



MULTI AGENCY COLLABORATION

Maricopa County, Arizona

MISSOURI OPERATIONS SUMMIT

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Maricopa County

- Approximately 9,226 sq. miles
- 4th largest County in United States
- Greater in population than 24 States (about 4 million)
- 24 cities and towns



MAG ITS Committee (MPO)

- 21 Members
 - 14 Cities and Towns
 - FHWA
 - State DOT
 - County DOT
 - State Police
 - Public Transit
 - Metro Rail
 - Arizona State University
- Planning Function and Support for Operations

AZTech™ Partnership



- Established 1996 as one of four MDI's
- Goal to provide Phoenix Metropolitan Area with seamless transportation system
- 26 members
 - 15 Cities and Towns
 - FHWA
 - MAG (Local MPO)
 - State DOT and PD
 - County DOT
 - Phoenix International Airport
 - Public Transit
 - Metro Rail
 - Regional Public Transportation Authority
 - Arizona State University
 - University of Arizona
 - Private Partners
- Traffic Management and Operations Function



MOVING FORWARD TOGETHER

Infrastructure Implementation

- Freeway Management System
- Local Traffic Management Center (TMC) Development (13)
- System Expansion (SMART Corridors – Communications to Signals, DMS and CCTV systems)
- Communication Deployment – Local and regional - RCN Design and phase I implementation, Wireless Communication
- Regional Camera Control Software
- Regional Archived Data System (RADS) Established – leading to the Center-to-Center System for exchange of regional information (Phoenix Fire CAD, Signal, FMS, travel time)
- ATIS Expansion (511 system, Airport ATIS, DMS Travel Time, Local DMS)
- Incident Management Program established (Freeway Service Patrol and Alert; REACT for Arterials)
- Public Safety Connection (DPS, Phoenix Fire CAD)
- Policies and Guidelines for information sharing

Recent Collaboration Milestones

- FHWA identified Arizona as Opportunity State – 2008
- Prepared Operations Action Plan – July to Sept 2009
- Capability Maturity Model Workshop – May 2010
- Arizona Operations Workshop and Summit – May 2010
- Traffic Incident Management Workshop – Nov 2010
- Implementation of Arizona Action Plan Priorities – Feb 2011 to present
- Research – MCDOT SMART*Drive* Program

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- Established AZTech Strategy Task Force
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FHWA Opportunity State

2008

Target efforts towards states at the tipping point (lead adopters) in advancing operations.

Arizona Operations Action Plan

July to Sept 2009

Definition of Operations

The Arizona Operations Action Plan defines Operations as management of transportation systems and traffic flow to enhance safety and mobility through the application of ITS technology and regional collaboration.



MOVING FORWARD TOGETHER

Arizona Operations Action Plan

Vision

1. We have a well informed traveling public
2. Performance measures tell our story
3. Upper management, the public and elected/appointed officials understand and appreciate our value
4. Incident management is responsive and effective
5. Leverage regional Infrastructure for operational efficiency and redundancy
6. Create seamless operational partnerships
7. We have well qualified, well trained staff and a pipeline of new talent



Arizona Operations Action Plan

Priorities (Top 4)

1. Alternate Route Policy (TIM & Corridor Management)
2. Develop Regional Performance Measures
3. Job Descriptions for ITS Certification/Training Programs
4. Travel Times – improving on freeways and arterials

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Capability Maturity Model Workshop

May 2010

AZTech CAPABILITY MATURITY SELF EVALUATION - PRIORITIES?				
ELEMENTS	LEVEL 1 PERFORMED	LEVEL 2 MANAGED	LEVEL 3 INTEGRATED	LEVEL 4 OPTIMIZING
Planning & Programming				
Technology and Systems				
Performance				
Culture				
Organization/ staffing				
Resource Allocation				
Collaboration				

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Arizona Operations Workshop and Summit May 2010

- Two day workshop
- Target Group – traffic management, maintenance, capital improvement, planning
- Those who can influence direction, budget and resources
- Half day Executive Session
- Directors of Agencies, Mayors, State Legislators, MAG Officials, City Council, County Supervisors
- Those how can champion policy and funding opportunities

Arizona Operations Workshop and Summit May 2010

- Vision for Transportation Mobility and Safety
- Performance Measures Tell the Story
- Advancing Planning for Operations
- Resources: Funding and People

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Traffic Incident Management Workshop

Nov 2010

- Attended by FHWA, DOT's, First Responders, Medial Examiner, Towing and Recovery, PIO's
- Discussed typical Incident Scenarios to better understand roles and duties
- Agreed on goal for improved collaboration
- Decision to establish TIM Coalition

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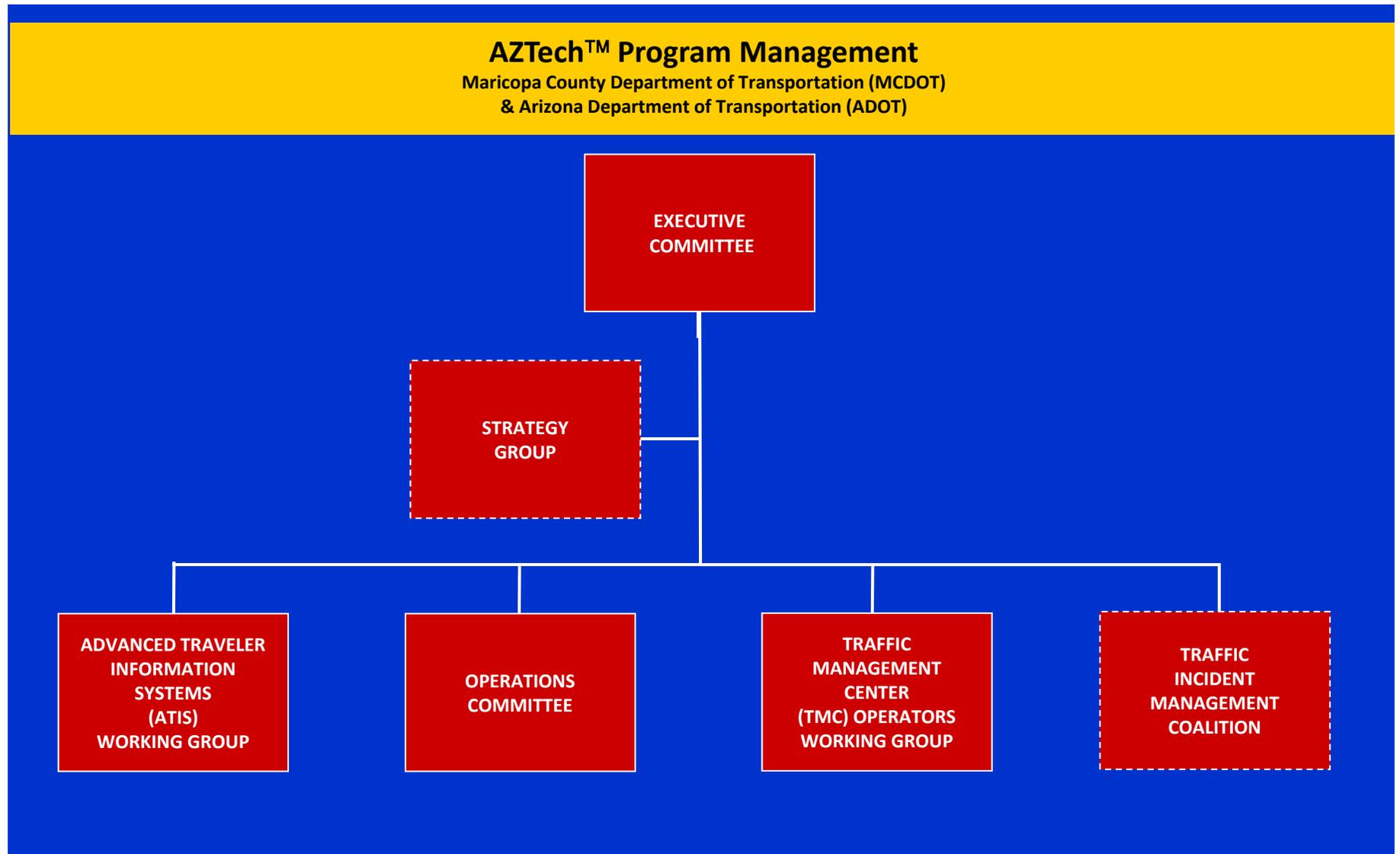
Established AZTech Strategy Task Force

From Arizona Operations Action Plan

Priorities (Top 4)

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AZTech Structure



AZTech™ Committee Functions

- **AZTech™ Executive Committee**

Guide Vision

Champion Resources

Clear Political and Institutional Barriers

- **AZTech™ Strategy Group**

Develop Strategies for Implementation of the Action Items identified in the Arizona Operations Action Plan

Pursue Funding Strategies

Identify Regional Projects for Funding and Implementation through CMAQ and RTP Program

- **AZTech™ ATIS Working Group**

Expansion of Single 511 System

Media and Transportation Summits

Regional Alerts, Special Events, Traveler Information



AZTech™ Committee Functions

- **AZTech™ Operations Committee**

Regional Operations Guidelines – video and camera control, DMS, Traffic Management System

Technology (Agreement of Regional Equipment, Standards, Technology Procurement etc.)

Deployment of Center-to-Center System (Inter-jurisdictional Signal Operations, Camera Operations, Exchange of Data)

Development of RADS as a Center-Center data exchange system

- **AZTech™ Traffic Management Center (TMC) Working Group**

Regional TMC Contact List

After Hour Support

Operator Training

TMC Tours



Bell Road: Focus on Recurring Congestion



Direction	Travel time 2008	Travel Time 2010	TRAVEL TIME SAVED
Eastbound (AM)	14 Mins	12 Mins	2 Mins
Westbound (PM)	20 Mins	15 Mins	5 Mins

Background

- **Road Capacity:** 50,000 ADT
- **Year 2001:** Traffic reached up to 50,000 ADT
- **Year 2010:** Traffic reached 70,000 ADT
- **Length of Road:** 6 Miles

Benefits

- Eastbound : 14% travel time saving
 - Westbound: 25% travel time saving
- Direct Reductions from Eliminating 5 minutes of Idling

Engine Size	Daily	Annual		
	Gasoline Not Burned	Gasoline Not Burned	Money Not Spent	CO2 Not Emitted
Small	.5 cups	10 gallons	\$30	220 lbs.
8 Cylinder	1 cup	20 gallons	\$60	440 lbs.

Reference: anti-idling primer – Every Minute Counts (Hinkle Charitable Foundation)

Traffic Incident Management “TIM” Coalition

- The focus of the TIM Coalition is to achieve the National Unified Goal (NUG) for TIM, developed by the National Traffic Incident Management Coalition in 2004
- NUG:
 - Responder Safety
 - Safe, Quick Clearance
 - Prompt, Reliable, Interoperable Communications

Traffic Incident Management “TIM” Coalition

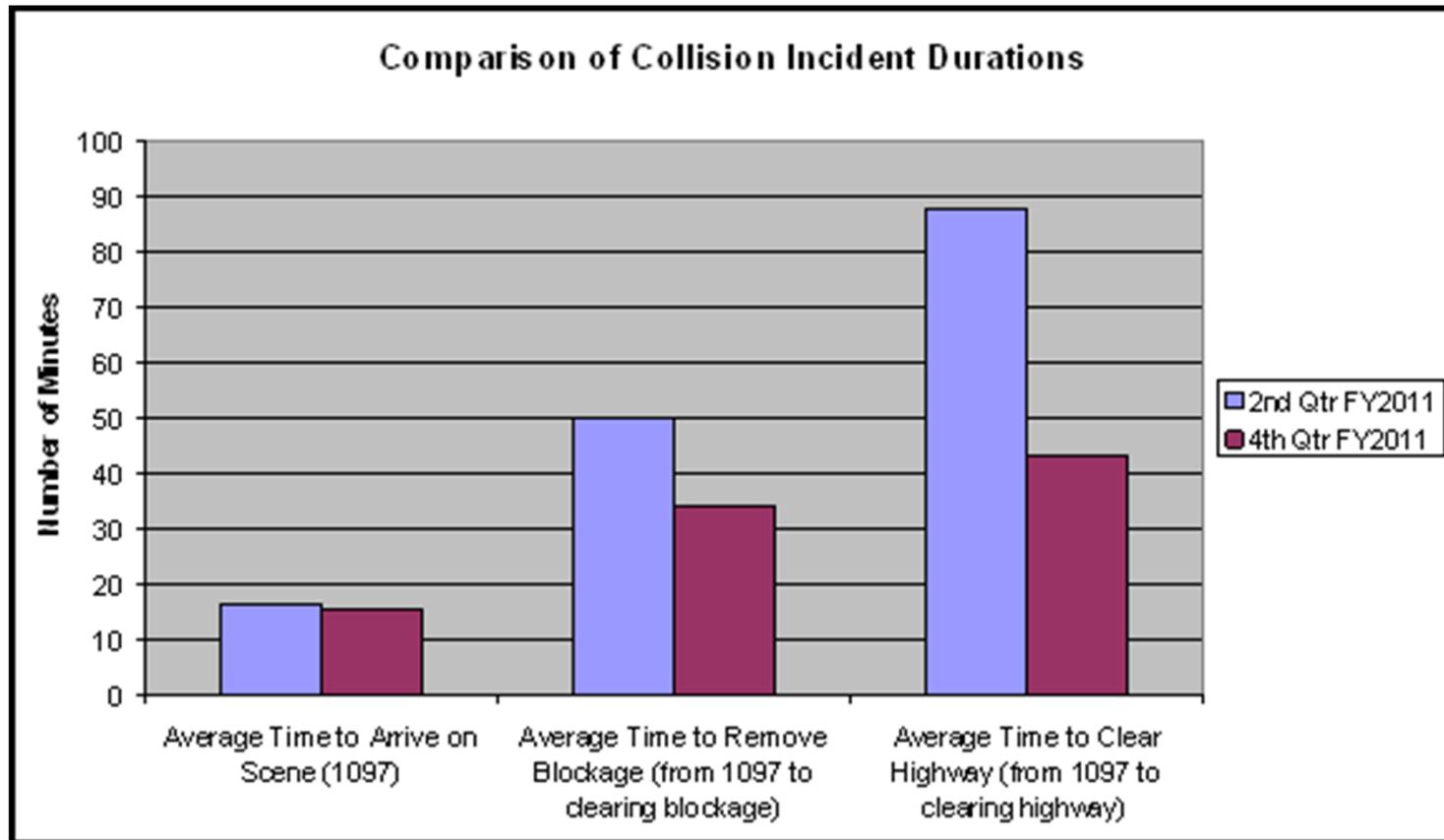
- Regional Planning and FHWA Workshop Led to TIM Coalition established in January 2011
- Through Mutual Consensus – Led by Dept of Public Safety (DPS)
- Meetings held Bi-Monthly along with AZTech ATIS Working Group
- TIM Coalition Members (State, County Local and Private)
 - Law Enforcement
 - Transportation Operation Responders (ADOT Alert, MCDOT REACT)
 - Fire and EMS
 - Maricopa County Office of Medical Examiner
 - Towing and Recovery
 - PIO's
 - MAG
- Activities
 - Improved cross-discipline communications
 - Best practices review – Incident debriefings
 - Joint training and planning
 - Webinars on topics of interest to TIM Practitioners

Traffic Incident Management “TIM” Coalition Progress

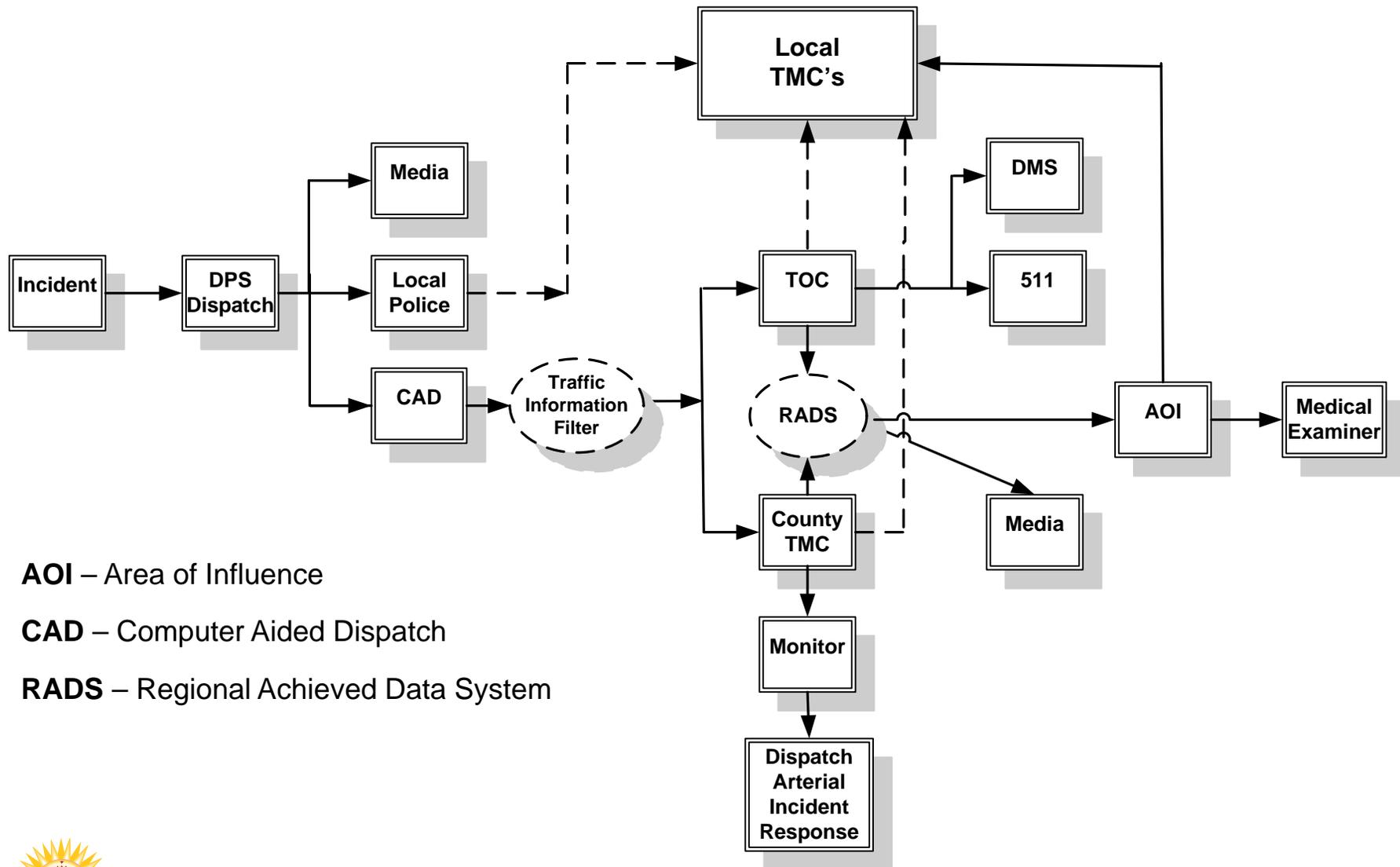
- Introduce performance measures that focus on clearance time, secondary accidents and first responder safety
- Reduced roadway clearance time for non-injury incidents from 45 minutes in the last Q of 2010 to 32 minutes in July 2011
- Incident Debriefs to discuss lessons learned and identify gaps – Loop 101 Example
- Produced training video showing challenges of different responders and how their actions can improve safety for all responders while minimizing the impact on roadway users
- Establish contact list for incident response
- Area of Influence System Adaptation – Medical examiner response improvements

FY11 *Opportunity State Plan Progress*

Traffic Incident Management (TIM) Coalition Status Update



INCIDENT RESPONSE NOTIFICATION



AOI – Area of Influence

CAD – Computer Aided Dispatch

RADS – Regional Achieved Data System

Traffic Incident Management “TIM” Coalition

New Initiative

Integrated Corridor Management

- Established AZTech Project Subgroup to prepare Freeway/Arterial Integrated Operations Plan to Support 14 mile segment of Loop 101 Freeway
- Subgroup consist of State DOT, City of Scottsdale, DPS, MCDOT, other local agencies interested in initiative
- Alternative Route Plan to include:
 - Operational Procedures and Guidelines
 - Alternative Route Policy
 - Identify Regional Corridors for Operations
 - Develop Signal Timing Collaboration Capabilities for Incident Management
 - Develop Ramp Meter Operational Strategies
 - Model Agreements to Support Operations
 - Incident Management
- Lessons Learned from Study will also be used for development of Broader ICM Plan and help in the development of IMC Plans for more complex corridors.

Performance Measure Focus Areas

Focus Area	Goals and Key Performance Measures
Freeways	Improve freeway travel times Improve travel time reliability
Arterials	Improve arterial travel times Improve travel time reliability Expand after-hours TMC monitoring
Incident Management	Reduce incident duration Improve incident clearance time TIM Coalition Goals
Safety	Reduce road fatalities Reduce crash rate on urban freeways Reduce bicycle crashes on arterials
Traveler Information	Increase traveler information system usage Expand freeway travel time program
Transit	On-time performance of bus and light rail

AZTech™ PERFORMANCE DASHBOARD



Performance trending in favorable direction.



Trend is holding.



Performance is trending in an unfavorable direction.

Policy Goal/ Performance Measure

Previous Reporting Period

Current Reporting Period

Trend

Description

Incident Management – Freeways

MAG RCTO Goal: Reduce incident duration by 20%.
Additional Goals: To be developed by TIM Coalition.



The development of incident management goals which will support better performance

DPS Average Time to Remove Blockage from Travel Lanes (2nd Qtr 2011 to 4th Qtr 2011)

49.8 min

34.2 min
(-31.33%)

Quicker clearance time increases overall safety

Incident Management – Arterials

REACT Goal: Zero secondary crashes when REACT is present.
Additional Goals: To be developed by TIM Coalition.



REACT presence on scene has achieved the ultimate goal and additional improvements

Number of Secondary Crashes When REACT is Present

0

0

No secondary accidents is the goal and that is consistently being achieved

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RESEARCH

MCDOT SMART*Drive* Program

- **Arizona Partnership (ADOT, University of Arizona)**
- **Projects**
 - V2I and V2V Applications to improve incident management
 - Phase I and II – Prototype development, lab testing
 - Phase III: SMART*Drive* Field Test
- **Participation in Federal Connected Vehicle Initiative**
 - Strong advocate of the public sector needs
 - AASHTO, ITE, TRB, ITS America, Connected Vehicle Workshops (Deployment, User Needs, Research)
 - USDOT Pooled Funded

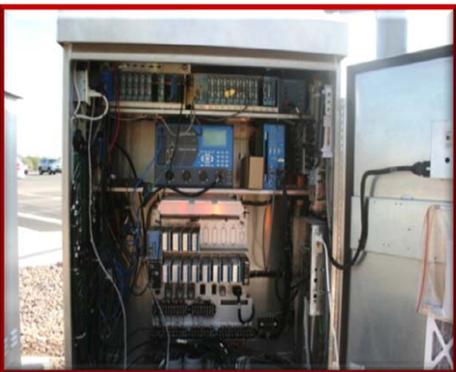
Field Test Location – Anthem, AZ W. Daisy Mountain Dr.



Pole Mounted
Roadside Equipment
(RSE)



- Equipment Installation
- Test and Verification
- Application Tests and Evaluations



MCDOT SMART*Drive* Demonstration



Anthem Field Test Applications

- **Application 1: Traffic Signal Priority for Emergency Vehicles and Transit**
 - Emergency and Transit Vehicles
 - Incident Response through several signals with and without Priority (multiple Vehicles)

Application 2: Pedestrian Application

- Developed by Savari through USDOT SBIR Project
- Pedestrian Crosswalk Status
- Sound enabled
- Extension request



Application 3: Traveler Information

- OBE transitions to RSE
- Initiates Incident Warning
- Dissemination
 - In-vehicle
 - Cell Phone
 - TMC



Questions?

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MOVING FORWARD TOGETHER