ITS in Work Zones Meeting
March 16-17, 2005
Maryland State Highway Administration

Attendees: Jawad Paracha (MD), Steve Kite (NC), Richard Sesney (PA), Glenn Rowe (PA), Tracy Scriba (FHWA), Jeremy Fissel (AASHTO)

COMPLIED NOTES ON WEBSITE AND WORKSHOP DISCUSSION

Goal is to get people to use WZ ITS.

- Need to have a champion in the state and/or district to make it work
- Consider web-conferencing: perhaps 2-hour session with 1-hour on a national perspective, and 1-hour from peers having used WZ ITS or local info; or perhaps a series of webconferences starting with general principles and going through different aspects
- Information needs to be specific enough – e.g., designers want specifics
- Needs to be a solution to a problem

Who are the users of our info?

- Designers
- Construction engineers
- Traffic engineers
- Some DOT execs?

<u>WEBSITE</u>

What info should be on the website?

- Video clips (both from the media and of the systems themselves)
- Specs
- Performance measures (include damages to ensure performance)
- Info from the toolbox
- Cost info (Steve would be willing to provide bid tabs – mobilization cost, pieces of equipment, etc.)
- Relationship between permanent ITS and temporary WZ ITS [MD - have to integrate with their statewide ITS (architectures), differences between the two (cost, etc.)]
- Different systems/specific technologies – what are the components, communications options, descriptions, advantages/disadvantages
- Lessons learned
- Reasons to use WZ ITS: why consider it? What can it do for you? Benefits?
- Study documents/evaluation (NC has 2; PA would have to provide anecdotal writeups/don't have formal evaluations; MD has a report on dynamic late merge that could be posted/field tests of other 3 systems – license plate system (ADDCO ok, CRS had problems), ASIS, trav info – all had reliability problems and would need to extract more limited info for the public website; MO?)
- Technical contacts (DOT, industry, vendors)

Organizational scheme for WZ ITS

Existing scheme

- Outside the WZ
- Approaching the WZ
- Inside the WZ

Other possible schemes

By purpose

- Providing traveler info
- Improving traffic management/merge management
- Increasing safety

- Managing queues
- Alleviating congestion

By purpose, more detailed
- Congestion mitigation/management– alt route, cut the source of the problem; pre-trip info
- Queue management (late/lane merge)
- Traveler info (motorist behavior)
- Incident management
- WZ Safety (including weather like Steve's system, – is this for WZs? Only portable for WZ concerns)
- Speed management/enforcement/aggressive driving (VSL, automated enforcement)
- Construction mgmt-maybe remove later

Team suggested using the "by purpose" scheme, with possible general information navagatable through the original "approaching/inside/pre trip" scheme.

SUGGESTED TEXT FOR THE WEBSITE

Start off with the statement that you must have a problem to address before choosing the correct ITS technologies.

> *The use of Intelligent Transportation Systems in Work Zones addresses anticipated, current, or consequential problems due to the project. First you must identify your problems, then choose the ITS technology that fits your needs. Yoru selection should consider your estimated traffic volumes, work zone physical length, and the expected work zone time length.*

How ITS can be used to reduce incident mgt.

> *Experience has indicated that State DOT budgeting often determines whether a project will utilize ITS. This TIG Team recommends that you address work zone safety, public demand, and how ITS can improve your project in the early stages of project development.*

Must coordinate between Design, Construction departments in earliest phase of the project (before budget). ITS is typically cut when projects are over budget, or value engineering is introduced.

Following are various ITS systems used by State DOTs, and their testimonials. It should be noted, that these technologies may not serve all of your work zones needs. It is suggested that you contact the State DOT representative listed if you have any questions concerning the devices and whether it applies to your specific work zone.

Have a "Table" opener (use original Toolbox plan, inside, outside, etc, containing brief 2 line description) link to the actual website pages

Use from original toolbox:

Opening slides: some may be useful
State of the art tech – Don't use
MD Lane Closure System – Jawad to forward
IN Expert System – Don't Use
AZ Work Zone Incentive – under construction mgt/contract admin category. Case Study on this.
Research for valid links

Software (Toolbox: Pre-Trip Traveler Info): 1. identify problem 2. do analysis, 3. ???

Synchro/Traffic (CA) trafficware.com
Tom to send website for Marquette Interchange
Work Zone best practices Guidebook pages– brief description, then link to FHWA's site on Guidebook

Approaching Workzone - Panel to forward, categorizing their techs
MD and KY TIPS - many problems, Jawad to forward 2 paragraph summary including probems.
What was KY's experience?
CalTrans – Don't use
NC Smart Workzones - Steve to forward
MO Intellizone – Tom to forward

Portable ITS Systems
Description, + another link to FHWA's on line Guidebook

Speed Advisory Systems
Brief description
Midwest Smart Workzone www.matc.unl.edu is there a report – Tracy to research then forward

En-route traveler
Kiosks – don't include

Inside the Workzone
Autoflagger - contact Marthand, get info, send to panel, may choose not to include
Dynamic Lane Merge - (MD and MI) include under queue mgt? Lots of info avail, MidWest (Tracy), TRB (Jawad)
Portable Traffic Signal – MD, Jawad to forward
Speed Trailers – Safety category
NC's info – On steve's disc
Intrusion Alarms – Don not use

Toolbox Tabs:
1: include survey in workshop
2. brochure at FHWA's site
3. link to projects and papers same FHWA site
6. link to cross cutting studies on FHWA site
7. general paper on ITS presented at TRB
8. paper avail at TTI? Anywhere? Congestion mgt
9. cong mgt?

Current specs:
NC will forward.

WORKSHOP
Date: late August/early September
Locations: St. Louis, MO
1 ½ days

This workshop will not focus on a specific local project. It will consist of presentations and discussions concerning ITS in Work Zones experiences used at various State DOTs. Topics will focus on deployment of these technologies, advantages, public perception and lessoned learned.

Participants

Approximately 40 State DOT participants which have experience or wish to gather information from others' experiences on deployment of ITS technologies used in work zones are expected. Reaching these people could be a task; the ITS department is not consistently located in many State DOTs. The first contact should be the AASHTO Subcommittee on Systems Operations and Management.

Two High Level speakers are desired to open and close the workshop. Speaker should be advocate of the use of ITS in work zones and an AASHTO Member. This Team plans to use recommendations from FHWA division offices. We are hoping the participants will we welcomed by Pete Rhan.

A notice in the AASHTO Journal is expected upon request for registrants. A hard copy notice will be mailed to various Team recommended individuals and State DOT departments. The letter is to include a notice to "forward to your ITS department" in case the DOT's structure has changed. Also, a 'blast email' will be sent by AASHTO staff to the appropriate Subcommittees.

States will be reimbursed by AASHTO up to $1000 for up to 2 participants travel from their respective DOT. There will be no registration fee for State DOT employees.

The Team requests that registration be opened for private firms and contractors, at a registration fee of $200. A formal notification will not be distributed to private firms, however, if the private sector inquires about participation through the Team members, their registration must be approved by the Lead States (NC and MD).

Possibility of taping the workshop and breakout session with hopes of future web streaming will be sought by MO.

Breakout Sessions

Approximately 3 speakers will be requested to present information. These are expected to be those who have excelled in the are of ITS in work zones. Possible presenters include: Fontaine (VTRC), Dr Tom Maze (IA State), and Eric Myers.

Breakout sessions will be concurrent and repeating. All participants may attend each topic. 2 sessions before lunch, 1 after on the first day.

3 Sessionss

1. Why use ITS in Work Zones
    a. what is the benefit of ITS, putting a dollar amount on benefits/safety/fatalities, benefit cost ratio, challenges with quantifying user cost savings, quantifying safety benefits.
        <20 min presentation>
        possible speaker: Karl Wunderlich
        PA will organize
        comments: use materials for the Midwest reports, Workzone reports

    b. customer expectations (see Marquette info, have presenter from this area)/driver expectation/human factors research (Univ of MN)/WZ 'needs assessment' (mention software programs-QuickZone, Quewz, CORSIM - *Dr. Louis in MO speaker)/Ways of distributing info from ITS (511, websites, CMSs, email alerts, etc)
        <20 min presentation>
        MD will organize
        Speaker: Someone familiar with Marquette information

2. Specs and Contracting
        <20min presentation, 20 min discussion>

NC will organize

comments: (1) specs: include topic "what message is on you display", (2) contracting: include innovative contacting, AZ may assist (See Case Studies); vendor/contractor coordination; (3) include potential risks, communication failures, and other challenges. Problems using ITS in WZ: funding, management resistance, motivation, risks from contractors perspective and others who never bid on projects with ITS (allow time for deployment, coordination of ITS people and contractor, when to program ITS into the project), bad experiences, "there will be failures"

3. Implementation Guide/Evaluation of New Technologies/choosing the correct ITS <40min>assigned FHWA/MD

<20 min presentation, 20 min discussion>
MD (eval of new Techs)/FHWA (implementation guide, choosing ITS) will organize
Comments: incorporate Case Studies

A High Level report will be provided after all the breakout sessions are complete. The report will include the discussion. There must be a person assigned to take minutes for this task. MO DOT may bring 2. FHWA may bring 2, we need two more. No Powerpoints, just an informal report/discussion, lead by a Team Member.

Local Project Tour

A presentation will open a 1 ½ hour van or bus tour of a local project. This will be done by the project manager. Project engineers are anticipated to narrate and provide Q&A for the participants in the van or bus.

Workshop Agenda

Day 1

1. Welcome and Introduction (Pete Rhan?)/ "How ITS can help"
2. ITS in Work Zones general presentation/ "Addressing Public Needs"
3. Break
4. Break Out Session 1 (1 hr)
5. Break Out Session 2 (1 hr)
6. Lunch (noon to 1)
7. Break Out Session 3 (1 hr)
8. Local Project/Case Study presentation
9. Break (2:30 – 2:45)
10. Project Tour, 3 vans or 1 bus (2:45 to 5)
11. Networking event in the evening- baseball game?

Day 2

1. Presentation website demo/nav. Tour- needs to be done early in case participants leave early. Check into a direct URL to TIG site (www.itsinworkzones.org)
2. High Level report from breakout sessions. Need someone to put report together, informal discussion? 2 people from MO DOT and 2 from MO FHWA Div?
3. Break
4. Hypothetical ITS situation
5. Closeout/Thank You (Done by SSOM Member? Bernie Arseneau , MN, or TIG Chair - Gary Hoffman?)

Assistants

A estimated 4 DOT staffers will be needed to assist with hotel, registration, and other logistics. MO can assist with initial planning.

Promotional Materials

An information package will be printed, and included with a greeting package for the registrants.

Include: brochures, flyers, freebees (magnets), CD-Rs

Effectiveness Measures

Several months after the workshop, the Team plans to distribute an email to the participants requesting feedback, whether their state has deployed ITS technologies in work zones since the workshop, and if they are having any current implementation problems.

Measure number of hits on website.

WORKSHOP BUDGET
ITS in WZ Workshop, Aug/Sept05

TRAVEL

	Number of participants expected	travel reimbursement	**Total**
DOT participants	50	1000	**$50,000**
$1000/DOT, may send up to 2 people, AASHTO reimburses State			
speaker travel	6	1000	**$6,000**
meeting space			**$8,000**
A/V			**$600**
printing, copying			**$500**

FOOD

	participants	unit price	
breakfast	50	8	**$400**
lunch	50	18	**$900**
breakfast	50	8	**$400**

BUS

$300

promotional materials

$2,500

widjits, magnets
poster
flyers
flashy handout

TOTAL: $69,600