Smarter Work Zones
Overview of Variable Speed Limits

Efficiency through technology and collaboration

Every Day Counts
innovation · ingenuity · invention · imagination

U.S. Department of Transportation
Federal Highway Administration

Smarter Work Zones
OVERVIEW

What are Smarter Work Zones?

Innovative strategies designed to optimize work zone safety and mobility

- Policies and practices used to incrementally and continuously improve WZ operations

- Tools to reduce WZ crashes and delays

- Tools to enhance WZ management strategies

What are Smarter Work Zones (cont.)?

Project Coordination	Technology Applications
Coordination within a single project and/or among multiple projects within a corridor, network, or region, and possibly across agency jurisdictions	Deployment of Intelligent Transportation Systems (ITS) for dynamic management of work zone traffic impacts, such as queue and speed management

Today's Focus

Types of Technology Applications Include...

- Real-Time Traveler Information

- Queue Warning

- Dynamic Lane Merge

- Incident Management

- Variable Speed Limits

- Automated Enforcement

- Entering/Exiting Construction Vehicle Notification

- Performance Measurement

For more information check out the SWZ TA website
https://www.workzonesafety.org/swz/swztechnology-application/types-of-applications/

Most States are already Utilizing SWZ!

- Over **40 states** have implemented technology applications, including:

  - Formalizing processes for planning and operating technology applications

  - Implementing "on-call" regional ITS SWZ contracts

  - Implementing steps towards institutionalizing technology:

    - Developing systems engineering documents

    - Developing specs to bid on technology

    - Piloting technology applications

    - Evaluating pilot to determine effectiveness for wider implementation

    - Fully implementing technology applications

    - Utilizing project funds to implement ITS – leading to institutionalization

Why Implement SWZ?
Capabilities of Technology Application

- **Improved driver awareness**
  - Changing traffic patterns
  - Downstream congestion
  - Construction vehicle ingress/egress
  - Expected delay / travel time

- **Dynamic and actionable guidance to drivers**
  - "Road work ahead" vs "Traffic Stopped 1 mile ahead"
  - "Road work – expect delays" vs. "Road Work I-95 past Exit 52 Use Alternate Routes"

- **Enhanced tools for on-site traffic management**
  - Speed monitoring
  - Automated speed enforcement
  - Queue formation

Why Implement SWZ?
Benefits of Technology Application

- **Empowers drivers to be proactive in responding to work zones**
  - Awareness of downstream hazards
  - Facilitates real-time decision-making and trip planning

- **Streamlines traffic management functions through partial automation**
  - Speed enforcement
  - Data collection
  - Performance measurement

- **Information increases customer satisfaction**
  - The More you Know…

Smarter Work Zones
VARIABLE SPEED LIMIT SYSTEMS

Variable Speed Limits (VSL)

- Multiple speed trailers in & approaching work zone

- Each unit monitors prevailing speed – relays information to upstream units.

- Posted speed limit dynamically adjusted to reduce downstream speed differential

Implementation Guidance
Work Zone ITS Implementation Guide

- Provides guidance on implementing ITS in work zones to assist public agencies, design and construction firms, and industry stakeholders

- Presented through a 6-step Systems Engineering Approach to WZ ITS implementation

- Available for download at: http://www.ops.fhwa.dot.gov/publications/fhwahop14008/fhwahop14008.pdf
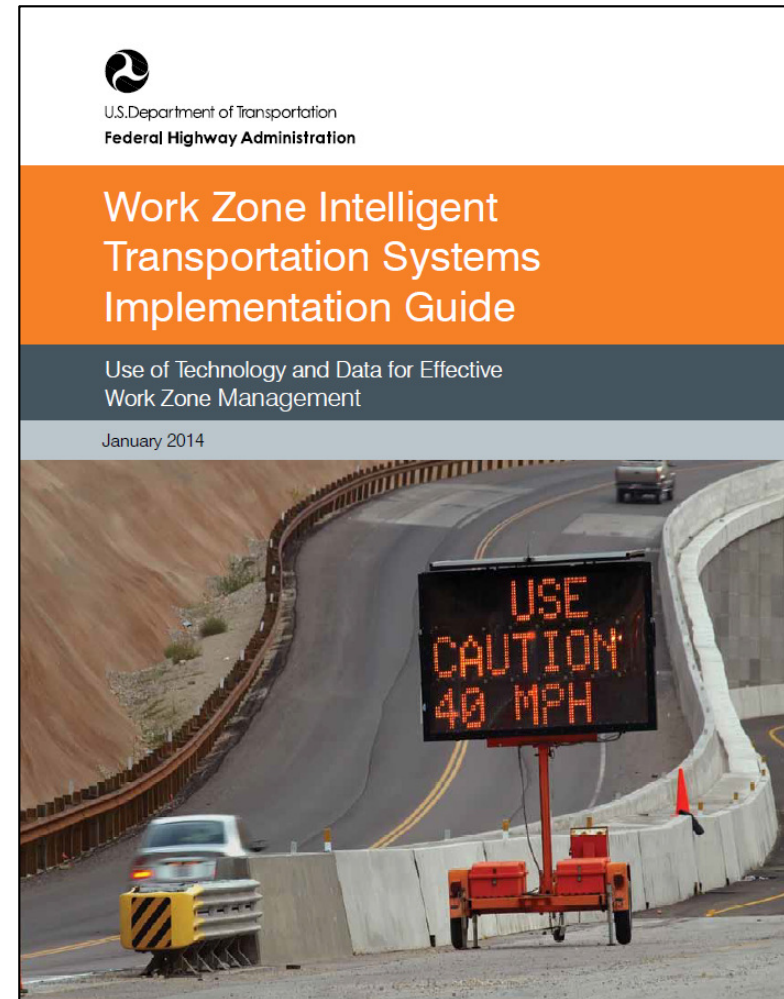
Source: FHWA

Implementation Guidance
Work Zone ITS Implementation Guide Steps

1 Assessment of Needs

2 Concept Development & Feasibility

3 Detailed System Planning & Design

4 Procurement

5 System Deployment

6 System Operation, Maintenance, and Evaluation
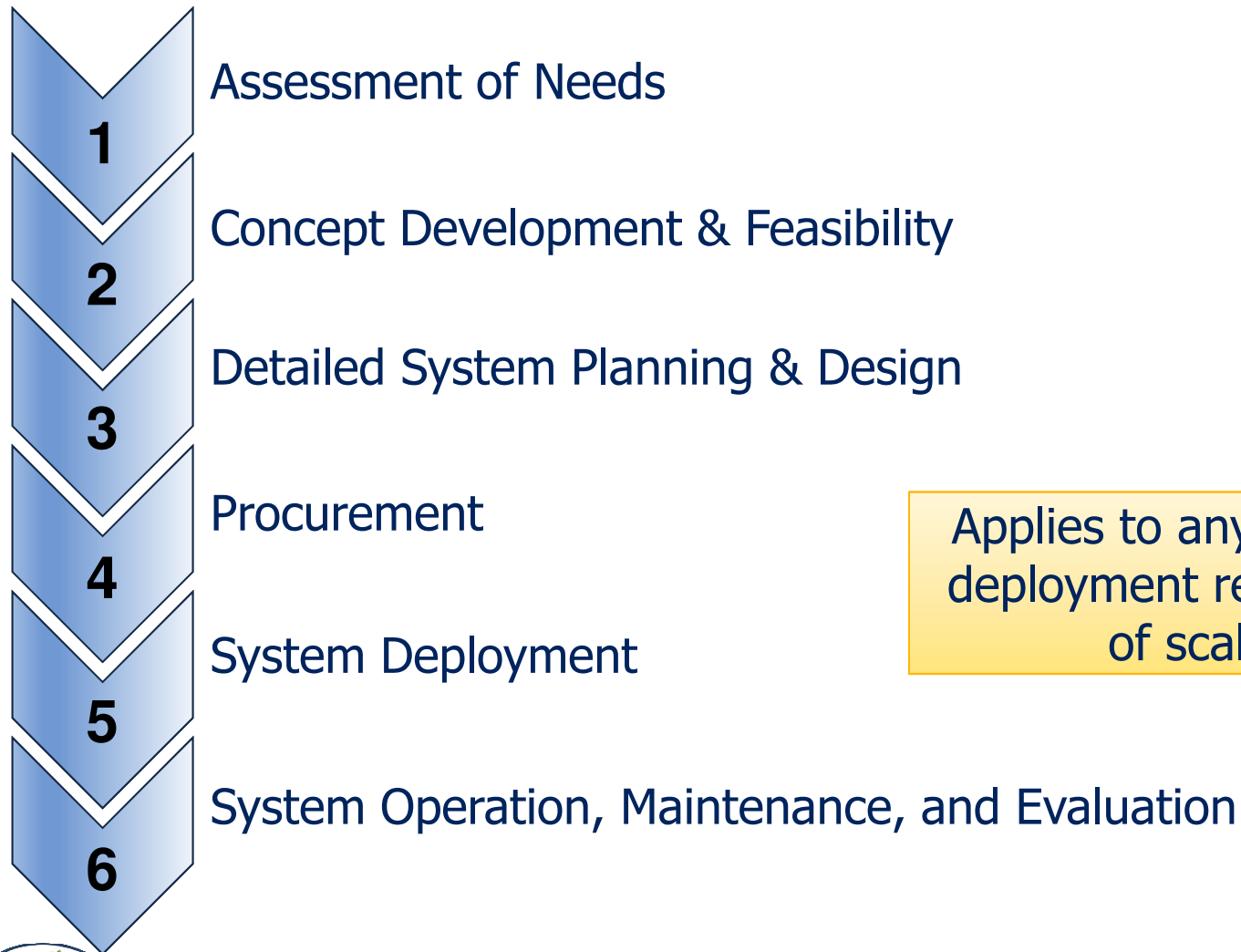
> Applies to any WZ ITS deployment regardless of scale

Smarter Work Zones
RESOURCES

Funding Opportunities

State Transportation Innovation Councils (STIC) Incentive Program	Accelerated Innovation Deployment (AID) Demonstration Program
• Funds activities which turn innovations into standard practices • All states are eligible • Up to $100,000 available to each STIC annually • Can be used to fund multiple initiatives • Use to pay consultants to develop standards, specifications, design manuals, evaluations, implementation plans, workshops, training, and more!	• Projects may be any aspect of highway transportation • Max of $1,000,000 (up to full cost of project) • Monitoring, assessment, and technology transfer commitments • Current grants include ABC, high surface friction treatments, and ATMS/A.

www.fhwa.dot.gov/stic

https://www.fhwa.dot.gov/accelerating/grants/

Visit FHWA's SWZ Interactive Toolkit

https://www.workzonesafety.org/swz/

Utilize Various Learning Opportunities!

- In-Person Workshops

- Virtual Peer Exchanges

- In-Person Peer Exchanges

- Demonstration Site Visits

Free educational opportunities are available!

Contact Jawad Paracha for more information

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