



# ARIZONA TRANSPORTATION OPERATIONS EXECUTIVE SUMMIT MAY 13, 2010

## ***Meeting Overview***

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On May 13, 2010, FHWA, ADOT, MCDOT, MAG partnered to host the “first of its kind” Arizona Operations Executive Summit. In 2009, FHWA identified Arizona as one of ten Opportunity States<sup>1</sup>. In order to meet this challenge, the AZTech Operations Committee, with support from FHWA, developed an Operations Action Plan. One of the priorities identified by the cross-functional, multi-jurisdictional group was to garner needed support from vital stakeholders.

This six-hour workshop was dedicated to elected and appointed officials, executive management and senior transportation leaders in the Phoenix Metro area to gain understanding and awareness of the potential for the system, the current gaps, and to have them be champions of an Operations Culture.

## **Vision for the Summit**

A quote from John Mason’s presentation focused the workshop for these leaders.

“Three key points need to be made in any communication:

- 1) What action do you want me to take?
- 2) Why should I support this action?
- 3) How does it impact my constituents?”

*Sarah Siwek, President*

*Sarah J. Siwek & Associates*

### **Call to Action**

- Understand the benefits of operational strategies
- Support and champion a balanced approach to transportation investment

### **<sup>1</sup>Opportunity State**

In an ongoing effort to improve the efficiency of the transportation system in the US, the FHWA Office of Operations selected 10 opportunity states as a priority for operations investment. The goal of this program is to help states who are close to becoming overall transportation leaders in the country. FHWA’s philosophy is not negative, but rather it is an effort to make these 10 states into national examples of transportation operations and management.

The meeting was attended by over 45 participants from multiple jurisdictions and agencies from around Arizona.

## Welcome and Introductions


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The meeting was opened with welcoming remarks from the following leaders:

- **Eric Anderson**, *Transportation Director, Maricopa Association of Governments*,
- **John Hauskins**, *Director, MCDOT and Co-Chair of the AZTech™ Executive Committee*
- **John McGee**, *Executive Director for Planning and Policy, Arizona Department of Transportation (ADOT)*
- **Mayela Sosa**, *Arizona Assistant Division Administrator, Federal Highway Administration*

One local example that was shared as a best practice was the multi-jurisdictional project on Bell Road that implemented ITS technologies in lieu of a capital improvement project.

### Bell Road: Benefits from a different approach



Costs	Additional Capacity	ITS Technologies
Construction	\$24 M	\$1.6 M (Fed \$1.1M)
Right of Way Impact	Yes	No
Utility Relocation	Yes	No
Annual Operating Cost	\$100,000	\$50,000 current \$30,000 future

**Background - 2001**

- Traffic reached up to 50,000 ADT
  - Typical capacity for 6-lanes between 45,000-48,000
- Peoria, Surprise, Glendale, MCDOT, ADOT responsibilities for a 10 mile segment
- Two possible solutions:
  - Build Additional Capacity
  - Implement ITS technologies

Chose to Implement ITS

**Benefits**

- Increased volume to 80,000 ADT
- \$50,000 annual savings to MCDOT
- \$22 M left for other MCDOT capital projects
- 163,000 hours of travel saved each year

The participants introduced themselves at their tables and discussed their current challenges. When the group came back together, the tables offered their thoughts on challenges for the group to consider.

## ***Keynote Address – Transportation Operations***

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### **Jeff Lindley, Federal Highway Administration**

The FHWA Associate Administrator for Operations presented the group some insight on national transportation initiatives.

How Operations fits into each of USDOT's five strategic priorities:

#### **Safety**

- MUTCD, Work Zones, Incident Management, access management, good arterial design practices, and road weather management are tools used for safety.
- Operations and safety are synonymous and should be improved in all transportation modes.

#### **Economic Competitiveness**

- Congestion is choking our metropolitan areas and adversely affecting our quality of life, but it also adversely impacts the movement of goods within and between metropolitan areas.

#### **Sustainability**

- Sustainability is broad in scope, but largely correlated to addressing the critical national issue of climate change.
- Operational strategies have the potential to improve system efficiency and decrease harmful greenhouse gases.

#### **Livability**

- Livability is typically thought of as improving mobility and accessibility. In addition to having mode choices, communities are perceived as more livable if the system is efficient when people choose to drive.
- Improvements to signal timing, traffic incident management, and traveler information can make communities more livable.

#### **State of Good Repair**

- Operational strategies are clearly critical while managing the impacts of construction and preservation projects, particularly those with potential traffic impacts.

***Operations – operating the system effectively – is critical if we are to achieve our national strategic priorities in transportation.***

What you will be seeing from FHWA in terms of these priorities:

- Addressing congestion problems, through better operations, better management of demand, removal of key bottlenecks, and a targeted addition of highway capacity.
- Better balancing of transportation supply and demand, and significantly *reducing* congestion through the use of tools such as congestion pricing.
- Improving the efficiency of freight movement.
- Researching the next frontier of traffic management strategies like integrated corridor management, active traffic management, and cooperative vehicle-infrastructure systems.

While the details are still uncertain federal transportation reauthorization will occur. The investment need has consistently been identified as **\$450-500 billion over 6 years**.

Likely items for Reauthorization:

- Improving safety, reducing congestion, boosting economic productivity, and addressing the effects of climate change.
- Performance management focus guiding investment decisions.
- Improving efficiency in the movement of freight.
- Innovation, including research and technology activities, as a key place where problems and an appropriate Federal role intersect.

### ***Vision for Transportation Mobility and Safety***

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#### **Phillip J. Tarnoff, Consultant**

The former president and founder of Farradyne Systems, Inc. and Director of the Center for Integrated Transportation System Management at the University of Maryland presented the group with the issues and potential ITS remedies for transportation.

Understanding Mobility:

- From 1980-1998, Vehicle travel is up **72%**, while Road Miles increased only **1%**.
- Poor mobility can occur as a result of bottlenecks, traffic incidents, and other non-recurring issues.

ITS components, such as lane and speed control, electronic payments, signal timing for transit and autos, and other freeway management devices all have various impacts on mobility.

Travel time and travel time reliability can both lead to ***economic vitality, livability, and accessibility***.

Risk Management and Systems Engineering are important tools in the development of operational projects. Their use in combination with performance measures allow agencies to:

- Manage expectations and risk
- Ensure projects are completed on-time, within budget, and are functionally complete

***However, in order to succeed, there needs to be careful planning and control throughout project implementation.***

Alternatives analysis can evaluate transportation operations using benefits & costs.

- The challenge is to find the best solution to a problem when multiple options exist.
- Compare operational alternatives to capital projects in a resource-constrained environment
- Benefit/Cost (B/C) ratios are typically higher for operations than new construction
  - An arterial widening project has a typical B/C ratio of **4:1** while the application of operational strategies to the same arterial has a higher return on investment with a B/C ratio of **22:1**.

**Customer Service** is an important, but often neglected, part of the transportation system.

- Operations is the interface between the infrastructure and the customer.
- 3C's of Customer Service - Communications, Collaboration, Commitment

Where are we going?

- The world of operations demands good customer service.
- Agencies need to think like a traveler and not always like engineers.

What is the *future of operations*?

- Operational strategies will be more prevalent, because they offer benefits over conventional construction practices in the following:
  - Higher returns on lower cost investments,
  - Faster implementation, and
  - Improved interactions with the customer.
- Congestion Pricing will be considered as an option.
- Telecommuting will be recognized as a transportation function.
- The use of sophisticated vehicle electronics will increase.
- Performance measurement will become common place.

### ***Performance Measures as an Operational Tool***

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#### **Daniela Bremmer, Washington Department of Transportation**

The Director of Strategic Assessment for the Washington State Department of Transportation (WSDOT) provided a compelling case for performance measurement by showing the benefits Washington has received from this new philosophy.

There is an evident **need** for Performance Measures (PM).

- Without PM, transportation investments are tough to justify
- Operations is highly scrutinized, and PM are an easy and effective way to implement and continue operational strategies.
- *Example:* In 2001, WSDOT could not communicate with the public.
  - As a result, 30% of their revenue eroded by voter cutback on transportation taxes.
  - New WSDOT Secretary mandated accountability in order to resolve this problem.
- PM communicate effectiveness
  - In response to negative media coverage, PM provide credibility to the story.

Some points on how to create a Performance-Based Framework:

- Practice “*performance journalism*” by using layman’s terms to explain complex concepts.
- Full collaboration across all department and jurisdictions is essential.
- To be credible, successes as well as failures must be shared.
- Real-time data is invaluable.
- Understand customers’ perception of “congestion.”
  - Engineers see certain levels of congestion as acceptable, while the public may think any congestion is unacceptable.
- *Example:* WSDOT created the Gray Notebook as a way to combat their deficiencies.
  - In 2001, it started as a brief 7-page report.
  - Currently, this document is a detailed 117-page ***national benchmark*** for PM reporting.

Using Performance Measures:

- When ***communicating to constituents***, they help to:
  - Show transparency
    - Tax payers want to know what they are getting for their money!
  - Deter negative media
    - An agency’s view on their performance is not always in sync with the public’s perception.
- For Operations, PM increase:
  - ***Investment*** on existing roadways
    - Typical roadways use less than **60%** of their maximum capacity, which is a lost investment.
  - ***Results*** of operations projects
    - Garbage-in = garbage-out
    - PM can effectively tell a compelling story without using extensive datasets.

## Operate Efficiently: SR 532 Signal Improvements – Before/After Analysis

**Project Need:** Increased development and rise in population in Stanwood along SR 532

**Project Limits:** From 72<sup>nd</sup> Ave. to 102<sup>nd</sup> Ave. along SR 532

**ADT:** 20,000 vehicles per day

**Project Cost:** \$60,000

**Solution:** Signal improvements and coordination –Add video detection and connect signals to TMC in Shoreline to remotely adjust the signal timing to improve traffic flow.

**Result:** Immediate and significant travel time benefits

- Westbound travel time savings – 6 minutes
- Eastbound travel time savings – 2 minutes

**Location of SR 532 Signal Improvements**

**Signal Improvements**  
WSDOT interconnected and synchronized the signals to improve traffic flow through the city of Stanwood. Newly added electronic traffic detection devices and five cameras provide up-to-the-minute information on the WSDOT website.

Data Source: WSDOT Northwest Region.

**SR 532 Before and After Travel Times**  
Travel Times in Minutes by Time of Day

**Eastbound SR 532 A.M. Travel Times at Mileposts 3.05 to 5.8, 2.85 Miles**

Time	Before Data	After Data
6 AM	~12	~10
6:30 AM	~12	~10
7 AM	~12	~10
7:30 AM	~12	~10
8 AM	~12	~10
8:30 AM	~12	~10
9 AM	~12	~10

**Westbound SR 532 P.M. Travel Times at Mileposts 6.83 to 3.7, 3.13 Miles**

Time	Before Data	After Data
6 AM	~12	~10
6:30 AM	~12	~10
7 AM	~12	~10
7:30 AM	~12	~10
8 AM	~12	~10
8:30 AM	~12	~10
9 AM	~12	~10

Data Source: WSDOT Northwest Region.

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***Example from WSDOT***

There are direct **results and benefits** of performance measures.

- PM can make a case for additional funding.
  - PM increase confidence in the agency. Three examples were provided by WSDOT.
    - 1) 2008 proposition to open HOV lanes to general traffic was denied.
      - “MacDonald [Secretary of Transportation, Washington] came from outside the state, injecting vital doses of accountability, openness and determination. As a result, the DOT is more widely trusted and better funded.” Seattle Post-Intelligencer Editorial Board, April, 2007.
    - 2) Federal Recovery Act (ARRA) funds required scrutiny, and WSDOT could quickly and easily streamline their performance reporting.
    - 3) Increasing and retaining transportation funding:
      - Two gas taxes (5 & 9.5 cents/gal) passed in 2003 & 2005, respectively, in WA, amounting to approx. \$16 billion
      - 2005 proposition to eliminate 9.5 cents/gal gas tax was turned down
- PM can **improve the safety** of a system.
  - Longer incidents = higher costs  
*Example:* Preliminary estimates by WSDOT showed:
    - \$244 per minute of an “incident”
    - \$345 per minute of a “lane closure”
  - Longer incidents = Higher risk to emergency crews  
*Example:* WSDOT, through PM, decreased incident clearance by half in the first two years.
- More projects can be validated and commence when PM are used because they enhance credibility and show:
  - What is done with the current funds, and what the results were
  - What will be done with future funds

### ***Management and Operations: Putting It All Together***

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#### **John Mason, Division and Operations Manager, SAIC (Former Mayor of Fairfax, Virginia)**

The former six-term mayor offered his insight as a fellow elected official, reiterating to the group that **Management and Operations (M&O)** is a wise investment.

The purpose of this session is to share:

- Thoughts (empathy!) with respect to realities for decision makers in tackling fundamental cultural and budgetary process changes
- Emerging thinking on how to address challenges in performance of our transportation system

***Shift focus from capital investment to a mixture of capital and operational investments!***

Remember, there are competing imperatives for decision makers.

- Economic development/jobs **vs.** environmental and quality of life concerns
- Residential quality of life **vs.** commuter cut-through traffic
- The “American dream” **vs.** sprawl
- Expanded services **vs.** anti- or no-tax advocates
- Air quality requirements **vs.** mobility needs
- Social imperatives and school needs **vs.** transportation need

Also, certain factors that affect decision makers, which include:

- Limited time to address any issue
- Tendency to have particular areas of interest (especially elected officials)
- Sensitivity to process (or train might get derailed!)
- Respect for colleagues’ turf
- Peer perspectives
- Sensitivity to fiscal constraints
- Elected officials very dependent on staff
- Inter-personal relationships usually the key to getting things done
- Elected officials like to be given credit and recognition for successes
- Jargon – elected official prefer “plain speak”

***And, most importantly, elected officials like to get re-elected!***

However, the **customers have certain expectations** about the transportation system, which include:

- Safety,
  - Smooth and safe travel
  - Quickly detected and cleared incidents
  - Efficient evacuations
- Traffic information,
  - Be kept informed of conditions with timely information they can use to make mode and route choices.
- Goods moved efficiently and quickly,
- Coordination of construction projects,
- All with sensitivity to environmental concerns, and

***Preferably with no tax increases!***

Here is where **M&O** comes in...

- Jurisdictions have limited resources.
  - Constantly expanding roadways are becoming more expensive to maintain.
- The approach to transportation investment needs to be reexamined.
  - **Shift to mix of construction and operations**

A cultural shift is needed to make it happen!

- Think **M&O** – operational strategies to address challenges
  - **Management and Operations, not Operations and Maintenance**
- Performance measurement is essential to this shift.
- There is a need to rethink the planning process, which must:
  - Build on current planning and collaborative processes by linking with operations
  - Create a mix of capital and operations projects in investment decisions (TIP, STIP)
- Must involve operators and users of system (public safety, tourism, freight, etc.)
- An institutional advocacy for operations has to be initiated.

The outcomes of operational culture shift include:

- Well-developed **relationships** among key agencies (state, MPO, public safety, etc.) and jurisdictions
- A **shared** vision among operators, planners, and public safety providers for transportation system **performance**
- More effective allocation of **resources**
- Enhanced **information sharing**
- **Integration** of state/regional systems and organizational processes

Final Suggestions:

- Build on existing collaborative processes.
- Create an annual report.
- Create advocacy for operations in the planning process.
- Don't expect non-planners (operators, public safety, freight, etc.) to be enamored with the planning process; engage in a focused and time-sensitive manner.
- Don't make performance measurement more difficult than it need be; pick measures the public understands.
- Stick to it; it will take time!

### ***Wrap Up Group Discussion***

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At the conclusion of the summit the participants took the opportunity to identify challenges and next steps in moving towards an operations-focused culture. These thoughts will be shared with the AZTech and MPO committees addressing transportation management and operations.

### **Challenges**

- Environmental process – Is there a potential for streamlining ITS projects which typically don't involve ground disturbances?
- What are the challenges in having more "Bell Roads"? What do we need to do to facilitate their development?
- How do we bring all agencies/departments/modes to the table?
- Integration of Emergency Management
- Funding shortfalls
- Public is now expecting "Green" – Can Operations play a role?
- Coordination Issues
  - Field operators communication when some are still on older radio systems
  - Bringing all agencies data into RADS (Regional Archived Data System)
- Role for Transit and their understanding of Operations
- Heavy rail (Union Pacific, BNSF) and how to incorporate ITS into their systems

## **Next Steps**

- Utilize Performance Measurement/Management
  - Need to be results-oriented
  - Identify and communicate expectations for performance
  - Complete Before and After studies and report them
  - Get data out there (need to start somewhere)
  - Ensure data is customer-friendly
  - Publish data in a way that makes us accountable
- Communicate
  - Communication generally internally focused need to develop methods for better communications with customers
  - Develop appropriate communications for elected officials
- Understand sources of congestion
- Expand AZTech to include Tucson
- Consider opportunities for Public-Private Partnerships
- Streamline federal environmental process for ITS projects
- Improve coordination of construction projects (travelers don't see jurisdictional, nor departmental, boundaries)
- Implement Arizona Operations Action Plan

## ***Executive Summit Closing Remarks***

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John McGee, Eric Anderson, and John Hauskins closed the meeting, thanking participants for their interest and engagement in the subject, along with their future championing of the operations culture.