Working Together for Smart Work Zone Success

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INVESTING IN A GLOBAL FUTURE
Why care about Smart Work Zones?

• Challenge is increasing: **build / repair / and maintain** infrastructure while also meeting **user safety and mobility** needs

• Smart Work Zones are one tool to address this challenge

• Use of Smart Work Zones in increasing rapidly in some areas

• Project benefit or project headache?
What is a Smart Work Zone?

- Use of technology
  - Gather data
  - Monitor traffic
  - Process information
  - Provide guidance and information
    - Travel time / delay
    - Route selection
    - Control / guidance – merge behavior
    - Advisories
      - Reduced speed, stopped traffic
I-75 - Detroit, Michigan
Marietta, Georgia

www.i-75georgia.com
Dynamic Lane Merger Trailer
Overview of A Dynamic Late Merge System

FLASHING ARROW PANEL

TAKE YOUR TURN
MERGE HERE
USE BOTH LANES
USE BOTH LANES
USE BOTH LANES
TRAFFIC BACKUP

I-83 SB
Overview of A Dynamic Late Merge System

FLASHING ARROW PANEL

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TRAFFIC BACKUP

I-83 SB
Evolution of Smart Work Zone Deployment

- Experimentation and development
- Evaluation and pilots
- Mainstream use

1993 to 2007
Smart Work Zone Deployments
Mainstreaming of Smart Work Zones

- North Carolina – approx 10 past deployments
- Minnesota – QPL requirements and process for SWZ systems, deployment guidelines, designated “seed money” funding
Mainstreaming of Smart Work Zones

- Michigan – standard specifications, large project with 180 sensor locations in 2007
- Georgia – 6 projects deployed in 2007 alone
- Oklahoma – central SWZ management system
Impact of Mainstreaming

- No longer “special projects”
- Often responsibility of prime contractor to include as line item
- Decision making – vendor selection by prime contractor
- Deliver and perform
  - Schedule impacts
  - Performance requirements and penalties
- Increased integration with permanent systems
Working Together for Success

- Relationship between prime and vendor is important for success
- Importance and timing
  - 0.25% to 2% of overall project price
  - Low priority in terms of $
  - Often required at start of construction
  - Provide as much time to vendors as possible to ensure smooth start up
    - Resolve questions
    - Mobilization
    - Acceptance testing
Working Together for Success

• Roles and responsibilities
  • Equipment supply
    • Sensors and communication
    • Sign trailers
    • Cones / barrels / barricades
  • Support and operation
    • Day to day monitoring and operation
    • Maintenance and emergency repair
Working Together for Success

- Facilitate communication with DOT
  - Layout and functionality
  - Technical questions
  - Performance requirements
  - Not typical asphalt and concrete questions
- Coordination of activities
  - Advance notice of phase changes, traffic shifts, etc.
- Performance data
  - Traffic volumes and delay times
  - Examine enlarged working windows
Summary

- Smart Work Zones – keep traffic moving and improve safety
- Tool to help facilitate major construction projects so they can go ahead
- Increasing requirement on upcoming jobs
- May provide feedback to expand construction window and improve efficiency
- Three way relationship is important
THANK YOU

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