Temporary Traffic Control
State Perspective – PennDOT

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add your name and title to this slide
Rowe, Glenn (BOMO), 1/25/2016
What you will learn

• Crashes
• Peer and Partners and Resources
• Strategic Planning
• Short Term Goals
• Long Term Goals
• Open discussion for question and answers
Statewide Crashes and Fatalities

2014
• Fatalities = 1,195

2015
• Fatalities = 1,234 (+39)

Trends going up
- Unrestraint drivers
- Motorcyclists
- Younger and Older drivers
- Distracted drivers
- Run off the road
these numbers can’t be right. 2015 is supposed to be higher than 2014. Last estimate I saw was 2012 fatalities. Where did these come from? Also what are projected for work zones?

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WZ Fatalities (2015) = 23
why isn't 2015 added to the graph?
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Work Zone Crashes

WZ Crashes (2015 projections) = 1902

pennsylvania
DEPARTMENT OF TRANSPORTATION
double check 2015 number. also put it on the graph
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Stats on Work Zone Intrusions

In 2015, there were 112 reported intrusions in PennDOT Work Zones

- 8 resulted in employee injuries
- 6 injuries to the public, and
- 29 intrusions that caused damage to Department vehicles or equipment.
Peers, Partners and Resources

- NCUTCD – Provides Recommendations to FHWA
- Pooled Fund Study- TCD and Connected Vehicles
- FHWA Peer-to-Peer Exchanges
- Every Day Counts (EDC-3) Smart Work Zones
- AASHTO SCOTE
- APC/PennDOT Safety Committee
- ATSSA Pennsylvania Chapter
Peers, Partners and Resources

Work Zone Clearinghouse Website

American Road & Transportation Builders Assoc.
FHWA
TTI
Strategic Planning

- FHWA WZ Implementation Plan
- PennDOT & PTC Safety Summit
- Work Zone Final Rule
FHWA WZ Safety Implementation Plan

- FHWA’s Sponsored to Identify an Action Plan to improve Work Zone Safety
- Pennsylvania was the 2nd State to participate
- Leidos developed the Final Plan Report
  - Reviewed Policies, Procedures and Standards
  - Reviewed 5 Years of Crash Data including all WZ Crashes (from 2010-2014)
- Effort included a Practitioner’s Workshop
  - PSP, FHWA, ATTSA, APC, contractors, other stakeholders
Location of Crashes Within Work Zone

Year

Percent of Work Zone Crashes

- Before 1st Sign
- Activity
- Linear (Before 1st Sign)
- Linear (Advance Warning)
- Linear (Transition)
- Linear (Activity)
- Linear (Termination)
- Other
- Transition
PennDOT and PTC WZ Safety Summit

- Agencies Represented: AAA, ATSSA, APC, FHWA, PENNDOT, PMTA, PSP, PA Turnpike
- Identified a Mission and Vision – Future Summits
- Overview of PennDOT and Turnpike Initiatives

- Four Focus Groups:
  - Programmatic
  - Engineering, Construction & Maintenance
  - Enforcement
  - Public Education/Awareness
PennDOT and PTC WZ Safety Summit

- Each Group Discussed Pre-Determined Issues
  - Each Provided a Number of Solutions
  - Identified Long- and Short-Term Actions
  - Impacts to Current Laws and Regulations

- Next Steps:
  - Summarize the meeting into a DRAFT Action Plan – completed Late December 2015
  - Refined Action Plan and Direction from Leadership - Early 2016
Established Policy for Projects:

- On fully-controlled, limited access highways: interstate or freeways, including the PA Turnpike
- Occupying a location for more than 3 days with either intermittent or continuous lane closures
- Additional travel delays under 20 minutes when compared to the base condition
- Provide guidance in the development and implementation of “Significant Projects”.
- Mitigations for Significant Projects
  - Public information and outreach
  - Transportation Management Plans.
• Short Term Goals (0 to 2 years)
Short Term Goals

- Update PSP MOU to focus on enforcement
- Expand the Use of ITS Technologies in WZ
- Ensure WZ Set-up Consistency (WZ MGR Policy)
- Establish WZ Speed Limit Criteria
- CDART Enhancements to better describe WZs
- Improve WZ Accessibility for Pedestrians, ADA and Bicyclists
Short Term Goals

- Implement ITS on Long-term Projects – Advanced Queue Warning Systems (AQW)
- Statewide Implementation of other Devices
  - Arrow Barricades, Rumble Strips and Sequential Lights
- Provide Real-Time WZ Data for Motorists
  - Similar to the non-WZ Data being shared now
- Develop INRIX-Based Performance Measurements
Big Data in Pennsylvania

**- SOURCES -**
- Internal
- Public Partners
- INRIX
- Waze

**- EXCHANGE -**
- Online Portal
- Incident Data
- Traffic Cameras
- Data Warehouse

**- PROCESSING -**
- Travel Times
- Expand Detection
- Data Manipulation

**- METRICS -**
- Understandable
- Actionable
- Credibility
- Efficiency
INRIX Data

**Input**
- GPS
  - Commercial
  - Consumer
- Smartphones
- Road Sensors
- Cellular Network Probe

**Output**
- ~40,000 miles of data
- Speed error +/- 5 MPH
- Archived data back to 2011
- Available to all PA agencies
INRIX Uses

- Travel Times
- Work Zone Monitoring
- Traffic Speed Monitoring
- Work Zone Planning/Performance Analysis
  - User Delay Costs
  - Historical Travel Times
- Incident Response QA/AAR
Travel Time for I-81 Construction Zone
Thursday September 17, 2015

- Northbound
- Southbound
- 20 Minute Delay Threshold
Data Driven Irix speed thermo/heat graph

Congestion on US-322 using INRIX data
Averaged by 10 minutes for September 23, 2015 and for September 04, 2015
Short Term goals

Education and Enforcement

- Changing Driver Behavior
- Work Zone Manager Certification and Training
- Public Outreach
  - Social media
  - Public Service Announcements
  - Driver Handbook
  - Changeable Message Boards
- Legislative Outreach - Safety Symposium
- PennDOT /PSP Memorandum of Understanding
- Motor Carrier Enforcement (Federal Motor Carrier Safety Administration)
- NHTSA
Automated Speed Enforcement

Based on Maryland’s ASE data:

- 85% reduction in vehicles traveling more than 11mph over the posted speed limit (in ASE areas)
- 35% reduction in all crashes (in all work zones)
- 40% reduction in crashes that resulted in an injury or death (in all work zones)

PennDOT supports the implementation

- Change in driver behavior
- Reduce fatalities and crashes, and
- Slower work zone speeds
• Long Term Goals
(3 years and beyond)
Long-Term Goals

- Applicable Summit and WZSIP Report Action Items
- Continue to Identify New and Innovative Products and Methods to Improve WZ Safety and Mobility
Royal Trucking Autonomous Crash Vehicle
Connected Vehicles
Automated Vehicles

Stay Informed & Involved
Start Small & Work With Partners
Understand the Implications
Develop a Plan
Challenges of Planning for the Future

DIRECTION of TECHNOLOGY

Rollout of TECHNOLOGY

Workforce Development

Pennsylvania Department of Transportation