

AASHTO

Technology Implementation Group

Promoting the Use of ITS in Work Zones



Business Plan
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TRANSPORTATION ENGINEERS and PLANNERS

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ITS IN WORK ZONES BUSINESS PLAN

To date, there has been a lot of effort put forth in researching the best practices used in work zone operations. In April 2000 the Federal Highway Administration (FHWA), United States Department of Transportation, and the American Association of State Highway and Transportation Officials (AASHTO) released the "Work Zone Operations Best Practices Guidebook". ITS and Innovative Technology was identified as one of the categories of those best practices. The Guidebook contains 16 best practices in that category.

The Maryland State Highway Administration conducted a survey of the State Departments of Transportation for AASHTO to gain an understanding of the current usage of ITS in work zones. Although most states are using ITS in other areas, only a fraction of the states are currently using ITS in work zones. The states that are currently using ITS indicated in the survey that ITS has proven to be a valuable tool to increase safety and improve operations in and around work zones.

The AASHTO Technology Implementation Group (TIG) selected "ITS in Work Zones" as one of the technologies they will support and champion for increased implementation. As a first step the TIG selected "Pilot States" to help with the project. The following nine states were selected based on their experience with ITS in work zones, their willingness to participate in the study, and their desire to increase the use of ITS in work zones.

- California
- Maryland (lead State)
- Minnesota
- Missouri
- North Carolina
- Pennsylvania
- Texas
- Utah
- Washington

The second step was to host a workshop with the Pilot States to gain a better understanding of how ITS is currently being used in work zones across the United States and to gather their thoughts on how to promote use of ITS technology by other states. Based on input received at the workshop, a Business Plan for furthering implementation of ITS in work zones would be developed.

Participants from the nine Pilot States, along with representatives from FHWA and AASHTO, attended a one-day workshop on ITS in work zones in December 2003. Orth-Rodgers Associates (ORA) prepared and distributed an ITS Work Zone notebook to be used in the workshop. Utilizing the notebook as a reference and guide, ORA facilitated the discussions on what strategies the Pilot states were using in deploying ITS in work zones. Based on the discussions and research conducted, the group began to identify those strategies of deploying ITS in work zones that have been used, and are potentially applicable for other state and local entities to deploy. The Pilot State participants were asked to give a brief description of the current use of work zone ITS in their states. The participants also discussed a variety of work zone ITS uses and discussed the benefits and obstacles of each one. The set of viable work zone ITS strategies will form the basic tools that AASHTO will promote as part of this initiative. The participants defined the "ITS in Work Zone Toolbox" as the collection of those basic tools.

The Toolbox can be broken down into three major components: activities that occur outside of the work zone, either physically or by timeframe, activities that occur approaching the work zone, and activities inside the work zone. Some technologies may be used for more than one purpose and therefore may overlap between the three components.

- **Outside the Work Zone:** This category refers to ITS applications that are used outside of the work zone. For the purposes of this document, “outside the work zone” is defined as out of the immediate influence of the construction activities; either physically (i.e. pre-trip traveler information on the internet, or en-route traveler information elsewhere in the roadway network) or by timeframe (i.e. work zone planning and design or notifications to motorists prior to commencement of construction).
- **Approaching the Work Zone:** ITS applications that are used en-route in advance of the work zone such as real-time information.
- **Inside the Work Zone:** ITS applications that are used inside the work zone such as state-of-the-art lane closure and work zone intrusion warning systems.

The initial set of examples within the AASHTO Toolbox were selected by the project team because they use cost-effective, proven technology that is relatively easy to implement, can be portable or reusable, can be targeted to a large number of users, and increase safety and mobility in the work zone.

These systems may have a primary goal of improving either mobility or safety, but can provide benefits to both. Selecting an appropriate system for a given location depends on the issues the system is intended to address, and the project and site characteristics (e.g., typical traffic conditions, line of sight).

The ITS Work Zone notebook that was used by the Pilot States has been updated to include the results of the discussions and the development of this business plan. The notebook has become the first generation of the “ITS in Work Zones Toolbox” and has been provided as a reference for the business plan.

Based on the results of the workshop, this Business Plan outlines a strategy to educate state and local highway officials on the benefits of ITS, find out what the obstacles are that are inhibiting the use of ITS, and ultimately increase the usage of ITS in work zones in the United States. The Business Plan proposes to use the following steps:

- 1) Build the Project Team
- 2) Develop Educational/Marketing Material
- 3) Develop Training Material
- 4) Take the Show on the Road
- 5) Update Material

BUILD THE PROJECT TEAM

The Project Team will be instrumental in developing the project material. It is important that the Project Team be comprised of a diverse group of people from the public and private sector so that the material appeals to a wide audience. The team should consist of no more than twenty people, approximately half from the public sector and half from the private sector. A facilitator will be retained to lead the Project Team and develop project material.

Assuming the representatives from the Pilot States will want to continue participating in the effort, the public sector members of the Project Team will be from the nine Pilot States, and possibly one or two other key states.

The remaining members should consist of people who have experience with ITS in work zones. These experts may have experience in construction, design, maintenance, project management, or research, and may be representatives from industry groups such as American Traffic Safety Services Association (ATSSA), American Road and Transportation Builders Association (ARTBA), Institute of Transportation Engineers (ITE), ITS America, and others. AASHTO will solicit team member recommendations from the Pilot States, from the AASHTO TIG, FHWA, and other sources.

DEVELOP EDUCATIONAL / MARKETING MATERIAL

The Project Team will develop the concepts and ideas for the project material. A series of project meetings/workshops will be held to develop the educational and marketing material. The first meeting will be a brainstorming session to discuss the various materials proposed in this section. Project meetings will be held, as needed, to develop the material. A maximum of four project meetings is envisioned over a one-year time period.

The following methods may be used to promote the use of ITS in work zones for both State and local governments. This list is meant to be a guideline only; additional ideas may be developed over the life of the project.

The material should be marketed to AASHTO members, local governments, researchers, and industry. It will be necessary to develop different sets of materials based on the targeted audience.

Logo or Catch Phrase: Successful initiatives often have a logo or catch phrase used to promote awareness. Examples include “Operation Lifesaver”, “Give us a brake”, etc. The Project Team will develop a list of possible logos and catch phrases to be voted on for use. Examples include:

- Let ITS “Work” for you
- Get into the Zone (The ITS Work Zone)
- Working the Zone

Website: A project website will be the foundation for the dissemination of material. This website will need to be maintained and updated periodically. The following is a brief site map for the website. It is presumed that the facilitator will populate and maintain the website for duration of their contract.

Introduction: Describe the history and objective of the project, contact information

Toolbox: A list and description of ITS strategies that AASHTO member states have found to be of benefit for use in work zones. Tools also include reference materials such as sample legislation, sample specifications, glossary of technical terms, and case studies. For additional information see the “Toolbox” Attachment.

Success Stories: Report successful implementations and their evaluation reports and include any applicable hyperlinks.

News Room: Provide press releases and newsletter information.

Calendar: List the schedule of ITS in Work Zone Workshops.

Member Message Boards: Provide a message board that allows practitioners to ask questions and receive answers from peers.

Links: Link to other relevant websites such as AASHTO, AASHTO TIG, ITE, APWA, ARTBA, NACE, ATSSA, FHWA work zone site, FHWA ITS site and its technical assistance site (Professional Capacity Building Program, ITS Peer to Peer Program, Electronic Document Library, and Benefit/Cost database).

Clearinghouse: Information on obtaining CD-ROMs or other project material.

Press Release: Develop a kick-off press release for national newspapers, and trade journals announcing the project and the project website. National Work Zone Awareness Week would be a good time to promote AASHTO's support of the use of ITS in work zones.

Brochures: Develop a series of brochures geared towards different targeted audiences. Examples of potential brochures could include, an "executive summary" or other non-technical brochure for decision-makers or elected officials, a general overview of ITS in work zones for states who are not currently using ITS in work zones, and detailed information for each application of specific ITS technologies.

CD-ROM: The CD-Rom will contain much of the same information as the website. This CD-ROM may be mass-produced and distributed to State DOTs, Research Centers, AASHTO members, and may be ordered on-line through the project website.

TRB Roundtable Discussion: Host a roundtable discussion at the 2005 Annual TRB Meeting.

Demonstration Booth: Develop a portable "booth" presentation to be transported to various industry conferences. This material would be available for use at various conferences such as TRB, ATSSA, ARTBA, APWA, ITE, ITS America, and National Engineers Week.

DEVELOP TRAINING MATERIAL

A series of mini-courses can be developed that can be put together to form a custom half-day or full-day seminar. Some states may want a basic introductory course, whereas other states may want more specific information on implementing a particular technology or developing legislation. These courses/modules could be added to existing NHI coursework.

Smaller one to two-hour versions of the presentation could be transferred to video or DVD based presentations for audiences without the need for a hired speaker, or for use in web conferences.

TAKE THE SHOW ON THE ROAD

Develop a one or two-person "road show" to take around the country as a workshop to educate state and local highway departments on the benefits of using ITS in work zones and how to overcome the obstacles that are preventing them from implementing ITS enhanced work zones. This is envisioned to be a full-day seminar presenting the strategies contained within the AASHTO ITS in Work Zone Toolbox. The presentation can be tailored for the targeted audience or amount of time allocated. The presenters should be consistent from presentation to presentation but may include local experts when appropriate. The estimated cost of this proposed business plan includes the development of the presentation and two seminars per year

for the initial five-year period. Additional seminars would be made available, but would require additional funding.

UPDATE MATERIAL

The success of this project depends upon up-to-date information. ITS technology changes as new technologies are tested and proven effective. The project educational and marketing material will need to be updated at least once a year.

The budget provided in this business plan assumes an annual cost of \$10,000 to update the material. Since the pace of technology is unpredictable, the cost for each update will need to be negotiated between AASHTO and the facilitator.

SCHEDULE AND BUDGET

SCHEDULE

This Business Plan covers a five-year period. The first round of material should be available by September 2004 for the Annual AASHTO meeting, as well as January 2005 for the TRB Annual Meeting.

June 2004 – Obtain a Facilitator for Project Team under open-ended contract (work order assignments) with responsibility to run Project Team meetings and prepare materials, as required

July 2004 – Kick-off meeting of Project Team to determine the type of materials to be distributed at the AASHTO meeting

September 2004 – Present project material at Annual AASHTO meeting in Philadelphia

October 2004 – Follow-up meeting of Project Team to brainstorm, and finalize the selection of the remaining material to be included in initial version of the toolbox

January 2005 – Present available project material at TRB in Washington, D.C.; launch website

Spring 2005 – Project Team meeting to finalize workshop format/material and training classes

Summer 2005 - Roll out workshops and training material

Fall 2005 – Summer 2009 – Schedule meetings of the project team, as needed, to keep material updated and expand the toolbox with additional proven technology.

BUDGET

This is a “strawman” budget. The tasks can be tailored to meet approved budget.

Description	Year 1	Years 2-5
Build the Project Team - 2 meetings and 1 teleconference in first year, 1 meeting per year thereafter		
Meeting Preparation	\$45,000	\$40,000
Travel Costs for Project Team (20 members @ \$800)	\$32,000	\$40,000
Develop Educational / Marketing Material		
Development	\$30,000	\$0
Printing and Distribution	\$15,000	\$0
Website Development and Administration	\$39,000	\$27,000
Develop Training Material	\$25,000	
Take the Show on the Road	\$75,000	\$40,000
Update Material		\$40,000
TOTALS	\$261,000	\$187,000

FIRST YEAR DELIVERABLES

- **Project Meetings**
 - Teleconference: The first meeting will be a teleconference in July, 2004. The Facilitator will provide a meeting agenda and facilitate the discussions.
 - Project Meetings: The project team will meet twice during the first year to discuss the project materials and deliverables. The budget includes an average of \$800 per person per trip, which includes airfare and hotel.
- **Project Brochure:** Based on the July teleconference, the Facilitator will create and print up to 1,000 color copies of a one-page, two-sided "Project Brochure" to be distributed at the AASHTO meeting in September. It is anticipated that this brochure will announce the kick-off of the project and provide some of the information provided in the Toolbox.
- **Project Website:** The Facilitator will design the layout and the contents of the project website. It is anticipated that the website will be up and running by January 2005 so that it can be announced at the TRB meeting. Additional material will be added to the website throughout the life of the project. It is anticipated that the Facilitator will create the website but it reside on the AASHTO server.
- **Educational / Marketing Material:** Based on the discussions at the project meetings, the Facilitator will create educational and marketing material. It is anticipated that the Contract will distribute the material to the project team for input and revise accordingly. Examples of the types of educational and marketing material are described on page 4 of this Business Plan.
- **Training and Workshop Presentation:** The Facilitator will develop a PowerPoint presentation that can be easily tailored to different audiences. The presentation will be created so that it can be presented by the Facilitator or be given to other interested parties who can present the material at various conferences and workshops in the United States.
- **TRB Roundtable Discussion:** The Facilitator will make the arrangements and facilitate a roundtable discussion at the TRB conference in January 2005. The Facilitator will take notes and incorporate the information into future material.

FACILITATOR CONTRACT

The Budget contains the estimated cost for the entire five-year project. However, it is anticipated that the contract for facilitator services would be administered through an unfunded open-ended agreement with a series of funded work orders.