Arizona Department of Transportation

ITS Activities in Arizona

August 3, 2010

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Assistant State Engineer
Arizona General Information

- Population: 6 Million
- Total Area: 114,000 mi²
  - 1,000 mi²: Water
  - 39,000 mi²: < 3,000 ft elev
  - 27,000 mi²: 3,000 - 5,000 ft elev
  - 47,000 mi²: > 5,000 ft elev
- Elevation Range: 100 - 12,600 ft
Arizona General Information (continued)

Total State Highway System 6,200 mi
  ▪ Interstate Highway 1,200 mi
  ▪ US Route 1,800 mi
  ▪ State Route 3,200 mi
Transportation Technology Group
Transportation Technology Group

- Research, plan, design, construct, maintain, and operate ITS Infrastructure
- Improve transportation safety
- Improve the movement of people and goods throughout the state
- Coordinate Statewide incident management
- Provide quality and timely information to the public
- Reduce congestion in urban areas
- Assist in minimizing the State’s tort liability
- Assist in maintaining homeland security
Transportation Technology Group

- Statewide 24/7 Operations
- Full-Time State Employee Operators
- Central Hub for Managing Traffic
- Provides More Consistent & Unified Responses
- Increase in overall Effectiveness of Resources
HCRS

- 4,000 monthly entries
- Information from HCRS goes into ADOT’s 5-1-1 System (telephone system and web site – az511.gov)
Arizona 5-1-1

- Launch Date: March 20, 2002
  - Fifth state in U.S. to adopt 5-1-1
- Statewide coverage
- 2002:
  - 25,000 calls per month
  - 3 million hits per month AZ511.gov
- 2008:
  - 56,000 calls per month
  - 38.4 million hits per month AZ511.gov
Vehicle Restrictions

- Height limit
- Weight limit
- Length limit
- Hazardous materials
Tourism Information

- Transfer to Arizona Office of Tourism
- Grand Canyon Information
TOC Operators Post Messages on Dynamic Message Signs
The affects of congestion nationally include:

• Road congestion annually results in 3.7 billion hours of travel delay and 2.3 billion gallons of wasted fuel.

• When unreliability, extra inventory, and environmental costs across the entire transportation system are included, the cost of congestion climbs to nearly $200 billion annually.
Causes of Congestion in the U.S.

Non-recurrent Congestion = 55%
- Work Zones, 10%
- Special Events, 5%
- Traffic Incidents, 25%
- Bad Weather, 15%

Recurrent Congestion = 45%
- Bottlenecks, 40%
- Poor Signal Timing, 5%
Incident Levels

- Level 1 – most serious
  - Fatalities
  - Full closures for more than an hour
  - Hazardous spills, school buses, planes, trains
- Level 2 – requires immediate ADOT assistance
- Level 3 – does not require immediate assistance
How Much Does A Collision Like This Cost?

- Emergency Airlift: $5000.00
- Department of Ecology: $500.00
- WSP: $4200.00
- Damage to Vehicles: $30,000.00
- Trucking Company: $80,000
- Department of Transportation: $13,000.00
- Clean-up: $6800.00
- Ambulance: $4500.00
- Towing: $10,000.00
- Fire Department: $570.00
- Local Police Departments: $500.00

Costs not included:
- Hospital / Medical
- Court / Fines
- Increased Insurance
- Societal Costs (lost time and revenue due to delay)

Total Cost = $155,070.00 (Estimated Minimum)
Emergency Detour Routing

Alternative Routes for Major Corridors in Arizona

LEGEND
- I-40 East Bypass
- I-40 West Bypass
- I-17 Bypass
- I-10 East Bypass
- I-10 Phoenix Bypass
Existing ADOT ITS Components in Arizona

- DMS 150
- CCTV Cameras 180
- Ramp Meters 180
- Traffic Detectors 270
IntelliDrive
Arizona E-IntelliDrive
Pilot Applications

- Ramp meter priority / queue flushing
- Traffic signal preemption / priority
- Mobile incident warning (vehicle-vehicle)
- Transmit incident details back to center and other incident responders
Travel Times on DMS
Travel Times on DMS

Technical Advisory Committee

ADOT
DPS
FHWA
MAG
MCDOT

City of Phoenix
Travel Times on DMS

Evaluation

Safety

Efficiency

Accuracy

Public Opinion
<table>
<thead>
<tr>
<th>AM Peak: Inbound: 6am – 9am</th>
<th>PM Peak: Outbound: 3pm – 7pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMS 1 I-10 EB 67th Ave</td>
<td>DMS 13 I-10 WB 7th Ave</td>
</tr>
<tr>
<td>MINUTES TO TUNNEL XX AIRPORT YY</td>
<td>MINUTES TO 83RD AVE XX I-17 PEORIA AVE</td>
</tr>
<tr>
<td>DMS 9 I-10 WB Guadalupe Rd</td>
<td>DMS 4 I-10 EB 10th St</td>
</tr>
<tr>
<td>MINUTES TO SR-143 XX TUNNEL YY</td>
<td>MINUTES TO RAY RD XX SR-51 BELL RD</td>
</tr>
<tr>
<td>DMS 47 L-202 WB McClintock Dr</td>
<td>DMS 50 L-202 EB 24th St</td>
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<tr>
<td>MINUTES TO SR-143 XX I-10 TUNNEL YY</td>
<td>MINUTES TO LOOP 101 XX</td>
</tr>
<tr>
<td>DMS 42 US-60 WB Extension Rd</td>
<td>DMS 32 I-17 SB Central Ave</td>
</tr>
<tr>
<td>MINUTES TO TUNNEL VIA I-10 XX</td>
<td>MINUTES TO I-10 RAY RD XX US-60 VAL VISTA</td>
</tr>
<tr>
<td>DMS 27 I-17 SB Northern Ave</td>
<td>DMS 17 I-17 NB 4th Ave</td>
</tr>
<tr>
<td>MINUTES TO I-10 TUNNEL XX</td>
<td>MINUTES TO PEORIA AVE XX I-10 83RD AVE YY</td>
</tr>
<tr>
<td>DMS 58 SR-51 SB Northern Ave</td>
<td>DMS 55 SR-51 NB Osborn Rd</td>
</tr>
<tr>
<td>MINUTES TO I-10 TUNNEL XX</td>
<td>MINUTES TO BELL RD XX</td>
</tr>
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Pilot Study: 1/22/08 – 1/21/11
Arizona / Mexico Commission

- Arizona and Sonora Governors created borderless vision for 5-1-1.
- Arizona-Sonora/5-1-1 was international 5-1-1 system in the world.
Statewide Activities

- ADOT Homeland Security Task Force
- AMBER Alert Technical Advisory Committee
- Arizona Border (Mexico/U.S.) Wait Times Technical Advisory Committee (sponsored by the Governor’s CANAMEX Task Force & CANAMEX Corridor Coalition)
- Arizona Operations Academy Planning Committee
- ATRC Research Projects
- AZTech Committees (Executive, Advance Traveler Information Systems, Operations, TMC)
- Freeway Service Patrol
National Activities

- 5-1-1
- AASHTO IntelliDrive Working Group
- AASHTO Subcommittee on Systems Operations and Management
- CLARUS/MDSS
- Consortium on Remote Sensing of Traffic Activities (CRESTA) at the Canada/U.S. Border and Mexico/U.S. Border Technical Advisory Committee
- ENTERPRISE (Rural ITS) Pooled Fund Study
- FEMA Public Works Working Group
- I-10 Corridor Coalition Technical Advisory Committee
- SHRP 2 Project Panel
- Transportation Management Center Pooled Fund Study
- Transportation Research Board ITS Committee
Awards

- **Arterial ITS Expansion Plan** – Best ITS Planning Project for 2009

- **Regional Community Network (RCN) Phase 1A** – Transportation Partnering Excellence Award for 2009

- **Travel Times on Dynamic Message Signs** - Best ITS Implementation Project for 2008

- **Arizona’s Emergency Vehicle Infrastructure Integration (E-VII) Program** – Best ITS Planning Project for 2008
Future

- Expansion of FMS
- Evaluation of RWIS
- Southern TOC (Tucson)
- Alternate TOC (City of Peoria)
Questions?
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