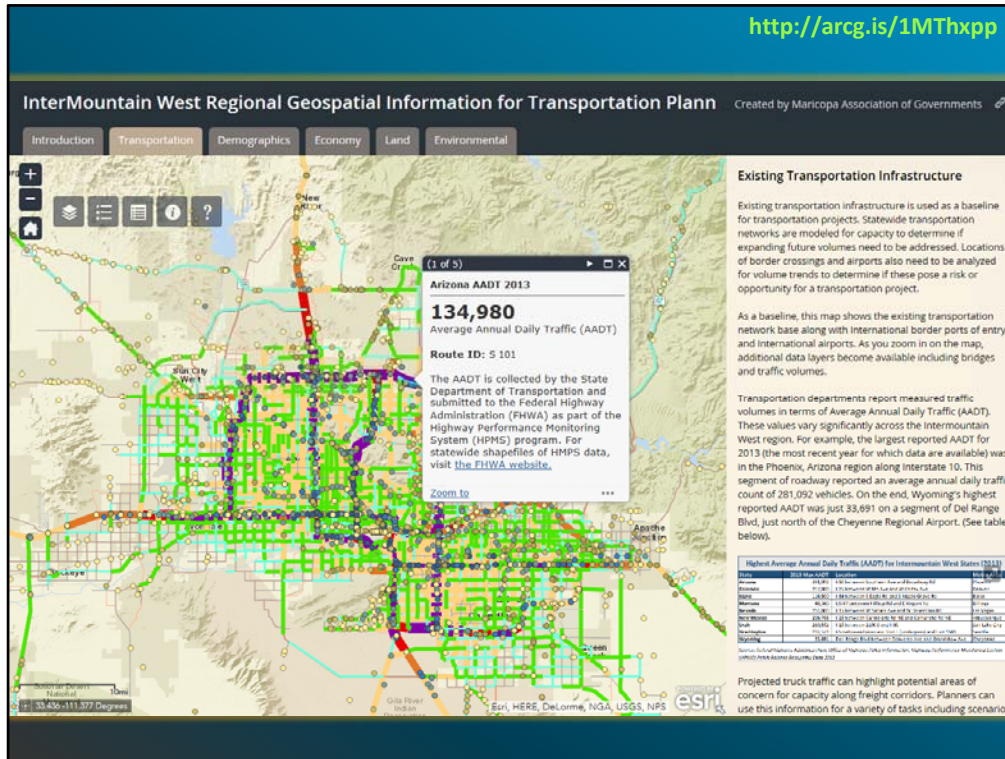
Added functionality:

- Turn layers on/off
- Reorder layers
- Open attribute table
- Export attributes
- Download shapefile
- Information about map (source and description)
- Help for using the map

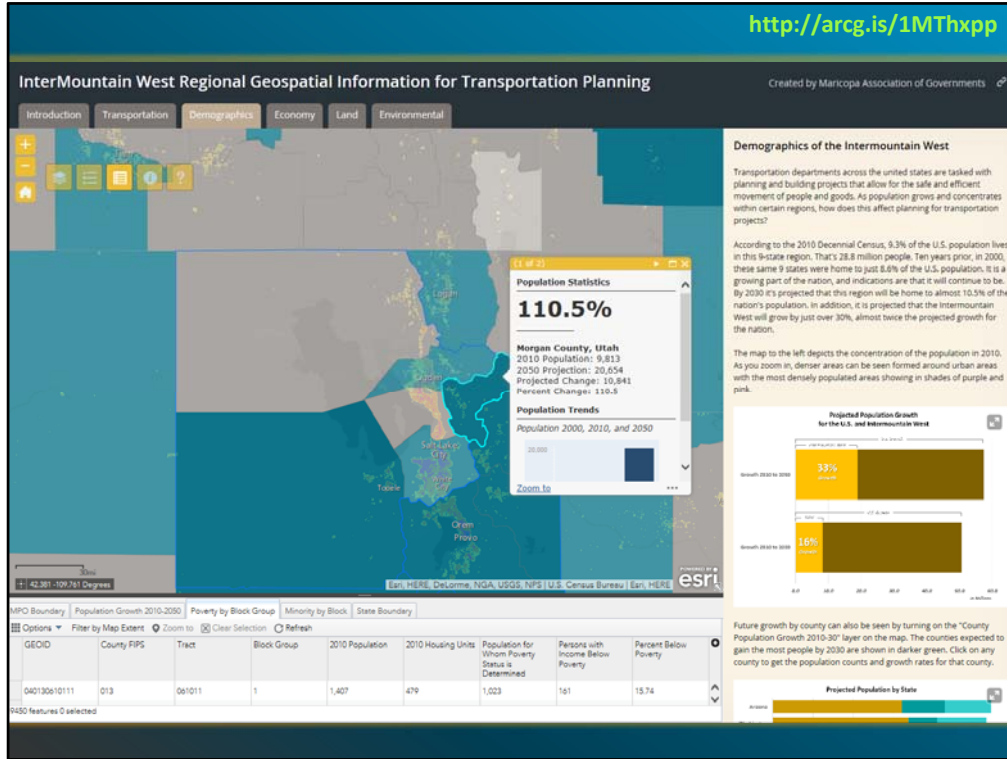


Zoom in on the map to see additional data layers. This map shows future truck traffic (from the Freight Analysis Framework FAF data) and airports.

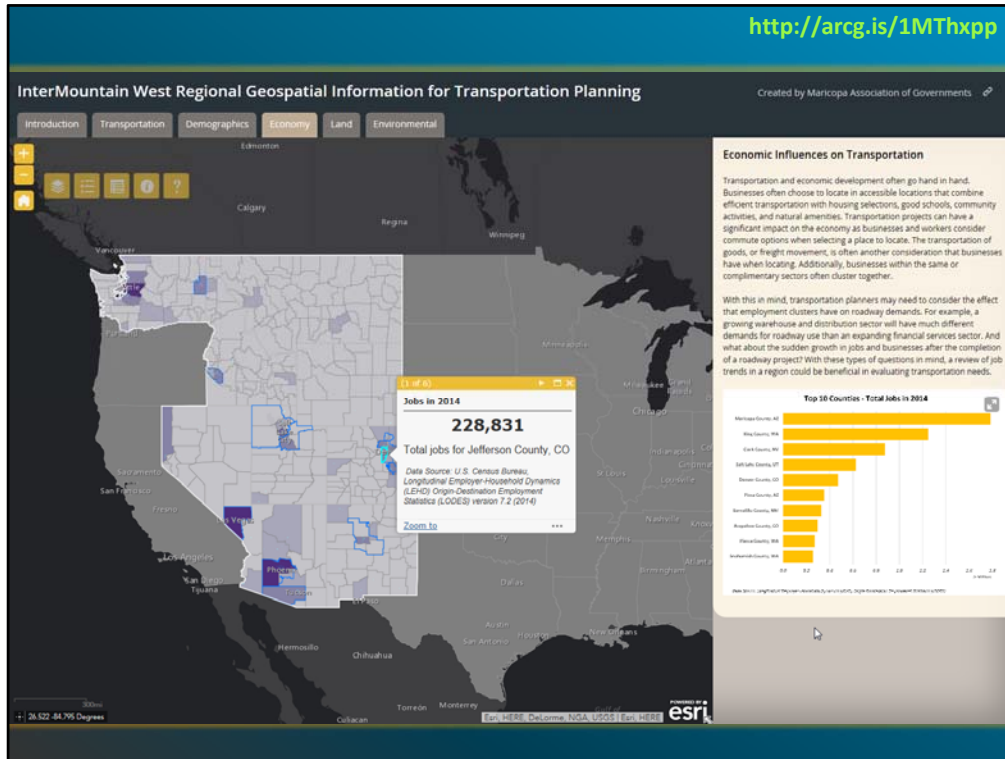




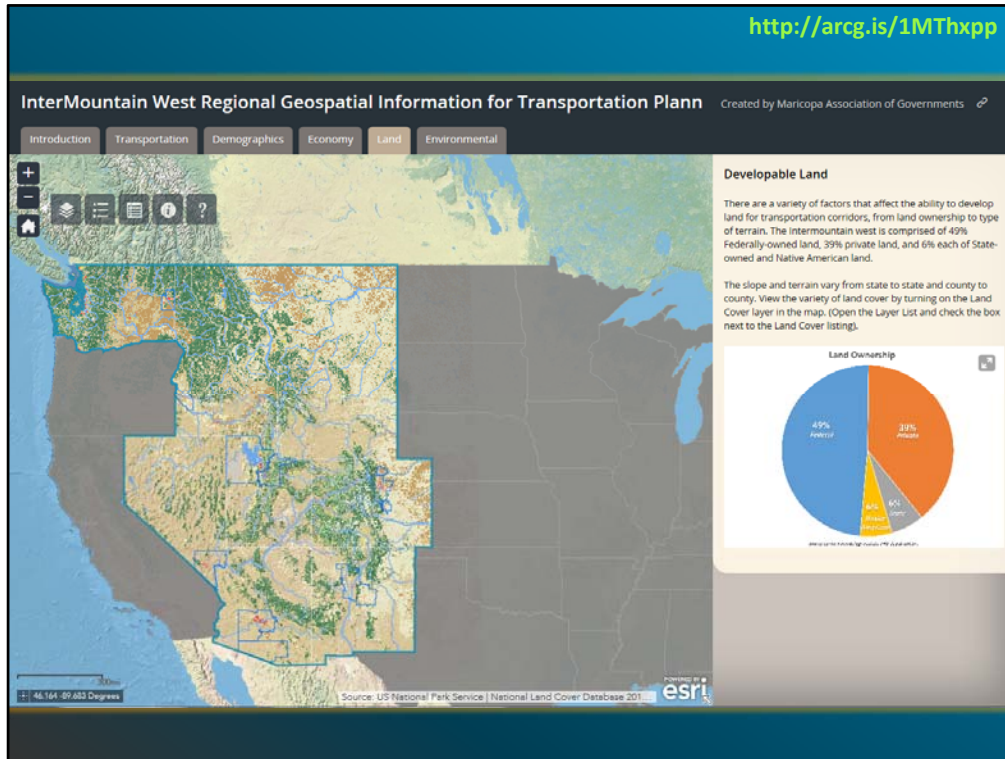
Zoom in further and you can see bridges with average annual daily traffic (AADT) counts for bridges and the road network.



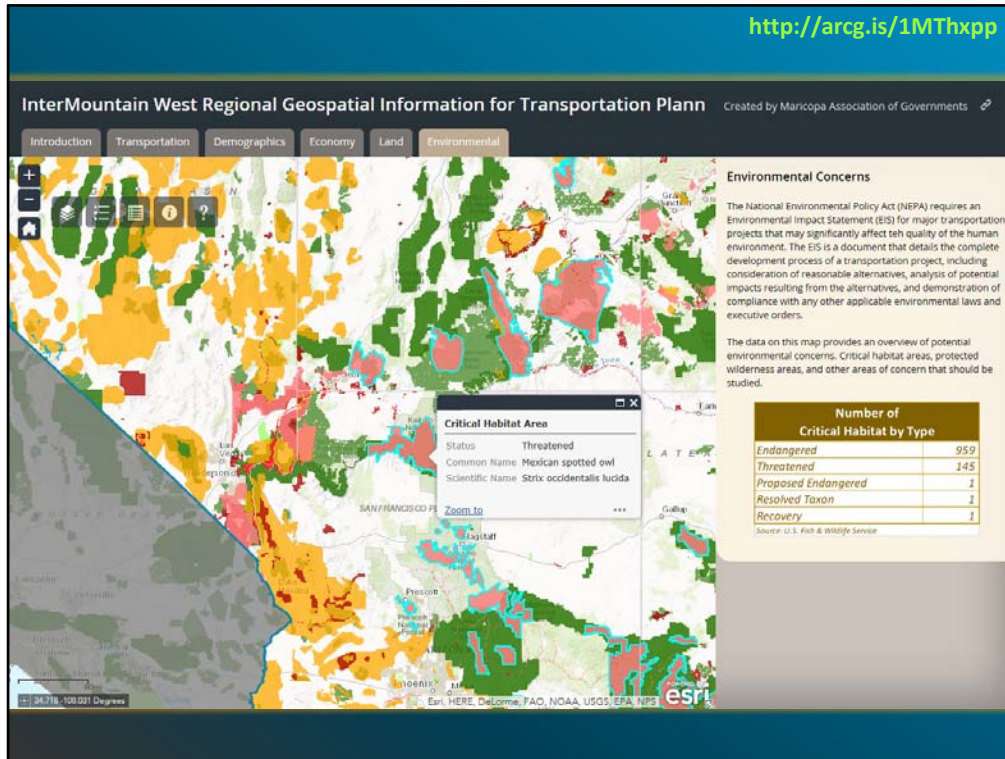
Population data are also available. Here we see the growth in population for Morgan County, Utah. The top layer can be turned off to show the population concentration below it.



Economic data includes jobs and workers. These data come from the Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES) latest version (2014). This is the one data source that provides consistent data for the 9-state Intermountain West region. Some of you may be familiar with this data in the Census Bureau's "On The Map" tool.



As you can see, we will continue to add data to these maps as it becomes available. Here we have land ownership information for the region.



Critical habitat can be a issue for transportation projects. Here we have data available for the region.

## Report with Risk Register

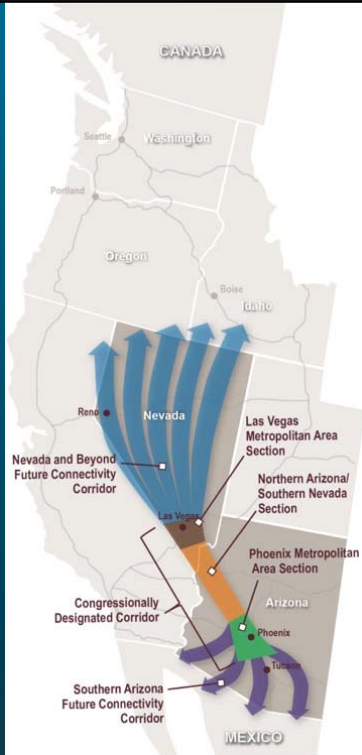
- **Vision:** *Intermountain Transportation vision that will focus on moving people and freight efficiently*
- **Constraints and Opportunities**
- **Stakeholder expectations**
- **GIS data layers**
- **Public engagement and communication best practices**
- **Lessons Learned**



Intermountain Transportation **vision** that will focus on moving people and freight efficiently  
**Constraints and Opportunities** (e.g. natural and cultural resources, work force, etc.)  
Stakeholder **expectations**, issue priorities, areas of commonality, potential areas of conflict, and methods of reducing or resolving areas of conflict  
**GIS data layers** that identify transportation focus and potential areas of conflict and provide useful analytic tools (e.g. red dot map of status and trends). Will establish methods and processes for maintenance and conflation of datasets to a common platform  
Public **engagement and communication best practices** and lessons learned from this effort

## I-11 and Intermountain West Corridor Study

Joint project by the Arizona DOT and Nevada DOT, in association with the Federal Highway Administration, Federal Railroad Administration, MAG, and Regional Transportation Commission of Southern Nevada.



- Completed in September 2014.
- NDOT currently constructing the first segments of I-11.
- ADOT conducting a statewide EIS for I-11

# 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

Thematic Area	Subject	Categories
Land	Land ownership	BLM
		National Forest
		National Monument
		National Park
		Other Protected
		Military
		Native American
		State Trust
		State Park
		Park
	Railroad Right of Way (ROW)	
	Topography	0-15%
		15% - 20%
		20% +
Land Cover	Developed	
	Forest	
	Grass/Scrub/Wetland	
	Pasture/Cropland	
Future Land Use	Water/Wetlands	
	Open Space/Undevelopable	
Hydro	Hydro	Remaining Uses
		Lakes/Rivers/Streams
		Areas of Critical Environmental Concern (ACEC)
		ACEC
		Critical Habitat
		Critical Habitat
		Superfund Sites
		Superfund Sites
		National & State Parks
		National & State Parks
Herd Management		
Herd Management		
Population	Proximity to population	Population
	Proximity to housing	Housing
Infrastructure	Electricity	Electrical lines
	Education Institutions	Proximity
Public Policy	Public Policy	Overall Tax Base
		Select Tax Credits/Exemptions
		Infrastructure Investment

<ANIMATED SLIDE – click to see the list scroll up>

Moving Forward

**NEXT STEPS**

# Resources

[http://www.azmag.gov/information\\_services/shrp2-expediting-project-delivery-grant.asp](http://www.azmag.gov/information_services/shrp2-expediting-project-delivery-grant.asp)



Interactive Tools  
MAG Region & Arizona  
<http://ims.azmag.gov/>



Story Map  
GIS data sets & Common formats  
<http://arcg.is/1MThxpp>

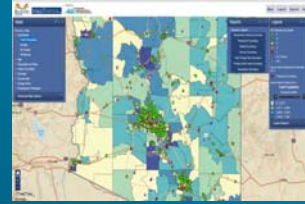


Risk Register  
Detailed AZ datasets



# Lessons

- Engagement & Partnerships
  - Need end to end support – all levels
  - Open format for sharing of information - Current projects, needs, practices
- Beyond transportation
  - MPO's are regional resources with data warehouses – need to develop analytics
  - Essential to expand to other areas of expertise:
    - Economic Development
    - Social infrastructure
  - Question Why? Prepare to be surprised !!!
  - Information sharing forums – SHRP2 webinars, SANDAG meetings, etc.



# SHRP2 Project: Next Steps

- July – August 2016
  - Review Draft Report and Risk Register by Intermountain West Technical Staff and other key stakeholders
  - Finalizing GIS Platform, Tools and Resources supporting report
- August – September 2016
  - Refine Report with Risk Register
  - Present to stakeholders
- September 30, 2016
  - SHRP2 Project Completed and Submitted to FHWA





## MAG Team Members

Anubhav Bagley	Jim Rounds
Amy Duffy	Mark Roberts
Denise McClafferty	Natalia Cuneo
Jami Dennis	Tim Strow
Jason Howard	

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602-254-6300





# Quick Reference Guide for expediting project delivery of Local Public Agency ( LPA) Federal-Aid Projects

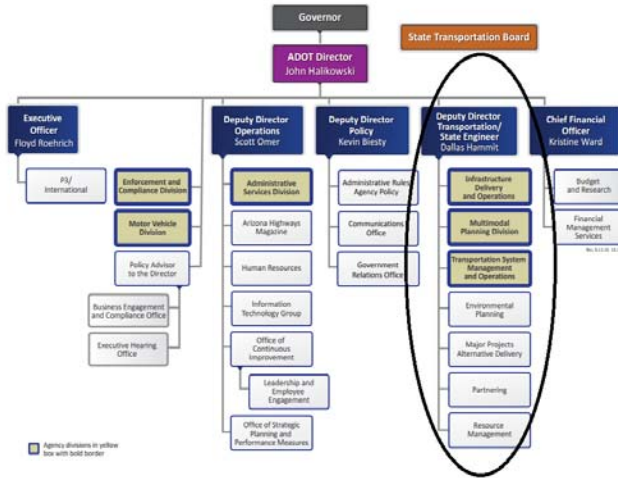
*Marinela Papa-Konomi*  
*Arizona Department of Transportation*

July 19,2016



# Overview - ADOT Process for FAHP

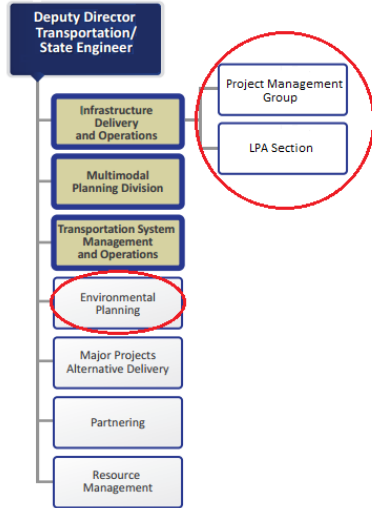
## ADOT Organization Chart



- ADOT administers the Federal-Aid Highway Program (FAHP) for LPAs.
- FHWA delegates the administration authority to ADOT through the *FHWA and ADOT Stewardship and Oversight Agreement for Arizona, 2015*



# Overview – ADOT Process for FAHP



- ❑ The LPA Section is tasked with implementing the administration of FAHP for LPAs within ADOT
- ❑ ADOT does not administer all aspects of the development of LPA projects, but **is responsible for all NEPA compliance.**
- ❑ ADOT Environmental Planning completes NEPA
- ❑ ADOT Project Management Group administered 107 projects for LPAs during FY16
- ❑ 126 LPAs eligible for FAHP in Az

## Example - Communication Breakdown

### Sample LPA Project

2013 -

**November** - LPA (County) initiates project

**December 9** - FHWA authorizes project

2014 -

**August 19** - County asked for the status of the environmental clearance. PM sent an email to EPG. There was no awareness of the project at Environmental Planning ( Env).

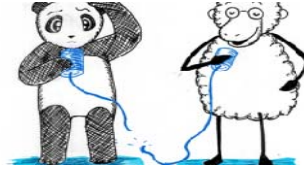
**September 9** - Env LPA Team Leader informed the PM that they need to provide a SOW and basic project information to prepare a clearance.

**November 14** - Env LPA Team Leader sent an email to the LPA Section Program Manager informing him that Env had been waiting for the a scope of work.

**November 14** - LPA Section Manager provided the SOW to Env LPA Section

**November 25** - Draft CE was prepared and sent to LPA Section for project info confirmation

**December 15** - CE was approved



August 19 – County asked for the status of the environmental clearance. PM sent an email to EPG. There was no awareness of the project at EPG. PM didn't know who in EPG was even assigned to the project and sent an email to a Planner, not the EPG LPA Section Manager or the NEPA Section Manager: "Are you doing the Clearance for xxx project? Can you provide a status update? If its not you, can you please forward?"

September 9 – EPG LPA Team Leader informed the PM that they need to provide a Scope of Work and basic project information to prepare a clearance.

November 14 – EPG LPA Team Leader sent an email to the LPA Section Program Manager informing him that EPG had been waiting for the a scope of work.

November 14 – LPA Section Manager provided the SOW to EPG LPA Section

November 25 – draft CE was prepared and sent to LPA section for SOW confirmation/ STIP /project information

November 26 –data confirmed by LPA

December 15 – CE was approved

## Overview - SHRP2 , C19 Report

- ❑ ADOT is a recipient of SHRP2 Implementation Assistance Program “Round 2” for Expediting Project Delivery ( C19)
- ❑ SHRP2 research focused on:
  - ❑ *Renewal*- accelerate renewal
  - ❑ *Safety* – prevent or reduce the severity of highway crashes
  - ❑ *Reliability* – preventing and reducing the impact of nonrecurring congestion
  - ❑ **Capacity** – develop approaches and tools for systematically integrating environmental ... into the analysis, planning , and design of new highway capacity
- ❑ ADOT’s grant was based on focus area “**Capacity**” and SHRP2 research report S2-C19-RR-1, *Expedited Planning and Environmental Review on Highway Projects ( Report C19)*
- ❑ The report identified 24 strategies for addressing 16 common constraints to speed up delivery of transportation projects.

SHRP2 SOLUTIONS | 55

SHRP2 research program Common constraints

C1 - Avoiding policy decisions through continual analysis

C2 – Conflicting resource values

C3 – Difficulty agreeing on impacts and mitigations

C4 – Inability to maintain agreement

C5 – Ineffective internal communication

C6 – Inefficient Section 106 consultation with SHPO

C7 – Inordinate focus on single issue

C8 – Insufficient Public Engagement or support

C9 – Issues arising late, causing project change

C10- Lack of dedicated staff

C11 – Lengthy review and revision cycles

C12 – negative or critical coverage from media

C13 – Relocation process delays construction

C14 – Slow decision making

C15 – Stakeholder controversy and opposition

C16 – Unusually large scale of and/or complex project or program

## Purpose of ADOT 's SHRP2 Grant

- ❑ ADOT's grant was based on two constraints outlined in Report C19:
  - ❑ Constraint 16 – ***“unusually large scale and complex program”***
    - The LPA FAHP is a large scale and complex program
  - ❑ Constraint 5 – **“ineffective internal communication”**
    - Ineffective internal and external communication impacts the delivery of the LPA FAHP
- ❑ ADOT's purpose of the grant was to provide an additional tool in expediting LPA project delivery.
- ❑ Time lost with project basics = time lost on environmental

C16 - The ADOT LPA Program involves numerous personal and ADOT staff in its delivery. The program efficiency would greatly benefit from expedited planning and environmental review of projects.

C5 - Ineffective internal and external communication and collaboration amongst the different LPAs and ADOT functions impacts the delivery of the LPA program.

## SHRP2 Grant Implementation

- **July 2014** – ADOT and FHWA organized an Assessment Workshop discussing *Expediting Project Delivery*
  - Attendees : ADOT staff, LPA PMs, FHWA staff
  - Identified: Strengths, Challenges and Opportunities of LPA Project Delivery at ADOT
- **November 2014** – ADOT developed an Action Plan to implement SHRP2 for *Expediting Project Delivery*
  - Included summary of challenges and opportunities identified in the workshop, proposed work steps and management team
- **February 2015 – 2016** – Joint Management Team was formed, procure consultant services, identify current ADOT policies , processes, conduct interview, research, develop work product – **Quick Reference Guide**

## Identification of issues

- ADOT LPA Section has developed the **Local Public Agency Project Manual** which provides information and guidance for FAHP delivery
- The LPA Project Manual is a large on line document
- Staff involved on the project sometimes is unaware of the overall process; they work in segments.
- Common questions : What is the first step? What is next? Who should I contact? Who is responsible?
- Inadequate internal and external communication
- Many questions go to the last person worked with:
  - Can the LPA consultant communicate with ADOT directly?
  - The technical specialist needs more information from the consultant. The consultant in turn submits a task mod to the LPA. The work on the project stops until the funds are available !!!

## Goal of the QRG

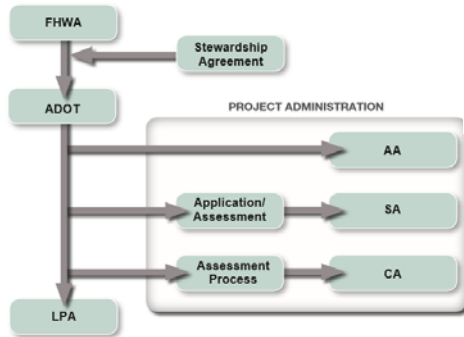
- ❑ The **Quick Reference Guidance (QRG)** was developed to present simplified strategies of the project development process.
- ❑ The **QRG** is an additional tool in expediting LPA project delivery , in particular the environmental review.
- ❑ The **QRG** quickly conveys key point of the ADOT Local Public Agency Projects Manual.
- ❑ The **QRG** serves the LPA PMs, ADOT PMs, consultants, and everyone involved in the LPA projects.
- ❑ Throughout the **QRG** responsible parties are identified with different colors.
- ❑ Throughout the **QRG** communication and coordination between all the players is emphasized.



## Delegation Authority for LPA projects

- ❑ The **QRG** identifies the flow of the delegation authority.
- ❑ ADOT delegates administration of FAHP either through Self – Administration Agreement ( SA) or Certification Acceptance Agreement (CA).

### DELEGATION OF AUTHORITY

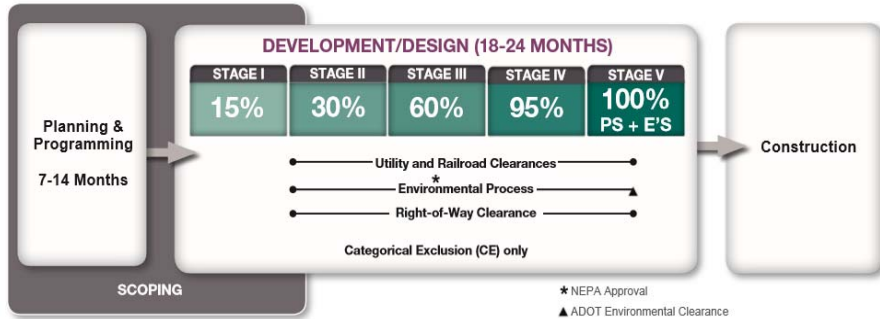


**KEY POINT:** There is no delegation of NEPA approval (Categorical Evaluations (CEs)) from FHWA to the LPA. FHWA delegates that authority only to ADOT for certain NEPA approvals (CEs).



# Overview- ADOT Project Development Process

□ The **QRG** presents an overview of the anticipated timelines for the project development process including NEPA Approval and ADOT Environmental Clearance.



## NEPA Approval and ADOT Environmental Clearance

- The **QRG** clarifies the definitions and actions involved with the NEPA Approval and ADOT Environmental Clearance

### **NEPA APPROVAL AND ADOT ENVIRONMENTAL CLEARANCE:**

**NEPA Approval** and the **ADOT Environmental Clearance** for final approval of environmental actions are separate approval steps.

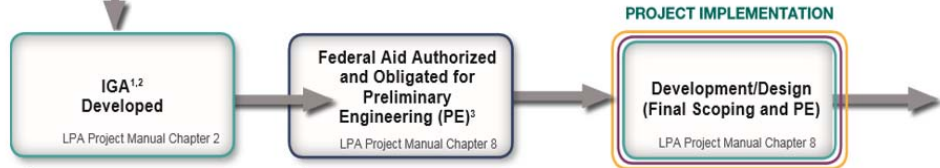
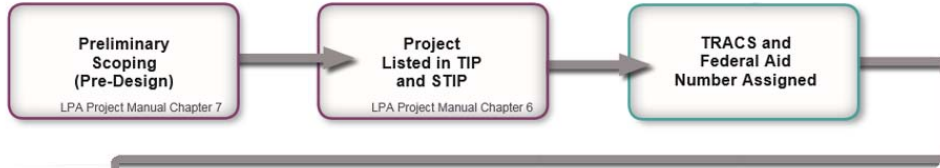
**NEPA Approval** is the completion of the federal NEPA process as indicated by the approval of a CE, Environmental Assessment (EA), or Environmental Impact Statement (EIS). The NEPA Approval date is also the date after which FHWA can authorize right-of-way (ROW) acquisition and construction funding.

**ADOT Environmental Clearance** is an internal ADOT approval document sent from Environmental Planning to ADOT Contracts and Specifications Section for an ADOT construction administered project, to certify that the environmental process and documentation is complete, has been approved by the responsible agencies, and that the project is ready to advertise for bid.

The Environmental Clearance can be issued concurrently or after the NEPA Approval date.

# Initiating ADOT Administered LPA project Existing process

## PLANNING AND PROGRAMMING



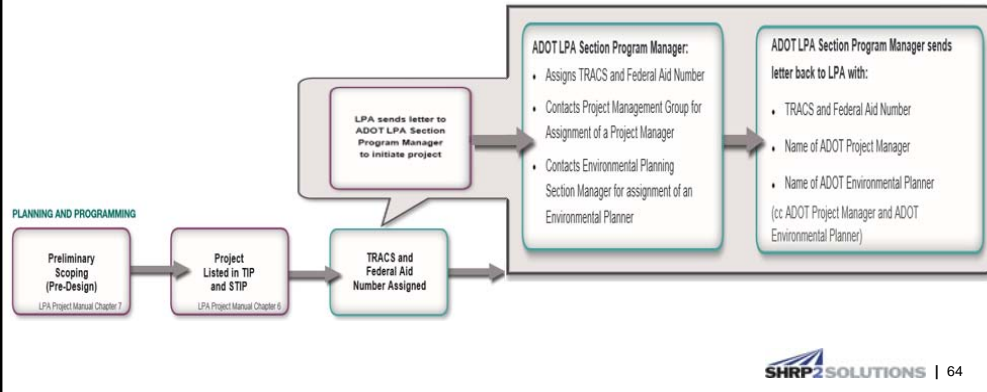
<sup>1</sup> IGA = Intergovernmental Agreement

<sup>2</sup> LPA that is CA operates under CA Agreement

<sup>3</sup> LPAs can self fund the PE and require Federal-aid for construction

# Initiating ADOT Administered LPA project New process

- The **ORG** introduces a **New Step** in the process:
  - Notification of ADOT Environmental Planning of the project initiation and identification of the ADOT Environmental Planner.



# ADOT IGA and Consultant Procurement

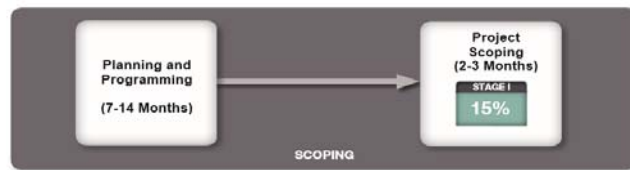
- The **QRG** highlights that consultant procurement is dependent on the type of project administration
- The **QRG** introduces a **New Step** in the process: ADOT Environmental Planner can review the consultant proposal



**KEY POINT:** In addition to the ADOT PM and LPA PM, ADOT Environmental Planners can review proposals from an environmental perspective. Though not required, LPAs that are CA and SA can send their project's scope of work to ADOT Environmental Planning for review to ensure that it is not under or over-scoped.

## Assistance During Scoping Phase

- ❑ The **QRG** stresses that ADOT Environmental Planning involvement in LPA projects **can begin as early as preliminary scoping** during planning and programming phase.
- ❑ ADOT encourages LPAs to conduct preliminary scoping early and as thoroughly as possible to evaluate cost estimates before the projects are included in a TIP to ensure that sufficient funding is secured.
- ❑ ADOT Environmental Planning can be contacted during scoping pre-TIP and post-TIP to provide assistance on NEPA requirements.

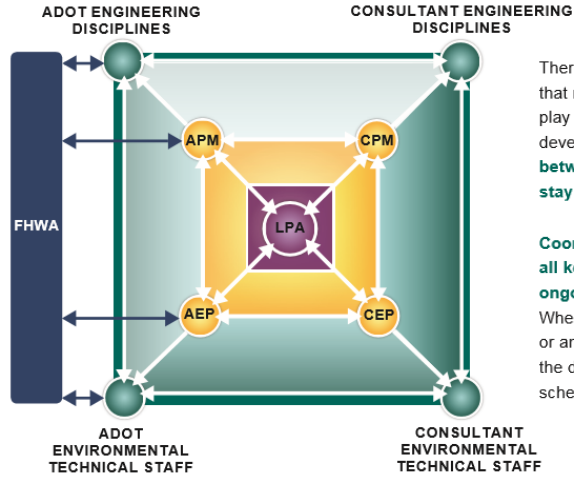


## Assistance During Development Phase



- Preliminary Engineering, the environmental process, and NEPA approval occur within the Development/Design Phase
- Various environmental analysis may be required and coordination between disciplines is essential.
- Identifying and managing the project critical path, meaning accounting for the “other environmental laws” such as NHPA, ESA, CWA, Section 4(f), is also essential, because these typically dictate the environmental component of a project schedule.

# Coordination and Communication



There are many different stakeholders that make up the project team, and each play a key role throughout the LPA project development process. **Communication between all players is essential in order to stay on schedule and within budget.**

**Coordination and communication between all key players should be constant and ongoing throughout project development.** When a project requires a change of scope or an environmental issue arises, notify the design team. These issues may affect schedule, budget, and/or scope.



## Coordination, Communication, Documentation, QA/QC

- ❑ The **QRG** introduces a **New Step** in the process:
  - ❑ Creating a communication protocol upfront for all projects, so all team members know the communication chain.
- ❑ The **QRG** lays out the steps to be taken when communication breakdown occurs.
- ❑ The **QRG** emphasizes the importance of record keeping and documentation through out the project development process.
- ❑ LPAs and consultants are encouraged to consult the ADOT Environmental Planning Quality Control Plan.  
<http://azdot.gov/business/environmental-planning/additional-resources>
- ❑ The approach to project should always be to keep quality in mind from the beginning.

FHWA decisions on LPA projects are communicated by the ADOT Environmental Planner assigned to the project.

The QRG emphasizes the importance of record keeping and documentation through out the project development process. NEPA is a process-based law, and it is crucial that documentation of the activities and decision-making is complete.

## Summary

- ❑ The SHRP2 identified constraints in expedited project delivery
- ❑ ADOT challenge – expediting environmental review
- ❑ ADOT SHRP2 project team took an holistic approach to the solution – Creating the **QRG**
- ❑ QRG - to improve all project components to deliver expedited environmental review for LPA program by:
  - ❑ providing an additional tool in expediting LPA project delivery.
  - ❑ simplifying strategies of the project development process

## Contact Information

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### Contacts:

ADOT LPA Section

<http://azdot.gov/business/programs-and-partnerships/LocalPublicAgency/contact-us>

ADOT Project Management Services

<http://azdot.gov/business/ManagementServices/ProjectManagementGroup/contact-us>

ADOT Environmental Planning

<http://azdot.gov/business/environmental-planning/contact-us>



**SHRP2 C19, *Expediting Project Delivery***  
**Accelerated Bridge Program, Vermont Agency of Transportation**

Presented By: Jennifer Fitch, P.E., VTrans  
Aaron Guyette, P.E., VHB



**Accelerated  
Bridge  
Program**  
VTRANS

## Presentation Outline

- Origins of the ABP
- Overview of Structures Organization
  - Project Initiation and Innovation Team (PIIT)
  - Accelerated Bridge Program (ABP)
- C19 Timeline: Past, Present, and Future
- C19 Key Strategies and Outcomes
- Future Action Items
- Three Years of Proven Performance



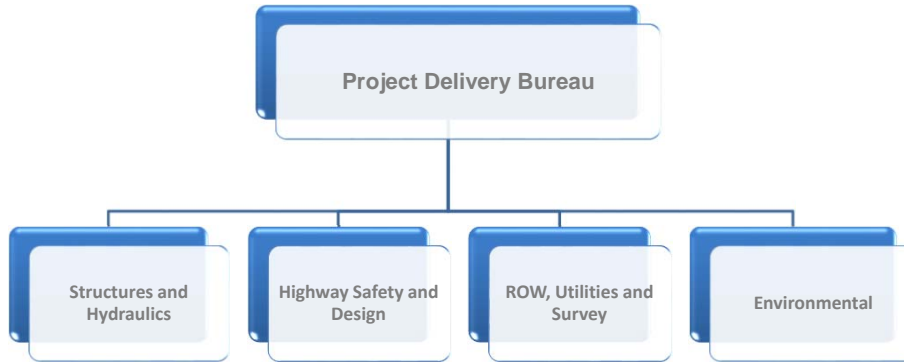


## Origins of the Accelerated Bridge Program

Minimizing Impacts to Expedite Project Delivery



## PDB Organizational Chart



## Setting the Stage for Expediting Project Delivery

- Significant increase in funding allocated to the Bridge program
  - 2009 American Recovery and Reinvestment Act
- Aging population necessitates replacement
- Tropical Storm Irene
- Legacy Projects







## Structures Reorganization

Dedicating Staff and Cultivating Proficiency



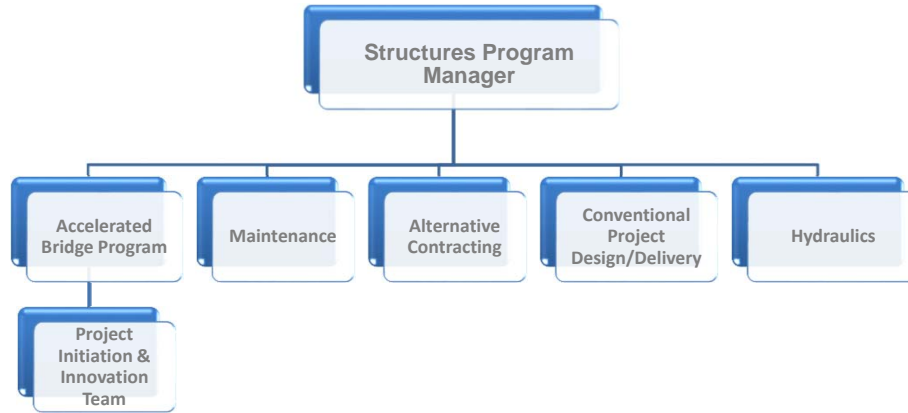
**Accelerated  
Bridge  
Program**

## Structures Reorganization

- The Structures Section reorganized in 2012 to streamline project delivery
  - Project Initiation and Innovation Team (PIIT)
  - Accelerated Bridge Program (ABP)



# Structures Organizational Chart



## Project Initiation & Innovation Team (Scoping)

- All bridge projects start here
  - Full Replacement
  - Rehabilitation
  - Major Maintenance
    - Painting
    - Membrane and Paving
    - Deck Patching
- Approximately 20-30 projects initiated and scoped per year
- Large investment in early public outreach and consensus building



## Accelerated Bridge Program (ABP)

- Initiated and endorsed by Secretary Searles in January 2012
- Programmatic approach to accelerating projects
  - Minimize Project Impacts
  - Short Term Road Closures
  - Utilize Prefabricated Bridge Elements and Systems (PBES)
- Jump Started – Tropical Storm Irene – 14 Bridge Replacement projects delivered within 24 months
- 24 month performance goal from project defined to procurement (80% to meet 24 months)



## Challenges and Opportunities

- Program not yet ingrained in the Agency's organization
- Struggling with resource allocation to meet the 24 month development schedule
- Managing Internal and External Stakeholder and Customer Expectations
- Need to document successful approaches to expediting project delivery





SHRP2 C19 Timeline: Past, Present and Future  
Leveraging Strategies to Remove Impediments and  
Deliver Projects



## SHRP2 C19 Background

- In 2012, SHRP2 published a report entitled, "Expedited Planning and Environmental Review of Highway Projects."
- In October 2013, VTrans was selected as a recipient of the SHRP2 C19 grant.
- These funds were used to develop an action plan that identifies, describes, and evaluates the leading constraints to expediting project delivery and strategies to overcome these barriers.





## C19 Desired Outcomes

- Evaluate risks to timely project delivery
- Identify opportunities to expediting projects with special emphasis on the strategies described in the *Expediting Project Delivery* report
- Identify resource demands for the ABP and how this may differ from conventional project delivery
- Analyze the VTrans organizational structure for opportunities for increased efficiencies
- Identify potential process improvements
- Build relationships with internal and external partners



## 5 Key Strategies for Expediting Project Delivery

- Strategy 3: Context Sensitive Design/Solutions (Objective: Improve public involvement and support)
- Strategy 8: Expediting Internal Review and Decision-Making (Objective: Streamline decision-making)
- Strategy 10: Highly Responsive Public Engagement (Objective: Improve public involvement and support)
- Strategy 21: Strategic Oversight and Readiness Assessment (Objective: Improve internal communication and coordination)
- Strategy 22: Team Co-Location (Objective: Improve internal communication and coordination)

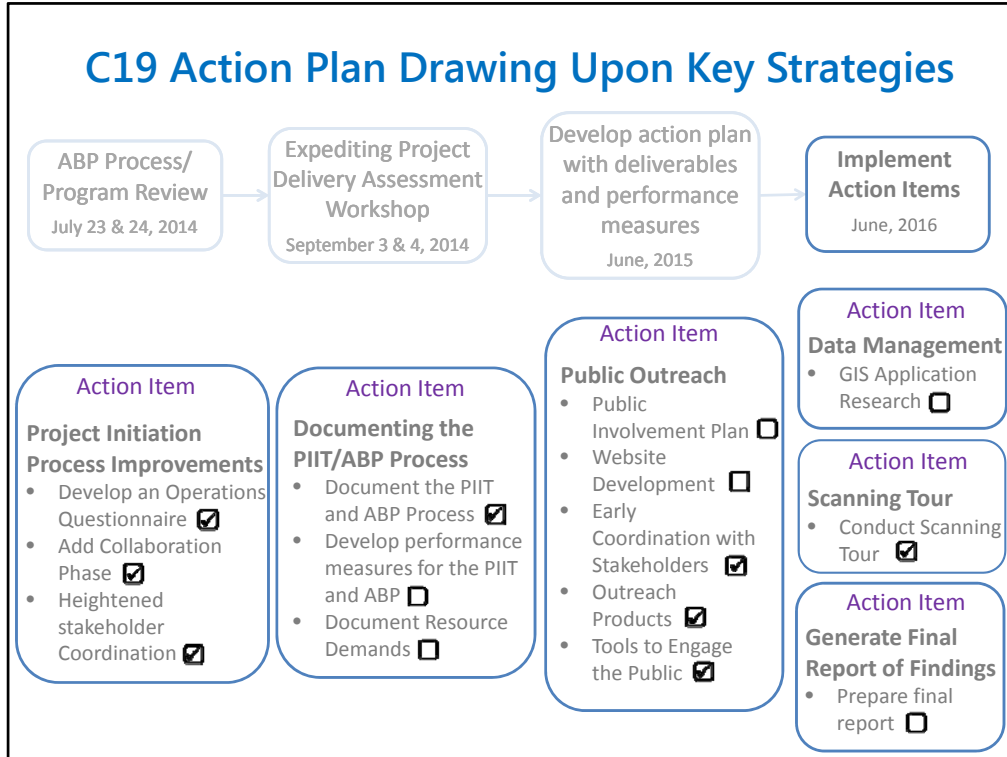


## SHRP2 C19 Timeline

- October 2013, VTrans was selected as a recipient
- July 2014, Program/Process Review
- September 2014, C19 Workshop
- June 2015, Action Plan Approved
- Summer/Fall 2015, Peer to Peer Exchanges
- Fall 2015-Present, Implement Action Items
- January 2016, External and Internal Stakeholder Interviews



## C19 Action Plan Drawing Upon Key Strategies





**C19 Key Strategies and Outcomes**  
**Focused Approach to Maximize Success**



### Strategy 3: Context Sensitive Design Solutions

- Dedicated scoping team to ensure consistency
- Community and Operations Questionnaires
- Addition of "Collaboration Phase" during project definition
- Proper Selection of selected alternatives (avoidance, minimization, and mitigation)



## Strategy 8: Expediting Internal Review and Decision Making

- Dedicated PIIT and ABP Teams
- Batching of scoping projects for resource ID
- Heightened Communication and Collaboration (**Emphasizing Partnerships**)
  - Collaboration Phase during Project Definition
  - Team Meetings
  - Construability Review Meetings
  - Pre-closure Contractor Meeting
- Concurrent Activities and Decision Tree



## Strategy 10: Highly Responsive Public Engagement

- Providing Financial Incentives on TH Projects (ACT 153)
- Public Meetings throughout the life of the project
- Effective Public Engagement
  - Audience Response Systems
- Public Involvement Plans
- Project Outreach Coordinators
- Customer Satisfaction Surveys





## Strategy 21: Strategic Oversight and Readiness Assessment

- Creating a Culture that Values Innovation
- Strong and Effective Project Management
- Developing Key Planning Documents
  - Traffic Management Plans
  - Public Involvement Plans
  - Risk Registry
  - Credible Schedules and Spending Profiles
- Standardized Design Details and Special Provisions for ABC



## Strategy 22: Team Co-Location

- Resource Groups Housed Together
- Dedicated Utility Relocation Specialists
- Project Development Team Meetings
- Constructability Review Meetings





## Future Action Items

Setting the Stage for  
Continuous Process Improvements



## Our C19 Journey Has Just Begun

- Numerous Takeaways from the Program/Process Review, Peer to Peer Exchanges, and Stakeholder Interviews
- Peer Exchanges with MassDOT, NYSDOT and MaineDOT
  - Diverse Group from VTrans in Attendance
  - Program Overviews
  - Accelerated Program Emphasis Areas
  - Shared New Initiatives, Innovations, and Lessons Learned
  - Takeaways



## Our C19 Journey Has Just Begun

- Explore Enhancements in the PIIT process
  - Leverage expertise in VTrans to help refine recommended alternatives
  - Develop truncated scoping report for Preventative Maintenance and Emergency Projects
  - Explore effective methods to engage upper lever management on high risk and high cost projects
  - Develop prescreening GIS tool for resource ID



## Our C19 Journey Has Just Begun

- Expand the Use of Alternative Contracting Methods
  - Best Value, Detail-Build, and Proposal Only
- Expediting ROW Acquisition
  - Modify project schedule to meet with property owners during preliminary plan development
  - Use “Block Out Approach” and begin “Plans and Titles” during preliminary plan development
- Explore Strategies for timely delivery of Utility Relocation
  - Consider integrating relocation order through the contract and make it the contractors responsibility



## Our C19 Journey Has Just Begun

- Strengthen Partnerships with Construction
  - Develop construction expertise in ABC
  - Assign resident engineer during design
  - Seek approval from Construction on the design construction schedule prior to PS&E
  - Augment Construction Staff with Structures Design Staff
  - Embed Construction Staff in the Structures Program during winter months
  - Establish effective feedback loop of lessons learned
  - Consider the timing and sequencing of bridge closures



## Our C19 Journey Has Just Begun

- Effective and Clear Traffic Management
  - Determine how to integrate portions of the TMP into the contract plans and special provisions
  - Establish protocol and approval process for closing roads
  - Create or utilize existing tools to determine if there are any conflicts with other ongoing construction projects
  - Develop FAQs for road closures on TH projects





## Our C19 Journey Has Just Begun

- Effective and Clear Traffic Management
  - Determine how to integrate portions of the TMP into the contract plans and special provisions
  - Establish protocol and approval process for closing roads
  - Create or utilize existing tools to determine if there are any conflicts with other ongoing construction projects
  - Develop FAQs for road closures on TH projects



## Our C19 Journey Has Just Begun

- Enhanced Quality and Customer Service
  - Develop Plan Quality Certification
  - Consider pairing new consultant with seasoned designer
  - Develop and disseminate quality surveys for bidders following project award
  - Consider Local Advisory Committees for projects with significant public interest
  - Consider holding Regional Concerns Meetings for Interstate projects during TAC meetings





## Accelerated Bridge Program

Three Years of Proven Performance



**Accelerated  
Bridge  
Program**  
VTRANS

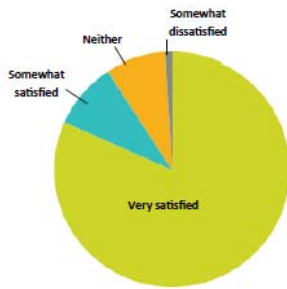
## ABP by the Numbers

- 22 projects have been delivered through 2014
- 6 are under construction this summer
- The 28 projects represent \$55 million in construction costs
- Another 10 ABP projects will be delivered in 2017



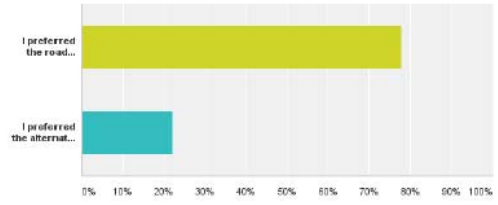
**Q8** The Stowe VT 108 Bridge Project used an innovative construction method called Accelerated Bridge Construction, which uses prefabricated bridge elements and road closures to reduce onsite construction time. Conventional construction typically uses temporary bridges and takes one to two years to complete. How satisfied were you with the Accelerated Bridge Construction?

Answered: 189 Skipped: 6



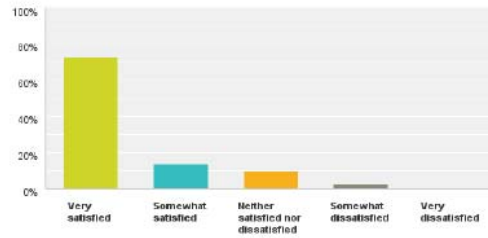
**Q9** How would you rate your level of satisfaction with the road closure compared to alternating one-way traffic following the bridge closure period?

Answered: 188 Skipped: 7



**Q12** Overall, how satisfied were you with how VTrans delivered this project?

Answered: 188 Skipped: 7





**SHRP2 C19, *Expediting Project Delivery***  
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Aaron Guyette, P.E., VHB



**Accelerated  
Bridge  
Program**  
VTRANS

Panel: Questions and Answers



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Thank you!

# Session 2 Slides



**SHRP2 SOLUTIONS**  
TOOLS FOR THE ROAD AHEAD

## SHRP2 Solutions: C19 Expediting Project Delivery Session 2

Kate Kurgan, AASHTO  
Damaris Santiago, FHWA



 U.S. Department of Transportation  
Federal Highway Administration

 AMERICAN ASSOCIATION  
OF STATE HIGHWAY AND  
TRANSPORTATION OFFICIALS  
**AASHTO**

Thank you for the opportunity for AASHTO and FHWA to co-host these two morning sessions today. I'm Kate Kurgan and am excited to share with you a little about the SHRP2 program. My counterpart at FHWA, Damaris Santiago, will also provide some specific information for you on the product that this the focus of our session today, C19 – Expediting Project Delivery.

After that, we have 3 presenters here to share with you the results of their Expediting Project Delivery projects. We plan to hold all questions until after all of the presentations have been completed. We will hold a panel discussion after the presentations to answer all of your questions.

## SHRP2 at a Glance

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



Last year, there was a new initiative that was launched, called SHRP2 Education Connection.

This opportunity is designed to introduce SHRP2's proven innovations and technologies to the next generation of transportation professionals encouraging academia to incorporate SHRP2 Solutions into transportation coursework—and bringing SHRP2 products into the classroom.

## Focus Areas



**Safety:** fostering safer driving through analysis of driver, roadway, and vehicle factors in crashes, near crashes, and ordinary driving



**Reliability:** reducing congestion and creating more predictable travel times through better operations



**Capacity:** planning and designing a highway system that offers minimum disruption and meets the environmental and economic needs of the community



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

Again these are the four focus areas of SHRP2.

Capacity – In another SHRP2 session later this afternoon you will have the opportunity to hear a little more about Eco-Logical and Plan works.

## SHRP2 Implementation Assistance Program

- **Round 7:**
  - 13 products or bundles of products
  - 1 capacity; 3 reliability; 9 renewal products
- **42 recipients** just announced in June 2016
  - **37 state DOTs**
  - **4 MPOs**
  - **1 Federal Lands Highway**
- **79 projects in 37 states**

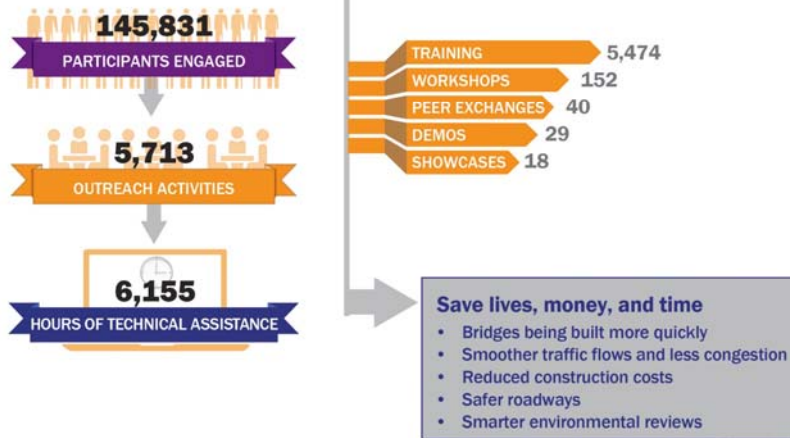


SHRP2SOLUTIONS | 4

In round 7 as I mentioned earlier, there were 42 recipients, including 37 state DOTs, 4 MPOs, and 2 Federal Lands Highway project received awards. 79 projects in 37 states will soon get underway.

## SHRP2 Implementation: Moving Us Forward

As of November 2015:



As of November 2015, approximately 5,700 outreach activities have been launched, and have engaged more than 145,000 participants in trainings, workshops, peer exchanges, demos, and showcases.

In addition, more than 6,100 hours of technical assistance have been provided to ensure those who implement SHRP2 Solutions have the support they need to advance these innovations into industry practice.

## 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.**

SHRP2 SOLUTIONS | 6

- First, *Expediting Project Delivery* identifies 24 strategies for addressing or avoiding 16 common constraints in order to speed delivery of transportation projects. The 16 common constraints are:
  1. Avoiding Policy Decisions Through Continual Analysis
  2. Conflicting Resource Values
  3. Difficulty Agreeing on Impacts and Mitigation
  4. Inability to Maintain Agreement
  5. Ineffective Internal Communication
  6. Inefficient Section 106 Consultation With State Historic Preservation Officer
  7. Inordinate Focus on Single Issue
  8. Insufficient Public Engagement or Support
  9. Issues Arising Late Cause Project Change
  10. Lack of Dedicated Staff
  11. Lengthy Review and Revision Cycles
  12. Negative or Critical Coverage from the Media
  13. Relocation Process Delays Construction
  14. Slow Decision Making



15. Stakeholder Controversy and Opposition

16. Unusually Large Scale of and/or Complex Project or Program

- Within *Expediting Project Delivery*, the strategies are grouped under six objectives:

**1. Improve internal communication and coordination:** Strategies that address a lack of communication, unclear protocols, and unclear roles and responsibilities.

**2. Streamline decision-making:** Strategies to support effective and timely decision-making that maintains project timeframes and avoids later re-evaluations.

**3. Improve resource agency involvement and collaboration:** Strategies that provide ways to build trust and constructive collaboration among transportation and resource and regulatory agencies in order to avoid or minimize unforeseen impacts.

**4. Improve public involvement and support:** Strategies to address the potential for public opposition or controversy, which commonly delay projects.

**5. Demonstrate real commitment to the project:** Strategies to garner support among stakeholders through demonstrations of financial, political, and staffing commitments.

**6. Coordinate work across phases of project delivery:** Strategies to ensure that data, decisions, documentation, and findings from earlier phases are advanced into later phases in order to avoid redundant analysis and decision-making.

- Let's now talk about a few other key features of *Expediting Project Delivery*.

# Expediting Project Delivery

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

- This table (see Table 3.1 in the SHRP2 Report S2-C19-RR-1) shows all 24 strategies and how each are connected (directly or conditionally) to five key stages of project planning or delivery: (a) Early Planning; (b) Corridor Planning; (c) NEPA; (d) Design/Right-of-Way/Permitting; and (e) Construction. The fully-shaded circles show direct applicability, while the unshaded circles show conditional applicability.
- We will next briefly summarize each of these 24 strategies.

## For More Information

### **Kate Kurgan**

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### **Damaris Santiago**

Environmental Protection  
Specialist, FHWA  
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### **Additional Resources:**

**GoSHRP2** [fhwa.dot.gov/GoSHRP2](http://fhwa.dot.gov/GoSHRP2)  
**Website:**

**AASHTO SHRP2** <http://shrp2.transportation.org>  
**Website:**

**GoSHRP2** [fhwa.dot.gov/goshrp2/contact](http://fhwa.dot.gov/goshrp2/contact)  
**Alert Sign Up:**

**Email:** [GoSHRP2@dot.gov](mailto:GoSHRP2@dot.gov)



For additional information, please feel free to reach out to me. I also encourage you to visit FHWA's GoSHRP2 website and AASHTO's SHRP2 website, where you can find technical information about the products. In particular, the AASHTO site has quite a bit of detail on the products, from the tools and processes needed to implement the products, to presentations, case studies, and which states are engaged in working to implement a specific strategy.

Both sites offer a variety of helpful resources including fact sheets, videos, and links to product research.

## Session 2 Presentations

- Massachusetts DOT – Jose Simo: MassDOT's Roads & Highways GIS system
- Arkansas State Highway and Transportation Department - Elisha Wright-Kehner: Development of an improved process for project delivery
- Florida DOT – Steve Braun: Implementing streamlining recommendations to improve project delivery process
- Panel: Question and Answers

## MaPPS Tool What is it?

MassDOT Project Planning System is a planning phase tool with environmental and safety screening function, to improve agency project coordination and expedite project delivery

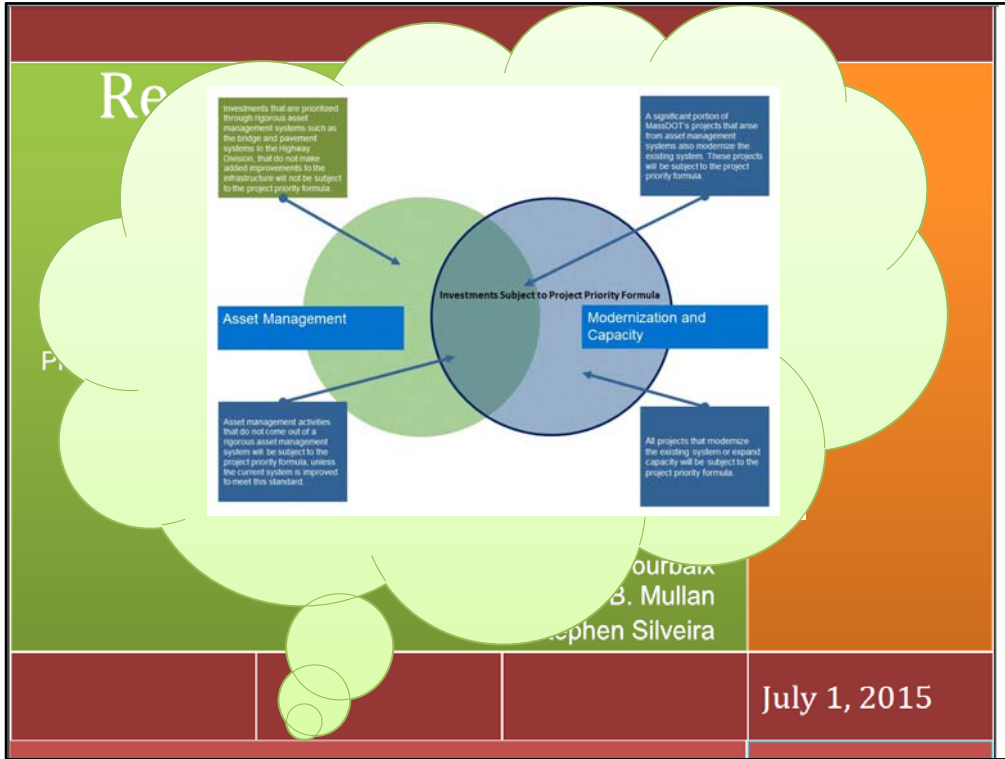
### Every Day Counts 2

- Agency & Business Process Implementation Teams

### Strategic Highway Research Program 2

- Funding & FHWA Implementation Assistance





## Complex Processes



So do you have any business processes that could be modeled like this?

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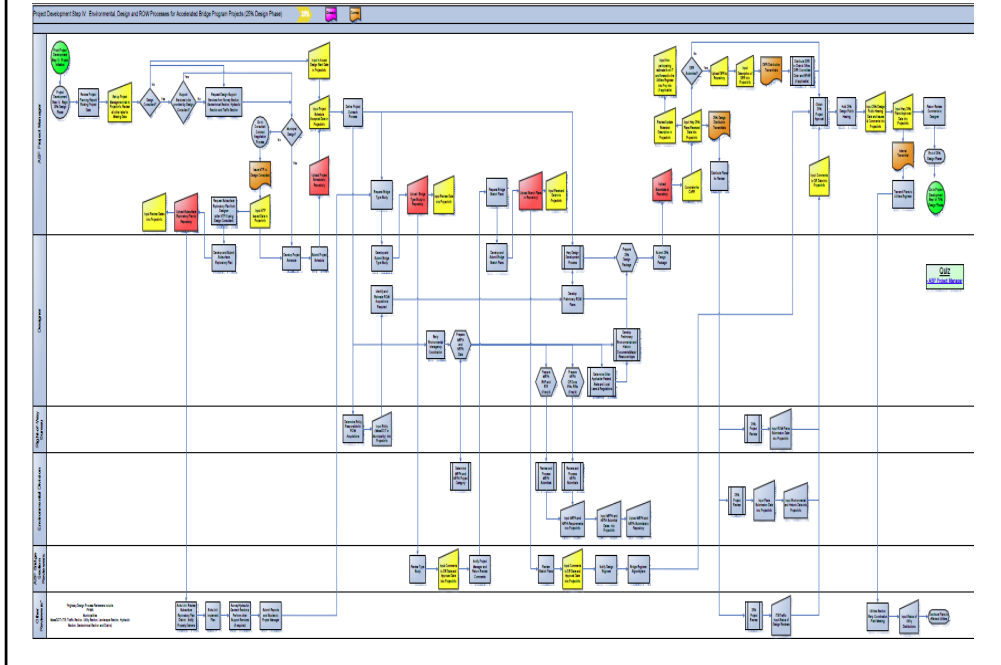
With the platform in place, every organization is equipped to deploy tools to support complex business processes.

Instead of building complicated and custom systems, break down the processes into components and align those components with location aware apps. These apps are targeted to stakeholder groups or even individuals. They are simple to use and relevant. Just like the app on our smartphone, people should be able to access them and use them. Minimal training or reading of a manual required.

But we don't end up with a bunch of disconnected apps. All of them are integrated through a GIS platform to the system of record. Each of these apps keeps the system of record updated with accurate and current data.

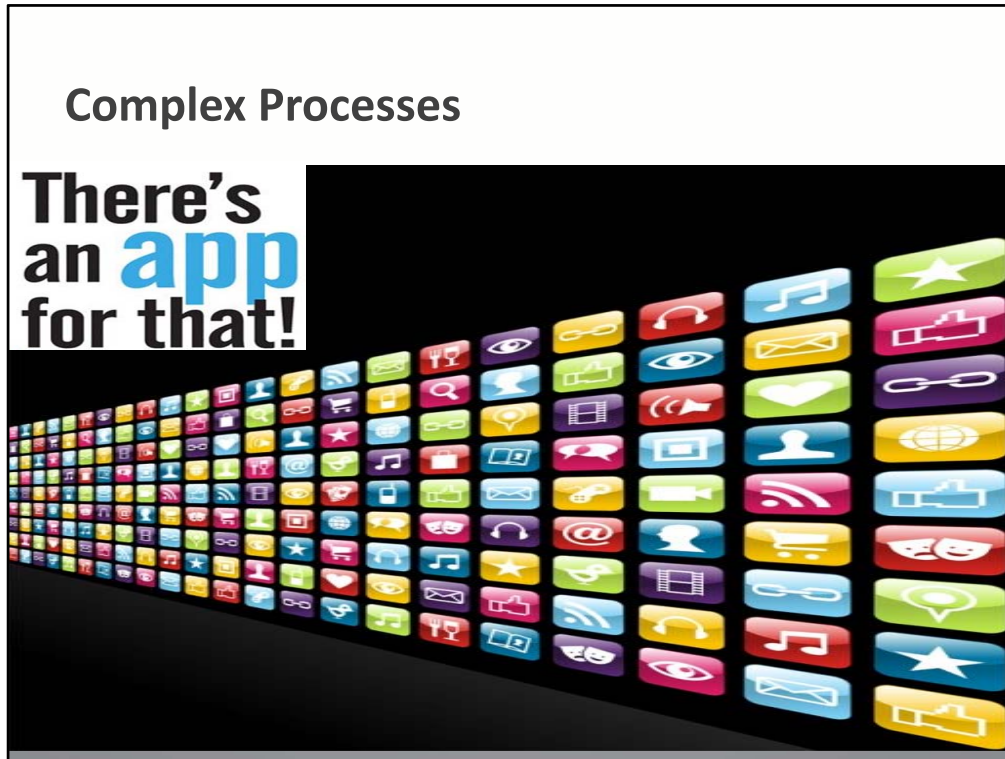
MaPPS is the first of many examples of this approach

# Project Development Step IV: Environmental, Design ...









So do you have any business processes that could be modeled like this?

<down arrow>

With the platform in place, every organization is equipped to deploy tools to support complex business processes.

Instead of building complicated and custom systems, break down the processes into components and align those components with location aware apps. These apps are targeted to stakeholder groups or even individuals. They are simple to use and relevant. Just like the app on our smartphone, people should be able to access them and use them. Minimal training or reading of a manual required.

But we don't end up with a bunch of disconnected apps. All of them are integrated through a GIS platform to the system of record. Each of these apps keeps the system of record updated with accurate and current data.

MaPPS is the first of many examples of this approach

## Location Aware Apps

Tightly integrated and designed to work together



Let me build on this concept for a moment

Are you able to find the restaurants within a 5 mile radius of where we are at right now and get information such as cuisine, dress code, and customer ratings? OK, I can too. I have an app called “around me”. It is a “location aware” app. It provides me with information by analyzing location data, where I am at and where the restaurant is at.

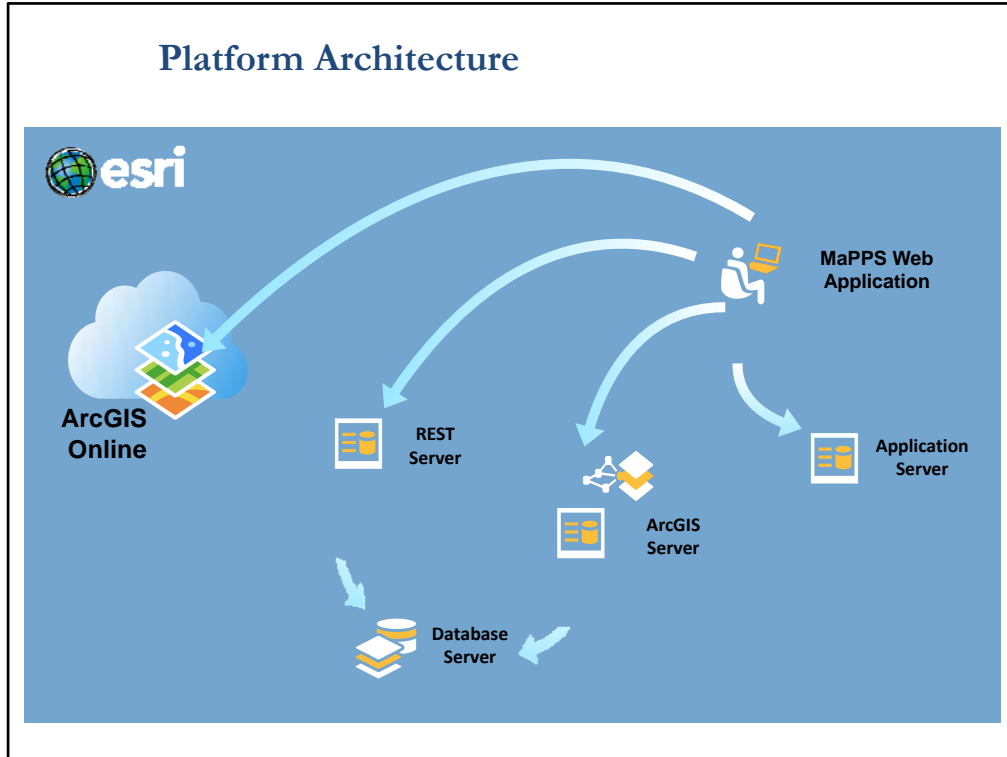
You have location aware applications today, like RideDC

But let’s take it to another level. How about standing on at the intersection of South Capitol and M and pulling up the posted speed limit, upcoming projects occurring close by, information on assets close by such as signs, street lamps,

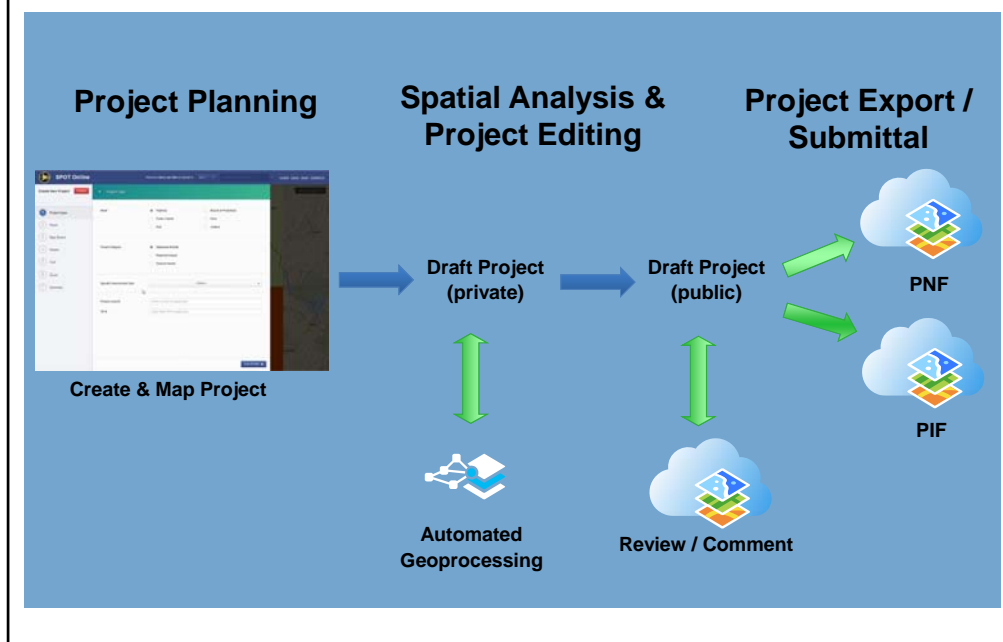
Ok, let’s take the mobile device aspect out of it for a moment. Can you sit at your desk and point to road section on a map and immediately see information related to that section such as the Pothole reports, latest LIDAR and imagery, Data, crashes, congestion data, the nearest snowplow, the IRI or maybe information about the demographics of residents within a 5 mile radius?

These too are location aware applications that I am asking you about. These are the types of things you can do with a location platform

## Platform Architecture



## Workflow Overview



# Login Page

MassDOT Project Planning System (v1.13)

My Projects

MassDOT Project Planning System

username

password

→

Disclaimer:  
The MassDOT Project Planning System (MaPPS) is a Geographic Information System (GIS) and project development tool for online project planning, assessment, analysis, reporting and collaboration. The system is licensed to provide a user-friendly, web-based environment for publishing Project Development and Project Initiation Forms, mapping project limits, storing project data internally within MassDOT and externally with various systems, and for generating various project information. MaPPS was developed in collaboration with the Federal Highway Administration through the Second Strategic Highway Research Program (SHRP2) project Supporting Project Delivery (C10) and the Every Day Counts 2 (EDC2) initiative under Geographic Data Collaboration.

About Us

Edit Delete Export Reports Comments Changes

Move mouse to get coordinates

MaPPS | MassDOT



# Project Description

MassDOT Project Planning System

Create Project Cancel

- 1 Project Type  
Project Need & Initiation
- 2 Project Description**
- 3 Sketching
- 4 Cost Processing
- 5 Project Need Form (PMF)
- 6 Project Initiation Form (PIF)
- 7 Report

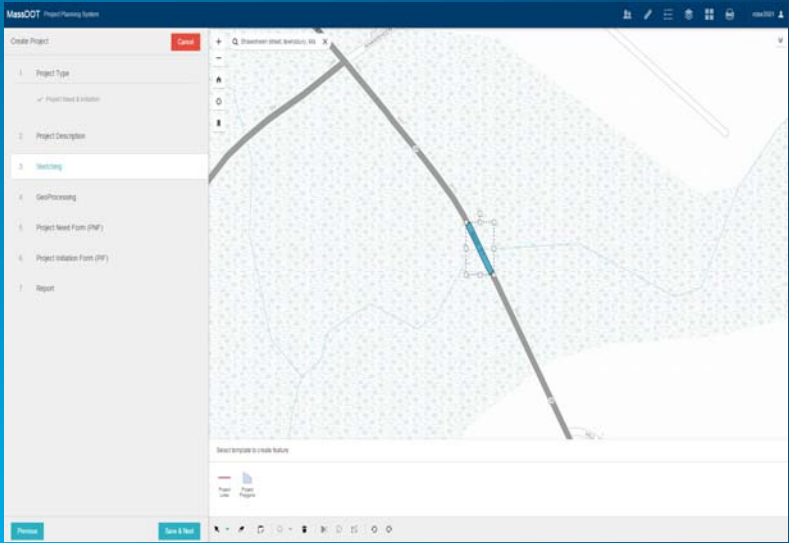
Previous Save & Next

Project Name	Bridge Replacement Route 30
Proposer	Tim Decker
Title	Environmental Analyst
Municipality / Organization	MassDOT
Company	Tim Decker
Title	Environmental Analyst
Phone	(857) 368-6714
Email	timothy.decker@state.ma.us
Date	3/5/2015

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# Project Sketching



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# Geoprocessing: Running

The screenshot displays the 'MassDOT Project Planning System' interface. On the left, a sidebar lists project stages: 1. Project Type, 2. Project Description, 3. Sketching, 4. Geoprocessing (selected), 5. Project Need Form (PMF), 6. Project Initiation Form (PIF), and 7. Report. The main content area is titled '4 Geoprocessing' and features a 'Run Geoprocessing' button. Below the button, a list of geoprocessing tasks is shown, including 'Executing Geoprocessing Tool: Top Wetlands (2011-2012) - 000001341411', 'Executing Flow Tool', and 'Executing Geoprocessing Tool: Top Wetlands (2011-2012) - 000001341411'. Each task is followed by a status message, such as 'No interaction found with Top Wetlands (2011-2012) - 000001341411' or 'No interaction found with Wetlands (2011-2012) - 000001341411'. At the bottom of the main area, there are 'Previous' and 'Save & Next' buttons.

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# Project Initiation Form (PIF)

The screenshot displays the MASSDOT Project Planning System interface. On the left, a sidebar titled 'Create Project' contains a list of steps: 1. Project Type, 2. Project Description, 3. Sketching, 4. Cost/Processing, 5. Project Need Form (PNF), 6. Project Initiation Form (PIF) (highlighted), and 7. Report. A 'Cancel' button is located at the top right of the sidebar. The main content area is titled 'Project Initiation Form (PIF)' and 'MASSDOT - HIGHWAY DIVISION'. It includes a 'Project Initiation Form' header and a 'Part 1 - General Information' section. The 'Project Location' is 'Main Street (SR 36)'. The 'Project Need' section contains the text: 'Existing bridge is structurally deficient and needs superstructure and substructure replacement.' The 'Regional Benefit' section contains the text: 'The bridge is an important connect on Main Street (SR 36), which is an important arterial providing a connection from 2-405 south to Route 128 / I-95. Replacing the bridge is essential to maintaining this important corridor.' At the bottom of the form, there are 'Previous' and 'Save & Next' buttons.

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# PIF Report

PIF Page 1:  
MassDOT - Highway Division  
Project Initiation Form

Proposer: Ten Center Title: Environmental Analyst  
Municipality/Organization: MassDOT  
PIF completed by: Ten Center Title: Environmental Analyst  
Phone: (857) 368-8734 Email: broths.decker@state.ma.us  
Date: Fri Mar 26 2015 00:00:00 GMT-0800 (Pacific Standard Time)

**Part I - General Information**  
Project Location: Main Street (SR 30) over Shaheen River, Teahsburg, MA  
Project Need: Shirley restates the primary project need or goal as developed in the Project Need Form (e.g. rehabilitate a roadway, improve safety at an intersection, reduce corridor congestion, improve pedestrian facilities, or provide bike accommodations).  
Existing bridge is structurally deficient and needs superstructure and substructure replacement.  
Regional Benefit: Describe any regional benefits that would be realized should the Project Need be met.  
The bridge is an important connect on Main Street (SR 30), which is an important arterial providing a connection from I-495 south to Route 128 I-95. Replacing the bridge is essential to maintaining this important corridor.

**Part II - Project Costs and Responsibilities**  
Estimated Costs: Provide available cost estimates or estimated cost ranges in current year

Estimated Construction Costs:	Estimated Other Costs:
Construction Items:	Planning/Design:
Contingencies (10%):	Right-of-way:
Other Construction Costs (10%):	Environmental Mitigation:
<b>Total Construction Cost:</b>	<b>Total Other Costs:</b>

Anticipated Funding Program:  
Indicate all potential sources of funding that may apply to the project.

<input type="checkbox"/> STP	<input type="checkbox"/> CMAQ	<input type="checkbox"/> HSP
<input type="checkbox"/> TAP	<input type="checkbox"/> NEFP	<input type="checkbox"/> VPP
<input type="checkbox"/> MFA	<input type="checkbox"/> Other	

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## Expediting Project Delivery (C19)

July 19, 2016

Elisha Wright-Kehner, P.E.





Bringing greater collaboration  
for better, faster decisions



**Capacity Focus Area –**  
Expediting Project Delivery



## Why Expediting Project Delivery (C19)?



### **Areas of interest to:**

- Improve Public Involvement and Support
- Improve Resource Agency Involvement and Collaboration
- Demonstrate Real Commitment to the Project
- Improve Internal Communication and Coordination
- Streamline Decision Making
- Integrate Across all Phases of Project Delivery

## History in Arkansas



- Award Date - October 17, 2013
- Awarded - \$50,000
- Assessment Workshop - \$20,000



## Expediting Project Delivery – Assessment Workshop



- Facilitated by FHWA on July 30-31, 2014
- 30 Attendees
- Topics
  - Overview of the Expediting Project Delivery and the Expediting Project Delivery Assessment Tool
  - Overview of “Current State” and “Desired State” of Project Development and Delivery Processes and Practices
  - Collaboration and Coordination Challenges and Opportunities
    - ✓ “What works well?”
    - ✓ “What needs work?”

## What works well at AHTD?



- Administration Open to Change
- Recent Organizational Changes
- Creation of Preliminary Engineering Squad
- Hiring Qualified Personnel
- Open Communication
- Improved Teamwork
- Good Relationship between AHTD and FHWA
- Public Engagement

## Challenges and Opportunities



- Project Development Process Documentation
  - Personnel changes and work load
  - Project Change Communication
- Early Project Decision Making:
  - Defining the Purpose and Need
  - Project Scoping
- Local Agencies Communication
  - Need for standardization and streamline process

## Action Plan



- Developed an Action Plan in August 2014 to facilitate the activities identified in the Workshop
- Five Steps of Implementation:
  - Refine Scoping Procedure
  - Enhancing Purpose and Need Statements
  - Improving Information and Data
  - Improving Internal and External Communication and Coordination
  - Evaluating Resource Allocation

## Action Steps - 1



### Refine Scoping

- A draft project initiation form
  - Developed in coordination with internal stakeholders.
  - Expected to be complete and approved in September 2016.
- A project planning study process has been developed.
  - This documented process will help ensure consistency, accuracy, and transparency of the decision making and scoping process.
  - Planning study procedure manual. Ongoing modifications and updates.
- A data-driven, performance-based approach to better identify system needs.
  - These documented processes are being refined and updated.
- A project prioritization system has recently been implemented to assist decision makers on which projects to prioritize.
  - The methods to quantify needs and outcomes will be refined.

## Action Steps - 1



### **Refine Scoping – Project Development Form (*Draft*)**

- Form Information - Five pages
  - Project Information
  - Partnering Information
  - Project Purpose and Need
  - Scope
  - Planning Considerations/Study Findings
  - Existing Project Information
  - Existing Bridge Information
  - Proposed Improvement
  - Access/Right-of-Way/Utility
  - Environmental
  - Cost and Funding
  - Project Responsibilities
  - Map of Area

## Action Steps - 2

### **Enhance Purpose and Need Statements**

- The project planning study procedure manual will be modified and updated as needed to ensure project P&N statements are tied to the performance-based planning process.
- A data-driven, performance-based approach is being implemented to better identify system needs.
- A project prioritization system has recently been implemented to assist decision makers on which projects to prioritize.
- We conducted a NEPA and Enhanced Purpose and Need Training. Provide guide to consultants and starting communications with locals earlier in process.

Hire a new position to help with demographics. This person will work between Planning and Environmental folks.

Demographic profile for each planning study. This will help with public involvement meetings, the project itself, potential relocations and displacements.

NEPA and Enhanced Purpose and Need Training.

Locals – Work up a draft scope and then have meetings with locals to better define scope from their perspective and any further needs that were missing from the draft scope.

## Action Steps - 3

### **Improve Information Exchange and Data Sharing**

- Improve Communication/Coordination (Internal and External)
  - A comment documentation process has been recently created for planning studies.
  - This process will be modified to better document comment resolutions, thereby improving the transparency and documentation of the decision-making process.
- Improve Resource Allocation (Internal and Consultant Staff)
  - The Department's consultant selection process will be updated in the near future to allow for stream-lined process for non-engineering services.
  - Enterprise Data Committee to facilitate the incorporation of Department data.
  - Purchase of server to facilitate the enterprise warehouse.



## Action Steps - 4

### **Facilitate Communication & Coordination Training**

- Alternative Development, Purpose and Needs Statements – 40 Attendees
- Technical Writing – 50 Attendees
- Public Involvement – 18 Attendees
- NEPA and Enhanced Purpose and Need Training.

#### **Alternative Development, Purpose and Needs Statements (June/23 & 24/2015)**

This EDC initiative to implement quality environmental documentation will promote existing recommendations and current best practices to simplify and expedite the development of environmental documents, saving time and money. It will focus on ensuring that the good efforts for project purpose and need, consideration of alternatives, and impacts, are appropriately documented and effectively included in the NEPA document.

Best practices in developing and documenting purpose and need, alternatives analysis, and impacts make clear presentations in plain language using effective visual elements.

Document writers focus on information that is relevant to the project decision, keeping the document as brief as possible. The Purpose and Need should be specific and provide an understandable conceptual framework for the NEPA analysis. It supports the screening process in selecting the reasonable alternatives for further evaluation of their cost and impacts. The Purpose and Need should be the credible basis for the decision recorded in a Record of Decision or a Finding of No Significant Impact.

#### **Technical Writing (May/26-28/2015)**

This class was designed to teach business writing to engineering professionals. Using eLearning, classroom, computer-based training and online tutorials the goal is to improve each participant's ability in four crucial areas: analysis, organization, writing, and revision. The focus is on teaching the science of business writing: its methodologies, metrics, and strategies. The participants learn how to apply these skills to improve their own client communications, including proposals, reports, letters, procedures, and emails.

**Public Involvement (September/15-17/2015)**

Designed to help transportation staff become better communicators, this course is a blend of two live, web-conference training (WCT) sessions coupled with a series of self-paced web-based training (WBT) modules

This training addresses the public involvement component of transportation planning and project delivery and how to incorporate an effective communications plan into this process. The course explores how and why members of the public can develop entrenched and sometimes, inflexible emotionally-charged positions; traces the root causes of their hostilities and anger; and teaches strategies to help you and your organization gain credibility and the public's trust. Participants learn how to prepare for all types of public meetings, how to give effective presentations, how to handle hostile groups or individuals, ways to overcome frustrations and loss of control during public meetings, as well as preparing proper, post-meeting documentation.

## Action Steps - 4



### **Facilitate Communication & Coordination**

- Development of a Local Public Agency Manual
  - Completing Date of 2016-2017
- Increased the tracking and disbursement of project related information after all supplemental staff meetings.
- Still in the process of creating a line of communication for tribes, local public officials, and affected landowners to use throughout the project development process.

## Action Steps - 5

### **Evaluate resource allocation**

- Utilize the Department's Achieving Career Excellence (ACE) to assist in training on all of these new processes and procedures.
- Still developing a plan on Managing Consultant Resources.

#### Personnel Management

##### Managing Consultant Resources:

- o Develop a list of pre-approved consultants for AHTD projects and local public agency projects.
- o Implement frequent use of environmental consultants, in order to ensure that qualified consultants are available.
- o Embed consultants within the AHTD to help educate consultant staff.

## Steps Forward



- Utilize the Project Initiation Form on a pilot project .
- Buy in from all participants.
- Develop training programs on the ACE platform.
- Update the process to allow for stream-lined process for non-engineering services.
- Create an on-line format for tribes, local public officials, and affected landowners to use throughout the project development process.
- Establish a rotational program to improve coordination between all Divisions.
- Develop and implement a plan on Managing Consultant Resources.

## Overall

- Assessment Workshop Successful
- Opportunities for Improvement Identified and started to implement these improvements
- **Increased Communications**
  - Internal
  - External

## Lessons Learned

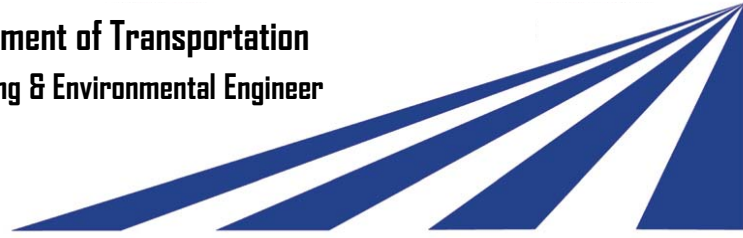


- The constant turnover of employees makes it difficult to complete tasks that are handed off each time a person changes positions.
- Employee workloads also have a large impact on task completion.
- Rome wasn't built in a day.



## Expediting Project Delivery

**Steven C. Braun, PE**  
**Florida Department of Transportation**  
**District 4 Planning & Environmental Engineer**







**INNOVATIVE EFFICIENT**  
**EXCEPTIONAL**  

---

**OUR ROAD AHEAD**

A graphic of a sunburst with red rays emanating from a central point, positioned above the text.

## Outline

- I. Existing Streamlining Processes**
- II. Value Engineering PD&E Process Review**
- III. SHRP-2 Project Approach and Recommendations**
- IV. Statewide Initiatives**
- V. Project Examples**

*\* PD&E: "Project Development & Environment" = NEPA Phase*

# Background

## Existing System

### Efficient Transportation Decision Making (ETDM)

- Established in 2006
  - MAP-21: "Environmental Streamlining"
- GIS Based Program
- Agency Coordination
  - Environmental Technical Advisory Team
- Screening Events
  - Planning
  - Programming
  - Document Reviews

### *The Benefits*

- *Early coordination with local, state, and federal partners*
- *Identify potential impacts within/adjacent to corridor*
- *Receive public comments early in the process*
- *Screen alternatives*
- *Focus on key issues*
- *Better define project scope*

## Background

### “Value Engineering” Process Review

- Evaluate **processes** rather than **projects**
- Multi-disciplined team structure
- “Think Tank” with buy-in from management
- Identify recommendations for implementation
- PD&E, R/W, Pond Siting, Lane Elimination Processes

#### *The Benefits*

- *Process Improvements*
- *Inter-office & industry input/participation/buy-in*
- *Identify system constraints and develop working solutions*
- *PD&E Process Review: 16 recommendations developed for further consideration*

## D4 VE Recommendations

### V.E. Recommendation No.5: Allow more preliminary engineering

Goal	Objectives
<b>Expedite PD&amp;E and Design projects</b>	<ul style="list-style-type: none"><li>• Conduct Pre-work activities in advance of the PD&amp;E Study</li><li>• Advance Preliminary Design to overlap PD&amp;E</li><li>• Continuity of PD&amp;E and Design Project Manager</li></ul>

D4 VE Recommendations	
V.E. Recommendation No.7: Early identification and consideration of environmental risks	
Goal	Objectives
Minimize changes during the design phase	<ul style="list-style-type: none"> <li>• <b>Objective 1</b>- Early identification of risk (during early stages of PD&amp;E).</li> </ul>
	<ul style="list-style-type: none"> <li>• <b>Objective 2</b>- Identify and account for potential environmental impacts during the alternative selection process.</li> </ul>
	<ul style="list-style-type: none"> <li>• <b>Objective 3</b> - Standardize the environmental element of the alternative selection matrix</li> </ul>
	<ul style="list-style-type: none"> <li>• <b>Objective 4</b> – Quantify environmental impacts due to design changes.</li> </ul>

Leads to project schedule and cost impacts by better identifying, understanding, and accounting for site-specific environmental risks.

Objective 1: Example: Conducting a seagrass survey program that is frequent and flexible so that it addresses projects that are entering PD&E.

Objective 2: Better identifying and accounting for potential impacts to a project due to site-specific environmental risks during the alternative selection process.

Objective 3: And/or add an environmental submatrix that feeds into the overall matrix.

Train FDOT and consultants to use the form properly. Become consistent with the alternative selection process.

Objective 4: When an environmental red flag is identified on a project so that the design team better understands the magnitude of potential environmental impacts related to design changes.

Example: Conducting a full Bridge Hydraulics Report for bridges that have a risk of

impacting seagrass.

## SHRP-2 Project

### The motivation to apply for the SHRP-2 grant?

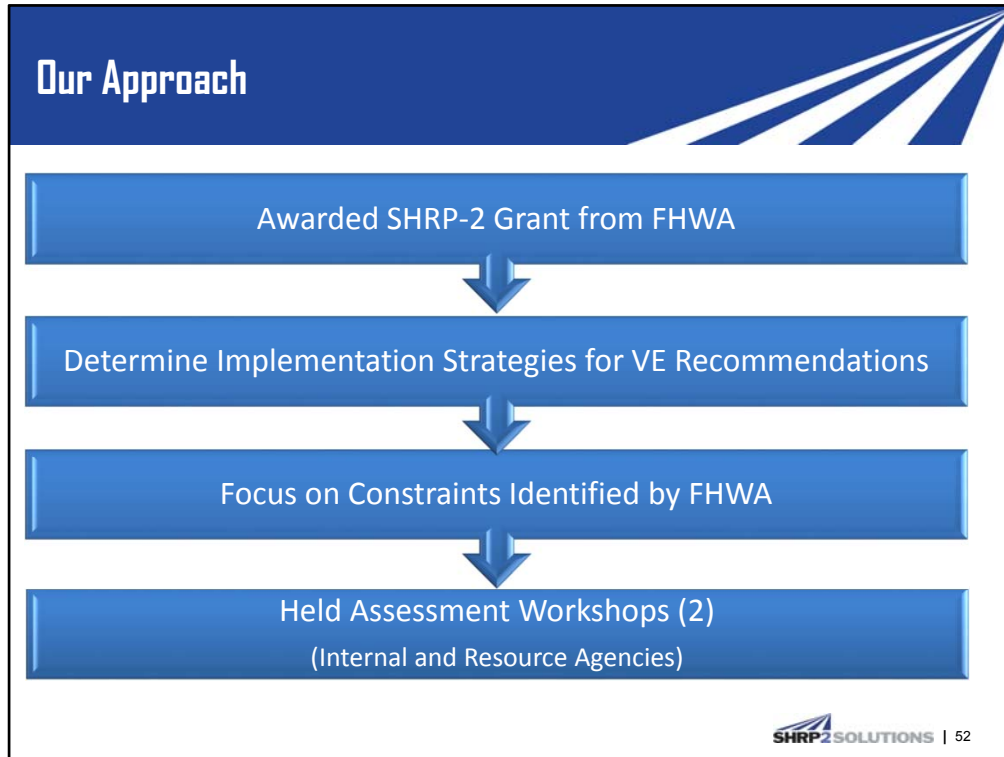
- Continued emphasis on accelerating Project Development & Environment (PD&E) project schedules
- Support advancement of projects in the work program
- Reduce the delay in identifying environmental issues
- Strong foundation of existing streamlining initiatives
- Assist with the implementation of VE recommendations
- Identify additional strategies

Even with these systems in place, there were still deficiencies in the process:

Lengthy PD&E durations led to 30+ month schedules and the need to re-do traffic using updated model which caused project delays.

Traditional schedules - identification of wildlife impacts, historic/archaeological sites identified late in the study

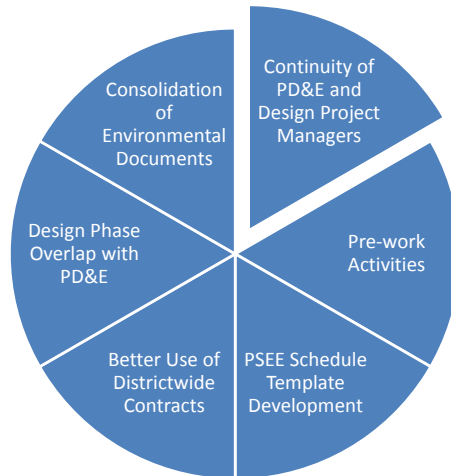




Once awarded the SHRP-2 Grant from FHWA,

- Needed to further evaluate the 16 recommendations for the PD&E Value Engineering Study
  - Build on those alternative
  - Identify those items that could be implemented and the steps towards accomplishing our goals of Expediting Project Delivery
- Held two Assessment Workshops with our Partners
  - Included FHWA
  - FDOT Districts 4, 5, and Central Office
  - Regulatory Agencies (NMFS, FWC)
  - MPOs
- The C-19 report identified 16 common constraints to transportation project delivery and 24 different strategies around the country. Of those constraints, FDOT noted the following were particularly applicable to project delivery in Florida
  - #3: Difficulty agreeing on impacts and mitigation
  - #4: Inability to maintain agreement
  - #9: issues arising late cause project change
  - #11: lengthy review and revision cycles
  - #12: negative critical coverage from the media

## SHRP-2 Transformation Strategies



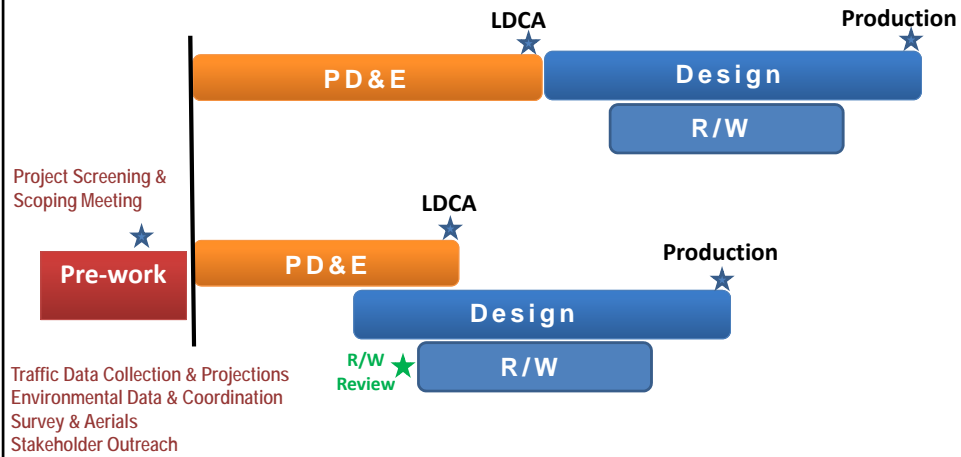
As a result of VE Recommendations and SHRP-2, the following tools were developed:

## Transformation Strategies

- **Advancement of “Pre-work” (Survey, Traffic, Environmental)**
  - Advance key activities
  - Scope Report & Scope Development Meeting
  - Improved Scope and Purpose & Need
- **Streamlined schedule templates**
- **Developed “check-lists” for document reviews**
- **Consolidation of environmental documents**
- **Early identification of mitigation funding needs**

# Transformation Strategies (Pre-work)

## More Efficient Work Processes



## Transformation Strategies

- **Project Continuity**
  - Continuity of Project Manager
  - Overlap PD&E and Design Schedules
  - Options for single consultant contract for PD&E and Design
  
- **Contributed to Statewide Initiatives**
  - State-wide Acceleration Transformation (SWAT)

## Statewide Initiatives

### **State-wide Acceleration Transformation (SWAT)**

- Formed Statewide & District SWAT Teams
- SWAT Planning Meeting
  - Scopes / Schedules / Strategies / Funding
- Standard practice of conducting “pre-work”
- Standard staff hour estimates
- Interagency Agreements
  - Interchange Access Process (FHWA)
  - NEPA Assignment (FHWA)
  - Historic Resources (SHPD)
  - ETDM Updated Agreement

# Statewide Initiatives

## SWAT Dashboard

- Statewide Schedule Milestones
- Executive Dashboard Tracking
- The dashboard is updated and reviewed regularly at Executive Meetings
- The dashboard tracks time from PD&E Advertisement to Production Date

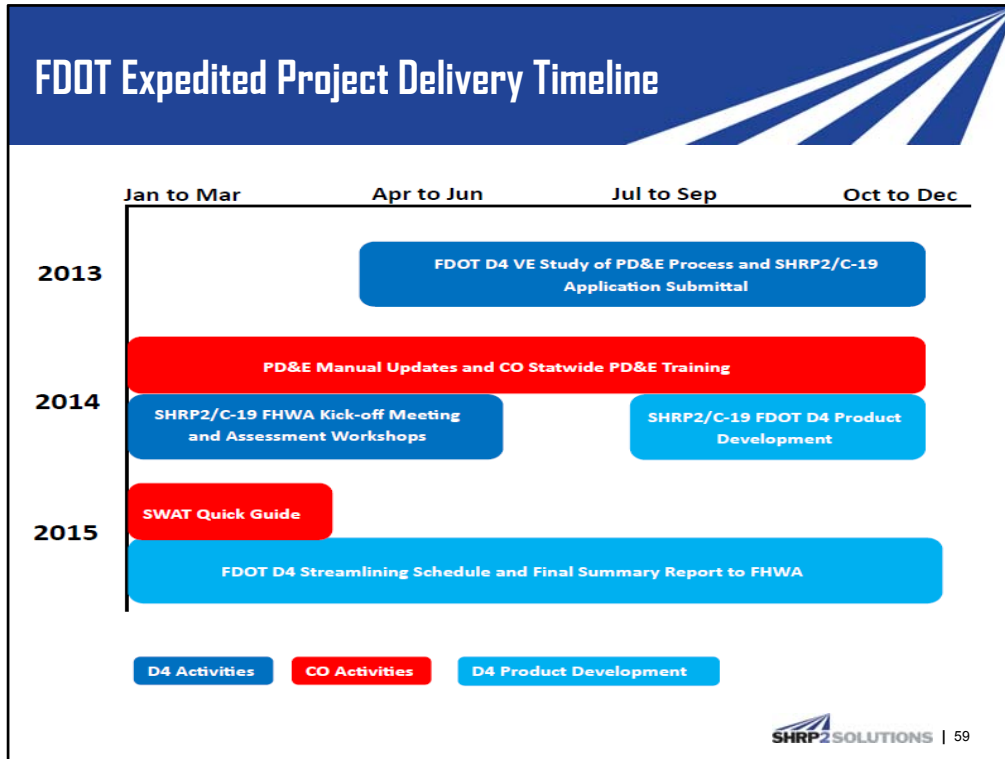
State Wide Acceleration and Transformation (SWAT) / Not Federal Eligible (NFE) Dashboard

Project schedule information is from a PDM export file dated 09/22/2015 12:42 am; not a live connection to the PDM Database ([more info...](#))

Track: Search for a Tracked Item (Enter an Item Number or Description) Highlight:  Highlight Changes Since 09/09/2015 Layout:  Summary  Detailed  Executive Exp:

Status	Year	Priority	Item #	Segment	Item Description	Project Likely New ROW	Federal	NEPA 20% SEER (P&M 701)	PD&E Advertisment (P&M 701)	SEER Start (P&M 263)	Public Hearing (P&M 263)	SEER APPROVED
Current	1415	1	438111-1	SR 81 FROM MANATEE RD TO N OF TOWER RD	Yes	Type II CE	38 / 81 / 15	09/21/2014	02/09/2015	06/14/2017	09/19/2017	01
Current	1415	2	438064-1	SR 24 LANCHER RD FROM US 274/BRONSON TO SW 78TH ST/TOWER RD	Yes	Type II CE	38 / 81 / 15	09/01/2014	09/16/2015	07/07/2017	02/09/2016	01
Current	1415	2	438062-1	SR 200 (US 301) AT CRAWFORD ROAD	Yes	Type II CE	38 / 81 / 15	01/05/2015	06/17/2016		02/06/2016	01
Current	1415	2	438030-1	STANKE RR OVERPASS FROM US 301 TO EAST OF GSA RR	Yes	EA	62 / 62 / 13	02/04/2014	05/09/2015	09/01/2016	11/01/2016	01
Current	1415	3	437782-2	SR TO (US 231) FROM S OF SR 30A (US 86) 15TH STREET TO SR 25	Yes	Type II CE	38 / 81 / 15	09/18/2014	09/24/2014	06/13/2016	11/02/2016	01
Current	1415	3	438036-1	SR 61 FROM MICHIGAN AVENUE TO SR 61 FROM MICHIGAN AVENUE TO INDUSTRY ROAD	Yes	Type II CE	38 / 81 / 15	02/02/2015	03/13/2015	02/22/2016	04/29/2016	01
Current	1415	3	438031-1	SR 203 ST & NE 215 ST INTERSECTION IMPROVETS ST/US 1 & W. DIXIE HWY	Yes	Type II CE	38 / 81 / 20	10/07/2013	02/04/2015	10/14/2015	12/15/2015	01
Current	1415	3	438032-1	SR 203 ST & NE 215 ST INTERSECTION IMPROVETS ST/US 1 & W. DIXIE HWY	Yes	EA	52 / 62 / 13	07/07/2014	02/16/2015			01
Current	1510	7	438742-1	SR 66 (LUMBERTON RD) FROM W OF 35TH ST NORTH TO W OF INTERSTATE 275	Yes	Type II CE	38 / 81 / 23M					01
Current	1415	7	438792-2	SR 60 FROM DOVER RD TO SR 26	Yes	Type II CE	38 / 81 / 11	12/02/2011	07/18/2014	11/05/2014	03/09/2015	01
Current	1415	7	438790-1	SR 60 FROM VALUICO RD TO DOVER RD	Yes	Type II CE	38 / 81 / 15	12/02/2011	07/18/2014	11/05/2014	03/09/2015	01
Current	1415	7	438794-1	SR 52 EXTENSION FROM E OF MCKENDREE RD TO E OF US 301	Yes	EA	62 / 62 / 13	10/01/2014	12/04/2014	09/03/2016	08/29/2016	01
Current	1415	Turnpike	438733-1	POE WIDEN SAWGRASS EXPY S OF SUNBURG TO S OF US441 (SR 5 TO 18)	No	Type II CE	38 / 81 / 20	01/05/2015	06/01/2016	11/02/2016	03/13/2017	01
Current	1415	Turnpike	438732-1	POE WIDEN SAWGRASS S OF US 441 TO W OF POWERLINE (MP18-22)	Yes	Type II CE	38 / 81 / 20	09/31/2015	05/17/2016	10/13/2017	02/14/2018	01

NOTES:



**D4 Activities included:**

PD&E Process VE Study

D4 Transportation Development Director Implementation Memo

SHRP-2 Application submittal and Assessment Workshops

**CO Activities:**

PD&E Manual Updates and Statewide Trainings

SWAT Quick Guide

**D4 Project Development Activities:**

SHRP-2/C-19 Product Development

Schedule Streamlining (CE-2 and SEIR)

Develop PIP Template

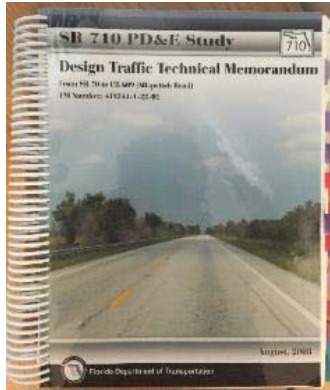
Final Summary Report to FHWA



## SR 710: Project Traffic

### The Problem:

Lengthy PD&E duration led to needing to re-do traffic using updated model which caused project delays.



## Project Traffic

### The SR 710 Result:

A lot of time and effort

**WASTED**

### New SWAT Strategies:

- Model validation & traffic done in "pre-work"
- Remove traffic projections from the critical path
- Shortened PD&E schedule
- Eliminate re-work!

## US-1 Boca Raton: Public Involvement

### The Problem:

Lack of public consensus and political support led to the PD&E study resulting in a **No Build** as the selected alternative



*Photos from the US-1  
Public Hearing*

## Public Involvement

### US-1 in Boca Raton Result:

A lot of time and effort

**WASTED**

### New SWAT Strategies:

- SWAT Planning Meetings
- Earlier identification/escalation of issues
- Earlier public/stakeholder outreach
- "Consensus Building" by the MPD prior to prioritization of the PD&E study (SW 10<sup>th</sup> Street Example)

## SR-7 in Hollywood: Right-of-Way

### The Problem:

Pond sites were questioned by the public and design team began to consider sites outside the scope of the PD&E

### Option 1-B



Parcels NOT included in original PD&E study!

## Right of Way Decisions

### The SR 7 Result:

A lot of time and effort

**WASTED**

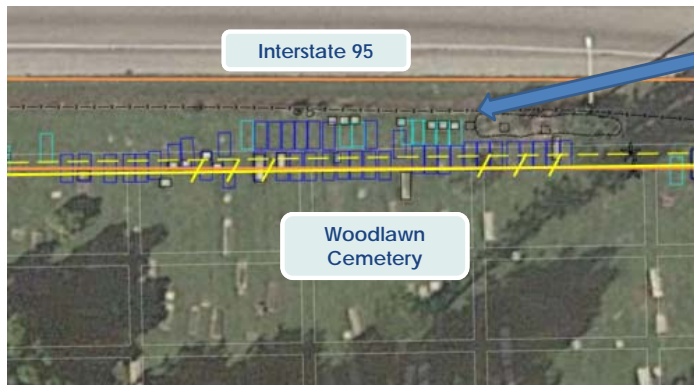
### New SWAT Strategies:

- Single PM for both PD&E and Design
- Overlap Design with PD&E
- Shortened time until Design and RW acquisition
- Prepare projects for advanced Production and RW

## I-95 & Sunrise Blvd.: Historic Resources

### The Problem:

Gravesites from adjacent Woodlawn Cemetery encroach into the I-95 RW. Cemetery is eligible for National Register of Historic Places designation.



Gravesites within  
I-95 RW

## Historic Resources

**Woodlawn Cemetery Result:**  
A lot of time and effort wasted?

**No!!**

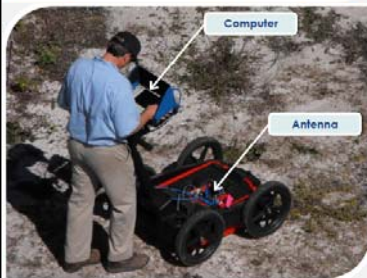
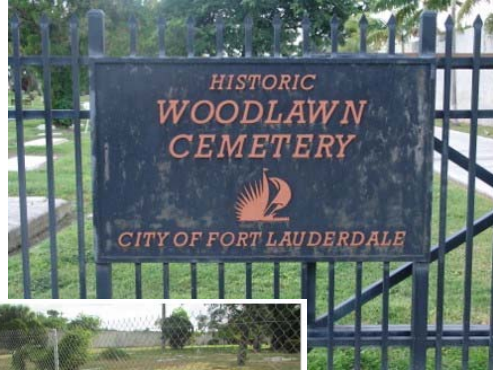


### SWAT Strategies Employed:

- Funded a separate study in advance of the interchange PD&E study
- Earlier environmental analyses & coordination
- Earlier community outreach
- Established constraints for the interchange project, while addressing community's concerns



# Historic Resources



## Advanced Wetland Mitigation

### Developed a \$4 Million Invitation to Bid Contract Package

- 104 Mitigation Credits purchased for a variety of habitat types
- Credits serve both State and Federal Impacts
- **Credits are available for future projects**
- Time Savings during Environmental Permitting
- Cost Savings - \$5,870,686

# Advanced Wetland Mitigation





## **Steven C. Braun, PE**

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District 4 Planning & Environmental Engineer  
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Panel: Questions and Answers



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# 2017 Environmental Excellence Awards

## 2017 Categories

### Organization and Process Innovation

- Accelerating Project Delivery
- Collaboration and Partnership
- Educational and Training Programs
- Environmental Leadership
- Environmental Research
- Programmatic Agreements

### Natural Environment

- Air Quality and Greenhouse Gas Emissions
- Climate Change Adaptation and Resilience
- Ecosystems, Habitat, and Wildlife
- Environmental Leadership
- Roadside Resource Management and Maintenance
- Wetlands, Watersheds, and Water Quality

### Human Environment

- Community Considerations in Transportation Improvements
- Nonmotorized and Multimodal Transportation
- Demonstrated Advances in Nondiscrimination, Including Environmental Justice
- Cultural and Historic Resources
- Context Sensitive Solutions

APPLICATION PERIOD OPENS  
AUGUST 1<sup>st</sup>, 2016!

For general questions, please email:

[EEAwardsNomination@dot.gov](mailto:EEAwardsNomination@dot.gov)

Organization and Process Innovation

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Natural Environment

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Human Environment

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## Session: Collaboration and Innovation for Project Delivery

Time: 3:15pm

Date: Tuesday, July 19, 2016







Thank you!